

	INSTALLATION AND REMOVAL REQUIREMENTS FOR		2016revA
	UNDERGROUND STORAGE TANKS (USTs)		
	AUTHORED BY: Tyler Drage	FESSAM # 5A.2	EFFECTIVE DATE: 5/16/2016
	APPROVED BY: Fire Chief Mark Miller	<i>Mark Miller</i>	REVISION DATE: 5/1/2017

Purpose:

It shall be the responsibility of the underground storage tank (UST) owner or his/her designee, to follow all applicable local, state and federal requirements when installing or removing any UST within the Loveland Fire Rescue Authority (LFRA) response area. This policy shall be used to provide guidelines for the safe and proper installation and/or removal of USTs, in accordance with applicable requirements from the adopted International Fire Code, City of Loveland municipal code, Larimer County adopted resolution and/or Town of Johnstown municipal code.

A representative of the LFRA Community Safety Division (CSD) will verify that all procedures have been followed and document the results of the installation and/or removal.

Abandonment-in-place of USTs is prohibited within the City of Loveland and the Loveland Rural Fire Protection District.

UST Installation Procedures:

1. The general contractor will apply to the Building Department with primary jurisdiction (i.e., City of Loveland, Larimer County or Town of Johnstown) for a Building Permit to install any underground storage tank(s).
2. The general contractor shall provide copies of all permit application materials to the LFRA CSD at least 14 days prior to the scheduled date of installation. Submittal requirements shall include a detailed site plan and locations of all buildings and lot lines, description of proposed work to be performed, UST specifications, wiring specifications, dispenser specifications and any other information as required by the adopted International Fire Code.
3. No installation may begin without the general contractor having in his/her possession a current and valid Building Permit from the appropriate Building Department and a current and valid UST Installation Permit from LFRA.
4. For any tanks exceeding 660 gallons, the general contractor must also obtain a UST installation permit from the State Oil & Gas Commission.
5. The general contractor shall notify the LFRA CSD after USTs have been set in the excavation and secured in place, prior to backfill. The LFRA CSD will perform a site inspection to verify that all tanks are appropriately anchored in place prior to backfill beginning. Preliminary notification of

estimated date and time of this benchmark should be made to the LFRA CSD at least 48 hours in advance.

6. Upon verification of appropriate anchoring, the LFRA inspector shall complete the Underground Storage Tank Installation Checklist for each tank installed. The general contractor shall provide tank manufacturer documentation to facilitate completion of this form.
7. The general contractor will install the tank(s) according to the installation guidelines provided by the tank manufacturer.
8. The facility owner shall be responsible for maintaining the appropriate hazardous materials permit through LFRA after installation is complete and the facility commences operation.

UST Removal Procedures:

1. Prior to the initiation of any work on the job site, the general contractor will take steps to ensure a safe working environment:
 - a. Prohibit smoking within 50 feet of any tanks.
 - b. Prohibit all open flame and/or spark-producing equipment within 50 feet of any tanks.
 - c. Remove electrical and internal combustion equipment from the job site unless it is designed to be "explosion proof."
 - d. Allow only non-sparking tools to expose tank fittings and prepare for the vapor freeing procedures.
 - e. Control static electricity by minimizing agitation or static producing movement whenever possible. Static electricity can be generated by moving liquids or solids. If eliminating the static producing movement is not possible, a conductive path for a continuous "safe" discharge of static electricity, either by bonding or grounding equipment in vehicles, shall be provided.
 - f. All utility (i.e., gas, electric, water, sewer) lines on the job site shall be located and marked prior to excavation.
2. It shall be the responsibility of the general contractor to ensure that there is a qualified person on the job site to operate all atmospheric testing instruments. Representatives of LFRA will not operate testing instruments on a job site and LFRA will not furnish testing instruments.
3. When the piping is disconnected and the product in the piping is emptied into approved container(s), precautions shall be taken to avoid any spillage. The emptied product piping shall be capped or removed. When removing product and residues from within the tank, explosion proof or air-driven pumps shall be used. Pump motors and suction hoses shall be bonded to the tank to prevent static electricity ignition hazards. Residual product and solids must be disposed of properly.
4. Limiting the flammable vapors within the tank shall be completed by "inerting" the tank. The concentration of oxygen in the tank shall be reduced to a level insufficient to support combustion

by replacing the oxygen with an inert gas. Inerting with a compressed gas may be dangerous and is not permitted. The preferred method for developing an inert atmosphere within the tank is through application of dry ice inside the tank, which generates carbon dioxide as it warms.

