10.20 UNDERGROUND TANKS

Underground Storage Tanks (USTs) represent one of the more common environmental problems encountered. USTs may have been (or may currently be) used to store almost any kind of viscous material including petroleum products, chemicals, and discarded wastes (some of which could be classified as hazardous). Leaks from these tanks or their auxiliary components (i.e., piping, couplings, pumps, and valves) are not uncommon.

An Underground Storage Tank (UST) is defined as a tank and associated piping with 10% or more of its volume below the ground which has stored or is storing a regulated substance. Regulated substances include petroleum based substances (motor fuels, motor oil, home heating fuels, solvents, etc.) and any other substance which, if released into the environment, may present substantial danger to public health, welfare, or the environment.

10.21 REGISTRATION

The Iowa DNR has requirements for the registration of underground tanks. Contact the Office of Location and Environment for assistance in determining the registration status of an existing underground tank and the need to register a tank prior to its removal.

10.22 REMOVAL OF USTs

The procedure for removing underground tanks is based on Iowa DNR regulations codified in *567 IAC, Chapters 135*. For all removals of underground tanks, follow Specification 2537, "Removal of Underground Tank Systems and Remediation of Petroleum Contaminated Soil".

Removal of Known Tanks

Whenever possible, known underground tanks will be removed prior to the project letting utilizing the service agreement contracts administered by the Office of Location and Environment. Early removal allows additional time for any necessary investigation and remediation of contamination issues. If a known underground tank is still present upon commencement of the project, the Office of Location and Environment will coordinate the removal with the project engineer, utilizing the service agreement contracts.

Removal/Discovery of Unknown Tanks

For the purposes of this chapter, "unknown" tanks should be considered those tanks not identified on the plans but encountered during a project. Most likely the discovery of an unknown tank will come at the worst time. For example, machinery running, work time in a crunch, and "any" appreciable delay will work a severe hardship on the contractor. Therefore, timeliness and notification become critical in dealing with the issues.

Upon finding a previously unknown tank, follow these guidelines:

FIRST: Immediately stop all work in and around the tank.

SECOND: Determine the site conditions. For example:

A. Note tank condition and damage. Is liquid leaking from the tank? If so:
   1. If, based on site conditions and situations, the inspector or contractor feels there is an immediate threat for **explosion**, the contractor shall:
      - Immediately shut-off all operating equipment, extinguish all sources of ignition (i.e., cigarettes etc.) and evacuate the area. This includes all personnel.
      - After the site is evacuated, establish controls to prevent site access and

contact local authorities.
The inspector shall contact the Office of Construction.

2. If, based on site conditions and situations, the inspector or contractor feels there is an **immediate** danger to life or health **other than** by explosion, the Contractor shall:
   - Immediately evacuate the area. This includes all personnel and could include equipment.
   - After the site is evacuated, establish controls to prevent site access.

   The inspector shall contact the Office of Construction.
3. If, based on site conditions and situations, the inspector feels there is an immediate danger to a water supply, the contractor shall: **(Threats to life or health and explosion are not present.)**
   - Using whatever means are available, immediately establish positive restrictions to limit or prevent migration of contamination to a water supply.
   - Watch for changing conditions which could present threats due to explosion and/or danger to life or health. If site conditions change, implement the appropriate response as noted above.

   The inspector shall contact the Office of Construction.

B. If leakage is not apparent, determine if any liquid is in the tank.

C. Attempt to determine the size of the tank (volumetric and/or dimensional size estimation).

D. Is there any indication of past leakage? (Stained soil or smell of fuel are indicators.)

E. Establish tank location by station, offset, and approximate depth.

THIRD: Begin to establish some positive control to eliminate access to the immediate area. (Silt fence, snow fence, or orange safety fencing set on fence posts are examples of temporary restraints.)

FOURTH: Notify the project engineer or supervisor of the discovery and provide site conditions to them. If a supervisor or the project engineer will not be available for some time (3 to 5 hours), the inspector shall contact the Office of Construction directly.

FIFTH: The project engineer shall notify the Office of Construction. (Iowa DOT has a legal responsibility, and time limit, to report finding previously unknown USTs.)

For Reference: Time expired since first discovering the tank shall not be more than 5 hours before contacting the Office of Construction.

Recap:

- All construction activity around the area of the tank shall be halted, and remain that way, pending further investigation.
- Preliminary site assessment shall be completed. Included in this assessment shall be an evaluation for imminent dangers.
- Site "SPILL CONTROL" measures should be implemented if needed.
- Positive constraints shall be in place to prevent free public access of the site.
- The Office of Construction shall be notified of the discovery.

What Happens Next?

- Office of Location and Environment notifies Iowa DNR about finding an unknown UST.
- Office of Location and Environment will determine if the UST is registered. If not, a registration process will be initiated. (An unregistered UST cannot be removed until after it is registered.)
- The Office of Location and Environment will request Iowa DNR's approval to remove the tank, once registration status is resolved.
- The Office of Location and Environment will have the tank removed utilizing a statewide service agreement contract.
- The prime or a subcontractor may be utilized by the environmental consultant to physically remove the tank and/or perform activities related to the hauling and disposal of contaminated soil. If used, the project engineer will need to negotiate a Change Order for the necessary work.

Removal of Contaminated Soil

If the site is determined to be contaminated, one method of remediation is to over-excavate. Over-excavation as part of the tank removal typically expedites any necessary clean-up and monitoring activities. Additionally, over-excavation of contaminated soil prior to project construction is warranted as the contaminated area may become inaccessible (e.g. under pavement) subsequent to construction.

Contaminated soil that has been over-excavated must be properly disposed. Iowa DNR must receive notice within 30 days of commencement of over-excavation.

Disposal Options

There are several approved methods for disposal.

1. Disposal in a State permitted sanitary landfill. This requires prior approval from the local receiving landfill.

2. Another option is to remove the soil (over-excavate) and spread it out on the surface. This method is called "Land Application" and also requires advance notification to the Iowa DNR. The land application of petroleum-contaminated soil provides an effective means of treatment through volatilization and biodegradation. Land application has been used successfully in situations where Iowa DOT owns (not by temporary easement) a parcel of excess right-of-way. Iowa DNR's authority to regulate the land application of petroleum-contaminated soil is contained in 567 IAC, Chapter 120.

   Extensive revisions to the rules for the land application of petroleum-contaminated soil went into effect in October 2004. These revisions added permitting, operations, monitoring and closure requirements along with additional restrictions on the sites that can be used for landfarming. The net effect of these changes makes the landfarming of petroleum-contaminated soil more cumbersome than in the past and in some situations may eliminate this as a possible option.

   In situations where the land application of petroleum-contaminated soil is being considered, the project engineer should contact the Office of Location and Environment for assistance.

Reserved for Future Use.