

PPC 9523.00-14

OSWER POLICY DIRECTIVE NO. 9523.00-14

OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE

MAR 14 1986

MEMORANDUM

SUBJECT: Summary of Recent Permit Assistance Team
(PAT) Comments

FROM: Terry Grogan, Program Manager
Land Disposal PAT Program

TO: Permit Section Chiefs
Regions I - X

The OSW Permits Branch plans to provide a semi-annual report summarizing major issues that PAT members address in their reviews of specific Part B applications. These reports will cover issues that are of national interest rather than strictly site-specific interest. The attached report is the first in this series; it summarizes generic issues addressed in PAT comments prepared for nine land disposal Part B applications reviewed during 1985. We hope the recommendations provided in this summary of recent PAT comments will be helpful for permit writers encountering similar situations at other RCRA facilities. Therefore, we encourage you to share this report with your staff and State permit writers.

Since this report is the first attempt to derive written national suggestions from site-specific PAT comments, we are very interested in your reaction. Please let me know if the report and current format are useful. Is the level of detail provided here adequate? Would you like to see the original PAT comments for specific sites or some other form of guidance?

Attachment A to the report lists the facility names, Regions, and PAT reviewers for each application included in this report. Attachment B provides a current roster of the members and expertise of the Land Disposal PAT staff.

cc: Marcia Williams
Bruce Weddle
Jack Lehman
Eileen Claussen
Lloyd Guerci
Peter Guerrero
Truett DeGeare
Ken Shuster
Jerry Kotas

RO 12582

Sylvia Lowrance
Mark Greenwood

SUMMARY OF RECENT PERMIT ASSISTANCE TEAM (PAT) COMMENTS

Sampling Procedures

1) Filtering Ground Water Samples

The practice of filtering ground water prior to analysis can remove contaminants sorbed onto particulates which can give misleading indications of ground water quality. The August 1985 Draft RCRA Ground-water Monitoring Technical Enforcement Guidance Document recommends that ground water samples collected for metals analysis should be split into two portions. One portion should be filtered through a 0.45 micron filter and analyzed for dissolved metals. The recommended approach for the second unfiltered portion is to use a mild acid digestion method (e.g., Method-3010, SW-846) to yield total recoverable metals. Any difference in concentration between the total and dissolved fractions may be attributed to either the original metals content of the particles or to the migration of dissolved metals onto the particles.

2) Bailers

The composition of bailers is important when monitoring for certain types of constituents. For example, brass bailers should not be used when sampling for metals because brass can introduce metallic ions into the samples.

The Use of Models

1) Unusual Ground Water Situations

In situations where aquifers are composed of highly stratified sediments or have other unique features, most current mathematical models may not accurately predict aquifer characteristics. Therefore, the model used should include a trial-and-error phase, in which computed drawdowns are matched with observed field drawdowns. A recommended reference is: Land, Larry F., "Utilizing a Digital Model to Determine the Hydraulic Properties of a Layered Aquifer" *Ground Water* v.15, no. 2 pp 153-159 (1977).

Applying HSWA Corrective Action Requirements to Releases from Process Areas

1) Interpretation of "SWMU"

A facility is underlain by contaminated soils and ground water resulting from prior releases from process areas. Draft policy guidance (January 30, 1985) interprets the term

"solid waste management unit" (SWMU) to exclude accidental spills from production areas. However, the contamination at this facility appears to be the result of routine, deliberate, and systematic discharges from the process area. Such deliberate deposition qualifies the process area as a de facto SWMU.

Request for a Liner Exemption

1) Liner Exemption Based on Design Concept

A facility applied for an exemption from the landfill liner and leachate collection and removal system requirements of 264.301. The owner/operator claimed that the landfill unit will not result in migration of leachate from the unit due to its intergradient design. The unit is located within the uppermost aquifer and the net migration of water is into the unit. Theoretically, migration of contaminants out of the unit will be prevented since this is counter to the inward flow of water. However, this design does not qualify for a liner exemption, which requires that the unit prevents the migration of hazardous constituents into ground or surface water at any future time. Although the net flow of ground water is into the proposed facility, under certain conditions (i.e., when the waste reaches saturation) constituents can be expected to migrate out of the waste and eventually out of the unit.

Stabilization of Bulk Liquids

1) Acceptable Chemical Stabilization Techniques

To treat bulk hazardous liquids, owner/operators must demonstrate that the 'treatment' applied to the liquid is not absorption. Chemical stabilization is one treatment alternative for bulk hazardous liquids. Stabilization technologies commonly used include Portland cement-based processes and other pozzolanic processes using lime products and materials such as fly ash, ground slag, and cement kiln dust.

2) Demonstrations of Stabilization

After chemical transformation has occurred, the end product should pass the Paint Filter Liquids Test finalized on April 30, 1985 (50 FR 18370). In addition, the owner/operator must demonstrate that the waste has been adequately stabilized. EPA is in the process of recommending a performance standard to help owners/

operators and permit writers determine whether a process is "chemical stabilization" (as opposed to absorption). This standard uses an unconfined strength test to make the determination. The owner/ operator has the option of proposing a different methodology as long as adequate stabilization can be demonstrated.

Corrective Action

1) Regulatory Status of Contaminated Ground Water

John Skinner's memo of December 26, 1984, states that contaminated ground water collected and derived from a listed waste or hazardous due to presence of a characteristic is a hazardous waste and subject to Subtitle C regulations. Therefore, owner/ operators proposing a corrective action such as counterpumping must manage such collected ground water as a hazardous waste. The Part B application must include the procedures used to manage ground water so that they can be evaluated.