5. Since the inerting process displaces flammable vapors and oxygen in the tank, venting precautions for exhaust must be taken. Exhaust fumes from the inerting process shall be vented at a minimum height of twelve (12) feet above grade and three (3) feet above any adjacent roof lines. The atmosphere at the ground level should be tested periodically to ensure that vapors are being vented effectively into the upper atmosphere and not collecting at ground level.
6. An oxygen meter shall be used to determine when a tank has been successfully inerted. The oxygen readings shall be below 10% prior to the removal of the tank from the ground. An oxygen level of 6-7% is recommended. Readings shall be taken at three (3) levels inside the tank: bottom, middle and top. Readings should also be taken at various locations along the length of the tank as well.
7. It is further recommended that the general contractor use a combustible gas indicator (CGI) to monitor flammable vapor levels within the tank. The target range for the lower explosive limit (%LEL) of the vapors present within the atmosphere of the tank shall be within 10-20% prior to tank removal.
8. It is prohibited to clean the inside of the tank on the job site.
9. Once the tank has reached appropriate and safe oxygen and flammable vapor levels, it shall be capped for transportation by the general contractor.
10. Before the tank can leave the job site, it must be securely anchored to a transport vehicle and shall be marked to indicate that it is inert.

Attachments

Underground Storage Tank Installation Checklist

Underground Storage Tank Removal Checklist

Revision History

May 16, 2016 – Guideline developed

References:

LFR UST Removal and Install Policy (G.O. 7.10) – September 7, 2006



Loveland Fire Rescue Authority
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UNDERGROUND STORAGE TANK INSTALLATION CHECKLIST

Tank Installed at (business name): _____

Address: _____

Business Owner Name: _____ Phone: _____

TO BE COMPLETED BY INSTALLATION CONTRACTOR

General Contractor: _____ Contact Name: _____

Street Address: _____

City, State, Zip: _____

Tank Delivery Driver Name: _____ Date/Time: _____

TANK INSTALLATION INFORMATION:

	Tank #1	Tank #2	Tank #3	Tank #4
Manufacturer:	_____	_____	_____	_____
UL Number:	_____	_____	_____	_____
Tank Capacity:	_____	_____	_____	_____
Intended Contents:	_____	_____	_____	_____
Vacuum Reading:				
At Delivery:	_____	_____	_____	_____
At Placement:	_____	_____	_____	_____
At Backfill:	_____	_____	_____	_____
Visual Inspection:	_____	_____	_____	_____
Anchoring:	_____	_____	_____	_____
Backfill:	_____	_____	_____	_____

Tank Installation Date/Time: _____ Piping Primary Inspection: _____

Piping Secondary Inspection: _____ Fuel System Final Inspection: _____

Leak Monitoring Equipment/Location: _____

Installation Contractor Name: _____ Signature: _____ Date/Time: _____

LFRA Inspector Name: _____ Signature: _____ Date/Time: _____



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UNDERGROUND STORAGE TANK REMOVAL CHECKLIST

BUSINESS NAME: _____

ADDRESS: _____

LFRA PERMIT NO: _____ DATE/TIME OF TANK REMOVAL: _____

TO BE COMPLETED BY REMOVAL CONTRACTOR

General Contractor: _____

Street Address: _____

City, State, Zip: _____ Phone: _____

	Tank 1	Tank 2	Tank 3	Tank 4
Capacity	_____	_____	_____	_____
Contents	_____	_____	_____	_____
Manuf.	_____	_____	_____	_____
Serial #	_____	_____	_____	_____
O ₂ Level	_____	_____	_____	_____
% LEL	_____	_____	_____	_____
Time	_____	_____	_____	_____

TANK(S) LABELED AND SECURED FOR TRANSPORT?

CONTENTS	YES	NO
VAPOR FREEING TREATMENT	YES	NO
WARNING AGAINST REUSE	YES	NO

Tank Disposition: _____

Comments: _____

Removal Contractor Signature: _____

Date: _____

Fire Inspector Signature: _____

Date: _____