

3. **CARBON CANISTER:** In the two most recent Board cases where carbon adsorption was employed, emissions were to be monitored continuously so that the rate in pounds per year of total organic carbon could be reported to the agency. In these cases it was estimated that emissions would be on the order of tons per year. Also, the emissions were recorded on a strip chart or other permanent record. Such recording enabled Ohio EPA inspectors to easily verify whether the carbon adsorption system was properly managed.

In the Recommended Permit:

Permittee shall monitor the sample port located between the primary and secondary carbon canisters with an organic vapor analyzer once each operating day and record the data in the operating record of the facility. A reading exceeding 1,000 parts per million will require the Permittee to replace the primary carbon canister.

Recommended Permit Condition D.8 **(b)**.

This approach may be improved by requiring the measurements at the warmest time of day, between **2:00** p.m. and **3:30** p.m., when the carbon would be least effective in control. It may also be appropriate to measure emissions from the exit port of the second canister to verify collection by that canister of emissions passing the first canister.

***CLARIFICATION REQUESTED:*** Ohio EPA is requested to comment regarding the following: If a permit should issue, a condition would be inserted requiring that:

Carbon adsorption emissions shall be monitored continuously on a strip chart or other permanent record. Monitoring shall take place at the exit ports of both the primary and secondary carbon canisters until such time as Permittee can satisfactorily demonstrate that monitoring at the port between such canisters is sufficient.

Or, in the alternative:

Carbon adsorption emissions shall be monitored once each day between 2:00 p.m. and **3:30** p.m. Monitoring **shall** take place at the exit ports of both the primary and secondary carbon canisters until such time as Permittee can satisfactorily demonstrate that monitoring at the port between such canisters is sufficient.

- c. Was there verification of the equations and calculations used in calculation of the movement of spilled waste from the soil surface toward the ground water? In particular: (i) Was there a review of the sources of equations 2 through 16 to determine if they were published in peer review journals or other peer reviewed forum? (ii) A determination of whether field data have been used to evaluate predictions of the equations? (iii) A repeat of the calculations of **pages H-5 through H-16** to ascertain whether the numbers selected can be reproduced? (iv) Consultation with experts regarding the validity of the calculations?
- d. Regarding the estimation of air emissions from a tank spill, the air emissions are estimated with calculations presented on CD .97, pages H-17 through H-34. Was there verification of the air emission calculations which are summarized in tables **H.2-7 and H.2-8?**
- e. Modelling of dispersion of emissions from a tank spill are discussed at CD .97 at pages H-35 through H-38. Was there verification of the maximum 1 hour unit air concentrations, *i.e.*, Did Ohio EPA run the ISCST model with appropriate input parameters and compare the results of the run with Applicant's results?
- f. The evaluation of acute health risks associated with a tank spill is based upon health risk criteria summarized in CD .97 at Table 4.1-4, page 4.7. Was there verification regarding the selection of data for Table **4.1-4?**

NOTE: As the data in the above-referenced table are taken from at least 5 authoritative technical references, verification would likely require a review of the data from each source to determine which is more valid and which is the most stringent, and a subsequent decision made as to whether the appropriate data was selected.

- g. Were the data regarding the tank fire and the spill into Beaver Creek scenarios in CD .97 verified?

In addition to that specified above, verification is defined as a process consisting of completion of the following steps: (1) model *run*; (2) comparison with known results; (3) adjustment of model parameters to make the model a more accurate reproduction or mimic of reality; and (4) adjustment of data to accommodate model adjustments, measurement and collection shortcomings, and inefficiencies in the data base.

- Human Health Risk Assessment for the Southdown, Incorporated, Cement Kiln, Fairbom, Ohio, prepared by Clement International Corporation, dated August 1992, discussing issues of worst-case transportation accidents, fires and explosions, the effects upon ground water due to storage tank spills, and effects of fugitive emissions **from** the storage tank area;
- Dispersion modelling to predict ambient impact of emissions, performed by Clement International Corporation, using emission rates calculated by TERA and the Industrial Source Complex Short Term (ISCST) model;
- Potential risk from fugitive emissions from the piping systems associated with the storage tanks calculated by TERA and Clement International Corporation, using USEPA's Non-leaking Average Fugitive' Emission Factors for the Synthetic Organic Chemical Manufacturing Industry (SOCMI).

