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May 21, 1993

Mr. Peter G. Noll
Department of Health
Neshaminy Manor Center
Doylestown, PA 18901

Subject: Noncompliance with NPDES Permit No. PA 0052221
Bradshaw Reservoir Temperature, Dissolved Oxygen
and pH Monitoring

Dear Mr. Noll:

DESCRIPTION OF NONCOMPLIANCE

NPDES Permit No. PA 0052221 requires continuous monitoring of Discharge 001 for temperature, dissolved oxygen and pH. On the weekend of April 17 and 18, 1993 equipment problems occurred which rendered temperature, dissolved oxygen (DO) and pH monitoring instrumentation inoperable.

Discharges from Bradshaw Reservoir were terminated on April 16, 1993 because of high natural flow in the East Branch Perkiomen Creek. When discharges from Bradshaw Reservoir were resumed at approximately 0900 hours on April 17, 1993, the Bradshaw Pump Station temperature, DO and pH monitoring equipment became inoperable. The inoperability of the monitoring equipment was identified because the temperature monitoring instrumentation continued to indicate 71 degrees F (ambient indoor temperature) rather than the expected water temperature of approximately 50 degrees F. Redundant temperature, DO and pH monitoring equipment at the Water Processing Facility (WPF) was in service, but the WPF temperature monitoring instrumentation was inoperable because of previously identified failures. As a result of an inability to perform continuous monitoring of temperature, local sampling was initiated to measure temperature at four hour intervals. The samples indicated a discharge temperature of 51 degrees F which is well below the permit limit of 74 degrees F.

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At 0645 hours on April 19, 1993 when personnel reported to work at the WPF, the sample pumps were discovered off and were immediately turned on. It was subsequently determined that the sample pumps had been off since 1130 hours on April 18, 1993 which rendered the WPF DO and pH monitoring equipment inoperable.

Failure to perform continuous monitoring of temperature, DO, and pH constituted noncompliance with the permit.

CAUSE OF THE NONCOMPLIANCE

The cause for the inoperability of the temperature, DO and pH monitoring equipment at the Bradshaw Pump Station was debris in the sample line which blocked flow to the temperature, DO, and pH monitoring equipment.

The cause for the sample pumps at the WPF being off was the setting of their low WPF flow trip setpoint. The flow through the WPF was close to the trip setpoint of the sample pumps such that ordinary fluctuations of the flow transmitter signal generated a trip signal to the WPF sample pumps.

DURATION OF THE NONCOMPLIANCE

As a result of these events, temperature was not being continuously monitored from 0900 hours on April 17, 1993 to 1030 hours on April 19, 1993. DO and pH were not being continuously monitored from 1130 hours on April 18, 1993 to 0645 hours on April 19, 1993.

CORRECTIVE ACTIONS

When the Bradshaw Pump Station temperature, DO and pH monitoring equipment was determined to be inoperable, Operations personnel initiated manual monitoring of temperature at four hour intervals beginning at 0800 hours on April 18, 1993. These interim arrangements were communicated to Ms. Whitcomb of the DER on April 18, 1993 at 1135 hours.

Manual DO and pH analyses were not performed because Operations personnel had no indications that the WPF sample pumps were off. The WPF sample pumps were immediately turned on in manual mode when they were discovered off at 0645 hours on April 19, 1993. The manual mode overrides automatic computer control and restored continuous monitoring of DO and pH. Upon clearing of debris from the sample line the monitoring equipment at the Bradshaw Pump Station was restored to operability on April 19, 1993 at 1030 hours which restored continuous monitoring of temperature.

PREVENTION OF FUTURE OCCURRENCES

To prevent a blockage of flow in the sample line to Bradshaw Pump Station temperature, DO and pH monitoring equipment, we are investigating methods of filtering or straining the sample flow.

The low WPF flow trip setpoint for the sample pumps was lowered on April 20, 1993 to prevent inadvertent trips.

In the event of equipment inoperability, contingency actions are included in the LGS Makeup Water System Operating Plan which has been submitted to the PA DER. These plans include obtaining and analyzing grab samples until the continuous monitoring equipment is restored to operable status.

If you have any questions please contact Mr. James L. Kantner at (215) 327-1200.

Sincerely,

JLP:cah

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