***FINAL***

# ENVIRONMENTAL CONDITION OF PROPERTY REPORT

## WESTOVER
## U.S. ARMED FORCES RESERVE CENTER (MA007)
## 160 AIRMAN DRIVE
## CHICOPEE, MA 01022

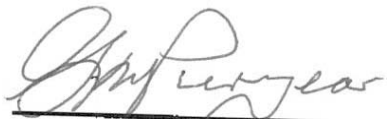
***Prepared For:***

**U.S. Army Corps of Engineers – Louisville District**
**Engineering Division – Environmental Engineering Branch**
**600 Dr. Martin Luther King, Jr. Place**
**Louisville, Kentucky 40202-2232**

## FEBRUARY 2007

# CERTIFICATION

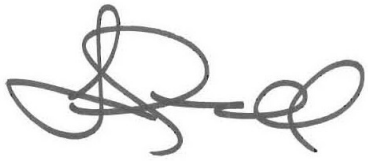
All information/documentation provided accurately reflects the environmental condition of the property. This ECP Report is in general accordance with the U.S. Department of Defense (DoD) requirements for completion of an Environmental Condition of Property (ECP) Report.



03/07/07

**GARY PURYEAR** **DATE**
**Environmental Division ARIM**
**Chief Environmental Division**
**94th Regional Readiness Command**

The undersigned certifies the contents of this report are in general accordance with DoD policies for the completion of an ECP.



02/20/07

**LENARD GUNNELL, P.G.** **DATE**
**Project Geologist**
**U.S. Army Corps of Engineers**

# Executive Summary

CH2M HILL, under contract to the U.S. Army Corps of Engineers (USACE), Louisville District, prepared this Environmental Condition of Property (ECP) Report for the Westover U.S. Armed Forces Reserve Center (USAFR Center) (Facility ID MA007), hereafter referred to as the "Site," the "Property," or "USAFR Center." The Site is located in Chicopee, Massachusetts, and encompasses approximately 12.42 acres.

This ECP was conducted in conformance with the Department of Defense's Base Redevelopment and Realignment Manual (BRRM), DoD 4165.77-M, Army Regulation 200-1, and the American Society for Testing and Materials (ASTM) Designation D 6008-96 (2005) *Standard Practice for Conducting Environmental Baseline Surveys.*

This ECP details the history of the property including prior tenant use; however, the focus of this document is on the USAFR Center use of the property and the resulting environmental condition of the Site.

The USAFR Center is located in Hampden County, on the northeast side of the city of Chicopee, Massachusetts, at 160 Airman Drive (Figure 1, Appendix A). The 12.42-acre parcel is an irregular-shaped property entirely located within the current boundaries of Westover Air Reserve Base (ARB), formerly Westover Air Force Base (AFB), and is situated west of the runway. The USAFR Center is located on a northern boundary of Westover ARB. Air Force barracks and dormitories lie to the Center's west, a radar tower lies to the east, and the base exchange (BX) (grocery store) to the south. The USAFR Center is currently occupied by the 226th Transportation Company (Army), 287th Medical Dental Unit (Army), 25th Tube launched, Optically tracked, Wire-guided missile (TOW) Platoon (Marines), Marine Corps Recruiters, Navy Recruiters, and the Hamden County Sheriffs Academy.

The Property also is improved with a privately owned vehicle (POV) parking lot, two military equipment parking (MEP) areas, and landscaped grounds, part of which is located across Airman Drive to the west (Figure 2, Appendix A). Approximately one-third of the 12.42-acre tract is considered impervious (asphalt parking areas, driveways, concrete walkways, building footprints, etc.), while the remainder is covered by lawn and a considerable population of oak trees.

Southern portions of the Property, including the MEP areas and the Organizational Maintenance Shop (OMS) building, are secured by fencing. The remainder of the Property, including the Administration Building and POV parking area, is open to South Main Street. Since the USAFR Center is located completely within the boundaries of Westover ARB, access is limited to the Property.

Based on a review of aerial photographs, U.S. Geological Survey (USGS) topographical maps and historical documents, the Property was used as tobacco farming before the Air Force took over the land in the 1940s, and was used by the Air Force as an Air Force Service club until it was turned over to the U.S. Army in 1976. It has since been used as a USAFR Center. The original buildings on the Property were constructed in 1959 when it was used

by the Air Force as an Air Force Service Club. In 1978, the Army added an addition to the administration building and constructed an OMS.

Reserve personnel historically have conducted administrative, logistical, and training activities at the Property, with limited vehicle maintenance occurring in the OMS building.

Areas of potential environmental concern were reviewed and Contractor CH2M HILL found the following relating to the USAFR use of this property:

- Subsurface environmental conditions on the Westover ARB that have significant potential to impact the USAFR Center.

In accordance with Department of Defense policy defining the classifications (see Sherri Goodman Memorandum dated 21 October 1996), the Property has been classified as Type 7. This classification does not include categorizing the property based on *de minimus* conditions that generally do not present material risk of harm to the public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

# Contents

## Appendixes



## Tables

# Abbreviations and Acronyms

The following is a comprehensive list of abbreviations and acronyms that are used throughout this report.

| | |
|---|---|
| ACM | asbestos-containing material |
| AFB | Air Force Base |
| AMSA | Area Maintenance Support Activity |
| AR | Army Regulation |
| ARB | Air Reserve Base |
| AST | aboveground storage tank |
| ASTM | American Society for Testing and Materials |
| BRAC | base realignment and closure |
| BRRM | Base Redevelopment and Realignment Manual |
| BX | base exchange |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CERCLIS | Comprehensive Environmental Response, Compensation, and Liability Act Information System |
| CFR | Code of Federal Regulations |
| CORRACTS | Resource Conservation and Recovery Act corrective action site |
| DEP | Department of Environmental Protection |
| DEM | Massachusetts Department of Environmental Management |
| DoD | Department of Defense |
| ECP | Environmental Condition of Property |
| EDR | Environmental Data Resources, Inc. |
| EPH | extractable petroleum hydrocarbons |
| ERNS | Emergency Response Notification System |
| FEMA | Federal Emergency Management Agency |
| FUDS | formerly used defense site |
| kg | kilogram |
| LBP | lead-based paint |
| LUST | leaking underground storage tank |

| | |
|---|---|
| MATS | Military Air Transport System |
| MCP | Massachusetts Contingency Plan |
| MEC | munitions and explosives of concern |
| MEP | military equipment parking |
| msl | mean sea level |
| NBC | nuclear, biological, and/or chemical |
| NPL | National Priorities List |
| NRHP | National Register of Historic Places |
| OMS | Organizational Maintenance Shop |
| OWS | oil/water separator |
| PCB | polychlorinated biphenyl |
| pCi/L | picoCuries per liter |
| POL | petroleum, oil, and lubricant |
| POV | privately owned vehicle |
| ppm | parts per million |
| RCRA | Resource Conservation and Recovery Act |
| RCRIS | Resource Conservation and Recovery Act Information System |
| RRC | Regional Readiness Command |
| SHWS | state hazardous waste site |
| TOW | Tube-launched, Optically tracked, Wire-guided missile unit |
| TPH | total petroleum hydrocarbons |
| TSD | treatment, storage, and/or disposal |
| USACE | United States Army Corps of Engineers |
| USAFR | United States Armed Forces Reserve |
| USEPA | United States Environmental Protection Agency |
| USFWS | United States Fish and Wildlife Service |
| USGS | United States Geological Survey |
| UST | underground storage tank |
| VPH | volatile petroleum hydrocarbons |

# 1 Introduction

CH2M HILL, under contract to the U.S. Army Corps of Engineers (USACE) Louisville District Engineering Division was authorized to conduct an Environmental Condition of Property (ECP) report for the Westover U.S. Armed Forces Reserve Center (MA007). The facility is located at 160 Airman Drive, Chicopee, Hampden County, Massachusetts, 01022, and is hereafter referred to as the "Site," the "Property," or "USAFR Center." CH2M HILL prepared this ECP report under contract number W912QR-04-D-0020, Task Order No. 0018, with the USACE Louisville District.

A visual non-intrusive (for example, no sampling) reconnaissance of the Property was conducted on September 6, 2006, in support of the ECP. The reconnaissance purpose was to obtain visual information indicating the likelihood of recognized environmental conditions associated with the Property or adjacent properties.

In preparing this ECP report, CH2M HILL gathered information from the available records and previous work from others, interviews with individuals purporting to be familiar with the Property, and observations from a site reconnaissance. The accuracy of the information obtained from these sources was not verified by CH2M HILL. As such, CH2M HILL will make no warranty, expressed or implied, relative to the accuracy, completeness, or reliability of the information used to create the records and reports prepared by others.

## 1.1 Purpose of Environmental Condition of Property

The Military Department with real property accountability shall assess, determine and document the environmental condition of all transferable property in an ECP Report. This ECP Report is based on readily available information. Pursuant to the Department of Defense's (DoD) policy, set forth in the Base Redevelopment and Realignment Manual (BRRM) (DoD 4165.66-M, March 1, 2006) Section C8.3, the primary purposes of the ECP Report include the following:

- Provide the Army with information it may use to make disposal decisions.
- Provide the public with information relative to the environmental condition of the property.
- Assist in community planning for the reuse of Base Realignment and Closure (BRAC) property.
- Assist Federal agencies during the property screening process.
- Provide information for prospective buyers.
- Assist prospective new owners in meeting the requirements under U. S. Environmental Protection Agency's (USEPA) "All Appropriate Inquiry" regulations.
- Provide information about completed remedial and corrective actions at the property.

- Assist in determining appropriate responsibilities, asset valuation, and liabilities with other parties to a transaction.

The ECP Report contains the information required to comply with the provisions of 40 Code of Federal Regulations (CFR) Part 373, which require that a notice accompany contracts for the sale of, and deeds entered into, for the transfer of federal property on which any hazardous substance was stored, released or disposed of. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 120(h) stipulates that a notice is required if certain quantities of designated hazardous substances have been stored on the property for 1 year or more—specifically, quantities exceeding 1,000 kilograms (kg) or the reportable quantity, whichever is greater, of the substances specified in 40 CFR 302.4 or 1 kg of acutely hazardous waste as defined in 40 CFR 261.30. A notice is also required if hazardous substances have been disposed of or released on the property in an amount greater than or equal to the reportable quantity. Army Regulation (AR) 200-1 requires that the ECP Report address asbestos, lead-based paint (LBP), radon and other substances potentially hazardous to human health.

This ECP Report used the American Society for Testing and materials (ASTM) Designation D 6008-96 (2005), *Standard Practice for Conducting Environmental Baseline Surveys*, the BRRM, CERCLA § 120, and Army Regulation 200-1.

## 1.2 Scope of Services

This ECP report covers the 12.42-acre USAFR Center located at 160 Airman Drive, Chicopee, Massachusetts. The Property is located within Westover Air Reserve Base (ARB) with the base boundary on the Property's northern border. All site maps, figures, and aerial photographs referenced herein are provided in Appendix A, while Appendix B contains the photographs taken during the September 6, 2006, site reconnaissance. Appendix C contains the Property warranty deeds and chain of title information, and lease or permit agreements if applicable. Relevant historical environmental documents and reports are provided in Appendix D, while Appendix E contains the Environmental Data Resources, Inc. (EDR) radius search reports commissioned for this effort.

This ECP report classifies the property into one of seven DoD Environmental ECP categories as defined by the DoD policy defining the classifications (see Sherri Goodman Memorandum dated 21 October 1996). The property classification categories are as follows:

- ECP Area Type 1—An area or parcel of real property where no release or disposal of hazardous substances or petroleum products or their derivatives has occurred (including no migration of these substances from adjacent properties).
- ECP Area Type 2—An area or parcel of real property where only the release or disposal of petroleum products or their derivatives has occurred.
- ECP Area Type 3—An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, but at concentrations that do not require a removal or remedial action.

- ECP Area Type 4—An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred and all remedial actions necessary to protect human health and the environment have been taken.
- ECP Area Type 5—An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred and removal or remedial actions, or both, are underway, but all required actions have not yet been taken.
- ECP Area Type 6—An area or parcel of real property where release, disposal, or migration, or some combination thereof, of hazardous substances has occurred, but required response actions have not yet been initiated.
- ECP Area Type 7—An area or parcel of real property that is unevaluated or requires additional evaluation.

# 2 Site Location and Physical Description

## 2.1 Site Location

The USAFR Center is located in Hampden County, on the northeast side of the city of Chicopee, Massachusetts, at 160 Airman Drive. The 12.42-acre parcel is located within Westover AFB with the base boundary on the Properties northern border (Figure 1, Appendix A).

## 2.2 Asset Information

| | |
|---|---|
| Facility Name and Address: | Westover U.S. Armed Forces Reserve Center<br>160 Airman Drive<br>Chicopee, Massachusetts |
| Property Owner: | U.S. Government |
| Date of Ownership: | Acquired by U.S. Air Force in 1939, transferred to U.S. Army on September 11, 1976 |
| Current Occupant: | 226th Transportation Company (Army), 287th Medical Dental Unit (Army), 25th Tube–launched, Optically tracked, Wire-guided missile (TOW) Platoon (Marines), and the Hamden County Sheriffs Academy |
| Zoning: | Military |
| County, State: | Hampden, Massachusetts |
| USGS Quadrangle(s): | Springfield North |
| Latitude/longitude: | 42°11'37"N; 72°33'27"W |
| Legal Description: | The USAFR Center includes 12.42 acres of land. No deeds, leases or titles were reviewed for the ECP report. |

## 2.3 Physical Description

The USAFR Center contains two permanent structures and three parking lots. Construction of the 42,000-square-foot administration building (Building 5550) was completed in 1959, while the 5,800-square-foot Organizational Maintenance Shop (OMS) (Building 5551), approximately 250 feet south, was completed in 1978. Both structures have flat roofs and are on concrete foundations, and consist of concrete block walls covered with a brick veneer. Two military equipment parking (MEP), MEP 1 and 2, areas and a privately owned vehicle (POV) parking area also are contained within the Property. Approximately one-third of the Property is covered by impervious surface features such as asphalt parking areas,

driveways, concrete walkways, and building footprints. The remaining land is grassed with a robust population of oak trees, especially clustered on the parcel east of Airman Drive (Figure 2, Appendix A).

The Administration Building consists of two components: an original cruciform-plan structure built in 1959 and a rectangular addition to the northern arm completed in 1978 at the same time as the OMS. The original cruciform corridor is a one-story, 245-foot-long structure, while the addition is a two-story, 136-foot-long structure. Interior features include administrative offices, classrooms, arms vault, storage lockers, showers, a boiler room, kitchen, drill hall, weapon simulator, and equipment storage.

The facility currently houses the 226th Transportation Company (Army), which facilitates transportation and fuel resources for forward units in the event of mobilization; the 287th Medical Dental Unit (Army), which provides dental assistance for troops in field environments; the 25th Platoon (Marines), the TOW unit; the Hamden County Sheriffs Academy; a Marine Corps recruiter; and a Navy recruiter.

The OMS (Building 5551) is a one-story, brick building with five roll-type garage doors, three of which are located in the taller, main portion of the building with two smaller doors located in the shorter wing at the west end of the building. A fenced parking lot MEP 2 is located immediately to the east of the building. A hydraulic lift used for minor maintenance on equipment is located in the OMS (Photograph 1, Appendix B). At the time of the site reconnaissance, there were 30 to 40 vehicles at the OMS, including two heavy-duty fork lifts and a large crane.

The wash rack area, located near the OMS (Photograph 2, Appendix B) consists of a cement pad that drains to a floor drain connected to an oil/water separator (OWS); wash fluid then flows to the sanitary sewer. The wash rack uses two water spouts connected to the City of Chicopee water supply for vehicle cleaning. An oil stain was observed near the drain at the time of the site reconnaissance.

## 2.4 Site Hydrology and Geology

The USAFR Center and Chicopee are located within the Connecticut Lowlands Zone of the Eastern Connecticut River Valley. The Connecticut River Valley is bounded to the west by the Berkshire Mountains and to the east by the Worcester Plateau. The distinct north-south trend of the Connecticut River reflects the fracturing and collision of the North American and African crustal plates during the Ordovician and Devonian period approximately 350 million years ago (Hartshorn and Colton, 1967).

The area around Chicopee geographically is dominated by the Connecticut River floodplain, typically consisting of nearly level floodplains and gently sloping terraces, punctuated by steep intrusive dikes. Outside the floodplain are glacial lake sediments and other glacial features caused during the most recent glacial period. Surface elevations range from 40 feet above mean sea level (msl) to 260 feet above msl in the Chicopee area.

### 2.4.1 Surface Water Characteristics

Figure 3 in Appendix A provides a portion of the 1958, Springfield North U.S. Geological Survey (USGS) topographic map that includes the Property. As shown, the Property is situated at an elevation of approximately 250 feet above msl and is relatively flat. In the immediate vicinity of the Property, the land surface is situated on a plateau that slopes west toward Williamson Brook that feeds into Langewald Pond and Mountain Pond, which eventually drain to the Connecticut River.

Stormwater sheet flow from the MEP area and POV parking lots collects in storm drains, which drain to four outfall points. The first outfall point collects runoff from within MEP 1 and directs stormwater southwest along Galaxy Road, eventually discharging to Williams Brook. Outfalls two and three collect runoff from the pavement in front of the OMS and the southern edges of the POV parking area, respectively. These two outfalls discharge to the storm sewer on Airman Drive, which flows southwest toward Galaxy Drive and ends up in Williams Brook. The fourth outfall drain collects runoff from the northern side of the POV parking lot and discharges to the storm sewer system, which flows west to Williams Brook.

No surface water features are located on the Property, although according to the 1979 USGS topographic map, an intermittent brook appears along the western border of the USAFR Center. During the site reconnaissance, no signs of wetlands were observed in this area. Langewald Pond appears 1,000 feet west of the USAFR Center.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, the Property is not located in the 100-year floodplain nor does a floodplain appear within 0.5 mile of the USAFR Center.

### 2.4.2 Hydrogeological Characteristics

The soils at the Property are classified as Urban Land and nearly level to moderately sloping Hinckley and Windsor soils on glacial outwash terraces (Project Facilities, 2004). These soils are deep and excessively well drained. Underlying bedrock formations in the Chicopee area generally consist of reddish-brown sedimentary sandstones and shales. These shales contain an abundance of floral and faunal fossils. There also are a series of well-developed diabase dikes.

During removal of an underground storage tank (UST) in 1992, the soil that was uncovered was characterized as medium-brown silty fine sand with little fine to medium gravel to at 6 feet deep. No groundwater was observed during the excavation.

The USAFR Center is located in an area of a potentially productive aquifer (EDR, 2006; Appendix E). The inferred groundwater flow direction is not listed in the EDR report nor are there any wells near the USAFR Center. From topography and fluvial features close to the USAFR Center, groundwater flow direction is inferred to be flowing southwest.

## 2.5 Site Utilities

***Water Service—*** The City of Chicopee provides potable water service to the Property.

***Sanitary Sewer System—*** The City of Chicopee provides sanitary sewer service to the Property. The primary source of wastewater that is directed to the city sewer system includes nonprocess wastewater (bathrooms, sinks, etc.), vehicle washing runoff, OWS runoff, and drains located throughout the Property.

***Gas and Electric—*** Bay State Gas provides natural gas service to the Property, while National Grid provides electric service to the Property.

## 2.6 Water Supply Wells and Septic Systems

Based upon a review of available historical site and agency records and interviews with site personnel, neither a water supply well nor a septic system is or was located at the Property. Potable water is supplied by the City of Chicopee.

A search of federal and state water well databases identified one public water supply source located approximately 0.75 mile northeast of the Property. The well is owned by the Massachusetts Department of Environmental Management (DEM) State Forest and is an untreated well that has no major violations or enforcement.

# 3 Site History

## 3.1 History of Ownership

The site was used for tobacco farming prior to 1939, which is when Westover Air Force Base (AFB) was built (Project Facilities, 2004). In 1976, when Westover AFB was deactivated, the Air Force transferred the facility to the U.S. Army for use as a Reserve facility.

## 3.2 Past Uses and Operations

According to historical documentation, the U.S. Government constructed Westover AFB in 1939 and activated it in 1940 as a bomber base. Between 1947 and 1955, the base was the largest freight and passenger terminal in the Military Air Transport System (MATS) and was used extensively during the Berlin Airlift. According to Westover AFB records, the building present at the site in 1969 was used as an Air Force Service Club. The base was deactivated in 1976, at which point the Property currently occupied by the USAFR Center was transferred to the U.S. Army. The Administration Building (Building 5550) was then altered and enlarged to a 300-man capacity, adding the north wing and the OMS.

After the USAFR Center was rededicated on September 11, 1976, it was used for administrative, operations, and recruiting space for the U.S. Army, U.S. Navy, and the U.S. Marines Corps. The USAFR Center served (and still serves) as a base of operations for specialized units that can be mobilized and assimilated into the Regular Army when required.

The Property primarily functioned as an administrative, logistical, and educational facility, with limited maintenance of military vehicles occurring in the OMS building. The Property historically was used by reservists for drill activities on various weekends throughout the year. The OMS building was used to perform minor maintenance activities on military equipment. Activities inside the OMS building were limited to preventative maintenance checks, including checking vehicle fluids, such as motor oil, water, and antifreeze, and light maintenance activities. Any equipment requiring heavier maintenance activities was sent to an Area Maintenance Support Activity (AMSA) shop located at one of the other Reserve centers. Equipment requiring major overhaul also was sent offsite. A hydraulic floor jack pit was observed in the OMS (Photograph 3, Appendix B). An associated hydraulic oil pump and hydraulic jacks had not been removed (Photograph 4, Appendix B), even though Property personnel stated the pit had not been used in some time.

Vehicle washing would have occurred historically at the wash rack (Photograph 2, Appendix B) just north of the OMS building. One drain located in the middle of the cement pad carries rinse water to an OWS (Photograph 5, Appendix B) located in the MEP area, which is connected to the municipal sanitary sewer. No storage tanks are associated with the OWS.

Historical aerial photographs and topographic maps were the primary source of information on the past use and operations at the Property. Figures 3 through 7 in Appendix A provide USGS topographical maps and aerial views of the Property and surrounding areas in 1958, 1960, 1972, 1979, and 1980.

The 1958 USGS topographical map (Figure 3, Appendix A) shows the Property as developed with three large H-shaped structures and four smaller buildings. These structures were associated with an Air Force Service Club. The surrounding areas are developed with buildings; two schools appear north of the USAFR Center, and Westover AFB lies to the west.

The 1960 aerial photograph (Figure 4, Appendix A) shows four buildings located on the Property. Two of the buildings were present on the previous topographic map: the H-shaped building and one of the smaller buildings to the south of the Property. The third building appears to be the cruciform plan building that is the current USAFR Center Administration Building. A small building located across Airman Drive also is observed. The immediate surrounding area is developed with large buildings and, to the west, a residential neighborhood. Some construction appears to the north.

The 1972 USGS topographic map (Figure 5, Appendix A) shows only the cruciform building and the smaller building across Airman Drive. The surrounding area has nearly 75 percent fewer buildings. The 1979 USGS topographic map (Figure 6, Appendix A) is identical to the 1972 USGS topographic map with regard to the Property.

The 1980 aerial photograph (Figure 7, Appendix A) shows the new addition on the USAFR Center and a small building appears in the southern part of the Property. The building located across Airman Drive is gone. The surrounding area appears to be unchanged from the 1972 USGS topographic map.

## 3.3 Past Use, Storage, Disposal, and Release of Hazardous Substances

### 3.3.1 Past Use and Storage of Hazardous Substances

Information related to the past use and storage of hazardous substances at the Property was compiled through review of available site records, search of federal and state environmental databases, and interviews with Army Reserve personnel. Chemicals formerly used and stored at the Property were associated with vehicle and facility maintenance activities, and janitorial services. Janitorial chemicals and building maintenance-related products were stored in the designated storage area within the janitorial closet located in the administration building.

Vehicle maintenance products and petroleum, oil, and lubricant (POL) products also were stored within designated areas within the OMS building equipped with secondary containment basins (Photograph 6, Appendix B). Other potentially hazardous materials and POL products were stored in the outdoor hazardous material storage shed (Photograph 7, Appendix B) located north of the OMS building within the MEP area. Materials used and stored in the past are similar to those used currently, which are described in Section 6.

Chemical products used and stored at the Property would have contained CERCLA hazardous.

### 3.3.2 Past Disposal and Release of Hazardous Substances

Information related to past disposal and potential release of hazardous substances at the Property was compiled through review of available site records, search of federal and state environmental databases, and interviews with Army Reserve personnel. According to Army Reserve personnel and site records, onsite disposal of hazardous materials or wastes has not occurred at the Property. No stained soil or stressed vegetation was observed during the site reconnaissance. The MEP area and POV parking area showed signs of minor staining from normal use. Staining was noticed around the drain at the wash rack area and on the floor of the OMS. Several large structures were present at the Property before the USAFR Center was built, as observed on aerial photographs and topographic maps. The large structures have been identified as a former Air Force Service Club; no other information about activities or other environmental concerns is available regarding these buildings.

## 3.4 Past Presence of Bulk Petroleum Storage Tanks

Based upon a review of available site records, a search of federal and state environmental databases, and interviews with Army Reserve personnel, three USTs were removed from the USAFR Center. An 8,000-gallon and a 2,000-gallon No. 2 fuel oil USTs were removed from the Property in November 2000, and a 1,000-gallon waste oil UST was removed in December 1992.

The 8,000- and 2,000-gallon No. 2 fuel oil USTs were removed by Nobis on November 2, 2000. The 8,000-gallon UST was removed from the east side of the Administration Building (Building 5550). When the 8,000-gallon UST was removed, the tank was observed to be in good condition with no holes or signs of corrosion. Analytical results from soil samples were non-detect for extractable petroleum hydrocarbons (EPH) or volatile petroleum hydrocarbons (VPH).

The 2,000-gallon No. 2 fuel oil UST was removed from the south side or behind the OMS (Building 5551). When the 2,000-gallon UST was removed, the tank was observed to be in good condition with no holes or signs of corrosion. Analytical results from soil were non-detect for EPH or VPH.

The 1,000-gallon waste oil UST was removed by ATEC Associates on December 3 and 4, 1991, from the east side of the OMS. When removed, the tank was in good condition with no signs of perforations or punctures, and no visible contamination was observed. The two soil samples sent to the laboratory for analysis showed levels of total petroleum hydrocarbons (TPH) of 14 parts per million (ppm) and 24 ppm.

Closure reports for the three UST removed from the Property were obtained and TPH impacts did not exceed Massachusetts Contingency Plan (MCP) minimum contaminant levels of 200 ppm for TPH. No Massachusetts Department of Environmental Protection (DEP) closure letters were obtained, and the USTs were not listed in the EDR database (Appendix E).

Several large structures previously existed on the property, and have been identified as a former Air Force Service Club; no other information is available about the type of fuel used or stored for heating of the buildings.

## 3.5 Review of Previous Environmental Reports

A review of site records produced several reports pertaining to the Property. The following subsections provide a brief summary of these reports. Copies of the reports, unless otherwise specified, are provided in Appendix D.

### 3.5.1 1992 Underground Storage Tank Closure

The report summarizes the removal of one 1,000-gallon waste oil UST by ATEC Associates in December 1992. The UST was removed from the east side of the OMS building. Soil samples collected from the bottom of the excavation showed levels of TPH of 14, 28, and 24 ppm. No stained soil was observed, the tank was intact, and groundwater was not encountered.

### 3.5.2 1995 Real Property Description

A historical resources inventory was prepared by The Public Archaeology Laboratory, Inc. The inventory includes historical information, setting and landscape, cultural resources, security, architectural information, and structure descriptions are included for each property. The USAFR Center has been recommended for listing on the National Register of Historic Places (NRHP).

### 3.5.3 1996 Natural Resources Inventory

This report inventories all the storm drains located at the USAFR Center and documents where they lead. During the site visit conducted as part of this inventory it was noted that the OWSs had visible oil layers and required maintenance and that the wash rack was full of silt. The report also inventories natural resources such as wildlife, vegetation, birds, and protected species or environments. It concluded no endangered or threatened species inhabited the Property. The report was completed by ENSR in 1996.

### 3.5.4 1996 Asbestos and Lead-based Paint Identification Survey

Paint and suspect potential asbestos-containing material (ACM) were collected and tested during an investigation completed in 1996. Lead was detected in the paint collected from the roof trim and exhaust fans located on the roof. ACM was not detected in six samples collected from roofing material and roof flashing. This survey was completed in response to a plan for replacement of the roof. The investigation was limited to the roof area; other interior parts of the building were not tested.

### 3.5.5 1998 Asbestos Survey Report and Operations and Maintenance Plan

An asbestos survey was completed in 1998 by Covino Environmental Consultants, Inc., Woburn, MA. The survey concluded that friable ACM was present in the gray mudded pipe fitting insulation and white block-type duct insulation in the sublevel mechanical room.

Nonfriable ACM included floor tiles, mastic beneath floor tiles, and black roof flashing cement.

### 3.5.6 1999 Storm Water Pollution Prevention Plan

This plan developed by USGS describes the stormwater drainage paths at the site. Stormwater flows from the POV parking lot and MEP toward four separate outfalls. The water discharges into the City of Chicopee stormwater municipal drains. A wash rack and several OWSs are documented as connected to the sanitary sewer. The report notes that facility personnel stated the OWSs were cleaned in 1998. Several UST locations since removed were identified in the plan.

### 3.5.7 2001 Underground Storage Tank Closure Report

This report prepared by Nobis Engineering Inc., Lawrence, MA, documents the removal of one 8,000-gallon UST and one 2,000-gallon UST. The 8,000-gallon UST was used to fuel the boiler in the Administration Building with No. 2 fuel oil, while the 2,000-gallon UST fueled the boiler in the OMS with No. 2 oil. Soil from around the tanks was analyzed for petroleum hydrocarbons, which were not detected. No soil staining was observed, the tank did not appear to have holes or perforations, and groundwater was not encountered.

# 4 Adjacent Properties

Adjacent property land uses are significant to the ECP process, as these current or past uses may have an environmental impact on the USAFR Center. Adjacent properties were included in the EDR report review for this reason. Typically, adjacent properties within 0.25 mile of the USAFR Center property boundaries are reviewed and visually surveyed. For the purposes of this ECP, the adjacent property reconnaissance was performed from the USAFR Center property boundaries and from public access points. Historical aerial photographs and topographic maps also were reviewed for conditions or activities that may have had an environmental impact on the Property.

## 4.1 Land Uses

The Westover Air Reserve Base (ARB) property surrounds the USAFR Center to the east, west, and south. The base exchange (BX), or base store, is located south of the Property. Military dormitories are located west of the USAFR Center, and a radar tower is adjacent to the site on the east side.

The base boundary is located north of the USAFR Center, beyond which is U.S. Department of Labor—Job Corps buildings. Also north of the USAFR Center is an oil and lube shop. The runway for the Westover ARB is located approximately 0.5 mile southeast of the USAFR Center. Table 1 summarizes the current adjacent properties, their owners, and zoning.

TABLE 1
List of Properties Adjacent to Westover USAFR Center, Chicopee, Massachusetts

| Name/Type of Property | Address | Distance and Direction from Property | Zoning | Remarks |
|---|---|---|---|---|
| Westover ARB—Runway and associated fueling activities | Westover ARB | Property is enclosed within Westover ARB | Military | Petroleum and solvent releases at a former DOD property |
| U.S. Department of Labor—Job Corps | 103 Johnson Road | Approx. 685 feet north | Commercial | SHWS—40-gallon No. 4 fuel spill, permanent solution achieved |
| King Ward Coach Lives | 70 Justin Drive | Approx. 868 feet south | Commercial | 10,000-gallon diesel fuel tank; in use |

SHWS—state hazardous waste site

## 4.2 Findings

The EDR database search results were reviewed for any evidence that adjacent properties may have past or present environmental issues that would impact the USAFR Center.

The USAFR Center is located within Westover ARB, and the EDR report has identified seven facilities within the base boundaries that have past or present environmental issues. All of these facilities have been investigated and a remediation solution has been chosen, but it is unknown whether several of them would impact the USAFR Center, based on an inferred direction of groundwater flow to the southwest. Seven additional facilities identified on the orphans list were identified as Westover ARB facilities but were unable to be located. Additionally, the U.S. Department of Labor--Job Corps was reported to have a 40-gallon diesel spill. EDR reports that a permanent solution has been found; however, soil contamination has not been brought to background levels. No information was reasonably available regarding the groundwater associated with the 40-gallon diesel spill.

Water well databases at the federal and state level were reviewed to identify any water supply source near the Property. One water supply source is located approximately 0.75 mile northeast of the Property. This water well is operated by the Massachusetts DEM State Forest and is reported as untreated and supplying 25 people.

Land use at adjacent properties does not appear to have changed significantly over the years, based on a review of available aerial photographs. Based on the 1953 topographic map, development of the Westover AFB began before 1958. After the 1970s, the number of structures on Westover AFB dramatically decreased. Since then, no major changes have occurred in the area.

# 5 Review of Regulatory Information

An essential component of an ECP is the review of records and databases containing information on the Property and adjacent properties. The review includes reasonably obtainable federal, state, and local government records, and is intended to identify a release or likely release of any hazardous substance or any petroleum product, which is likely to cause or contribute to a release or threatened release of any hazardous substance or any petroleum product to the Property.

The majority of the regulatory information for this ECP was obtained from EDR on September 6, 2006. EDR provides a regulatory database summary that consolidates standard federal, state, local, and tribal environmental record sources based on ASTM-recommended minimum search distances from the Property. It should be noted that the Westover ARB is a large property surrounding the USAFR Center. EDR located many of the Westover ARB facilities at the Westover ARB main gate. However, in reality, many of these "main gate" facilities are situated further north and east, and therefore possibly upgradient from the USAFR Center.

All findings reported in Sections 5.1, 5.2, and 5.3 are from the EDR report unless otherwise noted. A copy of the complete EDR report is included in Appendix E.

## 5.1 Federal Environmental Records

### 5.1.1 Federal National Priorities List Sites within 1 Mile

USEPA maintains a record of the nation's worst uncontrolled or abandoned hazardous waste sites, known as the National Priorities List (NPL). Sites on the NPL undergo long-term remedial action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The USAFR Center is not an NPL site, nor were any such sites located within 1 mile of the Property.

### 5.1.2 Federal Comprehensive Environmental Response, Compensation and Liability Act Information Systems Sites within 0.5 Mile

The CERCLA Information System (CERCLIS) contains data on potentially hazardous waste sites that have been reported to USEPA by state, municipalities, private companies, and private persons, pursuant to Section 103 of the CERCLA. CERCLIS contains sites that either are proposed to be or are on the NPL and sites that are in the screening and assessment phase for possible inclusion on the NPL.

The Westover USAFR Center is not a CERCLIS site, and there are no CERCLIS sites located within 0.5 mile of the center.

### 5.1.3 Resource Conservation and Recovery Act Corrective Action Sites Within 1 Mile

Resource Conservation and Recovery Act (RCRA) corrective action sites (CORRACTS) represent facilities that have generated or managed hazardous wastes and require corrective action. The USAFR Center is not a CORRACTS site, nor were any such sites identified within 1 mile of the USAFR Center.

### 5.1.4 RCRA Transport, Treatment, and/or Disposal Sites Within 0.5 Mile

RCRA defines and regulates sites that generate, transport, treat, store, and/or dispose (TSD) of hazardous wastes. The RCRA Information System (RCRIS) includes selective information on these sites.

The USAFR Center is not a RCRIS-TSD site and there are no such sites located with 0.5 mile of the USAFR Center.

### 5.1.5 Federal RCRA Small and Large Quantity Generators List within 0.25 Mile

Conditionally exempt small quantity generators are defined as facilities generating less than 100 kilograms (kg) of hazardous waste, or less than 1 kg of acutely hazardous waste per month. RCRA small quantity generators are defined as facilities generating between 100 and 1,000 kg of hazardous waste per month. A facility generating more than 1,000 kg of hazardous waste or over 1 kg of acutely hazardous waste per month is defined as a large quantity generator.

The USAFR Center is not a RCRA-registered small or large quantity generator, nor are there any such sites within 0.25 mile of the site.

### 5.1.6 Department of Defense

The DoD consists of federally owned or administered lands, administered by the DoD that have an area equal to or greater that 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands. The USAFR Center was part of the former Westover AFB.

### 5.1.7 Formerly Used Defense Sites

The listing includes locations of formerly used defense site (FUDS) properties where USACE is actively working or will take necessary cleanup actions.

The USAFR Center was not identified on the FUDS list. Two sites identified on the FUDS list are approximately 15.1 acres of the formerly used bulk POL terminal area and a 2.8-acre salvage yard. Neither of these areas are upgradient from the USAFR Center, assuming the inferred flow direction to the southwest.

### 5.1.8 Federal Emergency Response Notification System List

The federal Emergency Response Notification System (ERNS) List maintains information on reported releases of oil and hazardous substances. The USAFR Center is not on this notification list.

## 5.2 State and Local Environmental Records

Most of the information presented in this subsection was obtained from the EDR report. Additional information also was obtained from online database searches of the State of Massachusetts Web site. Occasionally, state and local agency personnel were interviewed via telephone to answer questions about any database issues.

### 5.2.1 State Lists of Hazardous Waste Sites within 1 Mile

The USAFR Center is not listed as a state hazardous waste site (SHWS). Within 1 mile of the USAFR Center were 17 adjacent properties listed as having a hazardous waste site (Table 2).

TABLE 2
State-Registered Hazardous Waste Sites
*Near Westover USAFR Center, Chicopee, Massachusetts*

| Company/Site | Address | Distance and Direction from Property | Regulatory Status | Elevation Relative to Property |
|---|---|---|---|---|
| U.S. Department of Labor—Job Corps | 103 Johnson | 685 feet north-northeast | RAO—40-gal No. 4 fuel oil spill has not been reduced to background | Equal/higher |
| Off Westover Road | 32 Dulong CIR | 1,565 feet south | RAO—Class C (no health risk) for 28700 ppb TCE | Equal/higher |
| Stop & Shop Warehouse and Distribution Center | 1255 Sheridan Street | 2,305 feet southeast | RAO—contaminants reduced to background | Equal/ higher |
| Building 3155—Westover AFB | Seawolf Avenue, Westover ARB | 2,637 feet southeast | RAO—permanent solution, not reduced to background | Equal/higher |
| Westover Hangar Apron/Aqua sys | Westover AFB | 2,656 feet southeast | RAO—partial outcome, not reduced to background | Equal/higher |
| Vehicle Maintenance Shop | Westover AFB | 2,656 feet southeast | RAO—contaminants reduced to background | Equal/higher |
| No Location Aid | 1380 Sheriden Street | 2,819 feet east | RAO—no significant risk | Equal/ higher |
| Hangar 11 | 227 Lonczak Dr. | 3,733 feet south-southeast | RAO—contaminants reduced to background | Equal/higher |
| WAFB Building # 9000 | Access Road | 3,779 feet northwest | RAO—permanent solution, not reduced to background | Equal/higher |
| Echo-2 Tarmac – Westover AFB | 250 Patriot Avenue | 3,892 feet east-northeast | RAO—permanent solution, not reduced to background | Equal/higher |
| Avery Dennison Company | 1 Better way | 5,262 feet east-northeast | RAO—contaminants reduced to background | Equal/higher |
| Hess Station 21209 | 1423 Memorial Drive | 4,463 feet west-northwest | RAO—permanent solution, not reduced to background | lower |
| Fairview Plaza | 1451-1505 Memorial Drive | 4,485 feet west-northwest | RAO—no significant risk | lower |
| Dairy Mart | 1284 Memorial Drive | 1,401 feet west | RAO—release of unknown chemicals | lower |

RAO = Response Action Outcome, a site has been assessed and a remedial action as been put in place.

### 5.2.2 State-Registered Landfills or Solid Waste Disposal Sites within 0.5 Mile

The USAFR Center does not have a solid waste landfill, incinerator, or transfer station within the Property boundaries. No adjacent properties within 0.5 mile of the USAFR Center have a solid waste landfill, incinerator, or transfer station.

### 5.2.3 State-Registered Leaking UST Sites within 0.5 Mile

In addition to information obtained from the EDR report, the Massachusetts Division of Underground Storage Tanks maintains a comprehensive database of leaking underground storage tank (LUST) sites. The USAFR Center is not listed in the state LUST database. There are no LUST sites listed on the database within 0.5 mile of the USAFR Center.

### 5.2.4 State-Registered UST Sites within 0.5 Mile

Based on a review of the EDR report and the state of Massachusetts UST database, one UST site was identified within 0.5 mile of the USAFR Center. The Property itself was not listed in the state UST database. The UST site was identified as King Ward Coach Lives, 70 Justin Drive. A 1,000-gallon diesel UST has an approved in-tank monitor.

### 5.2.5 Massachusetts Release Tracking Database within 1 Mile

The USAFR Center is not listed on Massachusetts state release tracking database. There are 22 release sites within 1 mile of the USAFR Center (Table 3).

### 5.2.6 Records of Contaminated Public Wells within 1 Mile

A search of federal and state water well databases within 1 mile of the USAFR Center identified one public water supply source located approximately 0.75 mile northeast of the Property. The well is owned by the Massachusetts DEM State Forest and is an untreated well that has not had major violations or enforcement.

TABLE 3
Massachusetts Release Tracking Database
*Near Westover USAFR Center, Chicopee, Massachusetts*

| Company/Site | Address | Distance and Direction from Property | Regulatory Status | Elevation Relative to Property |
|---|---|---|---|---|
| U.S. Department of Labor—Job Corps | 103 Johnson | 685 feet north-northeast | RAO—40-gallon No. 4 fuel oil spill has not been reduced to background | Equal/higher |
| Off Westover Road | 32 Dulong CIR | 1,565 feet south | RAO—Class C (no health risk) for 28,700 ppb TCE | Equal/higher |
| Stop & Shop Warehouse and Distribution Center | 1255 Sheridan Street | 2,305 feet southeast | RAO—contaminants reduced to background | Equal/ higher |
| Building 3155—Westover AFB | Seawolf Avenue, Westover ARB | 2,637 feet southeast | RAO—permanent solution, not reduced to background | Equal/higher |
| Westover Hangar Apron/Aqua sys | Westover AFB | 2,656 feet southeast | RAO—partial outcome, not reduced to background | Equal/higher |

TABLE 3
Massachusetts Release Tracking Database
*Near Westover USAFR Center, Chicopee, Massachusetts*

| Company/Site | Address | Distance and Direction from Property | Regulatory Status | Elevation Relative to Property |
|---|---|---|---|---|
| Vehicle Maintenance Shop | Westover AFB | 2,656 feet southeast | RAO—contaminants reduced to background | Equal/higher |
| No Location Aid | 1380 Sheridan Street | 2,819 feet east | RAO—no significant risk | Equal/ higher |
| Hangar 11 | 227 Lonczak Drive | 3,733 feet south-southeast | RAO—contaminants reduced to background | Equal/higher |
| WAFB Building # 9000* | Access Road | 3,779 feet northwest | RAO—permanent solution, not reduced to background | Equal/higher |
| Echo-2 Tarmac – Westover AFB | 250 Patriot Avenue | 3,892 feet northwest | RAO—permanent solution, not reduced to background | Equal/higher |
| Avery Dennison Company | 1 Better Way | 5,262 feet east-northeast | RAO—contaminants reduced to background | Equal/higher |
| No Location Aid | 1737 Donohue Road | 4,914 feet east-northeast | RAO—permanent solution not reduced to background | Equal/higher |
| Hess Station 21209 | 1423 Memorial Drive | 4,463 feet – north-northeast | RAO—permanent solution, not reduced to background | lower |
| Fairview Plaza | 1451-1505 Memorial Drive | 4,485 feet west-northwest | RAO—no significant risk | lower |
| Dairy Mart | 1284 Memorial Drive | 1,401 feet west-northwest | RAO—release of unknown chemical | lower |
| Fairview Service Center Inc. | 1492 Memorial Drive | 4,580 feet west | Completion statement received | lower |

RAO = Response Action Outcome—(permanent solution not reduced to background)—a facility that has addressed contamination but that the contamination has not necessarily been cleaned up.

## 5.3 Unmapped Sites

Some sites within the databases EDR searches have the same zip code as the USAFR Center, but no street address. These sites, known as unmapped or orphan sites, cannot be mapped from the EDR results alone. Additional efforts described herein were made to locate these sites and assess their environmental importance to the USAFR Center.

Using the mapping utility provided at maps.google.com, and mapquest.com the locations of the orphan sites were identified and mapped. Many of the orphan sites were identified as Westover ARB target with no addresses. These are listed below:

- WARB Jet Test Stand Area—SHWS, Release
- New Industrial Security Gate D—SHWS, Release
- Building 1833—SHWS, Release

## 5.4 Summary of Properties Evaluated to Determine Risk to the Property

To summarize Subsections 5.1 through 5.3, separate properties, near or adjacent to the USAFR Center, were evaluated as potential risk properties to the Property. These adjacent properties evaluated were identified as a result of information obtained during area reconnaissance, interviews, and regulatory database searches. Those determined to pose a potential risk to the Property are summarized below in Table 4.

TABLE 4
Properties Evaluated for Potential Environmental Risks
*Westover USAFR Center, Chicopee, Massachusetts*

| Company/Site | Address | Distance, Direction Relative to Property? | Potential Impact on the Property? | Comments |
|---|---|---|---|---|
| Westover ARB—runway and associated fueling activities | Westover ARB, several orphan sites with unknown locations | Within Westover ARB | Unknown | Petroleum and solvent releases; remediation ongoing Inferred to be downgradient from the Property |
| U.S. Department of Labor—Job Corps | 103 Johnson Road | Approx. 685 feet north | Upgradient, possible impacts | SHWS—40-gallon No. 4 fuel spill, permanent solution achieved |
| Off Westover Road | 32 Dulong Circle | 1,565 feet south | RAO—Class C (no health risk) for 28,700 ppb TCE; other side of a brook | Equal/higher |
| Westover Hangar Apron/Aqua sys | Westover AFB | 2,656 feet southeast | RAO—partial outcome, not reduced to background; possible impacts | Equal/higher |
| Building 3155—Westover AFB | Seawolf Avenue, Westover ARB | 2,637 feet southeast | RAO—permanent solution, not reduced to background; possible impacts | Equal/higher |
| WAFB Building 9000 | Access Road | 3,779 feet northwest | RAO—permanent solution, not reduced to background; possible impacts | Equal/higher |

# 6 Site Investigation and Review of Hazards

Findings documented in the following subsections are based on the September 6, 2006, site reconnaissance, a review of available site records, and information obtained from U.S. Army Reserve personnel.

## 6.1 USTs/ASTs

An 8,000-gallon No 2 fuel oil UST was removed from the east side of the Administration Building (Building 5550) in 2000 by Nobis. When the 8,000-gallon UST was removed, the tank was observed to be in good condition with no holes or signs of corrosion. Analytical results from soil samples were non-detect for EPH or VPH.

A 2,000-gallon No. 2 fuel oil UST was removed from the south side or behind the OMS (Building 5551) in 2000 by Nobis. When the 2,000-gallon UST was removed, the tank was observed to be in good condition with no holes or signs of corrosion. Analytical results from soil samples were non-detect for EPH or VPH.

The 1,000-gallon waste oil UST was removed by ATEC Associates on December 3 and 4, 1991, from the east side of the OMS. When removed, the tank was in good condition with no signs of perforations or punctures, and no visible contamination was observed. The two soil samples sent to the laboratory for analysis showed levels of TPH of 14 and 24 ppm.

Closure reports for the three UST removed from the Property were obtained and TPH impacts did not exceed MCP minimum contaminant levels of 200 ppm for TPH. No Massachusetts DEP closure letters were obtained, and the USTs were not listed in the EDR database (Appendix E).

## 6.2 Inventory of Chemicals/Hazardous Substances

Records pertaining to hazardous substances including hazardous materials, chemical bulk storage, petroleum products, hazardous waste, and petroleum waste were reviewed in addition to interviews and the site reconnaissance to develop the inventory for this Property.

Available records indicate that hazardous materials or POLs have been stored at this facility in conjunction with intermittent use of the OMS facility. Materials stored at the site historically included waste oils, solvents, antifreeze, and other fluids associated with vehicle maintenance.

During the site reconnaissance cleaning solvents, waxes, and other cleaning products were observed in the janitor's closet. A hazardous material storage shed was observed in the parking lot, north of the OMS building. Motor oil, No. 2 fuel waste oil, diesel fuel, solvents, glycol, hydraulic fluid, lube engine oil, paint, brake fluid, base/acid used to combat nuclear biological, and/or chemical (NBC) attack, and several batteries were observed in the hazardous material storage shed. According to site contacts, the OMS produces

approximately one 55-gallon drum of waste oil every 4 years from light maintenance of vehicles. Once the drum is filled, the unit removes the waste within 90 days via the Defense Reutilization and Marketing Office.

According to personnel from the 287th Medical Dental Unit, this dental unit is a mobile unit and does not perform dentistry operations at the facility. During the site reconnaissance, waxes and solvents were seen, but no X-ray or radiological material was observed.

Current tenants use a licensed commercial company (Burns & Roe) for herbicide and pesticide management. Other than the assumed routine household and yard use of pesticides and herbicides, no evidence of pesticide/herbicide use (empty containers, dead or stressed vegetation) was observed during the site reconnaissance.

## 6.3 Waste Disposal Sites

Available records and interviews did not indicate the practice of onsite waste disposal. No waste disposal sites were observed during the site reconnaissance, nor were any signs of past onsite waste disposal (such as stressed vegetation or suspicious depressions in the landscape) observed.

## 6.4 Pits, Sumps, Drywells, and Catch Basins

Available records, interviews, and site observations did not indicate the existence or past existence of any pits, drywells.

Several stormwater basins were observed on the Property, and according to the Storm Water Pollution Prevention Plan (USGS, 1999), the water is diverted from the MEP and POV parking lots toward four outfall points. The first outfall point collects runoff from within MEP 1 and directs stormwater southwest along Galaxy Road, eventually discharging to Williams Brook. Outfalls two and three collect runoff from the area in front of the OMS building and the southern edges of the POV parking area, respectively. These two outfalls discharge to the storm sewer on Airman Drive, which flows southwest towards Galaxy Drive and ends up in Williams Brook. The fourth outfall point collects runoff from the northern side of the POV parking lot and discharges to the storm sewer system that flows west to Williams Brook.

According to a drain survey, 12 floor drains located at the Property are connected to the sanitary sewer. Of these, the flow from the four drains located in the OMS and the drains from the wash rack first passes through the three OWSs before discharging to the sanitary sewer. Within the Administrative Building, two drains located in the kitchen direct flow through an outdoor grease trap (Photograph 8, Appendix B) prior to discharge to the sanitary sewer. Drains located in the boiler room and four drains located in and around the air handling room are connected directly to the sewer (Photograph 9, Appendix B).

According to personnel present during the site reconnaissance, the OWSs are maintained regularly. The SWPPP indicates the OWSs were serviced at least in 1998. This inspection report and any other inspection records were not available for review. One OWS is adjacent to the wash rack on its east side. The other two OWSs are located on the south side of the

OMS building (Figure 7, Appendix B). These OWSs have manhole covers and associated sampling ports. During the site reconnaissance, an oil stain was observed directly around the wash rack area drain (Figure 2, Appendix B). The concentrated nature of this stain directly around the drain appeared to be indicative of a spill or discharge from a vehicle. Facility personnel were not aware of any spills at the wash rack area.

A former hydraulic pit was observed in the OMS shop (Photograph 3, Appendix B). This pit is about 1 foot wide and runs 12 to 15 feet and approximately 12 feet deep. According to personnel at the site, the pit has been unused for many years and was used originally to lift military vehicles when they required maintenance. An associated hydraulic pump is located in this bay, presumably to operate the hydraulic lift. Site personnel stated that the pump is dry and has not been operated as long as personnel can remember. Although the hydraulic pit is not currently used, the bay is reportedly still used for routine maintenance. According to personnel at the site 55 gallons of POL waste is generated from routine maintenance at the OMS per year. Staining was observed on the metal plate covering the pit and on the floor of the OMS, and along the sidewalls of the pit (Photograph 10, Appendix B). While it was difficult to see the pit bottom, due to the depth of the pit, there did not appear to be any staining in the bottom of the pit (see Photograph 11, Appendix B).

## 6.5 Asbestos-Containing Material (ACM)

Friable and nonfriable ACM were identified on the Property. Roof materials were identified as ACM (Dames & Moore, 1996), and a later report identified friable mudded piping insulation and block-type insulation in the sublevel mechanical room. Nonfriable ACM includes floor tiles and underlying mastic adhesives beneath floor tiles and black roof flashing cement (CEC, 1998). No other records were available indicating whether abatement has been performed.

## 6.6 PCB-containing Equipment

One pole-mounted transformer is located on the Property, between the Administration Building and the OMS (Photograph 10, Appendix B). No staining or leaks were observed beneath the transformer. The transformers were observed to be in good condition and are not considered a recognized environmental condition. No labels were observed on the transformer.

## 6.7 Lead-Based Paint

An LBP survey was conducted for the Army in conjunction with an asbestos survey in 1996 included this facility. Samples were collected from the Property, and it was determined that LBP was determined to be present located on the roof flashing and a fan. The LBP survey was completed in preparation for replacement of the roof at which time all LBP identified was removed. The investigation was limited to the roof and interior spaces were not inspected during this investigation.

## 6.8 Radon

A site-specific radon survey was conducted at the USAFR Center in 1994. Passive detection equipment was installed in two locations, the first in the basement of the administration building and the second location is in the OMS building. Sampling results from the administration building were 1.3 picoCuries per liter (pCi/L), while results from the OMS building were 0.7 pCi/L. These levels were below the action level of 4 pCi/L.

## 6.9 Munitions and Explosives of Concern (MEC)

Based on a review of available records, the site reconnaissance, and interviews with USAFR Center personnel, there are no indications that unexploded ordnance is or was present at the Property. There are no firing ranges on the Property, and there is no evidence that a firing range existed on the Property historically. A weapons vault was observed in a building, although no ammunition currently or historically was stored in the vault.

## 6.10 Radioactive Materials

Based on a review of available records, the site reconnaissance, and interviews with USAFR Center personnel, small amounts of radioactive devices such as radioactive compasses, gas and chemical detection devices, and night vision goggles are stored onsite. Both the Army and Marine Corps have store rooms with these radioactive pieces of equipment. The amount of radioactive materials present in these devices is expected to be de minimis and, therefore, is not expected to present a threat of release to the environment.

# 7 Review of Special Resources

## 7.1 Land Use

The USAFR Center and surrounding Westover ARB are federal lands zoned for military purposes.

## 7.2 Coastal Zone Management

The Massachusetts Office of Coastal Zone Management is the lead agency for the Massachusetts Coastal Management Program. This Property is not included in the coastal zone management plan, nor is it in a coastal zone.

## 7.3 Wetlands

According to the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory map, no wetlands appear on the USAFR Center property, and no wetlands appear within 0.25 mile of the USAFR Center. Several riverine wetlands appear east of the airport runway associated with Cooley Brook. Several other areas north of the USAFR Center appear to be associated with a lake. The Natural Resources Survey did not mention any wetlands located on the property.

## 7.4 100-year Floodplain

A review of the FEMA digital Flood Hazard Area map indicates that the Property lies outside the 100-year floodplain. No areas within 1 mile of the USAFR Center lie within the 100-year floodplain.

## 7.5 Natural Resources

A natural resources survey completed by ENSR (1994) noted that this USAFR Center does contain upland vegetation consisting of trees shrubs, grasses, and forbs. Approximately 50 to 100 oaks were identified on the Property as commercially valuable. The Property otherwise does not contain any key natural resources, including wetlands, surface water, floodplains, rare species, and/or the potential for rare species. Appendix D contains copies of the natural resource survey report.

## 7.6 Cultural Resources

The USAFR Center has been evaluated as a contributing resource to a potential Westover AFB National Register historic district. Attached in Appendix D is the Massachusetts Historical Commission evaluation prepared by The Public Archaeology Laboratory, Inc. The USAFR Center has been recommended for listing on the NRHP. The Massachusetts Historical Commission found Westover AFB eligible for the NRHP in November 1995.

An archaeological sensitivity study was completed for this facility coming to the conclusion that the Site has low probability of intact archeological resources (PAL Inc. 1995).

# 8 Conclusions

The following information was obtained after conducting an environmental record search, including records for adjacent properties, reviewing available historical information, conducting interviews with knowledgeable parties connected with the Property or with state and local agencies, and conducting a reconnaissance of the Property and adjacent properties.

## 8.1 Review of Findings

**Hazardous Substances.** Hazardous substances pursuant to CERCLA 101(14) (42 USC 9601 (14)) were used and stored at the Property in amounts necessary to support unit-level vehicle and building maintenance activities.

At the time of the site reconnaissance, an oil stain was observed over the wash rack area drain, which flows to an OWS. The OWS leads to the sanitary sewer, therefore, it is unlikely the spilled or leaked material impacted environmental media.

There is no evidence that a release of hazardous substances to the environment has occurred as a result of USAFR activities at the Property.

**USTs/Aboveground Storage Tanks (ASTs).** Three USTs were removed from the USAFR Center. An 8,000-gallon No. 2 fuel oil UST was removed from the east side of the Administration Building (Building 5550) in 2000. A 2,000-gallon No. 2 fuel oil UST was removed from the south side or behind the OMS (Building 5551) in 2000. A 1,000-gallon waste oil UST was removed in 1991 from the east side of the OMS. According to closure records, soil samples did not exceed soil contaminant criteria for petroleum.

**Non-UST/AST Petroleum Storage.** Petroleum storage other than in USTs or ASTs was not observed on the Property.

**Polychlorinated Biphenyls (PCBs).** One pole-mounted transformer is located on the Property, between the Administration Building and the OMS. No labels were observed on the transformer to indicate whether it contains PCBs. No staining or leaks were observed beneath the transformer. It is unknown whether the transformer contains PCBs but it was observed to be intact and is therefore not considered a recognized environmental condition or concern.

**Asbestos Containing Materials (ACM).** A 1998 asbestos survey evaluation at the USAFR Center found friable and nonfriable types of ACM. Friable mudded piping insulation and block-type insulation were noted in the sublevel mechanical room. Nonfriable ACM includes floor tiles and underlying mastic adhesives beneath floor tiles and black roof flashing cement. There are no records indicating whether abatement was performed.

**LBP.** A limited LBP survey was conducted in 1996 at the USAFR Center. Samples were collected from the roof and associated areas in preparation for a roof replacement. It was determined that LBP was present in paint collected from roof flashing and a fan (Dames &

Moore, 1996). During the roof replacement, the LBP was removed from the Property. The interior spaces were not evaluated for LBP during this investigation. At the time of the ECP site reconnaissance, some painted surfaces, especially in the bathrooms, had chipping or peeling paint. No peeling paint was observed on exterior painted surfaces.

**Radiological Materials.** Based on a review of available records, the site reconnaissance, and interviews with USAFR Center personnel, there are radioactive materials currently stored at the USAFR Center. Property personnel indicated that radioactive devices such as radioactive compasses, gas and chemical detection devices, and night vision goggles are stored at the Property for use in training exercises. Both the Army and Marine Corps have store rooms with this radioactive equipment. The amount of radioactive material present in these devices is expected to be de minimis and, therefore, is not expected to present a threat of release to the environment.

**Radon.** A site-specific radon survey was conducted at the USAFR Center in 1994. Passive detection equipment was installed in two locations, the first in the basement of the administration building and the second location is in the OMS building. Sampling results from the administration building were 1.3 picoCuries per liter of air (pCi/L) while results from the OMS building were 0.7 pCi/L. These results were below the action level of 4 pCi/L.

**Munitions and Explosives.** Available records do not indicate any munitions and explosives of concern (MEC) currently or formerly located at this Property. No evidence of MEC was observed during the site reconnaissance. A weapons vault was observed in a building, although no ammunition currently or historically was stored in the vault.

**Surrounding Properties.** Potential environmental sites of concern, located within the ASTM D6008 recommended minimum search distances from the Property, were evaluated through database review and site reconnaissance. Many of the former Westover AFB sites were unable to be located and were placed on the orphan summary. Although groundwater flow in the area of the Westover ARB is uncertain, several of the properties for which specific data were available exhibited environmental conditions had or have the potential to adversely affect environmental conditions at the Property.

**Wetlands and Floodplain**. According to the USFWS National Wetlands Inventory map, no wetlands appear on the USAFR Center property or within 0.5 mile of the Property. The Property is not located within a 100-year floodplain or within a coastal zone. The Natural Resources Survey did not mention any wetlands located on the property.

**Threatened and Endangered Species**. A natural resources survey noted that this USAFR Center does contain upland vegetation consisting of trees shrubs, grasses, and forbs. Roughly 50 to 100 oaks were identified on the Property as commercially valuable. The Property otherwise does not contain any key natural resources, including wetlands, surface water, floodplains, rare species, and/or the potential for rare species.

**Archaeological and Historical Resources**. The Massachusetts Historical Commission found Westover AFB eligible for the NRHP in November 1995. Attached in Appendix D is the Massachusetts Historical Commission evaluation prepared by The Public Archaeology Laboratory, Inc. The USAFR Center has been recommended for listing on the NRHP. An archaeological sensitivity study was not completed for this report. Historical topographic

map uncovered several structures previously located on the property associated with an Air Force service Club. No other environmental information is known about the previous structures.

## 8.2 Environmental Condition of Property

Findings of this ECP report were based on reasonably available environmental information; interviews with site, state, and local personnel; review of previous environmental studies; and federal and state database and file information related to the storage, release, treatment, or disposal of hazardous substances or petroleum products. Results also were based on visual observations of the Property and adjacent properties.

In accordance with the DoD policy defining the classifications (see Sherri Goodman Memorandum dated 21 October 1996), the Property has been classified into one of seven property types. Based on the results of this ECP study, the property has been assigned an overall DoD Environmental Condition Type 7. The property type is based on the following major findings.

- Subsurface environmental conditions on the Westover ARB that have significant potential to impact the USAFR Center.

# 9 References

## Persons Contacted

- Christopher Coute, Westover USAFR Center Facility Coordinator, September 6, 2006
- James Bland, Westover USAFR Center Asst. Facility Coordinator, September 6, 2006.
- John Sagan, Facility Maintenance Manager, September 6, 2006.
- Craig Kelly, NEPA Coordinator for 94th RRC, 978-796-2606, September 6, 2006.

## Resources Consulted

- Aerial photographs provided by Massachusetts Department of Transportation dated 1960 and 1980.
- Massachusetts Coastal Zone Management, http://coastalmanagement.noaa.gov/mystate/ma.html
- National Wetlands Inventory, http://www.fws.gov/nwi/
- FEMA Flood Hazard Insurance Map, http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView
- Federal regulatory databases
  - National Priorities List (NPL), April 19, 2006
  - Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), February 1st 2006
  - Department of Defense (DOD), December 31, 2004
  - Formerly Used Defense Sites (FUDS), December 31, 2005
  - Emergency Response Notification System (ERNS), December 31, 2005
  - Facility Index System/Facility Registry System (FINDS), April 27, 2006
- State and local regulatory databases
  - State Hazardous Waste Sites (SHWS), March 20, 2006
  - Leaking Underground Storage Tanks (LUST), March 20, 2006
  - Underground Storage Tank File (UST), March 20, 2006
  - Massachusetts Release Tracking Database

## Agencies Contacted

- City of Chicopee, Massachusetts—Planning and Zoning Department

- Massachusetts DEP—Reportable Release Lookup
  http://db.state.ma.us/dep/cleanup/sites

## Works Cited

ATEC. 1992. Underground storage tank technical report closure. December 22.

Covino Environmental Consultants (CEC). 1998. Final Asbestos Survey Report. June.

Dames & Moore. 1996. Asbestos and Lead Paint Identification Survey. June 12.

Department of the Army. 1994. USARC Army Radon Reduction Program. November 15

ENSR. 1994. MA007 Floor and Storm Drain and Natural Resources Report. April 11.

Goodman, Sherri. 1996. Memorandum. October 21.

Hartshorn and Colton. 1967. Connecticut River Valley.

Nobis Engineering Inc. 2001. Underground Storage Tank Closure Report.

Project Facilities. 2004. Westover U.S. Armed Forces Reserve Center.

Public Archeological Laboratory, Inc. 1995. Historical Resources Inventory. April 11.

U.S. Geological Survey (USGS). 1999. Storm Water Pollution Prevention Plan. September 16.

- Massachusetts DEP—Reportable Release Lookup
  http://db.state.ma.us/dep/cleanup/sites

## Works Cited

ATEC. 1992. Underground storage tank technical report closure. December 22.

Covino Environmental Consultants (CEC). 1998. Final Asbestos Survey Report. June.

Dames & Moore. 1996. Asbestos and Lead Paint Identification Survey. June 12.

Department of the Army. 1994. USARC Army Radon Reduction Program. November 15

ENSR. 1994. MA007 Floor and Storm Drain and Natural Resources Report. April 11.

Goodman, Sherri. 1996. Memorandum. October 21.

Hartshorn and Colton. 1967. Connecticut River Valley.

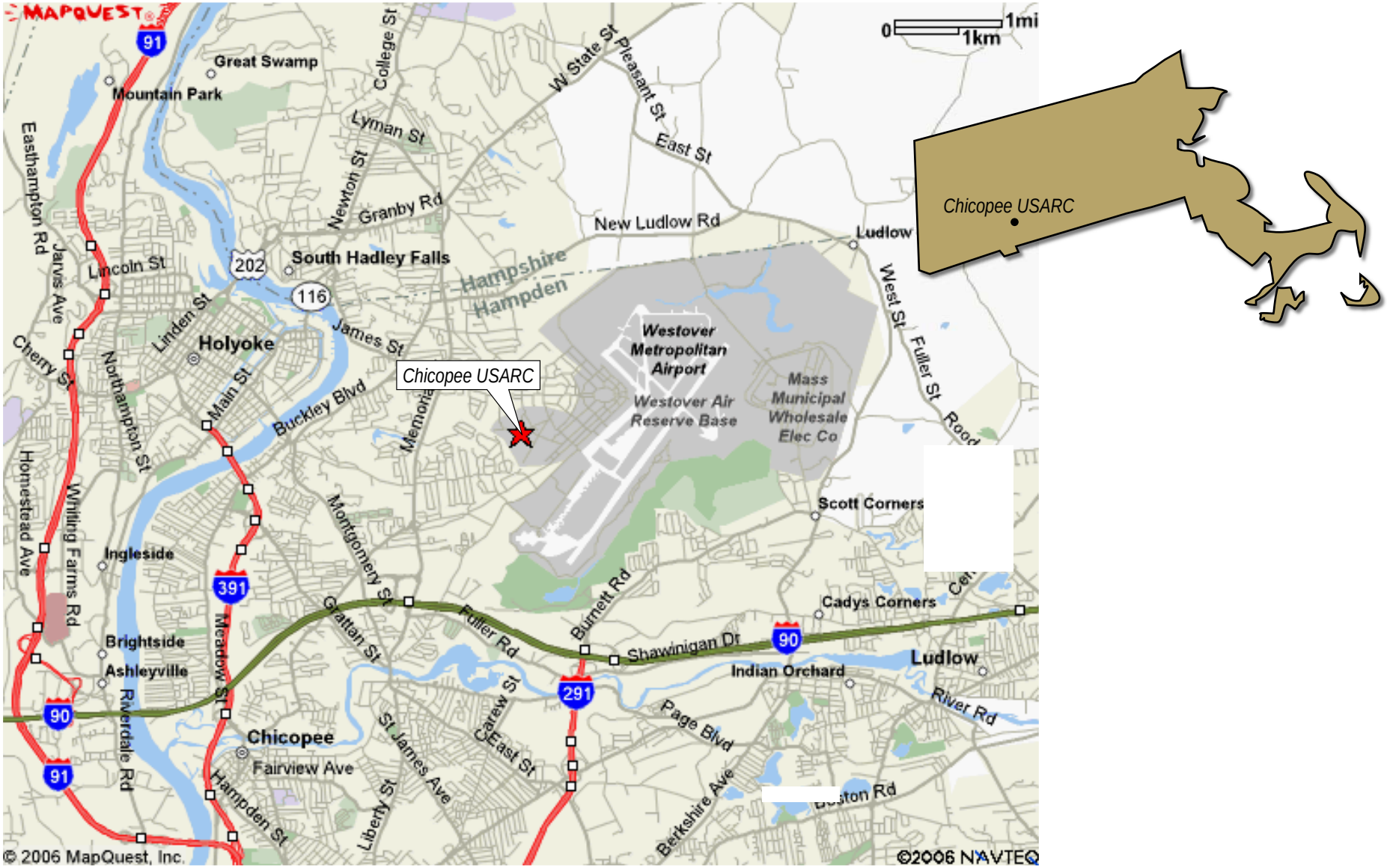
Nobis Engineering Inc. 2001. Underground Storage Tank Closure Report.

Project Facilities. 2004. Westover U.S. Armed Forces Reserve Center.

Public Archeological Laboratory, Inc. 1995. Historical Resources Inventory. April 11.

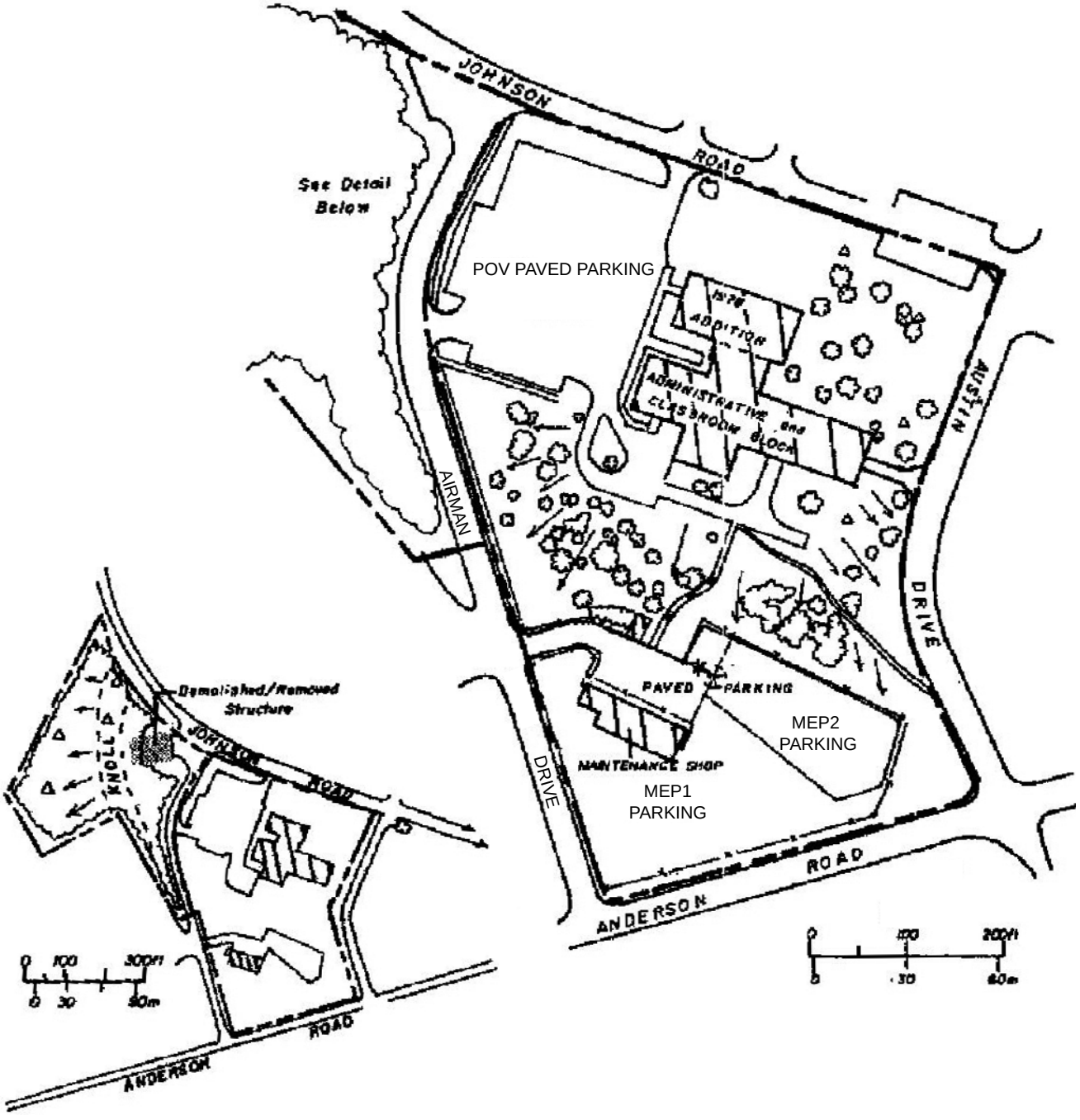
U.S. Geological Survey (USGS). 1999. Storm Water Pollution Prevention Plan. September 16.

# Appendix A
# Figures




North
Not To Scale

FIGURE 1
General Site Location Map
*Phase I ECP Report*




North

Not To Scale

FIGURE 2
Site Layout Plan
*Phase I ECP Report*

## Historical Topographic Map


| | | | |
|---|---|---|---|
| N | TARGET QUAD<br>NAME: Springfield North, MA<br>MAP YEAR: 1958<br><br>SERIES: 7.5<br>SCALE: 1:24,000 | SITE NAME: Westover AFRC, MA<br>ADDRESS: BLDG 5550, WESTOVER AFB<br>CHICOPEE, MA 01021<br>LAT/LONG: 42.1926 / 72.5599 | CLIENT: CH2M Hill<br>CONTACT: Mary Beth Jacques<br>INQUIRY #: 1725083.46<br>RESEARCH DATE: 08/11/2006 |

North

1:24000

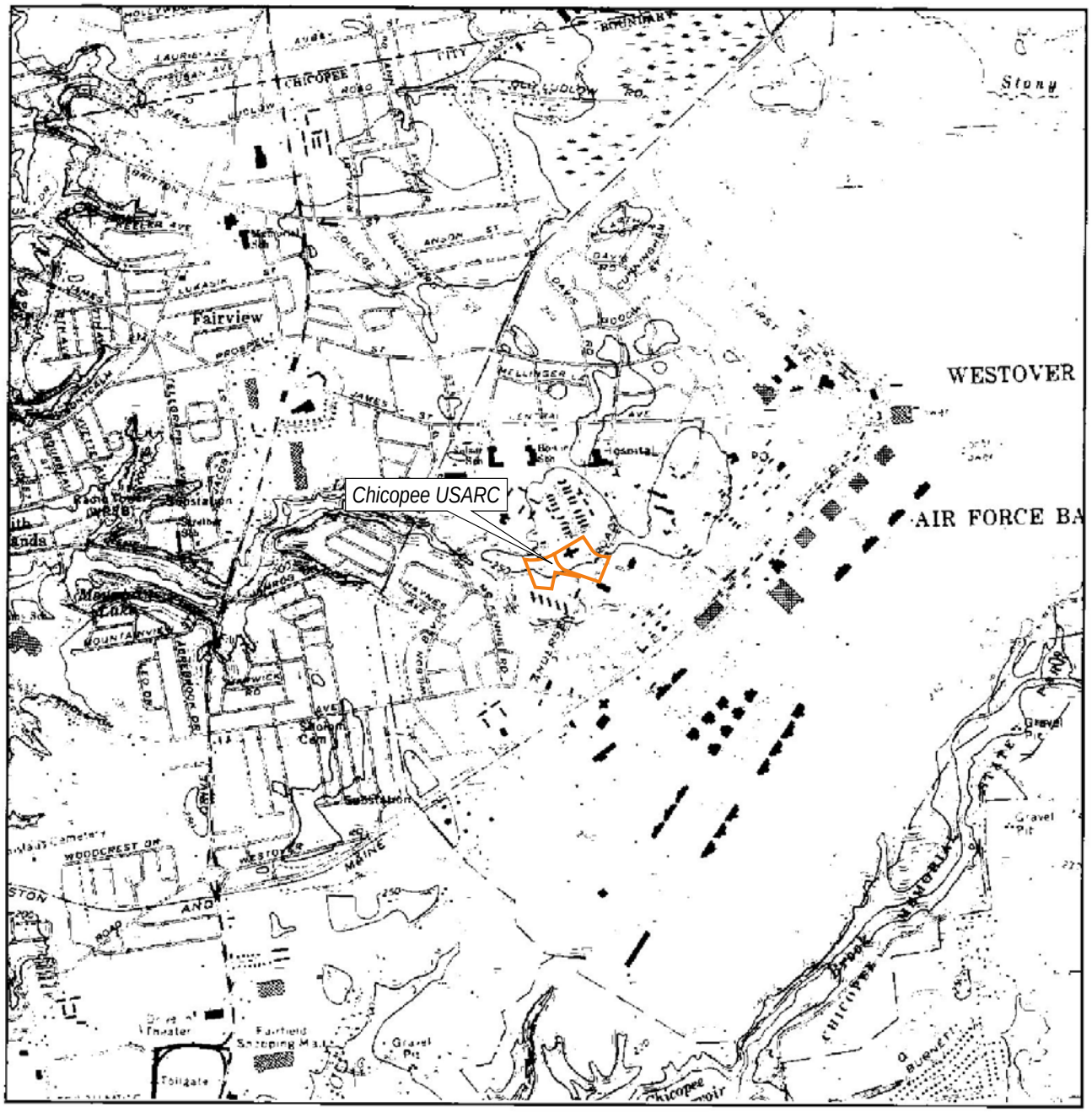
FIGURE 3
1958 USGS 7.5-Minute Topographic Map, Chicopee
*Phase I ECP Report*


North

1:24000

FIGURE 4
1960 Aerial Photograph, Chicopee
*Phase I ECP Report*

## Historical Topographic Map



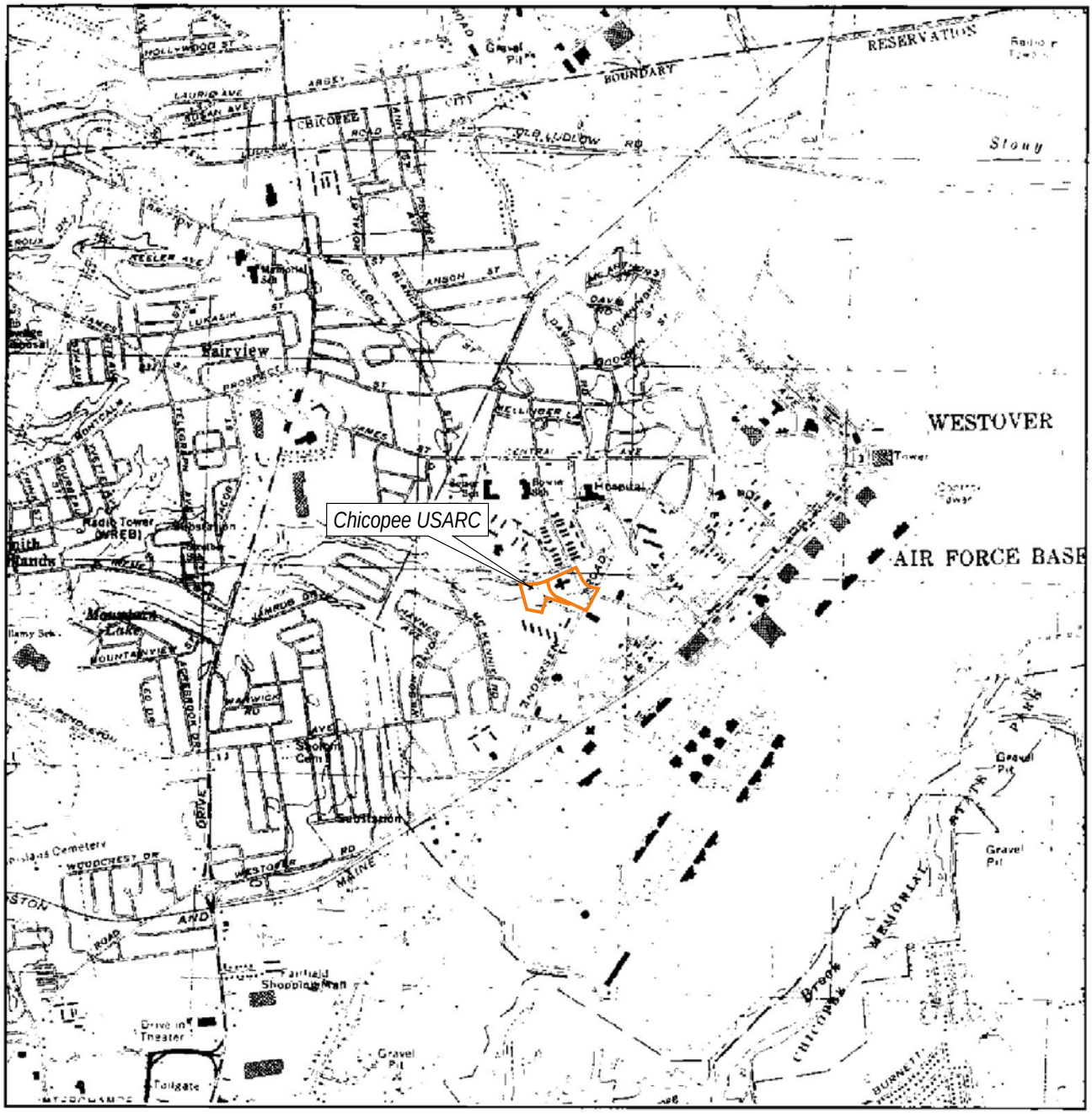

| | | | |
|---|---|---|---|
| N | TARGET QUAD<br>NAME: Springfield North, MA<br>MAP YEAR: 1972<br><br>SERIES: 7.5<br>SCALE: 1:24,000 | SITE NAME: Westover AFRC, MA<br>ADDRESS: BLDG 5550, WESTOVER AFB<br>CHICOPEE, MA 01021<br>LAT/LONG: 42.1926 / 72.5599 | CLIENT: CH2M Hill<br>CONTACT: Mary Beth Jacques<br>INQUIRY #: 1725083.46<br>RESEARCH DATE: 08/11/2006 |

North

1:24000

FIGURE 5
1972 USGS 7.5-Minute Topographic Map, Chicopee
*Phase I ECP Report*

## Historical Topographic Map




| | | | |
|---|---|---|---|
| N | TARGET QUAD<br>NAME: Springfield North, MA<br>MAP YEAR: 1979<br>PHOTO REVISED: 1972<br>SERIES: 7.5<br>SCALE: 1:24,000 | SITE NAME: Westover AFRC, MA<br>ADDRESS: BLDG 5550, WESTOVER AFB<br>CHICOPEE, MA 01021<br>LAT/LONG: 42.1926 / 72.5599 | CLIENT: CH2M Hill<br>CONTACT: Mary Beth Jacques<br>INQUIRY #: 1725083.46<br>RESEARCH DATE: 08/11/2006 |

North

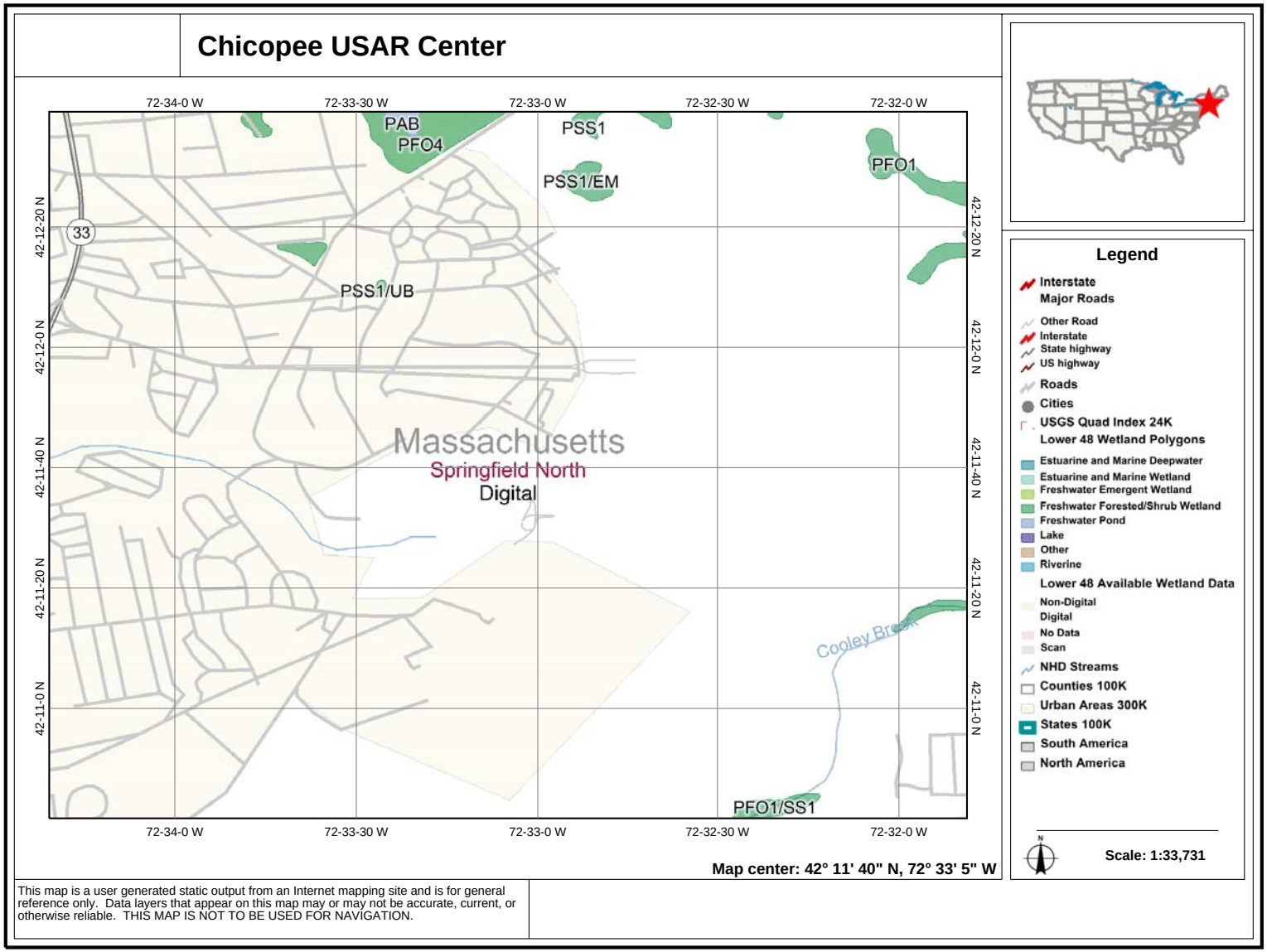
1:24000

FIGURE 6
1979 USGS 7.5-Minute Topographic Map, Chicopee
*Phase I ECP Report*


North

1:24000

FIGURE 7
1980 Aerial Photograph, Chicopee
*Phase I ECP Report*




North

FIGURE 8
National Wetlands Inventory Map
*Phase I ECP Report*

## Appendix B
# Site Reconnaissance Photographs

**APPENDIX B**

# Site Reconnaissance Photographs


*1. View looking east at hydraulic lift OMS.*

*2. View looking west at wash pad, oil staining and 2 water faucets are visible in the picture.*

*3.* View looking east at top of hydraulic lift pit.

*4. View looking east at hydraulic fluid container.*

*5. View looking east at OWS, east of OMS.*

6. View looking east/south at temporary storage of oils and maintenance fluids in the OMS.

*7.* View looking west at hazardous waste storage shed.

*8. View looking east at grease trap.*

*9.* View looking down at drain in the boiler room.

*10.* View looking east at pole-mounted transformer.

Appendix C

# Property Acquisition Documents and Chain of Title Report

RECORD OF ENVIRONMENTAL CONSIDERATION (REC)
**94th** Regional Support Command

Proposed Action Location: Westover AFRC, 160 Airman Drive, Chicopee, MA

Title of Proposed Action: Transfer of portion (split stationing)of 303rd Postal Company *to* Westover AFRC.

Description of Proposed Action: To split station the 303rd postal Company to allow a small detachment to perform administrative duties at the Westover AFRC. This proposed use is entirely in keeping with the relevant facilities, to include parking, sewerage, etc. Should this unit actually handle mail at this facility, unit members should be trained and equipped to respond properly to packages and letters that may pose environmental or public health threats.

Dates of Proposed Action: Fall 2003 for an indefinite time

Determination: Based on a review of all known aspects of this proposal, it is determined that this project does not require an Environmental Assessment according to AR 200-2 as published in 32 CFR Part 651, 29 March 2002. Furthermore, proposed action is categorically excluded under AR 200-2, Appendix B (32 CFR 651, Appendix B to Part 651-Categorical Exclusions), having no significant individual or cumulative environmental impacts.

Categorical Exclusion: B-12

Any change in the scope, location or timing of this project will require re-evaluation and possible additional documentation by the proponent with the 94th RRC Environmental Division.

Proponent: 94th RRC

Approving Official:

Name: /s/ MAJ Janice Higuera
Date: 10/20/03
Title: Regional **Engineer**
Signature:

Environmental Evaluator:

Name: Craig A. Kelley
Date: 10/20/03
Title: NEPA Consultant (DTC)
Signature:

Concurrence

Name: Gary W. Puryear
Date: 10/20/03
Title: **Installation Environmental** Officer
**Signature:**

RCS exempt: AR 335-15, para 5-2

# CHANGE IN STATUS OF USAR ORGANIZATIONS

2003/10/01

☐ ACTIVATION ☐ INACTIVATION ☐ REORGANIZATION ☐ CONVERSION (USARC Regulation 140-1)

| 2. UIC | 3. UNIT DESIGNATION | 4. MUSARC |
|---|---|---|
| WRPMAA | 303RD ADJUT.INT GENERAL COMPANY(POSTAL) | 94TH RRC |

5. a. PRESENT LOCATION *(Street Address, City, State, ZIP Code)*
BLDG 687, 40 MACARTHUR AVENUE, AYEK, MA 01432 — b. FACILITY ID

6. a. PROPOSED LOCATION *(Street Address, City, Stale. ZIP Code)*
BLDG 5550, WESTOVEK AFRC, CHICOPEE, MA 01022-1433 — b. FACILITY ID

7. a. CHECK APPROPRIATE BOX ☐ WITH PERSONNEL ☒ WITHOUT PERSONNEL

b. DISTANCE FROM PRESENT TO PROPOSED LOCATION

| Miles | Travel Time |
|---|---|
| 85 | 1 HR 45 MIN |

c. SUPPORTING INSTALLATION 94TH RRC, DEVENS RFTA, MA

d. DOL & F&A SUPPORT INSTALLATION OWENS RFTA, MA

e. READINESS GROUP

| 8. CURRENT MTOE/TDA | CURRENT SRC | PROPOSED MTOE/TDA | PROPOSED SRC |
|---|---|---|---|
| 122440LAR07 | 124401210000100 | NA | NA |

9. STRENGTH

| | OFF | WO | ENL | AGGR | | OFF | WO | ENL | AGGR |
|---|---|---|---|---|---|---|---|---|---|
| a. TPU Req/Auth | 5 | 0 | 54 | 59 | b. Assigned Strength | 1 | 0 | 18 | 19 |
| c. FTS Req/Auth | | | | | d. FTS Proposed | | | | |
| e. DAC/Mil Tech Req/Auth | | | | | f. DAC/Mil Tech Proposed | | | | |

10. IMPACT ON USE OF USAR CENTERS AT PRESENT AND PROPOSED LOCATION
*(Show rated capacity of gaining and losing facility and the present and proposed use of each facility involved in accordance with AR 140-483)*

| a. PRESENT | | | | b. PROPOSED | | | |
|---|---|---|---|---|---|---|---|
| GAINING CENTER | | LOSING CENTER | | GAINING CENTER | | LOSING CENTER | |
| Sq Ft 36465 | % Used 82 | Sq Ft 6150 | % Used 127 | Sq Ft 36465 | % Used 86 | Sq Ft 6150 | % Used 87 |
| ☒ GOV'TOWNED | ☐ LEASED | | | ☒ GOV'TOWNED | ☐ LEASED | | |

11. PROPOSED DISTRIBUTION OF ALL USAR PERSONNEL CURRENTLY ASSIGNED TO THE UNIT IN ITS PRESENT LOCATION THAT ARE NOT RELOCATING WITH THE UNIT

THIS IS A SPLIT-STATIONING ACTION. CURRENTLY ASSIGNED PERSONNEL OF THE POSTAL SERVICES PLATOON BEING RELOCATED WILL REMAIN AND BE REDISTRIBUTED TO THE REMAINING PLATOONS, INCREASING THEIR STRENGTH.

12. CONGRESSIONAL IMPACT *(Name and address of House of Representative(s) of affecfed districts.)*

a. GAINING
2ND MASSACHUSETTS CONGRESSIONAL DISTRICT
HONORABLE RICHARD D. NEAL
2113 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, D.C. 20515

b. LOSING
5TH MASSACHUSETTS CONGRESSIONAL DISTRICT
HONORABLE MARTIN T. MEEHAN
229 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, D.C. 20515

13. COORDINATION HAS PRODUCED RESULTS AS INDICATED *(Attach documents)*

| | | | |
|---|---|---|---|
| a. USAREC (MSS) | ☐ Support | ☐ Non-support | ☒ N/A |
| b. Unif commander | ☒ Support | ☐ Non-support | ☐ N/A |
| c. Stale Adjutant General | ☐ Support | ☐ Nun-support | ☐ N/A |

14. STATEMENT OF FUNDING IMPACT IS ATTACHED *(Required funds are available from local resources)*

15. PROPOSED DISPOSITION OF FACILITIES NO LONGER REQUIRED : FACILITY WILL CONTINUE IN USE.

16. JUSTIFICATION *(Continue on additional sheet(s) if required)*
SPLIT STATIONING WILL ALLOW THE 303RD TO REACH P-1 IN PERSONNEL, WHICH "HE UNIT COULD NOT HISTORICALLY MEET IN AYER, MA ALONE, BY REDUCING THE NUMBER OF POSITIONS 'TO BE FILLED IN AYER *AND* BACK-FILLING FOR *AND* ABSORBING THE PERSONNEL FROM THE 470TH POSTAL COMPANY, WHICH RELOCATED FROM SPRINGFIELD. MA TO THE 63RD RRC IN CALIFORNIA

DEPARTMENT OF THE ARMY
HEADQUARTERS, 94TH REGIONAL SUPPORT COMMAND
11 SARATOGA BLVD
AYER, MASSACHUSETTS 01432

REPLY TO
ATTENTION OF:

AFRC-CMA-FD

05 October 2003

MEMORANDUM FOR RECORD

SUBJECT: 303rd AG CO (Postal) Relocation Market Supportability Study

1. A Market Supportability Study is not required for the relocation of the 303rd AG CO (Postal) from Ayer, MA to Chicopee, MA. There is no requirement for the study based on the size of the unit (Assigned Strength – **19)** and the fact that the unit will be back-filled by soldiers caused by the relocation of the 470th AG CO from Springfield, MA to the 63rd RRC in California.

2. POC for this HQ is Mr. Michael Stylianos at 978-784-3662 or MAJ Kurt O'Rourke at 978 784-3657.

FOR THE COMMANDER:

GREGORY H. DEVOE
COL, GS, **USAR**
Deputy Chief of Staff,
Force Development

| RECORD OF ENVIRONMENTAL CONSIDERATION (32 CFR 650-651) | RCS: AFZD-AG-2 |
|---|---|

TITLE:

DESCRIPTION OF PROPOSED ACTION:

ANTICIPATED DATE AND DURATION OF PROPOSEID ACTION:

It has been determined that the action (choose one)

☐ Is adequately covered in the existing
EA EIA EIS

☒ Qualifies for Categorical Exclusion(s) # B-12

☐ Is exempt from NEPA requirements under the provisions of (cite legal statute):

Office/Activity Responsible for the Proposed Action: AFRC-CMA-FD

Approving Official:

for Kurt D. O'Rourke

GREGORY H. DEVOE
COL, GS, USAR
Deputy Chief of Staff, Force Development

Date: 10/20/03

Concurrence:

GARY W. PURYEAR
Environmental Coordinator

Date: 10/20/03

**DEPARTMENT OF THE ARMY**
**HEADQUARTERS, 94TH REGIONAL READINESS COMMAND**
**11 SARATOGA BOULEVARD**
**AYER, MASSACHUSETTS 01432-5216**

REPLY TO
ATTENTION OF

AFRC-CMA-FD-I (71)

9 October 2003

**MEMORANDUM FOR** The Adjutant General of Massachusetts, ATTN: The Adjutant General's Office, 50 Maple Street. Milford, Massachusetts 01757-3604

**SUBJECT:** Reorganization/Relocation of one Postal Services Platoon **of** the 303rd Adjutant General Company (Postal)

1. Purpose. In accordance with DOD Directive 1225.7. *Reserve Component Facilities Programs and Unit Stationing*, this memorandum provides notification of the proposed stationing action to the State Adjutant General.

*1.* Discussion. This headquarters is preparing a stationing packet for the proposed split-stationing relocation **of** one Postal Services Platoon of the 303rd Adjutant General Company of Ayer. MA from Ayer. MA to Westover AFB, Chicopee, MA. This unit is programmed **as** a backfill for the 470th Adjutant General Company (Postal). which is relocating *to* California in FY04. The 470th has a current structured strength in Springfield of 4/0/37/41. The structured strength of one Postal Services Platoon of the 303rd Adjutant General Company (Postal) is 1/0/18/19 for **a** decrease in requirements of 22 **pax** in the Springfield area.

3. Details. The following information is provided regarding unit **type**

- SRC: 12440L20000100
- MTOE: 12440LAR07 AR0104
- Required Strength of 303rd (OFF/WO/ENL/AGG): 5/0/54/59

4. Action. Request that you provide comments on this **proposed** stationing action by 30 October 03 Failure to reply by this date will be noted as a negative response in the relocation **packet.**

5. Closure. For additional information, contact **Mr.** Michael Stylianos, Supervisory Management Analyst, at 978-784-3662, or e-inail michael.stylianos@usarc-emh2.army.mil.

FOR THE COMMANDER:

GREGORY H. DEVOE
COL, GS, USAR
Deputy Chief of Staff,
Force Development

RECORD OF ENVIRONMENTAL CONSIDERATION
(32 CFR 650-651)

RCS: AFZD-AG-2

'TITLE: License for Use of Westover AFRC

DESCRIPTION OF THE **PROPOSED ACTION:** License for MAANG to use facility at Westover AFRC.

(use additional pages as necessary)

ANTICIPATED DATE **AND** DURATION OF PROPOSED ACTION:) ASAP

It has been determined that the action (choose one)

( ) Is adequately covered in the existing

EA EIA EIS

Entitled:

Dated:

SOH

(✓) Qualifies for Categorical Exclusion(s)# 21

( ) Is exempt from NEPA requirements under the provisions of (cite legal statute).

Office/Activity Responsible for the Proposed Action: Real Property Office

Approving Official:

NAME: Diana J. Bean TITLE: Real Property Officer

DATE: 8 Feb 96 SIGNATURE: Diana J. Bean

CONCURRENCE:

DATE: 2 Feb 96 SIGNATURE: Joseph Pitt

Installation Environmental Officer

## Appendix D

# Previous Environmental Site Assessment Reports

**Technical Report**
**Underground Storage Tank Closure**
**1,000 Gallon Waste Oil**
**UST No. 0070**
United States Army Reserve Center
Building 5550, Westover AFB
Chicopee, Massachusetts

**ATEC** File: 37.07.91.0451
Contract No. DAK31-91-D-0015

Prepared **for:**

**united states Army**
Directorate **of** Contracting
Building 221
Fort Devens, Massachusetts

Attn: **Beth Castriotta**
Contract Specialist

**December** 22,1992

ATEC Environmental Consultants
Division of ATEC Associates. Inc
55 Accord Park Drive
Rockland Massachusetts 02370
(617) 878-6200 FAX (617)871-6781



December 22, 1992

Ms. Beth Casmotta, Contract Specialist
united states Army
Directorate of Contracting
Building 227
Fort Devens, Massachusetts 01433-5340

DRAFT

RE: Technical Report
Underground Storage Tank Closure
1,000 Gallon Waste Oil, UST No. 0070
United States Army Reserve Center
Building 5550, Westover AFB
Chicopee, Massachusetts
ATEC File: 37 07.91.0451

Ms. Castriotta:

Attached is a report by ATEC Associates, Inc. (ATEC), detailing the closure of one Underground Storage Tank (UST) referenced as UST No. 0070, located at the United States Army Reserve Center, Building 5550, Westover AFB, Chicopee, Massachusetts (the site). The Technical Report covers work conducted under Contract No. DAKF31-91-D-0015 as part of Removal of Underground Storage Tanks in the New England Area, US Army Project No. EQ-19027-9P.

ATEC appreciates the opportunity to be of service in this matter. If you have any questions or comments, please do not hesitate to contact our office.

Sincerely,

ATEC Associates. Inc.

Mark E. Baldi
Project Manager

Gregory A. Mischel
Senior Project Manager

Marta J. Nover
Associate and
Division Manager

## TABLE OF CONTENTS



**APPENDICES**

TECHNICAL REPORT
UST No. 0070

**United States Army Reserve Center**
**Building 5550**
**Westover Air Force Base**
**Chicopee, Massachusetts**
ATEC Project No. 37.04.483

# 1.0 INTRODUCTION

This Technical Report details the removal of one Underground Storage ***Tank*** (UST) referenced as UST No 0070 at the United States Army Reserve Center, Building *5550*, Westover AFB, Chicopee, Massachusetts (the site). **This** Technical Report covers work conducted under Contract No. DAKF31-91-D-00115 as part of Removal of Underground Storage Tanks in the New England Area, US Army Project No. EQ-19027-9P.

The basic Project Work Scope included:

- Procurement/administration of all federal, state and local permits, manifests, regulations, etc., associated with UST system closure.

- Excavating, venting, cleaning, transporting, and disposing of one 1,000 gallon UST by appropriately licensed contractors/facilities.

- Disposal of residual UST materials at a licensed facility.

- Field screening and analysis of soil from the excavations by Photoionization Detector (PID) and field analyzed with a portable Non-Dispersive Infrared **(NDIR)** Analyzer, to identify evidence of a release of oil and hazardous materials from the UST, if any.

