

MEMORANDUM

FROM: LeRoy Feusner P.E., BCEE, Administrator
TO: SHWD Hazardous Waste Program and Inspection and Compliance Program Staff
SUBJECT: Methanol Spill Remediation Guidance Document
DATE: July 24, 2006 (rev. 8/29/2015)

This memorandum supercedes the February 12, 1997 memorandum, same subject, from Dave Finley.

Spills of methanol (the commercial chemical product, not products that contain methanol) on or into environmental media create a listed hazardous waste. Staff should ensure that the remediation requirements for spill media (contaminated soils and/or groundwater) meet the requirements of the Hazardous Waste Rules, as described in this memo.

As a general policy matter, responsible parties would usually be encouraged to excavate contaminated soils as a means of methanol spill remediation, unless the spill is too large. Excavation and 90-day treatment, as discussed below, is the simplest and most effective way to ensure adequate remediation of a methanol spill site. Excavation and 90-day treatment can be done without a permit or order, allows confirmation by soil sampling that there are no groundwater impacts, and because of methanol's low vapor pressure, allows quick volatilization of methanol with subsequent atmospheric conversion to carbon dioxide and water.

Staff should note that under Chapter 1, Section 264 (264.1)(g)(8), Hazardous Waste Rules, immediate response activities for hazardous waste spills are exempt from hazardous waste permitting requirements. Therefore, excavation of contaminated soils and placement of those soils in a bermed, lined storage area is allowed without a need to have a generator comply with Land Disposal Restrictions. However, please be advised that a lined, bermed pad does not meet the definition of a "tank or container" described below. As a general rule of thumb, immediate response should be consistent with the pollution incident report period of seven (7) days required by the WQD for releases. However, this may depend on the size and accessibility of the methanol release site. Therefore, some individual judgment may be necessary. In some cases, the act of excavating the methanol-contaminated soil and placing it in a lined pad could sufficiently aerate the soil to meet the 90-day treatment objective discussed below. Activities subsequent to those which you conclude to be "immediate" response activities, continue to be subject to the hazardous waste regulatory requirements.

1. Soils

In-situ requirements: If soils are to be treated in-situ, the treatment level should be established such that the soils do not pose a threat to human health or the environment. The default human health (residential soil) cleanup level provided in the Voluntary Remediation

Program (VRP) Fact Sheet #12, is 31,000 mg/kg to twelve feet below ground surface, and the migration to groundwater cleanup level for methanol is 3.2 mg/kg. An appropriate fate and transport model can be used to develop a site specific migration to groundwater level. It is recommended that VRP Fact Sheet #25, be used to calculate site specific soil cleanup migration to groundwater levels. The final cleanup level would be the lower of the human health or migration to groundwater levels (look-up or calculated as appropriate). In-situ treatment requires either a hazardous waste permit, a corrective action order or the responsible party can apply (and must be accepted) to participate in the VRP. If eligible, corrective action would be guided by the VRP process.

Ex-situ requirements: For treatment of soils that requires longer than 90 days (or 120 days with prior written approval from DEQ), the treatment level should comply with the Land Disposal Restriction (LDR) rules. LDR rules require non-wastewaters be treated to either 0.75 mg/L (TCLP), or to be combusted in industrial furnaces meeting the requirements of the hazardous waste regulations. Since combustion is not a practical alternative, soils should be treated to a concentration that would result in a TCLP analysis concentration of less than 0.75 mg/L prior to being placed on the land. Ex-situ treatment taking longer than 90-days requires either a hazardous waste permit, a corrective action order or the responsible party can apply to participate in the VRP. If accepted, corrective action would be guided by the VRP process.

Once treated soils have met the treatment objective for in- or ex-situ treatment as described above, they no longer “contain” the listed hazardous waste methanol and is no longer a hazardous waste.

2. Groundwater

In-situ requirements: If groundwater is to be treated in-situ, the treatment level should be established at the drinking water equivalent level for methanol (16 mg/L). In-situ treatment of methanol impacted groundwater requires either a hazardous waste permit, a corrective action order or the responsible party can apply (and must be accepted) to participate in the VRP. If eligible, corrective action would be guided by the VRP process.

