Sanford Fire Department
PO Box 3729
Sanford, NC 27331-3729
www.sanfordnc.net
(P) 919-775-8316
(P) 919-775-8311
(F) 919-708-5492

Underground Tank Removal

C.4 Closure of Underground Tank in Place

C.4.1 At least 30 days before beginning closure procedures, owners and operators should notify the implementing agency of they're intent to close unless such action is in response to corrective action proceedings.

C.4.2 Closure of tanks either in place or by removal requires the owners and operators to measure for the presence of a release where contamination is most likely to be present at the UST site. This requirement can be satisfied if one of the external release detection methods allowed in 40 CFR280.43(e) and (f) is operating in accordance with the requirements in Part 280.43 at the time of closure and indicates no release has occurred.

C.4.3 Prepare a safe workplace by following the special safety precautions and cleaning and closure procedures in either of the following documents.

(1) API 1604, *Removal and disposal of used underground petroleum storage tanks*
(2) NEIWCC, *Tank closure without tears: An inspector's safety guide*

C.4.4 Safe work preparation should include the following:

1. No smoking in the area
2. Shutting down all open flame and spark-producing equipment not necessary for the removal of the underground tank
3. Using only hand tools to expose tank fittings and preparing for the vapor-freeing procedures

4. Controlling static electricity or providing a conductive path to discharge static electricity by bonding or grounding equipment and vehicles
5. Roping off tank area from pedestrian and vehicular traffic
6. Locating and marking all utility lines on site
7. Determine meteorological conditions. Vapor accumulation can occur on still and high-humidity days. Under these conditions, test the area for vapor accumulation and if present either provide additional forced ventilation or delay the job until there is a breeze and is less humid. Excavated soil should be tested for vapor release. Artificial ventilation or repeated turning of excavated soil might be necessary to avoid ignitable concentrations of vapors
8. Ensuring that personnel are wearing hard hats, safety shoes, and safety glasses and that a combustible gas indicator is available. Providing any other safety measure or methods that might be required to meet local requirements.

C.4.5 Remove all flammable or combustible liquid and residue from the tank and from all connecting lines.

C.4.6 Residual product and solids should be disposed of properly.

C.4.7 Excavate to the top of the tank.

C.4.8 Disconnect the suction, inlet, gauge, and all other tank fixtures. The vent line should remain connected until the tank is purged.

C.4.9 Ether purge the tank of flammable vapors or inert the potentially explosive atmosphere in the tank.

(1) Purging or ventilating the tank replaces the flammable vapors in the tank with air, reducing the flammable mixture of fuel and oxygen below the lower explosive limit or lower flammable limit (LFL). Two methods can be used to introduce air into the tank. One is the use of a "diffused air blower" to pump air into the bottom of the tank through the fill pipe or a properly bonded air-diffusing pipe. The second method is the use of an "educator-type air mover," typically driven by compressed air. It draws vapors out of the tank and brings fresh air into the tank. The vent pipe can be used to exhaust vapors 12 ft above grade and 3 ft from any rooflines.

(2) Inerting the tank does not replace the flammable vapors but instead reduces the concentration of oxygen to a level insufficient to support combustion. Two inert gases can be used. Carbon dioxide gas can be generated by crushing and distributing dry ice evenly over the bottom of the tank. The dry ice will release carbon dioxide as it warms. Nitrogen gas can be pumped into the tank from a hose through the fill hole to the bottom of the tank. Oxygen will be reintroduced into the tank unless all holes are effectively plugged except for the vent line.

C.4.10 The tank should be tested to determine if it is safe by one of the following procedures:

(1) When purging, a combustible gas indicator is used to measure the reduction in the concentration of flammable vapors. The meter reads from 0 to 100 percent of the LFL. The goal is to achieve a reading of 10 to 20 percent LFL for petroleum products.

(2) When inerting, an oxygen meter is used to determine when a tank has been successfully inerted. The meter reads from 1 to 100 percent oxygen content. The goal is to achieve a reading of 1 to 10 percent, which is safe for most petroleum products.

C.4.11 Fill the tank completely with an inert solid material. One or more holes can be cut in the tank top if existing tank openings are not adequate for the introduction of the inert material. Cap or remove remaining underground piping. The tank can now be backfilled.

C.5 Closure by Removal of Underground Tanks

C.5.1 Observe all procedures listed under Section C.4, except for C.4.11, filling the tank with an inert solid material and backfilling the excavation.

C.5.2 After the tank has been made safe by the following purging or inerting procedures and before it is to be removed from the excavation, plug or cap all accessible holes. One plug should have a 1/8-in. vent hole to prevent the tank from being subjected to excessive

differential pressure caused by temperature changes. This vent should be positioned on top of the tank during subsequent transportation or storage.

C.5.3 Excavate around the tank to uncover it for removal. Remove the tank from the excavation and check for corosion holes in the tank shell. Use screwed boiler plugs to plug any corrosion holes.

C.5.4 Tanks should be labeled with information about the former contents, present contents, present vapor state, vapor-freeing treatment method, and a warning against reuse.

C.5.5 Tanks should be removed from the site promptly and preferable the same day as removal because additional vapor can be released from the liquid absorbed in tank wall corrosion or residues. However, before removal, the tank atmosphere must be checked to ensure the flammable vapor concentration does not exceed safe levels.

Contractor's Signature_____

Inspector's Signature _____

CITY OF SANFORD / COUNTY OF LEE / TOWN OF BROADWAY

REMOVAL OR INSTALLATION OF STORAGE TANKS

900 WOODLAND AVENUE, SANFORD, NC 27330
TELEPHONE (919) 718-4654 WWW.SANFORDNC.NET FAX (919) 718-4637

Application is hereby made by the undersigned for a permit to:

☐ **INSTALL:**

☐ **REMOVE:**

- ☐ Underground Storage Tank(s), Number of Tanks:_____
- ☐ Aboveground Storage Tank(s), Number of Tanks:_____

Permit fee is: $65.00 for 1st Tank, $30.00 for each Additional Tank AND Technology Fee $10.00

DATE OF APPLICATION:_____ **PARCEL IDENTIFICATION #:**_____

LOCATION NAME:_____

ADDRESS:_____

CITY:_____ **STATE:**_____ **ZIP:**_____ **TELEPHONE#:**_____

CONTRACTOR'S NAME:_____

CONTRACTOR ADDRESS:_____

CITY:_____ **STATE:**_____ **ZIP:**_____ **TELEPHONE#:**_____

MOBILE#:_____

1. A permit shall be obtained for the above listed procedure prior to beginning work. All fees shall be paid at the time of the permit being issued.
2. All tank work shall comply with all local, state, federal laws and N.F.P.A. and A.P.I. standard practices.
3. Notify the Fire Marshal's Office prior to installation, removal or in place abandonment of tank(s).
4. For removal in place, all liquids shall be removed from the tank(s) and disposed of properly.
5. A representative from the Fire Marshall's office shall be on site at the time of installation or removal of the tank(s). Please schedule a time with the Inspector. Lee County Fire Marshall (919) 775-4829, City of Sanford Fire Department (919) 775-8316.

I hereby certify that the information on this application is correct and that all work in connection with the above referenced job will be performed under my supervision and that such work complies with the requirements of the North Carolina State Building Codes and applicable City of Sanford, Lee County and Town of Broadway ordinances. Call for inspection at proper stage of work.

_____ _____ _____

CONTRACTOR / APPLICANT **DATE** **LICENSE NUMBER**