Laboratory Analysis of soil sampled from the UST excavation by a USEPA certified laboratory for Total Petroleum Hydrocarbons (USEPA Method 418.1).

- Backfii and surface restoration.

- Preparation of a Technical Report, to include assimilation of information gathered, major findings and conclusions.

## 2.0 POST REMOVAL REPORT

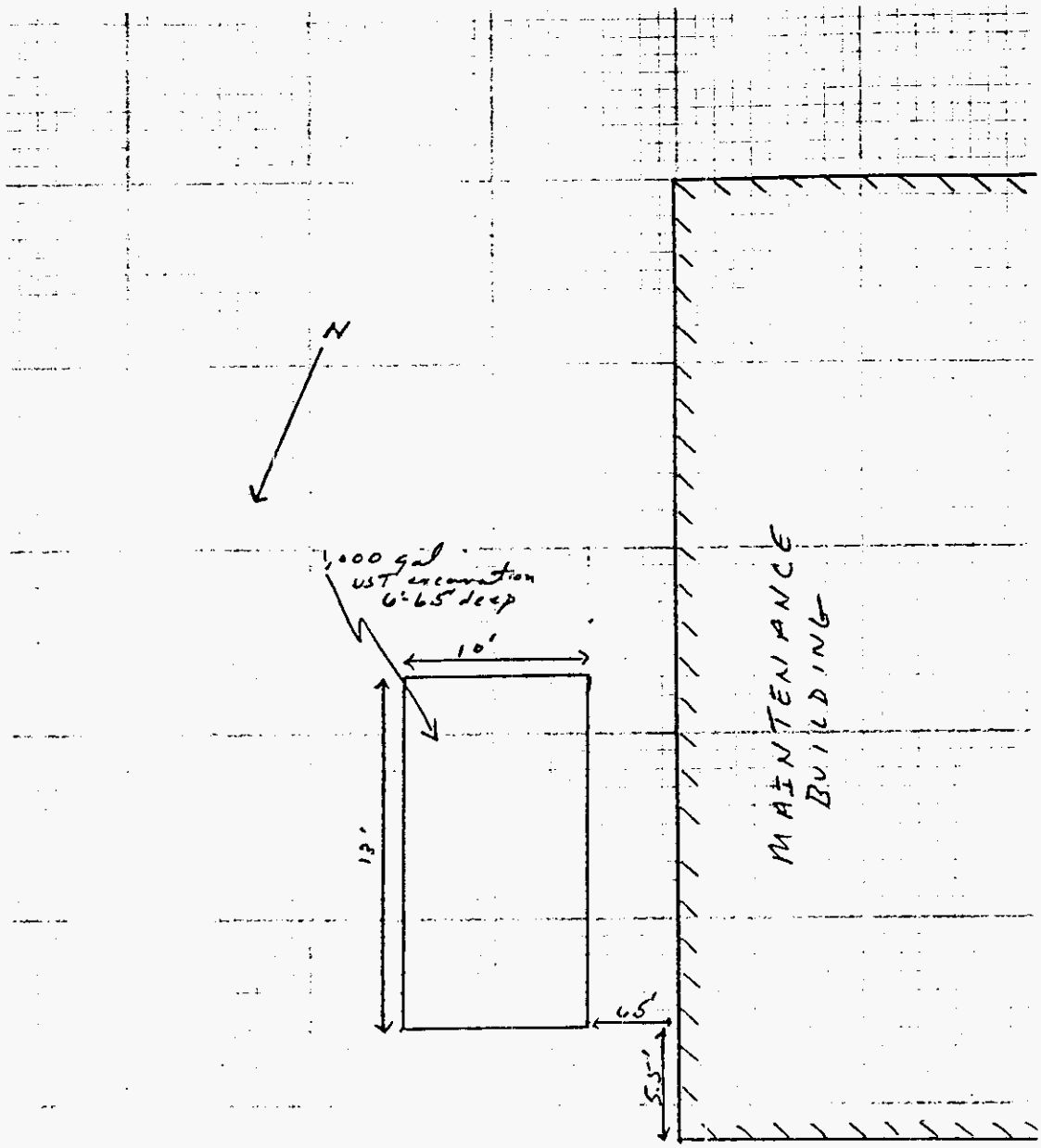
### 2.1 Subsurface Storage Tank Excavation and Removal

On December 3 and 4, 1991, one 1,000 gallon, subsurface, waste oil, storage tank was excavated and removed from the site.. The UST was located near the northwest comer of the maintenance building. Site topography is sloped moderately upgradient to the north, and relatively level to the south.

The tank was observed to be in good condition with no signs of perforations or punctures. The tank was covered by approximately two feet of soil.

Native soils in the excavation consisted primarily of medium brown, fine silty sand with little fine to medium gravel. The bottom of the excavation was approximately six to seven feet below grade. Groundwater was no%encountered in the excavation. No visible contamination of soil was observed.

Associated piping was drained, and tank connections were removed. UST No. 0070 was estimated to contain 160 gallons of waste oil and halogenated solvents. One sample of the tank contents (W.O.) was laboratory analyzed for disposal classification purposes. The analytical results are in Appendix D. The waste oil was removed on December 3 and 4, 1991 and drummed for on-site storage. The waste oil was transported to Polution Solutions of Williston, Vermont on July 6, 1992, by Lincoln Environmental, Inc. Tank openings were capped, and the tank was removed from the excavation. The tank was




## UST LOCATION PLAN

1,000 gallon UST relative to maintenance building at:
US Army Reserve Center
Chicopee, Massachusetts

PROJECT: 37.07.483

NOT TO SCALE

FIGURE: 2

ATEC©

observed to be in good condition with no perforations or punctures. Following venting of the tank, an access way was cut in the end of the tank to allow entry for cleaning. It was then entered and vacuumed/wiped clean of any resided materials.

The scrap tank was removed from the site on December 4, 1991 and disposed at Mass Tank Disposal, a licensed Massachusetts tank yard located in Chicopee, Massachusetts.

## 2.2 Sampling and Analysis Plan

Ten soil samples were obtained from the excavation for field screening with a Photoionization Detector (PID) and field analyzed with a Non-Dispersive Infrared (NDIR) Analyzer. The PID field screening for Total Organic Vapors (TOV) were conducted with an HNu photoionizer utilizing the jar headspace screening procedures outlined in the Hazardous Materials Containment Plan. The NDIR field screening for Total Petroleum Hydrocarbons (TPH) was conducted with a Horiba OCMA 220, utilizing the procedures outlined in the Hazardous Materials Containment Plan.

Eight of the samples (SS-1 to SS-8) were obtained from the excavation walls at a depth of approximately three to four feet below grade. Two of the samples (SS-9 and SS-10) were obtained from the bottom of the excavation at a depth of approximately six to seven feet below grade. Sampling locations for the excavation are depicted on the Sampling Schematic attached as Figure 2.

Two soil samples (Stock-I and Stock-2) from the stockpile were obtained pursuant to the Hazardous Waste Containment Plan for screening with a Photoionization Detector (PID) and Non-Dispersive Infrared Analyzer (NDIR). PID readings revealed 0 ppm. NDIR readings revealed 34.2 ppm TPH for Stock-I. Stock-2 was broken during shipping, therefore, it was not analyzed using the NDIR.

Two soil samples (LSS-1 & LSS-2) were obtained from the excavation for laboratory analysis. One composite soil sample LSS-3 was obtained from stockpiled soil for laboratory analysis. These samples were analyzed for TPH utilizing USEPA Method 418.1.

A sample of the tank (w.o.) contents was laboratory analyzed for disposal classification purposes. Laboratory analyses included Volatile Organic Compounds (USEPA Method 8010/8020), Semi - Volatile Organic Compounds (USEPA Method 8270), 13 Metals by Toxicity Characteristic Leaching Procedure (USEPA Method 6010), Polychlorinated Biphenyls (USEPA Method 8080), Corrosivity (USEPA Method 9045), and Ignitability (USEPA Method 1010).

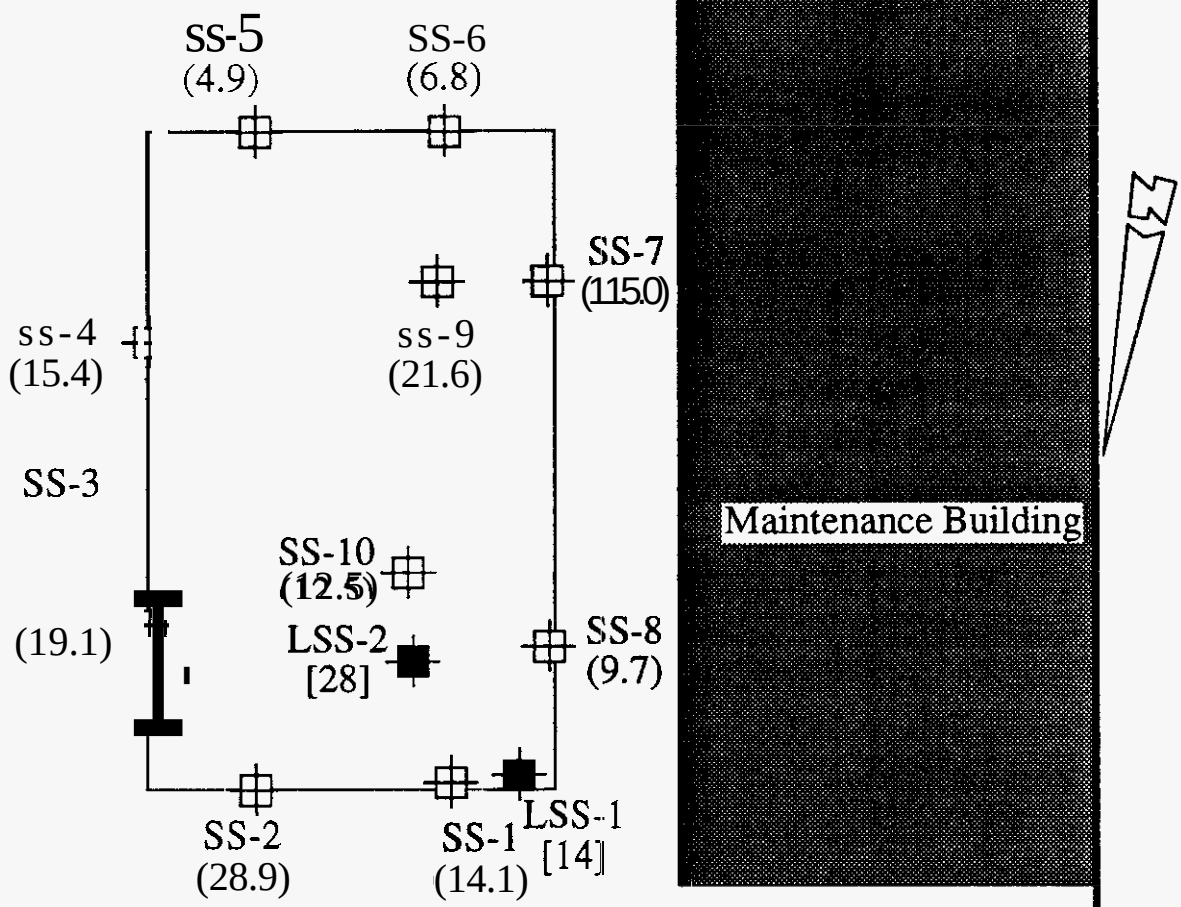
Sampling locations are depicted on the Sampling Schematic attached as Figure 2. The appropriate chain of custody forms are included in Appendix E.

## 2.3 Analytical Results

The results from analysis with the Photoionization Detector (PID) and the Non-Dispersive Infrared (NDIR) Analyzer of the ten samples obtained from the excavation and the two samples obtained from the stockpile are as follows:

**TABLE I - PID AND NDIR RESULTS**

| Sample No. | TOV (ppm) | TPH (ppm) |
|---|---|---|
| SS-1 | N.D. | 14.1 |
| SS-2 | N.D. | 28.9 |
| SS-3 | N.D. | 19.1 |
| SS-4 | N.D. | 15.4 |
| SS-5 | N.D. | 4.9 |
| SS-6 | N.D. | 6.8 |
| SS-7 | N.D. | 15.0 |
| SS-8 | N.D. | 9.7 |
| SS-9 | N.D. | 21.6 |
| SS-10 | N.D. | 12.5 |
| Stock-1 | N.D. | 34.2 |
| Stock-2 | N.D. | ----- |




LEGEND:

Field Screened Soil Sample

Lab Analyzed Soil Sample

( ) NDIR Results in ppm

[ ] Lab Analysis Results in ppm

**Results in bold denote levels in excess of MA DEP Remedial Goal Level (100 ppm)**

## SAMPLING SCHEMATIC

1,000 gallon UST excavation at:
US **Army** Reserve Center
Chicopee, Massachusetts

PROJECT: 37.04.483

NOT TO SCALE

FIGURE: 2

ATEC

N.D. = None Detected (Detection Limit < 1 ppm )

Laboratory analytical results of the two soil samples revealed 14 ppm TPH for LSS1, 28 ppm TPH for LSS2, and 24 pprn for LSS-3 (Appendix D).

Laboratory analytical results for the sample of the tank contents (w.o.) revealed 3,000 parts per billion (ppb) Tetrachloroethene, 2,000 ppb 1,1,1-Trichloroethane, and 2,700 ppb Trichloroethene. Analytical results for Semivolatile Organic Compounds revealed; 48 ppm Bis(2-ethylhexyl)phtalate, and 25 pprn 2-Methylnaphthalene. Analytical results for 13 Metals by TCLP revealed 1.9 pprn Lead, 0.07 ppm Nickel, and 8.0 ppm Zinc. No PCBs were detected. The Flashpoint was 82°F, and revealed a pH of 6.1.

## *3.0* SITE REMEDIATION AND CONTAMINATED SOIL DISPOSAL

### 3.1 Site Remediation

The results of the NDIR Screening and laboratory analyses for the soil samples collected during the tank closure were submitted to the U.S. Army in a Post Rmoval Report dated January 2, 1992. Based upon NDIR Screening and laboratory analytical results, remedial excavation of petroleum contaminated soil was not requested by the U.S. Army for UST No. 0070.

### 3.2 Soil Stratigraphy

Contact specifications do not require a stratigraphic soil section if site remediation *is* not conducted. Therefore, a soil stratigraphy figure is not included within this technical report. See section 2.1 for soil description.

### 3.3 Contaminated Soil Disposal

contaminated soil disposal was not required for UST No. 0070.

## 4.0 HYDROGEOLOGICAI, SERVICES

Hydrogeological services were not performed relative to UST No. 0070.

## 5.0 BACKFILL

On December **4, 1991,** approximately **43.3** tons **(28.9** cubic yards) of soil was used to fill the excavation associated with the removal of **UST** No. 0070. Backfii material consisted of **23.9** cubic yards of native soil which was excavated to free the tank and **5** cubic yards of bank run sand. Bank run sand contained particles which 'were **less** than three inches in diameter and was free from roots and debris, **as** per Section **4,** Paragraph **5** of the contract. Backfill material was compacted and tamped to contract specifications utilizing an excavator. The excavation was backfilled to subgrade level prior to site restoration.

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

ATEC's conclusions are as follows:

Upon excavation and removal, the tank was observed to be in good condition with no signs of perforation or punctures.

Groundwater was not encountered within the excavation.

Visual inspection of the excavation revealed no stained soil.

Ten soil samples were obtained from the excavation walls for field screening and field analysis utilizing a PID and NDIR Analysis respectively. PID readings were 0 ppm. NDIR results ranged from **4.9** ppm to **28.9** ppm.

Two soil samples were obtained from the excavation for laboratory analysis for TPH utilizing USEPA Method **418.1.** Analytical results for **LSS-1** obtained from the northwest

comer of the excavation revealed 14 ppm TPH. Analytical results for LSS-2 obtained from the bottom of the excavation revealed 28 ppm TPH.

One composite soil sample (LSS-3) was obtained from the stockpiled soils for laboratory analysis. Analytical results for LSS-3 revealed 24 ppm TPH.

ATEC's recommendations are as follows:

Based upon laboratory analytical results, soil surrounding the UST has been impacted by petroleum hydrocarbons. Because analytical results for the sample of the *tank* contents showed relatively high concentrations of chlorinated hydrocarbons, exploratory soil borings should be advanced and groundwater monitoring wells installed to evaluate soil and groundwater in the vicinity of the UST for the presence of volatile organic compounds.

Soil samples should be collected during drilling at five foot intervals using a split-spoon sampler. The samples should be analyzed in the field using a PID and the NDIR. The soil sample from each boring showing the highest PID reading and/or TPH concentration should be laboratory analyzed for volatile organic compounds. Groundwater samples should also be collected from the monitor wells and analyzed for volatile organic compounds.

## APPENDIX A: PHOTOGRAPHIC DOCUMENTATION

**U.S. Army Reserve Center, Chicopee, Massachusetts**
**ATEC** File No. **37.04.483**

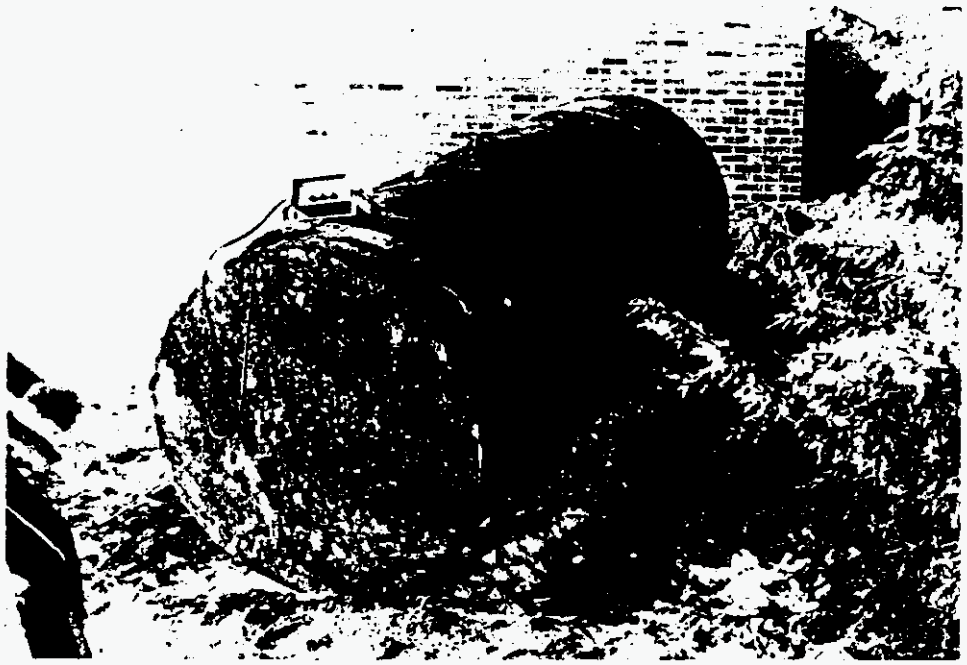
**A-1:** One side of removed tank.

**A-2:** Opposite side of removed **tank.**

**A-3:** Excavation as viewed from north, facing south.

A-4: Excavation as viewed from west, facing east

A-1



A-2

**PHOTO DOCUMENTATION**

1,000 gallon **UST excavation at**
**US** Army **Reserve Center**
Chicopee, **Massachusetts**

PROJECT: 37.04.483

ATEC

A-3

A-4

**PHOTO DOCUMENTATION**

1,000 gallon UST excavation at:
US Army Reserve Center
Chicopee, Massachusetts

PROJECT: 37.04.483

ATEC

| UST CLOSURE O/C CHECK LIST — USMC Cl.c. pce | | | | |
|---|---|---|---|---|
| Tank No. 1000 gal. [illegible] 0.1 | | | | |
| DEFINABLE FEATURE | DATE | TIME | MEASUREMENTS | NOTES |
| | | | | Site topography: sloping moderately upward to N of excav. Relatively level to west, closed Mercer Blvd to south of excavation. |
| Calibrate PID & LEL/O2 meters | 12/3 | 9:00 | | |
| | 12/4 | 9:00 | | |
| Drain & flush piping & pumps | 12/3 | 2:30 | | |
| Excavate to top of tank | 12/4 | 3:00 | | |
| Vent tank note LEL/O2 levels & times | 12/4 | | LEL / O2 | |
| | | T1: 9:30 | 30 / 20.9 | |
| | | T2: 9:45 | 100 / 20.9 | |
| | | T3: 11:00 | 40 / 15.8 | Inert w/ Dry Ice ($CO_2$) |
| | | T4: 11:15 | 12 / 9.2 | |
| | | T5: 11:30 | 6 / 4.6 | |
| | | T6: 11:45 | 4 / 5.2 | |
| | | T7: | | |
| | | T8: | | |
| | | T9: | | |
| | | T10: | | |
| | | T11: | | |
| | | T12: | | |
| Pump & clean tank: | 12/5 | 4:00 | 130 gal. liquid | Tank dimensions 6'x10.5' little rust no punctures or holes. Tank cover w/approx 2' topsoil cover |
| Note quantities liquid (gal) & sludge (lbs) | 12/4 | | ___ lbs. sludge | |
| Remove all tank connections, and cap openings | 12/4 | 9:30 | | |
| Excavate soils to free tank | 12/4 | 3:45 | | |
| Segregate stained soils: Note PID readings | 12/3 | 3:00 | PID (ppm) / NDIR (ppm) | No visible contamination noted soil |
| (if >10 ppm NDIR also) | 12/11 | 9:45 | 0 / - | stock 1 |
| | | | 0 / 34.2 | stock 2 |

| UST CLOSURE Q/C CHECK LIST | | | | |
|---|---|---|---|---|
| DEFINABLE FEATURE | DATE | TIME | MEASUREMENTS | NOTES |
| Photograph excavation; note descriptions. | 12/4 | 10 00 | Photographic Descriptions: | Soil Description: mostly fine silty sand, little silt to med gravel. No |
| | | | Photo 1: | |
| | | | Photo 2: | |
| | | | Photo 6: | |
| Place tank at safe distance from excavation | 12/4 | 10:00 | | |
| Secure tanks transport off-site | 12/4 | 12:00 | | |
| Obtain 10 soil samples from excavation walls/bottom: Note PID/NDIR readings and sample locations. | 12/4 | 10:00 | PID (ppm) / NDIR (ppm) | Sample locations: see attached S.C |
| | | | SS1: 0 / 14.1 | N wall |
| | | | SS2: 0 / 28.9 | N wall |
| | | | SS3: 0 / 17.1 | E wall |
| | | | SS4: 0 / 15.4 | E wall |
| | | | SS5: 0 / 4.9 | S wall |
| | | | SS6: 0 / 6.9 | S wall |
| | | | SS7: 0 / 15.0 | W wall |
| | | | SS8: 0 / 9.7 | W wall |
| | | | SS9: 0 / 21.6 | Bottom |
| | | | SS10: 0 / 12.5 | Bottom |
| Obtain 2 soil samples & 1 water samples | | | | |
| | | | | LSS1: = SS1 N wall |
| | | | | LSS2: = SS10 Bottom |
| | | | | LWS1: |
| | | | | LSS3: composite stockpile |

| DEFINABLE FEATURE | DATE | TIME | MEASUREMENTS | NOTES |
|---|---|---|---|---|
| | | | | 43.3 tons of backfill = 28.9 c.y. |
| Backfill excavation (if clean): | 12/4 | 11:00 | | Backfill description: 5 c.y. 6" minus run |
| Note amount & type of backfill | | | | sand + 23.9 c.y. native soil |
| | | | | |
| | | | | |
| | | | | |
| Close open excavation (if applicable) | | | | |
| | | | | |
| Restore surface and rope off | | | | |

1

| Remove rubbish/debris | | | | |
|---|---|---|---|---|
| | | | | |
| Transport hazardous material off-site: | | | | Amount Classification |
| Note amount/classification | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

# *OCMA Data Sheet*

**Operator Name:** Bald **Date:** 12/17 ***EBI* Project Number:** _____

## *Calibration*

| | First Reading | | Second Reading | | Third Reading | |
|---|---|---|---|---|---|---|
| | Initial | Final | Initial | Final | Initial | Final |
| Zero Calibration | - | 0.5 | -1.0 | 0.0 | 0.0 | 0.0 |
| Span Calibration | 33.4 | 40.0 | 41.3 | 40.00 | 41.4 | 40.0 |
| Zero Calibration | | | | | | |

Span Check: 31.3

## *Testing* Chicopee MA

| Sample ID# | Weight Gross | Weight Tare | First Approach F-113 | First Approach Sample | Second Approach F-113 | Second Approach Sample | Readings First | Readings Second | Readings Third | |
|---|---|---|---|---|---|---|---|---|---|---|
| SS-1 | 80.2 | 74.4 | 17.5 ml | 3 ml | 17.5 ml | 3 ml | 0.4 | 0.3 | 0.4 | |
| SS-2 | 81.4 | 74.7 | 17.5 ml | 3 ml | 17.5 ml | 3 ml | 0.9 | 1.1 | 1.0 | 28.9 |
| SS-3 | 83.2 | 75.7 | 17.5 ml | 3 ml | 17.5 ml | 3 ml | 0.7 | 0.6 | 0.7 | 19.1 |
| SS-4 | 82.3 | 74.9 | 17.5 ml | 3 ml | 17.5 ml | 3 ml | 0.6 | 0.6 | | 15.4 |
| SS-5 | 82.9 | 74.7 | 17.5 ml | 3 ml | 17.5 ml | 3 ml | 0.2 | 0.2 | | 8.9 |
| SS-6 | 81.4 | 74.6 | 17.5 ml | 3 ml | 17.5 ml | 3 ml | 0.0 | 0.3 | 0.3 | 6.9 |
| SS-7 | 86.6 | 75.7 | 17.5 ml | 3 ml | 17.5 ml | 3 ml | 0.6 | 0.7 | 0.8 | 15.0 |
| SS-8 | 82.2 | 75.9 | 17.5 ml | 3 ml | 17.5 ml | 3 ml | 0.3 | 0.3 | | 9.7 |
| SS-9 | 81.3 | 73.7 | 17.5 ml | 3 ml | 17.5 ml | 3 ml | 0.7 | 0.9 | 0.8 | 21.4 |
| SS-10 | 85.2 | 73.7 | 17.5 ml | 3 ml | 17.5 ml | 3 ml | 0.7 | 0.7 | | 12.5 |
| stock 1 | broken in transit | | | | | | | | | |
| stock 2 | 81.9 | 74.1 | 17 ml | 3 ml | 17.5 ml | 5 ml | 0.8 | 1.0 | 1.3 | 31.2 |

RECEIVED DEC 2 4 1991

In Response To The Future

December 20, 1991

Mr. Mark Baldi
ATEC Environmental Consultants
62 Accord Park Drive
Norwell, MA 02061

Dear Mr. Baldi:

Tabulated below are the laboratory test results for the analyses of samples from several of your Tank pull projects.

| Atec project ID | Ess Sample ID | Atec Sample ID | TPHIR |
|---|---|---|---|
| Worcester, MA | 915454-01 | LSS1-500 | 12 mg/Kg |
| | 915454-02 | LSS2-500 | 41 " |
| | 915454-03 | LSS3-500 | 19 " |
| Roslindale, MA | 915484-01 | SS 13 | <10 " |
| | 915484-02 | SS 14 | 332 " |
| Lawrence, MA | 915487-01 | LSSI-1000 | 142 " |
| | 915487-02 | LSS2-1000 | 46 " |
| | 915487-03 | LSS3-1000 | 69 " |
| Portsmouth, NH | 915490-01 | WS 13 | <1 mg/L |
| | 915490-02 | SS 1.3 | <10 mg/Kg |
| | 915490-03 | SS 10.3 | <10 " |
| Pittsfield, MA | 915497-01 | LSSl | 23 " |
| | 915497-02 | LSS2 | 19 " |
| | 915497-03 | LSS3 | 20 " |
| Chicopee, MA | 915510-01 | LSS1 | 14 " |
| | 915510-02 | LSS2 | 28 " |
| | 915510-03 | LSS3 | 24 " |
| Milford, CT | 915525-01 | LSSl | 1080 " |
| | 915525-02 | LSS2 | 30 " |
| Fairfield, CT | 915526-01 | LSS1 | 92 " |
| | 915526-02 | LSS2 | 74 " |
| Brockton | 915528-01 | LSS1 | <10 " |
| | 915528-02 | LSS2 | <10 " |
| | 915528-03 | LWS1 | <1 mg/L |

ATEC Environmental Consultants
62 Accord Park Drive
Norwell, MA 02061
December 20, 1991

| Atec uroiect ID | Ess Samule ID | Atec Sample ID | TPHIR |
|---|---|---|---|
| Springfield, MA | 915537-01 | LSSl | 191 mg/Kg |
| | 915537-02 | LSS2 | <10 " |
| | 915537-03 | LSS3 | 37 " |
| Windsor Lock, CT | 915556-01 | LSSl | 42 " |
| | 915556-02 | LSS2 | 13 " |
| | 915556-03 | LSS3 | 28 " |
| Auburn, ME | 915592-01 | LRS-1 | <10 " |
| | 915592-02 | LRS-2 | <10 " |
| New Haven, CT | 915593-01 | LSSl | 18 " |
| | 915593-02 | LSS2 | 12 " |

If you have any questions please feel free to call.

Sincerely,

Dave Dickinson
Laboratory Manager

In Response To The Future

# CERTIFICATE OF ANALYSIS

Date: 1/30/92 Job: 5510
Account: 95659
Received: 12/5/91

TO: ATEC: ENVIRONMENTAL
62 Accord Park Drive
Norwell, MA 02061

Project: CHICOPEE

tn: Mr. Mark Baldi

| Sample Number | Method Number | Parameter | Result | Unit | Sample Description |
|---|---|---|---|---|---|
| 91551001 | EPA-418.1 | TPH/IR(Dry Wt.) | 14 | mg/Kg | **LSSl** |
| | EPA-160.3 | Total Solids | 88 | % | |
| 91551002 | EPA-418.1 | TPH/IR(Dry Wt.) | 28 | mg/Kg | LSS2 |
| | 'EPA-160.3 | Total Solids | 87 | % | |
| 91551003 | EPA-418.1 | TPH/IR(Dry.Wt.) | 24 | mg/Kg | LSS3 |
| | EPA-160.3 | Total Solids | 89 | % | |
| 91551004 | SW-846 1010 | Flash Point | 82 | 'F | W.O. |
| | SW-846 9045 | pH | 6.1 | | |
| | SW-846 8080 | PCBs | Attached | | |
| | SW-846 8010/8020 | Volatile | Attached | | |
| | EPA-8270 | Semi-Volatiles | Attached | | |
| | TCLP | Inorqanics | Attached | | |

David Dickinson
Laboratory Manager



Environmental Science Services
[illegible] Providence, Rhode Island 02909 (401) 421-0398 Fax (401) 421-5731

In Response To The Future

CERTIFICATE OF ANALYSIS



Polychlorinated Biphenyls

ESS SAMPLE ID: 91551004
CLIENT SAMPLE ID: W.O.

ESS PROJECT ID: 5510
CLIENT PROJECT ID: Chicopee

| Parameter | Results | Method Reporting Limit |
|---|---|---|
| rochlor 1016 | ND | < 50 mg/kg |
| Arochlor 1221 | ND | < 50 mg/kg |
| Arochlor 1232 | ND | < 50 mg/kg |
| rochlor 1242 | ND | < 50 mg/kg |
| rochlor 1248 | ND | < 50 mg/kg |
| Arochlor 1254 | ND | < 50 mg/kg |
| rochlor 1260 | ND | < 50 mg/kg |

David Dickinson
Laboratory Manager

Note: ND=None Detected

In Response To The Future

# CERTIFICATE OF ANALYSIS



EPA Method 8010/8020

ESS SAMPLE ID: 91551004
CLIENT SAMPLE ID: W.O.

ESS PROJECT ID: 5510
CLIENT PROJECT ID: Chicopee

| Volatile Halogenated Organics | RESULT | METHOD REPORTING LIMIT | |
|---|---|---|---|
| Bromodichloromethane | ND | 500 | ug/Kg |
| Bromoform | ND | 500 | ug/Kg |
| Bromomethane | ND | 500 | ug/Kg |
| Carbon tetrachloride | ND | 500 | ug/Kg |
| Chlorobenzene | ND | 500 | ug/Kg |
| Chloroethane | ND | 500 | ug/Kg |
| 2-Chloroethylvinyl ether | ND | 500 | ug/Kg |
| Chloroform | ND | 500 | ug/Kg |
| Chloromethane | ND | 500 | ug/Kg |
| Dibromochloromethane | ND | 500 | ug/Kg |
| 1.2-Dichlorobenzene | ND | 500 | ug/Kg |
| 1,3-Dichlorobenzene | ND | 500 | ug/Kg |
| 1,4-Dichlorobenzene | ND | 500 | ug/Kg |
| Dichlorodifluoromethane | ND | 500 | ug/Kg |
| 1,1-Dichloroethane | ND | 500 | ug/Kg |
| 1,2-Dichloroethane | ND | 500 | ug/Kg |
| 1,1-Dichloroethene | ND | 500 | ug/Kg |
| trans-1,2-Dichloroethene | ND | 500 | ug/Kg |
| 1,2-Dichloropropane | ND | 500 | ug/Kg |
| cis-1,3-Dichloropropene | ND | 500 | ug/Kg |
| trans-1,3-Dichloropropene | ND | 500 | ug/Kg |
| Methylene Chloride | ND | 500 | ug/Kg |
| 1,1,2,2-Tetrachloroethane | ND | 500 | ug/Kg |
| Tetrachloroethene | 3000 | 500 | ug/Kg |
| 1,1,1-Trichloroethane | 2000 | 500 | ug/Kg |
| 1,1,2-Trichloroethane | ND | 500 | ug/Kg |
| Trichloroethene | 2700 | 500 | ug/Kg |
| Trichlorofluoromethane | ND | 500 | ug/Kg |
| Vinyl Chloride | ND | 500 | ug/Kg |
| Benzene | ND | 500 | ug/Kg |
| Ethylbenzene | ND | 500 | ug/Kg |
| Toluene | ND | 500 | ug/Kg |
| Total Xylenes | ND | 500 | ug/Kg |

David Dickinson
Laboratory Manager

NOTE: ND=None Detected above method reporting limit.

CERTIFICATE OF ANALYSIS

PAGE 4

TCL ACID EXTRACTABLES-EPA METHOD 8270

SS SAMPLE ID: 91551004 ESS PROJECT ID: 5510
LIENT SAMPLE ID: W.O. CLIENT PROJECT ID: Chicopee

| arameter | Sample Concentration | Method Reporting Limit | |
|---|---|---|---|
| 2-Chlorophenol | ND | 25 | mg/Kg |
| -Nitrophenol | ND | 25 | mg/Kg |
| henol | ND | 25 | mg/Kg |
| 2,4-Dimethylphenol | ND | 25 | mg/Kg |
| 2,4-Dichlorophenol | ND | 25 | mg/Kg |
| ,4-Dinitrophenol | ND | 125 | mg/Kg |
| entachlorophenol | ND | 125 | mg/Kg |
| 4-Nitrophenol | ND | 125 | mg/Kg |
| ,4,6-Trichlorophenol | ND | 25 | mg/Kg |
| ,4,5-trichlorophenol | ND | 125 | mg/Kg |
| 2-Methylphenol | ND | 25 | mg/Kg |
| -Methylphenol | ND | 25 | mg/Kg |
| -Chloro-3-Methylphenol | ND | 25 | mg/Kg |
| 4,6-Dinitro-2-Methylphenol | ND | 125 | mg/Kg |

David Dickinson
Laboratory Manager

** Above list compiled from US EPA Contract Laboratory Program Statement of Work for Organic Analysis, Multi-media, Multi-concentration, SOW NO. 2/88.

OTE: ND=None Detected above method reporting limit

In Response To The Future

CERTIFICATE OF ANALYSIS
PAGE **5**
TCL BASE NEUTRAL EXTRACTABLES--EPA METHOD 8270

ESS SAMPLE ID: **91551004**
CLIENT SAMPLE ID: W.O.

ESS PROJECT ID: **5510**
CLIENT PROJECT ID: Chicopee

| Parameter | Sample Concentration | Method Reportins Limit | |
|---|---|---|---|
| .cenaphthylene | ND | 25 | mg/Kg |
| ,2,4-Trichlorobenzene | ND | 25 | mg/Kg |
| Hexachlorobenzene | ND | 25 | mg/Kg |
| ᵇis(2-chloroethyl)ether | ND | 25 | mg/Kg |
| --Chloronaphthalene | ND | 25 | mg/Kg |
| 1,2-Dichlorobenzene | ND | 25 | mg/Kg |
| 1,3-Dichlorobenzene | ND | 25 | mg/Kg |
| ,4-Dichlorobenzene | ND | 25 | mg/Kg |
| _,3-Dichlorobenzidine | ND | 50 | mg/Kg |
| 2,4-Dinitrotoluene | ND | 25 | mg/Kg |
| ,6-Dinitrotoluene | ND | 25 | mg/Kg |
| luoranthene | ND | 25 | mg/Kg |
| 4-Chlorophenyl phenyl ether | ND | 25 | mg/Kg |
| ᵇis(2-chloroisopropyl) ether | ND | 25 | mg/Kg |
| is(2-chloroethoxy) methane | ND | 25 | mg/Kg |
| exachlorobutadiene | ND | 25 | mg/Kg |
| Hexachlorocyclopentadiene | ND | 25 | mg/Kg |
| sophorone | ND | 25 | mg/Kg |
| aphthalene | ND | 25 | mg/Kg |
| Nitrobenzene | ND | 25 | mg/Kg |
| -nitrosodipheny1amine | ND | 25 | mg/Kg |
| -nitrosodi-n-propylamine | ND | 25 | mg/Kg |
| Bis(2-ethylhexyl)phthalate | 48 | 25 | mg/Kg |
| i-n-butylphthalate | ND | 25 | mg/Kg |
| i-n-octylphthalate | ND | 25 | mg/Kg |
| Diethyl phthalate | ND | 25 | mg/Kg |
| Dimethyl phthalate | ND | 25 | mg/Kg |
| enzo(a)anthracene | ND | 25 | mg/Kg |
| enzo(a)pyrene | ND | 25 | mg/Kg |
| Benzo(b)fluoranthene | ND | 25 | mg/Kg |
| enzo(k)fluoranthene | ND | 25 | mg/Kg |
| hrysene | ND | 25 | mg/Kg |
| Acenaphthene | ND | 25 | mg/Kg |
| Anthracene | ND | 25 | mg/Kg |

David Dickinson
Laboratory Manager

** Above list compiled from US EPA Contract Laboratory Program Statement of Work for Organic Analysis, Multi-media, Multi-concentration, SOW NO. 2/80.

In Response To The Future

CERTIFICATE OF ANALYSIS

PAGE 6

TCL BASE NEUTRAL EXTRACTABLES-EPA METHOD 8270 cont.

ESS SAMPLE ID: 91551004
CLIENT SAMPLE ID: W.O.

ESS PROJECT ID: 5510
CLIENT PROJECT ID: Chicopee

| Parameter | Sample Concentration | Method Reporting Limit |
|---|---|---|
| enzo(ghi)perylene | ND | 25 mg/Kg |
| Fluorene | ND | 25 mg/Kg |
| Phenanthrene | ND | 25 mg/Kg |
| ibenzo(a,h)anthracene | ND | 25 mg/Kg |
| deno(1,2,3-cd)pyrene | ND | 25 mg/Kg |
| Pyrene | ND | 25 mg/Kg |
| exachloroethane | ND | 25 mg/Kg |
| -Bromophenyl-phenylether | ND | 25 mg/Kg |
| Benzyl Alcohol | ND | 25 mg/Kg |
| Benzoic Acid | ND | 125 mg/Kg |
| is(2-Chloroethoxy)methane | ND | 25 mg/Kg |
| 4-Chloroaniline | ND | 25 mg/Kg |
| 2-Methylnaphthalene | 25 | 25 mg/Kg |
| -Nitroaniline | ND | 125 mg/Kg |
| -Nitroaniline | ND | 25 mg/Kg |
| Dibenzofuran | ND | 25 mg/Kg |
| -Nitroaniline | ND | 125 mg/Kg |
| utylbenzylphthalate | ND | 25 mg/Kg |

David Dickinson
Laboratory Manager

** Above list compiled from US EPA Contract Laboratory Program Statement of Work for Organic Analysis, Multi-media, Multi-concentration, SOW No. 2/88.

Note: ND=None Detected above method reporting limit.

In Response To The Future

# CERTIFICATE OF ANALYSIS

## TCLP CONSTITUENTS

### Inorganic Components

ESS SAMPLE ID: **91551004**
CLIENT SAMPLE ID: W.O.

ESS PROJECT ID: **5510**
CLIENT PROJECT ID: Chicopee

| Inorganics | Sample Result* | | Regulatory Level | |
|---|---|---|---|---|
| Arsenic | <0.2 | mg/L | **5.0** | mg/L |
| Barium | <0.2 | mg/L | **100.0** | mg/L |
| Cadmium | <0.02 | mg/L | 1.0 | mg/L |
| Chromium | <0.05 | mg/L | **5.0** | mg/L |
| Lead | 1.9 | mg/L | **5.0** | mg/L |
| Mercury | <0.002 | mg/L | **0.2** | mg/L |
| Selenium | <0.3 | mg/L | 1.0 | mg/L |
| Silver | <0.05 | mg/L | **5.0** | mg/L |
| Nickel | **0.07** | mg/L | N.A. | |
| Thallium | <0.1 | mg/L | N.A. | |
| Zinc | **8.0** | mg/L | N.A. | |
| Copper | 0.06 | mg/L | N.A. | |
| Antimony | <0.2 | mg/L | N.A. | |
| Beryllium | <0.01 | mg/L | N.A. | |

### Matrix Spike Recovery Data

| | |
|---|---|
| Arsenic | **120%** |
| Barium | **98%** |
| Cadmium | **80%** |
| Chromium | **105%** |
| Lead | **80%** |
| Mercury | **107%** |
| Selenium | **80%** |
| Silver | **85%** |
| Nickel | **75%** |
| Thallium | **95%** |
| Zinc | **125%** |
| Copper | **125%** |
| Antimony | **110%** |
| Beryllium | **130%** |

* Sample result is not corrected for matrix bias

David Dickinson
Laboratory Manager:

NOTE: Regulatory Levels from Federal Register / Vol. **55.** No. **126** / Friday, June **29, 1990** / Rules and Regulations.

# CHAIN OF CUSTODY RECORD

JOB NO. .453 | PROJECT NAME U.S. Aire Chicopee WWH | LAB PROJ. NO.

CLIENT

SAMPLERS: (Signature) Frank E. Balch

SAMPLING METHOD

LABORATORY ANALYSIS

| SAMPLE I.D. NO. | DATE | TIME | COMPOSITE | GRAB | WATER | SOIL | % Dry | FILTERED | ACIDIFIED | ICED | | NUMBER OF CONTAINERS | LAB I.D. NUMBER | TPH (418.1) | TCLP Pesticides (1311/8081) | PCB (8082) | Volatiles (8260) | Semi-Volatiles (8270) | SAMPLE LOCATION / REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12/4 | | | | | X | | | | | | 1 | | X | | | | | |
| 2 | 12/4 | | | | | X | | | | | | 1 | | X | | | | | |
| 3 | 12/4 | | | | | X | | | | | | 1 | | X | | | | | |
| 4 | 12/4 | | | | | | X | | | | | 4 | | | X | X | X | X | |

Relinquished by: (Signature) Frank E. Balch | Date / Time 12/4 4:00 | Received by: (Signature) | Relinquished by: (Signature) | Date / Time | Received by: (Signature)

Relinquished by: (Signature) | Date / Time | Received for Laboratory by: (Signature) | Date / Time | Project Manager / Phone #:


ATEC Environmental Consultants
Division of ATEC Associates, Inc.
2646 Highway Avenue
Highland, Indiana 46322
219-972-5252 • FAX 312-375-8649

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE
One Winter Street
Boston, Massachusetts 02108

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

**UNIFORM HAZARDOUS WASTE MANIFEST**

1. Generator US EPA ID No.: MAR 000087981 | Manifest Document No.:
2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
U.S. Army Reserve Center
Westover Air Force Base, Chicopee Ma 01022-5403
4. Generator's Phone ( 413 ) 593-6008

A. State Manifest Document Number: MA FS 6113116
B. State Gen. ID: Same

5. Transporter 1 Company Name: Lincoln Environmental, Inc
6. US EPA ID Number: MAD982199882
C. State Trans. ID: MA 9445 6429 615
7. Transporter 2 Company Name:
8. US EPA ID Number:
D. Transporter's Phone ( 401 ) 232-3353
E. State Trans. ID:

9. Designated Facility Name and Site Address
Pollution Solutions of Vermont
2 avenue D
Williston, VT. 05495
10. US EPA ID Number: VTD982766937
F. Transporter's Phone ( )
G. State Facility's ID: Not Required
H. Facility's Phone ( 802 ) 860-1200

| 11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) | 12. Containers No. | Type | 13. Total Quantity | 14. Unit Wt/Vol | I. Waste No. |
|---|---|---|---|---|---|
| a. Hazardous Waste Liquid,n.o.s.,ORM-E,NA9189 (111-Tri, Oil) F002 | X | DM | 110 | G | EHHE |
| b. | | | | | |
| c. | | | | | |
| d. | | | | | |

J. Additional Descriptions for Materials Listed Above (Include physical state and hazard code.)
a. VT. code VT66, E
b.
c.
d.

K. Handling Codes for Wastes Listed Above
a. SP1 (T)
b.
c.
d.

15. Special Handling Instructions and Additional Information
24 Hour Emergency Contact Lincoln Environmental at 800-659-3353

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal current available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: William Martin | Signature: William Martin | Month 09 Day 13 Year 92 | Date

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: | Signature: | Month Day Year | Date

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: Daniel T Longley | Signature: Daniel T Longley | Month 09 Day 20 Year 92 | Date

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: [illegible] | Signature: [illegible] | Month 09 Day 28 Year 92 | Date

GENERATOR
TRANSPORTER
FACILITY

In case of emergency or spill, immediately call the National Response Center (dial 424-8802).

MA GILLETTE COPY: FACILITY RETAINS

DIMENSIONS

| | Width (feet) | Length (feet) |
|---|---|---|
| Tank 1 | 1000 Gal. Steel | White Oil |
| Tank 2 | ----- X ----- | |
| Tank 3 | ----- X ----- | |
| Tank 4 | ----- X ----- | |
| Tank 5 | ----- X ----- | |

Tank Removed From

BLDG 5550-WESTOVER AFB
(no. street)

CHICOPEE, MA
(city or town)

Fire Department Permit # RI 596
(if applicable)

RECEIPT OF DISPOSAL OF UNDERGROUND STEEL STORAGE TANK

NAME AND ADDRESS OF APPROVED TANK YARD: MASS TANK DISPOSAL, BARON DRIVE, CHICOPEE, MA 01021

APPROVED TANK YARD NO. 0 0 1 - 1

Tank Yard Ledger 502 CMR 3.0314) Number: 9 0 1 0 5 2

I certify under penalty of law I have personally examined the underground steel storage tank delivered to this "approved tank yard" by firm, corporation or partnership MARK BALDI / TEC and accepted same in conformance with Massachusetts Fire Prevention Regulation 502 CMR *3.00* Provisions for Approving Underground Steel Storage Tank dismantling *yards*. A valid permit was issued by LOCAL Head of Fire Department FDID# 13061 to transport this tank to this yard.

Name and official title of approved tank yard owner or owners authorized representative

| SIGNATURE | TITLE | DATE SIGNED |
|---|---|---|
| [signature] | FOREMAN | 12/4/91 |

This signed receipt of disposal must be returned to the local head of the fire department FDID# 13061 pursuant to 502 CMR 3:00. (EACH TANK MUST HAVE A RECEIPT OF DISPOSAL)

FORM F.P. 291 (rev. 9/88) (OVER) MASSACHUSETTS STATE FIRE MARSHAL'S OFFICE

RECEIVED DEC a 9 1991

R.T.#596

COPY

1052

FORM FP. 292
(rev. 9/90)

The Commonwealth of Massachusetts

# Department of Public Safety
# Division of Fire Prevention and Regulation

## APPLICATION FOR PERMIT, AND PERMIT, FOR REMOVAL AND TRANSPORTATION TO APPROVED TANK YARD

FDID# _____ Permit # R.T.596 Date December 3, 19 91

CHICOPEE
City, Town or District

C.82 S.40 M.G.L.

DIG SAFE NUMBER
91481867
start date 12/7/91

Fee Paid: $10.00

In accordance with the provisions of Chapter 148, Sec. 38A, M.G.L., 527 CMR 9.00 application is hereby made by: Mark Baldi/ATEC

Street Address & City or Town: 62 Accord Park Dr, Norwell MA

Signature of applicant: Mark E Baldi

Applicants name printed: Mark Baldi

For permission to remove and transport one underground storage tank from.

Owner: US Army Reserve Street Address: Bldg 555a, Westover AFB

Firm transporting waste: Cyn Oil State Lic.# MA40

Hazardous waste manifest # MAF 362 5553 E.P.A.# MAD092363777

Approved tank yard: Mass. Tank # 06101

Tank yard Address: Bastin Dr Chicopee

Type of inert gas: $CO_2$ / Dry Ice UL tank #: _____

Tank capacity: 1000 gal Substance last stored: waste oil

Date of issue: December 3, 19 91 Date of expiration: January 3, 19 92

Signature/Title of officer granting permit: Robert J Nunes

Robert J. Nunes, CHIEF
Chicopee Fire Department

## ATEC Promises

- To be totally responsive to our clients' wants and needs with a constant sense of urgency.
- To perform high quality services with technically superior personnel.
- To perform all assignments for a reasonable fee and within budget.
- To communicate with our clients frequently so there will he **no** surprises.
- To complete our assignments and deliver reports when promised.
- To review reports with our clients to be sure then: are no misunderstandings.
- To deliver accurate invoices to our clients within seven (7) days after the completion of the assignment or as required by the clients.
- To follow up with the clients to be sure services completely satisfied their wantr. and need:;.

**ATEC Associates, Inc.**
Corporate Headquarters
8665 Bash Street
Indianapolis, IN 46256-1202
(317) 577-1761

At ATEC, "Client sarisfaction with a constant sense of urgency" is our goal. **If** you have concerns with an ATEC project or service that your local ATIEC Representative has not resolved, please call 1-800-800-ATEC. a "hot line" to my office. **We** will do everything possible to satisfy your concerns. If you have received quality service, we would appreciate knowing that as well. Thank you for allowing us to work **on** your team.

Sincerely.

Gerald D. Mann
President
ATEC Associates, Inc.

Corporate Headquarters - Client Satisfaction Hot Line
1-800-800-ATEC
(1-800-800-2832)

ANDERSON-NICHOLS
& Company, Inc.

ENGINEERS • ENVIRONMENTAL CONSULTANTS • ARCHITECTS

**Survey** Performed For:

Anderson-Nichols & Company, Inc.
31 St. James Avenue
Boston, Massachiisetts 02116

Survey Performed fly:

**DAMES** & MOORE, INC.
5 Industrial Way
Salem, **New** Hampshire 03079

June 13, 1996
PN: 30589-003-210:S15414A

# ASBESTOS AND LEAD-BASED PAINT IDENTIFICATION SURVEY UNITED STATES ARMY RESERVE CENTER BUILDING #5550 WESTOVER AIR FORCE BASE CHICOPEE. MASSACHUSETTS

DAMES & MOORE

# TABLE OF CONTENTS



## APPENDICES

# ASBESTOS AND LEAD-BASED PAINT IDENTIFICATION SURVEY
# UNITED STATES ARMY RESERVE CENTER
# BUILDING #5550
# WESTOVER AIR FORCE BASE
# CHICOPEE, MASSACHUSETTS

## 1.0 SURVEY PURPOSE

Dames & Moore was retained by Anderson-Nichols & Company, Inc. (ANCO) to conduct a limited asbestos and lead-based paint identification survey of suspect roofing materials and associated building components at the U.S. Army Reserve Center (USARC) located in Building #5550, Westover Air Force Base, Chicopee, Massachusetts.

The purpose of this survey was to locate, identify and sample suspect asbestos-containing materials (ACM) that may be contained in roofing components, as well as any associated building components which may be coated with lead-based paint (LBP). This report provides ANCO with information and recommendations regarding the ACM and LBP found during the survey

## *2.0* BUILDING DESCRIPTION

**Building #5550 is a multi-story building, consisting of administrative and training spaces as well as a drill hall. The building is constructed of concrete block with brick exteriors and built-up gravel roofing. The main building was constructed in 1962.**

# 3.0 SURVEY METHODS

## 3.1 ASBESTOS

The investigative field survey was performed on May 8, 1996 by Mr. Jonathan Ellis of Dames & Moore, who is a U.S. Environmental Protection Agency (EPA) certified Asbestos Inspector. During the survey, suspect roofing components were inspected and quantified and suspect materials !sampled. The analytical method used to determine the asbestos content of bulk samples collected during the survey was polarized light microscopy (PLM) with dispersion staining. Samples were analyzed by Dames & Moore's laboratory which is certified to perform sample analysis by both the National Voluntary Laboratory Accreditation Program (NVLAP) and the American Industrial Hygiene Association (AIHA).

## 3.2 LEAD

Suspect LBP was sampled by collecting paint chips from various exterior building surfaces. The LBP inspection was performed concurrently with the ACM survey. The paint chip samples were submitted for analysis to ESA Laboratories, Inc., of Chelmsford, Massachusetts. The analytical method used to determine the lead content (percentage) of the paint chip samples collected during the survey was the U. S. Environmental Protection Agency (EPA) Method 3050/7420.

# 4.0 SURVEY OBSERVATIONS AND FINDINGS

## 4.1 ASBESTOS

Dames & Moore collected a total of 6 bulk samples of suspect ACM. Materials sampled included roofing material and roof flashing. Analytical results for the roofing material and flashing indicated no asbestos content.

## 4.2 LEAD

Laboratory analysis identified detectable levels of lead in the paint chip samples collected from the roof trim and the exhaust fans located on the roof. This material is similar in color to the paint applied to other roof-associated materials/equipment and is in a loose, flaking condition.

The Survey and Sampling Protocol and Limitations are provided in Appendix A. Analytical results of suspect ACM and LBP identified during the survey can be found in the Bulk Sample Analytical Reports in Appendix B1.0 and B2.0. The ACM and LBP Inventory Table is presented in Appendix C. An abatement cost estimate for the removal of identified LBP is provided in Appendix D.

## 5.0 RECOMMENDATIONS

No visible ACM was identified which may be impacted by the planned roof replacement project.

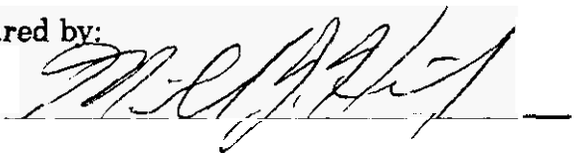
Dames & Moore recommends removal of the loose, flaking paint covering the continuous edge flashing roof trim and roof-mounted ventilation equipment prior to the roof replacement project. Complete removal of the LBP is not required, or recommended. Hand scraping of the material, to make the existing paint intact, prior to repainting is recommended. The LBP abatement should be performed by a licensed lead abatement contractor.

## 6.0 CONSTRUCTION COST ESTIMATE

Dames & Moore has prepared a construction cost estimate based on the above recommendations. This estimate was generated using unit price schedules currently used in the local industry for lead abatement. The cost estimate for the recommended lead abatement work is $9,425.00. Please note that replacement materials were not specified or included in this cost estimate.

An overview of the current OSHA lead standard is provided in Appendix E.

Report Prepared by:

Signature: 

Name: Michael J. Hickey

Title: Project Manager

Address: Dames & Moore, Inc.
5 Industrial Way
Salem, New Hampshire 03079

Reviewed and Approved:

Signature: _____

Name: Douglas R. Lawson, Ph.D., CIH

Title: Associate, Industrial Hygiene Services

Address: Dames & Moore , Inc.
5 Industrial Way
Salem, New Hampshire 03079

# APPENDIX A

## SURVEY AND SAMPLING PROTOCOL AND LIMITATIONS

## APPENDIX A

## SURVEY AND SAMPLING PROTOCOL AND LIMITATIONS

The facility asbestos survey was conducted by an EPA certified Asbestos Inspector. The lead survey was not performed by Dames & Moore. The specifics of the survey included the following:

- The asbestos survey was limited to roofing materials only. Interior building areas were not inspected for suspect ACM which may be located within the building.

  Survey data was compiled and reported by building area.

- Suspect ACM was sampled following the protocol detailed in the section below, Bulk Sampling Protocol.

- Lead paint chips were collected and analyzed for lead concentration by percent *dry* weight.

- Information concerning locations, quantities and types of ACM and LBP was gathered during the survey and is presented in Appendix C in a tabular format.

### ASBESTOS BULK SAMPLING PROTOCOL

During the survey of this facility, bulk samples of suspect ACM were collected for laboratory analysis. The bulk samples were collected and categorized according to the homogeneous building material being evaluated. The designation of a homogeneous building material was made by the Dames & Moore survey team. Once suspect homogeneous materials were identified, bulk samples were collected of each homogeneous material. If a single sample of a homogeneous material was found to contain asbestos, then that homogeneous material was identified as containing asbestos throughout the building.

Sampling techniques generally involved the following sampling procedures:

1. Core samples were collected of the roofing materials to sample these potentially multi-layered materials. Disposable core boring devices were used for this purpose to minimize potential cross contamination of samples.

2. Each sample location was patched/sealed using an asphaltic-based sealant. All samples were given a unique sample number, which included the project number, and were placed in sample containers for transportation to Dames & Moore's laboratory for analysis. Information regarding the sample location was entered onto the Dames & Moore chain-of-custody form. The quantity, location and physical condition of each material was recorded on Dames & Moore's field data sheets.

## SURVEY LIMITATIONS

As with any other specific study, a facility asbestos survey is subject to both limitations. Some limitations to be considered in interpreting the results of this survey are as follows:

A. No asbestos or lead survey will be able to identify all ACM or LBP throughout a facility. A thorough study should be capable of identifying approximately 95 percent of accessible (by non-destructive methods) materials present.

B. This survey was limited to roofing materials and associated building components. No other interior or exterior materials were evaluated during this project.

C. Dames & Moore identified only those suspect roofing and associated materials which were visible and accessible. Non-accessible areas and materials will require further investigation prior to renovation or demolition activities when future renovation or demolition work would require disturbing these areas or materials.

D. This report includes only recommendations for the removal of LBP from the roofing flashing and associated roof-mounted equipment, and makes no recommendations or assumptions for any other surfaces which may be covered with LBP.

# APPENDIX B

# 10 BULK SAMPLE ANALYTICAL REPORT

DAMES & MOORE
5 INDUSTRIAL WAY, SALEM, NEW HAMPSHIRE 03079
(603) 893-0616 FAX: (603) 893-6240

Dames & Moore Project # : 30569.003
Laboratory Batch # : 6521
Date Received : 5/10/96
Date Reported : 5/31/96

Mr. Frank Siraco
Anderson-Nichols & Co., Inc.
31 St. James Avenue
Boston, Massachusetts 02116

**SAMPLE IDENTIFICATION:**

Six bulk samples from the Chicopee USARC; submitted by J. Ellis.

These bulk samples were delivered to Dames & Moore, Inc., Salem, New Hampshire for asbestos content determination.

**ANALYTICAL METHOD:**

Analytical procedures were performed in accordance with the **U.S.** Environmertal Protection Agency (EPA) Recommended Method for the Determination of Asbestos *in* Bulk Samples with Polarized Light Microscopy and Dispersion Staining (PLM/DS)(EPA-600/M4-82-020, EPA-600/ R-93-116). This report relates only to those samples analyzed, and may not be indicative of other similar appearing materials existing at this, or other sites.

NVLAP



AMERICAN INDUSTRIAL **HYGIENE** ASSOCIATION

DAMES & MOORE

Mr. Frank Siraco
Anderson-Nichols & Co., Inc.

Dames & Moore Project# : 30589.003
laboratory Batch # : 6521

## BULK SAMPLE RESULTS

| | Sample Description | Results | |
|---|---|---|---|
| 001 | C1, Black & Yellow Roof Material Composite. Roof One | No Asbestos Detected | |
| | | Cellulose | 25 % |
| | | fibrous Glass : | < 1 % |
| | | Non-Fibrous Material | 75 % |
| 002 | c2. Black & Yellow Roof Material Composite, Roof One | No Asbestos Detected | |
| | | Cellulose | 25 % |
| | | Fibrous Glass : | < 1 % |
| | | Non-Fibrous Material | 75 % |
| 003 | C3. Black & Yellow Roof Material Composite, Roof One | No Asbestos Detected | |
| | | Cellulose | 25 % |
| | | Fibrous Glass : | < 1 % |
| | | Non-Fibrous Material | 75 % |
| 004 | C4, Black Roof Flashing Composite, Roof Two | No Asbestos Detected | |
| | | Cellulose | 10 % |
| | | Fibrous Glass : | < 1 % |
| | | Non-Fibrous Material | 90 % |
| 005 | C5, Brown & Black Roof Material Composite, Roof Two | No Asbestos Detected | |
| | | Cellulose | 35 % |
| | | Fibrous Glass : | < 1 % |
| | | Non-Fibrous Material | 65 % |
| 006 | C6, Brown & Black Rooi Material Composite, Roof Two | No Asbestos Detected | |
| | | Cellulose | 30 % |
| | | Fibrous Glass : | < 1 % |
| | | Non-Fibrous Material | 70 % |

# DAMES & MOORE

Dames & Moore Project # : 30589.003
Laboratory Batch # : 6521
Date Received : 5/10/96
Date Reported : 5/31/96

If you have any questions regarding this report, please do not hesitate to contact us.

Christopher Strickler
Laboratory Supervisor

Douglas R. Lawson, Ph.D, CIH
Associate, Laboratory Director

Dames & Moore will retain all samples for a minimum of three months. Further analysis or return of samples must be requested within this three month period to guarantee their availability.

Use of the NVLAP and AIHA Logo in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology or the American Industrial Hygiene Association.

Quantification of asbestos content was determined by visual estimation.

The EPA requires that friable samples with analytical results of 10% or less asbestos, by visual estimation, be treated as asbestos containing material unless these quantities are verified using the point counting method. The point counting method is a systematic technique for estimating concentration, also using PLM. If you would like any of your friable samples with asbestos contents of less than 10% to be point counted, please contact our office. Point counting is not required for those samples in which no asbestos is detected during analysis by PLM.

'Floor tile and other resinously bound material may yield a false negative if the asbestos fibers are too small to be resolved using PLM. Additional analytical methods may be required. Dames & Moore recommends using Transmission Electron Microscopy (TEM) for a more definitive analysis.

NVLAP

AMERICAN INDUSTRIAL HYGIENE ASSOCIATION

# APPENDIX B

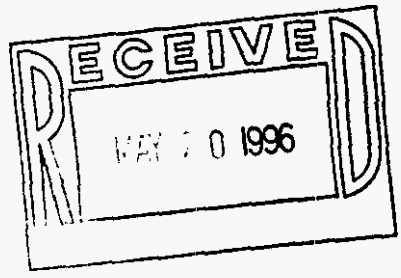
## 2.0 LEAD PAINT CHIP ANALYTICAL REPORT

ESA LABORATORIES, INC.
22 ALPHA ROAD
CHELMSFORD, MA 01824
(508) 250-7150 FAX: (508) 250-7171



PO#/RELEASE: 30589-003-0306/NA
CLIENT JOB#: CHICOPEE USARC

ESAL BATCH#: 961676




DATE RECEIVED . 05-13-96
DATE ANALYZED : 05-14-96
DATE REPORTED : 05-15-96

53070
MIKE HICKEY
DAMES & MOORE
5 INDUSTRIAL WAY
SALEM, NH 03079

Reginald M. Griffin, Ph.D.
Laboratory Director

| TEST DESCRIPTION | REFERENCE | ANALYTICAL METHOD |
|---|---|---|
| LEAD/PAINT LOD 0.002% | c0.7 MG/CM2; <0.5% DRY WEIGHT | EPA3050/7420 |

| SAMP NO. | DATE CLLCT | SAMPLE ID/OTHER | PB-PNT % | MESSAGES |
|---|---|---|---|---|
| 3001 | 04-08 | CL-1 CORNER ROOF 2 EDGE BY ROOF 1 | 0.0030 | |
| 0002 | 04-08 | CL-2 ROOF 2 EXHAUST FAN 1 | 6.0 | |
| 0003 | 04-08 | CL-3 ROOF 2 EXHAUST FAN 2 | 7.6 | |
| 0004 | 04-08 | CL-4 ROOF 2 EXHAUST FAN 3 | 5.4 | |

# APPENDIX C

# ASBESTOS AND LEAD-BASED PAINT INVENTORY TABLE

# APPENDIX C

## ASBESTOS AND LEAD-BASED PAINT INVENTORY TABLE

| Material Type | Location | Approximate Quantity |
|---|---|---|
| **ASBESTOS** | | |
| **No visible ACM was identified which would be impacted by the roof replacement project.** | | |
| LEAD | | |
| **Continuous Edge Flashing** | **Roof Perimeter** | 1400 SF |
| **Equipment** | Roof **Top** | 500 SF |

# APPENDIX D

## LEAD-BASED PAINT ABATEMENT COST ESTIMATE
## (Roof Replacement Project)

**APPENDED**

## LEAD-BASED PAINT ABATEMENT COST ESTIMATE
**(Roof Replacement Project)**

| Work Description | Quantity | unit cost | Total |
|---|---|---|---|
| Construct 2 Chamber Remote Decontamination Unit | 1 EA | $550.00 | $550.00 |
| Scrape Flaking and Peeling Lead-Based Paint to an Intact Condition | 1,900SF | $4.25 | $8075.00 |
| Waste Handling, Packaging and Disposai | 2 Drums | $400.00 | $800.00 |
| | Total Estimated Lead Paint Abatement Cost: | | $9425.00 |

**Note**

Unit mst for scraping lead based paint includes labor, and materials (poly sheeting), etc.,
Poly sheeting to be disposed as non-contaminated waste.

APPENDIX E

# OSHA LEAD STANDARD (SYNOPSIS)

## LEAD STANDARDS

The Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1926.62 applies to situations involving lead paint disturbance in structures not used as a residence by children under six years of age and commercial structures. A synopsis of the significant components of these regulations are as follows:

### Safety Procedures for Renovation and/or Rehabilitation

On all work areas where renovation or rehabilitation is performed in a manner that disturbs paint, plaster or other materials containing dangerous levels of lead, the employer shall comply with the following safe work practices:

1. Whenever there is an exposure to lead dust, a respirator and personal protective clothing such as those listed in 1926.62 shall be worn.

2. The employer shall not permit employees to eat, drink, smoke, chew (gum or tobacco), or apply cosmetics in the work area.

3. The employer shall provide medical surveillance and monitoring, and exposure monitoring to employees who are exposed to potentially dangerous levels of lead.

4. When tools and/or equipment are removed from the work area, they shall be cleaned with a solution of tri-sodium phosphate (TSP) or vacuumed with a HEPA vacuum. All work areas shall be cleaned at the end of the job with a HEPA vacuum.

5. Adequate precautions shall be implemented to insure that the outside environment is protected, according to applicable state and federal regulations.

6. To prevent contamination of adjacent areas, the employer shall seal off the work areas.

The Environmental Protection Agency (EPA), under the Resource Conservation and Recovery Act has also promulgated regulations for the disposal of (constructiondebris contaminated with lead baaed paint. Construction waste containing lead is considered hazardous waste under the EPA regulations *if* the toxic characteristic is greater than 5 milligrams per liter (>5 mg/L).

MA ( )

**FORM B - BUILDING**

**Assessor's number** **USGS Quad** Springfield North **Area(s)** **Form Number**

**Massachusetts Historical Commission**
**Massachusetts Archives Facility**
**?0 Morrissey Boulevard**
**_oston, Massachusetts 02125**

**Town** Chicouee

**Place** ***(neighborhood or village)*** Westover Air Force Base

Bldg. 5550. Airman Way, Westover AFB

**ame** Air Force Service Club

**sent** Defense-Military Training

**ginal** Military-Service Club

**nstruction** 1959

**t** Devens Real Prouerty Office

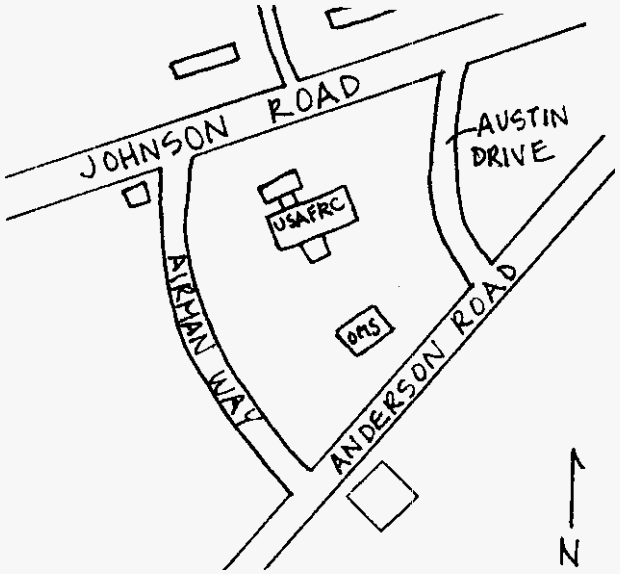
**n** Contemporary

**Builder** Unknown

**Material:**

**n** concrete slab

**:etch Map**




**Wall/Trim** concrete block with brick veneer

**Roof** tar, built-up

**Outbuildings/Secondary Structures** five-bay maintenance shop constructed in 1978; located south of the reserve center

**Major Alterations** ***(with dates)*** expanded **for** combined Armed Forces Reserve Center (1978. by Von Storch and Burkavage)

**Condition** ***good*** (with alterations)

**Moved** **X** **no** __ **yes** **Date**

**Acreage** 12.42

**Recorded by** Matthew Kierstead and Kirk Van Dyke

**Organization** The Public Archaeology Laboratory, Inc.

**'ate** ***(month/day/year)*** 4/11/95

**Setting** on Westover Air Force Base; campus-like surroundings; dorms, lawns and trees

**BUILDING FORM**

**ARCHITECTURAL DESCRIPTION** X *see continuation sheet*
*Describe architectural features. Evaluate the characteristics of this building in terms of other buildings within the community.*

**HISTORICAL SIGNIFICANCE** X *see continuation sheet*
*Discuss the history of the building. Explain its associations with local or state history. Include uses of the building, and the role(s) the owners/occupants played within the community.*

**BIBLIOGRAPHY and/or REFERENCES** X *see continuation sheet*

X **Recommended for listing on the National Register of Historic Places.** *If checked, you must attach a completed National Register Criteria Statement form.*

Community: Chicopee
Property Address: Airman Way

ARCHITECTURAL DESCRIPTION *(continued)*

The Westover Armed Forces Reserve Center consists of two components: an original cruciform-plan structure built in 1959, and a rectangular addition to the north arm of the cross in 1978. The long, one-story, east-west axis of the original cruciform building is 245 feet long, and the shorter, two-story, north-south axis is 132 feet long, All four arms are 60 feet wide. Both structures have flat roofs, and concrete block walls with brick exterior veneer. The west, south, and north elevations of the shorter, two-story, east-west oriented axis contain regularly-spaced groups of three metal-sashed, two-pane windows. All arms have overhanging metal coping at the roof line. The west elevation of the north arm of the short axis contains the main entrance, located at the intersection of the long axis. The double entrance doors are sheltered by a cantilevered awning. On the west arm, the north elevation is filled by vertical bands containing grouped windows or brick panels. The west elevation of the long axis contains the legend "UNITED STATES ARMED FORCES RESERVE CENTER" in metal letters and a door. The south elevation contains the loading dock, with double doors, and a row of three small, square windows on protruding concrete sills. The east arm is windowless and slightly lower than the main wing. On the north and south elevations, square stucco panels indicate the previous location of entrances to the drill hall. Only one of these openings, located on the south elevation, is used as a vehicular entrance and contains a roll-type door. Interior features include administrative offices, classrooms, arms vaults, storage, lockers, showers, boiler room, kitchen, and a 3,776-square foot drill hall.

The 1978 addition is attached to the end of the north arm of the building. The addition is a 126-foot by 62-foot, two-story structure with a flat roof. It is divided into 20-foot bays by one-foot wide, vertical, red enamelled metal pilasters. The north and south elevations consist of three bays, and the east and west elevations consist of six bays. The red metal box-section material used for the pilasters is also used as a cornice. All windows are triple-pane, casement type, one pair to a bay. The south elevation only has windows on the first floor, and the other elevations contain both first- and second-story windows. Interior features include administrative offices.

One related building, the Maintenance Shop (MS), or Building 5551, is located approximately 250 feet south of the reserve center. This building was constructed in 1978, along with the addition and renovations made to the reserve center. The maintenance shop is a one-story, brick building. with a flat roof. The front (north) elevation contains five roll-type garage doors. Three are located in a taller, main building. and two smaller doors are located in a shorter wing at the west end of the building. A personnel door is located in the west elevation. A small office is located at the east end of the building. A fenced military vehicle storage lot is located immediately to the east of the building. This maintenance shop is divided into separate interior areas for Army, Navy, and Marines vehicles.

The Westover Reserve Center is located east of Airman Way on Westover Air Force Base, where it is also known as Building 5550. The building is located on a 12.42-acre graded parcel of land set aside for a reserve facility within the air base. The surroundings are landscaped and campus-like, with barracks located to the west. The reserve center is located at the top of a low rise, and the property is open on all sides. A paved driveway leads from Airman Way to a large parking area to the west of the reserve center and to the loading dock at the south side. This driveway continues east to the drill hall vehicle access door. A separate drive leads to the maintenance shop, and a curving set of terraced concrete steps connects the two buildings. Landscaping is minimal. The reserve center is surrounded by mown lawns, with large oak, maple, and pine trees. Trimmed yews are located at the entrances.

HISTORICAL SIGNIFICANCE *(continued)*

The United States Army Reserve (USAR) is a Federal military organization distinct from the full-time, professional Regular Army and the state National Guard, The USAR is maintained as a source of personnel to rapidly support the Regular Army in the event of conflict. The USAI? is composed of "citizen-soldiers." civilians committed to a period of duty in exchange for benefits and pay. The history of the USAR has been characterized by conflict between the Regular Army, U.S. Presidents, and Congress over the combat role and funding of the USAR. This conflict resulted in early difficulties in reaching projected goals for equipment, facilities, and utilization, The USAR has its origins in the Colonial state militia, informally trained citizens organized against the British Army during the Revolution. The modern USAR has its roots in the Medical Act of 1908, which started a reserve force of medical officers,. Distinct organizations of reserve officers and regulars participated in World War I. During the 1930s, the Works Projects Administration provided reserve officers with the opportunity to run Civilian Conservation Corps camps.

The USAR also sent soldiers into combat during World War II. The postwar period was a time of change for the USAR, as emerging Cold War defense philosophy called for a larger reserve force to augment the Regular Army. Reliance on nuclear detente during the Cold War drew attention away from the development of the USAR, and reduced its effectiveness in the Korean Conflict. The USAR was not a major participant in the Vietnam War, as President Lyndon Johnson anticipated the negative political implications of USAR mobilization for an unpopular war. Under Nixon's 1970 Total Force policy, the USAR was made an all-volunteer force with an increased combat role and increased benefits .and pay. Overall, USAR equipment and facilities have been increased since World War II. These gains have been vital for USAR units in reaching unit size and readiness requirements.

The USAR remains an active element in the U.S. military establishment. In the event of mobilization, USAR units are assimilated into the Regular Army to provide service and support. Army reservists today are required to attend forty-eight 4-hour drills per year at a Reserve Center, where Army training staff instruct them in procedure and the use of equipment, and one 15-day intensive summer training camp. Military training personnel of the 98th Training Division are stationed at New England reserve centers to provide instruction. USAR activities in New England and New York are controlled by the 94th Regional Support Command (RSC) headquartered at Fort Devens, Massachusetts.

The Chicopee Armed Forces Reserve Center is representative of a mid-1960s change in Reserve construction policy. The early Cold War reserve center construction program, 1951-1964, consisted of a series of 23 centers, all designed by the same architect and constructed on land purchased from private parties. After the end of this program reserve center construction policy changed. Some new reserve centers were built on purchased land, and many were located on existing defense facilities and made use of existing buildings. In some cases, such as at Chicopee, the Army Reserve shares a preexisting Air Force building with other regular and reserve branches of the U.S. military.

Westover Air Force Base is located on a flat, former tobacco farming area in the town of Chicopee. With the decline of Chicopee's industrial base during the 1930s. the town promoted new economic opportunities in the Westover area, and lobbied the U.S. Army Air Corps to locate an air base there. Westover Air Force Base was activated as a bomber base in 1940, and was a vital Military Air Transport System facility, particularly during the Berlin Airlift. By the late 1950s Westover Air Force Base was a Strategic Air Command base, and Eighth Air Force Headquarters,, The base was (deactivated during the 1970s, and property sold back to Chicopee and Ludlow. The base is now the site of the Westover Industrial Airpark, with the Air Force Reserves maintaning a presence. The Westover Reserve Center was constructed as an Air Force Service Club in 1969. In 1976, after Westover Air Force Base closed, the Air Force transferred this facility to the U.S. Army for use as a reserve facility. The building was then altered and enlarged to

300-man capacity according to plans by Von Storch & Burkavage. This enlargement included the north wing, and the maintenance shop. The new reserve center was rededicated on September 11, 1976. The facility is currently shared by administration and recruiting offices for the reserve forces of the U.S. Army. U.S. Navy, and the U.S. Marines.

The function of this reserve center is to provide administrative, classroom, maintenance, and storage space to Army Reserve personnel and assigned Army Reserve units. The reserve center serves as a base of operations for specialized units that can be mobilized and assimilated into the Regular Army when required. At the reserve center, assigned Army Reserve units receive advanced individual training in the use of military equipment, weapons, tactics, and vehicles. In the event of mobilization with a draft, U.S. Army training instructors stationed at the reserve center are deployed to conduct basic training of draftees. Military instruction at the reserve center takes place in the classrooms and in the drill hall, which is used for general assemblies and drill practice and can accommodate large military vehicles. A kitchen is also associated with the drill hall. Administrative office space is provided for full-time unit support personnel, including the Facility Manager, who is responsible for the day-to-day operation and maintenance of the facility; and the Unit Administrator, who is responsible for unit personnel, pay, promotion, and supply. In the event that the assigned reserve units are mobilized, the reserve center also provides home support for the units. The reserve center also serves as an Army Reserve recruiting center.

This maintenance shop is a motor vehicle garage used by reserve center personnel for routine periodic maintenance and storage of smaller assigned unit vehicles. Tasks performed at the maintenance shop include oil changes, lubrication, battery filling, light running repairs, and minor maintenance such as tire changing, replacement of light bulbs, and minor painting, tuning and washing. Heavier repairs are performed at a centralized regional Area Maintenance Support Activity (AMSA) facility which is discussed on a separate form. The maintenance shop is now also used for unit equipment storage, with most assigned unit vehicles stored outdoors.

BIBLIOGRAPHY and SOURCES *(continued)*

Crossland, Richard B. and James T. Currie
1984 Twice the Citizen: A History of the United States Army *Reserve, 1908-1983.* Office of the Chief, Army Reserve, Washington, D.C.

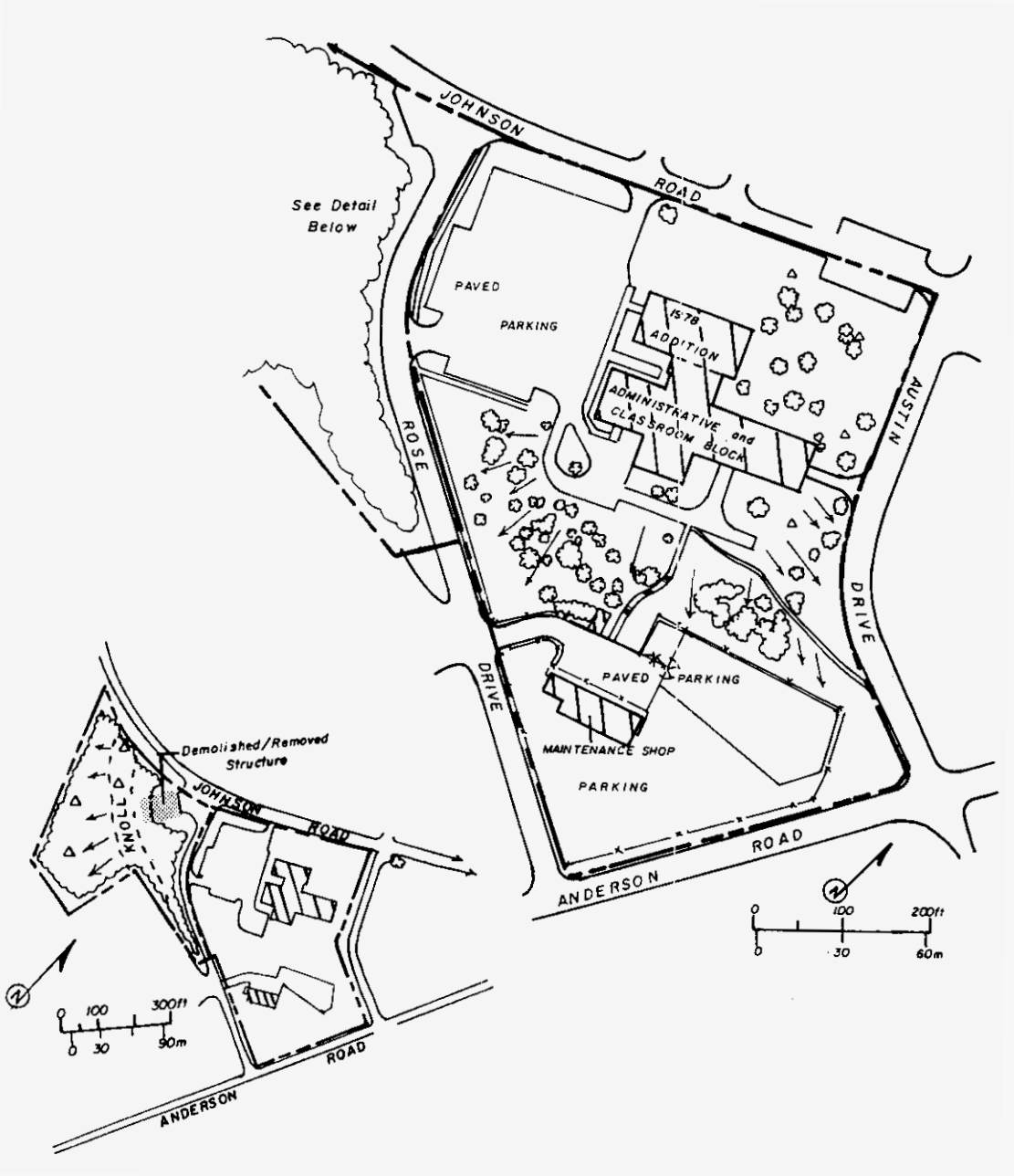
Fort Devens
1995 Real Property Files

Mowchan, Denise and Deborah Cox
1989 An Intensive Archaeological Survey of the Small Arms Range Parcel, Westover Air Force Base, Chicopee, Massachusetts. The Public Archaeology Laboratory, Inc. Report No.263. Submitted to U.S. Army Corps of Engineers, New England Division, Waltham, MA and Department of the Air Force, Westover Air Force Base, Chicopee, MA

Sergeant Carver, Facility Manager
1995 Interview with Matt Kierstead, April 11, 1995.

Westover Armed Forces Reserve Center
1995 Facility Files

## SITE PLAN OF THE WESTOVER ARMED FORCES RESERVE CENTER



**INVENTORY FORM CONTINUATION SHEET**

**Community:** Chicopee

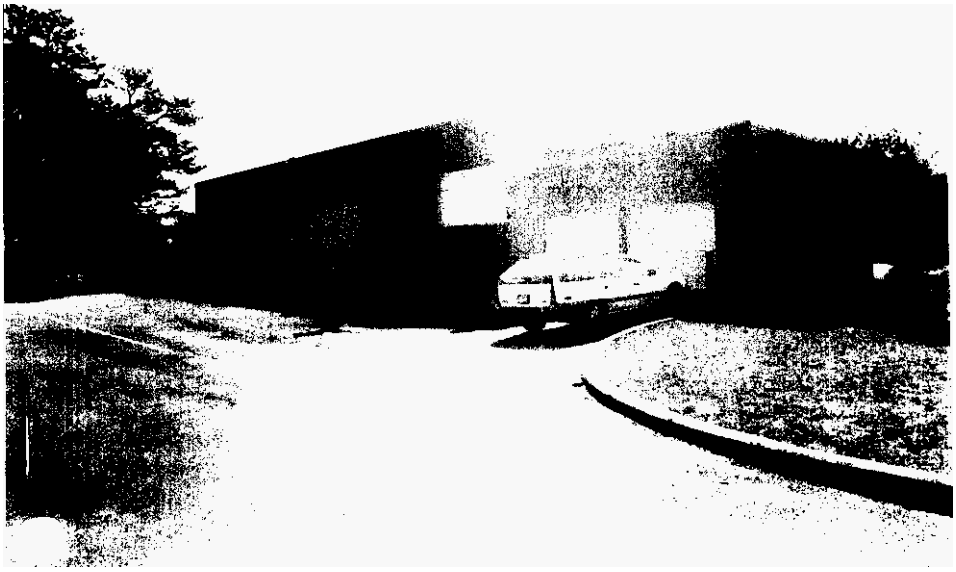
**Property Address:** Airman Way, Westover AFB

**Massachusetts Historical Commission**
**Massachusetts Archives Facility**
**220 Morrissey Boulevard**
**Boston, Massachusetts 02125**

**Area(s)**

**Form No.**

**PHOTOGRAPHS**



**Massachusetts Historical Commission**
**Massachusetts Archives Facility**
**220 Morrissey Boulevard**
**Boston, Massachusetts 02125**

| **Community:** | **Property Address:** |
|---|---|
| Chicopee | Airman Way |

| **Area(s)** | **Form No.** |
|---|---|
| | |

# National Register of Historic Places Criteria Statement Form

Check all that apply:

___ Individually eligible ____ Eligible only in a historic district

__X__ Contributing to a potential historic district ____ Potential historic district

Criteria: __X__ A ____ B __X__ C ____ D

Criteria Considerations: ____ A ____ B ____ C ____ D ____ E

____ F __X__ G

**Statement of Significance by:** V.H. Adams & M. Kierstead, The Public Archaeology Laboratory, Inc.
(The criteria that are checked in the above sections must be justified here.)

---

The Westover Air Force Base Armed Forces Reserve Center, Chicopee has been evaluated as a contributing resource to a potential Westover Air Force Base National Register historic district. The Massachusetts Historical Commission found Westover Air Force Base eligible in November 1995.

## Westover AFRC (MA007)

### Facility Description

The Westover AFRC is located within the Westover Air Force Base, northeast of the urban center of Chicopee, Hampden County, Massachusetts (Figure 5-12). The 12.42-acre parcel was transferred to the Army Reserves from the U.S. Air Force in 1976. It is accessed from Sheriden Street to the north, and it is generally surrounded by dormitories and mess halls related to the Air Force base. The reserve center is a former Air Force Service Club that was built in 1959, and the Organizational Maintenance Shop (OMS) was constructed in 1978 approximately 250 ft south of the reserve center. The facility consists of concrete paved parking areas, grass areas, and landscaping surrounding the two buildings.

### Environmental Setting

#### *Topography and Physiographic Zone*

Chicopee is located in the central portion of Hampden County, in the southwestern part of Massachusetts. This county is bounded on the west by the Berkshire Mountains and on the east by low hills associated with the Worcester Plateau. Physiographically, it is located within the Connecticut Lowlands zone in the eastern portion of the Connecticut River Valley. The main topographic features are the nearly level flood plains and level to gently sloping terraces associated with the Connecticut River and the steep intrusive dikes that rise several hundred feet above the valley floor. The central part of the valley is flanked by undulating to rolling ridges (USDA 1978b). Elevations in the area range from about 40 ft msl around the Connecticut River to about 1,200 ft msl at Mount Tom.

The topography of the Connecticut River Valley shows a distinctive north-south trend that reflects the fracturing and collision of the North American and African crustal plates during the Ordovician and Devonian periods, ca. 350 million years ago. The basic division of the Connecticut Valley was formed at this time with secondary north-south faults along the Swift River Valley of the Quabbin Reservoir. Deep longitudinal basins with sharply defined mountain fronts were formed, with the Connecticut Valley being the largest.

Topographically, the westernmost part of Chicopee is characterized by the Connecticut River floodplain, which extends from South Hadley south to Springfield. The remainder of Chicopee is situated on a plateau with a maximum elevation of approximately 260 ft. The areas surrounding the floodplain of the Connecticut River are remnants of the glacial Lake Hitchcock, one of the longest and largest glacial lakes in southern New England (Hartshorn and Colton 1967:73). Glacial lakes were produced as the glaciers retreated and released enormous quantities of sediments and meltwater. In the Connecticut Valley, the drainage of the meltwaters were blocked by a deposit of glacial sediments at Rocky Hill, Connecticut. Glacial Lake Hitchcock formed between Rocky Hill and the southern end of the glacier. At its greatest extent, it reached 160 miles from Rocky Hill and Lyme, New Hampshire, with a maximum width of 12 miles (Hartshorn and

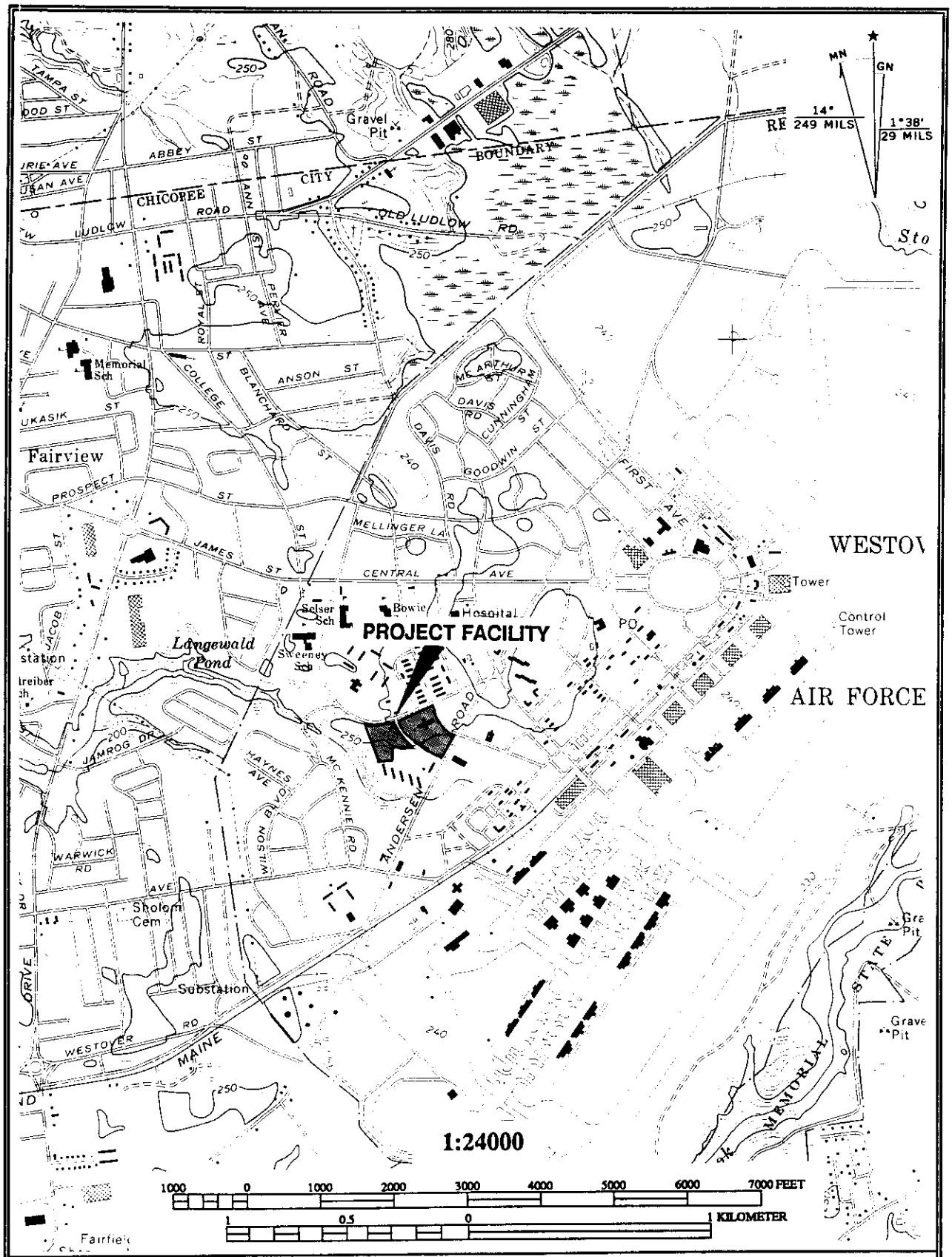



**Figure 5-12. Location of the Westover AFRC (MA007) project facility on the Chicopee, Massachusetts USGS topographical quadrangle, 7.5 minute series.**

Colton 1967:73). Three large deltas extended into the southern part of glacial Lake Hitchcock and formed large sand plains, including the delta of the glacial Chicopee River. The Westfield and Chicopee rivers together drained a 45-mile glacier margin in the igneous and metamorphic uplands. The bottom of glacial Lake Hitchcock was characterized by varve clays and sediments that alternate between coarse and fine sediments of clay and silts.

The dam at Rocky Hill was breached between 13,000 and 11,000 years ago, and the lake suddenly drained. The Connecticut River began cutting into the former lake bed, creating floodplains. Large sand dunes, some up to 55 ft high, were created by winds on the surface of the dry lake beds and deltas. Abrupt transitions between the lowlands and the uplands lie west and east of Chicopee. The edges of the uplands are marked by a series of mountain peaks, including Mount Tekoa in Deerfield and Butler Hill in Belchertown.

### *Bedrock, Surficial Geology, and Soils*

The bedrock in Chicopee is generally characterized by a Devonian-Triassic valley comprised of trap rock ranges and reddish-brown sedimentary sandstones and shales. These shales contain an abundance of floral and faunal fossils (Emerson 1917; Hartshorn and Colton 1967). In addition, there are a series of well-developed diabase dikes, including Hampden diabase, in this section of the Connecticut Valley. The bedrock is generally covered by a blanket of till with an average thickness of 3 m. This till was derived from the glaciofluvial sediments deposited along the shores of glacial Lake Hitchcock and from postglacial streams carrying upland sediments down to the valley (MDPW 1974).

Soils within the Westover AFRC property are classified as Urban Land-Hinckley-Windsor association (USDA 1978b). This association is made up of Urban Land and nearly level to moderately sloping Hinckley and Windsor soils on glacial outwash terraces. The Hinckley and Windsor soils are located on vacant lots, lawns, and parks interspersed between buildings and streets. These soils are deep and excessively well-drained. Slopes range from 0 to 15 percent. Hinckley and Windsor soil types have few limitations for urban uses (USDA 1978b).

### *Connecticut River Drainage*

Chicopee falls within the Connecticut and Chicopee river drainage systems. These rivers, along with the Westfield River, dominate the drainage of the area. The Connecticut River is New England's longest river and principal drainage. Originating in the Connecticut Lakes, a short distance north of the Canadian border, the river flows south and marks the entire length of the Vermont-New Hampshire border. It then flows through central Massachusetts and into Connecticut, eventually draining into Long Island Sound at Old Saybrook, Connecticut. The total length of the river is 409 miles (Bickford and Dymon 1990).

Through Canada and Vermont, the Connecticut River flows in a narrow valley; over the next 100 miles through Massachusetts and Connecticut this valley broadens considerably, attaining a width of 20 miles in

Connecticut. The Connecticut River and its tributaries drain nearly the entire Connecticut River Valley except on the southeastern perimeter. In the eastern uplands, the major tributaries (south to north) are the Chicopee and its tributaries the Quaboag, Ware, and Swift rivers, and the Fort, Sawmill, and Millers rivers. In the western uplands, the major tributary streams are (south to north) the Farmington River; the Westfield River with its East, Middle, and West branches; the Manhan and Mill rivers; the Deerfield River with its tributaries the North, South and Green rivers; and the Fall River.

The Connecticut, Deerfield, and Westfield rivers have cut narrow gaps in the basalt ridges, affecting the rate of flow. This has caused increased alluvial deposition and created the extensive floodplain characteristic of the areas that comprise Hadley, Deerfield, and Westfield. The Connecticut River, and to a lesser extent its tributaries, are bordered by low, flat terraces of flood-deposited sediments.

The size and contour of the floodplain are the most dynamic of any land formed in the valley. The Connecticut River has continually eroded old floodplain and deposited new alluvial sediments, gradually altering the broad, looping meanders that characterize its course. Numerous ancient channels, some at great distance from the river's present course, attest to the cumulative effects of this process over thousand of years. Many of the wetland areas that border the river are remnants of earlier channels. The river's downcutting to new base elevations has stranded earlier floodplains in the form of alluvial terraces. Oxbow Lake in Northampton and Easthampton, for example, was formed when the Connecticut River cut a new channel through a neck of land. Other significant features include the delta of the Westfield River in Agawam, with local meanders in the valleys of the Deerfield, Westfield, and Chicopee Rivers.

The Westover AFRC is immediately drained to the south by Williamansett Brook, a major tributary of the Connecticut River. The Connecticut River lies about 2 miles west of the project facility and the Chicopee River passes about 2 miles to the south. A limited amount of wetlands is located in the town adjacent to the northern and southern boundaries of the Westover Air Force Base. Only a few ponds are present within the town and none of these are natural (MHC 1982c:1).

**Prehistoric Context**

The prehistoric context for the Connecticut River Valley and Granby vicinity is presented under the Chicopee facility. Interest in the prehistory of the Connecticut River Valley and its tributaries began during the nineteenth century and increased during the second half, when local antiquarians and historians included site locations in town histories. Prehistoric sites and artifact collections were documented in the town of Westfield as early as the 1830s (Barber 1839:304). Other mid and late-nineteenth-century works include Josiah Gilbert Holland's *History of Western Massachusetts* (1855) and Sylvester Judd's *History of Hadley* (1863).

Collecting activities surged during the late nineteenth century, particularly in Springfield, Holyoke, and Northampton. Some of the largest artifact collections were assembled following intensive plowing and periodic flooding along the Connecticut and Westfield rivers. The late nineteenth century also saw the

beginning of professional investigations with the Harry Andrew Wright excavations at the Contact Period Native American village at the Long Hill Site in Springfield (Wright 1897). Much of the information recorded during the excavations has been lost, but the artifacts are curated at the Springfield Museum. Frederick Ward Putnam of the Peabody Academy of Science and Harvard University excavated a number of burials in the area and collected artifacts from locations in Longmeadow as early as 1883.

During the 1930s and 1940s there was a resurgence in the quantity and quality of archaeological investigations in Massachusetts. Perhaps the most significant development was the formation of the MAS in 1930. This organization provided both amateur and professional archaeologists with a repository for artifacts, a centralized location for recording sites, and a bulletin through which to report finds and site information. William S. Fowler, a former Westfield resident, and William J. Howes were two of the most important individuals in the organization during its early years. The prehistoric Westfield steatite quarry was first described by Jacob Bowne of Springfield College in 1907 and investigated by Fowler and Howes in the 1930s and 1940s (Young 1969:48). Charles Hull, a resident of Agawam, collected artifacts from five nearby towns: Agawam, Southwick, and Longmeadow in Massachusetts, and Suffield and Enfield in Connecticut. Between 1921 and 1946, Hull collected over 2,500 artifacts from plowed fields in these towns (Pretola 1985).

The late 1960s saw the beginnings of CRM studies, with Bert Salwen's survey of the Connecticut River Valley for the National Park Service. In 1970, William Fitzhugh surveyed and excavated sites in Rowe and Florida, Massachusetts prior to hydroelectric development, as part of the first contract salvage archaeology undertaken in Massachusetts. During the 1970s several important sites and archaeological districts were added to the National Register of Historic Places, including the Riverside Archaeological District in Gill and Greenfield and the DEDIC Site in Deerfield.

The combined avocational and professional research on the prehistory of the Connecticut River Valley has resulted in a large database on site locations. The highest densities of sites have been found on alluvial terraces of the Connecticut River and its tributaries and brooks, on bluffs overlooking the terraces, and on sandy terraces bordering uplands that were once the shores of glacial Lake Hitchcock.

The Connecticut River Valley drainage system, with its large and small tributaries, lakes, and wetlands, has been a focal point of prehistoric occupation. Occupation of this area by human populations is likely to have begun more than 10,000 years ago, during the PaleoIndian Period. Clearly identified PaleoIndian Period sites have been found in Deerfield and Hadley, with scattered find spots reported from a number of other areas within the Connecticut River Valley, including Agawam, Montague, Hampden, Gill, Chicopee, and Greenfield. The site in Hadley was not systematically excavated, but fluted points and other PaleoIndian artifacts manufactured from New York flint were collected prior to the site being destroyed (MHC 1984a:25). Controlled subsurface excavations did occur at the DEDIC Site in Deerfield on the shores of the former glacial Lake Hitchcock, overlooking the Connecticut River floodplain (Ulrich 1978).

In Chicopee, at least two fluted projectile points have been located in the Westover Air Force Base area; the only two wetlands in Chicopee are situated along the southern and northern borders of the Westover Air Force Base. This area also contains deposits from glacial Lake Hitchcock, the floral and faunal resources

of which may have attracted PaleoIndian groups to the area. A PaleoIndian site was also reported for the Mount Toby area, where geologists have discovered the once-level shorelines of Lake Hitchcock (Hartshorn and Colton 1967:75; MHC 1984a:25). Clearly identifiable PaleoIndian sites have also been located in Hadley and Deerfield. The Hadley Site is located on a broad alluvial plain of the Connecticut River and contained artifacts made of Hudson Valley chert (Curran and Dincauze 1977:334-335). Excavations at the DEDIC Site in Deerfield found that the site was located on the former bottom of glacial Lake Hitchcock (Ulrich 1978).

