

WASHINGTON DEPARTMENT OF ECOLOGY  
ENVIRONMENTAL INVESTIGATIONS AND LABORATORY SERVICES

June 28, 1989

To: Jim Malm

From: Denis Erickson *DE*  
Hydrogeologist

Subject: Ground Water Monitoring Network, Frontier Machinery Inc.,  
Walla Walla, Washington - WAD# 081482457

This memorandum describes the conclusions of my review of the hydrogeologic portions of the Site Closure Plan for Frontier Machinery Inc., Walla Walla, Washington. The review was requested by you in a February 16, 1989 memorandum to Bill Yake. The information reviewed is listed as follows:

1. Site Closure Plan dated March 27, 1989.
2. Two letter reports by QGNF Environmental Consultants dated January 6, 1989 and April 13, 1989 summarizing field activity and ground water sampling conducted December 1988 and March 20, 1989, respectively.
3. Well logs and as-built drawings for wells W-3, MW-5, MW-6, MW-7, MW-8, MW-9, EMW-1, and EMW-2.

I have two general comments on the hydrogeologic portions of the Site Closure Plan followed by a few detailed comments. First, the plan does not address the observed ground water contamination described in the January 6 and April 13, 1989 letter reports. The December 1988 sample results show concentrations of chromium exceeding the Maximum Contaminant Level (MCL), 50 ug/L, in four downgradient wells W-2, W-7, EMW-1, and EMW-2. In addition, lead concentrations exceeded the MCL of 50 ug/L in two downgradient wells W-2 and EMW-1. Even though reported concentrations decreased dramatically in the March sampling event, chromium concentrations still exceeded the MCL in three downgradient wells MW-6, MW-7 and EMW-2.

To eliminate the possibility that the elevated metals results are related to sample turbidity, I suggest that for subsequent sampling both total and dissolved (filtered) metals are tested. I believe it is appropriate that sampling be conducted as soon as possible to verify whether the site ground water is contaminated with metals. If ground water contamination exists, the facility must meet additional ground water monitoring requirements under WAC 173-303 and the possibility of a clean closure is much more difficult and expensive. The additional ground water monitoring requirements are summarized as follows:

Under Interim Status the facility must meet the ground water assessment requirements as specified in 40 CFR 265.93 to define the extent of ground water contamination and monitored quarterly. Under Final Status, the facility must meet the requirements of WAC 173-303-645 and -806 which includes additional monitoring requirements and provisions to define the extent of contamination. Also, because the observed concentrations exceed allowable maximum concentrations for ground water protection (Table 1 of 173-303-645(5)), corrective action must be addressed or alternate concentration limits proposed.

The second general comment is that EPA, after reviewing the previous closure plan, requested that a detailed description of the ground water monitoring system should be included in the plan. In my opinion, the information in the Site Closure Plan does not provide sufficiently detailed information to address this comment. In addition to the information provided, at a minimum, an adequate description of the ground water monitoring system should include as-built diagrams and well logs for each monitoring well, hydrogeologic cross sections showing the hydrogeologic units and completion intervals of wells, all water-quality results to date, water table contour maps showing the seasonal variation of ground water flow directions, and water-level measurements and elevations.

Detailed comments are described below:

1. Reliable testing for methylene chloride has not been completed. For both sampling events, the methylene chloride data is not usable because of apparent laboratory contamination. In addition, the reporting of methylene chloride data as "U", undetected, in Table 3 is misleading. The results should be reported as blank contamination or some equivalent.
2. The source of the chloroform reported in both sampling events was not addressed.
3. The cause of the decrease in metals concentrations between the December 1988 and March 1989 sampling events is not known. A possible explanation may be a difference in sampling procedures, for example, the second sample set have been field filtered. However, no differences in sampling procedures are described in the letter reports referenced above. Additional monitoring is needed to determine seasonal variations of water quality results.
4. The decontamination of bailers should include an acid rinse.
5. Additional well development at W-2 is appropriate until pH and specific conductance are stabilized.

Thank you for the opportunity to review the site closure plan. If you have any questions about these comments please call me at SCAN 321-4480.

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