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# Hydrologic and Nutrient Monitoring of the Lake Decatur Watershed

## Final Report 1993-2008

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Illinois State Water Survey, Center for Watershed Science  
Institute of Natural Resource Sustainability  
University of Illinois at Urbana-Champaign

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Prepared for the  
City of Decatur  
Keith Alexander, Director of Water Management

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## Abstract

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Lake Decatur is the water supply reservoir for the City of Decatur. The reservoir was created in 1922 by constructing a dam to impound the flow of the Sangamon River. The dam was modified in 1956 to increase the maximum capacity of the lake to 28,000 acre-feet. The lake receives water from the 925-square-mile watershed of the Upper Sangamon River that includes portions of seven counties in east-central Illinois. Lake Decatur has high nitrate-N concentrations which have been consistently exceeding the Illinois Environmental Protection Agency (IEPA) drinking water standard of 10 milligrams per liter (mg/L) since 1980. This has created a serious situation for the drinking water supply of the City of Decatur, since nitrate-nitrogen (N) cannot be removed from finished drinking water through regular water purification processes.

Since 1993, the Illinois State Water Survey (ISWS) has been monitoring the Lake Decatur watershed for trends in discharge, nitrate-N concentration, and nitrate-N yield and to identify any significant changes in the watershed. The purpose of the monitoring was to collect reliable scientific data throughout the watershed for use by city planners and resource managers to develop watershed management alternatives based on scientific data. The ISWS originally established eight monitoring stations in the Upper Sangamon River watershed. Three of those stations have been in continuous operation from May 1993 to April 2008. A companion study funded by the Agricultural Watershed Institute allowed for continued monitoring at those three stations from May 2008 through September 2008. The purpose of this report is to document and present the discharge, nitrate-N concentration, and nitrate-N yield data for the 15 water years of monitoring (October 1993–September 2008), as well as to determine any annual trends in the Lake Decatur watershed. The intended purpose of the monitoring data and trends investigation results is to assist the City of Decatur planners and resource managers in developing watershed management alternatives to manage the current and future city water supply.

In summary, eight of the 15 water years experienced above or extremely above normal precipitation. Based on the 100-year streamflow record at the Monticello station, 4 of the top 11 total annual discharges occurred during the monitoring period (Water Year (WY) 1993 - 2<sup>nd</sup>, WY2008 - 3<sup>rd</sup>, WY1994 - 10<sup>th</sup>, and WY1998 - 11<sup>th</sup>), whereas WY2000 had the fourth lowest annual discharge. The 15-year mean annual nitrate-N yield delivered to Lake Decatur from the Upper Sangamon River watershed was 23 lb/acre and varied from 6 lb/acre (WY2000) to 42 lb/acre (WY2008). During the 15-year monitoring period, there were no significant trends in discharge and nitrate-N yields for the Long Creek (101), Friends Creek (102), and Monticello (111) stations in the Lake Decatur watershed. Annual average nitrate-N concentration for the Monticello (111) station had a statistically significant increasing trend with an increase of 0.087 mg/L per year based on the statistical fit of the annual average data. This dataset was augmented by a longer data record (WY1975–2006) from the downstream gaging station near Oakford to investigate longer-term trends in the Sangamon River watershed. There were no trends detected for nitrate-N concentration or yield within the 32-year record from the Oakford gage.



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by  
Illinois State Water Survey  
Champaign, IL

## Introduction

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Lake Decatur is the water supply reservoir for the City of Decatur and several surrounding communities. The reservoir was built in 1922 by constructing a dam to impound the flow of the Sangamon River. The original dam had a crest elevation of 28 feet above the river bottom and a length of one-third of a mile. The dam created a lake with a surface area of 4.4 square miles and volume of 20,000 acre-feet (6,518 million gallons). The dam was modified in 1956 to increase the maximum capacity of the lake to 28,000 acre-feet (9,125 million gallons). Water withdrawal from the lake and pumping of nine groundwater wells combined provide drinking water for 82,000 people and average 34.9 million gallons per day (mgd). The Village of Mt. Zion is a full-time water customer of the City of Decatur. Harristown and the Long Creek Township Water Department periodically purchase water from the city (City of Decatur, 2008).

The drainage area of the Sangamon River at the Lake Decatur dam is 925 square miles. The watershed includes portions of seven counties in east-central Illinois. The predominant land use in the watershed is row crop agriculture, which composes nearly 90 percent of the land area (Keefer and Bauer, 2005). The major urban areas within the watershed are Decatur, Monticello, Mahomet, Rantoul, and Gibson City.

Lake Decatur has a history of high concentrations of total dissolved solids and nitrate-nitrogen (nitrate-N). This created a serious situation for the drinking water supply of the City of Decatur, since nitrate-N cannot be removed from finished drinking water through regular water purification processes. Nitrate-N concentrations in Lake Decatur have exceeded the Illinois Environmental Protection Agency (IEPA) drinking water standard of 10 milligrams per liter (mg/L), generally occurring on a seasonal basis (spring through mid-summer and late winter).

In 1992, a Letter of Commitment (LOC) between the IEPA and the City of Decatur required the city to take several steps to reduce nitrate-N drinking water levels to acceptable concentrations within nine years. One of the steps required the city to conduct a two-year monitoring study to better understand nitrate-N yields in the Lake Decatur watershed. The Illinois State Water Survey (ISWS) received a grant from the City of Decatur in 1993 to conduct the two-year monitoring study and develop land-use management strategies that could assist the city in complying with IEPA drinking water standards (Demissie et al., 1994, 1996). The City of Decatur has continued to fund data collection to monitor the Lake Decatur watershed for nitrate-N concentration and yields to detect possible trends and collect reliable hydrologic and water

quality data throughout the watershed for use by city planners and resource managers to develop watershed management alternatives based on scientific data. In July 2000, the City of Decatur and the State of Illinois agreed to a Consent Order to construct an ion exchange facility at the South Water Treatment Plant to remove nitrate-N from the drinking water by July 1, 2002. The ion exchange facility went online in June 2002.

Several ISWS publications report the monitoring results from 1993 to 2006. Demissie and Keefer (1996) present a technical report on the watershed investigation, modeling, and results of the first two project years (PY) of monitoring (May 1993–April 1995). Subsequent reports present monitoring for PY3–13 (May 1995–April 2006): PY3–4 in Keefer et al. (1996); PY5–7 in Keefer and Demissie (1999, 2000, and 2002); and PY8–13 in Keefer and Bauer (2005 and 2008). Reports for PY3–13 present annual results in the context of the longer term records and can be found in electronic format on the Illinois State Water Survey Web site (<http://www.isws.illinois.edu/>). Another product based on the earlier monitoring data is a model created by the ISWS to assist the city in forecasting weekly nitrate-N concentrations in Lake Decatur, which could assist in the operation of the South Water Treatment Plant ion exchange facility (Markus et al., 2003; Amenu et al., 2007; and Markus et al., 2009). Also, additional analysis using the dataset compared annual nitrate-N yield estimation methods as a function of dataset length, sampling frequency, and method of yield estimation (Guo et al., 2002). The conclusion was that similar accuracy in estimating annual nitrate-N yields can be achieved by frequent sampling for short time periods and less frequent sampling for much longer time periods.

This final report reorganizes the annual data into water years (WY) rather than in the project years (PY) that were presented in earlier reports (see Appendix A). A water year begins in October and ends in September with the water year determined by the calendar year of the final month (September). For example, Water Year 2000 (WY2000) begins on October 1, 1999 and ends on September 30, 2000. This report will present annual results of the monitoring period from May 1993 through September 2008, which includes data from WY1993 through WY2008. Water year 1993 contains data from May 1993 through September 1993, and therefore is a partial year except where noted. The monitoring network initially consisted of eight stations and concluded with three stations. Data from each station will be discussed to the extent of the individual monitoring periods. The report is organized into five main sections: Introduction, Background, Hydrologic and Nitrate-N Monitoring, Trends Investigation, and Summary and Conclusions. The Background section is updated from the corresponding sections in Keefer and Bauer (2005, 2008). The Hydrologic and Nitrate-N Monitoring section discusses the annual monitoring results through WY2008. Using the hydrologic and monitoring results, a discharge and nitrate-N trends investigation was performed and presented in the Trends Investigation section. An extensive appendix (provided as PDF files on a CD insert in the hard copy of this report or as PDF files at the end of the electronic report file) is also included which contains data for the entire monitoring period.

## **Acknowledgments**

This work was supported by the City of Decatur. Keith Alexander, Water Management Director, served as project manager, and his constant support, cooperation, and assistance are

greatly appreciated. Several other city officials and staff were very cooperative and supportive: the Decatur City Council, Mayor Paul Osborne, City Manager Steve Garman, and Assistant City Manager for Public Services John Smith. We would also like to acknowledge the cooperation and support from the Champaign, DeWitt, McLean, Macon, and Piatt Soil and Water Conservation Districts.

During the last three years of this study, the U.S. Environmental Protection Agency (USEPA) funded a separate study through the Agricultural Watershed Institute (AWI). Much of the cost share for the USEPA study was provided by City of Decatur funding for the original monitoring study. This provided the means to continue hydrologic and nitrate monitoring at three of the City of Decatur stations, which extended the data for this report from April 2008 to the end of Water Year 2008 (September 2008). The authors gratefully acknowledge the support of the USEPA and AWI for providing these additional five months of data.

The authors wish to acknowledge the significant contributions of the current ISWS project staff: Ryan Williams, Field Technician, was responsible for field data collection; Sandy Jones and Mary Richardson assisted with data entry and analysis; and Yi Han, Sediment Chemist, for assistance in preparing water samples for delivery to the ISWS Analytical Services Group. We gratefully acknowledge the nitrate-N analyses performed by the following chemists at the Illinois State Water Survey Center for Chemistry and Technology, Analytical Services Group: Sofia Lazovski, Ruthann Nichols, Lauren Sievers, Kaye Surratt, and Daniel Webb. Becky Howard prepared the final version of the report, which was edited by Lisa Sheppard. Sara Olson provided expert advice on illustration layout. We also acknowledge the extensive and thoughtful review of this report by Vern Knapp, Interim Head, Center for Watershed Science.

This study was overseen by Dr. Misganaw Demissie, Director of Illinois State Water Survey, throughout the study period, and his expertise and guidance in various capacities are deeply appreciated. Over the course of the 15-year duration of this project we would like to acknowledge the many ISWS staff that at one time or another contributed their expertise toward the successful completion of this study:

<i>Field staff</i>	<i>Data processing</i>	<i>Lab analysis</i>
Louis Arighi	Ben Bromiel	Sue Bachman
Bill Bogner	Brian Chaille	Saada Hamdy
Kevin Rennels	Brad Chapin	Troy Foster
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		Loretta Skowron
		Kaye Surratt
		Dan Webb



# Background

## Water Quality Issues in Lake Decatur

Lake Decatur has experienced water quality problems for many years. Past studies by the U.S. Environmental Protection Agency (USEPA) and the Illinois Environmental Protection Agency (IEPA) documented historical water quality problems in the lake (USEPA, 1975; IEPA, 1978). Most of the problems are associated with nonpoint source pollution generated in the watershed of the Upper Sangamon River. The most pressing water quality problem in Lake Decatur is high concentration of nitrate-N. Nitrate-N cannot be removed from finished drinking water through regular water purification processes. Consequently, an ion-exchange nitrate removal facility was constructed at the South Water Treatment Plant and began operating in June 2002.

The nitrate-N yield that eventually reaches Lake Decatur originates in the watershed of the Upper Sangamon River (Figure 1). To characterize and quantify the spatial and temporal distribution of nitrate-N yield in the Upper Sangamon, the City of Decatur supported watershed monitoring from 1993 to 2008 through a grant to the Illinois State Water Survey (ISWS). The purpose of the monitoring was to collect reliable hydrologic and water quality data throughout the watershed for use by city planners and resource managers to develop watershed management alternatives based on scientific data. Final results of the entire monitoring period are presented in this report.

To put Lake Decatur nitrate-N concentrations in a historical perspective, Figure 2 presents available data from 1923 to 2008. As can be seen in Figure 2a, prior to 1967 nitrate-N concentration obtained from IEPA, raw records are significantly less dense than data following 1967. Consequently, this older data can provide a perspective only on data availability and not magnitude of concentrations during that period. The laboratory analytical method utilized to derive these older concentrations was not reported. Analytical methods used by ISWS laboratories for this study can be found later in this report. As can be seen in Figure 2b, nitrate-N concentrations in Lake Decatur raw water samples from the South Water Treatment Plant (SWTP) have exceeded the IEPA drinking water standard of 10 milligrams per liter (mg/L) at least once during the years of 1967, 1980–1991, 1996–1999, 2001–2002, 2004, and 2007–2008. For regulatory purposes, maximum concentrations are important for drinking water standards. Figure 3 shows that the maximum concentration measured from Lake Decatur exceeded the maximum contaminant level (MCL) most years since WY1980. The 42-year (WY1967–2008) average annual maximum concentration was 10.6 mg/L, whereas the average annual mean and minimum concentrations were below the MCL (5.0 and 0.5 mg/L, respectively).

## Watershed Physical Characteristics

The Sangamon River is a major tributary to the Illinois River with the confluence near Chandlerville in Cass County. The drainage area of the Sangamon River at the Decatur dam is 925 square miles. The headwaters of the Sangamon River are in McLean County near the town of Ellsworth. The watershed lies across seven counties in east-central Illinois: Champaign, Christian, Dewitt, Ford, Macon, McLean, and Piatt, as shown in Figure 1. The major urban areas





Figure 1. Location of Lake Decatur watershed

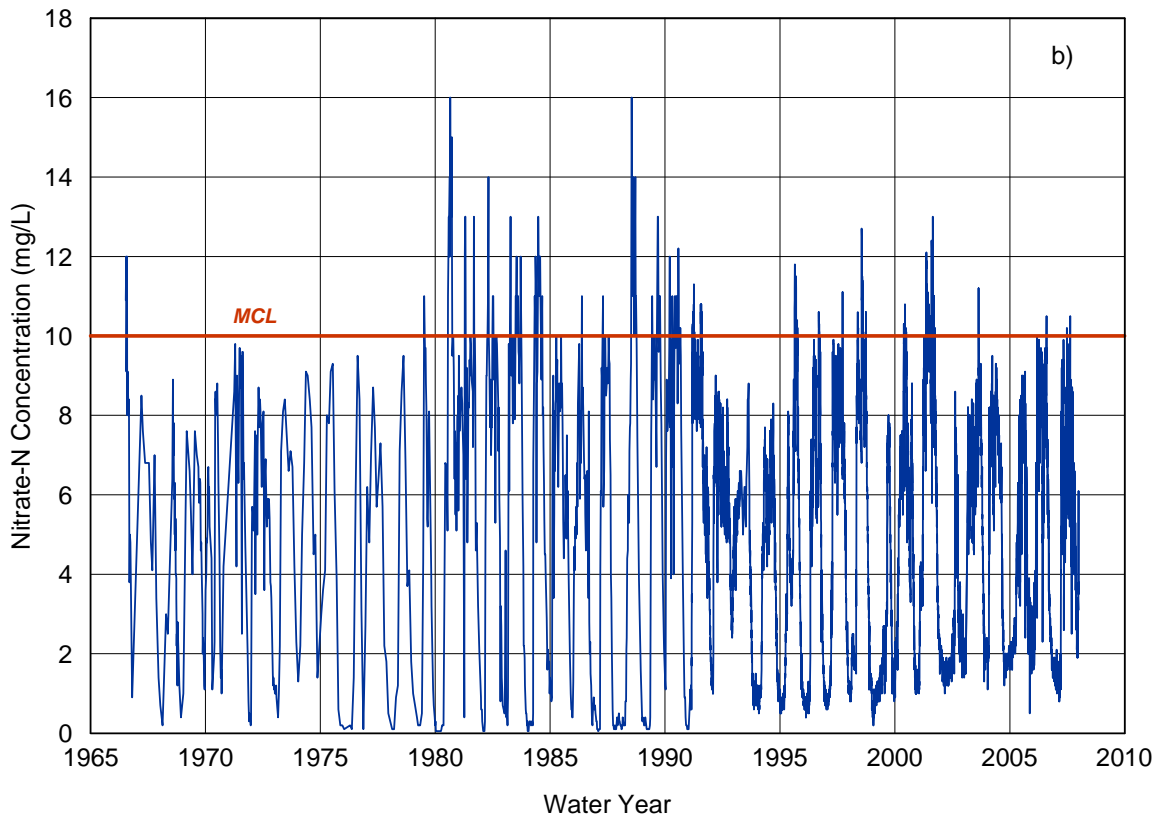
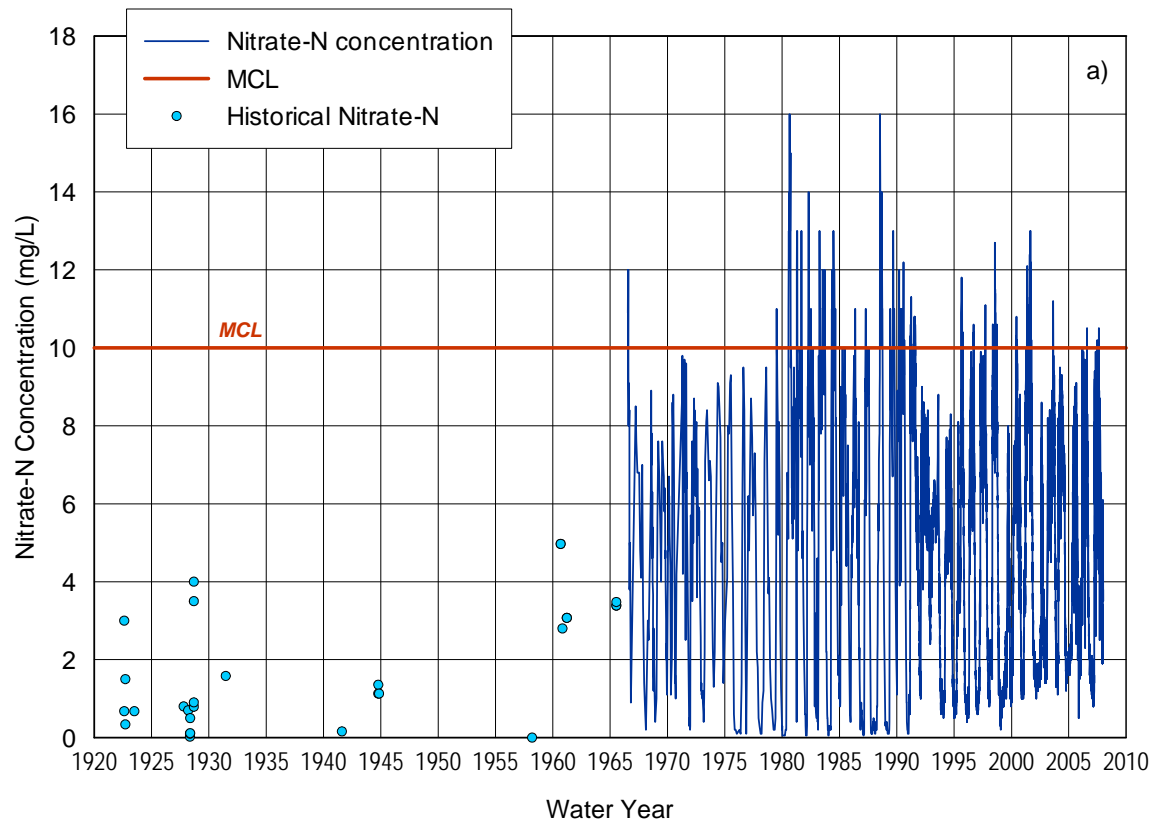


Figure 2. Historical nitrate-N concentrations in Lake Decatur from a) 1923–2008 and b) 1967–2008

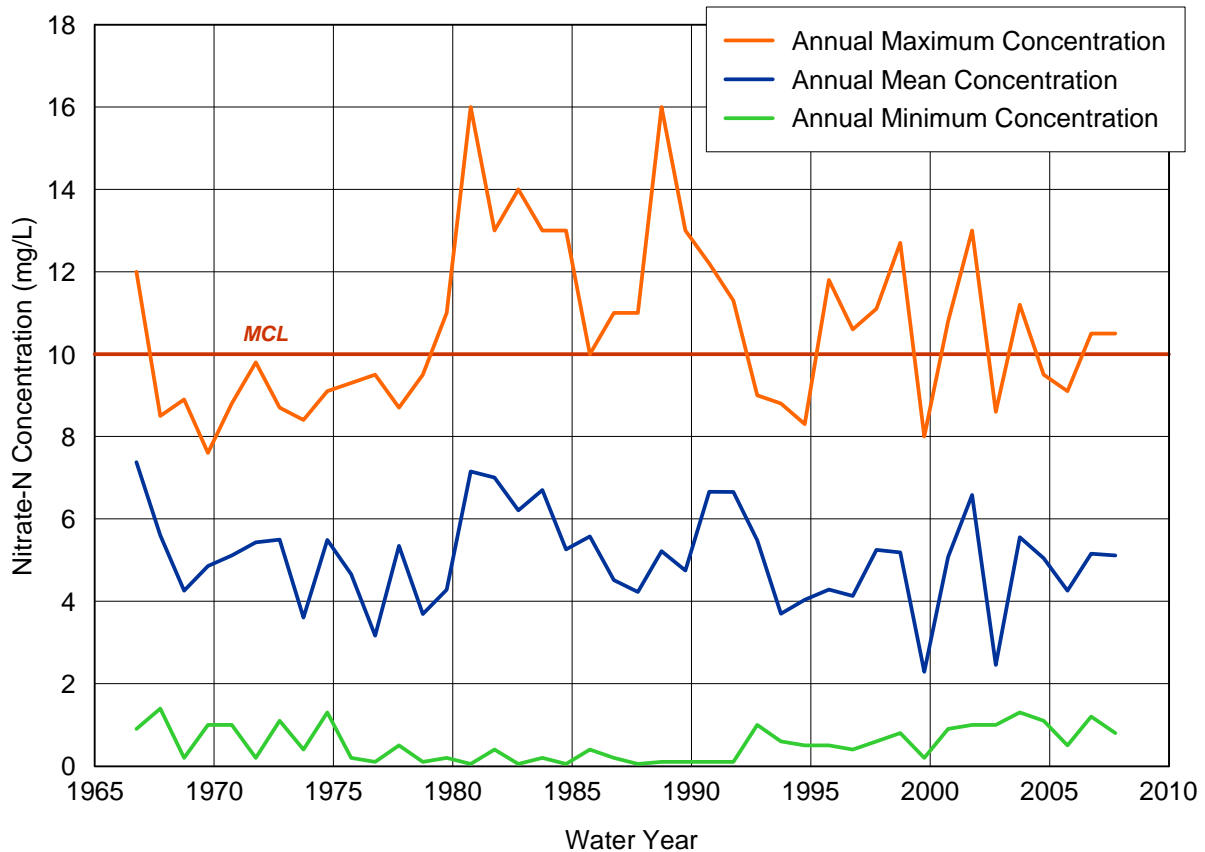


Figure 3. Annual maximum, mean, and minimum nitrate-N concentrations in Lake Decatur for WY1967–2008

within the watershed are Decatur, Monticello, Mahomet, Rantoul, and Gibson City. The predominant land use in the watershed is row crop agriculture, which composes nearly 90 percent of the land area (Keefer and Bauer, 2005).

The Lake Decatur watershed is in the humid, continental, climate region, typical for central Illinois. It lies exclusively in the Bloomington Ridged Plain of the Till Plains Section of the Central Lowland Province (Figure 4). The Till Plains section has broad till plains in a youthful erosion stage. Low, broad, morainic ridges with intervening wide stretches of relatively flat or gently undulating ground moraine characterize the Bloomington Ridged Plain (Leighton et al., 1948).

### Soil

There are 14 major soil association types in the watershed. Figures 5 and 6 show the distribution of the different soil associations and parent material, respectively. The percentage of watershed area of each soil association also is presented (Table 1). The dominant soil associations in the Lake Decatur watershed consist of poorly drained Drummer and Sable silty clay loams and somewhat poorly drained Flanagan and Ipava silt loams (IL003, IL009, IL011,

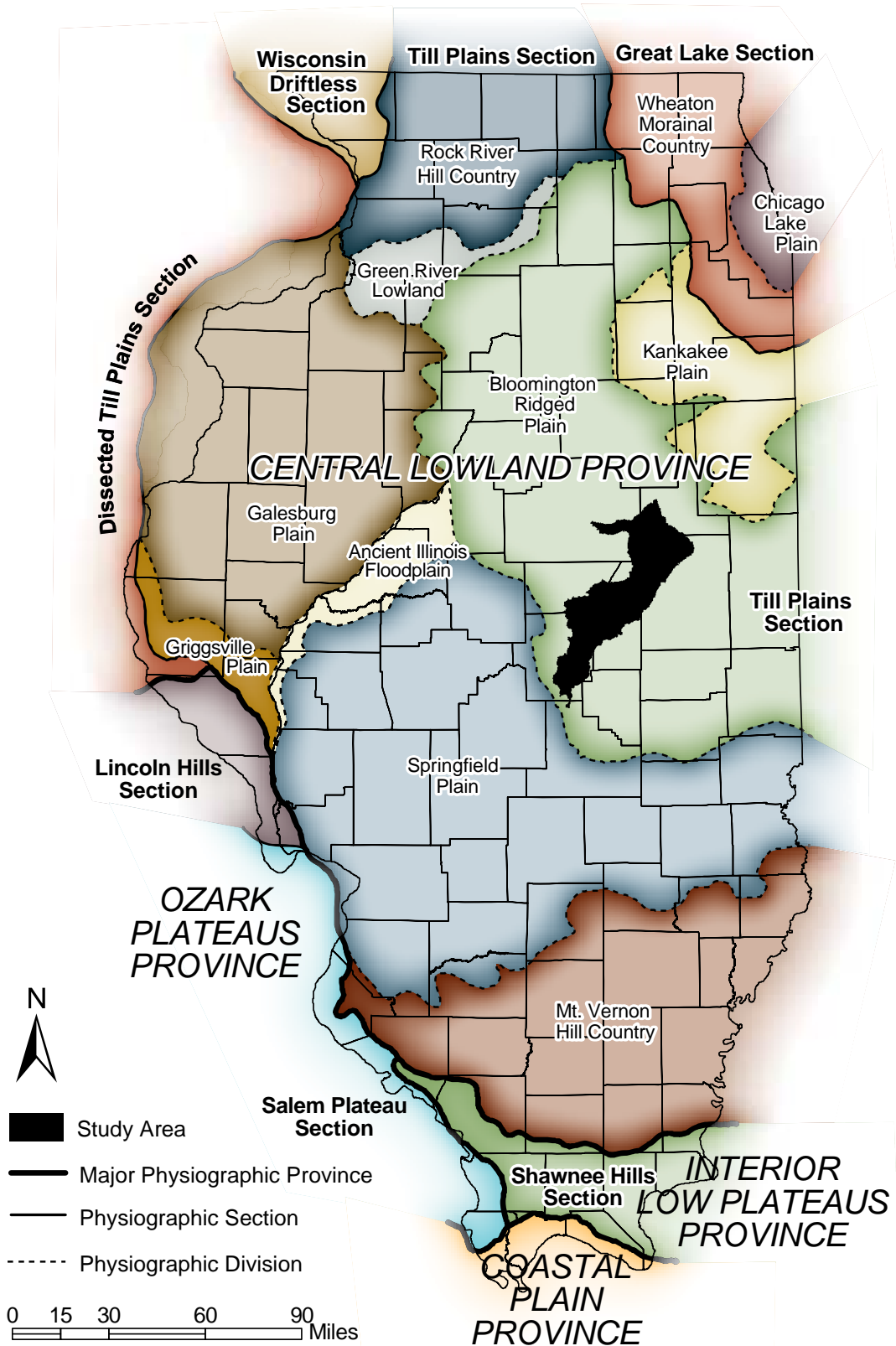


Figure 4. Location of the Lake Decatur watershed in the physiographic divisions of Illinois

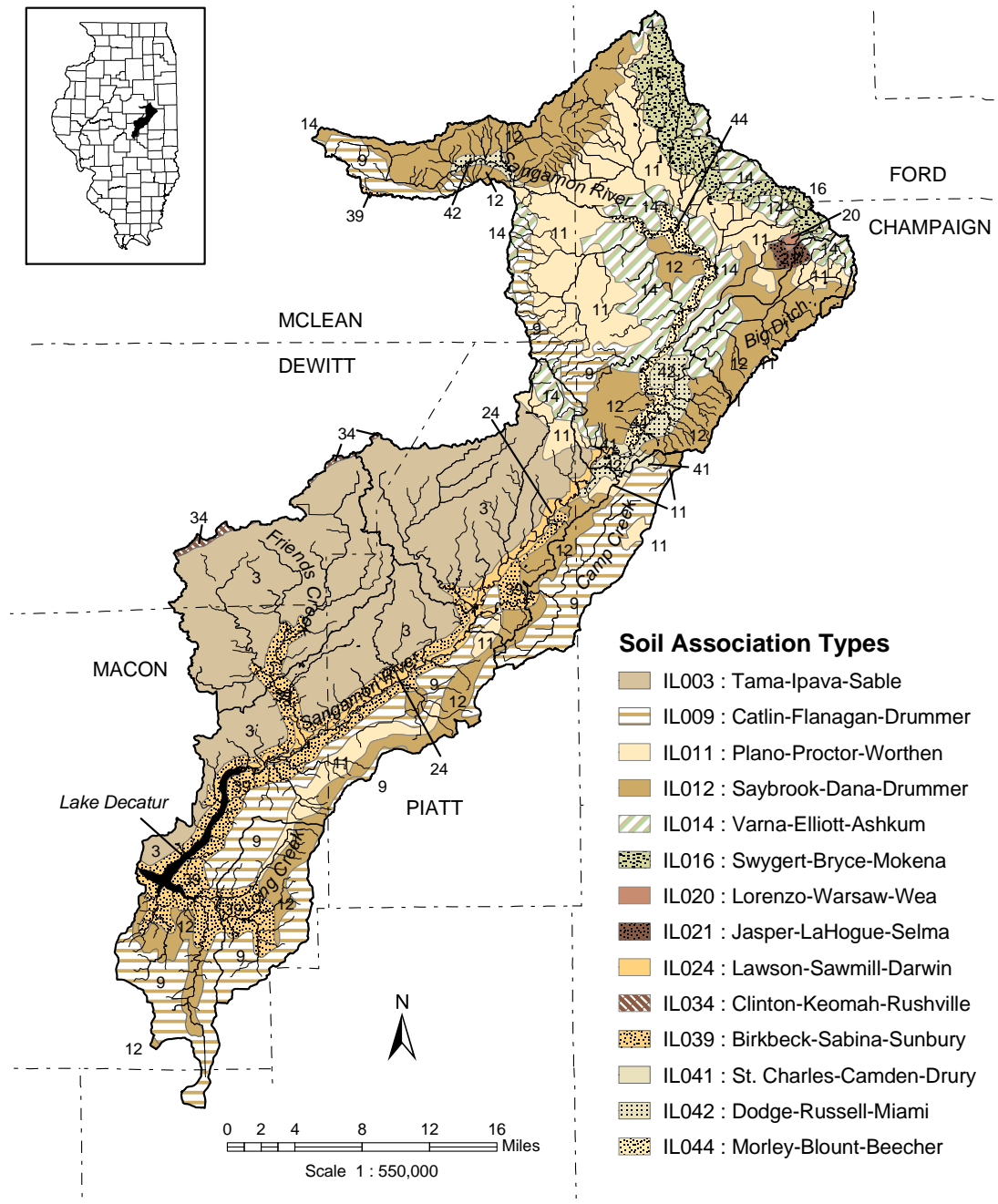


Figure 5. Map of soil associations in the Lake Decatur watershed

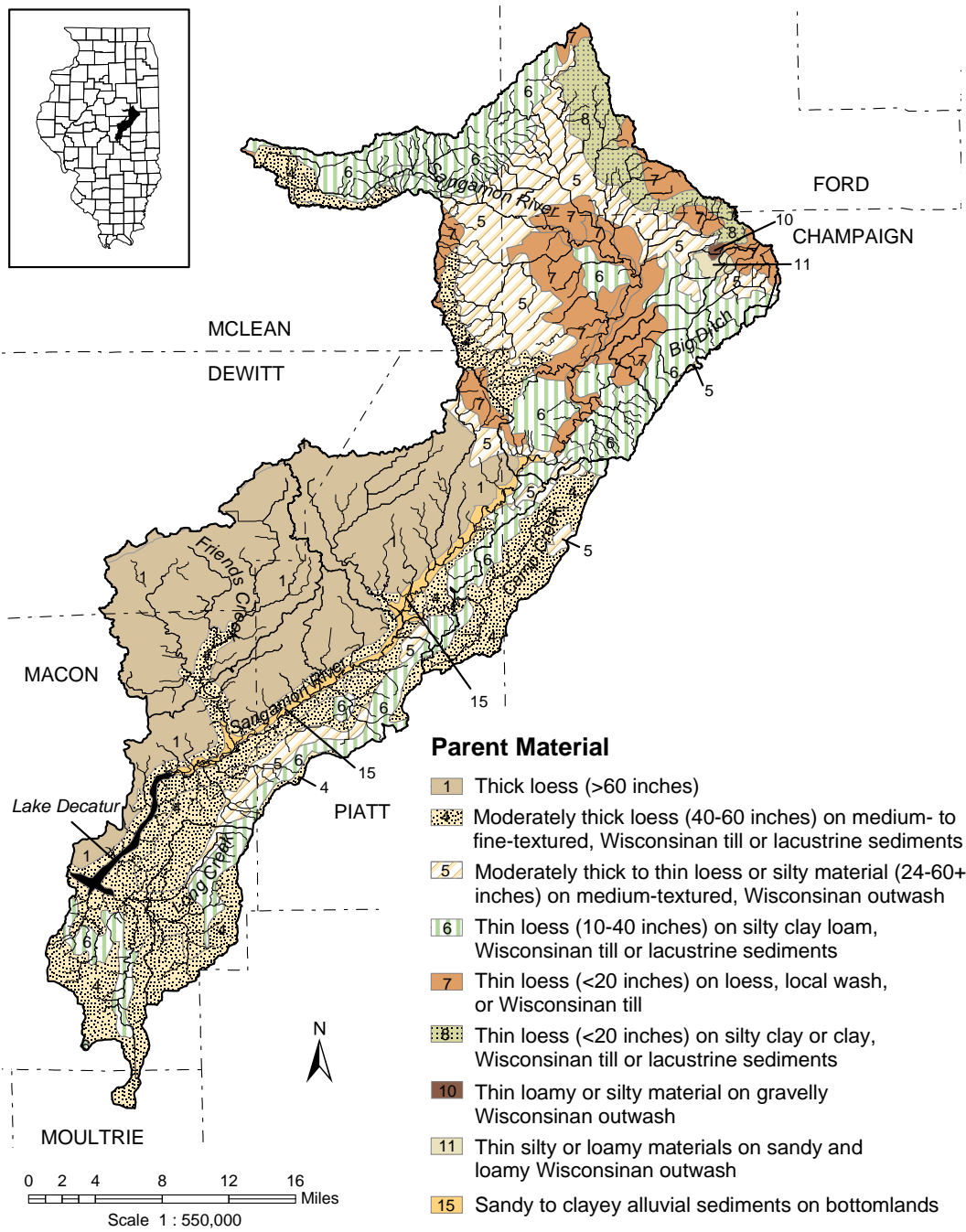


Figure 6. Map of soil parent material within the Lake Decatur watershed

**Table 1. Percent Area of Soil Association within the Lake Decatur Watershed**

<i>Association code</i>	<i>Association name</i>	<i>Percent watershed area</i>
IL003	Tama-Ipava-Sable	27.4
IL012	Saybrook-Dana-Drummer	17.7
IL009	Catlin-Flanagan-Drummer	15.4
IL011	Plano-Proctor-Worthen	13.4
IL014	Varna-Elliott-Ashkum	8.4
IL039	Birkbeck-Sabina-Sunbury	7.7
IL016	Swygert-Bryce-Mokena	3.3
IL024	Lawson-Sawmill-Darwin	1.9
IL044	Morley-Blount-Beecher	1.7
IL042	Dodge-Russell-Miami	1.6
IL041	St. Charles-Camden-Drury	0.3
IL021	Jasper-LaHogue-Selma	0.3
IL034	Clinton-Keomah-Rushville	0.2
IL020	Lorenzo-Warsaw-Wea	0.1
	Water	0.5

and IL012), which cover 74 percent of the watershed area. These very fertile soils, the most productive in the watershed, are very resistant to drought, and have relatively high organic matter content.