The location of these sites indicate a direct association with post-glacial features that no longer exist. Other sites may have been destroyed or not recognized due to changes that have occurred in the environment and topography during and immediately following glacial retreat. Early sites may be located in areas that have changed substantially since they were occupied over 10,000 years ago. For example, upwarping of 4.2 ft per mile occurred after the ice retreated and the lake drained (Hartshorn and Colton 1967:75). In addition, the Connecticut River has cut vertically into the lake deposits in both Massachusetts and Connecticut. In the Springfield South quadrangle, the river has cut through at least 160 ft into lake deposits and cut laterally over 2 miles to the east and west, possibly inundating or destroying early prehistoric sites.

The traditional concept that early postglacial environments were inhospitable is currently being disputed by palynologists (Gaudreau 1988; Nicholas 1988). Recent studies have indicated that glacial lake basins, most active between 14,000 to 11,000 B.P., provided hydrological settings for the development of extensive lake, pond, wetland, and river basin mosaics between 10,000 and 7000 B.P. These were important foci for PaleoIndian and Early Archaic groups (Nicholas 1988:267). In comparison to other parts of the early postglacial setting, glacial lake basins exhibited the highest resource diversity and productivity. The model developed of the landscape sequence following postglacial stabilization includes the presence of lowered or fluctuating lakes, ponds, and wetlands and an emerging riverine system.

The lack of known Early Archaic sites in the Connecticut River Valley is indicative of a situation that prevails over most of Massachusetts and southern New England. Either the full range of diagnostic artifacts have not been identified or site locations are not easily identifiable. There may also have been a change in lake basin productivity over the long term as part of a geographically focused exploitation of the resources within the basin: PaleoIndian sites and depositions are relatively numerous in this area. The availability or diversity of resources may have changed by the Early Archaic, which would alter site location and subsistence strategies (Nicholas 1988:259). This suggests that the land use patterns have not yet been definitively recognized in the archaeological record. The current evidence indicates that Early Archaic groups utilized riverine resources during spring fish runs at such sites as the WMECO Site in Gill (Thomas 1980). In eastern Massachusetts, Early Archaic components tend to occur within major drainage systems, adjacent to large bodies of water (Dincauze 1974).

Sites dating to the Middle Archaic Period are more numerous in the Connecticut River Valley. Sites have been found in a variety of settings and indicate functional differentiation (Dincauze and Mulholland 1977). Comparative data from sites elsewhere in Massachusetts indicate that riverine wetlands and fall lines similar to those along the Chicopee River were a focal point of Middle Archaic activity. By this time the locations

of rapids and fall lines along the Connecticut River the major tributaries would have been well established, although the exact courses may have changed. Anadromous fish were important to the prehistoric diet by the Early and Middle Archaic periods. Falls and narrows would have been the easiest places along major rivers to catch shad and salmon, while confluences of narrower tributaries would have required the least effort. The Dukes Collection from the northern half of the Westover Air Force Base contained a possible Middle Archaic Neville projectile point. This area is more than 1 mile from the Chicopee River and indicates that utilization of wetlands also occurred during this period.

The Late Archaic Period continues the pattern of increasing site density and distribution through its three cultural traditions (Laurentian, Small Stemmed, Susquehanna). Laurentian Tradition materials are the least frequently found in the Connecticut River Valley, with Small Stemmed projectile points the most commonly recovered artifacts.

Several multicomponent sites have been documented in the area. These include the Granfield Site in Agawam which has components related to the three major traditions: with Brewerton points of the Laurentian, Small Stemmed and Squibnocket points of the Small Stemmed Tradition, and Wayland-notched and Mansion Inn points of the Susquehanna Tradition. The Mansion Inn blades were found in a cache, suggesting that they were left by a group that expected to reuse the site location. Subsurface testing at the site excavated a hearth that was radiocarbon dated to 4340±90 B.P. and was most likely associated with the Small Stemmed component (Pretola 1983). The Whalen Site (19-HD-189) in Westfield, just north of the town boundary with Southwick, contained Late Archaic and Early Woodland materials. This site was surface collected for 20 years and is known to have contained a grooved adze, an ovate blade of banded chert, and a Small Stemmed point, as well as several Early Woodland Meadowood points.

The Kellog Brook Site (19-HD-190) is a small single component Late Archaic site located in the uplands adjacent to the Westfield River in Westfield. The importance of tributary streams to prehistoric groups can be seen by the presence of another site on Kellog Brook in Southwick. The Driftwood Site (19-HD-158) is located in Southwick, although little is known about this site except for its location; it was found because artifacts were exposed to the surface during plowing.

The Susquehanna Tradition in the area is characterized by the exploitation of steatite, which was used in the manufacture of pipes and various vessels. A steatite outcrop that was intensively quarried during the Late Archaic has been identified in the uplands associated with the Little River drainage in Westfield. The Susquehanna groups that extracted this material used it to manufacture bowls, cups, and other vessel forms. Numerous broken bowls, discarded bowl preforms, and quarry tools such as picks and scrapers were left at this quarry workshop location. Sets of quarry tools also were made from quartz found in veins exposed on the outcrops and cached on the site for future use (Fowler 1968). Other Late Archaic quarrying in the middle Connecticut River Valley included basalt outcrops that occur along a narrow ridge extending from Westfield to the Hadley/Holyoke area. Talus slopes below the outcrops contain thin prismatic fragments of basalt that were used as preforms for a range of chipped and ground stone tools such as axes, adzes, pestles, and picks. Other talus quarries have been located in the Mount Tom and Holyoke ranges (Howes 1942; MHC 1984a:30-31).

Prehistoric exploitation was extensive in the Chicopee-Hadley-Ludlow area during the Late Archaic Period. Utilization of river fall areas, banks along major and minor streams, floodplain terraces, and uplands have all been documented for the Late Archaic Period. In addition to the diversity of site location, there exists a wide variety of site size and function. Fishing and fish processing has been well documented on a number of sites (Curran and Thomas 1979). Particularly important was the discovery of a cache of Susquehanna Tradition projectile points on a site in Hadley (Dincauze 1975b); evidence of land use patterns of this tradition are very scarce in this part of Massachusetts.

Sites with Woodland Period components are the most numerous in the Connecticut Valley archaeological record. In most of Massachusetts, Late Archaic sites are the most frequent in the prehistoric database. The diversity in site location, size, and function continues into the Woodland Period. The Woodland Period is characterized by the appearance of ceramic vessels. Ceramics have been located on a number of sites in the Chicopee area, including 19-HD-59, 19-HD-8, and 19-HD-222 (Howes 1943, 1954, 1955, 1960, 1964, 1965, 1966). Ceramic workshops have been located in South Springfield, South Hadley Falls, and Westfield. Large fishing station middens have been found at the Riverside District and WMECO sites (Curran and Thomas 1979), and a possible Woodland Period fishweir was reported in Palmer along the Ware River.

Early Woodland settlement patterns are not well-known due to a lack of clearly identified Early Woodland components on sites in this area and elsewhere in southern New England. The South Meadow Site on the lower Little River in Westfield probably has a small Early Woodland component; a chert Meadowood point was found during surface collecting by a local archaeologist (Gorman and Dalton 1988). Site locations that are likely to have been occupied during this period include the first terrace along the Connecticut and Westfield rivers.

Small hunting and gathering camps have been found in numerous upland areas. In Holyoke, an Early Woodland Period cemetery was located at the Holyoke Depot in 1868. Woodland Period artifacts, including ceramics, have been located along the northern edge of the Westover Air Force Base adjacent to the wetland (Mowchan and Cox 1984:27). The Indian Crossing Site in Chicopee is located on a sandy bluff overlooking the Chicopee River; this site was occupied during the Middle and Late Woodland periods for fairly long periods. Features and artifacts reflect resource procurement and processing activities, as well as possibly horticulture (Ulrich 1977).

The Middle Woodland Period continues to be poorly represented in the Connecticut River Valley. For example, the extensive Hull collection from sites in Agawam contains only two Middle Woodland Period artifacts (Pretola 1985:17). In the lower Westfield drainage there are only two sites with Middle Woodland components. A possible Middle Woodland component is present at the South Meadow Site, where a few lanceolate and corner-notched points were found (Gorman and Dalton 1988). The recovery of a few blanks or preforms for smoking pipes at the Westfield steatite quarry suggests that use of this area continued into the Middle Woodland Period (Fowler 1968).

There is substantial evidence that by the Late Woodland Period the Connecticut River Valley contained a number of primary and secondary core areas of settlement. The distribution of diagnostic Levanna points

suggests that a fairly wide range of environmental settings was used in this area (Pretola 1985:17). A large Late Woodland base camp known as the Guida Farm Site (19-HD-111) was located on the floodplain of the lower Westfield River. This site may have been located in this area due to the suitability for maize horticulture. Features exposed on the site during modern loam stripping and sand and gravel extraction include numerous hearths, refuse pits, and large habitation areas where chipping debris, ceramic vessels, and bone and shell fragments were recovered. A number of Late Woodland burials were also recorded on this site during salvage excavations (Byers and Rouse 1960; Young 1969:50-51).

The Palmer Site (19-HD-97) was a Late Woodland and Contact Period cemetery located on an elevated terrace of sand and gravel above a tributary of the Westfield River. This site was accidentally exposed by construction activity in 1975 and contained at least 14 burials. When excavations were conducted, the burials appeared primarily to be single interments of individuals in flexed body positions. One of these flexed burials contained a fragment of sheet copper or brass that was the only grave offering found during the salvage excavations. There were also two multiple burials and a possible bundle burial. Metallurgical analysis indicated that this metal was of European origin and may have been cut from a kettle obtained from trade during the Contact Period.

### *Expected Prehistoric Resources*

The majority of known sites in Chicopee are characterized by low densities of chipping debris including chert, rhyolite, argillite, quartzite, quartz, jasper, and sandstone (Ulrich 1977, 1978). Given the proximity of Williamansett Brook and the upland location, intact soils within the Westover AFRC facility had a high likelihood of containing prehistoric resources. These resources could date from the earliest PaleoIndian Period through Late Woodland Period. They could represent a wide range of site sizes and types due to the proximity of Williamansett Brook and the Connecticut and Chicopee rivers.

### Historic Context

During the Contact Period, Native American core areas were located along the Connecticut River and its associated tributaries. These core areas were the center of Native settlement and subsistence patterns and were connected to seasonally occupied sites in the uplands (MHC 1984a:46). The MHC has determined that there were seven major cores in the Connecticut River Valley and four secondary cores. The first regional core extended north from the falls located at Enfield Falls, Connecticut and included Longmeadow, Agawam, Springfield, and the southern portion of Chicopee. A second core area was centered around South Hadley Falls and included northern Chicopee, Holyoke, and South Hadley. The Chicopee/Quaboag/Ware river system connected the Connecticut River Valley with the Brookfield core area. This three river system contained several major falls and was known for its fishing locations (MHC 1984a:49).

Native American groups incorporated anadromous fish, shad and salmon, into their diet. Prior to the nineteenth century when dams, industrial development, and pollution sharply reduced their numbers, salmon

migrated as far as Beecher Falls (347 miles) and shad as far as Bellows Falls, Vermont (195 miles) (Moore and Root 1979:35). Summer Native settlement may have focused on planting small fields, with fall activities aimed at harvesting and storing crops and hunting (MHC 1984a:47). Native groups in this area included the Nipmucks, Nonotucks, and Agawams (Salwen 1978).

The primary mode of transportation during the Contact Period was a system of overland trails that connected different core areas with one another. In the Connecticut River Valley these trails followed the river terraces, the easiest topographical contour to traverse. Through the uplands, the trails followed the course of the tributary rivers, such as the Chicopee and Quaboag rivers. In the rougher upland areas, including Deerfield, the deep river gorges were avoided except at major fall lines, fords, and intervales (MHC 1984a:50). The major trail in proximity to the Westover Air Force Base was the north-south trail that ran along the eastern side of the Connecticut River from Windsor Locks, Connecticut, to the ford near Chicopee Falls and to Hinsdale, New Hampshire. The trail then continued along the north bank of the river to Chicopee Street (Route 116) in Wollomansuk (Williamset) and north along Prospect and Montcalm streets (MHC 1982c). Chicopee, or Chicuppe, is a native place name that refers to the southern edge of the Chicopee River near its confluence with the Connecticut River (Wright 1911).

The first European settlement was established at Springfield in 1636. Native involvement in the Anglo-Indian fur trade in this area began in the late 1630s. Additional European settlements were slowly added through the middle of the Connecticut River Valley with a series of lightly to moderately populated towns scattered north to the present-day Northfield area and west to present-day Westfield area. Epidemics from this influx of Europeans resulted in the rapid decline in the Native American population and the abandonment of large areas.

European population growth occurred at a rapid pace throughout the seventeenth century. After 1650, groups from one or more towns would band together and move as a unit to a new area (McArdle 1979). The Massachusetts General Court granted this land and established minimum numbers of families for new communities, usually between 20 and 30. In the Connecticut Valley, newly settled villages acted as founder populations. Within a generation of establishment, groups from these villages left to establish new settlements farther out along the frontier.

The majority of new settlements in western Massachusetts were the result of internal growth. The expansion into new areas was risky from the late seventeenth century to the mid eighteenth century due to a series of conflicts that occurred between 1675 and 1765. Northfield, Deerfield, and Brookfield were burned out and temporarily abandoned. Every town north of the Connecticut border was attacked at least once during this period, resulting in the construction of fortifications. Stockades and blockhouses were built in great numbers (McArdle 1979).

It is uncertain when Chicopee was first settled, although by 1675 Springfield residents had settled in Chicopee, then known as the North Springfield district. Early settlements were located on Chicopee Street along the Connecticut River meadows. Chicopee retained close social and economic ties with the neighboring river settlements of West Springfield, Agawam, South Hadley, and Longmeadow (MHC 1982c).

The Chicopee area maintained a strong agricultural base that was supplemented by fishing and also probably hunting. By the mid-seventeenth century, Springfield had established itself as a core area of commercial, political, and social activity with strong ties to Boston and Hartford. Secondary towns such as Chicopee and Agawam supplied grain and livestock to a number of markets, particularly those in eastern Massachusetts (MHC 1984a).

Industrial development began after the end of King Philip's War; the first sawmill at Chicopee Falls was built in 1678. A gristmill was constructed slightly downstream in 1698, and a deposit of iron ore was found slightly east of St. Patrick's Cemetery around 1693. The commercial use of this ore does not appear to have occurred until 1788, when a "hollow ware" furnace was built near Chicopee Falls. Three sawmills marked on the 1794 map of Chicopee and Springfield, upstream of the Route 116 bridge, may have been built prior to 1775 (MHC 1982c). In general, industrial development remained modest in the Springfield core area, including Chicopee, through the eighteenth century.

The Springfield regional core continued to dominate the lower portion of the Connecticut Valley through the late eighteenth century. Springfield itself grew considerably as a result of the establishment of the U.S. Arsenal in 1794. The arsenal drew considerable mechanical and inventive talent to the town and surrounding area; secondary manufacturing complexes were established by the early nineteenth century. The manufacturing potential surrounding the Chicopee River was a primary factor in the reorientation of the economic base in the Springfield core area from agriculture to industry (MHC 1984a).

Chicopee started out as an agricultural district of Springfield, but with the influx of outside capital from the Boston Associates, Chicopee emerged as an industrial center on its own. In 1822 the first company town in western Massachusetts was established at Chicopee Falls. The Boston and Springfield Manufacturing Company, changed to the Chicopee Manufacturing Company in 1828, was incorporated to build the cotton mills and town. The establishment of this and sister mills at Cabotville instigated a wide variety of related manufacturing concerns. Other products such as boots and bricks were also made in Chicopee. By the early 1830s Chicopee was considered "the second Lowell" (MHC 1982c).

By the early nineteenth century, Hampden County had a solid industrial base in the towns of Springfield, Chicopee, and Holyoke; it was the only part of the Connecticut River Valley to experience growth. Chicopee was granted separate township status from Springfield in 1848. Arms makers were attracted to Chicopee as early as 1836, and the Chicopee Falls Company was established to manufacture hardware and firearms. During the Civil War, the area was the primary supplier of arms to the Union Army. Chicopee developed as a distinct local core on the basis of manufacturing weapons and cotton milling.

Chicopee continued to be a major economic center during the late nineteenth century. Textiles were still a dominant economic factor, followed by the machine tool industry, which led to the production of bicycles, automobiles, and cars. Between 1870 and 1915, the population of Chicopee tripled, with the most growth occurring after 1905 (MHC 1982c:12). The 1873 (Beers) map depicts the town center at the confluence of the Connecticut and Chicopee rivers, the villages of Chicopee Falls to the east along the Chicopee River, and Willimansett to the north along the Connecticut River (Figure 5-13). At that time the area presently occupied

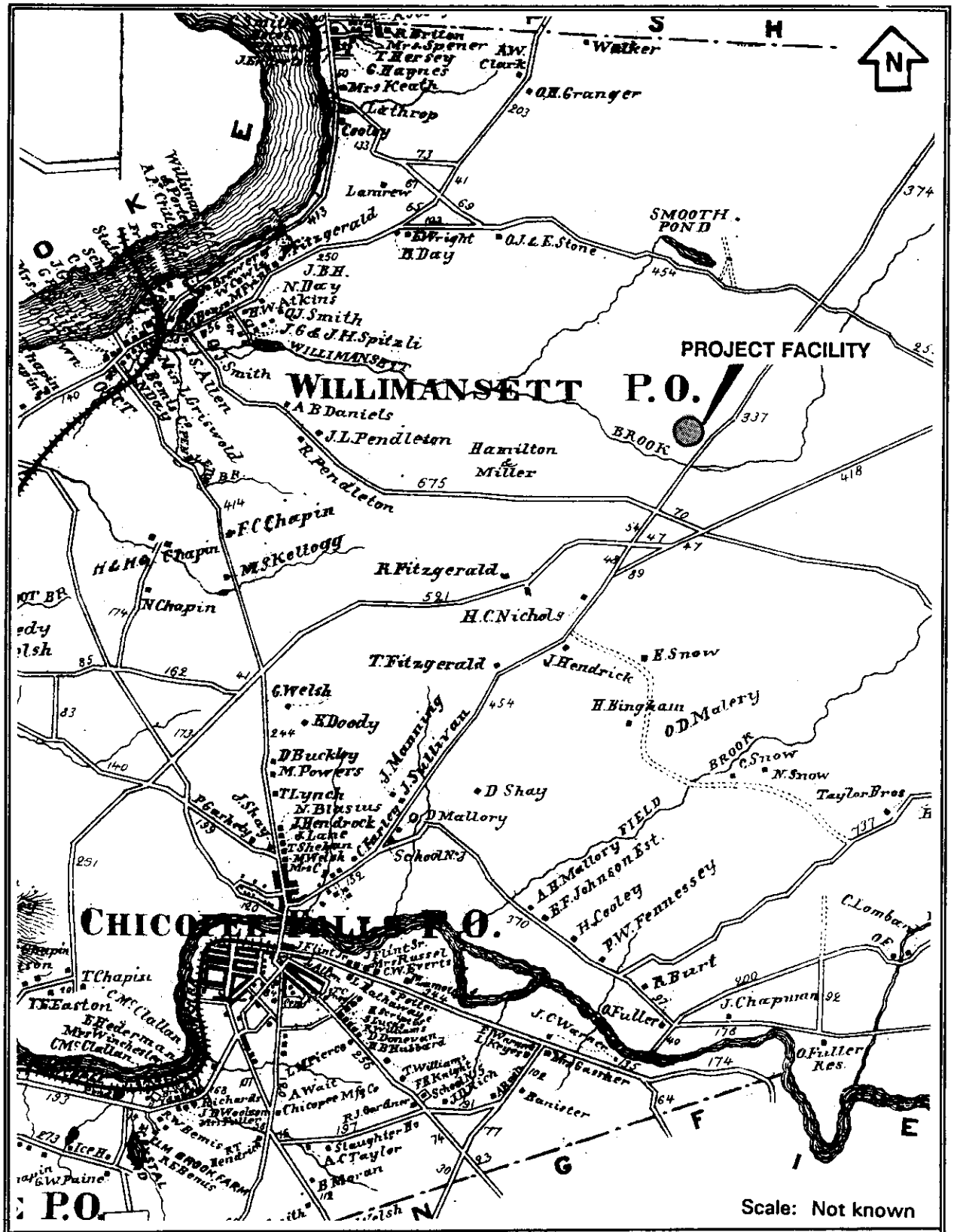



**Figure 5-13. 1873 map of Chicopee, Massachusetts with the location of the Westover AFRC (MA007) project facility (source: Beers 1873).**

by the Westover Air Force Base was located east of the Willimansett village in a largely undeveloped portion of the town. Chicopee was incorporated as a city in 1890 (MHC 1984a:120). By that time, Chicopee had a substantial business district with a developing suburban periphery. Street railway and trolley lines into Chicopee were built during the late nineteenth and early twentieth century.

Chicopee continued to expand until 1925, when the declining fortunes of the industrial base slowed job opportunities. Most of the competition came from western firms during the early 1920s. The Depression acerbated a failing situation. By 1933, nearly 25 percent of the population was receiving economic relief. Improvement of the local highways during this period included Chicopee Street as Route 116, a bridge replacement across the Connecticut River in 1931, and other bridge replacements at Cabotville and Chicopee Falls. The Westover Air Force Base was built in Chicopee in 1939 and activated as a bomber base in 1940. Between 1947 and 1955, it was the largest freight and passenger terminal in the Military Air Transport System and was extensively used during the Berlin Airlift.

### *Expected Historic Resources*

A review of late eighteenth and nineteenth-century maps of Chicopee (Chapin 1794; Anon. 1830a; Beers 1873) along with facility files indicates an absence of documented historic period resources within the facility boundaries. Facility files report that the Westover Air Force Base is located on a flat, former tobacco farming area of northeast Chicopee. It was built in 1939 and was not deactivated until the 1970s. No extant structures are noted within the Westover AFRC facility prior to its construction as the Air Force Service Club in 1969. The project property is located near documented Native American Contact Period trails and Colonial sites from the seventeenth and eighteenth centuries. The presence and integrity of any under-documented historic resources within the Westover AFRC facility is dependent upon the degree of previous disturbance related to facility construction and associated earthmoving activity.

### Results of Previous Archaeological Studies

The Westover AFRC facility was not included in the 1979 archaeological survey. The 1988 archaeological survey reported that the facility is located atop a steep slope, on artificial step-like terraces; the natural topography of the property was determined to have been extensively modified by construction and landscaping activities (Bourassa and Atwood 1988). An intensive archaeological survey of the parcel was not recommended.

### Results of Validation Survey

The validation survey included a walkover of the facility to reassess the previous determination of low sensitivity and recommendation for no further work. A total of 8 shovel turnovers was used to verify the presence of disturbed soils throughout the facility (Figure 5-14). The profiles indicated mottled fill soils (see

Appendix B). The walkover survey, shovel turnovers, and the 1976 facility plan revealed that the natural topography of the facility had been disturbed by the creation of artificial terraces and the construction of the two buildings, paved parking areas, and underground utilities (see Figure 5-14).

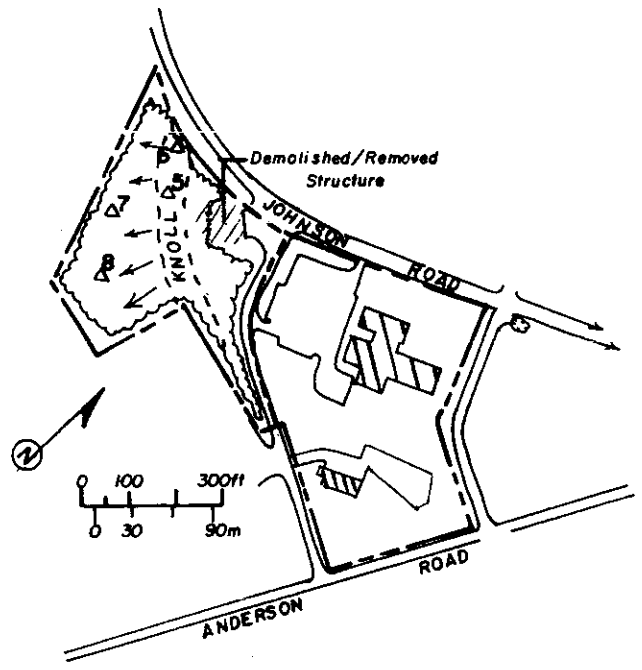
**Conclusion/Recommendation**

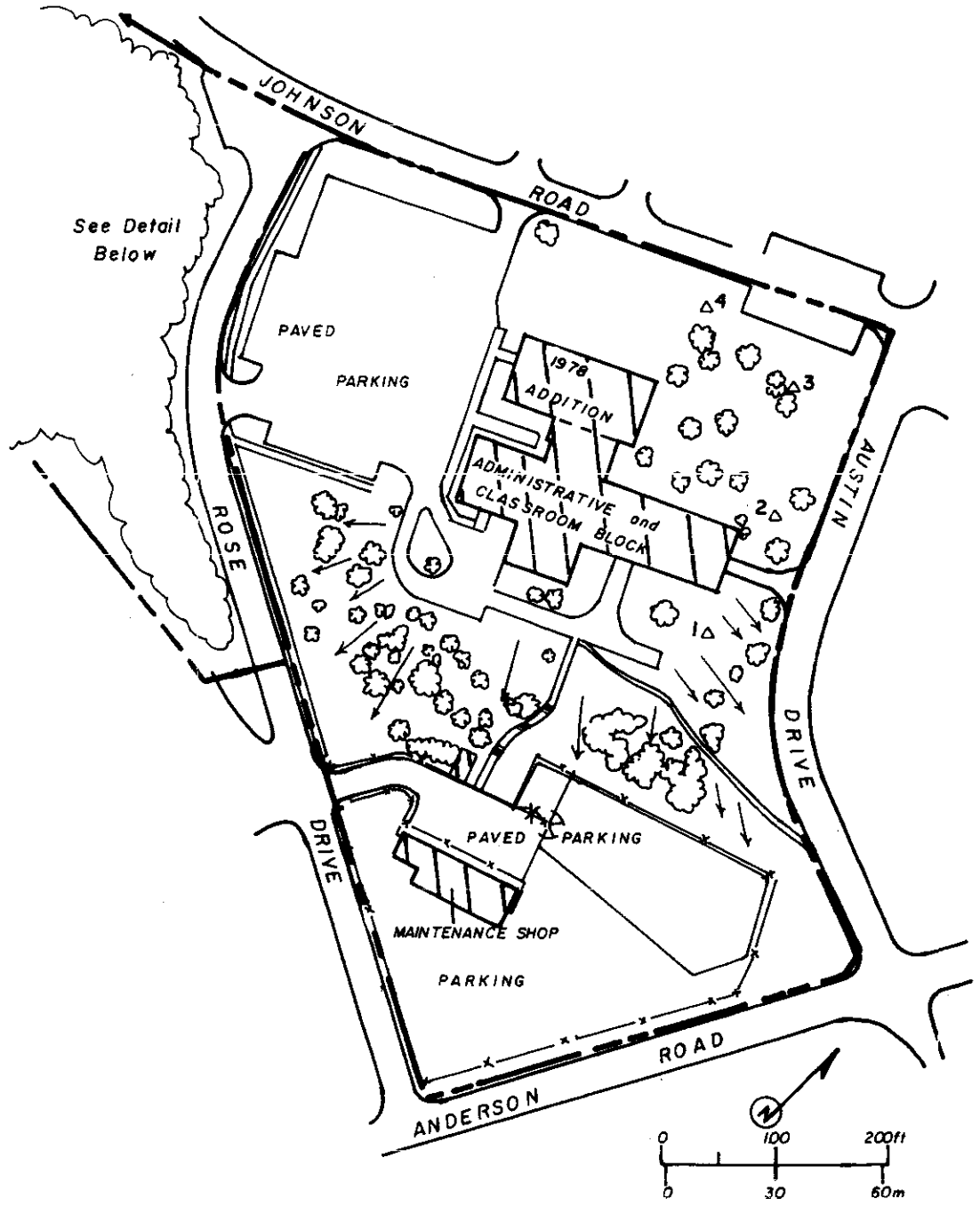
Based on the degree of previous disturbance, it was confirmed that this facility possesses a low archaeological sensitivity for intact cultural resources. No further archaeological investigation is recommended.

KEY:

Moderate to High archaeological sensitivity

Low archaeological sensitivity




KEY:

PROPERTY BOUNDARY

FENCE

EXISTING 94th RSC STRUCTURES

Archaeological Testing

SHOVEL TURNOVER

**Figure 5-14. Westover AFRC (MA007) project facility, showing the location of shovel turnovers and archaeological sensitivity.**

# MA007
# WESTOVER AFRC
# Chicopee, Massachusetts

## FLOOR AND STORM DRAIN INVENTORY

## AND

## NATURAL RESOURCES INVENTORY

***Prepared** for:*

94th Department of the Army
Regional Support Command

***Prepared** by:*

U.S. Army Corps of Engineers
**New** England Division
Waltham, **MA** 02254-9149

***With Technical Assistance** from:*

***ENSR***
Acton. MA 01720

M950217MA007

**June, 1996**

**DOC** NO. 9000-025-100
9000-026-100

# FILE NAME EXPLANATION FOR FLOOR AND STORM DRAIN, AND NATURAL RESOURCES REPORTS
**(EXAMPLE FOR MA009 - BURKE CENTER - FORT DEVIENS - MASSACHUSETTS)**

INSTRUCTIONS **FOR ACCESSING FILES:**

*ALL NATURAL RESOURCES FILES ARE ACCESSED THROUGH LOTUS 1-2-3 RELEASE 2.4 WITH WYSIWYG.*
*THE FLOOR AND STORM DRAIN FILES ARE ACCESSED THROUGH LOTUS 1-2-3 RELEASE 5.*

*THE FIRST FIVE CHARACTERS (MA009) ARE THE FACILITY ID # FOR NATURAL RESOURCES AND FLOOR AND STORM DRAIN REPORTS*

FOR NATURAL RESOURCES:

*THE FOLLOWING TWO LETTERS (NR) INDICATE THAT THE TABLE IS A NATURAL RESOURCES TABLE*
*THE LAST LETTER OR NUMBER INDICATES THE INDIVIDUAL TABLE (5 CORRESPONDS TO TABLE AS - SR=*

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## GENERAL

| FILE NAME | DESCRIPTION |
|---|---|
| MA009E | EXPLANATION OF FILE NAMES AND ACCESS INFORMATION |

## A. FLOOR AND STORM DRAIN REPORT

| FILE NAME | DESCRIPTION |
|---|---|
| MA009 | FLOOR AND STORM DRAIN SURVEY TABLES AND COMMENTS |

## B. NATURAL RESOURCES TABLES

| FILE NAME | DESCRIPTION |
|---|---|
| MA009NRC | TABLE OF CONTENTS |
| MA009NRM | DATA COLLECTION AND REPORTING ISSUES |
| MA009NRS | MASTER SUMMARY TABLE |
| MA009NR1 | TABLE A1 - WILDLIFE AND VEGETATION OBSERVED AND EXPECTED |
| MA009NR2 | TABLE A2 - PROTECTED SPECIES - VEGETATION AND WILDLIFE |
| MA009NR3 | TABLE A3 - PROTECTED PLANTS |
| MA009NR4 | TABLE A4 - AMPHIBIANS AND REPTILES |
| MA009NR5 | TABLE A5 - BIRDS |
| MA009NR6 | TABLE A6 - MAMMALS |
| MA009NRF | REFERENCES |

*NOTE: THE STATE AND FEDERAL PROTECTED SPECIES TABLES AND OTHER DATA ARE NOT ON DISC FILES - THE ONLY COPIES ARE THE ORIGINALS INCLUDED WITH THE REPORT.*

*NOTE: COMPUTER FILE NAMES ARE AT THE BOTTOM OF EACH TABLE EXAMPLE: MA009NRC - TABLE OF CONTENTS*

US ARMY RESERVE CENTER - DRAIN SURVEY
SUMMARY and GENERAL COMMENTS



Facility ID #: MA007 Center Name: Westover AFRC

Address: Bldg 5550, Westover AFB Ci Chicopee State: MA

Site Point of Contact: Mr. Bernier Date of Survey: 25-26 May 94

1. Regulatory Compliance Violations:
No regulatory violations were observed during the site visit.

2. Potential Regulatory Compliance Violations:
No potential regulatory violations were observed during the site visit.

3. Recommended Actions to Improve Environmental Practices:
a. Oil/Water Separator Number 1 (OWS-1). OWS-2, and OWS-3 had a definite oil layer on the top. OWS-1, OWS-2, and OWS-3 require maintenance The sanitary sewer line which drained the OWSs did not have any apparent sheens. AFRC personnel were unaware of the last scheduled OWS servicing. It is recommended that a service schedule be established for OWS-1, OWS-2, and OWS-3.
b. Wash Rack Number 1 (WR-1) is full of silt and should be cleaned out in conjunction with the OWSs. Because of the condition of WR-1 it was not possible to verify that OWS-1 was the pretreatment for WR-1
c. Storm Drain Number 5 (SD-5) is in the immediate vicinity (60 ft southwest) of a large underground fuel tank. There is a potential for a spill during refueling of the fuel tank to enter SD-5. It is recommended that either a dike be placed around the refueling area or that the AFRC establish a policy to cover SD-5 during refueling operations.

4. Potential Problems:
The Can Wash Number 1 (CW-1) is reported to not be in use. Although CW-1 had a sheen on the water, the source of the sheen could not be determined since CW-1 was bermed and it would not be possible for any runoff to enter CW-1

5. Uncompleted Inventory Items:
a. The storm drain system on the AFRC feeds into the Westover Air Force Base storm sewer system at three locations. The Air Force base storm water system drains into the city of Chicopee storm drain system.
b. After cleaning WR-1 and the OWSs, verify that WR-1 feeds into OWS-1

6. Other Comments:
a. SD-8 is full of sand and should be cleaned out.
b. Because the AFRC is located on an Air Force base, the "property lines" are unclear. ENSR only inventoried SDs up to the curb of the streets around the AFRC. The plans show several SDs on the other side of the street which were not included in this report
c. The Air Force base storm sewer system crossed into and through the USARC "property" at several locations. There were no neighboring units (within one to two blocks) to the USARC that would appear to have any operations that could potentially provide any contamination to the storm sewer lines on the USARC

7 Data Gathenng Parameters and Limitations

This report contains the results of a survey conducteo under a series of agreea constraints and limitations descnbed in Secbon 7 1 below In addition, site-specific factors may have affected the quality or completeness of data gathered and these are descnbed in Secbon 7 2 below

Secbon 7.1

Surveys were conducted using plans obtained by the Corps of Engineers New England Division from the 94th Regional Support Command drawing vault at Fort Devens. MA The best available site and interior plans on which the surveys were based, in many instances. did not contain

a up-to-date information;
b a complete property boundary;
c. storm water drainage data; and/or
d plumbing information

In some cases, no sie and/or interior plans were provided and informabon was hand-sketched by the survey team

Data collection was limited to the information that could be gathered in the assigned time frame (ranging from one to two days). No supplementary data collection was performed.

a. Outfalls to municipal sanitary or storm sewer could not be determined because either manways were located in the middle of streets and could not be safely accessed or a visit to the municipal authorities. which could not be performed within the assigned time frame. would be required to confirm connections.

b. Information about rooms and/or areas which were not made accessible to the survey team was provided by the facility manager or other facility personnel.

c. Drains shown on field maps are shown in their approximate location. Locations were not scaled off.

d. Drainage associated with purely sanitary purposes such as sinks. water bubblers. toilets, or bermed shower drains was not inventoried. Shower drains which were not located in a bermed area and thus could potentially collect drainage other than sanitary were inventoried as floor drains.

e. Slop sinks which were located on the floor in the janitors closets and could potentially collect drainage other than sanitary were inventoried. Slop sinks attached to the wall were not inventoried.

f. Miliary organizational maintenance (-20 level and above) facilities. within EPA Region l, are considered as industrial facilities and, therefore, require an NPDES storm water permit. Because of this requirement, roof drains were inventoried for buildings in which greater than organizational maintenance is performed because these buildings would be considered industrial facilities.

g. Surrounding property was classified by usage such as residential, industrial. commercial. or woodland according to the visual observations of the survey team. No additional research was performed to confirm this property classification.

h. The status of drains and pretreatment systems was determined by observation only.

i. Surface drainage directions were estimated based on observation of land contours. Drainage directions were not determined by observing water flow.

j. Water meter pits and non-PCB transformers were not inventoried and thus are not depicted on the field map.

k. Features on the map which did not directly affect the drainage survey were considered to be outside the scope of the field survey and thus were not updated to reflect current status.

l. Vehicles parked on the site or equipment stored on site or inside the building were not moved to survey for drains.

m. OMS work pits were inventoried as containing a floor drain based on information from facility personnel. The presence of a floor drain in the work pit could not be confirmed by visual observation because the work pits were either cemented in, covered by equipment, filled with water, or the sump of the work pit was covered by a grate which could not be removed.

Section 7.2

a. The complete property boundary was not shown on available plans. Facility manger did not know where the property line was. For the survey, property boundary was assumed to be up to the curbs of Rose Drive, Anderson Road, Austin Drive, and Johnson Road.

b. The Arms Vaults and the Marine Locker Room in the AFRC Building were not accessible to the survey team.

c. The floor of the X-Ray Room in the AFRC Building was not visible due to storage of boxes on the floor.

d. Site personnel reported that maintenance is performed in the OMS Building.

e. The roof of OMS Building was not accessible to the survey team.

f. The majority of the military parking areas were not visible due to equipment and vehicle parking.

FACILITY ID#: MA007 CENTER NAME: Westover AFRC ADDRESS Bldg 5550, Westover AFB

CITY: Chicopee COUNTY Hampden STATE: MA SURVEYED BY: W. Kidd, M. Healey - ENSR

COMMAND 94th SITE CONTACT(S) (Name/Rank/Title) Mr. Bernier / Civilian DATE OF SURVEY: 25 - 26 MAY 94

WEATHER (Day 1 Heavy overcast, high 60's. Day 2 Heavy overcast humid, low 70's, )

REFERENCE SITE PLAN - TITLE: Grading and Drainage **Plan.** Dwg No. File No. 7695 - 823

DRAWING DATE 30 APR 76 CONTRACTOR Von Storch & Burkavage SHEET NUMBER: 3 OF 64 OTHER IFB No. DACA 51-76-E4071

| INDEX ON SITE PLAN | ROOM NUMBER/ LOCATION | DRAIN | | OUTFALL | | TREATMENT | | POTENTIAL CONTAMINANTS | REGULATORY COMPLIANCE STATUS |
|---|---|---|---|---|---|---|---|---|---|
| | | STATUS | VERIFIED | TYPE | VERIFIED | TYPE | STATUS | | |
| FLOOR DRAINS | | | | | | | | | |
| FD - 1 | East end of kitchen. | CIU | OBS | SAN | PNO | NONE | | JAN | IN |
| FD - 2 | Center of kitchen. | CIU | OBS | SAN | PNO | NONE | | JAN | IN |
| FD - 3 | Boiler room of AFRC building. | CIU | OBS | SAN | PNO | NONE | | FLO | IN |
| FD - 4 | North end of air handling room. | CIU | OBS | SAN | PNO | NONE | | POL, Refrigerant | IN |
| FD - 5 | South end of air handling room. | CIU | OBS | SAN | PNO | NONE | | POL, Refrigerant | IN |
| FD - 6 | Outside air handling room. | CIU | OBS | SAN | PNO | NONE | | POL | IN |
| FD - 7 | West end of air handling room. | CIU | OBS | SAN | PNO | NONE | | POL, Refrigerant | IN |
| FD - 8 | Navy bay of OMS building. | CIU | OBS | SAN | PNO | OWS-2 | | ANT,BAT,DEG,DES,GAS,OIL,POL,WOL | IN |
| FD - 9 | Boiler room of OMS building. | CIU | OBS | SAN | PNO | NONE | | FLO | IN |
| FD - 10 | Center of Army bay in OMS. | CIU | OBS | SAN | PNO | OWS-3 | | ANT,BAT,DEG,DES,GAS,OIL,POL,WOL | IN |
| FD - 11 | North end of Army bay in OMS. | CIU | OBS | SAN | PNO | OWS-3 | | ANT,BAT,DEG,DES,GAS,OIL,POL,WOL | IN |
| FD - 12 | Marine bay in OMS building. | CIU | OBS | SAN | PNO | OWS-2 | | ANT,BAT,DEG,DES,GAS,OIL,POL,WOL | IN |
| | | | | | | | | | |
| ROOF DRAINS | | | | | | | | | |
| RD - 1 | East side of OMS building. | CIU | PNO | STM | PNO | NONE | | Condensate of OMS ventilation system. | POUT |
| RD - 2 | West side of OMS building. | CIU | PNO | STM | PNO | NONE | | Condensate of OMS ventilation system. | POUT |

COMMENTS None on this **page**

FACILITY ID#: MA007 CENTER NAME: Westover AFRC ADDRESS Bldg 5550, Westover AFB

CITY Chiwpee COUNTY Hampden STATE MA SURVEYED BY: W. Kidd, M. Healey - ENSR

COMMAND 94th SITE CONTACT(S) (Name/Rank/Title) Mr. Bernier/ Civilian DATE OF SURVEY 25 - 26 MAY 94

| INDEX ON SITE PLAN | ROOM NUMBER/ LOCATION | DRAIN STATUS | DRAIN VERIFIED | OUTFALL TYPE | OUTFALL VERIFIED | TREATMENT TYPE | TREATMENT STATUS | POTENTIAL CONTAMINANTS | REGULATORY COMPLIANCE STATUS |
|---|---|---|---|---|---|---|---|---|---|
| STORM DRAINS | | | | | | | | | |
| SD - 1 | West corner of POV parking area. | CIU | OBS | STM (1) | PNO | NONE | | POL | IN |
| SD - 2 | East of SD - 1. | CIU | OBS | STM (1) | PNO | NONE | | POL | IN |
| SD - 3 | Southwest of AFRC building | CIU | OBS | STM (2) | PNO | NONE | | POL | IN |
| SD - 4 | West of SD - 3. | CIU | OBS | STM (2) | PNO | NONE | | POL | IN |
| SD - 5 | East of SD - 3. | CIU | OBS | STM (2) | PNO | NONE | | POL, FLO | IN |
| SD - 6 | North of OMS building. | CIU | OBS | STM (2) | PNO | NONE | | ANT,BAT,DEG,DES,GAS,OIL,POL,WOL(3 | IN |
| SD - 7 | West of SD - 6. | CIU | OBS | STM (2) | PNO | NONE | | FER | IN |
| SD - 8 | West of SD - 7. | CIU | OBS | STM (2) | PNO | NONE | | POL | IN |
| SD - 9 | North of military parking area. | CIU | OBS | STM (4) | PNO | NONE | | FER | IN |
| SD - 10 | South of SD - 9. | CIU | OBS | STM (4) | PNO | NONE | | POL | IN |
| SD - 11 | East of SD - 10 | CIU | OBS | STM (4) | PNO | NONE | | POL | IN |
| | | | | | | | | | |
| WASH RACK | | | | | | | | | |
| WR - 1 | North of OMS building. | CIU/MAT | OBS | SAN | PNO | OWS-1 | CIU/MAT | ANT,BAT,DEG,DES,GAS,OIL,POL,WOL | IN |
| | | | | | | | | | |
| CAN WASH | | | | | | | | | |
| CW - 1 | Outside, south of kitchen. | CIU | OBS | SAN | PNO | GRT-1 | CIU | JAN (5) | IN |
| | | | | | | | | | |
| PRE-TREATMENT SYSTEMS | | | | | | | | | |
| GRT - 1 | South of the AFRC building. | CIU (6) | OBS | SAN | PNO | | | | IN |
| OWS - 1 | North of the OMS building. | CIU/MAT | OBS | SAN | PNO | (7) | | | IN |
| OWS - 2 | Southwest of the OMS building. | CIU/MAT | OBS | SAN | PNO | (7) | | | IN |
| OWS - 3 | Southeast of the OMS building. | CIU/MAT | OBS | SAN | PNO | (7) | | | IN |
| | | | | | | | | | |
| SLOP SINKS | | | | | | | | | |
| SS - 1 | 2nd floor, room 215. | CIU | OBS | SAN | PNO | NONE | | JAN | IN |
| SS - 2 | 1st floor, room 127. | REM | REP | NONE | | NONE | | PAINT (8) | IN |
| SS - 3 | 1st floor, room 136. | CIU | OBS | SAN | PNO | NONE | | JAN | IN |
| | | | | | | | | | |

COMMENTS: (1) SD-1 and SD-2 drain to the base storm system north of the USARC, then into the municipal storm drain system. (2) SD-3, SD-4, SD-5, SD-6, SD-7, and SD-8 drain to the base (then municipal storm system) at the west end of the USARC. (3) SD-6 could potentially collect drainage from the maintenance bays of the OMS building and collects roof drainage from the OMS. (4) SD-9, SD-10, and SD-11 drain to the base/municipal storm system at the east end of the USARC. (5) There is a sheen on the liquid in the drain of CW-1. (6) GRT-1 is a pretreatment system for the kitchen sinks and CW-1 and is not associated with any floor drainage. (7) OWS-1, OWS-2, and OWS-3 are labeled "Sediment Interceptors" on the plans. (8) SS-2 has been plugged and covered with a board upon which are stored various paint cans.

Explanations of report codes follow inventory sheets.

REPORTING CODE EXPLANATIONS

DRAIN.
TYPE.

CW - A can wash is a hard surfaced area with a drain, outside. usually next to a kitchen used for washing garbage cans.
F - A funnel drain collects drainage through a funnel and does not collect any floor drainage directly. These are often found in the boiler rooms
FD - A floor drain is a grated drain collecting drainage from the floor.
GP - A grease platform is an elevated structure onto which vehicles are driven for maintenance. A drain is associated with this structure.
OUT An outlet is the defined point where the effluent of a pipe discharges.
RD - A roof drain collects drainage from a roof usually to discharge onto the ground surface or into the storm drainage system
SD - A storm drain collects outdoor surface drainage usually in the form of a catch basin or drop inlet.
UIC - An underground injection chamber collects drainage to discharge directly into the ground.
WR - A wash rack is a hard surfaced area with a drain designated for washing vehicles.

STATUS.
BLK - The drain is blocked or filled with debris and does not operate properly.
CIU - The drain is currently in use and is operating property.
OTH - The status of the drain is unique and will be further described with a numbered note,
POT - The drain does not currently operate properly however, it is potentially operational without an extensive amount of work done.
REM - The drain has been purposely removed from service.

VERIFIED.
OBS - The issue has been observed by ENSR personnel during the site visit.
NOP - The issue has not been observed by ENSR personnel from the available plans.
PNO - The issue has not been observed by ENSR personnel during the site visit but has been observed from tne available plans
REP - The issue has been confirmed by a verbal report from the site personnel.

OUTFALL.
TYPE.
GRW - The outfall discharges into the groundwater on site.
LCF - The outfall discharges into a leachfield on site.
SAN - The outfall discharges into a local municipal sanitary system.
STM - The outfall discharges into a local municipal storm drainage system.
UNK - The discharge location is unknown.
WTF - The outfall discharges to a wetlands area off of the site property.
WTN - The outfall discharges to a wetlands area on the site property.
WWTP - The outfall discharges to a waste water treatment plant other than municipal.
DRY - The outfall discharges to a drywell on site.
INF - The outfall discharges to an intermittent stream off of the site property.
INN - The outfall discharges to an intermittent stream on the site property.
SRF - The outfall discharges to a stream or a river off of the site property.
SRN - The outfall discharges to a stream or a river on the site property.
SWF - The outfall discharges to standing water off of the site property.
SWN - The outfall discharges to standing water on the site property.

VERIFIED.
OBS - The issue has been observed by ENSR personnel during the site visit.
NOP - The issue has not been observed by ENSR personnel from the available plans.
PNO The issue has not been observed by ENSR personnel during the site visit but has been observed from the available plans.
REP - The issue has been confirmed by a verbal report from the site personnel.

**US ARMY RESERVE CENTER - DRAIN SURVEY**
**REPORTING CODE EXPLANATIONS**

**TREATMENT.**

TYPE.

ANS - An acid neutralizing sump is a treatment system usually associated with drainage from a battery storage area.
DET - A detention basin is a treatment system to separate sediment from Storm drainage.
GRT - A grease trap is a treatment system used to separate grease from the kIchen drainage.
OWS - An oil water separator is a treatment system used to separate oil and other LNAPL materials from drainage.
RT - A running trap is a treatment system used to prevent back flow into drainage pipes.
UNK - It is unknown if the drainage has a treatment system.

STATUS.

CIU - The treatment system is operating but currently in use and is operational.
MAT - The treatment system does not function properly and needs maintenance.
NOT - The treatment system does not operate.
OCC The treatment system operates occasionally.

**POTENTIAL CONTAMINANTS**

ANT - Anti-freeze.
BAT - Battery acid.
CBR - Chemical, biological, or radioactive agents.
DEG - Degreasing solvent (product).
DES - Diesel fud.
FER - Lawn fertilizer.
FLO - Fuel oil.
GAS - Gasoline.
HAZ - Hazardous wastes.
JAN - Janitorial supplies.
OIL - Oil (product).
OTH - The potential contaminant is unique and will be further described with a numbered note.
POL - Any combination of petroleum, oil and lubricants.
UNK - It is unknown if there are any potential contaminants.
WEP - Potential contaminants may occur due to weapons cleaning in the area.
WOL - Waste oil.

**REGULATORY COMPLIANCE.**

CND - The status of compliance can not be determined based on available information
IN - The faalrly is in compliance, based on available information
OUT - The faalrly definlely violates regulatory compliance
POUT. The facility could potentially be out of compliance

# USARMYRESERVECENTERS
# NATURAL RESOURCES SURVEY TABLES

FACILITY ID#: MA007
**CENTER NAME:** Chicopee, Massachusetts - Westover AFRC

TABLE OF CONTENTS

**FILE NAME:**

# DATA COLLECTION AND REPORTING ISSUES

**US** *ARMY* **RESERVE CENTER**
**NATURAL** RESOURCE **INVENTORY**

US **ARMY** RESERVECENTER – NATURAL RESOURCE INVENTORY
**FACILITY ID#:** MA007
**CENTER NAME:** Chicopee. Massachusetts – Westover AFRC

A. CONTRACT SCOPE–OF–WORK

- Review feoeral regulations governing preparabon of Natural Resource Management Plans for USAR sites.
- Conduct a site visit and inventory existing natural resources based on review of existing on–site reports and a general site walkover. A formal wetland delineation is not a part of this scope.
- Provide to the 94th RSC two copies of the hvo **(2)** page draft spreadsheet and map for review, and two copies of the final spreadsheet and map. The final spreadsheet will also be provided on computer disk.
- Delineate vegetative habitats and land uses on the site map provided by the 94th RSC. in pencil.
- Attend three **(3)** in–progress review meetings in Waltham or at Ft. Devens.
- The project will be completed in approximately **12** months from award date, which was 29 September, 1993.

B. GENERAL DATA COLLECTION AND REPORTING ISSUES THAT ARE **COMMON** TO ALL CENTERS

- The site inventory was limited to a one or two day visit.
- The inventory could not be conducted during the optimum season at each Center for the following reasons:

  1) Waiting to initiate inventories until the spring (mid–April) would not have permitted completion of surveys at all 43 Centers, provide an adequate review period for the 94th RSC. and allow ENSR to complete the final reports by the delivery date of 30 October 1994.

  **2)** A one or hvo day survey would not have provided a complete set of natural resource data even if it had been conducted in the spring. For example. amphibian surveys would need to be conducted in April and May, while breeding bird surveys should be conducted in early June.

  3) Similarly, surveys for protected plants would need to be conducted over a two to four month period, based on the flowering season for each protected species.

- Access to the Center early in the morning (bird studies) and at night (amphibian surveys) were generally impractical due to on–site military personnel availability.

***It should*** be ***noted that representative breeding bird data were collected at only a few of the Centers.***

- The vegetative mapping and land use delineations were plotted on site plans provided by CENED. At some Centers, accurate or up–to–date maps were not available. For a number of Centers, the site plans provided did not include the enbre property.
- Limited information was collected for adjacent properties and habitats.
- Development of Natural Resource Management Pans were not within the scope of this project.
- No attempt was made to dentify and map every plant at each Center. If several individuals of the Same species occurred on a Center, me average heignt was inaicated on the summary legend on the facility base map.

C. CENTER – SPECIFIC DATA COLLECTION ISSUES

Note : ***Some*** site ***specific data,*** such as weather, survey dates, contacts, etc. ***are*** included on ***the Summary*** Table for each ———

1) The inventory was conducted on **25** May **1594,** precluding definitive surveys for breeding birds and flowering plants.

2) The property boundary near the housing area and parking lot was not clearly identified

3) The Facility Base Map does not include the entire property to the west–northwest. A new base map should be developed.

FACILITY ID#: MA007 CENTER NAME: Chicopee – Westover AFRC ADDRESS: 5555 Westover AF

CITY: Chicopee COUNTY: Hampden STATE: MA SURVEYED BY: Jim Duncan – ENSR

COMMAND: 94th SITE CONTACT(S):(Name/Rank/Title) Mr. Bernier DATE OF SURVEY: 25 MAY 94

WEATHER: (Day 1 75 deg F. cloudy, winds 15 mph Day 2 NA

REFERENCE SITE PLAN – TITLE: Armed Forces Reserve Center – Westover A.F.B Mass. Grading & Drainage Plan Dwg. No. File No. 7695–823

DRAWING DATE: 30 APRIL 76 CONTRACTOR: Von Storch & Burkavage Clarks Summit & Media, Penna. SHEETNUMBER: 3 of 64 OTHER:

Scale: 1"=30'

| A. FACILITIES/HABITATS | IMPROVED GROUNDS | SEMI–IMPROVED GROUNDS | UNIMPROVED GROUNDS | COMMENTS |
|---|---|---|---|---|
| Buildings and Paved Areas (ac) | 3.45 acres | 0.57 acres | \ | Some gravel/grass/dirt parking within fence. |
| Grassed Areas (ac) | \ | 4.41 acres | \ | Prinarity lawn. |
| Wooded Areas (ac) | \ | \ | 3.97 acres | Significant stand of mature climax upland hardwoods. Acreage approximate. |
| Water (ac) | \ | \ | \ | \ |
| Total (ac) (12.4 acres) | 3.45 acres | 4.98 acres | 3.97 acres | |

"PROPERTY LINE NEAR HOUSING AND PARKING COMPLEX COULD NOT BE DETERMINED; ASSUME PART OF PARKING LOT ON CENTER PROPERTY".

| B. Human Uses | COMMENTS |
|---|---|
| Scenic and Natural Areas | None on Center. |
| Aesthetic Values | None on Center. Upland hardwood forest. |
| Recreational Areas | Yes. Picnic pavillion with table, barbecue pit, and volleyball court. |
| Public Use | No. |
| Milllitary Use Only | Yes. |

| C. MANAGEMENT PLANS | None identified. |
|---|---|

| C.1 TIMBER Mgmt. Prog. | None identified. |
|---|---|
| Commercial Forest (ac) | Yes. Approximately 3 acres; 50 to 100 commercially valuable oaks. |

| C.2 Wildlife Mgmt. Prog. | None identified. |
|---|---|
| Hunting | None identified. |
| Fishing | None identified. |

| C.3 Programs With State or Federal Agencies | None identified. |
|---|---|

| C.4 Grounds Maintenance | |
|---|---|
| Landscaping | Yes. Extensive lawn with large native oaks, maples, and pines. Also extensive landscape shrubs around Center. |
| Prescribed Burning | Not used. |
| Weed Control | Subcontracted. Primarily lawn care. No evidence of herbicide use. Brush hog used to clear inside of fence. |
| Agricultural Activity | None observed. |
| Pest Control | No insecticide us indicated. |

FACILITY ID#: MA007 CENTER NAME: Chicopee – Westover AFRC ADDRESS, 5555 Westover AF

CITY: Chicopee COUNTY: Hampden STATE: MA SURVEYED BY: Jim Duncan – ENSR

COMMAND: 94th SITE CONTACT(S):(Name/Rank/Title) Mr. Bernier DATE OF SURVEY: 25 MAY 94

## D. NATURAL RESOURCES

| D.1 Surface Water Bodies | Pond/Impoundment | Lake | River | Brook | Offsite Discharge |
|---|---|---|---|---|---|
| General Occurrence | \ | \ | \ | \ | Base or Municipal? |
| Acres (est) | \ | \ | \ | \ | \ |

| D.2 Wetlands | Riverine | Lacustrine | Palustrine | Estuarine | Marine |
|---|---|---|---|---|---|
| General Occurrence | \ | \ | \ | \ | \ |
| Sub–Type Species (1) | \ | \ | \ | \ | \ |
| Floodplains/Riparian Veg. | \ | \ | \ | \ | \ |
| Acres (est.) | \ | \ | \ | \ | \ |

| D.3 Upland Vegetation | Trees | Shrubs | Grasses | Forbs | |
|---|---|---|---|---|---|
| General Occurrence | Yes | Yes | Yes | Yes | |
| State Protected Species | NONE IDENTIFIED BY THE MASSACHUSETTS NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM (REFER TO TABLES A2 AND A3. SEE ATTACHED LETTER). | | | | |
| Federally Protected Species | NONE IDENTIFIED BY U.S. FISH AND WILDLIFE SERVICE (REFER TO TABLES A2 AND A3. SEE ATTACHED LETTER). | | | | |
| Commercially Valuable | Yes 50–100 oaks. | \ | \ | \ | |

| D.4 Invertebates | | | | | |
|---|---|---|---|---|---|
| State Protected Species | NONE IDENTIFIED BY THE MASSACHUSETTS NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM (REFER TO TABLE A2. SEE ATTACHED LETTER). | | | | |
| Federally Protected Species | NONE IDENTIFIED BY U.S. FISH AND WILDLIFE SERVICE (REFER TO TABLE A2. SEE ATTACHED LETTER). | | | | |

| | | | | Freshwater | | | | |
|---|---|---|---|---|---|---|---|---|
| D.5 Fish | Marine | Estuarine | Marsh | Pond | Lake | Brook | River | Impoundment |
| General Occurrence | \ | \ | \ | \ | \ | \ | \ | \ |
| State Protected Species | NONE IDENTIFIED BY THE MASSACHUSETTS NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM (REFER TO TABLE A2. SEE ATTACHED LETTER). | | | | | | | |
| Federally Protected Species | NONE IDENTIFIED BY U.S. FISH AND WILDLIFE SERVICE (REFER TO TABLE A2. SEE ATTACHED LETTER). | | | | | | | |
| Sport Fishing | \ | \ | \ | \ | \ | \ | \ | \ |
| Commercial Use | \ | \ | \ | \ | \ | \ | \ | \ |

FACILITY ID#: MA007 CENTER NAME: Chicopee – Westover AFRC ADDRESS 5555 Westover AF

CITY: Chicopee COUNTY: Hampden STATE: MA SURVEYEDBY Jim Duncan – ENSR

COMMAND: 94th SITE CONTACT(S):(Name/Rank/Title) Mr. Bernier DATE OF SURVEY: 25 MAY 94

| D.6 Reptiles and Amphibians | Salamanders | Frogs | Toads | Turtles | Lizards | Snakes |
|---|---|---|---|---|---|---|
| General Occurrence | SEE TABLE A1 | \ | SEE TABLE A1 | SEE TABLE A1 | \ | SEE TABLE A1 |
| State Protected Species | NONE IDENTIFIED BY THE MASSACHUSETTS NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM (REFER TO TABLE A2. SEE ATTACHED LETTER). | | | | | |
| Federally Protected Species | NONE IDENTIFIED BY U.S. FISH AND WILDLIFE SERVICE (REFER TO TABLE A2. SEE ATTACHED LETTER). | | | | | |

| D.7 Birds | Waterbirds (3) | Raptors (4) | Gamebirds (5) | Flycatchers | Swallows | |
|---|---|---|---|---|---|---|
| General Occurrence (2) | S SEE TABLE A5 | H,O SEE TABLE A5 | G,T,W SEE TABLE A5 | SEE TABLE A5 | SEE TABLE A5 | |
| Nesting | S SEE TABLE A5 | H,O SEE TABLE A5 | G,T,W SEE TABLE A5 | SEE TABLE A5 | SEE TABLE A5 | |
| Migration | S SEE TABLE A5 | H SEE TABLE A5 | W SEE TABLE A5 | SEE TABLE A5 | SEE TABLE A5 | |
| Wintering | \ | H,O SEE TABLE A5 | G,T SEE TABLE A5 | \ | \ | |
| State Protected Species | NONE IDENTIFIED BY THE MASSACHUSETTS NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM (REFER TO TABLE A2. SEE ATTACHED LETTER). | | | | | |
| Federally Protected Species | NONE IDENTIFIED BY U.S. FISH AND WILDLIFE SERVICE (REFER TO TABLE A2. SEE ATTACHED LETTER). | | | | | |
| Waterfowl Hunting | \ | \ | \ | \ | \ | |
| Gamebird Hunting | \ | \ | \ | \ | \ | |

| D.7 Birds *(CONT'D)* | Woodpeckers | Wood Warblers | Thrushes | Sparrows | Other Passerines |
|---|---|---|---|---|---|
| General Occurrence (2) | SEE TABLE A5 | SEE TABLE A5 | SEE TABLE A5 | SEE TABLE A5 | SEE TABLE A5 |
| Nesting | SEE TABLE A5 | SEE TABLE A5 | SEE TABLE A5 | SEE TABLE A5 | SEE TABLE A5 |
| Migration | \ | SEE TABLE A5 | SEE TABLE A5 | SEE TABLE A5 | SEE TABLE A5 |
| Wintering | SEE TABLE A5 | \ | \ | SEE TABLE A5 | SEE TABLE A5 |
| State Protected Species | NONE IDENTIFIED BY THE MASSACHUSETTS NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM (REFER TO TABLE A2. SEE ATTACHED LETTER). | | | | |
| Federally Protected Species | NONE IDENTIFIED BY U.S. FISH AND WILDLIFE SERVICE (REFER TO TABLE A2. SEE ATTACHED LETTER). | | | | |

FACILITY ID#: MA007 CENTER NAME: Chicopee – Westover AFRC ADDRESS: 5555 Westover AF

CITY: Chicopee COUNTY: Hampden STATE: MA SURVEYEDBY: Jim Duncan – ENSR

COMMAND: 94th SITE CONTACT(S):(Name/Rank/Title) Mr. Bernier DATE OF SURVEY: 25 MAY 94

| D.8 Mammals | Marsupials | Insectivores (6) | Bats | Rodents (7) | Carnivores (8) | Deer/Moose |
|---|---|---|---|---|---|---|
| General Occurrence | SEE TABLE A1 | S,M SEE TABLE A1 | SEE TABLE A1 | R,H,C,S,M,V,JM SEE TABLE A1 | CN,R,W,S,CT SEE TABLE A1 | Deer |
| State Protected Species | NONE IDENTIFIED BY THE MASSACHUSETTS NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM (REFER TO TABLE A2. SEE ATTACHED LETTER). | | | | | |
| Federally Protected Species | NONE IDENTIFIED BY U.S. FISH AND WILDLIFE SERVICE (REFER TO TABLE A2. SEE ATTACHED LETTER). | | | | | |
| Game Species | \ | \ | \ | R,S | \ | Not hunted. |
| Furbearers | SEE TABLE A1 | \ | \ | \ | CN,R,W,S,CT SEE TABLE A1 | \ |

| D.9 Other Protected Species | | | | | | | |
|---|---|---|---|---|---|---|---|
| State Protected Species | NONE IDENTIFIED BY THE MASSACHUSETTS NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM (REFER TO TABLE A2. SEE ATTACHED LETTER). | | | | | | |
| Federally Protected Species | NONE IDENTIFIED BY U S FISH AND WILDLIFE SERVICE (REFER TO TABLE A2. SEE ATTACHED LETTER) | | | | | | |

SUMMARY AND RECOMMENDATIONS:

SUMMARY:

Significant upland hardwood woodland on Center; many red. black, and white oaks over 70 feet tall
Closed canopy prevents significant understory regeneration.
Lawn areas contain mainy large oak, maple, and pine trees over 50 feet tall

RECOMMENDATIONS:

Remove several of the large oak trees in the woodland to promote understory regeneration Create brush piles from fallen tree limbs (do not remove from site).
Plant fruit–bearing shrubs and low growing trees in lawn and along fences.
Erect gray squirrel nesting boxes ( 4 in woodland and 2 in trees in lawn).
Erect American kestrel nesting boxes in open areas (4 total).
Erect screech owl nesting boxes in woodland habnats ( 4 total)
Erect chickadee/tree swallow/nuthatch/wren/bluebird nesting boxes in woodland, on trees in lawn, and along fence ( 20 total)
Erect American robin/house finch/eastern phoebe/barn swallow nesting platforms on Center buildings, in woodland, and on trees in lawn ( 15 total).

RECOMMENDATIONS ARE ONLY SUGGESTIONS AND ARE NOT MEANT TO SERVE AS A MANAGEMENT PLAN. PERMITS MAY RE REQUIRED FOR SOME OF THESE ACTIONS.

FACILITY ID#: MA007 CENTER NAME: Chicopee – Westover AFRC ADDRESS 5555 Westover AF

CITY: Chicopee COUNTY: Hampden STATE: MA SURVEYED BY: Jim Duncan – ENSR

COMMAND: 94th SITE CONTACT(S):(Name/Rank/Title) Mr. Bernier DATE OF SURVEY: 25 MAY 94

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Legend:

'SEE TABLE" indicates that e species or species group is expected based on range and habitat requirements. Refer to the indicated table for a list of species.

\ Indicates species or species group is not expected to occur on the USARC because suitable habitat is not present.

1) Subtype

| RIVERINE | LACUSTRINE | PALUSTRINE | ESTUARINE | MARINE |
|---|---|---|---|---|
| Tidal | Limnetic | Emergent = E | Intertidal | Subtidal |
| Lower perennial | Littoral | Scrub–Shrub = S/S | | Intertidal |
| Upper perennial | | Forested = F | | |
| Intermittent | | Open Water =OW | | |
| Unknown Perennial | | | | |

2) Observed species are listed in Table A I

**3)** WATERBIRDS

Ocean/Marine = O/M
Waterfowl = W
Herons = H
Shorebirds = **S**

4) RAPTORS

Hawks = H
Owls = **O**
Eagles = E

5) GAMEBIRDS

Grouse = G
Quail = Q
Pheasant = P
Turkey = T
Woodcock = W

6) INSECTIVORES

Shrews = S
Moles = M

7) RODENTS

Rabbits = R
Hares = H
Beaver = B
Chipmunks = C
Squirrels = **S**
Mice = M
Rats = RS
Voles = V
Jumping mice = JM

8) CARNIVORES

Canids = CN
Bears = B
Raccoon = R
Weasels = W
Skunks = **S**
Cats = CT

US ARMY RESERVE CENTER – NATURAL RESOURCES SURVEY

SURVEYED BY: Jim Duncan ENSR

FACILITY I D # MA007

SURVEY DATE(S): 25 MAY 94

CENTER NAME: Chicopee. Massachusetts – Westover–AFRC

WILDLIFE SPECIES REPORTED: None

## TABLE A1

## WILDLIFE AND VEGETATION SPECIES OBSERVED AND EXPECTED TO OCCUR ON THE CHICOPEE, MASSACHUSETTS AFRC (1994)

### WILDLIFE SPECIES OBSERVED

| BIRDS | BIRDS | MAMMALS | AMPHIBIANS | REPTILES |
|---|---|---|---|---|
| Mourning dove | Tree swallow | Eastern gray squirrel | Jefferson salamander ? | |
| Common crow | Eastern wood pewee | Mole spp. | | |
| Northern mockingbird | Tufted titmouse | Woodchuck | | |
| House sparrow | Bay–breasted warbler | | | |
| Rock dove | Blue jay | | | |
| Chimney swift | Purple finch | | | |
| European starling | Cedar waxwing | | | |
| Scarlet tanager | Black–capped chickadee | | | |
| American robin | Broad–winged hawk (flyover) | | | |
| Chipping sparrow | Common flicker | | | |
| Wood thrush | American goldfinch | | | |
| Rose–breasted grosbeak | | | | |

### WILDLIFE SPECIES EXPECTED

| | MAMMALS | MAMMALS | AMPHIBIANS | REPTILES |
|---|---|---|---|---|
| | Silver–haired bat | Woodland vole | Marbled salamander | wood turtle |
| | Eastern pipistrelie | House mouse | Jefferson salamander | Eastern box turtle |
| *SEE TABLE AS FOR A LIST* | Big brown bat | Woodland jumping mouse | Blue–spotted salamander | Northern brown snake |
| *OF MPECTED BIRDS.* | Eastern red bat | coyote | Spotted salamander | Northern redbelly snake |
| | Hoary bat | Red fox | Red–spotted newt | Eastern garter snake |
| | Eastern cottontail | Common gray lox | Redback salamander | Eastern hognose snake |
| MAMMALS | Eastern chipmunk | Common raccoon | Northern two–lined salamander | Northern ringneck snake |
| Virginia opossum | Woodchuck | Ermine | Eastern American load | Eastern worm snake |
| Common masked shrew | Eastern gray squirrel | Long–tailed weasel | | Northern black racer |
| Northern short–tailed shrew | Red squirrel | Striped skunk | | Smooth green snake |
| Hairy–tailed mole | Southern flying squirrel | Bobcat | | Black rat Make |
| Eastern moie | Northern flying squirrel | Whita–tailed deer | | Eastern milk snake |
| Star–nosed mole | White–footed mouse | | | Northern copperhead |
| Little brown myotis | Southern red–backed vole | | | |
| Keen's myotis | Meadow vole | | | |

### VEGETATION SPECIES OBSERVED

| | NATIVE S ECIES | | | ORNAMENTAL SPECIES | |
|---|---|---|---|---|---|
| GRASSES/FORBS | SHRUBS | TREES | TREES | SHRUBS | TREES |
| Yarrow | Honeysuckle shrub | Red oak | Red maple | Winged euonymus | Mimosa |
| Wild strawberry | Sumac spp. | Paper birch – 2 var. | White pine | Pfitzer juniper. | |
| Raspberry | Sweet tern | Bigtooth aspen | Scrub pine ? | Yew spp. | |
| Buttercup spp. | Wild grape | Quaking aspen | Red pine | Common lilac | |
| Violet spp. | Escaped yew | Black cherry | Eastern hemlock | Cotoneaster spp. | |
| Ground holly | Escaped juniper | Eastern red cedar | Scotch pine | | |
| | | Crab apple | Hazlenut | | |
| | | Atlantic white cedar | Pin oak | | |
| | | | White oak | | |

FACILITY ID# MA007

CENTER NAME. Chicopee, Massachusetts – Westover AFRC

## TABLE A2
## FEDERAL AND STATE PROTECTED SPECIES POTENTIALLY OCCURRING ON THE CHICOPEE. MASSACHUSETTS USARC (1994)

| 1)PLANTS | Status | Species |
|---|---|---|
| | *SEE TABLE A3 FOR A LIST OF PROTECTED PLANTS POTENTIALLY OCCURRING ON THE CENTER.* | |

| 2)INVERTEBRATES | Status | Species |
|---|---|---|
| | None identified in Natural Diversity Data Base (Natural Heritage Program) | |

*"SOME OF THE 43 STATE AND FEDERAL PROTECTED INVERTEBRATE SPECIES OCCUR IN HABITATS SIMILAR TO THOSE OCCURRING ON TILE USARC; A DETAILED ANALYSIS OF THEIR POTENTIAL OCCURRENCE HAS NOT BEEN MADE".*

| 3)AMPHIBIANS | Status | Species | RECORDS |
|---|---|---|---|
| | *SC* | ***BLUE–SPOTTED SALAMANDER*** | ***(*LUDLOW 1992)*** |
| | *SC* | *JEFFERSON SALAMANDER* | |
| | *ST* | *MARBLED SALAMANDER* | |

| 4)REPTILES | Status | Species | |
|---|---|---|---|
| | *SC* | ***WOOD TURTLE*** | *(*CHICOPEE – NO DATE)* |
| | *SC* | *EASTERN BOX TURTLE* | *(*LUDLOW 1991)* |
| | *ST* | *EASTERN WORMSNAKE* | |
| | *SE* | *BUCKRATSNAKE* | |
| | *SE* | *NORTHERN COPPERHEAD* | |

| 5)BIRDS | Status | Species | |
|---|---|---|---|
| | *SC* | *SHARP–SHINNED HAWK* | *(*CHICOPEE 1884)* |
| | *SC* | *COOPER'S HAWK* | |

| 6)MAMMALS | Status | Species |
|---|---|---|
| | *NONE* | |

*'DENOTES TOWN AND DATE SPECIES LAST OBSERVED(NATURAL HERITAGE PROGRAM)*

**SC = SPECIES OFCONCERN**
**ST = STATE THREATENED SPECIES** **SE = STATE ENDANGERED SPECIES**

TABLE A9
STATE AND FEDERAL PROTECTED PLANT SPECIES POTENTIALLY OCCURRING ON THE CHICOPEE, MASSACHUSEITS USARC (1994)

| STATUS | COMMON NAME | SCIENTIFIC NAME | HABITAT | FLOWERING SEASON | DATE LAST RECORDED |
|---|---|---|---|---|---|
| SC | Philadelphia panic–grass | *Panicum philadelphicum* | Roadsides, shores. open woods. | 8/7 – 9/2 | *Ludlow 1980 |
| SE,FE | Small whorled pogonia | *Isotria medeoloides* | Rich woods. | 6/11 – 7/6 | |

* Denotes town and date species last observed ( Natural Heritage Program

SC = STATE SPECIES OF CONCERN
SE = STATE ENDANGERED SPECIES
FE = FEDERAL ENDANGERED SPECIES

RANGES FROM:
STATE OF MASSACHUSETTS, DIVISION OF FISHERIES AND WILDLIFE 1994

HABITATS FROM
SEYMOUR 1993

TABLE A4

AMPHIBIANS AND REPTILES WHOSE RANGES INCLUDE! THE CHICOPEE. MASSACHUSETTS USARC (1994)

| | |
|---|---|
| MUDPUPPY | *NECTURUS MACULOSUS MACULOSUS* |
| MARBLED SALAMANDER • | *AMBYSTOMA OPACUM* |
| JEFFERSON SALAMANDER | *AMBYSTOMA JEFFERSONIANUM* |
| BLUE–SPOTTED SALAMANDER | *AMBYSTOMA LATERALE* |
| SPOTTED SALAMANDER | *AMBYSTOMA MACULATUM* |
| RED–SPOTTED NEWT | *NOTOPHTHALMUS VIRIDESCENS VIRIDESCENS* |
| NORTHERN DUSKY SALAMANDER | *DESMOGNATHUS FUSCUS FUSCUS* |
| REDBACK SALAMANDER | *PLETHODON CINEREUS* |
| FOUR–TOED SALAMANDER | *HEMIDACTYLIUM SCUTATUM* |
| NORTHERN SPRING SALAMANDER | *GYRINOPHILUS PORPHYRITICUS PORPHYRITICUS* |
| NORTHERN TWO–LINED SALAMANDER | *EURYCEA BISLINEATA* |
| EASTERN SPADEFOOT | *SCAPHIOPUS HOLBROOKII HOLBROOKII* |
| EASTERN AMERICAN TOAD | *BUFO AMERICANUS AMERICANUS* |
| FOWLER'S TOAD | *BUFO WOODHOUSII FOWLERI* |
| NORTHERN SPRING PEEPER | *PSEUDACRIS CRUCIFER CRUCIFER* |
| GRAY TREEFROG | *HYLA VERSICOLOR* |
| BULLFROG | *RANA CATESBEIANA* |
| GREEN FROG | *RANA CLAMITANS MELANOTA* |
| WOOD FROG | *RANA SYLVATICA* |
| NORTHERN LEOPARD FROG | *RANA PIPIENS* |
| PICKEREL FROG | *RANA PALUSTRIS* |
| COMMON SNAPPING TURTLE | *CHELYDRA SERPENTINA SERPENTINA* |
| COMMON MUSK TURTLE | *STERNOTHERUS ODORATUS* |
| SPOTTED TURTLE | *CLEMMYS GUTTATA* |
| WOOD TURTLE | *CLEMMYS INSCULPTA* |
| EASTERN BOX TURTLE | *TERRAPENE CAROLINA CAROLINA* |
| EASTERN PAINTED TURTLE * | *CHRYSEMYS PICTA PICTA* |
| MIDLAND PAINTED TURTLE • | *CHRYSEMYS PICTA MARGINATA* |
| NORTHERN WATER SNAKE | *NERODIA SIPEDON SIPEDON* |
| NORTHERN BROWN SNAKE | *STORERIA DEKAYI DEKAYI* |
| NORTHERN REDBELLY SNAKE | *STORERIA OCCIPITOMACULATA OCCIPITOMACULATA* |
| EASTERN GARTER SNAKE | *THAMNOPHIS SIRTALIS SIRTALIS* |
| EASTERN RIBBON SNAKE | *THAMNOPHIS SAURITUS SAURITUS* |
| EASTERN HOGNOSE SNAKE | *HETERODON PLATIRHINOS* |
| NORTHERN RINGNECK SNAKE | *DIADOPHIS PUNCTATUS EDWARDSII* |
| EASTERN WORM SNAKE • | *CARPHOPHIS AMOENUS AMOENUS* |
| NORTHERN BLACK RACER | *COLUBER CONSTRICTOR CONSTRICTOR* |
| SMOOTH GREEN SNAKE | *OPHEODRYS VERNALIS* |
| BLACK RAT SNAKE | *ELAPHE OBSOLETA OBSOLETA* |
| EASTERN MILK SNAKE | *LAMPROPELTIS TRIANGULUM TRIANGULUM* |
| NORTHERN COPPERHEAD | *AGKISTRODON CONTORTRIX MOKASEN* |
| TIMBER RATTLESNAKE | *CROTALUS HORRIDUS* |

• Reserve Center is **near** me edge of me species geographic range.

NOMENCLATURE FROM:
SOCIETY FOR THE STUDY OF AMPHIBIANS AND REPTILES 1990.

RANGES FROM:
1) CORDOZA AND MIRICK 1987.
2) OEGRAAFAND RUDIS 1983a.
3) OEGRAAF AND RUDIS 1983b.

# TABLE A5

*BREEDING BIRDS WHOSE RANGES INCLUDE THE CHICOPEE. MASSACHUSETTS USARC INCLUDING POTENTIAL NESTING SPECIES (19914)*

| | |
|---|---|
| *Pied–billed grebe* | *Podilymbus podiceps* |
| *American bittern* | *Botaurus lentiginosus* |
| *Least bittern* | *Ixobrychus exilis* |
| *Great blue heron* | *Ardea herodias* |
| *Green–backed heron* | *Butorides striatus* |
| *Canada goose* | *Branta canadensis* |
| *Wood duck* | *Aix sponsa* |
| *Green–winged teal* | *Anas crecca* |
| *American black duck* | *Anas rubripes* |
| *Mallard* | *Anas platyrhynchos* |
| *Blue–winged teal* | *Anas discors* |
| *Hooded merganser* | *Lophodytes cucullatus* |
| *Common merganser* | *Mergus merganser* |
| **Turkey vulture** | *Cathartes aura* |
| **Sharp–shinned hawk** | *Accipiter striatus* |
| **Cooper's hawk** | *Accipiter cooperii* |
| **Northern goshawk** | *Accipiter gentilis* |
| **Red–shouldered hawk** | *Buteo lineatus* |
| **Broad–winged hawk** | *Buteo platypterus* |
| **Red–tailed hawk** | *Buteo jamaicensis* |
| **American kestrel** | *Falco sparverius* |
| **Peregrine falcon** | *Falco peregrinus* |
| **Ring–necked pheasant** | *Phasianus colchicus* |
| **Ruffed grouse** | *Bonasa umbellus* |
| **Wild turkey** | *Meleagris gallopavo* |
| **Northern bobwhite** | *Colinus virginianus* |
| *King rail* | *Rallus elegans* |
| *Virginia rail* | *Rallus limicola* |
| *Sora* | *Porzana carolina* |
| **Common moorhen** | *Gallinula chloropus* |
| **Killdeer** | *Charadrius vociferus* |
| *Spotted sandpiper* | *Actitis macularia* |
| *Upland sandpiper* | *Bartramia longicauda* |
| **Common snipe** | *Gallinago gallinago* |
| **American woodcock** | *Scolopax minor* |
| **Rock dove** | *Columba livia* |
| **Mourning dove** | *Zenaida macroura* |
| **Black–billed cuckoo** | *Coccyzus erythropthalmus* |
| **Yellow–billed cuckoo** | *Coccyzus americanus* |
| **Barn owl** | *Tyto alba* |
| **Eastern screech owl** | *Otus asio* |
| **Great horned owl** | *Bubo virginianus* |
| **Barred owl** | *Strix varia* |
| **Northern saw–whet owl** | *Aegolius acadicus* |
| **Common nighthawk** | *Chordeiles minor* |
| **Whip–poor–will** | *Caprimulgus vociferus* |
| **Chimney swift** | *Chaetura pelagica* |
| **Ruby–throated hummingbird** | *Archilochus colubris* |
| **Belted kingfisher** | *Ceryle alcyon* |
| **Red–headed woodpecker** | *Melanerpes erythrocephalus* |
| **Red–bellied woodpecker** | *Melanerpes carolinus* |
| **Yellow–bellied sapsucker** | *Sphyrapicus varius* |
| **Downy woodpecker** | *Picoides pubescens* |
| **Hairy woodpecker** | *Picoides villosus* |

**TABLE A5 cont.**
**BREEDING BIRDS WHOSE RANGES INCLUDE THE CHICOPEE. MASSACHUSETTS USAAC INCLUDING POTENTIAL NESTING SPECIES (199'4)**

| | |
|---|---|
| Northern flicker | *Colaptes auratus* |
| Pileated woodpecker | *Cryocopus pileatus* |
| Eastern wood–pewee | *Contopus virens* |
| Acadian flycatcher | *Empidonax virescens* |
| Alder flycatcher | *Empidonax alnorum* |
| Willow flycatcher | *Empidonax traillii* |
| Least flycatcher | *Empidonax minimus* |
| Eastern phoebe | *Sayornis phoebe* |
| Great–crested flycatcher | *Myiarchus crinitus* |
| Eastern kingbird | *Tyrannus tyrannus* |
| Horned lark | *Eremophila alpestris* |
| Purple martin | *Progne subis* |
| Tree swallow | *Tachycineta bicolor* |
| Northern rough–winged swallow | *Stelgidopteryx serripennis* |
| Bank swallow | *Riparia riparia* |
| Cliff swallow | *Hirunda pyrrhonota* |
| Barn swallow | *Hirundo rustica* |
| Blue jay | *Cyanocitta cristata* |
| American crow | *Corvus brachyrhynchos* |
| Fish crow | *Corvus ossifragus* |
| Common raven | *Corvus corax* |
| Black–capped chickadee | *Parus atricapillus* |
| Tufted titmouse | *Parus bicolor* |
| Red–breasted nuthatch | *Sitta canadensis* |
| White–breasted nuthatch | *Sitta carolinensis* |
| Brown creeper | *Certhia americana* |
| Carolina wren | *Thryothorus ludovicianus* |
| House wren | *Troglodytes aedon* |
| Winter wren | *Troglodytes troglodytes* |
| Sedge wren | *Cistothorus platensis* |
| Marsh wren | *Cistothorus palustris* |
| Golden–crowned kinglet | *Regulus satrapa* |
| Blue–gray gnatcatcher | *Polioptila caerulea* |
| Eastern bluebird | *Sialia sialis* |
| Veery | *Catharus fuscescens* |
| Hermit thrush | *Catharus guttatus* |
| Wood thrush | *Hylocichla mustelina* |
| American robin | *Turdus migratorius* |
| Gray catbird | *Dumetella carolinensis* |
| Northern mockingbird | *Mimus polyglottos* |
| Brown thrasher | *Toxostoma rufum* |
| Cedar waxwing | *Bombycilla cedrorum* |
| European starling | *Sturnus vulgaris* |
| Solitary vireo | *Vireo solitarius* |
| Yellow–throated vireo | *Vireo flavifrons* |
| Warbling vireo | *Vireo gilvus* |
| Red–eyed vireo | *Vireo olivaceus* |
| Blue–winged warbler | *Vermivora pinus* |
| Golden–winged warbler | *Vermivora chrysoptera* |
| Nashville warbler | *Vermivora ruficapilla* |
| Yellow warbler | *Dendroica petechia* |
| Chestnut–sided warbler | *Dendroica pensylvanica* |
| Magnolia warbler | *Dendroica magnolia* |
| Black–throated blue warbler | *Dendroica caerulescens* |
| Yellow–rumped warbler | *Dendroica coronata* |
| Black–throated green warbler | *Dendroica virens* |

TABLE A5 cont.
BREEDING BIRDS WHOSE RANGES INCLUDE THE CHICOPEE. MASSACHUSETTS USARC INCLUDING POTENTIAL NESTING SPECIES (1994)

| | |
|---|---|
| Blackburnian warbler | *Oendroica fusca* |
| **Pine warbler** | *Dendroica pinus* |
| **Prairie warbler** | *Dendroica discolor* |
| **Cerulean warbler** | *Dendroica cerulea* |
| **Black–and–white warbler** | Mniotilta varia |
| **American redstart** | *Setophaga ruticilla* |
| **Worm–eating warbler** | *Helmitheros vermivorus* |
| **Ovenbird** | *Seiurus aurocapillus* |
| **Northern waterthrush** | *Seiurus noveboracensis* |
| Louisiana waterthrush | *Seiurus motacilla* |
| Common yellowthroat | *Geothlypis trichas* |
| Canada warbler | *Wilsonia canadensis* |
| **Yellow–breasted chat** | *Icteria virens* |
| **Scarlet tanager** | *Piranga olivacea* |
| **Northern cardinal** | *Cardinalis carolinalis* |
| **Rose–breasted grosbeak** | *Pheucticus ludovicianus* |
| **Indigo bunting** | *Passerina cyanea* |
| **Rufous–sided towhee** | *Pipilo erythrophthalmus* |
| **Chipping sparrow** | *Spizella passerina* |
| Field sparrow | *Spizella pusilla* |
| Vesper sparrow | *Pooectes gramineus* |
| Savannah **sparrow** | *Passerculus sandwichensis* |
| **Grasshopper sparrow** | *Ammodramus savannarum* |
| **Song sparrow** | *Melospiza melodia* |
| Swamp sparrow | *Melospiza georgiana* |
| White–throated sparrow | *Zonotrichia albicollis* |
| Dark–eyed junco | *Junco hyemalis* |
| Bobolink | *Dolichonyx oryzivorus* |
| Red–winged blackbird | *Agelaius phoeniceus* |
| **Eastern meadowlark** | *Sturnella magna* |
| **Common grackle** | *Quiscalus quiscula* |
| **Brown–headed cowbird** | *Molothrus ater* |
| **Orchard oriole** | *Icterus spurius* |
| **Northern oriole** | *Icterus galbula* |
| **Purple finch** | *Carpodacus purpureus* |
| **House finch** | *Carpodacus mexicanus* |
| Pine siskin | *Carduelis pinus* |
| **American goldfinch** | *Carduelis tristis* |
| **House sparrow** | *Passer domesticus* |

**DENOTES SPECIES POTENTIALLY NESTING ON THE USARC BECAUSE SUITABLE HABITAT IS PRESENT.**

NOMENCLATURE FROM:
AMERICAN BIRDING ASSOCIATION 1990.

RANGES FROM:
1) DEGPAAF AND RUDIS 1983b.
2) VEIT AND PETERSEN 1993.

TABLE A6
MAMMALS WHOSE RANGES INCLUDE THE CHICOPEE, MASSACHUSETTS USARC (1994)

| | |
|---|---|
| VIRGINIA OPOSSUM | *DIDELPHIS VIRGINIANA* |
| COMMON MASKED SHREW | *SOREX CINEREUS* |
| WATER SHREW | *SOREX PALUSTRIS ALBIBARBIS* |
| SMOKEY SHREW | *SOREX FUMEUS* |
| NORTHERN SHORT–TAILED SHREW | *BLARINA BREVICAUDA* |
| HAIRY–TALED MOLE | *PARASCALOPS BREWERI* |
| EASTERN MOLE | *SCALOPUS AQUATICUS* |
| STAR–NOSED MOLE | *CONDYLURA CRISTATA* |
| LITTLE BROWN MYOTIS | *MYOTIS LUCIFUGUS* |
| KEENS MYOTIS | *MYOTIS KEENII SEPTENTRIONALIS* |
| SLVER–HAIRED BAT | *LASIONYCTERIS NOCTIVAGANS* |
| EASTERN PIPISTRELLE | *PIPISTRELLUS SUBFLAVUS OBSCURUS* |
| BIG BROWN BAT | *EPTESICUS FUSCUS* |
| EASTERN RED BAT | *LASIURUS BOREALIS* |
| HOARY BAT | *LASIURUS CINEREUS* |
| EASTERN COTTONTAIL | *SYLVILAGUS FLORIDANUS* |
| NEW ENGLAND COTTONTAL | *SYLVILAGUS TRASITIONALIS* |
| SNOWSHOE HARE | *LEPUS AMERICANUS* |
| EASTERN CHIPMUNK | *TAMIAS STRIATUS* |
| WOODCHUCK | *MARMOTA MONAX* |
| EASTERN GRAY SOUIRREL | *SCIURUS CAROLINENSIS PENNSYLVANICUS* |
| REO SQUIRREL | *TAMIASCIURUS HUDSONICUS* |
| SOUTHERN FLYING SOUIRREL | *GLAUCOMYS VOLANS* |
| NORTHERN FLYING SQUIRREL | *GLAUCOMYS SABRINUS MACROTIS* |
| AMERICAN BEAVER | *CASTOR CANADENSIS* |
| DEER MOUSE * | *PEROMYSCUS MANICULATUS* |
| WHITE–FOOTED MOUSE | *PEROMYSCUSLEUCOPUS* |
| SOUTHERN RED–BACKED VOLE | *CLETHRIONOMYS GAPPERI* |
| MEADOW VOLE | *MICRONS PENNSYLVANICUS* |
| WOODLAND VOLE | *MICRONS PINETORUM SCALOPSOKES* |
| COMMON MUSKRAT | *ONDATRA ZIBETHICUS* |
| SOUTHERN BOG LEMMING | *SYNAPTOMVS COOPERI* |
| BLACK RAT | *RATTUS RATTUS* |
| NORWAY RAT | *RATTUS NORVEGCUS* |
| HOUSE MOUSE | *MUS MUSCULUS* |
| MEADOW JUMPING MOUSE | *ZAPUS HUDSONIUS* |
| WOODLAND JUMPING MOUSE | *NAPAEOZAPUS INSIGNIS* |
| COMMON PORCUPINE | *ERETHIZON DORSATUM DORSATUM* |
| COYOTE | *CANIS LATPANS* |
| REO FOX | *VULPES VULPES* |
| COMMON GRAY FOX | *UROCYON CINEREOARGENTEUS* |
| BLACK BEAR * | *URSUS AMERICANUS* |
| COMMON RACCOON | *PROCYON LOTOR* |
| ERMINE | *MUSTELEA ERMINEA CICOGNANII* |
| LONG–TAILED WEASEL | *MUSTELA FRENATA* |
| STRIPED SKUNK | *MEPHITIS MEPHITIS* |
| MINK | *MUSTELA VISON* |
| NORTHERN RIVER OTTER | *LUTRA CANADENSIS* |
| BOBCAT | *LYNX RUFUS* |
| WHITE–TAILED DEER | *ODOCOLEUS VIRGINIANUS BOREALIS* |

* Reserve Center is near the edge of the species geographic range.

NOMENCLATURE FROM:
JONES et.al. 1992.

RANGES FROY:
1) DEGRAAF AND RUDIS 1983b.

2) GODN 1077.

FACILITY ID #: MA007
CENTER NAME: Chicopee. Massachusetts – Westover AFRC

# REFERENCES


## GENERAL

DeGraaf, R.M. and D.D. Rudis. 1983b. New England wildlife: habitat, **natural** history. and distribution. General Technical Report NE-, 108. U.S. Dept. of Agriculture. Forest Service. Northeastern Forest Experiment Station. Amherst, Massachusetts. 491 pp.

## PLANTS

Seymour. F.C. 1993. The flora of New England. Second Ed. Fourth Printing. Privately printed. 61t pp. +

## THREATENED AND ENDANGERED SPECIES

Massachusetts Division of Fisheries and Wildlife. 1995. Massahcusetts natural heritage atlas. 1995 – 1996 edition. Natural Heritage and Endangered Species Program. Westboro. maps and appendices.

State of Massachusetts. Division of Fisheries and Wildlife. Natural Heritage and Endangered Species Program. 1994. List of Slate protected species potentially occurring at Army **Reserve** Centers in Massachusetts, Personal communication with Jim Duncan. ENSR

U.S. Fish and Wildlife Service. 1994. List of Federal species potentially occurring at Army Reserve Centers in New England Personal communication with Jim Duncan, ENSR.

## AMPHIBIANS AND REPTILES

Cordoza, J.E. and P.G. Mirick. 1987. List of the reptiles and amphibians of Massachusetts. (2nd edition). Fauna of Massachusetts Series No. 3. Massachusetts Division of Fisheries and Wildlife. 12 pp.

DeGraaf, R.M. and D.D. Rudis. 1983a. Amphibians and reptiles of New England. Habitats and natural history. University of Massachusetts Press. Amherst. 85 pp.

Society for the Study of Amphibians and Reptiles. 1930. Standard common end current scientific names for North American amphibians and reptiles. Herpetological Circular No. 19. Museum of Natural History. Lawrence. Kansas. 41 pp.

## BIRDS

American Birding Association. 1990. Birds of the continental United States and Canada. Colorado Springs. 91 pp

Massachusetts Audubon Society. 1986. A checlist of Massachusetts birds. Lincoln. 4 pp.

Robbins, C.S.. B.Bruun and H.S. Zim. 1983. A field guide to bird identification. Birds of North America. Golden Press. New York 360 pp.

Veit, R.R. and W.R. Petersen. 1993. Birs of Massachusetts. Natural History of New England Series. Massachusetts Audubon Society. Lincoln. 514 pp.

## MAMMALS

Godin, A.J. 1977. Wild mammals of New England. The Johns Hopkins University Press. Baltimore. 304 pp.

Jones. J.K. Jr., R.S. Hoffmann, D.W. Rice. C. Jones, R.J. Baker and M.D. Engstrom. 1992. Revised checklist of North American mammals north of Mexico. 1991. Occasional papers No. 146. The Museum, Texas Tech University. 23pp.

# STATE PROTECTED SPECIES INFORMATION

Commonwealth of Massachusetts
Division of Fisheries: and Wildlife
100 Cambridge Street
Boston, MA 02202

Natural Heritage and
Endangered Species Program

tel (617) **727-9194**
fax (617) **727-7288**

4 March 1994

Jim Duncan
ENSR Consulting & Engineering
35 Nagog Park
Acton, MA 01720

Re: Rare species informarion on 12 Army Reserve Centers in Massachusetts
**NHESP** File No.: 94-112

Dear Mr. Duncan:

Thank you for contacting the Natural Heritage and Endangered Species Program regarding the project referred to above.
Enclosed are print-outs of all the recorded rare species observations for the towns within which the twelve Army Reserve Centers fall, according to our conversation of February 16, 1994. In Addition, you will find maps copied from our Priority Habitat atlas corresponding to the quadrangles listed in your letter dated January 18, 1994. The habitats indicated on these maps do not have a regulatory effect, but rather signify areas we consider important for rare species; they demonstrate where most of the rare species listed on the print-outs occur.

Please note that this evaluation is based on the most recent information available in the Natural Heritage database, which is constantly being expanded and updated through ongoing research and inventory. Should new rare species information become avaiiable, this evaluation may be reconsidered.

Please do not hesitate to call me if you have any questions.

Sincerely,

Diane Lauber
Elnvironmental Review Assistant

Natural Heritage & Endangered Species Program

**Commonwealth of Massachusetts**
**Division of Fisheries & Wildlife**
**Route 135**
**Westborough, MA 01581**
**(508) *792-7270* ext. *200***

# Massachusetts List of Endangered, Threatened and Special Concern Species

This is a copy of the List of Endangered, Threatened, and Special Concern Species occurring at Section 10.60 of Chapter 321 of the Code of Massachusetts Regulations and includes vertebrate and invertebrate animals, and plants. Attached is an index to the state-listed species.

This list is prepared under the authority of the Massachusetts Endangered Species Act, M.G.L. c.131A. A copy of the complete Endangered Species Act Regulations, 321 CMR 10.00, may be obtained from the State House Bookstore, State House, Rm. 116, Boston, MA 02133 (617-727-2834). The cost is $4.35 if picked up and $6.55 if mailed.

The following abbreviations are used in this list:

**E** = Endangered: any species of plant or animal in danger of extinction throughout all or a significant portion of its range, and species of plants or animals in danger of extirpation as documented by biological research and inventory.

**T** = Threatened: any species of plant or animal likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range, and any species declining or rare as determined by biological research and inventory and likely to become endangered in the foreseeable future.

**SC** = Special Concern: any species of plant or animal which has been documented by biological research and inventory to have suffered a decline that could threaten the species if allowed to continue unchecked or that occurs in such small numbers or with such a restricted distribution or specialized habitat requirements that it could easily become threatened within Massachusetts.

**(Source:** 321 CMR 10.03)

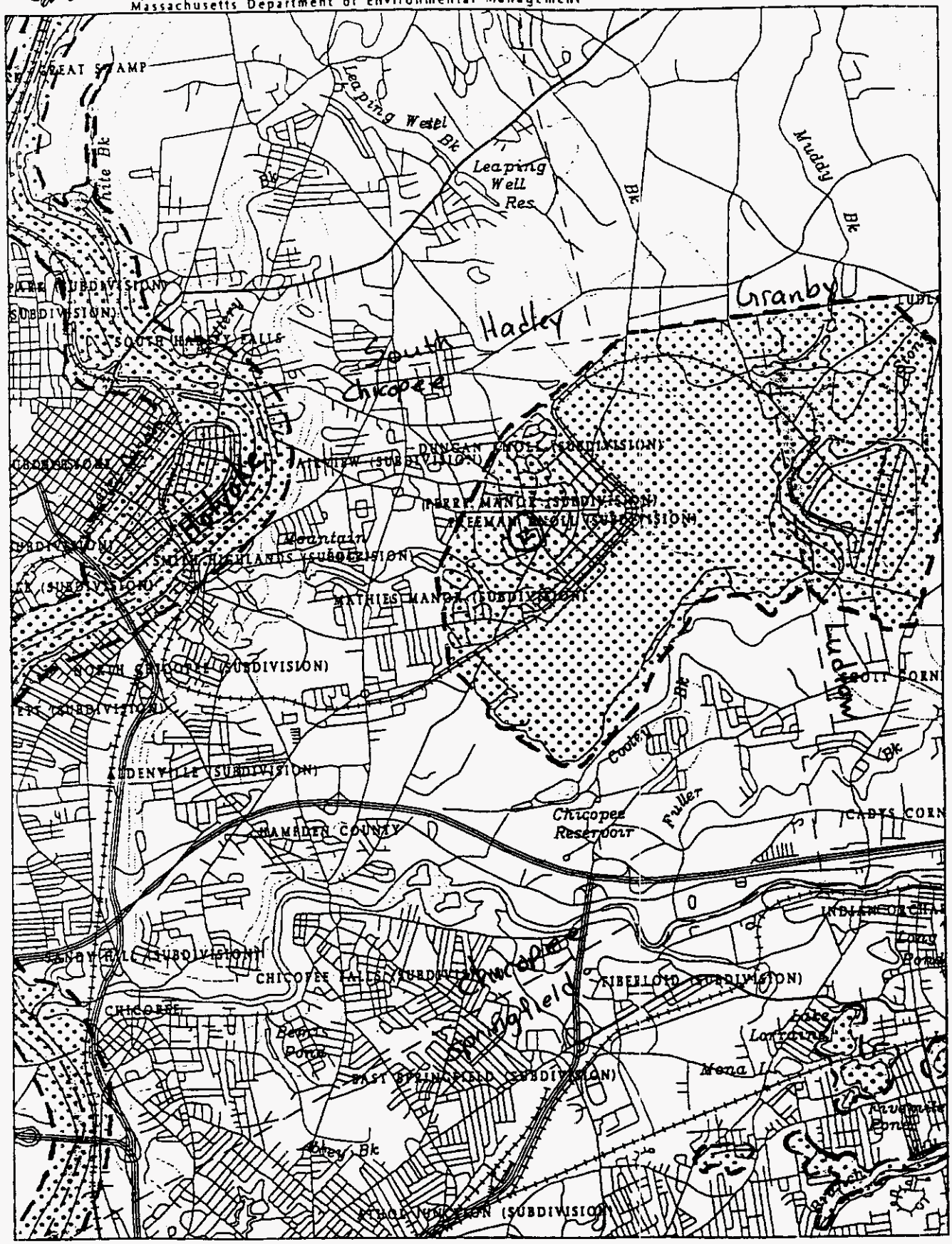
Voluntary contributions to the Natural Heritage & Endangered Species Fund provide a significant portion of the funding for the Natural Heritage & Endangered Species Program. Contributions can be made on state income tax forms or directly to the Program (address above).

