UST CLOSURES - SOME PRACTICAL CONSIDERATIONS FOR OWNER PLANNING

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With the promulgation of the U.S. Environmental Protection Agency (EPA) Federal rules 40 CFR parts 280 and 281 as well as state and local Underground Storage Tank (UST) guidelines and regulations, the implementation of an UST closure program has become more complicated. The Federal guidelines place the burden of responsibility on the state and local regulatory agencies and the UST owners. Because the responsibility has been relinquished to local levels, specific UST closure requirements vary greatly from state to state and even city to city.

To further complicate a closure, unknown factors can lead to exorbitant cost add-ons. These factors may result from the generally tendency of UST owners to not maintain records dealing with UST installations, repairs, spill incidents, and inventory control. Additionally, the hydrogeologic conditions of a site directly control the migration of contamination and, therefore, have a direct effect on remedial action alternatives and cleanup costs.

Preparation for a proper closure is the most important aspect for an UST owner. Without a specific scope of work the owner

must rely on the contractor or environmental consultant (contractor) to develop a closure plan. This leaves the owner vulnerable to unexpected additional costs resulting from an under scoped removal plan or from conditions not adequately defined by the contractor. The final outcome could be an inadequately closed UST.

This article has been prepared to present a brief overview of the development and implementation of an effective UST closure program. Specifically provided are step-by-step requirements and recommendations for UST closure through excavation. The procedures are presented with respect to five key areas: program identification, contractor specifications, field closure procedures, environmental assessment and closure documentation.

PROGRAM IDENTIFICATION

1. Define which UST systems require closure. This may be based on local regulatory requirements, company production needs and system inefficiencies, a risk assessment of environmental liabilities and receptors, the age of the systems, the material of construction, the product stored, and the operating and maintenance history of the facility.

2. Collect all information pertinent to each UST site through research and interview with personnel including UST

notification forms, installation blue prints or photographs, tank dimensions and capacities, depths of burial, surface cover materials, locations of any subsurface utilities, identification of any above ground obstructions (buildings, walls, overhead power lines, fences, etc.). Identify product distribution and vent lines, dispensers, number and diameter of access points into the UST, and the quantity and contents of each system.

3. Establish a schedule for the UST closure program to begin. Allow enough lead time typically six to eight weeks for state and local agency notification and permit applications.

CONTRACTOR SPECIFICATIONS

1. Develop a comprehensive contractors bid package. Identify and locate each UST to be removed. Include all the information derived from the program identification process with specific instructions regarding the removal of ancillary piping, pump islands, canopies, ballards, lighting and any other equipment associated with an UST system. Be sure to include the disconnection of electrical service at the junction box. Specify that all work procedures be conducted in accordance with state and local requirements as well as API bulletin 1604.

2. Specify who will be responsible for the transportation and disposal of any remaining liquids or sludge. If the contractor is to be responsible, have the disposal firm identified and verify the method of disposal (incineration, solidification, re-refining). Specify whether costs will be lump sum, time and material or per gallon. Continuity in pricing will allow for easier cost comparison for competitive bids.

3. Define the specific backfill requirements to be followed after excavation procedures have been completed. This will be contingent on the future usage of the site. Should the excavation require engineered backfill, specify the requirements within the bid package. Have the contractor provide unit costs per ton or identify the type and quantity of backfill material to be used.

4. Require that the contractor notify all appropriate agencies and acquire any construction permits for UST closures.

FIELD CLOSURE PROCEDURES

1. During excavation and removal activities, a qualified environmental field inspector (e.g., geologist or engineer) should be on site to monitor general site conditions. This person will be responsible for evaluating the conditions of the closure site and determining whether any remedial

activities are required. Additionally, the inspector shall provide complete documentation of all removal activities including photographic evidence and field notes.

2. The field inspector shall also be responsible for site safety. Tank degassing, purging or cutting should be carefully observed and done in accordance with API bulletin 1604 section 4.

3. The closure site should be barricaded to the public and sufficiently identified to prevent accidental entry.

ENVIRONMENTAL ASSESSMENT

1. Prior to initiating an UST closure program, specific environmental assessment procedures must be determined. A detailed understanding of state and local closure requirements will be required. Specific target compounds will be tested (e.g., total petroleum hydrocarbons, benzene, toluene, ethylbenzene, xylene, volatile organic compounds) from the excavation soils and/or groundwater to determine if the environment has been impacted or to verify the effectiveness of remedial efforts. These compounds will be based on the product previously stored in an UST.

2. Soil and/or groundwater sampling procedures should be performed by the site inspector. Sample frequency and

location must be performed as outlined by the state or local regulatory agency. All sampling must be conducted in accordance with EPA guidelines and sampling protocol.

3. Sample analysis should be conducted by an approved laboratory in accordance with the specified test method. This information can be acquired through the local regulatory agency.

4. If during excavation procedures contamination becomes evident, an assessment of the severity and extent of contamination should be made prior to initiation of remedial activities. The inspector should contact the UST owner and provide guidance for remedial efforts and act as a liaison between the UST owner and regulatory officials. In this capacity the inspector shall also be responsible for written notification and reporting to the regulatory agency as required.

5. If contaminated soils are excavated and stored on site during closure activities, arrangements must be made to treat or dispose of the soils. The most effective method of dealing with the soils will depend on the quantity and severity of contamination and the local regulations dealing with soil treatment and disposal. The UST owner must rely on the competency of the contractor to provide remedial

options and alternatives.

6. Should contamination be so extensive as to prohibit remedial excavation or should groundwater contamination exist, further investigation will be required to determine the severity of contamination to delineate contaminant plume boundaries, and to determine clean-up options and objectives. The contractor selected for closure activities should have the ability and resources to provide these services.

CLOSURE DOCUMENTATION

1. Following the completion of an UST closure the contractor should submit a report thoroughly documenting all activities. The report should contain a brief description of the project site, the scope of work developed for the UST closure, documentation of all field activities, soil and groundwater sampling procedures and results, photographic documentation of each UST removal, and all important receipts, manifests or documents concerning tank, sludge, contaminated soil, or liquid waste disposal, soil compaction reports, notification forms, construction permits and any other information relevant to the closure.

With all the unknown factors which can effect an UST closure program it is impossible to outline an all-encompassing closure

procedure. However, with careful planning and data collection, a large number of unknowns may be eliminated allowing for a more controllable and cost effective program.