ENVIRONMENTAL ASSESSMENT

INSTALLATION OF THERMALLY STABLE JET FUEL (JPTS) ABOVE GROUND STORAGE SYSTEM WESTOVER AIR RESERVE BASE CHICOPEE, MASSACHUSETTS

JUNE 30, 2004

PREPARED FOR:

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Finding of No Significant Impact (FONSI)

Installation of Thermally Stable Jet Fuel (JPTS) Above Ground Storage System

Westover Air Reserve Base (WARB), Chicopee, Massachusetts

Description of the Proposed Action

The decision to be made is whether to permit installation of a new JPTS Above Ground Storage System at Westover ARB. Design of the storage system shall consist of (2) 10,000 gallon above ground fuel storage tanks and associated hardware. Analysis of the environmental consequences of implementing this proposed action is addressed in the attached environmental assessment.

Anticipated Environmental Impacts

The primary environmental concerns associated with the proposed action are potential releases to air, water, or soil from the storage, controlled delivery, and dispensing of fuel at the proposed new facility. The engineering designs, construction standards, and facility operations shall include prudent safeguards to insure that any potential risks are mitigated and that all design and operation safeguards are employed to insure the safe delivery, storage and dispensing of fuel.

Preventative Measures

Preventative measures shall include project design and construction in accordance with the American Petroleum Institute and the National Fire Protection Association Standards, including double-walled piping, overfill protection, leak detection, alarm systems and double-walled tanks for leak containment. A site-specific contingency plan shall be established to prevent and respond to spills.

Site Characteristic Survey Clearance

A site characteristic survey of the proposed facility site was conducted through the review of regulatory compliance documents available from the Installation Restoration Program for Site SS-16. The results of this survey revealed the proposed site currently has soil and groundwater contaminated with petroleum hydrocarbons. Environmental evaluations of the site and available data do not indicate any need for further site surveys at this time.

Conclusions leading to a FONSI

The Environmental Assessment prepared addresses the potential adverse impacts and supports the conclusion that implementation of the proposed action would not result in significant impact to the environment.

In accordance with the Council on Environmental Quality regulations implementing the *National Environmental Policy Act* of 1969, as amended, and the *Air Force Environmental Impact Analysis Process*, 32 CFR 989, an assessment of the identified environmental effects has been prepared for construction and operation of a JPTS Above Ground Storage System at Westover ARB. I have determined that the action will have no

significant impact on the quality of the human environment. Thus, an Environmental Impact Statement is not required.

Approved on 27 Oct 04 **, 2004**

WALLACE W. FARRIS, JR., Colonel, USAFR
Commander, 439th Airlift Wing

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1.0 – Purpose of and Need for Proposed Action

At the request of Westover Air Reserve Base (WARB), Massachusetts, TEC Environmental Consulting, Inc. (TEC) has completed an environmental assessment of the proposed project which consists of the installation of permanent above ground storage facilities for fuel in order to augment the use of temporary storage to satisfy the special mission requirements.

1.1 – Proposed Action

The United States Air Force proposes to install a new Thermally Stable Jet Fuel (JPTS) Above Ground Storage system at WARB. This environmental assessment was conducted to aid in this decision and has been prepared pursuant to the National Environmental Policy Act.

1.2 – Purpose of and Need for Proposed Action

WARB is required to maintain a total inventory of 30,000 gallons of JPTS to support special mission requirements. Present storage is limited to two (2) R-11 refueling vehicles with a total storage capacity of 12,000 gallons. At this time storage capacity does not meet special mission requirements; additional bulk tanker trucks are necessary when special mission requirements exceed the current R-11 storage capacity.

1.3 – Location of the Proposed Action

The proposed facility siting is in an area of WARB known as the Hanger Apron Area, Installation Restoration Program Site SS-16, located on approximately 12 acres in the south central area of the base. Taxiways border the site on the southeast and southwest, and the runway is located immediately southeast of the site. The majority of the site is either covered with structures or paved surfaces.