November 1995

# MAP OF PRIORITY HABITATS OF STATE-LISTED RARE SPECIES

MA007 CHN
Chicopee
"Westover AFB"

Produced by Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries & Wildlife
Sponsored by Forest Stewardship Program
Massachusetts Department of Environmental Management




Scale 1:60,000
(1 inch = 5,000 feet)

See County Index Maps to
locate adjacent quadrangles

**SPRINGFIELD NORTH OUAD**

**1993 EDITION**

Mass. Natural Heritage & Endangered Species Program
Div. of Fisheries and Wildlife, 100 Cambridge St., Boston, MA
Rare Species Element Occurrences in **Chicopee**, MA.

| Scientific Name..... | Common Name..... | Town Name..... | First Obs. | Last Obs. | DFW Rank |
|---|---|---|---|---|---|
| ACCIPITER STRIATUS | SHARP-SHINNED HAWK | CHICOPEE | 1864 | 1884-06-01 | SC |
| ACIPENSER BREVIROSTRUM | SHORTNOSE STURGEON | HOLYOKE<br>CHICOPEE<br>WEST SPRINGFIELD<br>AGAWAM | 1957 | 1982 | E |
| ALASMIDONTA HETERODON | DWARF WEDGEMUSSEL | CHICOPEE | | 0000-00-00 | E |
| AMMODRAMUS SAVANNARUM | GRASSHOPPER SPARROW | CHICOPEE | 1984 | 1984-07-17 | SC |
| BARTRAMIA LONGICAUDA | UPLAND SANDPIPER | CHICOPEE | 1984 | 1989-SUMM | E |
| CICINDELA PURITANA | PURITAN TIGER BEETLE | CHICOPEE | | 0000 | E |
| CLEMMYS GUTTATA | SPOTTED TURTLE | CHICOPEE | | 1900-PRE | SC |
| CLEMMYS INSCULPTA | WOOD TURTLE | CHICOPEE | | 0000 | SC |
| LAMPSILIS CARIOSA | YELLOW LAMPMUSSEL | CHICOPEE | | 0000 | E |
| LIGUMIA NASUTA | EASTERN PONDMUSSEL | CHICOPEE | 0000 | 0000 | SC |
| NICROPHORUS AMERICANUS | AMERICAN BURYING BEETLE | CHICOPEE | | 1899-06-04 | E |
| SCAPHIOPUS HOLBROOKII | EASTERN SPADEFOOT | CHICOPEE | 1866 | 1866-05-28 | T |

Key to DFW Ranks:
**E = Endangered. T = Threatened. SC = Special Concern.
- WL = Watch List. - H = Historical. - = Delisted.

Mass. Natural Heritage & Endangered Species Program
Div. of Fisheries and Wildlife, 100 Cambridge St., Boston, MA
re Species Element Occurrences in Ludlow, MA.

| Scientific Name | Common Name | Town Name | First Obs | Last Obs. | DFW Rank |
|---|---|---|---|---|---|
| AMBYSTOMA LATERALE | BLUE-SPOTTED SALAMANDER | LUDLOW | 1990 | 1992-04-10 | SC |
| CASTILLEJA COCCINEA | INDIAN PAINTBRUSH | LUDLOW | 1938 | 1938-05-22 | H |
| FUIRENA PUMILA | UMBRELLA-GRASS | LUDLOW | S | 1924-10-09 | - WL |
| HEMIDACTYLIUM SCUTATUM | FOUR-TOED SALAMANDER | LUDLOW | 1992-10-0 | 1992-10-03 | SC |
| LYCOPODIUM PALMATUM | CLIMBING FERN | LUDLOW | 1988 | 1988-05-17 | SC |
| OPHIOGLOSSUM VULGATUM | ADDER'S-TONGUE FERN | LUDLOW | | 1930-09-22 | T |
| ORONTIUM AQUATICUM | GOLDEN CLUB | LUDLOW | 1928 | 1928-09-22 | T |
| PANICUM PHILADELPHICUM | PHILADELPHIA PANIC-GRASS | LUDLOW | | 1980-09-04 | SC |
| PSILOCARYA SCIRPOIDES | LONG-BEAKED BALD-SEDGE | LUDLOW | | 1988-09-30 | SC |
| RANUNCULUS PENSYLVANICUS | BRISTLY BUTTERCUP | LUDLOW | 1914 | 1914-09-02 | T |
| SCLERIA RETICULARIS | RETICULATE NUT-RUSH | LUDLOW | | 1980-09-04 | - WL |
| SCLERIA RETICULARIS | RETICULATE NUT-RUSH | LUDLOW | | 1914-09-02 | - WL |
| TERRAPENE CAROLINA | EASTERN BOX TURTLE | LUDLOW | 1990 | 1991-09-18 | SC |

Key to DFW Ranks:
E = Endangered. T = Threatened. SC = Special Concern.
- WL = Watch List. - H = Historical. - = Delisted.

(1) Introduction. The list in 321 CMR 10.60 contains the names of all species of plants and animals which have been determined to be Endangered, Threatened, or of Special Concern pursuant to M.G.L. c. 131A and 321 CMR 10.03..

(2) List Format. The columns cnddcd "Common Name" and "Scientific Name" define the species listed. In the "Status" columns the following symbols are used: "E" for Endangered, "T" for Threatened, and "SC" for Special Concern. The status defined unda the "MA" column denotes the official status of the species in Massachusetts pursuant to M.G.L. c.131A and 321 CMR 10.00. The status under the "US" column is the status of the species under the federal Endangered Species A n at the time of the latest revision of 321 CMR 10.00 and is given for informational purposes only. Recent changes in the federal list might not be reflected on this list. The U.S. Fish and Wildlife Service should be consulted for official and up to date information an the federal status of any species. Inquiries may be made by writing to U.S. Fish and Wildlife Service, 400 Ralph Pill Marketplace, 22 Bridge Street, Concord. NH 033014901. The Taxonomic Family/Taxonomic Group" column of the list is included for the purpow of organizadon. The "Notes" column directs the reader to footnotes which further define or clarify the status of a species or alternadve names of species.

(3) Organizadon of the List. The list is generally organized according to the relationship of the listed species as determined by the science of taxonomy, which groups and categorizes species that are similar on the bask of shared evolutionary descent. The most basic division in the list is between animals and plants. Within animals the list is dividcd between vertebrates (animals with backbones) and invertebrates (animals without backbones). Within vertebrates, invertebrates, and plants the list is further divided into categories which are generally recognized, such as fish, mammals, dragonflies, and violets. All such information has no regulatory effect and is provided only for the purpose of organizing the list. The following outline shows the taxonomic categories used and their order. A species name i n d a is provided after the list at 321 CMR 10.61 to assist the reader in finding species on the list.

Outline of State List

ANIMALS
- Vertebrates
  - Fish
  - Amphibians
  - Reptiles
  - Birds
  - Mammals
- Invertebrates
  - Sponges
  - Flatworms
  - Moss Animals
  - Segmented Worms
  - Snails
  - Mussels
  - Crustaceans
  - Dragonflies
  - Damselflies
  - Beetles
  - Butterflies and Moths

PLANTS
- Aceraceae (Maples)
- Adiantaceae (Cliff Ferns)...
  - through...(alphabetically by scientific family nunc)
- Verbenaceae (Vervains)
- Violaceae (Violets)

(4) The List. The Massachusetts List of Endangered, Threatened, and Special Concern species follows:

10.60: continued

**Massachusetts List of Endangered, Threatened, and Special Concern Species**

*ANIMALS*

| Taxonomic Group<br>Common Name | Scientific Name | Status<br>MA | US | Notes |
|---|---|---|---|---|
| VERTEBRATES: | | | | |
| **Fish** | | | | |
| *American* Brook Lamprey | *Lampetra appendix* | T | | |
| Shortnose Sturgeon | *Acipenser brevirostrum* | E | E | |
| Atlantic Sturgeon | *Acipenser oxyrhynchus* | E | | |
| Lake Chub | *Couesius plumbeus* | E | | |
| Eastern silvery Minnow | *Hybognathus regius* | SC | | |
| Northern Redbelly Dace | *Phoxinus eos* | E | | |
| Longnose Sucker | *Catostomus catostomus* | SC | | |
| Burbot | *Lota lota* | SC | | |
| Threespine Stickleback | *Gasterosteus aculeatus* | T | | 1 |
| **Amphibians** | | | | |
| Jefferson Salamander | *Ambystoma jeffersonianum* | SC | | 2 |
| Blue-spotted Salamander | *Ambystoma laterale* | SC | | 3 |
| Marbled Salamander | *Ambystoma opacum* | T | | |
| Spring Salamander | *Gyrinophilus porphyriticus* | SC | | |
| Four-toed Salamander | *Hemidactylium scutatum* | SC | | |
| Eastern Spadefoot | *Scaphiopus holbrookii* | T | | |
| Reptiles | | | | |
| Loggerhead | *Caretta caretta* | T | T | |
| Green Turtle | *Chelonia mydas* | T | T | |
| Hawksbill | *Eretmochelys imbricata* | E | E | |
| Atlantic Ridley | *Lepidochelys kempi* | E | E | |
| Leatherback | *Dermochelys coriacea* | E | E | |
| Spotted Turtle | *Clemmys guttata* | SC | | |
| Wood Turtle | *Clemmys insculpta* | SC | | |
| Bog Turtle | *Clemmys muhlenbergii* | E | | |
| Blanding's Turtle | *Emydoidea blandingii* | T | | |
| Diamondback Terrapin | *Malaclemys terrapin* | T | | |
| Redbelly Turtle | *Pseudemys rubriventris* | E | E | 4 |
| Eastern Box Turtle | *Terrapene carolina* | SC | | |
| Worm snake | *Carphophis amoenus* | T | | |
| Black Rat Snake | *Elaphe obsoleta* | E | | |
| copperhead | *Agkistrodon contortrix* | E | | |
| Timber Rattlesnake | *Crotalus horridus* | E | | |

[1] Trimorphic freshwater population only.

[2] Including triploid and other polyploid forms within the *Ambystoma jeffersonianum/Ambystoma laterale* complex.

[3] Ditto.

[4] This species is listed by the U.S. Fish & Wildlife Service as *P.r. bangsi* (Plymouth Redbelly Turtle) in 50 CFR 17.11.

E = Endangered, T = Threatened, SC = Special Concern

10.60: continued

Massachusetts List of Endangered, Threatened. and Special Concern Species

*ANIMALS*

| Taxonomic Group<br>Common Name | Scientific Name | Status<br>MA | US | Notes |
|---|---|---|---|---|
| VERTEBRATES: continued | | | | |
| Birds | | | | |
| Common Loon | *Gavia immer* | SC | | |
| Pied-billed Grebe | *Podilymbus podiceps* | E | | |
| Leach's Storm-petrel | *Oceanadroma leucorhoa* | E | | |
| American Bittern | *Botaurus lentiginosus* | E | | |
| Least Bittern | *Ixobrychus exilis* | E | | |
| Bald Eagle | *Haliaeetus leucocephalus* | E | T | |
| Northern Harrier | *Circus cyaneus* | T | | |
| Sharp-shinned Hawk | *Accipiter striatus* | SC | | |
| Cooper's Hawk | *Accipiter cooperii* | SC | | |
| Peregrine Falcon | *Falco peregrinus* | E | E | |
| King Rail | *Rallus elegans* | T | | |
| Common Moorhen | *Gallinula chloropus* | SC | | |
| Piping Plover | *Charadrius melodus* | T | T | |
| Upland Sandpiper | *Bartramia longicauda* | E | | |
| Eskimo Curlew | *Numenius borealis* | E | E | |
| Roseate Tern | *Stem dougallii* | E | E | |
| Common Tern | *Sterna hirundo* | SC | | |
| Arctic Tern | *Sterna paradisaea* | SC | | |
| Least Tern | *Sterna antillarum* | SC | | |
| Common Barn-owl | *Tyto alba* | SC | | |
| Long-eared Owl | *Asio otus* | SC | | |
| Short-eared Owl | *Asio flammeus* | E | | |
| Sedge Wren | *Cistothorus platensis* | E | | |
| Loggerhead Shrike | *Lanius ludovicianus* | E | | |
| Golden-winged Warbler | *Vermivora chrysoptera* | E | | |
| Northern Parula | *Parula americana* | T | | |
| Blackpoll Warbler | *Dendroica striata* | SC | | |
| Mourning Warbler | *Oporornis philadelphia* | SC | | |
| Vesper sparrow | *Pooecetes gramineus* | T | | |
| Grasshopper Sparrow | *Ammodramus savannarum* | T | | |
| Henslow's Sparrow | *Ammodramus henslowii* | E | | |
| Mammals | | | | |
| Water Shrew | *Sorex palustris* | SC | | |
| Rock Shrew | *Sorex dispar* | SC | | |
| Indiana Myotis | *Myotis sodalis* | E | E | |
| Small-footed Myotis | *Myotis leibii* | SC | | |
| Southern Bog Lemming | *Synaptomys cooperi* | SC | | |
| Sperm whale | *Physeter catodon* | E | E | |
| Fin whale | *Balaenoptera physalus* | E | E | |
| Sei Whale | *Balaenoptera borealis* | E | E | |
| Blue Whale | *Balaenoptera musculus* | E | E | |
| Humpback Whale | *Megaptera novaeangliae* | E | E | |
| Northern Right Whale | *Eubalaena glacialis* | E | E | |
| Gray seal | *Halichoerus grypus* | SC | | |

E = Endangered, T = Threatened, SC = Special Concern

10.60: continued

Massachusetts List of Endangered, Threatened, and Special Concern Species

*ANIMALS*

| Taxonomic Group / Common Name | Scientific Name | Status MA | US | Notes |
|---|---|---|---|---|
| **INVERTEBRATES** | | | | |
| Sponges | | | | |
| Smooth Branched Sponge | *Spongilla aspinosa* | SC | | |
| **Flatworms** | | | | |
| Sunderland Spring Planarian | *Polycelis remota* | E | | |
| Moss Animals | | | | |
| Carter's Moss Animal | *Lophopodella carteri* | SC | | |
| Segmented Worms | | | | |
| New England Medicinal Leech | *Macrobdella sestertia* | SC | | |
| Snails | | | | |
| New England Siltsnail | *Cincinnatia winkleyi* | SC | | |
| Walker's Limpet | *Ferrissia walkeri* | SC | | |
| Coastal Marsh Snail | *Littoridinops tenuipes* | SC | | |
| Slender Walker | *Pomatiopsis lapidaria* | E | | |
| Pilsbry's Spire Snail | *Pyrgulopsis lustrica* | E | | |
| Boreal Turret Snail | *Valvata sincera* | E | | |
| Olive Vertigo | *Vertigo perryi* | SC | | |
| Mussels | | | | |
| Dwarf Wedgemussel | *Alasmidonta heterodon* | E | E | |
| Triangle Floater | *Alasmidonta undulata* | SC | | |
| Swollen Wedgemussel | *Alasmidonta varicosa* | E | | |
| Yellow Lampmussel | *Lampsilis cariosa* | E | | |
| Tidewater Mucket | *Leptodea ochracea* | SC | | |
| Eastern Pondmussel | *Ligumia nasuta* | SC | | |
| Squawfoot | *Strophitus undulatus* | SC | | |
| Crustaceans | | | | |
| Appalachian Brook Crayfish | *Cambarus bartonii* | SC | | |
| Mystic Valley Amphipod | *Crangonyx aberrans* | SC | | |
| Intricate Fairy Shrimp | *Eubranchipus intricatus* | SC | | |
| Agassiz's Clam shrimp | *Eulimnadia agassizii* | E | | |
| Northern Spring Amphipod | *Gammarus pseudolimnaeus* | SC | | |
| American Clam Shrimp | *Limnadia lenticularis* | SC | | |
| Taconic Cave Amphipod | *Stygobromus borealis* | E | | |
| Piedmont Groundwater Amphipod | *Stygobromus tenuis tenuis* | SC | | |
| Coastal Swamp Amphipod | *Synurella chamberlaini* | SC | | |
| **Dragonflies** | | | | |
| Spring Blue Damer | *Aeshna mutata* | E | | |
| Comet Damer | *Anax longipes* | SC | | |
| Ocellated Damer | *Boyeria grafiana* | SC | | |
| Spine-crowned Clubtail | *Gomphus abbreviatus* | E | | |
| Beaver Pond Clubtail | *Gomphus borealis* | SC | | |
| Harpoon Clubtail | *Gomphus descriptus* | E | | |

E = Endangered, T = Threatened, SC = Special Concern

10.60: continued

Massachusetts List of Endangered, Threatened. and Special Concern Species

*ANIMALS*

| Taxonomic Group / Common Name | Scientific Name | Status MA | US | Notes |
|---|---|---|---|---|
| INVERTEBRATES: continued | | | | |
| Dragonflies: continued | | | | |
| Midland Clubtail | *Gomphus fraternus* | E | | |
| Cobra Clubtail | *Gomphus vastus* | SC | | |
| Skillet Clubtail | *Gomphus ventricosus* | SC | | |
| Twilight Skimmer | *Neurocordulia obsoleta* | SC | | |
| Brook Snaketail | *Ophiogomphusaspersus* | SC | | |
| Riffle Snaketail | *Ophiogomphus carolus* | T | | |
| Ringed Emerald | *Somatochlora cingulata* | SC | | |
| Slender Emerald | *Somatochlora elongata* | SC | | |
| Coppery Emerald | *Somatochlora georgiana* | E | | |
| Kennedy's Emerald | *Somatochlora kennedyi* | E | | |
| Mocha Emerald | *Somatochlora linearis* | SC | | |
| Riverine Clubtail | *Stylurus amnicola* | E | | |
| Zebra Clubtail | *Stylurus scudderi* | E | | |
| Arrow Clubtail | *Stylurus spiniceps* | T | | |
| Ebony Boghaunter | *Williamsonia fletcheri* | E | | |
| Ringed Boghaunter | *Williamsonia lintneri* | E | | |
| Damselflies | | | | |
| Tule Bluet | *Enallagma carunculatum* | SC | | |
| Attenuated Bluet | *Enallagma daeckii* | SC | | |
| New England Bluet | *Enallagma laterale* | SC | | |
| Barrens Bluet | *Enallagma recurvatum* | T | | |
| Beetles | | | | |
| Twelve-spotted Tiger Beetle | *Cicindela duodecimguttata* | SC | | |
| Hentz's Redbelly Tiger Beetle | *Cicindela rufiventris hentzii* | T | | |
| Northeastern Beach Tiger Beetle | *Cicindela dorsalis dorsalis* | E | T | |
| Bank Tiger Beetle | *Cicindela limbalis* | SC | | |
| Barrens Tiger Beetle | *Cicindela patruela* | SC | | |
| Puritan Tiger Beetle | *Cicindela puritana* | E | T | |
| Purple Tiger Beetle | *Cicindela purpurea* | SC | | |
| Elderberry Long-horned Beetle | *Desmocerus palliatus* | SC | | |
| American Burying Beetle | *Nicrophorus americanus* | E | E | |
| Butterflies and Moths | | | | |
| Coastal Heathland Cutworm | *Abagrotis crumbi benjamini* | SC | | |
| Barrens Daggermoth | *Acronicta albarufa* | T | | |
| spiny Oakworm | *Anisota stigma* | SC | | |
| Blueberry Sallow | *Apharetra purpurea* | SC | | |
| New Jersey Tea Inchworm | *Apodrepanulatrix liberaria* | T | | |
| Straight Lined Mallow Moth | *Bagisara rectifascia* | SC | | |
| Gerhard's Underwing | *Catocala herodias gerhardi* | T | | |
| Melsheimer's Sack Bearer | *Cicinnus melsheimeri* | T | | |

E = Endangered, T = Threatened, SC = Special Concern

10.60 continued

Massachusetts List of Endangered, Threatened. and Special Concern Species

*ANIMALS*

| Taxonomic Group<br>Common Name | Scientific Name | Status<br>MA US | Notes |
|---|---|---|---|
| INVERTEBRATES: continued | | | |
| Butterflies and Moths: continued | | | |
| Chain Dot Geometer | *Cingilia catenaria* | SC | |
| Unexpected Cycnia | *Cycnia inopinatus* | SC | |
| Imperial Moth | *Eacles imperialis* | SC | |
| Early Hairstreak | *Erora laeta* | T | |
| Persius Duskywing | *Erynnis persius persius* | T | |
| Northern Hairstreak | *Fixsenia ontario* | SC | |
| Williams' Tigermoth | *Grammia williamsii* | T | |
| Barrens Buckmoth | *Hemileuca maia* | T | |
| Bucholz's Gray | *Hypomecis buchholzaria* | T | |
| Pine Barrens Itame | *Itame inextricata* | SC | 1 |
| Pale Green Pinion Moth | *Lithophane viridipallens* | SC | |
| Pie Barrens Lycia | *Lycia ypsilon* | T | |
| Barrens Metarranthis | *Metawanthis apiciaria* | E | |
| Coastal Swamp Metarranthis | *Metawanthis pilosaria* | SC | |
| Hessel's Hairstreak | *Mitoura hesseli* | SC | |
| Northern Brocade Moth | *Oligia hausta* | SC | |
| Pitcher Plant Borer | *Papaipema appassionata* | SC | |
| Heracleum Stun Borer | *Papaipema harrisii* | SC | |
| Ostrich Fern Borer | *Papaipema* sp. | SC | 2 |
| Chain Fern Borer | *Papaipema stenocelis* | SC | |
| Water-willow Stem Borer | *Papaipema sulphurata* | T | |
| Mustard White | *Pieris napi oleracea* | SC | |
| Golden Aster Flower Moth | *Schinia tuberculum* | T | |
| Three-Lined Angle Moth | *Semiothisa eremiata* | SC | |
| Spartina Borer | *Spartiniphaga imps* | SC | |
| Regal Fritillary | *Speyeria idalia* | E | |
| Clemens' Hawkmoth | *Sphinx luscitiosa* | SC | |
| Pine Barrens Zale , | *Zale* sp. | SC | 3 |
| Pine Barrens Zanclognatha | *Zanclognatha martha* | T | |

1 The northeastern population of this species was discussed under the name *Itame inceptaria* in W.T.M. Forbes. 1948. Lepidoptera of New York and Neighboring States. Part II. Cornell University Agricultural Experiment Station Memoir *274.* p. 40.

2 A full scientific name for this species has not b a n published.

3 A full scientific name for this species has not b a n published A photograph of this unnamed species war improperly labeled as *Zale lunifera* on plate 38(21) p. 251 in C.V. Covell, Jr. 1984. A Field Guide to the Moths of Eastern North America. (The Peterson Field Guide Series). Houghton Mifflin Company. Boston.

E = Endangered, T = Threatened, SC = Special Concern

10.60: continued

Massachusetts List of Endangered. Threatened. and Special Concern Species

PLANTS

| Taxonomic Family / Common Name | Scientific Name | Status MA | US | Notes |
|---|---|---|---|---|
| Aceraceae (Maples) | | | | |
| Black Maple | *Acer nigrum* | SC | | |
| Adiantaceae (Cliff Ferns) | | | | |
| Fragile Rock-brake | *Cryptogramma stelleri* | T | | |
| Alismataceae (Arrowheads) | | | | |
| Estuary Arrowhead | *Sagittaria calycina* ssp. *spongiosa* | E | | |
| Waparo | *Sagittaria cuneata* | E | | |
| River Arrowhead | *Sagittaria subulata* w. *subulata* | E | | |
| Terete Arrowhead | *Sagittaria teres* | SC | | |
| Apiaceae (Parsleys, Angelicas) | | | | |
| Hemlock Parsley | *Conioselinum chinense* | SC | | |
| Saltpond Pennywort | *Hydrocotyle verticillata* | SC | | |
| Canadian Sanicle | *Sanicula canadensis* | T | | |
| Long-styled Sanicle | *Sanicula odorata* | T | | |
| Aquifoliaceae (Hollies) | | | | |
| Mountain Winterberry | *Ilex montana* | T | | |
| Araceae (Arums) | | | | |
| Green Dragon | *Arisaema dracontium* | T | | |
| Golden Club | *Orontium aquaticum* | T | | |
| Araliaceae (Ginseng.) | | | | |
| Ginseng | *Panax quinquefolius* | SC | | |
| Asclepiadaceae (Milkweeds) | | | | |
| Purple Milkweed | *Asclepias purpurascens* | T | | |
| Linear-leaved Milkweed | *Asclepias verticillata* | T | | |
| Aspleniaceae (Spleenworts) | | | | |
| Mountain Spleenwort | *Asplenium montanum* | E | | |
| Wall-rue Spleenwort | *Asplenium ruta-muraria* | T | | |
| Asteraceae (Asters, Composites) | | | | |
| Boreal Wormwood | *Artemisia campestris* up. *borealis* | E | | |
| Eastern Silvery Aster | *Mer concolor* | E | | |
| Cornel-leaved Aster | *Mer infirmus* | E | | |
| Crooked-am Aster | *Mer prenanthoides* | SC | | |
| Tradescant's Aster | *Aster tradescantii* | SC | | |
| Eaton's Beggar-ticks | *Bidens eatonii* | T | | |
| Estuary Beggar-ticks | *Bidens hyperborea* var. *colpophila* | E | | |
| Lesser Snakeroot | *Eupatorium aromaticum* | E | | |

E = Endangered. T = Threatened, SC = Special Concern

10.60 continued

Massachusetts List of Endangered. Threatened. and Special Concern Species

*PLANTS*

| Taxonomic Family / Common Name | Scientific Name | Status MA | Status US | Nota |
|---|---|---|---|---|
| Asteraceae (Asters, Composites): continued | | | | |
| New England Boneset | *Eupatorium leucolepis* var. *novae-angliae* | E | | |
| Purple Cudweed | *Gamochaeta purpurea* | E | | |
| New England Blazing Star | *Liatris scariosa* var. *nowemgiiae* | SC | | |
| Sweet Coltsfoot | *Petasites frigidus* var. *palmatus* | T | | |
| Lion's Foot | *Prenanthes serpentaria* | E | | |
| Sclerolepis | *Sclerolepis uniflora* | E | | |
| Large-leaved Goldenrod | *Solidago macrophylla* | T | | |
| Upland White Aster | *Solidago ptarmicoides* | T | | |
| Rand's Goldenrod | *Solidago glutinosa* ssp. *randii* | E | | |
| Betulaceae (Birches, Alden) | | | | |
| Mountain Alder | *Alnus viridis* ssp. *crispa* | SC | | |
| swamp Birch | *Betula pumila* | T | | |
| Boraginaceae (Borages) | | | | |
| Oysterleaf | *Mertensia maritima* | E | | |
| Brassicaceae (Mustards) | | | | |
| Smooth Rock-cress | *Arabis laevigata* | T | | |
| Lyre-leaved Rock-cress | *Arabis lyrata* | T | | |
| Green Rock-cress | *Arabis missouriensis* | T | | |
| Purple Cress | *Cardamine douglassii* | E | | |
| Long's Bitter-cress | *Cardamine longii* | E | | |
| Fen Cuckoo Flower | *Cardamine pratensis* var. *palustris* | T | | |
| Cactaceae (Cacti) | | | | |
| Prickly Pear | *Opuntia humifusa* | T | | |
| Campanulaceae (Bluebells, Lobelias) | | | | |
| Great Blue Lobelia | *Lobelia siphilitica* | T | | |
| Caprifoliaceae (Honeysuckles) | | | | |
| Hairy Honeysuckle | *Lonicera hirsuta* | E | | |
| Snowberry | *Symphoricarpos albus* var. *albus* | E | | |
| Broad Tinker's-weed | *Triosteum perfoliatum* | E | | |
| Downy Arrowwood | *Viburnum rafinesquianum* | T | | |
| Caryophyllaceae (Pinks, Sandworts) | | | | |
| Nodding Chickweed | *Cerastium nutans* | E | | |
| Michaux's Sandwort | *Minuartia michauxii* | SC | | |
| Luge-leaved Sandwort | *Moehringia macrophylla* | T | | |
| Silverling | *Paronychia argyrocoma* | E | | |
| Knotted Pearlwort | *Sagina nodosa* ssp. *nodosa* | T | | |
| Chenopodiaceae (Saltworts) | | | | |
| American Sea-blite | *Suaeda americana* | SC | | |

E = Endangered, T = Threatened, SC = Special Concern

10.60: continued

Massachusetts List of Endangered. Threatened. and Special Concern Species

*PLANTS*

| Taxonomic Family<br>Common Name | Scientific Name | Status<br>MA US | Notes |
|---|---|---|---|
| Cistaceae (Rockroses, Pinweeds) | | | |
| Bushy Rockrose | *Helianthemum dumosum* | SC | |
| Beaded Pinweed | *Lechea pulchella* var. *monoliformis* | E | |
| Clusiaccae(St. John's-worn) | | | |
| Creeping St. John's-won | *Hypericum adpressum* | T | |
| Giant SL John's-won | *Hypericum ascyron* | T | |
| St. Andrew's Cross | *Hypericum hypericoides* ssp. *multicaule* | E | |
| Convolvulaceae (Morning Glories) | | | |
| Low Bindweed | *Calystegia spithamaea* | E | |
| Crassulaceae (Sedum) | | | |
| Pygmyweed | *Crassula aquatica* | T | |
| Cupressaceae (Cedars, Junipers) | | | |
| Arborvitae | *Thuja occidentalis* | E | |
| Cyperaceae (Sedges) | | | |
| Foxtail Sedge | *Carex alopecoidea* | T | |
| Bailey's Sedge | *Carex baileyi* | E | |
| Bush's Sedge | *Carex bushii* | E | |
| Chestnut-colored Sedge | *Carex castanea* | E | |
| Creeping Sedge | *Carex chordorrhiza* | E | |
| Davis's Sedge | *Carex davisii* | E | |
| Glaucescent Sedge | *Carex flaccosperma* var. *glaucodea* | E | |
| Handsome Sedge | *Carex formosa* | T | |
| Slender Woodland Sedge | *Carex gracilescens* | E | |
| Gray's Sedge | *Carex grayi* | T | |
| Hitchcock's Sedge | *Carex hitchcockiana* | SC | |
| Shore Sedge | *Carex lenticularis* | T | |
| Glaucous Sedge | *Carex livida var. radicaulis* | E | |
| Midland Sedge | *Carex mesochorea* | E | |
| Michaux's sedge | *Carex michauxiana* | E | |
| Few-fruited sedge | *Carex oligosperma* | T | |
| Few-flowered Sedge | *Carex pauciflora* | E | |
| Variable sedge | *Carex polymorpha* | E | |
| Eastern saline sedge | *Carex recta* | E | |
| Schweinitz's sedge | *Carex schweinitzii* | E | |
| Dioecious Sedge | *Carex sterilis* | T | |
| Walter's sedge | *Carex striata* var. *brevis* | E | |
| Fen Sedge | *Carex tetanica* | SC | |
| Hairy-fruited Sedge | *Carex trichocarpa* | T | |
| Tuckerman's Sedge | *Carex Tuckermanii* | E | |
| Cat-tail Sedge | *Carex typhina* | T | |
| Wiegand's Sedge | *Carex wiegandii* | E | |
| Engelmann's Umbrella-sedge | *Cyperus engelmannii* | SC | |
| Houghton's Flatsedge | *Cyperus houghtonii* | E | |

E = Endangered, T = Threatened, SC = Special Concern

10.60: **continued**

Massachusetts List of Endangered, Threatened. and Special Ccncern Species

*PLANTS*

| Taxonomic Family / Common Name | Scientific Name | Status MA | Status US | Notes |
|---|---|---|---|---|
| Cyperaceacc (Sedges): continued | | | | |
| Intermediate Spike-sedge | *Eleocharis intermedia* | T | | |
| Tiny-fruited Spike-sedge | *Eleocharis microcarpa* | E | | |
| Ovate Spike-sedge | *Eleocharis obtusa* var. *ovata* | E | | |
| Few-flowered Spike-sedge | *Eleocharis pauciflora* var. *fernaldii* | E | | |
| Three-angled Spike-sedge | *Eleocharis tricostata* | E | | |
| Slender Cottongrass | *Eriophorum gracile* | T | | |
| Capillary Beak-sedge | *Rhynchospora capillacea* | E | | |
| Inundated Horned-sedge | *Rhynchospora inundata* | T | | |
| Short-beaked Bald-sedge | *Rhynchospora nitens* | T | | |
| Long-beaked Bald-sedge | *Rhynchospora scirpoides* | SC | | |
| Torrey's Beak-sedge | *Rhynchospora torreyana* | E | | |
| Northeastern Bulrush | *Scirpus ancistrochaetus* | E | E | |
| River Bulrush | *Scirpus fluviatilis* | SC | | |
| Long's Bulrush | *Scirpus longii* | E | | |
| Pendulous Bulrush | *Scirpus pendulus* | SC | | |
| Papillose Nut-sedge | *Scleria pauciflora* | E | | |
| Tall Nut-sedge | *Scleria triglomerata* | E | | |
| Dryopteridaceae (Wood Ferns) | | | | |
| Braun's Holly-fern | *Polystichum braunii* | E | | |
| Smooth Woodsia | *Woodsia glabella* | E | | |
| Elatinaceae (Waterworts) | | | | |
| American Waterwort | *Elatine americana* | E | | |
| Empetraceae (Crowberries) | | | | |
| Broom Crowberry | *Corema conradii* | SC | | |
| Equisetaceae (Horsetails) | | | | |
| Dwarf Scouring-rush | *Equisetum scirpoides* | SC | | |
| Ericaceae (Laurels, Blueberries) | | | | |
| Great Laurel | *Rhododendron maximum* | T | | |
| Mountain Cranberry | *Vaccinium vitis-idaea* ssp. *minus* | E | | |
| Eriocaulaceae (Pipeworts) | | | | |
| Parker's Pipewort | *Eriocaulon parkeri* | E | | |
| Fabaceae (Beans, Peas, Clovers) | | | | |
| Spreading Tick-trefoil | *Desmodium humifusum* | E | | |
| Wild Senna | *Senna hebecarpa* | E | | |
| Fagaceae (Oaks Beeches) | | | | |
| Bur Oak | *Quercus macrocarpa* | SC | | |
| Yellow oak | *Quercus muhlenbergii* | SC | | |
| Fumariaceae (Fumitories) | | | | |
| Climbing Fumitory | *Adlumia fungosa* | T | | |

[1] Includes the two varieties of this species that occur in Massachusetts: *s. p.* var. *pauciflora* and *s. p.* var. *caroliniana*

E = Endangered, T = Threatened, SC = Special Concern

10.60: continued

Massachusetts List of Endangered. Threatened. and *Special* Concern Species

*PLANTS*

| Taxonomic Family<br>Common Name | Scientific Name | Status<br>MA US | Notes |
|---|---|---|---|
| Gentianaceae (Gentians) | | | |
| Andrews's Bottle Gentian | *Gentiana andrewsii* | T | |
| Spurred Gentian | *Halenia deflexa* | E | |
| Slender Marsh Pink | *Sabatia campanulata* | E | |
| Plymouth Gentian | *Sabatia kennedyana* | SC | |
| Sea Pink | *Sabatia stellaris* | E | |
| Grossulariaceae (Currants) | | | |
| Bristly Black Currant | *Ribes lacustre* | SC | |
| Swamp Red Currant | *Ribes triste* | SC | |
| Haemodoraceae (Redroots) | | | |
| Redroot | *Lachnanthes caroliana* | SC | |
| Haloragaceae (Water-milfoils) | | | |
| Alternate-flowered Water-milfoil | *Myriophyllum alterniflorum* | T | |
| Farwell's Water-milfoil | *Myriophyllum farwellii* | E | |
| Pinnate Water-milfoil | *Myriophyllum pinnatum* | SC | |
| Comb Water-milfoil | *Myriophyllum verticillatum* | T | |
| Hydrophyllaceae (Waterleaves) | | | |
| Broad Waterleaf | *Hydrophyllum canadense* | E | |
| Hymenophyllaceae (Ti-funs) | | | |
| Weft Bride-fern | *Trichomes intricatum* | T | |
| Iridaceae (Irises) | | | |
| Sandplain Blue-eyed Grass | *Sisyrinchium arenicola* | SC | |
| Slender Blue-eyed Grass | *Sisyrinchium mucronatum* | T | |
| Isoetaceae (Quillworts) | | | |
| Acadian Quillwort | *Isoetes acadiensis* | E | |
| Lake Quillwort | *Isoetes macrospora* | E | |
| Juncaceae (Rushes) | | | |
| Two-flowered Rush | *Juncus biflorus* | E | |
| Weak Rush | *Juncus debilis* | E | |
| Thread Rush | *Juncus filiformis* | T | |
| Black-fruited Woodrush | *Luzula parviflora* ssp. *melanocarpa* | E | |
| Lamiaceae (Mints) | | | |
| Downy Wood-mint | *Blephilia ciliata* | E | |
| Hairy Wood-mint | *Blephilia hirsuta* | E | |
| Gypsywort | *Lycopus rubellus* | T | |
| Basil Mountain-mint | *Pycnanthemum clinopodioides* | E | |
| Woundwort | *Stachys palustris* | T | |
| False Pennyroyal | *Trichostema brachiatum* | E | |

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10.60 continued

Massachusetts List of Endangered. Threatened. and Special Concern Species

*PLANTS*

| Taxonomic Family / Common Name | Scientific Name | Status MA | Status US | Notes |
|---|---|---|---|---|
| Lentibulariaceae (Bladderworts) | | | | |
| Two-flowered Bladderwort | *Utricularia biflora* | T | | |
| Fibrous Bladdenvon | *Utricularia fibrosa* | T | | |
| Subulate Bladdenvon | *Utricularia subulata* | SC | | |
| Liliaceae (Lilies) | | | | |
| Devil's-bit | *Chamaelirium luteum* | E | | |
| Linaceae (Flaxes) | | | | |
| Sandplain Flax | *Linum intercursum* | SC | | |
| Rigid Flax | *Limm medium* var. *texanum* | T | | |
| Lycopodiaceae (Clubmosses) | | | | |
| Foxtail Clubmoss | *Lycopodiella alopecuroides* | E | | |
| Appalachian Firmoss | *Huperzia appalachaiana* | E | | |
| Mountain Firmoss | *Huperzia selago* | E | | |
| Lythraceae (Loosestrifes) | | | | |
| Toothcup | *Rotala ramosior* | E | | |
| Magnoliaceae (Magnolias) | | | | |
| Sweetbay Magnolia | *Magnolia virginiana* | E | | |
| Melastomataccae (Meadow Beauties) | | | | |
| Maryland Meadow Beauty | *Rhexia mariana* | E | | |
| Moraceae (Mulberries) | | | | |
| Red Mulberry | *Morus rubra* | 'E | | |
| Nymphaeaceae (Water Lilies) | | | | |
| Tiny Cow-lily | *Nuphar lutea* ssp. *pumila* | E | | |
| Onagraceae (Evening Primroses) | | | | |
| Many-fruited False-loosestrife | *Ludwigia polycarpa* | T | | |
| Round-fruited False-loosestrife | *Ludwigia sphaerocarpa* | T | | |
| Ophioglossaceae (Grape Ferns) | | | | |
| Adder's-tongue Fern | *Ophioglossum pusillum* | T | | |
| Orchidaceae (Orchids) | | | | |
| Putty-root | *Aplectrum hyemale* | E | | |
| Arethusa | *Arethusa bulbosa* | T | | |
| Autumn Coralroot | *Corallorhiza odontorhiza* | SC | | |
| Ram's-head Lady's-slipper | *Cypripedium arietinum* | E | | |

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10.60: continued

Massachusetts List of Endangered. Threatened. and Special Concern Species

*PLANTS*

| Taxonomic Family / Common Name | Scientific Name | Status MA | US | Notes |
|---|---|---|---|---|
| Orchidaceae (Orchids): continued | | | | |
| Small Yellow Lady's-slipper | *Cypripedium calceolus* var. *parviflorum* | E | | |
| Showy Lady's-slipper | *Cypripedium reginae* | SC | | |
| Dwarf Rattlesnake-plantain | *Goodyera repens* | E | | |
| Small Whorled Pogonia | *Isotria medeoloides* | E | T | |
| Heartleaf Twayblade | *Linnea cordata* | E | | |
| Bayard's Green Adder's-mouth | *Malaxis bayardii* | E | | |
| White Adder's-mouth | *Malaxis brachypoda* | T | | |
| Crested Fringed Orchis | *Platanthera cristata* | E | | |
| Leafy White Orchis | *Platanthera dilatata* | T | | |
| Pale Green Orchis | *Platanthera flava* var. *herbiola* | T | | |
| Hooded Ladies'-tresses | *Spiranthes romanzoffiana* | E | | |
| Grass-leaved Ladies'-tresses | *Spiranthes vernalis* | SC | | |
| Cranefly Orchid | *Tipularia discolor* | E | | |
| Nodding Pogonia | *Triphora uianthophora* | E | | |
| Oxalidaceae (Wood-sorrels) | | | | |
| Violet Wood-sorrel | *Oxalis violacea* | T | | |
| Poaccae (Grasses) | | | | |
| Annual Peanutgrass | *Amphicarpum purshii* | E | | |
| Purple Needlegrass | *Aristida purpurascens* | T | | |
| Seabeach Needlegrass | *Aristida tuberculosa* | SC | | |
| Tufted Hairgrass | *Deschampsia cespitosa* var. *glauca* | E | | |
| Commons's Panic-grass | *Dichanthelium commonsianum* | SC | | |
| Mattamuskeet Panic-grass | *Dichanthelium mattamuskeetense* | E | | |
| Rough Panic-grass | *Dichanthelium scabriusculum* | r | | |
| Wright's Panic-grass | *Dichanthelium wrightianum* | SC | | |
| Hairy Wild Rye | *Elymus villosus* | r | | |
| Frank's Lovegrass | *Eragrostis frankii* | SC | | |
| Saltpond Grass | *Leptochloa fascicularis* var. *maritima* | T | | |
| sea Lyme-grass | *Leymus mollis* | E | | |
| Woodland Millet | *Milium effusum* | T | | |
| Gattinger's Panic-grass | *Panicum gattingeri* | SC | | |
| Long-leaved Panic-grass | *Panicum rigidulum* var. *pubescens* | T | | |
| Philadelphia Panic-grass | *Panicum philadelphicum* | SC | | |
| Drooping Speargrass | *Poa languida* | E | | |
| Bristly Foxtail | *Setaria geniculata* | SC | | |
| Salt Reedgrass | *Spartina cynosuroides* | SC | | |
| Shining Wedgegrass | *Sphenopholis nitida* | T | | |
| Swamp Oats | *Sphenopholis pensylvanica* | T | | |
| Small Dropseed | *Sporobolus neglectus* | E | | |
| Northern Gama-grass | *Tripsacum dactyloides* | E | | |
| Spiked False-oats | *Trisetum triforum* ssp. *molle* | E | | |

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10.60: continued

Massachusetts List of Endangered, Threatened. and Special Concern Species

*PLANTS*

| Taxonomic Family<br>Common Name | Scientific Name | Status<br>MA US | Notes |
|---|---|---|---|
| Podostemaceae (Threadfeet) | | | |
| Threadfoot | *Podostemum ceratophyllum* | SC | |
| Polygonaceae (Docks. Knotweeds) | | | |
| Pondshore Knotweed | *Polygonum puritanorum* | SC | |
| Strigose Knotweed | *Polygonum setaceum* var. *interjectum* | SC | |
| Seabeach Dock | *Rumex pallidus* | T | |
| Swamp Dock | *Rumex verticillatus* | T | |
| Portulacaceae (Spring Beauties) | | | |
| Narrow-leaved Spring Beauty | *Claytonia virginica* | T | |
| Potamogetonaceae (Pondweeds) | | | |
| Fries's Pondweed | *Potamogeton friesii* | T | |
| Hill's Pondweed | *Potamogeton hillii* | SC | |
| Pyrolaceae (Shinleaf) | | | |
| Pink Pyrola | *Pyrola asarifolia* var. *purpurea* | E | |
| Ranunculaceae (Buttercups) | | | |
| Black Cohosh | *Cimicifuga racemosa* | E | |
| Purple Clematis | *Clematis occidentalis* | SC | |
| Gulden Seal | *Hydrastis canadensis* | E | |
| Tiny-flowered Buttercup | *Ranunculus micranthus* | T | |
| Bristly Buttercup | *Ranunculus pensylvanicus* | T | |
| Rosaceae (Roses, Shadbushes) | | | |
| Small-tlowaed Agrimony | *Agrimonia parviflora* | E | |
| Hairy Agrimony | *Agrimonia pubescens* | T | |
| Bartram's Shadbush | *Amelanchier bartramiana* | T | |
| Nantucket Shadbush | *Amelanchier nantucketensis* | SC | |
| Roundleaf Shadbush | *Amelanchier sanguinea* | SC | |
| Bicknell's Hawthorn | *Crataegus bicknellii* | E | |
| sandbar cherry | *Prunus pumila* var. *depressa* | SC | |
| Northern Prickly Row | *Rosa acicularis* | E | |
| Northern Mountain-ash | *Sorbus decora* | E | |
| Barren Strawberry | *Waldsteinia fragarioides* | SC | |
| Rubiaceae (Bedstraws, Bluets) | | | |
| Northern Bedstraw | *Galium boreale* | E | |
| Labrador Bedstraw | *Galium labradoricum* | SC | |
| Long-leaved Bluet | *Houstonia longifolia* | T | |
| Salicaceae (Willows) | | | |
| Sandbar Willow | *Salk exigua* | SC | |

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10.60 continued

Massachusetts List of Endangered. Threatened. and Special Concern Species

*PLANTS*

| Taxonomic Family<br>Common Name | ScientificName | Status<br>MA | US | Notes |
|---|---|---|---|---|
| Scheuchzeriaceae (Pod-pes) | | | | |
| Pod-grass | *Scheuchzeria palustris* | T | | |
| Schizaeaceae (Climbing Ferns) | | | | |
| Climbing Fern | *Lygodium palmatum* | SC | | |
| Scrophulariaceae (Figworts) | | | | |
| Sandplain Gerardia | *Agalinis acuta* | E | E | |
| Winged Monkey-flower | *Mimulus alatus* | E | | |
| Muskflower | *Mimulus moschatus* | T | | |
| Swamp Lousewort | *Pedicularis lanceolata* | E | | |
| Hairy Beardtongue | *Penstemon hirsutus* | E | | |
| Sessile Water-speedwell | *Veronicacatenata* | E | | |
| Culver's-root | *Veronicastrum virginicum* | SC | | |
| Sparganiaceae (Bur-reeds) | | | | |
| Small Bur-reed | *Sparganium natans* | E | | |
| Verbenaceae (vervains) | | | | |
| Narrow-leaved Vervain | *Verbenasimplex* | E | | |
| Violaceae (Violets) | | | | |
| Sand Violet | *Viola adunca* | E | | |
| Britton's Violet | *Viola brittoniana* | T | | |
| Northern Bog Violet | *Viola nephrophylla* | T | | |
| Viscaceae (Christmas-mistletoes) | | | | |
| Dwarf Mistletoe | *Arceuthobium pusillum* | SC | | |

E = Endangered, T = Threatened. SC = Special Concern

10.61: Index to State Listed Species

The following index is intended to help users of the state list of Endangered, Threatened, and Special Concern species determine the official status of any species listed under MESA. This is particularly important for users of the list who are not familiar with the scientific names of species. Starting with only a common or scientific name, the index tells the user where to find the species on the list. The index accomplishes this by specifying the name of the animal group or plant family under which the species will be found.

For example, to find the status of Acipenser brevirostrum, one would look up "Acipenser" in the index and find that it is a fish. Where fish occur in the list is specified by the outline appearing just before the list at 321 CMR 10.60(3). The outline shows that fish is the first category of vertebrate animals. By looking for "Acipenser brevirostrum" in that section of the list one would determine that it is the "Shortnose Sturgeon" and is lined as an Endangered species on both the state and federal lists.

Note that all plants are found under plant families which end with "-aceae" and that animals are listed under commonly known categories, such as birds, mammals, or butterflies.

**Index to State Listed Species**

Abagrotis, Butterflies and Moths
Accipiter, Birds
Acer, Aceraceae
Achillea, Asteraceae
Acipenser, Fish
Acronicta, Butterflies and Moths
Adder's-mouth, Orchidaceae
Adlumia, Fumariaceae
Aeshna, Dragonflies
Agalinis, Scrophulariaceae
Agkistrodon, Reptiles
Agrimonia, Rosaceae
Agrimony, Rosaceae
Alasmidonta, Mussels
Alder, Betulaceae
Alnus, Betulaceae
Ambystoma, Amphibians
Amelanchier, Rosaceaes
Ammodramus, Birds
Amphicarpum, Poaceae
Amphipod, Crustaceans
Anax, Dragonflies
Anisota, Butterflies and Moths
Annelids, Segmented Worms
Aphareus, Butterflies and Moths
Aplectrum, Orchidaceae
Apodrepanulatrix, Butterflies and Moths
Arabis, Brassicaceae
Arborvitae, Cupressaceae
Arceuthobium, Viscaceae
Arethusa, Orchidaceae
Arisaema, Araceae
Aristida, Poaceae
Arrowhead, Alismataceae
Arrowwood, Caprifoliaceae
Artemisia, Asteraceae
Asclepias, Asclepiadaceae
Asio, Birds
Asplenium, Aspleniaceae
Aster, Asteraceae
Bagisara, Butterflies and Moths
Balaenoptera, Mammals
Bald-sedge, Cyperaceae
Barn-owl, Birds
Bartramia, Birds
Beak-sedge, Cyperaceae
Bedstraw, Rubiaceae
Beetle, Beetles
Beggar-ticks, Asteraceae
Betula, Betulaceae
Bidens, Asteraceae
Bindweed, Convolvulaceae
Birch, Betulaceae
Bitter-cress, Brassicaceae
Bittern, Birds
Bladderwort, Lentibulariaceae
Blazing Star, Asteraceae
Blephilia, Lamiaceae
Blue-eyed Grass, Iridaceae
Bluet, Rubiaceae
Bluet, Damselflies
Boghaunter, Dragonflies
Boneset, Asteraceae
Borer, Butterflies and Moths
Botaurus, Birds
Boyeria, Dragonflies
Bristle-fern; Hymenophyllaceae
Bryozoans, Moss Animals
Buckmoth, Butterflies and Moths
Bulrush, Cyperaceae
Bur-reed, Sparganiaceae
Burbot, Fish
Buttercup, Ranunculaceae
Calystegia, Convolvulaceae
Cambarus, Crustaceans
Cardamine, Brassicaceae
Caretta, Reptiles
Carex, Cyperaceae
Carphophis, Reptiles
Catocala, Butterflies and Moths
Catostomus, Fish
Chamaelirium, Liliaceae
Charadrius, Birds
Chelonia, Reptiles

*10.61:* continued

Cherry, Rosaceae
Chub, Fish
Cicindela, Beetles
Cicinnus, Butterflies and Moth
Cimicifuga, Ranunculaceae
Cincinnatia, Snails
Cingilia, Butterflies and Moths
Circus, Birds
Cistothorus, Birds
Clam shrimp. Crustaceans
Claytonia, Portulacaceae
Clematis, Ranunculaceae
Clemmys, Reptiles
Club. Araceae
Clubmoss. Lycopodiaceae
Clubtail. Dragonflies
Cohosh, Ranunculaceae
Coleoptera, Beetles
Coltsfoot, Asteraceae
Conioselinum, Apiaceae
Copperhead, Reptiles
Corallorhiza, Orchidaceae
Coralroot, Orchidaceae
Corema, Empetraceae
Cottongrass, Cyperaceae
Couesius, Fish
Cow-lily. Nymphaeaceae
Cranberry, Ericaceae
Crangonyx, Crustaceans
Crassula, Crassulaceae
Crayfish, Crustaceans
Cress, Brassicaceae
Crotalus, Reptiles
Crowberry, Empetraceae
Cryptogramma, Adiantaceae
Cuckoo Flower, Brassicaceae
Cudweed, Asteraceae
Culver's-root, Scrophulariaceae
Curlew Birds
Currant, Grossulariaceae
Cutworm, Butterflies and Moths
Cycnia, Butterflies and M o h
Cyperus, Cyperaceae
Cypripedium, Orchidaceae
Dace, Fish
Daggermoth, Butterflies and Moths
Damelfly, Damelflies
Darner, Dragonflies
Dendroica, Birds
Dermochelys, Reptiles
Deschampsia, Poaceae
Desmocerus, Beetles
Desmodium, Fabaceae
Devil's-bit, Liliaceae
Dichanthelium, Poaceae
Dock, Polygonaceae
Dragon, Araceae
Dragonfly, Dragonflies
Dropseed, Poaceae
Eacles, Butterflies *and* Moths
Eagles, Birds
Elatine, Elatinaceae
Eleocharis, Cyperaceae
Elymus, Poaceae
Emerald, Dragonflies
Emydoidea, Reptiles
Enallagma, Damselflies
Equisetum, Equisetaceae
Eragrostis, Poaceae
Eretmochelys, Reptiles
Eriocaulon, Eriocaulaceae
Eriophorum, Cyperaceae
Erora, Butterflies and Moths
Erynnis, Butterflies and Moths
Eubalaena, Mammals
Eubranchipus, Crustaceans
Eulimnadia, Crustaceans
Eupatorium, Asteraceae
Fairy Shrimp, Crustaceans
Falco, Birds
Falcon, Birds
False-loosestrife, Onagraceae
False-oats, Poaceae
Fern, Dryopteridaceae, Ophioglossaceae, Schizaeceae
Ferrissia, Snails
Firmoss, Lycopodiaceae
Fixsenia, Butterflies and Moths
Flax, Linaceae
Floater, Mussel
Foxtail, Poaceae
Fritillary, Butterflies and Moths
Fumitory, Fumariaceae
Galium, Rubiaceae
Gallinula, Birds
Gama-grass, Poaceae
Gammarus, Crustaceans
Gamochaeta, Asteraceae
Gasterosteus, Fish
Gavia, Birds
Gentian, Gentianaceae
Gentiana, Gentianaceae
Geometer, Butterflies and Moths
Gerardia, Scrophulariaceae
Ginseng, Araliaceae
Golden Seal, Ranunculaceae
Goldenrod, Asteraceae
Gomphus, Dragonflies
Goodyera, Orchidaceae
Grammia, Butterflies and Moths
Grass, Poaceae
Gray, Butterflies and Moths
Grebe, Birds
Gypsywort, Lamiaceae
Gyrinophilus, Amphibians
Hairgrass, Poaceae
Hairstreak, Butterflies and Moths
Halenia, Gentianaceae
Haliaeetus, Birds
Halichoerus, Mammals

10.61: continued

Harrier. Birds
Hawk. Birds
Hawkmoth. Butterflies and Moths
Hawksbill. Reptiles
Helianthemum, Cistaceae
Hemidactylium, Amphibians
Hemileuca, Butterflies and Moths
Holly-fa. Dryopteridaceae
Honeysuckle, Caprifoliaceae
Horned-sedge. Cyperaceae
Houstonia, Rubiaceae
Huperzia, Lycopodiaceae
Hybognathus, Fish
Hydrastis, Ranunculaceae
Hydrocotyle, Apiaceae
Hydrophyllum, Hydrophyllaceae
Hypericum, Clusiaceae
Hypomecis, Butterflies and Moths
Ilex, Aquifoliaceae
Inchworm Butterflies and Moths
Isoetes, Isoetaceae
Isotria, Orchidaceae
Itame, Butterflies and Moths
Ixobrychus, Buds
Juncus, Juncaceae
Knotweed, Polygonaceae
Lachnanthes, Haemodoraceae
Ladies'-tresses, Orchidaceae
Lady's-slipper, Orchidaceae
Lampeta, Fish
Lamprey, Fish
Lampsilis, Mussels
Lanius, Birds
Laurel Ericaceae
Leatherback, Reptiles
Lechea, Cistaceae
Leech, Segmented Worms
Lemming, Mammals
Lepidochelys, Reptiles
Lepidoptera, Butterflies and Moths
Leptochloa, Poaceae
Leptodea, Mussels
Leymus, Poaceae
Liatris, Asteraceae
Ligumia, Mussels
Limnadia. Crustaceans
Limpet, Snails
Linum, Linaceae
Lion's Foot, Asteraceae
Listera, Orchidaceae
Lithophane, Butterflies and Moths
Littoridinops, Snails
Lobelia, Campanulaceae
Loggerhead, Reptiles
Lonicera, Caprifoliaceae
Loon. Birds
Lophopodella, Moss Animals
Lota, Fish
Lousewort, Scrophulariaceae
Lovegrass, Poacue
Ludwigia, Onagraceae
Luzula, Juncaceae
Lycia, Butterflies and Moths
Lycopdiella, Lycopodiaceae
Lycopus, Lamiaceae
Lygodium, Schizaeaceae
Lyme-grass, Poaceae
Macrobdella, Segmented Worms
Magnolia, Magnoliaceae
Malaclemys, Reptiles
Malaxis, Orchidaceae
Maple, Aceraceae
Meadow Beauty, Melastomataceae
Megaptera, Mammals
Mertensia, Boraginaceae
Metarranthis, Butterflies and Moths
Milium, Poaceae
Milkweed, Asclepiadaceae
Millet, Poaceae
Mimulus, Scrophulariaceae
Minnow, Fish
Minuartia, Caryophyllaceae
Mistletoe, Viscaceae
Mitoura, Butterflies and Moths
Moehringia, Caryophyllaceae
Molluscs, Mussels
Monkey-flower, Scrophulariaceae
Moorhen, Birds
Morus, Moraceae
Moss Animal, Moss Animals
Moth, Butterflies and Moths
Mountain-ash, Rosaceae
Mountain-mint, Lamiaceae
Mucket, Mussels
Mulberry, Moraceae
Muskflower, Scrophulariaceae
Mussel, Mussels
Myotis, Mammals
Myriophyllum, Haloragaceae
Needlegrass, Poaceae
Neurocordulia, Dragonflies
Nicrophorus, Beetles
Numenius, Birds
Nuphar, Nymphaeaceae
Nut-sedge, Cyperaceae
Oak, Fagaceae
Oakworm, Butterflies and Moths
Oats, Poaceae
Oceanodroma, Birds
Odonata, Dragonflies or Damselflies
Oligia, Butterflies and Moths
Ophioglossum, Ophioglossaceae
Ophiogomphus, Dragonflies
Oporornis, Birds
Opuntia, Cactaceae
Orchid, Orchidaceae
Orchis, Orchidaceae
Orontium, Araceae
Owl, Birds
Oxalis, Oxalidaceae

10.61: continued

Oysterleaf, Boraginaceae
Panax, Araliaceae
Panic-grass, Poaceae
Panicum, Poaceae
Papaipema, Butterflies and Moths
Paronychia, Caryophyllaceae
Parsley, Apiaceae
Parula, Birds
Peanutgrass, Poaceae
Pearlwort, Caryophyllaceae
Pedicularis, Scrophulariaceae
Pennyroyal, Lamiaceae
Pennywort, Apiaceae
Petasites, Asteraceae
Phoxinus, Fish
Physeter, Mammals
Pieris, Butterflies and Moths
Pink, Gentianaceae
Pinweed, Cistaceae
Pipewort, Eriocaulaceae
Planarian, Flatworms
Platanthera, Orchidaceae
Plover, Birds
Poa, Poaceae
Pod-grass, Scheuchzeriaceae
Podilymbus, Birds
Podostemum, Podostemaceae
Pogonia, Orchidaceae
Polycelis, Flatworms
Polygonum, Polygonaceae
Polystichum, Dryopteridaceae
Pomatiopsis, Snails
Pondweed, Potamogetonaceae
Pooecetes, birds
Potamogeton, Potamogetonaceae
Prenanthes, Asteraceae
Prickly Pear, Cactaceae
Prunus, Rosaceae
Pseudemys, Reptiles
Putty-root, Orchidaceae
Pycnanthemum, Lamiaceae
Pygmyweed, Crassulaceae
Pyrgulopsis, Snails
Pyrola, Pyrolaceae
Quercus, Fagaceae
Quillwort, Isoetaceae
Rail, Birds
Rallus, Birds
Ranunculus, Ranunculaceae
Rattlesnake, Reptiles
Rattlesnake-plantain, Orchidaceae
Redroot, Haemodoraceae
Reedgrass, Poaceae
Rhexia, Melastomataceae
Rhododendron, Ericaceae
Rhynchospora, Cyperaceae
Ribes, Grossulariaceae
Ridley, Reptiles
Rock-brake, Adiantaceae
Rock-cress, Brassicaceae
Rockrose, Cistaceae
Rosa, Rosaceae
Rose, Rosaceae
Rotala, Lythraceae
Rumex, Polygonaceae
Rush, Juncaceae
Rye, Poaceae
Sabatia, Gentianaceae
Sack Bearer, Butterflies and Moths
Sagina, Caryophyllaceae
Sagittaria, Alismataceae
Salamander, Amphibians
Salix, Salicaceae
Sallow, Butterflies and Moths
Sandpiper, Birds
Sandwort, Caryophyllaceae
Sanicle, Apiaceae
Sanicula, Apiaceae
Scaphiopus, Amphibians
Scheuchzeria, Scheuchzeriaceae
Schinia, Butterflies and Moths
Scirpus, Cyperaceae
Scleria, Cyperaceae
Sclerolepis, Asteraceae
Scouring-rush, Equisetaceae
Sea-blite, Chenopodiaceae
Seal, Mammals
Sedge, Cyperaceae
Semiothisa, Butterflies and Moths
Senna, Fabaceae
Setaria, Poaceae
Shadbush, Rosaceae
Shrew, Mammals
Shrike, Birds
Siltsnail, Snails
Silverling, Caryophyllaceae
Sisyrinchium, Iridaceae
Skimmer, Dragonflies
Skipper, Butterflies and Moths
Snail, Snails
Snake, Reptiles
Snakeroot, Asteraceae
Snaketail, Dragonflies
Snowberry, Caprifoliaceae
Solidago, Asteraceae
Somatochlora, Dragonflies
Sorbus, Rosaceae
Sorex, Mammals
Spadefoot, Amphibians
Sparganium, Sparganiaceae
Sparrow, Birds
Spartina, Poaceae
Spartiniphaga, Butterflies and Moths
Speargrass, Poaceae
Speyeria, Butterflies and Moths
Sphenopholis, Poaceae
Sphinx, Butterflies and Moths
Spike-sedge, Cyperaceae
Spiranthes, Orchidaceae
Spleenwort, Aspleniaceae

10.61: continued

Sponge, Sponges
Spongilla, Sponges
Sporobolus, Poaceae
Spring Beauty, Portulacaceae
Squawfoot, Mussel
St. John's-wort, Clusiaceae
St. Andrew's Cross, Clusiaceae
Stachys, Lamiaceae
Sterna, Birds
Stickleback, Fish
Storm-petrel, Buds
Strawberry, Rosaceae
Strophitus, Mussel
Sturgeon, Fish
Stygobromus, Crustaceans
Stylurus, Dragonflies
Suaeda, Chenopodiaceae
Sucker, Fish
Symphoricarpos, Caprifoliaceae
Synaptomys, Mammals
Synurella, Crustaceans
Tern, Birds
Terrapene, Reptiles
Terrapin, Reptiles
Threadfoot, Podostemaceae
Thuja, Cup —e——
Tick-trefoil, Fabaceae
Tigermoth, Butterflies and Moths
Tinker's-weed, Caprifoliaceae
Tipularia, Orchidaceae
Toothcup, Lythraceae
Trichomes, Hymenophyllaceae
Trichostema, Lamiaceae
Triosteum, Caprifoliaceae
Triphora, Orchidaceae
Tripsacum, Poaceae
Trisetum, Poaceae
Turtle, Reptiles
Twayblade, Orchidaceae
Tyro, Birds
Umbrella-sedge, Cyperaceae
Utricularia, Lentibulariaceae
Vaccinium, Ericaceae
Valvata, Snails
Verbena, Verbenaceae
Vermivora, Birds
Veronica, Scrophulariaceae
Veronicastrum, Scrophulariaceae
Vertigo, Snails
Vervain, Verbenaceae
Viburnum Caprifoliaceae
Viola, Violaceae
Violet, Violaceae
Waldsteinia, Rosaceae
Walker, Snails
Wapato, Alismataceae
Warbler, Birds
Water-milfoil, Haloragaceae
Water-speedwell, Scrophulariaceae
Water-starwort, Callitrichaceae
Waterleaf, Hydrophyllaceae
Waterwort, Elatinaceae
Wedgegrass, Poaceae
Whale, Mammals
White, Butterflies and Moths
Williamsonia, Dragonflies
Willow, Salicaceae
Winterberry, Aquifoliaceae
Wood-mint, Lamiaceae
Wood-sorrel, Oxalidaceae
Woodrush, Juncaceae
Woodsia, Dryopteridaceae
Wormwood, Asteraceace
Woundwort, Lamiaceace
Wren, Birds
Yarrow, Asteraceae
Zale, Butterflies and Moths
Zanclognatha, Butterflies and Moths

(10:70: Designated Significant Habitats: Reserved)

REGULATORY AUTHORITY

321 CMR 10.00: M.G.L. c. 131A.

# FEDERAL PROTECTED SPECIES INFORMATION

# United States Department of the Interior

**FISH AND WILDLIFE SERVICE**
New England Field Offices
22 Bridge Street, Unit #1
Concord, New Hampshire 03301-4986

March 16, 1994

Jim Duncan
ENSR Consulting and Engineering
35 Nagog Park
Acton, MA 01720

Dear Mr. Duncan:

This responds to your letter dated January 21, 1994 requesting information on the presence of Federally listed and proposed endangered or threatened species in relation to 39 Army Reserve Centers in New England. The centers reviewed occur in: Connecticut (8), Maine (3), Massachusetts (12), New Hampshire (5), Rhode Island (7) and Vermont (4).

Based on information currently available to us, no Federally listed or proposed threatened and *endangered* species under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project *area,* with the exception of occasional transient *endangered* bald eagles (Haliaeetus leucocephalus) *or* peregrine falcons (Falco peregrinus anatum). However, we suggest that you contact the following for information *on* state listed species that may be present:

Nancy Murray
Connecticut Natural Diversity Data Base
79 Elm St., P.O. Box 5066
Hartford, CT 06106-5066
203-566-3540

Sue Gawler
Maine Natural *Areas* Program
State House Station 130
Augusta, Maine 04333
(207) 289-6800

Pat Huckery
Massachusetts Natural Heritage Program
Division of Fisheries and Wildlife
100 Cambridge St., Boston, MA 02202
(617) 727-9194

David Moore
New Hampshire Natural Heritage *Inventory* Program
P.O. Box 856, Concord, New Hampshire 03302-0856
(603) 271-3623

Rick Enser
Rhode Island Natural Heritage Program
83 Park St.
Providence, RI 02903
(401) 277-2776,

Chris Fichtel
Vermont Natural Heritage Program
Agency of Natural Resources
10 South, 103 S. Main St.
Waterbury, VT 05676
(802) 244-7331

Lists of Federally designated endangered and threatened species in all of the New England state are included for your information. Thank you for your cooperation and please *contact* Susi von Oettingen of this office at (603) 225-1411 if we can be of further assistance.

Sincerely yours,

for Gordon E. Beckett
Supervisor
New England Field Offices

Enclosures

# FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

| Common Name | Scientific Name | Status | Distribition |
|---|---|---|---|
| FISHES: | | | |
| Sturgeon, shortnose* | Acipenser brevirostrum | E | Atlantic coastal waters and rivers (Conn. R.) |
| REPTILES: | | | |
| Turtle, green* | Chelonia mydas | T | oceanic straggler in *southern* New England |
| Turtle, hawksbill* | Eretmochelys imbricata | E | oceanic straggler in *southern* New England |
| Turtle, leatherback* | Dermochelys coriacea | E | Oceanic summer resident |
| Turtle, loggerhead* | Caretta caretta | T | oceanic summer resident |
| Turtle, Atlantic ridley* | Lepidochelys kempii | E | oceanic summer resident |
| Turtle, Plymouth redbelly | Chrysemys rubriventris bangsi | E | Plymouth & Dukes Counties |
| BIRDS: | | | |
| Eagle, bald | Haliaeetus leucocephalus | E | Nesting *in* Quabbin Res. and along Conn. R.; entire state-migratory |
| Falcon, American peregrine | Falm peregrinus anatum | E | Current *nesting:* Boston & Springfield; entire state-migratory |
| Falcon, Arctic peregrine | Falco peregrinus tundrius | P | Entire state-migratory |
| Plover, Piping | Charadrius melodus | T | Atlantic coast |
| Roseate Tern | Sterna dougallii dougallii | E | Atlantic *coast* |
| MAMMALS: | | | |
| Whale, blue* | Balaenoptera musculus | E | oceanic |
| Whale, finback* | Balaenoptera physalus | E | oceanic |
| Whale, humpback* | Megaptera novaeangliae | E | oceanic |
| Whale, right* | Eubalaena spp. (all species) | E | oceanic |
| Whale, sei* | Balaenoptera borealis | E | oceanic |
| Whale, sperm* | Physeter catodon | E | oceanic |
| MOLLUSKS: | | | |
| Mussel, Dwarf wedge | Alasmidonta heterodon | E | Hampshire County probably extirpated |
| INSECTS | | | |
| Beetle, *Puritan* tiger | Cicindela puritana | T | Hampshire County (Conn. River Valley) |
| Beetle, northeastern beach tiger | Cicindela dorsalis dorsalis | T | Dukes County (beaches, Cape Cod south) |
| PLANTS: | | | |
| Small whorled Pogonia | Isotria medeoloides | E | Hampshire, Essex, Hampden, Worcester Middlesex Counties |
| Gerardia, Sandplain | Agalinus acuta | E | Barnstable County |
| Bulrush, Northeastern | Scirpus ancistrochaetus | E | Franklin County |

* Except for *sea* turtle nesting habitat, principal responsibility for these species is vested with the National Marine Fisheries Service

Rev. 11-12-92

# U.S. ARMY RESERVE
# STORMWATER-POLLUTION PREVENTION PLAN
# (SWP3)

**Westover Armed Forces Reserve Center**
**Buildings *5550* and *5551***
**Organizational Maintenance Facility & Military Equipment Parks**
**Chicopee, Massachusetts**
**MA007**

*Drafted by*

U.S. GEOLOGICAL SURVEY
Water Resources Division
Massachusetts-Rhode Island District

*for*

94'' REGIONAL SUPPORT COMMAND
Devens, Massachusetts

09116199

**SWP3 Certification (NPDES, VTLG)**

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

Signature:

Typed name: Gary W. Puryear

Title: Environmental Manager

Telephone numbers: (978) 796-2238

| Acronyms and Abbreviations | |
|---|---|
| AMSA | Area Maintenance Support Activity |
| AFB | Air Force Base |
| AST | Aboveground-Storage Tank |
| BMP | Best Management Practice |
| CFR | Code of Federal Regulations |
| DCSOPS (T) | Deputy Chief of Staff, Operations (Training Division) |
| DEP | Department of Environmental Protection |
| DRMO | Defense Reutilization and Marketing Office |
| DS | Dental Service |
| HMMWV | High Mobility Multi-purpose Wheeled Vehicle |
| HQ | Headquarters |
| II | Inspector-Instructor |
| MEP | Military Equipment Park |
| MSDS | Material Safety Data Sheet |
| MSGP | Multi-Sector General Permit |
| NPDES | National Pollutant Discharge Elimination System |
| NSWD | Non-Stomiwater Discharge |
| OF | Outfall |
| OMF | Organizational Maintenance Facility |
| PMCS | Preventive Maintenance Checks and Services |
| | |
| POV | Privately Owned Vehicle |
| PPM | Potentially Polluting Material |
| PPT | Pollution Prevention Team |
| RFTA | Reserve Forces Training Area |
| RSC | 94th Regional Support Command, Devens, Massachusetts |
| SOP | Standard Operating Procedure |
| SWP3 | Stormwater-Pollution Prevention Plan |
| TOW | Tube-launched Optically-tracked Wire-guided missile system |
| USARC | U.S. Army Reserve Center |
| USEPA | U.S. Environmental Protection Agency |
| USGS | U.S. Geological Survey |
| UST | Underground-Storage Tank |

TABLE **OF** CONTENTS

# 1.0 WNTRODUC'TION

The Clean Water Act of 1987 [40 Code of Federal Regulations (CFR) 122] requires Federal installations that discharge stomwater whose quality may be affected by industrial activities to implement plans to control the quality of stormwater discharges. This *"Stormwater-Pollution Prevention Plan"* (SWP3) was developed in response to these requirements. The plan identifies sources of potential pollution, describes *"Best Management Practices"* (BMPs) designed to minimize pollution through prevention and source control, and recommends actions for this facility. The SWP3 also discusses stormwater-runoff drainage, identifies point-source outfalls into local surface waters, and provides non-stormwater discharge certification of stormwater outfalls.

## 1.1 FACILITY PERMIT

The State of Massachusetts, in which the facility is located, does not have National Pollutant Discharge Elimination System (NPDES) permitting authority. Stormwater permitting in the State is administered by the U.S. Environmental Protection Agency (USEPA) Region I [Stormwater Permit Manual, Thompson Publishing Group, Inc., written commun., July 1998]. The Massachusetts Department of Environmental Protection (DEP) reviews the USEPA's stormwater permits for water-quality certification under Section 401 of the Clean Water Act. State-specific conditions have been added to USEPA's stormwater permits by the Massachusetts DEP to ensure:that they do not violate State waterquality standards. Massachusetts' stormwater dischargers may seek coverage under the USEPA's multi-sector general permit (MSGP). To obtain coverage, the facility should send completed notice of intent forms to:

Stormwater Notice of Intent (4203)
401 M. Street, Southwest
Washington, D.C. 20460.

## 1.2 FACILITY DESCRIPTION

Buildings *5550* and 5551 are located at the Westover Armed Forces Reserve Center (AFRC) in Chicopee, Massachusetts *(PLATES 1,* **3).** Building 5550 is the AFRC and building 5551 is the Organizational Maintenance Facility (OMF). The AFRC, OMF, and military equipment parks (MEPs, *PLATES 37 to 40)* are surrounded by Radar Hill Drive to the east, Galaxy Road to the southeast, **Airman** Drive to the southwest, and Johnson Drive to the north. USEPA-regulated activities, including the OMF and MEPs, encompass about 12.2 acres at an elevation of about 240 feet above the national geodetic vertical datum of 1929 (figure 1.2). Geographic coordinates for the AFRC are latitude 42'1 1'37" North and longitude 72'33'27" West.

The primary mission of the Westover OMF **is** to provide operator and some organizational maintenance for vehicles used by the 287th Medical Company Dental Service (DS). Maintenance conducted by the Army Reserve at the OMF includes support of military vehicles and equipment necessary to perform the units' mission. The mission of the 287th Medical Company (DS) is to provide dental support. Unit personnel perfonn 20 percent of the organizational maintenance on their vehicles but usually take the vehicles to Area Maintenance Support Activity **(AMSA)** 72 (C) in Windsor **Locks,** Connecticut, to do this maintenance. The remaining 80 percent of the organizational maintenance and direct support maintenance for military vehicles used by the 287th Medical Company (DS) is performed by AMSA 72 (G) personnel.

The 287"' Medical Company (DS) shares the OMF with the 25th Marines Tube-launched Optically-tracked Wire-guided missile system (TOW) Platoon. Maintenance conducted by the Marine Corps at the OMF includes support of military vehicles and equipment necessary to perform the units' mission. The 25th Marines TOW Platoon **is** a mobile anti-armor weapon unit. Unit personnel perform first echelon maintenance (similar to operator and organizational maintenance) on vehicles operated by the unit. **Higher** levels of maintenance (second and third echelon) are performed at the Headquarters (HQ) Marine Regiment in Worcester, Massachusetts. Sometimes a contact team comes to the Westover OMF to perform higher level maintenance for the unit.

**1.0 Introduction**-*Continued*

## 1.3 PIAN DEVELOPMENT

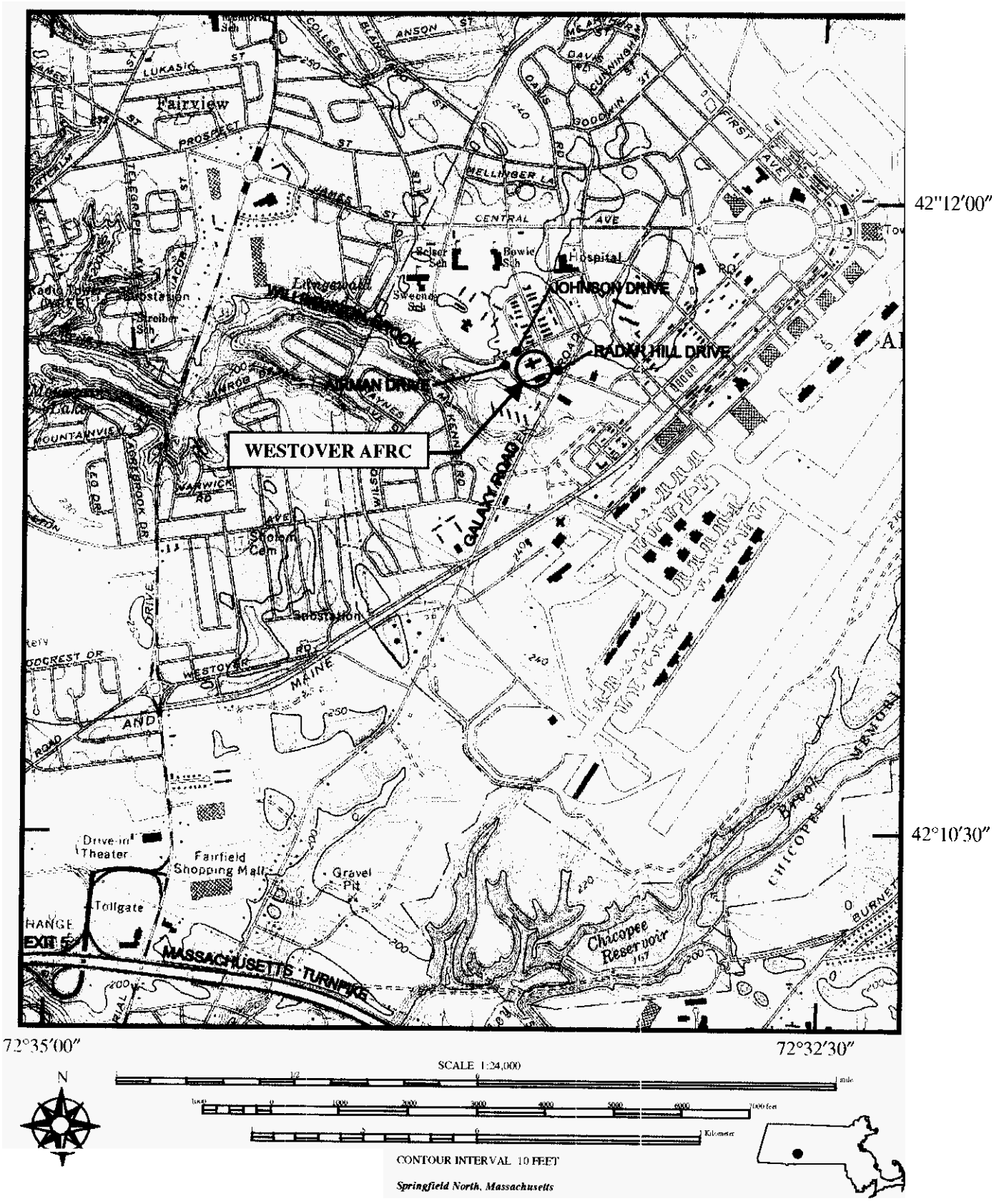
This plan was drafted by the U.S. Geological Survey (USGS), Water Resources Division. Information and illustrations included in the plan were developed from site inspections and from the 94'' Regional Support Command (RSC) and USGS databases.

## 1.4 PLAN REVISIONS

The SWP3 should be updated annually or more often, if required. Many elements of the plan are presented in maps and tables describing (I) sites where potential pollution of stomiwater might occur, (2) stormwater-pollution **risks** from those sites to surface waters of the State, **and (3)** BMPs that prevent or control stormwater pollution. Detailed notes and sketches should he made during periodic stomwater inspections to facilitate the annual plan revision.

**1.0 Introduction**-*Continued*

**Figure 1.2--Location Map** (source: USGS).



# 2.0 POLLUTION-PREVENTION TEAM [NPDES.XI.P.2.b.(1)]

The Pollution-Prevention Team (PPT) is responsible for implementing and evaluating the effectiveness of the SWP3 at this facility. Personnel should officially be appointed to the team. Tables 2.0a and 2.0b list the members of the PPT and show their respective duties. Additional members may be appointed to the PPT as needed.

**Table 2.0a—Pollution-Prevention Team Members and Duties for the U.S. Army Reserve.**

| Team member | Duties |
|---|---|
| 94th Regional support Command - Chief Environmental Division 978) 796-2238 | • Reviews and approves the S W 3 and any modifications or updates to the plan in coordination with State and Federal regulators.<br>• Provides guidance and information as requested.<br>• Performs annual site compliance inspection. |
| Regional Facility Manager - Vermont ,802)773-1786 | • Reviews and approves the SWP3 and any modifications or updates to the plan. |
| Westover AFRC Facility Coordinator 413) 593-1110 | • Implements the stormwater-pollution prevention program at the facility.<br>• Schedules meetings of the PPT.<br>• Signs documents and certificates required in the S W 3 .<br>• Prepares cost estimates for implementation plans for advanced and baseline **BMPs** at the facility.<br>• Submits requisitions and work orders and promotes self-help initiatives.<br>• Reviews monthly stormwater-inspection checklists.<br>• Serves as backup emergency-response spill coordinator for the facility.<br>• Informs Commanding Officer and 94th RSC of problems and equipment and training needs. |
| Westover OMF Motor Sergeant 413) 593-6329 | ■ Assists Facility Coordinator with implementation of the SWP3 at the facility, including plans for equipment, construction, and training.<br>• Serves as official emergency-response spill coordinator for the facility.<br>• Conducts monthly stormwater inspections and files inspection reports.<br>• Inspects hazardous material and waste-storage areas, updates records on those areas, monitors waste generation, and monitors the transfer of such materials among units.<br>• Ensures that OMF personnel implement good housekeeping, preventive-maintenance, and spill-prevention practices at the motor pool. |

**2.0** Pollution Prevention **'leani-Conrimred**

'Table **2.0b—Pollution-Prevention Team** Members **and** Duties for the U.S. Marine **Corps.**

| Team member | **Duties** |
|---|---|
| )4th Regional support Command - Chief Environmental Division 978) 796-2238 | • Reviews and approves the SWP3 and any modifications or updates to the plan.<br>• Provides guidance and information as requested.<br>• Performs annual site compliance inspection. |
| Nestover AFRC Facility Coordinator 413) 593-1110 | • Reviews and approves the SWP3 and any modifications or updates to the plan in coordination with State and Federal regulators, |
| Nestover AFRC I Captain 413) 593-5252 | • Reviews and approves the S W 3 and any modifications or updates to the plan in coordination with State and **Federal** regulators. |
| Nestover AFRC I Staff First Sergeant 413) 593-5252 | • Implements the stormwater-pollution prevent on program at the facility.<br>• Schedules meetings of the PPT.<br>• Signs documents and certificates **required** in the SWP3.<br>• Prepares cost estimates for implementation plans for advanced and baseline **BMPs** at the facility.<br>• Submits requisitions and **work** orders and promotes self-help initiatives.<br>• Reviews monthly stormwater-inspection checklists.<br>• Serves as backup emergency-response spill coordinator for the facility.<br>• Informs Commanding Officer and Facility Coordinator of problem and equipment and training **needs.** |
| Nestover OMF I Staff Motor Transport Chief 413) 593-5252 | • Assists First Sergeant with implementation of the SWP3 at the facility, including plans for equipment, construction, and training.<br>• Serves as official emergency-response spill coordinator for the facility.<br>• Conducts monthly stormwater inspections and files inspection reports.<br>• Inspects hazardous material and waste-storage **areas,** updates records on those **areas,** monitors waste generation, and monitors the transfer of such materials among units.<br>• Ensures that OMF personnel implement good housekeeping preventive-maintenance, and spill-prevention practices at the motor pool. |

# 3.0 ASSESSMENT [NPDES.XI.P.2.b.(2)]

As required by the USEPA multi-sector general permit, the site assessment includes a description of potential source:; of pollutants that may affect stomiwater discharges or which may cause the discharge of pollutants during dry weather from the facility, All activities and materials that may be potential pollutant sources are identified. Pollutant sources arc referenced to stormwater outfalls to aid in conducting the risk assessment, implementing BMPs, and updating the SWP3.

## 3.1 SITE MAP [NPDES.XI.P.2.b.(2)(a)]

The USEPA stormwater regulations require that a facility site map be developed as part of the SWP3. Required elements of the **map** include locations of industrial activities, stormwater structures, and the directions of stormwater runoff. The site maps (figures 3.1a and 3.1b) show primary stormwater-drainage directions, outfalls, and the location of buildings and facilities. Stormwater-control structures, pollutant sources, and areas at high risk for pollution are labeled with site map codes.

## 3.2 DRAINAGE [NPDES.XI.P.2.b.(2)(a)]

Site observation of the Westover AFRC identified three stormwater outfalls (OF-1 through OF-3, figures 3.1a and 3.1b) that could be subject to USEPA stormwater regulations OF-I is a storm drain in MEP 1 that includes runoff from the **grass** hill between the AFRC and the MEP *(PLATE'42).* Regulated activities within the drainage area of OF-1 include potential **leaks** from military vehicles parked at MEP 1 *(PLATES 37, 38).* MEP I is a paved parking area surrounded by an asphalt berm on the northern, eastern, and southern sides. Spills and leaks from military vehicles parked in a MEP commonly result from an inadequate facility preventive-maintenance program, including a lack of available drip pans and infrequent vehicle inspections (see section 3.9). Stormwater leaving the facility at OF-1 drains into the storm-sewer system on Galaxy Road. The storm-sewer system directs stormwater southwest along Galaxy Road and discharges into Willimanson Brook. Willimanson Brook directs flow west and north through Mountain Lake into the Connecticut River.

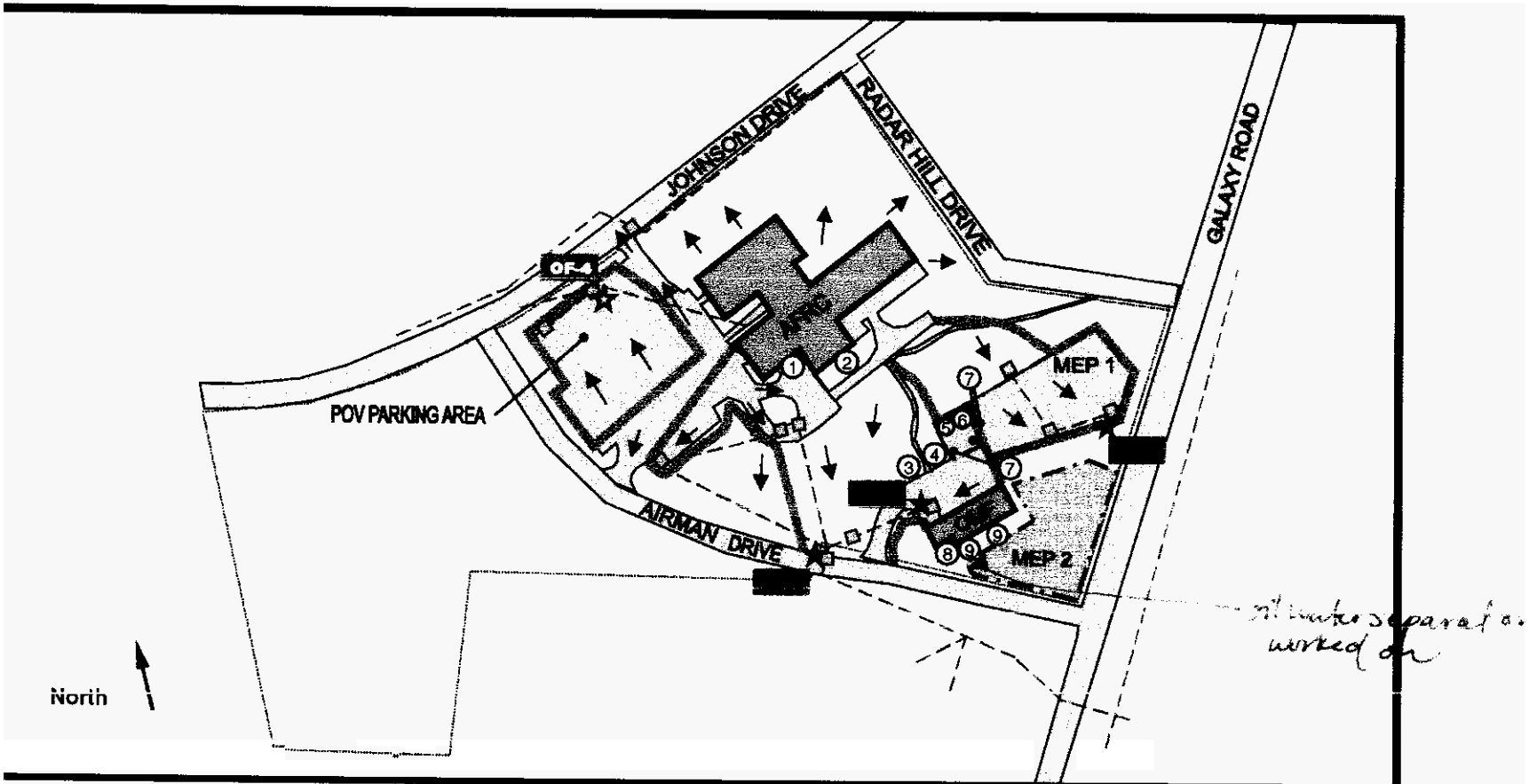
OF-2 is a storm drain north of the OMF *(PLATE 43).* Military vehicles waiting to be moved into the maintenance bays are temporarily parked in front of the OMF near this storm drain. Operator maintenance is performed in this parking area. Regulated activities within the drainage area of OF-2 include potential leaks from military vehicles temporarily parked in this area and potential spill during loading/unloading of PPMs into the OMF and the POL shed area *(PLATE 13).* This outfall also includes roof draiige from the OMF. Stormwater exiting the facility at OF-2 flows west and enters the storm-sewer system on *Airman* Drive. The storm-sewer system directs flow southeast to Galaxy Road and discharges into Willimanson Brook.

OF-3 is a storm drain northwest of the OMF on *Airman* Drive (*PLATE 44*). Most of the stormwater runoff exiting the facility at OF-3 is **from** the paved POV parking area south of the AFRC building and from the grass covered hill south of the AFRC. OF-3 is regulated because stormwater runoff entering the facility storm-sewer system at OF-2 flows past OF-3 before exiting the facility. Stormwater from OF-3 is directed southeast to Galaxy Road and discharges into Willimanson Brook.

OF-4 is a storm drain in the POV parking area west of the AFRC *(PLATE 4'5).* No regulated activities occur within the drainage area of OF-4. Most of the POV parking area that contributes flow to O F 4 can be seen in plate 2. Stormwater exiting the facility at O F 4 flows southwest along Johnson Drive and enters Willimanson Brook Some overland flow from the eastern side of the POV parking area bypasses OF-4 and flows under the fence onto Johnson Drive. Some of this flow may enter the storm drain located on the southern side of Johnson Drive.

The Westover *Air* Force Base (AFB) SWP3 does not include the AFRC. Stormwater runoff from the AFRC enters storm-sewer systems that do not have a NPDES permit, according to the Environmental Engineering Group at Westover AFB.

**3.0 Assessment-***Continued*



**3.0 Assessment-***Continued*

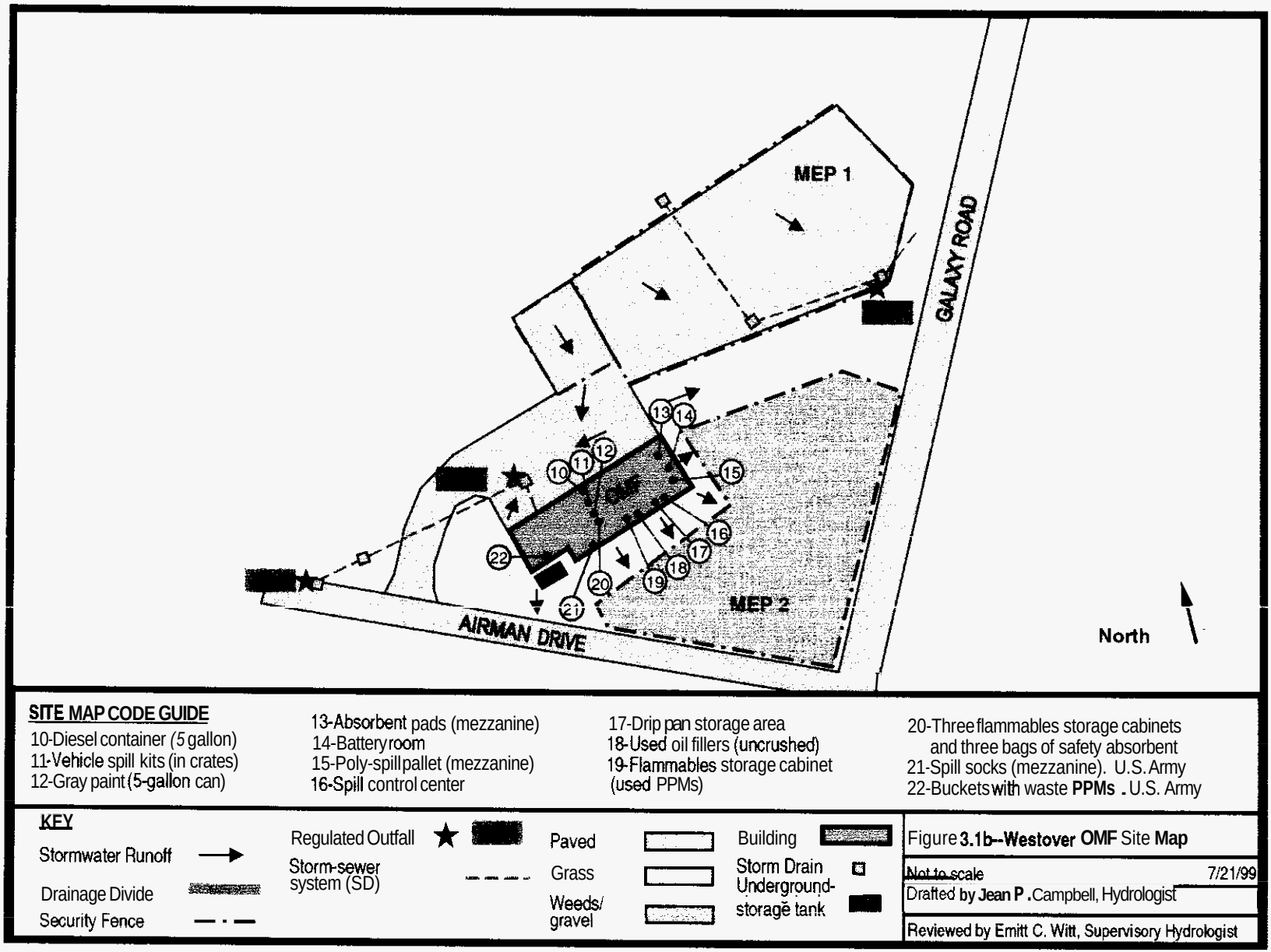



Figure 3.1b--Westover OMF Site Map

Not to scale 7/21/99

Drafted by Jean P. Campbell, Hydrologist

Reviewed by Emitt C. Witt, Supervisory Hydrologist

**3.0 Assessment-***Continued*

## 3.3 STRUCTURES [NPDES.XI.P.2.b.(2)(a) & (b)]

Stormwater runoff at the Westovcr OMF collects in one of two storm drains in MEP 1 that direct flow into the storm-sewer system on Galaxy Koad. *An* asphalt berm surrounds MEP 1, so all runoff in this area is directed into the stom-sewer system. The storm drain north of the OMF (OF-2) directs flow into the stom-sewer system on Aimian Drive (*PLATE 43)*. The vehicle-wash rack north of the OMF (site **3,** *PLATE* 6) directs flow through an oil/water separator (site **4,** *PLATE* **7)** into the sanitary-sewersystem. The oil/water separator and stonn drains were cleaned in June 1998, according to the facility coordinator. Several floor drains *(PLATE 33 shows one drain)* inside the OMF direct flow through one of two oiliwater separators south of the OMF **(site 9,** *PLATE 16*) into the sanitary-sewer system.

## 3.4 POTENTIALLY POLLUTING MATERIALS [NPDES.XI.P.2.b.(2)(b)]

Exposed potentially polluting materials (PPMs) include any hazardous materials that are exposed to precipitation and/or stormwater runoff (i.e., during storage, active **use,** or loading/unloading). **A** lack of cover and containment during loading/unloading or storage of PPMs commonly results in exposure to stormwater runoff, Both U.S. Army Reserve and U.S. Marine Corps maintenance personnel at the OMF should maintain an updated inventory tracking system for PPMs used by their unit at the facility. *An* electronic copy of the PPM inventory for each unit, in spreadsheet format, will be provided to maintenance personnel as part of this assessment. The inventory should be continuously updated and include: the locations of materials and approximate quantities on hand.

## 3.5 POTENTIAL SOURCES OF POLLUTANTS [NPDES.XI.P.2.b.(2)(e)]

An inventory of areas at the Westover OMF where industrial activities could potentially pollute stormwater runoff was compiled from facility plans, staff interviews, and field reconnaissance. PPMs, either during storage or loading and unloading, are the main source of pollution at this facility. The use of PPMs and generation of waste products are results of vehicle maintenance. Substantial vehicle fueling is not conducted at this facility.

The **U.S.** Army Reserve performs maintenance of vehicles and equipment imide the OMF within three service bays (*PLATE* 32 *shows the large maintenance buy).* Minor repairs are occasionally made to vehicles outside the OMF in the vehicle parking areas. Vehicle maintenance that involves the exchange of fluids is not conducted in the MEPs, according to the Motor Sergeant. The 287" Medical Company (DS) participates in the Army Oil Analysis Program operated through Fort Drum, New **York.**

The Army Reserve stores PPMs in a triple-bay POL shed on a paved area surrounded by a fence near MEP 1 (site **5,** *PLATES 8, 9, 10*). New PPMs are stored inside the eastern hay. The middle bay is used as a storage area for outdated PPMs such as paint. The western bay is used as a :storage*area* for new 55-gallon drums and empty canisters.

The 25th Marines TOW Platoon performs vehicle maintenance within two service bays inside the OMF *(PLATE 31 shows one buy).* The Marine Corps store most new PPMs inside the OMF in one of two flammables storage cabinets (site 20, *PLATES 28, 29)* or in a corrosive storage cabinet in the battery room (site **14,** *PLATE 21).* Battery filling with a sulfuric acid electrolyte is performed in the battery room. Some new PPMs were observed on the floor of the OMF and battery room during the assessment. Materials stored inside the OMF are protected from precipitation and stormwater runoff during storage, however secondary containment should be provided for all PPMs stored either inside or outside the OMF. **A** single-bay POL shed is used for bulk storage of new PPMs (site **6,** *PLATE 11*).

**3.0 Assessment-***Continued*

The Marine Corps store waste PPMs inside the OMF in one of two flammables storage cabinets **(sites 19, 20**; *PLATES* 26, 27). Used oil filters are drained and stored uncrushed in a metal bucket prior to disposal **(site 18, *PLATE 25)*.**

The 287th Medical Company (DS) does not generate hazardous waste on a routine basis. Waste generated by the unit is given to the 25'' Marines TOW Platoon for disposal. The Motor Transport Chief (Marine *Corps)* takes waste PPMs to hanger 5 on the Westover AFB for disposal about once a month. The unit generates about 5 gallons of waste oil per month, according to the Motor Transport Chief. The 25'' Marines TOW Platoon follows the same hazardous-material regulations as those followed by Westover AFB personnel.

**A** 2,000-gallon underground-storage tank (UST) filled with no. *2* fuel oil is used to heat the OMF **(site 8,** *PLATE 15).* An 8,000-gallon UST is used to store fuel oil used to heat the AFRC **(site 2,** *PLATE* **5).** Both USTs have the potential to impact surface water during the tank filling procedure. The tanks are tested yearly, according to the Facility Coordinator.

**3.6 SIGNIFICANT SPILLS AND LEAKS** [NPDES.XI.P.2.b.(2)(c)]

There have not been any significant (reportable) spills or leaks during the last **3** years at the Westover AFRC, according to the Army Reserve Facility Coordinator and the Marine Corps Motor Transport Chief.

**3.7 NON-STORMWATER DISCHARGES [NPDES.XI.P.2.b.(3)(g)(i)]**

Unauthorized connections discharging pollutants to stormwater runoff or inappropriate management practices result in non-stormwater discharges (NSWDs) to stormwater-sewer systems, open drainage ditches, and outfalls. Sources of unauthorized NSWDs must be identified and permitted, or eliminated, except for flows in compliance with a NPDES permit. Stormwater-pollution prevention measures should be adopted and implemented, where necessary, to minimize pollutants in these discharges.

OF-I, OF-2, and OF-3 (*PLATES 42 to 44)* were observed for NSWDs on July 22, 1999, as part of the Westover AFRC site assessment conducted by the USGS. Dry-weather discharges were not observed at any of these regulated outfalls. **A** NSWD certification is provided in the Appendix (table 6.0). The certification [NPDES.XI.P.2.b.(3)(g)(i)] **must** be signed by the Facility Coordinator/First Sergeant in accordance with the signatory-requirements section of the multi-sector general permit [NPDES.VII.G].

**3.8 STORMWATER-MONITORING DATA [NPDES.XI.P.2.b.(2)(d)]**

Stormwater sampling has not occurred at this facility, according to the Facility Coordinator. Sampling of stormwater, if required, should he conducted at regulated outfalls as mandated by the USEPA. Stormwater sampling and analysis **must** be performed by qualified individuals adhering to a specific quality-assurance/quality-control program. Stormwater monitoring currently is not required for vehicle-maintenance activities in USEPA-regulated states like Massachusetts and most stales with NPDES permitting authority.

**3.9 RISK SUMMARY [NPDES.XI.P.2.b.(2)(a) & (e)]**

An initial assessment of *areas* at the Westover AFRC with a potential. for pollution from stormwater runoff has been prepared as part of the SWP3. The assessment should be considered a "snapshot" in time and must be updated annually or more often, as necessary. The following narratives summarize conditions observed during the July 13 and 22, 1999, site assessment. Sites identified as having a potential for stormwater pollution are summarized in table 3.9. Locations of these sites are shown in figures 3.1a and 3.1b.