2) Removal of PCP by Activated Carbon

Passing contaminated water through activated carbon usually works well for most organic chemicals. However, the applicability of this method for PCP (penta-chlorophenol) may be questionable. The phenolic group in PCP is weakly acidic ($pK_a = 4.7$) and PCP will ionize in neutral water. In the ionic form, the compound is highly water soluble and its affinity for carbon severely reduced. Specific data must be provided (e.g., from bench or pilot studies) that demonstrate the applicability of activated carbon in removing PCP.

3) Permit Specifications

Corrective action programs, when warranted for regulated land disposal units, must be specified as part of a facility's permit. The permit should include the basic measures to be taken for the corrective action, and predict when the goals of the corrective action plan will be met. Any future changes in the specifics of the corrective action program would entail a permit modification. It is important that the owner/operator adequately define the zone(s) of contamination, aquifer hydraulic characteristics, and the hazardous constituents in the groundwater. The owner/operator should conduct pilot pump tests to verify the performance of any counter-pumping installation if necessary.

ACLs

1) Use of Acceptable Surface Water Limits

When the only exposure to ground water contaminants is via surface water, then it is possible to base the ACLs on acceptable surface water limits for the contaminants present in the ground water and to use a surface water dilution factor to derive the ACLs. The dilution factor, however, must be sufficiently conservative relative to the assumed stream flow. In general, the owner/operator should assume a 7-day, 10-year low flow. The dilution calculations should only consider mixing within some State-approved zone and will depend on the ground water loading to the river.

Owner/operators intending to use surface water dilution in an ACL application must prepare a surface water analysis to determine the cumulative impact on the river. The analysis should include upstream, downstream and point of discharge sampling for the Appendix VIII constituents present in the ground water.

The actual ground water discharge to a surface water body must be verified by appropriate ground water delineation methodology. It is not sufficient to assume that all ground water discharges to a surface water body. It must be demonstrated that ground water flow does not go under and beyond the surface water body.

2) Potential Point of Exposure

In an ACL submission, the applicant must address the on-site use of ground water as well as any use downgradient of the facility. Ground water exposure is assumed to be at the facility's waste management boundary unless there is use restrictions on-site. The fact that ground water is not currently used is not sufficient evidence to assume no potential exposure. If ground water use restrictions, i.e., deed restrictions, are implemented on-site, then the property boundary is assumed to be the potential point of ground water exposure. If the point of exposure is at a surface water body, ground water use restrictions should be in effect from the waste management boundary to the point where ground water discharges to surface water.

When calculating exposure through surface water in order to determine an ACL, surface water exposure should be based on exposure immediately outside the mixing zone. Applicants

cannot assume that water consumed will be treated prior to consumption because the criterion is not technology-based and exposure must be estimated adjacent to the mixing zone. For surface waters, the potential point of use is at the shoreline or area of the waterbody where contaminated ground water discharges. The requirement that the point of exposure is at the edge of the mixing zone is primarily for the protection of the environment, as the ACL guidance stresses the importance of protecting the environment as well as human health. Aquatic toxicity data should be compared with human toxicity data to determine limiting effects of the constituents of concern. Information should be submitted on aquatic habitats adjacent to ground water discharges to the surface waterbody. Special attention should be placed on bioaccumulation of hazardous contaminants by benthic organisms and fishery resources.

3) Modeling Information Required for ACL Demonstrations

Modeling degradation and attenuation of constituents between hazardous waste management units and a potential point of exposure is a valid method for developing ACLs. However, all modeling must be substantiated by sufficient information and sampling. Model documentation is necessary for most ACL proposals. For example, applicants must provide the full name of all models used as well as documentation on why and how the model was applied.

4) Grouping of Toxic Contaminants

Grouping can mask the effects of individual chemicals. In addition, degradation products can be lost in grouping schemes. Nevertheless, the ACL guidance allows grouping of hazardous constituents in order to simplify the ACL demonstration. The burden of proof that a grouping of constituents is appropriate is on the owner/operator. Exposure pathways and metabolic endpoints for each constituent must always be considered when determining appropriate groupings. The fate and transport mechanism, not concentration and volume, are the most important factors for choosing the most mobile constituents within a grouping.

Attachment A

Pat Reviews Included in This Summary

Facility	Region	PAT Coordinator
Allied Chemical	III	Amy Mills
Chem Waste Management	IV	Chris Rhyne
Ciba-Geigy	IV	Rich Steimle
Eaton Corp	V	Amy Mills
G.E. Waterford	II	Amy Mills
Hytek	X	Amy Mills
International Paper	VII	Vernon Myers
Permapost	X	Robert Kayser
USPCI	VI	Robert Kayser

Attachment B

OSW Permits Branch

Land Disposal Permit Assistance Team (PAT)

Terry Grogan, Manager (382-4740)

Current Staff:

Chris Rhyne (Civil Engineer; 382-4695)

- Disposal D & O Standards
(liners, leachate collection)
- Closures (caps, etc.)
- CERCLA sites

Bob Kayser (Chemist; 382-4536)

- Appendix VIII Monitoring
- Waste Analysis
- Exposure Assessments

Nestor Aviles (Chemical Engineer; 382-2218)

- Land Treatment

Janette Hansen (Hydrogeologist; 382-4754)

- Groundwater Monitoring
- Corrective Action
- PA/SI Field Test and Training

Mark Salee (Environmental Scientist; 382-4740)

- ACLs
- Exposure/Risk Assessments

Dave Eberly (Civil Engineer; 382-4691)

- Disposal Standards

Vacancy (Geologist)

Others:

Mickey Hartnett (Environmental Engineer; 382-4755)

- On detail from Region IV to develop program
for Corrective Action technical assistance.

Rich Steimle (Hydrogeologist; 382-7912)

- On detail to Ground Water Task Force.

Amy Mills (Geologist)

- On academic leave until 1/87.