



THE MEMPHIS DEPOT TENNESSEE

ADMINISTRATIVE RECORD COVER SHEET

AR File Number 58



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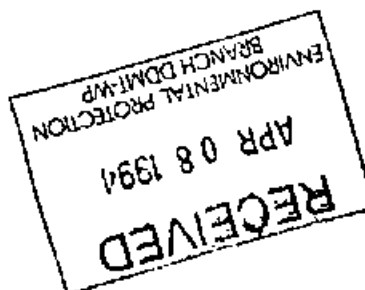
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

MAR 31 1994



4WD-FFB

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

C. Michael Rust, Colonel, USA
Commander
Defense Depot Memphis Tennessee
2163 Airways Blvd.
Memphis, Tennessee 38114-5000

SUBJ: Notice of Technical Inadequacy (NOTI): Interim
Measures to address contaminated groundwater at Operable
Unit 1 - Dunn Field;
Defense Distribution Depot Memphis, Tennessee (DDMT)
EPA I.D. No.: TN4 210 020 570

Dear Colonel Rust:

The Environmental Protection Agency (EPA) has completed its review of the document Draft Final Engineering Report: Interim Remedial Measure for Groundwater (Report). Our comments are enclosed. EPA has reviewed this Report for compliance with the requirements for an Interim Measure (IM), pursuant to Condition II.F. of the RCRA HSWA permit, and a Focused Feasibility Study (FS), pursuant to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). As stated in previous correspondence (see letter dated November 27, 1991), EPA strongly recommends that the proposed IM also be completed as an Interim Remedial Action (IRA) in accordance with the NCP.

The current Report fails to adequately characterize the groundwater contaminant plume beneath Dunn Field, particularly for metals. Specifically, the information presented does not provide a sufficient basis for the proposal and selection of appropriate remedial alternatives to extract and treat contaminated groundwater at Dunn Field. Further justification is also needed to support the decision not to install any off-site extraction wells. The present Report is therefore incomplete and must be revised to address these, and all other, concerns specified in the first group of attached comments.

EPA also continues to have concerns regarding the number, placement and pumping rates of the proposed extraction wells. As specified in the second group of attached comments, these

concerns must be addressed in the Remedial Design (RD) documents to be submitted subsequent to the present Report.

EPA understands that DDMT is now in receipt of the analytical results from a round of groundwater sampling which was conducted during the Fall of 1993. This data should provide the information needed to revise this Report and initiate preparation of an appropriate RD. Therefore, in accordance with Condition II.F.1.c. of the RCRA/HSWA Permit No. TN4 210 020 570, a revised Report and an IM (RD) Work Plan must be submitted to EPA no later than sixty (60) calendar days from your receipt of this letter.

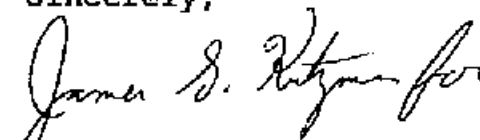
Please submit three (3) copies of the revised Report and Draft IM (RD) Work Plan to:

Mr. Joseph R. Franzmathes, Director
Waste Management Division
U.S. Environmental Protection Agency
345 Courtland Street, NE
Atlanta, Georgia 30365

Failure to comply with any permit condition may result in an enforcement action pursuant to Section 3008(a) of the RCRA, 42 U.S.C. 6928, as amended by the Federal Facility Compliance Act of 1992, under which EPA may seek the imposition of penalties of up to \$25,000 for each day of continued non-compliance.

If you have questions or comments regarding these matters, please contact Allison Drew of the Department of Defense Remedial Section at (404) 347-3016.

Sincerely,



Joseph R. Franzmathes, Director
Waste Management Division

Enclosure

cc: Frank Novitzki, DDMT
Christine Kartman, DDMT
Bill Forrester, TDEC
Jordan English, TDEC

TECHNICAL REVIEW AND COMMENTS
ENGINEERING REPORT: INTERIM REMEDIAL MEASURE FOR GROUNDWATER
DEFENSE DISTRIBUTION MEMPHIS TENNESSEE

COMMENTS TO BE ADDRESSED IN THE NEXT REVISION OF THIS REPORT:

1. Title:

Please retitle this Report as follows: "Focused Feasibility Study: Groundwater Contamination at Operable Unit 1 - Dunn Field".