Site SS-16 consists of two hangars (designated as 7000 & 7040), several pump houses (designated Buildings 7700, 7701 & 7705), underground and aboveground fuel storage tanks, ramps, the hangar apron, taxiways, and grassy areas. The majority of the Hanger Apron Area is paved with reinforced concrete approximately 2-feet in thickness. The proposed location of the JPTS Ground Storage System is approximately 150 feet southeast of Pumphouse Building 7705, approximately 250 feet south of Pumphouse Building 7700, and approximately 200 feet southwest of Pumphouse Building 7701.

1.4 – Scope of the Environmental Review

This Environmental Assessment will document, summarize and accurately describe, to the extent such information is available, the environmental condition to include environmental related factors of the land, facilities, and other real property assets for the specified location. The following issues have been identified with regard to siting the proposed facility, all of which are addressed in this Environmental Assessment:

- The proposed action would result in the development of less than one-acre of property on the base;
- The proposed facility would have potential adverse impacts to the environment in the event of an uncontrolled release of jet fuel;
- Additionally, fugitive emissions from the fuel as a source of volatile organic compounds could adversely impact the atmospheric air quality;

The potential for the presence of lead-based paint, asbestos, radon or any issue regarding wetlands adjacent to the property have not been considered as part of this assessment. In addition, no soil and / or groundwater samples were collected or analyzed as part of this assessment.

1.5 – Applicable Regulatory Requirements

Permit approvals for the proposed facility will be coordinated through the local fire department representing the State of Massachusetts Department of Public Safety. If the project is approved and implemented, the existing National Pollution Discharge Elimination System (NPDES) permit for WARB must be amended to accept drainage from a proposed storm drain for this type of project.

The development of this facility will also necessitate an amendment to the base Storm Water Pollution Prevention Plan as necessary.

The fuel storage inventories will be maintained for the purpose of the Emergency Planning and Community Right to Know Act as required.

The normal operation of the proposed facility will also create a source of volatile organic compound emissions in the base's Air Operating Permit.

2.0 – Description of the Proposed Action and Alternatives

2.1 – Description of the Proposed Action

The proposed action is to procure and install two (2) 10,000 gallon JPTS above ground jet fuel storage tanks with R-11 refueler filling capability. The storage tanks will each have their own integral secondary containment system (double walled tanks), with leak detection alarms. The system shall include overfill protection, high/low level sensors, a two-inch manual gauging access port with a lockable cap, a ground readable volume gauge, a weather tight and lockable 36" ingress manhole, a 300 gallon per minute jet-fuel pumping system, and jet-fuel separator/coalescing filters. Also tank-to-tank manifold piping will be installed along with all the necessary valves, hoses, and connections for individual tank receipt, issue, rotation and sampling.

The description of the proposed facility is detailed in design drawings and specifications in the Civil Engineering office at WARB.

2.2 – No Action Alternative

The no action alternative would result in a continuation of the current conditions and refueling operations. In this case WARB's mission support capability for Special Missions will be greatly restricted.

2.3 – Alternatives to the Proposed Action

No alternatives have been proposed for the action. Alternative siting could be considered but would only be feasible in the immediate vicinity of the fueling operation facilities. Since the existing R-11 storage area has been chosen for the proposed action location, the potential for adverse impact to this area will not significantly change. Current R-11 storage was chosen due to the proximity and ease of use to meet the fueling objectives for special mission requirements; therefore, alternative siting has not been considered.

2.4 – Impacts of the Proposed Action

Implementing the proposed action would result in the installation of a JPTS Ground Storage System with an increase of 20,000 gallons in total JPTS storage capacity from 12,000 gallons to 32,000 gallons. The primary environmental consideration is to prevent an uncontrolled release of the jet fuel from the facility. Uncontrolled releases could have a potential adverse impact to the receiving waters of Cooley Brook, the Chicopee State Park reservoir, and possibly the Chicopee and Connecticut River basins. Standard fuel safety handling procedures

and construction standards will provide the necessary means to prevent uncontrolled releases. The inclusion of the proposed facility into the base Stormwater Pollution Prevention Plan will result in a spill prevention and contingency plan specific to the facility.

