

Addison Airport - Underground Fuel Storage Tank
Removal

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**Recommendations and Scope of Work
For
Bulk Fuel Storage and Dispensing Facility
And
Underground Fuel Storage Tank Removal**

**Prepared for Addison Airport
Addison, Texas**

1. Tasking:

The Town of Addison requested Washington Infrastructure to perform a review, make recommendations and develop the scope of work for design of a replacement Bulk Fuel Storage Facility. The design and subsequent construction is to be accomplished in conjunction with the removal of all existing Underground Fuel Storage Tanks, as specified in the to be developed and approved Underground Fuel Storage Tank Removal Plan.

2. References:

Addison Airport ALP (Barnard Dunkelberg & Co), dated May 1999, and Addison Airport 10 year CIP (Shimek, Jacobs & Finklea, LLP), dated Feb 2000
Phase I Environmental Site Assessment Update (Camp Dresser & McKee), dated Feb 1, 2001
Addison Airport Development Drawing (Washington Infrastructure), dated Oct 30, 2000.

3. Background:

Although the Capital Improvement Program (CIP) for Addison Airport, does not specifically address an upgrade or replacement Bulk Fuel Storage and Dispensing facility, the current status and regulatory requirements for the numerous underground fuel storage tanks on Airport property mandate action. The referenced Phase I Environmental Site Assessment indicates a need to control bulk fuel storage and dispensing, including the installation of environmental protection and spill prevention systems, along with the necessity of bringing the Airport into compliance with the current Underground Storage Tanks (UST) requirements. A do nothing alternative is not discussed because of the mandated upgrades required for the systems and because closing the airport is not considered a reasonable or viable option.

4. Discussion: Centralized Bulk Fuel Storage and Dispensing versus Decentralized

The existing decentralized bulk fuel storage and dispensing systems are convenient for the tenant operators on the Airport. However, as indicated in the Phase I Environmental Assessment, and subsequent actions by the Airport's insurance carrier, environmental and spill prevention controls, along with operational and spill response accountability are not up to current requirements or standards. As the Airport property owner, the Town of Addison is responsible for oversight and management of environmental requirements and will face increased liability for poor management practices. In comparing the convenience of decentralized bulk fuel storage and dispensing facilities versus a centralized system on the Airport, a centralized system allows for better security and effective management and monitoring of operations as well as the installation of standardized storage systems with appropriate environmental and spill prevention controls. In addition, a new centralized system

could be constructed in a large berm/diked containment area that would prevent catastrophic tank leakage and fuel release. A centralized system also allows the installation of spill collections systems under the bulk fuel unload and dispensing stands, to safely collect inadvertent spills into an oil/water separator. Finally, the cost of retrofitting appropriate environmental and spill prevention controls, plus the cost to either install double wall underground fuel storage tanks with leak detection, or the area and cost to berm/dike new single wall above ground fuel storage tanks at each decentralized location, makes a centralized storage and dispensing facility a more cost effective alternative.

Recommendation Number 1: The Town of Addison and the Airport mandate that all bulk fuel storage and dispensing systems on the Airport are to be constructed in a centralized location with the appropriate containment and spill collection systems.

5. Proposed Location for a new Centralized Bulk Fuel Storage and Dispensing Facility:

A proposed location for the "Future Fuel Farms" was identified on the May 1999 Airport Layout Plan (ALP); however, the site is not currently owned by the Airport. In addition, questions of land use and zoning compatibility could be raised, since the surrounding area and facilities are commercial/business, not industrial and aircraft refuel truck access to the aircraft parking areas could be a problem. Some concerns may also be raised about large over the road tanker trucks accessing the site for bulk fuel delivery. Several alternative locations are possible; however, for existing property owned by the Airport, a new proposed location was identified on the North side of the airport, from the intersection of Bent Tree Plaza, along Westgrove Road, adjacent to the Town Servicing Yard and Facilities. Construction would be outside the existing east Runway Obstacle Free Area line, but inside the 20 foot Building Restriction Line, which will make height of facilities a factor for design. The location is compatible with the Town Servicing Yard activities and also provides an opportunity to install a Town use, gas/diesel vehicle dispensing pump, while providing for bulk storage within the Airport site. The greatest disadvantage of the location is that construction heights will be limited and the site is in the proposed "Future Approach" Runway Protection Zone. Construction of the Bulk Fuel Storage Facility on this site will preclude upgrading Runway 15, as listed on the May 1999 ALP, to a higher category precision instrument approach.

