Watershed Outlet Monitoring Program

Willow Creek Station

Burnsville, MN

Quarterly Report

Preliminary Data

April - June 2005

Prepared By: Dakota County Soil and Water Conservation District
Prepared For: Lower Minnesota River Watershed District
August 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 2nd quarter of 2005. This data is preliminary and is subject to change until the Metropolitan Council submits the final report for this period.

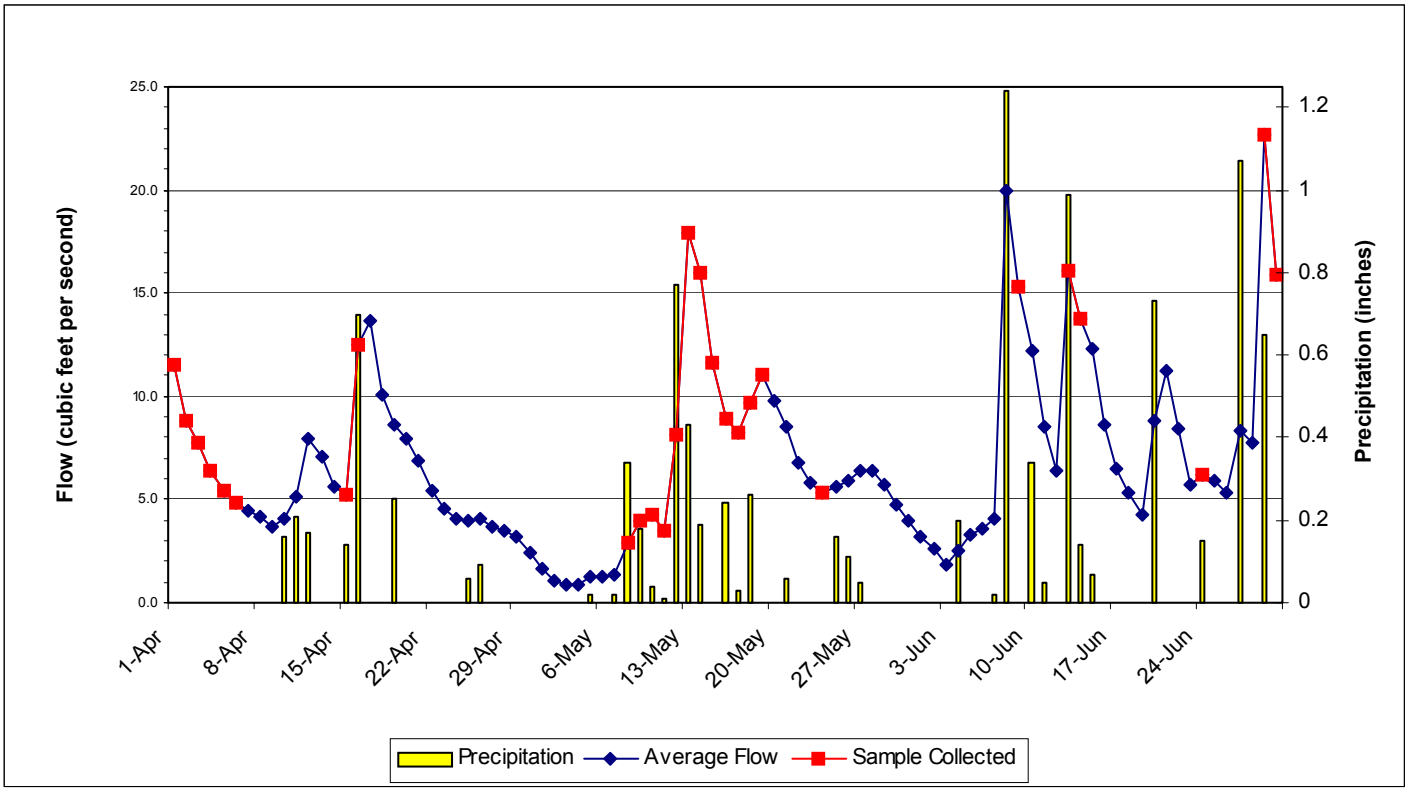
Flow and Precipitation

Average flow in Willow Creek was almost 7 cubic feet per second (cfs) or 4.5 million gallons per day (mgd). Total precipitation for the quarter was 10.34 inches, most of which fell in June (Table 1, Figure 1).

Table 1. Average flow and total precipitation at Willow Creek WOMP Station April - June 2005

Period	Average Flow (cfs/mgd)	Precipitation (inches)
APRIL	6.23 / 4.03	1.78
MAY	6.27 / 4.05	2.91
JUNE	8.57 / 5.54	5.65
TOTAL QUARTER	6.96 / 4.50	10.34

Figure 1. Flow and precipitation at Willow WOMP Station April - June 2005



Water Quality

Six composite samples and one grab sample were taken during runoff events and three grab samples were taken during low flow at the Willow WOMP Station during the 2nd 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 January - March 2005 (for comparison purposes) and April - June 2005.

Parameter	1st quarter 2005 Ave. Concentration	2nd quarter 2005 Ave. Concentration	Notes – 2nd quarter results
Alkalinity	120 mg/L $CaCO_3$	76 mg/L $CaCO_3$	Typical for freshwater; usually higher during low flow
Biological Oxygen Demand (BOD5)	2.92 mg/L	3.14 mg/L	Fair level; higher during runoff events
Cadmium	0.04 ug/L	NA	Data unavailable
Chloride	198 mg/L	121.5 mg/L	In compliance with state standard
Chlorophyll-a	13.3 ug/L	NA	Data unavailable
Chromium	0.2 ug/L	3.2 ug/L	In compliance with state standard
Conductivity	1623 mMHOs	805 mMHOs	Higher than average for metro streams, higher during low flow
Copper	1.8 ug/L	3.9 ug/L	In compliance with state standard
Fecal Coliform Bacteria	63.0 CFU	31.8 CFU	In compliance with state standard
Hardness	147 mg/L $CaCO_3$	95 mg/L $CaCO_3$	Considered moderately hard water
Lead	0.2 ug/L	2.0 ug/L	In compliance with state standard
Nickel	7.5 ug/L	3.5 ug/L	In compliance with state standard
Nitrogen Ammonia	32.6 ug/L	98 ug/L	In compliance with state standard
Nitrate + Nitrite	0.455 mg/L	0.21 mg/L	Slightly below ecoregion mean
Phosphorus, Total	0.3165 mg/L	0.1004 mg/L	Slightly below ecoregion mean; slightly above EPA recommendation; higher during runoff events
Suspended Solids	54.5 mg/L	17.0 mg/L	Slightly above ecoregion mean; higher during some runoff events
Turbidity	11.0 NTU	7.3 NTU	In compliance with state standard
Zinc	4.4 ug/L	14.7 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