Ex-situ requirements: If groundwater must be withdrawn to control plume migration or to accelerate treatment, groundwater must be treated to a level of 5.6 mg/L to meet the LDR standards before being reinjected. Ex-situ treatment of groundwater requires either a hazardous waste permit, a corrective action order, or the responsible party can apply (and must be accepted) to participate in the VRP. If eligible, corrective action would be guided by the VRP process.

Once treated groundwater has met the 16 mg/L standard for in-situ treatment, or the 5.6 mg/L standard for ex-situ treatment, groundwater no longer contains the listed hazardous waste methanol and is no longer a hazardous waste.

3. 90-day treatment

Soils and groundwater can be treated in containers for a 90-day period without any requirement for a hazardous waste permit or corrective action order. If the responsible party wants a liability assurance from DEQ (e.g., no further action letter, certificate of completion), the responsible party would need to apply and be accepted into the VRP. The 90-day period can be extended to 120 days with written authorization from DEQ/SHWD. If a responsible party elects

to excavate and treat soils within this 90-day period, the treatment objective should be set at the appropriate human health or fate and transport based level described above. If the treatment objective is met within the 90-day exemption period, further treatment below the LDR level of 0.75 mg/kg TCLP will not be required. Soils that have met the treatment objective could be placed on the land.

In similar fashion (although this may occur less frequently than for soils), if groundwater can be extracted and treated in a tank or container for less than 90 days (or 120 days with a written time extension), the treatment objective should be set at 16 mg/L. If ex-situ treatment of groundwater is needed, and it is anticipated to take more than 90 days, the treatment level should be set at 5.6 mg/L to comply with LDR requirements.

To meet the requirements for treatment without a permit, treatment must occur in a tank or container. The container must be clearly marked and visible for inspection with the words "Hazardous Waste" and the date upon which accumulation began. Previous examples of units that have met the definition of "tank or container" include pug mills to break up and aerate the soils and open top metal 20 or 40-yard trash roll-off containers. We have also permitted 'soil burners' through the solid waste program, and these burners could also be approved for use as meeting the definition of "tank or container". Please note that use of a soil burner permitted through the solid waste program would only be allowed for 90-day treatment (i.e., that which is exempt from the hazardous waste permitting requirements) and may require a permit from the DEQ Air Quality Division.

4. Permit/order/voluntary remediation requirements

Treatment of soils or groundwater, excluding treatment in a 90-day tank or container, requires either a hazardous waste permit, a corrective action order, or the responsible party must apply (and be accepted) into the VRP. Normally, the latter two are preferred over permits. Staff have the following options when dealing with responsible parties:

- a. A hazardous waste, corrective action order, (analog to RCRA 7003), can be issued unilaterally to the facility owner compelling the owner to clean up soils and groundwater to appropriate levels; or,
- b. A hazardous waste, corrective action order, (analog to RCRA 7003), can be negotiated with the owner and issued on consent; or,
- c. The owner can apply to participate in the VRP, and if found to be eligible, can treat soils or groundwater through the VRP process (preliminary remedy agreement, remedy agreement). Because treatment of these media is considered treatment of hazardous waste, the minimum requirements to maintain RCRA primacy would need to be implemented.

Orders or VRP remedy agreements should contain requirements to clean up methanol contaminated media to specific levels. For minor spills where there is a desire on the part of the owner to excavate contaminated soils before groundwater is impacted, the order or remedy agreement should contain requirements to confirm that methanol contaminated soils above the cleanup levels are not left in the excavation. Unless groundwater contamination is a remote likelihood, a comprehensive groundwater investigation with confirmatory groundwater sampling and analysis should also be included in the order. These small spill sites may also qualify to conduct an independent cleanup under the VRP, in which case, the owner should receive prior concurrence from DEQ that groundwater has not been impacted. Regardless of the administrative mechanism used to perform corrective action at the site, the selected remedy should be consistent

with VRP guidance (e.g., monitored natural attenuation guidance, remedy selection, etc.). It is also important that restrictions on groundwater use be put into place for the period of time groundwater remains contaminated above the DWEL as a condition of any remedial action.

C: John Wagner – WQD
Joe Hunter - ADMN