The watershed can be divided into three areas with respect to the drainage characteristics of the soil; these correspond closely with the distribution of the parent material. One area is in the west-central portion of the watershed on the north side of the Sangamon River. The dominant soil association in this area is Tama-Ipava-Sable, which are “poorly drained to moderately well drained soils formed in loess, on uplands” (Martin, 1991). The second area is along the southeastern watershed boundary where the dominant soils are poorly drained to moderately well-drained silty soils formed in loess on nearly level to moderately sloping terrain (Martin, 1991). The third area in the northeastern end of the watershed has two types of soil: poorly to moderately drained silty soils formed in loess, local wash, or glacial material on nearly level to gently sloping terrain, and moderately well to well drained silty soils formed in loess and the underlying glacial outwash on nearly level to moderately sloping ridges, outwash plains, or terraces (Fehrenbacher, 1990; National Agricultural Statistics Service, 2003).

### ***Channel Gradient***

Channel gradient (slope) is an indicator of erosion and stream velocity. Figure 7 shows the channel profiles for the Upper Sangamon River and selected tributaries with respect to the monitoring station locations and elevations. Each tributary is plotted relative to other tributaries and Lake Decatur. Data were retrieved from the Illinois Streams Information System (Day, 1999), version 3.0 from May 2003. Table 2 presents the mean percent slope of each tributary

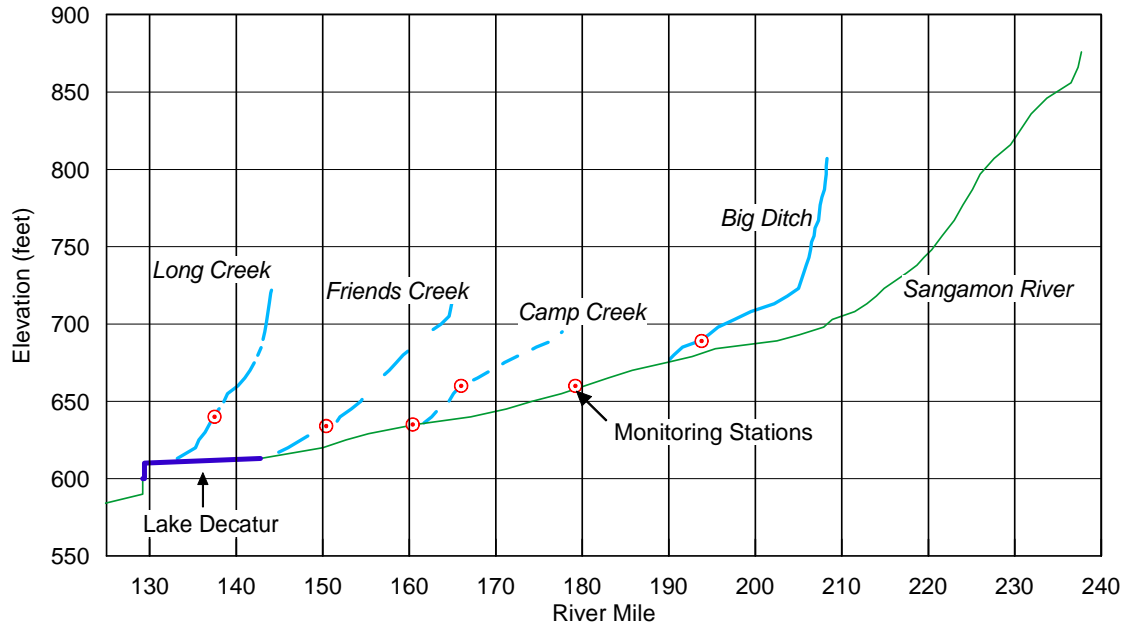


Figure 7. Stream profiles of the Upper Sangamon River and selected tributaries in the Lake Decatur watershed

**Table 2. Mean Stream Slope of the Sangamon River and Selected Tributaries**

<i>Location</i>	<i>Mean slope (percent)</i>
Sangamon River	
Upstream of Lake Decatur Dam	0.059
Long Creek	0.223
Long Creek upstream of Station 101	0.223
Big Creek #1 tributary	0.199
Big Creek #2 tributary	0.296
Friends Creek	0.095
Friends Creek upstream of Station 102	0.106
Sangamon River upstream of Station 111	0.068
Camp Creek	0.069
Camp Creek upstream of Station 104	0.057
Sangamon River upstream of Station 105	0.082
Big Ditch	0.141
Big Ditch upstream of Station 106	0.154
Big Ditch upper reach	0.538



and the river. The mean slope of the Sangamon River upstream of Lake Decatur Dam is 0.059 percent. The greatest slopes are found on the upper reach of Big Ditch (0.538 percent), Big Creek, a tributary to Long Creek (0.296 percent), and Long Creek upstream of Station 101 at Twin Bridges Road bridge (0.223 percent).

### **Lake Sedimentation History**

Soil erosion in the Lake Decatur watershed is recognized as a long-term problem to be controlled so that Lake Decatur can provide an adequate water supply to the City of Decatur (Demissie and Keefer, 1996). The ISWS has conducted eight sedimentation surveys in Lake Decatur (1931, 1932, 1936, 1946, 1956, 1966, 1983, 2000, and 2001). A report by Fitzpatrick et al. (1987) summarizes the surveys from 1931–1932 through 1983, and Bogner (2001, 2002) summarizes the 2000 and 2001 surveys.

Analysis of the lake sedimentation surveys from 1922 until 1983 showed that total lake storage capacity dropped from 27,900 to 18,800 acre-feet (ac-ft), a loss of one-third of the original capacity in 61 years (Fitzpatrick et al., 1987). The annual capacity loss rate for Lake Decatur averaged 149 ac-ft. The total sediment delivered to the lake between 1922 and 1983 was 21.4 tons per acre of watershed. The 1922–1983 annual rate of sediment delivered to the lake is 0.35 tons per acre, and 77 percent of that sediment is trapped (deposited) in the lake for an annual accumulation rate of 0.27 tons per acre. Table 3 delineates the sources of sediment delivered to the lake for this period (Fitzpatrick et al., 1987). Sediment size fractions of samples taken in 1983 were 57 percent clay, 36 percent silt, and 7 percent sand (Bogner, 2001, 2002; Fitzpatrick et al., 1987).

Sedimentation surveys conducted in 2000 and 2001 focused on three basins of Lake Decatur: the basin at the headwater of the main lake body (Basin 6) and the basin areas of the Sand Creek and Big/Long Creek tributaries at the southern end of the lake (Bogner, 2001, 2002). The capacity of Basin 6 decreased from 2,797 ac-ft in 1922 to 1,451 ac-ft in 2000, a loss of 48.1 percent. Annual sedimentation rates for Basin 6 decreased over time. The most recent rate, 8.3 ac-ft, occurred in 1983–2000 (Bogner, 2001). The capacity of the Big/Long Creek Basin

**Table 3. Sources of Sediment to Lake Decatur: Estimated Proportion of Total Lake Sediment and Sediment Yield by Source Area (Fitzpatrick et al., 1987)**

<i>Source</i>	<i>Lake watershed area (percent)</i>	<i>Total lake sediment (percent)</i>	<i>Yield to lake (tons/acre/year)</i>
All sources	100	100	0.27
Sangamon River above Monticello	59	22	0.10
Sangamon River below Monticello and above the lake	25	27	0.29
Bluff watersheds	6	29	1.25
Big/Long and Sand Creeks	9	19	0.56
Lakeshore erosion	–	2	–

**Note:** – indicates incomplete data or no data available.

decreased from 2,754 ac-ft in 1922 to 1,512 ac-ft in 2001, a loss of 54.9 percent. Annual sedimentation rates for the basin were 9.9 ac-ft. Sediment consolidation was not as apparent in the deeper Big/Long Creek basin as in the shallower Basin 6 (Bogner, 2002).

### ***Land Use and Land Cover***

**Land Use:** Agriculture is the dominant land use in the Lake Decatur watershed. The following crop data are from the Illinois Agricultural Statistics Service (IASS). Figure 8 shows changes in acreage for selected crops in the watershed from 1925 to 2008. Agricultural land use increased from 416,400 acres (70 percent of the total watershed area) in 1925 to 496,000 acres (84 percent) in 2008. Since 1925, the percentage of land in agricultural use within the watershed was lowest in 1934 (62 percent) and highest in 1980 (90 percent). Corn and soybeans, the dominant crops, composed 83 percent of the watershed in 2008. Row crops (corn and soybeans) more than doubled from 1925 (221,020 acres) to 2008 (492,264 acres). However, corn acreage increased by only 67,077 acres over 84 years, averaging 227,949 acres and ranging from 163,470 acres in 1934 to 309,156 acres in 2008. Corn acreage sharply increased by 41,495 acres from 2006 to 2007 (15.5 percent). This dramatic increase in acreage was accompanied by an even greater decrease in soybean acres by 49,906 acres (-22 percent). The increased acreage of corn is assumed to be due to increased demand from ethanol producers. Corn acres dropped by 7 percent between 2007 and 2008 (21,059 acres), while soybeans rebounded by 18 percent (31,676 acres).

As shown in Figure 8, soybean acreage gradually increased from 13,400 acres in 1927 to 204,200 acres in 2008. This increase had a reciprocating decrease in acreage of small grain crops such as wheat, oats, hay, and sorghum. Acreage for small grains began a steady decline from almost 34 percent of the watershed area in 1927 to less than 1 percent in 2008. In 2008 corn and soybean acreage accounted for nearly all the agricultural acreage in the watershed, whereas in 1925 corn and small grains acreage dominated.

**Land Cover:** The United States Department of Agriculture, National Agricultural Statistics Service (USDA-NASS) Cropland Data Layer (CDL) is a raster, geo-referenced, categorized land cover data layer developed from satellite imagery. The Illinois CDL is categorized annually based on extensive field observations and a national survey based on a stratified random sample of land areas selected from each state. The survey focus is on cropland, but all land covers are recorded within the sampled land area. NASS uses broad land use categories to define land that is not under cultivation, including non-agricultural, pasture/rangeland, water, woods, and farmstead. The Illinois CDL uses 13 land categories for all land types of land cover. A list of all categorization codes and land covers can be found in Appendix B. Land cover data for 1999 and 2007 were retrieved for this report. A detailed description of the USDA-NASS Illinois Cropland Data Layers can be found in the Illinois Geospatial Clearinghouse at the Illinois State Geological Survey (<http://www.isgs.illinois.edu/nsdihome/webdocs/landcover/index.html>).

The 2007 Illinois CDL data for the Lake Decatur watershed are illustrated in Figure 9. Corn and soybean acreage was 77 percent of the watershed area, developed areas (urban land cover) were 12 percent, grassland and forest were 5 percent each, and 1 percent of the watershed was covered with small grains, wetlands, open water, and other uses. As can be seen, the non-agricultural land covers (developed areas, forest, water/wetlands) are easily discernable from

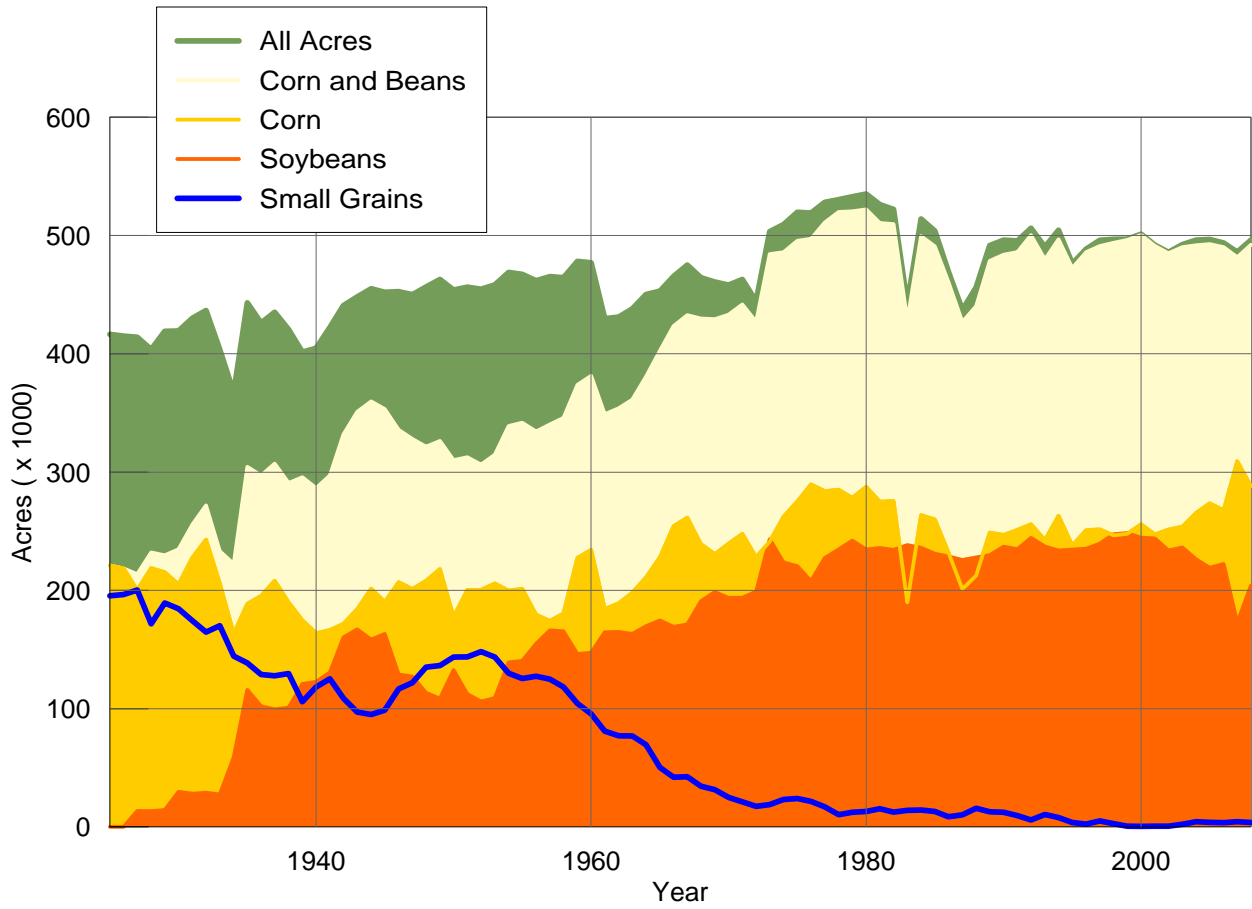


Figure 8. Crop acreage harvested in the Lake Decatur watershed, 1925–2008

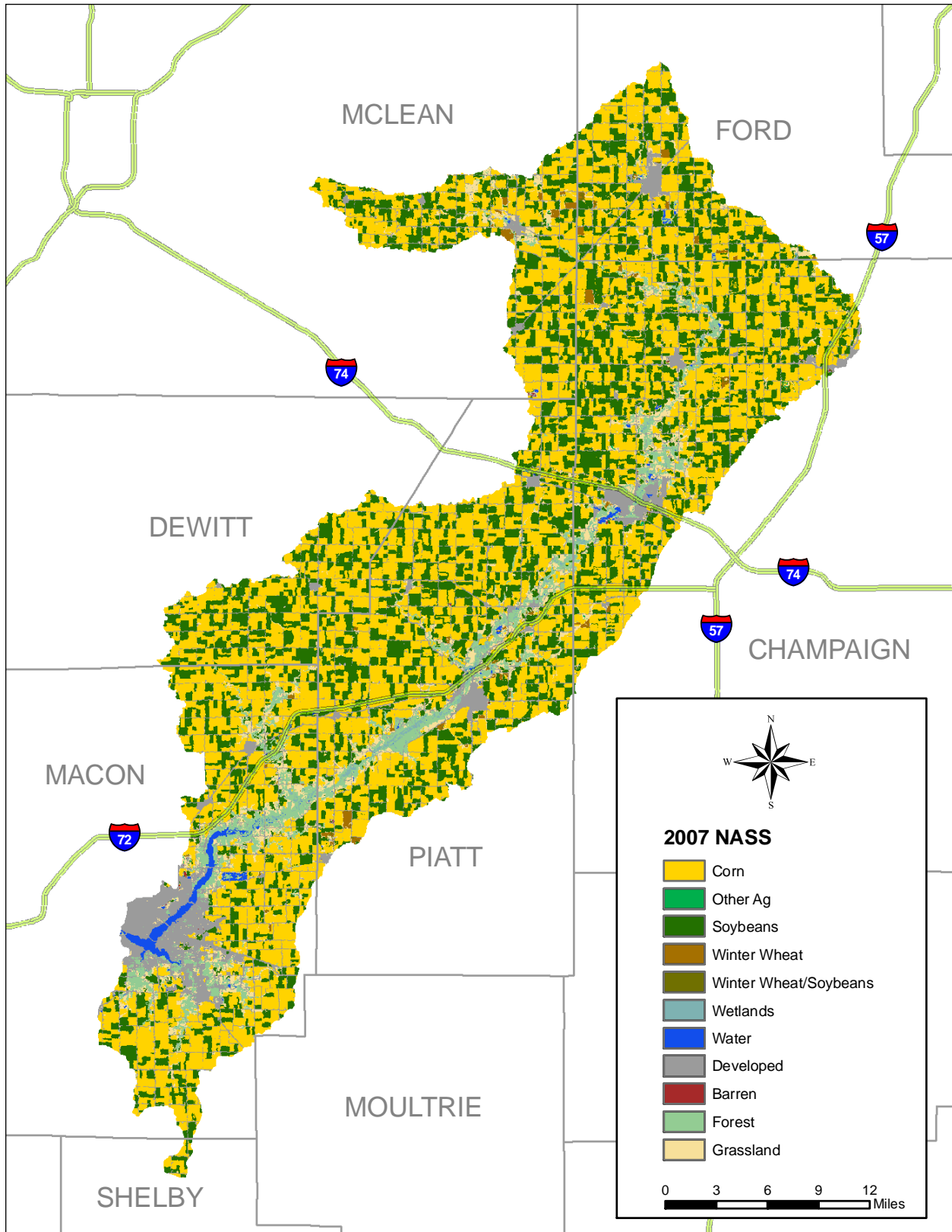


Figure 9. Map of 2007 NASS land cover categories in Lake Decatur watershed

the dominant distribution of agricultural land cover, predominantly corn and soybeans. In 2007, cropland area calculated from the IASS data was 82 percent of the watershed area, which is reasonably comparable to the 78 percent of cropland calculated from the Illinois CDL data. Cropland area information was also similar between the IASS and CDL datasets for 1999, 84 and 81 percent, respectively. The 1999 CDL data show corn and soybean acreage was 82 percent of the watershed area, developed areas were 3 percent, grassland was 10 percent, forest was 3 percent, and 2 percent of the watershed area was covered with all other crops, wetlands, open water, and other uses.

Figure 10 illustrates the percent difference in area for each land cover category between 1999 and 2007. The largest difference in land cover area was the increases in corn and developed (urban) covers and decreases in soybean and grassland covers. Soybeans had the largest decrease (11 percent) and developed land had the largest increase (9 percent). Due to differences in technology and satellite data acquisition used to compute CDL data between 1999 and 2007, these percentages are not considered absolute but do represent relative changes over this time period.

Figure 11 illustrates the difference between 1999 and 2007 for the 13 land cover categories for each of the eight monitored watersheds as well as the Sangamon River near Oakford. The Oakford station drainage area also was investigated to determine changes at increasingly larger scales and give regional context to the Lake Decatur watershed land cover

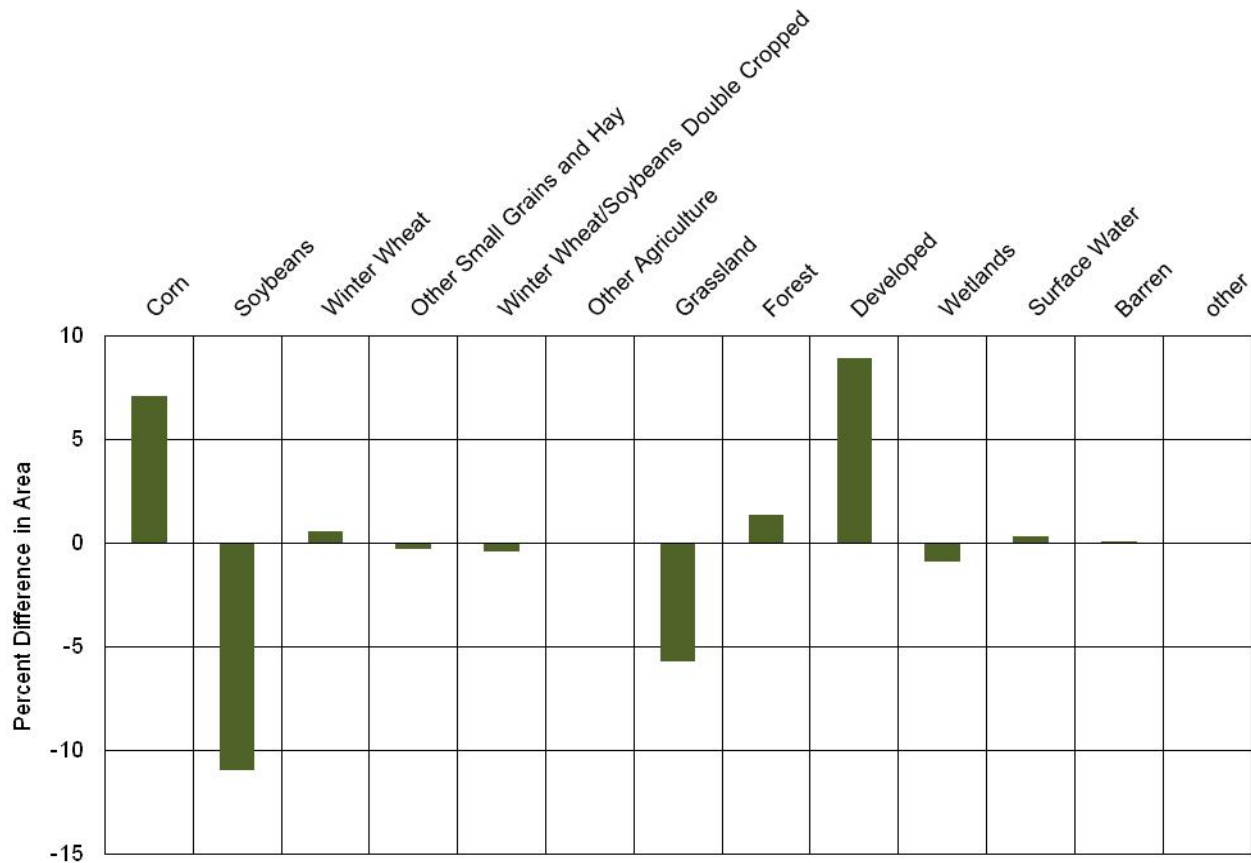


Figure 10. Percent difference in NASS land cover category areas between 1999 and 2007 datasets

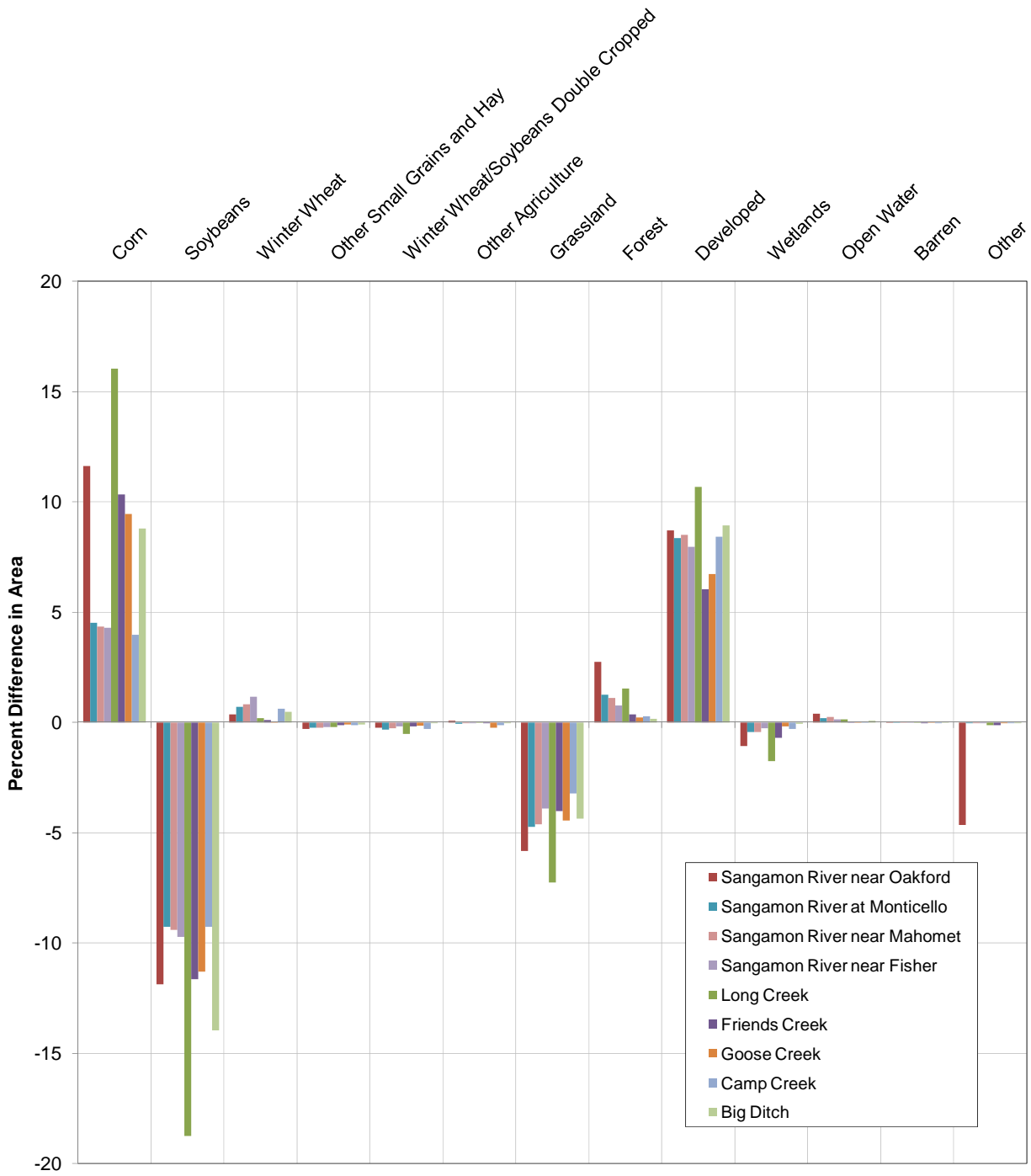


Figure 11. Percent difference in NASS 1999 and 2007 land cover category areas for Lake Decatur monitored watersheds and downstream regional watersheds

changes. All watersheds have similar patterns in the relative changes in land cover categories between 1999 and 2007; therefore these patterns are not unique to the Lake Decatur watershed. A general observation is the decrease in soybeans is more than twice as much as the increase in corn. Also, the Long Creek watershed seems to have some of the highest changes in land cover as compared to other watersheds. Long Creek had the highest increase and decrease in corn and soybean acres, respectively. Of all the Lake Decatur watersheds, Long Creek appears to have the highest decrease of grassland and highest increase in developed lands. The Long Creek watershed is within the City of Decatur metropolitan area, which includes the Village of Mt. Zion and Harristown and Long Creek Township communities.

### **Fertilizer Use**

Row crop agriculture requires application of nitrogen fertilizer to produce viable yields at harvest. This is just one of several sources of nitrogen in a watershed (Demissie and Keefer, 1996). The following nitrogen consumption data were retrieved primarily from the Illinois Department of Agriculture and the United States Department of Agriculture Annual Summary reports (2003, 2002, 2001, 2000, 1994, 1984, 1976, 1970, and 1968), and NASS (online 2008), as well as from Mehring (1957), TVA (1994), and Jordan (1961). The data are reported for the State of Illinois and not by county, which makes it difficult to determine applications strictly for the Lake Decatur watershed. However, the general statewide trends for fertilizer consumption shown in Figure 12 are thought to be comparable to the Lake Decatur watershed. As can be seen in the figure, statewide nitrogen fertilizer consumption was extremely low in 1930, but steadily rose from generally 1,000 tons in the late 1940s to 1 million tons by 1980. Although some annual

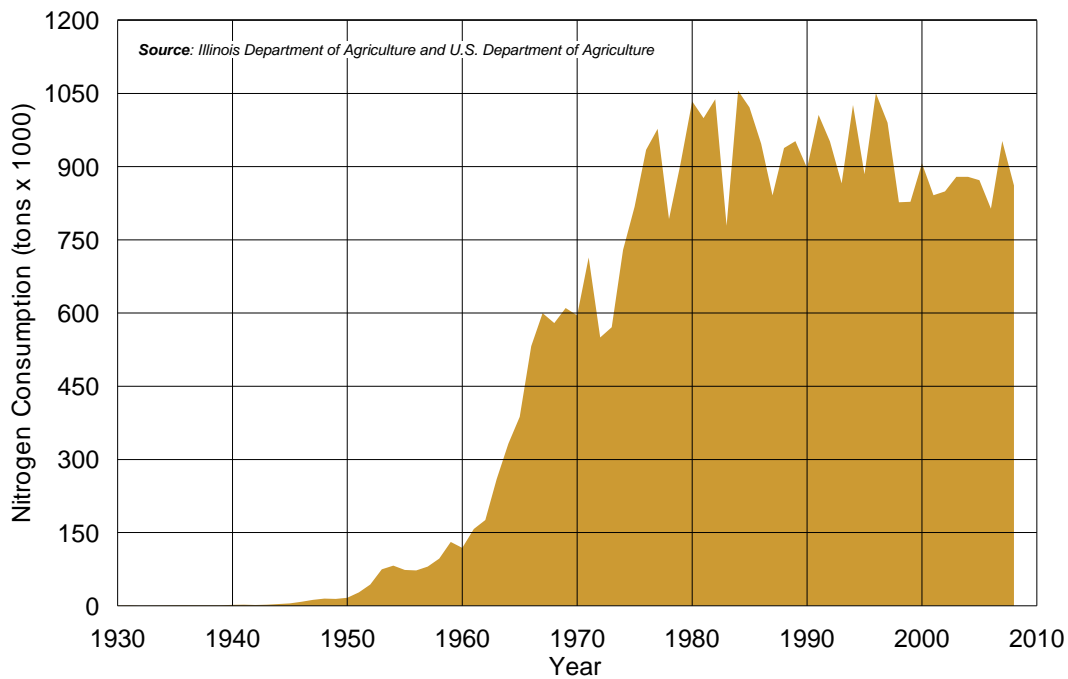


Figure 12. Nitrogen fertilizer consumption for State of Illinois

variation in nitrogen consumption is evident from 1980 through 2008, it was fairly steady during this period. Average nitrogen fertilizer consumption in the state averaged 923,800 tons from 1980 through 2008 and varied between a high of 1,055,600 tons in 1984 to a low of 778,700 tons in 1983.

### ***Atmospheric Deposition***

The National Atmospheric Deposition Program (NADP) is a long-term monitoring program which supports research on the effects of atmospheric chemical deposition. The NADP Program Office and Central Analytical Laboratory (CAL) are housed at the Illinois State Water Survey. The National Trends Network (NTN) in NADP provides a long-term record of precipitation chemistry across the United States. The purpose of the NTN is to provide weekly data on the amounts, trends, and geographic distributions of the atmospheric deposition of acids, nutrients, and base cations. The CAL analyzes NTN samples for pH (as pH), sulfate, nitrate, ammonium, chloride, calcium, magnesium, potassium, and sodium. The Bondville, Illinois (IL11) NTN station is the one closest to the Lake Decatur watershed of the four located in Illinois. The Bondville annual average precipitation-weighted concentration and wet deposition from WY1979 to 2007 for nitrate-N and ammonium-N were retrieved from the NADP Web site (<http://nadp.sws.uiuc.edu>). The unpublished data for WY2008 was computed for this study and is considered provisional. Annual data for the WY1979–2008 monitoring period are presented in Figure 13. The original data units were incompatible with the units used in this report, therefore the concentration and deposition data were converted from the ionic weight to nitrate and ammonium as nitrogen, and then wet deposition was converted to pounds per acre rather than kilograms per hectare.

As seen in Figure 13a, the three-year moving average of annual mean nitrate-N precipitation-weighted concentrations and wet deposition appears to be decreasing from WY1979 to 2008. The concentrations varied from highs of 0.46 and 0.37 mg/L in WY1980 and WY1996, respectively, to lows of 0.27 and 0.32 mg/L in WY2004 and 2007. The mean annual nitrate-N concentration for the period of record is 0.34 mg/L. The wet deposition of nitrate-N ranged from 3.78 lb/acre in WY1998 and 1.63 lb/acre in WY2007. The mean annual wet deposition of nitrate-N was 2.61 lb/acre for the 30-year monitoring period. Another form of nitrogen measured by the NTN is ammonium. Figure 13b appears to show an increase in ammonium-N concentration and deposition for the period of record. There were three years with concentrations above 0.4 mg/L: WY1998, 2006, and 2008. The lowest concentration was 0.18 mg/L in WY1986. The mean annual ammonium-N concentration was 0.31 mg/L. The ammonium-N wet deposition ranged from 4.05 to 1.29 lb/acre in WY1998 and 1988, respectively. The 30-year mean annual wet deposition of ammonium-N was 2.39 lb/acre.