2.5 – Impacts of the Alternatives

A continuation of the current operations is in compliance with appropriate environmental regulations; however, the no action alternative would result in the inability of WARB to meet its Special Mission support requirements.

3.0 – The Affected Environment

3.1 – Location and History of Westover Air Reserve Base

According to the current USGS Springfield North Topographic Quadrangle Map (USGS, 1972, revised / inspected in 1979) the Site is located at latitude 42°11'23.7" north and longitude 72°32'45.4" west. Westover is located in the City of Chicopee in the northern portion of Hampden County, Massachusetts. The base was constructed at the beginning of World War II as a training base in support of the war effort. According to available records and city directories, prior to 1939 the area was utilized for agriculture, including tobacco cultivation. In 1974 Westover changed from Strategic Air Command to an Air Force Reserve unit with C-123 aircraft, then to a Reserve Tactical Airlift Wing with C-130 aircraft assigned. In 1987 the C5-A aircraft mission bed-down conversion occurred and the base operates as an Airlift Wing to date.

3.2 – Installation Environmental Management Program

For the purpose of this Environmental Assessment, the primary Air Force programs in place to insure the safe operation of the proposed facility are as follows. The Petroleum, Oil and Lubrication (POL) protocol of the Environmental Compliance and Management Program (ECAMP) as implemented by the base fuels officer (LGSF), Liquid Fuels Maintenance (LFM), and the Environmental Engineering Flight (CEV) within base Civil Engineering. In addition to the state and federal environmental regulations, the Air Force Fuels Office and the Defense Logistics Agency Defense Fuels Office provide oversight of bulk fuels storage and dispensing operations.

3.21 – INSTALLATION RESTORATION PROGRAM

The Hanger Apron Area is listed as Massachusetts Department of Environmental Protection (MADEP) disposal site RTN: 1-0000854 as well as part of Westover's Installation Restoration Program (SS-16). The site has a history of hazardous material releases leading to soil and groundwater contamination with petroleum hydrocarbons. The Hangar Apron Area has been impacted by several releases of Oil or Hazardous Material (OHM) from storage tanks, the most recent and notable being a reported release of approximately 1,030 gallons of JP-8 jet fuel from a ruptured 4,000-gallon underground storage tank (UST) in the area of pumphouse 7705 on April 27, 1998. A significant spill of approximately 2,200 gallons of JP-4 jet fuel also occurred in lateral control pit 34 in 1988. Contamination from aviation gas and gasoline fuels is a result of leaking USTs in the Aqua System Site (SS-19) to the north. Volatile petroleum hydrocarbon (VPH) contamination from the Aqua System Site has migrated south via groundwater flow from its original source area and has commingled with contamination from sources in the Hangar Apron Area. This site is classified in accordance with the regulatory requirements as a Tier 1A site and is currently in Phase III of the state regulatory process.

The groundwater beneath the subject site has been contaminated with non-aqueous phase petroleum as a result of the 1998 release of JP-8. In September and October 1998 up to 19.5 inches of non-aqueous phase petroleum product were measured in monitoring wells on the site. A Release Abatement Measure (RAM) consisting of a product recovery system was installed at the site in May 1999 and operated until October 1999 when the system was shut down because it was not functioning effectively due to the high water table.

During operation the system removed approximately 220 gallons of free product. Additional groundwater monitoring wells were installed in 2002 for the purpose of measuring the thickness of the free product remaining at the site. Measurements from the additional wells were collected during two gauging rounds in December 2002. No free product was detected during either gauging round in any of the monitoring wells at the site. Field investigations suggest that the petroleum as free product has either adsorbed to soil particles or dissolved into the groundwater at the site.

The objectives of Phase III are to evaluate and choose a remediation alternative to reduce the risk of harm the site poses to public health, safety, welfare and the environment.