**CLARIFICATION REQUESTED:** Ohio EPA is requested to respond. Did the Ohio EPA verify the following:

- a. Regarding the probability of truck accidents in which hazardous waste fuels (HWF) are released to the environment, Table J.2-2 of Appendix J of CD .97 summarizes the expected releasing accident rate for tank truck transport of HWF to the facility. Was verification performed?

The statistics of accidents per million miles and probability of release per accident which were used in Table J.2-2 apply to highway conditions from Detroit, Cincinnati, or Carrollton to the facility. The references for these statistics are based upon studies in California, Texas, and New Jersey. Was inquiry made as to whether the data taken from these studies reflect the conditions of Ohio winters? Was inquiry made as to whether results would have been different if data were obtained from the Ohio Department of Transportation?

- b. The impact of a tank spill on ground water is considered in CD .97, Appendix H. Was there verification that equation 1 on page h-5 is appropriate for calculation of the surface area of the pool of HWF in the tank spill scenario? Was the original source of the equation reviewed to determine the accuracy of the assumptions used in the derivation of the equation? Were the existing topography, surface materials in the vicinity of the storage tanks, and surface drainage system verified to ensure consistency with conditions required for the use of equation 1?

**NOTE:** The area calculated by equation 1 is used in equations 2, 4, 6, 8, 10, 11, and 16 in subsequent calculations.

**CLARIFICATION REQUESTED:** Applicant is requested to comment regarding the following:

If a permit should issue, a condition would be inserted requiring that the bum tank be sampled once every day to confirm its composition.

Or, in the alternative, explain why daily sampling of the bum tank is not necessary.

11. **OHIO EPA'S CLARIFICATION OF ATTACHMENT I:** Attached is Ohio EPA's Exhibit A, which the agency suggests be added to Recommended Attachment I for clarification.

**CLARIFICATION REQUESTED:** Does Applicant wish to comment regarding the insertion of the Exhibit into Attachment I?

12. **TRANSPORTATION ISSUES - GREENE COUNTY OFFICIALS:** Applicant had indicated that it was willing to work with Greene County officials regarding transportation issues discussed at a December, 1992 meeting. Tr. of January 13, 1993 at 62-64.

**CLARIFICATION REQUESTED:** Applicant is requested to comment regarding the following: If a permit should issue, is a permit condition appropriate regarding this subject?

TO OHIO EPA:

1. **SPECIFICATION OF CRITERIA FOR PERMISSION:** The Recommended Permit provides for certain, specified waste codes to be restricted to 5000 tons per year of throughput, provided that if "Applicant wishes to accept any . . . [said waste] above this specified limit, permission must be obtained from OEPA upon a case-by-case review." Recommended Permit Attachment I.

**CLARIFICATION REQUESTED:** Ohio EPA is requested to clarify how it intends to administer the condition. For example:

- a. How will permission be manifest?
- b. Who will sign the document?
- c. Will permission be public noticed? Public comment provided?
- d. Is permission or denial an appealable action? To whom?
- e. What criteria will be used for granting permission?

2. **VERIFICATION:** Risk assessments, designed to estimate and describe the level of risk associated with the facility and associated operations and activities, were used by Applicant in support of its application. These included:

- (d) Emergency shut-off switches, which ~~will~~ SHALL deactivate all electrical equipment in the tank storage facility, ~~will~~ SHALL be located on the outside of the maintenance shop, which is directly adjacent to the storage facility, and in the facility control room.
- (e) All electrical systems ~~will~~ SHALL conform to NFPA 497A: Hazardous Locations for Electrical Installations in Chemical Process Area, and Articles 500 through 502 of NFPA 70, or equivalent specifications as approved by the appropriate authorities with jurisdiction of the subject matter.

9. **VAPOR MONITORS:** A question is raised as to whether a tank farm design should require vapor monitor placement in the containment area? In previous cases, vapor monitors were used to sound an alarm when vapor concentrations approached lower explosion limits.

**CLARIFICATION REQUESTED:** Applicant is requested to comment regarding the following: If a permit should issue, a condition would be inserted requiring that:

Vapor monitor(s) shall be installed in the tank containment system, adequate and sufficient to detect and alert to vapor concentrations approaching the lowest lower explosion limit of the waste constituents which Permittee is authorized to manage at the facility.

Or, in the alternative, demonstrate why the condition is not necessary by describing other devices or procedures planned that would address this concern? Or, the is the condition unworkable.

