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BULLETIN NO.

95-1A

Date: **September 1995**
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Subject: **Installation of Residential
Heating-Oil Tanks and Other
Heating-Oil Tanks Under
2,001 Gallons**

Reference: **N.J.A.C. 5:23-3.20,**
Mechanical Subcode Section
M-905.0

The installation of residential heating-oil tanks and other heating-oil tanks under 2,001 gallons is regulated by the Mechanical Subcode. Under Section M-905.0 (Corrosion Protection and Leak Detection) of the Mechanical Subcode, underground flammable and combustible liquid tanks over 1,000 gallons are required to be provided with some method of leak detection. Furthermore, all tanks regardless of size are required to be cathodically protected. For those tanks subject to the Department of Environmental Protection's Underground Storage Tank Regulations, methods of leak detection and corrosion protection are clearly defined. However, for tanks covered by this bulletin (which are subject only to the requirements of the Uniform Construction Code's Mechanical Subcode), the requirements are not as clear. As an aid to code officials in determining compliance with the Mechanical Subcode, the following recommended details concerning leak detection and corrosion protection are provided.

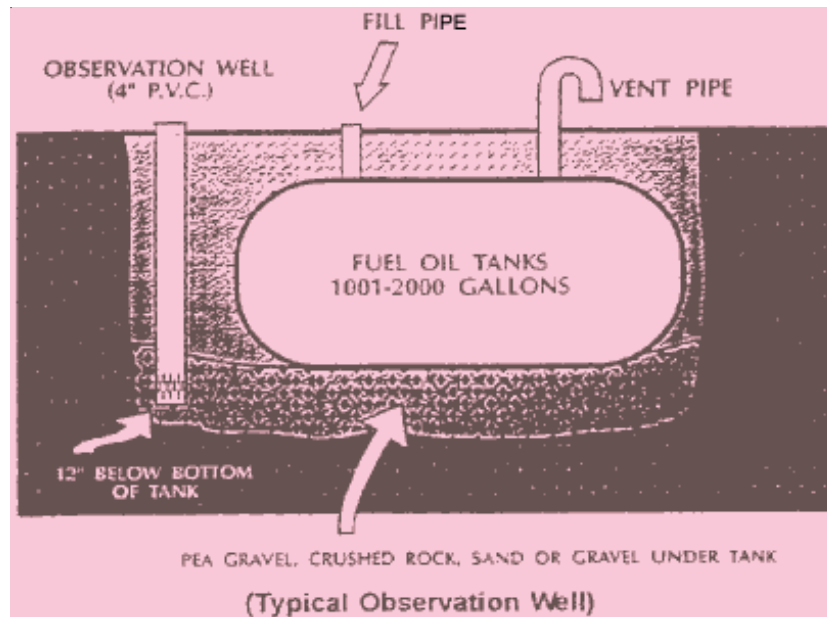
Leak Detection:

For tanks of double-wall construction, leak detection may be accomplished through interstitial monitoring. Such tanks should be provided with a means of checking the annular space between their two shells for leakage. For single-wall tanks, providing leak detection may consist of any of the following: observation wells, monitoring wells, or inventory control. However, for tanks that are connected to fuel-oil burners, inventory control is not feasible.

For single-wall fuel-oil storage tanks over 1,000 gallons connected to an oil burner, monitoring wells and observation wells are the appropriate methods. Monitoring wells are used to monitor the ground water in the area surrounding underground tanks. Generally, monitoring wells are used in areas where the soil is porous (permeability is high). Where the soil is less porous, observation wells may be utilized. (Observation wells may also be used in high-permeability areas, but the

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excavation must be lined.) It is anticipated that observation wells will be the most common method of leak detection used. Therefore, we are providing the following detail as an example of a typical observation well.



