Minnesota Pollution Control Agency

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

September 11, 2003

Mr. Douglas Hildre, P.E.
Environmental Control Manager
United Defense LP
Armament Systems Division
4800 East River Road
Minneapolis, MN 55421-1498

RE: Draft Work Plan for Supplemental RCRA Facility Investigation
Corrective Action Agreement

Dear Mr. Hildre:

The Minnesota Pollution Control Agency (MPCA) staff has reviewed the reports entitled, "Draft Supplemental RCRA Facility Investigation, ("Draft RFI Report"), dated May 2003 and the "Work Plan for Supplemental RCRA Facility Investigation," ("Supplemental RFI Work Plan") attached to your email message to me dated August 7, 2003.

The MPCA staff hereby approves the Draft RFI Report as modified pursuant to Attachment I to this letter. The modifications were discussed at our meeting of July 2, 2003 and formed the basis for MPCA staff responses to the Supplemental RFI Work Plan. Also Attachment I contains comments regarding the natural attenuation portion of the report.

The MPCA staff hereby approves the Supplemental RFI Work Plan as modified pursuant to Attachment II to this letter. As indicated in the schedule in the Supplemental RFI Work Plan, results of this additional work will be combined with the results from the Draft RFI Report and will be reported in a revised Supplemental RCRA Facility Inspection Report.

If you have any questions regarding this letter, please contact me at (651) 296-7818.

Sincerely,

David N. Douglas, Project Manager
Superfund Unit 2
Superfund Section
Majors and Remediation Division

DND:csa

cc: David Seely, U.S. Environmental Protection Agency
Dan Owens, US Navy
David Brayak, Tetra Tech NUS, Inc.

Attachment I
To The Report Entitled,
"Draft Supplemental RCRA Facility Investigation,"
Dated May 2003

Modifications:

4.0 Conclusions, Item 3

It is possible that the highest portion of the downgradient Former Paint Shop plume is located between monitoring wells MW-UD68-I and MW-UD58-I. The Minnesota Pollution Control Agency (MPCA) staff requests that an additional well be located between these wells to define the center of the plume. The location should be focused utilizing push probe technology to determine the optimal location of the monitoring wells.

4.0 Conclusions, Item 4

Limited data is available from the monitoring wells to establish trends. The decreases in concentrations of contaminants of concern (COCs) observed in the various sampling events are rather dramatic over short periods of time. It is expected that, in an old plume, variations of such magnitude over relatively short periods of time make sampling procedures suspect as the reason for the variations. It may also be possible that some seasonal variations may occur. For future work, the MPCA staff requests that United Defense, LP (UDLP) identify the monitoring well sampling methodology.

4.0 Conclusions, Item 6

The MPCA staff does not agree that the magnitude and extent of COCs in contaminated ground water associated with the Former Paint Shop is adequately defined. Concentrations of COCs increase with depth and the terminus of the plume has not been defined. The MPCA staff requests that additional work be performed to define the plume. The additional investigation will assist in defining the ground water flow as well as the plume. Additional wells will be needed to monitor natural attenuation at the site if it is selected as the remedy.

4.0 Conclusions, General

The conclusions are vague concerning a potential remedy for the Former Paint Shop plume. Please provide clarification regarding remedial options.

Appendix C

The use of Biochlor as an analytic fate-and-transport model for a screening tool is appropriate. However, the MPCA staff disagrees with a couple of its applications:

a. The rates adopted for the degradation of trichloroethylene (TCE) and cis-1,2-dichloroethylene (cis-DCE) look high. While it is possible for the rates to be this high, these have not been measured yet at this site. This does not need to be done for the screening step. However, any conclusions drawn based on rates will need to be substantiated.

b. A couple of the model runs are based on the degradation of cis-DCE to vinyl chloride and the degradation of vinyl chloride to ethene. Since ethene was not detected, this seems optimistic. At the second well, neither vinyl chloride nor ethene was detected in the samples so the modeling done assuming that this is occurring is incorrect.

Comments:

1. The data shows that perchloroethylene/trichloroethylene (PCE/TCE) is decomposing to cis-DCE and vinyl chloride at the site so biological degradation is occurring, at some unknown rate, through anaerobic dehalogenation at the site.

2. Ethene was not detected, at least in this sampling event. Thus, it is possible that degradation could be proceeding through to vinyl chloride but not to ethene. Vinyl chloride may also degrade through a microbiological anaerobic oxidation process or could be degraded microbiologically further downgradient of the source area. However, the data presented in this report do not show that vinyl chloride is being destroyed in the ground water.

3. Overall, the "scores" in the attenuation screening are used properly to show that there is evidence to conclude that the contaminants are breaking down at the site. Note that these scores should not be used in the future as evidence that natural attenuation is the remedy.

4. The dissolved organic carbon results support the concept that dehalogenation is occurring and the data are consistent.

5. The data shows that biological degradation of the chlorinated compounds is occurring. If UDLP wants to demonstrate it as a partial remedy or an entire remedy, the number of wells needs to be expanded, supporting data regarding lithology and ground water flow direction presented, and more detailed modeling done. This is all detailed in MPCA's "Guidelines, Natural Attenuation of Chlorinated Solvents in Ground Water," dated 1999 from the MPCA Risk-Based Evaluation Manual and EPA natural attenuation guidance.

Attachment II
To The Report Entitled,
"Work Plan for Supplemental RCRA Facility Investigation,"
Dated August 2003

Section 1.0 Introduction, page 1, paragraph 4

The reason for doing additional work in the Former Paint Shop plume needs to be more accurately defined. The additional work is necessary because the MPCA staff believes that the plume emanating from the Former Paint Shop area has not been adequately defined. As stated in Section 2.0 from "Guidelines, Natural Attenuation of Chlorinated Solvents in Ground Water," dated 1999 from the MPCA Risk-Based Evaluation Manual detailed site characterization should include work to "...define the lateral or leading edges of the plume." The work described in the Supplemental RFI Work Plan is to define the leading edge of the plume; provide data to support remedy selection; and install the necessary monitoring wells to monitor the remedial option. The MPCA staff requests that UDLP modify the text accordingly.

Section 2.1 Field Activities, page 3, paragraph 2

An accurate understanding of the ground water flow direction in the area of interest will result in maximizing the proper location of monitoring wells. The MPCA staff requests that temporary wells (piezometers) be installed in each drilling location in the deepest interval in the aquifer to be sampled (75-80 foot depth). The MPCA staff requests that wells be allowed to stabilize overnight. Once all temporary wells have stabilized, water level measurements should be taken from all temporary wells and from all intermediate wells in the study area. The MPCA staff requests that an equipotential map be constructed to verify ground water flow directions in the study area prior to selection of locations for permanent monitoring wells. The information shall be provided to the MPCA staff along with chemistry information collected prior to selection of monitoring well locations for Phase II work. Any locations for additional monitoring wells for phase II work shall have prior approval of the MPCA staff. The schedule for the work shall be changed to accommodate MPCA staff review as described above.

Attachment I to the MPCA guidance cited above specifies one upgradient well in the study area; one source well; two wells in the dissolved portion of the plume and one well at the periphery ('toe") of the plume. The MPCA staff requests that the work plan be made consistent with this guidance. The MPCA staff is particularly interested in establishing the leading edge of the plume and locating a periphery well at that location. As the supplemental work proceeds, the MPCA staff requests that UDLP identify which monitoring wells that satisfy these requirements. These requirements shall be considered in selection of locations for any new monitoring wells installed in Phase II.