Department of Energy
Washington, DC 20585

October 24, 2012

Mr. Timothy Fischer
U.S. Environmental Protection Agency
Region V-SRF-6J
77 W. Jackson Blvd.
Chicago, IL 60604-3590

Mr. Thomas A. Schneider
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402

Dear Mr. Fischer and Mr. Schneider:

SUBJECT: **Abandonment of Flumes in the Storm Sewer Outfall Ditch (SSOD) at the Fernald Preserve**

This letter serves to document DOE's intention to abandon six flumes in the SSOD at the end of 2012. Ohio EPA and EPA verbal concurrence for this action was given during meetings held at the Fernald Preserve on August 30, 2012 and September 5, 2012, respectively.

The flumes were originally installed to support a 2005 test that gauged seasonal flow of water in the SSOD and infiltration to the Great Miami Aquifer from the SSOD. The 2005 study concluded that infiltration through the SSOD at a rate of 500 gpm was predicted to decrease the cleanup time by one year. The study concluded, though, that the operation would not be cost effective. Subsequent discussions with EPA and Ohio EPA in 2006 led to an agreement to proceed with a scaled-down version of the operation. Clean groundwater would be pumped into the SSOD to supplement natural storm water runoff in an attempt to accelerate remediation of the South Plume. Three wells on the east side of the site would be utilized to deliver as much clean water as was needed to maintain flow of approximately 500 gpm into the SSOD. This supplemental flow was to continue until the wells, pumps, or motors were no longer serviceable. At that time, operation will be suspended, pending a determination that the remedy is benefiting from the operation.

In theory, cleanup of the Great Miami Aquifer should have benefited from the infiltration of clean water from the SSOD that has taken place since 2005. Uranium concentration data collected from the Great Miami Aquifer near the SSOD though does not indicate that the uranium plume near the SSOD is cleaning up any faster than other areas of the plume.

Enough data has been collected and presented in annual Site Environmental Reports since 2005 to quantify flow and infiltration rates in the SSOD. Observations indicate that much less infiltration than anticipated is occurring and that the SSOD will benefit more by removing the flumes than it would by maintaining the flumes. During the production years large amounts of runoff from the Production Area was directed into the SSOD, resulting in scouring and deepening of the channel during those years. Since the site was restored, flows to the SSOD have been greatly reduced resulting in less energy being available to remove sediment from the SSOD.

The buildup of sediment in the SSOD decreases the potential for infiltration. Large storm events help to remove sediment buildup from the SSOD. Unfortunately, the flumes work to block the full benefit that could be gained by the large storm events and because they are designed for low flow conditions the flumes are also frequently damaged by large flow events. Removing the flumes will allow water to move unrestricted through the SSOD during large storm events, and may help to improve infiltration conditions.

The flumes will be maintained through 2012. Following removal of the transducers from the flumes in December (in preparation for the winter), the flumes will be abandoned and removed from the SSOD. Supplemental pumping to the SSOD from the three wells on the east side of the site will continue for now. Next year after the issuance of the Site Environmental Report for 2012, DOE would like to discuss the need for continuing supplemental pumping into the SSOD.

If you have any questions or require additional information, please call me at (513) 648-3148. Please send any correspondence to:

U.S. Department of Energy
Office of Legacy Management
10995 Hamilton-Cleves Hwy.
Harrison, OH 45030

Sincerely,

Jane Powell

Jane Powell
Fernald Preserve Site Manager
DOE-LM-20.2

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