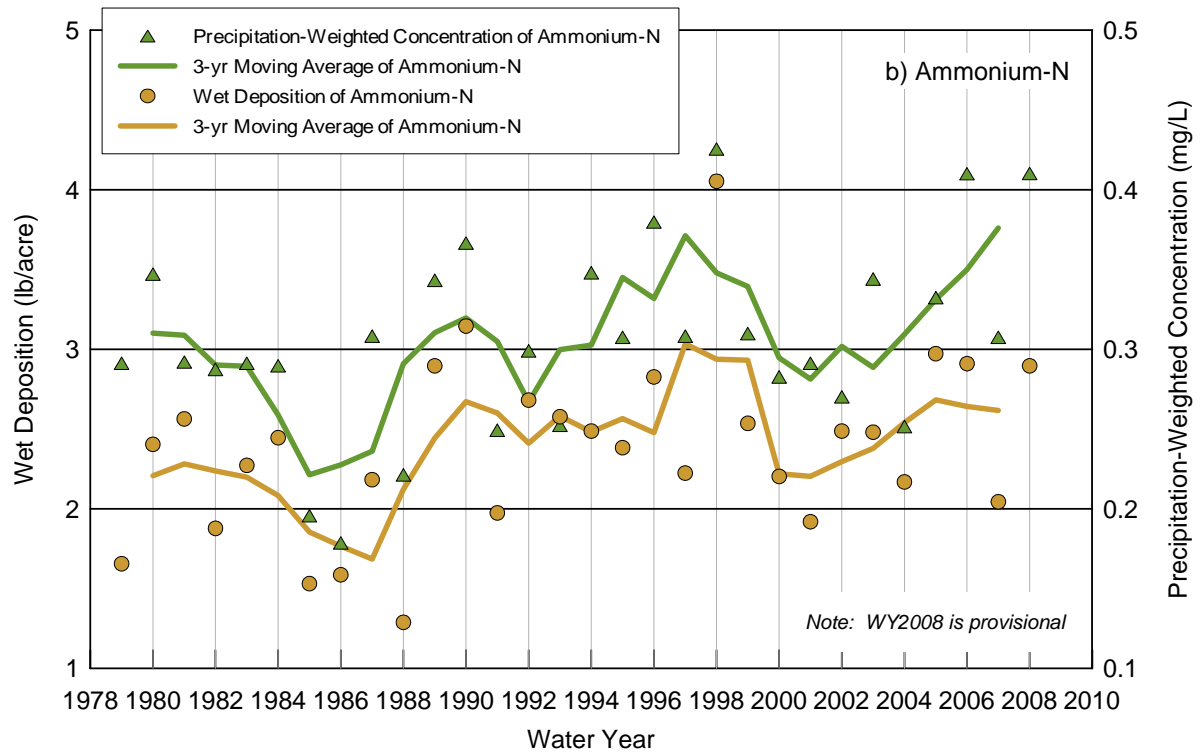
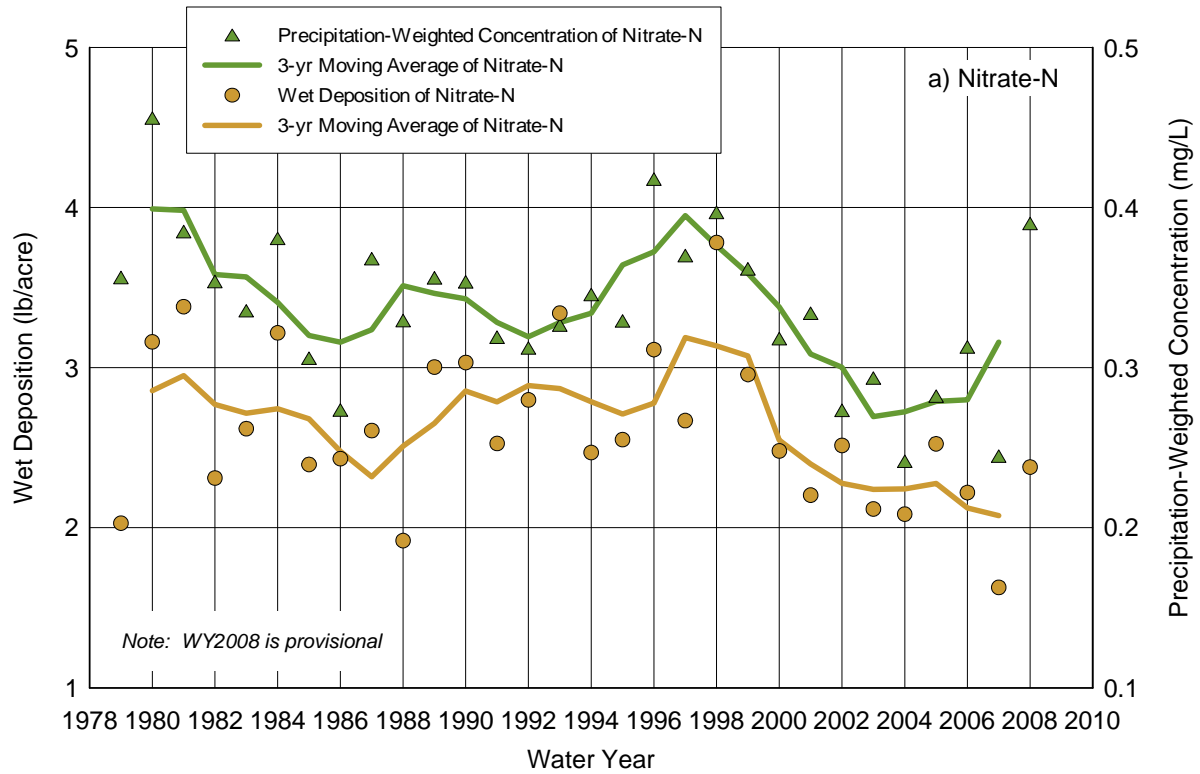


Figure 13. Annual mean precipitation-weighted concentration and wet deposition at NADP/NTN site IL11 near Bondville, Illinois for WY1979–2008: a) Nitrate-N and b) Ammonium N

## Hydrologic and Nitrate-N Monitoring

The watershed monitoring network was established in 1993 to provide streamflow and water quality data for the Upper Sangamon River and selected tributaries. The network originally comprised eight sampling stations (see Figure 14) throughout the watershed upstream of Lake Decatur. Table 4 presents the station number, location, monitoring period, and drainage area for each station. In this report the data from these stations are presented and discussed as annual data for Water Years (WY) 1993–2008 for the period May 1993 through September 2008. Therefore unless specified otherwise, WY1993 is a partial water year. The original study period was designed to conclude data collection at the end of April 2008. However, a separate but parallel monitoring study funded by the U.S. Environmental Protection Agency (USEPA) occurred at three of the stations (Long Creek, Friends Creek, and Monticello) through September 2008. The City of Decatur provided matching support for the additional study; therefore these additional five months of hydrologic and nitrate monitoring data were added to the report analysis to complete WY2008.

### Hydrologic Monitoring

Continuous hydrologic monitoring of the water level at each station facilitates the calculation of streamflow (discharge). This is essential for establishing the nitrate-N contribution to Lake Decatur from the Upper Sangamon River and its tributaries. The ISWS installed streamgages at all monitoring sites, except the U.S. Geological Survey (USGS) streamgaging station at Monticello (111) and Fisher (112). At each ISWS station, stage was automatically recorded at 15-minute intervals and discharge measurements were made periodically. Water levels were checked manually on a weekly basis, and mean daily streamflow data were obtained from the USGS for the Monticello (111) and Fisher (112) stations.

**Table 4. Station Number, Name and Location, Period of Monitoring, and Drainage Area, Lake Decatur Watershed Monitoring Stations**

<i>Station</i>	<i>Name/location</i>	<i>Period of ISWS monitoring (water years)</i>	<i>Drainage area</i>	
			<i>(mi<sup>2</sup>)</i>	<i>(acres)</i>
101	Long Creek: at Twin Bridge Road	1993 – 2008	46.2	29,568
102	Friends Creek: at Route 48 near Argenta	1993 – 2008	111.9	71,616
103	Goose Creek: near Deland	1993 – 2000	45.1	28,864
104	Camp Creek: near White Heath	1993 – 2002	47.2	30,208
105	Mahomet: Sangamon River at Shively Bridge near Mahomet	1993 – 2003	368.2	235,648
106	Big Ditch: at Champaign County Road 700 East near Fisher	1993 – 2003	38.2	24,448
111	Monticello: Sangamon River USGS Station (#05572000) near Monticello	1993 – 2008	543.4	347,776
112	Fisher: Sangamon River USGS Station (#05570910) near Fisher	1993 – 2000	245.6	157,184

## **Precipitation**

Precipitation data for selected locations around the watershed were retrieved predominantly from the Midwestern Regional Climate Center (MRCC) database at the ISWS (<http://mrcc.sws.uiuc.edu>). Figure 14 shows the locations of the six precipitation stations selected from within and around the Lake Decatur watershed: Clinton, Decatur, Gibson City, Rantoul, Monticello, and Urbana. Precipitation data were not available at the Monticello station from October 2003 through September 2006. Daily precipitation data were estimated from a method developed by Liang et al. (2004) using observational data from 7,235 National Oceanic and Atmospheric Administration (NOAA) cooperative stations across the United States. The Liang et al. (2004) method produces grid cell values based on the observed data. The four grid cells around Monticello were averaged to produce the daily data for the missing time period. The MRCC data for Gibson City ended in March 2008; therefore precipitation data from the Community Collaborative Rain, Hail & Snow Network (CoCoRaHS) Web site (<http://www.cocorahs.org>) were used for April–September 2008 by averaging two CoCoRaHS stations (IL-FD-5 and IL-MCL-2). CoCoRaHS data were also used to supplement a few days of missing data in June 2008 at Monticello. The monthly and annual 30-year (1971–2000) mean precipitation data are provided in Table 5. Table 6 presents the annual precipitation totals for each station and the 15-year mean annual precipitation for the study period. The dataset for WY1993 is complete. Both tables list each station in order from north to south in the watershed. The Gibson City station is the closest to the northern (headwater) portion of the watershed and the Decatur station is the farthest south (downstream).

The 30-year (1971–2000) mean annual precipitation based on the six stations was 38.94 inches. The mean annual precipitation (39.14 inches) during the 15-year study period (WY1993–2008) was only slightly higher than the 30-year mean. During WY1993–2008, annual precipitation varied from 37.71 to 40.84 inches. Annual precipitation for all 15 years of monitoring is presented in Figure 15. As can be seen in Figure 15, the highest annual precipitation occurred in the first and last water years of the monitoring period with a station average of approximately 54 inches for both years (15 inches above the 30-year mean). Water Year 2000 had the lowest station average annual precipitation of approximately 30 inches. Mean monthly and annual precipitation values for October 1992–September 2008 are presented in Appendix C.

## **Stream Stage**

The “stage” of a stream is the measurement of the water surface elevation from an arbitrary datum. The stage is recorded at discrete intervals that make it possible to calculate the volume of water flowing past a gaging station (Demissie et al., 2001).

**Monitoring Equipment.** Each ISWS streamgaging station housed a water-level recorder that continuously monitored and recorded the stage of the stream every 15 minutes. Water level was measured with a float-and-pulley system enclosed within a polyvinyl chloride pipe (PVC)

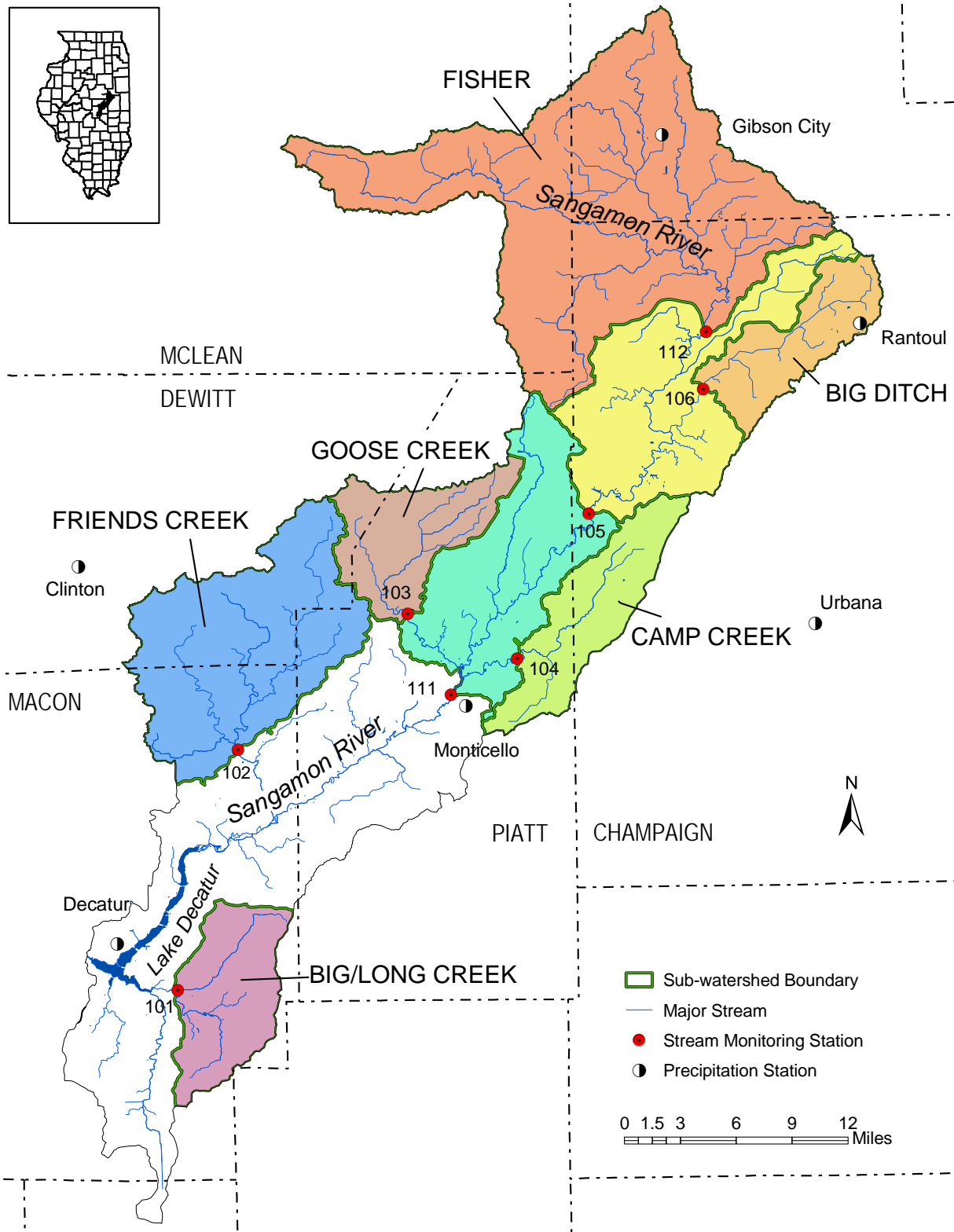


Figure 14. Location of the Lake Decatur sub-watershed boundaries and stream and precipitation monitoring stations

**Table 5. Monthly and Annual 30-Year (1971–2000) Mean Precipitation for Selected Stations (inches)**

<i>Month</i>	<i>Gibson City</i>	<i>Rantoul</i>	<i>Urbana</i>	<i>Clinton</i>	<i>Monticello</i>	<i>Decatur</i>
October	2.66	2.89	2.81	3.16	2.77	2.76
November	3.01	2.80	3.45	3.28	3.38	3.16
December	2.54	2.38	2.76	2.85	2.86	2.86
January	1.60	1.94	1.89	1.84	1.98	2.11
February	1.59	1.94	2.01	1.93	1.93	1.94
March	2.99	2.96	3.21	3.43	3.12	3.25
April	3.30	3.84	3.65	4.03	3.75	3.63
May	4.07	3.99	4.80	4.28	4.41	4.50
June	4.04	3.97	4.21	4.06	3.97	3.79
July	3.74	3.95	4.67	4.34	4.57	4.60
August	3.91	3.50	4.37	3.93	4.15	4.10
September	2.83	3.03	3.22	2.81	2.79	2.98
Annual	36.28	37.01	41.05	39.94	39.66	39.68

**Table 6. Annual Precipitation for WY1993–2008 for Selected Stations (inches)**

<i>Water year</i>	<i>Gibson City</i>	<i>Rantoul</i>	<i>Urbana</i>	<i>Clinton</i>	<i>Monticello</i>	<i>Decatur</i>
1993	51.78	57.30	61.06	55.30	51.46	52.35
1994	36.00	36.40	37.37	38.77	36.40	34.35
1995	40.53	37.76	39.12	41.27	37.76	36.30
1996	33.85	32.15	38.84	33.97	32.15	39.06
1997	36.01	38.21	37.49	38.13	38.21	30.17
1998	37.51	44.35	46.34	39.65	44.35	38.90
1999	30.30	31.53	40.28	39.66	31.53	34.54
2000	27.21	26.81	34.25	33.91	26.81	29.52
2001	34.01	32.04	34.07	33.37	32.04	38.03
2002	41.09	39.39	44.48	46.05	44.14	46.93
2003	32.87	38.89	36.19	33.37	35.71	33.59
2004	37.80	40.31	41.38	41.13	31.18*	37.94
2005	38.22	44.54	40.41	40.02	30.14*	42.19
2006	36.84	37.32	33.93	39.99	26.24*	36.51
2007	37.14	35.47	34.86	37.20	29.66	31.87
2008	52.25*	55.82	53.30	45.69	56.55	59.95
15-yr mean	37.71	39.27	40.84	39.84	38.27	38.89
1971-2000 30-yr mean	<b>36.28</b>	<b>37.01</b>	<b>41.05</b>	<b>39.94</b>	<b>39.66</b>	<b>39.68</b>

**Note:** \* Estimated record

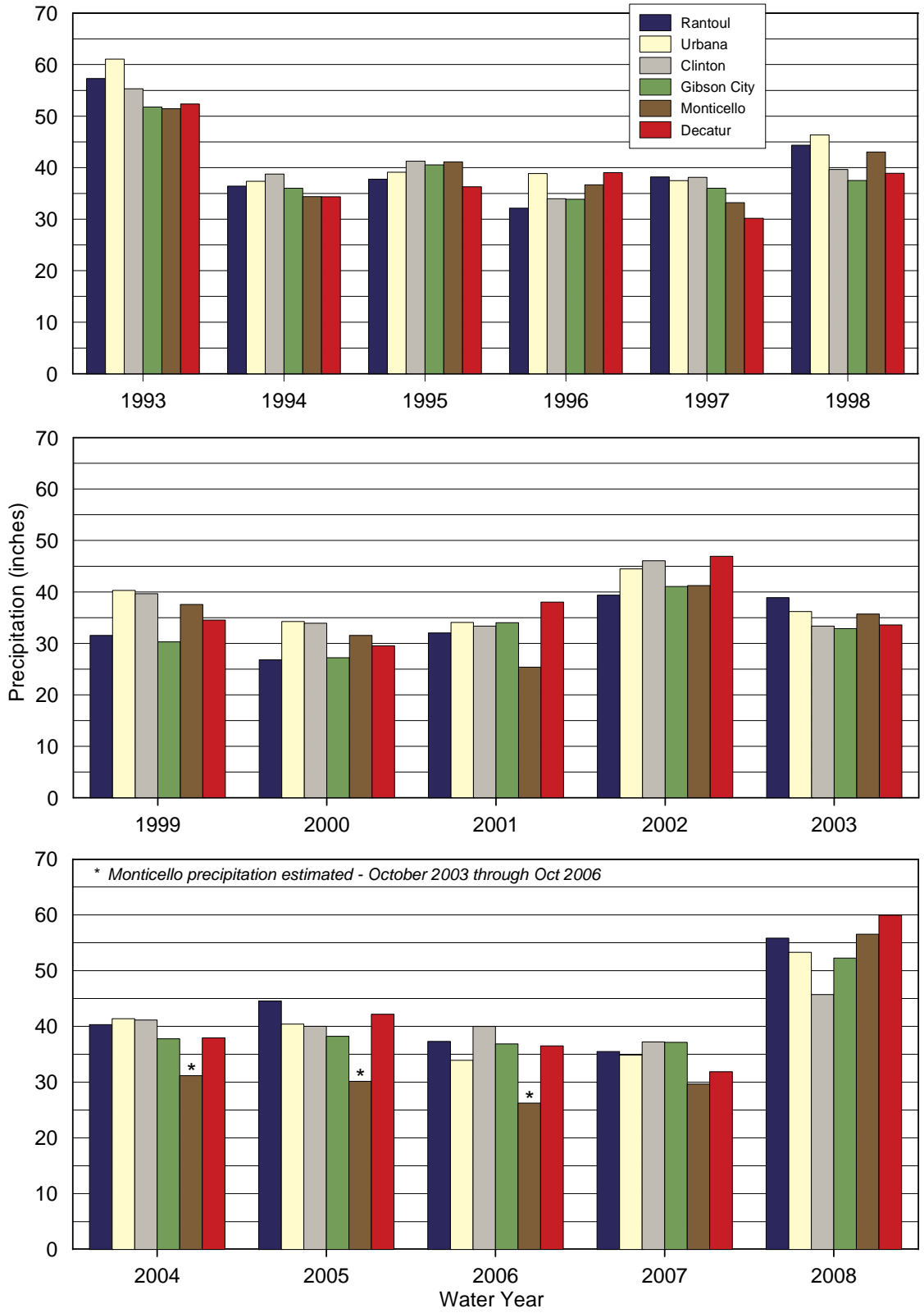


Figure 15. Annual precipitation for WY1993–2008



Figure 16. Streamgaging equipment: (a) Leupold & Stevens data logger and (b) CR10X data logger

stilling well. The stage was recorded using either a Leupold & Stevens data logger or a Campbell Scientific CR10X data logger/controller connected to an SM192 storage module (Figure 16a and 16b, respectively). Each station housed stage recording equipment in an ISWS-designed security shelter for protection from weather and vandalism.

**Station Site Descriptions.** A detailed description of the location and period of record for each station follows. Refer to Figure 14 for the location of each station within the watershed. Figure 17 shows downstream and upstream views from each monitoring station.

*Long/Big Creek near Twin Bridge Road, Long Creek, IL (Station 101).* The ISWS started monitoring this station in May 1993. The gage was located on Long Creek at Twin Bridge Road approximately 1.5 miles southeast of Long Creek, Illinois. The shelter and stilling well were located on the downstream bridge rail on the southernmost bridge pier, left descending bank. The station had a drainage area of 46.2 square miles.

*Friends Creek at Rt. 48 near Argenta, IL (Station 102).* The USGS monitored Friends Creek from October 1966 through October 1982 with a graphic water-stage recorder (USGS #05572450). A Type A wire-weight gage also was installed. The graphic stage recorder was replaced with a digital water-stage recorder in July 1971. The USGS streamflow data are available online ([http://waterdata.usgs.gov/nwis/discharge/?site\\_no=05572450](http://waterdata.usgs.gov/nwis/discharge/?site_no=05572450)). In May 1993, the ISWS began monitoring the same gage site, using the existing USGS steel stilling well, oil tube, and wire-weight gage. The gage on Friends Creek at Illinois Route 48 was approximately 0.5 miles east-northeast of Argenta, Illinois. The shelter and stilling well were located on the upstream bridge rail, right descending bank. The station had a drainage area of 111.9 square miles.

*Goose Creek near Deland, IL (Station 103).* The Goose Creek station was a USGS gage from May 1951 through September 1959 (USGS #05571500), and those data are available online (<http://waterdata.usgs.gov/il/nwis/uv?05571500>). The ISWS conducted monitoring from May 1993 through September 2000. The ISWS gage was located on Goose Creek at Piatt County



Station 101: Long Creek at Twin Bridges Road in the town of Long Creek



Station 102: Friends Creek near Argenta



Station 103: Goose Creek near Deland

Figure 17. Downstream (left) and upstream (right) views from stations in the study area





Station 104: Camp Creek near White Heath



Station 105: Sangamon River southwest of Mahomet



Station 106: Big Ditch near Fisher

Figure 17. Continued



Station 111: Sangamon River near Monticello



Station 112: Sangamon River near Fisher

Figure 17. Concluded

Road 600 East, approximately two miles southeast of DeLand, Illinois. The shelter and stilling well were located on the downstream bridge rail, right descending bank. The station had a drainage area of 45.1 square miles.

*Camp Creek near White Heath, IL (Station 104).* The ISWS monitored the Camp Creek station from April 1993 through July 2002. The station was located on Camp Creek at Piatt County Road 1200 East, approximately two miles south of White Heath, Illinois. The shelter and stilling well were located on the downstream side of the bridge on the northern bridge pylon near the right descending bank. The station had a drainage area of 47.2 square miles.

*Sangamon River at Shively Bridge near Mahomet, IL (Station 105).* The ISWS began monitoring at the Mahomet station in May 1993. The station was located on the Sangamon River at Champaign County Road 2000 North, approximately 2.5 miles southwest of Mahomet, Illinois. The shelter and stilling well were located on the downstream side of the bridge on the pylon nearest the right descending bank. The station had a drainage area of 368.2 square miles.

*Big Ditch near Fisher, IL (Station 106).* The ISWS began monitoring at Big Ditch in April 1993. The station was located on Big Ditch at Champaign County Road 700 East, approximately 3.5 miles south-southeast of Fisher, Illinois. The shelter and stilling well were located on the downstream side of the bridge in line with the pylon nearest the left descending bank. The station had a drainage area of 38.2 square miles.

*Sangamon River at Monticello, IL (Station 111).* The USGS began streamflow monitoring at the Monticello station (USGS #05572000) in February 1908. The ISWS began monitoring water quality at this station in May 1993. The USGS streamflow data are available online (<http://waterdata.usgs.gov/il/nwis/uv?05572000>). The station is located on the Sangamon River at Bridge Street, west of Monticello, Illinois. Suspended sediment samples are collected by the ISWS using the single vertical method with a bridge-mounted DH-59 (depth-integrated sampler). The station has a drainage area of 543.4 square miles.

*Sangamon River at Fisher, IL (Station 112).* The USGS began streamflow monitoring at the Fisher station (USGS #05570910) in September 1978. The ISWS monitored water quality at this station from April 1993 through July 2000. The USGS streamflow data are available online through September 2001 (<http://waterdata.usgs.gov/il/nwis/uv?05570910>). The station is located on the Sangamon River at U.S. Route 136 in Champaign County, east of Fisher, Illinois. The station has a drainage area of 245.6 square miles.

## **Streamflow**

Streamflow data (discharge) are generated from the stage record collected at a gaging station. The stage-discharge rating relationship is developed by taking detailed discharge measurements in the stream at various known stages. Each measurement is plotted against the corresponding stage at which the discharge measurement occurred. A curve is developed to express the relationship between stage and discharge. Using this stage-discharge (rating) curve, the stage data are converted to discharge. Discharge data then are used to calculate runoff. During monitoring, the rating curve may require recalibration due to changes in the channel cross section caused by extreme streamflow events or human modifications to the stream channel geometry. In these cases, the stage-discharge curve is adjusted and applied only to the portion of the stage record affected by the disturbance. Methods used in this study to determine stream discharge followed established USGS procedures as outlined by Rantz (1982a, 1982b). Discharge data from the streamgaging stations at Monticello (111) and Fisher (112) were obtained from the USGS.

**Discharge.** The following section presents annual discharge (streamflow) data for WY1993–2008. The annual discharges at all stations are summarized in Table 7 and presented in Figures 18 and 19. Figure 18 presents the stations located on the Sangamon River: Sangamon River near Fisher (112), Sangamon River near Mahomet (105), and Sangamon River at Monticello (111), and Figure 19 presents the stations located on tributaries of the Sangamon River: Long Creek (101), Friends Creek (102), Goose Creek (103), Camp Creek (104), and Big Ditch (106). Figure 14 shows the location of all these stations. Except for the two USGS stations located near Fisher and Monticello, the remaining six stations are partial datasets for WY1993,

**Table 7. Annual Discharge for All Stations, WY1993–2008**

<i>Water year</i>	<i>Annual streamflow (cfs * 1000)</i>							
	<i>Station 101</i>	<i>Station 102</i>	<i>Station 103</i>	<i>Station 104</i>	<i>Station 105</i>	<i>Station 106</i>	<i>Station 111</i>	<i>Station 112</i>
1993	2.9*	20.4*	8.6*	10.6*	102.2*	10.8*	383.8	182.0
1994	16.9	47.2	17.6	17.1	149.3	15.7	247.2	101.9
1995	8.2	34.3	13.3	11.9	124.8	9.8	187.5	91.2
1996	14.0	23.1	6.4	7.5	75.5	7.5	114.4	58.5
1997	4.6	23.0	8.5	7.8	90.3	11.1	136.3	66.1
1998	21.0	46.2	16.8	25.3	142.8	16.0	247.3	99.0
1999	19.8	27.3	7.7	8.6	70.9	9.3	111.7	51.2
2000	5.1	21.2	5.3	4.6	24.3	3.2	41.0	12.0
2001	17.1	25.6	–	7.9	80.9	7.3	120.7	55.7
2002	23.2	49.5	–	16.3	125.0	14.0	243.0	92.7
2003	3.2	13.8	–	–	12.8	3.3	78.9	37.2
2004	13.5	41.5	–	–	–	–	219.6	85.9
2005	21.1	46.0	–	–	–	–	213.0	93.6
2006	11.0	27.1	–	–	–	–	87.0	41.8
2007	12.1	54.8	–	–	–	–	177.0	100.5
2008	29.1	53.1	–	–	–	–	317.4	143.0

**Note:** – Incomplete data or no data available;  
 \* Partial water year, May – September 1993 only

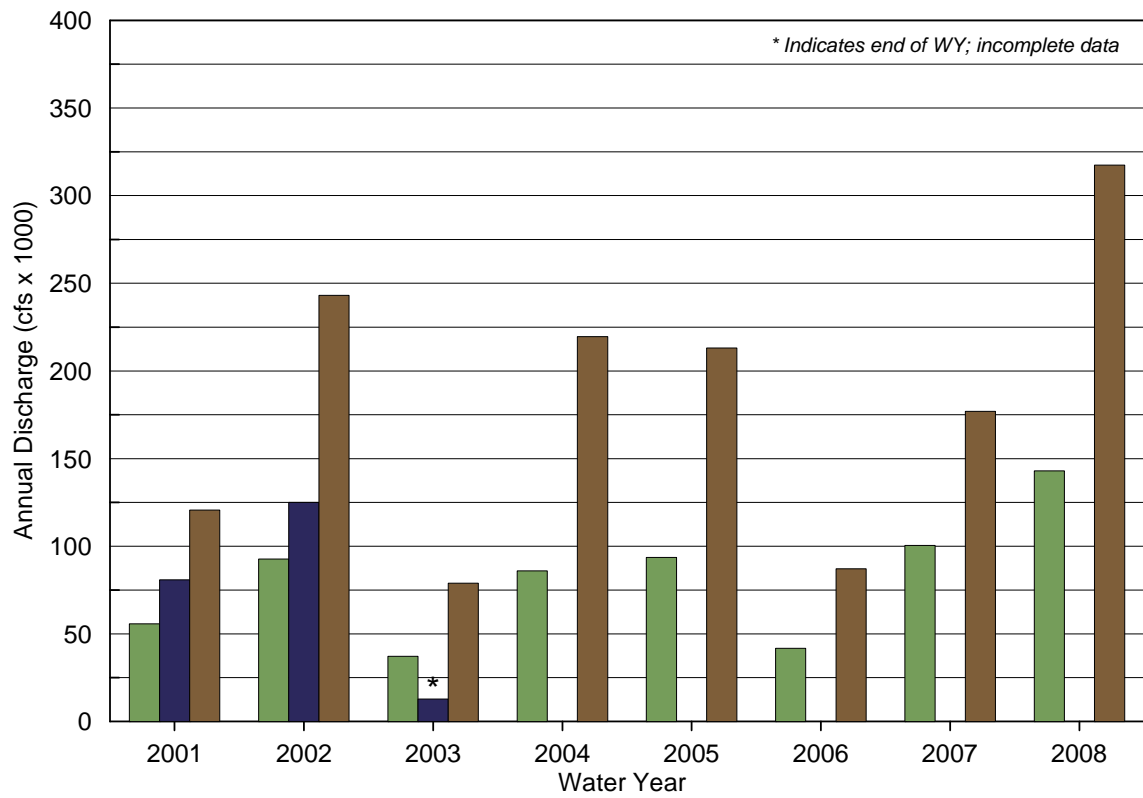
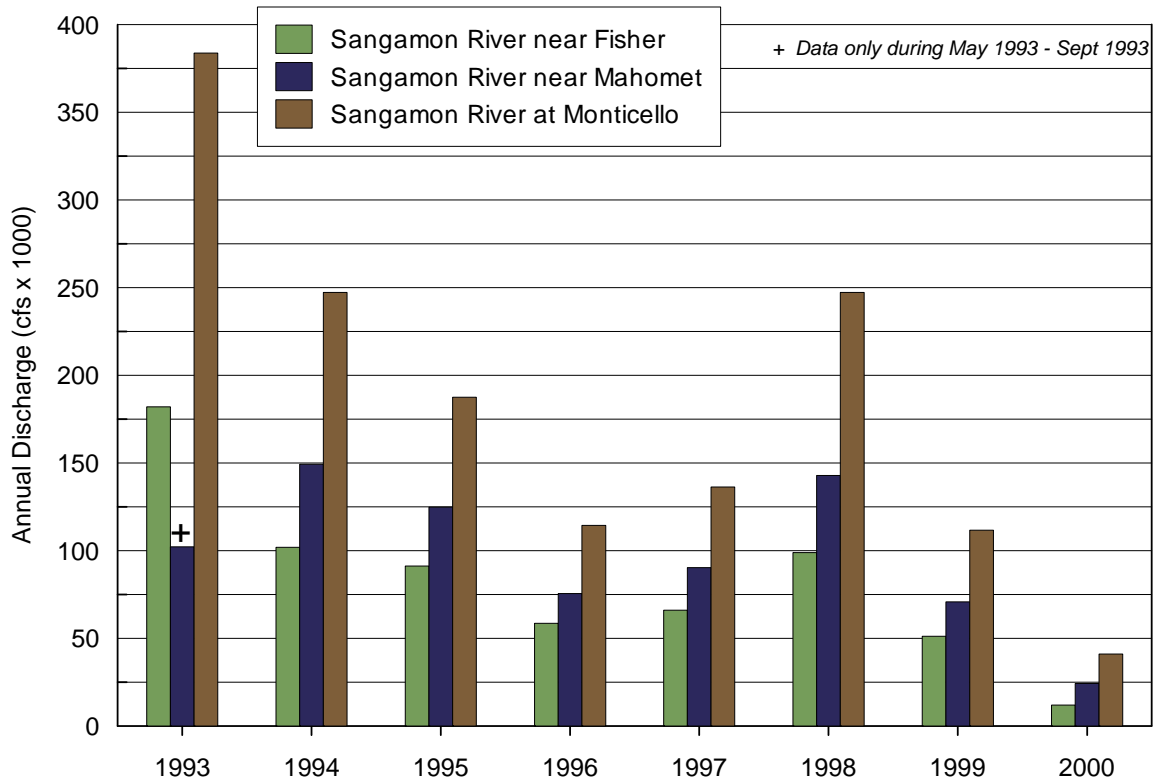


Figure 18. Annual discharge for river stations WY1993–2008

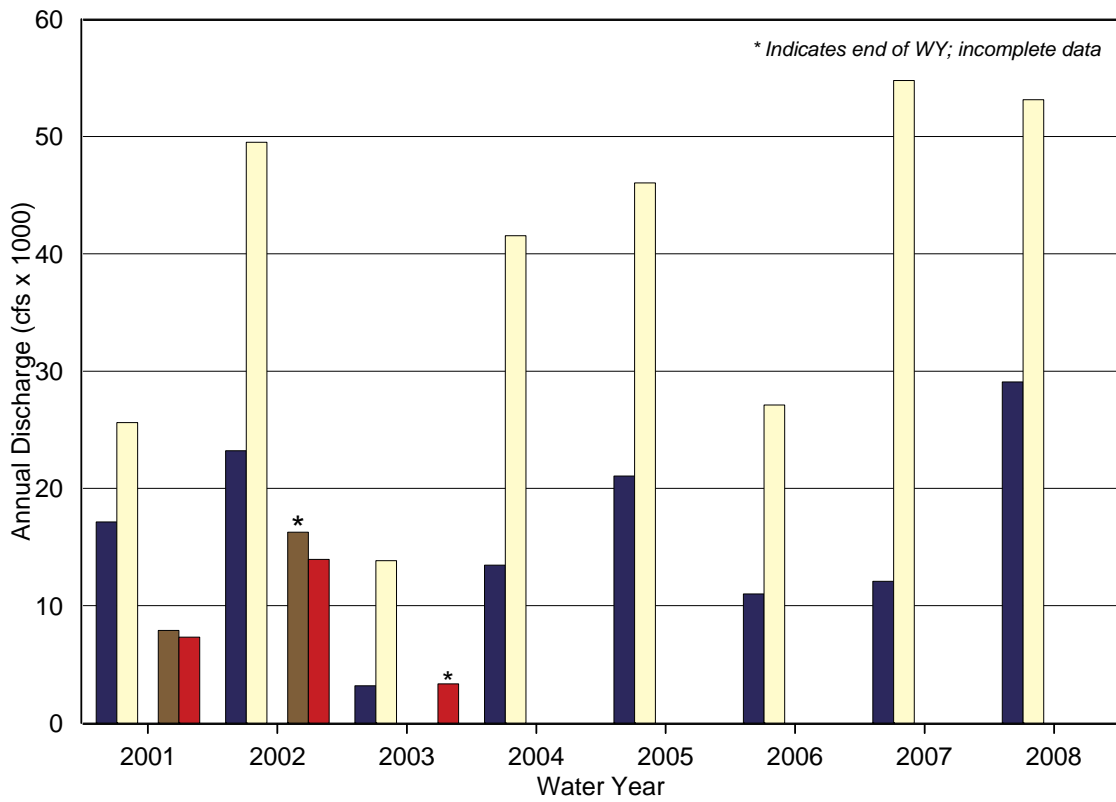
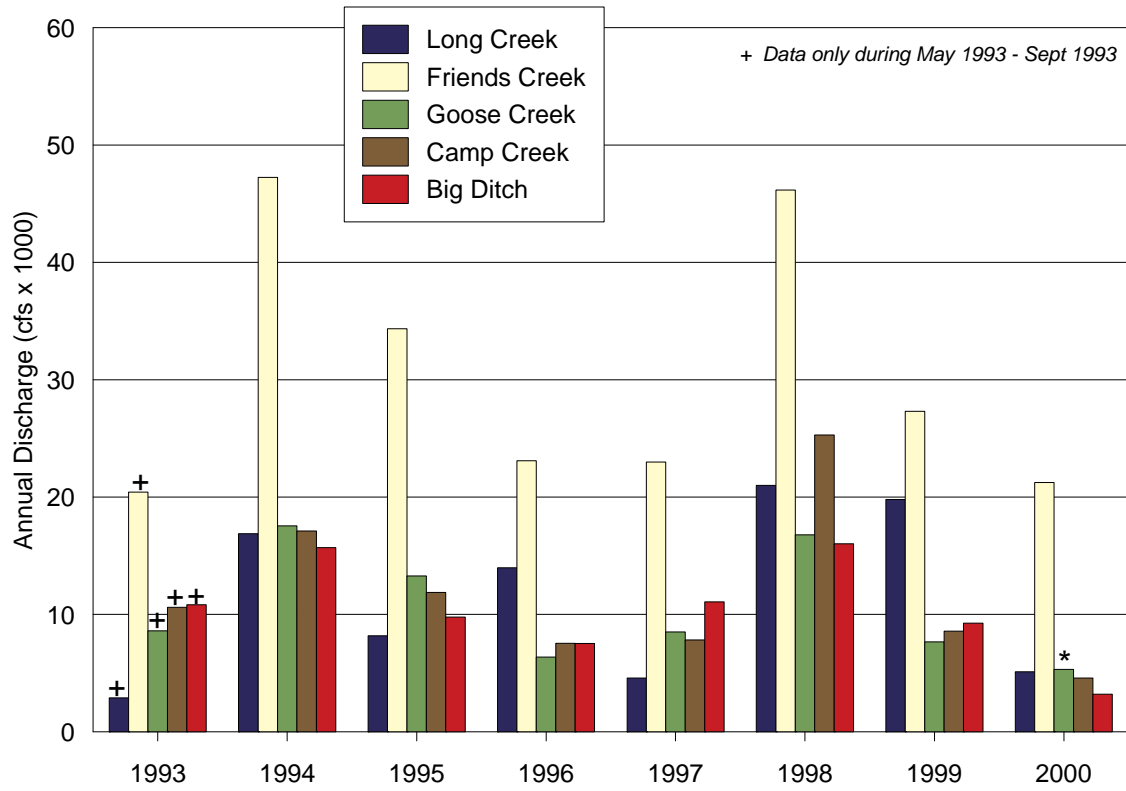


Figure 19. Annual discharge for tributary stations WY1993–2008

where the monitoring period covered only May 1993 through September 2008. The complete WY1993 dataset for Monticello (111) and Fisher (112) was available from the USGS. The mean daily and monthly discharge, as well as monthly runoff, can be found in Appendix D.