Recommendation Number 2:

None yet. Determine if the proposed site is viable for the system or if it violates FAA guidelines for the current ILS approach.

6. Airport Ownership versus Supplier Ownership of Storage Tanks and Dispensing Equipment:

The key factors to consider in determining ownership of the storage tanks and dispensing equipment include available funds, risk management, desire and ability to maintain the system and stability of the users. If the Town/Airport has sufficient funding available and desires to make the up-front investment in a new storage and dispensing system, they can recover the investment by long term leasing of storage and dispensing to users. The advantages are construction of standardized storage tanks and dispensing equipment, common operation and maintenance procedures, and if any user develops financial problems, the storage and

equipment is owned by the Airport and will not be included in any bankruptcy proceedings. The disadvantages are that the Town/Airport must maintain the tanks and equipment either by contract or with in house personnel, and the Airport keeps liability for the storage tanks and dispensing equipment, along with the site. If the Tenant/FBO/Supplier installs the bulk storage and dispensing equipment, installed items should be specified and approved by the Airport for standardization of tank size, material and construction, along with commonality of dispensing equipment. If tank and dispensing equipment is provided and installed by the Tenant/FBO, lease documents should provide for immediate acquisition by the Airport at the amortized value of the equipment if the operator develops financial problems.

Recommendation:

7. Single bulk fuel storage system versus multi-supplier system

A single bulk fuel storage and dispensing system is the most efficient from a cost and space utilization perspective; however, if a single system is used to supply all users of the Airport, then the system should be owned by the Airport. This will also require the Airport to competitively bid the total airfield fuel requirement on an annual or biennial basis and all users must purchase from this supply. The advantages are generally a lower per gallon price and a stable price to the user over the life of the supply contract; however, with market fluctuation, if the cost per gallon declines after the contract, the user will still pay the same. In short, the Airport is buying all fuels and the users buy fuels from the Airport and there is no competition after the Airport contracts for the best price available at time of contract. Since there is no market competition after contract, if the price of fuel goes up, it's a good deal and if it goes down, the contract becomes a poor deal. Current FBO arrangements with branded fuel suppliers could be impacted by a single fuel storage operation. The decision to take the Airport into the aviation fuel market as a supplier should be carefully considered by Airport and Town management.

8. Bulk fuel storage system Options:

• **Combined Use Storage Facility with Shared Off-Load/Dispensing Facility**

This option may be the best option in terms of space use and total cost. With a combined use storage facility, one large fuel storage complex could be designed with secondary containment designed for the largest storage tank in the complex. This method allows maximum flexibility for future needs and provides for maximum storage capacity in the minimum area used. The shared on-load/dispensing equipment also economizes on space use as well as cost, since only one storage and dispensing system is constructed. The storage tanks would use a card or key system to track withdrawal from the system by each user. This system would work with one supplier, competitively bid by the Airport, for all airport users. Some disadvantages of this system is that all users share the facility, which could be an operational/maintenance problem, which will be an Airport responsibility, and there is increased liability risk to the Airport. If a spill occurs, it also may be more difficult to track responsibility.

• **Combined Use Off-Load and Storage Facility with Individual Dispensing Facilities**

This option varies from the above option in that there is one selected fuel supplier and bulk fuel storage source which is dispensed to individual Tenant/FBO for convenience of accounting and access to the stored bulk aviation fuel.