10. **TANK SAMPLING:** The prediction of waste composition in the bum tank, based upon records of **incoming** waste, may not be an adequate indication of real situations. Sampling of the bum tank to **confirm** its composition may be necessary to ensure that the waste is the typical hazardous waste fuel as defined in the Siting Criteria Document, Attachment 22.

- (b) The foam deluge system ~~will~~ SHALL utilize alcohol resistant (polar solvent) type foam through overhead nozzles PLACED IN A 10 FEET BY 10 FEET GRID PATTERN ~~located~~ over the **four**-tank area and unloading area, giving a simultaneous discharge throughout. Design density ~~will~~ SHALL be a minimum of **.2 Gpm/ft<sup>2</sup>** for extra hazard/special hazard occupancy, or equivalent specifications as approved by the appropriate authorities with jurisdiction of the subject matter. Manual pull stations ~~will~~ SHALL be located AT EACH END OF THE TANK UNLOADING RACK AND as needed AROUND THE TANK SYSTEM for manual over-ride capability. The foam storage tank shall be located remotely in an enclosed, heated building, and ~~will~~ SHALL be sized to provide constant operation throughout the complete capacity of the water storage tank. The storage tank shall hold approximately 7500 gallons, which ~~will~~ SHALL yield 7732 gallons of foam product. The foam tank shall hold 300 gallons.
- (c) A fire pump shall be provided for additional water from the water pond. Fire department connections which conform with NFPA standards **#13** and **#15**, or equivalent specifications as approved by the appropriate authorities with jurisdiction of the subject matter, shall also be available for additional capacity if required.

Listing for control and releasing devices, or equivalent specifications as approved by the appropriate authorities with jurisdiction of the subject matter, as well as to the requirements of applicable NFPA standards. THE FIRE ALARM AND CONTROL PANELS SHALL BE EQUIPPED WITH A 60 HOUR BACKUP BATTERY IN THE EVENT OF A POWER LOSS. ALL CIRCUITS ASSOCIATED WITH THE SYSTEM SHALL BE CONTINUOUSLY MONITORED FOR INTEGRITY. IN THE EVENT OF A POWER LOSS OR IF A CIRCUIT IS BROKEN, THE MASTER CONTROL PANEL SHALL SOUND AN AUDIBLE ALARM AND SEND A SIGNAL TO THE CENTRAL CONTROL ROOM. Detection ~~will~~ SHALL be by rate-compensated thermal detectors spaced on approximate 25 foot centers in a cross zone configuration. Actuation of any one detector ~~would~~ SHALL cause an audible (92 DECIBELS AT 10 FEET) AND VISUAL (8,000 CANDLE-POWER STROBE LIGHT) alarm to sound locally AT EACH OF THE MANUAL PULL STATIONS and at a constantly attended location, and open the automatic valve to the water supply (from storage tank) to activate the foam deluge system. Actuation of a detector shall also transmit a signal to the Fairbom fire station via automatic telephone dialer.

- (F) THE DETECTION / ALARM SYSTEM SHALL INCLUDE A MASTER CONTROL PANEL LOCATED NEAR THE FOAM STORAGE TANK, WHICH IS REMOTE FROM THE HAZARD. THIS CONTROL PANEL SHALL CONFORM TO THE U.L. 864 LISTING FOR CONTROL AND RELEASING DEVICES, OR EQUIVALENT SPECIFICATIONS AS APPROVED BY THE APPROPRIATE AUTHORITIES WITH JURISDICTION OF THE SUBJECT MATTER, AS WELL AS TO THE REQUIREMENTS OF APPLICABLE NFPA STANDARDS. THE FIRE ALARM AND CONTROL PANEL SHALL BE EQUIPPED WITH A 60 HOUR BACKUP BATTERY IN THE EVENT OF A POWER LOSS. ALL CIRCUITS ASSOCIATED WITH THE SYSTEM SHALL BE CONTINUOUSLY MONITORED FOR INTEGRITY. IN THE EVENT OF A POWER LOSS OR IF A CIRCUIT IS BROKEN, THE MASTER CONTROL PANEL SHALL SOUND AN AUDIBLE ALARM AND SEND A SIGNAL TO THE CENTRAL CONTROL ROOM.

D.7 Fire Suppression System

- (a) The detection/alarm system ~~will~~ SHALL consist of a master control panel located near the foam storage tank, which is remote from the hazard. This control panel ~~will~~ SHALL conform to the U.L. 864