Figure 18 shows Monticello consistently has the highest annual discharges and Fisher has the lowest, which is a function of drainage area. The highest annual discharges were during WY1993 and 2008, which is expected based on the annual precipitation data (Figure 15). Due to the monitoring period beginning within WY1993, the Mahomet station is incomplete. The next highest annual discharges occurred in WY1994, 1998, and 2002, which occurred in the near normal range based on annual precipitation data. The lowest annual discharges occurred in WY2000. This pattern is similar with the annual precipitation, which should be expected. Figure 19 shows the annual discharge for the tributary stations. Friends Creek has the highest discharge due to a drainage area over twice the size of the other four tributary watersheds. However, unlike the river stations, the remaining four tributary stations do not differentiate themselves by drainage area, but tend to reflect the spatial influence of precipitation patterns on smaller watersheds.

**Runoff.** As seen from the annual discharge data, discharge is a function of drainage area, which makes the comparison of streamflow between stations problematic. Runoff is a normalized measure of streamflow per unit watershed area, which allows for an improved comparison of streamflow and precipitation records between stations. Runoff is computed by dividing monthly discharge by the drainage area upstream of the streamgaging station and then converting the result to inches. Runoff can still somewhat vary between stations due to the spatial variability of precipitation patterns across the watershed and drainage characteristics. Table 8 summarizes the annual runoff for each station during the 15-year monitoring period. Annual data for WY1993 to 2008 at river and tributary stations are presented in Figures 20 and 21, respectively. For all tributary stations (101, 102, 103, 104, 106) and one river station (105), WY93 is incomplete and runoff values are for May through October 1993.

Runoffs between river stations (Figure 20) are generally within 1 inch of each other except during the high rainfall years. Extremely high runoff occurred during WY1993 and 2008 with over 26 and nearly 22 inches, respectively. These years experienced mean annual precipitation of over 15 inches above the 30-year mean. Water years 1994, 1998, 2002, 2004, 2005, and 2007 show runoff at many of the river stations near or over 14 inches when annual precipitation was generally several inches above the 30-year mean. Thus, 8 of the 15 years experienced above or extremely above normal precipitation (Table 8). In general, the other water years varied from 6 to 10 inches of runoff. WY2000 runoff, the driest of the monitoring period, was between 1 to 3 inches. The next lowest annual runoff occurred in WY2003 and 2006. The highest annual runoff occurred in WY1993 at Fisher and Monticello with 27.79 and 26.49 inches, respectively.

Figure 21 shows more variability in runoff among the tributary stations than river stations. Variability is usually due to precipitation patterns in terms of watershed proximity and intensity. As was seen in the river stations, the higher runoffs occurred in WY1994, 1998, 2002, 2005, and 2008. Runoff in WY2008 was nearly the same as the river stations, averaging over 23 inches. The lowest runoffs occurred in WY2000 and 2002 with approximately 4 inches or less.

**Table 8. Annual Runoff for All Stations, WY1993–2008**

<i>Water year</i>	<i>Annual Runoff, inches</i>							
	<i>Station 101</i>	<i>Station 102</i>	<i>Station 103</i>	<i>Station 104</i>	<i>Station 105</i>	<i>Station 106</i>	<i>Station 111</i>	<i>Station 112</i>
1993	2.35*	6.84*	7.16*	8.43*	10.41*	10.63*	26.49	27.79
1994	13.70	15.83	14.59	13.60	15.20	15.41	17.06	15.56
1995	6.64	11.51	11.04	9.43	12.71	9.59	12.94	13.93
1996	11.34	7.74	5.30	5.99	7.69	7.39	7.89	8.94
1997	3.72	7.70	7.08	6.22	9.20	10.86	9.41	10.09
1998	17.04	15.47	13.96	20.10	14.54	15.72	17.06	15.11
1999	16.07	9.15	6.37	6.82	7.22	9.08	7.71	7.82
2000	4.15	7.12	4.41	3.64	2.47	3.15	2.83	1.36
2001	13.91	8.58	–	6.28	8.24	7.19	8.33	8.51
2002	18.84	16.59	–	12.93	12.73	13.69	16.77	14.16
2003	2.58	4.64	–	–	1.31	3.28	5.44	5.68
2004	10.93	13.92	–	–	–	–	15.16	13.12
2005	17.09	15.43	–	–	–	–	14.70	14.29
2006	8.94	9.08	–	–	–	–	6.01	6.38
2007	9.80	18.35	–	–	–	–	12.21	15.35
2008	23.60	23.13	–	–	–	–	21.91	21.83

**Note:** \* Partial water year, May – September 1993 only  
 – Incomplete data or no data available



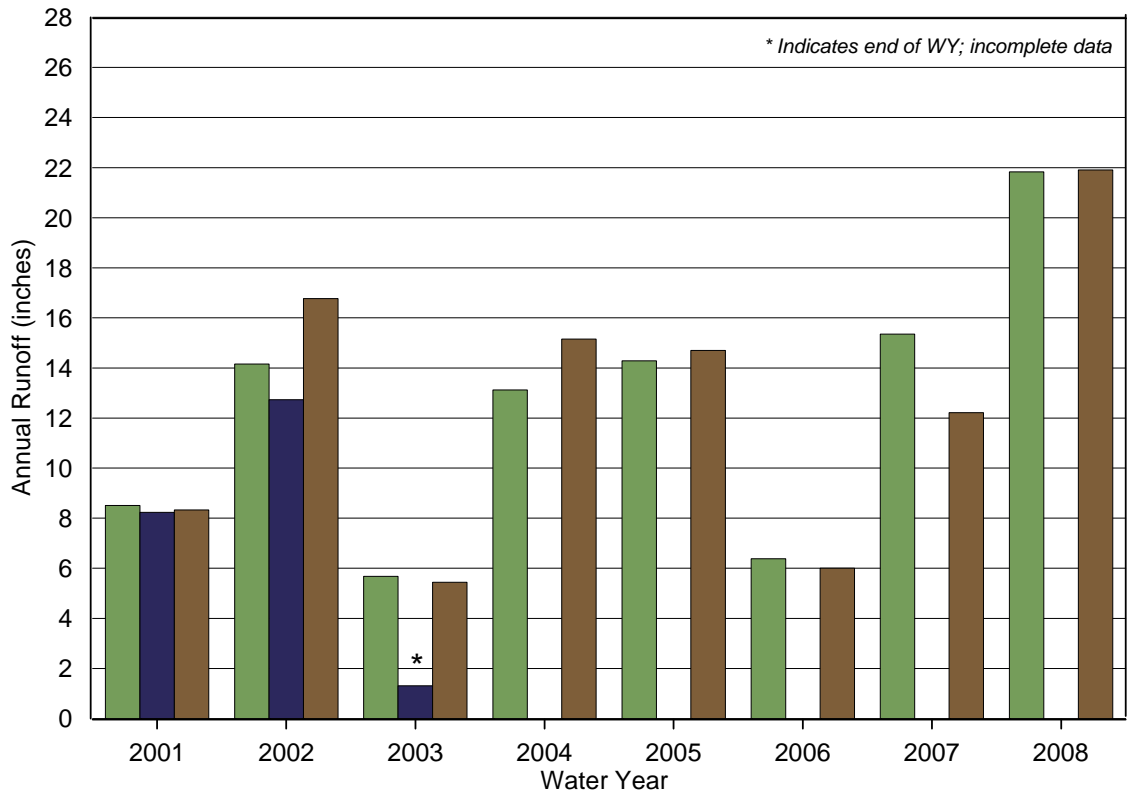
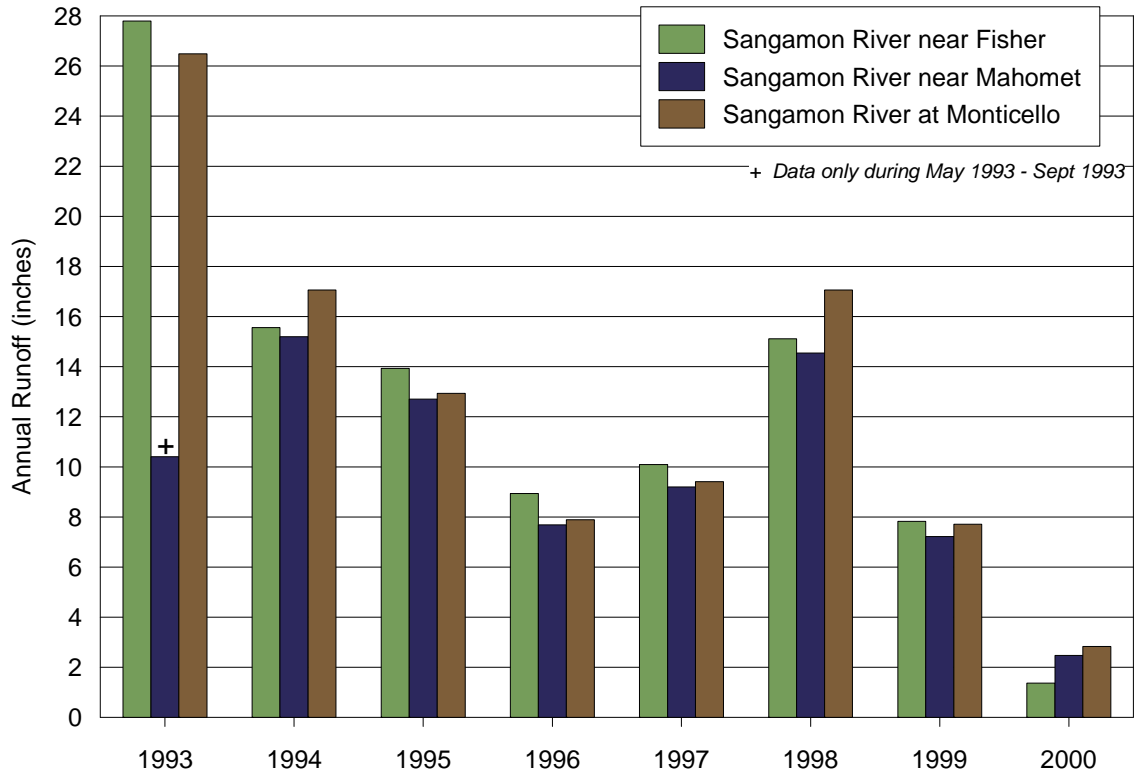


Figure 20. Annual runoff for river stations WY1993–2008

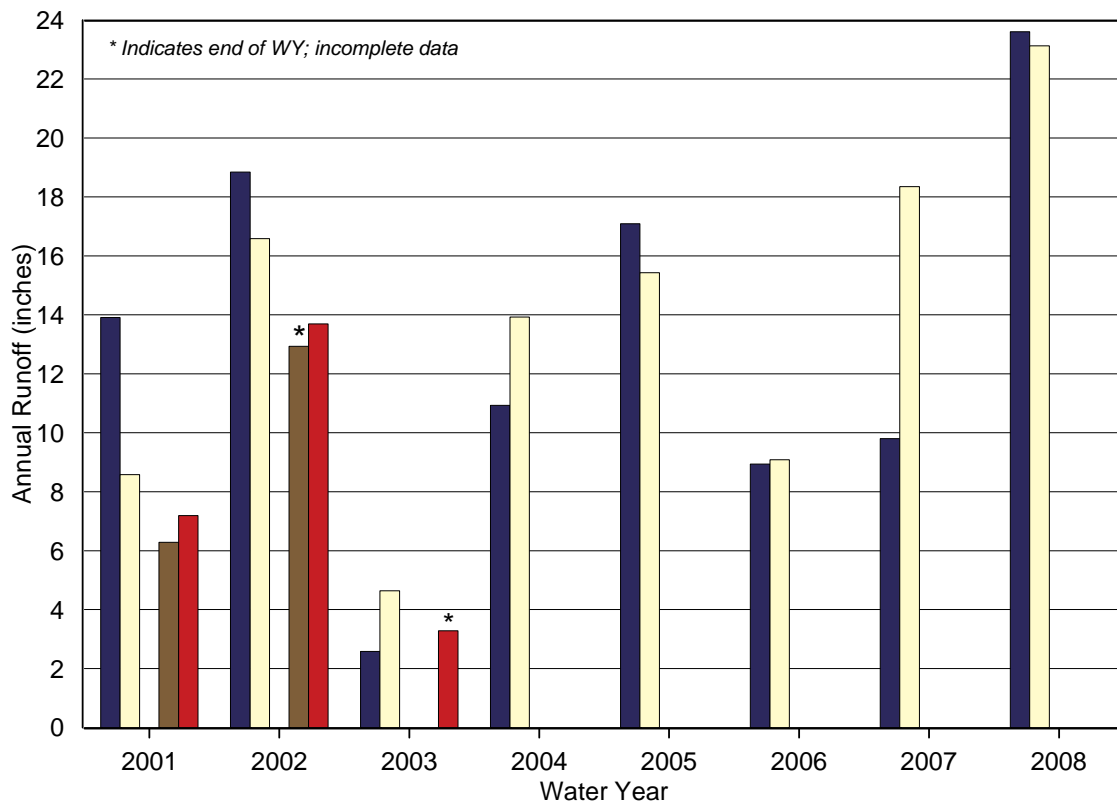
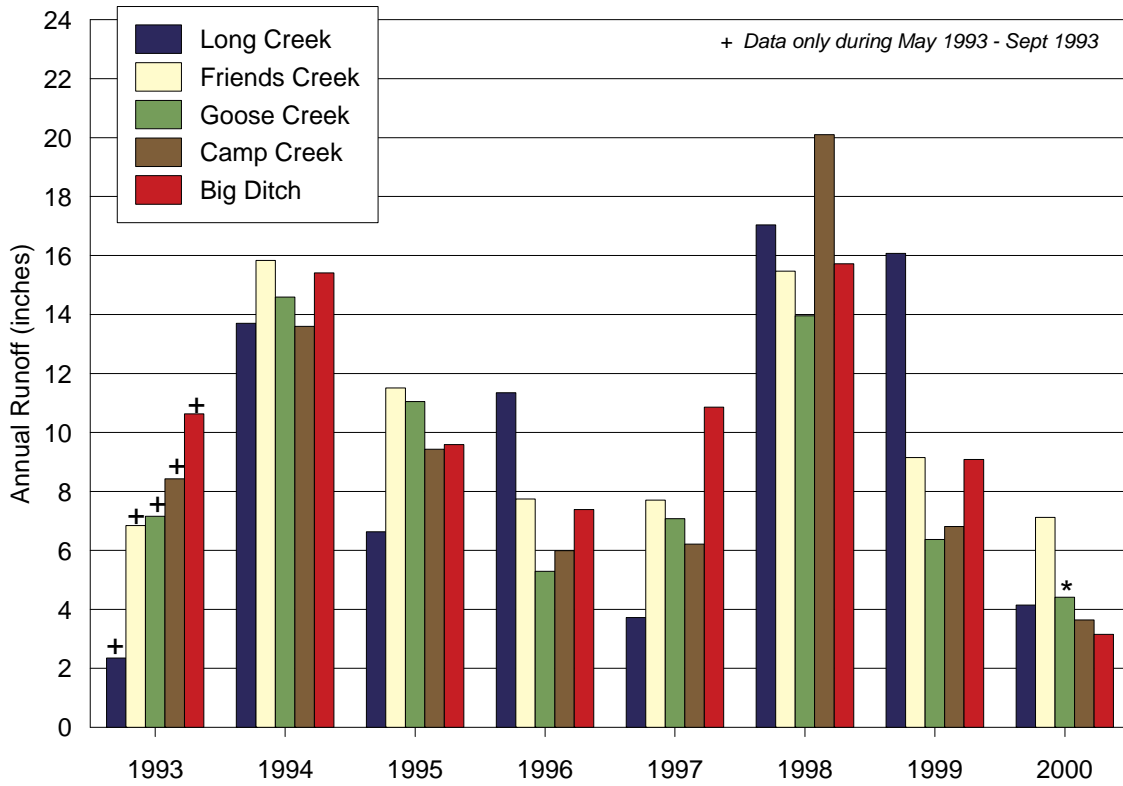


Figure 21. Annual runoff for tributary stations WY1993–2008

It should be noted that during the monitoring period, Friends Creek occasionally received water pumped from the DeWitt County groundwater well-fields to augment the drinking water supply in Lake Decatur due to very low rainfall conditions. The well fields are upstream of the Friends Creek station. These periods included 51 days, from January 1 through February 20, 2000, at an average pumping rate of 10.34 cubic feet per second (cfs) per day; 63 days from September 2, 2005 through November 4, 2005, at an average of 15 cfs per day; and 39 days from September 18, 2007 through October 26, 2007, with an average of 13.93 cfs per day. This additional flow volume usually accounted for approximately 5–6 percent or less of the annual runoff at the Friends Creek station.

## **Nitrate-N Monitoring**

Nitrate-N samples were collected weekly at all eight stations during the period of record. Three stations, Long Creek (101), Friends Creek (102), and Monticello (111), had nitrate-N data collected for the entire study period. Weekly samples were collected unless the stream was pooled or ice-covered. Efforts were made to visit sites more often during storm events. Water temperature and pH of each bulk sample were also recorded in the field. Over the course of the 15-year study, periodic water quality sampling was conducted at other locations throughout the watershed; those results can be found in previous ISWS reports (Demissie and Keefer, 1996; Keefer et al., 1996; Keefer and Demissie, 1999, 2000, and 2002; Keefer and Bauer, 2005 and 2008).

## ***Sample Collection, Preservation, and Handling***

All water samples were collected in a 1-liter glass jar held inside an aluminum frame basket that was lowered on a rope into the stream at the midpoint of the channel where the stream velocity is greatest. Samples were then brought back to the field vehicle for preparation. A water temperature reading was recorded and the water sample was transferred to a 60-mL polyethylene bottle and labeled. The station number, sample number, date and time of collection, and water temperature were recorded. The sample bottle was placed in a cooler kept at <math>4^{\circ}</math> C and transported to the laboratory for analysis. pH was added to the data collection activities in the spring of 2001. pH and temperature of the bulk sample were measured at the same time, shortly after collection from the stream. pH was measured with a Corning 313 pH/temperature probe, which was calibrated at the beginning of each field day according to instrument document specifications. Temperature of the bulk sample was measured with a liquid-in-glass thermometer or the Corning 313 pH/temperature probe.

## ***Analytical Methods and QA/QC Procedures***

The analysis of the nitrate-N samples followed the Illinois Environmental Protection Agency (IEPA) method number 300.0, Ion Chromatography. A more thorough discussion of the methods involved in this study can be found in Demissie and Keefer (1996).

The collection of water samples for water quality analysis followed several quality assurance/quality control (QA/QC) procedures. Each glass sample jar used to collect samples

from the stream was first rinsed with deionized water and then resident stream water before the actual sample was collected at each station. This prevented cross-contamination among stations. Each polyethylene bottle used for storing samples was pre-cleaned according to the IEPA method specifications and never reused.

Every week, one field blank was taken to determine if contamination of the sample bottles had occurred. This consisted of pouring deionized water into the glass bottle used to collect samples in the field, then processing the water like a normal sample. One out of every 10 samples was analyzed in duplicate to provide a test of laboratory precision. To evaluate the sample matrix, one out of every 10 samples the laboratory analyzed was spiked with a known amount of nitrate and the recovery monitored. Blanks and spiked blanks were also carried throughout the procedure. To evaluate instrument calibration, separate-source and same-source check solutions/standards were analyzed.

The minimum concentration of a substance is delineated by the method detection limit (MDL). The MDL is defined as that analyte concentration that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero and is determined from analysis in a given matrix of a sample containing the analyte. MDL's were determined according to EPA protocol 40 CFR Part 136, Appendix B. Seven replicate aliquots of spiked reagent water were processed through the entire analytical method. The MDL was calculated as:  $MDL = (t) \times (S)$ , where  $t$  = the student's  $t$  value for a 99 percent confidence level and a standard deviation estimate with  $n-1$  degrees of freedom [ $t = 3.14$  for seven replicates], and  $S$  = the standard deviation of the replicate analyses. The MDLs for this project varied throughout the 15-year monitoring period and ranged from 0.02 to 0.13 mg/L. In Appendix E, a nitrate-n value that reflects a concentration at the MDL is identified by the less-than sign (<) to the left of the value. The analytical methods and laboratory procedures in the ISWS Champaign Laboratory, Analytical Services Group, can be found on file with the Center for Chemistry and Technology (ISWS, 2007).

### ***Nitrate-N Concentrations***

The nitrate-N concentration data collected at the eight network stations for the entire monitoring period are located in Appendix E of this report. Figures 22 and 23 show the annual minimum, mean, and maximum nitrate-N concentrations during the 15-year study period at the Sangamon River, including Lake Decatur at the South Water Treatment Plant (SWTP), and tributary stations, respectively. Water Year 1993 data are from May 1993 to September 1993 only. A table of the annual minimum, mean, and maximum values appears in Appendix F.

As can be seen in Figure 22, the minimum nitrate-N concentrations for all the river stations were very low for all years except WY1993 when concentrations ranged from 4 to 5 mg/L. Lake Decatur at the SWTP had slightly higher minimum concentrations than the river stations all years except WY1993. All the mean nitrate-N concentrations were below the maximum contaminant level (MCL) of 10 mg/L for the entire monitoring period. The highest mean concentrations occurred at the Sangamon River near the Mahomet station in WY1997 and 2002, 9.45 and 9.06 mg/L, respectively. In general, all stations seem to follow a similar pattern in mean and maximum concentrations from year to year. Also, Lake Decatur at the SWTP

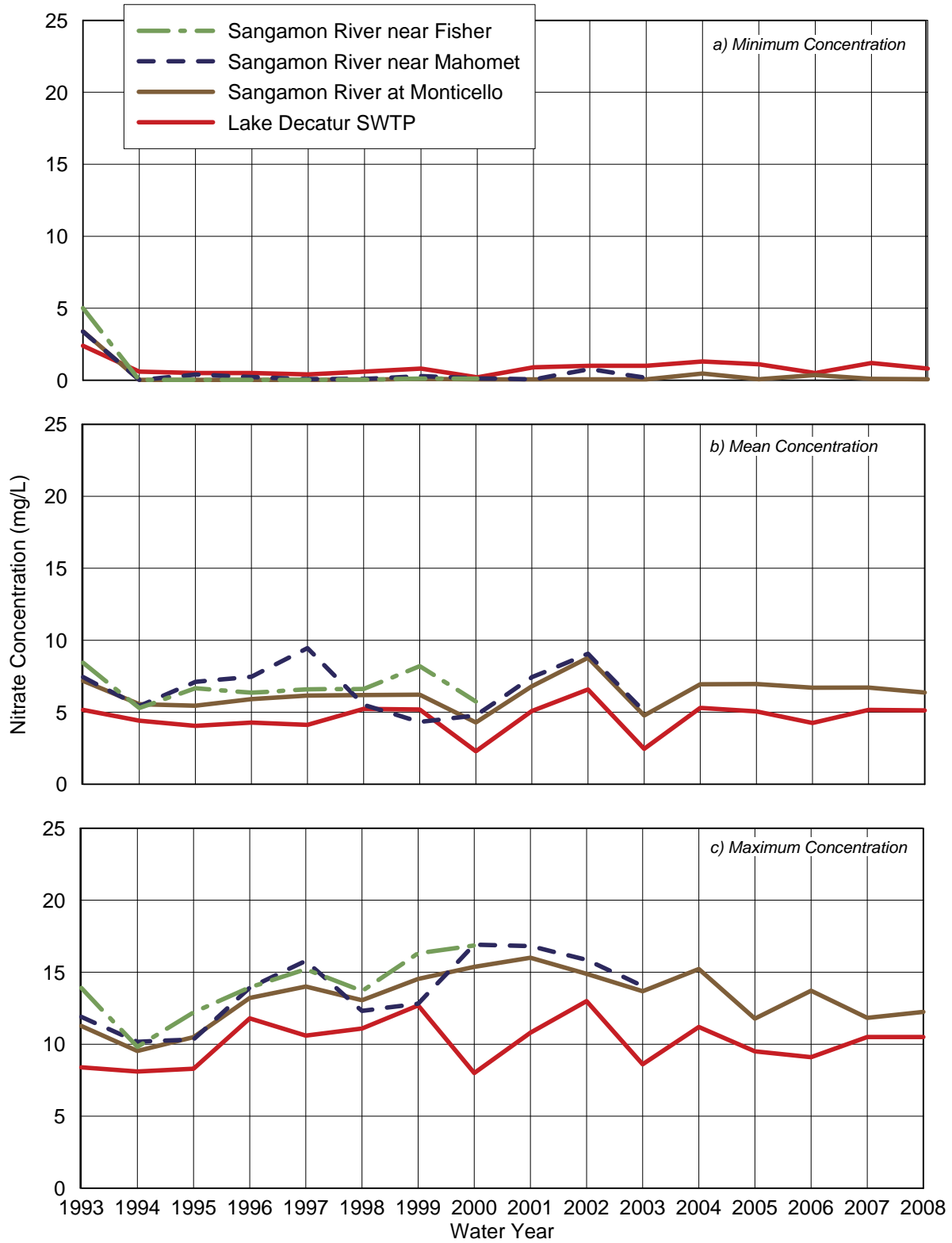


Figure 22. Annual nitrate-N concentrations in the Sangamon River stations and Lake Decatur: a) minimum, b) mean, and c) maximum

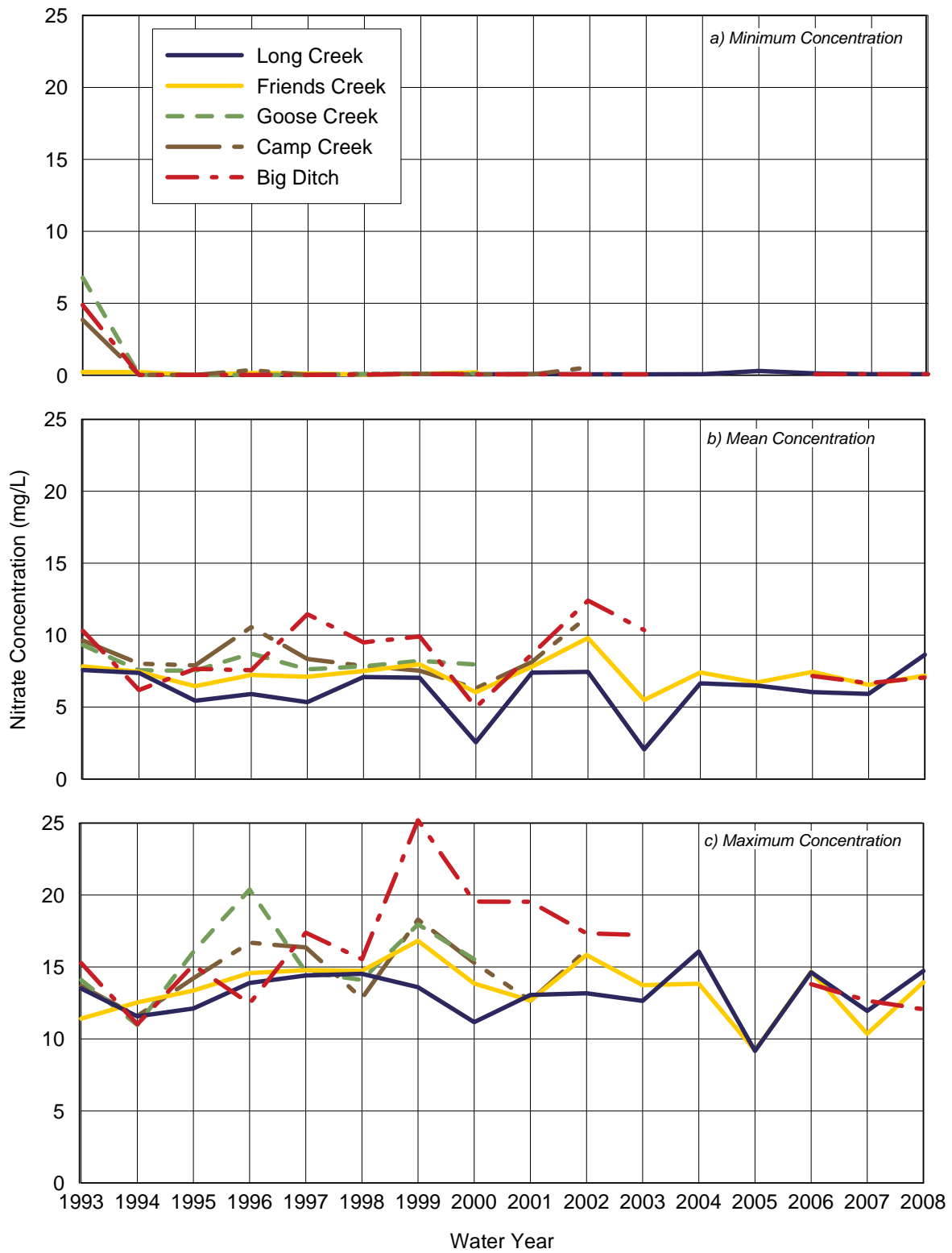


Figure 23. Annual nitrate-N concentrations in the tributary stations:  
a) minimum, b) mean, and c) maximum

is consistently lower than Monticello, and Monticello is lower than Fisher, with Mahomet showing the most variability. Except for WY1994 and 1995, the annual maximum concentrations exceeded the MCL for most of the monitoring period at all river stations. Lake Decatur exceeded the MCL 9 of the 15 years (WY1996–1999, WY2001–2002, WY2004, and WY2007–2008). The highest maximum concentration occurred in WY2000 at the Mahomet and Fisher stations with 16.91 and 16.86 mg/L, respectively.

The minimum nitrate-N concentrations at the tributary stations shown in Figure 23 are similar to the river stations with levels well below 1 mg/L except in WY1993. Big Ditch and Camp Creek are the only stations where the mean concentrations exceeded the MCL (WY1996, 1997, 2002, and 2003). The Long and Friends Creek stations tended to have the lowest annual mean and maximum nitrate-N concentrations, with Big Ditch having the most variability with mean and maximum concentrations ranging from 4.98 to 12.40 and 11.02 to 25.20 mg/L, respectively. All tributary station annual maximum concentrations exceeded the MCL except in WY2005. Between WY1993 and WY2003, Long Creek appears to have the least variability in annual maximum concentrations.

### ***Nitrate-N Yields***

Nitrate-N concentrations are used for regulatory purposes but are insufficient to determine the relative contribution of nitrate-N from different areas. Determining the volume of nitrate-N (load) transported out of a watershed is a better way to formulate management alternatives than concentration. Load is the total mass or volume that is transported by a stream from a given point for a specified period of time and calculated as the product of nitrate-N concentration and discharge. Comparing total nitrate-N load from different watersheds over time is problematic because load is proportional to the watershed area being monitored. Therefore, load was converted to pounds of nitrate-N per year and then normalized per unit area (acres) to determine the nitrate-N yield per acre from the watershed above each monitoring station (Keefer, 2003). Computing yields provides an improved understanding of the relative contribution of nitrate-N from different watersheds. Nitrate-N yield was calculated for each month as the product of the monthly average nitrate-N concentrations and total monthly discharge divided by the monitored watershed area. The annual yield is the sum of the monthly yields.