- **Individual Storage Facilities using a Combined Use Off-Load/Dispensing Facility**

This option varies from the first in that one Off-Load/Dispensing Stand would use electronically controlled pumps to place off-loaded fuel into the correct bulk fuel storage tank and electronically controlled dispensing pump would select fuel from the correct bulk fuel storage tank to fill aircraft fuel servicing trucks. Advantage is a little less space required for Combined Off-Load/Dispensing facility, but the design of the electronically controlled pump/manifold system is critical and there will be some product remaining in the dispensing piping after delivery, which goes to the next user.

- **Consolidated Individual Facilities for Each Aviation Fuel Operators**

This concept is that each Tenant/FBO/Supplier has an individual bulk fuel storage and dispensing system, either leased from the Airport or owned, within the Airport Bulk Fuel Storage site. If equipment and storage tanks are built by the users/suppliers, they follow Airport mandated standards for construction on the Airport owned site and the equipment and storage tanks are maintained by the user/supplier. Individual storage and dispensing equipment can be either Airport or Tenant/FBO/Supplier installed and owned. The advantage is that each storage and dispensing system is operated by the user, for clear delineation of accounting and responsibility, plus consolidated individual systems minimizes liability to the Airport. The greatest disadvantage is the individual system requires more area for construction.

9. Other Considerations:

Industry standard filtering systems with automatic shutdown and alarms should be installed on the Off-Load side of the Storage Tanks, to protect product in the tank. An oil/water separator should be installed and connected to the bermed containment area, Off-Load and Dispensing pads to allow for immediate wash-down of any spilled product and a designated parking area for any aircraft refueler vehicle that develop a leak. Use of a concrete low wall would allow a more compact containment berm area and would also allow lowering the storage tank area by two to three feet, if Part 77 geometry is a problem, or for appearance. Installing a panel and frame roof system, that allows access to storage tanks, would minimize rainfall into the containment area. This would also allow the containment area to be valve connected to a smaller oil/water separator so that any major spill in the containment area can be washed down and pumped out through the oil/water separator. A panel and frame roof system would also enhance the facility appearance from outside the Airport property

10. Scope of work:

After including all appropriate guidance, recommendations and options, the scope of work will provide for comprehensive design services and the production of bid documents for the new Bulk Fuels Storage and Dispensing Facility at Addison Airport. Service should include developing an Environmental Assessment (EA) or a Category Exclusion (CATEX) document as required, acquisition process support, bid result review, and optional construction management and inspection, and project close-out/as-built service, if desired by the Airport and Town.

CONCEPTUAL SCOPE OF WORK
For Underground Fuel Storage Tank Removal

1. Discussion:

The following narrative describes the typical activities and possible results that would be conducted as part of the Underground Storage Tank (UST) removal and environmental remediation program at Addison Airport. The narrative is not in itself a detailed scope of work but is intended to provide guidance to Airport and Town Management on Environmental Engineering requirements and to support efforts in obtaining qualified contractors and testing consultants to successfully execute the Airport UST removal program. Environmental Engineering Consultant and Management functions are required at the Airport to oversee construction, evaluation, remedial actions and monitoring of possible problem sites, and to assist with qualified contractor selection. In addition to a Comprehensive Site Assessment, The Environmental Engineer must be prepared to rapidly accomplish specific tasks, such as contamination assessment for sites discovered during construction, in an effort to accomplish the UST removal as expeditiously and cost effectively as possible.