**3.0 Assessment-***Continued*

ORGANIZATIONAL MAINTENANCE FACILITY – U.S. ARMY RESERVE

'Ihc 287th Medical Company (DS) performs operator and some organizational maintenance at three bays inside the OMF. One large bay *(PLATE' 32)* and two small bays are available for the Army Reserve to perform vehicle maintenance in the Westover OMF. There is a floor drain in the large bay and a floor drain in the center of the two small bays (*PLATE 33)*. Both *floor* drains direct flow through an oil/water separator south of the OMF (site **9,** *PLATE 16)* into the sanitary-sewer system.

Military equipment serviced at the shop includes 2.5-ton cargo units,, light utility vehicles, cargo trailers, and generators. Unit maintenance personnel perform all of the operator maintenance and about twenty percent of the organizational maintenance on vehicles operated by the 287"' Medical Company (DS). Unit personnel usually perform organizational maintenance on vehicles operated by the 287th Medical Company (DS) at AMSA 72 (C) in Windsor Locks, Connecticut. Eighty percent of the organizational maintenance and all of the direct support maintenance on these vehicles is done by AMSA 72 (G).

Adequate workspace was noted in the maintenance bays. Spill **socks** were located on the mezzanine at the back of the large maintenance bay (site *21, PLATE 34)*. It is recommended that the spill equipment be moved near **the** maintenance bay doors to protect OF-2 from a spill or leak.

PPMs used for vehicle maintenance are currently being stored in the eastern bay of the tripledoor POL shed (site **5,** *PLATE 10)*. PPMs were observed without secondary containment in the large maintenance bay during the first day of the site assessment. A flammables storage cabinet or poly-spill pallet is needed to store PPMs inside the OMF. The PPMs were moved to the Army Reserve POL shed for safe storage. Waste PPMs were observed in several buckets in the back of a small maintenance bay (site *22, PLATE 35)*. The used motor oil needs to be disposed of as hazardous waste.

Two drip pans for use by the Army Reserve were observed during the site assessment. Approximately 10 percent of the vehicles stored at the facility should have drips pans available to control potential leaks. The Army Reserve has a sufficient number of drip pans at this time.

Material safety data sheets (MSDS) were not available for PPMs used by the Army Reserve. Spill-response procedure signs were not posted in the OMF. A recommended BMP is to post current spill-response procedure signs at all PPM storage and loading/unloading areas. It is recommended that current MSDS sheets be stored in a binder and mounted to the wall in the OMF.

An Installation Spill Contingency Plan (ISCP) was designed by the Army Reserve for this facility by combining a plan from the 94" Regional Support Command and a plan from the Westover AFB. The plan is about two to three years old, according to the Facility Coordinator. The Army Reserve **has** a hazardous-material/waste handling plan. The Motor Sergeant **has** had hazardous-material/waste handling training and is due for a yearly refresher. It is recommended that all military and civilian personnel have good housekeeping,-." emergency spill response, and stormwater training.

The OMF poses a moderate risk to surface waters of the State of Massachusetts. A spill inside the OMF or a leaking vehicle parked outside the maintenance bays *(PLATE 14)* could enter OF-2. Army Reserve personnel need to have spill equipment near this drain to shorten spill response time. PPMs should not be stored in the maintenance bays without secondary containment.

**3.0 Assessment**-*Continued*

ORGANIZATIONAL MAINTENANCE FACILITY – U.S. MARINE CORPS

The 25th Marines TOW Platoon performs maintenance at two service bays inside the OMF *(PLATE 31).* Thci-e are two floor drains in the maintenance area that direct flow through an oil/water separator south of the OMF (site **9,** *PLATE 16*) into the sanitary-sewersystem.

Military equipment serviced at the shop includes high mobility multi-purpose wheeled vehicles (HMMWVs), 5-ton cargo units, light utility vehicles, and a trailer. Unit personnel perform first echelon maintenance on vehicles operated by 25th Marines TOW Platoon. Second or third echelon maintenance is performed in Worcester, Massachusetts, at the Marine Headquarters or a contact team travels to the Westover OMF to perfonn vehicle maintenance.

Neat. orderly conditions and adequate workspace were noted in the maintenance bays. A spill control center (barrel on wheels) was observed in the southeastem corner of the maintenance area, (site **16,** *PLATE 23).* Absorbent pads were observed in the mezzanine (site **13,** *PLATE 20*). Crates of spill equipment for vehicles were observed in one of the maintenance bays (site **11,** *PLATE 18*). Three bags of safety absorbent were observed on top of flammables storage cabinet no. 1 (site *20, PLATE 30).*

PPMs used for vehicle maintenance are stored in the OMF in one of two flammables storage cabinets (site *20, PLATES 28, 29).* Bulk PPM storage occurs in a singledoor POL shed north of the OMF (site **6,** *PLATE 11*). Flammables storage cabinet no. 1 is equipped with a spill containment *tray [PLATE29).* Cabinet no. 2 is an older model storage cabinet that does not provide secondary containment *(PLATE 28).* PPMs stored inside the OMF are fully protected from precipitation and stormwater runoff. It is recommended that a flammables storage cabinet that provides secondary containment be,requisitioned to replace cabinet no. **2.**

Waste PPMs are stored in one of two flammables storage cabinets prior to disposal at hanger 5 on the Westover AFB (sites **19, 20;** *PLATES 26, 27). Drums* were stored neatly and were well labeled in cabinets that provide secondary containment. The Marine Corps bas two drip pans available in the drip pan storage area (site **17,** *PLATE 24*). The Marines routinely use mats underneath vehicles to contain leaks, so they *can* be easily cleaned up with *dry* sweep. A berm is created by raising the sides of the mat with dirt or by digging down in the center of the mat.

New PPMs were observed stored directly on the floor in the maintenance shop without secondary containment (sites **10, 12;** *PLATES 17, 19).* Five-gallon *cans* of paint were also observed stored directly on the floor in the battery room. It is recommended that all PPMs in the shop be stored with secondary containment. A poly-spill pallet observed in the mezzanine during the assessment could be moved to the maintenance area and used as a temporary storage area for waste PPMs prior to disposal (site **15,** *PLATE* 22). The flammables storage cabinets could then be used to store new PPMs.

Material safety data sheets **(MSDS)** are stored in a binder in the shop office. Spill-response procedure signs. were not posted in the OMF. A recommended BMP is to post current spill-response procedures signs at PPM storage and loading/unloading area,,.

The maintenance staff attends hazardous-materials training every year, according to unit personnel. The Motor Transport Chief **has** a computerized hazardous-waste tracking system and a hazardous-materials inventor).. Environmental documentation was not observed during the assessment. It is recommended that the Marine Corps develop hazardous-materials standard operating **procedures** (SOPs) that include a spill contingency plan and hazardous-materidwaste handling plan.

**3.0 Assessment-***Continued*

The Marine Corps has two flammables storage cabinets at the AFRC loading dock (site **1,** *PLATE 4).* These cabinets contain lithium batteries and cans of spray paint. It is recommended that no liquid PPMs be stored in these cabinets unless they are moved indoors to protect them from precipitation.

The OMF poses a moderate risk to surface waters of the State of Massachusetts. PPMs stored without secondary containment, especially the 5-gallon container of diesel fuel stored by the bay door, have the potential to adversely affect surface water. Adequate spill-response equipment is located in the building. The most significant threat to stormwater from this area would be an undetected leak in the diesel container that entered OF-2.

MILITARY EQUIPMENT PARK NO. 1

The Military Equipment Park used by the U.S. Army Reserve is a paved, bermed area northeast of the OMF identified as MEP 1 *(PLATES 37, 38).* The 287th Medical Company (DS) uses MEP 1 for storage of about 26 military vehicles and pieces of equipment. The vehicles were parked in a neat and orderly manner. A walk-around-visual inspection for leaks is performed about two to three times per week, according the Facility Coordinator. The vehicle operators perform a technical inspection, preventive maintenance checks and services (PMCS), on drill weekends.

The storm drain north of MEP 1 *(PLATE 36)* collects surface runoff from the grass area between the AFRC and MEP 1 and directs the runoff into the storm-sewer system that runs through MEP 1. A storm drain in the southeastern comer of the parking area (OF-1) was covered with pine needles and debris at the time of the assessment *(PLATE 42).* It is recommended that the debris be removed from this area and that all of the storm drains at the facility have debris removed from them.

Two conexes were observed in the northwestern comer of MEP 1 (site **7).** One conex contained stove parts, the other conex was empty. No PPMs were observed in either conex during the site assessment.

MEP 1 poses a low risk to surface waters of the State of Massachusetts. **The** most significant threat to surface water from this area would be an undetected **leak** from a military vehicle parked in this area.

MILITARY EQUIPMENT PARK NO. 2

The Military Equipment Park used by the U.S. Maine Corps is a fenced, unpaved area at the corner of Galaxy Road and Airman Drive. This weeds/gravel parking area has been identified as MEP 2 *(PLATES 39, 40, 41).* The 25th Marines TOW Platoon uses MEP 2 for storage of about 35 military vehicles and pieces; of equipment. The vehicles were parked in a neat and orderly manner. Active duty personnel perform preventive maintenance inspections every day during the week. Reservists perform inspections on drill weekends once a month.

Stormwater from the grass area south and east of the OMF runs into MEP 2. POL staining was observed in MEP *2 (PLATE 41).* Minor staining from a POL leak is easy to clean with *dry* sweep on a paved surface. Clean **up** of a leak in a dirt area is costly because the dirt surrounding the leak must also be disposed of as hazardous waste. It is recommended that MEP *2* be paved and bermed so that an undetected leak can be most cost efficiently controlled.

MEP 1 poses a low risk to surface waters of the State of Massachusetts. POL **leaks** into the soil under the gravel surface of the parking area are a groundwater concern. Groundwater contamination may enter Willimanson Brook through the groundwater/surface-water interface.

**3.0 Assessment-***Continued*

PETROLEUM, OIL, AND LUBRICANTS SHED AREA

Two POL sheds were observed inside a paved, fenced area west of MEP 1. The triple-bay POL shed is used by the Army Reserve to store empty drums, outdated PPMs, and new PPMs (site **5,** *PLATES 8, 9, 10*). The Marine Corps uses the single-bay POL shed as a bulk storage area for new PPMs (site **6,** *PLATE 11*). It is recommended that the 287th Medical Company (DS) properly dispose of all outdated PPMs stored in the middle bay of the Army Reserve POL shed.

POL sheds protect stored chemicals from precipitation and stormwater runoff. However, PPMs have the potential to be stormwater pollutants as they are loaded/unloaded at the shed doors. A spill in the area of sites 5 and 6 will drain toward the OMF and may enter OF-2 if not quickly contained. It is recommended that a poly-spill barrel he stored outdoors near the POL shed area and MEP 1.

Two conexes were observed in the POL shed area (site **7,** *PLATE 13)*. The conexes were used as storage areas lor tents, tent poles and parts, and camouflage netting. No PPMs were observed in either conex. A unit that is no longer stationed at this facility left a supply of tent poles, pallets, and empty 55-gallon drums (*PLATE 12)*. It is recommended that the drums be stored on the pallets and that they be covered with a tarp to prevent exposure to precipitation and stormwater runoff. These supplies could be disposed of properly if they are no longer useful to the 287'' Medical Company (DS)

The POL sheds area poses a moderate risk to surface waters of the State of Massachusetts because no spill equipment is located in this area. Disposal of the excess equipment left at the facility would make access to the POL sheds easier and would minimize the chance of a spill during loadingiunloading.

WASH RACK

The vehicle-wash rack at the Westover AFRC is north of the OMF (site **3,** *PLATE 6*). Water entering the wash-rack drain is directed through an oil/water separator into the sanitary-sewer system (site **4,** *PLATE* **7).** The vehicle-wash rack is not used by the Army Reserve, according to the Facility Coordinator. The Marine *Corps* rinses their vehicles when slightly ***duty*** and steam cleans them when they are very dirty at the vehicle-wash rack.

Drums of sand were removed from the oil/water separator when it was cleaned in June 1998. Sand enters the separator through the wash-rack drain. Precipitation and vehicle washing move sand into the separator. It is recommended that the oil/water separator he inspected and cleaned yearly so it functions at its maximum capacity.

The wash-rack area poses a low risk to surface waters of the State of Massachusetts because it drains into the sanitary-sewer system. The wash-rack drainage system is currently exposed to precipitation because it is not covered.

**3.0 Assessment-***Continued*

**Table 3.9–Risk summary.**

| Site map code | Location | Regulated activity | Potentially polluting materials | Outfall/Receiving waters | Exposure type[1] | Rating/ Reason[2] |
|---|---|---|---|---|---|---|
| 1 | South of AFRC | PPM storage, loading | Batteries/spray paint | OF-3/Willimanson Brook | B, E | Low / c, d, e, f |
| 2 | South of AFRC | PPM storage, loading | Fuel oil | None/Groundwater | E | Low / h |
| 3 | North of OMF | Vehicle washing | POL residue | None/Sanitary sewer | G | Low / c, g |
| 4 | North of OMF | PPM storage | UsedPOL | None/Sanitary sewer | D | Low / g |
| 5 | West of MEP 1 | PPM storage | New/outdated POL | OF-2/Willimanson Brook | E | Moderate / e, h |
| 6 | West of MEP 1 | PPM storage | used POL | OF-2/Willimanson Brook | E | Moderate / e, h |
| 8 | South of OMF | PPM storage, loading | Fuel oil | None/Groundwater | E | Low / h |
| | | | | | | |
| 10 | OMF | PPM storage | New POL | OF-2/Willimanson Brook | H | Moderate / d, f |
| 12 | OMF | PPM storage | New POL | None/Sanitary sewer | A | Low / d, g |
| 19, 20 | OMF | PPM storage, loading | New/used POL | None/Sanitary sewer | A | Low / h |

3.0 Assessment-*Continued*

**Table 3.9–Continued.**

| Site map code | Location | Regulated activity | Potentially polluting materials | Outfall/Receiving waters | Exposure type[1] | Rating/ Reason[2] |
|---|---|---|---|---|---|---|
| 22 | OMF | PPM temporary storage | Used POL | None/Sanitary sewer | A | Low / d, e, g |
| | | | | | | |
| MEP2 | SouthofOMF | Military vehicle parking | POL leak | None/Groundwater | H | Low / g |

[1] **Exposure type:**

**A** No exposure to precipitation or stormwater runoff
B **Direct** exposure to precipitation due to **lack** of covering during storage
**C** Direct exposure to stormwater runoff due to lack of containment during storage.
**D** Some indirect exposure to precipitation due to wash rack drainage **system**
E **Direct exposure** to precipitation and runoff due to **spills/leaks** during material transfer.
F **Direct** exposure of wash rack **drainage** system to storm runoff due to lack **of** berms.
G Direct **exposure** of wash rack drainage system to precipitation due to lack of covering.
H Direct exposure to precipitation and stormwater runoff due to undetected **leak** during storage.

[2] **Rating/Reason key:**

a Lack of preventive maintenance and visual **inspection** program
b Lack of containment preventing exposure to stormwater runoff.
c Lack **of** covering preventing exposure to precipitation.
d Lack **of employee** training and/or awareness.
e Lack of spill **kits,** drip pans, sorbant, and/or **other** spill equipment.
f Proximity to storm-drain inlet or other conveyance.
**g** Not a point-source discharge to surface waters of the State.
h Potential for spills/leaks into exposed areas during material transfer.

# 4.0 BEST MANAGEMENT PRACTICES PLAN [NPDES.XI.P.2.b.(3)]

Best Management Practices are measures and controls that can reduce potential stormwater pollution from industrial-activity pollutant sources. These BMPs are classified as *"baseline"* or *"advanced"* and they may he either inexpensive or costly to implement. Baseline BMPs include: inspection programs and a contingency plan that attempts to identify and eliminate conditions and practices that could cause stormwater pollution. Advanced BMPs are techniques, equipment, or structures that eliminate contact between stormwater runoff and PPMs.

In the following sections, foundations are established for a BMPs program at the Westover AFRC. Baseline and advanced BMPs necessary for the implementation of the facility stormwater program are discussed and listed in tables 4.0a and 4.0b. The stormwater inspection checklist (table 5.1b) should be used to monitor potential problem and to select BMPs.

## 4.1 BASELINE BEST MANAGEMENT PRACTICES

Baseline BMPs are relatively simple inspection programs and contingency plans that are implemented at a facility. The Motor Sergeant/Motor Transport Chief will perform monthly stormwater inspections. The 94th RSC is responsible for updating the spill plan, ensuring that unit personnel receive environmental training, and conducting an annual compliance inspection of the facility. The following baseline programs are discussed briefly in this chapter and are included in the stormwater inspection checklist provided in table 5.1b.

### 4.1.1 **Good** Housekeeping **[NPDES.XI.P.2.b.(3)(a)]**

Good housekeeping addresses cleanliness and orderliness of work and storage areas. Practicality guides the appropriate implementation of good-housekeeping practices.

### 4.1.2 Preventive Maintenance **[NPDES.XI.P.2.b.(3)(b)]**

Preventive maintenance involves an inspection of all vehicles and equipment for conditions that could lead to leaks or spills of PPMs. **A** technical inspection for fluid **leaks** or drips should be done for all incoming vehicles and equipment. Vehicles and equipment stored at the facility should be inspected daily for fluid leaks and drips. Maintenance equipment, oil/water separators, storage tanks and drums, pipes, and pumps should be included in the technical inspection.

### 4.13 **Spill** Prevention and Response **[NPDES.XI.P.2.b.(3)(c)]**

The facility spill plan should be reviewed and revised by the 94th RSC for the Westover AFRC. The Motor Sergeant/Motor Transport Chief **has** the responsibility to serve as emergency coordinator in the event of a spill. The Facility Coordinator/First Sergeant should be designated as emergency-response spill coordinator at the facility when the Motor Sergeant/Motor Transport Chief is not present. **The** Motor Sergeant/Motor Transport Chief (or alternate) have the responsibility to ensure the spill is immediately contained, proper spill reporting procedures are followed, and the 94'' RSC is immediately informed.

**4.0** Best Management Practices Plan-*Continued*

### **4.1.4** Visual Inspections **[NPDES.XI.P.2.b.(3)(d)]**

**A** formal visual-inspection program is used to ensure that good housekeeping and preventive maintenance are actively practiced, and that a spill plan and spill-containment equipment arc readily available at the facility. The Motor Sergeant/Motor Transport Chief should conduct a monthly visual inspection of the motor pool using the stormwatcr-inspectionchecklist. The 94th RSC should perform annual compliance inspections using the stormwater-inspection checklist.

### **4.1.5** Sediment and Erosion Control [NPDES.XI.P.2.b.(3)(h)]

The USEPA Multi-Sector General Permit requires identification of areas having a high potential for significant soil erosion and selection of measures (BMPs) to mitigate soil loss. For information on such areas, refer to section **3.9.** The area near the stonn drain north of MEP I **is** devoid of grass or vegetation and is an erosion issue at this facility. This area should be re-seeded so that soil is not washed into the storm draii during heavy downpours.

### 4.1.6 Environmental Training **[NPDES.XI.P.2.b.(3)(e)]**

Headquarters, U.S. Army Reserve Command, has developed a video-based stormwater-training package. Annual stormwater training is mandated by Deputy Chief of Staff, Operations (Training Division) [DCSOPS (T)] for all reservists assigned to a facility with a stormwater permit. All civilian personnel who work Within regulated areas also are required to attend this training. The training, using several videos supplied by the US. Army Reserve Command, can be implemented in two or more sessions during the year.

## 4.2 ADVANCED BEST MANAGEMENT PRACTICES

Advanced BMPs are techniques, equipment, structures, or construction practices that prevent hazardous materials or wastes from reaching the environment in stormwater runoff. All Army Reserve maintenance facilities employ advanced **BMPs.** Implementation of new advanced BMPs or maintenance and upkeep of existing advanced BMPs usually requires requisitions, work orders, or self-help initiatives. Identification, implenientation, and upkeep of advanced BMPs involves communicationamong the Facility Coordinator/First Sergeant, Motor Sergeant/Motor Transport Chief, shop personnel, senior officers, and **94"** RSC staff. The Facility Coordinator/First Sergeant has the responsibility to work with OMF, unit, and 94th RSC personnel to identify necessary advanced BMPs and provide proper maintenance and upkeep for existing advanced **BMPs.** Also, the Facility Coordinator/First Sergeant has the responsibility to inform **senior** officers of advanced BMP needs, and to submit and follow up on requisitions and work orders for those BMPs selected.

Tables 4.0a and 4.0b detail the status of the BMP program at the facility. Baseline and advanced BMPs can be prioritized according to need and scheduled by the PPT. "Recommended" BMPs in tables 4.0a and 4.0b should be endorsed by the PPT as goals for 2000. The Facility Coordinator/First Sergeant should initial and date the block indicating that the recommended BMP is accepted and is being implemented.

## 4.0 Best Management Practices Plan-*Continued*

**Table 4.0a—Best Management Practices for the U.S. Army Reserves.**

| Best management practice (BMP) | BMP type[1] | Imple-mented | Recom-mend improve-ment | Imple-mented by | Imple-mentation date |
|---|---|---|---|---|---|
| Keep work areas and outside areas clean, free of easily spilled materials, and free of sediment and loose soil | GH | | X | | |
| Ensure that maintenance buildings and PPM storage buildings are in good condition | GH | X | | | |
| Perform maintenance at authorized areas | GH | X | | | |
| Clean spilled materials with dry sweep or rags, not with water | GH | X | | | |
| Enforce proper handling, storage, disposal, and labeling of new and used PPMs | GH | | X | | |
| Maintain updated MSDS sheets and PPMs inventory | GH | | X | | |
| Post good-housekeeping visual aids at the motor pool | GH | | X | | |
| Formally train military and civilian maintenance personnel in good-housekeeping practices | GH/TG | | X | | |
| Provide technical inspection for all incoming and parked vehicles and equipment with particular emphasis on fluid leaks | PM/VI | X | | | |
| Regularly service storm-drain inlets, pipes, and other conveyances | PM | | X | | |
| Ensure that updated spill plan, emergency coordinator, and spill equipment are available at the facility during working hours | SPR | | X | | |
| In the event of a significant spill or leak during off-duty hours, the designated spill coordinator should refer to the spill plan | SPR | | X | | |
| Provide formal training in emergency spill response to all military and civilian maintenance personnel | SPR/TG | | X | | |
| Ensure that outdoor-storage structures provide secondary containment and prevent contact between PPMs and stormwater | SPR | X | | | |
| Conduct a monthly visual inspection of the motor pool using the stormwater-inspection checklist. Sign, date, and retain with SWP3 | VI | | X | | |
| Identify conditions that could cause stormwaterpollution and report potential problems to the 94th RSC | VI | X | | | |
| Perform an annual stormwater-compliance inspection | VI | | X | | |
| Provide stormwater training for all military and civilian maintenance personnel | TG | | X | | |

## 4.0 Best Management Practices Plan-*Continued*

### Table 4.0a-Continued

| Best management practice (BMP) | BMP type[1] | Imple-mented | Recom-mend improve-ment | Imple-mented by | Imple-mentation date |
|---|---|---|---|---|---|
| Move spill equipment near maintenance bay doors (closest to storm drain) | BBMP | | X | | |
| Dispose of used motor oil (in buckets) as hazardous waste | BBMP | | X | | |
| Post current spill-response procedures signs at PPM storage and loading/unloading areas | BBMP | | X | | |
| Get MSDS sheets for PPMs, store in a binder, mount to wall in OMF | BBMP | | X | | |
| Only store new/used PPMs in maintenance bays with *secondary* containment | BBMP | | X | | |
| Remove debris from area around OF-1 and the top of all facility storm drains | BBMP | | X | | |
| Reseed barren area near storm drain north of MEP 1 | BBMP | | X | | |
| Dispose of outdated PPMs from the middle bay of the POL shed properly | BBMP | | X | | |
| Requisition a poly-spill barrel for the area near the POL sheds and MEP 1 | ABMP | | X | | |
| Store empty 55-gallon drums on pallets and cover with a tarp or dispose of them properly | BBMP | | X | | |

[1]BMP type:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| GH | Good Housekeeping | SPR | Spill Prevention and Response | SEC | Sediment Erosion and Control | BBMP | Baseline Best Management Practice |
| PM | Preventive Maintenance | VI | Visual Inspections | TG | Training | ABMP | Advanced Best Management Pmctice |

## 4.0 Best Management Practices Plan-*Continued*

### Table 4.0b—Best Management Practices for the U.S. Marine Corps.

| Best management practice (BMP) | BMP type | Imple-mented | Recom-mend improve-ment | Imple-mented by | Imple-mentation date |
|---|---|---|---|---|---|
| Keep work areas and outside areas clean, free of easily spilled materials, and free of sediment and loose soil | GH | X | | | |
| Ensure that maintenance buildings and PPM storage buildings are in good condition | GH | X | | | |
| Perform maintenance at authorized areas | GH | X | | | |
| Clean spilled materials with dry sweep or rags, not with water | GH | X | | | |
| Enforce proper handling, storage, disposal, and labeling of new and used PPMs | GH | | X | | |
| Maintain updated MSDS sheets and PPMs inventory | GH | X | | | |
| Post good-housekeeping visual aids at the motor pool | GH | X | | | |
| Formally train military and civilian maintenance personnel in good-housekeeping practices | GH/TG | | X | | |
| Provide technical inspection for all incoming and parked vehicles and equipment with particular emphasis on fluid leaks | PM/VI | X | | | |
| Regularly service storm-drain inlets, pipes, and other conveyances | PM | X | | | |
| Ensure that updated spill plan, emergency coordinator, and spill equipment are available at the facility during working hours | SPR | | X | | |
| In the event of a significant spill or leak during off-duty hours, the designated spill coordinator should refer to the spill plan | SPR | | X | | |
| Provide formal training in emergency spill response to all military and civilian maintenance personnel | SPR/TG | | X | | |
| Ensure that outdoor-storage structures provide secondary containment and prevent contact between PPMs and stormwater | SPR | X | | | |
| Conduct a monthly visual inspection of the motor pool using the stormwater-inspection checklist. Sign, date, and retain with SWP3 | VI | | X | | |
| Identify conditions that could cause stormwater pollution and report potential problems to the HQ Marine Regiment | VI | X | | | |
| Perform an annual stormwater-compliance inspection | VI | | X | | |
| Provide stormwater training for all military and civilian maintenance personnel | TG | | X | | |

## 4.0 Best Management Practice. Plan-*Continued*

### Table 4.0b-Continued

| Best management practice (BMP) | BMP type[1] | Imple-mented | Recom-mend improve-ment | Imple-mented by | Imple-mentation date |
|---|---|---|---|---|---|
| Requisition a flammables storage cabinet that provides secondary containment | ABMP | | X | | |
| Move poly-spill pallet to maintenance area and use for storage of waste PPMs | BBMP | | X | | |
| Store new PPMs (currently on shop floor) in flammables storage cabinet | BBMP | | X | | |
| Post spill-response procedure signs at PPM storage and loading/unloading areas | BBMP | | X | | |
| Develop hazardous-materials SOPs that include a spill contingency plan and a hazardous-material/waste handling plan | BBMP | | X | | |
| Never store liquid PPMs in flammables storage cabinets at *AFRC* loading dock (they must be moved indoors first) | BBMP | | X | | |

[1]BMP type:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| GH | Good Housekeeping | SPR | Spill Prevention and Response | SEC | Sediment Erosion and Control | BBMP | Baseline Best Management Practice |
| PM | Preventive Maintenance | VI | Visual Inspections | TG | Training | ABMP | Advanced Best Management Practice |

# 5.0 IMPLEMENTATION [NPDES.XI.P.2.b.(4)]

'This section establishes inspection and record-keeping programs that will bring the facility into compliance. Included in this chapter are a guide for implementing a stormwater program, a stormwater-log sheet for record keeping, a stormwater-inspection checklist to be used when performing monthly and annual stormwater inspections, and an annual compliance schedule. Table 5.0 presents key elements required to implement and evaluate the stormwater-management program, and includes columns for approval and scheduling of such activities by senior officials.

Table 5.0–Key elements to implement and evaluate the stormwater-management program.

| Elements to implement stormwater-management program | By | Date |
|---|---|---|
| Assign top priority to: (1) correcting problems identified during the initial site assessment; and (2) establishing a stormwater-inspection and personnel-training program. | | |
| Record significant stormwater-management activities on the stormwater-log sheet. | | |
| The Motor Sergeant/Motor Transport Chief will perform monthly inspections. Any problems identified will be reported to the Facility Coordinator/First Sergeant for corrective action. If the Facility Coordinator/First Sergeant cannot correct the problem, recommendations for corrective actions will be made to the 94'' RSC. | | |
| Monthly inspection checklists will be reviewed, signed, and dated by the Facility Coordinator/First Sergeant, and filed by the Motor Sergeant/Motor Transport Chief for future reference by compliance inspectors. | | |
| The ´4th RSC will perform periodic stormwater-inspection reviews. Recommended corrective actions and employee training needs should he discussed. | | |
| The Facility Coordinator/First Sergeant should discuss equipment, construction, and training needs with the Motor Sergeant/Motor Transport Chief, senior officers and the 94th RSC. The Facility Coordinator/First Sergeant should submit requisitions and work orders through proper channels. | | |
| Employee training should be conducted. | | |
| Advanced BMPs should be implemented. | | |
| Personnel from the 94th RSC will conduct the annual compliance evaluations for the stormwater-management program and stormwater-plan reviews. | | |

*5.0* Implementation-Continuen'

## 5.1 STORMWATER-LOG SHEET AND -INSPECTION CHECKLIST [NPDES.XI.P.2.b.(4)(c)]

The stormwater-log sheet (table 5.1a) and stormwater-inspection checklist (table **5.**1b) for motor pool operations are provided on the following pages. The log sheet and checklist are a permanent record of stormwater-management activities conducted at this facility. Items such as stormwater inspections, PPM spills, or activities related to implementation and maintenance of BMPs should be recorded on the log sheet. The inspection checklist is designed to reinforce the existing BMP program by assessing the effectiveness of implemented measures and controls. Regularly (monthly) updating logs and checklists will aid the facility in tracking pollutant sources, **risks,** and BMPs. The original documents should be **signed** and dated, and kept with the SWP3 at the facility for future reference during, plan revisions or inquiries by 94" RSC, State, or Federal inspectors.

**5.0 Implementation-***Continued*

**Table 5.1a—Stormwater-log sheet.**

| Date | initials | Narrative |
|---|---|---|
| Example: 1-1-00 | EFD | PPM spill occurred at waste-oil **AST.** Twenty gallons spilled and 12 gallons recovered Remaining spillage drained into sanitary-sewer system. |
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## 5.0 Implementation-*Continued*

**Table 5.1b—Stormwater-inspection checklist.**

| Unit name: | Building name: | Date: |
|---|---|---|
| Problems noted: | | |
| Inspector's name: | Signature: | |

| Yes | No | Type Inspection Item |
|---|---|---|
| | | Do you see any evidence of recently spilled materials, either solid or liquid? |
| | | Do you see any evidence of illegal dumping in storm-sewer system or storm drains? |
| | | Are PPMs exposed to precipitation or stormwater runoff? |
| | | Are drums, PPM storage structures, and secondary-containment units secure and properly labeled? |
| | | Are waste PPMs generated at the OMF properly collected and disposal of? |
| | | Are vehicles and equipment stored outdoors free of excessive mud and dirt? |
| | | Do you see excess trash, unswept or cluttered work areas, or materials that can be easily spilled? |
| | | Are there spots, pools, or other traces of PPMs on the ground? |
| | | Do you see any leaking vehicles, drums, tanks, dumpsters, or other equipment? |
| | | Does standing water have an oil sheen or discoloration? |
| | | Is vehicle/equipment washing or steam cleaning performed at any area other than the vehicle-wash rack? |
| | | Is the vehicle-wash rack operating properly? |
| | | Is an updated spill plan or SOP posted on the shop bulletin board? |
| | | Is spill-containment equipment readily accessible? |
| | | Are monthly visual inspections performed and documented? |
| | | Does stormwater runoff enter and cause problems inside shop and storage buildings? |
| | | Is there any active soil erosion at the motor pool? |
| | | Are there areas of standing water at the motor pool? |
| | | Are any non-stormwater discharges entering the storm-sewer system or drainage ditches? |
| | | Do outdoor PPM storage structures prevent contact with precipitation or stormwater runoff? |
| | | Are secondary-containment units in use at new and used PPM storage areas? |
| | | Are drip pans in use at the motor pool? Estimated percentage of vehicles with drip pans: ____%. |
| | | Are conex boxes or milvans used to store new or used PPMs at this motor pool? If yes, please give the number of conex boxes or milvans in use: _____ |
| | | Are visual ai |
| | | Is environm |

| Corrective actions needed: | | |
|---|---|---|
| Reviewer's name: | Signature: | Date. |

**5.0** Implementation-Continued

## 5.2 ANNUAL COMPLIANCE INSPECTION [NPDES.XI.P.2.b.(4)(a)]

The SWP3 should be updated annually or more often, as required. The **94"** RSC is charged with conducting compliance evaluations and updating the plan. Major tasks includa (1) reviewing updated site information (including stormwater-log sheets and stormwater-inspection forms), *(2)* reinspecting industrial-activity and pollutant-source areas and outfalls, (3) updating information about those **area::** and the PPMs inventory, (4) conducting non-stormwater-discharge inspections of outfalls, *(5)* reevaluating the use of BMPs and recommending additional controls (if necessary), and (6) convening the PPT to review stormwater issues and problems. The compliance update also allows the PPT to assess and update training needs. Table *5.2* provides information on conducting the evaluations

Table 5.2–Annual compliance schedule.

| Compliance element | Conducted by | Start date | Completion date |
|---|---|---|---|
| Review monthly stormwater-inspection checklists completed by the Motor Sergeant/Motor Transport Chief | | | |
| Review site assessment in SWP3 and update as necessary (outfalls, sources, PPMs, site map) | | | |
| Review implementation status of **BMPs** in SWP3 and update as necessary | | | |
| Based on updates to implemented BMPs, update recommended BMPs | | | |
| Review and update regulatory information in the SWP3 if necessary | | | |
| Conduct NSWD assessment and certification of regulated outfalls | | | |
| Conduct stormwater sampling of regulated outfalls if required. (Consult USEPA and USEPA Multi-Sector General Permit for information.) | | | |
| Complete report of compliance findings and sample results, and file | | | |

# 6.0 APPENDIX

**Table 6.0–Non-stormwater discharge certification.**

| **Non-stormwater discharge assessment and certification** | | | **Completed by:** **Agency:** **Date:** | | **Jean Campbell, MA** **USGS-WRD** **22 July 1999** | |
|---|---|---|---|---|---|---|
| **Date of test or evaluation** | **Outfall directly observed during the test** | **Method used to test or evaluate discharge** | **Describe test results for the presence of non-stormwater discharge** | **Identify potential significant sources** | **Agency conducting test or evaluation** | **Recommended action** |
| *1122199* | OF-1 | Visual | No NSWD | NA | USGS, MA | NA |
| *1122199* | OF-2 | Visual | No NSWD | NA | USGS, MA | NA |
| 7/22/99 | OF-3 | Visual | No NSWD | NA | USGS, MA | NA |
| | | | | | | |
| | | | | | | |
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| | | | | | | |

I certify that periodic NSWD inspections will be performed at the Westover AFRC and conducted in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information that is collected. Additionally, I certify the NSWD information listed in this table is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that ihere are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

| **A. Name and Title of Certifying Authority** | **B. Area Code and Telephone Number** |
|---|---|
| **C. Signature Certifying Authority** | **D. Date Signed** |

**6.0 Appendix-*Continued***

**Figure 6.0—Photolog.**

**PLATE 1:** Westover Armed Forces Reserve Center, Chicopee, MA

**PLATE 2:** POV parking area west of the AFRC

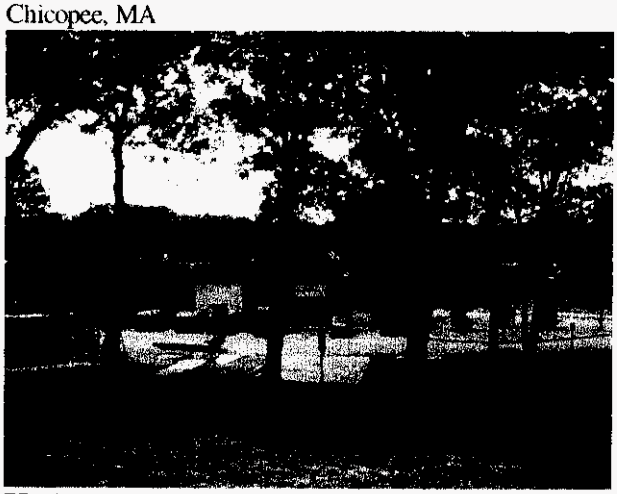


**PLATE 3:** Organizational Maintenance Facility (OMF)

**PLATE 4:** Two flammables storage cabinets (**site 1**)

**PLATE 5:** Heating-oil UST [8,000 gallon] (**site 2**)

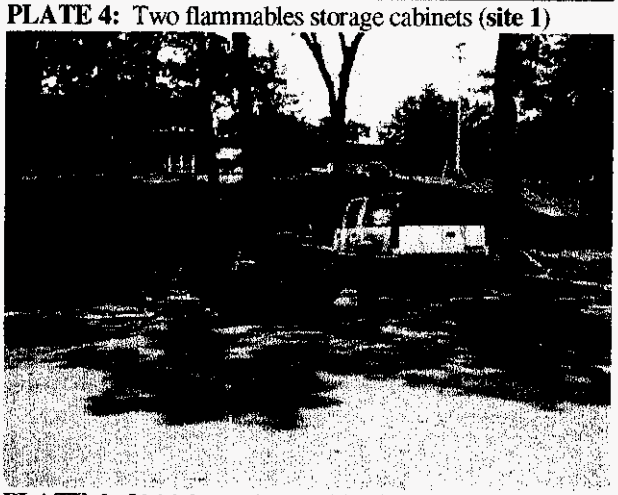


**PLATE 6:** Vehicle-wash rack (**site 3**)

**6.0 Appendix-***Continued*

**PLATE 7:** Oil/water separator [vehicle-wash rack] **(site 4)**

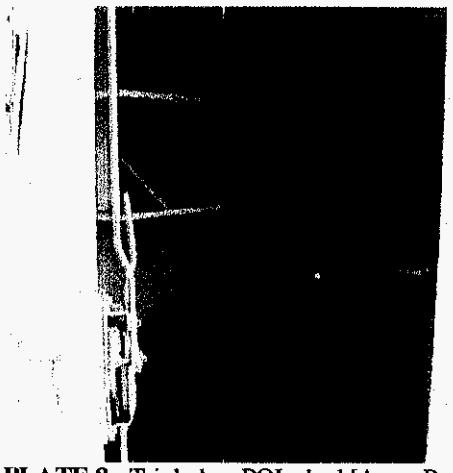


**PLATE 8:** Triple-bay POL shed [Army Reserve] – western bay **(site 5)**

**PLATE 9:** Triple- hay POL shed **[Army Reserve]** - middle hay **(site 5)**

**PLATE 10:** Triple- hay POL shed [Army Reserve] – eastern bay **(site 5)**

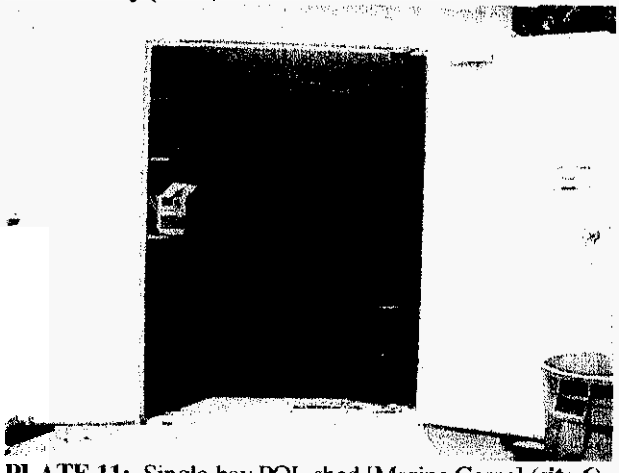


**PLATE 11:** Single-bay POL shed [Marine Corps] **(site 6)**

**PLATE 12:** Empty 55-gallon drums in POL shed area

**6.0 Appendix-***Continued*

**PLATE 13:** Conexes [no PPMs observed] **(site 7)**

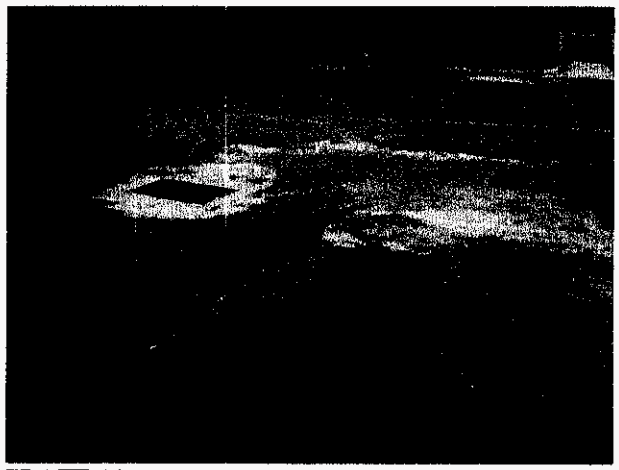


**PLATE 14:** Staining from POL leak – near OF-2

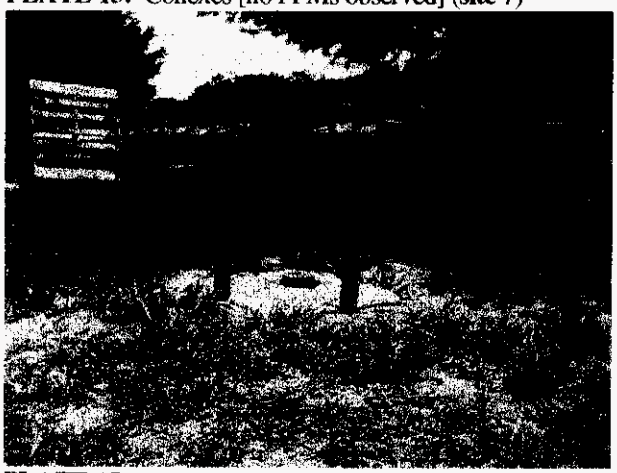


**PLATE 15:** Heating-oil UST [2,000 gallon] **(site 8)**

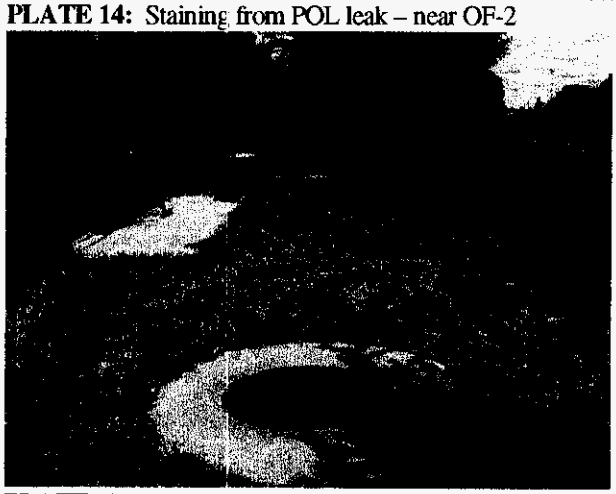


**PLATE 16:** Oil/water separators [OMF floor drains] **(site 9)**

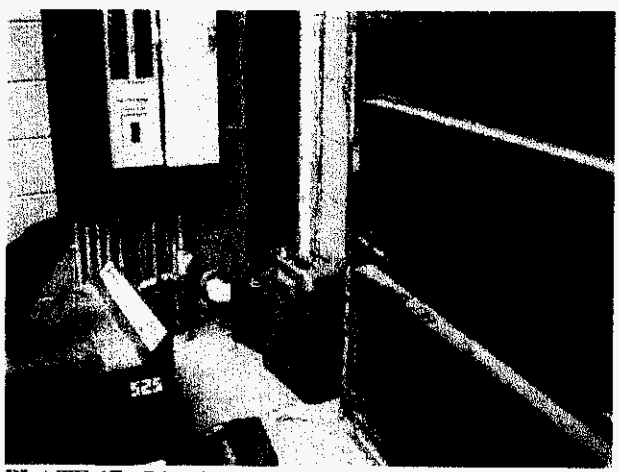


**PLATE 17:** Diesel container [5-gallon] **(site 10)**

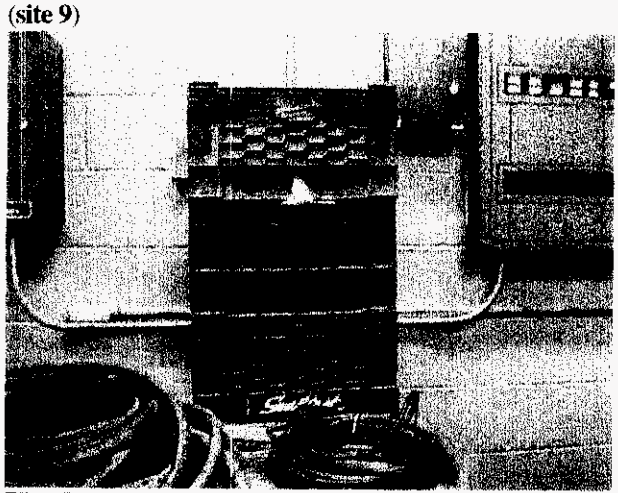


**PLATE 18:** Vehicle spill kits [in crates] **(site 11)**

**6.0 Appendix-*Continued***

**PLATE 19:** Gray paint [5-gallon can] (**site 12**)

**PLATE 20:** Absorbent pads [mezzanine] (**site 13**)

**PLATE 21:** Corrosives storage cabinet in battery room (**site 14**)

**PLATE 22:** Poly-spill pallet [mezzanine] (**site 15**)

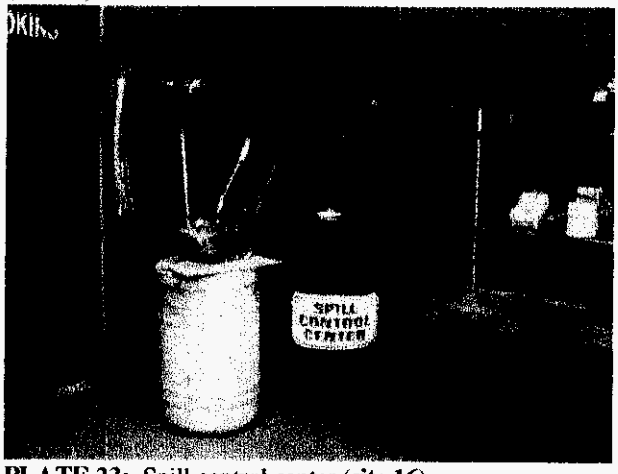



**PLATE 23:** Spill control center (**site 16**)

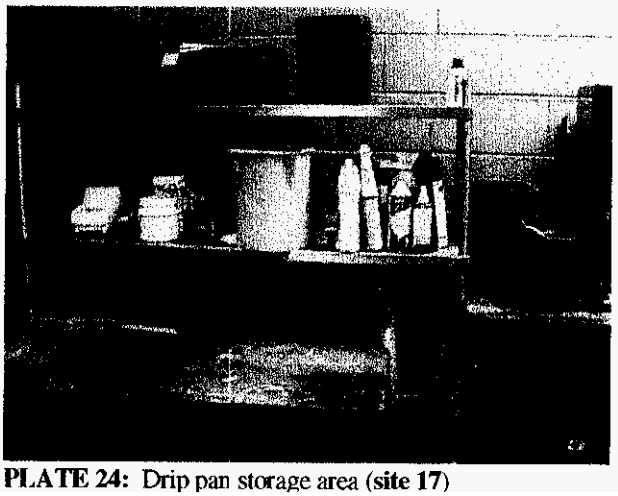


**PLATE 24:** Drip pan storage area (**site 17**)

**6.0 Appendix-***Continued*

**PLATE 25:** Used oil **filters** [uncrushed] **(site 18)**

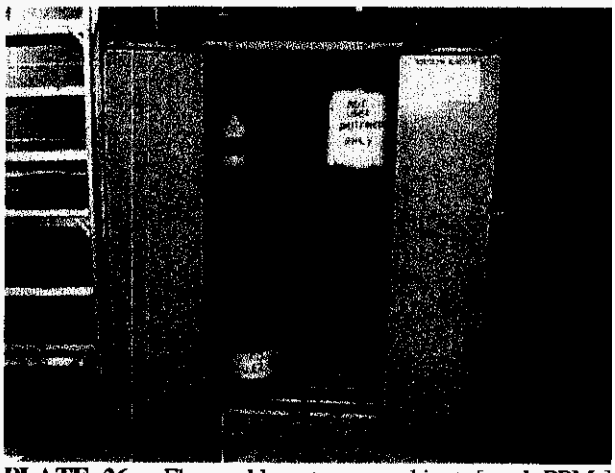


**PLATE 26:** Flammables storage cabinet [used PPMs] **(site 19)**

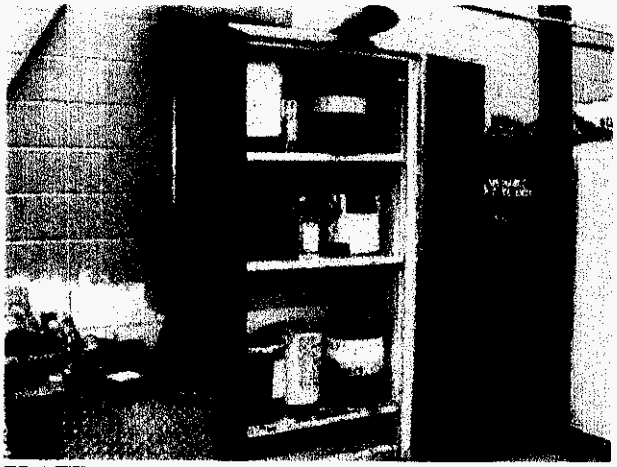


**PLATE 27:** Flammables storage cabinet [used PPMs] **(site20)**

**PLATE 28:** Flammables storage cabinet no. 2 **(site 20)**

**PLATE 29:** Flammables storage cabinet no. 1 **(site 20)**

**PLATE 30:** Three bags of safety absorbent **(site 20)**

**6.0 Appendix-***Continued*

**PLATE 31:** One of the Marine Corps maintenance bays

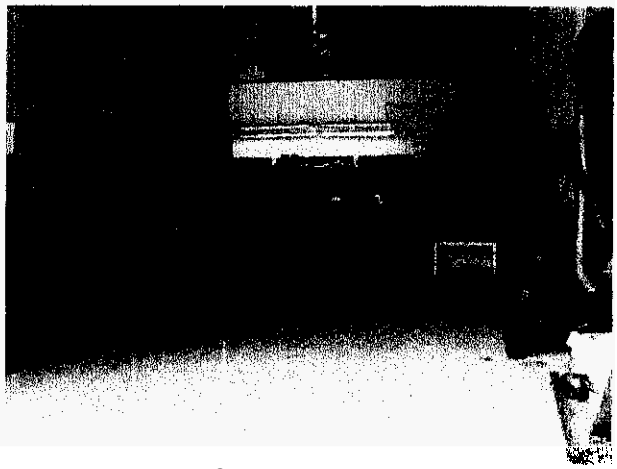


**PLATE 32:** ***One*** **of** the Army Reserve maintenance bays (large bay)

**PLATE 33:** Floor drain in the center of two small maintenance bays used by the Army Reserve

**PLATE 34:** Spill socks [mezzanine] (**site 21**)

**PLATE 35:** Buckets with waste PPMs (**site 22**)

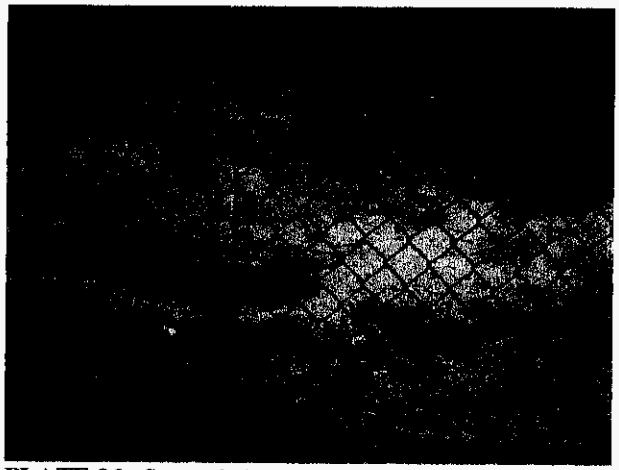


**PLATE 36:** Storm drain north of MEP 1

**6.0 Appendix-***Continued*

**PLATE 37:** MEP 1, facing northeast

**PLATE 38:** MEP 1, facing northwest

**PLATE 39:** MEP 2, facing southwest

**PLATE 40:** MEP 2, facing east

**PLATE 41:** POL staining in MEP 2

**PLATE 42:** Outfall no. 1 (OF-1) - Regulated

6.0 Appendix-*Continued*

**PLATE 43:** Outfall no. 2 (OF-2) - Regulated

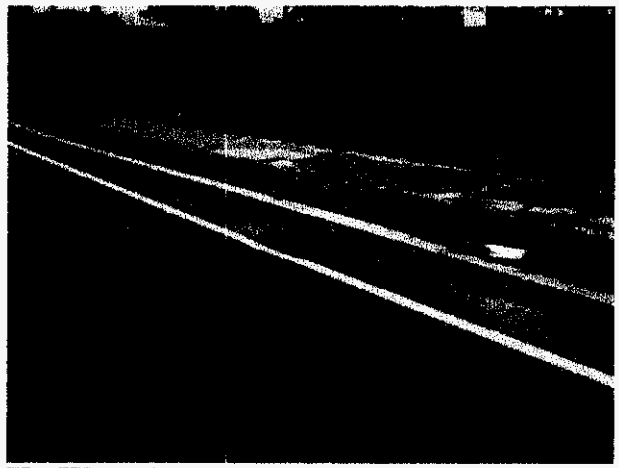


**PLATE 44:** Outfall no. 3 (OF-3) - Regulated

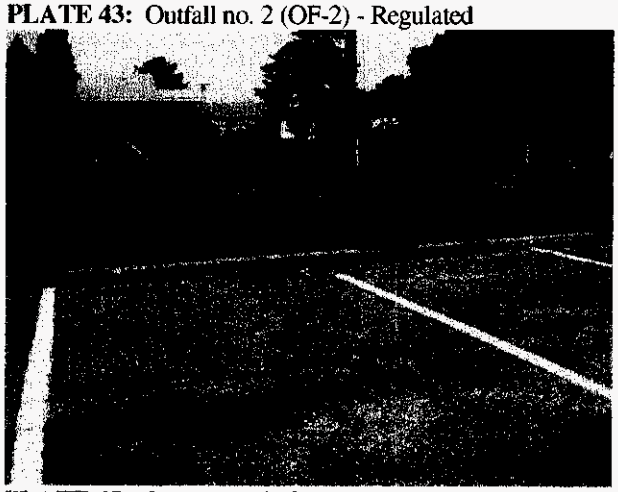
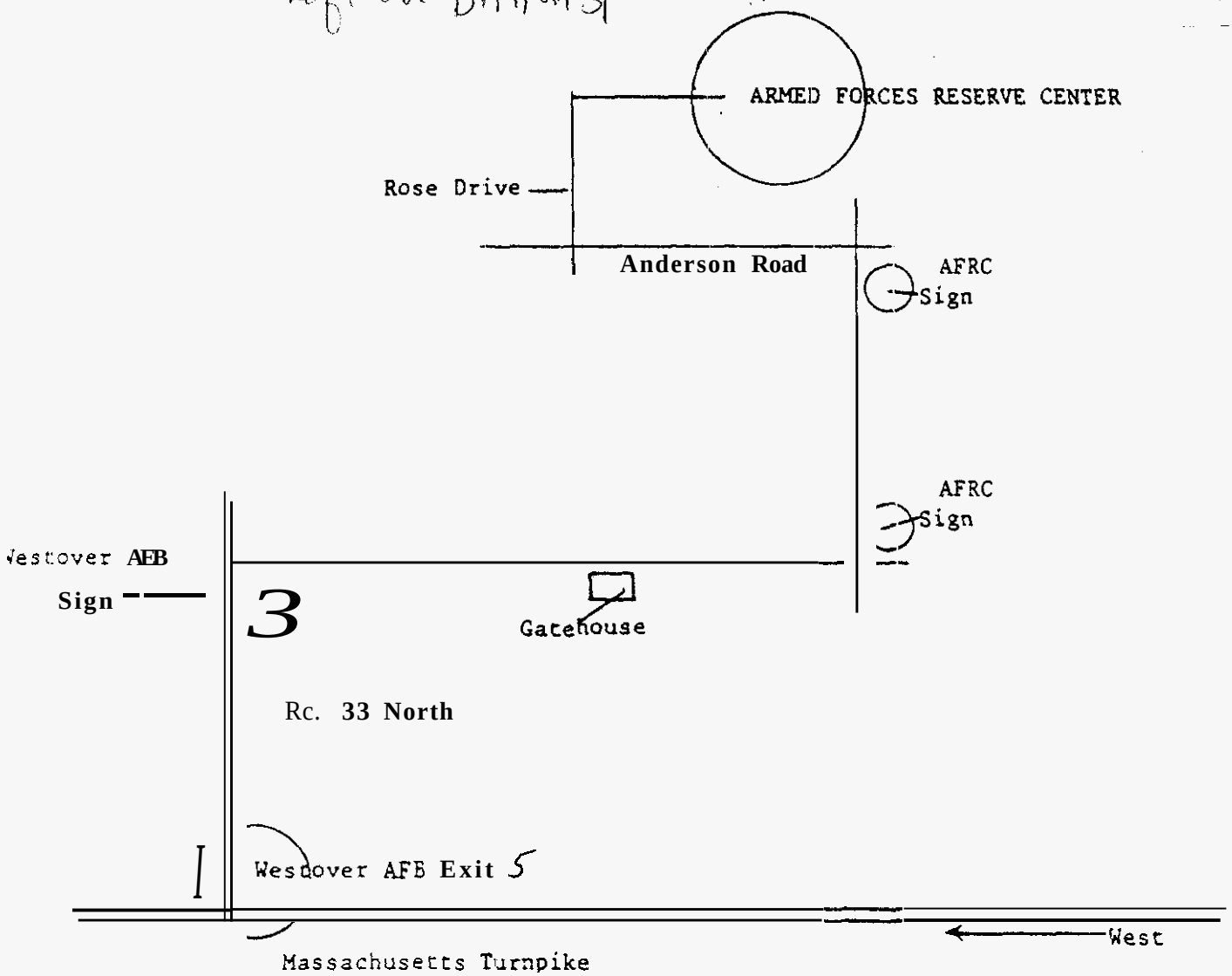


**PLATE 45:** Outfall no. 4 (OF-4) - Unregulated

Fairview Public Library
373 Britton St. Chicopee

North on 33 past Westover (pass James St / Central Ave)
Left on Britton St.




LOCUS MAP

**ARMED FORCES RESERVE CENTER. UESTOVER AFB**

**CBICOPEE. MA**

Point of Contact:
J. Dolloff
Tel. 617-593-6008

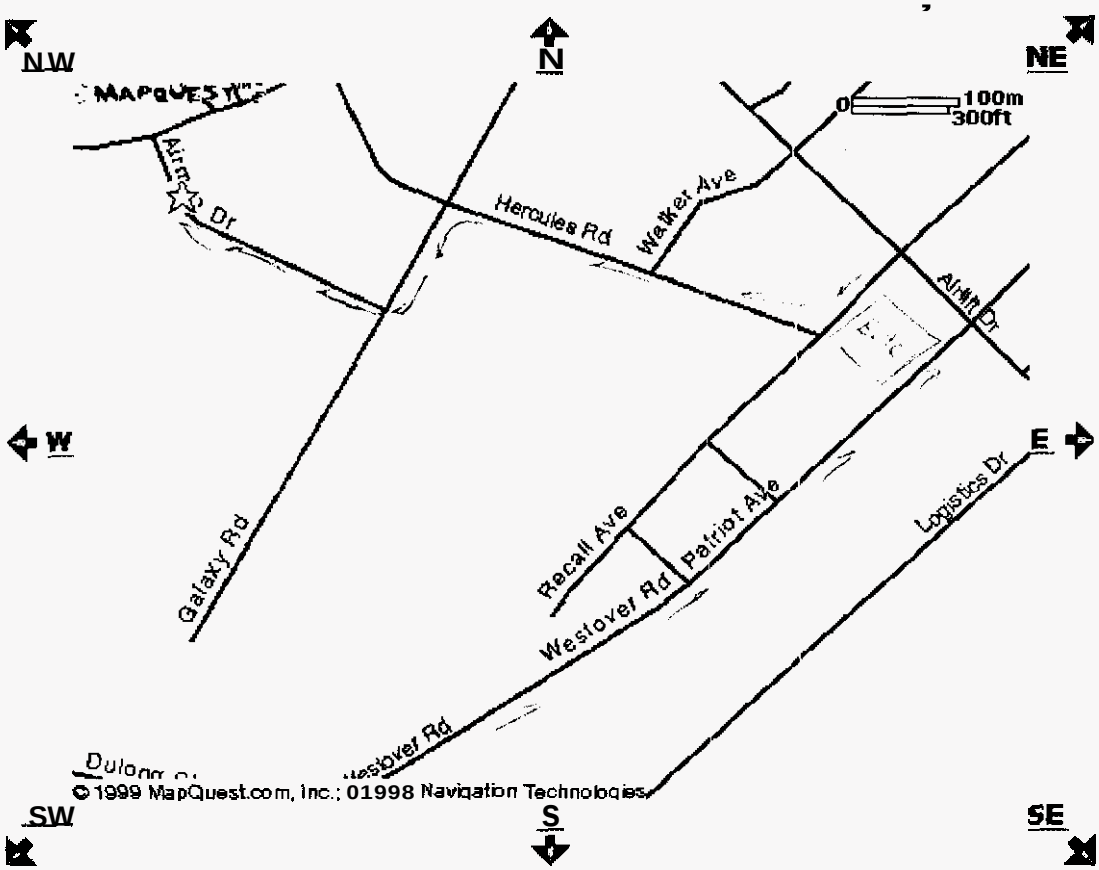
Go Straight
thru gate
take 1st left
to the blue Bldg

# Printable Map

**160 Airman Drive, Chicopee, MA**

at Westover AFB

[ Back to freei ]




Zoom Level

Map Size

SHRINK RESET EXPAND

Click anywhere on map to center on that point



[ Back to freei ]

Take Rte 2 west to I-190 south to Worcester. Pick up I-290 west, towards Mass Pike in Auburn (I-90).

Take I-90 west to Exit 5. Bear right after tolls at sign for Westover Then left onto Rte 33 North. Follow signs

# HANSCOM AFB, MA.

## 4.0 Best Management Practices Plan-*Continued*

**Table 4.08—Best Management Practices for the U.S. Army Reserves.**

| | | | | | |
|---|---|---|---|---|---|
| Keep work areas and outside areas clean, free of easily spilled materials, and free of sediment and loose soil | GH | | X | EM | |
| Ensure that maintenance buildings and PPM storage buildings are in good condition | GH | X | | EM | |
| Perform maintenance at authorized areas | GH | X | | EM | |
| Clean spilled materials with dry sweep or rags, not with water | GH | X | | EM | |
| Enforce proper handling, storage, disposal, and labeling of new and used PPMs | GH | | X | EM | |
| Maintain updated MSDS sheets and PPMs inventory | GH | | X | EM | |
| Post good-housekeeping visual aids at the motor pool | GH | | X | EM | |
| Formally train military and civilian maintenance personnel in good-housekeeping practices | GH/TG | | X | EM | |
| Provide technical inspection for all incoming and parked vehicles and equipment with particular emphasis on fluid leaks | PM/VI | X | | EM | |
| Regularly service storm-drain inlets, pipes, and other conveyances | PM | | X | EM | |
| Ensure that updated spill plan, emergency coordinator, and spill equipment are available at the facility during working hours | SPR | | X | EM | |
| In the event of a significant spill or leak during off-duty hours, the designated spill coordinator should refer to the spill plan | SPR | | X | EM | |
| Provide formal training in emergency spill response to all military and civilian maintenance personnel | SPR/TG | | X | EM | |
| Ensure that outdoor-storage structures provide secondary containment and prevent contact between PPMs and stormwater | SPR | X | | EM | |
| Conduct a monthly visual inspection of the motor pool using the stormwater-inspection checklist. Sign, date, and retain with SWP3 | VI | | X | EM | |
| Identify conditions that could cause stormwater pollution and report potential problems to the 94th RSC | VI | X | | EM | |
| Perform an annual stormwater-compliance inspection | VI | | X | EM | |
| Provide stormwater training for all military and civilian maintenance personnel | TG | | X | EM | |

## 4.0 Best Management Practices Plan-Continued

### Table 4.0a-Continued

| | | | | | |
|---|---|---|---|---|---|
| Move spill equipment near maintenance bay doors (closest to storm drain) | BBMP | | X | Em | |
| Dispose of used motor oil (in buckets) as hazardous waste | BBMP | | X | Em | |
| Post current spill-response procedures signs at PPM storage and loading/unloading areas | BBMP | | X | Em | |
| Get MSDS sheets for PPMs, store in a binder, mount to wall in OMF | BBMP | | X | Em | |
| Only store new/used PPMs in maintenance bays with secondary containment | BBMP | | X | Em | |
| Remove debris from area around OF-1 and the top of all facility storm drains | BBMP | | X | Em | |
| Re-seed barren area near storm drain north of MEP 1 | BBMP | | X | Em | |
| Dispose of outdated PPMs from the middle bay of the POL shed properly | BBMP | | X | Em | |
| Requisition a poly-spill barrel for the area near the POL sheds and MEP 1 | ABMP | | X | Em | |
| Store empty 55-gallon drums on pallets and cover with a tarp or dispose of them properly | BBMP | | X | Em | |

'BMP type:

GH Good Housekeeping
PM Preventive Maintenance
SPR Spill Prevention and Response
VI Visual Inspections
SEC Sediment Erosion and Control
TG Training
BBMP Baseline Best Management Practice
ABMP Advanced Best Management Practice

# 5.0 IMPLEMENTATION [NPDES.XI.P.2.b.(4)]

This section establishes inspection and record-keeping programs that will bring the facility into compliance. Included in this chapter are a guide for implementing a stormwater program a stormwater-log sheet for record keeping, a stormwater-inspection checklist to be used when performing monthly and annual stormwater inspections, and an annual compliance schedule. Table **5.0** presents key dements required to implement and evaluate the stormwater-management program, and includes columns for approval and scheduling of such activities by senior officials.

**Table 5.0–Key elements to implement and evaluate the stormwater-management program.**

| Elements to implement stormwater-management program | By | Date |
|---|---|---|
| Assign top priority to: (1) correcting problems identified during the initial site assessment; and (2) establishing a stormwater-inspection and personnel-training program. | EM | 5 Jun 02 |
| Record significant stormwater-managementactivities on *the* stormwater-log sheet. | EM | 5 Jun 02 |
| The Motor Sergeant/Motor Transport Chief will perform monthly inspections. Any problems identified will be reported to the Facility Coordinator/First Sergeant for corrective action. If *the* Facility Coordinator/First Sergeant cannot correct the problem, recommendations for corrective actions will be made to the 94th RSC. | EM | 5 Jun 02 |
| Monthly inspection checklists will be reviewed, signed, and dated by the Facility Coordinator/First Sergeant and filed by the Motor Sergeant/Moto Transport Chief for future reference by compliance inspectors. | EM | 5 Jun 02 |
| The 94th RSC will perform periodic stormwater-inspection reviews. Recommended corrective actions and employee training needs should be discussed. | EM | 5 Jun 02 |
| The Facility Coordinator/First Sergeant should discuss equipment, construction, *and* training needs with the Motor Sergeant/Motor Transport Chief, senior officers and the 94th RSC. The Facility Coordinator/First Sergeant should submit requisitions and work orders through proper channels. | EM | 5 Jun 02 |
| Employee training should be conducted. | EM | 5 Jun 02 |
| Advanced BMPs should be implemented. | EM | 5 Jun 02 |
| Personnel from the 94th RSC will conduct the annual compliance evaluations for **the** stormwater-management program and stormwater-plan reviews. | EM | 5 Jun 02 |

# 6.0 APPENDIX

**Table 6.0–Non-stormwater discharge certification.**

| | | | | | | |
|---|---|---|---|---|---|---|
| 7/22/99 | OF-1 | Visual | No NSWD | NA | USGS, MA | NA |
| 7/22/99 | OF-2 | Visual | No NSWD | NA | USGS, MA | NA |
| 7/22/99 | OF-3 | Visual | No NSWD | NA | USGS, MA | NA |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

I certify that periodic NSWD inspections will be performed at the Westover AFRC and conducted in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information that is collected. Additionally, I certify the NSWD information listed in this table is, to the best of my knowledge and belief, hue, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

| A. Name and Title of Certifying Authority | B. Area Code and Telephone Number |
|---|---|
| Edward Mason SSG. Motor SGT. | (413) 593-1110 |
| **C. Signature Certifying Authority** | **D. Date Signed** |
| | 5 June 02 |

**FINAL**

# UNDERGROUND STORAGE TANK CLOSURE REPORT
# 2,000 GALLON No. 2 FUEL OIL UST AND 8,000 GALLON No. 2 FUEL OIL UST
# UNITED STATES ARMED FORCES RESERVE CENTER
# WESTOVER AIR FORCE BASE
# BUILDING 5550 & BUILDING 5551

CHICOPEE, MASSACHUSETTS

***Prepared by:***

Nobis Engineering, Inc.
439 South Union Street
Building 2, Suite 207
Lawrence, Massachusetts 01843

***Prepared for:***

U.S. Army Corps of Engineers
New England District
North Central Resident Office
Devens, Massachusetts

USACE Contract No. DACA33-98-D-0004
Delivery Order No. 0003
Nobis Project No. 67026

May 31, 2001

FINAL

# UNDERGROUND STORAGE TANK CLOSURE REPORT
# 2,000 GALLON No. 2 FUEL OIL UST AND 8,000 GALLON No. 2 FUEL OIL UST
# U.S. ARMED FORCES RESERVE CENTER
# WESTOVER AIR FORCE BASE
# BUILDING 5550 & BUILDING 5551
# CHICOPEE, MASSACHUSEiTTS

## TABLE OF CONTENTS,

**FINAL**

# UNDERGROUND STORAGE 1ANK CLOSURE REPORT
# 2,000 GALLON Nc. 2 FUEL OIL UST AND 8,000 GALLON No. 2 FUEL OIL UST
# U.S. ARMED FORCES RESERVE CENTER
# WESTOVER AIR FORCE BASE
# BUILDING 5550 & BUILDING 5551
# CHICOPEE, MASSACHUSETTS

## TABLE OF CONTENTS

### LIST OF TABLES



### LIST OF FIGURES



### APPENDICES

**FINAL**

# UNDERGROUND STORAGE TANK CLOSURE REPORT
# 2.000 GALLON No. 2 FUEL OIL UST AND 8,000 GALLON No. 2 FUEL OIL UST
# U.S. ARMED FORCES RESERVE! CENTER
# WESTOVER AIR FORCE BASE
# BUILDING 5550 & BUILDING; 5551
# CHICOPEE. MASSACHUSEiTTS

## 1.0 PLAN IDENTIFICATION AND APPROVALS

| | |
|---|---|
| Project Title: | Underground Storage Tank Closure Report |
| Project Location: | U.S. Armed Forces Reserve Center, Westover Air Force Base |
| | Building 5550 & Building 5551, Chicopee, MA |
| Delivery Order No.: | 0003 |
| Nobis Project No.: | 67026 |
| Prepared By: | Corey Rousseau/Amy Adams |
| Date Prepared: | 05/31/01 |
| Revision No.: | 00 |

APPROVALS:

Amy Adams

Amy Ad&, Site Remediation Manager

5/31/01

Date

Cindy Moore

FOR Scott Harding, Delivery Order Manager

5/31/01

Date

## 2.0 INTRODUCTION

Nobis Engineering, Inc. *(Nobis)* has prepared this Closure Report summarizing the results of the underground storage tank (UST) removal activities conducted at the U.S. Armed Forces Reserve (USAFR) Center Westover Air Force Base Building 5550 and Building 5551 in Chicopee, Massachusetts. The UST removal activities were periormed under Delivery Order No. 0003 of U.S. Army Corps of Engineers (USACE) New England District Contract No. DACA33-98-D-0004. This work was conducted in accordance with *Nobis'* approved Work Plan dated September 22, 2000, USACE May 10, 2000 (refer to contract modification no.07) Statement of Work (SOW), and USACE UST Removal Technical Specification No. 02115. A locus plan snowing the approximate site location is included as Figure 1. A site plan depicting the location of the former on-site USTs and other pertinent site information is included as Figure 2. Soil sample location schematics are included as Figures 3A and 3B arid pertinent site photographs are included as Figure 4A and 4B.

### 2.1 Site Background Information

The site is known as the USAFR Center Westover Air Force Base located in Chicopee, MA. Building 5550 is used as the Armed Forces Reserve (AFR) Center and Building 5551 is the Organizational Maintenance Shop (OMS). The remaining portions of the site Consist of peved and landscaped areas.

One 8,000-gallon, single-walled, steel UST was located on the east side of Building 5551. Surficial conditions adjacent to the 8,000-gallon UST include both paved and landscaped areas. One 2,000-gallon, single-walled, steel UST was located behind the OMS Building 5550 in a patchy grass-covered a-ea. Surficial conditions in the vcinity of the 2,000-gallon UST include landscaped areas. The 8,000-gallon UST was reportedly installed in 1969, and the 2,000-gallon UST was reportedly installed ir 1977.

## 3.0 SCOPE OF SERVICES

The objective of this project was to remove and dispose of one 8,000-gallon *K2* fuel oil UST, one 2,000-gallon #2 fuel oil UST, the contents of the tanks, and miscellaneous debris associated with the excavation and removal. Soils encountered during the UST excavations were screened in the field for the presence of hydrocarbon contamination with a photoionization (PID) detector. Details of the field screening rnay be found in Section 6.0. The work described herein was based on USACE's SOW dated May 10, 2000 arid includes the following remedial tasks:

- Mobilization/Demobilization Activities.
- UST and associated debris removal and disposal
- Confirmatory sampling and analysis.
- Backfill and site restoration.
- Preparation *of* UST closure report.

## 4.0 REGULATORY REQUIREMENTS

In addition to the Federal regulations pertaining to UST removal actions and OSHA requirements that are described in the approved Work Plan, UST removal activities were performed in accordance with the following State and local regulatory requirements:

### 4.1 State and Local Requirements

*Nobis*, and our subcontractor Resource Control conducted UST removal actions in accordance with the *Commonwealth of Massachusetts Underground Srorage Tank Closure Assessment Manual*. The Chicopee Fire Department (CFD) was notified approximately one-week prior to the removal of the UST. A permit was obtained from the CFD for the UST removal and transportation to a i approved UST disposal yard A copy of the permit is included in Appendix A.

Sampling and field screening oi soil and groundwater, as described in the Sampling and Analysis Plan (SAP), dated September 22, 2000, was performed in accordance with the above mentioned document.

### 4.2 Soil and Groundwater Reportable Categories

The Massachusetts Contingency Plan (MCP), dated Octobe· 1997, was reviewed to determine the applicable evaluation method and soil and groundwater standards. Numerical standards are established in the MCP for ail contaminants on the site. No site-specific conditions exist which would require the use of Method 2 or Method *3* evaluations. The MCP Method 1 Criteria, therefore, applies to the USAFR Center Westover Air Force Base site.

Based on initial review, applicable criteria for the site is Reportable Concentrations lor Soil (RCS-2). Analytical results of soil samples collected during the UST closure activities did not indicate target parameters at concentraticins exceeding laboratory detection limits. Laboratory detection limits were less than the more stringent RCS-1 standards.

## 5.0 UST REMOVAL ACTIVITIES

On November 2, 2000, one 8,1300-gallon #2 fuel oil UST and one 2,000-gallon #2 fuel oil LJST were removed at the subject site by Resource, of Weymouth, Massachusetts, as a subcontractor to *Nobis.* Prior to removal approximately 500-gallons of product was removed from the 8,000-gallon UST and no product was removed from the 2,00C-gallon UST. Approximately 180-gallons of wash water was *used* to clean the *8,000* and 2,000-gallon USTs, for a total of 680 gallons of product removed from the site. The product was transported for disposal by New England Disposal Technology (NEDT) of Readville, Massachusetts to Environmental Compliance Corp. of Stowghton, Massachusetts for disposal (Refer to Appendix A for a copy of the Hazardous Waste Manifest).

5.1 8,000-Gallon UST

In order to remove the UST, Resource excavated soils within an area approximately 35 feet long by 17 feet wide, and extending to a depth of approximately 9 feet below the ground surface (bgs). The feed lines running frorn the UST to the building were removed and the holes to the building were sealed with hydraulic cement.

Soi s encountered during the excavation activities were primarily a finely graded fine to medium native sand and gravel backfill. Groundwa:er or bedrock was not encountered during the UST excavation. Excavated so ls generated during the removal of the UST were temporarily stockpiled adjacent to rhe excavation.

The single-walled, steel UST was observed to be in good condition with no evidence of noles or damage other than incidental damage incurred during removal. The length of the tank was approximately 336 inches (28 feet) and the diameter was 84 inches (7 feet). The UST was situated on a concrete pad, which was not removed during the excavation oi the UST. The UST fuel lines were cut and filled with tiydraulic cement.

The UST was cleaned in ground, removed, and placed on a flat bed for transport. James G. Grant Recycling transported the resulting UST and debris to the Grant Recycling Readville, Massachusetts on November 2, 2000. A copy of the UST receipt is included in Appendix A.

Based on field screening results (refer to Section 6.0) and site observatinns, the excavation was backfilled with the temporarily stockpiled material and imported processed gravel

Interim restoration was limited to backfilling with processed gravel and compaction. Final restoration activities including loaming and seeding were completed on November 3, 2000.

5.2 2,000-Gallon UST

Prior to removal of the 2.000-gallon UST, Resource excavated soils within an area approximately 2.0 feet 8 inches long by 10 feet 9 inches wide, and extending to a depth of approximately 8 feet bgs. The feed lines running from the UST to the building were removed and the holes to the building were sealed with hydraulic cement,

Soil!; encountered during the excavation activities were primarily a fine to medium graded native sand and gravel backfill. Groundwater or bedrock was not encountered during the UST excavation. Excavated soils generated during the removal of the LJST were temporarily stockpiled adjacent to the excavation,

The single-walled, steel UST was observed to be in good condition with no evidence of holes or damage other than slight scrapes on the outer wall caused during

excavation. The length of the tank was approximately 144 inches (12 feet) and the diarneter was 64 inches (5 feet 4 inches).

The UST was cleaned in ground, removed and placed on a flat bed for transport. The UST was cleaned by flushing water into UST and pumping the oil and water intc a vacuum truck for disposal. James G. Grant Recycling transported the resulting tank and debris to the Grant Recycling in Reaclville, Massachusetts 0n November 2, 2000. A copy of the tank receipt is included in Appendix A.

Based on field screening results (refer to Section 6.0) ard site observations, the excavation was backfilled with the temporarily stockpiled material arid imported processed gravel.

Interim restoration was limited to backfilling with processed gravel and compaction. Final restoration activities including loaming and seeding were completed on November 3, 2000.

## 6.0 FIELD SCREENING RESULTS

A F'hotovac MicroTIP PID equipped with a 10.6 eV bulb was used to screen the temporary soil stockpile, ambient air over the excavation, the breathing zone, and other materials encountered during the removal activities for total volatile organic compounds (VOCs). Additionally, soil samples collected for laboratory analysis were screened in the field. Refer to Section 7.0 for descriptions of the analytical sample locations. The MicroTIP PID responds readiy to most VOCs but does not register methane or natural components of air such as oxygen, nitrogen, or carbon dioxide. The MicroTIP PID has a detection limit of approximately 1 part per million (pprn) by volume, refererced to an isobutylene-in-air standard. In accordance with *Nobis'* approved Work Plan, an action level *of* 25 ppm, was used for the purpose of seqregating "clean" soil from contaminated soil.

Field screening results art: summarized in Table 1 anti screening results of analytical sample locations are summarized in Table 2. Feld screening procedures are described in Appendix B.

### 6.1 8,000-Gallon UST Excavation

PID screening results of soils encountered during ?he 8,000-gallon UST removal activities were all below the action level of 25 ppm. ?ID readings of the temporary stockpile were 0 ppm. The ?ID readings of the soil samples collected for laboratory analysis ranged from 0 io 4.1 ppm. The highest PID reading was recorded for sample 8KW collected at a depth of four to six feet bgs. No staining or petroleum odors were noted during the excavation of the 2,000-gallon UST.

Based on screening results and observations, the excavation was backfilled with the temporary soil stockpile material and processed gravel, after collection of applicable samples for laboratory analysis.

## 6.2 2,000-Gallon UST Excavation

PID screening results of soils encountered during the 2,000-gallon UST removal activities were all below the action level of 25 ppm. PID readings of the temporary stockpile were 0 ppm. The PID readings of the soil samples collected for laboratory analysis ranged from 0 to 2.7 ppm. The highest PID reading was recorded for sample 2KE collected at a depth of four to six feet bgs. No staining or petroleum odors were noted during the excavation of the 2,000-gallon UST.

Based on screening results and observation:., the excavation was backfilled with the temporary soil stockpile material and processed yravel, after collection of applicable samples for laboratory analysis.

## *7.0* SAMPLE COLLECTION AND ANALYSIS

Confirmatory soil samples were collected from the UST excavations based on field conditions and in accordance with the approved SAP. Soil samples were designated 2K or 8K for the 2,000-gallon or 8,000-gailon locations, respectively. At each of the UST excavations, five grab/discrete soil samples were collected from the sidewalls and bottom of each excavation at depths of eight to nine feet bgs after removal of the UST. Additionally, a duplicate sample was coiiected from rhe 8,000-gallon UST excavation. All soil samples were composited from representative material collected in the excavator bucket.

Confirmatory soil samples were submitted to AMRO Environmental Laboratories Corporation (AMRO) of Nerrimack, New Hampshire for analysis *of* volatile petroleum hydrocarbons (VPH) per MADEP VPH method, and extractable petroleurn hydrocarbons (EPH) arid four (4) polynuclear aromatic hydrocarbons (PAHs) per MADEP EPH methods. A QA sample (designated as 8KNQA) was submitted to Severn Trent Laboratories of Colchester, VT for the aforementioned analyses, Refer to Sectiori 8.3 foi- QA sample details.

## '7.1 8,000-Gallon UST Location Sampling

The 8,000-gallon UST excavation samples are designated 8KN for the north wall, 8KS for the south wall. 8KE for the east wall, 8KW for the west wall, and 8KB for the bottom of the excavation. Additionally, a duplicate sample designated as 8KN2 was collected from the 8,000-gallon UST excavation.

A Quality Assurance sample designated as 8KNQA was collected at the 8KN location. Refer to Figure 3 for relative locations of analytical samples.

## 7.2 .2,000-Galion UST Location Sampling

The 2,000-gallon UST excavation samples are designated 2KN for the north wall, 2KS for the south wall, 2KE for the east wall, 2KW for the west wall, and 2KB for the bottom of the excavation

## 8.0 SAMPLE ANALYTICAL RESULTS

## 8.0 SAMPLE ANALYTICAL RESULTS

The applicable reportable concentrations for the site are the MCP RCS-2. Refer to Section 4.2 for a discussion of the classification criteria.

The results of the laboratory analysis indicate the following:

### 8.1 Confirmatory Soil Sample Analytical Results - 8,000-Gallon UST Location

- EPH was not detected above the laboratory detection limits in the confirmatory soil samples. The laboratory detection limits ranged from 0.25 ppm to 0.5 ppm for the 8,000-gallon UST confirmatory soil samples.

- VPH was not detected above the laboratory detection limits in the confirmatory soil samples. The laboratory detection limits ranged from 0.05 ppni to 0.13 pprn for the 8,000-gallon UST confirmatory soil samples.

  The detection limits are less then the applicable repcrtable concentrations for each of the target parameters.

### 8.2 Confirmatory Soil Sample Analytical Results - 2,000-Gallon UST Location

- EPH was not detected above the laboratory detection limits in the confirmatory soil samples. The laboratory detection limits ranged from 0.25 ppm to 0.5 ppm for the 2,000-gallon UST confirmatory soil samples.

  VPH was not detected above the method 1 laboratory detection limits in the confirmatory soil samples. Ttic laboratory detection limits ranged from 0.05 pprn to 0.13 pprn ior the 2.000-gallon UST confirmatory soil samples.

  The detection limits are less then the applicable repo-table concentrations *for* each of the target parameters.

Refer io Table 3 for a summary *of* the soil sample analyses. A copy of the laboratory reports is included in Appendix C.

### 8.3 Quality Assurance

In accordance with thc approved Quality Assurance/Quality Control (QA/QC) Plan described in ttic approved SAP, a duplicate soil sample was submitted 'to Severn Trent Laboratories (STL) of Colchester, Vermont for analysis *of* EPH and VPH per EPA Methods.

The QA soil sample designated as 8KNQA was a duplicate sample of the sample collected from the northern sidewall of the 8,000-gallon US1 excavation. No VPH or EPH compound:; were detected above RCS-2 reportable concentrations in the duplicate sample. The analytical data is included in Appendix C.

## 9.0 CONCLUSIONS AND RECOMMENDATIONS

The activities of November 1 and 2, 2000 are summarized as follows:

- The 8,000-gallon fuel oil UST was closed-by-remobal at the subject site on November 2, 2000 The single-wall, steel UST was determined to be in good condition with no evidence of holes or other damage other than incidental damaging that incurred during removal.

- The 2,000-gallon fuel oil UST was closed-by-removal at the subject site on November 2, 2000. The single-wall, steel UST was determined to be in good condition with no evidence of holes or other damage

- Soil encountered during the 2,000-gallon and 8,000-gallon UST removal activities was observed to be a finely graded fine tc mediurn native sand and gravel backfill. No visual or olfactory evidence of a petroleum release was observed or detected during the soil removal activities.

- Field screening results of the soil encountered in the excavation arid the temporary stockpile were below the action level of 25 ppni.

- Both excavations were backfilled with stockpiled soiis and imported processed gravel.

- Laboratory analysis of ten composite soil samples and one duplicate sample, representative of remaining in-ground conditions, did not indicate the presence of EPH or VPH at concentrations exceeding the MCP RCS-2. No reportable situations were encouiitered tha! required the State of Massachusetts to be notified.

- Eased on the observations and analytical results cited above, *Nobis* concurs with the USACE that no further investigations or remedial actions pertaining to the removed fuel oil USTs are necessary.

**Table 1**

**SUMMARY OF STOCKPILE SCREENING AND AMBIENT AIR MONITORING**

**WESTOVER AFB U.S. ARMY RESERVE CENTER**
**CHICOPEE, MASSACHUSETTS**

| Screening Area/Material | Date | Time Recorded | PID Reading (ppm) | Backgroun Interferenc |
|---|---|---|---|---|
| Stockpile - 2K | 11/1/00 | 11:20 | 0.0 | 0.0 |
| Stockpile - 2K | 11/1/00 | 11:30 | 0.0 | 0.0 |
| Stockpile - 2K | 11/1/00 | 11:35 | 0.0 | 0.0 |
| Over Excavation - 2K | 11/1/00 | 11:40 | 0.0 | 0.0 |
| Stockpile - 2K | 11/1/00 | 11:40 | 0.0 | 0.0 |
| Stockpile - 2K | 11/1/00 | 11:45 | 0.0 | 0.0 |
| Stockpile - 2K | 11/1/00 | 12:00 | 0.0 | 0.0 |
| Stockpile - 8K | 11/1/00 | 13:50 | 0.0 | 0.0 |
| Stockpile - 8K | 11/1/00 | 14:00 | 0.0 | 0.0 |
| Stockpile - 8K | 11/1/00 | 14:05 | 0.0 | 0.0 |
| Over Excavation - 8K | 11/1/00 | 14:05 | 0.0 | 0.0 |
| Stockpile - 8K | 11/1/00 | 14:10 | 0.0 | 0.0 |
| Stockpile - 8K | 11/1/00 | 14:15 | 0.0 | 0.0 |
| Stockpile - 8K | 11/1/00 | 14:20 | 0.0 | 0.0 |

NOTES:

1) Photoionization detector (PID) readings are in parts per millicn (ppm) referenced to an isobutylene-in-air standard.
2) PID readings obtained by Nobis Engineering, Inc. personnel using a F'hotovac MicroTIP PID equipped with a 10.6 eV lamp.
3) Detection limit of PID instrument is considered to be 1 ppm.
4) 8K stands for 8.000-gallon UST. 2K stands for 2,000-gallon UST.

**TABLE 2**

**SUMMARY OF SAMPLE SCREENING**

**UST EXCAVATIONS**

**WESTOVER AFB U.S. ARMY RESERVE CENTER**

**CHICOPEE, MASSACHUSETTS**

| Sample Number | Depth Interval (ft.) | PID Reading (ppm) | Sample Number (R) | Depth Interval | PID Reading (ppm) |
|---|---|---|---|---|---|
| 8KN | 4' - 6' | *0.6* | 2KN | 4' - 6' | 0.0 |
| 8KS | 4' - 6' | 0.0 | 2KS | 4' - 6' | 0.0 |
| 8KW | 4' - 6' | 4.1 | 2KW | *4' - 6'* | 0.0 |
| 8KE | 4' - 6' | 0.0 | 2KE | 4' - 6' | 2.7 |
| 8KB | 9' | *0.1* | 2KB | 3' | 0.3 |

NOTES:

1) Photoionization detector (PID) readings are in parts per million (ppm) referenced to an isobutylene-in-air standard.
2) PID readings obtained from head-space tests of 4-ounce jar soii
3) PID readings obtained by Nobis Engineering, Inc. perscnnel using a Photovac MicroTIP PID equipped with a 10.6 eV lamp.
4) Detection limit of PID instrument is considered to be 1 ppm.
5) Depth stated is measured in feel below existing grade.

Table 3A

SUMMARY OF EPH AND VPH ANALYTICAL RESULTS FOR
CONFIRMATORY SOIL SAMPLES
WESTOVER AFB U.S. ARMY RESERVE CENTER
CHICOPEE, MASSACHUSETTS
November 2, 2000

| | Location | | | | | | | MCP Standards | |
|---|---|---|---|---|---|---|---|---|---|
| Sample I.D. | 8KN | 8KN2 | 8KNOA | 8KE | 8KW | 8KS | 8KB | Reportable Concentrations | |
| Sampling Date | 11/2/00 | 11/2/00 | 11/2/00 | 11/2/00 | 11/2/00 | 11/2/00 | 11/2/00 | RCS-1 | RCS-2 |
| Depth | 4-6 ft | 4-6 ft | 4-6 ft | 4-6 ft | 4-6 ft | 4-6 ft | 5 ft | Soil Criteria | Soil Criteria |
| **EPH (mg/Kg dry weight)** | | | | | | | | | |
| C9-C18 Aliphatic Hydrocarbons | <51 | <52 | <6.2 | <51 | <52 | <51 | <50 | 1,000 | 2500 |
| C19-C36 Aliphatic Hydrocarbons | <51 | <52 | <8.3 | <51 | <52 | <51 | <50 | 2,500 | 5,000 |
| C11-C22 Aromatic Hydrocarbons | <51 | <52 | <8.8 | <51 | <52 | <51 | <50 | 200 | 2,000 |
| Napthalene | <0.25 | <0.26 | <0.52 | <0.26 | <0.26 | <0.25 | <0.25 | 4 | 1000 |
| 2-Methylnapthalene | <0.25 | <0.26 | <0.52 | <0.26 | <0.26 | <0.25 | <0.25 | 4 | 1000 |
| Phenanthrene | <0.25 | <0.26 | <0.52 | <0.26 | <0.26 | <0.25 | <0.25 | 100 | 100 |
| Acenaphthene | <0.25 | <0.26 | <0.52 | <0.26 | <0.26 | <0.25 | <0.25 | 20 | 2500 |
| | | | | | | | | | |
| **VPH (mg/Kg dry weight)** | | | | | | | | | |
| C5-C8 Aliphatic Hydrocarbons | <2.4 | <2.7 | 2.3 | <2.4 | <3.1 | <3.1 | <2.5 | 100 | 500 |
| C9-C12 Aliphatic Hydrocarbons | <0.60 | <0.67 | <0.28 | <0.60 | <0.78 | <0.77 | <0.65 | 1,000 | 2500 |
| C9-C10 Aromatic Hydrocarbons | <0.60 | <0.67 | 1.1 | <0.60 | <0.78 | <0.77 | <0.65 | 100 | 500 |
| Methyl tert-butyl Ether | <0.048 | <0.054 | <0.41 | <0.048 | <0.063 | <0.061 | <0.052 | 0.3 | 200 |
| Benzene | <0.048 | <0.054 | <0.14 | <0.048 | <0.063 | <0.061 | <0.052 | 10 | 60 |
| Toluene | <0.048 | <0.054 | <0.41 | <0.048 | <0.063 | <0.061 | <0.052 | 90 | 500 |
| Ethylbenzene | <0.048 | <0.054 | <0.14 | <0.048 | <0.063 | <0.061 | <0.052 | 80 | 500 |
| Xylenes | <0.048 | <0.054 | <0.83 | <0.048 | <0.063 | <0.061 | <0.052 | 1,000 | 1,000 |
| Naphthalene | <0.12 | <0.13 | <0.28 | <0.12 | <0.16 | <0.15 | <0.13 | 4 | 1,000 |

Notes:

1) All results reported in milligrams per kilogram dry weight (mg/Kg dry weight).
2) Analyses performed by AMRO Environmental Laboratories Corp. of Merrimack NH per EPA Method 8060B .
3) EPH is extractable petroleum hydrocarbons.
4) VPH is volatile petroleum hydrocarbons.
5) ND-not within the detection limit for laboratory
6) < # is less than method detection limit.

**Table 313**

**SUMMARY OF EPH AND VPH ANALYTICAL RESULTS FOR CONFIRMATORY SOIL SAMPLES**
**UNITED STATES ARMED FORCES RESERVE CENTER**
**CHICOPEE, MASSACHUSETTS**
**November 2. 2000**

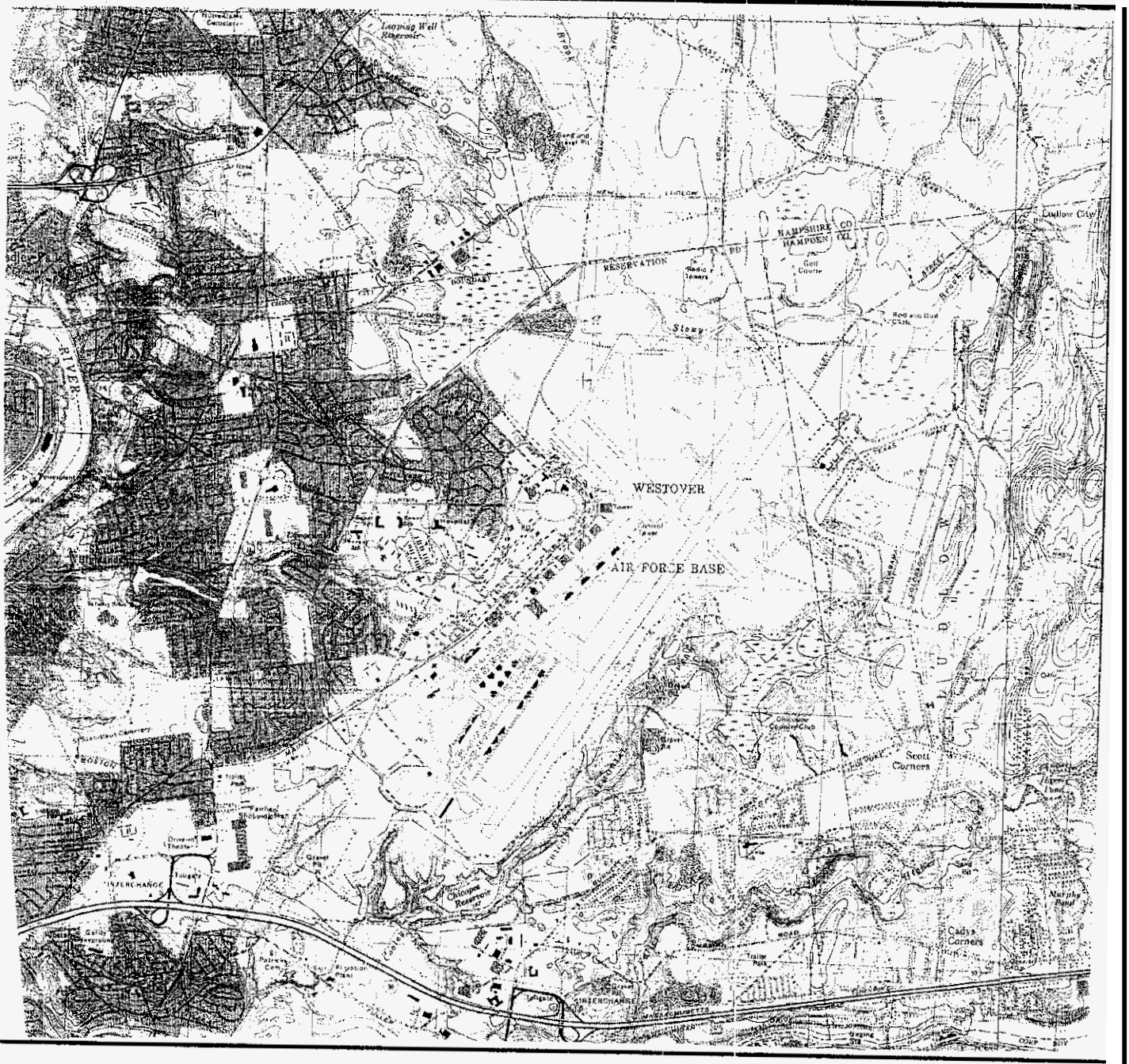
| | Locations | | | | | MCP S indards | |
|---|---|---|---|---|---|---|---|
| Sample I.D. | 2KB | 2KN | 2KE | 2KW | 2KS | Reportable C | oncentrations |
| Sampling Date | 11/2/00 | 11/2/00 | 11/2/00 | 11/2/00 | 11/2/00 | RCS-1 Soil Criteria | RCS 2 Soil Criteria |
| Depth | 8 ft | 4-6 ft | 4-6 ft | 4-6 ft | 4-6 ft | | |
| **EPH (mg/Kg dry weight)** | | | | | | | |
| C9-C18 Aliphatic Hydrocarbons | <53 | <53 | <52 | <52 | <52 | 1,000 | 2500 |
| C19-C36 Aliphatic Hydrocarbons | <53 | <53 | <52 | <52 | <52 | 2,500 | 5,000 |
| C11-C22 Aromatic Hydrocarbons | <53 | <53 | <52 | <52 | <52 | Z00 | 2 000 |
| Napthalene | <0.27 | <0.27 | <0.26 | <0.26 | <0.26 | 4 | 1000 |
| 2-Methylnapthalene | <0.27 | <0.27 | <0.26 | <0.26 | <0.26 | 4 | 1000 |
| Phenanthrene | <0.27 | <0.27 | <0.26 | <0.26 | <0.26 | 100 | 100 |
| Acenaphthene | <0.27 | <0.27 | <0.26 | <0.26 | <0.26 | 20 | 2500 |
| | | | | | | | |
| **VPH (mg/Kg dryweight)** | | | | | | | |
| C5-C8 Aliphatic Hydrocarbons | <3.1 | <3.3 | <2.2 | <2.2 | <3.1 | 130 | *500* |
| C9-C12 Aliphatic Hydrocarbons | <0.78 | <0.83 | <0.55 | <0.54 | <0.77 | 1000 | 2500 |
| CY-ClO Aromatic Hydrocarbons | <0.78 | <0.83 | <0.55 | <0.54 | <0.77 | 100 | *500* |
| Methyl tert-butyl Ether | <0.063 | <0.066 | <0.044 | <0.043 | <0.061 | *0.3* | *200* |
| Benzene | <0.063 | <0.066 | <0.044 | <0.043 | <0.061 | 10 | 60 |
| Toiuene | <0.063 | <0.066 | <0.044 | <0.043 | <0.061 | 90 | 500 |
| Ethylbenzene | <0.063 | <0.066 | <0.044 | <0.043 | <0.061 | a0 | 500 |
| Xylenes | <0.063 | <0.066 | <0.044 | <0.043 | <0.061 | 1,000 | *i*,000 |
| Naphthalene | <0.16 | <0.17 | <0.11 | <0.11 | <0.15 | 4 | 1.000 |

Notes:

1) All results reported in milligrams per kilogram dry weight (mg/Kg dry weight)
2) Analyses performed by AMRO Environmental Laboratories Corp. of Merrimack NH per EPA Method 83608
3) EPH is extractable petroleum hydrocarbons,
4) VPH is volatile petroleum hydrocarbons.
5) ND-not within the detection limit lor laboratory
6) < # is less than method detection limit.