Figures 24 and 25 present the annual nitrate-N yields, in water years, during the 15-year study period at the Sangamon River and tributary stations, respectively. Table 9 presents the annual nitrate-N yields for all stations in the watershed during their monitoring period, as well as the weighted annual yield into Lake Decatur. Unlike the annual discharge and runoff values for Fisher and Monticello during WY1993, annual nitrate-N yields are only computed from May 1993 through September 1993. Streamflow data were available for those stations from the USGS; however, nitrate-N concentration data are only available from May 1993. Therefore WY1993 is a partial year. Annual nitrate-N yields varied from approximately 5 to 41 pounds per acre (lb/acre) at the river stations (Figure 24 and Table 9). Water years 1998, 2002, and 2008 stand out with the highest annual yields, averaging 35, 36, and 37 lb/acre, respectively. Monticello had the highest annual yield of 41 lb/acre in WY2002 and Mahomet had the lowest

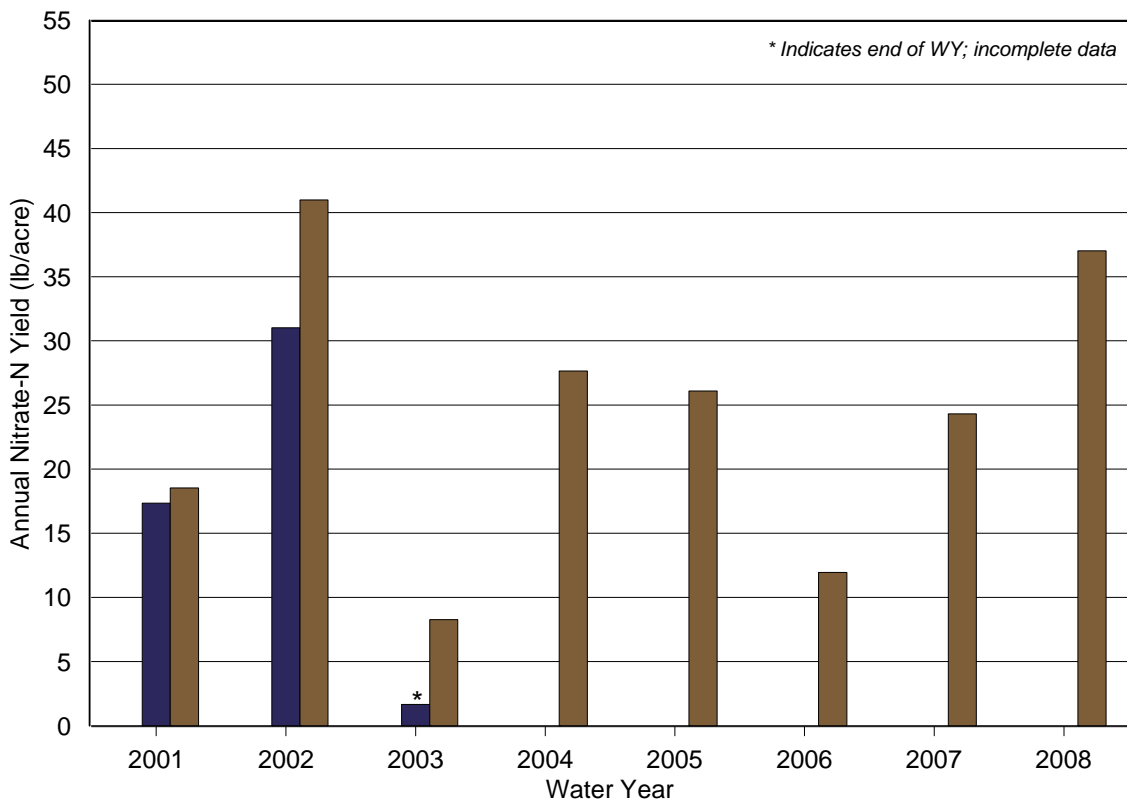
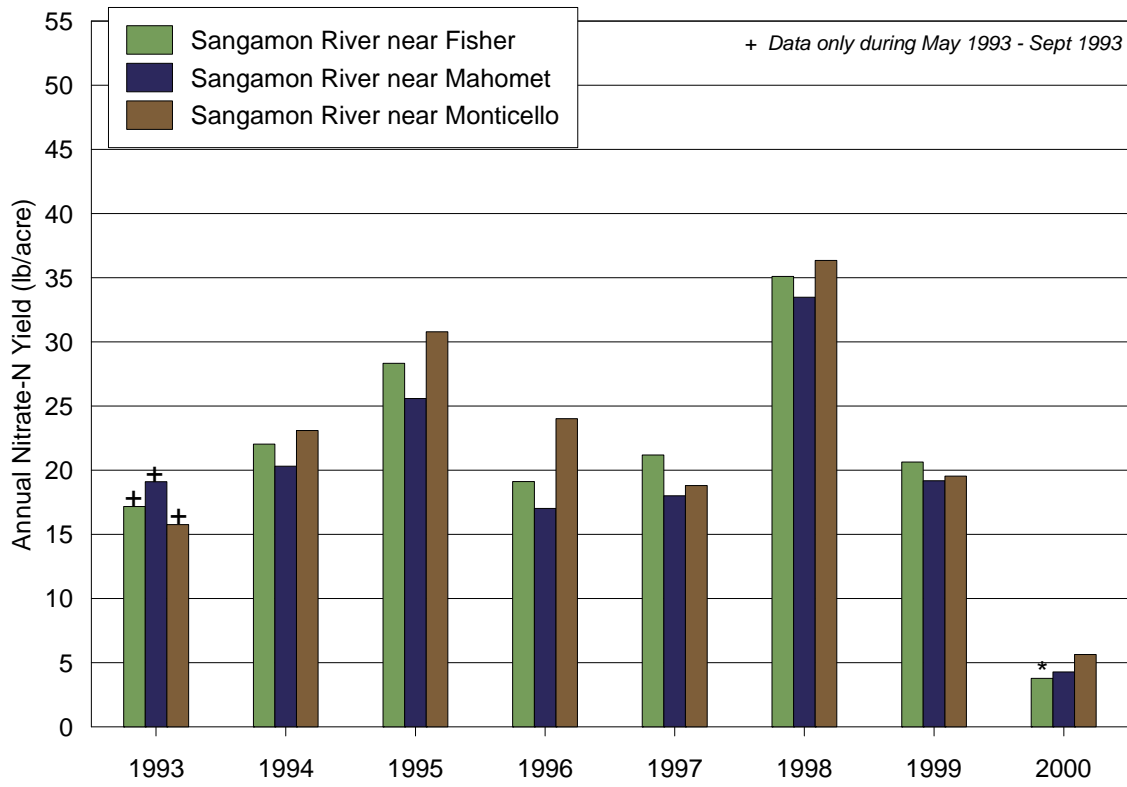


Figure 24. Annual nitrate-N yield for Sangamon River stations during WY1993–2008



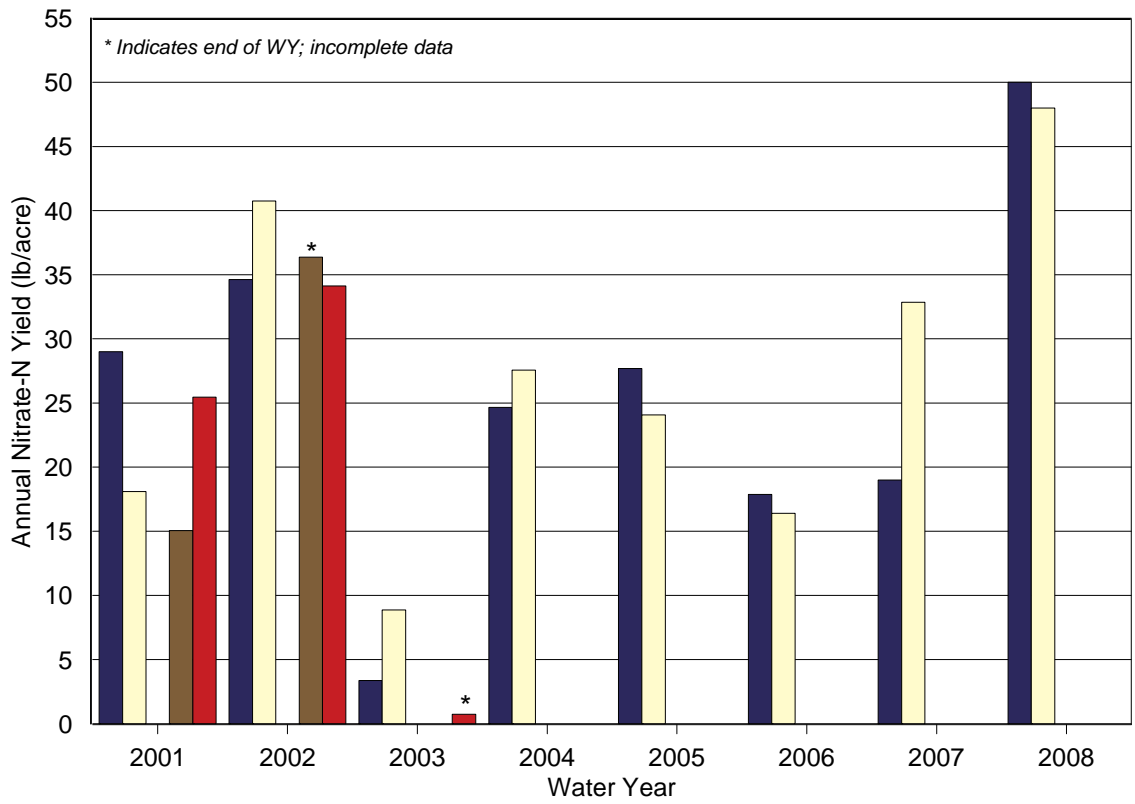
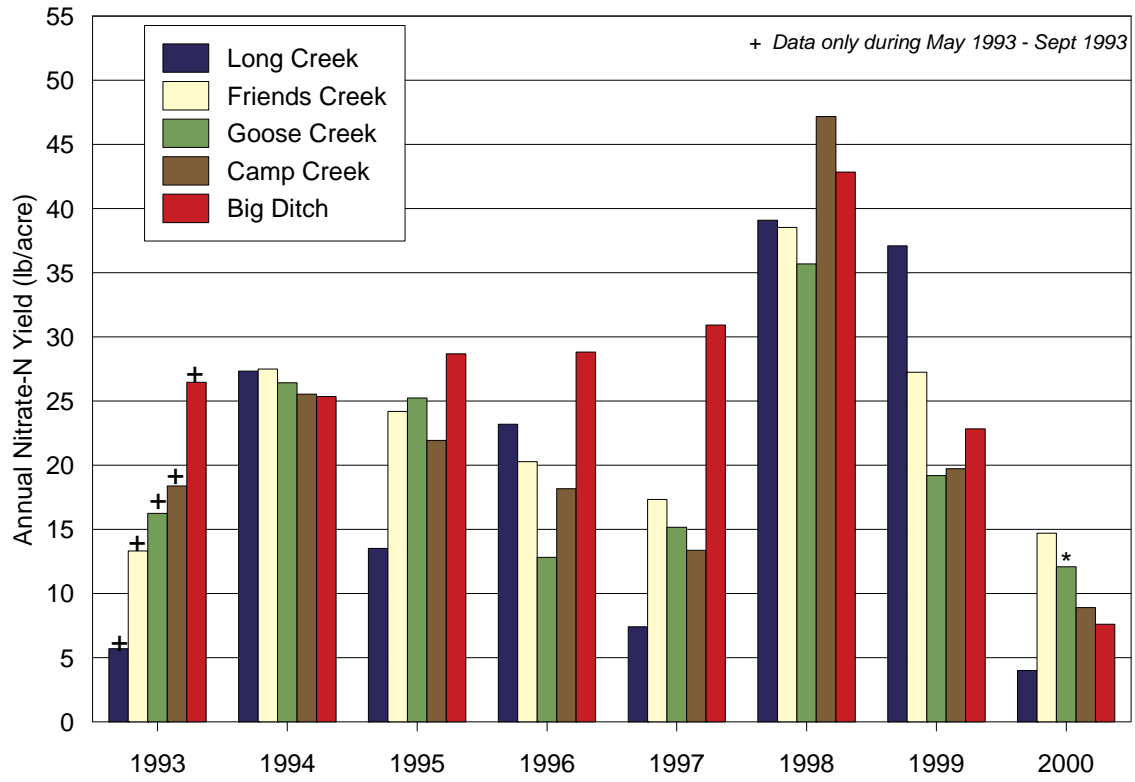


Figure 25. Annual nitrate-N yield for tributary stations during WY1993–2008

**Table 9. Annual Nitrate-N Yields in the Lake Decatur Watershed for the 15-Year Study Period**

Station name	Water year (annual nitrate-N yield, lb/acre)																Mean	Percent area of Lake Decatur watershed	Drainage area (acres)
	1993*	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008			
<b>Tributary</b>																			
Long Creek (101)	6	27	14	23	7	39	37	4	29	35	3	25	28	18	19	50	23	5.0	29,539
Friends Creek (102)	13	27	24	20	17	39	27	15	18	41	9	28	24	16	33	48	25	12.2	71,647
Goose Creek (103)	16	26	25	13	15	36	19	12	-	-	-	-	-	-	-	-	20	4.9	28,892
Camp Creek (104)	18	26	22	18	13	47	20	9	15	36	-	-	-	-	-	-	22	5.2	30,242
Big Ditch (106)	26	25	29	29	31	43	23	8	25	34	1	-	-	-	-	-	25	4.2	24,421
<i>Annual average</i>	16	26	23	21	17	41	25	10	22	36	4	26	26	17	26	49			
<b>Sangamon River</b>																			
Fisher (112)	17	22	28	19	21	35	21	4	-	-	-	-	-	-	-	-	21	26.8	157,177
Mahomet (105)	19	20	26	17	18	33	19	4	17	31	2	-	-	-	-	-	19	40.2	235,653
Monticello (111)	16	23	31	24	19	36	20	6	19	41	8	28	26	12	24	37	23	59.3	347,747
<i>Annual average</i>	17	22	28	20	19	35	20	5	18	36	5	28	26	12	24	37			
Weighted annual yield into Lake Decatur**	13	25	25	23	15	37	25	6	21	39	7	27	26	14	24	42	23	76.5	586,868

**Notes:**

- No data available

\* Partial water year, May – September 1993 only

\*\* Area-weighted using Long Creek, Friends Creek, and Monticello stations

with 4 lb/acre in WY2000. WY2000 had the lowest annual runoff at river stations during the monitoring period but WY2002 was not the highest annual runoff (WY1993 was highest). However, the maximum nitrate-N concentrations at Monticello were around 15 mg/L in WY2002, which would account for higher yields. Figure 25 also shows the highest annual yields at tributary stations were WY1998, 2002, and 2008 averaging 41, 36, and 49 lb/acre, respectively. The highest annual nitrate-N yield occurred at Long Creek in WY2008 (50 lb/acre). Big Ditch had the lowest yield in WY2003 (1 lb/acre). Water year 2008 had the highest tributary runoff during the monitoring period and WY2003 had the lowest annual runoff.

Table 9 shows the 15-year mean annual nitrate-N yield at the tributary and river stations and nitrate-N delivered (yield) to Lake Decatur. The 15-year mean annual nitrate-N yield at the three stations with records during the entire period are very close, ranging from 23 to 25 lb/acre, even though there were variations between river and tributary stations within any water year. The yield into Lake Decatur was computed using the Long Creek, Friends Creek, and Monticello annual nitrate-N yield data and weighting them based on watershed area. This allows for a reasonable approximation of the nitrate-N delivered to Lake Decatur. The 15-year mean annual nitrate-N yield is 23 lb/acre. During the monitoring period the annual yields varied from 7 lb/acre (WY2003) to 42 lb/acre (WY2008).

### ***Flow-Weighted Nitrate-N Concentration***

Flow-weighted concentration is useful for detecting changes over time. The flow-weighted concentration for nitrate-N was determined by summing the product of the monthly average nitrate-N concentrations and the monthly total streamflow, and then dividing that value by the total annual streamflow. The annual average data for rainfall, streamflow, runoff, flow-weighted nitrate-N concentrations, and nitrate-N yield for the 15-year monitoring period at Monticello, Friends Creek, and Long Creek are presented in Tables 10–12, respectively. The runoff, nitrate-N yields, and flow-weighted nitrate-N concentrations for all three stations are plotted in Figure 26. The Monticello (111) station monitors a 543.4 square-mile drainage area, which represents approximately 60 percent of the Lake Decatur watershed with Friends and Long Creeks representing 12 and 5 percent of the watershed, respectively. Approximately 77 percent of the watershed is represented by these three stations.

The Sangamon River at Monticello station (111) is operated by the USGS (05572000) with cooperative funding from the City of Decatur, and has a 100-year streamflow record (1908–2008) with a long-term mean annual streamflow of 424 cfs (Table 10). Due to an extremely long streamflow record that represents more than half the watershed, the Monticello station is considered fairly representative of annual discharge into Lake Decatur. This station also has a complete discharge record for WY1993 and is presented in Table 10 to give context of streamflow for the monitoring period within the larger record. The greatest annual streamflow during the monitoring study was 1,052 cfs in WY1993, over two-and-one-half times the long-term mean. This streamflow was the second highest recorded streamflow since 1908, and the WY2008 streamflow (867 cfs, twice the long-term mean) was the third highest recorded. It should be noted that the 10<sup>th</sup> and 11<sup>th</sup> highest recorded streamflow also occurred during the monitoring period for this study (WY1994 and 1998, respectively). The lowest streamflow

**Table 10. Summary of Rainfall, Streamflow, Flow-Weighted Nitrate-N Concentration, and Nitrate-N Yield for the Sangamon River at Monticello (111) for WY1993–2008**

<i>Water year (Oct-Sept)</i>	<i>Total annual rainfall (inches)</i>	<i>Annual mean streamflow (1000 x cfs)</i>	<i>Annual runoff (inches)</i>	<i>Flow-weighted nitrate-N concentration (mg/L)</i>	<i>Annual nitrate-N yield (lb/acre/yr)</i>
1993	51.5	1,052	*26.5	*10.3	*16
1994	34.4	677	17.1	5.9	23
1995	41.1	514	12.9	7.4	31
1996	36.7	312	7.9	8.4	24
1997	33.2	373	9.4	8.3	19
1998	43.0	677	17.1	9.4	36
1999	37.6	306	7.7	11.4	20
2000	31.5	112	2.8	8.8	6
2001	25.4	331	8.3	9.6	19
2002	41.2	666	16.8	10.8	41
2003	35.7	216	5.4	9.5	8
2004	^31.2	600	15.2	8.1	28
2005	^30.1	584	14.7	8.0	26
2006	^26.2	238	6.0	9.0	12
2007	29.7	485	12.2	8.8	24
2008	+56.6	867	21.9	7.3	37
15-year mean (1993-2008)	36.6	501	12.6	8.8	23
Long-term mean (1908-2008)	-	424	10.5	-	-

**Notes:**

\* Data only for May–September 1993.

^ Average of precipitation from Gibson City, Urbana, Clinton, and Rantoul weather stations.

+ Some data from CoCoRas precipitation database.

**Table 11. Summary of Rainfall, Runoff, Flow-Weighted Nitrate-N Concentration, and Nitrate-N Yield for the Friends Creek at Argenta (102) for WY1993–2008**

<i>Water year (Oct-Sept)</i>	<i>Total annual rainfall (inches)</i>	<i>Annual mean streamflow (1000 x cfs)</i>	<i>Annual runoff (inches)</i>	<i>Flow-weighted nitrate-N concentration (mg/L)</i>	<i>Annual nitrate-N yield (lb/acre/yr)</i>
1993	52.4	*56	*6.8	*7.7	*13
1994	34.4	129	15.8	7.7	27
1995	36.3	94	11.5	9.3	24
1996	39.1	63	7.7	11.6	20
1997	30.2	63	7.7	10.0	17
1998	38.9	126	15.5	11.1	39
1999	34.5	75	9.2	12.9	27
2000	29.5	+58	+7.1	9.6	15
2001	38.0	70	8.6	10.1	18
2002	46.9	136	16.6	11.5	41
2003	33.6	38	4.6	8.8	9
2004	37.9	114	13.9	8.9	28
2005	42.2	+126	+15.4	7.4	24
2006	36.5	+74	+9.1	8.6	16
2007	31.9	+150	+18.4	8.1	33
2008	60.0	+189	+23.1	8.5	48
15-year mean (1993-2008)	38.9	98	11.9	9.5	25

**Notes:**

\* Data only for May–September 1993.

+ Dewitt County well fields were pumping for some period during these years.

**Table 12. Summary of Rainfall, Runoff, Flow-Weighted Nitrate-N Concentration, and Nitrate-N Yield for the Long Creek at Twin Bridge Road (101) for WY1993–2008**

<i>Water year (Oct-Sept)</i>	<i>Total annual rainfall (inches)</i>	<i>Annual mean streamflow (1000 x cfs)</i>	<i>Annual runoff (inches)</i>	<i>Flow-Weighted nitrate-N concentration (mg/L)</i>	<i>Annual nitrate-N yield (lb/acre/yr)</i>
1993*	52.4	3	*3.3	*7.7	*6
1994	34.4	17	16.3	7.1	26
1995	36.3	8	6.6	9.1	14
1996	39.1	14	11.3	9.1	14
1997	30.2	5	3.7	8.8	7
1998	38.9	21	17.0	10.2	39
1999	34.5	20	16.1	10.3	37
2000	29.5	5	4.2	4.6	4
2001	38.0	17	13.1	9.8	29
2002	46.9	23	18.8	8.8	36
2003	33.6	3	2.6	6.2	4
2004	37.9	13	10.9	10.0	25
2005	42.2	21	17.1	7.4	28
2006	36.5	11	8.9	8.9	18
2007	31.9	12	9.8	8.1	19
2008	60.0	29	23.6	10.0	50
15-year mean (1993-2008)	38.9	14	12.0	8.5	23

**Notes:** \*Data only for May–September 1993.

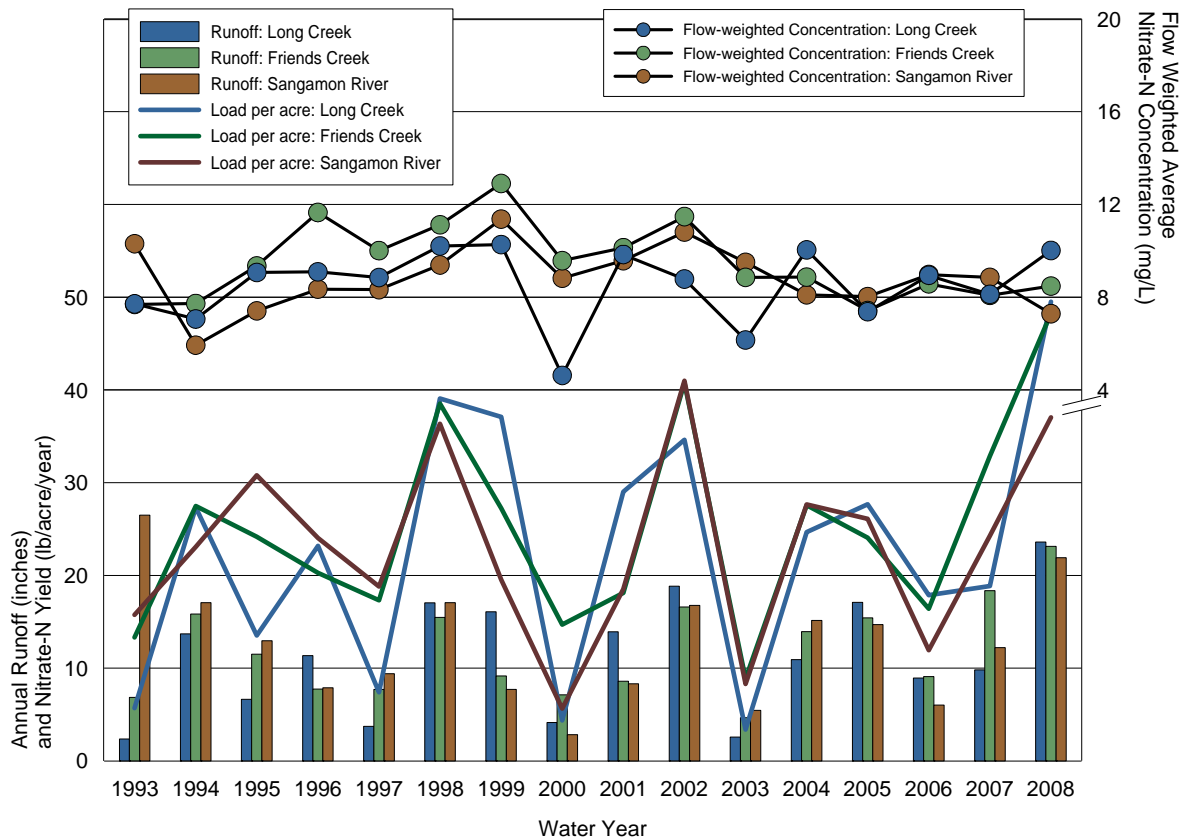


Figure 26. Runoff, nitrate-N yield, and flow-weighted nitrate-N concentration for the Long Creek, Friends Creek, and Sangamon River at Monticello and for the 15-Year Study Period (WY1993–2008)

during the monitoring period was WY2000 (112 cfs), and was the fourth lowest annual mean streamflow for the 100-year record. Based on this record, it appears that the monitoring period had some of the higher mean annual streamflows in the past 100 years.

As can be seen in Figure 26 and Tables 10–12, between WY1993 and WY1994, the flow-weighted nitrate-N concentrations at Monticello (111) decreased from 10.3 to 5.9 mg/L then steadily increased to 11.4 mg/L in WY1999. There was a slight drop and then rise to 10.8 mg/L in WY2002, but then nitrate-N steadily decreased to 7.3 mg/L over the remainder of the monitoring period (Figure 26). The 15-year mean annual flow-weighted nitrate-N concentration is 8.8 mg/L. Friends Creek annual runoff and flow-weighted nitrate-N concentrations had very similar patterns and fluctuations during the monitoring period. Friends Creek had higher flow-weighted concentrations from WY1994 through WY2002, and had the highest levels of all stations (12.9 and 11.6 mg/L in WY1999 and WY1996, respectively). Long Creek flow-weighted nitrate-N concentrations were more dynamic over the 15-year monitoring period (Figure 26). During the low runoff years of WY2000 and WY2003, Long Creek flow-weighted concentrations were the lowest of the period. From WY2005 through WY2007, flow-weighted concentration values were very close between the stations as opposed to the previous years when there was generally a 1–2 mg/L difference. Annual flow-weighted nitrate-N concentrations vary year-to-year for all stations, but no longer-term trends are apparent over the course of the 15-year monitoring period (Figure 26).

## Trends Investigation

The 15-year dataset allowed for an investigation into possible trends in nitrate-N to provide information to the City of Decatur for consideration in making future drinking water management decisions. This dataset has already assisted the city in the design of the ion exchange facility that removes nitrate-N from Lake Decatur water supplies for finished potable water. The data were also used in developing a nitrate-N concentration prediction tool for optimal operation of that facility (Markus et al., 2003). To investigate possible trends in the Lake Decatur watershed annual data, as well as complement and contrast data and trends in the entire Sangamon River watershed, this 15-year dataset (WY1994–2008) was augmented by data from the Sangamon River near Oakford station, which has longer-term nitrate-N data (WY1975–2006). In general, the statistical analysis shows no significant trends in discharge and nitrate-N yields in the Sangamon River watershed during the WY1994–2008 or WY1975–2006 periods. A significant increasing trend was detected at Sangamon River at Monticello (111) for nitrate-N concentration. However, this is the only station in the Sangamon River watershed exhibiting this trend. This chapter presents the statistical approach and analyses for these results.

### Data

The records from three of the eight monitoring project stations were selected for statistical analysis: Long Creek at Twin Bridge Road (101), Friends Creek near Argenta (102), and Sangamon River at Monticello (111). Those project stations have the longest record period for streamflow, nitrate-N concentration, and nitrate-N yield observations (WY1994 to WY2008). Descriptions of data sources, computations, and discussion of the station data can be found in previous sections of this report. The USGS Sangamon River streamgaging station near Oakford (#05583000) was added to augment the analyses to possibly infer longer-term trends for the Lake Decatur watershed. The Oakford station has a 32-year nitrate-N data record (WY1975–2006), is downstream of the Lake Decatur watershed, and is nearly five times the drainage area of the Lake Decatur watershed. These data were collected less frequently than the data in this study; however, previous work by Guo et al. (2002) showed that lower frequency data collected over much longer time periods reliably computes average annual yields as compared to shorter periods with more frequent data. Therefore, all statistical analyses used annual data to determine possible trends. At the time these analyses were performed, data during WY2007–2008 for the Oakford station was not available. Although the overlapping data periods for the project (WY1994–2008) and Oakford (WY1975–2006) stations are different, using WY2007–2008 data from the project stations was deemed to be beneficial because these included all available data from the project. The Oakford station is part of the Illinois Environmental Protection Agency (IEPA) Ambient Water Quality Monitoring Network (AWQMN), and station descriptions and background can be found in Short (1999). Figure 27 shows the location of all four stations and Table 13 lists the station numbers, locations, periods of record, and drainage areas.



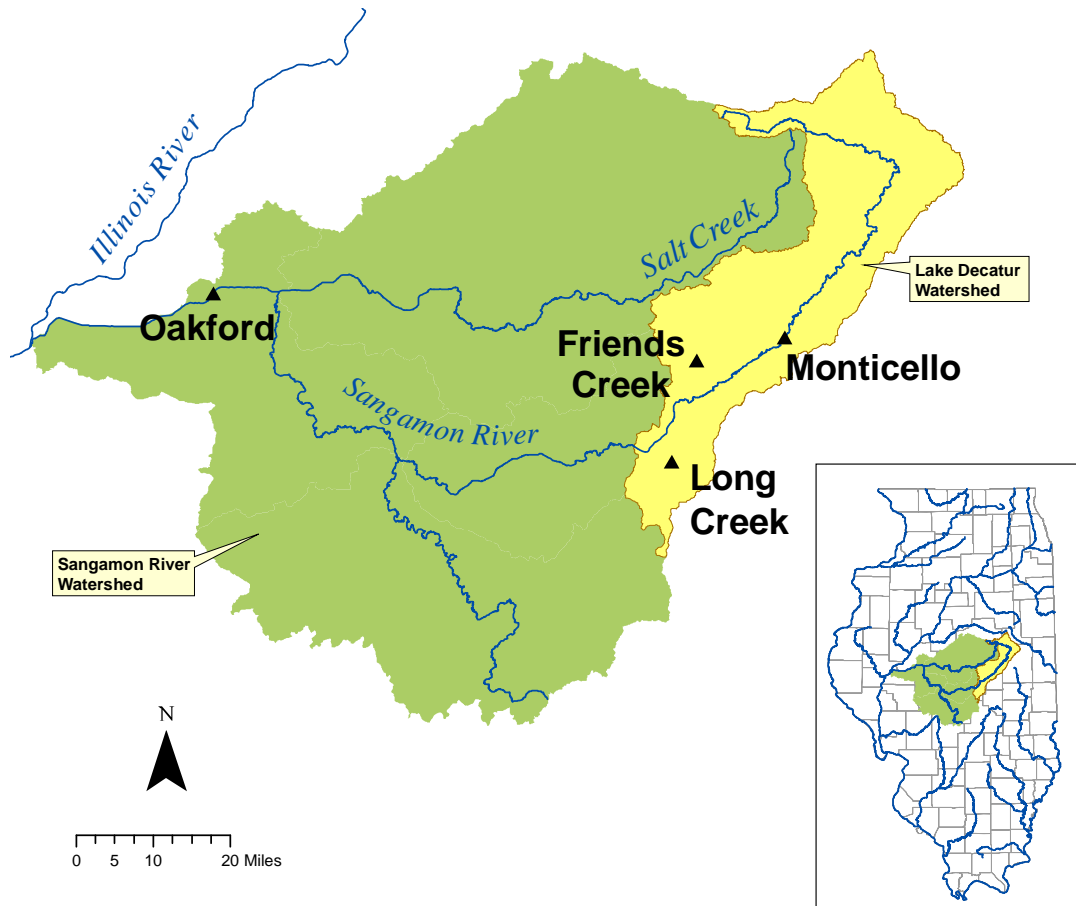


Figure 27. Map of stations used in statistical analyses

**Table 13. Station Number, Name and Location, Period of Record, and Drainage Area Used in Trend Analysis**

<i>ISWS station number</i>	<i>USGS station number</i>	<i>Stream name</i>	<i>Period of record (water years)</i>	<i>Drainage area (mi<sup>2</sup>)</i>
-	05583000	Sangamon River near Oakford	1975-2006	5034
111	05572000	Sangamon River at Monticello	1994-2008	543.4
102	-	Friends Creek	1994-2008	111.9
101	-	Long Creek	1994-2008	46.2

The annual average discharge values for all stations were calculated by averaging daily values over the entire water year; the annual total yields were calculated as a sum of daily yields; and the annual average nitrate concentration was calculated as an average of the observed concentration values within each water year. The monthly nitrate-N yields, such as the yields for January 1994, were calculated as a sum of daily yields within that month. The mean monthly yields for January, however, are calculated as an average of 15 monthly yields between January 1994 and January 2008. The mean monthly nitrate concentration was calculated similarly by averaging the observed concentration values within each month and each year, and then by averaging all 15 monthly values for each of the 12 months.

Nitrate-N yield calculations for the three project stations were based on the monthly weighted average method. Monthly weighted average yields are calculated as products of the total monthly discharge and the monthly average nitrate-N concentrations as reported by Demissie and Keefer (1996). For the Oakford station, the calculated yields were adopted from Short (1999) and Markus et al. (2009) and were based on the seven-parameter log-linear model (Cohn et al., 1992; Guo et al., 2002). The seven-parameter log-linear model requires the estimation of seven parameters: a constant; a quadratic fit to the logarithm of discharge (two parameters); a quadratic fit to time (two parameters); and a sinusoidal function to remove the effects of annual seasonality (two parameters).

## **Statistical Approach**

There are two main modeling approaches which can be used for detecting trends in water quality studies: physical and statistical modeling. Physical watershed models are typically derived from a strong theoretical base and have a potential to capture underlying processes and relationships. Those models also require preparation of large input datasets and have a lengthy calibration and validation process. Statistical models have less stringent data requirements than physical models, but often have more strict statistical assumptions, such as normality, independence, and constant residual variance. More importantly, statistical models have an ability to identify relationships in complex multivariate hydrologic systems that are not easily detected using physically-based models. For its relative simplicity and potential to detect unknown trends and relationships, a statistical modeling approach was adopted for this project.

To increase the likelihood of detecting trends, the project dataset (WY1994–2008) was augmented by a longer (32-year) data record (WY1975–2006) from the Oakford station. The augmented dataset allowed for an assessment of possible spatial and temporal (long-term annual and seasonal) trends. The latter portion of the Oakford data record closely overlaps that of the three project stations and extends for 19 years prior to the project data period. This data overlap could then make it possible to imply longer-term project station trends using the 32-year data record if similar trend relationships are found among the three project and Oakford stations for that overlapping data period. Therefore, the statistical analysis took the approach of comparing possible annual and monthly trends in streamflow, nitrate-N concentrations, and nitrate-N yields during the latter time period (WY1994–2008) to detect similar trend relationships among all four Sangamon River watershed stations. Statistical analyses for longer-term trends were also performed on the Oakford station 32-year data record for the purpose of inferring long-term trends in the Lake Decatur watershed. Furthermore, the statistical analysis results for annual and

monthly relationships among all four stations during the overlapping and longer-term data periods were utilized to perform a preliminary investigation on the effects of watershed size on streamflow, nitrate-N concentration, and nitrate-N yields.

## Statistical Methods

Different trend tests applied to the same dataset frequently produce variable results due to different methodologies and assumptions of each test. To avoid creating a bias based on selection of any single test, statistical significance of trends in this project was evaluated using three statistical tests. Those tests are used to determine if significant trends exist in the calculated annual average concentration, total yield, and average discharge. The following tests were used: the non-parametric Kendall's Tau test (Kendall, 1955; Helsel and Hirsh, 1995), the parametric t-test on the slope of the linear regression relationship between the annual series (discharge, nitrate-N concentration, and nitrate-N yields) and time (Salas, 1993), and the non-parametric Hotelling-Pabst test (Conover, 1980). The tests for significance levels of 70, 80, 90, and 95 percent are performed in this study. In hydrologic practice, statistically significant trends are those passing trend tests with significance levels usually of 95 percent, and at times 90 percent. Those trends not passing trend tests with significance levels of 90 or 95 percent are considered statistically insignificant, even if they pass tests for significance levels of 70 or 80 percent. Nonetheless, the trend test results for lower significance levels (<90 percent), although not used to determine statistically significant trends, were provided here for reference.

The three tests were applied to the three project gaging records, Long Creek (101), Friends Creek (102), and Sangamon River near Monticello (111), for WY 1994–2008 and the Sangamon River near Oakford station for WY1994–2006 and WY1975–2006 time periods. The statistical significance for the three tests was applied to the annual average discharge, nitrate-N concentration, and nitrate-N yield data during the overlapping (WY1994–2008) and longer-term (WY1975–2006) data periods.

## Statistical Results

Table 14 presents the results of the trend analysis, with indications of the occurrence or absence of statistically significant trends within the flow quantity and quality records. Statistically significant trends in discharge, concentration, or yield were not detected at Long Creek (101) and Friends Creek (102). However, all three statistical trend tests indicated that the annual average nitrate-N concentration at Monticello (111) has been increasing since WY1994 with a significance level of 90 and 95 percent. At the same time, discharge and nitrate-N yields at this station did not exhibit a statistically significant trend, similar to Long Creek (101) and Friends Creek (102).

For the overlapping period (WY1994–2006), the Oakford analysis was similar to Long Creek (101) and Friends Creek (102) results showing no trend in each of the three variables. The trend results for the overlapping data period were similar for the three project and Oakford stations for discharge and nitrate-N yields except for the increasing trend for nitrate-N concentration at the Sangamon River at Monticello station.