2. Page 1-1, Paragraph 3:

The text throughout this Report indicates that the groundwater data available for the Dunn Field area is insufficient to support remedy selection. As such, the Report is incomplete and cannot be considered for approval or finalization. The next revision of this Report must contain the information needed to support a remedy selection. Specifically, "Metals in the aquifer were above action levels in 1989 and 1990, but below action levels in 1992. Another round of sampling and analysis for metals is required to determine if metals warrant remedial action." An appropriate treatment for the contaminated groundwater extracted from the Dunn Field area cannot be proposed until the nature of groundwater metals contamination in this area is adequately characterized. This information must be provided in the next revision of this Report.

3. Page 1-3, Paragraph 3:

"This Engineering Report (ER) is intended to meet all requirements of the Engineering Evaluation/Cost Analysis (EE/CA) under CERCLA and the National Contingency Plan (NCP) for a non-time critical removal." Based on the standard set forth in CERCLA Section 104(c), the proposed action for this NPL Site is better characterized as an Interim Remedial Action (IRA), since IRAs are generally used for activities of longer duration and higher cost. The extensive, ongoing nature of the proposed response action would seem to be at variance with the normal function of the removal program, which is to take quick, short-term action to achieve immediate risk reduction. EPA's preference on this issue has been clearly documented in correspondence to DDMT since November 27, 1991.

The documentation requirements for conducting IRAs are much more clearly established and thoroughly documented in EPA guidance than those for non-time critical removals. In particular, the IRA process provides for more effective community participation through public notice of the Proposed Plan: a document specifically designed to communicate the selected response action to the public in "layman's" terms.

Finally, the present Report appears to more closely approximate a focused Feasibility Study than an EE/CA, since it evaluates the

proposed alternatives for nine criteria, as opposed to the three primary criteria required for EE/CAs. Ultimately, a final Feasibility Study will be required even if an EE/CA is prepared for this action. The current efforts should be aimed at meeting these future requirements.

4. Page 3-13, Paragraph 2:A

Although titled as such, the report prepared by Law in 1990 did not meet the requirements of an RI/FS. Under the terms of the Federal Facilities Agreement, an RI/FS will be required for each Operable Unit at DDMT. As such, the current reference to this document is misleading and confusing to the reader, particularly if that reader is a public citizen who is unfamiliar with the history of environmental activities DDMT. All references to the Law study must therefore be appropriately qualified and clarified.

5. Page 4-6, Table 4.1:

The following errors were noted in this table. Please correct here and throughout the document as needed:

A. An MCL of 70 ppb exists for cis 1,2 dichloroethene, not for 1,2 dichloroethane (total), as indicated. The MCL for trans 1,2 dichloroethene is 100 ppb.

B. The MCL for chromium is 100 ppb.

6. Page 5-2, Paragraph 2:

"The following sections present a preliminary list of the Chemical-Specific, Action-Specific, and Location-Specific ARARs that may apply to Dunn Field." Please delete the words "preliminary" and "may" from this sentence. The ARARs list may be considered preliminary insofar as the subject interim action is of limited scope. However, the list provided must be complete with regards to this action.

EPA also has concerns regarding the completeness and accuracy of the ARARs section. However, given the incompleteness of the current draft of this Report, EPA will defer a detailed review of this section to the next revision of this Report.

7. Page 5-7 through 5-8, Section 5.2:

Please use the terms "preliminary" or "final" (as opposed to "tentative", "firm" or "Groundwater") when discussing cleanup goals for groundwater.

The preliminary cleanup goals identified are acceptable. However, while such goals should be identified, this section should emphasize that the primary purpose of the IRA is to stabilize the groundwater contaminant plume and remove contaminant mass, not to remediate groundwater to specific cleanup levels. CERCLA Section 121(d) provides for a waiver from the attainment of such chemical-specific ARARs for interim actions.

Preliminary cleanup goals will prove useful insofar as they can facilitate evaluation of the effectiveness of the IRA. An important function of the IRA is to use all information collected to evaluate aquifer and contaminant response to the IRA; thereby facilitating the selection of a final remedial action and final cleanup goals. Such final goals, however, are beyond the scope of the present IRA.

The critical numerical standards to be established for this IRA are those which define the standards for treatment of extracted groundwater. These standards are determined based upon the media to which the treated water is being discharged (including the means of treatment and disposal), not the media from which it was extracted.

