

Florida Department of Environmental Protection

Memorandum

TO: Directors of District Management Waste Program
Administrators

FROM: Mary Jean Yon, Director
Division of Waste Management

DATE: August 29, 2006

SUBJECT: Voluntary Cleanup of Cattle Dip Vats

This guidance outlines the steps for voluntary cleanup of a cattle dip vat (CDV).

Cattle dip vats were used long ago to treat cattle for the eradication of disease-bearing ticks. Vat construction and use was mandated by state and federal governments from the early 1900's until 1961 in Florida. Cattle that were not properly treated could not be shipped out of state. Mixtures containing arsenic were the primary solutions used for treating cattle, but chlorinated pesticides were used in later years as the pesticides became available and approved for use. Cattle would be run through the vats for treatment and held on the drip pad at the exit of the vat. When their hides no longer dripped any solution, the cattle were released back to the pasture. Periodic maintenance of the vats included replenishing the dipping solution and removing the dead ticks and other organisms from the bottom of the vat. The cattle ranchers were instructed to bury these materials, but investigations indicate that disposal occurred to the ground adjacent to the vat. Many vats were simply abandoned once dipping was no longer required and little is known of the location of most vats.

The lands containing cattle dip vats were once rural areas but these areas are now being developed for residential and commercial use as communities expand. This development increases the potential for human exposure to any residual chemicals from the vats. Most of these chemicals can cause cancer in humans and are very persistent in the environment. Therefore, it is best to clean up vat areas before development to prevent workers and residents from coming into contact with these chemicals. Cleanup is also less expensive and less complicated before the property is developed because there are no roads or other community infrastructure, such as water, sewer, cable, electricity, and telephone lines, to interfere with the removal. This early removal eliminates the potential for contaminated soil to remain around and under homes and businesses, around underground utilities and under roads. It also minimizes worker exposure during property development or any subsequent work in the area of the former vat.

The Department does not enforce cleanup of cattle dip vats because section 376.306, Florida Statutes (attached) provides a broad exemption from liability for "Any private owner of property in this state upon which cattle-dipping vats are located ..." Consequently, these owners cannot be compelled to pursue cleanup of cattle dip vats under either state law or rule. However, voluntary cleanup of a vat should follow the procedures described in the Contaminated Site

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Cleanup Rule, Chapter 62-780, F.A.C. All of the site closure options described in that rule are available for vat closure and all of the rule requirements for the chosen option must be followed for the person responsible for site rehabilitation to receive a Site Rehabilitation Completion Order (SRCO) from the Department.

The following is general guidance on the voluntary assessment and cleanup of a former cattle dip vat:

Determine which contaminants are present by laboratory analysis of soil samples for arsenic and organochlorine pesticides (EPA methods 7060 and 8081B, respectively). Soil samples should be collected from the bottom of the vat, outside the deepest part of the vat, and by the exit end drip pad.

Determine the area of contaminated soil by collecting soil samples at increasing distances from the vat. The use of a grid with 10 to 25-foot sample spacing provides sufficient detail to plan an excavation. The smaller grid applies to the first phase of assessment that is typically conducted adjacent to the drip pad and is used to plan subsequent phases of assessment. These subsequent phases may be conducted on the larger grid spacing.

Determine the depth of the contaminated soil by collecting separate soil samples from different soil depths. Typically samples are collected from 0-6", 6"-2 feet, and then every 2 feet until the depth of contaminated soil has been established. Many of the vats leaked so contaminated soil may extend into the water table.

Determine the depth to groundwater, the groundwater flow direction, and whether any of the contaminants are also present in the groundwater. If the groundwater is contaminated, the horizontal and vertical extent of the contamination must be determined. Groundwater monitoring wells are typically used in this determination. The groundwater contamination may be very shallow so it is important to use short well screens and to construct the monitoring wells so that the well screens intercept the water table surface.

If contaminated soil or groundwater extend to a surface water or wetland, samples of sediment and/or surface water will need to be analyzed. Sediment samples should be compared to the applicable Sediment Quality Assessment Guidelines (SQAGs). Groundwater and surface water samples should be compared to both groundwater and surface water Cleanup Target Levels (CTLs) (See 62-780.600(5)(m), F.A.C.).

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If there are any drinking water supply wells in use within 500 feet of the vat, contact the Department of Health, Division of Environmental Health, Bureau of Water Programs, Drinking Water Toxics Program or the county health department to arrange for sampling and analysis. The well sampling will be performed at no cost to the landowner. An alternative water supply may be necessary if contaminants are found in the well.

The assessment described above will provide the volume of contaminated soil, indicate if the contaminated soil extends into the water table and should indicate whether affected groundwater extends beyond the edges of contaminated soil. This information, along with the proposed development plans, can be used to determine the level of cleanup, evaluate different remedial strategies, decide whether dewatering will be required for excavation and determine whether any institutional and/or engineering controls will be required to control exposure to contaminants.

Most vats are cleaned up by excavating the contaminated soil to the default Soil Cleanup Target Levels in the Contaminant Cleanup Target Levels Rule, Chapter 62-777, F.A.C., and taking the soil to a permitted lined landfill for disposal. Contaminated groundwater can be pumped from the excavation or from wells and, (1) treated onsite to the applicable groundwater cleanup target levels and released to the ground, (2) transported in a tanker truck for offsite treatment and disposal, or (3) discharged to a sanitary sewer if contaminant concentrations are below the local discharge criteria and the receiving waste water treatment plant allows it.

Cleanup can also be limited to removal of only the most highly contaminated soil followed by a cap over the remaining contaminated soil and a restrictive covenant to maintain the cap and prevent digging. These options are more fully discussed in the Contaminated Site Cleanup Rule as are the requirements for the different types of Site Rehabilitation Completion Orders the Department will issue following cleanup.

Please contact Zoe Kulakowski of the Program and Technical Support Section if you have any comments or questions at 850-245-8982 or Zoe.Kulakowski@dep.state.fl.us.

MJY/zk

Attachment

**Update: The contact information provided above is no longer valid. Please refer to the Cattle Dip Vat website for current contact information.