**Table 14. Significant Trends Based on Kendall-Tau Test (Orange), T-Test (Blue), and Hotelling-Pabst Test (Grey), for Variable Confidence Levels**

	STATION NAME AND DURATION	SIGNIFICANCE LEVEL	DECREASING TREND		NO TREND				INCREASING TREND		
			95	90	80	70	70	80	90	95	
OVERLAPPING TIME PERIOD	Long Creek WY1994-2008	Discharge									
		NO <sub>3</sub> Concentration									
		NO <sub>3</sub> Yield									
	Friends Creek WY1994-2008	Discharge									
		NO <sub>3</sub> Concentration									
		NO <sub>3</sub> Yield									
	Sangamon R. at Monticello WY1994-2008	Discharge									
		NO <sub>3</sub> Concentration									
		NO <sub>3</sub> Yield									
	Sangamon R. at Oakford WY1994-2006	Discharge									
		NO <sub>3</sub> Concentration									
		NO <sub>3</sub> Yield									
LONGER-TERM PERIOD	Sangamon R. at Oakford WY1975-2006	Discharge									
		NO <sub>3</sub> Concentration									
		NO <sub>3</sub> Yield									

The Oakford station longer-term dataset (WY1975–2006) exhibited a possible decrease in discharge as indicated by two out of three tests. For discharge at the Oakford station, two non-parametric trend tests (Kendall-Tau and Hotelling-Pabst) produced identical results, indicating a significant trend with 90 percent confidence level, while the third parametric t-test produced a much lower confidence level, indicating no trend.

There were no trends for nitrate-N yields at the Oakford station for both the overlapping and longer-term time periods. The project stations also showed no trends for yields during the overlapping time period. Therefore, it may be speculated that there has been no significant trend for nitrate-N yields in the Lake Decatur watershed previous to the monitoring period (WY1994–2008). During the overlapping time period, three of the four stations (Long Creek (101), Friends Creek (102), and Oakford) also showed no evidence of statistically significant trends in nitrate-N concentration and discharge. Therefore, at these three stations it can be concluded that discharge, concentration, and yield trends were absent within the overlapping period (WY-1994–WY2008).

## Spatial and Temporal Variability

To better understand any spatial and temporal variability of nitrate-N concentrations in the Sangamon River watershed, the annual average nitrate-N concentrations were compared over

each of the record periods in Figure 28. That figure shows that during the overlapping time period the variation of annual average nitrate-N concentration at the project stations is more dynamic than that of the Oakford station. Also, the larger watershed area for the Oakford station generally seems to have lower concentrations than the much smaller watershed areas of the project stations.

To evaluate possible relationships between watershed (drainage) area and nitrate-N concentration, annual averages were computed for nitrate-N concentration as well as discharge, runoff, and nitrate-N yield for the three project and Oakford stations for the overlapping time period (WY1994–2008). The mean, standard deviation, and coefficient of variation (CV) of the annual average nitrate-N concentration, discharge, runoff, and nitrate-N yield were plotted against the watershed drainage area. These statistics may provide additional insight into the statistical trend results.

Precipitation is the major driving force for runoff. Figure 29 shows annual runoff ranging between just under 3 inches (Monticello (111) in WY2000) to over 23 inches (Friends Creek (102) in WY2008). The annual runoff data exhibited spatial variability within any one year. For some water years, e.g., 1995, 1997, 2001, and 2007, the runoff within the same year varies significantly among gaging stations. Typically, this variability primarily results from the uneven distribution of storms across any given region as well as other differences, such as soil type and land cover. Rainfall variability is the most dominant factor affecting variability in runoff, as all other potentially contributing factors are more similar across the Sangamon River watershed. Despite a significant spatial variability of annual runoff, the long-term averages for all three stations are quite consistent. All three stations have runoff within 3.8 percent of the long-term average runoff based on the three stations (11.83 inches).

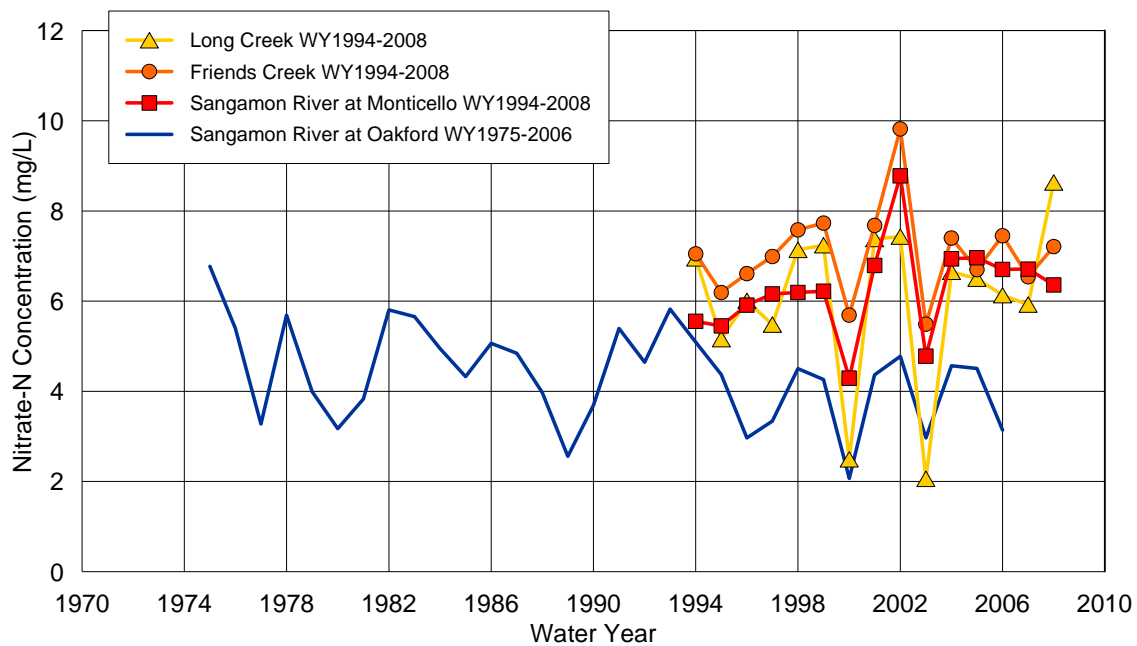


Figure 28. Annual average nitrate-N concentrations at project and regional stations

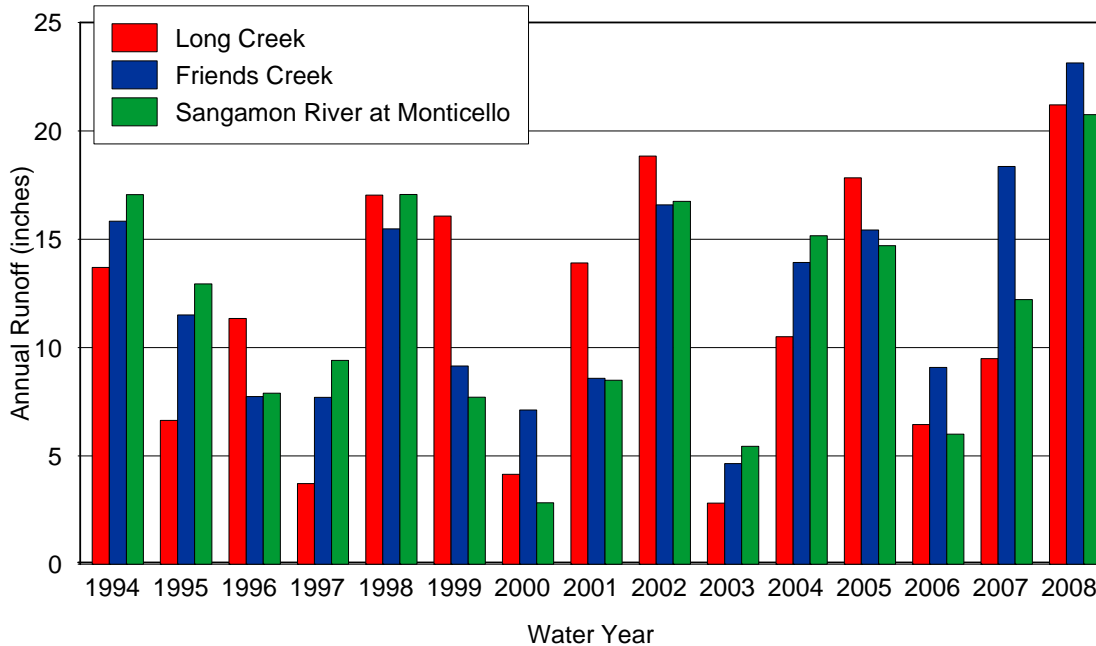


Figure 29. Annual runoff at three of the monitoring study stations (revised from Figures 20 and 21)

To determine any variation in rainfall and runoff relationships among watersheds, annual runoff is presented as a function of annual precipitation in Figure 30. Annual runoff divided by annual precipitation is defined as the runoff coefficient. The runoff coefficient represents the percentage of precipitation that appears as runoff and is a reflection of the physical and climatic character in the watersheds. Annual runoff values were already computed and presented previously in this report (Figures 20–21). The annual precipitation data (Figure 15) were used to determine representative rainfall for each of the three watersheds. The Decatur precipitation station was used to represent rainfall in the Long Creek (101) watershed; Clinton and Monticello precipitation stations were averaged for the Friends Creek (102) watershed; and Gibson, Rantoul, Urbana, and Clinton precipitation stations were averaged to represent Monticello (111).

Figure 30 illustrates that the relationship between annual runoff and annual precipitation has substantial variability between years. The precipitation average for the project period (WY1994–2008) for all three watersheds was 38.23 inches. The long-term averages for each of the three watersheds are all within 1 percent of the regional average. Similar to the runoff, average annual precipitation varied significantly from year to year. The spatial variability exists both for rainfall and runoff. It appears that relationships between runoff and rainfall at the three sites are reasonably similar. This similarity is expected for watersheds near each other, and those with similar physical characteristics such as slope, land use/cover, and soil type.

Figure 31 shows a decrease in mean annual nitrate-N concentration with increasing drainage area, which is reasonable due to the likelihood of additional land uses that contribute little or no nitrate-N and increased water residence time that allows potential sinks for nitrate-N, such as denitrification or biological assimilation, to become relatively more important. The relationship between mean annual streamflow (discharge) and drainage area appears to be strong, with the mean flow being nearly proportional to the drainage area (Figure 32). The combination

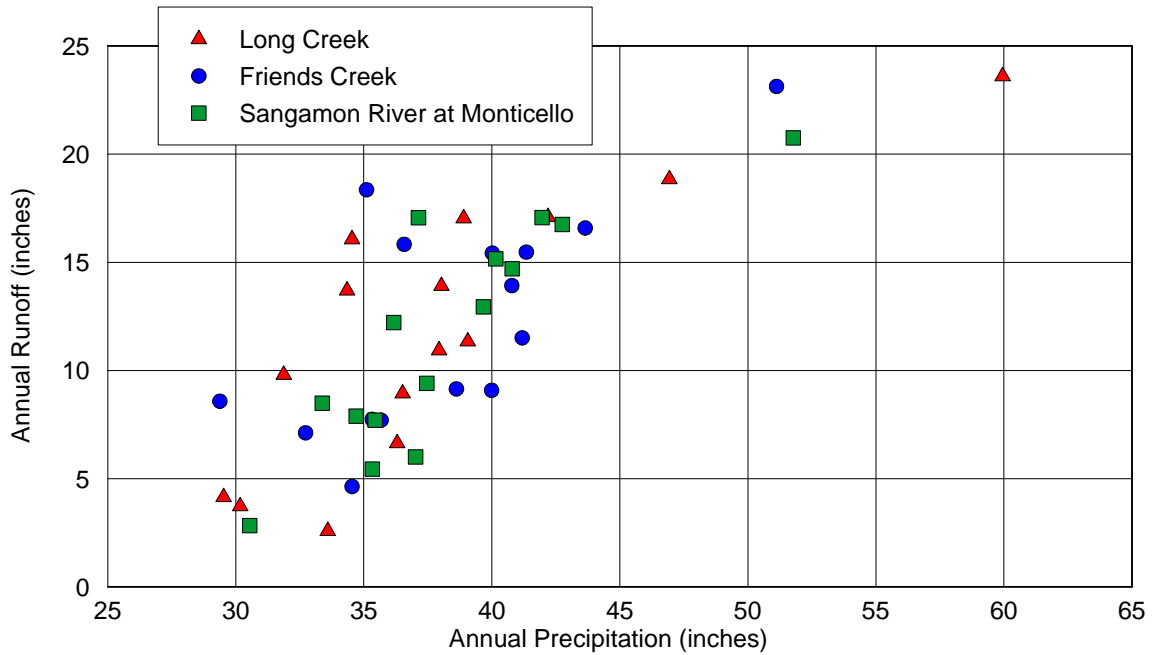


Figure 30. Annual runoff vs. annual precipitation (runoff coefficients) for WY1994–2008

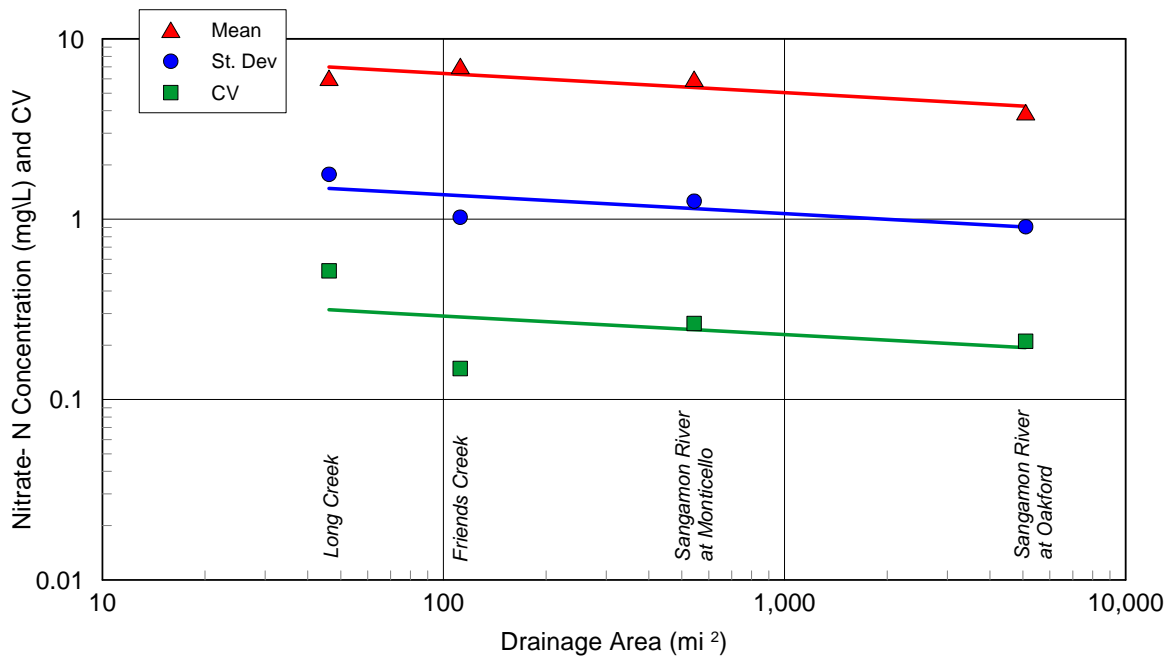


Figure 31. Long-term mean nitrate-N concentration, standard deviation, and coefficient of variation (CV) versus project and regional station drainage areas

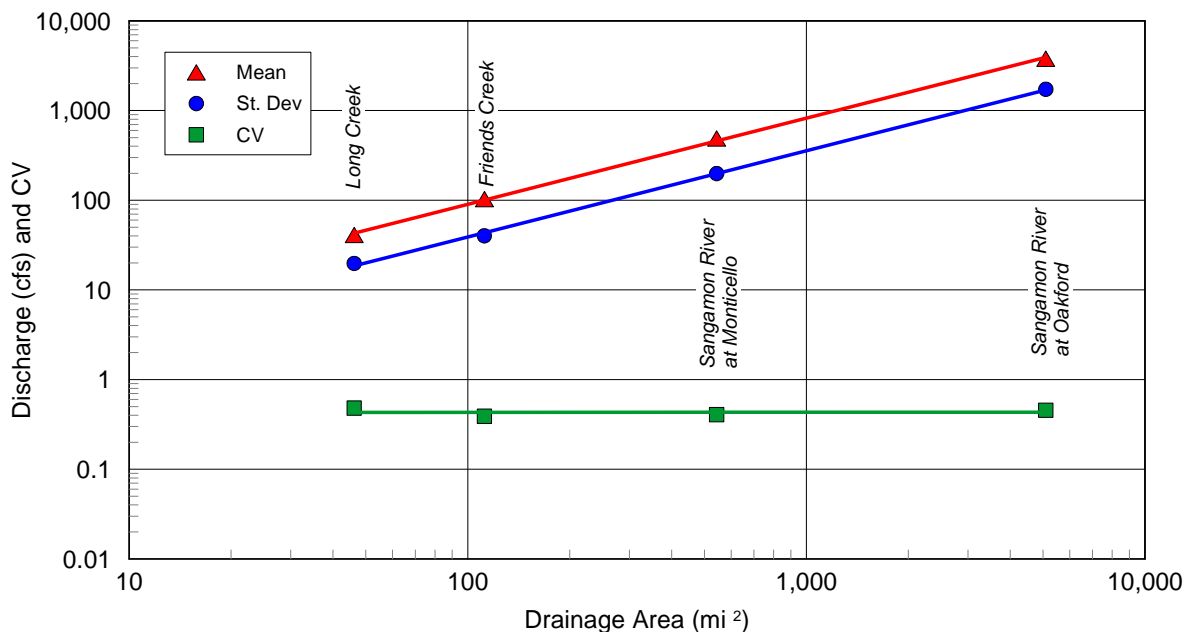


Figure 32. Long-term mean discharge, standard deviation, and coefficient of variation (CV) versus project and regional station drainage areas

of increasing runoff and diversity of land uses are common factors that have a dampening effect on nitrate-N concentrations as watershed area increases. This can be seen in Figure 33 where mean annual nitrate-N yield per acre decreased with increased area. In general, the relationships in all figures are fairly consistent and nearly log-linear with minor departures, which are generally explained by natural and anthropogenic differences between the watersheds.

Nitrate-N yields are a product of streamflow (runoff) and concentration. The timing of runoff events throughout the year also can affect annual nitrate-N yields. Therefore, the influence of seasonality was investigated by inspecting mean monthly runoff and nitrate-N yields per acre. Figure 34 presents mean monthly runoff during the overlapping record (bars represent WY1994–2008) and shows that the mean monthly runoff among all four stations is reasonably similar with a more pronounced relative difference among project and Oakford stations during the winter months (December–March). May is when all stations experience the highest runoffs. The Oakford longer-term record (line represents WY1975–2006) has similar monthly runoff from September through April as the overlapping period (WY1994–2008), except it was drier during May and June and wetter during July and August.

Figure 35 shows the long-term mean monthly nitrate-N yields per acre for the overlapping record (bars represent WY1994–2008) for all four stations and the Oakford longer-term record (line represents WY1975–2006). May and June are when yields peak at the three project stations during the overlapping record (WY1994–2008), which is the same period for high runoff at these stations. Also, yields between the project and Oakford stations during the overlapping period (WY1994–2008) are markedly different from March through June. Inspection of streamflow records shows that several significant storm events during the 15-year monitoring period occurred predominantly during May and June, which may be skewing the



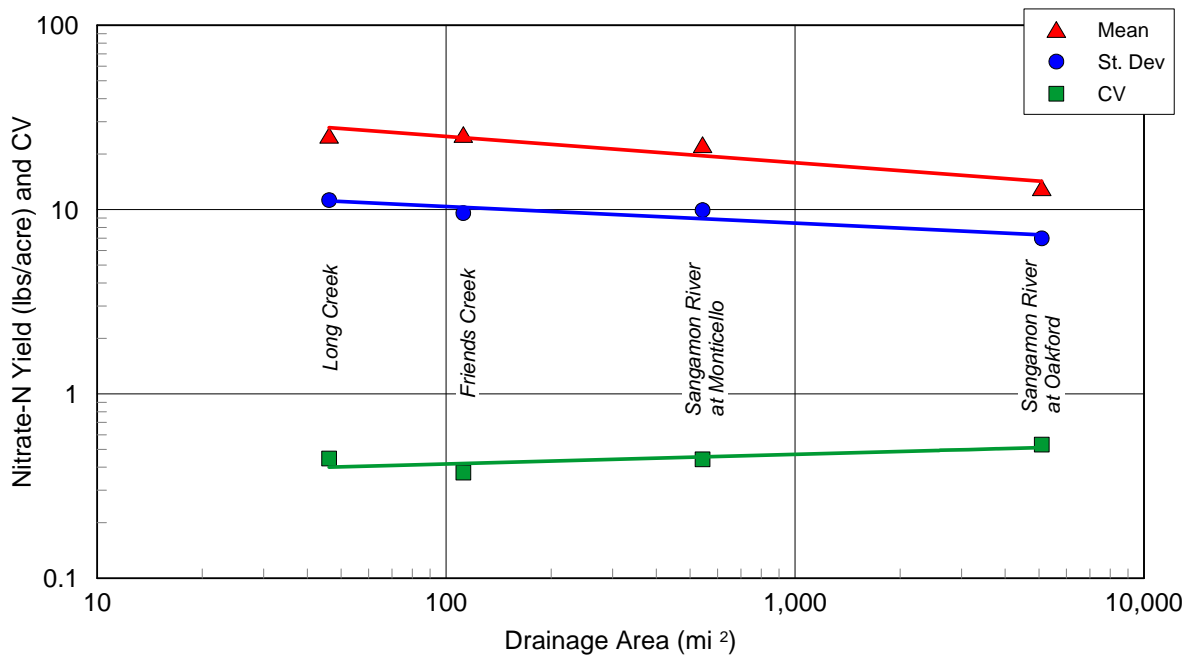


Figure 33. Long-term mean nitrate-N yield per acre, standard deviation, and coefficient of variation (CV) versus project and regional station drainage areas

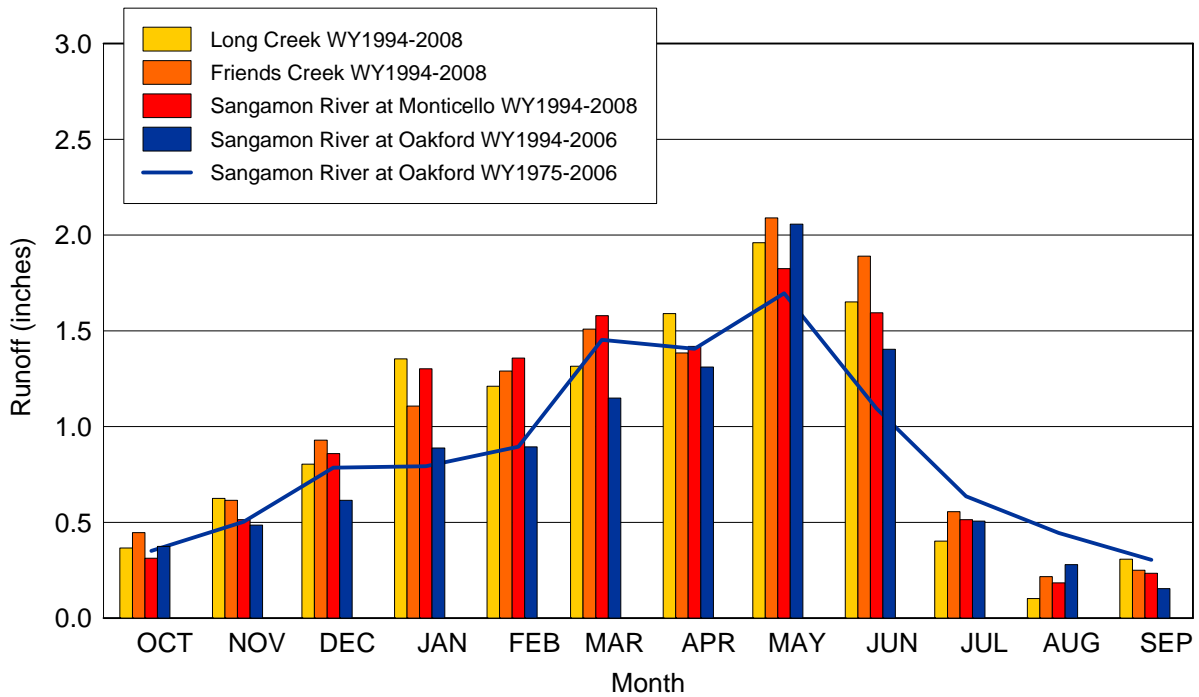


Figure 34. Long-term mean monthly runoff for the project and regional stations

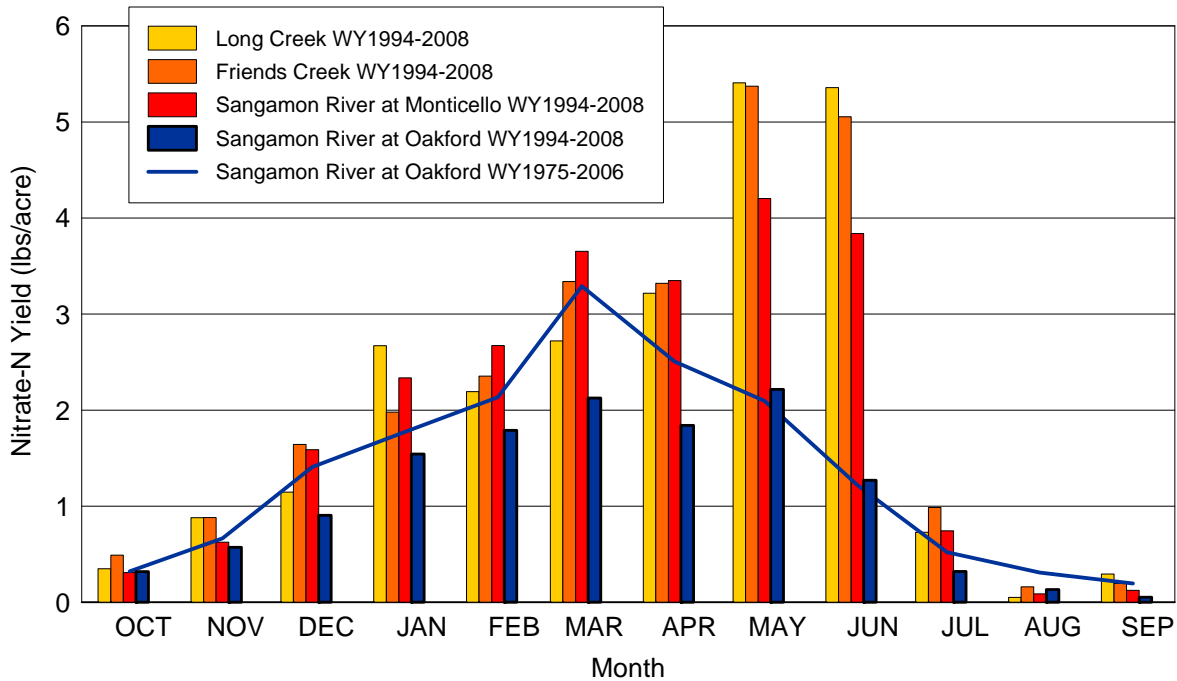


Figure 35. Long-term mean monthly nitrate-N yield per acre for the project and regional stations

yield peak for project stations due to the shorter data record as compared to the longer record at the Oakford station. The longer record period would dampen the significance of such events.

The Oakford nitrate-N yields show different distributions for the two data periods (Figure 35). The longer-term record (WY1975–2006) shows yields were generally higher than during the overlapping period. Also the longer-term yields peaked in March but appear to have a double peak in March and May during the overlapping record (WY1994–2008 - bars). This apparent decrease in yields between the project and Oakford stations could indicate differences in amount, timing, and distribution of precipitation, as well as supply of available nitrogen or fertilizer in the watershed.

## Trends Summary

In summary, the statistical analysis for trends during the WY1994–2008 time period generally shows no apparent trends in discharge and nitrate-N yields in the Sangamon River watershed, as represented by the three project and Oakford stations (Table 14). Also, there was no trend for nitrate-N concentration at the Long Creek, Friends Creek, and Oakford stations during this period. However, there was a statistically significant increasing trend for nitrate-N concentration at Monticello (111), but that increase did not lead to an increased nitrate-N yield. This may be due to differences in the timing of nitrate-N availability and precipitation patterns, although streamflow is more likely the controlling factor as seen in Figure 26 in which nitrate-N concentrations are weighted by streamflow and appear to be steady over the project monitoring

period. The Oakford station showed a decreasing discharge trend during the longer-term record (WY1975–2006) in which two of the three tests were statistically significant; however, no trends were found in nitrate-N concentration and yield.

The similarity in nitrate-N yield trends between the project and Oakford stations during the overlapping period could imply a similarity in trends for the longer-term period. Therefore, it can be speculated that there has been no trend for nitrate-N yields in the Lake Decatur watershed for a longer period prior to monitoring because there was no trend for the Oakford longer-term period. Although results detected an increasing trend of nitrate-N concentrations for the Monticello (111) station, based on the statistical fit of the annual average data, the rate is a small increase of 0.087 mg/L per year (1.3 mg/L over the project monitoring period). Also, due to the variability in hydrologic/climatic cycles, it is uncertain whether an increase would continue. This type of climatic variability is best illustrated in Figure 36, which shows a) long-term annual precipitation for the last 172 years in Illinois and b) last 115 years at the Decatur precipitation station. Figure 36 presents the 5- and 11-year moving averages for the entire time period. As can be seen from the moving averages, annual precipitation has cycles of wet and dry periods with durations that vary on the order of decades. For example, Figure 36a is a compilation of several long-term precipitation stations from around the State of Illinois and indicates an approximately 15- to 25-year cycle in wetter versus drier periods. In addition, the 11-year moving average in Figure 36b shows four cycles with durations of 20 to 30 years, each peaking (wetter) around 1910, 1930, 1950, and 1980. The period of 1990 to 2008 seems to be relatively level, although the five-year moving average shows a peak in the mid-1990s and then a leveling. Therefore, the 15-year monitoring period (WY1994–2008) could be a reflection of this latest cycle and has the likelihood of shifting in the future. Uncertainty in climate trend predictions makes it complicated to predict future shifts. Therefore, caution should be used when considering this increasing trend for future water treatment and management purposes.

Additional investigation of the annual variables and the relationships between stations and drainage area was made to possibly understand the trend results. The relationship between annual precipitation and the amount of precipitation that appears as annual runoff is similar among the three project stations regardless of the difference in their drainage areas or spatial variability in rainfall events across the entire Lake Decatur watershed (Figure 30). This indicates that the drainage areas of the three project stations have similar physical characteristics such as slope, land use/cover, and soil type, which are consistent with the land use information for the watershed (Figure 9) and the no trend in discharge (Table 14). The mean discharge is nearly proportional to drainage area. Mean annual nitrate-N concentrations at the project stations are generally twice that of the Oakford station and slightly decrease with increasing drainage area (Figures 28 and 31). Investigation of seasonal effects on runoff and nitrate-N yield shows only minor variations in runoff among all stations during the overlapping period and the Oakford station during both periods. However, the Oakford station appears to have a decrease in mean monthly nitrate-N yields between the longer-term and overlapping periods from December through April. Because a decreasing trend in annual nitrate-N yields was not detected during the longer-term period (Table 14), the lower mean monthly nitrate-N yield (Figure 35) may not be statistically significant.

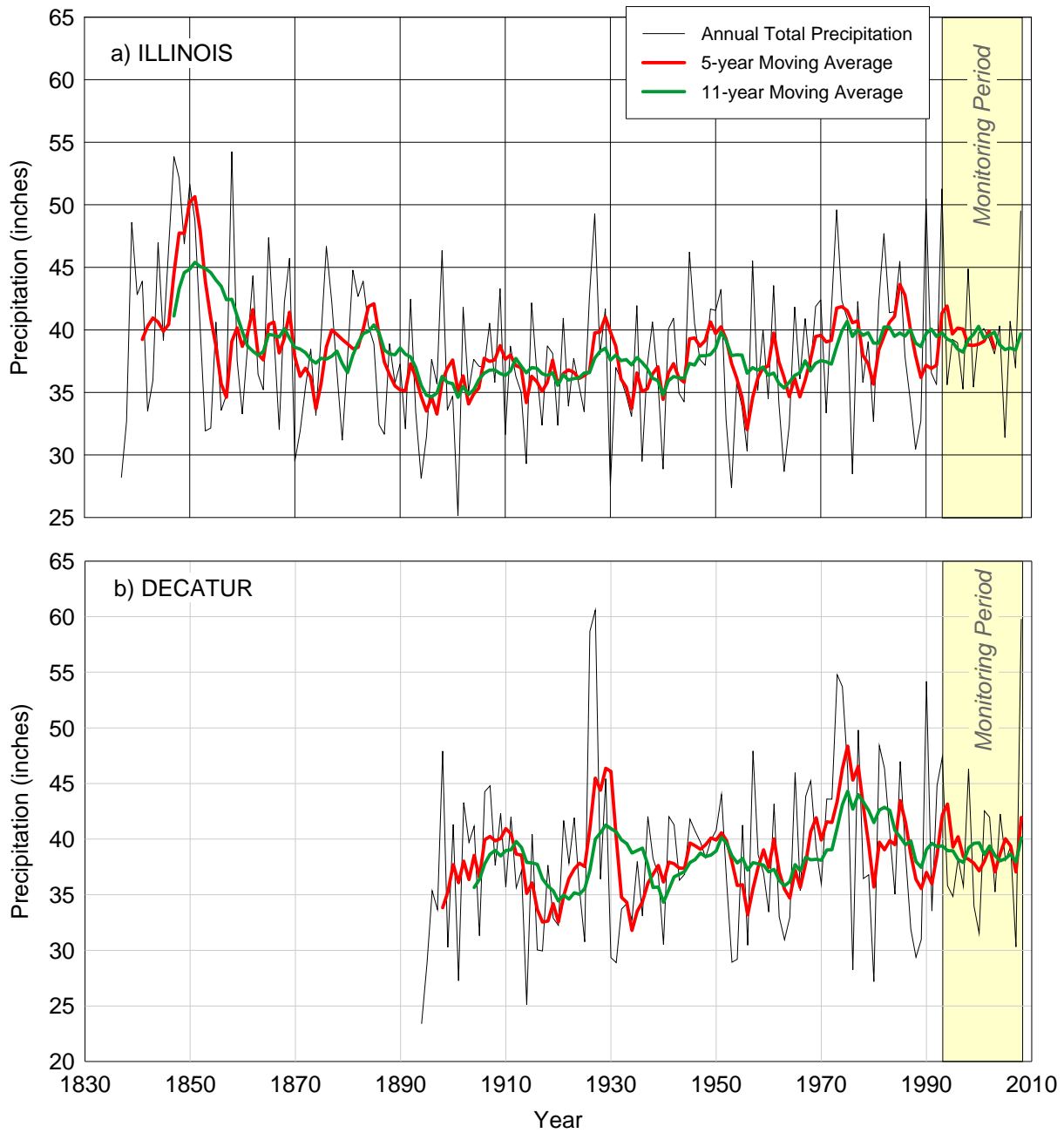


Figure 36. Long-term annual precipitation, 5- and 11-year moving averages for a) Illinois and b) Decatur precipitation station



## Summary and Conclusions

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The monitoring network for the Lake Decatur watershed was established in 1993 to provide streamflow, nitrate-N concentration, and nitrate-N yield data for the Sangamon River upstream of Lake Decatur and associated tributaries. The network was composed of eight sampling stations located throughout the watershed and concluded with three stations in 2008. Specifically, the monitoring period was from May 1993 to September 2008, and the entire dataset is presented in water years (October through September). This report presents the annual precipitation, discharge, runoff, nitrate-N concentration, and nitrate-N yield data for the 15-year monitoring period, as well as a statistical analysis of this data to determine significant trends that may be considered for future water management decisions by the City of Decatur. More detailed data can be found in Appendices A–G.