2. Background and Tasking:

From best information available and according to the referenced Phase I Environmental Site Assessment Update, there are 29 registered Underground Storage Tanks (USTs) and one unregistered above ground storage tank located at the airport and that 15 USTs are currently inactive. The remaining 14 active USTs and one above ground storage tank must remain in service until a new bulk fuel storage and dispensing facility has been constructed or suitable temporary alternatives are available. There is also concern that additional unregistered above ground and underground fuel storage tanks may be on the Airport. It is assumed that the new construction site will be on the Airport and that the Airport and Town will provide general or specific management and oversight of the new facility. In addition, the Airport and Town desire that the 15 inactive USTs be fully taken out of service and have final actions accomplished, which would be defined as either permanent abandonment in place or removal. Subsequent to the activation of the new bulk fuel storage and dispensing facility at the Airport, the remaining 14 USTs will be taken out of service and permanently abandoned or removed. For all USTs, removal is the preferred option, unless utility lines or structures would be at substantial risk from removal operations, or the associated cost of removal is excessive. Based on the available information and conditions on site, the most efficient and effective process for comprehensive all UST removal at Addison Airport will be to first investigate, categorize and develop a baseline, then develop a UST removal/compliance/mitigation plan, based on the investigation. After plan approval, proceed with UST removal or permanent abandonment by a licensed UST removal contractor and accomplish final remediation on each site as required.

3. Environmental Baseline and Investigation:

An investigation is required to determine site conditions at each UST and develop a Baseline for the Airport that clearly indicates the environmental status of the Airport with new Airport Management and Operations. The Phase I Environmental Site Assessment Update indicates several incidences of hydrocarbon spills to the surface. Although existing USTs should have been at least tank tightness tested, these documented spills, potential undocumented spills and

associated underground piping leakage would not be detected using only a tank tightness test. A soil gas analysis should be accomplished on all USTs as soon as possible to determine actual conditions, verify current operating USTs comply and allow a credible estimate of the planned UST removal and mitigation requirements. Soil gas analysis is a sensitive, relatively accurate, and relatively inexpensive method of identifying impacts to geologic media. For this reason, we recommend a soil gas analysis be conducted in the areas of the tanks and/or identified spill areas. The soil gas analysis will be key information in developing the Airport Environmental Baseline and Investigation. The Environmental Consultant should also perform an extensive document, construction plan and written inspection review of all bulk fuel storage tanks and related piping on the Airport as part of the Investigation. If the Investigation determines that one or more of the current operational underground fuel storage tanks are leaking, TNRCC must be notified and the operator must immediately take that tank out of service. The Environmental Consultant should work with the operator to develop reasonable temporary fuel storage options until the new system can be constructed. In the event that soil gas analysis indicates the probability of impacted geologic media, Texas Natural Resource Conservation Commission (TNRCC) regulations would require that a Comprehensive Site Assessment be conducted to determine the extent and magnitude of the impacts. This would include soil borings, monitoring wells, analytical testing, a receptor survey, and a human health risk assessment, at a minimum. The Environmental Consultant should conduct this work for the Airport and Town under the direction of a TNRCC-registered Corrective Action Project Manager.

4. Development of detailed UST Removal/Compliance/Mitigation Plans and Specifications:

In some cases, it may be more cost effective to abandon tanks in place because of safety issues. This is more likely to be the case when utility lines and structures will be placed at risk because of excavation and removal activities. Otherwise, we recommend removal of all tanks to mitigate future liabilities. The Environmental Consultant will develop detailed plans and specifications to function as bid documents for tank abandonment and/or removal by qualified tank removal contractors. The Environmental Consultant should also conduct an Applicable or Relevant and Appropriate Regulations Analysis to identify regulations or reasonably accepted practices that must be or reasonably should be complied with for the tank abandonment/removal and remediation programs. This effort assists in identifying Federal, State, County, and Town laws, regulations, and ordinances that are mandatory, including identification of any wastewater discharge permits/approvals, air emissions permits/approvals, waste disposal permits/approvals, and construction permits. It will also help to identify industry accepted practices, such as American Petroleum Institute and American National Standards Institute standards, that are not necessarily mandatory by regulation but which constitute "best practices."

