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March 12, 1999

Fernald Environmental Management Project
Letter No. C:C:SWP(ARWWP):99-0010

Mr. Thomas A. Winston, District Chief
Ohio Environmental Protection Agency
Southwest District Office
401 East Fifth Street
Dayton, OH 45402-2911

Dear Mr. Winston:

**NONCOMPLIANCE REPORT - FEBRUARY 1999 - NPDES PERMIT NUMBER 11000004*ED -
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT**

Enclosed is the Noncompliance Report for February 1999. A copy of the February 1999 Discharge Monitoring Reports are enclosed to aid your review. If you have any questions please contact Mr. Frank Johnston at (513) 648-5294.

Sincerely,

A handwritten signature in black ink, appearing to read "David J. Brettschneider".

David J. Brettschneider, Project Manager
Aquifer Restoration and Wastewater Project

DJB:FLJ
Enclosures



Mr. Thomas A. Winston, District Chief
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EDC File No. 52700
- c w/o: L. J. Evans, Fluor Daniel Fernald, MS90
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Donna Metzler, Fluor Daniel Fernald, MS52-5

**NONCOMPLIANCE REPORT
NPDES PERMIT NO. 11000004*ED
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
U.S. DEPARTMENT OF ENERGY**

The following table describes the February 1999 noncompliances with the discharge limitations specified in the FEMP NPDES Permit. This table lists the affected outfall, dates of the noncompliances, parameter, permit limits, and measured effluent concentrations.

SEWAGE TREATMENT PLANT (STP) - OUTFALL *4601			
DATE	PARAMETER	PERMIT LIMIT	ACTUAL MEASUREMENT
February 10, 1999	TSS Concentration	40 mg/l	58.0 mg/l
February 17, 1999	TSS Concentration	40 mg/l	47.0 mg/l
February 24, 1999	TSS Concentration	40 mg/l	49.0 mg/l
February 1999	Monthly Avg. TSS Concentration	20 mg/l	35.6 mg/l

The noncompliances at the sewage treatment plant are related to the continuing problems associated with suspended solids control. These noncompliances have not had a detrimental impact on TSS limits at the outfall to the Great Miami River (Outfall 4001).

The December 1998 and January 1999 Noncompliance Reports identified a number of actions that were planned or initiated to address these continuing noncompliances. This report serves to update previous actions taken and identify any new trends or issues.

1. The noncompliance experienced on February 10, 1999 is likely related to the east secondary clarifier being removed from service to install improved scum collection equipment. The management of scum was identified in past reports as a potential problem related to these TSS noncompliances. This work was completed in an attempt to ensure scum will be effectively managed and not adversely impact plant operations.
2. FDF has been operating the system with one reactor basin (aeration basin) followed by two secondary clarifiers. This has allowed the use of the second reactor basin to be used as an equalization tank accepting large flows and then bleeding these flows back into the reactor basin. This has mitigated difficulties during periods of high flow rates but has not alleviated the TSS problems. However, even by operating in this configuration, operations personnel believe the STP is still adversely impacted by high diurnal flows. These diurnal flows are exacerbated during wet weather flows. This may have been the case on February 17 when morning rains were experienced.

3. Operations personnel have reconfigured the aeration system to incorporate a tapered aeration along the length of the reactor basin. This was begun on February 18. It is not clear at this time whether this will mitigate the TSS problems in the clarifiers. As previously discussed, adjusting the aeration in the reactor basin is an attempt to ensure that formed floc is not being sheared due to over-aeration.
4. Operations staff have observed and continue to observe weekly the biomass under a microscope. No microorganisms detrimental to the activated sludge process are present (e.g. norcardia). Filaments have been observed but not in excess that would lead to a bulking floc.
5. Operations staff continue to provide a biomass supplement (dog food) on Fridays, Saturdays, and Sunday evenings in an attempt to increase mixed liquor volatile suspended solids. As reported in the December 1998 noncompliance report, this was begun December 28 and had raised MLVSS from approximately 200 mg/l to 600 mg/l. This continued supplement has raised the MLVSS to an average of approximately 700 mg/l. The range during January 1999 was from a low of 520 to a high of 970. This level has been maintained during February 1999. Also, as previously discussed, sludge return and sludge wasting is being better controlled to ensure proper a food/microorganisms ratio and reduce sludge age. Sludge age has been reduced from approximately 21 days in January to 14 days in February.
6. Operations staff have eliminated the return of scum collected from the secondary clarifier to the aeration basin. Scum can potentially be a source of certain species detrimental to the activated sludge process.
7. Operations staff have implemented a routine cleaning program to ensure flights, chains, troughs, UV units are clean and not the cause of the TSS problems.

There have been a number of improvements in the STP equipment (e.g. scum control) and in the control of operations. A number of operational changes (e.g. using one reactor basin for sewage surges; tapered aeration; biomass supplement) have been instituted to address the TSS noncompliances. A closer evaluation of diurnal impacts and ambient temperature impacts are being discussed. However, to date these efforts have had limited success. FDF will continue to monitor the performance of the sewage treatment plant and institute improvements where appropriate.