The highest annual precipitation occurred in the first (WY1993) and last (WY2008) water years of the monitoring period with a station average of approximately 54 inches for both years (15 inches above the 30-year mean). Water Year 2000 had the lowest station average annual precipitation of approximately 30 inches. Eight of the 15 years experienced above or extremely above normal precipitation. Consequently, runoff had similar annual variability as precipitation. Annual runoff between river stations had little variability within any year, while there was more variability between the small tributary watershed stations, most likely due to precipitation patterns in terms of watershed proximity and intensity. Relationships between annual precipitation and the amount of precipitation that appears as runoff at Long Creek (101), Friends Creek (102), and Monticello (111) are all similar and within 1 percent of regional values. This similarity is indicative of watersheds with similar physical characteristics.

The 100-year streamflow gaging record at the USGS station at Monticello gives an opportunity to understand the character of streamflow in the Lake Decatur watershed during the monitoring period in the context of a longer-term record. Analysis of the data shows that the highest annual streamflow during the monitoring project occurred in WY1993, which was two-and-one-half times the long-term mean. This streamflow was the second highest recorded streamflow at this station since 1908. The WY2008 streamflow was twice the long-term mean and the third highest recorded. WY2000 had the lowest streamflow recorded at Monticello, which was the fourth lowest annual mean streamflow for the 100-year record at Monticello. It appears, along with the annual precipitation record, that the monitoring period covered several record extremes and was a wetter than normal period.

In general, annual maximum nitrate-N concentrations decreased as the drainage area increased. Except for WY1994, WY1995, and WY2005, maximum nitrate-N concentrations exceeded the 10 mg/L MCL at all river stations and, except for WY2005, all tributary stations. The 15-year mean annual nitrate-N yield delivered to Lake Decatur from the Upper Sangamon River watershed was 23 lb/acre and varied from 6 lb/acre (WY2000) to 42 lb/acre (WY2008). The annual flow-weighted nitrate-N concentration at Monticello (111), Friends Creek (102), and Long Creek (101) follow similar patterns with some minor fluctuations, and there appears to be no discernable increase or decrease in these concentrations over the 15-year monitoring period.

Trends for discharge, nitrate-N concentration, and nitrate-N yield were investigated for the 15-year datasets at Monticello (111), Long Creek (101), and Friends Creek (102). This dataset was augmented by longer data records (WY1975–2006) from a downstream station in the region (Sangamon River station near Oakford) to investigate longer-term trends in the watershed and region. Trend tests indicated a statistically significant increasing trend in annual average nitrate-N concentration only at Monticello (111). Trends of any significance for discharge and nitrate-N yields were not detected at any of the four stations in the Sangamon River watershed during the 15-year monitoring period.

Based on the compilation and analyses of the 15-year dataset, the following observations can be made:

Eight of the 15 years of the monitoring period had annual precipitation above or extremely above the 1971–1990 30-year mean, making this a relatively wet period.

Based on the 100-year streamflow record at the Monticello station, 4 of the top 11 total annual discharges occurred during the project monitoring period (WY1993 - 2<sup>nd</sup>, WY2008 - 3<sup>rd</sup>, WY1994 - 10<sup>th</sup>, and WY1998 - 11<sup>th</sup>), further confirming that the monitoring period was a wet period.

Tributary stations had nitrate-N concentrations consistently higher than river stations, which in turn were higher than Lake Decatur concentrations at the South Water Treatment Plant. As watershed areas increased, nitrate-N concentrations decreased.

Nitrate-N yields decreased as drainage area increased, were dispersed throughout the watershed, and varied from year to year.

Trends analysis detected a statistically significant increasing trend in annual average nitrate-N concentration at Monticello (111) for the monitoring period. This corresponds to an increase of 1.3 mg/L between 1993 and 2008. This trend did not have a corresponding increasing trend in nitrate-N yields, whereas no trends were detected at the other stations in the Sangamon River watershed. Also, it is unclear whether an increasing trend would continue into the future due to the unknown nature of climate cycles and variability relative to the shorter time interval (15 years) for which nitrate-N data are available.

There are no significant trends in discharge and nitrate-N yields for the three stations in the Lake Decatur watershed, implying that there was no change in these parameters over the 15 years.

Similarity in trends for nitrate-N yields between the project and Oakford stations during both data periods could imply a similarity in trends during the longer-term period (WY1975–2006). Therefore it can be speculated that there has been no significant change in nitrate-N yields in the Lake Decatur watershed since 1975.

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**Appendix A. Starting and Ending Dates  
of Water Years and Project Years**

### Starting and Ending Dates of Water Years and Project Years

<i>Water year</i>	<i>Year</i>	
	<i>Starting October 1</i>	<i>Ending September 30</i>
WY 94	1993	1994
WY 95	1994	1995
WY 96	1995	1996
WY 97	1996	1997
WY 98	1997	1998
WY 99	1998	1999
WY 00	1999	2000
WY 01	2000	2001
WY 02	2001	2002
WY 03	2002	2003
WY 04	2003	2004
WY 05	2004	2005
WY 06	2005	2006
WY 07	2006	2007
WY 08	2007	2008

<i>Project year</i>	<i>Year</i>	
	<i>Starting May 1</i>	<i>Ending April 30</i>
PY 1	1993	1994
PY 2	1994	1995
PY 3	1995	1996
PY 4	1996	1997
PY 5	1997	1998
PY 6	1998	1999
PY 7	1999	2000
PY 8	2000	2001
PY 9	2001	2002
PY 10	2002	2003
PY 11	2003	2004
PY 12	2004	2005
PY 13	2005	2006
PY 14	2006	2007
PY 15	2007	2008

## **Appendix B. NASS Attribute Values and Definitions**

## Appendix B-1. 1999 NASS Attribute Values and Definitions

*Categorization code*    *Land cover*

### Row crops 1-20

1	Corn
2	Cotton
3	Rice
4	Sorghum
5	Soybeans
6	Sunflowers
10	Peanuts
11	Tobacco

### Small grains & hay 21-40

21	Barley
22	Durum wheat
23	Spring wheat
24	Winter wheat (AR,IL,MS,NM)
25	Other small grains & hay (oats, millet, rye and winter wheat, alfalfa and other hay)
26	Winter wheat/soybeans double cropped

### Other crops 41-60

41	Beets
42	Dry edible beans
43	Potatoes
44	Other crops (canola, flaxseed, safflower & very small acreage crops)
50	State 560 CRP
51	State 561 popcorn
52	State 562 snap beans
53	State 563 green peas
54	State 564 pumpkins
55	State 565 apples
56	State 566 peaches
57	State 567 sweet corn - fresh
58	State 568 sweet corn - processing
59	State 569 other crops

### Other land 61-80

61	Fallow/idle cropland
62	Pasture/range/CRP/non-agricultural (permanent and cropland pasture, waste and farmstead)
63	Woods

### Other 81-99

81	Clouds
82	Urban
83	Water
84	Roads/railroads
85	Ditches/waterways
86	Buildings/homes/subdivisions
87	Wetlands
88	Grassland
90	Mixed water/crops
91	Mixed Water/Clouds

## Appendix B-2. 2007 NASS Attribute Values and Definitions

*Categorization code*    *Land cover*

### Row crops 1-20

1	Corn
2	Cotton
3	Rice
4	Sorghum
5	Soybeans
6	Sunflowers
10	Peanuts
11	Tobacco

### Grains, hay, and seeds 21-40

21	Barley
22	Durum wheat
23	Spring wheat
24	Winter wheat
25	Other small grains
26	Winter wheat/soybeans double cropped
27	Rye
28	Oats
29	Millet
30	Speltz
31	Canola
32	Flaxseed
33	Safflower
34	Rape seed
35	Mustard
36	Alfalfa
37	Other hays

### Other crops 41-60

41	Sugar beets
42	Dry beans
43	Potatoes
44	Other crops
45	Sugarcane
46	Sweet potatoes
47	Miscellaneous vegeAppendixs and fruit
48	Watermelon
50	Pickles
51	Chick peas
52	Lentils
53	Peas
58	Clover/wildflowers

### Open non-crop 61-65

61	Fallow/idle cropland
62	Grass/pasture/non-agricultural
63	Woodland
64	Shrubland
65	Barren



## Appendix B-2. Concluded

*Categorization code*    *Land cover*

### Open non-crop 66-80

67	Peaches
68	Apples
69	Grapes
70	Christmas trees
71	Other tree nuts & rruit
72	Citrus
73	Other tree Fruit
70	Other non-tree rruit

### Other 81-99

81	Clouds
82	Urban/developed
83	Water
87	Wetlands
92	Aquaculture

### NLCD-derived non-crop 100-195

111	NLCD - open water
112	NLCD - perennial ice, snow
121	NLCD - developed/open space
122	NLCD - developed/low intensity
123	NLCD - developed/medium intensity
124	NLCD - developed/high intensity
131	NLCD - barren
141	NLCD - deciduous forest ( <i>Revised Illinois CDL incorporates #143-Mixed Forest and #63-Woodland</i> )
142	NLCD - evergreen forest
143	NLCD - mixed forest
152	NLCD - shrubland
171	NLCD - grassland herbaceous ( <i>Revised Illinois CDL incorporates #152-Shrub/Scrub, #181-Pasture/Hay, and #62-Grassland/Pasture/Non-Ag</i> )
181	NLCD - pasture/hay
182	NLCD - cultivated crop
190	NLCD - woody wetlands
195	NLCD - herbaceous wetlands ( <i>Revised Illinois CDL incorporates #87-Wetlands</i> )

**Appendix C. Monthly Precipitation at Selected Stations  
(May 1993-September 1998)**

**Appendix C. Monthly Precipitation at Selected Stations (May 1993-September 1998)**

<i>Date</i>	<i>Gibson City</i>	<i>Rantoul</i>	<i>Urbana</i>	<i>Clinton</i>	<i>Monticello</i>	<i>Decatur</i>
	<i>(inches)</i>					
Oct 1992	0.84	2.79	2.08	2.05	1.64	0.95
Nov 1992	7.37	7.68	8.03	7.54	7.24	9.07
Dec 1992	2.54	2.12	2.45	2.71	2.45	3.00
Jan 1993	3.54	3.63	4.39	4.43	4.77	4.27
Feb 1993	2.02	1.69	2.30	2.13	2.21	2.63
Mar 1993	-	2.47	3.04	2.58	2.61	2.22
Apr 1993	4.91	6.32	5.06	6.58	6.23	5.14
May 1993	3.66	3.90	1.83	1.15	1.95	1.62
Jun 1993	8.35	5.62	5.47	5.48	4.23	4.12
Jul 1993	6.14	7.31	8.42	8.52	6.22	7.03
Aug 1993	5.44	5.51	10.02	5.31	5.06	4.58
Sep 1993	6.97	8.26	7.97	6.82	6.85	7.83
Oct 1993	4.19	4.27	4.10	5.00	3.54	3.16
Nov 1993	3.55	3.71	4.24	4.37	4.17	3.75
Dec 1993	1.80	1.74	1.70	1.57	1.78	1.03
Jan 1994	1.29	2.04	1.84	1.88	2.28	1.27
Feb 1994	0.54	0.75	0.98	1.12	0.93	0.84
Mar 1994	1.10	1.43	1.10	1.59	1.39	1.18
Apr 1994	5.75	9.85	9.27	8.92	8.07	5.88
May 1994	2.68	2.34	4.01	3.36	3.46	3.47
Jun 1994	2.15	1.83	1.99	3.56	2.42	3.91
Jul 1994	3.61	2.72	1.28	2.09	1.90	2.48
Aug 1994	7.21	3.05	3.65	2.73	2.49	5.00
Sep 1994	2.13	2.67	3.21	2.58	1.95	2.38
Oct 1994	1.85	2.95	3.11	2.68	1.75	2.23
Nov 1994	4.95	3.18	5.15	5.50	5.12	5.28
Dec 1994	2.04	2.00	1.90	2.42	1.71	1.89
Jan 1995	3.05	3.52	2.12	3.71	3.88	3.02
Feb 1995	0.27	0.15	0.45	0.29	0.38	0.34
Mar 1995	3.23	3.54	2.91	3.82	3.04	3.38
Apr 1995	4.05	5.12	3.59	4.17	3.80	3.94
May 1995	8.31	6.62	10.11	10.76	11.37	9.70
Jun 1995	3.44	1.26	1.93	2.04	1.71	2.02
Jul 1995	1.39	1.20	1.99	1.95	1.08	1.64
Aug 1995	7.05	7.62	5.36	3.41	5.89	1.68
Sep 1995	0.90	0.60	0.50	0.52	1.37	1.18
Oct 1995	4.09	4.38	3.88	3.39	3.23	3.57
Nov 1995	1.82	1.46	2.03	1.92	2.20	2.58
Dec 1995	0.76	1.38	1.62	1.75	1.43	1.78
Jan 1996	1.09	1.63	2.04	1.78	1.81	2.38
Feb 1996	0.24	0.27	1.41	0.49	0.78	1.27
Mar 1996	1.67	2.20	2.19	1.88	1.46	2.06
Apr 1996	3.14	2.72	3.58	2.98	4.61	4.97
May 1996	7.29	6.62	8.26	7.72	8.12	10.72
Jun 1996	4.82	3.97	5.65	3.94	3.82	2.66
Jul 1996	4.80	3.39	3.36	4.42	2.41	2.63

**Appendix C. Continued**

<i>Date</i>	<i>Gibson City</i>	<i>Rantoul</i>	<i>Urbana</i>	<i>Clinton</i>	<i>Monticello</i>	<i>Decatur</i>
	<i>(inches)</i>					
Aug 1996	2.08	2.76	1.42	1.85	4.78	2.00
Sep 1996	2.05	1.37	3.40	1.85	2.03	2.44
Oct 1996	1.49	1.84	1.55	1.94	1.79	1.56
Nov 1996	2.95	3.65	4.14	3.18	3.78	4.37
Dec 1996	1.27	1.95	1.39	1.50	1.30	1.19
Jan 1997	2.20	2.69	2.50	2.26	2.77	3.79
Feb 1997	3.66	4.87	3.51	3.34	3.83	3.92
Mar 1997	2.46	2.46	2.93	2.91	2.53	2.26
Apr 1997	1.54	1.58	1.09	1.26	0.95	1.68
May 1997	5.02	6.23	4.69	4.68	3.87	4.40
Jun 1997	3.43	5.54	2.37	4.62	4.63	2.24
Jul 1997	3.82	1.99	2.90	3.04	0.64	0.90
Aug 1997	5.38	4.15	7.02	5.92	3.66	1.02
Sep 1997	2.79	1.26	3.40	3.48	3.47	2.84
Oct 1997	1.06	1.78	1.96	1.85	1.79	1.71
Nov 1997	2.18	2.40	2.56	4.97	3.47	3.40
Dec 1997	1.07	1.66	1.97	1.52	1.78	0.71
Jan 1998	2.84	2.05	2.23	2.09	2.69	2.32
Feb 1998	1.34	1.78	1.80	2.23	2.07	1.96
Mar 1998	5.81	6.00	6.35	5.12	5.69	5.37
Apr 1998	4.27	3.61	4.61	3.10	4.64	2.98
May 1998	5.11	6.73	7.82	5.73	8.36	4.33
Jun 1998	9.59	8.91	8.72	6.82	7.91	7.01
Jul 1998	2.00	4.72	4.19	2.03	1.91	3.06
Aug 1998	1.46	3.43	1.94	3.11	2.13	5.32
Sep 1998	0.78	1.28	2.19	1.08	0.60	0.73
Oct 1998	2.83	2.22	2.94	3.09	2.46	2.93
Nov 1998	1.20	2.12	2.43	1.82	2.07	1.56
Dec 1998	1.24	1.22	0.89	1.32	1.07	0.88
Jan 1999	2.54	2.36	4.14	2.85	4.53	2.01
Feb 1999	3.04	3.16	2.48	3.11	3.43	2.31
Mar 1999	1.14	1.17	1.90	1.65	1.48	0.18
Apr 1999	4.16	4.51	4.77	5.97	5.05	5.96
May 1999	2.18	3.67	3.52	3.16	2.64	3.01
Jun 1999	5.07	3.53	6.14	7.42	4.67	7.63
Jul 1999	2.61	2.60	3.82	2.10	2.85	2.90
Aug 1999	2.93	2.90	5.34	5.51	5.86	3.39
Sep 1999	1.36	2.07	1.91	1.66	1.46	1.78
Oct 1999	1.97	2.29	1.92	2.30	1.96	2.09
Nov 1999	0.25	0.63	0.81	0.42	0.52	0.54
Dec 1999	2.22	2.46	2.05	2.46	2.20	2.17
Jan 2000	1.08	1.06	1.54	1.19	1.21	1.21
Feb 2000	1.50	1.72	2.40	1.80	1.91	1.84
Mar 2000	1.67	1.39	1.77	2.41	1.51	1.27
Apr 2000	2.52	1.71	2.78	4.78	2.50	1.08
May 2000	4.44	4.18	6.18	3.60	4.04	2.84
Jun 2000	3.77	4.98	4.52	7.21	6.01	4.69

**Appendix C. Continued**

<i>Date</i>	<i>Gibson City</i>	<i>Rantoul</i>	<i>Urbana</i>	<i>Clinton</i>	<i>Monticello</i>	<i>Decatur</i>
	<i>(inches)</i>					
Jul 2000	2.41	0.94	2.45	3.00	2.47	3.98
Aug 2000	1.51	2.43	3.59	2.32	3.54	4.07
Sep 2000	3.87	3.02	4.24	2.42	3.67	3.74
Oct 2000	2.04	2.15	2.76	2.50	2.17	1.99
Nov 2000	3.00	3.55	3.84	3.88	3.42	3.24
Dec 2000	2.00	2.38	1.73	1.89	1.81	1.56
Jan 2001	1.05	1.10	1.32	2.30	0.93	1.82
Feb 2001	3.89	3.99	3.84	3.78	2.99	3.38
Mar 2001	0.74	0.57	0.85	1.46	0.80	1.08
Apr 2001	3.74	2.04	1.09	1.89	0.31	4.11
May 2001	3.54	2.81	3.83	3.05	2.23	3.36
Jun 2001	4.29	3.32	2.83	3.19	2.48	6.34
Jul 2001	2.59	2.88	3.64	3.44	4.80	2.25
Aug 2001	4.61	4.99	4.79	3.50	2.36	5.84
Sep 2001	2.52	2.26	3.55	2.49	1.08	3.06
Oct 2001	6.85	7.02	6.45	6.53	5.53	6.59
Nov 2001	1.77	2.00	1.91	2.21	1.91	2.34
Dec 2001	1.82	1.84	2.21	2.05	1.55	2.36
Jan 2002	2.43	2.43	2.81	2.67	2.21	2.84
Feb 2002	2.35	3.68	2.95	2.92	2.33	2.27
Mar 2002	2.74	2.57	3.10	2.63	2.86	2.95
Apr 2002	3.44	4.11	4.21	6.07	4.36	6.70
May 2002	4.23	2.89	6.29	5.98	7.56	10.78
Jun 2002	2.83	3.58	2.78	4.72	3.26	3.45
Jul 2002	4.44	2.12	2.73	3.37	2.42	2.29
Aug 2002	7.04	5.29	7.27	5.30	5.71	2.40
Sep 2002	1.15	1.86	1.77	1.60	1.54	1.96
Oct 2002	1.87	2.24	3.17	2.71	2.83	3.25
Nov 2002	0.96	0.94	0.86	0.96	0.93	0.86
Dec 2002	1.50	2.10	1.54	1.50	1.75	2.23
Jan 2003	0.42	0.53	0.79	0.75	0.96	0.67
Feb 2003	1.07	1.00	1.60	1.52	1.57	1.25
Mar 2003	1.38	0.81	2.08	2.44	1.58	2.35
Apr 2003	2.98	3.58	2.20	2.41	2.26	2.36
May 2003	4.30	4.22	3.59	4.73	5.32	5.23
Jun 2003	2.79	3.04	3.04	2.30	3.81	3.06
Jul 2003	6.70	8.73	6.98	7.07	5.12	4.66
Aug 2003	5.66	7.03	6.27	2.87	3.62	4.13
Sep 2003	3.24	4.67	4.07	4.11	5.96	3.54
Oct 2003	1.56	1.59	1.31	1.56	0.86	1.75
Nov 2003	4.05	4.43	4.94	6.20	-	3.76
Dec 2003	1.71	2.62	3.11	1.92	-	2.49
Jan 2004	0.99	1.57	2.18	1.69	-	2.58
Feb 2004	0.51	0.36	0.56	0.55	-	0.48
Mar 2004	6.16	5.43	7.74	4.48	-	4.62
Apr 2004	1.26	1.31	1.88	1.52	-	1.91
May 2004	8.21	5.14	4.38	7.29	-	5.04

**Appendix C. Continued**

<i>Date</i>	<i>Gibson City</i>	<i>Rantoul</i>	<i>Urbana</i>	<i>Clinton</i>	<i>Monticello</i>	<i>Decatur</i>
	<i>(inches)</i>					
Jun 2004	3.84	6.30	3.77	4.56	-	4.00
Jul 2004	3.77	4.47	5.73	4.99	-	3.58
Aug 2004	4.74	6.94	3.59	6.14	-	7.59
Sep 2004	1.00	0.15	2.19	0.23	-	0.14
Oct 2004	3.59	4.42	3.71	6.12	-	5.25
Nov 2004	4.43	3.85	5.16	4.62	-	5.27
Dec 2004	2.13	2.49	2.02	1.90	-	1.80
Jan 2005	6.51	6.80	6.20	6.57	-	7.35
Feb 2005	1.34	2.64	2.00	2.19	-	1.66
Mar 2005	1.31	1.59	1.73	1.84	-	1.61
Apr 2005	3.74	3.19	3.98	1.61	-	2.22
May 2005	1.63	1.99	0.97	1.56	-	1.45
Jun 2005	1.70	2.77	2.42	0.88	-	4.09
Jul 2005	3.91	8.14	4.30	4.60	-	3.22
Aug 2005	2.90	2.45	2.26	4.83	-	2.28
Sep 2005	5.03	4.21	5.66	3.30	-	5.99
Oct 2005	0.92	1.10	1.28	1.53	-	3.31
Nov 2005	3.85	4.25	3.72	4.65	-	3.68
Dec 2005	0.83	1.02	1.86	1.21	-	1.23
Jan 2006	1.99	1.13	1.78	1.98	-	2.05
Feb 2006	0.68	1.00	0.52	0.45	-	0.71
Mar 2006	4.34	2.96	3.46	4.13	-	3.52
Apr 2006	4.65	5.95	4.41	3.86	-	5.68
May 2006	2.36	3.03	3.06	2.60	-	3.87
Jun 2006	3.63	1.70	1.65	4.74	-	1.57
Jul 2006	5.56	8.38	7.85	6.81	-	4.73
Aug 2006	2.70	4.36	3.00	4.59	-	4.03
Sep 2006	5.33	2.44	1.34	3.44	-	2.13
Oct 2006	3.61	3.97	3.78	3.35	-	3.94
Nov 2006	2.40	2.67	2.35	2.96	0.74	3.32
Dec 2006	4.29	3.33	4.68	5.72	4.77	3.75
Jan 2007	2.81	2.82	3.03	3.06	3.07	3.16
Feb 2007	1.09	1.90	2.07	2.44	1.96	2.26
Mar 2007	3.92	3.17	2.23	3.92	2.97	1.40
Apr 2007	4.55	3.29	2.43	4.04	2.45	3.59
May 2007	0.84	1.50	1.63	1.42	1.51	2.00
Jun 2007	3.25	5.35	5.68	5.63	6.50	5.03
Jul 2007	5.74	3.32	3.44	2.07	2.37	1.96
Aug 2007	3.63	1.51	1.48	1.90	1.87	0.64
Sep 2007	1.01	2.64	2.06	0.69	1.45	0.82
Oct 2007	4.27	3.48	3.29	4.76	3.58	3.77
Nov 2007	2.89	4.39	3.65	2.74	2.60	2.90
Dec 2007	4.80	2.60	2.95	3.87	2.66	2.78
Jan 2008	4.40	3.40	2.31	4.13	2.94	2.26
Feb 2008	4.29	5.32	5.96	2.84	5.41	5.57

**Appendix C. Concluded**

<i>Date</i>	<i>Gibson City</i>	<i>Rantoul</i>	<i>Urbana</i>	<i>Clinton</i>	<i>Monticello</i>	<i>Decatur</i>
Mar 2008	1.83	2.37	2.84	2.63	2.50	4.02
Apr 2008	2.72	3.75	3.01	1.52	3.40	2.32
May 2008	*5.70	5.38	6.07	3.44	5.19	6.33
June 2008	*5.42	6.32	6.40	6.19	9.35	8.03
July 2008	*5.02	7.76	7.89	4.10	8.14	8.90
Aug 2008	*1.10	1.06	0.79	0.18	0.65	2.21
Sept 2008	*9.85	9.99	8.15	9.29	10.13	10.86

**Note:** \*Data derived from surrounding area.

**Appendix D. Mean Daily and Monthly Discharge (cfs)  
and Runoff (inches) by Station**



**Appendix D-1. Mean Daily and Monthly Discharge (cfs) and Runoff (inches) for Long Creek (Station 101)**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 1993</b>												
1	-	-	-	-	-	-	-	20	80	29	5	0
2	-	-	-	-	-	-	-	20	70	34	2	3
3	-	-	-	-	-	-	-	20	50	39	1	72
4	-	-	-	-	-	-	-	20	43	15	0	21
5	-	-	-	-	-	-	-	20	57	9	0	8
6	-	-	-	-	-	-	-	20	29	6	0	4
7	-	-	-	-	-	-	-	20	21	5	0	3
8	-	-	-	-	-	-	-	20	16	4	0	2
9	-	-	-	-	-	-	-	20	15	3	0	1
10	-	-	-	-	-	-	-	20	11	3	0	1
11	-	-	-	-	-	-	-	20	10	2	0	0
12	-	-	-	-	-	-	-	20	9	2	1	1
13	-	-	-	-	-	-	-	20	8	8	1	1
14	-	-	-	-	-	-	-	20	7	31	0	64
15	-	-	-	-	-	-	-	20	6	1	0	193
16	-	-	-	-	-	-	-	20	5	0	0	94
17	-	-	-	-	-	-	-	20	4	0	0	57
18	-	-	-	-	-	-	-	20	6	0	0	37
19	-	-	-	-	-	-	-	20	6	0	2	24
20	-	-	-	-	-	-	-	20	6	6	6	17
21	-	-	-	-	-	-	-	20	7	4	1	14
22	-	-	-	-	-	-	-	20	5	6	0	40
23	-	-	-	-	-	-	-	20	4	6	0	376
24	-	-	-	-	-	-	-	70	3	4	2	184
25	-	-	-	-	-	-	-	40	3	3	1	177
26	-	-	-	-	-	-	-	35	2	2	0	240
27	-	-	-	-	-	-	-	30	2	2	0	337
28	-	-	-	-	-	-	-	25	2	1	0	173
29	-	-	-	-	-	-	-	20	2	1	0	117
30	-	-	-	-	-	-	-	20	7	1	0	93
31	-	-	-	-	-	-	-	40		3	0	
<i>Total</i>	-	-	-	-	-	-	-	740	492	228	24	2353
<i>Max</i>	-	-	-	-	-	-	-	70	80	39	6	376
<i>Min</i>	-	-	-	-	-	-	-	20	2	0	0	0
<i>Avg</i>	-	-	-	-	-	-	-	24	16	7	1	78
<i>Runoff</i>	-	-	-	-	-	-	-	1.0	0.4	0.2	0.0	1.9

**Appendix D-1. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 1994</b>												
1	74	24	62	0	48	12	10	202	15	11	0	0
2	54	21	238	0	26	12	10	132	15	10	0	0
3	42	21	184	0	18	14	15	111	16	10	0	0
4	37	20	212	0	15	53	15	93	16	9	0	0
5	28	19	163	0	14	112	14	76	14	8	0	1
6	20	15	114	0	13	99	15	70	14	6	0	0
7	6	13	86	0	14	152	14	296	13	5	0	0
8	1	12	59	0	14	80	17	176	20	5	0	0
9	0	11	9	0	17	0	18	116	49	4	0	0
10	0	10	0	10	12	0	147	86	37	3	0	0
11	0	10	0	8	11	0	606	68	29	3	0	0
12	0	10	0	8	11	0	1595	60	28	2	0	0
13	46	14	0	8	11	0	438	52	64	2	0	0
14	60	289	0	11	10	0	230	50	39	2	0	0
15	50	283	1	10	11	0	244	47	29	2	0	0
16	62	148	11	9	13	0	191	39	22	1	0	0
17	428	288	13	12	14	9	143	35	19	1	0	0
18	194	243	0	12	17	3	123	33	18	1	0	0
19	131	150	0	13	20	0	108	31	16	1	0	0
20	150	111	0	15	31	0	89	29	14	1	0	0
21	324	87	0	15	32	0	84	27	13	1	0	0
22	152	66	5	17	23	0	76	24	12	1	0	0
23	123	56	8	20	27	4	67	22	15	1	0	0
24	114	48	0	48	23	1	62	21	82	1	0	0
25	90	72	0	146	18	0	57	28	36	0	0	0
26	64	276	0	122	19	0	52	27	24	0	0	0
27	53	175	0	148	20	0	106	22	19	0	0	0
28	51	120	0	663	13	0	107	20	16	0	0	0
29	42	92	0	105		8	143	19	14	0	0	0
30	34	69	0	62		11	232	18	12	0	0	0
31	30		0	38		10		17		0	0	
<i>Total</i>	2459	2772	1164	1499	514	579	5027	2046	729	90	0	1
<i>Max</i>	428	289	238	663	48	152	1595	296	82	11	0	1
<i>Min</i>	0	10	0	0	10	0	10	17	12	0	0	0
<i>Avg</i>	79	92	38	48	18	19	168	66	24	3	0	0
<i>Runoff</i>	2.0	2.3	0.9	1.2	0.4	0.5	4.1	1.7	0.6	0.1	0.0	0.0

**Appendix D-1. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 1995</b>												
1	0	2	3	0	15	5	9	12	68	2	0	0
2	0	0	3	0	15	4	9	12	55	2	0	0
3	0	0	3	0	15	4	9	11	44	2	0	0
4	0	3	3	0	14	5	8	10	34	2	0	0
5	0	7	2	0	12	5	7	10	29	1	0	0
6	0	5	2	0	14	5	7	9	27	1	0	0
7	0	2	10	0	13	13	8	9	22	1	0	0
8	0	1	12	0	10	129	8	12	16	1	0	0
9	0	14	11	0	11	102	8	415	14	1	0	0
10	0	10	11	0	11	78	7	208	13	0	0	0
11	0	5	9	3	9	66	7	173	11	0	0	0
12	0	3	5	9	11	52	8	122	10	0	0	0
13	0	2	0	11	9	40	7	134	8	0	0	0
14	0	2	0	11	9	32	6	121	7	0	0	0
15	0	2	0	11	9	26	6	88	5	0	0	0
16	0	2	0	11	8	23	6	116	4	0	0	0
17	0	2	0	13	7	20	11	823	3	0	0	0
18	0	1	0	15	6	18	68	616	3	0	0	0
19	0	1	0	15	6	17	63	549	3	0	0	0
20	0	1	0	15	6	18	45	191	3	0	0	0
21	0	13	0	16	7	15	43	139	3	0	0	0
22	0	12	0	16	6	13	30	110	2	0	0	0
23	0	7	0	16	7	12	25	92	21	0	0	0
24	0	5	0	32	6	11	23	83	51	0	0	0
25	0	4	0	31	5	10	19	83	12	0	0	0
26	0	3	0	25	5	10	16	84	7	0	0	0
27	0	5	0	21	5	12	16	85	6	0	0	0
28	0	7	0	21	5	13	0	85	9	0	0	0
29	0	6	0	18		11	0	85	5	0	0	0
30	0	4	0	16		10	0	86	3	0	0	0
31	1		0	15		10		83		0	0	
<i>Total</i>	3	131	75	336	259	789	473	4654	496	12	0	0
<i>Max</i>	1	14	12	32	15	129	68	823	68	2	0	0
<i>Min</i>	0	0	0	0	5	4	0	9	2	0	0	0
<i>Avg</i>	0	4	2	11	9	25	16	150	17	0	0	0
<i>Runoff</i>	0.0	0.1	0.1	0.3	0.2	0.6	0.4	3.8	0.4	0.0	0.0	0.0

**Appendix D-1. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 1996</b>												
1	0	1	6	8	4	13	112	144	111	14	0	0
2	0	1	6	8	4	11	61	108	433	13	0	0
3	0	2	7	8	4	8	39	104	157	12	0	0
4	0	2	7	8	4	4	22	882	117	11	0	0
5	0	2	8	8	4	30	12	270	93	9	0	0
6	0	2	9	8	4	62	10	159	106	7	0	0
7	0	2	10	8	4	26	8	140	80	7	0	0
8	0	2	10	8	6	38	7	1268	66	7	0	0
9	0	2	10	8	5	38	5	781	83	6	0	0
10	0	2	10	8	3	8	3	710	256	4	0	0
11	0	5	10	8	1	5	3	414	152	3	0	0
12	0	6	10	8	1	4	3	202	162	3	0	0
13	0	5	10	8	0	4	3	163	101	3	0	0
14	0	5	10	8	0	4	2	145	77	2	0	0
15	0	4	11	8	0	3	2	129	60	3	0	0
16	0	4	11	8	0	3	2	113	52	2	0	0
17	0	4	11	24	0	3	1	102	46	2	0	0
18	0	4	12	65	0	2	1	86	43	2	1	0
19	0	4	17	86	0	2	41	74	40	1	0	0
20	0	4	17	28	0	2	13	66	35	1	0	0
21	0	5	16	14	0	2	5	58	32	1	0	0
22	0	4	16	10	0	2	42	50	31	1	0	0
23	0	5	14	8	0	2	93	46	28	1	0	0
24	0	5	13	13	1	2	61	40	27	1	0	0
25	0	5	12	8	1	7	44	38	21	1	0	0
26	0	5	11	4	7	4	26	676	18	1	0	0
27	0	5	10	3	55	3	15	1008	17	0	0	0
28	0	6	8	3	24	3	18	315	16	0	0	0
29	0	6	8	2		3	537	163	15	0	0	0
30	0	6	8	3		3	180	125	14	0	0	0
31	1		8	4		52		107		0	0	
<i>Total</i>	1	107	324	397	134	352	1370	8687	2487	118	1	0
<i>Max</i>	1	6	17	86	55	62	537	1268	433	14	1	0
<i>Min</i>	0	1	6	2	0	2	1	38	14	0	0	0
<i>Avg</i>	0	4	10	13	5	11	46	280	83	4	0	0
<i>Runoff</i>	0.0	0.1	0.3	0.3	0.1	0.3	1.1	7.1	2.0	0.1	0.0	0.0

**Appendix D-1. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 1997</b>												
1	0	1	2	0	4	119	11	5	15	4	0	0
2	0	1	2	0	9	111	10	5	17	4	0	4
3	0	1	1	0	19	98	10	75	18	3	0	1
4	0	1	1	0	165	74	11	92	15	2	0	0
5	0	1	1	1	85	64	12	58	13	2	0	0
6	0	1	1	0	40	54	12	40	13	2	0	0
7	0	3	1	0	23	45	7	28	20	1	0	0
8	0	2	1	0	15	41	5	25	43	1	0	0
9	0	1	1	0	9	47	5	20	75	1	0	0
10	0	0	1	0	8	65	5	15	51	1	0	0
11	0	0	1	0	7	56	6	13	38	0	0	0
12	0	0	1	0	6	42	9	14	34	0	0	0
13	0	0	1	0	5	45	8	14	37	0	0	0
14	0	0	1	0	5	167	6	13	33	0	0	0
15	0	0	1	0	4	97	7	11	22	0	0	0
16	0	0	1	0	4	65	7	9	20	0	0	0
17	0	0	1	0	4	57	7	8	17	0	0	0
18	0	0	1	0	4	52	7	8	15	0	0	0
19	0	0	1	0	4	47	7	8	13	0	0	0
20	0	0	1	0	5	44	7	8	11	0	0	0
21	0	0	1	0	5	41	7	6	11	0	0	0
22	0	0	1	33	5	33	7	5	10	0	0	0
23	1	0	1	63	5	26	7	5	8	0	0	0
24	1	0	1	30	5	23	6	5	7	0	0	0
25	0	1	1	12	20	26	5	6	6	0	0	0
26	0	1	1	3	237	21	5	7	6	0	0	0
27	0	1	1	3	485	19	5	7	5	0	0	0
28	0	1	1	3	171	19	5	7	6	0	0	0
29	0	1	1	3		18	5	7	5	0	0	0
30	1	2	1	3		14	5	7	4	0	0	0
31	1		1	3		13		14		0	0	
<i>Total</i>	4	19	27	162	1355	1644	217	544	588	21	1	5
<i>Max</i>	1	3	2	63	485	167	12	92	75	4	0	4
<i>Min</i>	0	0	1	0	4	13	5	5	4	0	0	0
<i>Avg</i>	0	1	1	5	48	53	7	18	20	1	0	0
<i>Runoff</i>	0.0	0.0	0.0	0.1	1.1	1.3	0.2	0.4	0.5	0.0	0.0	0.0