According to a Phase III Remedial Action Plan (RAP) dated May 2003 an in-situ enhanced bioremediation plan will be implemented to reduce the concentrations of VPH that are present in soils in the groundwater saturated zone and in groundwater. This will be achieved by the injection of oxygen releasing compound (ORC) within the source areas and downgradient within the contaminated groundwater plume. This ORC application will be completed prior to JPTS tank siting. Tank siting will be completed in a manner such that these proposed facilities will not impair or preclude the completion of additional response actions at this site.

3.3 – Geological Resources

According to the current USGS Springfield North Topographic Quadrangle Map (USGS, 1972, revised / inspected in 1979), the site is situated approximately 240 feet above mean sea level. The Former Chicopee Reservoir (no longer used for drinking water) is located approximately 6,000 feet south of the site, and the Chicopee River is located approximately 2 miles south of the site. Visual observations reveal that the Site topography is relatively flat. The topography of the surrounding area is relatively flat to the north, east and west of the site; however south of the site topography begins a steeper slope downward to the Chicopee Reservoir and the Chicopee River.

According to published information in the Natural Resources Conservation Service, Soil Survey of the area, the soil at the project location is classified as Ub-Urban land. This area has been so altered or obscured by urban works and structures that identification is impossible. According to the *USAF Management Action Plan, WARB, July 1998*, WARB is generally located on the surface of a Pleistocene outwash delta that was constructed by glacial meltwater associated with the glacial Chicopee delta.

3.4 – Surface Water Resources

Surface water flow from WARB is derived from a variety of sources including storm water runoff and overland or sheet flow from wooded and filled areas. WARB has nine outfalls where the stormwater collection systems exit the base. Stormwater also infiltrates storm waters on gentle land slopes underlain by pervious soils derived from glacial outwash. Surface stormwater flow on the base flows into three separate drainage basins. Stormwater from the northern half of the base flows into the wetlands of Stony Brook, a tributary of the Connecticut River in South Hadley. Surface stormwater from the southern half of the base flows

either into Cooley Brook (to the east), a tributary of the Chicopee River, or into Willimansett Brook, which flows to the Connecticut River to the west.

Stormwater in the proposed project area is directed to the southerly stormwater collection system, which discharges into Cooley Brook. According to the *Environmental Assessment, Explosive Ordnance Disposal Training Facility and Munitions Complex, WARB, August 2003*, surface waters are not used for any industrial, domestic or municipal purpose.

3.5 – GROUNDWATER RESOURCES

According to the *USAF Management Action Plan, WARB, July 1998; and, the Final Supplemental Environmental Impact Statement, Military and Civil Aircraft Operations at WARB, January 1995*, groundwater in the project area is primarily contained in the shallow delta outwash plain aquifer that underlies WARB. This unconfined aquifer lies above glacio-lacustrine fine-grained sediments (silts and clays). Groundwater is located approximately 15 to 19 feet below grade and flows beneath the subject site in a southeasterly direction. Groundwater beneath the project area is not used to supply WARB with drinking water and this shallow aquifer is classified as a non-potential drinking water source area (GW3 as defined in 310 CMR 40.0006). A deeper confined aquifer, about 150 feet below the surface, is used by nearby residences as a source of drinking water. This aquifer is separated from the shallow aquifer by a 60-foot aquitard of low permeability clays. The drinking water wells in this deep aquifer are located off of the base. The groundwater in the shallow aquifer that underlies The Hangar Apron Area has been impacted by several releases of OHM from storage tanks.

3.6 – AIR RESOURCES

WARB is located in the Hartford-New Haven-Springfield Interstate Air Quality Control Region (AQCR), which is USEPA's AQCR NO. 42. This region is currently classified as being in serious non-attainment for ozone, and in attainment for nitrogen oxides and sulfur oxides (USEPA, 2002).