5. Tank abandonment or removal:

In accordance with the Airport and Town's desire to permanently remove the tanks from service, the Environmental Consultant should assist the Airport and Town with selection of a qualified contractor(s) to conduct tank abandonment or removal. Activities include but are not limited to: site preparation (drain the lines and tanks, remove and dispose or re-use fuels, remove ancillary equipment), remove flammable vapors, test tank atmosphere, fill tanks with inert material or remove them, backfill pit with clean fill soil, dispose waste soils, dispose tanks. The Environmental Consultant should monitor and document the removal and mitigation activities of the selected contractor(s) and to report progress and compliance with statutory requirements and

contractual obligations for tank abandonment and/or removal. A detailed, site-specific health and safety plan for tank abandonment/removal process and for all remediation activities should be developed by the contractor and reviewed by the Environmental Consultant on behalf of the Airport and Town. Soils must be excavated from the tank pits to allow access to the tanks for backfilling or removal. Excavated soils that are not impacted by hydrocarbons can be used for backfill; otherwise, clean soils must be brought from a borrow source for backfilling. Soils unsuitable as backfill, either because of poor geotechnical properties or contamination, must be disposed properly. Contaminated soils will be tested to determine contaminant levels, which will then define the type of disposal facility that is suitable. In some situations, contaminated soils may be subjected to a treatment process, such as bio-remediation or thermal desorption, if it appears cost effective or is necessary because of Federal Land Disposal Restrictions. Waste fuels, i.e. fuels unsuitable for use in aircraft, must be disposed properly. Tank sediments and emulsions, consisting of corrosion byproducts, water, soil particles, and other detritus, must also be disposed properly. Construction equipment wash waters, contaminated personal protective equipment, sampling devices, and all other waste produced as part of the abandonment/removal activities must be properly characterized and disposed. For either abandonment/removal or remediation activities, soil, water, and wastes must be analyzed for hydrocarbons in order to properly characterize and categorize them. Analytical test methods will be those approved by the U.S. EPA and TNRCC. The Environmental Consultant should define the analytical program and conduct the testing with our National Environmental Laboratory Accreditation Program approved lab. Once the Applicable or Relevant and Appropriate Regulations Analysis is completed, the Environmental Consultant should either assist the Airport and Town with obtaining the permits, approvals, and required plans (such plans function as permits by rule) or will monitor the activities of contractors and consultants that are obtaining the permits, approvals, and plans on behalf of the Airport and Town. Such permits/approvals/plans typically include but are not limited to wastewater discharge permits to other municipal sewer systems, air permits, waste disposal authorizations from permitted disposal facilities, one-time waste generator numbers and waste identification numbers, construction permits, construction stormwater pollution prevention plans, and authorizations to access privately-operated areas.

6. Final Site Remediation and Close-out:

If geologic media are contaminated above acceptable human-health-based levels, a Remedial Action Program (RAP) must be implemented according to TNRCC guidelines. The Environmental Consultant should design the RAP and assist the Town with selection of contractors to implement the RAP. Remediation could involve over-excavation and disposal of waste soils, in situ or ex situ treatment of soils, groundwater treatment, soil vapor extraction, installation of barriers, etc. Excavated soils that are not impacted by hydrocarbons can be used for backfill; otherwise, clean soils must be brought from a borrow source for backfilling. Soils unsuitable as backfill, either because of poor geotechnical properties or contamination, must be disposed properly. Contaminated soils will be tested to determine contaminant levels, which will then define the type of disposal facility that is suitable. In some situations, contaminated soils may be subjected to a treatment process, such as bio-remediation or thermal desorption, if it appears cost effective or is necessary because of Federal Land Disposal Restrictions. Waste fuels, i.e. fuels unsuitable for use in aircraft, must be disposed properly. Tank sediments and emulsions, consisting of corrosion byproducts, water, soil particles, and other detritus, must also be disposed properly. Construction equipment wash water, contaminated personal protective equipment,

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