

9484.1987(07)

SURFACE IMPOUNDMENT (IS) RETROFITTING WAIVER REQUEST (OCCIDENTAL CHEMICAL)

July 14, 1987

MEMORANDUM

SUBJECT: Interim Status Surface Impoundment Retrofitting Waiver Request; Occidental Chemical Corporation, Delaware City, Delaware

FROM: Robert Kayser, Acting Chief
Land Disposal Permit Assistance Section (WH-563)

TO: John J. Humphries III, Acting Chief
DELMARVA/DC/WV Section (3HW32)

As you requested, we have reviewed the material relevant to the surface impoundment retrofitting waiver request submitted by Occidental under §3005(j)(2). These materials are the:

1. Aquifer Connection Study, Diamond Chemicals Company, Delaware City, Delaware; February, 1985
2. Request for Existing Surface Impoundment Retrofitting Variance for Cell No. 2 Occidental Electrochemicals Corporation; November 6, 1986
3. Letter, Stephen Wassersug to Mr. I.F. Polask, Occidental Electrochemicals Corporation; February 19, 1987 (with enclosures)
4. Retrofit Waiver Request, Response to EPA Document Dated 2/19/87; April 8, 1986 [sic]

Specifically, you requested our evaluation of the relevant information pertaining to the requirement of §3005(j)(2)(B), which requires that the surface impoundment be located at least one-quarter mile from an underground source of drinking water (USDW). The impoundment that is the subject of the waiver request, the mercury brine sludge cell No. 2, is underlain by two aquifers, both within one-quarter mile of the impoundment. In their request for the exemption under §3005(j)(2), Occidental

claims that the upper aquifer, in the Columbia Formation, is unusable as a USDW and that the lower aquifer, in the Potomac Formation, cannot be reached by migration of contaminants. Our comments below address both claims.

1. The Columbia Aquifer

The Columbia Aquifer is a regional aquifer used as a water supply source in Northern Delaware, primarily for private household wells. It is not used as such, however, in the vicinity of the Occidental site. Occidental attributes this to the poor water quality, specifically high chlorides. Occidental also states that future use is not anticipated.

The Columbia Aquifer is immediately under the site, which would make the impoundment ineligible for a waiver under §3005(j)(2) unless the aquifer is not a USDW. As noted in the 1986 Interim Status Surface Impoundments Retrofitting Variance Guidance Document (p. 2-8), "any portion of a nonexempted USDW within a 1/4-mile radius disqualifies an impoundment from the first exemption". Further, on page 2-9, the Guidance provides an elaboration on the term "aquifer" by explaining that the term "refers to an entire hydrogeologic unit, not only the points at which water is or could be withdrawn (emphasis added).

Thus, regardless of the condition of the aquifer in the immediate vicinity of the surface impoundment at Occidental, the fact that the impoundment is within one-quarter-mile of the Columbia Aquifer, which is a regional aquifer used for public water systems, would disqualify Occidental from receiving a waiver under §3005(j)(2).

In section 3.2 of the original application of November 6, 1986, Occidental admits that the Columbia Aquifer meets the criteria of a USDW, but then precedes to confuse the requirements of §3005(j)(2) with those of §3004(o)(2). Design, operating practices, and location have no relevance to a §3005(j)(2) waiver request.

2. Potomac Aquifer

The Potomac Aquifer is extensively used as a water supply source by municipal and industrial users in Northern Delaware. The Upper Hydrogeologic Zone (UHZ) of the Potomac Aquifer is

separated from the Overlying Columbia Aquifer by a layer of clays and silts having an average permeability of 1.9×10^{-8} cm/sec. The claim by Occidental is that the layer acts as "a significant aquitard between the two aquifers" (p. 5 of April 8, 1987 Response). While extenuating circumstances may exist that could

preclude hazardous constituents from reaching the Potomac Aquifer for, as Occidental claims, 20,000 years, neither §3005(j)(2) nor the Guidance provide for such circumstances to be considered. Therefore, the waiver request does not satisfy the criteria in §3005(j)(2) because the Potomac Aquifer is a USDW that is within one-quarter mile of the impoundment.

If you or your staff wish to discuss any aspect of this review, please call Dave Eberly at FTS 382-4691.

cc: Marcia Williams
Bruce Weddle
Suzanne Rudzinski
Dave Eberly
Paul Cassidy
Bob Greaves, Region III
Stephen Wassersug, Region III
Diane Schott, Region III