8. Page 7-1, Paragraph 3:

"..the fluvial aquifer is only 15 to 20 feet thick..". Please provide further justification for this assumption. Review of the cross sections presented by Law (1990) suggests that the fluvial aquifer is approximately 40 to 50 feet thick beneath most of DDMT.

9. Page 7-8, Sections 7.4.1 and 7.4.2:

According to the text, the extent of the off-site capture zone is reduced from 12 to 7 acres by relocating the northeasternmost on-site pumping wells to off-site locations to the west. This reduction in off-site influence is not readily apparent through comparison of figures 7.3. and 7.4. Please clarify through text or in the figures.

10. Page 7-14, Paragraph 2:

According to Section 3.4.2, estimated groundwater flow velocity in the fluvial aquifer is .006 feet per minute. This is equal to approximately 0.6 miles per year. Neglecting contaminant retardation effects and accounting only for advective transport, the Allen Well Field, located approximately 1.0 to 1.5 miles west of Dunn Field may be affected by the observed contaminant release. Given this scenario, the arguments presented in this report against installing off-site extraction wells at DDMT (i.e. captures less groundwater North of Dunn Field and "adds some risk of pulling contaminants beneath Dunn Field off-site.") appear less significant. Given the potential risk to human health presented by the identified groundwater contaminant plume, significant additional information must be provided in order to adequately justify the author's stated preference for installing extraction wells only within DDMT boundaries.

11. Pages 10-1 through 10-15, Section 10:

The Report develops seven alternatives to achieve extraction and treatment of contaminated groundwater. Due to the interim, or focused, nature of the action, it is not necessary to develop such a large number of alternatives. However, each alternative developed must be more thoroughly evaluated against the nine criteria. Given the need to implement this action quickly,

alternatives which require specialized equipment or special regulatory considerations (e.g. Alternatives 4, 6 and 7) are probably not appropriate for consideration. However, a more thorough evaluation of the advantages and disadvantages of on-site versus on-site/off-site extraction is needed.

12. General Comment:

In order to satisfy condition II.F.1.b. of the DDMT's HSWA permit (number TN4 210 020 570), this Report must be revised to include an implementation schedule for the Interim Measures. Given EPA's anticipated approval and finalization of the Site Management Plan via attachment to the signed Federal Facilities Agreement, it would be acceptable for DDMT to reference (or include copies of) the IM schedules contained in the SMP in this Report.

COMMENTS TO BE ADDRESSED DURING THE REMEDIAL DESIGN FOR THIS ACTION:

1. Page 1-1, Paragraph 3:

Interpretation of 1992 groundwater analytical results suggest that different factors may have influenced the migration of inorganic and organic contaminants. The analytical results of the most recent round of groundwater sampling (Fall 1993) must therefore be carefully evaluated to determine whether any modification of the currently proposed extraction system (i.e. number, placement of wells) is needed to ensure effective stabilization and extraction of all chemicals identified in the contaminant plume beneath Dunn Field.

2. Pages 7-5 through 7-12, Section 7.4:

EPA remains concerned at the high pumping rates which DDMT is proposing for the extraction system at Dunn Field. Specifically, as discussed in EPA's comments on the draft version of this document, when the EPA "WHPA" model GPTRAC is run using the semianalytical option for an unconfined aquifer condition, the results indicate that the pumping rates proposed for recovery well scenarios 1 and 2 may not be sustainable on a long-term basis. Downward adjustment of the pumping rate to run the GPTRAC model indicates the maximum pumping rate for on-site wells may be as low as 25 GPM per well.

Because the long-term pumping rate may be less than that used to develop Figures 7.3, 7.4, and 7.5, the capture zones for the extraction wells may not extend as far downgradient as these figures indicate. The report must therefore reanalyze the proposed recovery well designs, using conservative assumptions of the maximum sustainable pumping rate.

The report should also identify, for each modeled scenario, the areas where ground water withdrawals are likely to create stagnation zones (low ground water velocity zones). This may be done using a particle tracking model. The interim remedial

action for ground water should primarily be considered a containment action, because it does not address the source area(s) for the contaminants. Therefore, the stagnation zones will, over the short term (several year period), be areas of effective ground water containment by hydraulic control.

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