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TITLE: Additional Organic Parameters in Evaluation of Interim Status Ground-Water Monitoring

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ORIGINATING OFFICE: Office of Solid Waste

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Regulations: 40 CFR 270.14(c)(4), 265 Subpart 5
Subject: Additional Organic Parameters in Evaluation of
Interim Status Ground-Water Monitoring
Addressee: Lloyd Guerci, Acting Director, RCRA Enforcement Division
Originator: Bruce R. Weddle, Director, Permits and State Program Division
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Summary:

The memo discusses methods to overcome the limitations of interim status ground-water monitoring data. The memo recommends using the authority of §270.14(c) after the Part B is called. This allows the permit writer to direct the applicant to undertake a full Appendix VIII scan or to monitor for a set of parameters beyond those in Part 265 in order to confirm the absence of ground-water contamination.

AUG 19 1985

MEMORANDUM

SUBJECT: Use of Additional Organic Parameters in Evaluation of Interim Status Ground-Water Monitoring

FROM: Bruce R. Weddle, Director
Permits and State Programs Division

TO: Lloyd Guerici, Acting Director
RCRA Enforcement Division

You recently asked for our views on a memo from Michael Gansecki of Region VIII on the limitations of ground-water monitoring required under Interim Status. We believe that this memo (which is attached) raises a variety of valid concerns. Under Part 265 regulations, the parameters are restricted to a few indicators and the drinking water standards, and do not include numerous organic chemicals of possible concern. The problems outlined in the memo accurately characterize the difficulty encountered in interpreting Interim Status monitoring data.

The most serious problem, however, is the lack of appropriate monitoring data for organic compounds. Even with full compliance with the rules under Part 265 Subpart F, the lack of adequate organic parameters leaves some uncertainty as to whether facilities have, in fact, contaminated the ground water. The Part 265 indicator parameters suffer from a lack of sensitivity, and may be unreliable; most importantly, the only specific organic parameters are a handful of pesticides.

Questions concerning Interim Status ground-water monitoring have been raised many times, and the Agency has previously provided guidance on the subject. The joint memo from Lee Thomas and Courtney Price to the Regions (November 29, 1984) addressed this issue in some detail. This memo advised the Regions to "notify facilities as early as possible prior to or upon calling in their Part Bs (or knowledge of a planned new facility) of the types of data that must be submitted in the Part B in order to satisfy §270.14(c)." The memo also noted that in order to satisfy §270.14(c), facilities must provide information to support a determination of whether hazardous constituents (i.e., App. VIII) are present in the ground water.

WH-563:BKaysen:mc:S264:382-4740:8/9/85:Disk Kayser IV
 WH-563:BKaysen:mc:S264:382-4740:8/16/85:Disk Kayser IV:correction

As noted in the Permit Applicants' Guidance Manual for Hazardous Waste Land Treatment, Storage, and Disposal Facilities (May 1984), if EPA determines that the Interim Status ground-water monitoring program cannot adequately determine whether a plume of contamination has entered the ground water, then the Region may immediately require compliance with §270.14(c)(4) and direct the applicant to analyze for all Appendix VIII constituents at once. Alternately, a compliance order may be issued directing the applicant to collect additional data "responsive to §270.14(c)(4) for use in determining how the facility should be permitted under the Part 264, Subpart F system."

The Compliance Order Guidance (Draft, March 1985) attempts to integrate the §265 and §270 ground-water requirements. This guidance reaffirms that §270.14(c)(4) applies to facilities that have not demonstrated the absence of contamination. Chapter 5 points out that at this point in the RCRA program, facilities should not be allowed to begin the entire sequence designed for the permitting process, i.e., the installation of an adequate monitoring system, periodic sampling, determining if statistically significant indications of contamination exist, and then characterizing the plume of contamination. If Interim Status monitoring data is deemed inadequate, facilities should be forced to accelerate this process, and the guidance suggests that the determination of contamination may be made based on monitoring for an expanded list of chemical parameters. These additional parameters may be chosen based on site-specific factors, including the types and characteristics of the wastes handled, and the potential for migration into ground water. The document suggests several administrative enforcement options, including action under §3008(a) enforcing Parts 265 and 270 to develop and monitor for a list of meaningful "indicator" chemicals.

The Permits and States Program Division has long advised Regions to use the authority of §270.14(c) after the Part B has been called. If the Permit Writer cannot determine from the Interim Status data whether or not contamination has occurred, he can direct the applicant to undertake a full App. VIII scan. Rather than exercise the full authority of §270.14(c)(4), the Permit Writer may attempt to negotiate to have the applicant voluntarily monitor for a set of parameters beyond those in Part 265 in order to confirm the absence of ground-water contamination. The threat the Permit Writer would hold in reserve would be to insist on a full App. VIII scan. Note that if a limited organic analysis indicates that ground-water contamination exists, then a full App. VIII scan would be mandatory under §270.14(c).

Therefore, the Region may pursue one of the above approaches in dealing with problems in Interim Status monitoring. Whether the Region decides to exercise the full authority of §270.14(c)(4) at once and demand an App. VIII scan, or instead decides to choose "indicator" chemicals through negotiation or an enforcement order, will depend on the specific merits of each case. In all cases, however, the Region must be satisfied that the existing monitoring network of wells will, in fact, be able to detect contamination. Additional wells and/or further site characterization may often be required.

The memo from Region VIII also urges EPA to develop a "national model" for sampling a restricted set of organic parameters. However, as noted in the Compliance Order Guidance, the parameters chosen may vary considerably from site to site. Certainly, the GC/MS methods recommended in the memo (SW-846 methods 8240 and 8250/8270) are quite comprehensive, and should be adequate to determine most organic constituents of concern in App. VIII.

Currently, the Agency has no plans to develop a "national model" for a restricted group of organic chemicals from App. VIII. However, the approach outlined in the memo from Region VIII seems valid, i.e., to select organics from the CERCLA priority pollutants list and other App. VIII chemicals that are most likely to enter ground water. In such an exercise the following should be considered:

- past data showing what substances have been most often measured in ground water;
- the types of wastes handled at the facility and the likely hazardous constituents;
- the physical/chemical properties of candidate organics that are indicative of a high potential for migration, i.e., high water solubility, low octanol/water partition coefficient, etc; and
- the availability of proven analytical methods.

If you or your staff would like to pursue these issues with us further, please feel free to contact Bob Kayser and Amy Mills of the Permit Assistance Team.

Attachment

cc: Peter Guerrero Bob Kayser Mike Barclay
Terry Grogan Amy Mills