GWOU ADMINISTRATIVE RECORD
SECTION TITLE:
GW-300-302-1.10

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Ms. Mimi Garstang
Missouri Department of Natural Resources
Division of Geology and Land Survey
P.O. Box 250
Rolla, MO 65402

Dear Ms. Garstang:

This is in reply to Larry Erickson's letter to me dated July 30, 2002 (enclosed), regarding the in-situ chemical oxidation report. He expressed the opinion that full scale treatment should be implemented in the near future under the Interim Record of Decision.

During the meeting on August 6, 2002, both DOE and EPA agreed that the scope of TCE treatment envisioned in the IROD had been accomplished. Further treatment on the scale described in the contractor's final design would require a reevaluation under CERCLA and an amendment to the IROD would be necessary in order to proceed. Similarly, a decision to cease treatment without having met the ARAR of 5 ppb TCE would also require a reevaluation under CERCLA and an amendment to the IROD. Ben Moore of MDNR expressed a concern that this had not been done earlier since the full scale scope is not dramatically different than the conceptual full scale design, which was included with the original bid. He also wanted EPA to express its opinion in this regard in writing and Dan Wall committed to that action. The reason DOE proceeded with the initial or pilot scale treatment was due in large part to the need to better understand the application of this technology given the site's complex hydrogeology. The technology was originally selected not so much as the best available, but as the only possible technology that might succeed. We had six vendors conduct bench scale tests. We then sought bids to design and perform the groundwater treatment, only to receive no responsive bids. We rebid the work as an

initial/pilot scale, placing no risk on the successful bidder to achieve the ARAR of 5 ppb TCE, with a full-scale design as a deliverable document. A review of the results reveals that the chemistry was, predictably, very successful in destroying TCE. Residual amounts of chromium as a by-product of the chemical reaction may be an issue for a larger scale approach. The radius that the injected chemicals penetrated the formation was not uniform; rather, the chemicals sought the path of least hydraulic resistance and headed preferentially toward the paleochannel.

This leads us to conclude that a full scale application of this technology is not practical because it will not achieve 5 ppb TCE throughout the contamination area. Rather, it will clean up the more transmissive portions of the aquifer associated with the paleochannel, which could very likely result in rebound if the remaining TCE in groundwater is not within the direct impact area of the oxidizing chemicals.

Further, TCE is no longer the risk-driver for the Groundwater Operable Unit due to decreasing TCE concentrations over the past several years. This means that treating TCE no longer provides an incremental risk reduction for the operable unit. Also, treating TCE would not shorten remediation time frames. Time frames for the other contaminants to naturally attenuate are at least as long as for TCE. The distribution of TCE in groundwater does not control the area where institutional controls will be established. Therefore, treating TCE would not reduce the area or shorten the time that institutional controls will be necessary.

The outcome of the August 6, 2002, meeting was a tentative plan for DOE, EPA and MDNR to bring our respective decision-makers to a meeting to be briefed on the technical information gathered during the various groundwater studies and remedial action. And then the decision-makers will adjourn and develop a mutual path forward. Technical staff will remain available to caucus, but the intent is for the decision-makers to determine a mutually agreeable course of action. DOE's delegated decision-maker for this briefing will be Ray Plieness, Deputy Manager of the Grand Junction Office (GJO). GJO will have the authority to sign the Record of Decision for the Groundwater Operable Unit. David Geiser, Director of the Office of Stewardship in DOE headquarters would also attend to assure participants that the DOE position is a consensus position. We would like to suggest a date for this briefing during the week of October 21, 2002. If this is acceptable, DOE will take the lead to develop a draft agenda.

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Again, it is our desire to brief on the current technical issues and then discuss the path forward for the entire Groundwater Operable Unit.

Sincerely,

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[illegible]A THOMPSON

Pamela Thompson
Project Manager
Weldon Spring Site
Remedial Action Project

Enclosure:
As stated

cc: Dan Wall, EPA Region VII
Larry Erickson, MDNR
Ray Plieness, DOE-GJO
David Geiser, EM-51

EM-95:TPauling:X7051:mmc:9/9/02 (M: ICO Response to Erickson-Garstang)

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STATE OF MISSOURI Bob Holden, Governor • Stephen M. Mahfood, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.state.mo.us

July 30, 2002

Ms. Pamela Thompson, Project Manager
United States Department of Energy
Weldon Spring Site Remedial Action Project Office
7295 Highway 94 South
St. Charles, MO 63304

Subject: Pilot Scale Test Completion Report:
In-Situ Chemical Oxidation of TCE in Groundwater

Dear Ms. Thompson:

This office has examined the ATC Associates Inc. *Pilot Scale Test Completion Report: In-Situ Chemical Oxidation of TCE in Groundwater* report, prepared for the Department of Energy (DOE) in support of the *Interim Record of Decision for Remedial Action for the Groundwater Operable Unit at the Chemical Plant Area of the Weldon Spring Site, September 2000* (IROD). The DOE has put this review on the critical path for the project and requested a one-week turn-around time. In order to assist the DOE in maintaining their project schedule the department has completed its review within the requested time frame. Due to the shortened comment period the department was not able to make an in-depth review of the appendices and took the data presented at face value. Because of this, the department is reserving the right to provide further comment on this document as warranted.

Based on the information provided in the report the selected reagent, Sodium Permanganate is capable of reducing the concentrations of Trichloroethlyene (TCE) below the groundwater Maximum Contaminant Level of 5 micrograms per liter. The two-phase injection methodology used prevented over-dosing the aquifer and the observed secondary effects are expected to lessen as the remaining reagent is consumed. The pilot scale test also determined that the injection wells' area of influence, and sustainable injection rates, are adequate. Based on the information presented in Section 3.3, on pages 48 and 49 of the report, the department can only conclude that full-scale treatment is technically feasible.

The cover letter attached to the Pilot Scale Test Completion Report reads:

> It has been our (DOE's) plan to incorporate the decision on further TCE treatment into the final GWOU ROD.

The Statement of Basis and Purpose in paragraph two on page iii of the IROD reads:

> The selected interim remedial action provides for the remediation of TCE contaminated groundwater at the Chemical Plant Area. No decision is being made relative to other contaminants determined to be of concern. These other contaminants will be addressed, as necessary, in a final ROD that will be issued at a later time. This approach allows for TCE to be remediated in the near-term while further studies are planned and conducted to determine the effectiveness and practicability of remediating any remaining contaminants.

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To delay any decision regarding TCE treatment until the final GWOU ROD would be not be appropriate and would be contradictory to the IROD. Clearly, DOE's commitment to implement a treatment application is contained in the IROD. The rigorous evaluation of the CERCLA nine criteria documents the goals and expectations, and the pilot scale completion report confirms that remediation of this contaminant can be achieved. Therefore, the department looks forward to meeting with DOE and EPA on August 6, 2002, to discuss the near future implementation of the full-scale treatment. We encourage DOE to provide the public with the details of the plans and timetable for this activity. If you have any questions please feel free to call me at (573) 751-6838, or you may contact me in writing at P.O. Box 176, Jefferson City, MO 65102.

Sincerely,

HAZARDOUS WASTE PROGRAM

Larry Erickson P.E., DOE Unit Chief
Federal Facilities Section

LE:dd

c: Mr. Dan Wall, U.S. Environmental Protection Agency, Region VII
Weldon Spring Citizens Commission