# FIGURES

DWG. NAME: LOCU




NORTH

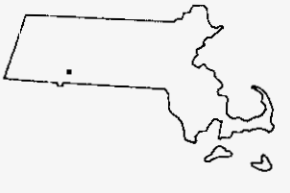
## USGS TOPOGRAPHIC MAP

SPRINGFIELD NORTH, MASSACHUSETTS

1958
PHOTOREVISED 1979

APPROXIMATE SCALE
1 : 24,000

Nobis Engineering, Inc.
439 South Union Street
Suite 207
Lawrence, MA 01843
Tel (978) 683-0891
Fax (978) 683-0966



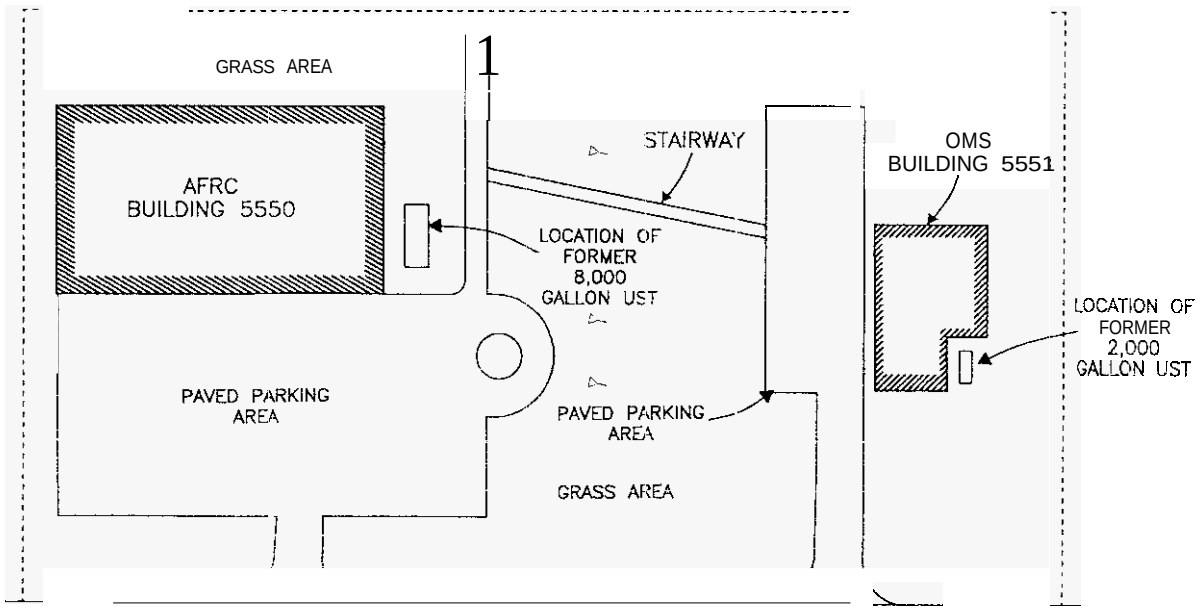
QUADRANGLE LOCATION

FIGURE 1

# LOCUS PLAN

U.S. ARMED FORCES RESERVE CENTER
WESTOVER AIR FORCE BASE
CHICOPEE, MASSACHUSETTS

PROJECT 67026 | MAY 2001




LEGEND

UST — APPROXIMATE LOCATION OF UST

SITE BOUNDARY AND FENCE LINE

SLOPE OF GROUND SURFACE

**APPROXIMATE SCALE**

0' 50' 100' 200'

NOTES

1. THIS SITE SKETCH WAS DEVELOPED FROM SITE OBSERVATIONS BY NOBIS ENGINEERING. INC IN NOVEMBER 2000.
2. LOCATIONS OF SITE FEATURES DEPICTED HEREON ARE APPROXIMATE AND GIVEN FOR ILLUSTRATIVE PURPOSES ONLY.

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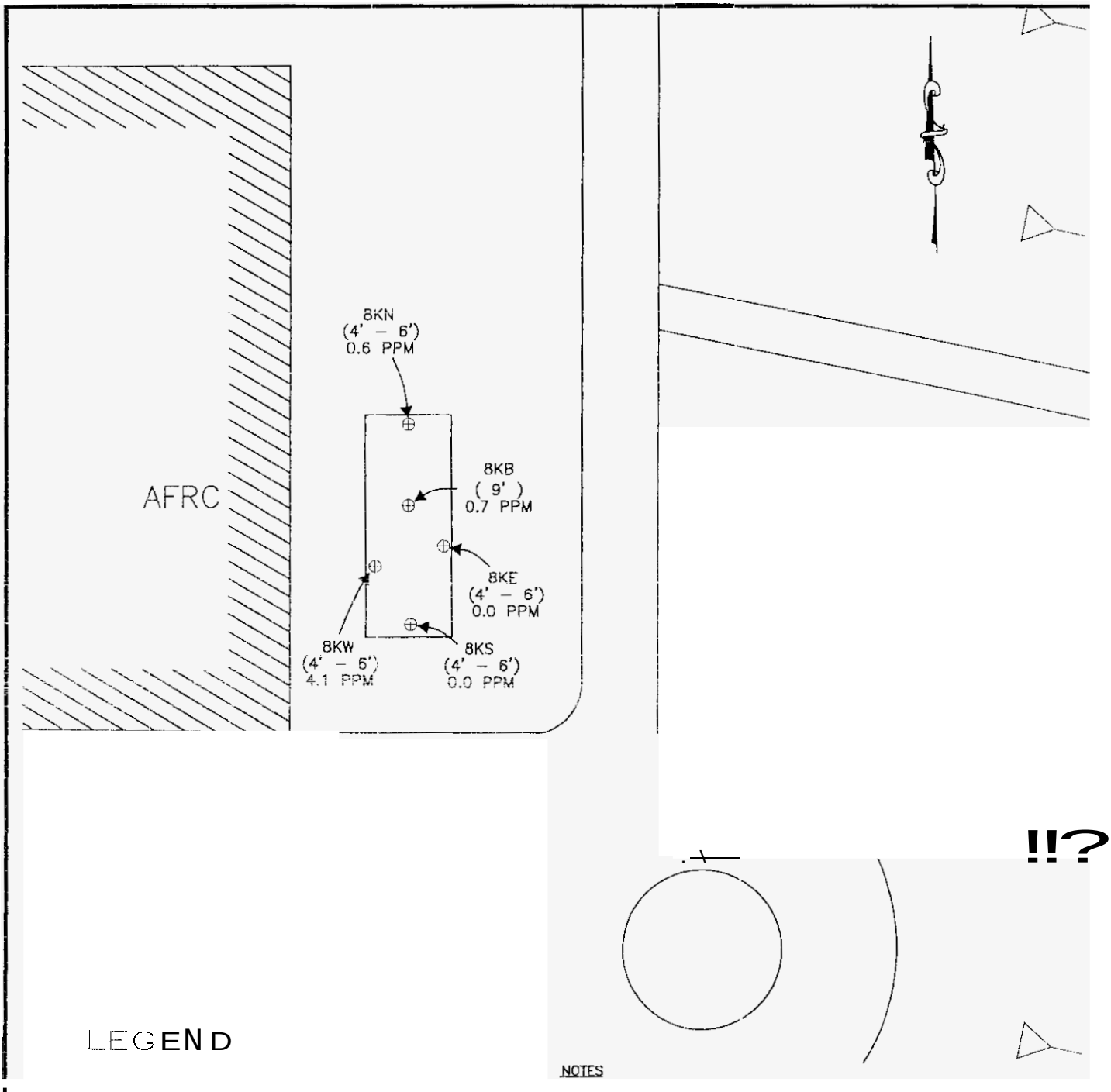
Suite 207
Lawrence, MA 01843
Tel (978) 683-0891
Fax (978) 683-0966

# SITE PLAN

U.S. ARMED FORCES RESERVE CENTER
WESTOVER AIR FORCE BASE
CHICOPEE, MASSACHUSETTS

PROJECT 67026 | MAY 2001

DWG NAME: SITE




LEGEND

SAMPLE LOCATION

(4' – 6') APPROXIMATE DEPTH OF SAMPLE

0.0 PPM FIELD SCREENING RESULT

NOTES

1. THIS SITE SKETCH WAS DEVELOPED FROM SITE OBSERVATIONS BY NOBIS ENGINEERING. INC. IN NOVEMBER 2300.
2. LOCATIONS OF SITE FEATURES DEPICTED HEREON ARE APPROXIMATE AND GIVEN FOR ILLUSTRATIVE PURPOSES ONLY.

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FIGURE 3A

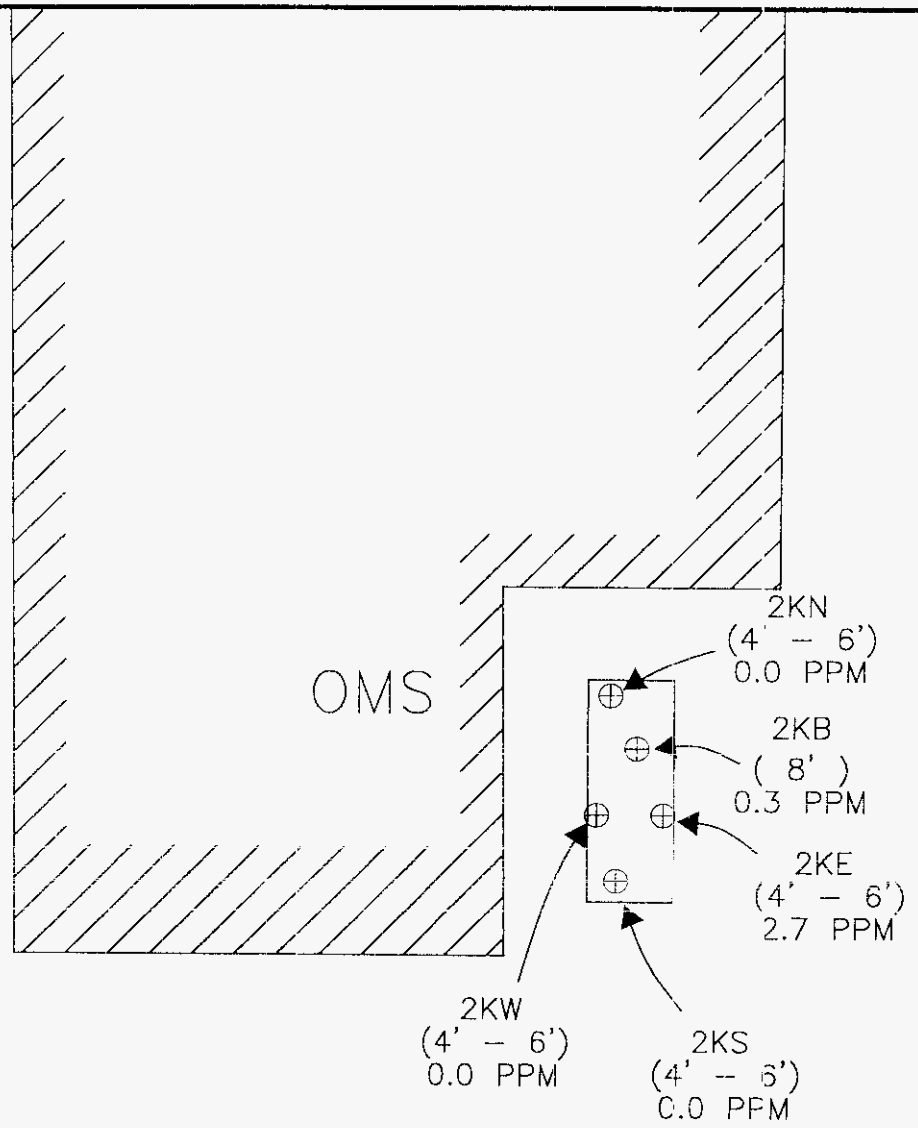
# SAMPLING SCHEMATIC – 8,000 GALLON UST

U.S. ARMED FORCES RESERVE CENTER
WESTOVER AIR FORCE BASE
CHICOPEE, MASSACHUSETTS

PROJECT 67026

MAY 2001

DWG NAME: SITE




## LEGEND

⊕ SAMPLE LOCATION

(4' – 6') APPROXIMATE CEPTH OF SAMPLE

0.0 PPM FIELD SCREENING RESULT

NOTES

1. THIS SITE SKETCH WAS DEVELOPED FROM SITE OBSERVATIONS BY NOBIS ENGINEERING. INC. IN NOVEMBER 2000.
2. LOCATIONS OF SITE FEATURES DEPICTED HEREON ARE APPROXIMATE AND GIVEN F3R ILLUSTRATIVE PURPOSES ONLY.

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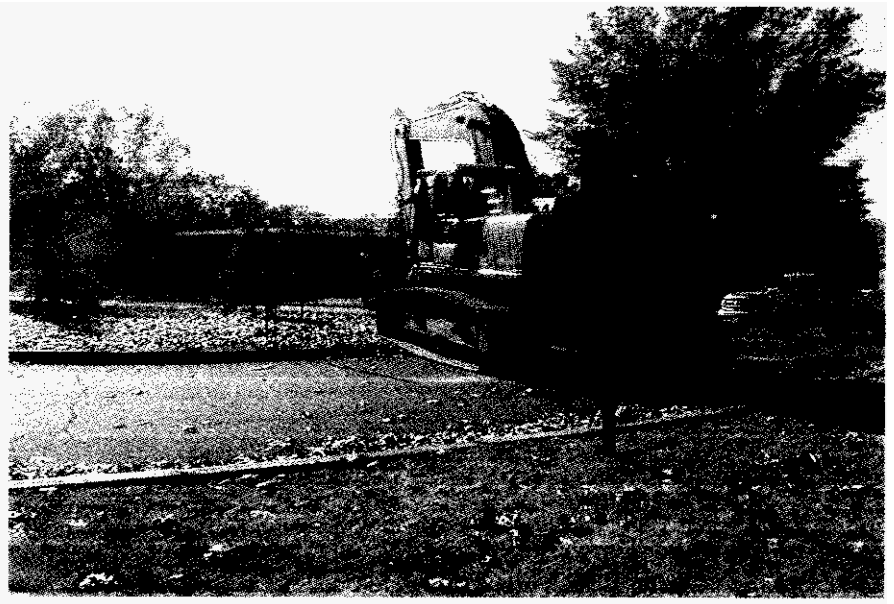
FIGURE 3B

# SAMPLING SCHEMATIC – 2,000 GALLON UST

U.S. ARMED FORCES RESERVE CENTER
WESTOVER AIR FORCE BASE
CHICOPEE, MASSACHUSETTS

PROJECT 67026 | MAY 2001



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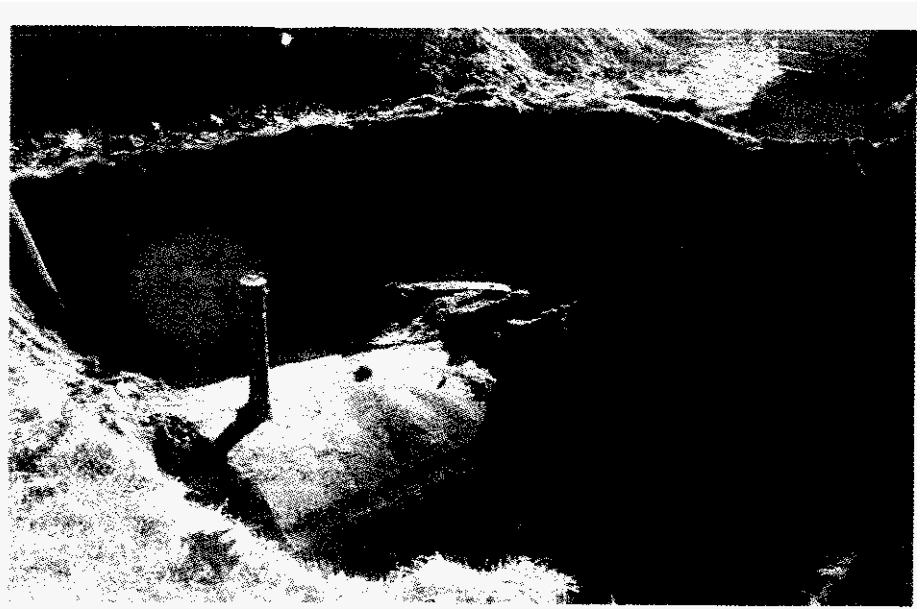
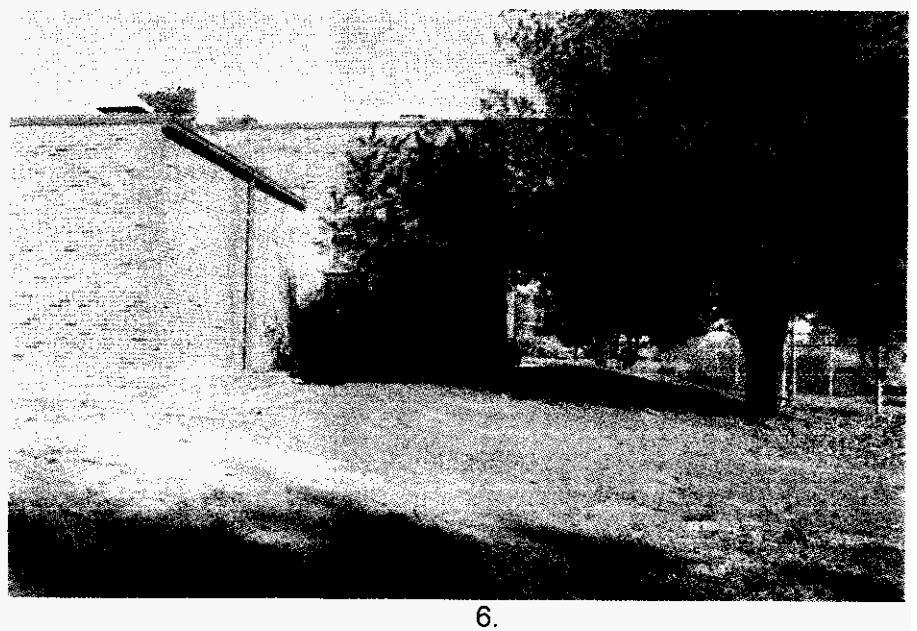


3.

4.

5.



6.

PHOTOGRAPHS TAKEN BY NOBIS ENGINEERING, INC. ON NOVEMBER 4 AND 5 20 0

*Nobis Engineering, Inc.*
*439 South Union Street*
*Building 2, Suite 207*
*Lawrence, Massachusetts 01843*
*Tel (978) 683-0891*
*Fax (978) 683-0966*

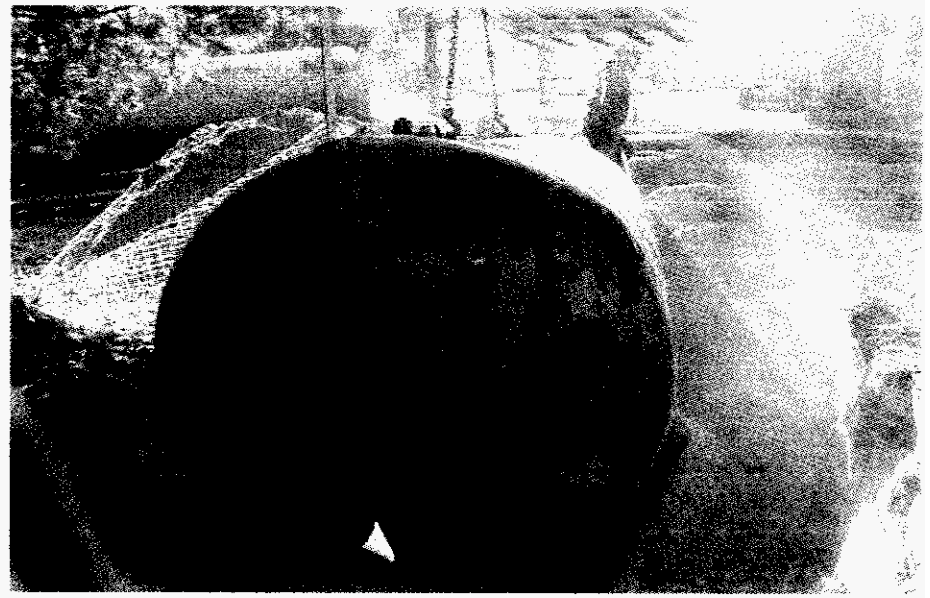
FIGURE 4A

SITE PHOTOGRAPHS
UNITED STATES ARMED FORCES RESERVE CENTER
WESTOVER AIR FORCE BASE
160 AIRMEN DRIVE RD.
CHICOPEE, MASSACHUSETTS

PROJECT 67026 | MAY 31, 2001

7.

8.



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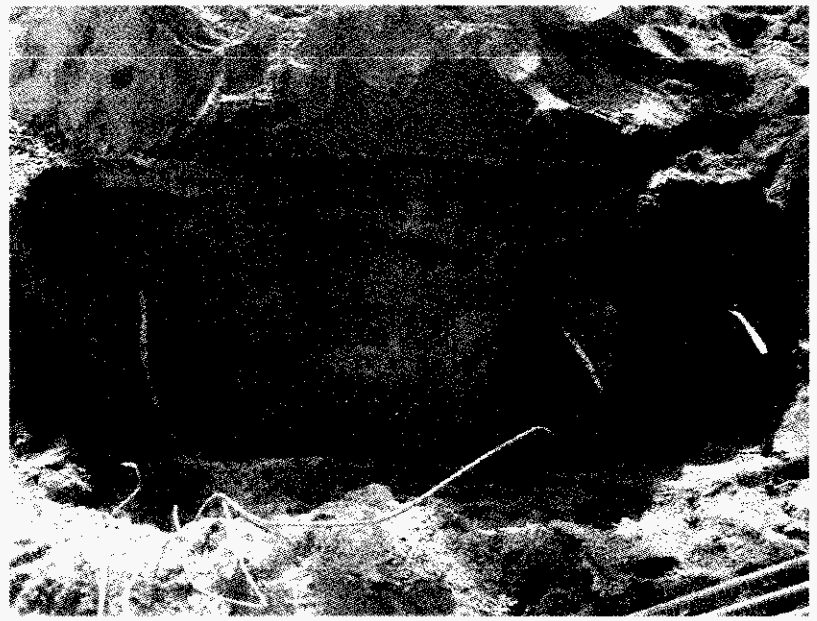

10.

11.

PHOTOGRAPHS TAKEN BY NOBIS ENGINEERING, INC. ON NOVEMBER 4 AND 5, 2000


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*Building 2, Suite 207*
*Lawrence, Massachusetts 01843*
*Tel (978) 683-0891*
*Fax (978) 683-0966*


FIGURE 4B

SITE PHOTOGRAPHS

UNITED STATES ARMED FORCES RESERVE CENTER
WESTOVER AIR FORCE BASE
160 AIRMEN DRIVE RD.
CHICOPEE, MASSACHUSETTS

PROJECT 67026 | MAY 31, 2001

**TEXT FOR PHOTOGRAPHS**
**Project 67026**

1. Mobilization of excavator to behind the OMS building. Photo taken facing east.
2. Removal of topsoil over 2,000-gallon LIST. Photo taken facing south.
3. Partially excavated 2,000-gallon UST. Photo taken facing southeast.
4. 2,000-gallon UST being removed from excavation. Photo taken facing south.
5. Backfilling after removal of 2,000-gallon UST. Photo taken facing west.
6. Loaming and secding after removal of 2,000-gallon UST. Photo taken faciny southwest.
7. Product removal and cleaning of 8,000 gallon UST prior to excavation. Photo taken facing east.
8. Partially excavated 8,000-gallon UST. Photo taken facing southeast.
9. 8,000-gallon UST being removed from excavation. Photo taken facing south.
10. Open excavation after removal of 8,000-gallon UST. Photo taken facing east.
11. Backfilling and seeding after removal of 8,000-gallon UST. Photo taken facing west.

# APPENDIX A

10-24-00
5F30(2)

Make application to local Fire Department.
Fire Department retains original application and issues duplicate as Permit.

*Commonwealth of Massachusetts* 001072

*Department of Fire Services — Board of Fire Prevention* Contractor

# APPLICATION and PERMIT

Fee: $10.00

for storage tank removal and transportation to approved tank disposal yard in accordance with the provisions of M.G.L. Chapter 148, Section 38A, 527 CMR 9.00, application is hereby made by:

## Tank Owner

Tank Owner Name (please print) U.S. ARMY RESERVE CENTER X _____ (Signature (if applying for permit))

Address 160 AIRMAN DRIVE, WESTOVER AIR FORCE BASE (Street) CHICOPEE, MA 01022 (City, State, Zip)

## Removal Contractor

Company Name RESOURCE CONTROLS (Print)

Address 25 MATHEWSON DRIVE, SUITE 120 (Print) WEYMOUTH, MA 02189

Signature (if applying for permit) /SCOTT HARDING

☒ IFCI Certified Other _____

## Contamination Assessment

Co. or Individual NOBIS ENGINEERING, INC. (Print)

Address-1 GRIFFITH BROOK DRIVE (Print) METHIJEN, MA 01844

Signature (if applying for permit)

☐ IFCI Certified ☐ LSP # _____ Other _____

## Tank Information

Tank Location 160 AIRMAN DRIVE (Street Address) CHICOPEE, MA 01022 (City)

Tank Capacity (gallons) (1) 2,000 GALLON Substance Last Stored #2 FUEL OIL

Tank Dimensions (diameter x length) 5' X 12

Remarks: _____

## Disposal Information

firm transporting waste NEDT State Lic. # MA477

Hazardous waste manifest# TBD E.P.A. # MA5000004002

Approved tank disposal yard GRANTS RECYLING Tank yard # 008

Type of inert gas DRY ICE Tank yard address WOLCOTT STREET, READVILLE, MA

## Approvals

City or Town CHICOPEE, MA FDID# 13061 Permit:: 001072

Date of issue OCTOBER 24, 2000 Date of expiration NOVEMBER 24, 2000

Dig sale approval number. 20004404334

Dig Safe Toll Free Tel. Number - 800-322-4844

Signature / Title of Officer granting permit Robert J. Nunes
ROBERT J. NUNES, CHIEF CHICOPEE

Her removal(s) send Form FP-290R signed by Local Fire Dept. to UST Regulatory Compliance Unit, One Ashburton Place, Room 1310, Boston, MA 02108-1618.

Make application to local fire Department.
Fire Department ret s original application and issues duplic e as Permit.

Commonwealth of Massachusetts 001071

Department of Fire Services — Board of Fire Prevention (contractor)

# APPLICATION and PERMIT

Fee: $10.00

*tor* storage tank removal and transportation to approved tank disposal yard in accordance with the provisions of M.G.L. Chapter 148, Section 38A, 527 CMR 9.00, application is hereby made by:

## Tank Owner

Tank Owner Name (please print) U.S. ARMY RESERVE CENTER X _____ Signature (if applying for permit)

Address 160 AIRMAN DRIVE, WESTOVER AIR FORCE BASE, CHICOPEE, MA 01022
Street City State Zip

## Removal Contractor

Company Name RESOURCE CONTROLS (Print)

Address 25 MATHEWSON DRIVE, SUITE 120 (Print)
WEYMOUTH, MA 02189

Signature (if applying for permit)

/SCOTT HARDING

☒ IFCI Certified Other _____

## Contamination Assessment

Co. or Individual NOBIS ENGINEERING, INC. (Print)

Address 1 GRIFFITH BROOK DR., SUITE 204 (Print)

Signature (if applying for permit)

☐ IFCI Certified ☐ LSP # _____ Other _____

## Tank Information

Tank Location 160 AIRMAN DRIVE, CHICOPEE, MA 01022
Street Address City

Tank Capacity (gallons) (1) 8,000 GALLONS Substance Last Stored #2 FUEL OIL

Tank Dimensions (diameter x length) _____

Remarks: _____

## Disposal Information

Firm transporting waste NEDT State Lic. # MA 427

Hazardous waste manifest# TBD EPA # MA5000004002

Approved tank disposal yard GRANTS RECYCLING Tank yard # 008

Type of inert gas DRY ICE Tank yard address WOLCOTT STREET, READVILLE, MA

## Approvals

City or Town CHICOPEE, MA FDID# 13061 Permit:: 001071

Date of issue OCTOBER 24, 21100 Date of expiration NOVEMBER 24, 2000

Dig safe approval number #20004404334 Dig Safe Toll Free Tel. Number - 800-322-4844

Signature / Title of Officer granting permit Robert J. Nunes
ROBERT J. NUNES, CHIEF CHICOPEE FIRE DEPARTMENT

3

After removal(s) send Form FP-290R signed by Local Fire Dept. to UST Regulatory Compliance Unit One Ashburton Place, Room 1310, Boston, MA 02108-1618.

Commonwealth of Massachusetts
Department of Fire Services - Office of the State Fire Marshal
RECEIPT OF DISPOSAL OF UNDERGROUND STEEL STORAGE TANK

Form FP 291

NAME AND ADDRESS OF APPROVED TANK YARD: James G. Grant Co., Inc.
28 Wolcott St.
Readville, MA 02137

APPROVED TANK YARD NO. 008 Tank Yard Ledger 502 CMR 3.03 (4) Number: 20004006 9

I certify under penalty of law I have personally examined the underground steel storage tank delivered to this "approved tank yard" by firm, corporation or partnership RESOURCE CONTROLS and accepted same in conformance with Massachusetts Fire Prevention Regulation 502 CMR 3.00 Provisions for Approving Underground Steel Storage Tank dismantling yards. A valid permit was issued by LOCAL Head of Fire Department. FDID# 1 3 0 6 1 to transport this tank to this yard.

Name and official title of approved tank yard owner or owners authorized representative:

SIGNATURE | TITLE: MGR | DATE SIGNED: 11-3-00

This signed receipt of disposal must be returned to the local head of the fire department FDID# 1 3 0 6 1 pursuant to 502 CMR 3.00

EACH TANK MUST HAVE A RECEIPT OF DISPOSAL

**TANK DATA**

Gallons 8000

Previous Contents #2 FUEL OIL

Diameter N/A Length N/A

Date Received 11-3-00

Serial # (if available) N/A

Tank I.D. # (Form FP-290) N/A

**TANK REMOVED FROM**

160 AIRMAN DR
(No. and Street)

CHICOPEE
(City or Town)

Fire Department Permit # 001071

**Owner/Operator to mail revised copy of Notification Form (FP290, or FP290R) to : UST Compliance, Office of the State Fire Marshal, P.O. Box 1025 State Road, Stow, MA 01775.**

Commonwealth of Massachusetts
Department of Fire Services - Office of the State Fire Marshal
RECEIPT OF DISPOSAL OF UNDERGROUND STEEL STORAGE TANK

Form FP 291

NAME AND ADDRESS OF APPROVED TANK YARD: James G. Grant Co., Inc.
28 Wolcott St.
Readville, MA 02137

APPROVED TANK YARD NO - 008 Tank Yard Ledger 502 CMR 3 03 (4) Number: 0068

I certify under penalty of law I have personally examined the underground steel storage tank delivered to this "approved tank yard" by firm, corporation a partnership RESOURCE CONTROLS and accepted same in conformance with Massachusetts Fire Prevention Regulation 502 CMR 3 00 Provisions for Approving Underground Steel Storage Tank dismantling yards A valid permit was issued by LOCAL Head of Fire Department FDID# 1 3 0 ( to transport this tank to this yard

Name and offidal title of approved tank yard Owner or owners authorized representative

SIGNATURE — MGR TITLE — 11-3-00 DATE SIGNED

This signed receipt of disposal must he returned to the local head of the fire department FDID# 1 3 0 6 1 pursuant to 502 CMR 3.0

EACH TANK MUST HAVE A RECEIPT OF DISPOSAL

**TANK DATA**

Gallons 2000

Previous Contents #2 FUEL OIL

Diameter 5' Length 12'

Dmte Received 11-3-00

Serial # (if available) N/A

Tank I.D. # (Form FP-290) N/A

**TANK REMOVED FROM**

160 AIRMAN DR
(No. and Street)

CHICOPEE
(City or Town)

Fire Department Permit # 001072

**Owner/Operator to mail revised copy of Notification Form (FP290, or FP290R) to : UST Compliance, Office of the State Fire Marshal, P.O. Box 1025 State Road, Stow, MA 01775.**

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS MATERIA-S
One Winter Street
Boston, Massachusetts 0210*8*

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

| UNIFORM HAZARDOUS WASTE MANIFEST | 1. Generator US EPA ID No. | Manifest Document No. | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law. |
|---|---|---|---|---|
| | MP4135931110 | 33852 | | |

3. Generator's Name and Mailing Address
U.S. Army Corps. of Engineers (New England District)
Box 90 - 50 MacArthur Ave. Devens, Ma 01432-4440

4. Generator's Phone ( 413 ) 593-1110

| 5. Transporter 1 Company Name | 6. US EPA ID Number |
|---|---|
| New England Disposal TEchnologies | MA5000004002 |
| 7. Transporter 2 Company Name | 8. US EPA ID Number |
| | |

9. Designated Facility Name and Site Address
Environmental Compliance Corp
441 E Canton St
Stoughton, Ma 02072

10. US EPA ID Number
MAD062179890

A. State Manifest Document Number
MA MI33852
B. State Generator ID
C. State Trans. ID
D. Transporter's Phone
E. State Trans. ID
F. Transporter's Phone
G. State Facility's ID Not Required
H. Facility's Phone (781) 297-3300

| 11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) | 12. Containers No. | Type | 13. Total Quantity | 14. Unit Wt/Vol | Waste No. |
|---|---|---|---|---|---|
| a. Combustible Liquid NOS (#2 Fuel Oil) Combustible Liquid NA 1993 PGIII ERG#128 | 001 | TT | 16180 | G | |
| b. | | | | | |
| c. | | | | | |
| d. | | | | | |

J. Additional Descriptions for Materials Listed Above (Include physical state and hazard code)
K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Site Address: Westover A.F.B. 160 Airman Dr. Chicopee, Ma
Army Reserve Ctr.
ERN# 1-800-698-1865

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

| GENERATOR | Printed/Typed Name | Signature | Date (Month Day Year) |
|---|---|---|---|
| | On Behalf of Corps JOHN D. SUGAT | | 11/6/96 |

| TRANSPORTER | Printed/Typed Name | Signature | Date (Month Day Year) |
|---|---|---|---|
| 17. Transporter 1 Acknowledgement of Receipt of Materials | DAVID CARTER | | 11/6/96 |
| 18. Transporter 2 Acknowledgement of Receipt of Materials | | | |

| FACILITY | |
|---|---|
| 19. Discrepancy Indication Space | |
| 20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. | |
| Printed/Typed Name: ERIN R Twomey | Signature: Date (Month Day Year): 11/6/96 |

Form Approved OMB No. 2050-0039
EPA Form 8700-22 (Rev. 9-94) Previous editions are obsolete

In case of emergency or spill, immediately call the National Response Center (800) 424-8802.

MA MI33852 COPY>3: FACILITY MAILS TO GENERATOR

COPY>3: FACILITY MAILS TO GENERATOR

ENVIRONMENTAL
COMPLIANCE
CORPORATION

# CERTIFICATE OF DISPOSAL/RECYCLING

Manifest # MAM133852

This is to certify that the material received from your facility has been managed at Environmental Compliance Corporation (ECC) or another licensed facility which has been approved by ECC in accordance with all applicable federal, state, and local laws, statutes, and regulations.

Recyclable material has been blended for use in accordance with all applicable federal, state, and local statutes, laws and regulations at ECC, a licensed facility,

All materials consolidated at ECC and subsequently shipped to another licensed facility for treatment and disposal, shall be identified as being generated *by* ECC.

ECC shall indemnify the generator from ***my*** claims as result of damage to any property, contamination of, or adverse effects on the environment, any violation of governmental laws, regulations, or orders, caused by treatment and disposal of the material specified on the manifest.

| **Waste Description** | **Treatment/Disposal Method** | Facility |
|---|---|---|
| Combustible Liquids<br>Oils n.o.s.<br>NA1270<br>MA97/98/99 | T-35 | ECC<br>441 R Canton St.<br>Stoughton, MA 02072 |

Authorized By:

Date: 11-7-00

Fred Adams
Administrative/Compliance
Coordinator

# APPENDIX B

## APPENDIX B

## FIELD PROCEDURES

### Field Screening of Soils

The soil samples collected during drilling were screened for total concentrations *of* volatile organic compounds (VOCs) using a MicroTIP organic vapor meter equipped with a photoionization detector (PID) The MicroTIP PID is equipped with a 10.6 eV bulb and has a detection limit of 1 part per million (ppm) by volume referenced to an isobutylene-in-air standard. The tightly-capped soil samples were allowed to equilibrate to room temperature. Immediately prior to screening, the jar sample was shaken vigorously for approximately 30 seconds. A measurement of the total VOCs within the headspace of the jar sample was then obtained by loosening the cap, slightly lifting one side of the cap, and inserting the PID probe tip between the lip of the jar and the cap. The maximum PID reading was recorded and the cap was placed back on the jar.

# APPENDIX C

Environmental
Laboratories Corporation

111 Herrick Street, Merrimack, NH 03054
TEL: (603)424-2622· FAX: (603) 429-6496

December 07. 2000

Amy Adams
Nobis Engineering Inc
1 Griffin Brook Drive
Suite 204
Methuen. MA 01844
TEL: (978) 683-0891
FAX (978) 683-0966

RE: 67026 Chicopee. MA

Order No.: 001 1033

Dear Amy Adams:

AMRO Environmental Laboratories Corp. received 12 samples on 11/3/00 for the analyses presented in the following report.

AMRO operates a Quality Assurance Program which meets or exceeds EPA and state requirements. A copy of the appropriate State Certificate is attached. The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt. Please see the enclosed Case Narrative for quality control deviations that were encountered during the analyses associated with this project.

Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sampleis). If you require further analysis, or need ths samples held for a longer period. please contact us immediately.

This letter Is an integral pari of your data report. If you have any questions regarding this project in the future. please refer to the Order Number above.

Sincerely

Nancy Stewart
Vice President / Lab Director

# AMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

**CLIENT:** **Nobis Engineering** Inc
**Project:** **67026 Chicopee, MA**
**Lab Order:** **0011033**
**Date Received:** 11/3/00

## Work Order Sample Summary

| Lab Sample ID | Client Sample ID | Collection Date |
|---|---|---|
| 0011033-01A | 8KN | 11/2/00 |
| 0011033-01B | 8KN | 11/2/00 |
| 0011033-02A | 8KN2 | 11/2/00 |
| 0011033-02B | 8KN2 | 11/2/00 |
| 0011033-03A | 8KE | 11/2/00 |
| 0011033-03B | 8KE | 11/2/00 |
| 0011033-04A | 8KW | 11/2/00 |
| 0011033-04B | 8KW | 11/2/00 |
| 0011033-05A | 8KS | 11/2/00 |
| 0011033-05B | 8KS | 11/2/00 |
| 0011033-06A | 2KN | 11/2/00 |
| 0011033-06B | ?KN | 11/2/00 |
| 0011033-07A | 2KE | 11/2/00 |
| 0011033-07B | 2KE | 11/2/00 |
| 0011033-08A | 2KW | 11/2/00 |
| 0011033-08B | 2KW | 11/2/00 |
| 0011033-09A | 2KS | 11/2/00 |
| 0011033-09B | 2KS | 11/2/00 |
| 0011033-10A | 8KB | 11/2/00 |
| 0011033-10B | 8KB | 11/2/00 |
| 0011033-11A | **2KB** | 11/2/00 |
| 0011033-11B | 2KB | 11/2/00 |
| 0011033-12A | **TRIP BLANK.** | 11/2/00 |

# AMRO Environmental Laboratories Corp.

16-Nov-00

**Lab Order:** 0011033
**Client:** Nobis Engineering Inc
**Project:** 67026 Chicopee, MA

## DATES REPOKT

| Sample ID | Client Sample ID | Collection Date | Matrix | Test Name | TCLP Date | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|
| 0011033-0 IA | 8KN | 1112100 | Soil | Volatile Petroleum Hydrocarbons | | 11/2/00 | 11/8/00 |
| 0011033-01B | | | | EPH, Soil, 4 Diesel PAHs | | 1116100 | 1119100 |
| | | | | Percent Moisture | | | 1116100 |
| 0011033-02A | 8KN2 | | | Volatile Petroleum Hydrocarbons | | 1 112100 | 1118100 |
| 0011033-02B | | | | EPH, Soil, 4 Diesel PAHs | | 11/6/00 | 1 119100 |
| | | | | Percent Moisture | | | 11/6/00 |
| 0011033-03A | 8KE | | | Volatile Petroleum Hydrocarbons | | 11/2/00 | 11/8/00 |
| 0011033-03B | | | | EPH, Soil, 4 Diesel PAHs | | 11/6/00 | I119100 |
| | | | | Percent Moisture | | | 11/6/00 |
| 0011033-04A | 8KW | | | Volatile Petroleum Hydrocarbons | | 11/2/00 | 1 118100 |
| 0011033-04B | | | | EPH, Soil, 4 Diesel PAHs | | 1 116100 | 1119100 |
| | | | | Percent Moisture | | | I116100 |
| 0011033-05A | 8KS | | | Volatile Petroleum Hydrocarbons | | 11/2/00 | 11/8/00 |
| 001 1033-058 | | | | EPH, Soil, 4 Diesel PAHs | | 11/6/00 | 1 119100 |
| | | | | Percent Moisture | | | 1 1/6/00 |
| 0011033-06A | 2KN | | | Volatile Petroleum Hydrocarbons | | 11/2/00 | 11/8/00 |
| 0011033-06B | | | | EPH, Soil, 4 Diesel PAHs | | 1116100 | 11/9/00 |
| | | | | Percent Moisture | | | 11/6/00 |
| 001 1033-07A | 2KE | | | Volatile Petroleum Hydrocarbons | | 11/2/00 | 1118100 |
| 0011033-07B | | | | EPH, Soil, 4 Diesel PAHs | | I116100 | 1119100 |
| | | | | Percent Moisture | | | 11/6/00 |
| 0011033-08A | 2KW | | | Volatile Petroleum Hydrocarbons | | 11/2/00 | 11/8/00 |
| 001 1033-080 | | | | EPH, Soil, 4 Diesel PAHs | | 11/6/00 | 1 119100 |
| | | | | Percent Moisture | | | 11/6/00 |
| 0011033-09A | 2KS | | | Volatile Petroleum Hydrocarbons | | 1 112100 | 11/8/00 |
| 0011033-09B | | | | EPH, Soil, 4 Diesel PAHs | | 1116100 | 11/9/00 |
| | | | | Percent Moisture | | | 11/6/00 |
| 0011033-10A | 8KB | | | Volatile Petroleum Hydrocarbons | | 11/2/00 | 11/8/00 |

# AMRO Environmental Laboratories Corp.

16-Nov-00

**Lab Order:** 0011033
**Client:** Nobis Engineering Inc.
**Project:** 67026 Chicopee, MA

## DATES REPORT

| Sample ID | Client Sample ID | Collection Date | Matrix | Test Name | TCLP Date | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|
| 0011033-10B | 8KB | 1112100 | Soil | EPH, Soil, 4 Diesel PAHs | | 11/6/00 | 11/10/00 |
| | | | | Percent Moisture | | | 11/6/00 |
| 0011033-11A | 2KB | | | Volatile Petroleum Hydrocarbons | | 11/2/00 | 11/8/00 |
| 0011033-11B | | | | EPH, Soil, 4 Diesel PAHs | | 11/6/00 | 11/10/00 |
| | | | | Percent Moisture | | | 11/6/00 |
| 0011033-12A | TRIP BLANK | | | Volatile Petroleum Hydrocarbons | | 11/2/00 | 1118100 |

**AMRO Environmental Laboratories Corporation**
111 Herrick Street
Merrimack, N.H. 03054
Office: 603-424-2022 Fax: 603-429-8496

32632

# CHAIN OF CUSTODY RECORD

| Proj. No. | Project Name | Project State |
|---|---|---|
| 6702.6 | Chicopee, MA | MA |

Samplers (Signature): Doug E. Adams

PAGE 1 OF 1

MATRIX: Water - A; Soil/Solid-S; Waste-W; Other-O; Explain

| Sta. No. | Date | Time | Comp | Grab | Station Location | Type Size, & No. of Containers | MATRIX | VPH (nitrate, PRES) | EPH w/ PAHs | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 11/2/00 | 1100 | ✓ | | 3KN | 1-80z Amber 3-40ml VOA | S | ✓ | ✓ | | | | | * MS/MSD |
| | 11/2/00 | 1100 | ✓ | | 3KN2 | 1-80z Amber 3-40ml VOA | S | ✓ | ✓ | | | | | |
| | 11/2/00 | 1025 | ✓ | | 3KE | | S | ✓ | ✓ | | | | | |
| | 11/2/00 | 1020 | ✓ | | 3KW | | S | ✓ | ✓ | | | | | |
| | 11/2/00 | 1030 | ✓ | | 3KS | | S | ✓ | ✓ | | | | | |
| | 11/2/00 | 1420 | ✓ | | 2KN | | S | ✓ | ✓ | | | | | |
| | 11/2/00 | 1415 | ✓ | | 2KE | | S | ✓ | ✓ | | | | | |
| | 11/2/00 | 1425 | ✓ | | 2KW | | S | ✓ | ✓ | | | | | |
| | 11/2/00 | 1430 | ✓ | | 2KS | | S | ✓ | ✓ | | | | | |
| | 11/2/00 | 1015 | ✓ | | 3KB | | S | ✓ | ✓ | | | | | |
| | 11/2/00 | 1400 | ✓ | | 2KB | | S | ✓ | ✓ | | | | | |
| | 11/2/00 | 1200 | | | TB | 1-40ml VOA | | | | | | | | |
| | | | | | NOA | 11/3/00 | | | | | | | | |

Please print clearly, legibly and completely. Samples cannot be logged in and the turnaround time clock will not start until any ambiguities are resolved.

**PRIORITY TURNAROUND TIME AUTHORIZATION**

Before submitting samples for expedited T.A.T., you must have requested in advance and received a coded **T.A.T. AUTHORIZATION NUMBER.**

**AUTHORIZATION NO.**_____ **T.A.T. authorized by:**_____

| Relinquished by (Signature) | Date Time | Received by (Signature) |
|---|---|---|
| Doug E. Adams | 11/3/00 | |
| Relinquished by (Signature) | Date Time | Received by (Signature) |
| Relinquished by (Signature) | Date Time | Received by (Signature) |
| Relinquished by (Signature) | Date Time | Received for Laboratory by: (Signature) |

☒ Fax to (phone) 978-692-3566
Results needed: Standard TAT
PO#:

AMRO Project No:

Seal Intact? Yes No N/A

Send Results to:
Nobis Engineering, Inc.
One Griffin Brook Dr., Suite 201
Methuen, MA 01844

Remarks
* Please do MS/MSD on sample 3KN

White: Lab copy Yellow: Accompanies report Pink: Client copy

AMRO Environmental Laboratories Corporation

# SAMPLE RECEIPT CHECKLIST

111 Herrick Street
Merrimack, NH 03054
(603) 424-2022

Client: Nobis Eng
Project Name: 67026 Chicopee, MA
Ship via: (circle one) Fed Ex., UPS, (AMRO Courier), Hand Del., Other Courier, Other:

AMRO ID: 0011033
Date Rec.: 11-3-00
Date Due: 11-15-00

| Items to be Checked Upon Receipt | Yes | No | NA | Comments |
|---|---|---|---|---|
| 1 Army Samples received in individual plastic bags? | | | ✓ | |
| 2 Custody Seals present? | | ✓ | | |
| 3 Custody Seals intact? | | | ✓ | |
| 4 Air Bill included in folder / received? | | | ✓ | |
| 5 Is COC included with samples? | ✓ | | | |
| 6 Is COC signed and dated by client? | ✓ | | | |
| 7 Laboratory receipt temperature. TEMP = 4° | | | | |
| Samples rec. with ice ✓ ice packs ___ neither ___ | | | | |
| 8 Were samples received the same day they were sampled? | | ✓ | | |
| Is client temperature 4°C ± 2°C? | ✓ | | | |
| If no obtain authorization from the client for the analyses. | | | | |
| Client authorization from: Date: Obtained by: | | | | |
| 9 Is the COC filled out correctly and completely? | ✓ | | | |
| 10 Does the info on the COC match the samples? | ✓ | | | |
| 11 Were samples rec. within holding time? | ✓ | | | |
| 12 Were all samples properly labeled? | ✓ | | | |
| 13 Were all samples properly preserved? | ✓ | | | |
| 14 Were proper sample containers used? | ✓ | | | |
| 15 Were all samples received intact? (none broken or leaking) | ✓ | | | |
| 16 Were VOA vials rec. with no air bubbles? | | | ✓ | |
| 17 Were the sample volumes sufficient for requested analysis? | ✓ | | | |
| 18 Were all samples received? | ✓ | | | |
| 19 VPH and VOA Soils only: | | | | |
| Sampling Method VPH (circle one): M=Methanol, E=EnCore (air-tight container) | | | | |
| Sampling Method VOA (circle one): M=Methanol, SB=Sodium Bisulfate, E=EnCore, B=Bulk | | | | |
| If M or SB: | | | | |
| Does preservative cover the soil? | ✓ | | | |
| If NO then client must be faxed. | | | | |
| Does preservation level come close to the fill line on the vial? | ✓ | | | |
| If NO then client must be faxed. | | | | |
| Were vials provided by AMRO? | ✓ | | | |
| If NO then weights MUST be obtained from client | | | | |
| Was dry weight aliquot provided? | | | ✓ | |
| If NO then fax client and inform the VOA lab ASAP. | | | | |
| 20 Subcontracted Samples: | | | ✓ | |
| What samples sent: | | | | |
| Where sent: | | | | |
| Date: | | | | |
| Analysis | | | | |
| TAT: | | | | |
| 21 Information entered into: | | | | |
| Internal Tracking Log? | ✓ | | | |
| Dry Weight Log? | ✓ | | | |
| Client Log? | ✓ | | | |
| Composite Log? | | | ✓ | |
| Filtration Log? | | | ✓ | |

Received By: CB Date: 11-3-00 Logged In By: CB Date: 11-3-00
Labeled By: CB Date: 11-3-00 Checked By: MG Date: 11-6-00

NA= Not Applicable

# The Commonwealth of Massachusetts

## Department of Environmental Protection

*Division of Environmental Analysis*
*Senator William X. Wall Experiment Station*

*certifies*

M-NH012

AMRO ENVIRONMENTAL LAB
111 HERRICK ST
MERRIMACK, NH 03054-0000

*Laboratory Director:* Nancy Stewart

*for the analysis of* NON POTABLE WATER (CHEMISTRY)
POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

*Issued:* 01 JUL 2000

*Expires:* 30 JUN 2001

Oscar C. Jacobs

*Director, Division of Environmental Analysis*

# CASE NARRATIVE
## 0011033

## GENERAL

1. No QC deviations were observed.

## MADEP-VPH
## SOIL

1 No QC deviations were observed

## MADEP-EPH
## SOIL

1 The batch duplicate was performed on sample 001 1041-01B. The %RPD for Phenanthrene was 100% outside the laboratory control limit *(50%)*.

2 No other QC deviations were observed.

AMRO Environmental Laboratories Corporation
111 Herrick Street
Merrimack, NH 03054

## Volatile Petroleum Hydrocarbons (VPH)
## Massachusetts Department of Environmental Protection (MADEP)
## Method 1.0 -January 1998
## AMRO Modifications

This modification is based on the use of a purge and trap gas chromatography mass spectrometer (GC/MS) system to analyze samples for VPH. The hydrocarbon ranges are quantified using predominant mass fragmentation ions which are characteristic for the range being measured. This approach eliminates potential false positives for the target analytes while providing accurate hydrocarbon range data.

The chromatographic column is an HP-624 capillary column which has been validated by GCMS analysis of a gasoline standard to correctly identity the marker compounds and elution order of specific gasoline components. Batch quality control includes, at a minimum, method blank, laboratory control sample, and duplicate analysis. A matrix spike and/or matrix spike duplicate is analyzed if sufficient sample is submitted to the laboratory

The Reporting Limit (RL) of this method for each of the collective aliphatic and aromatic ranges is approximately 0.6-2 8 mg/kg in soil and 25-110 µg/L in water. The RL of this method for the target analytes ranges from approximately 0.05-0.13 mg/kg in soil and 2 0-5.0 µg/L for water samples.

## Extractable Petroleum Hydrocarbons (EPH)
## Massachusetts Department of Environmental Protection (MADEP)
## Method 1.0 - January 1998
## AMRO Modifications

This modification is based on a solvent extraction and gas chromatography mass spectrometer (GC/MS) analysis. The hydrocarbon ranges are quantified using predominant mass fragmentation ions which are characteristic for the range being measured This approach eliminates the silica gel solid-phase fractionation step. False positives for targeted PAH analytes are eliminated by using GC/MS as the primary analysis technique.

The chromatographic column is a J&W Scientific DB-5ms capillary column.
Internal standard calibration is performed using 5α-Androstane at a concentration of 40 ng/µL. o-Terphenyl and 1-Chlorooctadecane are added as surrogate compounds at 20 ng/µL in the sample extract. These two surrogates monitor the effects of the sample matrix and extraction efficiency. Two additional surrogates, 2-Fluorobiphenyl and 2-Bromonaphthalene, are added to the finished extract prior to analysis to monitor instrument performance. Batch quality control includes, at a minimum, a procedure blank, laboratory control sample and duplicate sample analysis. A matrix spike is analyzed if sufficient sample is submitted to the laboratory.

The Reporting Limit (RL) of this method for each of the collective aliphatic and aromatic ranges is approximately 2-15 mg/kg in soil and 10-50 µg/L in water. The RL of this method for the Target PAH analytes ranges from approximaely 0.25 to 0.5mg/kg in soil, 1.0µg/L for water when operating the GC/MS in full scan mode, and 0.1 to 1.0µg/L when operating the GC/MS in SIM mode. For sites requiring the lowest levels cited in the Massachusetts Contingency Plan for water, GC/MS in the Selected Ion Monitoring (SIM) mode is used.

# VOLATILE PETROLEUM HYDROCARBONS, (VPH)
# SOIL

# AMRO Environmental Laboratories Corp.

Date: *16-Nov-00*

CLIENT: Nobis Engineering Inc
Lab Order: 0011033
Project: 67026 Chicopee, MA
Lalb ID: 0011033-01A

Client Sample ID: 8KN
Tag Number:
Collection Date: 11/2/00
Matrix: SOIL

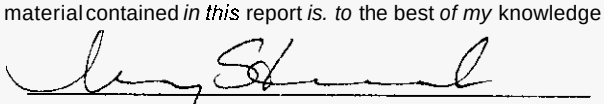
| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **VOLATILE PETROLEUM HYDROCARBONS** | | **MAVPH** | | | | Analyst: **SK** |
| 65-28 Aliphatic Hydrocarbons | ND | 2 4 | | mg/Kg-dry | | 11/8/00 1:52:00 AM |
| C9-C12 Aliphatic Hydrocarbons | ND | 060 | | mg/Kg-dry | 1 | 11/8/00 1:52:00 AM |
| C9-C10 Aromatic Hydrocarbons | ND | 0 60 | | mg/Kg-dry | 1 | 11/8/00 1:52:00 AM |
| Nlethyl tert-butyl ether | ND | 0 048 | | mg/Kg-dry | 1 | 11/8/00 1:52:00 AM |
| Benzene | ND | 0 048 | | mg/Kg-dry | 1 | 11/8/00 1:52:00 AM |
| Toluene | ND | 0 048 | | mg/Kg-dry | 1 | 11/8/00 1:52:00 AM |
| Ethylbenzene | ND | 0 048 | | mg/Kg-dry | | 11/8/00 1:52:00 AM |
| m,p-Xylene | ND | 0 048 | | mg/Kg-dry | 1 | 11/8/00 1:52:00 AM |
| o-Xylene | ND | 0 048 | | mg/Kg-dry | 1 | 11/8/00 1:52:00 AM |
| Naphthalene | ND | 0 12 | | mg/Kg-dry | 1 | 11/8/00 1:52:00 AM |
| Surr Dibromofluoromethane | 116 | 70-130 | | %REC | 1 | 11/8/00 1:52:00 AM |
| Surr 1 2-Dichioroethane-d4 | 103 | 70-130 | | %REC | 1 | 11/8/00 1:52:00 AM |
| Surr Toluene-d8 | 115 | 70-130 | | %REC | 1 | 11/8/00 1:52:00 AM |
| Surr 4-Bromofluorobenzene | 94.1 | 70-130 | | %REC | | 11/8/00 1:52:00 AM |
| Surr 2,5-Dibromotoiuene | 88.1 | 70-130 | | %REC | | 11/8/00 1:52:00 AM |

Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range EPH: C11-C22 Aromatic Hydrocarbons exclude the concentration of target PAH analytes. VPH: C5-C8 Aliphatic Hydrocarbons exclude the con. centration of target analytes eluting in this range. C9-C12 Aliphatic Hydrocarbons exclude the (concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons.

CERTIFICATION

Were all QAIQC **procedures** required by the VPH or EPH method followed: ✓ Yes ___ No - If No. ***See*** Case Narrative
Were all performanceiacceptance standards for required *QNQC* procedures achievecl: ✓ Yes ___ No - If No, See Case Narrative
Were any significant modifications made to the method as specified in section 11.3: ___ No ✓ Yes - Details enciosed

*I* attest under *the* pains and Penalties of *perjury* that, based upon my inquiry *of* those *individuals* immediately *responsible for* obtaining *the information,* the material contained *in this* report *is. to* the best *of my* knowledge and belief, *accurate* and complete.

SIGNATURE  DATE: 11-16-00

PRINTED NAME: Nancy Stewart POSITION: Laboratory Director (or designee)

Qualifiers: RL - Reporting Limii, defined as the lowest concentration the laboratory can accurately quantitate.
ND - Not Detected at the Reponing Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associaled Method **Rlank**
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - **Value** above quantitation range
# - See **Case** Narrative

# AMRO Environmental Laboratories Corp.

Date: **16-Nov-00**

CLIENT: Nobis Engineering Inc.
Lab Order: 0011033
Project: 67026 Chicopee, **MA**
Lalb **ID:** 0011033-02A

Client Sample **ID:** 8KN2
Tag Nuniber:
Collection Date: 11/2/00
Matrix: SOIL

| Analyses | Result | RL | Qual | Units | DF | **Date** Analyzed |
|---|---|---|---|---|---|---|
| **VOLATILE PETROLEUM** HYDROCARBONS | | **MAVPH** | | | | Analyst: **SK** |
| C5-C8 Aliphatic Hydrocaibons | ND | 2 7 | | mg/Kg-dry | 1 | 1118100 2:28:00 AM |
| C9-C12 Aliphatic Hydrocarbons | ND | 0.67 | | mg/Kg-dry | 1 | 11/8/00 2:28:00 AM |
| C9-C10 Aromatic Hydrocarbons | ND | 0.67 | | mg/Kg-dry | 1 | 1118100 2:28:00 AM |
| Methyl tert-butyl ether | ND | 0.054 | | mg/Kg-dry | 1 | 1118100 2:28:00 AM |
| Benzene | ND | 0.054 | | mg/Kg-dry | | 11/8/00 2:28:00 AM |
| Toluene | ND | 0.054 | | mg/Kg-dry | | 1118100 2:28:00 AM |
| Ethyibenzene | ND | 0 054 | | mg/Kg-dry | | 1118100 2:28:00 AM |
| m,p-Xylene | ND | 0 054 | | mg/Kg-dry | 1 | 1118/00 2:28:00 AM |
| o-Xylene | ND | 0 054 | | mg/Kg-dry | 1 | 11/8/00 2:28:00 AM |
| Naphthaiene | ND | 0.13 | | mg/Kg-dry | 1 | 1118100 2:28:00 AM |
| Surr Dibromofluoromethane | 117 | 70-130 | | %REC | | 1118100 2:28:00 AM |
| Surr 1,2-Dichloroethane-d4 | 103 | 70-130 | | %REC | 1 | 1118100 2:28:00 AM |
| Surr Toluene-d8 | 114 | 70-130 | | %REC | 1 | 1118100 2:28:00 AM |
| Surr 4-Bromofluorobenzene | 93.2 | 70-130 | | %REC | | 1118100 2:28:00 AM |
| Surr 2.5-Dibromotoluene | 89 0 | 70-130 | | %REC | | 11/8/00 2:28:00 AM |

Hydrocarbon range data exciude concentrations of any surrogate(s) andlor internal standards e uting in that range EPH: C11-C22 Aromatic Hydrocarbons exclude the concentration of target PAH analytes. VPH: C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range. C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons

CERTIFICATION

Were **all** *QNQC* procedures required by the VPH or EPH method followed: ✓ Yes ___ No - if No, See Case Narrative

Were all performance/acceptance standards for required QA/QC procedures achieved: ✓ Yes ___ No - If No, See Case Narrative

**Were any** significant modifications made to the method as specified in Section 11.3- ___ No ✓ Yes - Detaiis enclosed

*I attest* under *the* pains and penalties of *perjury* that. based upon my inquiry *of* those *individuals* immediately responsible for obtarning the *information,* the material confained*in* this *report is,* to the *best of* my knowledge and *belief, accurate* and complete

SIGNATURE. _____ DATE: 11-16-00

PRINTED NAME: Nancy Stewart POSITION: Laboratory Director (or designee)

**Qualifiers:** RL - Reporting Limit; defined as tte lowest Concentration the laboratory **can accurately** quantitate.

ND - Not Detected **at the** Reporting Limit S - Spike Recovery outside accepted recovery limits E - Valve above quantitation range

J - Analyte detected below quantitation limits R - RPD outride accepted recovery limits # - See Case Narrative

B - Analyre detected **in the** associated Method Blank

# AMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

| | | | |
|---|---|---|---|
| **CLIENT:** | Nobis Engineering Inc. | **Client Sample ID:** | 8KE |
| **Lab Order:** | 0011033 | **Tag Number:** | |
| **Project:** | 67026 Chicopee, **MA** | **Collection Date:** | 11/2/00 |
| **Lab ID:** | 0011033-03A | **Matrix:** | SOIL |

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| VOLATILE PETROLEUM HYDROCARBONS | | MAVPH | | | | Analyst: **SK** |
| C5-C8 Aliphatic Hydrocarbons | ND | 2.4 | | mg/Kg-dry | 1 | 1118100 3:03:00 AM |
| C9-C12 Aliphatic Hydrocarbons | ND | *0 60* | | mg/Kg-dry | 1 | 1118100 3:03:00 AM |
| C9-C10 Aromatic Hydrocarbons | ND | *0 60* | | mg/Kg-dry | 1 | 11/8/00 3:03:00 AM |
| Nlethyl tert-butyl ether | ND | 0 048 | | mg/Kg-dry | 1 | 1118100 3:03:00 AM |
| Benzene | ND | 0 048 | | mg/Kg-dry | 1 | 1118100 3:03:00 AM |
| Toluene | ND | 0 048 | | mg/Kg-dry | | 1118100 3'03.00 AM |
| Ethylbenzene | ND | 0 048 | | mg/Kg-dry | 1 | 1118100 3:03:00 AM |
| m,p-Xylene | ND | *0* **048** | | mg/Kg-dry | 1 | 1118100 3:03:00 AM |
| o-Xylene | ND | *0* 048 | | mg/Kg-dry | 1 | 1118100 3:03:00 AM |
| Naphthalene | ND | 0 12 | | mg/Kg-dry | 1 | 1118100 3:03:00 ***AM*** |
| Surr Dibromofluoromethane | 112 | 70-130 | | %REC | 1 | 1118100 3:03:00 AM |
| Surr i,2-Dichloroethane-d4 | 98 9 | IO-130 | | %REC | 1 | 1118100 3:03:00 AM |
| Surr Toluene-d8 | 109 | 70-130 | | %REC | 1 | 1118100 3:03 00 AM |
| Surr 4-Bromofluorobenzene | 90 4 | 70 130 | | %REC | 1 | 11/8/00 3.03'00 AM |
| Surr 2,5-Dibromotoluene | aa 6 | 70 130 | | %REC | 1 | 11/8/00 3:03:00 AM |

Hydrocarbon range data exclude concentrations of any surrogate(s) andlor Internal standards eluting in that range. EPH: C11-C22 Aromatic Hydrocarbons exclude the concentration of target PAH analytes VPH: C5-C8 Aliphaic Hydrocarbons exciude the concentration of target anaiytes eluting in this range. C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons.

CERTIFICATION

Were **all** QA/QC procedures required by the VPH or EPH method followed ✓ Yes ___ No - If No, See Case Narrative

Were all performancelacceptance standards for required QNQC procedures achieved: ✓ Yes ___ No - If No, See Case Narrative

Were any significant modifications made to the method as specified in section 11.3- ___ No ✓ Yes - Details enclosed

*I attest under* the pains and penalties of *perjury* that, based upon my *inquiry* of those individuals *immediately* responsible for obtarning the information ***the*** material contained in this *report* is, *to* the best *of my* knowledge and *belief, accurate* and complete.

SIGNATURE: _____ DATE: 11-16-00

PRINTED NAME: Nancy Stewart POSITION: Laboratory Director (or designee)

Qualifiers: RL - Reponing Limit; defined as the **lowest** concentration the laboratory **can** accurately quantitate.

ND - Not Detected **at** the Reporting Limit S - Spike Recovery outride accepted **recovery** limits E - Value above quamitation range

J - Analyte dctccted below quantitation limits R - RPD outside accepted recovery limits # - See **Care** Narrative

B - Analyte detected in the associated Method Blank

# AMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

**CLIENT:** Nobis **Engineering** Inc.
**Lab Order:** 0011033
**Project:** 67026 **Chicopee,** M A
**Lab ID:** 0011033-04A

**Client Sample ID:** XKW
**Tag Number:**
**Collection Date:** 11/2/00
**Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **VOLATILE PETROLEUM HYDROCARBONS** | | **MAVPH** | | | | **Analyst: SK** |
| C5-C8 Aiiphatic Hydrocarbons | ND | 3.1 | | mg/Kg-dry | 1 | 11/8/00 3:39:00 AM |
| C9-C12 Aliphatic Hydrocarbons | ND | 0 78 | | mg/Kg-dry | 1 | 11/8/00 3:39:00 AM |
| C9-C10 Aromatic Hydrocarbons | ND | 0 78 | | mg/Kg-dry | | 11/8/00 3:39:00 AM |
| Methyl tell-butyl ether | ND | 0 063 | | mg/Kg-dry | 1 | 11/8/00 3:39:00 AM |
| Benzene | ND | 0 063 | | mg/Kg-dry | 1 | 11/8/00 3:39:00 AM |
| Toiuene | ND | 0 063 | | mg/Kg-dry | | 11/8/00 3:39:00 AM |
| Ethylbenzene | ND | 0 063 | | mg/Kg-dry | 1 | 11/8/00 3:39:00 AM |
| m,p-Xylene | ND | 0 063 | | mg/Kg-dry | 1 | 11/8/00 3:39:00 AM |
| o-Xylene | ND | 0 063 | | mg/Kg-dry | 1 | 11/8/00 3:39:00 AM |
| Naphthalene | ND | 0 16 | | mg/Kg-dry | 1 | 11/8/00 3:39:00 AM |
| Surr Dibromofluorornethane | 114 | 70-130 | | %REC | 1 | 11/8/00 3:39:00 AM |
| Surr 1,2-Dichloroethane-d4 | 104 | 70-130 | | %REC | 1 | 11/8/00 3:39:00 AM |
| Surr Toluene-d8 | 113 | 70-130 | | %R EC | 1 | 11/8/00 3:39:00 AM |
| Surr 4-Bromofluorobenzene | 91 6 | 70-130 | | %R EC | 1 | 11/8/00 3:39:00 AM |
| Surr 2,5-Dibromotoluene | ***85*** *7* | 70-130 | | %REC | 1 | 11/8/00 3:39:00 AM |

Hydrocarbon range data exclude concentrations of any surrogate(s) andlor internal standards eluting in that range EPH: C11-C22 Aromatic Hydrocarbons exclude the concentration oftarget PAH analytes. VPH: C5-C8 Aiiphatic Hydrocarbons exclude the concentration of target analytes eluting in this range. C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons.

CERTIFICATION

Were all QAIQC procedures required by the VPH or EPH method followed: ✓ Yes ___ No - If No, See Case Narrative
Were all performance/acceptance standards for required QA/QC procedures achieveo: ✓ Yes ___ No - IfNo. See Case Narrative
Were any significant modifications made *to* the method as specified in section 11.3: ___ No ✓ Yes - Details enclosed

*I* attest under the *pains* and penalties *of perjury* that, based upon my *inquiry* ***of*** those *individuals* immediately *responsible for obtaining* the *information,* the material contained ***in*** this *report* ***is,*** *to* the best *of* my knowledge and belief. accurate and complete

SIGNATURE: _____ DATE: 11-16-00
PRINTED NAME Nancy **Stewart** POSITION: Laboratory Director (or designee)

Qualifier.: RL - Reponing Limit; defined as the lowest concentration the laboratory can accurately quantitate.
ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits E - Vaiue **above** quantitation **range**
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits # - See **Case** Narrative
B - **Analyte** detected in the associated Method Blank

# AMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

**CLIENT:** Nobis Engineering Inc.
**Lab Order:** 001 1033
**Project:** 67026 Chicopee, MA
**Lab ID:** 0011033-05A

**Client Sample ID:** 8KS
**Tag Number:**
**Collection Date:** **11/2/00**
**Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| VOLATILE PETROLEUM HYDROCARBONS | | MAVPH | | | | Analyst: **SK** |
| C5-C8 Aliphatic Hydrocarbons | ND | 3 1 | | mg/Kg-dry | 1 | 1118100 4:14:00 AM |
| C9-C12 Aliphatic Hydrocarbons | ND | 0.77 | | mg/Kg-dry | | 1118100 4:14:00 AM |
| C9-C10 Aromatic Hydrocarbons | ND | 0 77 | | mg/Kg-dry | | 1118100 4:14:00 AM |
| Methyl tert-butyl ether | ND | 0.061 | | mg/Kg-dry | 1 | 11/8/00 4:14:00 AM |
| Benzene | ND | 0.061 | | mg/Kg-dry | 1 | 11/8/00 4:14:00 AM |
| Toluene | ND | 0 061 | | mg/Kg-dry | 1 | 1118100 4:14:00 AM |
| Ethylbenzene | ND | 0.061 | | mg/Kg-dry | 1 | 11/8/00 4:14:00 AM |
| m,p-Xylene | ND | 0 061 | | mg/Kg-dry | | 11/8/00 4:14:00 AM |
| o-Xylene | ND | 0.061 | | rngiKg-dry | 1 | 11/8/00 4:14:00 AM |
| Naphthalene | ND | 0.15 | | rngiKg-dry | 1 | 1118100 4 14:00 AM |
| Surr Dibromofluoromethane | 119 | 70-130 | | %REC | 1 | 1118/00 4 14:00 AM |
| Surr 1,2-Dichloroethane-d4 | 106 | 70-130 | | %REC | 1 | 1118100 4'14.00 AM |
| Surr Toluene-d8 | 117 | 70-130 | | %REC | 1 | 1118100 4:14.00 AM |
| Surr 4-Rrornofluorobenzene | 93.5 | 70-130 | | %REC | | 1118100 4:14:00 AM |
| Surr 2,5-Dibromotoluene | 90 1 | 70-130 | | %REC | | 11/8/00 4 14 00 AM |

Hydrocarbon range data exclude concentrations of any surrogate(s) andlor internal standards eluting in that range EPH: C11-C22 Aromatic Hydrocarbons exclude the concentration of target PAH analytes VPH: C5-C8 Aliphatic Hydrocarbons exclude the con.. centration of target analyies eluting in this range. C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentratlon of C9-C10 Aromatic Hydrocarbons

CERTIFICATION

Were **all** QA/QC procedures required by the VPH or EPH method followed ✓ Yes ___ No - If No. See Case Narrative
Were all perforrnancelacceptance standards for required QAIQC procedures achieved. ✓ Yes ___ No - If No, See Case Narrative
Were any significant modifications made to the method as specified in section 11.3: ___ No ✓ Yes - Details enciosed

I attest under the pains and penalties of *perjury* that, based upon my *inquiry* of those individuals *immediately* responsible *for obtaining* the *information,* the material contained *in* this report *Is,* lo *the* best of my knowledge and belief. accurate and complete.

SIGNATURE: _____ DATIE: 11-16-00
PRINTED NAME: Nancy Stewart POSITION: Laboratory Director (or designee)

**Qualifiers:** RL - Reponing Limit; defined as the **lowest** concentration the laboratory can accurately quantitate
ND - Not Detected at the Reponing Limit S - Spike Recovery outside accepted **recovery** limits E - Value above quantitation range
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits # - **See Care** Narrative
B - Analyte detected **in the** associated Method Blank

# AMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

**CLIENT:** Nobis Engineering Inc.
**Lab Order:** 0011033
**Project:** 67026 Chicopee, **MA**
**Lab ID:** 0011033-06A

**Client Sample: ID:** 2KN
**Tag** Number:
**Collection** Date: 11/2/00
**Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **VOLATILE PETROLEUM HYDROCARBONS** | | **MAVPH** | | | | Analyst: **SK** |
| C5-C8 Aliphatic Hydrocarbons | ND | 3 3 | | mg/Kg-dry | 1 | 11/8/00 4:50:00 AM |
| C9-C12 Aliphatic Hydrocarbons | ND | 0.83 | | mg/Kg-dry | 1 | 11/8/00 4:50:00 AM |
| C9-C10 Aromatic Hydrocarbons | ND | 0.83 | | mg/Kg-dry | 1 | 11/8/00 4:50 00 AM |
| Methyl tert-butyl ether | ND | 0.066 | | mg/Kg-dry | 1 | 11/8/00 4:50:00 AM |
| **Benzene** | ND | 0.066 | | mg/Kg-dry | | 11/8/00 4:50:00 AM |
| Toluene | ND | 0.066 | | mg/Kg-dry | 1 | 11/8/00 4:50:00 AM |
| Ethylbenzene | ND | 0.066 | | mg/Kg-dry | | 1118100 4 50'00 AM |
| m p-Xylene | ND | 0 066 | | mg/Kg-dry | 1 | 11/8/00 4:50:00 AM |
| o-Xylene | ND | 0.066 | | mg/Kg-dry | 1 | 11/8/00 4:50:00 AM |
| Naphthalene | ND | 0.17 | | mg/Kg-dry | 1 | 11/8/00 4:50:00 AM |
| Surr Dibromofluoromethane | 117 | 70-130 | | %REC | 1 | 11/8/00 4:50:00 AM |
| Surr 1,2-Dichioroethane-d4 | 104 | 70-130 | | %REC | | 11/8/00 4:50:00 AM |
| Surr Toluene-d8 | 115 | 70-130 | | %REC | 1 | 11/8/00 4:50:00 AM |
| Surr. 4-Bromofluorobenzene | 92.0 | 70-130 | | %REC | 1 | 1118100 4:50:00 AM |
| Surr 2,5-Dibromotoluene | 94 2 | 70-130 | | %REC | 1 | 1118100 4 50:00 AM |

Hydrocarbon range data exclude concentrations of any surrogate(s) andlor internal standards eluting in that range. EPH: C11-C22 Aromatic Hydrocarbons exclude the concentration of target PAH analytes VPH: C5-C8 Aliphat c Hydrocarbons exclude the concentration of target analytes eluting in this range. C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons.

CERTIFICATION

**Were** all QAIQC **procedures** required by the VPH or EPH method followed ✓ Yes ___ No - If No, See Case Narrative

Were **all** performance/acceptance standards for required QNQC procedures achieved: ✓ **Yes** ___ No - If No, See Case Narrative

We're any significant modifications made to the method as specified in section 11 3. ___ No ✓ Yes - Details enclosed

*I attest under* the pains and penalties *of perjury* that, based upon my *inquiry of* those individuals immediately responsible *for* obtaining the information, the material coniained *in* this *report* **is,** io the best *of my* knowledge and belief. accurate and complete

SIGNATURE _____ DATE:: 11-16-00

PRINTED NAME. Nancy Stewart POSITION· Laboratory Director (or designee)

**Qualifiers:** RL - Reponing Limit; defined as the lowest concentration the laboratory can accurately quantitate.

ND - Not Detected at the Reporting Limit S - Spike **Recovery** outside accepted recovery limits **E** - Value above quamitation **range**

J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits # - See Care Narrative

B - Analyte detected in the associated Method Blank

# AMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

CLIENT: Nobis Engineering Inc.
Lab Order: 0011033
**Project:** 67026 Chicopee, MA
Lab **ID:** 0011033-07A

**Client Sample ID:** 2KE
**Tag Number:**
**Collection Date:** 11/2/00
**Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **VOLATILE: PETROLEUM HYDROCARBONS** | | **MAVPH** | | | | **Analyst: SK** |
| C5-C8 Aliphatic Hydrocarbons | ND | 2 2 | | mg/Kg-dry | 1 | 11/8/00 5:25:00 AM |
| C9-C12 Aliphatic Hydrocarbons | ND | 0.55 | | mg/Kg-dry | 1 | 11/8/00 5:25:00 AM |
| C9-C10 Aromatic Hydrocarbons | ND | 0 55 | | mg/Kg-dry | 1 | 1118100 5:25:00 AM |
| Nlethyl tert-butyl ether | ND | 0.044 | | mg/Kg-dry | 1 | 1118100 5:25:00 AM |
| Benzene | ND | 0.044 | | mg/Kg-dry | 1 | 11/8/00 5:25:00 AM |
| Toluene | ND | 0.044 | | mg/Kg-dry | 1 | 11/8/00 5:25:00 AM |
| Ethylbenzene | ND | 0.044 | | mg/Kg-dry | 1 | 1118100 5:25:00 AM |
| m,p-Xylene | ND | 0.044 | | mg/Kg-dry | 1 | 11/8/00 5:25:00 AM |
| o-Xylene | ND | 0.044 | | mg/Kg-dry | 1 | 11/8/00 5:25:00 AM |
| Naphlhaiene | ND | 0.11 | | mg/Kg-dry | 1 | 1118100 5'25'00 AM |
| Surr Dibromofluoromethane | 112 | 70-130 | | %REC | 1 | 11/8/00 5:25:00 AM |
| Surr 1,2-Dichioroethane-d4 | 102 | 70-130 | | %REC | 1 | 11/8/00 5:25:00 AM |
| Surr Toluene-d8 | 112 | 70-130 | | %REC | 1 | 1118100 5:25:00 AM |
| Surr 4-Bromofluorobenzene | 89.1 | 70-130 | | %REC | 1 | 1118100 5:25:00 AM |
| Surr 2,5-Dibromotoluene | 84.8 | 70-130 | | %REC | 1 | 11/8/00 5'2500 AM |

Hydrocarbon range data exclude concentrations of any surrogate(s) andlor internal standards eluting in that range EPH. C11-C22 Aromatic Hydrocarbons exclude the concentration of target PAH analytes. VPH: C5-C8 Aliphatic Hydrocarbons exclude the concentration of target anaiytes eluting in this range. C9-C12 Aiiphatic Hydrocarbons exclude the concentration of target anaiytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons.

CERTIFICATION

Were all QAIQC procedures required by the VPH or EPH method followed: ✓ Yes ___ No - If No, ***See*** Case Narrative
Were all performance/acceptance standards for required QA/QC procedures achievecl: ✓ Yes ___ No - if No, See Case Narrative
Were any significant modifications made lo the method as specified in section 11.3: ___ No ✓ **Yes** - Details enciosed

*I* attest under the pains and penalties *of perjury* that, based upon my inquiry of those individual? immediately responsible for obtaining *the information*, the material contained *in* this report **is.** to *the* best of my knowledge and belief *accurate* and *complete*.

SIGNATURE _____ DATE 11-16-00
PRINTED NAME **Nancy Stewart** POSITION taboratoly Director (or designee)

Qualifiers: RL - Reponing Limit; defined as the lowest concentration the laboratory can accurately quantitate.
ND - Not Detected at the Reponing Limit
J - Analyte detected **below** quantitation limits
R - **Analyte** detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
**E** - Value above quamitation range
**#** - See **Case** Narrative

# AIMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

**CLIENT:** Nobis Engineering Inc
**Lah Order:** 0011033
**Project:** 67026 Chicopee, **MA**
**Lab ID:** 0011033-08A

**Client Sampl: ID:** 2KW
**Tag Number:**
**Collection Date:** 11/2/00
**Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **VOLATILE PETROLEUM HYDROCARBONS** | | **MAVPH** | | | | Analyst: **SK** |
| C5-C8 Aliphatic Hydrocaibons | ND | 2.2 | | mg/Kg-dry | 1 | 11/8/00 6:01:00 AM |
| C9-C12 Aliphatic Hydrocarbons | ND | 0 54 | | mg/Kg-dry | 1 | 11/8/00 6:01:00 AM |
| C9-C10 Aromatic Hydrocarbons | ND | 0 54 | | mg/Kg-dry | 1 | 11/8/00 6:01:00 AM |
| Methyl tert-butyl ether | ND | 0 043 | | mg/Kg-dry | 1 | 11/8/00 6:01:00 AM |
| Benzene | ND | 0 043 | | mg/Kg-dry | 1 | 11/8/00 6:01:00 AM |
| Toiuene | ND | 0 043 | | mg/Kg-dry | 1 | 11/8/00 6:01:00 AM |
| Ethylbenzene | ND | 0 043 | | mg/Kg-dry | 1 | 11/8/00 6:01:00 AM |
| m,p-Xylene | ND | 0 043 | | mg/Kg-dry | 1 | 11/8/00 6:01:00 AM |
| o-Xylene | ND | 0 043 | | mg/Kg-dry | 1 | 11/8/00 6:01:00 AM |
| Naphthalane | ND | 011 | | mg/Kg-dry | | 11/8/00 6:01:00 AM |
| Surr. Dibromofluorornethane | 111 | 70-130 | | %R EC | 1 | 11/8/00 6:01:00 AM |
| Surr 1,2-Dichioroethane-d4 | 101 | 70-130 | | %R EC | 1 | 11/8/00 6:01:00 AM |
| Surr Toluene-d8 | 111 | 70-130 | | %R EC | 1 | 11*18/00* 6:01:00 AM |
| Surr 4-Bromofluorobenzene | 89 6 | 70-130 | | %REC | 1 | 1118100 6:01:00 AM |
| Surr 2 5-Dibromotoluene | 82 7 | 70-130 | | %REC | 1 | 11/8/00 6:01:00 AM |

Hydrocarbon range data exclude concentrations of any surrogate(s) andlor internal standards eluting In that range EPH: CII-C22 Aromatic Hydrocarbons exclude the concentration oftarget PAH analytes. VPH: C5-C8 Aliphatic Hydrocarbons exciude the concentration of target analytes eluting in this range. C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons.

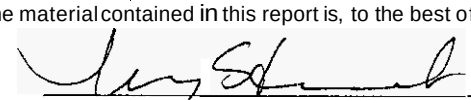
CERTIFICATION

Were all QA/QC procedures required by the VPH or EPH method followed: ✓ Yes ___ No - If No. See Case Narrative

Were all performanceiacceptance standards for required *QNQC* procedures achievecl: ✓ Yes ___ No - If No, See Case Narrative

Were any significant modifications made to the method as specified in section 11.3: ___ No ✓ Yes - Details enciosed

*I* attest under the Pains and *penalties of perjury* that, based upon my inquiry of those individual: Immediately responsible for obtainmg *the information*, the material contained in this report is, to the best of my knowledge and belief, *accurate* and *complete*

SIGNATURE  DATE 11-16-00

PRINTED NAME Nancy Stewart POSITION Laboratory Director (or designee)

**Qualifiers:** RL - Reponing Limit; defined as the **lowest** concentration **the** laboratory can accurately quantitate.

ND - Not Detected at the Reponing Limit

J - **Analyle** detected below quantitation limits

B - Analyre detected in the associated Method **Blank**

S - Spike Recovery outside accepted recovery limits

R - **RPD** outside accepted recovery limits

E - **Value *above*** quantitation range

# - See **Case** Narrative

# AMRO, Environmental Laboratories Corp.

**Date:** *16-Nov-00*

| | | | |
|---|---|---|---|
| **CLIENT:** | Nobis **Engineering** Inc. | **Client Sample ID:** | 2KS |
| **Lab Order:** | 0011033 | **Tag Number:** | |
| **Project:** | 67026 **Chicopee,** MA | **Collection Date:** | 11/2/00 |
| **Lab ID:** | 0011033-09A | **Matrix:** | SOIL |

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| VOLATILE PETROLEUM HYDROCARBONS | | MAVPH | | | | Analyst: **SK** |
| C5-C8 Aliphatic Hydrocarbons | ND | 3.1 | | mg/Kg-dry | | 1118100 6:36:00 AM |
| C9-C12 Aiiphatic Hydrocarbons | ND | 0 77 | | mg/Kg-dry | 1 | 1118100 6:36:00 AM |
| C9 C10 Aromatic Hydrocarbons | ND | 0 77 | | mg/Kg-dry | 1 | 11/8/00 6:36:00 AM |
| Nlethyl felt-butyl ether | ND | 0 061 | | mg/Kg-dry | 1 | 1118100 6:36:00 AM |
| Benzene | ND | 0 061 | | mg/Kg-dry | 1 | 1116100 6:36:00 AM |
| Toluene | ND | 0 061 | | mg/Kg-dry | 1 | 1116100 6:36:00 AM |
| Ethylbenzene | ND | 0 061 | | mg/Kg-dry | | 1116100 6:36:00 AM |
| m p Xylene | ND | 0 061 | | mg/Kg-dry | 1 | 1116100 6:36:00 AM |
| o Xylene | ND | 0 061 | | mg/Kg-dry | 1 | 1118100 6:36:00 AM |
| Naphthalene | ND | 0 15 | | mg/Kg-dry | | 1118100 6:36:00 AM |
| Surr Dibromofluoromethane | 116 | 70-130 | | %REC | 1 | 11/8/00 6:36:00 AM |
| Surr 1 2-Dichloroethane-d4 | 107 | 70-130 | | %REC | 1 | 11/8/00 6:36:00 AM |
| Surr Toluene-d8 | 117 | 70-130 | | %REC | 1 | 1118100 6:36:00 AM |
| Surr **4** Bromofluorobenzene | 95 5 | 70-130 | | %REC | 1 | 11/8/00 6:36:00 AM |
| Surr 2 5-Dibromotoluene | 91 1 | 70-130 | | %REC | 1 | 1118100 6:36:00 AM |

Hydrocarbon range data exclude concentrations of any surrogate(s) andlor internal stsndards eluting in that range EPH: C11-C22 Aromatic Hydrocarbons exciude the concentration of target PAH analytes. VPH: C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eiutlng in this range C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons.

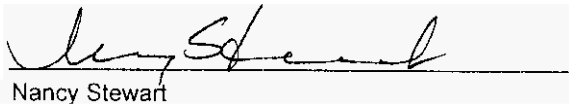
CERTIFICATION

**Were** all QNQC procedures required by the VPH or EPH method followed: ✓ Yes ___ No - If No. See Case Narrative

Were ail performance/acceptance standards for required QNQC procedures achievec: ✓ Yes ___ No - if No, See Case Narrative

Were any significant modifications made to the method as specified in section 11.3: ___ No ✓ Yes - **Details** enclosed

*iattest* under the pains and *penalties of perjury* that, based *upon my* inquiry *of* those individual: rmmediately responsible *for* obtaining *the* information, the material contained *in* this *report* is, to the best *of my* knowledge and belief, *accurate* and complete

SIGNATURE  DATE: 11-16-00

PRINTED NAME: Nancy Stewart POSITION: Laboratory Director (or designee)

Qualifiers: RL - Reponing Limit: defined as the lowest concentration the laboratory can accurately quantitate.

ND - Not Detected ai the Reponing Limit S - Spike Recovery **outride** accepted recovery limits E - Value **above** quantitation range

J - Analyte detected below quantitation limits R - RPD outside accepted **recovery** limits # - See **Care** Narrative

B - Analyte detected in **the** associated Method Blank

# AMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

| | | | |
|---|---|---|---|
| **CLIENT:** | Nobis Engineering Inc. | **Client Sample ID:** | XKB |
| **Lab Order:** | 0011033 | **Tag Number:** | |
| **Project:** | 67026 Chicopee, MA | **Collection Date:** | 11/2/00 |
| **Lab ID:** | 0011033-10A | **Matrix:** | SOIL |

| Analvses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| VOLATILE PETROLEUM HYDROCARBONS | | MAVPH | | | | Analyst: **SK** |
| C5-C8 Aiiphatic Hydrocarbons | ND | 2 6 | | mg/Kg-dry | 1 | 11/8/00 7:12:00 AM |
| C9-C12 Aiiphatic Hydrocarbons | ND | 0 65 | | mg/Kg-dry | 1 | 1118/00 7:12:00 AM |
| C9-C10 Aromatic Hydrocarbons | ND | 0 65 | | mg/Kg-dry | 1 | 1118100 7:12:00 AM |
| Nethyl tert-butyi ether | ND | 0 052 | | mg/Kg-dry | 1 | 1118100 7:12:00 AM |
| Benzene | ND | 0 **052** | | mg/Kg-dry | 1 | 1118100 7:12:00 AM |
| Toluene | ND | 0 052 | | mg/Kg-dry | 1 | 1118100 7:12:00 AM |
| Ethylbenzene | ND | 0 *052* | | mg/Kg-dry | 1 | 11/8/00 7:12:00 AM |
| m,p-Xylene | ND | 0 052 | | mg/Kg-dry | | 11/8/00 7:12:00 AM |
| o Xylene | ND | 0 052 | | mg/Kg-dry | | 11/8/00 7:12:00 AM |
| Naphthaiene | ND | 0 13 | | mg/Kg-dry | 1 | 11/8/00 7:12:00 AM |
| Surr Dibromofluoromethane | 114 | 70-130 | | %REC | 1 | 11/8/00 7:12:00 AM |
| Surr 1,2-Dichioroethane-d4 | 105 | 70-130 | | %REC | 1 | 11/8/00 7:12:00 AM |
| Surr Toluene-d8 | 115 | 70-130 | | %REC | 1 | 11/8/00 7:12:00 AM |
| Surr 4-Bromofluorobenzene | 96 9 | 70-130 | | %REC | 1 | 1118100 7:12:00 AM |
| Surr 2 5-Dibromotoluene | *85* 8 | 70-130 | | %REC | 1 | 11/8/00 7:12:00 AM |

Hydrocarbon range data exclude concentrations of any surrogate(s) andlor internal standards eiuting in that range EPH: C11-C22 Aromatic Hydrocarbons exclude the concentration of target PAH anaiytes. VPH: C5-C8 Aliphaic Hydrocarbons exclude the concentration of target analytes eiuting in this range C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this **range** and concentration of C9-C10 Aromatic Hydrocarbons.

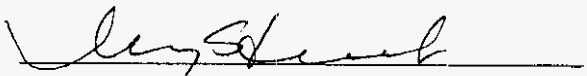
CERTIFICATION

Were **all** QA/QC procedures required by the VPH or EPH method foliowed: ✓ Yes ___ No - If No. See Case Narrative

Were all performancelacceptance standards for required QPJQC procedures achieved: ✓ Yes ___ No -If No, See Case Narrative

Were any significant modifications made to the method as specified in section 11 3: ___ No ✓ **Yes** - Detaiis enclosed

*I attest* under *the pains* and *penalties* ofperjury that, based *upon* my *inquiry of* those individuals immediately responsible for obtaining the *information* the material contained in this *report* is, to the *best* of my knowledge and belief *accurate* and complete

SIGNATURE  DATE 11-16-00

PRINTED NAME: Nancy Stewart POSITION Laboratory Director (or designee)

**Qualifiers:** RL - ReponingLimit; **defined as** the **lowest** concentration the laboratory can accurately **quantitate**.

ND - Not **Detected** at the Reponing Limit

J - Analyte detected below quantitation **limits**

B - Analyte detested in the **associated Method Blank**

S -Spike Recovery **outride accepted** recovery limits

R - RPD outside accepted recovery limits

E - **Value** above quantitation range

# - See Case **Narrative**

# AlMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

| | | | |
|---|---|---|---|
| **CLIENT:** | Nobis Engineering Inc | **Client Sample ID:** | 2KB |
| **Lab Order:** | 0011033 | **Tag Number:** | |
| **Project:** | 67026 Chicopee, MA | **Collection Date:** | 11/2/00 |
| **Lab ID:** | 0011033-11**A** | **Matrix:** | SOIL |

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| VOLATILE PETROLEUM HYDROCARBONS | | MAVPH | | | | Analyst: **SK** |
| C5-C8 Aliphatic Hydrocarbons | ND | 3 1 | | mg/Kg-dry | 1 | 1118100 7:47:00 AM |
| C9-C12 Aliphatic Hydrocarbons | ND | 0 78 | | mg/Kg-dry | 1 | 1118100 7.47.00 AM |
| C9-C10 Aromatic Hydrocarbons | ND | 0 78 | | mg/Kg-dry | 1 | 11/8/00 7:47:00 AM |
| Nlethyl lei!-butyl ether | ND | 0 063 | | mg/Kg-dry | 1 | 11/8/00 7:47:00 AM |
| **Benzene** | ND | 0 *063* | | mg/Kg-dry | 1 | 11/8/00 7:47:00 AM |
| Toluene | ND | *0 063* | | mg/Kg-dry | 1 | 1118100 7:47:00 AM |
| Ethylbenzene | ND | *0 063* | | mg/Kg-dry | 1 | 1 118100 7:47:00 AM |
| m,p-Xylene | ND | *0 063* | | mg/Kg-dry | 1 | 1118100 7'47'00 AM |
| o-Xylene | ND | 0 *063* | | mg/Kg-dry | 1 | 1118100 7:47:00 AM |
| Naphthalene | ND | 0 16 | | mg/Kg-dry | 1 | 11/8/00 7:47:00 AM |
| Surr Dibiomofluoromethane | 107 | 70-130 | | %REC | 1 | 1118100 7 47:00 AM |
| Surr 1,2-Dichloroethane-d4 | 98.0 | 70-130 | | %REC | 1 | 1118100 747:OO AM |
| Surr Toluene-d8 | 108 | 70-130 | | %REC | | 11/8/00 7'47'00 AM |
| Surr 4-Bromofiuorobenrene | 86 5 | 70-130 | | %REC | 1 | 1118100 7.47'00 AM |
| Surr 2,5-Dibromotoluene | 84 3 | 70-130 | | %REC | | 1?***18/00***7 47'00 AM |

Hydrocarbon range data exclude concentrations of any surrogate(s) andlor internal standards eluting in that range. EPH C11-C22 Aromatic Hydrocarbons exclude the concentration oftarget PAH analytes. VPH: C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range. C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eiuting in this range and concentration of C9-C10 Aromatic Hydrocarbons

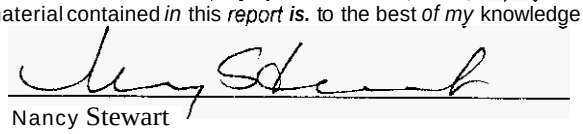
CERTIFICATION

Were all QA/QC procedures required by the VPH or EPH method followed: ✓ Yes ___ No - If No, See Case Narrative

Were all performancelacceptance standards for required QA/QC procedures achieved: ✓ Yes ___ No - If No. See Case Narrative

**Were** any significant modifications made to the method as specified in section 11 3: ___ No ✓ Yes - Details enclosed

*I attest* under *the pains* and *penalties of perjury* that. based upon my *inquiry of* those *individuals* immediately responsible for obtaining the *information*, the material contained *in* this *report is.* to the best *of my* knowledge and *belief, accurate* and complete

SIGNATURE.  DATE: 11-16-00

PRINTED NAME: Nancy Stewart POSITION: Laboratory Director (or designee)

Qualifiers KL - Reponing Limit: defined as the lowest concentration the laboratory can accurately quantitate.

ND - Not Detected at the Reponing Limit S -Spike Recovery outside accepted **recovery** limits E - Value above quantitation range

J - Analyte detected below quantitation limits R - KPD outride accepted recovery limits # - See Care Narrative

B - Analyte detected in the associated Method **Blank**

# AMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

**CLIENT:** Nobis Engineering Inc
**Lab Order:** 0011033
**Project:** 67026 Chicopee, MA
**Lalb ID:** 0011033-12A

**Client Sample ID:** TRIP BLANK
**l a g Nuniber:**
**Collection Date:** 11/2/00
**Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **VOLATILE: PETROLEUM HYDROCARBONS** | | **MAVPH** | | | | Analyst: **SK** |
| C5-C8 Aliphatic Hydrocarbons | ND | 2.5 | | mg/Kg | 1 | 1118100 8:22:00 AM |
| C9-C12 Aliphatic Hydrocarbons | ND | 0.62 | | mg/Kg | 1 | 1118100 8:22:00 AM |
| C9-C10 Aromatic Hydrocaibons | ND | 0.62 | | mg/Kg | 1 | 1118100 8:22:00 ***AM*** |
| Nethyl tert-butyl ether | ND | 0 050 | | mg/Kg | 1 | 1118100 8 22:00 AM |
| Benzene | ND | 0 050 | | mg/Kg | 1 | 11/8/00 8 22:00 AM |
| Toluene | ND | 0.050 | | mg/Kg | 1 | 1118100 8:22:00 AM |
| Ethylbenzene | ND | 0 050 | | mg/Kg | 1 | 1118100 8:22:00 AM |
| m,p-Xylene | ND | 0.050 | | mg/Kg | 1 | 1118100 8:22:00 AM |
| o-Xylene | ND | 0.050 | | mg/Kg | 1 | 1118100 8:22:00 AM |
| Naphthalene | ND | 0.12 | | mg/Kg | 1 | 1118100 8:22:00 AM |
| Surr Dibromofluoromethane | 127 | 70-130 | | %REC | 1 | 1118100 8.22 00 AM |
| Surr i,2-Dichioroethane-d4 | 116 | 70-130 | | %REC | 1 | 1118100 8:22:00 AM |
| Surr Toluene-d8 | 126 | 70-130 | | %REC | 1 | 1118100 8:22 00 AM |
| Surr 4-Bromofluorobenzene | 98.2 | 70-130 | | %REC | 1 | 1118100 8:22:00 AM |
| Surr 2,5-Dibromotoluene | 86 Y | 70-130 | | %REC | 1 | 11/8/00 8:22:00 AM |

Hydrocarbon range data exclude concentrations of any surrogate(s) andlor internal standards eluting in that range EPH: C11-C22 Aromatic Hydrocarbons exclude the concentration of target PAH anaiytes VPH: C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons

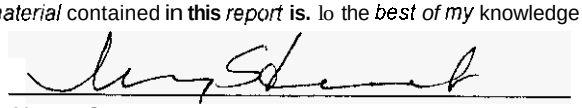
CERTIFICATION

Were all QA/QC procedures required by the VPH or EPH method followed: ✓ Yes ___ No - If No, ***See*** Case Narrative

Were ail performance/acceptance standards for required QAIQC procedures achieved: ✓ Yes ___ No - If No, ***See*** Case Narrative

Were any significant modifications made to the method as specified in section 11 3: ___ N3 ✓ **Yes -** Details enclosed

*I attest under* the pains and *penalties of perjury* Ihat. based upon *my inquiry of* Ihose *individuals* immediately responsible *for* obtaining the *information,* the *material* contained **in this** *report* **is.** lo the *best of my* knowledge and belief. acciirate and *complete*

SIGNATURE  DATE 11-16-00

PRINTED NAME Nancy **Stewart** POSITION Laboratory Director (or designee)

Qualifiers: KL - Reponing Limit; defined as the lowest concentration the laboratory can accurately quantitate.