WARB generates air emissions from mobile sources (primarily aircraft) and stationary sources (boilers, emergency generators, and aircraft refueling operations). The aircraft operations consist of a mixture of C-5 and civil aircraft; these contribute 70 percent of the total mobile air emissions. The remainder of mobile emissions on the base comes from motor vehicles. Even though WARB actual emissions are below the major source threshold, it is considered a major source for emissions due to the bases potential to emit. The base has

demonstrated stationary emissions below planning thresholds for nitrogen oxides (NOx), sulfur oxides (SOx), and volatile organic compounds (VOCs) since 1989 and has restricted emissions status.

4.0 – Environmental Consequences

Implementing the proposed action would not be considered a detriment to the base mission with regards to adverse environmental impact. The proposed facility safeguards and operations in accordance with the American Petroleum Institute, National Fire Protection Agency, Air Force Fuels handling standards and compliance with the applicable environmental regulations are considered sufficient to operate without undue harm or unacceptable risk to the environment. These precautionary measures will reduce the risks associated with an uncontrolled spill from the fuel storage and dispensing operations during special mission support.

4.1 – Geological Resources

Geological resources are limited, non-renewable earth resources whose characteristics can easily be degraded by physical disturbances. Impacts to geological resources would result primarily from disturbing the ground during construction activities. These activities would affect a shallow layer of the underlying geology including soils. The proposed action would result in less than one acre being disturbed and impacts to soil and geology would be insignificant. Uncontrolled releases could have a potential adverse impact to the soils underlying the site. The primary environmental consideration is to prevent an uncontrolled release of the jet fuel from the facility. Standard fuel safety handling procedures and construction standards would provide the necessary means to prevent uncontrolled releases.

4.2 – Surface Water Resources

Uncontrolled releases could have a potential adverse impact to the receiving waters of the Cooley Brook, the Chicopee State Park reservoir, and possibly the Connecticut River basin. The primary environmental consideration is to prevent an uncontrolled release of the jet fuel from the facility. Standard fuel safety handling procedures and construction standards would provide the necessary means to prevent uncontrolled releases.

Stormwater in the JPTS Ground Storage area will pass through an oil/water separator prior to being combined with other stormwater, which discharges into

Cooley Brook. The Westover National Pollution Discharge Elimination System (NPDES) permit for connecting a storm drain for this type of facility must be amended at the completion of the project. The proposed facility would also be included as an amendment to the base Storm Water Pollution Prevention Plan.

4.3 – Groundwater Resources

Groundwater in the project area is primarily contained in the shallow delta outwash plain aquifer that underlies WARB. The groundwater within the shallow aquifer at the site is known to be contaminated with petroleum hydrocarbons. A Remedial Action Plan (RAP) has been proposed and will be implemented in the area of the proposed project. The primary environmental consideration is to prevent future uncontrolled releases of the jet fuel from the facility.

Uncontrolled releases would have a potential adverse impact to the groundwater underlying the site, the receiving waters of the Cooley Brook, the Chicopee State Park reservoir, and possibly the Connecticut River basin. Standard fuel safety handling procedures and construction standards would provide the necessary means to prevent uncontrolled releases. These measures will be outlined in more detail in the amendment to the NPDES permit and Storm Water Pollution Prevention Plan.

4.4 – Air Resources

There would be increased emissions from heavy equipment and worker vehicles used during the construction of ground storage system, but there would be only insignificant impacts to air quality because no federal, state, or local pollution standard or regulation would be violated.

Fugitive emissions from the evaporation of JPTS are considered relatively minor in relation to the base capacity to emit because of the relatively low vapor pressure of the jet fuel. The new facility would be included in any base Air Operating Permit pursuant to the current Clean Air Act Amendments as required.

TEC Environmental Consulting, Inc. has not performed any soil or groundwater sampling to evaluate whether on-site or off-site current or historic uses have impacted the subject property and therefore, the scope and findings of this assessment are limited accordingly.

In accordance with TEC's "Terms and Conditions", the findings of this investigation are limited by the scope of work and information made available to TEC.

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