

## **Appendix D: NPDES Noncompliances**



**Table D.1. Summary of Y-12 Complex National Pollutant Discharge Elimination System (NPDES) excursions, 2002**

Excursion	Date	Location	Incident
2002-0001	19-Nov-02	Monitoring Point 201	Permit limit exceedance; daily chlorine 0.482 mg/L
2002-0002	30-Nov-02	Monitoring Point 201	Permit limit exceedance; monthly chlorine 0.074 mg/L
2002-0003	19-Nov-02	Outfall 125	Permit limit exceedance; daily chlorine 0.77 mg/L
2002-0004	3-Dec-02	Outfall 055	Permit limit exceedance; daily Hg 0.00502 mg/L
Description/cause		Corrective action	

**Excursions 2002-0001, 2002-0002, and 2002-0003**

On November 19, 2002, a water sample taken at in-stream Monitoring Point 201 revealed a higher-than-normal total residual chlorine (TRC) reading of 0.964 mg/L. A second compliance sample taken at this location approximately 3½ hours later revealed a TRC level of <0.05 mg/L. The daily maximum concentration for this day was 0.482 mg/L, which exceeded the permitted daily maximum concentration of 0.019 mg/L (Exceedance 2002-0001). Additional data analysis for the month of November revealed the monthly average concentration for TRC was 0.074 mg/L. This exceeded the permitted monthly maximum of 0.011 mg/L (Exceedance 2002-0002)

- Perform regular operational checks to ensure proper equipment and operator performance
- Reemphasize the importance of proper “Conduct of Operations”
- Evaluate component and piping system labeling and improve as needed
- Review and improve communication protocols among and between organizations
- Evaluate and improve, if needed, system monitoring displays
- Evaluate the need for, and install if needed, sodium bisulfite flow indication devices at all system dechlorinators

Also on November 19, 2002, a water sample taken at Outfall 125 discharge point revealed a higher-than-normal TRC reading of 1.54 mg/L. A second compliance sample taken at this location approximately 3½ hours later resulted in a TRC value of <0.05 mg/L. The daily maximum concentration for this day was 0.77 mg/L, which exceeded the permitted daily maximum concentration of 0.5 mg/L (Exceedance 2002-0003)

During an inspection of the dechlorination systems for Outfalls 200, 135, 125, and raw water on November 19, 2002, Y-12 Complex personnel discovered the main sodium bisulfite feed line isolation valve for these systems was in the closed position. The valve was immediately opened, and dechlorination treatment resumed. It appears the valve had been closed since earlier that same day as a result of a pump reconfiguration for the dechlorination systems

The higher-than-normal chlorine concentration in upper East Fork Poplar Creek (EFPC) is believed to have caused the death of 2933 fish. The fish kill was confined to the reach of the creek inside the Y-12 Complex, and no dead fish were observed downstream of Station 17, the exit point of EFPC from the Y-12 Complex. The fish community downstream of the Y-12 Complex does not appear to have been impacted by this event. Numerous live fish were also observed in upper EFPC throughout the elevated chlorine event

**Table D.1 (continued)**

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Description/cause	Corrective action
<b>Excursion 2002-0004</b>	
Analysis of a water sample taken at Outfall 055 on December 3, 2002, revealed an elevated mercury value of 0.00502 mg/L. This level is above the daily maximum concentration of 0.004 mg/L. Analysis of a sample taken the following day, December 4, 2002, indicated that the level was below the effluent limit. All available analytical results from samples (19 data points) taken after December 3, 2002, have been below the NPDES limit	Investigations into the cause of this exceedance were inconclusive, and all other mercury samples taken at this location in 2002 were below permit limits. No specific corrective actions were undertaken for this event

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**Table D.2. Summary of East Tennessee Technology Park (ETTP) National Pollutant Discharge Elimination System (NPDES) excursions, 2002**

Date	Location	Excursion	Explanation	Corrective action
6/19/02	Outfall 014 (Central Neutralization Facility)	Total suspended solids	TSS measurement of 43 mg/L exceeded ETTP NPDES permit limit of 40 mg/L	Investigation of the noncompliance was conducted, but no root cause could be identified
11/12/02	Outfall 014 (Central Neutralization Facility)	Total petroleum hydrocarbons (TPH)	TPH measurement of <1.8 mg/L exceeded ETTP NPDES permit limit of 0.1 mg/L	Investigation of the noncompliance was conducted, but no root cause could be identified

## Oak Ridge Reservation

**Table D.3. Summary of Oak Ridge National Laboratory National Pollutant Discharge Elimination System (NPDES) excursions, 2002**

Date	Location	Excursion	Explanation	Corrective action
1/25/2002	X01	Total suspended solids (TSS)	TSS level of 55.4 mg/L exceeded the NPDES permit limit of 45 mg/L	Plant flow was partially treated using disinfection during extremely heavy rainfall. Based on the actions of the Sewage Treatment Plant (STP) operators, the plant's situation returned to normal as the heavy flows diminished
1/25/2002	X01	TSS	TSS loading of 91.2 kg/day exceeded the NPDES permit limit of 39.2 kg/day	This was a calculated exceedance based on the measured 1/25/02 TSS exceedance; therefore the corrective action was the same
2/19/2002	235	pH	Elevated pH occurred when a leaking valve caused boiler blowdown to be commingled with low flow rate of cooling water	The valve was closed, and an administrative tag was placed on the valve to ensure it is properly operated until the line can be rerouted so as to prevent the error
3/19/2002	X01	Carbonaceous biochemical oxygen demand (CBOD)	CBOD loading of 23 kg/day exceeded the NPDES permit limit of 13.1 kg/day during extremely heavy rainfall	Based on the actions of the STP operators, the plant's situation returned to normal as the heavy flows diminished
3/19/2002	X01	TSS	TSS loading of 60.9 kg/day exceeded the NPDES permit limit of 39.2 kg/day	Plant flow was partially treated using disinfection during extremely heavy rainfall. Based on the actions of the STP operators, the plant's situation returned to normal as the heavy flows diminished
3/20/2002	X01	TSS	TSS loading of 57.9 kg/day exceeded the NPDES permit limit of 39.2 kg/day	Plant flow was partially treated using disinfection during extremely heavy rainfall. Based on the actions of the STP operators, the plant's situation returned to normal as the heavy flows diminished
4/15/2002	281	Total residual oxidant (TRO)	TRO level of 0.18 mg/L exceeded the daily maximum NPDES permit limit of 0.019 mg/L	Leaks causing increased TRO levels were located and corrected. Tablets were placed in the backup dechlorination system. Maintenance schedules are being reviewed to assure that tablet levels are checked routinely and that supplies stocked when needed.

Table D.3 (continued)

Date	Location	Excursion	Explanation	Corrective action
4/30/2002	281	TRO	TRO level of 0.09 mg/L exceeded the monthly average NPDES permit limit of 0.011 mg/L	Leaks causing increased TRO levels were located and corrected. Tablets were placed in the backup dechlorination system. Maintenance schedules are being reviewed to assure that tablet levels are checked routinely and that supplies stocked when needed.
5/8/2002	X01	Toxicity	The effluent strength lethal to at least 50% of test organisms of 21.6% was below the NPDES permit minimum limit of 44.1%	The required confirmatory test found that a condition of toxicity did not exist
8/12/2002	082	Instream temperature	Temperatures of 31.0 and 31.1°C. were measured instream. The maximum stream temperature allowed under the narrative NPDES permit conditions is 30.5°C	Investigation of the thermal load has been inconclusive and is continuing

