



# Memo

**TO:** Cindy James, South Puget Sound TMDL Coordinator, Water Cleanup/Technical Assistance Unit

**COPIES TO:** Kim McKee, Unit Supervisor, Water Cleanup/Technical Assistance Unit

**FROM:** Betsy Dickes, Water Quality Monitoring/Data Evaluation Technical Specialist, Water Cleanup/Technical Assistance Unit

**DATE:** June 7, 2010

**SUBJECT:** South Prairie Creek Watershed; Tile Drain T4DT on Tributary 4 to Ingle Creek Fecal Coliform concentrations March through May 2010.

This memo describes the findings of a 2010 water quality monitoring project conducted at a tile drain on Tributary 4 on Ingle Creek (site T4DT). The Quality Assurance Project Plan for the 2010 monitoring can be reviewed at <http://www.ecy.wa.gov/pubs/1010014.pdf>.

Water quality at the tile drain was monitored weekly March 2010 through May 2010, in response to your request. This project was initiated after reviewing the results from monthly water quality sampling by James Kardouni, Washington Department of Ecology (Ecology). Kardouni performed monitoring on the mainstem and tributaries of South Prairie Creek between December 2008 and December 2009. Of all the sites in his study, T4DT had the highest FC concentrations with a geometric mean concentration of 6,788 cfu/100 mL for all months. The final report by Kardouni can be reviewed at <http://www.ecy.wa.gov/pubs/1003026.pdf>.

Results from 2010 found that the water from the tile drain met the Washington State Primary Contact water quality standard (Chapter 173-201A WAC <http://www.ecy.wa.gov/pubs/0610091.pdf>). There were no samples with concentrations greater than 200 cfu/100 mL (Figure 1) and the geometric mean of the ten samples was 6 cfu/100 mL, well below 100 cfu/100 mL. This is an improvement from what was found in the 2008-2009 study when conditions were not meeting water quality standards.

Additionally, concentrations appeared to increase with rain events. Concentrations also began increasing with decreased flow (thus lower dilution) at the end of the survey period. These observations suggest that there is still a source of bacteria entering the water way.

It appears that the corrective actions by both the Tacoma Pierce County Health Department and the property owner were effective in reducing fecal coliform bacteria from the tile drain at Tributary 4, site T4DT (Figure 2). However, continued sampling would be warranted during the summer months to assess conditions during low flow. I suggest that this sampling be performed when an effectiveness monitoring assessment is initiated that includes Tributary 4 and Ingle Creek.

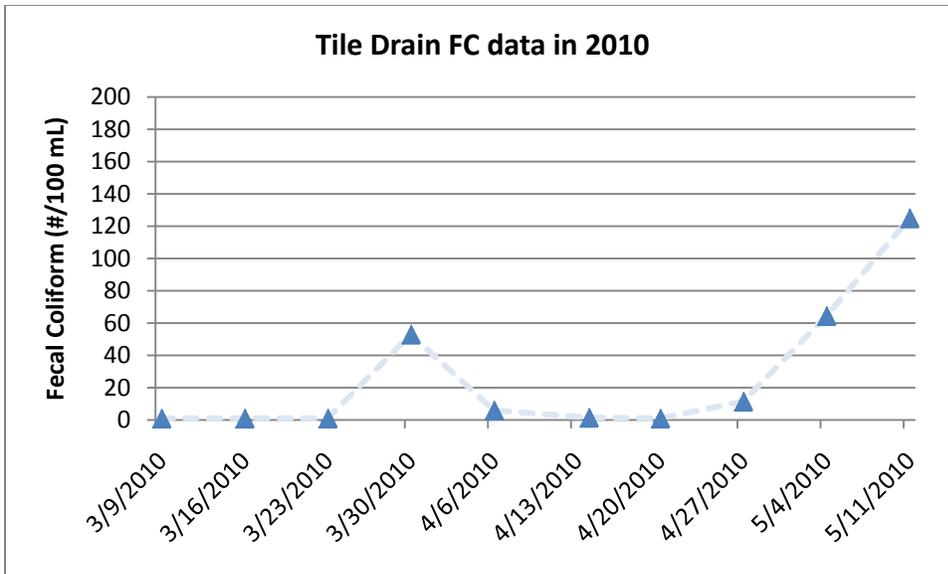


Figure 1. Fecal coliform concentrations from the Tributary 4 tile drain.

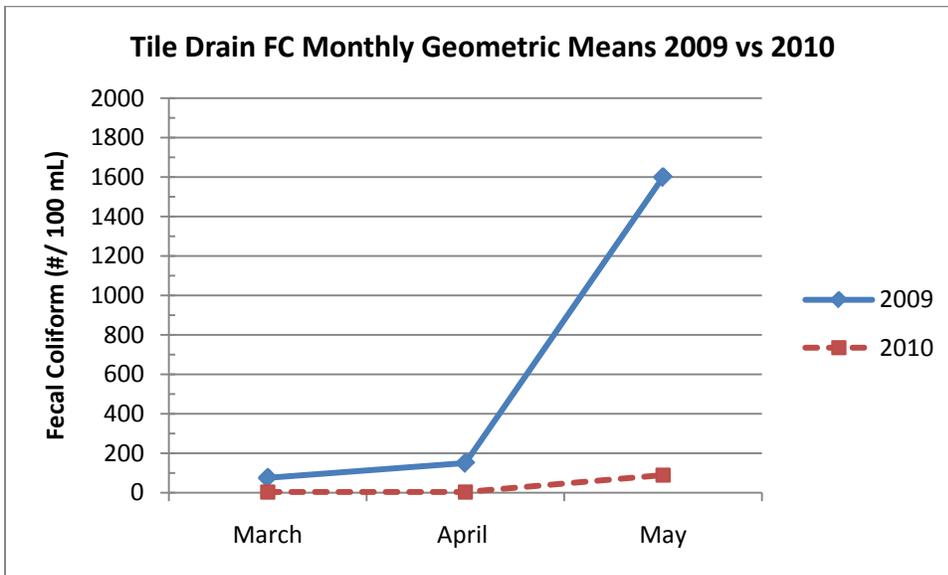


Figure 2. The Fecal coliform geometric mean value for March, April, and May in 2009 versus 2010.