ND - Not Detected ai the Reponing Limit S - Spike Recovery outside accepted recovery limits E - **Vaiue** above quantitation range

J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits # - See Care **Narrative**

B - Analvte detected in the associated Method Blank

AMRO Environmental Laboratories Corp

**Date:** 27-Nov-00

**CLIENT** Nobis Engineering Inc
**Work** Order: 0011033
Project: 67026 Chicopee, MA

# QC SUMMARY REPORT
Method Blank

Sample ID mblk11/07/00 Batch ID R5744 Test Code MAVPH Units mg/Kg Analysis Date 1117100 5 32 00 PM Prep Dale 1117100
Client ID Run ID V-2_001107A SeqNo 86981

| Analyte | QC Sample Result | RL | Units | QC Spike Amount | Original Sample Result | %REC | LowLimit | HighLimit | Original Sample or MS Result | %RPD | RPDLimit | Qua |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C5-C8 Aliphatic Hydrocarbons | ND | 2 5 | mg/Kg | | | | | | | | | |
| C9-C12 Aliphatic Hydrocarbons | ND | 0 62 | mg/Kg | | | | | | | | | |
| C9-C10 Aromatic Hydrocarbons | ND | 0 62 | mg/Kg | | | | | | | | | |
| Methyl tert-butyl ether | ND | 0 050 | mg/Kg | | | | | | | | | |
| Benzene | ND | 0 050 | mg/Kg | | | | | | | | | |
| Toluene | ND | 0 050 | mg/Kg | | | | | | | | | |
| Ethylbenzene | ND | 0 050 | mg/Kg | | | | | | | | | |
| m,p-Xylene | ND | 0 050 | mg/Kg | | | | | | | | | |
| o-Xylene | ND | 0 050 | mg/Kg | | | | | | | | | |
| Naphthalene | ND | 0 12 | mg/Kg | | | | | | | | | |
| Surr: Dibromofluorornethaoe | 3 004 | 0 0012 | mg/Kg | 2.5 | 0 | 120 | 70 | 130 | 0 | | | |
| Surr: 1,2-Dichloroethane-d4 | 2 678 | 00012 | mg/Kg | 2.5 | 0 | 107 | 70 | 130 | 0 | | | |
| Surr: Toluene-d8 | 3 012 | 0 0012 | mg/Kg | 2.5 | 0 | 120 | 70 | 130 | 0 | | | |
| Surr: 4-Bromofluorobenzene | 2 444 | 0 0012 | mg/Kg | 2.5 | 0 | 97.8 | 70 | 130 | 0 | | | |
| Surr: 2.5-Dibromotoluene | 2 3 | 0 0012 | mg/Kg | 2.5 | 0 | 92 | 70 | 130 | 0 | | | |

**Qualifiers:** ND - Not Detected at the Repotting Limit
J - Analyte detected below quantitation limits
RI.- Repotting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 2?-Nov-00

**CLIENT:** Nobis Engineering Inc
**Work Order:** 001 1033
**Project:** 67026 Cliicopee. MA

# QC SUMMARY REPORT
## Sample Matrix Spike

Sample ID **0011033-01Ams** Batch ID **R6004** **Test** Code MAVPH Units **mg/Kg-dry** Analysis Dale 11125100 3 32 00 AM **Prep Date** 1112100
**Client** ID: 8KN Run ID **V-2_001124A** SeqNo **90628**

| Analyte | QC Sample **Result** | RL | Units | QC Spike Amount | Original Sample **Result** | %REC | LowLimit | HighLimit | Original Sample or MS **Result** | %RPD | RPDLimit | Qua |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl tert-butyl ether | 0 488 | 0 048 | mg/Kg-dry | 0 4808 | 0 | 102 | 70 | 130 | 0 | | | |
| Benzene | 0 4928 | 0 048 | mg/Kg-dry | 0 4808 | 0 | 103 | 70 | 130 | 0 | | | |
| **Toluene** | 0 4724 | 0 048 | mg/Kg-dry | 0 4808 | *0* | 98 3 | 70 | 130 | 0 | | | |
| Ethylbenzene | 05188 | 0 048 | mg/Kg-dry | 0 4808 | 0 | 108 | 70 | 130 | 0 | | | |
| m,p-Xylene | 1056 | 0 048 | mg/Kg-dry | 0 9616 | *0* | 110 | 70 | 130 | 0 | | | |
| **a-Xylene** | 0 5118 | 0 048 | mg/Kg-dry | 0 4808 | *0* | 106 | 70 | 130 | 0 | | | |
| Naphthalene | 0 4046 | 0 12 | mg/Kg-dry | 0 4808 | 0 | 84 ***2*** | 70 | 130 | *0* | | | |
| Surr: Dibromofluoromethane | 2 272 | 0 0012 | mg/Kg-dry | 2 404 | 0 | 94 5 | 70 | 130 | *0* | | | |
| Surr: 1,2-Dichloroethane-d4 | 2 049 | 0 0012 | mg/Kg-dry | 2 404 | *0* | 85 2 | 70 | 130 | 0 | | | |
| Surr: Toluene-d8 | 2 029 | 00012 | mg/Kg-dry | 2 404 | *0* | 84 4 | 70 | 130 | 0 | | | |
| Surr: 4-Bromofluorobenzene | 2 453 | 0 0012 | mg/Kg-dry | 2 404 | 0 | 102 | 70 | 130 | 0 | | | |
| Sun: 2,5-Dibromotoluene | 2511 | 0 0012 | mg/Kg-dry | *2* 404 | 0 | 104 | 70 | 130 | 0 | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 27-Nov-00

**CLIENT:** Nobis Engineering Inc
**Work Order:** 0011033
**Project:** 671126 Chicopee, MA

# QC SUMMARY REPORT
## Sample Matrix Spike Duplicate

Sample ID 0011033-01Amsd Batch ID: R6004 Test Code. MAVPH Units: mg/Kg-dry Analysis Date 11/25/00 4:07:00 AM Prep Date 1112100

Client ID: BKN Run ID: V-2_001124A SeqNo. 90629

| Analyte | QC Sample Result | RL | Units | QC Spike Amount | Original Sample Result | %REC | LowLimit | HighLimit | Original Sample or MS Result | %RPD | RPDLimit | Qua |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl tert-butyl ether | 0 4873 | 0.048 | mg/Kg-dry | 0.4808 | 0 | 101 | 70 | 130 | 0 488 | 0 148 | 75 | |
| Benzene | 0 4832 | 0 048 | mg/Kg-dry | 0.4808 | 0 | 100 | 70 | 130 | 0.4578 | 1.57 | 25 | |
| Toluene | 0 5243 | 0 048 | mg/Kg-dry | 0.4808 | 0 | 109 | 70 | 130 | 0.4774 | 10.4 | 75 | |
| Ethylbenzene | 0.5024 | 0.048 | mg/Kg-dry | 0.4808 | 0 | 104 | 70 | 130 | 0.5188 | 3 7 | 75 | |
| m,p-Xylene | 1072 | 0.048 | mg/Kg-dry | 0.9616 | 0 | 106 | 70 | 130 | 1.056 | 3.24 | 25 | |
| o-Xylene | 0 4998 | 0 048 | mg/Kg-dry | 0.4808 | 0 | 104 | 70 | 130 | 0.5118 | 2.38 | 25 | |
| Naphthalene | 0.4277 | 0.12 | mg/Kg-dry | 0 4808 | 0 | 89 | 70 | 130 | 0 4046 | 5 55 | 75 | |
| Surr. Dibromofluoromethane | 2.303 | 0 0012 | mg/Kg-dry | 2.404 | 0 | 95.8 | 70 | 130 | *0* | 0 | a | |
| Surr 1,2-Dichloroethane-d4 | 7 103 | 0 0012 | mg/Kg-dry | 7 406 | 0 | 87 5 | 70 | 130 | 0 | 0 | 0 | |
| Surr: Toluene-d8 | 2.253 | 0 0012 | mg/Kg-dry | 2 404 | 0 | 93 7 | 70 | 130 | 0 | 0 | 0 | |
| Surr. 4-Bromofluorobenzene | 2.368 | 0 0012 | mg/Kg-dry | 2.404 | 0 | 98.5 | 70 | 130 | 0 | 0 | 0 | |
| Sun: 2,5-Dibromotoluene | 2 439 | 0.0017 | mg/Kg-dry | 2.404 | 0 | 101 | 70 | 130 | 0 | 0 | 0 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit: defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: 27-Nov-00

**CLIENT:** Nobis Engineering Inc
**Work Order:** 0011033
**Project:** 67026 Chicopee, MA

# QC SUMMARY REPORT
## Sample Duplicate

Sample ID 0011033-01ADUP Batch ID R6004 Test Code: **MAVPH** Units: mg/Kg-dry Analysis Date 11125100 2:57:00 AM Prep Date 1112100
Client ID: SKN Run ID, V-2_001124A SeqNo 90627

| Analyte | QC Sample Result | RL | Units | QC Spike Amount | Original Sample Result | %REC | LowLimit | HighLimit | Original Sample or MS Result | %RPD | RPDLimit | Qua |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C5-C8 Aliphatic Hydrocarbons | ND | 2.4 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | *50* | |
| C9-C12 Aliphatic Hydrocarbons | ND | 0.60 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | *50* | |
| C9-C10 Aromatic Hydrocarbons | ND | 0 60 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | |
| Methyl tert-butyl ether | ND | 0.048 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | |
| Benzene | ND | 0.048 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | |
| Toluene | ND | 0.048 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | |
| Ethylbenzene | ND | 0 048 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | |
| m,p-Xylene | ND | 0.048 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | |
| o-Xylene | ND | 0.048 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | |
| Naphthalene | ND | 0.12 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | |
| Surr: Dibromofluoromethane | 2 145 | 0.0012 | mg/Kg-dry | 2.404 | 0 | 89.2 | 70 | 130 | 0 | 0 | 0 | |
| Surr: 1,2-Dichloroethane-d4 | 7 025 | 0 0012 | mg/Kg-dry | 2 404 | 0 | 84 3 | 70 | 130 | n | n | 0 | |
| Surr Toluene-d8 | 2 203 | 0.0012 | mg/Kg-dry | 2.404 | 0 | 91 6 | 70 | 130 | 0 | 0 | 0 | |
| Surr: 4-Bromolluorahenzene | 2 36 | 0.0012 | mg/Kg-dry | 2.404 | 0 | 98.2 | 70 | 130 | 0 | 0 | 0 | |
| Surr: 2,5 Dibromotoluene | 2 353 | 0.0012 | mg/Kg-dry | 2 404 | 0 | 97 9 | 70 | 130 | 0 | 0 | 0 | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit: defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

**Date:** 27-Nov-00

**CLIENT:** Nobis Engineering Inc
**Work Order:** 0011033
**Project:** 67026 Chicopee, MA

# QC SUMMARY REPORT

## Laboratory Control Spike

Sample ID lcs11/07/00 Batch ID: R5744 Test Code. MAVPH Units. mg/Kg Analysis Date 11/7/00 4:20:00 PM Prep Date 11/7/00

Client ID. Run ID, V-2_001107A SeqNo. 86980

| Anaiyle | QC Sample Resuit | RL | Units | QC Spike Amount | Original Sample Result | %REC | LowLimit | HighLimit | Original Sample or MS Resuit | %RPD | RPDLimit | Qua |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl tert-butyl ether | 0 5592 | 0.050 | mg/Kg | 0.5 | 0 | 112 | 70 | 130 | 0 | | | |
| Benzene | 0 5698 | 0.050 | mg/Kg | 0.5 | 0 | 114 | 70 | 130 | 0 | | | |
| Toluene | 0 598 | 0.050 | mg/Kg | 0.5 | 0 | 120 | 70 | 130 | 0 | | | |
| Ethylbenrene | 0 4955 | 0.050 | mg/Kg | 0 5 | 0 | 99.1 | 70 | 130 | 0 | | | |
| m,p-Xylene | 0 9888 | 0.050 | mg/Kg | 1 | 0 | 98.9 | 70 | 130 | 0 | | | |
| o-Xylene | 0 4992 | 0.050 | mg/Kg | 0.5 | 0 | 99.8 | 70 | 130 | 0 | | | |
| Naphthalene | 0 **4685** | 0.12 | mg/Kg | 0.5 | 0 | 93.7 | 70 | 130 | 0 | | | |
| Surr: Dibromofluoromefhane | 2 796 | 0.0012 | mg/Kg | 2.5 | 0 | 112 | 70 | 130 | 0 | | | |
| Surr: 1,2-Dichloroethane-d4 | 2 391 | 0.0012 | mg/Kg | ***2.5*** | 0 | 95.6 | 70 | 130 | 0 | | | |
| Surr: Toluene-d8 | 2 733 | 0.0012 | mg/Kg | 2.5 | 0 | 109 | 70 | 130 | 0 | | | |
| Surr: 4-Bromofluorobenzene | 2 182 | 0.0012 | mg/Kg | 2.5 | 0 | 87.3 | 70 | 130 | 0 | | | |
| Surr: 2,5-Dibromotoluene | ***2*** 092 | 0 0012 | mg/Kg | 7 5 | 0 | 83.7 | 70 | 130 | 0 | | | |

**Qualifiers:** ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

# EXTRACTABLE PETROLEUM HYDROCARBONS (EPH)

SOIL

# AMRO Environmental Laboratories Corp.

Date: *16-Nov-00*

| | | | |
|---|---|---|---|
| CLIENT: | Nobis Engineering Inc. | Client Sample ID: | 8KN |
| Lab Order: | 0011033 | Tag Nuniber: | |
| Project: | 67026 Chicopee, MA | Collection Date: | 1112100 |
| Lalh ID: | 0011033-01B | Matrix: | SOIL |

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EXTRACTABLEPETROLEUMHYDROCARBONS** | | **MAEPH** | | | | Analyst: GG |
| C9-C18 Aliphatic Hydrocarbons | ND | 51 | | mgltig-dry | 1 | 11/9/00 6:20:00 PM |
| C19-C36 Aliphatic Hydrocarbons | ND | 51 | | mg/Kg-dry | 1 | 11/9/00 6:20:00 PM |
| C11-C22 Aromatic Hydrocarbons | ND | 51 | | mg/Kg-dry | 1 | 11/9/00 6:20:00 PM |
| Napntnaiene | ND | 025 | | mg/Kg-dry | 1 | 11/9/00 6:20:00 PM |
| 2-Methylnaphthalene | ND | 025 | | mg/Kg-dry | 1 | 11/9/00 6:20:00 PM |
| Acenaphthene | ND | 025 | | mgltig-dry | 1 | 11/9/00 6:20:00 PM |
| Phenanthrene | ND | 025 | | mg/Kg-dry | 1 | 11/9/00 6:20:00 PM |
| Surr 1-Chiorooctadecane | 94.1 | 40-140 | | %REC | 1 | 11/9/00 6:20:00 PM |
| Surr 2-Bromonaphthalene | 108 | 40-140 | | %REC | 1 | 11/9/00 6:20:00 PM |
| Surr 2 Fluorobiphenyl | 105 | 40-140 | | %REC | 1 | 11/9/00 6:20:00 PM |
| Surr o Terphenyi | 92 2 | 40-140 | | %REC | 1 | 11/9/00 6:20:00 PM |
| PERCENT **MOISTURE** | | D2216 | | | | Analyst: **CB** |
| Percent Moisture | 5 3 | *0* | | wt% | 1 | 11/6/00 |

Hydrocarbon range data exclude concentraticins of any surrogate(s) andior internal standards fluting in that range EPH: C11-C22 Aromatic Hydrocarbons exclude the concentration of target PAH analytes. VPH. C5-C8 Aliphatic Hydrocarbons exclude the con. centration of target analytes eluting in this range. C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons

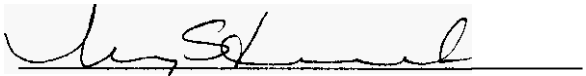
CERTIFICATION

Were **all** QAIQC procedures required by the VPH or EPH method followed. ✓ Yes ___ No - if No, See Case Narrative

Were all performancelacceptance standards for required QAIQC procedures achieved ___ Yes ✓ No - If No, See Case Narrative

Ware any significant modifications made to the method as specified in section 11.3: ___ No ✓ Yes - Details enclosed

*I attest under* the pains and penalties of perjury that, based upon my inquiry *of* those Individual.; *immediately* responsible *for* obtaining *the information,* the material contained *in* this report ***is,*** lo the best *of* my knowledge and *belief,* accurate and complete

SIGNATURE  DATE 11-16-00

PRINTED NAME' Nancy Stewart POSITION· Laboratory Director (or designee)

Qualifiers: RL - Reponing Limit: defined as the **lowest** Concentration the laboratory can accurately quantitate.

ND - Nor Detected at the Reponing Limit S - Spike Recovery outside accepted recovery limits **E** - Value **above** quantitation range

J - Analyte detected **below** quantitation limits **R** - RPD outside accepted **recovery** limits # - ***See*** Care Narrative

B - Analyte detected in *the* associated Method Blank

# AMRO Environmental Laboratories Corp.

**Date:** *16-Now00*

**CLIENI:** Nobis Engineering Inc.
**Lab Order:** 0011033
**Project:** 67026 Chicopee, MA
**Lab ID:** 001 3033-02B

Client **Sample ID:** 8KN2
**Tag Number:**
**Collection Date:** 1112100
**Matrix:** SOIL

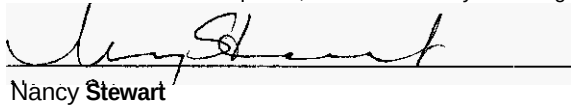
| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EXTRACTABLEPETROLEUMHYDROCARBONS** | | **MAEPH** | | | | **Analyst: GG** |
| C9-C18 Aliphatic Hydrocarbons | ND | 52 | | mg/Kg-dry | 1 | 1119100 7:31:00 PM |
| C19-C36 .Aliphatic Hydrocarbons | ND | 52 | | mg/Kg-dry | 1 | 1119100 7:31:00 PM |
| C11-C22 Aromatic Hydrocarbons | ND | 52 | | mg/Kg-dry | 1 | 1119100 7:31:00 PM |
| Naphthalene | ND | 0.26 | | mg/Kg-dry | 1 | 1119100 7:31:00 PM |
| 2-Methylnaphthalene | ND | 0.26 | | mg/Kg-dry | 1 | 1119100 7:31:00 PM |
| Acenaphtiene | ND | 0 26 | | mg/Kg-dry | 1 | 1119100 7:31:00 PM |
| Phenanthrene | ND | 0.25 | | mg/Kg-dry | 1 | 1119100 7 31 00 PM |
| Surr 1-Chlorooctadecane | 92 9 | 40-140 | | %REC | 1 | 11/9/00 7:31:00 PM |
| Surr 2-Bromonaphthalene | 106 | 40-140 | | %REC | 1 | 11/9/00 7:31:00 PM |
| Surr 2-Fluorobiphenyl | 106 | 40-140 | | %REC | 1 | 11/9/00 7:31:00 PM |
| Surr o-Terphenyl | 92.5 | 40-140 | | %REC | 1 | 1119100 7:31:00 PM |
| **PERCENT MOISTURE** | | **D2216** | | | | **Analyst: CB** |
| Percent Moisture | 5 1 | 0 | | wt% | 1 | *1116100* |

Hydrocarbon range data exclude concentrations of any surrogate(s) andlor internal standards eluting In that range EPH: C11-C22 Aromatic Hydrocarbons exclude the concentration of target PAH analytes. VPH: C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons

CERTIFICATION

Were all QAJQC procedures required by the VPH or EPH method followed: ✓ Yes ___ No - If No, ***See*** Case Narrative
Were all performanceacceptance standards for required QNQC procedures achieved: ___ **Yes** ✓ No - If No, See Case Narrative
Were any significant modifications made to the method as specified in section 11.3: ___ No ✓ Yes - Details enclosed

*I* attest under the *pains* and penalties *ofperjury* that, based upon my *inquiry of* those *individuals* rmmediately responsible *for* obtaining *the information*, the material contained in this *report is,* to the best *of* my knowledge and belief. accurate and complete

SIGNATURE 
DATE 11-16-00
PRINTED YAME Nancy **Stewart**
POSITION Laboratory Director (or designee)

**Qualifiers:** RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.
ND - Not Detected at the Reponing Limit
S - **Spike** Recovery outride accepted recovery limits
E - **Value** above quamitation range
J - Analyte detected below quamitation limits
R - RPD outride accepted recovery limits
# - See **Case** Narrative
B . **Analyte** detected in the associated Method **Blank**

# AMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

**CLIENT:** Nobis Engineering Inc.
**Client Sample ID:** 8KE
**Lab Order:** 0011033
**Tag Nuniber:**
**Project:** 67026 Chicopee, MA
**Collection Date:** 11/2/00
**Lab ID:** 0011033-03B
**Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EXTRACTABLEPETROLEUMHYDROCARBONS** | | **MAEPH** | | | | Analyst: GG |
| C9-C18 Aliphatic Hydrocarbons | ND | 51 | | mg/Kg-dry | 1 | 11/9/00 8:07:00 PM |
| C19-C36 Aliphatic Hydrocarbons | ND | 51 | | mg/Kg-dry | | 11/9/00 8:07:00 PM |
| CII-C22 Aromatic Hydrocarbons | ND | 51 | | mg/Kg-dry | 1 | 11/9/00 8:07:00 PM |
| Naphthalene | ND | 0.26 | | mg/Kg-dry | 1 | 11/9/00 8:07:00 PM |
| 2-Methylnaphthalene | ND | 0.26 | | mg/Kg-dry | 1 | 11/9/00 8:07:00 PM |
| Acenaphtiene | ND | 0.26 | | mg/Kg-dry | 1 | 11/9/00 8:07:00 PM |
| Phenanthrene | ND | 0.26 | | mg/Kg-dry | 1 | 11/9/00 8:07:00 PM |
| Surr 1-Chlorooctadecane | 98 6 | 40-140 | | %REC | 1 | 11/9/00 8:07:00 PM |
| Surr 2-Bromonaphthalene | 120 | 40-140 | | %REC | 1 | 11/9/00 8:07:00 PM |
| Surr 2-Fluorobiphenyl | 120 | 40-140 | | %REC | 1 | 11/9/00 8:07:00 PM |
| Surr o-Terphenyl | 93 5 | 40-140 | | %REC | 1 | 11/9/00 8:07:00 PM |
| **PERCENT MOISTURE** | | **D2216** | | | | Analyst: **CB** |
| Percent Moisture | 5 4 | n | | wt% | | 1116100 |

Hydrocarbon range data exclude concentrations of any surrogate(s) andior internal standards eluting in that range EPH. CII-C22 Aromatic Hydrocarbons exclude the concentration of target PAH analyies. VPH: C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range. C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analyies eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons.

CERTIFICATION

Were all QA/QC procedures required by the VPH or EPH method followed: ✓ Yes ___ No - If No, ***See*** Case Narrative

**Were** all performance/acceptance standards for required QA/QC procedures achieved ___ Yes ✓ No - If No, See Case Narrative

**Were** any significant modifications made to the method as specified in section 11 3: ___ No ✓ Yes - Details enclosed

*I attest under* the *pains* and penalties *of perjury* that, based *upon my* inquiry *of* those individual!; immediately responsible *for* obtaining *the information,* the material contained in this *report* is, to the best *of my* knowledge and belief accurate and complete

SIGNATURE: _____ DATE: 11-16-00

PRINTED NAME: Nancy Stewart POSITION: Laboratory Director (or designee)

**Qualifiers:** RL - Reporting Limit; **defined** as the lowest concentration **the** laboratory can accurately quantitate.

ND - Not Detected **at the** Reporting Limit
S - Spike **Recovery** outside **accepted** recovery limits
**E** - Value above quantitation **range**
J - Analyte detected below quantitation limits
R - **RPD** outside **accepted** recovery limits
**#** - See **Care Narrative**
B - Analyte detected in the **associated Method Blank**

# AMRO Environmental Laboratories Corp.

Date: *16-Nov-00*

| | | | |
|---|---|---|---|
| **CLIENT:** | Nobis Engineering Inc. | Client Sample **ID:** | 8KW |
| Lab Order: | 0011033 | Tag Number: | |
| Project: | 67026 Chicopee, **MA** | Collection **Date:** | 11/2/00 |
| Lab **ID:** | 0011033-04B | **Matrix:** | SOIL |

| Analyses | Result | RL | Qual | Units | **DF** | Date Analyzed |
|---|---|---|---|---|---|---|
| EXTRACTABLE PETROLEUM HYDROCARBONS | | MAEPH | | | | Analyst: GG |
| C9-C18 Aliphatic Hydrocarbons | ND | 52 | | mg/Kg-dry | 1 | 11/9/00 8:43:00 PM |
| C19-C36 Aliphatic Hydrocarbons | ND | 52 | | mg/Kg-dry | 1 | 11/9/00 8:43:00 PM |
| C11-C22 Aromatic Hydrocarbons | ND | 52 | | mg/Kg-dry | 1 | 11/9/00 8:43:00 PM |
| Naphthalene | ND | 0.26 | | mg/Kg-dry | 1 | 11/9/00 8:43:00 PM |
| 2-Methylnaphthalene | ND | 0.26 | | mg/Kg-dry | 1 | 11/9/00 8:43:00 PM |
| Acenaphthene | ND | 0.26 | | mg/Kg-dry | 1 | 11/9/00 8:43:00 PM |
| Phenanthrene | ND | 0.26 | | mg/Kg-dry | 1 | 11/9/00 8:43:00 PM |
| Surr 1-Chlorooctadecane | 96.5 | 40-140 | | %REC | 1 | 11/9/00 8:43:00 PM |
| Surr 2-Bromonaphthalene | 113 | 40-140 | | %REC | 1 | 11/9/00 8:43:00 PM |
| Surr 2-Fluorobiphenyl | 112 | 40-140 | | %REC | 1 | 11/9/00 8:43:00 PM |
| Surr o-Terphenyl | 92 6 | 40-140 | | %REC | 1 | 11/9/00 8:43:00 PM |
| PERCENT MOISTURE | | D2216 | | | | Analyst: C B |
| Percent Moisture | 6.0 | 0 | | wt% | 1 | 11*16/00* |

Hydrocarbon range data exclude concentrations of any surrogate standards eluting in that range EPH C11-C22 Aromatic Hydrocarbons exclude the concentration of target PAH analytes VPH C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons

CERTIFICATION

| | | |
|---|---|---|
| Were all QA/QC procedures required by the VPH or EPH method followed | ✓ Yes | No * If No See Case Narrative |
| Were all performance acceptance standards for required QA/QC procedures achieved | Yes | ✓ No * If No See Case Narrative |
| Were any significant modifications made to the method as specified in section 11.3 | No | ✓ Yes Details enclosed |

*I attest under the pains and penalties of perjury that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and* complete.

SIGNATURE _____ DATE 11-16-00

PRINTED NAME Nancy Stewart POSITION Laboratory Director (or designee)

**Qualifiers:** RL - Reporting Limit; defined as the lowest concentration the laboratory **can** accurately quantitate.

ND - Not Detected **at** the Reporting Limit S - Spike **Recovery** outside accepted recovery limits **E - Value** above quantitation **range**

J - **Analyte** detected below quantitation limits R - RPD outside accepted recovery limits # - See **Care** Narrative

B - **Analyte** detected in the associated Method Blank

# AlMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

**CLIENT:** Nobis Engineering Inc.
**Client Sample ID:** 8KS
**Lab Order:** 0011033
**Tag Number:**
**Project:** 67026 Chicopee, MA
**Collection Date:** 11/2/00
**Lab ID:** 0011033-05B
Mitrix: SOIL

| Analvses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EXTRACTABLEPETROLEUMHYDROCARBONS** | | **MAEPH** | | | | Analyst: GG |
| C9-C1a Aliphatic Hydrocarbons | ND | 51 | | mg/Kg-dry | 1 | 11/3/00 9:19:00 PM |
| C19-C36 Aliphatic Hydrocarbons | ND | 51 | | mg/Kg-dry | 1 | 11/9/00 9:19:00 PM |
| C11C22 Aromatic Hydrocarbons | ND | 51 | | mg/Kg-dry | 1 | 11/9/00 9:19:00 PM |
| hiaphlhaiene | ND | 0.25 | | mg/Kg-dry | 1 | 11/9/00 9:19:00 PM |
| 2-Methylriaphlhalene | ND | ***0.25*** | | mg/Kg-dry | 1 | 11/9/00 9:19:00 PM |
| Acenaphthene | ND | ***0.25*** | | mg/Kg-dry | 1 | 1119100 9:19:00 PM |
| Phenanthrene | ND | ***0.25*** | | mg/Kg-dry | 1 | 11/9/00 9:19:00 PM |
| Surr 1-Chlorooctadecane | 95.1 | 40-140 | | %REC | 1 | 11/9/00 9:19:00 PM |
| Surr 2-Brornonaphlhalene | 113 | 40-140 | | %REC | ▮ | 11/9/00 9:19:00 PM |
| Surr 2-Fluorobiphenyl | 111 | 40-140 | | %REC | ▮ | 11/3/00 9:19:00 PM |
| Surr o-Terphenyl | 88 5 | 40-140 | | %REC | 1 | 11/9/00 9:19:00 PM |
| **PERCENT MOISTURE** | | **D2216** | | | | Analyst: **CB** |
| Percent Moisture | 5.1 | , | | wt% | | 11/6/00 |

Hydrocarbon range data exclude concentrations of any surrogate(s) andlor internal standards eluting in that range EPH: C11-C22 Aromatic Hydrocarbons exclude the concentration oftarget PAH analytes. VPH: C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range. C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons.

CERTIFICATION

Were all QNQC procedures required by the VPH or EPH method foilowed: ✓ Yes ___ No - If No, ***See*** Case Narrative

Were all performance/acceptance standards for required *QAIQC* procedures achieved: ___ Yes ✓ No - If No, See Case Narrative

Were any significant modifications made to the method as specified in section 11.3: ___ No ✓ Yes - Details enclosed

*I attest* under the pains and penalties *of* perjury that, based upon my inquiry *of* those individuals immediately responsible for *obtaining the* information, the material contained in this *report* is, to the best *of my* knowledge and belief. accurate and complete

SIGNATURE _____ DATE 11-16-00

PRINTED NAME Nancy Stewart POSITION Laboratory Director (or designee)

**Qualifiers:** RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

ND - Not Detected at the Reporting Limit S -Spike Recovery outride accepted recovery limits E - Value **above** quantitation range

J - **Analyle** detected **below** quantitation limits R - RPD outside accepted recovery limits # - See **Case** Narrative

B - Analyte detected in the associated Method Blank

# AMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

| | | | |
|---|---|---|---|
| **CLIENT:** | Nobis Engineering Inc. | **Client Sample ID:** | 2KN |
| **Lab Order:** | 0011033 | **Tag Number:** | |
| **Project:** | 67026 Chicopee, MA | **Collection Date:** | 11/2/00 |
| **Lab ID:** | 0011033-06B | **Matrix:** | SOIL |

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EXTRACTABLE PETROLEUM HYDROCARBONS** | | **MAEPH** | | | | Analyst: **GG** |
| C9-C18 Aliphatic Hydrocarbons | ND | 53 | | mg/Kg-dry | 1 | 11/9/00 9:55:00 PM |
| C19-C36 Aliphatic Hydrocarbons | ND | 53 | | mg/Kg-dry | 1 | 11/9/00 9:55:00 PM |
| C11-C22 Aromatic Hydrocarbons | ND | 53 | | mg/Kg-dry | 1 | 11/9/00 9:55:00 PM |
| Naphthalene | ND | 0.27 | | mg/Kg-dry | 1 | 11/9/00 9:55:00 PM |
| 2-Methylnaphthalene | ND | 0.27 | | mg/Kg-dry | 1 | 11/9/00 9:55:00 PM |
| Acenaphthene | ND | 0.27 | | mg/Kg-dry | 1 | 11/9/00 9:55:00 PM |
| Phenanthrene | ND | 0.27 | | mg/Kg-dry | 1 | 11/9/00 9:55:00 PM |
| Surr: 1-Chlorooctadecane | 98.8 | 40-140 | | %REC | 1 | 11/9/00 9:55:00 PM |
| Surr: 2-Bromonaphthalene | 119 | 40-140 | | %REC | 1 | 11/9/00 9:55:00 PM |
| Surr: 2-Fluorobiphenyl | 119 | 40-140 | | %REC | 1 | 11/9/00 9:55:00 PM |
| Surr: o-Terphenyl | 90.2 | 40-140 | | %REC | 1 | 11/9/00 9:55:00 PM |
| **PERCENT MOISTURE** | | **D2216** | | | | Analyst: **CB** |
| Percent Moisture | 8.0 | 0 | | wt% | 1 | 11/6/00 |

Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range. EPH: C11-C22 Aromatic Hydrocarbons exclude the concentration of target PAH analytes. VPH: C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range. C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons.

CERTIFICATION

Were all QA/QC procedures required by the VPH or EPH method followed: ✓ Yes ___ No - If No, See Case Narrative

Were all performance/acceptance standards for required QA/QC procedures achieved: ___ Yes ✓ No - If No, See Case Narrative

Were any significant modifications made to the method as specified in section 11.3: ___ No ✓ Yes - Details enclosed

*I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.*

SIGNATURE: _____ DATE: 11-16-00

PRINTED NAME: Nancy Stewart POSITION: Laboratory Director (or designee)

**Qualifiers:** RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits E - Value above quantitation range

J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits # - See Case Narrative

B - Analyte detected in the associated Method Blank

# AMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

**CLIENT:** Nobis Engineering Inc
**Lab Order:** 0011033
**Project:** 67026 Chicopee, MA
**Lab ID:** 00 I 1033-07B

**Client Sampl: ID:** 2KE
**Tag Number:**
**Collection Date:** I 1/2/00
**Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EXTRACTABLEPETROLEUMHYDROCARBONS** | | **MAEPH** | | | | **Analyst: GG** |
| C9-C18 Aliphatic Hydrocarbons | ND | 52 | | mg/Kg-dry | 1 | 11/9/00 10:31:00 PM |
| C19-C36 Aliphatic Hydrocarbons | ND | 52 | | mg/Kg-dry | 1 | 11/9/00 10:31:00 PM |
| C11-C22 Aromatic Hydrocarbons | ND | 52 | | mg/Kg-dry | 1 | 11/9/00 10:31:00 PM |
| Naphthalene | ND | 0.26 | | mg/Kg-dry | 1 | 11/9/00 10:31:00 PM |
| 2-Methylraphthalene | ND | 0.26 | | mg/Kg-dry | 1 | 11/9/00 10:31:00 PM |
| Acenaphthene | ND | 0.26 | | mg/Kg-dry | 1 | 11/9/00 10:31:00 PM |
| Phenanthrene | ND | 0.26 | | mg/Kg-dry | 1 | 11/9/00 10:31:00 PM |
| Surr 1-Chlorooctadecane | 93 1 | 40-140 | | %REC | 1 | 11/9/00 10:31:00 PM |
| Surr 2-Bromonaphthalene | 116 | 40-140 | | %REC | 1 | 11/9/00 10:31:00 PM |
| Surr 2 Fluorobiphenyl | 116 | 40-140 | | %REC | 1 | 11/9/00 10:31 00 PM |
| Surr o Terphenyl | 88 4 | 40-140 | | %REC | 1 | 11/9/00 10.31.00 PM |
| **PERCENT MOISTURE** | | **D2216** | | | | **Analyst: CB** |
| Percent Moisture | 5.2 | Θ | | wt% | 1 | 11/6/00 |

Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range EPH: C11-C22 Ammatic Hydrocarbons exciude the concentration of target PAH analytes. VPH: C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eiuting in this range. C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons.

CERTIFICATION

Were all QA/QC procedures required **by** the VPH or EPH method followed ✓ Yes ___ No - If No, See Case Narrative

Were all performanceiacceptance standards for required *QNQC* procedures achievecl: ___ Yes ✓ No - If No, See Case Narrative

Were any significant modifications made to the method as specified in section 11.3: ___ No ✓ Yes - Details enciosed

*I* attest under *the* pains and penalties *or perjury* that, based upon my *inquiry of* those *individuals* immediately responsible *for obtaining the information,* Ihe material *contained* in this *report is, to the* best *of my* knowledge and belief. *accurate* and complete

SIGNATURE _____ DATE: 11-16-00

PRINTED NAME' **Nancy Stewart** POSITION: Laboratory Director (or designee)

**Qualifiers:** RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

ND - Not **Detected at** the Reponing Limit

I - Analyte detected below quantitation limits

B - Analyte detected in the associaled Method Blank

S - Spike Recovery **outside** accepted recovery limits

R - **RPD** outside accepted recovery limits

E - **Vaiue** above quantitation range

# - See **Case** Narrative

# AMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

| | | | |
|---|---|---|---|
| **CLIENT:** | Nobis Engineering Inc | **Client Sample ID:** | 2KW |
| **Lab Order:** | 0011033 | **lag Number:** | |
| **Project:** | 67026 Chicopee, MA | **Collection Date:** | 11/2/00 |
| **Lab ID:** | 0011033-08B | **Matrix:** | SOIL |

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EXTRACTABLE PETROLEUM HYDROCARBONS** | | **MAEPH** | | | | Analyst: GG |
| C9-C18 Aliphatic tiydrocarbons | ND | 52 | | mg/Kg-dry | 1 | 1119100 11:07:00 PM |
| C19-C36 Aliphatic Hydrocarbons | ND | 52 | | mg/Kg-dry | 1 | 1119100 11:07:00 PM |
| C11-C22 Aromatic Hydrocarbons | ND | 52 | | mg/Kg-dry | 1 | 1119100 11:07:00 PM |
| Naphthalene | ND | 0.26 | | mg/Kg-dry | | 1119100 11:07:00 PM |
| 2-Methylnaphthalene | ND | 0.26 | | mg/Kg-dry | | 1119100 11:07:00 PM |
| Acenaphthene | ND | 0.26 | | mg/Kg-dry | 1 | 1119100 11:07 00 PM |
| Phenanthrene | ND | 0.26 | | mg/Kg-dry | 1 | 1119100 11:07:00 PM |
| Surr 1-Chlorooctadecane | 98.1 | 40-140 | | %REC | 1 | 1119100 11'07-00 PM |
| Surr 2-Bromonaphthalene | 114 | 40-140 | | %REC | 1 | I119100 11:07:00 PM |
| Surr 2-Fluorobiphenyl | 112 | 40-140 | | %REC | | 1119100 11:07:00 PM |
| Surr o-Terphenyl | 92 4 | 40-140 | | %REC | | 1119100 11:07:00 PM |
| **PEIRCENT MOISTURE** | | **D2216** | | | | Analyst: CB |
| Percent Moisture | 4 4 | *0* | | wt% | 1 | 1116100 |

Hydrocarbon range data exclude concentrations of any surrogate(s) andlor internal standards eluting in that range EPH C11-C22 Aromatic Hydrocarbons exclude the concentration of target PAH analytes VPH C5-C8 Alipha ic Hydrocarbons exclude the concentration of target analytes eluting in this range. C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons.

CERTIFICATION

Were all QAIQC procedures required by the VPH or EPH method followed: ✓ Yes ___ No - If No, See Case Narrative

Were all perforrnancelacceptance standards for required QAIQC procedures achieved. ___ Yes ✓ No - If No. See Case Narrative

Were any significant modifications made to the method as specified in section 11 3: ___ No ✓ Yes - Details enclosed

*I attest* under the pains and penalties of *perjury* that. based upon *my inquiry* of those individuals immediately responsible *for* obtaining the *information*, the material contained *in* this *report* **is,** *to* the best *of my* knowledge and belief. accurate and complete

SIGNATURE _____ DATE 11-16-00

PRINTED NAME Nancy Stewart' POSITION Laboratory Director (or designee)

**Qualifiers:** KL - Reponing Limit: defined as the lowest concentration the laboratory can accurately quantitate

ND - Not Detected at the Reporting Limii S - Spike Recovery outside accepted recovery limits E. **Value** above quantitation range

J - **Analyte** detected below quantitation limits R - KPD outside accepted **recovery** limits # - See Case Narrative

B - Analyte detected in the associated Method Blank

# AMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

**CLIENT:** Nobis Engineering Inc
**Lalb Order:** 0011033
**Project:** 67026 Chicopee, MA
**Lalb ID:** 0011033-09B

**Client Sample ID:** 2KS
**l a g Nuniber:**
**Collection Date:** 11/2/00
**Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| EXTRACTABLE PETROLEUM HYDROCARBONS | | MAEPH | | | | Analyst: GG |
| C9-C18 Aliphatic Hydrocarbons | ND | 52 | | mg/Kg-dry | 1 | 1119100 11:43:00 PM |
| C19-C36 Aliphatic Hydrocarbons | ND | 52 | | mg/Kg-dry | 1 | 1119100 11:43:00 PM |
| C11 C22 Aromatic Hydrocarbons | ND | 52 | | mg/Kg-dry | 1 | 1119100 11:43:00 PM |
| Naphthalene | ND | 0.26 | | mg/Kg-dry | | 1119100 11.43-00 PM |
| 2-Methylnaphthalene | ND | 0.26 | | mg/Kg-dry | 1 | 1119100 11:43:00 PM |
| Acenapntliene | ND | 0.26 | | mg/Kg-dry | 1 | 1119100 11:43:00 PM |
| Phenanthrene | ND | 0 26 | | mg/Kg-dry | | 1119100 11:43:00 PM |
| Surr 1-Chlorooctadecane | 114 | 40-140 | | %REC | 1 | 1119100 11:43:00 PM |
| Surr 2-Bromonaphthalene | 121 | 40-140 | | %REC | 1 | 1119100 11:43:00 PM |
| Surr. 2-Fluorobiphenyl | 120 | 40-140 | | %REC | | 11/9/00 11:43:00 PM |
| Surr o-Terphenyl | 101 | 40-140 | | %REC | 1 | 1119100 11'43'00 PM |
| PERCENT MOISTURE | | D2216 | | | | Analyst: CB |
| Percent Moisture | 7 5 | *0* | | wt% | 1 | 1116100 |

Hydrocarbon range data exclude concentrations of any surrogate(s) andlor internal standards e uting in that range. EPH: C11-C22 Ammatic Hydrocarbons exclude the concentration of target PAH analytes VPH: C5-C8 Aliphalic Hydrocarbons exclude the concentration of target analytes eluting in this range C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons.

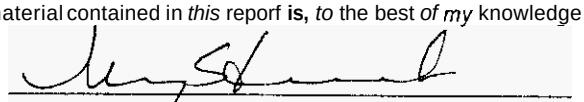
CERTIFICATION

Were ail *QNQC* procedures required by the VPH or EPH method followed: ✓ Yes ___ No - If No, See Case Narrative

Were all performancelacceptance standards for required QA/QC procedures achieved: ___ Yes ✓ No - If No, See Case Narrative

Were any significant modifications made to the method as specified in section 11.3: ___ No ✓ Yes - Details enclosed

*I* altest under *the* pains and penalties *of perjury that,* based upon my inquiry *of* ***those*** *individuals* immediately responsible ***for*** *obtaining* the *information,* the material contained in *this* reporf **is,** *to* the best *of my* knowledge and *belief, accurate* and complete.

SIGNATURE: 

DATIE: 11-16-00

PRINTED NAME: Nancy Stewart

POSITION: Laboratory Director (or designee)

**Qualifiers:** RL - Reponing Limit; defined as the lowest concentration the laboratory can accurately quantitate.

ND - Not Detected at the Reponing Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outride accepted *recovery* limits

E - Value above quantitation range

# - See **Case** Narrative

# AMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

**CLIENI:** Nobis Engineering Inc.
**Lab Order:** 0013033
**Project:** 67026 Chicopee, **MA**
**Lab ID:** 0011033-10B

**Client Sample ID:** 8KB
**Tag Number:**
**Collection Date:** 11/2/00
**Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EXTRACTABLE PETROLEUM HYDROCARBONS** | | **MAEPH** | | | | Analyst: **GG** |
| C9-C18 Aliphatic Hydrocarbons | ND | 50 | | mg/Kg-dry | 1 | 1111*0100* 12:18:00 AM |
| C19-C36 Aliphatic Hydrocarbons | ND | 50 | | mg/Kg-dry | 1 | 11/1*0100* 12:18:00 AM |
| C11 C22 Aromatic Hydrocarbons | ND | 50 | | mg/Kg-dry | 1 | 11/1*0100* 12:18:00 AM |
| Naphthalene | ND | 0.25 | | mg/Kg-dry | 1 | 11/10/00 12:18:00 AM |
| 2-Methylnaphthalene | ND | 0.25 | | mg/Kg-dry | 1 | 1111010012:18:00 AM |
| Acenaphthene | ND | 0.25 | | mg/Kg-dry | 1 | 1111010012:18:00 AM |
| Phenanthrene | ND | 0.25 | | mg/Kg-dry | 1 | 1111010012:18:00 AM |
| Surr 1-Chlorooctadecane | 113 | 40-140 | | %REC | 1 | 11/1*0100* 12:18:00 AM |
| Surr 2-Bromonaphthalene | 123 | 40-140 | | %REC | 1 | 11/1*0100* 12:18:00 AM |
| Surr 2-Fluorobiphenyl | 121 | 40-140 | | %REC | 1 | 11/1*0100* 12:18:00 AM |
| Surr o-Terphenyl | 102 | 40-140 | | %REC | 1 | 1111010012:18:00 AM |
| **PERCENT MOISTURE** | | **D2216** | | | | Analyst: **CB** |
| Percent Moisture | 4.9 | 0 | | wt% | 1 | 11/6/00 |

Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range. EPH: C11-C22 Aromatic Hydrocarbons exclude the concentration of target PAH analytes. VPH: C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range. C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range and concentration of C9-C10 Aromatic Hydrocarbons.

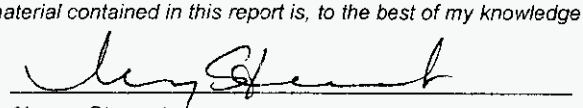
CERTIFICATION

Were all QA/QC procedures required by the VPH or EPH method followed: ✓ Yes ___ No - If No, See Case Narrative

Were all performance/acceptance standards for required QA/QC procedures achieved: ___ Yes ✓ No - If No, See Case Narrative

Were any significant modifications made to the method as specified in section 11.3: ___ No ✓ Yes - Details enclosed

*I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.*

SIGNATURE  DATE 11-16-00

PRINTED NAME Nancy Stewart POSITION Laboratory Director (or designee)

**Qualifiers:** RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

ND - Not Detected at the Reporting Limit

J - Analyte detected below **quantitation** limits

B - Analyte **detected** in the associated Method **Blank**

S - Spike **Recovery** outside accepted **recovery** limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

# - See **Care** Narrative

# AMRO Environmental Laboratories Corp.

**Date:** *16-Nov-00*

**CLIENT:** **Nobis Engineering** Inc.
**Lab Order:** 0011033
**Project:** *67026* **Chicopee, MA**
**Lab ID:** 0011033-11B

**Client Sample ID:** 2KB
**Tag Number:**
**Collection Date:** 11/2/00
**Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EXTRACTABLE PETROLEUM HYDROCARBONS** | | **MAEPH** | | | | **Analyst: GG** |
| C9-C18 Aliphatic Hydrocarbons | ND | 53 | | mg/Kg-dry | 1 | 11/10/00 12:54:00 AM |
| C19-C36 Aliphatic Hydrocarbons | ND | 53 | | mg/Kg-dry | 1 | 11110100 12:54:00 AM |
| C11-C22 Aromatic Hydrocarbons | ND | 53 | | mg/Kg-dry | 1 | 11110100 12:54:00 AM |
| Naphthalene | ND | 0.27 | | mg/Kg-dry | 1 | 11/10/00 12:54:00 AM |
| 2-Methylnaphthalene | ND | 0.27 | | mg/Kg-dry | 1 | 11110100 12:54:00 AM |
| Acenaphthene | ND | 0.27 | | mg/Kg-dry | 1 | 11/10100 12:54:00 AM |
| F'henanthrene | ND | 0.27 | | mg/Kg-dry | 1 | 11/10100 12:54:00 AM |
| Surr 1-Chlorooctadecane | 91 2 | 40-140 | | %REC | 1 | 11110100 12:54:00 AM |
| Surr 2-Bromooaphthalene | 112 | 40-140 | | %REC | 1 | 11/10/00 12:54:00 AM |
| Surr 2-Fiuorobiphenyl | 111 | 40-140 | | %REC | 1 | 11110100 12:54:00 AM |
| Surr o-Terphenyl | 82 5 | 40-140 | | %REC | 1 | 11/10100 12:54:00 AM |
| **PERCENT MOISTURE** | | **D2216** | | | | **Analyst: CB** |
| Percent Moisture | 8.1 | 0 | | wt% | 1 | 11/16100 |

Hydrocarbon range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range. EPH: C11-C22 Aromatic Hydrocarbons exclude the concentration of target PAH analytes. VPH: C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in this range. C9-C12 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in th s range and concentration of C9-C10 Aromatic Hydrocarbons.

CERTIFICATION

Were all QA/QC procedures required by the VPH or EPH method followed: ✓ Yes ___ No - If No, See Case Narrative

Were all performance/acceptance standards for required QA/QC procedures achieved: ___ Yes ✓ No - If No, See Case Narrative

Were any significant modifications made to the method as specified in section 11.3: ___ No ✓ Yes - Details enclosed

*I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.*

SIGNATURE: _____ DATE: 11-16-00

PRINTED NAME: **Nancy Stewart** POSITION: Laboratory Director (or designee)

**Qualifiers:** RL - Reporting Limit: defined as the **lowest** concentration the **laboratory** can **accurately** quantitate.

ND - Not Detected at the Reponing Limit

S - Spike Recovery outside accepted recovery limits

**E - Value above** quantitation **range**

**J - Analyle** detected below quantitation limits

R - **RPD** outside accepted **recovery** limits

**# - See** Case Narrative

B . **Analyle** detected in the associated Method Blank

AMRO Environmental Laboratories Corp.

Date: 17-Nov-00

**CLIENT:** Nobis Engineering Inc
**Work 01-der:** 0011033
**Project:** 67026 Chicopee, MA

# QC SUMMARY REPORT
## Method Blank

Sample ID **MB-3086** Batch ID 3086 Test Code **MAEPH** Units mg/Kg Analysis **Date 11/9/00** 5:08:00 **PM** Prep Date **1116100**

Client ID Run ID **SV-2_001109A** SeqNo **89028**

| Analyte | QC Sample Resuit | RL | Units | QC Spike Amount | Original Sample Result | %REC | LowLimit | HighLimit | Original Sample or MS Result | %RPD | RPDLimit | Qua |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Melhylnaphthaiene | ND | 0.25 | mg/Kg | | | | | | | | | |
| Acenaphthene | ND | 0.25 | mg/Kg | | | | | | | | | |
| C11-C22 Aromatic Hydrocarbons | ND | 50 | mg/Kg | | | | | | | | | |
| C19-C36 Aliphatic Hydrocarbons | ND | 50 | mg/Kg | | | | | | | | | |
| C9-C18 Aliphatic Hydrocarbons | ND | 50 | mg/Kg | | | | | | | | | |
| Naphthalene | ND | 0.25 | mg/Kg | | | | | | | | | |
| Phenanthrene | ND | 0.25 | mg/Kg | | | | | | | | | |
| Surr: 1-Chlorooctadecane | 1 042 | 0.25 | mg/Kg | 1 | 0 | 104 | 40 | 140 | 0 | | | |
| Surr: 2-Bromonaphthalene | 6 354 | 0.25 | mg/Kg | 5 | 0 | 127 | 40 | 140 | 0 | | | |
| Surr: 2-Fluorobiphenyi | 6 24 | 0.25 | mg/Kg | 5 | 0 | 125 | 40 | 140 | 0 | | | |
| Surr' o-Terphenyl | 1 03 | 0.25 | mg/Kg | 1 | 0 | 103 | 40 | 140 | 0 | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
! - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate
S - **Spike** Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMKO Environmental Laboratories Corp.

**Date:** *17-Nov-00*

**CLIENT:** Nobis Engineering Inc
**Work Order:** 0011033
**Project:** 67026 Chicopee, MA

# QC SUMMARY REPORT

Sample Matrix **Spike**

Sample ID **0011033-01BMS** Batch ID: **3086** Test Code **MAEPH** Units' **mg/Kg-dry** Analysis Date **11/9/00 6:56:00 PM** Prep Date **11/6/00**

Client ID: **8KN** Run ID: **SV-2_001109A** **SeqNo** **87494**

| Analyte | QC Sample Result | RL | Unils | QC Spike Arnoun! | Original Sample Result | %REC | LowLimit | HighLimit | Original Sample or MS Result | %RPD | RPDLimit | Qua |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acenaphtnene | 1253 | 0.26 | mg/Kg-dry | 1.278 | 0 | 98 | 40 | 140 | 0 | | | |
| Naphthalene | 1 33 | 0.26 | mg/Kg-dry | 1.278 | 0 | 104 | 40 | 140 | 0 | | | |
| Surr 1-Chlorooctadecane | 1039 | 0.26 | mg/Kg-dry | 1.023 | 0 | 102 | 40 | 140 | 0 | | | |
| Surr 2-Bromonaphthaiene | 6 04 | 0.26 | mg/Kg-dry | 5.114 | 0 | 118 | 40 | 140 | 0 | | | |
| Surr 2-Fluorobiphenyl | 5 69 | 0.26 | mg/Kg-dry | 5.114 | 0 | 115 | 40 | 140 | 0 | | | |
| Surr o-Terphenyl | 1041 | 0.26 | mg/Kg-dry | 1.023 | 0 | 102 | 40 | 140 | 0 | | | |

**Qualifiers:**
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 17-Nov-00

**CLIENT:** Nobis Engineering inc
**Work Order:** 0011033
**Project:** 67026 Chicopee, MA

# QC SUMMARY REPORT

## Sample Duplicate

Sample ID 0011041-01BDUP Batch ID: 3086 Test Code. MAEPH Units. mg/Kg-dry Analysis Date 11/10/00 2:06:00 AM Prep Date 1116100
Client ID Run ID. SV-2_001109A SeqNo. 89029

| Analyte | QC Sample Result | RL | Units | QC Spike Amount | Original Sample Result | %REC | LowLimit | HighLimit | Original Sample or MS Result | %RPD | RPDLimit | Qua |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | 0.6839 | 0.32 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 200 | 50 | NA |
| Aceoaphthene | 0.9991 | 0.32 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 200 | 50 | NA |
| C11-C22 Aromatic Hydrocarbons | 155.6 | 63 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 200 | 50 | NA |
| C19-C36 Aliphatic Hydrocarbons | ND | 63 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | |
| C9-C18 Aliphatic Hydrocarbons | ND | 63 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | |
| Naphfhalene | 1.371 | 0.32 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 0 | 200 | 50 | NA |
| Phenanthrene | 9.992 | 0.32 | mg/Kg-dry | 0 | 0 | 0 | 0 | 0 | 3 314 | 100 | 50 | R |
| Surr: 1-Chlorooctadecane | 1.273 | 0.32 | mg/Kg-dry | 1261 | 0 | 101 | 40 | 140 | 0 | 0 | 0 | |
| Surr: 2-Brornonaphthalene | 7.438 | 0.32 | mg/Kg-dry | 6 303 | 0 | 118 | 40 | 140 | 0 | 0 | 0 | |
| Surr: 2-Fluorobiphenyi | 7 242 | 0.32 | mg/Kg-dry | 6.303 | 0 | 115 | 40 | 140 | 0 | 0 | 0 | |
| Surr: o-Terphenyl | 1.135 | 0.32 | mg/Kg-dry | 1.261 | 0 | 90 | 40 | 140 | 0 | 0 | 0 | |

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyre detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

**Date:** *17-Nov-00*

**CLIENT:** Nobis Engineering Inc.
**Work Order:** 0011033
**Project:** 67026 Chicopee, **MA**

# QC SUMMARY REPORT
## Laboratory Control Spike

Sample ID LCS-3086 Batch ID: 3086 Test Code. MAEPH Unils, mg/Kg **Analysis** Date 11/9/00 **5:44:00 PM** Prep Date 1116100

Client ID Run ID· **SV-2_001109A** SeqNo 8749%

| Analyte | QC Sample Result | RL | Units | QC Spike Amount | Original Sample Result | %REC | LowLimit | HighLimit | Original Sample or MS Result | %RPD | RPDLimit | Qua |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| n-Eicosane | 1.28 | 0 25 | mg/Kg | 1.25 | 0 | 102 | 40 | 140 | 0 | | | |
| n-Nonadecane | 123 | 0 25 | mg/Kg | 1.25 | 0 | 98.4 | 40 | 140 | 0 | | | |
| n-Nonane | 1141 | 0 25 | mg/Kg | 125 | 0 | 91 3 | 40 | 140 | 0 | | | |
| n-Octacosane | 1.206 | 0.25 | mg/Kg | 125 | 0 | 96 5 | 40 | 140 | 0 | | | |
| n-Tetradecane | 1.345 | 0 25 | mg/Kg | 125 | 0 | 108 | 40 | 140 | 0 | | | |
| Naphlhalene | 1.32 | 0.25 | mg/Kg | 1.25 | 0 | 106 | 40 | 140 | 0 | | | |
| Acenaphthene | 1244 | 0.25 | mg/Kg | 1.25 | 0 | 99.5 | 40 | 140 | 0 | | | |
| Anthracene | 1.292 | 0.25 | mg/Kg | 1.25 | 0 | 103 | 40 | 140 | 0 | | | |
| Pyrene | 1151 | 0 25 | mg/Kg | 125 | 0 | 92.1 | 40 | 140 | 0 | | | |
| Chrysene | 1108 | 0.25 | mg/Kg | 125 | 0 | 88.6 | 40 | 140 | 0 | | | |
| Surr. 1-Chlorooctadecane | 0.9912 | 0.25 | mg/Kg | 1 | 0 | 99.1 | **40** | 140 | 0 | | | |
| Surr: 2-Bromonaphthalene | 5.935 | 0.25 | mg/Kg | 5 | 0 | 119 | 40 | 140 | 0 | | | |
| Surr: 2-Fluorobiphenyl | 5.945 | 0 25 | mg/Kg | 5 | 0 | 119 | 40 | 140 | 0 | | | |
| **Surr:** o-Terphenyl | 1.012 | 0.25 | mg/Kg | 1 | 0 | 101 | 40 | 140 | 0 | | | |

**Qualifiers:** ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

# FORM 1 | EXTRACTABLE PETROLEUM HYDROCARBON (EPH) ANALYSIS

Lab Name: Severn Trent Laboratories
Lab Code: STLVT
Matrix: SOIL (soil/water)
Sample wt/vol: 10.0 (G)
%Moisture: 4 (%)
Extraction: SONC
Extract Volume: 2 (mL)
Injection Volume: 1 (uL)
Conc. Units: MG/KG

Contract: 20001
Case: 20001
SDG: 80530
Client ID: 8KNQA
Lab Sample ID: 436586
Date Received: 11/04/2000
Date Extracted: 11/15/2000
Date Analyzed: 01/03/2001
Dilution Factor: 1.00

| CAS NUMBER | ANALYTE | AMOUNT | QUALIFIER |
|---|---|---|---|
| | Naphthalene | 0.52 | U |
| | | 0.52 | U |
| | | 0.52 | U |
| 83-32-9 | Acenaphthene | 0.52 | U |
| 86-73-7 | Fluorene | 0.52 | U |
| 85-01-8 | Phenanthrene | 0.52 | U |
| 120-12-7 | Anthracene | 0.52 | U |
| 206-44-0 | Fluoranthene | 0.52 | U |
| | | 0.52 | U |
| | | 0.52 | U |
| | | 0.52 | U |
| | | 0.52 | U |
| | | 0.52 | U |
| 50-32-8 | Benzo(a)pyrene | 0.52 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 0.52 | U |
| 53-70-3 | Dibenzo(a,h)anthracene | 0.52 | U |
| 191-24-2 | Benzo(ghi)perylene | 0.52 | U |

| EPH TOTALS | AMOUNT | QUALIFIER |
|---|---|---|
| C9-C18 Aliphatics 1 | 6.2 | U |
| C19-C36 Aliphatics 1 | 8.3 | U |
| C11-C22 Aromatics 1,2 | 8.8 | U |

SAMPLE INFORMATION

Matrix: Aqueous ____ Soil ____ Sediment ____ Other ____

Containers: Satisfactory ____ Broken ____ Leaking ____

Aqueous Preservatives: N/A ____ pH ≤ 2 ____ pH > 2 ____

Temperature: Received on ice ____ received at 4C ____ Other ____

# FORM 1 | VOLATILE PETROLEUM HYDRCXCARBON (VPH) ANALYSIS

Lab Name: Sevem Trent Laboratories (Contract: 20001
Lab Code: INCHVT Case: 20001
Matrix: SOIL (soil/water) SDG: 80530
Sample wt/vol: 20.0 (G) Client ID: 8KNQA
%Moisture: 4 (%) Lab Sample ID: 436586
Level: MED (low/med) Date Received: 11/04/2000
Extract Volume: 11 (mL) Date Analyzed: 11/17/2000
GC Column: RTx-502.2 Dilution Factor: 1.00
Column ID: 0.53 Soil Aliquot Volume: 100
Conc. Units: UG/KG

| CAS NUMBER | ANALYTE | AMOUNT | QUALIFIER |
|---|---|---|---|
| 1634-04-4 | Methyl tert-Butyl Ether | 410 | U |
| 71-43-2 | Benzene | 140 | U |
| 108-88-3 | Toluene | 410 | U |
| 100-41-4 | Ethylbenzene | 140 | U |
| 1330-20-7 | plm-Xylene | 550 | U |
| 95-47-6 | o-Xylene | 280 | U |
| 91-20-3 | Naphthalene | 280 | U |

| VPH TOTALS | AMOUNT | QUALIFIER |
|---|---|---|
| Unadjusted C5-C8 Aliphatics (FID) 1 | 2270 | |
| Unadjusted C9-C12 Aliphatics (FID) 1 | 281 | U |
| C9-C10 Aromatics (PID) 1 | 1100 | |
| C5-C8 Aliphatics (FID) 1,2 | 2300 | |
| C9-C12 Aliphatics (FID) 1,3 | 281 | U |

1 - Hydrocarbon Range data exclude concentrations of any surrogates
2 - C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
3 - C9-C12 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range and concentration of C9-C11 Aromatic Hydrocarbons

SAMPLE INFORMATION

Containers: Satisfactory ——Broken____ Leaking____
Aqueous: N/A____ pH≤2____ pH>2____
Soil or Sediment: N/A____ Samples not preserved in Methanol or airtight containers. ——
Sample received in Methanol ——covering soil ——not covering soil ——
Sample received in air-tight container ——m/L Methanol/g soil: 1:1____ Other ——
Temperature: Received on ice ——received at 4C____ Other____

Appendix E

# Regulatory Database Search Reports

# The EDR Radius Map
## with GeoCheck®

**Westover AFRC, MA**
**BLDG 5550, WESTOVER AFB**
**CHICOPEE, MA 01021**

**Inquiry Number: 01725083.44r**

**August 10, 2006**

EDR® Environmental Data Resources Inc

## The Standard in Environmental Risk Management Information


440 Wheelers Farms Road
Milford, Connecticut 06461

**Nationwide Customer Service**

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

# TABLE OF CONTENTS



***Thank you for your business.***
Please contact EDR at 1-800-352-0050
with any questions or comments.

# EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

## TARGET PROPERTY INFORMATION

### ADDRESS

BLDG 5550, WESTOVER AFB
CHICOPEE, MA 01021

### COORDINATES

| | |
|---|---|
| Latitude (North): | 42.192283 - 42° 11' 32.2'' |
| Longitude (West): | 72.558822 - 72° 33' 31.8'' |
| Universal Tranverse Mercator: | Zone 18 |
| UTM X (Meters): | 701574.4 |
| UTM Y (Meters): | 4673796.5 |
| Elevation: | 235 ft. above sea level |

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

| | |
|---|---|
| Target Property Map: | 42072-B5 SPRINGFIELD NORTH, MA |
| Most Recent Revision: | 1979 |

### TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

### DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

### FEDERAL RECORDS

| | |
|---|---|
| **NPL** | National Priority List |
| **Proposed NPL** | Proposed National Priority List Sites |
| **Delisted NPL** | National Priority List Deletions |
| **NPL RECOVERY** | Federal Superfund Liens |
| **CERCLIS** | Comprehensive Environmental Response, Compensation, and Liability Information System |
| **CERC-NFRAP** | CERCLIS No Further Remedial Action Planned |
| **CORRACTS** | Corrective Action Report |
| **RCRA-TSDF** | Resource Conservation and Recovery Act Information |
| **RCRA-LQG** | Resource Conservation and Recovery Act Information |

# EXECUTIVE SUMMARY

**RCRA-SQG** Resource Conservation and Recovery Act Information
**ERNS** Emergency Response Notification System
**HMIRS** Hazardous Materials Information Reporting System
**US ENG CONTROLS** Engineering Controls Sites List
**US INST CONTROL** Sites with Institutional Controls
**US BROWNFIELDS** A Listing of Brownfields Sites
**CONSENT** Superfund (CERCLA) Consent Decrees
**ROD** Records Of Decision
**UMTRA** Uranium Mill Tailings Sites
**ODI** Open Dump Inventory
**TRIS** Toxic Chemical Release Inventory System
**TSCA** Toxic Substances Control Act
**FTTS** FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
**SSTS** Section 7 Tracking Systems
**ICIS** Integrated Compliance Information System
**PADS** PCB Activity Database System
**MLTS** Material Licensing Tracking System
**MINES** Mines Master Index File
**FINDS** Facility Index System/Facility Registry System
**RAATS** RCRA Administrative Action Tracking System

**STATE AND LOCAL RECORDS**

**SWF/LF** Solid Waste Facility Database/Transfer Stations
**LUST** Site Transition List
**LAST** Leaking Aboveground Storage Tank Sites
**AST** Aboveground Storage Tank Database
**MA Spills** Historical Spill List
**INST CONTROL** Sites With Activity and Use Limitation
**DRYCLEANERS** Regulated Drycleaning Facilities
**ENF** Enforcement Action Cases
**AIRS** Permitted Facilities Listing
**LEAD** Lead Inspection Database

**TRIBAL RECORDS**

**INDIAN RESERV** Indian Reservations

**EDR PROPRIETARY RECORDS**

**Manufactured Gas Plants** EDR Proprietary Manufactured Gas Plants

**SURROUNDING SITES: SEARCH RESULTS**

Surrounding sites were identified.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

# EXECUTIVE SUMMARY

## FEDERAL RECORDS

**DOD:** Consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

A review of the DOD list, as provided by EDR, and dated 12/31/2004 has revealed that there is 1 DOD site within approximately 1 mile of the target property.

| Equal/Higher Elevation | Address | Dist / Dir | Map ID | Page |
|---|---|---|---|---|
| WESTOVER AIR FORCE BASE | | 0 - 1/8 | 0 | 6 |

**FUDS:** The Listing includes locations of Formerly Used Defense Sites Properties where the US Army Corps Of Engineers is actively working or will take necessary cleanup actions.

A review of the FUDS list, as provided by EDR, and dated 12/05/2005 has revealed that there is 1 FUDS site within approximately 1 mile of the target property.

| Equal/Higher Elevation | Address | Dist / Dir | Map ID | Page |
|---|---|---|---|---|
| WESTOVER AFB | | 1/4 - 1/2 NNE | 6 | 14 |

## STATE AND LOCAL RECORDS

**SHWS:** Contains information on releases of oil and hazardous materials that have been reported to DEP.

A review of the SHWS list, as provided by EDR, and dated 04/18/2006 has revealed that there are 17 SHWS sites within approximately 1 mile of the target property.

| Equal/Higher Elevation | Address | Dist / Dir | Map ID | Page |
|---|---|---|---|---|
| ***Not reported*** | ***103 JOHNSON RD*** | ***1/8 - 1/4 NNE*** | ***1*** | ***6*** |
| Facility Status: Response Action Outcome | | | | |
| ***OFF WESTOVER ROAD*** | ***32 DULONG CIR*** | ***1/4 - 1/2 S*** | ***3*** | ***9*** |
| Facility Status: Response Action Outcome | | | | |
| ***STOP & SHOP WAREHOUSE*** | ***1255 SHERIDAN ST*** | ***1/4 - 1/2 SE*** | ***A4*** | ***11*** |
| Facility Status: Response Action Outcome | | | | |
| ***STOP & SHOP DISTRIBUTION CENTE*** | ***1255 SHERIDAN ST*** | ***1/4 - 1/2 SE*** | ***A5*** | ***12*** |
| Facility Status: Response Action Outcome | | | | |
| ***BLDG 3155*** | ***SEAWOLF AVE-WARB*** | ***1/4 - 1/2 SE*** | ***B7*** | ***15*** |
| Facility Status: Response Action Outcome | | | | |
| ***WESTOVER HANGAR APRON/AQUA SYS*** | ***WESTOVER AFB*** | ***1/2 - 1 SE*** | ***B8*** | ***16*** |
| ***Not reported*** | ***WESTOVER AIR FORCE BASE*** | ***1/2 - 1 SE*** | ***B11*** | ***23*** |
| Facility Status: Response Action Outcome | | | | |
| ***VEHICLE MAINTENANCE SHOP*** | ***WESTOVER AFB*** | ***1/2 - 1 SE*** | ***B13*** | ***31*** |
| Facility Status: Response Action Outcome | | | | |
| ***NO LOCATION AID*** | ***1380 SHERIDEN ST*** | ***1/2 - 1 E*** | ***14*** | ***33*** |
| Facility Status: Response Action Outcome | | | | |
| ***HANGAR 11*** | ***227 LONCZAK DR*** | ***1/2 - 1 SSE*** | ***15*** | ***34*** |
| Facility Status: Response Action Outcome | | | | |

# EXECUTIVE SUMMARY

| Equal/Higher Elevation | Address | Dist / Dir | Map ID | Page |
|---|---|---|---|---|
| ***WAFB BUILDING #9000*** | ***ACCESS RD*** | ***1/2 - 1 NW*** | ***16*** | ***36*** |
| Facility Status: Response Action Outcome | | | | |
| ***ECHO-2 TARMAC*** | ***250 PATRIOT AVE*** | ***1/2 - 1 ENE*** | ***C17*** | ***38*** |
| Facility Status: Response Action Outcome | | | | |
| ***WESTOVER AIR FORCE BASE*** | ***250 PATRIOT AVE STE 1*** | ***1/2 - 1 ENE*** | ***C18*** | ***40*** |
| Facility Status: Response Action Outcome | | | | |
| ***AVERY DENNISON COMPANY*** | ***1 BETTER WAY*** | ***1/2 - 1 NNE*** | ***24*** | ***58*** |
| Facility Status: Response Action Outcome | | | | |

| Lower Elevation | Address | Dist / Dir | Map ID | Page |
|---|---|---|---|---|
| ***HESS STATION 21209*** | ***1423 MEMORIAL DR*** | ***1/2 - 1 WNW*** | ***19*** | ***43*** |
| Facility Status: Response Action Outcome | | | | |
| ***FAIRVIEW PLAZA*** | ***1451-1505 MEMORIAL DR*** | ***1/2 - 1 WNW*** | ***20*** | ***48*** |
| Facility Status: Response Action Outcome | | | | |
| ***DAIRY MART*** | ***1284 MEMORIAL DRIVE*** | ***1/2 - 1 W*** | ***22*** | ***54*** |
| Facility Status: Response Action Outcome | | | | |

**UST:** The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Protection's Summary Listing of all the Tanks Registered in the State of Massachusetts.

A review of the UST list, as provided by EDR, and dated 05/12/2006 has revealed that there is 1 UST site within approximately 0.25 miles of the target property.

| Equal/Higher Elevation | Address | Dist / Dir | Map ID | Page |
|---|---|---|---|---|
| KING WARD COACH LIVES | 70 JUSTIN DR | 1/8 - 1/4 S | 2 | 8 |

**Release:** MA Release Tracking Database.

A review of the Release list, as provided by EDR, and dated 04/18/2006 has revealed that there are 22 Release sites within approximately 1 mile of the target property.

| Equal/Higher Elevation | Address | Dist / Dir | Map ID | Page |
|---|---|---|---|---|
| ***Not reported*** | ***103 JOHNSON RD*** | ***1/8 - 1/4 NNE*** | ***1*** | ***6*** |
| Facility Status: Response Action Outcome | | | | |
| ***OFF WESTOVER ROAD*** | ***32 DULONG CIR*** | ***1/4 - 1/2 S*** | ***3*** | ***9*** |
| Facility Status: Response Action Outcome | | | | |
| ***STOP & SHOP WAREHOUSE*** | ***1255 SHERIDAN ST*** | ***1/4 - 1/2 SE*** | ***A4*** | ***11*** |
| Facility Status: Response Action Outcome | | | | |
| ***STOP & SHOP DISTRIBUTION CENTE*** | ***1255 SHERIDAN ST*** | ***1/4 - 1/2 SE*** | ***A5*** | ***12*** |
| Facility Status: Response Action Outcome | | | | |
| ***BLDG 3155*** | ***SEAWOLF AVE-WARB*** | ***1/4 - 1/2 SE*** | ***B7*** | ***15*** |
| Facility Status: Response Action Outcome | | | | |
| ***WESTOVER HANGAR APRON/AQUA SYS*** | ***WESTOVER AFB*** | ***1/2 - 1 SE*** | ***B8*** | ***16*** |
| ***BLDG 7060*** | ***WESTOVER ARB*** | ***1/2 - 1 SE*** | ***B9*** | ***19*** |
| Facility Status: Response Action Outcome | | | | |

# EXECUTIVE SUMMARY

| Equal/Higher Elevation | Address | Dist / Dir | Map ID | Page |
|---|---|---|---|---|
| ***WESTOVER AFB BLDG 1601*** | ***WESTOVER AIR FORCE BASE*** | ***1/2 - 1 SE*** | ***B10*** | ***21*** |
| ***Not reported*** | ***WESTOVER AIR FORCE BASE*** | ***1/2 - 1 SE*** | ***B11*** | ***23*** |
| Facility Status: Response Action Outcome | | | | |
| ***BUILDING 1411*** | ***WESTOVER AFB*** | ***1/2 - 1 SE*** | ***B12*** | ***29*** |
| Facility Status: Response Action Outcome | | | | |
| ***VEHICLE MAINTENANCE SHOP*** | ***WESTOVER AFB*** | ***1/2 - 1 SE*** | ***B13*** | ***31*** |
| Facility Status: Response Action Outcome | | | | |
| ***NO LOCATION AID*** | ***1380 SHERIDEN ST*** | ***1/2 - 1 E*** | ***14*** | ***33*** |
| Facility Status: Response Action Outcome | | | | |
| ***HANGAR 11*** | ***227 LONCZAK DR*** | ***1/2 - 1 SSE*** | ***15*** | ***34*** |
| Facility Status: Response Action Outcome | | | | |
| ***WAFB BUILDING #9000*** | ***ACCESS RD*** | ***1/2 - 1 NW*** | ***16*** | ***36*** |
| Facility Status: Response Action Outcome | | | | |
| ***ECHO-2 TARMAC*** | ***250 PATRIOT AVE*** | ***1/2 - 1 ENE*** | ***C17*** | ***38*** |
| Facility Status: Response Action Outcome | | | | |
| ***WESTOVER AIR FORCE BASE*** | ***250 PATRIOT AVE STE 1*** | ***1/2 - 1 ENE*** | ***C18*** | ***40*** |
| Facility Status: Response Action Outcome | | | | |
| Facility Status: Response Action Outcome | | | | |
| ***NO LOCATION AID*** | ***1737 DONOHUE RD*** | ***1/2 - 1 SW*** | ***23*** | ***56*** |
| Facility Status: Response Action Outcome | | | | |
| ***AVERY DENNISON COMPANY*** | ***1 BETTER WAY*** | ***1/2 - 1 NNE*** | ***24*** | ***58*** |
| Facility Status: Response Action Outcome | | | | |

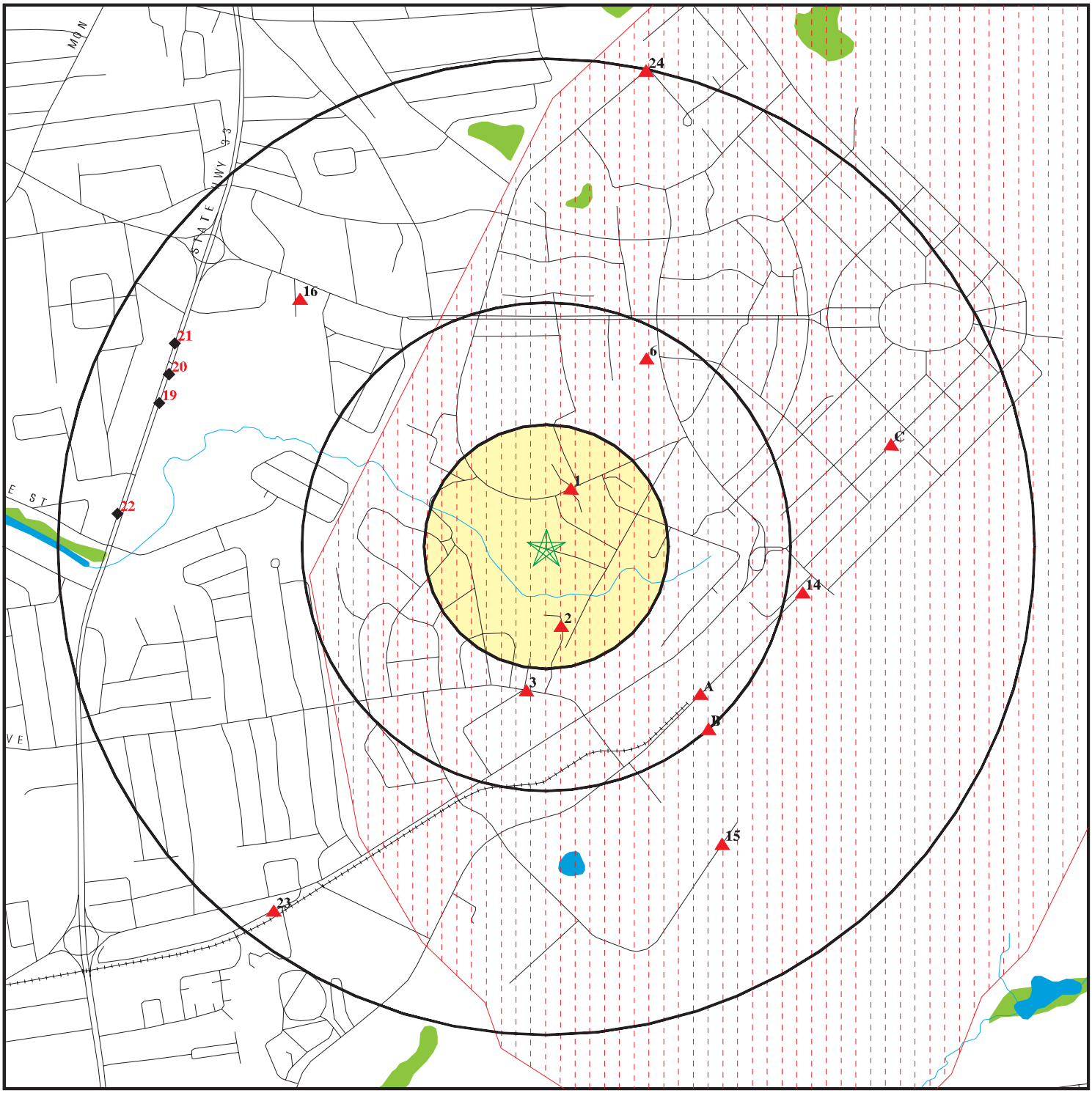
| Lower Elevation | Address | Dist / Dir | Map ID | Page |
|---|---|---|---|---|
| ***HESS STATION 21209*** | ***1423 MEMORIAL DR*** | ***1/2 - 1 WNW*** | ***19*** | ***43*** |
| Facility Status: Response Action Outcome | | | | |
| ***FAIRVIEW PLAZA*** | ***1451-1505 MEMORIAL DR*** | ***1/2 - 1 WNW*** | ***20*** | ***48*** |
| Facility Status: Response Action Outcome | | | | |
| ***FAIRVIEW SERVICE CENTER INC*** | ***1492 MEMORIAL DR*** | ***1/2 - 1 WNW*** | ***21*** | ***49*** |
| ***DAIRY MART*** | ***1284 MEMORIAL DRIVE*** | ***1/2 - 1 W*** | ***22*** | ***54*** |
| Facility Status: Response Action Outcome | | | | |

# EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

| Site Name | Database(s) |
|---|---|
| MASS TURNPIKE | SHWS, Release |
| BRIDGE OVER CT RIVER | SHWS, Release |
| TRIPLE B TOWING PARKING LOT | SHWS, Release |
| TAXIWAY DRIVE | SHWS, Release |
| WARB JET TEST STAND AREA | SHWS, Release |
| WESTOVER AIR BASE | SHWS, Release |
| WESTOVER AIR BASE | SHWS, Release |
| WARB BLDG 1307 | SHWS, Release |
| NEW INDUSTRIAL SECURITY GATE D | SHWS, Release |
| FRMR SEWAGE TREATMENT PLANT | SHWS, Release |
| WESTOVER ARB | SHWS |
| NO LOCATION AID | Release, LAST |
| PADGETTE STREET | Release, LAST |
| SENTRY CLEANERS AT WESTOVER | DRYCLEANERS |
| BUILDING 1833 | LUST, Release |
| BEHIND CIVIL ENGINEER BUILDING | LUST, Release |
| AT DULONG CIRCLE | LUST, Release |
| DURHAM VARIETY | LUST |
| WESTOVER ARB | Release |

# OVERVIEW MAP - 01725083.44r



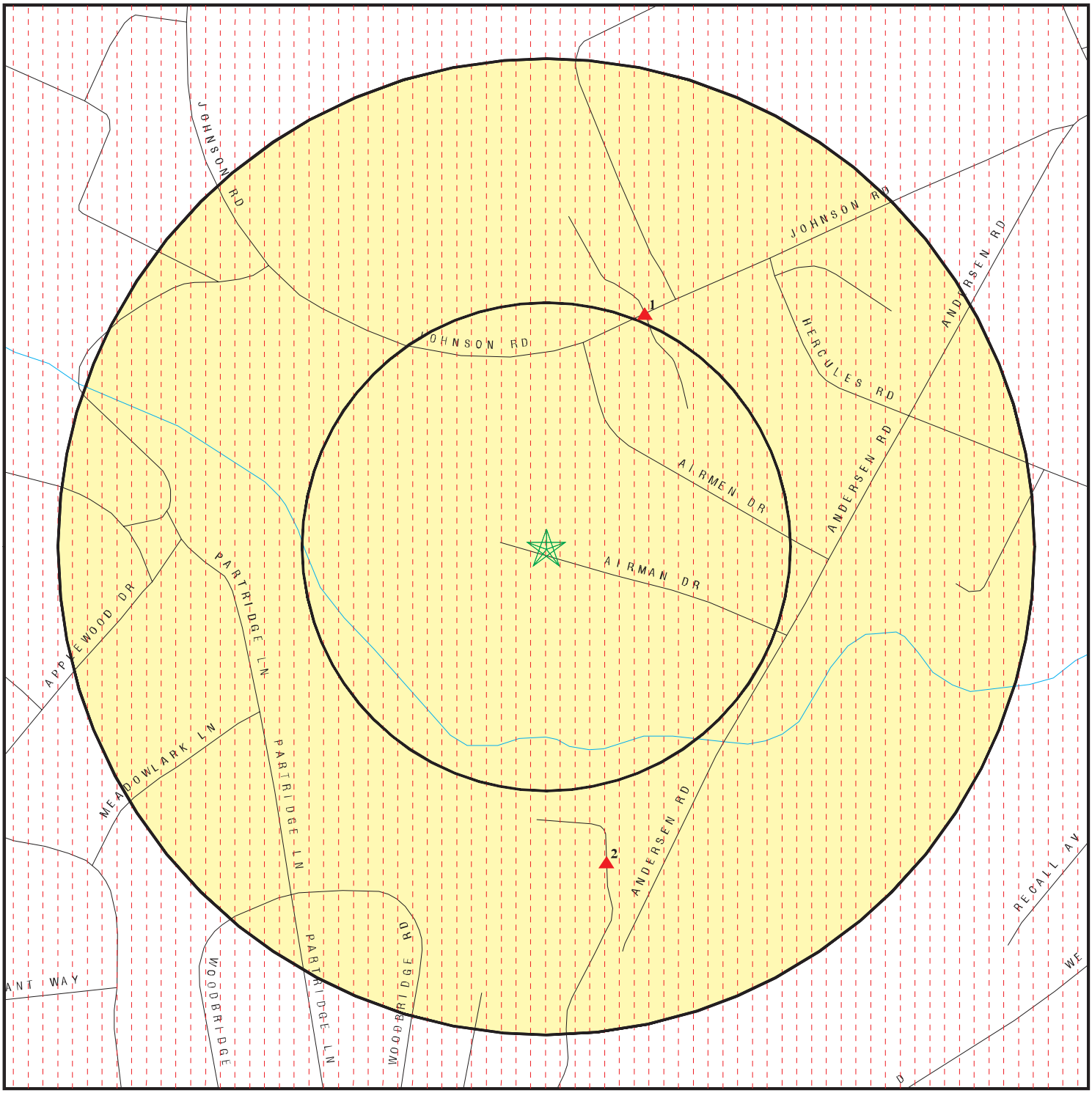

0 1/4 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Critical Environmental Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | |
|---|---|
| SITE NAME: Westover AFRC, MA | CLIENT: CH2M Hill |
| ADDRESS: BLDG 5550, WESTOVER AFB<br>CHICOPEE MA 01021 | CONTACT: Mary Beth Jacques |
| LAT/LONG: 42.1923 / 72.5588 | INQUIRY #: 01725083.44r<br>DATE: August 10, 2006 |

# DETAIL MAP - 01725083.44r




- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Critical Environmental Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | |
|---|---|
| SITE NAME: Westover AFRC, MA | CLIENT: CH2M Hill |
| ADDRESS: BLDG 5550, WESTOVER AFB<br>CHICOPEE MA 01021 | CONTACT: Mary Beth Jacques<br>INQUIRY #: 01725083.44r |
| LAT/LONG: 42.1923 / 72.5588 | DATE: August 10, 2006 |

# MAP FINDINGS SUMMARY

| Database | Target Property | Search Distance (Miles) | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| **FEDERAL RECORDS** | | | | | | | | |
| NPL | | 1.000 | 0 | 0 | 0 | 0 | NR | 0 |
| Proposed NPL | | 1.000 | 0 | 0 | 0 | 0 | NR | 0 |
| Delisted NPL | | 1.000 | 0 | 0 | 0 | 0 | NR | 0 |
| NPL RECOVERY | | TP | NR | NR | NR | NR | NR | 0 |
| CERCLIS | | 0.500 | 0 | 0 | 0 | NR | NR | 0 |
| CERC-NFRAP | | 0.500 | 0 | 0 | 0 | NR | NR | 0 |
| CORRACTS | | 1.000 | 0 | 0 | 0 | 0 | NR | 0 |
| RCRA TSD | | 0.500 | 0 | 0 | 0 | NR | NR | 0 |
| RCRA Lg. Quan. Gen. | | 0.250 | 0 | 0 | NR | NR | NR | 0 |
| RCRA Sm. Quan. Gen. | | 0.250 | 0 | 0 | NR | NR | NR | 0 |
| ERNS | | TP | NR | NR | NR | NR | NR | 0 |
| HMIRS | | TP | NR | NR | NR | NR | NR | 0 |
| US ENG CONTROLS | | 0.500 | 0 | 0 | 0 | NR | NR | 0 |
| US INST CONTROL | | 0.500 | 0 | 0 | 0 | NR | NR | 0 |
| DOD | | 1.000 | 1 | 0 | 0 | 0 | NR | 1 |
| FUDS | | 1.000 | 0 | 0 | 1 | 0 | NR | 1 |
| US BROWNFIELDS | | 0.500 | 0 | 0 | 0 | NR | NR | 0 |
| CONSENT | | 1.000 | 0 | 0 | 0 | 0 | NR | 0 |
| ROD | | 1.000 | 0 | 0 | 0 | 0 | NR | 0 |
| UMTRA | | 0.500 | 0 | 0 | 0 | NR | NR | 0 |
| ODI | | 0.500 | 0 | 0 | 0 | NR | NR | 0 |
| TRIS | | TP | NR | NR | NR | NR | NR | 0 |
| TSCA | | TP | NR | NR | NR | NR | NR | 0 |
| FTTS | | TP | NR | NR | NR | NR | NR | 0 |
| SSTS | | TP | NR | NR | NR | NR | NR | 0 |
| ICIS | | TP | NR | NR | NR | NR | NR | 0 |
| PADS | | TP | NR | NR | NR | NR | NR | 0 |
| MLTS | | TP | NR | NR | NR | NR | NR | 0 |
| MINES | | 0.250 | 0 | 0 | NR | NR | NR | 0 |
| FINDS | | TP | NR | NR | NR | NR | NR | 0 |
| RAATS | | TP | NR | NR | NR | NR | NR | 0 |
| **STATE AND LOCAL RECORDS** | | | | | | | | |
| State Haz. Waste | | 1.000 | 0 | 1 | 4 | 12 | NR | 17 |
| State Landfill | | 0.500 | 0 | 0 | 0 | NR | NR | 0 |
| LUST | | 0.500 | 0 | 0 | 0 | NR | NR | 0 |
| UST | | 0.250 | 0 | 1 | NR | NR | NR | 1 |
| LAST | | 0.500 | 0 | 0 | 0 | NR | NR | 0 |
| AST | | 0.250 | 0 | 0 | NR | NR | NR | 0 |
| MA Spills | | TP | NR | NR | NR | NR | NR | 0 |
| Release | | 1.000 | 0 | 1 | 4 | 17 | NR | 22 |
| INST CONTROL | | 0.500 | 0 | 0 | 0 | NR | NR | 0 |
| DRYCLEANERS | | 0.250 | 0 | 0 | NR | NR | NR | 0 |
| ENF | | TP | NR | NR | NR | NR | NR | 0 |
| AIRS | | TP | NR | NR | NR | NR | NR | 0 |
| LEAD | | TP | NR | NR | NR | NR | NR | 0 |
| **TRIBAL RECORDS** | | | | | | | | |
| INDIAN RESERV | | 1.000 | 0 | 0 | 0 | 0 | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Target Property | Search Distance (Miles) | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| **EDR PROPRIETARY RECORDS** | | | | | | | | |
| Manufactured Gas Plants | | 1.000 | 0 | 0 | 0 | 0 | NR | 0 |

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

**DOD** **WESTOVER AIR FORCE BASE** **DOD** **CUSA011534**
**Region** **N/A**

**WESTOVER AIR FORCE BASE (County), MA**

**< 1/8**
**1 ft.**

FEDERAL LANDS:

| | |
|---|---|
| Feature 1: | Air Force DOD |
| Feature 2: | Not reported |
| Feature 3: | Not reported |
| Agency: | DOD |
| URL: | Not reported |
| Name 1: | Westover Air Force Base |
| Name 2: | Not reported |
| Name 3: | Not reported |
| State: | MA |

---

**1** **SHWS** **S102083593**
**NNE** **103 JOHNSON RD** **Release** **N/A**
**1/8-1/4** **CHICOPEE, MA 01013** **LEAD**
**685 ft.**

**Relative:**
**Higher**

**Actual:**
**257 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0010929 |
| Source Type: | PIPE |
| Release Town: | CHICOPEE |
| Notification Date: | 06/26/95 |
| Category: | TWO HR |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 08/30/95 |
| Phase: | Not reported |
| Response Action Outcome Class: | A2 |
| Oil Or Haz Material: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 08/30/1995 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | NONE |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 08/30/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 06/26/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | FUEL OIL #4 |
| Amount: | 40 |
| Quantity: | gallons |
| Location Type: | COMMERCIAL |
| Location Type: | FEDERAL |
| Source Type: | PIPE |

**(Continued)** **S102083593**

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0010929 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 06/26/95 |
| Category: | TWO HR |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 08/30/95 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | A2 |
| Oil / Haz Material Type: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 08/30/1995 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | NONE |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 08/30/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 06/26/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | FUEL OIL #4 |
| Amount: | 40 |
| Quantity: | gallons |
| Location Type: | COMMERCIAL |
| Location Type: | FEDERAL |
| Source Type: | PIPE |

LEAD:

| | |
|---|---|
| Facility Id: | MA000000828680 |
| Unit: | 1 |
| Env Case Id: | MA000000205772 |
| Insp Date: | Not reported |
| Inspection Type: | Not reported |
| Inspection Results: | Not reported |
| Inspector Name: | Not reported |
| Inspector License Number: | Not reported |
| Deleading Notif Work Start Date: | 1995-08-29 |
| Compliance Letter Date: | Not reported |
| Complaince Type: | Not reported |
| Complaince Inspector Name: | Not reported |
| Complaince Inspector License #: | Not reported |

| | |
|---|---|
| Facility Id: | MA000000843533 |
| Unit: | 3 |
| Env Case Id: | MA000000222037 |
| Insp Date: | Not reported |

**(Continued)** **S102083593**

| | |
|---|---|
| Inspection Type: | Not reported |
| Inspection Results: | Not reported |
| Inspector Name: | Not reported |
| Inspector License Number: | Not reported |
| Deleading Notif Work Start Date: | 1995-08-29 |
| Compliance Letter Date: | Not reported |
| Complaince Type: | Not reported |
| Complaince Inspector Name: | Not reported |
| Complaince Inspector License #: | Not reported |

| | |
|---|---|
| Facility Id: | MA000000843638 |
| Unit: | 2 |
| Env Case Id: | MA000000222155 |
| Insp Date: | Not reported |
| Inspection Type: | Not reported |
| Inspection Results: | Not reported |
| Inspector Name: | Not reported |
| Inspector License Number: | Not reported |
| Deleading Notif Work Start Date: | 1995-08-29 |
| Compliance Letter Date: | Not reported |
| Complaince Type: | Not reported |
| Complaince Inspector Name: | Not reported |
| Complaince Inspector License #: | Not reported |

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**2** **KING WARD COACH LIVES** **UST** **U003993884**
**South** **70 JUSTIN DR** **N/A**
**1/8-1/4** **CHICOPEE, MA 01013**
**868 ft.**

**Relative:**
**Higher**

**Actual:**
**237 ft.**

UST:

| | |
|---|---|
| Facility ID: | 22379 |
| Tank ID: | 1 |
| Serial Number: | UL-77268 |
| Aboveground: | No |
| Capacity: | 10000 |
| Contents: | Diesel |
| **Tank Status:** | **In Use** |
| Tank Useage: | MV |
| Tank Material: | Reinforced |
| Tank Contents: | 2 Walls |
| Pipe Material: | Flexible |
| Pipe Container: | 2 Walls |
| Tank Leak Detection: | Approved In-Tank Monitor |
| Pipe Leak Detection: | Suction: Check Valve at Dispenser Only |
| Owner: | DRK LEASING INC |
| Owner Address: | 70 JUSTIN DR |
| Owner City,St,Zip: | CHICOPEE, MA 01022 |
| Telephone: | (413) 593-3939 |
| Description: | Bus/Transportion |
| Fire Dept. ID: | 13061 |
| Financial Responsibility: | Commercial, State Fund, |

**3**
**South**
**1/4-1/2**
**1565 ft.**

**OFF WESTOVER ROAD**
**32 DULONG CIR**
**CHICOPEE, MA 01022**

**SHWS** **S102403542**
**Release** **N/A**

**Relative:**
**Higher**

**Actual:**
**238 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0011555 |
| Source Type: | Not reported |
| Release Town: | CHICOPEE |
| Notification Date: | 10/16/96 |
| Category: | 120 DY |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 11/04/99 |
| Phase: | PHASE IV |
| Response Action Outcome Class: | C |
| Oil Or Haz Material: | Hazardous Material |
| Action Type: | Response Action Outcome |
| Action Stat: | TSEVAL |
| Action Date: | 08/19/2005 |
| Response Action Outcome: | A temporary solution, which ensures the elimination of any substantial hazard, has been achieved at the disposal site. |
| Activity Use Limitaion: | NONE |
| LSP Number: | Not reported |
| Action Type: | Tier Classification |
| Action Stat: | Tier 2 Classification |
| Action Date: | 10/23/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6135 |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 07/08/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6135 |
| Action Type: | Phase II |
| Action Stat: | Action Audited |
| Action Date: | 02/16/2001 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6135 |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 10/16/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase I |
| Action Stat: | Completion Statement Received |
| Action Date: | 10/23/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6135 |
| Action Type: | Phase III |
| Action Stat: | Action Audited |
| Action Date: | 02/16/2001 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |

**OFF WESTOVER ROAD (Continued)** **S102403542**

| | |
|---|---|
| LSP Number: | 6135 |
| Chemical: | ETHENE, TRICHLORO- |
| Amount: | 28700 |
| Quantity: | parts per billion |
| Location Type: | Not reported |
| Source Type: | Not reported |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0011555 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 10/16/96 |
| Category: | 120 DY |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 11/04/99 |
| Phase: | PHASE IV |
| Rspns Actn Outcome Class: | C |
| Oil / Haz Material Type: | Hazardous Material |
| Action Type: | Response Action Outcome |
| Action Stat: | TSEVAL |
| Action Date: | 08/19/2005 |
| Response Action Outcome: | A temporary solution, which ensures the elimination of any substantial hazard, has been achieved at the disposal site. |
| Activity Use Limitaion: | NONE |
| LSP Number: | Not reported |
| Action Type: | Tier Classification |
| Action Stat: | Tier 2 Classification |
| Action Date: | 10/23/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6135 |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 07/08/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6135 |
| Action Type: | Phase II |
| Action Stat: | Action Audited |
| Action Date: | 02/16/2001 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6135 |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 10/16/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase I |
| Action Stat: | Completion Statement Received |
| Action Date: | 10/23/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6135 |
| Action Type: | Phase III |
| Action Stat: | Action Audited |

**OFF WESTOVER ROAD (Continued)** **S102403542**

| | |
|---|---|
| Action Date: | 02/16/2001 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6135 |
| Chemical: | ETHENE, TRICHLORO- |
| Amount: | 28700 |
| Quantity: | parts per billion |
| Location Type: | Not reported |
| Source Type: | Not reported |

---

**A4** **STOP & STOP WAREHOUSE** **SHWS** **S104000233**
**SE** **1255 SHERIDAN ST** **Release** **N/A**
**1/4-1/2** **CHICOPEE, MA**
**2305 ft.**

**Site 1 of 2 in cluster A**

**Relative: Higher**

**Actual: 239 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0012990 |
| Source Type: | VEHICLE |
| Release Town: | CHICOPEE |
| Notification Date: | 06/23/99 |
| Category: | TWO HR |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 08/27/99 |
| Phase: | Not reported |
| Response Action Outcome Class: | A1 |
| Oil Or Haz Material: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 08/27/1999 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated. |
| Activity Use Limitaion: | NONE |
| LSP Number: | 9435 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 06/23/1999 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Oral Approval of Plan |
| Action Date: | 06/23/1999 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 08/27/1999 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | PETROLEUM BASED OIL |
| Amount: | 12 |
| Quantity: | gallons |
| Location Type: | COMMERCIAL |
| Source Type: | VEHICLE |

**STOP & SHOP WAREHOUSE (Continued)** **S104000233**

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0012990 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 06/23/99 |
| Category: | TWO HR |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 08/27/99 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | A1 |
| Oil / Haz Material Type: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 08/27/1999 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated. |
| Activity Use Limitaion: | NONE |
| LSP Number: | 9435 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 06/23/1999 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Oral Approval of Plan |
| Action Date: | 06/23/1999 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 08/27/1999 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | PETROLEUM BASED OIL |
| Amount: | 12 |
| Quantity: | gallons |
| Location Type: | COMMERCIAL |
| Source Type: | VEHICLE |

---

**A5** **STOP & SHOP DISTRIBUTION CENTE** **SHWS** **S103545276**
**SE** **1255 SHERIDAN ST** **Release** **N/A**
**1/4-1/2** **CHICOPEE, MA 01022**
**2305 ft.**

**Site 2 of 2 in cluster A**

**Relative:**
**Higher**

**Actual:**
**239 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0011400 |
| Source Type: | VEHICLE |
| Release Town: | CHICOPEE |
| Notification Date: | 06/08/96 |
| Category: | TWO HR |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 08/08/96 |

**STOP & SHOP DISTRIBUTION CENTE (Continued)** **S103545276**

| | |
|---|---|
| Phase: | Not reported |
| Response Action Outcome Class: | A2 |
| Oil Or Haz Material: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 08/08/1996 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 06/08/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Oral Approval of Plan |
| Action Date: | 06/08/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 08/08/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | DIESEL FUEL |
| Amount: | 100 |
| Quantity: | gallons |
| Location Type: | COMMERCIAL |
| Source Type: | VEHICLE |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0011400 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 06/08/96 |
| Category: | TWO HR |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 08/08/96 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | A2 |
| Oil / Haz Material Type: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 08/08/1996 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 06/08/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |

**STOP & SHOP DISTRIBUTION CENTE (Continued)** **S103545276**

| | |
|---|---|
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Oral Approval of Plan |
| Action Date: | 06/08/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 08/08/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | DIESEL FUEL |
| Amount: | 100 |
| Quantity: | gallons |
| Location Type: | COMMERCIAL |
| Source Type: | VEHICLE |

---

**6** **WESTOVER AFB** **FUDS** **1007211407**
**NNE** **N/A**
**1/4-1/2** **CHICOPEE, MA**
**2309 ft.**

**Relative:**
**Higher**

**Actual:**
**249 ft.**

FUDS:

| | |
|---|---|
| Federal Facility ID: | MA9799F1771 |
| Facility Name: | WESTOVER AFB |
| City: | CHICOPEE |
| State: | MA |
| EPA Region: | 1 |
| County: | HAMPDEN |
| Congressional District: | 02 |
| US Army District: | New England District (NAE) |
| Fiscal Year: | 2004 |
| Phone: | 978-318-8238 |
| Inst ID: | Not reported |
| CTC: | Not reported |
| RAB: | Not reported |
| FUDS History : | The 15.13 acres composing the bulk petroleum, oil, and lubricants terminal were acquired as a part of the overall acquisition of Westover Air Force Base in 1939 and 1940 through purchase condemnation. The terminal was used throughout its ownership b y the Air Force as a fuel storage facility. |
| FUDS Description : | The former Westover Air Force Base is located approximately 1 mile north and 1 mile east of the intersection of the Massachusetts Turnpike and State Highway Rte. 33. There are two sites, which were formerly used as a bulk petroleum, oil, and lubrica nts terminal area (approximately 15.1 acres) and a salvage yard (approximately 2.8 acres). |

**B7**
**SE**
**1/4-1/2**
**2637 ft.**

**Relative:**
**Higher**

**Actual:**
**239 ft.**

**BLDG 3155**
**SEAWOLF AVE-WARB**
**CHICOPEE, MA**

**Site 1 of 7 in cluster B**

**SHWS**
**Release**

**S102083716**
**N/A**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0011129 |
| Source Type: | PIPE |
| Release Town: | CHICOPEE |
| Notification Date: | 11/09/95 |
| Category: | TWO HR |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 12/27/96 |
| Phase: | Not reported |
| Response Action Outcome Class: | A2 |
| Oil Or Haz Material: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 12/27/1996 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 11/09/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 12/27/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 01/11/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | FUEL OIL #2 |
| Amount: | 350 |
| Quantity: | gallons |
| Chemical: | TOTAL PETROLEUM HYDROCARBONS (TPH) |
| Amount: | 18200 |
| Quantity: | parts per billion |
| Location Type: | FEDERAL |
| Source Type: | PIPE |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0011129 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 11/09/95 |
| Category: | TWO HR |
| **Facility Status:** | **Response Action Outcome** |

**BLDG 3155 (Continued)** **S102083716**

| | |
|---|---|
| Status Date: | 12/27/96 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | A2 |
| Oil / Haz Material Type: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 12/27/1996 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 11/09/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 12/27/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 01/11/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | FUEL OIL #2 |
| Amount: | 350 |
| Quantity: | gallons |
| Chemical: | TOTAL PETROLEUM HYDROCARBONS (TPH) |
| Amount: | 18200 |
| Quantity: | parts per billion |
| Location Type: | FEDERAL |
| Source Type: | PIPE |

---

**B8** **WESTOVER HANGAR APRON/AQUA SYS** **SHWS** **S100828547**
**SE** **WESTOVER AFB** **Release** **N/A**
**1/2-1** **CHICOPEE, MA 01013**
**2656 ft.**

**Site 2 of 7 in cluster B**

**Relative:**
**Higher**

**Actual:**
**239 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0000854 |
| Source Type: | UNKNOWN |
| Release Town: | CHICOPEE |
| Notification Date: | 01/15/91 |
| Category: | NONE |
| Associated ID: | - |
| **Facility Status:** | **TIER1A** |
| Status Date: | 09/13/94 |
| Phase: | PHASE IV |
| Response Action Outcome Class: | Not reported |
| Oil Or Haz Material: | Oil |
| Action Type: | Partial Response Action Outcome |
| Action Stat: | RAO Statement Received |

