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DEPARTMENT OF THE NAVY
INDIAN HEAD DIVISION
NAVAL SURFACE WARFARE CENTER
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Ser 046C/210
6 Sep 96

Mr. Frank Ciurca
Maryland Department of the Environment
Water Management Adminstration
2500 Broening Highway
Baltimore, MD 21224

Dear Mr. Ciurca:

We are writing as requested in your telephone conversation with Mr. Mike Snyder of my office on Wednesday, August 28, 1996, to discuss the circumstances resulting in our request to release treated water from three Baker tanks that were generated during the Removal Action (RA) at Installation Restoration (IR) Site 56 without having complete sample analyses. The RA, which is being conducted under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) involves the cleanup of lead contaminated soil from a drainage ditch leading to and including Industrial Wastewater Outfall 87 (IW87).

Numerous factors contributed to the generation and storage of over 250,000 gallons of water from this project. On Friday, August 9, 1996, the lower section of pipe was excavated, as presented in the work plan for this RA. The next step was to hydraulically clean the remaining pipe which began on August 14, 1996, and was completed on Friday, August 16, 1996. During this time, excessive amounts of sediment were removed and pipe seals from the old bell joint terra cotta pipes could be seen in the debris removed from the pipe. A video survey of the cleaned pipe showed a large quantity of sediment remaining in the pipe and groundwater infiltration.

The water flowing from the pipe exhibited a total lead concentration of 0.455 parts per million (ppm). Therefore, the water had to be containerized and treated before release. However, the initial filtration system, which included a 50,000 gallon pool, two 12,000 gallon pools, various size bag filters (down to 1 micron) in series and an activated carbon filter, did not operate as expected. Lead concentrations in the treated water exceeded the allowable limit of 0.082 ppm. Therefore, a chemical treatment had to be devised that would remove the lead and other particles from the water before it could be released downgradient of IW87.

Due to the fact that some of the old pipe joint seals had been removed from the pipe during cleaning, groundwater began to flow into the pipe. When the end of the pipe was plugged, groundwater made its way to the excavation via the outside of the pipe. During this time, approximately 18,000 gallons of water was removed from the excavation daily.

The infiltration of water into the excavation resulted in the need for additional water storage. Ten 21,000 gallon Baker tanks were brought on site over the seven day period ending Friday, August 16, 1996, to handle the amount of water that was entering the excavation while an appropriate mix of chemicals was formulated to handle the removal of lead and sediment from the water. A mixture of ferrous sulfate and calcium carbonate (hydrated lime) was used to settle out the lead and sediments from the containerized water. The cleaned water was then sent through the existing filtering system (bag filters and activated carbon) and was sampled.

On Wednesday, August 28, 1996, after three Baker tanks full of clean water were generated, and seven Baker tanks containing untreated water were being held awaiting treatment, storage once again became a problem. Water from the excavation had to be removed and storage space became very limited.

The lead concentrations of the water in the three Baker tanks were all less than 0.056 ppm and the total suspended solids (TSS) concentration in one tank was 0.7 ppm. The TSS results for the other two tanks were not available and, unfortunately, the nitrate ester sample results for all three tanks were not available. The first sample for nitrate esters was brought to the lab on the evening of August 21, 1996, with a request for a 24-hour turn around. However, the laboratory equipment was not working properly and had to be recalibrated over the weekend of August 24, 1996. A 40-point calibration is required, which is a time-consuming effort. By the time the equipment was recalibrated and the samples were being run, the ultraviolet source required for the unit had burned out. A new one was shipped overnight on Wednesday, August 28, 1996. However, at this point, water storage capacity was virtually zero.

Therefore, we requested your permission to release the cleaned, filtered water without having the results for nitrate esters. We did not believe that any nitrate esters were present in the cleaned, filtered water for a couple of reasons. First, two previous nitrate ester samples were taken; one in the excavation and the other in the 50,000 gallon settling pool. Both sample results were less than the detection limit of 0.20 ppm nitrate esters. Second, the filter system has an activated carbon filter as its final filter. Activated carbon would remove any nitrate esters that may have been present in the water.

You approved the release of these three Baker tanks containing approximately 60,000 gallons of filtered, treated water on August 28, 1996. Since that time, we have received the nitrate ester sample results and the levels of nitrate esters in all of the samples were as expected, nondetectable. In addition, the TSS sample results were below the permit limit of 60 ppm for IW87.

If you have any questions or comments concerning this matter, please contact Mr. Mike Snyder or Mr. Shawn Jorgensen on (301) 743-4320.

Sincerely,

MICHAEL W. DUNN
Director, Air, Water and Natural Resources Division
By direction of the Commander

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