Case Study - Underground Storage Tanks (USTs) Removal/Closure

Scope of Services: Accredited Environmental Technologies, Inc. (AET) was contacted by a real estate developer to confirm the existence/location of a UST at a commercial property prior to site redevelopment. If present, AET was also contracted to properly remove UST(s) and submit a UST Closure documentation to the state regulatory agency. The UST was suspected as a documented recognized environmental condition (REC) in a Phase I Environmental Site Assessment report for the property.

AET's Experience: Suspect UST Location(s) identified during Phase I ESAs are based on site research (review of regulatory records, site maps, building permits or personal interviews) as well as the identified fill ports or vent pipes during site reconnaissance. Rarely does site research/reconnaissance identify the exact location of the UST(s). Site specific identification and UST removal/closure requirements require a step-by-step approach as described below. The cost to identify/remove a 2000 gallon UST (with clean soil conditions) ranges between $8,500 and $10,000.

AET's Investigative Approach/Tools/UST Removal/Closure

1. **Geophysical Investigation**: Electromagnetic metal detection and ground penetrating radar (GPR) was used to identify the exact location of the UST. The top of a 2000 gallon metal UST was found 2-3 feet below the ground surface. Underground site utilities were also marked out to ensure safe UST removal.

2. **Notifications**: Area residences, businesses and the city's street department were notified of the planned work and any interference/precautions taken to minimize impact to road traffic near the site.

3. **Soil Excavation**: A backhoe was used to remove soil covering the UST to expose the tank and fill port. The soil was stock piled for later use to fill the excavation pit.

4. **UST Contents**: The UST was tested and found to contain 7 inches (395 gallons) of #2 fuel oil. This oil was pumped from the UST utilizing a vacuum truck. A bill of lading was received from the oil recycler for documentation and recordkeeping.

5. **Tank Integrity**: Visual inspection of the exterior surfaces of the UST after excavation found no apparent breaches or holes. No obvious soil staining or significant petroleum odors were noted. No groundwater was encountered in the excavation pit.

6. **Tank Cleaning**: The tank was cut open and the ambient environment inside the UST was remotely tested with a confined space meter for carbon monoxide, hydrogen sulfide and explosive gases. Upon acceptance, the tank was entered and the walls cleaned with a surfactant and abrasive pads.

7. **Photoionization Detector (PID)**: Screening was performed on the soils in the excavation pit for VOCs to determine if any additional impacted soil had to be removed prior to soil sampling.

8. **Soil Sampling**: Prior to backfilling the excavation, three distinct soil samples were collected for analysis of #2 fuel oil parameters as delineated by the state regulations.

9. **Tank Remnants**: The clean carcass of the UST was removed from the site and transported to a recycling center.

Conclusion: The entire project was completed in 5 working days. The GPR investigation was completed in 1 day; the UST/impacted soil also removed in one day. The stockpiled soil was used to fill the excavation pit immediately after UST removal (due to clean soil conditions observed at the site). Laboratory results confirming clean soil was received within 3 working days and a final closure report provided.

When you need professional help or advice, email Alan Sutherland, CIH, CHMM at a.sutherland@aetinc.biz or call 610-891-0114. We provide nationwide services; phone consultations are free. Check out the full range of environmental contracting/consulting services we provide at our website www.aetinc.biz.

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