**WESTOVER HANGAR APRON/AQUA SYS (Continued)** **S100828547**

| | |
|---|---|
| Action Date: | 10/12/2001 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase I |
| Action Stat: | Completion Statement Received |
| Action Date: | 10/12/2001 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 7688 |
| Action Type: | Phase II |
| Action Stat: | Completion Statement Received |
| Action Date: | 10/17/2000 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase IV |
| Action Stat: | APPT1A |
| Action Date: | 03/22/2005 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 7688 |
| Action Type: | Release |
| Action Stat: | TCTRNS |
| Action Date: | 01/15/1991 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Tier Classification |
| Action Stat: | PEREFF |
| Action Date: | 03/21/2006 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release Abatement Measure |
| Action Stat: | Completion Statement Received |
| Action Date: | 02/21/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release Abatement Measure |
| Action Stat: | Completion Statement Received |
| Action Date: | 06/20/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase III |
| Action Stat: | APPT1A |
| Action Date: | 06/11/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | PETROLEUM BASED OIL |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | FEDERAL |

**WESTOVER HANGAR APRON/AQUA SYS (Continued)** **S100828547**

Source Type: UNKNOWN

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0000854 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 01/15/91 |
| Category: | NONE |
| **Facility Status:** | **TIER1A** |
| Status Date: | 09/13/94 |
| Phase: | PHASE IV |
| Rspns Actn Outcome Class: | Not reported |
| Oil / Haz Material Type: | Oil |
| Action Type: | Partial Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 10/12/2001 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase I |
| Action Stat: | Completion Statement Received |
| Action Date: | 10/12/2001 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 7688 |
| Action Type: | Phase II |
| Action Stat: | Completion Statement Received |
| Action Date: | 10/17/2000 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase IV |
| Action Stat: | APPT1A |
| Action Date: | 03/22/2005 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 7688 |
| Action Type: | Release |
| Action Stat: | TCTRNS |
| Action Date: | 01/15/1991 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Tier Classification |
| Action Stat: | PEREFF |
| Action Date: | 03/21/2006 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release Abatement Measure |
| Action Stat: | Completion Statement Received |
| Action Date: | 02/21/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release Abatement Measure |

**WESTOVER HANGAR APRON/AQUA SYS (Continued)** **S100828547**

| | |
|---|---|
| Action Stat: | Completion Statement Received |
| Action Date: | 06/20/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase III |
| Action Stat: | APPT1A |
| Action Date: | 06/11/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | PETROLEUM BASED OIL |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | FEDERAL |
| Source Type: | UNKNOWN |

---

**B9** **BLDG 7060** **LUST** **S102083360**
**SE** **WESTOVER ARB** **Release** **N/A**
**1/2-1** **CHICOPEE, MA 01022**
**2656 ft.**

**Site 3 of 7 in cluster B**

**Relative: Higher**

**Actual: 239 ft.**

LUST:

| | |
|---|---|
| Facility ID: | 1-0011626 |
| Source Type: | UST |
| Release Town: | CHICOPEE |
| Notification Date: | 12/09/96 |
| Category: | 72 HR |
| Associated ID: | - |
| **Site Status:** | **Response Action Outcome** |
| Status Date: | 12/17/99 |
| Phase: | PHASE II |
| Rspns Actn Outcome Class: | A2 |
| Oil Or Haz Material: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 12/17/1999 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 12/19/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | Release Abatement Measure |
| Action Stat: | Completion Statement Received |
| Action Date: | 12/17/1999 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | Tier Classification |
| Action Stat: | Tier 2 Classification |
| Action Date: | 12/16/1997 |
| Response Action Outcome: | Not reported |

**BLDG 7060 (Continued)** **S102083360**

| | |
|---|---|
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 12/09/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase I |
| Action Stat: | Completion Statement Received |
| Action Date: | 12/16/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 02/07/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | DIESEL FUEL |
| Amount: | 500 |
| Quantity: | gallons |
| Location Type: | FEDERAL |
| Source Type: | UST |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0011626 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 12/09/96 |
| Category: | 72 HR |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 12/17/99 |
| Phase: | PHASE II |
| Rspns Actn Outcome Class: | A2 |
| Oil / Haz Material Type: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 12/17/1999 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 12/19/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | Release Abatement Measure |
| Action Stat: | Completion Statement Received |
| Action Date: | 12/17/1999 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | Tier Classification |

**BLDG 7060 (Continued)** **S102083360**

| | |
|---|---|
| Action Stat: | Tier 2 Classification |
| Action Date: | 12/16/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 12/09/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase I |
| Action Stat: | Completion Statement Received |
| Action Date: | 12/16/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 02/07/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | DIESEL FUEL |
| Amount: | 500 |
| Quantity: | gallons |
| Location Type: | FEDERAL |
| Source Type: | UST |

---

**B10** **WESTOVER AFB BLDG 1601** **LUST** **S100256874**
**SE** **WESTOVER AIR FORCE BASE** **Release** **N/A**
**1/2-1** **CHICOPEE, MA 01013**
**2656 ft.**

**Site 4 of 7 in cluster B**

**Relative: Higher**

**Actual: 239 ft.**

LUST:

| | |
|---|---|
| Facility ID: | 1-0000965 |
| Source Type: | UST |
| Release Town: | CHICOPEE |
| Notification Date: | 04/15/92 |
| Category: | NONE |
| Associated ID: | - |
| **Site Status:** | **TIERII** |
| Status Date: | 03/01/01 |
| Phase: | PHASE IV |
| Rspns Actn Outcome Class: | Not reported |
| Oil Or Haz Material: | Not reported |
| Action Type: | Release |
| Action Stat: | TCTRNS |
| Action Date: | 04/15/1992 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase II |
| Action Stat: | Completion Statement Received |
| Action Date: | 08/19/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |

**WESTOVER AFB BLDG 1601 (Continued)** **S100256874**

| | |
|---|---|
| LSP Number: | Not reported |
| Action Type: | Phase III |
| Action Stat: | Completion Statement Received |
| Action Date: | 01/07/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 7688 |
| Action Type: | Tier Classification |
| Action Stat: | Tier 2 Classification |
| Action Date: | 03/01/2001 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase IV |
| Action Stat: | Written Plan Received |
| Action Date: | 06/20/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 7688 |
| Chemical: | UNKNOWN CHEMICAL OF UNKNOWN TYPE |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | GASSTATION |
| Source Type: | UST |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0000965 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 04/15/92 |
| Category: | NONE |
| **Facility Status:** | **TIERII** |
| Status Date: | 03/01/01 |
| Phase: | PHASE IV |
| Rspns Actn Outcome Class: | Not reported |
| Oil / Haz Material Type: | Not reported |
| Action Type: | Release |
| Action Stat: | TCTRNS |
| Action Date: | 04/15/1992 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase II |
| Action Stat: | Completion Statement Received |
| Action Date: | 08/19/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase III |
| Action Stat: | Completion Statement Received |
| Action Date: | 01/07/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 7688 |
| Action Type: | Tier Classification |
| Action Stat: | Tier 2 Classification |
| Action Date: | 03/01/2001 |

**WESTOVER AFB BLDG 1601 (Continued)** **S100256874**

| | |
|---|---|
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase IV |
| Action Stat: | Written Plan Received |
| Action Date: | 06/20/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 7688 |
| Chemical: | UNKNOWN CHEMICAL OF UNKNOWN TYPE |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | GASSTATION |
| Source Type: | UST |

---

**B11** **SHWS** **S101021818**
**SE** **WESTOVER AIR FORCE BASE** **Release** **N/A**
**1/2-1** **CHICOPEE, MA 01022** **MA Spills**
**2656 ft.**

**Site 5 of 7 in cluster B**

**Relative: Higher**

**Actual: 239 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0010688 |
| Source Type: | AIR INTAKE |
| Release Town: | CHICOPEE |
| Notification Date: | 01/16/95 |
| Category: | TWO HR |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 05/18/95 |
| Phase: | Not reported |
| Response Action Outcome Class: | A2 |
| Oil Or Haz Material: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 05/18/1995 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 01/16/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Written Approval of Plan |
| Action Date: | 03/24/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 02/28/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |

**(Continued)** **S101021818**

| | |
|---|---|
| Chemical: | LUBRICATING OIL |
| Amount: | 20 |
| Quantity: | gallons |
| Chemical: | OIL |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | FEDERAL |
| Location Type: | INDUSTRIAL |
| Source Type: | AIR INTAKE |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0010688 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 01/16/95 |
| Category: | TWO HR |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 05/18/95 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | A2 |
| Oil / Haz Material Type: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 05/18/1995 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 01/16/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Written Approval of Plan |
| Action Date: | 03/24/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 02/28/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | LUBRICATING OIL |
| Amount: | 20 |
| Quantity: | gallons |
| Chemical: | OIL |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | FEDERAL |
| Location Type: | INDUSTRIAL |
| Source Type: | AIR INTAKE |

**(Continued)** **S101021818**

MA Spills:

| | | | |
|---|---|---|---|
| Facility ID: | 0000 | Spill ID: | W90-0803 |
| Staff Lead: | SLOWICK, D | Date Entered: | Not reported |
| Last Entered: | 19910114 | First Response: | 19901224 |
| Spill Date: | 19901224 | Spill Time: | 10:30AM |
| Report Date: | 19901224 | Report Time: | 11:50AM |
| Case Closed: | YES | Mat Type: | PETROLEUM |
| Virgin Waste: | VIRGIN | Contam Soil: | Not reported |
| Env Impact: | SOIL | Other Impact: | Not reported |
| Material: | #6 FUEL OIL | Other Material: | Not reported |
| Qty Reported: | 1-10 | Qty Actual: | 1-10 |
| Qty Reported: | GALLONS | Qty Actual: | GALLONS |
| CAS No: | Not reported | PCB Lev (ppm): | NONE |
| Source: | PIPE/HOSE/LINE | Other Source: | Not reported |
| Incident: | SPILL | Other Incdnt: | Not reported |
| Cleanup Type: | --- | Contractor: | NOT USED |
| Referral: | NO | LUST Elig: | NO |
| Report Prep: | Not reported | Category: | Not reported |
| Notifier: | BILL JOHNSTON - HESS OIL | | |
| Notif Tel: | Not reported | | |
| Days/Close: | 1 | | |

| | | | |
|---|---|---|---|
| Facility ID: | 0000 | Spill ID: | W91-0049 |
| Staff Lead: | TERENZI, R | Date Entered: | Not reported |
| Last Entered: | 19910219 | First Response: | 19910131 |
| Spill Date: | 19910131 | Spill Time: | 10:50AM |
| Report Date: | 19910131 | Report Time: | 01:40PM |
| Case Closed: | YES | Mat Type: | PETROLEUM |
| Virgin Waste: | VIRGIN | Contam Soil: | Not reported |
| Env Impact: | Not reported | Other Impact: | Not reported |
| Material: | JET FUEL | Other Material: | Not reported |
| Qty Reported: | 10,001 & UP | Qty Actual: | 10,001 & UP |
| Qty Reported: | POUNDS | Qty Actual: | POUNDS |
| CAS No: | Not reported | PCB Lev (ppm): | NONE |
| Source: | VEH. FUEL TANK | Other Source: | Not reported |
| Incident: | OTHER RELEASE > | Other Incdnt: | IN FLIGHT DUMP |
| Cleanup Type: | --- | Contractor: | NOT USED |
| Referral: | NO | LUST Elig: | NO |
| Report Prep: | Not reported | Category: | Not reported |
| Notifier: | JACK MORIARTY- BASE CIVIL ENGR. | | |
| Notif Tel: | Not reported | | |
| Days/Close: | 1 | | |

| | | | |
|---|---|---|---|
| Facility ID: | 0000 | Spill ID: | W91-0576 |
| Staff Lead: | FISH, B | Date Entered: | Not reported |
| Last Entered: | 19911028 | First Response: | 19911012 |
| Spill Date: | 19911012 | Spill Time: | 03:40PM |
| Report Date: | 19911012 | Report Time: | 07:15PM |
| Case Closed: | YES | Mat Type: | PETROLEUM |
| Virgin Waste: | VIRGIN | Contam Soil: | Not reported |
| Env Impact: | Not reported | Other Impact: | Not reported |
| Material: | #6 FUEL OIL | Other Material: | Not reported |
| Qty Reported: | 251-500 | Qty Actual: | 501-1000 |
| Qty Reported: | GALLONS | Qty Actual: | GALLONS |
| CAS No: | Not reported | PCB Lev (ppm): | NONE |
| Source: | U.S.T. | Other Source: | Not reported |
| Incident: | OVERFILL | Other Incdnt: | Not reported |

**(Continued)** **S101021818**

| | | | |
|---|---|---|---|
| Cleanup Type: | SC | Contractor: | NOT USED |
| Referral: | NO | LUST Elig: | NO |
| Report Prep: | Not reported | Category: | Not reported |
| Notifier: | JACK MORIARTY- WESTOVER ENVIRONMENTAL | | |
| Notif Tel: | Not reported | | |
| Days/Close: | 3 | | |

| | | | |
|---|---|---|---|
| Facility ID: | 0000 | Spill ID: | W91-0701 |
| Staff Lead: | CARPENTER, C | Date Entered: | Not reported |
| Last Entered: | 19911219 | First Response: | 19911218 |
| Spill Date: | 19911218 | Spill Time: | 02:50PM |
| Report Date: | 19911218 | Report Time: | 03:00PM |
| Case Closed: | YES | Mat Type: | PETROLEUM |
| Virgin Waste: | VIRGIN | Contam Soil: | Not reported |
| Env Impact: | Not reported | Other Impact: | Not reported |
| Material: | #6 FUEL OIL | Other Material: | Not reported |
| Qty Reported: | 51-100 | Qty Actual: | 51-100 |
| Qty Reported: | GALLONS | Qty Actual: | GALLONS |
| CAS No: | Not reported | PCB Lev (ppm): | NONE |
| Source: | U.S.T. | Other Source: | Not reported |
| Incident: | OVERFILL | Other Incdnt: | Not reported |
| Cleanup Type: | SC | Contractor: | NOT USED |
| Referral: | NO | LUST Elig: | NO |
| Report Prep: | Not reported | Category: | Not reported |
| Notifier: | JACK MORIARTY- ENV. ENGINEER | | |
| Notif Tel: | Not reported | | |
| Days/Close: | 1 | | |

| | | | |
|---|---|---|---|
| Facility ID: | 0000 | Spill ID: | W92-0474 |
| Staff Lead: | FISH, B | Date Entered: | Not reported |
| Last Entered: | 19920918 | First Response: | 19920908 |
| Spill Date: | 19920904 | Spill Time: | Not reported |
| Report Date: | 19920904 | Report Time: | 03:20PM |
| Case Closed: | YES | Mat Type: | PETROLEUM |
| Virgin Waste: | VIRGIN | Contam Soil: | Not reported |
| Env Impact: | SOIL | Other Impact: | Not reported |
| Material: | #2 FUEL OIL | Other Material: | Not reported |
| Qty Reported: | UNKNOWN | Qty Actual: | UNKNOWN |
| Qty Reported: | GALLONS | Qty Actual: | GALLONS |
| CAS No: | Not reported | PCB Lev (ppm): | NONE |
| Source: | U.S.T. | Other Source: | Not reported |
| Incident: | TANK REMOVAL | Other Incdnt: | Not reported |
| Cleanup Type: | --- | Contractor: | NOT USED |
| Referral: | NO | LUST Elig: | NO |
| Report Prep: | Not reported | Category: | Not reported |
| Notifier: | CAPT CZEPIEL, CHIC FD | | |
| Notif Tel: | Not reported | | |
| Days/Close: | 0 | | |

| | | | |
|---|---|---|---|
| Facility ID: | 0000 | Spill ID: | W93-0217 |
| Staff Lead: | BOURCIER, J | Date Entered: | Not reported |
| Last Entered: | 19930528 | First Response: | 19930505 |
| Spill Date: | Not reported | Spill Time: | Not reported |
| Report Date: | 19930505 | Report Time: | 09:50AM |
| Case Closed: | YES | Mat Type: | PETROLEUM |
| Virgin Waste: | VIRGIN | Contam Soil: | Not reported |
| Env Impact: | SOIL | Other Impact: | Not reported |

**(Continued)** **S101021818**

| | | | |
|---|---|---|---|
| Material: | AVIATION GAS | Other Material: | Not reported |
| Qty Reported: | 1-10 | Qty Actual: | UNKNOWN |
| Qty Reported: | GALLONS | Qty Actual: | GALLONS |
| CAS No: | Not reported | PCB Lev (ppm): | NONE |
| Source: | BELOW-GRND TANK | Other Source: | Not reported |
| Incident: | LEAK | Other Incdnt: | Not reported |
| Cleanup Type: | --- | Contractor: | NOT USED |
| Referral: | NO | LUST Elig: | NO |
| Report Prep: | Not reported | Category: | Not reported |
| Notifier: | PAUL CAMPAGNA, WAFB | | |
| Notif Tel: | Not reported | | |
| Days/Close: | 0 | | |

| | | | |
|---|---|---|---|
| Facility ID: | 0000 | Spill ID: | W93-0388 |
| Staff Lead: | SLOWICK, D | Date Entered: | Not reported |
| Last Entered: | 19930729 | First Response: | 19930721 |
| Spill Date: | 19930721 | Spill Time: | Not reported |
| Report Date: | 19930721 | Report Time: | 01:30PM |
| Case Closed: | YES | Mat Type: | PETROLEUM |
| Virgin Waste: | VIRGIN | Contam Soil: | Not reported |
| Env Impact: | SOIL | Other Impact: | Not reported |
| Material: | DIESEL FUEL | Other Material: | Not reported |
| Qty Reported: | 1-10 | Qty Actual: | 1-10 |
| Qty Reported: | GALLONS | Qty Actual: | GALLONS |
| CAS No: | Not reported | PCB Lev (ppm): | NONE |
| Source: | OTHER SOURCE > | Other Source: | COMPRESSOR |
| Incident: | SPILL | Other Incdnt: | Not reported |
| Cleanup Type: | --- | Contractor: | NOT USED |
| Referral: | NO | LUST Elig: | NO |
| Report Prep: | Not reported | Category: | Not reported |
| Notifier: | PAUL CAMPAGNA/WESTOVER ENVIRONMENTAL | | |
| Notif Tel: | Not reported | | |
| Days/Close: | 0 | | |

| | | | |
|---|---|---|---|
| Facility ID: | 0000 | Spill ID: | W88-0077 |
| Staff Lead: | PILEGI, S | Date Entered: | 19880223 |
| Last Entered: | 19880223 | First Response: | 19880217 |
| Spill Date: | 19880216 | Spill Time: | 03:30PM |
| Report Date: | 19880217 | Report Time: | 08:52AM |
| Case Closed: | YES | Mat Type: | PETROLEUM |
| Virgin Waste: | VIRGIN | Contam Soil: | Not reported |
| Env Impact: | SOIL | Other Impact: | Not reported |
| Material: | #6 FUEL OIL | Other Material: | Not reported |
| Qty Reported: | 10-50 | Qty Actual: | 10-50 |
| Qty Reported: | GALLONS | Qty Actual: | GALLONS |
| CAS No: | Not reported | PCB Lev (ppm): | Not reported |
| Source: | PIPE/HOSE/LINE | Other Source: | Not reported |
| Incident: | RUPTURE | Other Incdnt: | Not reported |
| Cleanup Type: | Not reported | Contractor: | NOT USED |
| Referral: | NO | LUST Elig: | Not reported |
| Report Prep: | Not reported | Category: | Not reported |
| Notifier: | Not reported | | |
| Notif Tel: | Not reported | | |
| Days/Close: | 1 | | |

| | | | |
|---|---|---|---|
| Facility ID: | 0000 | Spill ID: | W88-0503 |
| Staff Lead: | SLOWICK, D | Date Entered: | 19890226 |

**(Continued)** **S101021818**

| | | | |
|---|---|---|---|
| Last Entered: | 19890226 | First Response: | 19880908 |
| Spill Date: | 19880908 | Spill Time: | 04:10PM |
| Report Date: | 19880908 | Report Time: | 04:50PM |
| Case Closed: | YES | Mat Type: | HAZARDOUS |
| Virgin Waste: | VIRGIN | Contam Soil: | Not reported |
| Env Impact: | Not reported | Other Impact: | Not reported |
| Material: | HYPOCHLORINE | Other Material: | Not reported |
| Qty Reported: | 10-50 | Qty Actual: | 10-50 |
| Qty Reported: | GALLONS | Qty Actual: | GALLONS |
| CAS No: | Not reported | PCB Lev (ppm): | Not reported |
| Source: | Not reported | Other Source: | Not reported |
| Incident: | RUPTURE | Other Incdnt: | Not reported |
| Cleanup Type: | Not reported | Contractor: | NOT USED |
| Referral: | NO | LUST Elig: | Not reported |
| Report Prep: | Not reported | Category: | Not reported |
| Notifier: | Not reported | | |
| Notif Tel: | Not reported | | |
| Days/Close: | -1 | | |

| | | | |
|---|---|---|---|
| Facility ID: | 0000 | Spill ID: | W89-0272 |
| Staff Lead: | PILEGI, S | Date Entered: | 19890818 |
| Last Entered: | 19890818 | First Response: | 19890607 |
| Spill Date: | 19890607 | Spill Time: | Not reported |
| Report Date: | 19890607 | Report Time: | 02:13PM |
| Case Closed: | YES | Mat Type: | PETROLEUM |
| Virgin Waste: | WASTE | Contam Soil: | Not reported |
| Env Impact: | SOIL | Other Impact: | Not reported |
| Material: | TRANSFORMER OIL | Other Material: | Not reported |
| Qty Reported: | 10-50 | Qty Actual: | 10-50 |
| Qty Reported: | GALLONS | Qty Actual: | GALLONS |
| CAS No: | Not reported | PCB Lev (ppm): | 1-50 PPM |
| Source: | TRANSFORMER | Other Source: | Not reported |
| Incident: | LEAK | Other Incdnt: | Not reported |
| Cleanup Type: | --- | Contractor: | NOT USED |
| Referral: | NO | LUST Elig: | NO |
| Report Prep: | Not reported | Category: | Not reported |
| Notifier: | P FREGEAU | | |
| Notif Tel: | Not reported | | |
| Days/Close: | 1 | | |

| | | | |
|---|---|---|---|
| Facility ID: | 0000 | Spill ID: | W89-0450 |
| Staff Lead: | JONES, L | Date Entered: | Not reported |
| Last Entered: | 19890921 | First Response: | 19890901 |
| Spill Date: | 19890901 | Spill Time: | 08:30AM |
| Report Date: | 19890901 | Report Time: | 09:45AM |
| Case Closed: | YES | Mat Type: | PETROLEUM |
| Virgin Waste: | VIRGIN | Contam Soil: | Not reported |
| Env Impact: | Not reported | Other Impact: | Not reported |
| Material: | DIESEL FUEL | Other Material: | Not reported |
| Qty Reported: | 10-50 | Qty Actual: | 10-50 |
| Qty Reported: | GALLONS | Qty Actual: | GALLONS |
| CAS No: | Not reported | PCB Lev (ppm): | NONE |
| Source: | PIPE/HOSE/LINE | Other Source: | Not reported |
| Incident: | LEAK | Other Incdnt: | Not reported |
| Cleanup Type: | --- | Contractor: | NOT USED |
| Referral: | NO | LUST Elig: | NO |
| Report Prep: | Not reported | Category: | Not reported |

**(Continued)** **S101021818**

| | | | |
|---|---|---|---|
| Notifier: | Not reported | | |
| Notif Tel: | Not reported | | |
| Days/Close: | 1 | | |
| Facility ID: | 0000 | Spill ID: | W89-0457 |
| Staff Lead: | GOFF, C | Date Entered: | 19890926 |
| Last Entered: | 19891003 | First Response: | 19870905 |
| Spill Date: | 19870905 | Spill Time: | 10:30AM |
| Report Date: | 19870905 | Report Time: | 12:05PM |
| Case Closed: | YES | Mat Type: | PETROLEUM |
| Virgin Waste: | WASTE | Contam Soil: | Not reported |
| Env Impact: | SOIL | Other Impact: | Not reported |
| Material: | HYDRAULIC FLUID | Other Material: | Not reported |
| Qty Reported: | 10-50 | Qty Actual: | UNKNOWN |
| Qty Reported: | GALLONS | Qty Actual: | GALLONS |
| CAS No: | Not reported | PCB Lev (ppm): | ---------- |
| Source: | PIPE/HOSE/LINE | Other Source: | Not reported |
| Incident: | SPILL | Other Incdnt: | Not reported |
| Cleanup Type: | --- | Contractor: | NOT USED |
| Referral: | NO | LUST Elig: | NO |
| Report Prep: | Not reported | Category: | Not reported |
| Notifier: | J ANTHONY | | |
| Notif Tel: | Not reported | | |
| Days/Close: | -878 | | |

---

**B12** **BUILDING 1411** **LUST** **U003000135**
**SE** **WESTOVER AFB** **Release** **N/A**
**1/2-1** **CHICOPEE, MA 01022**
**2656 ft.**

**Site 6 of 7 in cluster B**

**Relative:**
**Higher**

**Actual:**
**239 ft.**

LUST:

| | |
|---|---|
| Facility ID: | 1-0011016 |
| Source Type: | UST |
| Release Town: | CHICOPEE |
| Notification Date: | 10/10/95 |
| Category: | 120 DY |
| Associated ID: | - |
| **Site Status:** | **Response Action Outcome** |
| Status Date: | 12/22/95 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | A2 |
| Oil Or Haz Material: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 12/22/1995 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 09/25/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |

**BUILDING 1411 (Continued)** **U003000135**

| | |
|---|---|
| Action Date: | 08/24/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release Abatement Measure |
| Action Stat: | Oral Approval of Plan |
| Action Date: | 08/24/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Written Plan Received |
| Action Date: | 10/27/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 10/10/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | FUEL OIL #6 |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | FEDERAL |
| Source Type: | UST |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0011016 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 10/10/95 |
| Category: | 120 DY |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 12/22/95 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | A2 |
| Oil / Haz Material Type: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 12/22/1995 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 09/25/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 08/24/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |

**BUILDING 1411 (Continued)** **U003000135**

| | |
|---|---|
| LSP Number: | Not reported |
| Action Type: | Release Abatement Measure |
| Action Stat: | Oral Approval of Plan |
| Action Date: | 08/24/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Written Plan Received |
| Action Date: | 10/27/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 10/10/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | FUEL OIL #6 |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | FEDERAL |
| Source Type: | UST |

---

**B13** **VEHICLE MAINTENANCE SHOP** **SHWS** **S101023798**
**SE** **WESTOVER AFB** **Release** **N/A**
**1/2-1** **CHICOPEE, MA 01013**
**2656 ft.**

**Site 7 of 7 in cluster B**

**Relative: Higher**

**Actual: 239 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0010993 |
| Source Type: | FUELTANK |
| Release Town: | CHICOPEE |
| Notification Date: | 10/10/95 |
| Category: | TWO HR |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 08/15/96 |
| Phase: | Not reported |
| Response Action Outcome Class: | A2 |
| Oil Or Haz Material: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 08/15/1996 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 10/10/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |

**VEHICLE MAINTENANCE SHOP (Continued)** **S101023798**

| | |
|---|---|
| Action Date: | 08/10/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 09/25/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 08/15/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | JET FUEL |
| Amount: | 30 |
| Quantity: | gallons |
| Location Type: | FEDERAL |
| Source Type: | FUELTANK |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0010993 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 10/10/95 |
| Category: | TWO HR |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 08/15/96 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | A2 |
| Oil / Haz Material Type: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 08/15/1996 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 10/10/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 08/10/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 09/25/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |

**VEHICLE MAINTENANCE SHOP (Continued)** **S101023798**

| | |
|---|---|
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 08/15/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | JET FUEL |
| Amount: | 30 |
| Quantity: | gallons |
| Location Type: | FEDERAL |
| Source Type: | FUELTANK |

---

**14**
**East**
**1/2-1**
**2819 ft.**

**NO LOCATION AID** **SHWS S105522125**
**1380 SHERIDEN ST** **Release N/A**
**CHICOPEE, MA**

**Relative:**
**Higher**

**Actual:**
**239 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0014394 |
| Source Type: | Not reported |
| Release Town: | CHICOPEE |
| Notification Date: | 05/06/02 |
| Category: | 120 DY |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 05/13/03 |
| Phase: | Not reported |
| Response Action Outcome Class: | B1 |
| Oil Or Haz Material: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | Level I - Technical Screen Audit |
| Action Date: | 08/07/2003 |
| Response Action Outcome: | Remedial actions have not been conducted because a level of No Significant Risk exists. |
| Activity Use Limitaion: | NONE |
| LSP Number: | 4813 |
| Action Type: | Downgradient Property Status |
| Action Stat: | Fee Received |
| Action Date: | 05/16/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 05/06/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | Not reported |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | Not reported |
| Source Type: | Not reported |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0014394 |

**NO LOCATION AID (Continued)** **S105522125**

| | |
|---|---|
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 05/06/02 |
| Category: | 120 DY |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 05/13/03 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | B1 |
| Oil / Haz Material Type: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | Level I - Technical Screen Audit |
| Action Date: | 08/07/2003 |
| Response Action Outcome: | Remedial actions have not been conducted because a level of No Significant Risk exists. |
| Activity Use Limitaion: | NONE |
| LSP Number: | 4813 |
| Action Type: | Downgradient Property Status |
| Action Stat: | Fee Received |
| Action Date: | 05/16/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 05/06/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | Not reported |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | Not reported |
| Source Type: | Not reported |

---

**15**
**SSE**
**1/2-1**
**3733 ft.**

**HANGAR 11** **SHWS** **S103042836**
**227 LONCZAK DR** **Release** **N/A**
**CHICOPEE, MA 01021**

**Relative:**
**Higher**

**Actual:**
**238 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0012269 |
| Source Type: | VEHICLE |
| Release Town: | CHICOPEE |
| Notification Date: | 03/31/98 |
| Category: | TWO HR |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 06/05/98 |
| Phase: | Not reported |
| Response Action Outcome Class: | A1 |
| Oil Or Haz Material: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 06/05/1998 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated. |
| Activity Use Limitaion: | NONE |
| LSP Number: | 6135 |

**HANGAR 11 (Continued)** **S103042836**

| | |
|---|---|
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 07/24/1998 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 03/31/1998 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Oral Approval of Plan |
| Action Date: | 03/31/1998 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | DIESEL FUEL |
| Amount: | -30 |
| Quantity: | gallons |
| Location Type: | INDUSTRIAL |
| Source Type: | VEHICLE |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0012269 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 03/31/98 |
| Category: | TWO HR |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 06/05/98 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | A1 |
| Oil / Haz Material Type: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 06/05/1998 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated. |
| Activity Use Limitaion: | NONE |
| LSP Number: | 6135 |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 07/24/1998 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 03/31/1998 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Oral Approval of Plan |
| Action Date: | 03/31/1998 |

**HANGAR 11 (Continued)** **S103042836**

| | |
|---|---|
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | DIESEL FUEL |
| Amount: | -30 |
| Quantity: | gallons |
| Location Type: | INDUSTRIAL |
| Source Type: | VEHICLE |

---

**16** **WAFB BUILDING #9000** **SHWS** **S100828545**
**NW** **ACCESS RD** **Release** **N/A**
**1/2-1** **CHICOPEE, MA 01013**
**3779 ft.**

**Relative:**
**Higher**

**Actual:**
**239 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0000863 |
| Source Type: | Not reported |
| Release Town: | CHICOPEE |
| Notification Date: | 01/15/91 |
| Category: | NONE |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 06/30/99 |
| Phase: | PHASE IV |
| Response Action Outcome Class: | A2 |
| Oil Or Haz Material: | Not reported |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 06/30/1999 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | NONE |
| LSP Number: | Not reported |
| Action Type: | Partial Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 11/25/1996 |
| Response Action Outcome: | NC |
| Activity Use Limitaion: | NONE |
| LSP Number: | Not reported |
| Action Type: | Phase II |
| Action Stat: | Completion Statement Received |
| Action Date: | 11/25/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release Abatement Measure |
| Action Stat: | Revised Statement or Transmittal Received |
| Action Date: | 05/18/1999 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | TCTRNS |
| Action Date: | 01/15/1991 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase I |

**WAFB BUILDING #9000 (Continued)** **S100828545**

| | |
|---|---|
| Action Stat: | Completion Statement Received |
| Action Date: | 11/25/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase III |
| Action Stat: | Completion Statement Received |
| Action Date: | 11/25/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | UNKNOWN CHEMICAL OF UNKNOWN TYPE |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | Not reported |
| Source Type: | Not reported |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0000863 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 01/15/91 |
| Category: | NONE |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 06/30/99 |
| Phase: | PHASE IV |
| Rspns Actn Outcome Class: | A2 |
| Oil / Haz Material Type: | Not reported |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 06/30/1999 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | NONE |
| LSP Number: | Not reported |
| Action Type: | Partial Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 11/25/1996 |
| Response Action Outcome: | NC |
| Activity Use Limitaion: | NONE |
| LSP Number: | Not reported |
| Action Type: | Phase II |
| Action Stat: | Completion Statement Received |
| Action Date: | 11/25/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release Abatement Measure |
| Action Stat: | Revised Statement or Transmittal Received |
| Action Date: | 05/18/1999 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | TCTRNS |
| Action Date: | 01/15/1991 |
| Response Action Outcome: | Not reported |

**WAFB BUILDING #9000 (Continued)** **S100828545**

| | |
|---|---|
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase I |
| Action Stat: | Completion Statement Received |
| Action Date: | 11/25/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase III |
| Action Stat: | Completion Statement Received |
| Action Date: | 11/25/1996 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | UNKNOWN CHEMICAL OF UNKNOWN TYPE |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | Not reported |
| Source Type: | Not reported |

---

**C17** **ECHO-2 TARMAC** **SHWS** **S106953824**
**ENE** **250 PATRIOT AVE** **Release** **N/A**
**1/2-1** **CHICOPEE, MA**
**3892 ft.**

**Site 1 of 2 in cluster C**

**Relative: Higher**

**Actual: 241 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0015761 |
| Source Type: | PIPE |
| Release Town: | CHICOPEE |
| Notification Date: | 05/16/05 |
| Category: | TWO HR |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 07/14/05 |
| Phase: | Not reported |
| Response Action Outcome Class: | A1 |
| Oil Or Haz Material: | Not reported |
| Action Type: | Response Action Outcome |
| Action Stat: | Level I - Technical Screen Audit |
| Action Date: | 09/15/2005 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 07/01/2005 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 05/16/2005 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |

**ECHO-2 TARMAC (Continued)** **S106953824**

| | |
|---|---|
| Action Stat: | Completion Statement Received |
| Action Date: | 07/14/2005 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | UNKNOWN CHEMICAL OF UNKNOWN TYPE |
| Amount: | 15 |
| Quantity: | gallons |
| Location Type: | FEDERAL |
| Source Type: | PIPE |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0015761 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 05/16/05 |
| Category: | TWO HR |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 07/14/05 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | A1 |
| Oil / Haz Material Type: | Not reported |
| Action Type: | Response Action Outcome |
| Action Stat: | Level I - Technical Screen Audit |
| Action Date: | 09/15/2005 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 07/01/2005 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 05/16/2005 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 07/14/2005 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | UNKNOWN CHEMICAL OF UNKNOWN TYPE |
| Amount: | 15 |
| Quantity: | gallons |
| Location Type: | FEDERAL |
| Source Type: | PIPE |

**C18**
**ENE**
**1/2-1**
**3892 ft.**

**WESTOVER AIR FORCE BASE**
**250 PATRIOT AVE STE 1**
**CHICOPEE, MA 01022**

**SHWS**
**LUST**
**Release**

**S101026390**
**N/A**

**Site 2 of 2 in cluster C**

**Relative:**
**Higher**

**Actual:**
**241 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0010430 |
| Source Type: | PRESS FIT |
| Release Town: | CHICOPEE |
| Notification Date: | 07/13/94 |
| Category: | TWO HR |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 04/26/95 |
| Phase: | Not reported |
| Response Action Outcome Class: | A2 |
| Oil Or Haz Material: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 04/26/1995 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | NONE |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 04/26/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 09/09/1994 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 07/14/1994 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | DIESEL FUEL |
| Amount: | 200 |
| Quantity: | gallons |
| Location Type: | FEDERAL |
| Source Type: | PRESS FIT |

LUST:

| | |
|---|---|
| Facility ID: | 1-0014023 |
| Source Type: | UST |
| Release Town: | CHICOPEE |
| Notification Date: | 07/12/01 |
| Category: | TWO HR |
| Associated ID: | - |
| **Site Status:** | **Response Action Outcome** |
| Status Date: | 06/24/03 |
| Phase: | PHASE II |

**WESTOVER AIR FORCE BASE (Continued)** **S101026390**

| | |
|---|---|
| Rspns Actn Outcome Class: | A2 |
| Oil Or Haz Material: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 06/24/2003 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | NONE |
| LSP Number: | 2890 |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 09/10/2001 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase I |
| Action Stat: | Completion Statement Received |
| Action Date: | 07/12/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 2890 |
| Action Type: | Tier Classification |
| Action Stat: | Tier 2 Classification |
| Action Date: | 07/12/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 2890 |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 11/01/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 2890 |
| Action Type: | Release Abatement Measure |
| Action Stat: | Completion Statement Received |
| Action Date: | 06/24/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 2890 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 07/12/2001 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | PETROLEUM BASED OIL |
| Amount: | 20 |
| Quantity: | gallons |
| Location Type: | FEDERAL |
| Source Type: | UST |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0010430 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 07/13/94 |
| Category: | TWO HR |

**WESTOVER AIR FORCE BASE (Continued)** **S101026390**

| | |
|---|---|
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 04/26/95 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | A2 |
| Oil / Haz Material Type: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 04/26/1995 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | NONE |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 04/26/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 09/09/1994 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 07/14/1994 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | DIESEL FUEL |
| Amount: | 200 |
| Quantity: | gallons |
| Location Type: | FEDERAL |
| Source Type: | PRESS FIT |
| | |
| Facility ID: | 1-0014023 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 07/12/01 |
| Category: | TWO HR |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 06/24/03 |
| Phase: | PHASE II |
| Rspns Actn Outcome Class: | A2 |
| Oil / Haz Material Type: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 06/24/2003 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | NONE |
| LSP Number: | 2890 |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 09/10/2001 |
| Response Action Outcome: | Not reported |

**WESTOVER AIR FORCE BASE (Continued)** **S101026390**

| | |
|---|---|
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase I |
| Action Stat: | Completion Statement Received |
| Action Date: | 07/12/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 2890 |
| Action Type: | Tier Classification |
| Action Stat: | Tier 2 Classification |
| Action Date: | 07/12/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 2890 |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 11/01/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 2890 |
| Action Type: | Release Abatement Measure |
| Action Stat: | Completion Statement Received |
| Action Date: | 06/24/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 2890 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 07/12/2001 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | PETROLEUM BASED OIL |
| Amount: | 20 |
| Quantity: | gallons |
| Location Type: | FEDERAL |
| Source Type: | UST |

---

**19**
**WNW**
**1/2-1**
**4463 ft.**

**HESS STATION 21209** **SHWS** **U000223390**
**1423 MEMORIAL DR** **Release** **N/A**
**CHICOPEE, MA 01020** **UST**

**Relative:**
**Lower**

**Actual:**
**225 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0001076 |
| Source Type: | Not reported |
| Release Town: | CHICOPEE |
| Notification Date: | 09/28/93 |
| Category: | NONE |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 12/06/00 |
| Phase: | PHASE II |
| Response Action Outcome Class: | A2 |
| Oil Or Haz Material: | Not reported |
| Action Type: | Response Action Outcome |
| Action Stat: | Level I - Technical Screen Audit |
| Action Date: | 01/14/2003 |

**HESS STATION 21209 (Continued)** **U000223390**

| | |
|---|---|
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | NONE |
| LSP Number: | Not reported |
| Action Type: | Phase I |
| Action Stat: | Completion Statement Received |
| Action Date: | 07/31/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | TCTRNS |
| Action Date: | 09/28/1993 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release Abatement Measure |
| Action Stat: | Completion Statement Received |
| Action Date: | 11/17/2000 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Tier Classification |
| Action Stat: | Tier 2 Classification |
| Action Date: | 07/31/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | UNKNOWN CHEMICAL OF UNKNOWN TYPE |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | Not reported |
| Source Type: | Not reported |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0001076 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 09/28/93 |
| Category: | NONE |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 12/06/00 |
| Phase: | PHASE II |
| Rspns Actn Outcome Class: | A2 |
| Oil / Haz Material Type: | Not reported |
| Action Type: | Response Action Outcome |
| Action Stat: | Level I - Technical Screen Audit |
| Action Date: | 01/14/2003 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | NONE |
| LSP Number: | Not reported |
| Action Type: | Phase I |
| Action Stat: | Completion Statement Received |
| Action Date: | 07/31/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |

**HESS STATION 21209 (Continued)** **U000223390**

| | |
|---|---|
| LSP Number: | Not reported |
| Action Type: | Release |
| Action Stat: | TCTRNS |
| Action Date: | 09/28/1993 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release Abatement Measure |
| Action Stat: | Completion Statement Received |
| Action Date: | 11/17/2000 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Tier Classification |
| Action Stat: | Tier 2 Classification |
| Action Date: | 07/31/1997 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | UNKNOWN CHEMICAL OF UNKNOWN TYPE |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | Not reported |
| Source Type: | Not reported |

UST:

| | |
|---|---|
| Facility ID: | 7104 |
| Tank ID: | 1 |
| Serial Number: | Not reported |
| Aboveground: | No |
| Capacity: | 8000 |
| Contents: | Gasoline |
| **Tank Status:** | **Removed** |
| Tank Useage: | MV |
| Tank Material: | Cathodic |
| Tank Contents: | 1 Wall |
| Pipe Material: | Cathodic |
| Pipe Container: | 1 Wall |
| Tank Leak Detection: | Monthly Soil Vapor Monitoring |
| Pipe Leak Detection: | Product Line Leak Detector |
| Owner: | AMERADA HESS CORPORATION |
| Owner Address: | 1 HESS PLAZA |
| Owner City,St,Zip: | WOODBRIDGE, NJ 07095 |
| Telephone: | (732) 750-6220 |
| Description: | Gas Station |
| Fire Dept. ID: | 13061 |
| Financial Responsibility: | Self Insured, Normal |

| | |
|---|---|
| Facility ID: | 7104 |
| Tank ID: | 2 |
| Serial Number: | Not reported |
| Aboveground: | No |
| Capacity: | 8000 |
| Contents: | Gasoline |
| **Tank Status:** | **Removed** |
| Tank Useage: | MV |
| Tank Material: | Cathodic |

**HESS STATION 21209 (Continued)** **U000223390**

Tank Contents: 1 Wall
Pipe Material: Cathodic
Pipe Container: 1 Wall
Tank Leak Detection: Monthly Soil Vapor Monitoring
Pipe Leak Detection: Product Line Leak Detector
Owner: AMERADA HESS CORPORATION
Owner Address: 1 HESS PLAZA
Owner City,St,Zip: WOODBRIDGE, NJ 07095
Telephone: (732) 750-6220
Description: Gas Station
Fire Dept. ID: 13061
Financial Responsibility: Self Insured, Normal

Facility ID: 7104
Tank ID: 3
Serial Number: Not reported
Aboveground: No
Capacity: 10000
Contents: Gasoline
**Tank Status: Removed**
Tank Useage: MV
Tank Material: Reinforced
Tank Contents: 1 Wall
Pipe Material: Cathodic
Pipe Container: 1 Wall
Tank Leak Detection: Monthly Soil Vapor Monitoring
Pipe Leak Detection: Product Line Leak Detector
Owner: AMERADA HESS CORPORATION
Owner Address: 1 HESS PLAZA
Owner City,St,Zip: WOODBRIDGE, NJ 07095
Telephone: (732) 750-6220
Description: Gas Station
Fire Dept. ID: 13061
Financial Responsibility: Self Insured, Normal

Facility ID: 7104
Tank ID: 4
Serial Number: Not reported
Aboveground: No
Capacity: 10000
Contents: Diesel
**Tank Status: Removed**
Tank Useage: MV
Tank Material: Reinforced
Tank Contents: 1 Wall
Pipe Material: Cathodic
Pipe Container: 1 Wall
Tank Leak Detection: Monthly Soil Vapor Monitoring
Pipe Leak Detection: Product Line Leak Detector
Owner: AMERADA HESS CORPORATION
Owner Address: 1 HESS PLAZA
Owner City,St,Zip: WOODBRIDGE, NJ 07095
Telephone: (732) 750-6220
Description: Gas Station
Fire Dept. ID: 13061
Financial Responsibility: Self Insured, Normal

**HESS STATION 21209 (Continued)** **U000223390**

| | |
|---|---|
| Facility ID: | 7104 |
| Tank ID: | 5 |
| Serial Number: | Not reported |
| Aboveground: | No |
| Capacity: | 10000 |
| Contents: | Gasoline |
| **Tank Status:** | **In Use** |
| Tank Useage: | MV |
| Tank Material: | Reinforced |
| Tank Contents: | 2 Walls |
| Pipe Material: | Reinforced |
| Pipe Container: | 2 Walls |
| Tank Leak Detection: | Interstitial Monitoring |
| Pipe Leak Detection: | Product Line Leak Detector |
| Owner: | AMERADA HESS CORPORATION |
| Owner Address: | 1 HESS PLAZA |
| Owner City,St,Zip: | WOODBRIDGE, NJ 07095 |
| Telephone: | (732) 750-6220 |
| Description: | Gas Station |
| Fire Dept. ID: | 13061 |
| Financial Responsibility: | Self Insured, Normal |

| | |
|---|---|
| Facility ID: | 7104 |
| Tank ID: | 6 |
| Serial Number: | Not reported |
| Aboveground: | No |
| Capacity: | 10000 |
| Contents: | Gasoline |
| **Tank Status:** | **In Use** |
| Tank Useage: | MV |
| Tank Material: | Reinforced |
| Tank Contents: | 2 Walls |
| Pipe Material: | Reinforced |
| Pipe Container: | 2 Walls |
| Tank Leak Detection: | Interstitial Monitoring |
| Pipe Leak Detection: | Product Line Leak Detector |
| Owner: | AMERADA HESS CORPORATION |
| Owner Address: | 1 HESS PLAZA |
| Owner City,St,Zip: | WOODBRIDGE, NJ 07095 |
| Telephone: | (732) 750-6220 |
| Description: | Gas Station |
| Fire Dept. ID: | 13061 |
| Financial Responsibility: | Self Insured, Normal |

| | |
|---|---|
| Facility ID: | 7104 |
| Tank ID: | 7 |
| Serial Number: | Not reported |
| Aboveground: | No |
| Capacity: | 10000 |
| Contents: | Gasoline |
| **Tank Status:** | **In Use** |
| Tank Useage: | MV |
| Tank Material: | Reinforced |
| Tank Contents: | 2 Walls |
| Pipe Material: | Reinforced |
| Pipe Container: | 2 Walls |
| Tank Leak Detection: | Interstitial Monitoring |

**HESS STATION 21209 (Continued)** **U000223390**

| | |
|---|---|
| Pipe Leak Detection: | Product Line Leak Detector |
| Owner: | AMERADA HESS CORPORATION |
| Owner Address: | 1 HESS PLAZA |
| Owner City,St,Zip: | WOODBRIDGE, NJ 07095 |
| Telephone: | (732) 750-6220 |
| Description: | Gas Station |
| Fire Dept. ID: | 13061 |
| Financial Responsibility: | Self Insured, Normal |

| | |
|---|---|
| Facility ID: | 7104 |
| Tank ID: | 8 |
| Serial Number: | Not reported |
| Aboveground: | No |
| Capacity: | 10000 |
| Contents: | Diesel |
| **Tank Status:** | **In Use** |
| Tank Useage: | MV |
| Tank Material: | Reinforced |
| Tank Contents: | 2 Walls |
| Pipe Material: | Reinforced |
| Pipe Container: | 2 Walls |
| Tank Leak Detection: | Interstitial Monitoring |
| Pipe Leak Detection: | Product Line Leak Detector |
| Owner: | AMERADA HESS CORPORATION |
| Owner Address: | 1 HESS PLAZA |
| Owner City,St,Zip: | WOODBRIDGE, NJ 07095 |
| Telephone: | (732) 750-6220 |
| Description: | Gas Station |
| Fire Dept. ID: | 13061 |
| Financial Responsibility: | Self Insured, Normal |

---

**20 WNW 1/2-1 4485 ft.** **FAIRVIEW PLAZA** **SHWS** **S104847291**
**1451-1505 MEMORIAL DR** **Release** **N/A**
**CHICOPEE, MA 01020**

**Relative: Lower**

**Actual: 229 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0013752 |
| Source Type: | Not reported |
| Release Town: | CHICOPEE |
| Notification Date: | 12/28/00 |
| Category: | 120 DY |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 12/28/00 |
| Phase: | Not reported |
| Response Action Outcome Class: | B1 |
| Oil Or Haz Material: | Hazardous Material |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 12/28/2000 |
| Response Action Outcome: | Remedial actions have not been conducted because a level of No Significant Risk exists. |
| Activity Use Limitaion: | NONE |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 12/28/2000 |

**FAIRVIEW PLAZA (Continued)** **S104847291**

| | |
|---|---|
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | UNKNOWN CHEMICAL OF TYPE - HAZARDOUS MATERIAL |
| Amount: | 1.595 |
| Quantity: | parts per million |
| Location Type: | Not reported |
| Source Type: | Not reported |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0013752 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 12/28/00 |
| Category: | 120 DY |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 12/28/00 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | B1 |
| Oil / Haz Material Type: | Hazardous Material |
| Action Type: | Response Action Outcome |
| Action Stat: | RAO Statement Received |
| Action Date: | 12/28/2000 |
| Response Action Outcome: | Remedial actions have not been conducted because a level of No Significant Risk exists. |
| Activity Use Limitaion: | NONE |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 12/28/2000 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | UNKNOWN CHEMICAL OF TYPE - HAZARDOUS MATERIAL |
| Amount: | 1.595 |
| Quantity: | parts per million |
| Location Type: | Not reported |
| Source Type: | Not reported |

---

**21**
**WNW**
**1/2-1**
**4580 ft.**

**FAIRVIEW SERVICE CENTER INC** **LUST** **U002009478**
**1492 MEMORIAL DR** **Release** **N/A**
**CHICOPEE, MA 01020** **UST**

**Relative:**
**Lower**

**Actual:**
**232 ft.**

LUST:

| | |
|---|---|
| Facility ID: | 1-0010666 |
| Source Type: | UST |
| Release Town: | CHICOPEE |
| Notification Date: | 12/21/94 |
| Category: | 72 HR |
| Associated ID: | - |
| **Site Status:** | **TIERII** |
| Status Date: | 12/05/95 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | Not reported |
| Oil Or Haz Material: | Oil |
| Action Type: | Tier Classification |

**FAIRVIEW SERVICE CENTER INC (Continued)** **U002009478**

| | |
|---|---|
| Action Stat: | Tier 2 Extension |
| Action Date: | 04/12/2004 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6517 |
| Action Type: | Phase III |
| Action Stat: | Completion Statement Received |
| Action Date: | 12/12/2001 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6517 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 12/21/1994 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 12/21/1994 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase IV |
| Action Stat: | Completion Statement Received |
| Action Date: | 04/12/2004 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6517 |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 02/21/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase I |
| Action Stat: | Completion Statement Received |
| Action Date: | 04/26/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6442 |
| Action Type: | Phase II |
| Action Stat: | Completion Statement Received |
| Action Date: | 12/12/2001 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6517 |
| Chemical: | FUEL OIL #2 |
| Amount: | 95 |
| Quantity: | parts per million |
| Chemical: | WASTE OIL |
| Amount: | 95 |
| Quantity: | parts per million |
| Chemical: | PETROLEUM BASED OIL |
| Amount: | 95 |
| Quantity: | parts per million |
| Location Type: | COMMERCIAL |

**FAIRVIEW SERVICE CENTER INC (Continued)** **U002009478**

Source Type: UST

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0010666 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 12/21/94 |
| Category: | 72 HR |
| **Facility Status:** | **TIERII** |
| Status Date: | 12/05/95 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | Not reported |
| Oil / Haz Material Type: | Oil |
| Action Type: | Tier Classification |
| Action Stat: | Tier 2 Extension |
| Action Date: | 04/12/2004 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6517 |
| Action Type: | Phase III |
| Action Stat: | Completion Statement Received |
| Action Date: | 12/12/2001 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6517 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 12/21/1994 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 12/21/1994 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase IV |
| Action Stat: | Completion Statement Received |
| Action Date: | 04/12/2004 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6517 |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 02/21/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Phase I |
| Action Stat: | Completion Statement Received |
| Action Date: | 04/26/1995 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6442 |
| Action Type: | Phase II |
| Action Stat: | Completion Statement Received |

**FAIRVIEW SERVICE CENTER INC (Continued)** **U002009478**

| | |
|---|---|
| Action Date: | 12/12/2001 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 6517 |
| Chemical: | FUEL OIL #2 |
| Amount: | 95 |
| Quantity: | parts per million |
| Chemical: | WASTE OIL |
| Amount: | 95 |
| Quantity: | parts per million |
| Chemical: | PETROLEUM BASED OIL |
| Amount: | 95 |
| Quantity: | parts per million |
| Location Type: | COMMERCIAL |
| Source Type: | UST |

UST:

| | |
|---|---|
| Facility ID: | 7119 |
| Tank ID: | 1 |
| Serial Number: | Not reported |
| Aboveground: | No |
| Capacity: | 6000 |
| Contents: | Gasoline |
| **Tank Status:** | **Removed** |
| Tank Useage: | Not reported |
| Tank Material: | Steel |
| Tank Contents: | Not reported |
| Pipe Material: | Steel |
| Pipe Container: | Not reported |
| Tank Leak Detection: | Not reported |
| Pipe Leak Detection: | Not reported |
| Owner: | RUSSELL CENTERBAR |
| Owner Address: | 1492 MEMORIAL DR |
| Owner City,St,Zip: | CHICOPEE, MA 01020 |
| Telephone: | (413) 536-0128 |
| Description: | Other |
| Fire Dept. ID: | 13061 |
| Financial Responsibility: | Normal |

| | |
|---|---|
| Facility ID: | 7119 |
| Tank ID: | 2 |
| Serial Number: | Not reported |
| Aboveground: | No |
| Capacity: | 6000 |
| Contents: | Gasoline |
| **Tank Status:** | **Removed** |
| Tank Useage: | Not reported |
| Tank Material: | Steel |
| Tank Contents: | Not reported |
| Pipe Material: | Steel |
| Pipe Container: | Not reported |
| Tank Leak Detection: | Not reported |
| Pipe Leak Detection: | Not reported |
| Owner: | RUSSELL CENTERBAR |
| Owner Address: | 1492 MEMORIAL DR |
| Owner City,St,Zip: | CHICOPEE, MA 01020 |
| Telephone: | (413) 536-0128 |

**FAIRVIEW SERVICE CENTER INC (Continued)** **U002009478**

Description: Other
Fire Dept. ID: 13061
Financial Responsibility: Normal

Facility ID: 7119
Tank ID: 3
Serial Number: Not reported
Aboveground: No
Capacity: 6000
Contents: Gasoline
**Tank Status:** **Removed**
Tank Useage: Not reported
Tank Material: Steel
Tank Contents: Not reported
Pipe Material: Steel
Pipe Container: Not reported
Tank Leak Detection: Not reported
Pipe Leak Detection: Not reported
Owner: RUSSELL CENTERBAR
Owner Address: 1492 MEMORIAL DR
Owner City,St,Zip: CHICOPEE, MA 01020
Telephone: (413) 536-0128
Description: Other
Fire Dept. ID: 13061
Financial Responsibility: Normal

Facility ID: 7119
Tank ID: 4
Serial Number: Not reported
Aboveground: No
Capacity: 6000
Contents: Gasoline
**Tank Status:** **Removed**
Tank Useage: Not reported
Tank Material: Steel
Tank Contents: Not reported
Pipe Material: Steel
Pipe Container: Not reported
Tank Leak Detection: Not reported
Pipe Leak Detection: Not reported
Owner: RUSSELL CENTERBAR
Owner Address: 1492 MEMORIAL DR
Owner City,St,Zip: CHICOPEE, MA 01020
Telephone: (413) 536-0128
Description: Other
Fire Dept. ID: 13061
Financial Responsibility: Normal

**22**
**West**
**1/2-1**
**4647 ft.**

**DAIRY MART**
**1284 MEMORIAL DRIVE**
**CHICOPEE, MA 01013**

**SHWS**
**Release**
**MA Spills**

**S101022313**
**N/A**

**Relative:**
**Lower**

**Actual:**
**206 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0000570 |
| Source Type: | Not reported |
| Release Town: | CHICOPEE |
| Notification Date: | 01/15/89 |
| Category: | NONE |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 02/23/96 |
| Phase: | Not reported |
| Response Action Outcome Class: | Not reported |
| Oil Or Haz Material: | Not reported |
| Action Type: | Release |
| Action Stat: | TCTRNS |
| Action Date: | 01/15/1989 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | UNKNOWN CHEMICAL OF UNKNOWN TYPE |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | Not reported |
| Source Type: | Not reported |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0000570 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 01/15/89 |
| Category: | NONE |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 02/23/96 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | Not reported |
| Oil / Haz Material Type: | Not reported |
| Action Type: | Release |
| Action Stat: | TCTRNS |
| Action Date: | 01/15/1989 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | UNKNOWN CHEMICAL OF UNKNOWN TYPE |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | Not reported |
| Source Type: | Not reported |

MA Spills:

| | | | |
|---|---|---|---|
| Facility ID: | 0000 | Spill ID: | W93-0186 |
| Staff Lead: | FISH, B | Date Entered: | Not reported |
| Last Entered: | 19930518 | First Response: | 19930422 |
| Spill Date: | 19930422 | Spill Time: | 04:15PM |
| Report Date: | 19930422 | Report Time: | 04:30PM |

**DAIRY MART (Continued)** **S101022313**

| | | | |
|---|---|---|---|
| Case Closed: | YES | Mat Type: | PETROLEUM |
| Virgin Waste: | WASTE | Contam Soil: | Not reported |
| Env Impact: | SOIL | Other Impact: | Not reported |
| Material: | GASOLINE | Other Material: | Not reported |
| Qty Reported: | 11-50 | Qty Actual: | UNKNOWN |
| Qty Reported: | GALLONS | Qty Actual: | GALLONS |
| CAS No: | Not reported | PCB Lev (ppm): | NONE |
| Source: | DRUM | Other Source: | Not reported |
| Incident: | OTHER RELEASE > | Other Incdnt: | TIPPED OVER |
| Cleanup Type: | --- | Contractor: | NOT USED |
| Referral: | NO | LUST Elig: | NO |
| Report Prep: | Not reported | Category: | Not reported |
| Notifier: | FORTIN, CFD | | |
| Notif Tel: | Not reported | | |
| Days/Close: | 0 | | |

| | | | |
|---|---|---|---|
| Facility ID: | 0000 | Spill ID: | W93-0277 |
| Staff Lead: | BOURCIER, J | Date Entered: | Not reported |
| Last Entered: | 19930618 | First Response: | 19930604 |
| Spill Date: | Not reported | Spill Time: | Not reported |
| Report Date: | 19930604 | Report Time: | 04:40PM |
| Case Closed: | YES | Mat Type: | PETROLEUM |
| Virgin Waste: | ------ | Contam Soil: | Not reported |
| Env Impact: | Not reported | Other Impact: | Not reported |
| Material: | GASOLINE | Other Material: | Not reported |
| Qty Reported: | UNKNOWN | Qty Actual: | UNKNOWN |
| Qty Reported: | ---------- | Qty Actual: | ---------- |
| CAS No: | Not reported | PCB Lev (ppm): | UNKNOWN |
| Source: | BELOW-GRND TANK | Other Source: | Not reported |
| Incident: | LEAK | Other Incdnt: | Not reported |
| Cleanup Type: | --- | Contractor: | NOT USED |
| Referral: | NO | LUST Elig: | YES |
| Report Prep: | Not reported | Category: | Not reported |
| Notifier: | HARRY PERRONE/DAIRY MART | | |
| Notif Tel: | Not reported | | |
| Days/Close: | 0 | | |

| | | | |
|---|---|---|---|
| Facility ID: | 0000 | Spill ID: | W88-0610 |
| Staff Lead: | SYMINGTON, A | Date Entered: | 19881125 |
| Last Entered: | 19881125 | First Response: | 19881107 |
| Spill Date: | 19881107 | Spill Time: | Not reported |
| Report Date: | 19881107 | Report Time: | 02:45PM |
| Case Closed: | YES | Mat Type: | PETROLEUM |
| Virgin Waste: | VIRGIN | Contam Soil: | Not reported |
| Env Impact: | SOIL | Other Impact: | Not reported |
| Material: | GASOLINE | Other Material: | Not reported |
| Qty Reported: | NONE | Qty Actual: | NONE |
| Qty Reported: | _____ | Qty Actual: | _____ |
| CAS No: | Not reported | PCB Lev (ppm): | Not reported |
| Source: | U.S.T. | Other Source: | Not reported |
| Incident: | OVERFILL | Other Incdnt: | Not reported |
| Cleanup Type: | Not reported | Contractor: | NOT USED |
| Referral: | NO | LUST Elig: | Not reported |
| Report Prep: | Not reported | Category: | Not reported |
| Notifier: | Not reported | | |
| Notif Tel: | Not reported | | |
| Days/Close: | 0 | | |

**23 SW 1/2-1 4914 ft.**

**NO LOCATION AID**
**1737 DONOHUE RD**
**CHICOPEE, MA**

**LUST**
**Release**

**S105735861**
**N/A**

**Relative: Higher**

**Actual: 239 ft.**

LUST:

| | |
|---|---|
| Facility ID: | 1-0014674 |
| Source Type: | UST |
| Release Town: | CHICOPEE |
| Notification Date: | 12/10/02 |
| Category: | 72 HR |
| Associated ID: | - |
| **Site Status:** | **Response Action Outcome** |
| Status Date: | 12/17/03 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | A2 |
| Oil Or Haz Material: | Oil and Hazardous Material |
| Action Type: | Response Action Outcome |
| Action Stat: | Level I - Technical Screen Audit |
| Action Date: | 02/20/2004 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | NONE |
| LSP Number: | 9908 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 09/08/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 12/10/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release Abatement Measure |
| Action Stat: | Completion Statement Received |
| Action Date: | 04/24/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 9908 |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 11/25/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 9908 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 02/28/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | Not reported |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | Not reported |
| Source Type: | UST |

**NO LOCATION AID (Continued)** **S105735861**

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0014674 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 12/10/02 |
| Category: | 72 HR |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 12/17/03 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | A2 |
| Oil / Haz Material Type: | Oil and Hazardous Material |
| Action Type: | Response Action Outcome |
| Action Stat: | Level I - Technical Screen Audit |
| Action Date: | 02/20/2004 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has not been reduced to background. |
| Activity Use Limitaion: | NONE |
| LSP Number: | 9908 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 09/08/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | RNF |
| Action Stat: | REPORT |
| Action Date: | 12/10/2002 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Release Abatement Measure |
| Action Stat: | Completion Statement Received |
| Action Date: | 04/24/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 9908 |
| Action Type: | Immediate Response |
| Action Stat: | Completion Statement Received |
| Action Date: | 11/25/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 9908 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 02/28/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Chemical: | Not reported |
| Amount: | Not reported |
| Quantity: | Not reported |
| Location Type: | Not reported |
| Source Type: | UST |

**24**
**NNE**
**1/2-1**
**5262 ft.**

**AVERY DENNISON COMPANY** — **SHWS** **S106030246**
**1 BETTER WAY** — **Release** **N/A**
**CHICOPEE, MA**

**Relative:**
**Higher**

**Actual:**
**248 ft.**

SHWS:

| | |
|---|---|
| Facility ID: | 1-0015041 |
| Source Type: | Not reported |
| Release Town: | CHICOPEE |
| Notification Date: | 10/07/03 |
| Category: | TWO HR |
| Associated ID: | - |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 01/30/04 |
| Phase: | Not reported |
| Response Action Outcome Class: | A1 |
| Oil Or Haz Material: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | Level I - Technical Screen Audit |
| Action Date: | 03/18/2004 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated. |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 10/07/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Modified, Revised, or Updated Plan Received |
| Action Date: | 12/12/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Chemical: | PETROLEUM BASED OIL |
| Amount: | 10 |
| Quantity: | gallons |
| Location Type: | COMMERCIAL |
| Source Type: | Not reported |

MA RELEASE:

| | |
|---|---|
| Facility ID: | 1-0015041 |
| Primary ID: | - |
| Official City: | CHICOPEE |
| Notification: | 10/07/03 |
| Category: | TWO HR |
| **Facility Status:** | **Response Action Outcome** |
| Status Date: | 01/30/04 |
| Phase: | Not reported |
| Rspns Actn Outcome Class: | A1 |
| Oil / Haz Material Type: | Oil |
| Action Type: | Response Action Outcome |
| Action Stat: | Level I - Technical Screen Audit |
| Action Date: | 03/18/2004 |
| Response Action Outcome: | A permanent solution has been achieved. Contamination has been reduced to background or a threat of release has been eliminated. |
| Activity Use Limitaion: | Not reported |

**AVERY DENNISON COMPANY (Continued)** **S106030246**

| | |
|---|---|
| LSP Number: | 4813 |
| Action Type: | Release |
| Action Stat: | REPORT |
| Action Date: | 10/07/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | Not reported |
| Action Type: | Immediate Response |
| Action Stat: | Modified, Revised, or Updated Plan Received |
| Action Date: | 12/12/2003 |
| Response Action Outcome: | Not reported |
| Activity Use Limitaion: | Not reported |
| LSP Number: | 4813 |
| Chemical: | PETROLEUM BASED OIL |
| Amount: | 10 |
| Quantity: | gallons |
| Location Type: | COMMERCIAL |
| Source Type: | Not reported |

ORPHAN SUMMARY

| City | EDR ID | Site Name | Site Address | Zip | Database(s) |
|---|---|---|---|---|---|
| CHICOPEE | S105810359 | MASS TURNPIKE | RTE 90 RTE 33 | | SHWS, Release |
| CHICOPEE | S104562305 | BRIDGE OVER CT RIVER | RTE 91 NORTHBOUND | | SHWS, Release |
| CHICOPEE | S106488477 | SENTRY CLEANERS AT WESTOVER | BLDG 2425 450 AIRLIFT DR | 01022 | DRYCLEANERS |
| CHICOPEE | S102967156 | TRIPLE B TOWING PARKING LOT | FULLER / SHERIDAN STS | | SHWS, Release |
| CHICOPEE | S102083876 | TAXIWAY DRIVE | NEAR COR OF SHERIDAN ST | 01022 | SHWS, Release |
| CHICOPEE | S103810794 | WARB JET TEST STAND AREA | OFF PATRIOT AVE | 01022 | SHWS, Release |
| CHICOPEE | S106510125 | WESTOVER AIR BASE | 250 PATRIOT AVE ECHO #11 | | SHWS, Release |
| CHICOPEE | S105810398 | WESTOVER AIR BASE | 250 PATRIOT AVE ECHO #13 | | SHWS, Release |
| CHICOPEE | S102083384 | BUILDING 1833 | PATRIOT AVE | 01022 | LUST, Release |
| CHICOPEE | S103810881 | WARB BLDG 1307 | PATRIOT AVE | 01022 | SHWS, Release |
| CHICOPEE | S106953843 | NEW INDUSTRIAL SECURITY GATE D | PATRIOT AVE | | SHWS, Release |
| CHICOPEE | S103810888 | FRMR SEWAGE TREATMENT PLANT | RECALL AVE | 01022 | SHWS, Release |
| CHICOPEE | S107678297 | NO LOCATION AID | SHERIDAN ST / FULLER RD | | Release, LAST |
| CHICOPEE | S105522120 | PADGETTE STREET | SHERIDAN ST | | Release, LAST |
| CHICOPEE | S107517392 | WESTOVER ARB | WESTOVER RD | | Release |
| CHICOPEE | S107516711 | WESTOVER ARB | WESTOVER RD | | SHWS |
| CHICOPEE | S103810761 | BEHIND CIVIL ENGINEER BUILDING | WESTOVER ARB NIAGRA AVE | 01022 | LUST, Release |
| CHICOPEE | S103383096 | AT DULONG CIRCLE | WESTOVER RD | | LUST, Release |
| DURHAM | S106674384 | DURHAM VARIETY | RT. 136 / DAVIS RD. | 01020 | LUST |

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

## FEDERAL RECORDS

**NPL:** National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/19/2006
Date Data Arrived at EDR: 05/05/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 17

Source: EPA
Telephone: N/A
Last EDR Contact: 08/02/2006
Next Scheduled EDR Contact: 10/30/2006
Data Release Frequency: Quarterly

**NPL Site Boundaries**

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

**Proposed NPL:** Proposed National Priority List Sites

Date of Government Version: 04/19/2006
Date Data Arrived at EDR: 05/05/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 17

Source: EPA
Telephone: N/A
Last EDR Contact: 08/02/2006
Next Scheduled EDR Contact: 10/30/2006
Data Release Frequency: Quarterly

**DELISTED NPL:** National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/19/2006
Date Data Arrived at EDR: 05/05/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 17

Source: EPA
Telephone: N/A
Last EDR Contact: 08/02/2006
Next Scheduled EDR Contact: 10/30/2006
Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

**NPL RECOVERY:** Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 05/23/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: No Update Planned

**CERCLIS:** Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/01/2006
Date Data Arrived at EDR: 03/21/2006
Date Made Active in Reports: 04/13/2006
Number of Days to Update: 23

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 06/22/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Quarterly

**CERCLIS-NFRAP:** CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 02/01/2006
Date Data Arrived at EDR: 03/21/2006
Date Made Active in Reports: 04/13/2006
Number of Days to Update: 23

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 06/23/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Quarterly

**CORRACTS:** Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/15/2006
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 04/13/2006
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 08/03/2006
Next Scheduled EDR Contact: 09/04/2006
Data Release Frequency: Quarterly

**RCRA:** Resource Conservation and Recovery Act Information

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/09/2006
Date Data Arrived at EDR: 04/27/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 33

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/28/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Quarterly

**ERNS:** Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 01/12/2006
Date Made Active in Reports: 02/21/2006
Number of Days to Update: 40

Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Last EDR Contact: 07/25/2006
Next Scheduled EDR Contact: 10/23/2006
Data Release Frequency: Annually

**HMIRS:** Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 07/19/2006
Next Scheduled EDR Contact: 10/16/2006
Data Release Frequency: Annually

**US ENG CONTROLS:** Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 03/21/2006
Date Data Arrived at EDR: 03/27/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 56

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 07/03/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Varies

**US INST CONTROL:** Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 03/21/2006
Date Data Arrived at EDR: 03/27/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 56

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 07/03/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

**DOD:** Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 02/08/2005
Date Made Active in Reports: 08/04/2005
Number of Days to Update: 177

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 05/12/2006
Next Scheduled EDR Contact: 08/07/2006
Data Release Frequency: Semi-Annually

**FUDS:** Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 01/19/2006
Date Made Active in Reports: 02/21/2006
Number of Days to Update: 33

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 07/17/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Varies

**US BROWNFIELDS:** A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 04/26/2006
Date Data Arrived at EDR: 04/27/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 33

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/12/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Semi-Annually

**CONSENT:** Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/14/2004
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 04/25/2005
Number of Days to Update: 69

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 07/24/2006
Next Scheduled EDR Contact: 10/23/2006
Data Release Frequency: Varies

**ROD:** Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/13/2006
Date Data Arrived at EDR: 04/28/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 32

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 07/06/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Annually

**UMTRA:** Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 11/04/2005
Date Data Arrived at EDR: 11/28/2005
Date Made Active in Reports: 01/30/2006
Number of Days to Update: 63

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 06/21/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Varies

**ODI:** Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

**PRP:** Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 03/09/2006
Date Data Arrived at EDR: 04/13/2006
Date Made Active in Reports: 05/19/2006
Number of Days to Update: 36

Source: EPA
Telephone: 202-564-6064
Last EDR Contact: 07/06/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Quarterly

**TRIS:** Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2003
Date Data Arrived at EDR: 07/13/2005
Date Made Active in Reports: 08/17/2005
Number of Days to Update: 35

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 06/22/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Annually

**TSCA:** Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 07/17/2006
Next Scheduled EDR Contact: 10/16/2006
Data Release Frequency: Every 4 Years

**FTTS:** FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/29/2006
Date Data Arrived at EDR: 04/26/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 34

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 06/19/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Quarterly

**FTTS INSP:** FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Date of Government Version: 03/31/2006
Date Data Arrived at EDR: 04/26/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 34

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 06/19/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Quarterly

**SSTS:** Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 05/11/2006
Date Made Active in Reports: 05/22/2006
Number of Days to Update: 11

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/17/2006
Next Scheduled EDR Contact: 10/16/2006
Data Release Frequency: Annually

**ICIS:** Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 02/13/2006
Date Data Arrived at EDR: 04/21/2006
Date Made Active in Reports: 05/11/2006
Number of Days to Update: 20

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 07/17/2006
Next Scheduled EDR Contact: 10/16/2006
Data Release Frequency: Quarterly

**PADS:** PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 12/27/2005
Date Data Arrived at EDR: 02/08/2006
Date Made Active in Reports: 02/27/2006
Number of Days to Update: 19

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 08/09/2006
Next Scheduled EDR Contact: 11/06/2006
Data Release Frequency: Annually

**MLTS:** Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/12/2006
Date Data Arrived at EDR: 04/26/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 34

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 07/03/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Quarterly

**MINES:** Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/09/2006
Date Data Arrived at EDR: 03/29/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 62

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 06/28/2006
Next Scheduled EDR Contact: 09/25/2006
Data Release Frequency: Semi-Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

**FINDS:** Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/27/2006
Date Data Arrived at EDR: 05/02/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 28

Source: EPA
Telephone: N/A
Last EDR Contact: 04/03/2006
Next Scheduled EDR Contact: 07/03/2006
Data Release Frequency: Quarterly

**RAATS:** RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/05/2006
Next Scheduled EDR Contact: 09/04/2006
Data Release Frequency: No Update Planned

**BRS:** Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2003
Date Data Arrived at EDR: 06/17/2005
Date Made Active in Reports: 08/04/2005
Number of Days to Update: 48

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 07/21/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Biennially

**STATE AND LOCAL RECORDS**

**SHWS:** Site Transition List

Contains information on releases of oil and hazardous materials that have been reported to DEP.

Date of Government Version: 04/18/2006
Date Data Arrived at EDR: 05/09/2006
Date Made Active in Reports: 05/26/2006
Number of Days to Update: 17

Source: Department of Environmental Protection
Telephone: 617-292-5990
Last EDR Contact: 08/09/2006
Next Scheduled EDR Contact: 11/06/2006
Data Release Frequency: Quarterly

**SWF/LF:** Solid Waste Facility Database/Transfer Stations

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 04/03/2006
Date Data Arrived at EDR: 05/02/2006
Date Made Active in Reports: 05/26/2006
Number of Days to Update: 24

Source: Department of Environmental Protection
Telephone: 617-292-5989
Last EDR Contact: 05/02/2006
Next Scheduled EDR Contact: 07/31/2006
Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

**LUST:** Site Transition List
Sites within the Releases Database that have a UST listed as its source.

Date of Government Version: 04/18/2006
Date Data Arrived at EDR: 05/09/2006
Date Made Active in Reports: 05/26/2006
Number of Days to Update: 17

Source: Department of Environmental Protection
Telephone: 617-292-5990
Last EDR Contact: 08/09/2006
Next Scheduled EDR Contact: 11/06/2006
Data Release Frequency: Quarterly

**UST:** Summary Listing of all the Tanks Registered in the State of Massachusetts
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 05/12/2006
Date Data Arrived at EDR: 05/16/2006
Date Made Active in Reports: 06/27/2006
Number of Days to Update: 42

Source: Department of Fire Services, Office of the Public Safety
Telephone: 978-567-3715
Last EDR Contact: 05/16/2006
Next Scheduled EDR Contact: 08/14/2006
Data Release Frequency: Quarterly

**LAST:** Leaking Aboveground Storage Tank Sites
Sites within the Releases Database that have a AST listed as its source.

Date of Government Version: 04/18/2006
Date Data Arrived at EDR: 05/09/2006
Date Made Active in Reports: 05/26/2006
Number of Days to Update: 17

Source: Department of Environmental Protection
Telephone: 617-292-5500
Last EDR Contact: 08/09/2006
Next Scheduled EDR Contact: 11/06/2006
Data Release Frequency: Quarterly

**AST:** Aboveground Storage Tank Database
Registered Aboveground Storage Tanks.

Date of Government Version: 05/12/2006
Date Data Arrived at EDR: 05/16/2006
Date Made Active in Reports: 06/27/2006
Number of Days to Update: 42

Source: Department of Public Safety
Telephone: 978-567-3715
Last EDR Contact: 05/16/2006
Next Scheduled EDR Contact: 08/14/2006
Data Release Frequency: Quarterly

**MA SPILLS:** Historical Spill List
The Spills Database was the release notification tracking system for spills that occurred prior to October 1, 1993. This information should be considered to be primarily of historical interest since all of the listed spills have either been cleaned up or assigned new tracking numbers and moved to the Reportable Releases or Sites Transition List databases.

Date of Government Version: 09/30/1993
Date Data Arrived at EDR: 12/03/2003
Date Made Active in Reports: 12/31/2003
Number of Days to Update: 28

Source: Department of Environmental Protection
Telephone: 617-292-5720
Last EDR Contact: 12/03/2003
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

**RELEASE:** Reportable Releases
Contains information on all releases of oil and hazardous materials that have been reported to DEP

Date of Government Version: 04/18/2006
Date Data Arrived at EDR: 05/09/2006
Date Made Active in Reports: 05/26/2006
Number of Days to Update: 17

Source: Department of Environmental Protection
Telephone: 617-292-5990
Last EDR Contact: 08/09/2006
Next Scheduled EDR Contact: 11/06/2006
Data Release Frequency: Quarterly

**INST CONTROL:** Sites With Activity and Use Limitation
Activity and Use Limitations establish limits and conditions on the future use of contaminated property, and therefore allow cleanups to be tailored to these uses.

Date of Government Version: 03/24/2006
Date Data Arrived at EDR: 05/09/2006
Date Made Active in Reports: 05/26/2006
Number of Days to Update: 17
Source: Department of Environmental Protection
Telephone: 617-292-5990
Last EDR Contact: 08/09/2006
Next Scheduled EDR Contact: 11/06/2006
Data Release Frequency: Quarterly

**DRYCLEANERS:** Regulated Drycleaning Facilities
A listing of Department of Environmental Protection regulated drycleaning facilities that use perchloroethylene under the Environmental Results Program.

Date of Government Version: 05/22/2006
Date Data Arrived at EDR: 05/22/2006
Date Made Active in Reports: 06/29/2006
Number of Days to Update: 38
Source: Department of Environmental Protection
Telephone: 617-292-5633
Last EDR Contact: 05/15/2006
Next Scheduled EDR Contact: 08/14/2006
Data Release Frequency: Varies

**ENFORCEMENT:** Enforcement Action Cases
A listing of enforcement action cases tracked by Department of Environmental Protection programs, including Solid Waste and Hazardous Waste.

Date of Government Version: 08/01/2004
Date Data Arrived at EDR: 09/01/2004
Date Made Active in Reports: 10/01/2004
Number of Days to Update: 30
Source: Department of Environmental Quality
Telephone: 617-292-5979
Last EDR Contact: 05/30/2006
Next Scheduled EDR Contact: 08/28/2006
Data Release Frequency: Varies

**AIRS:** Permitted Facilities Listing
A listing of Air Quality permit applications.

Date of Government Version: 06/05/2006
Date Data Arrived at EDR: 06/07/2006
Date Made Active in Reports: 07/17/2006
Number of Days to Update: 40
Source: Department of Environmental Protection
Telephone: 617-292-5789
Last EDR Contact: 05/18/2006
Next Scheduled EDR Contact: 08/14/2006
Data Release Frequency: Varies

**LEAD:** Lead Inspection Database
The Massachusetts Childhood Lead Poisoning Prevention Program data of lead inspection for the state.

Date of Government Version: 08/16/2005
Date Data Arrived at EDR: 10/20/2005
Date Made Active in Reports: 12/01/2005
Number of Days to Update: 42
Source: Department of Health & Human Services, Childhood Lead Poisoning Prevention Progr
Telephone: 617-624-5757
Last EDR Contact: 06/07/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Varies

**TRIBAL RECORDS**

**INDIAN RESERV:** Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 02/08/2005
Date Made Active in Reports: 08/04/2005
Number of Days to Update: 177
Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 05/12/2006
Next Scheduled EDR Contact: 08/07/2006
Data Release Frequency: Semi-Annually

**INDIAN LUST R1:** Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 06/08/2006
Date Data Arrived at EDR: 06/09/2006
Date Made Active in Reports: 06/28/2006
Number of Days to Update: 19

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/24/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Varies

**INDIAN LUST R6:** Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/04/2005
Date Data Arrived at EDR: 01/21/2005
Date Made Active in Reports: 02/28/2005
Number of Days to Update: 38

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 05/24/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Varies

**INDIAN LUST R8:** Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 06/06/2006
Date Data Arrived at EDR: 06/09/2006
Date Made Active in Reports: 07/28/2006
Number of Days to Update: 49

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 05/24/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Quarterly

**INDIAN LUST R10:** Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 06/08/2006
Date Data Arrived at EDR: 06/09/2006
Date Made Active in Reports: 07/28/2006
Number of Days to Update: 49

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/24/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Quarterly

**INDIAN LUST R9:** Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 06/01/2006
Date Data Arrived at EDR: 06/23/2006
Date Made Active in Reports: 08/02/2006
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 05/24/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Quarterly

**INDIAN UST R8:** Underground Storage Tanks on Indian Land

Date of Government Version: 06/06/2006
Date Data Arrived at EDR: 06/09/2006
Date Made Active in Reports: 07/28/2006
Number of Days to Update: 49

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 05/24/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Quarterly

**INDIAN UST R5:** Underground Storage Tanks on Indian Land

Date of Government Version: 12/02/2004
Date Data Arrived at EDR: 12/29/2004
Date Made Active in Reports: 02/04/2005
Number of Days to Update: 37

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 05/24/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Varies

**INDIAN UST R10:** Underground Storage Tanks on Indian Land

Date of Government Version: 06/08/2006
Date Data Arrived at EDR: 06/09/2006
Date Made Active in Reports: 07/28/2006
Number of Days to Update: 49

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/24/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Quarterly

**INDIAN UST R1:** Underground Storage Tanks on Indian Land

A listing of underground storage tank locations on Indian Land.

Date of Government Version: 06/08/2006
Date Data Arrived at EDR: 06/09/2006
Date Made Active in Reports: 06/30/2006
Number of Days to Update: 21

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/24/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Varies

**INDIAN UST R9:** Underground Storage Tanks on Indian Land

Date of Government Version: 06/01/2006
Date Data Arrived at EDR: 06/23/2006
Date Made Active in Reports: 08/02/2006
Number of Days to Update: 40

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 05/24/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Quarterly

**EDR PROPRIETARY RECORDS**

**Manufactured Gas Plants:** EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

**OTHER DATABASE(S)**

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

**CT MANIFEST:** Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 02/17/2006
Date Made Active in Reports: 04/07/2006
Number of Days to Update: 49

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 06/14/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

**NJ MANIFEST:** Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/01/2006
Date Data Arrived at EDR: 07/06/2006
Date Made Active in Reports: 08/01/2006
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/05/2006
Next Scheduled EDR Contact: 10/02/2006
Data Release Frequency: Annually

**NY MANIFEST:** Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 05/02/2006
Date Data Arrived at EDR: 05/31/2006
Date Made Active in Reports: 06/27/2006
Number of Days to Update: 27

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/31/2006
Next Scheduled EDR Contact: 08/28/2006
Data Release Frequency: Annually

**PA MANIFEST:** Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 05/04/2006
Date Made Active in Reports: 06/06/2006
Number of Days to Update: 33

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 06/12/2006
Next Scheduled EDR Contact: 09/11/2006
Data Release Frequency: Annually

**RI MANIFEST:** Manifest information
Hazardous waste manifest information

Date of Government Version: 09/30/2005
Date Data Arrived at EDR: 05/09/2006
Date Made Active in Reports: 05/24/2006
Number of Days to Update: 15

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 06/19/2006
Next Scheduled EDR Contact: 09/18/2006
Data Release Frequency: Annually

**VT MANIFEST:** Hazardous Waste Manifest Data
Hazardous waste manifest information.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 06/29/2006
Date Made Active in Reports: 07/31/2006
Number of Days to Update: 32

Source: Department of Environmental Conservation
Telephone: 802-241-3443
Last EDR Contact: 05/15/2006
Next Scheduled EDR Contact: 08/14/2006
Data Release Frequency: Annually

**WI MANIFEST:** Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 05/02/2006
Number of Days to Update: 46

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 07/25/2006
Next Scheduled EDR Contact: 10/09/2006
Data Release Frequency: Annually

**Oil/Gas Pipelines:** This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

**Electric Power Transmission Line Data**
Source: PennWell Corporation
Telephone: (800) 823-6277

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

**Sensitive Receptors:** There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

**AHA Hospitals:**
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

**Medical Centers: Provider of Services Listing**
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

**Nursing Homes**
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

**Public Schools**
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

**Private Schools**
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

**Scanned Digital USGS 7.5' Topographic Map (DRG)**
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

**STREET AND ADDRESS INFORMATION**

# GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

**TARGET PROPERTY ADDRESS**

WESTOVER AFRC, MA
BLDG 5550, WESTOVER AFB
CHICOPEE, MA 01021

**TARGET PROPERTY COORDINATES**

| | |
|---|---|
| Latitude (North): | 42.192283 - 42° 11' 32.2'' |
| Longitude (West): | 72.558822 - 72° 33' 31.8'' |
| Universal Tranverse Mercator: | Zone 18 |
| UTM X (Meters): | 701574.4 |
| UTM Y (Meters): | 4673796.5 |
| Elevation: | 235 ft. above sea level |

**USGS TOPOGRAPHIC MAP**

| | |
|---|---|
| Target Property Map: | 42072-B5 SPRINGFIELD NORTH, MA |
| Most Recent Revision: | 1979 |

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**GROUNDWATER FLOW DIRECTION INFORMATION**

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

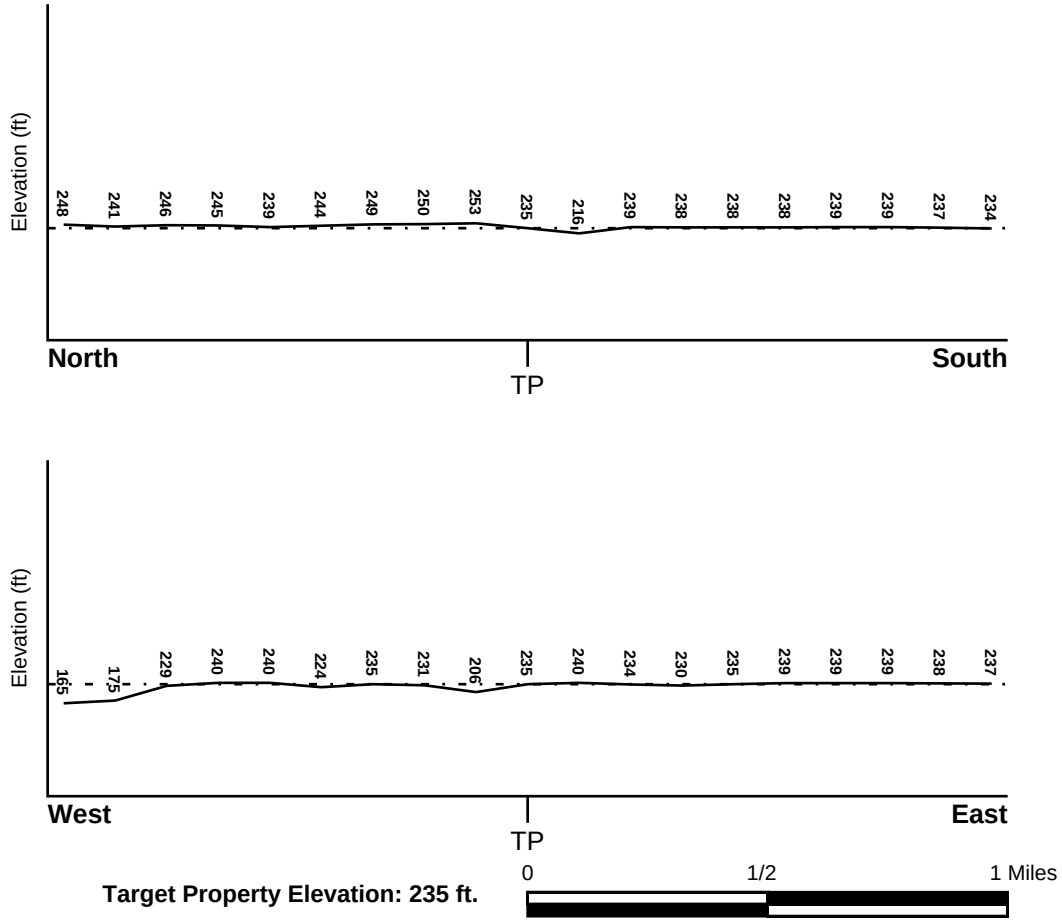
**TOPOGRAPHIC INFORMATION**

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

**TARGET PROPERTY TOPOGRAPHY**

General Topographic Gradient: General South

**SURROUNDING TOPOGRAPHY: ELEVATION PROFILES**




Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**HYDROLOGIC INFORMATION**

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

**FEMA FLOOD ZONE**

| Target Property County | FEMA Flood Electronic Data |
|---|---|
| HAMPDEN, MA | YES - refer to the Overview Map and Detail Map |

Flood Plain Panel at Target Property: 00000000000

Additional Panels in search area: 2501370005A
2501370010A

**NATIONAL WETLAND INVENTORY**

| NWI Quad at Target Property | NWI Electronic Data Coverage |
|---|---|
| SPRINGFIELD NORTH | YES - refer to the Overview Map and Detail Map |

**HYDROGEOLOGIC INFORMATION**

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

**AQUIFLOW®**

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

| MAP ID | LOCATION FROM TP | GENERAL DIRECTION GROUNDWATER FLOW |
|---|---|---|
| Not Reported | | |

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**GROUNDWATER FLOW VELOCITY INFORMATION**

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

**GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY**

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

**ROCK STRATIGRAPHIC UNIT**

| | |
|---|---|
| Era: | Mesozoic |
| System: | Triassic |
| Series: | Triassic |
| Code: | Tr *(decoded above as Era, System & Series)* |

**GEOLOGIC AGE IDENTIFICATION**

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

**DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY**

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: URBAN LAND

Soil Surface Texture: variable

Hydrologic Group: Not reported

Soil Drainage Class: Not reported

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 10 inches

Depth to Bedrock Max: > 10 inches

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | | |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | Permeability Rate (in/hr) | Soil Reaction (pH) |
| 1 | 0 inches | 6 inches | variable | Not reported | Not reported | Max: 0.00<br>Min: 0.00 | Max: 0.00<br>Min: 0.00 |

**OTHER SOIL TYPES IN AREA**

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: fine sandy loam
silt loam
very fine sandy loam

Surficial Soil Types: fine sandy loam
silt loam
very fine sandy loam

Shallow Soil Types: No Other Soil Types

Deeper Soil Types: fine sandy loam
channery - silt loam
gravelly - loamy sand
silt loam
loamy fine sand
stratified
gravelly - sandy loam

**LOCAL / REGIONAL WATER AGENCY RECORDS**

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

**WELL SEARCH DISTANCE INFORMATION**

| DATABASE | SEARCH DISTANCE (miles) |
|---|---|
| Federal USGS | 1.000 |
| Federal FRDS PWS | Nearest PWS within 1 mile |
| State Database | 1.000 |

**FEDERAL USGS WELL INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| No Wells Found | | |

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION**

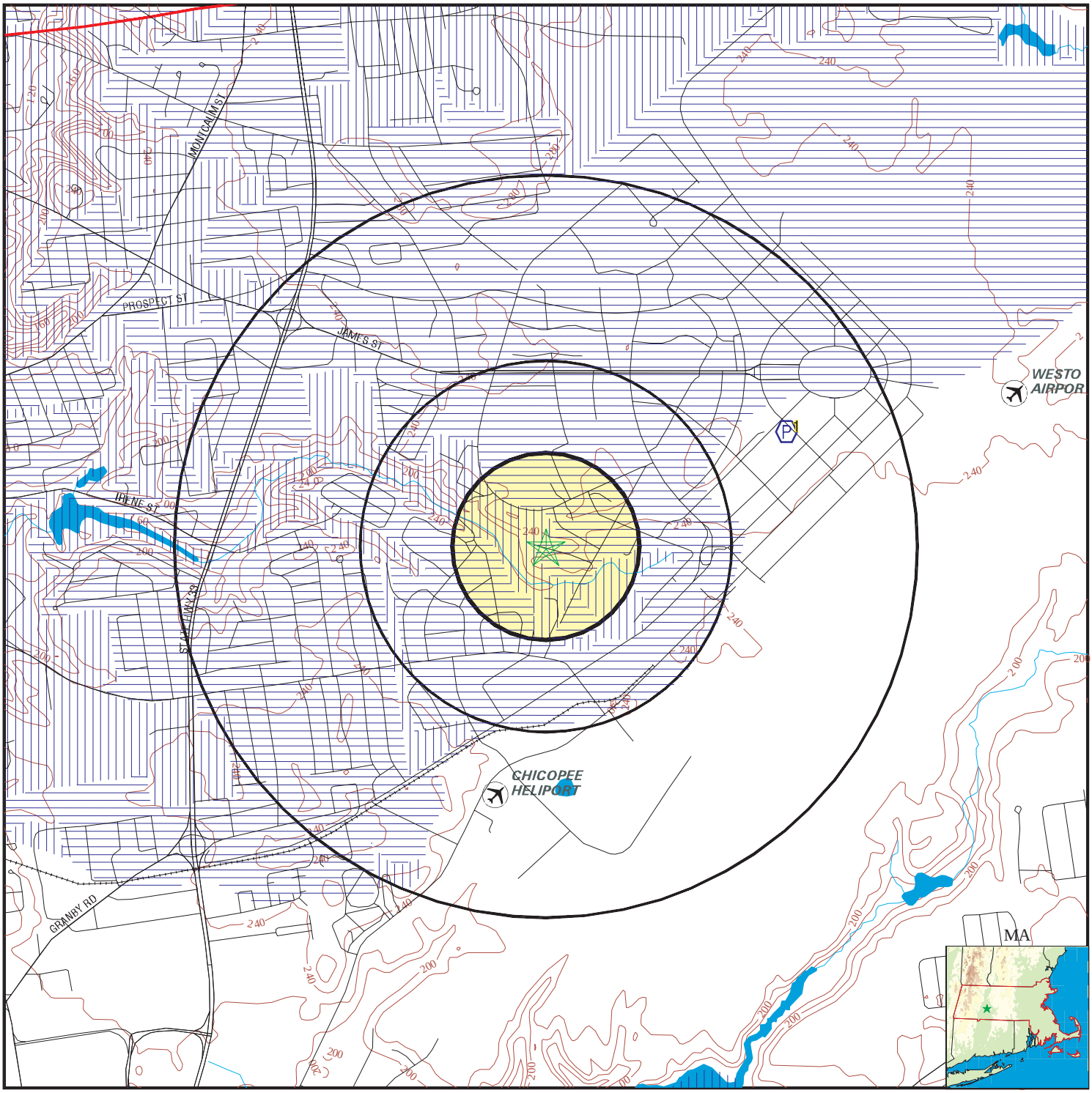
| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| 1 | MA1008007 | 1/2 - 1 Mile ENE |

Note: PWS System location is not always the same as well location.

**STATE DATABASE WELL INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| No Wells Found | | |

# PHYSICAL SETTING SOURCE MAP - 01725083.44r




- County Boundary
- Major Roads
- Contour Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- Potentially Productive Aquifers
- Not Potentially Productive Aquifers
- DEP Approved Zone IIs
- EPA Designated Sole Src. Aq.

| | | | |
|---|---|---|---|
| SITE NAME: | Westover AFRC, MA | CLIENT: | CH2M Hill |
| ADDRESS: | BLDG 5550, WESTOVER AFB<br>CHICOPEE MA 01021 | CONTACT: | Mary Beth Jacques |
| LAT/LONG: | 42.1923 / 72.5588 | INQUIRY #: | 01725083.44r |
| | | DATE: | August 10, 2006 |

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

| | Database | EDR ID Number |
|---|---|---|
| **1**<br>**ENE**<br>**1/2 - 1 Mile**<br>**Higher** | **FRDS PWS** | **MA1008007** |

| | | | |
|---|---|---|---|
| PWS ID: | MA1008007 | PWS Status: | Active |
| Date Initiated: | 7906 | Date Deactivated: | Not Reported |
| PWS Name: | MASS. D.E.M. STATE FOREST<br>KEN DUBUQUE BOX 484<br>AMHERST, MA 01022 | | |
| Addressee / Facility: | Not Reported | | |
| Facility Latitude: | 42 11 48 | Facility Longitude: | 072 32 48 |
| City Served: | Not Reported | | |
| Treatment Class: | Untreated | Population: | 00000025 |

PWS currently has or had major violation(s) or enforcement: No

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
# RADON

**AREA RADON INFORMATION**

State Database: MA Radon

Radon Test Results

| County | % of sites>4 pCi/L | Median |
|---|---|---|
| HAMPDEN | 11 | 1.3 |

Federal EPA Radon Zone for HAMPDEN County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

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Federal Area Radon Information for HAMPDEN COUNTY, MA

Number of sites tested: 108

| Area | Average Activity | % <4 pCi/L | % 4-20 pCi/L | % >20 pCi/L |
|---|---|---|---|---|
| Living Area - 1st Floor | 0.717 pCi/L | 100% | 0% | 0% |
| Living Area - 2nd Floor | Not Reported | Not Reported | Not Reported | Not Reported |
| Basement | 2.008 pCi/L | 90% | 9% | 1% |

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

**USGS 7.5' Digital Elevation Model (DEM)**
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

**Scanned Digital USGS 7.5' Topographic Map (DRG)**
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

## HYDROLOGIC INFORMATION

**Flood Zone Data:** This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

**NWI:** National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

## HYDROGEOLOGIC INFORMATION

**AQUIFLOW$^{R}$ Information System**
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

**Geologic Age and Rock Stratigraphic Unit**
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

**STATSGO:** State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

**SSURGO: Soil Survey Geographic Database**
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

### FEDERAL WATER WELLS

**PWS:** Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

**PWS ENF:** Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

**USGS Water Wells:** USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

### STATE RECORDS

**Massachusetts Geographic Information System (MassGIS) Datalayers**
Source: Executive Office of Environmental Affairs

**Public Water Supply Database:** The Public Water Supply datalayer contains the locations of public community surface and groundwater supply sources and public non-community supply sources as defined in 310 CMR 22.00.

## OTHER STATE DATABASE INFORMATION

**Areas of Critical Environmental Concern Datalayer:** The Areas of Critical Environmental Concern (ACEC) datalayer shows the location of areas that have been designated ACECs by the Secretary of Environmental Affairs. ACEC designation requires greater environmental review of certain kinds of proposed development under state jurisdiction within the ACEC boundaries. The ACEC Program is administered by the Department of Environmental Management (DEM) on behalf of the Secretary of Environmental Affairs. The Massachusetts Coastal Zone Management (MCZM) Office managed the original Coastal ACEC Program from 1978 to 1993, and continues to play a key role in monitoring coastal ACECs. Procedures for ACEC designation and the general policies governing the effects of designation are contained in the ACEC regulations (301 CMR 12.00). The ACEC datalayer has been compiled by MCZM and DEM and includes both coastal and inland areas.

**EPA Designated Sole Source Aquifers Datalayer:** The Sole Source Aquifer datalayer was compiled by the Department of Environmental Protection (DEP) Division of Water Supply (DWS). Seven Sole Source Aquifers have been designated by the US Environmental Protection Agency (EPA) for Massachusetts. A Sole Source Aquifer (SSA) is an aquifer designated by US EPA as the sole or principal source of drinking water for a given aquifer service area; that is, an aquifer which is needed to supply 50% or more of the drinking water for that area and for which there are no reasonably available alternative sources should that aquifer become contaminated. The aquifers were defined by a EPA hydrogeologist.

**Aquifers Datalayer:** MassGIS produced an aquifer datalayer composed of 20 individual panels, generally based on the boundaries of the major drainage basins. Areas of high and medium yield were mapped. This datalayer includes polygon attribute coding to help in the identification of areas in which cleanup of hazardous waste sites must meet drinking water standards, as defined in the Massachusetts Contingency Plan (MCP) (310 CMR 40.00000).

**DEP Approved Zone IIs Datalayer:** The Department of Environmental Protection (DEP) approved Zone IIs datalayer was compiled by the DEP Division of Water Supply (DWS). The database contains 281 approved Zone IIs statewide. As stated in 310 CMR 22.02, a Zone II is "that area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be realistically anticipated (180 days of pumping at safe yield, with no recharge from precipitation.) It is bounded by the groundwater divides which result from pumping the well and by the contact of the aquifer with less permeable materials such as till or bedrock. In some cases, streams or lakes may act as recharge boundaries. In all cases, Zone IIs shall extend up gradient to its point of intersection with prevailing hydrogeologic boundaries (a groundwater flow divide, a contact with till or bedrock, or a recharge boundary)." These data are used in association with the Public Water Supplies datalayer. The following describes certain unique features of this association.

- Any proposed new well which will pump at least 100,000 gallons per day must have a Zone II delineation completed and approved by DEP prior to the well coming on line.
- Additionally, a new source may not be on-line yet, but other, older wells may fall within its Zone II boundary.
- Further, existing wells must have a Zone II delineated as a condition of receiving a water withdrawal permit under the Water Management Act.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

**RADON**

**State Database: MA Radon**
Source: Department of Health
Telephone: 413-586-7525
Radon Test Results

**Area Radon Information**
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

**EPA Radon Zones**
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

**OTHER**

**Airport Landing Facilities:** Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

**Epicenters:** World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

**STREET AND ADDRESS INFORMATION**