Watershed Outlet Monitoring Program

Willow Creek Station

Burnsville, MN

Quarterly Report

Preliminary Data

January – March 2005

Prepared By: Dakota County Soil and Water Conservation District
Prepared For: Lower Minnesota River Watershed District
June 2005

The Willow Creek WOMP site, located in Burnsville behind the Cub Foods Store on Hwy. 13, has been in operation since 1999. This report summarizes the results of flow, precipitation, and water quality for the 1st quarter of 2005. This data is preliminary and is subject to change until the Metropolitan Council submits the final report for this period.

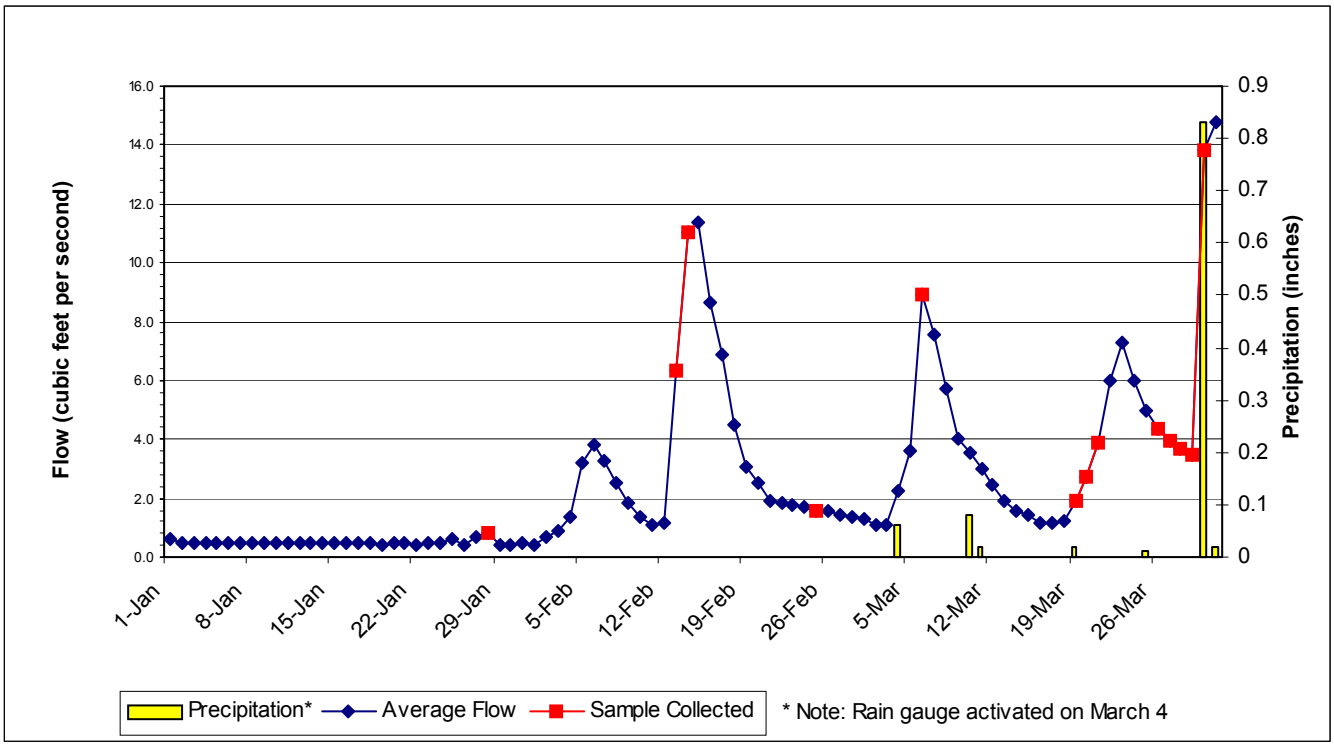
Flow and Precipitation

Average flow in Willow Creek was 2.60 cubic feet per second (cfs) or 1.68 million gallons per day (mgd). Total precipitation for the quarter is unknown as the rain gauge was activated on March 4. March precipitation was 1.04 inches (Table 1, Figure 1).

Table 1. Average flow and total precipitation at Willow Creek WOMP Station January – March 2005

Period	Average Flow (cfs/mgd)	Precipitation (inches)
JANUARY	0.49 / 0.317	na
FEBRUARY	3.27 / 2.11	na
MARCH	4.37 / 2.82	1.04
TOTAL QUARTER	2.60 / 1.68	na

Figure 1. Flow and precipitation at Willow WOMP Station January – March 2005



Water Quality

Six composite samples during runoff events and three low flow grab samples were taken at the Willow WOMP Station during the 1st quarter 2005. Overall, the water quality was fair to good with most parameters below the state standard (in compliance with standards) or near the ecoregion mean (Table 2).

Table 2. Average concentrations at Willow Creek WOMP Station October – December 2004 (for comparison purposes) and January – March 2005.

Parameter	4th quarter 2004 Ave. Concentration	1st quarter 2005 Ave. Concentration	Notes – 1st quarter results
Alkalinity	192 mg/L $CaCO_3$	120 mg/L $CaCO_3$	Typical for freshwater; higher during low flow
Biological Oxygen Demand (BOD5)	2.23 mg/L	2.92 mg/L	Fair level; higher during runoff events
Cadmium	0.08 ug/L	0.04 ug/L	In compliance with state standard
Chloride	68.5 mg/L	198 mg/L	Barely in compliance with state standard; higher during low flow
Chlorophyll-a	1.3 ug/L	13.3 ug/L	Fair level
Chromium	1.05 ug/L	0.2 ug/L	In compliance with state standard
Conductivity	1090 mMHOs	1623 mMHOs	Higher than average for metro streams, higher during low flow
Copper	3.3 ug/L	1.8 ug/L	In compliance with state standard
Fecal Coliform Bacteria	3.0 CFU	63.0 CFU	In compliance with state standard
Hardness	331 mg/L $CaCO_3$	147 mg/L $CaCO_3$	Considered hard water; sometimes very hard during low flow
Lead	0.7 ug/L	0.2 ug/L	In compliance with state standard
Nickel	5.35 ug/L	7.5 ug/L	In compliance with state standard
Nitrogen Ammonia	32.5 ug/L	32.6 ug/L	In compliance with state standard
Nitrate + Nitrite	0.535 mg/L	0.455 mg/L	Slightly above ecoregion mean
Phosphorus, Total	0.1545 mg/L	0.3165 mg/L	Slightly above ecoregion mean; slightly above EPA recommendation; higher during runoff events
Suspended Solids	29.75 mg/L	54.5 mg/L	Above ecoregion mean; higher during some runoff events
Turbidity	1.75 NTU	11.0 NTU	In compliance with state standard
Zinc	13.8 ug/L	4.4 ug/L	In compliance with state standard

mg/L = milligrams per liter or parts per million (ppm)
ug/L = micrograms per liter or parts per billion (ppb)
mMHO = micromhos or micorseimens
CFU = colony forming units
NTU = nephelometric turbidity units