The observation well consists of a length of PVC, or other approved pipe not less than 2 inches in diameter, embedded in the aggregate around the tank. The pipe should extend below the bottom of the tank. It should be perforated with 0.020-inch slots (or equivalent), but perforations should not be located within 12 inches of grade. The pipe should be capped at the top and bottom. The cap at the top should be removable, and should be labeled to avoid confusion between the fill pipe and the monitoring/observation well. The label should state:

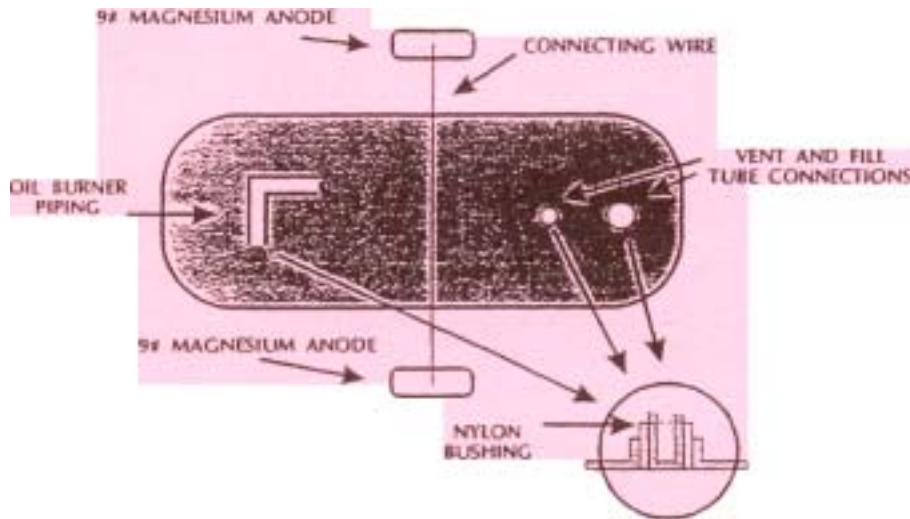
OBSERVATION WELL

Warning: Do not place gasoline, petroleum products, or other substances in this well. Violators may be subject to civil or criminal penalties.

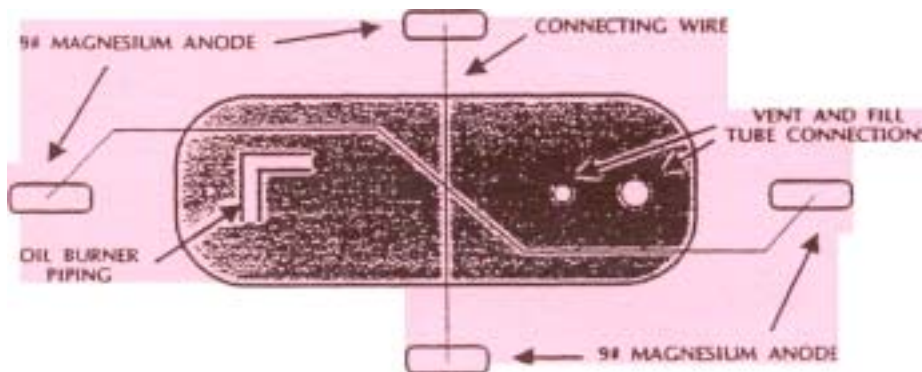
Corrosion Protection:

Corrosion protection may consist of using a tank that is not subject to galvanic action, such as a fiberglass tank or using a protected metallic tank. Methods of protection include impressed current systems and sacrificial anodes. It is anticipated that sacrificial anodes will be the most common method of cathodic protection. Following are some examples of providing corrosion protection using sacrificial anodes.

**TANKS UP TO 1,000 GALLONS
(Corrosion Protection)**



**TANKS 1,001 TO 2,000 GALLONS
(Corrosion Protection)**



Other designs are acceptable if they comply with STIP3, UL 1746, or ULC CAN/ULCS603.1, or are designed by a registered design professional in accordance with Section M-905.1 of the Mechanical Subcode.

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