**Appendix D-1. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 1998</b>												
1	0	0	3	2	10	30	108	201	34	121	12	0
2	0	0	1	1	9	28	102	238	31	90	7	0
3	0	0	1	1	6	26	176	335	25	69	5	0
4	0	0	0	1	5	23	579	443	23	58	4	0
5	0	0	0	5	6	19	192	193	28	47	27	0
6	0	0	0	24	6	17	138	133	24	41	22	0
7	0	0	0	21	5	17	124	120	19	125	12	0
8	0	0	0	156	5	67	311	304	18	122	8	0
9	0	0	0	156	4	161	144	187	186	61	6	0
10	0	0	0	95	4	114	112	135	122	46	6	0
11	0	0	0	65	8	85	92	112	112	36	5	0
12	0	0	0	50	16	66	74	93	380	30	3	0
13	0	0	0	38	13	63	68	78	232	25	2	0
14	0	0	0	35	11	87	66	65	146	20	2	0
15	0	0	0	33	10	76	59	57	454	17	38	0
16	0	0	0	31	12	64	56	51	689	16	20	0
17	0	0	0	28	74	229	45	42	317	14	6	1
18	0	0	0	25	154	489	39	37	162	12	80	4
19	0	0	0	22	109	201	37	34	445	11	30	4
20	0	0	0	20	89	554	34	31	166	8	12	4
21	0	0	0	15	71	456	32	29	133	6	7	3
22	0	0	0	10	60	236	30	29	233	7	5	3
23	0	0	0	8	53	157	27	158	947	8	3	3
24	0	0	1	6	43	128	24	224	231	8	3	3
25	0	0	3	5	36	111	23	127	143	8	2	3
26	0	0	4	5	35	93	22	93	113	6	1	3
27	0	0	3	5	39	78	16	70	92	4	1	3
28	0	1	2	8	34	727	14	59	73	3	1	3
29	0	1	2	12		316	30	51	104	2	1	3
30	0	14	2	11		161	57	44	304	61	1	3
31	0		2	10		125		39		34	1	
<i>Total</i>	0	19	26	904	926	5003	2829	3808	5985	1116	333	42
<i>Max</i>	0	14	4	156	154	727	579	443	947	125	80	4
<i>Min</i>	0	0	0	1	4	17	14	29	18	2	1	0
<i>Avg</i>	0	1	1	29	33	161	94	123	199	36	11	1
<i>Runoff</i>	0.0	0.0	0.0	0.7	0.8	4.1	2.3	3.1	4.9	0.9	0.3	0.0

**Appendix D-1. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 1999</b>												
1	3	56	28	25	163	36	19	59	43	20	6	3
2	3	54	27	25	157	42	19	55	420	20	4	3
3	3	56	27	25	130	79	94	50	141	17	4	3
4	5	68	27	25	107	59	86	47	216	16	4	3
5	6	51	26	25	87	52	49	59	528	15	3	3
6	12	41	26	25	74	47	95	66	136	14	3	3
7	10	35	26	25	319	37	65	68	97	15	4	3
8	11	33	25	25	407	38	53	56	77	13	5	2
9	11	32	25	25	217	43	130	48	65	12	5	2
10	12	72	25	25	151	37	67	45	55	11	5	2
11	13	73	25	25	159	38	56	42	54	11	4	2
12	13	49	25	25	212	51	42	45	49	10	3	2
13	14	40	25	25	124	61	37	155	147	9	403	2
14	16	37	25	25	105	55	35	105	119	8	42	2
15	18	34	26	25	96	47	271	79	71	7	15	2
16	21	30	26	25	86	42	575	66	55	7	10	2
17	24	27	25	25	77	40	524	58	47	8	8	2
18	31	23	25	25	70	33	245	53	41	8	7	2
19	36	21	27	25	64	28	163	47	37	7	7	2
20	38	21	28	20	57	28	130	44	34	6	6	2
21	41	20	29	44	52	28	233	42	46	5	6	2
22	43	19	30	555	49	26	140	42	39	5	6	2
23	44	18	30	916	48	24	107	38	32	5	9	2
24	46	18	29	518	44	24	83	36	37	5	20	2
25	46	20	29	288	40	22	70	34	35	4	16	2
26	47	23	28	208	36	21	65	32	29	4	10	2
27	52	24	28	201	38	21	70	30	28	20	7	2
28	55	24	27	166	41	21	120	28	26	13	6	2
29	60	24	27	133		20	86	27	26	9	6	4
30	67	26	26	117		19	64	26	22	7	5	2
31	63		26	122		19		27		7	4	
<i>Total</i>	864	1066	826	3766	3209	1137	3790	1607	2752	317	643	70
<i>Max</i>	67	73	30	916	407	79	575	155	528	20	403	4
<i>Min</i>	3	18	25	20	36	19	19	26	22	4	3	2
<i>Avg</i>	28	36	27	121	115	37	126	52	92	10	21	2
<i>Runoff</i>	0.7	0.9	0.7	3.1	2.6	0.9	3.1	1.3	2.2	0.3	0.5	0.1

**Appendix D-1. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 2000</b>												
1	2	5	5	6	7	13	9	9	51	19	2	0
2	2	6	5	6	6	12	9	9	42	17	1	0
3	2	6	5	9	6	11	9	9	33	15	1	0
4	3	6	5	11	6	11	9	9	30	13	1	0
5	3	6	10	9	6	11	8	8	30	325	8	0
6	2	6	9	8	6	10	12	8	24	167	9	0
7	2	6	7	8	6	10	8	9	19	86	7	0
8	10	6	7	8	6	10	8	10	18	53	4	0
9	8	7	6	7	6	10	7	13	16	39	3	0
10	7	6	7	7	9	10	7	16	14	31	2	0
11	6	5	6	7	10	10	6	14	14	37	2	0
12	5	5	6	7	9	11	6	16	13	84	1	0
13	5	5	6	7	8	12	6	32	13	41	1	0
14	5	5	7	6	8	12	6	21	13	29	0	0
15	4	5	7	6	8	12	6	14	14	21	0	0
16	4	5	7	6	7	12	6	12	12	16	0	0
17	5	5	7	6	7	11	7	10	11	13	0	0
18	5	7	7	6	46	10	8	10	10	12	0	0
19	5	7	7	6	53	11	8	9	9	11	0	0
20	5	6	7	6	35	22	7	8	15	10	0	0
21	5	6	6	6	26	28	7	8	184	9	0	0
22	5	6	6	6	20	21	7	8	81	8	0	0
23	5	6	6	6	17	17	6	8	48	7	0	0
24	5	7	6	6	15	16	11	8	58	6	0	0
25	5	6	6	6	15	15	14	7	57	5	0	11
26	5	6	6	6	14	14	13	6	63	4	0	12
27	5	6	7	6	15	14	12	95	56	4	0	11
28	5	6	6	6	14	13	11	405	38	3	0	7
29	5	6	7	6	13	12	10	141	30	3	0	4
30	5	5	7	6		10	9	95	24	3	0	4
31	5		6	7		9		68		2	0	
<i>Total</i>	140	173	206	215	404	397	249	1093	1041	1093	49	50
<i>Max</i>	10	7	10	11	53	28	14	405	184	325	9	12
<i>Min</i>	2	5	5	6	6	9	6	6	9	2	0	0
<i>Avg</i>	5	6	7	7	14	13	8	35	35	35	2	2
<i>Runoff</i>	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.9	0.8	0.9	0.0	0.0

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**Appendix D-1. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 2001</b>												
1	3	9	29	23	89	108	24	21	13	10	0	2
2	3	9	25	21	67	95	22	21	14	8	3	1
3	3	9	24	18	50	83	21	19	13	7	0	0
4	4	9	22	17	45	73	19	18	35	8	0	0
5	113	9	15	16	39	61	68	18	93	7	0	0
6	138	11	16	15	41	51	100	18	1633	6	0	0
7	80	30	15	14	55	44	49	18	345	5	0	1
8	54	27	10	13	191	41	37	18	156	4	0	0
9	41	87	10	12	198	37	32	17	114	4	0	5
10	33	197	22	13	114	34	55	15	89	3	0	2
11	26	135	65	13	86	33	885	17	70	3	0	1
12	20	106	58	13	69	31	205	15	56	2	0	0
13	17	111	46	29	107	31	140	14	46	2	0	0
14	17	106	41	91	153	27	109	14	40	1	0	0
15	17	84	37	74	121	27	91	15	36	1	0	0
16	15	75	33	48	90	69	72	15	31	1	0	0
17	14	61	29	35	68	102	59	14	27	1	0	0
18	13	50	28	31	60	80	50	17	26	1	0	1
19	12	46	28	24	51	65	46	16	23	1	0	1
20	12	41	27	22	41	56	44	17	21	1	0	0
21	11	32	27	18	39	49	39	17	22	1	0	0
22	10	29	26	15	35	43	34	16	21	1	0	0
23	10	28	26	16	241	39	32	15	19	0	1	0
24	9	26	25	17	1064	35	29	15	17	0	0	0
25	9	31	25	14	955	31	27	15	16	0	0	0
26	9	63	25	14	228	30	27	14	15	0	0	0
27	9	66	25	15	168	28	26	15	14	0	0	0
28	9	52	25	158	130	27	24	13	13	0	0	1
29	9	46	25	593		27	22	13	12	3	0	2
30	9	37	25	186		27	21	12	11	1	18	3
31	9	32	24	114		25		12		0	16	
<i>Total</i>	737	1652	855	1703	4595	1508	2409	493	3040	84	39	23
<i>Max</i>	138	197	65	593	1064	108	885	21	1633	10	18	5
<i>Min</i>	3	9	10	12	35	25	19	12	11	0	0	0
<i>Avg</i>	24	53	28	55	164	49	80	16	101	3	2	1
<i>Runoff</i>	0.6	1.3	0.7	1.4	3.7	1.2	2.0	0.4	2.5	0.1	0.0	0.0

**Appendix D-1. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 2002</b>												
1	3	24	101	20	463	44	72	125	42	14	0	0
2	3	24	63	19	194	86	61	109	40	13	0	0
3	3	20	47	18	150	161	45	84	37	11	0	0
4	3	18	38	18	116	95	38	66	34	11	0	0
5	5	17	31	18	86	75	34	54	39	10	0	0
6	4	17	27	17	70	87	32	140	36	8	0	0
7	5	17	24	16	58	88	31	995	32	7	0	0
8	5	17	21	15	48	72	71	340	29	6	0	0
9	6	15	18	14	45	221	99	831	27	5	0	0
10	6	15	16	13	44	145	66	241	26	4	0	0
11	3	14	14	12	40	95	56	354	73	3	0	0
12	17	12	15	12	41	81	49	805	214	3	0	0
13	33	11	34	12	32	73	43	1025	152	2	0	0
14	68	11	74	12	29	66	40	391	121	2	0	0
15	30	11	92	11	30	59	37	218	85	1	0	0
16	77	9	79	10	26	58	31	235	65	1	0	0
17	51	7	270	9	22	56	27	230	52	1	0	0
18	30	7	209	9	20	50	25	200	44	1	0	0
19	22	8	132	9	143	41	25	153	38	0	0	0
20	16	6	90	10	496	41	42	132	34	0	0	0
21	13	6	69	10	229	38	509	115	31	0	0	0
22	12	7	62	9	147	33	311	104	29	0	0	0
23	18	6	62	9	115	33	165	91	28	0	0	0
24	49	10	50	9	96	32	307	81	25	0	0	0
25	99	10	41	8	80	94	502	72	24	0	0	0
26	60	6	37	7	69	98	167	63	23	0	0	0
27	40	6	33	7	59	91	530	59	22	2	0	0
28	31	6	30	7	51	182	701	56	19	1	0	0
29	26	14	25	9		190	215	52	17	0	0	0
30	23	117	23	22		121	163	48	16	0	0	0
31	21		21	480		89		45		0	0	
<i>Total</i>	783	468	1850	850	2999	2693	4493	7513	1453	109	4	1
<i>Max</i>	99	117	270	480	496	221	701	1025	214	14	0	0
<i>Min</i>	3	6	14	7	20	32	25	45	16	0	0	0
<i>Avg</i>	25	16	60	27	107	87	150	242	48	4	0	0
<i>Runoff</i>	0.6	0.4	1.5	0.7	2.4	2.2	3.6	6.1	1.2	0.1	0.0	0.0

**Appendix D-1. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 2003</b>												
1	0	2	6	1	1	1	4	6	8	8	0	98
2	0	2	6	1	1	1	3	11	7	7	0	24
3	0	2	6	1	1	1	4	5	8	7	0	4
4	0	2	6	1	1	1	6	12	8	6	0	2
5	0	3	6	1	1	1	9	37	7	4	0	0
6	0	4	6	1	1	1	8	36	9	4	1	0
7	0	3	5	1	1	1	7	44	11	3	1	0
8	0	3	4	1	1	1	7	38	12	3	0	0
9	0	3	4	1	1	1	7	50	12	6	0	0
10	0	3	5	1	1	1	7	47	13	52	0	0
11	0	4	4	1	1	1	5	234	23	28	0	0
12	0	4	4	1	1	1	2	111	357	14	0	0
13	0	4	4	1	1	14	3	76	106	9	0	0
14	0	4	4	1	1	11	1	59	145	7	0	0
15	0	4	4	1	6	8	2	46	72	5	0	0
16	0	5	4	1	3	6	1	38	52	4	0	0
17	0	5	5	1	2	5	6	33	41	3	0	0
18	0	5	10	1	2	4	13	29	36	5	0	0
19	2	6	4	1	1	6	2	24	42	3	0	0
20	0	5	1	1	1	9	5	34	38	2	0	0
21	0	4	1	1	1	3	4	31	30	5	0	0
22	0	5	1	1	1	3	3	23	24	3	0	0
23	0	5	1	1	1	2	3	19	20	2	0	0
24	0	5	1	1	2	1	3	15	16	1	0	0
25	1	5	1	1	2	1	9	13	12	1	0	0
26	2	5	1	1	2	1	5	12	14	1	0	0
27	1	5	1	1	1	1	4	10	12	0	0	0
28	0	5	1	1	1	2	4	9	10	0	0	0
29	2	6	1	1		3	5	13	9	0	0	0
30	2	6	1	1		2	5	10	8	0	0	0
31	2		1	1		3		9		0	2	
<i>Total</i>	13	122	108	21	45	99	146	1132	1161	195	5	130
<i>Max</i>	2	6	10	1	6	14	13	234	357	52	2	98
<i>Min</i>	0	2	1	1	1	1	1	5	7	0	0	0
<i>Avg</i>	0	4	3	1	2	3	5	37	39	6	0	4
<i>Runoff</i>	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.9	0.9	0.2	0.0	0.1

**Appendix D-1. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 2004</b>												
1	0	8	8	62	13	36	128	28	57	6	0	13
2	0	9	8	57	10	34	104	27	43	5	0	8
3	0	9	10	51	8	26	84	20	37	5	0	6
4	0	9	10	560	6	125	68	18	34	5	0	4
5	0	11	16	435	5	369	59	21	33	5	0	4
6	0	12	18	177	5	175	53	18	32	41	0	3
7	0	11	16	114	4	119	49	16	30	72	0	2
8	0	11	14	86	3	90	43	13	26	21	0	2
9	0	10	12	69	3	73	38	13	21	10	0	2
10	0	10	12	58	2	60	35	14	22	87	0	2
11	0	10	11	54	2	55	34	26	45	36	0	1
12	0	11	11	53	2	46	32	26	37	22	0	1
13	0	11	11	48	2	41	30	40	27	12	0	1
14	2	11	11	46	2	40	25	228	19	9	0	1
15	2	11	11	44	4	38	21	179	661	6	0	1
16	1	11	11	40	6	39	21	119	271	5	0	1
17	1	14	10	49	11	38	19	92	98	4	0	1
18	1	61	9	97	30	36	16	81	66	4	0	2
19	1	47	9	72	61	32	16	144	51	3	0	2
20	1	43	9	54	80	32	16	96	41	2	1	2
21	4	26	9	45	64	30	21	71	38	2	0	2
22	4	13	11	42	46	24	27	60	35	2	0	3
23	4	10	108	40	43	24	38	52	29	1	0	3
24	4	10	100	39	44	25	35	44	21	1	0	3
25	4	10	64	38	42	34	38	77	16	0	3	3
26	5	9	48	37	40	217	36	73	13	0	46	3
27	6	9	41	35	38	238	33	64	10	0	14	3
28	6	9	41	34	35	152	30	54	10	0	116	3
29	6	8	132	30	35	182	28	44	8	0	289	3
30	7	8	114	22		198	24	45	7	1	57	3
31	8		76	17		168		83		1	30	
<i>Total</i>	68	443	970	2605	647	2797	1198	1886	1835	371	558	89
<i>Max</i>	8	61	132	560	80	369	128	228	661	87	289	13
<i>Min</i>	0	8	8	17	2	24	16	13	7	0	0	1
<i>Avg</i>	2	15	31	84	22	90	40	61	61	12	18	3
<i>Runoff</i>	0.1	0.4	0.8	2.1	0.5	2.3	1.0	1.5	1.5	0.3	0.5	0.1

**Appendix D-1. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 2005</b>												
1	2	120	542	25	40	40	36	12	9	5	0	0
2	2	279	229	22	38	38	36	10	10	5	0	0
3	2	161	157	123	38	37	34	10	12	4	0	0
4	2	179	128	276	38	37	33	10	14	4	5	0
5	2	140	108	995	48	36	33	9	13	4	2	0
6	2	110	107	735	64	35	32	9	12	4	0	0
7	2	86	865	250	98	36	31	10	12	4	0	0
8	3	68	418	156	173	34	28	9	9	3	0	0
9	3	59	206	127	140	31	25	10	8	3	0	0
10	3	54	155	139	101	31	24	10	8	2	0	0
11	2	51	127	239	81	32	23	9	16	2	0	0
12	4	48	111	557	77	31	29	19	15	3	0	0
13	7	42	93	1298	137	26	41	22	10	3	0	0
14	8	38	75	265	300	22	37	17	226	3	0	0
15	9	37	68	154	153	19	33	14	82	9	0	0
16	9	36	65	112	127	18	30	11	60	6	0	0
17	9	35	59	91	96	19	27	10	47	3	0	0
18	42	33	57	79	76	20	27	9	38	7	0	0
19	104	36	51	68	66	19	26	12	32	5	1	0
20	69	36	49	63	64	18	24	29	24	3	0	3
21	50	33	45	61	66	16	24	21	18	2	0	1
22	40	32	39	59	63	20	27	15	15	1	0	1
23	39	32	39	54	60	40	29	13	13	1	0	3
24	53	218	39	51	57	46	22	11	11	0	0	5
25	43	396	39	53	52	67	20	9	9	0	0	10
26	42	188	39	63	46	70	20	9	8	0	0	29
27	107	415	39	56	43	61	17	8	7	0	0	9
28	94	493	37	49	43	56	15	8	6	0	0	6
29	85	242	33	48		46	14	8	5	0	0	6
30	91	322	29	45		42	14	8	5	0	0	5
31	85		31	41		40		9		0	0	
<i>Total</i>	1017	4022	4079	6357	2386	1084	810	373	757	87	10	77
<i>Max</i>	107	493	865	1298	300	70	41	29	226	9	5	29
<i>Min</i>	2	32	29	22	38	16	14	8	5	0	0	0
<i>Avg</i>	33	134	132	205	85	35	27	12	25	3	0	3
<i>Runoff</i>	0.8	3.3	3.3	5.2	1.9	0.9	0.7	0.3	0.6	0.1	0.0	0.1

**Appendix D-1. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 2006</b>												
1	4	37	23	30	48	12	54	41	582	5	2	2
2	3	30	17	34	41	12	59	48	148	4	1	2
3	4	19	14	35	38	10	111	46	98	4	1	2
4	4	16	13	33	33	9	75	41	74	13	1	1
5	3	13	11	26	31	9	64	38	62	26	1	1
6	2	15	10	21	25	10	759	35	54	6	1	2
7	2	12	11	19	20	10	332	34	46	4	1	2
8	2	10	11	18	18	15	154	32	39	3	3	2
9	2	9	11	15	16	42	110	31	36	3	3	1
10	2	8	11	13	16	97	90	31	33	2	3	1
11	2	7	11	16	16	87	76	41	32	63	3	2
12	4	7	10	15	15	263	66	37	27	181	2	3
13	1	7	10	18	14	186	61	34	19	336	2	3
14	1	7	10	31	14	126	60	31	17	65	2	3
15	3	13	10	32	13	89	55	29	15	41	2	3
16	1	25	10	34	20	77	54	30	14	27	2	3
17	1	15	10	43	23	65	73	27	13	14	2	3
18	1	12	10	45	18	60	63	31	24	9	8	4
19	2	11	10	39	18	54	101	25	62	7	3	4
20	5	9	10	36	18	47	69	20	35	6	2	4
21	11	8	10	37	18	47	62	17	24	5	2	4
22	9	8	10	36	17	41	56	15	15	5	1	5
23	6	7	9	35	16	42	49	14	12	4	1	0
24	5	8	12	35	13	59	43	15	10	4	1	1
25	6	7	13	34	12	61	41	36	9	3	1	1
26	13	6	14	29	10	59	38	32	9	3	1	1
27	7	7	13	23	10	53	36	22	8	3	3	1
28	6	43	21	23	12	58	34	16	7	3	20	1
29	7	41	34	79		49	33	14	6	3	6	1
30	8	29	33	71		46	35	13	5	2	4	2
31	15		32	57		58		218		2	3	
<i>Total</i>	144	446	432	1013	564	1852	2915	1094	1536	858	87	67
<i>Max</i>	15	43	34	79	48	263	759	218	582	336	20	5
<i>Min</i>	1	6	9	13	10	9	33	13	5	2	1	0
<i>Avg</i>	5	15	14	33	20	60	97	35	51	28	3	2
<i>Runoff</i>	0.1	0.4	0.4	0.8	0.5	1.5	2.4	0.9	1.2	0.7	0.1	0.1

**Appendix D-1. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 2007</b>												
1	2	2	188	146	23	284	28	4	0	1	0	0
2	2	3	113	88	22	263	15	4	0	0	0	0
3	2	1	71	71	21	106	26	3	0	0	0	0
4	2	1	61	72	20	74	19	3	0	0	0	0
5	2	1	54	144	19	63	13	4	0	1	0	0
6	3	1	35	101	19	54	10	3	0	1	0	0
7	3	1	27	78	18	38	8	2	0	0	0	0
8	3	2	26	73	17	30	6	2	0	0	0	1
9	3	2	26	63	16	31	5	2	0	0	0	0
10	4	2	20	50	15	38	5	2	0	0	0	0
11	4	3	19	47	15	33	20	2	0	0	0	0
12	5	3	79	43	14	28	41	2	0	0	0	0
13	6	3	74	251	13	26	22	1	0	0	0	0
14	7	3	58	201	12	24	24	1	0	0	0	0
15	7	5	45	585	12	20	42	1	0	0	0	0
16	7	14	31	173	11	14	37	2	0	0	0	0
17	4	12	23	98	11	12	27	1	0	0	0	0
18	2	6	20	82	10	10	21	1	0	0	0	0
19	1	3	17	68	10	13	15	1	0	0	0	0
20	1	2	15	57	9	11	11	1	0	0	0	0
21	1	2	146	51	7	10	9	1	0	0	0	0
22	1	1	230	44	23	10	8	1	0	0	0	0
23	1	1	157	36	57	13	8	1	6	0	0	0
24	2	1	101	29	85	22	6	1	7	0	0	0
25	2	1	82	21	701	20	8	1	2	0	0	0
26	2	1	69	19	214	17	10	1	1	0	0	0
27	1	1	56	34	109	13	10	1	0	0	0	0
28	4	1	48	30	93	9	7	1	1	0	0	0
29	4	1	40	27		8	5	1	2	0	0	0
30	3	19	33	24		7	5	0	1	0	0	0
31	3		121	23		31		0		0	0	
<i>Total</i>	96	98	2085	2834	1596	1332	470	50	24	4	0	1
<i>Max</i>	7	19	230	585	701	284	42	4	7	1	0	1
<i>Min</i>	1	1	15	19	7	7	5	0	0	0	0	0
<i>Avg</i>	3	3	67	91	57	43	16	2	1	0	0	0
<i>Runoff</i>	0.1	0.1	1.7	2.3	1.3	1.1	0.4	0.0	0.0	0.0	0.0	0.0

**Appendix D-1. Concluded**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Long Creek (101), Water Year 2008</b>												
1	0	0	0	19	18	76	231	29	55	38	26	1
2	0	0	1	18	18	64	104	29	53	38	19	1
3	0	0	1	17	18	145	79	26	1446	106	14	2
4	0	0	1	17	45	134	67	20	1221	72	12	105
5	0	0	1	17	967	79	60	17	209	56	13	318
6	0	0	0	17	1088	70	54	17	127	43	22	74
7	0	0	0	14	174	76	47	17	1771	209	13	49
8	0	0	0	199	97	64	41	25	465	137	9	37
9	0	0	2	183	72	55	39	27	151	186	9	34
10	0	0	4	118	64	51	86	19	112	84	8	24
11	0	0	6	99	59	52	216	95	88	73	7	16
12	0	1	15	77	53	58	101	93	75	683	6	111
13	0	2	40	65	49	58	74	64	66	199	5	118
14	0	2	33	59	45	60	64	54	63	105	4	1295
15	0	2	27	49	42	58	59	52	61	78	4	1923
16	0	2	26	41	39	46	53	96	59	64	2	192
17	0	2	24	38	198	49	45	68	54	55	2	115
18	0	3	20	36	126	121	41	56	49	45	1	83
19	0	3	15	33	72	301	39	43	69	40	0	71
20	0	3	13	33	61	143	36	40	75	37	0	66
21	0	8	25	33	51	97	34	36	67	36	1	64
22	0	4	60	33	42	73	33	34	65	137	5	63
23	0	1	59	33	39	62	32	32	63	65	6	61
24	0	1	42	33	37	57	31	30	60	47	5	59
25	0	1	36	33	36	52	34	27	61	39	4	56
26	0	1	33	33	40	44	50	29	59	35	3	51
27	0	1	31	32	38	44	36	25	57	32	2	46
28	0	0	26	30	35	78	34	19	57	81	2	42
29	0	0	26	22	49	65	32	18	47	47	2	40
30	0	0	24	18		60	29	24	41	37	2	37
31	0		23	18		93		72		33	1	
<i>Total</i>	1	39	614	1469	3670	2484	1882	1232	6843	2937	208	5151
<i>Max</i>	0	8	60	199	1088	301	231	96	1771	683	26	1923
<i>Min</i>	0	0	0	14	18	44	29	17	41	32	0	1
<i>Avg</i>	0	1	20	47	127	80	63	40	228	95	7	172
<i>Runoff</i>	0.0	0.0	0.5	1.2	3.0	2.0	1.5	1.0	5.6	2.4	0.2	4.2



**Appendix D-2. Mean Daily and Monthly Discharge (cfs) and Runoff (inches) for Friends Creek (Station 102)**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 1993</b>												
1	-	-	-	-	-	-	-	465	51	256	149	13
2	-	-	-	-	-	-	-	408	52	699	90	14
3	-	-	-	-	-	-	-	358	52	560	65	204
4	-	-	-	-	-	-	-	312	92	351	52	283
5	-	-	-	-	-	-	-	318	366	236	37	144
6	-	-	-	-	-	-	-	281	265	161	32	103
7	-	-	-	-	-	-	-	202	176	129	27	83
8	-	-	-	-	-	-	-	143	138	155	22	63
9	-	-	-	-	-	-	-	120	118	126	18	52
10	-	-	-	-	-	-	-	111	103	103	17	50
11	-	-	-	-	-	-	-	106	90	116	17	50
12	-	-	-	-	-	-	-	102	82	198	39	75
13	-	-	-	-	-	-	-	97	76	126	105	75
14	-	-	-	-	-	-	-	87	71	361	75	100
15	-	-	-	-	-	-	-	84	65	229	60	500
16	-	-	-	-	-	-	-	75	60	182	40	250
17	-	-	-	-	-	-	-	70	58	268	28	150
18	-	-	-	-	-	-	-	69	57	411	23	100
19	-	-	-	-	-	-	-	66	55	250	20	75
20	-	-	-	-	-	-	-	62	56	175	191	75
21	-	-	-	-	-	-	-	60	59	125	206	75
22	-	-	-	-	-	-	-	57	54	109	119	75
23	-	-	-	-	-	-	-	61	50	103	87	100
24	-	-	-	-	-	-	-	60	44	173	76	140
25	-	-	-	-	-	-	-	53	41	586	70	150
26	-	-	-	-	-	-	-	50	35	440	48	200
27	-	-	-	-	-	-	-	48	32	264	30	500
28	-	-	-	-	-	-	-	48	33	164	24	400
29	-	-	-	-	-	-	-	43	32	119	20	260
30	-	-	-	-	-	-	-	42	49	94	17	257
31	-	-	-	-	-	-	-	51		98	14	
<i>Total</i>	-	-	-	-	-	-	-	4111	2512	7366	1816	4616
<i>Max</i>	-	-	-	-	-	-	-	465	366	699	206	500
<i>Min</i>	-	-	-	-	-	-	-	42	32	94	14	13
<i>Avg</i>	-	-	-	-	-	-	-	133	84	238	59	154
<i>Runoff</i>	-	-	-	-	-	-	-	1.4	0.8	2.5	0.6	1.5

**Appendix D-2. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 1994</b>												
1	200	93	148	57	64	20	35	603	48	16	2	1
2	144	86	432	57	50	17	34	412	42	17	2	1
3	117	84	564	55	32	16	35	324	37	20	2	1
4	106	83	509	53	25	34	37	260	32	17	2	1
5	86	80	444	50	26	255	37	206	30	15	2	1
6	73	68	340	46	23	315	38	165	35	15	2	1
7	68	62	258	39	23	396	38	471	35	16	2	1
8	64	60	201	42	17	463	52	583	36	24	2	1
9	322	57	168	37	21	341	71	386	62	23	1	1
10	538	56	154	26	16	239	173	301	61	18	1	1
11	374	55	124	18	15	170	943	218	54	15	1	1
12	277	55	115	18	14	138	3544	187	56	14	1	1
13	192	57	110	18	14	123	2194	153	142	14	1	1
14	146	264	111	16	13	112	1050	135	135	13	1	1
15	123	499	144	22	16	103	682	127	111	12	1	1
16	245	357	134	14	22	87	543	115	101	10	1	1
17	655	438	121	15	31	73	417	106	89	8	1	1
18	665	594	116	16	50	75	353	101	79	6	1	1
19	423	438	112	16	63	72	293	93	71	5	1	1
20	381	341	107	17	103	66	204	85	58	5	1	1
21	568	265	103	15	131	62	159	79	35	5	1	1
22	444	189	96	15	104	57	133	69	32	5	1	1
23	346	156	86	15	78	53	115	65	27	3	1	1
24	293	137	79	15	52	51	106	62	27	3	1	1
25	233	134	78	50	32	43	95	62	26	2	1	1
26	189	368	68	150	17	37	89	64	24	2	1	1
27	157	409	64	200	23	42	531	63	22	2	1	1
28	143	311	58	400	22	48	554	59	21	2	1	1
29	128	223	58	192		47	655	56	19	2	1	1
30	112	168	46	102		41	511	54	17	2	1	1
31	104		55	59		37		52		2	1	
<i>Total</i>	7919	6187	5201	1842	1096	3631	13720	5718	1564	313	29	18
<i>Max</i>	665	594	564	400	131	463	3544	603	142	24	2	1
<i>Min</i>	64	55	46	14	13	16	34	52	17	2	1	1
<i>Avg</i>	255	206	168	59	39	117	457	184	52	10	1	1
<i>Runoff</i>	2.7	2.1	1.7	0.6	0.4	1.2	4.6	1.9	0.5	0.1	0.0	0.0

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**Appendix D-2. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 1995</b>												
1	1	2	7	12	41	5	51	70	242	54	2	1
2	1	2	5	7	42	4	49	69	202	41	1	1
3	1	2	4	10	35	4	45	65	177	35	1	1
4	1	2	4	10	31	5	40	62	157	35	1	1
5	1	2	3	10	22	5	38	60	136	38	1	1
6	1	9	3	10	24	5	42	57	130	37	1	1
7	1	15	23	10	24	321	45	56	124	32	6	1
8	1	13	92	10	24	744	42	56	105	22	29	1
9	1	10	71	10	24	637	42	350	99	21	34	1
10	1	10	58	10	24	401	40	517	201	20	52	1
11	1	12	41	10	24	281	37	457	207	19	18	1
12	1	8	24	10	24	212	42	367	137	19	12	1
13	1	5	20	22	24	158	53	312	120	18	11	0
14	1	3	17	405	24	127	54	627	99	17	5	0
15	1	3	14	510	24	113	54	404	89	14	3	0
16	1	4	13	363	21	107	54	394	82	12	2	0
17	1	3	52	244	17	98	54	2964	76	12	3	0
18	1	3	60	159	17	90	134	2235	72	11	4	0
19	1	2	41	215	16	83	271	1869	68	10	4	0
20	2	2	27	386	10	79	171	1046	66	6	2	0
21	2	2	25	248	10	74	150	738	62	6	2	0
22	2	7	24	135	9	65	126	530	60	6	1	0
23	2	4	21	96	9	61	110	405	67	6	1	0
24	2	3	19	78	8	55	100	793	204	5	1	0
25	3	3	17	70	6	51	88	1224	116	5	1	0
26	3	2	16	61	6	51	77	691	101	5	1	0
27	3	2	15	59	6	52	73	511	77	5	1	0
28	3	14	15	58	6	55	74	657	65	4	1	0
29	3	16	13	46		56	70	555	67	3	1	0
30	3	11	12	38		54	70	387	65	2	1	0
31	2		11	37		52		311		2	1	
<i>Total</i>	49	176	766	3353	551	4104	2296	18838	3474	523	202	15
<i>Max</i>	3	16	92	510	42	744	271	2964	242	54	52	1
<i>Min</i>	1	2	3	7	6	4	37	56	60	2	1	0
<i>Avg</i>	2	6	25	108	20	132	77	608	116	17	7	0
<i>Runoff</i>	0.0	0.0	0.0	0.2	0.1	0.2	0.7	4.4	2.2	0.1	0.0	0.0

**Appendix D-2. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 1996</b>												
1	0	0	1	5	6	11	124	165	229	13	0	0
2	0	0	1	5	6	11	110	119	1006	11	0	0
3	0	0	1	5	6	28	79	103	694	10	0	0
4	0	1	1	5	6	28	63	241	432	7	0	0
5	0	1	1	5	6	24	46	250	305	5	0	0
6	0	1	1	5	6	26	34	158	237	4	0	0
7	0	1	1	5	6	21	30	130	192	5	0	0
8	0	1	1	5	6	23	27	374	160	8	0	0
9	0	4	1	5	6	23	24	1113	147	13	0	0
10	0	4	1	5	6	23	21	1120	680	18	0	0
11	0	4	1	5	6	23	20	1551	488	15	0	0
12	0	4	1	5	6	14	20	839	328	14	0	0
13	0	4	1	5	5	13	20	535	238	14	0	0
14	0	4	1	5	5	12	17	392	179	13	0	0
15	0	4	1	5	5	12	17	318	147	13	0	0
16	0	4	1	5	5	11	17	249	127	12	0	0
17	0	4	1	5	5	11	15	199	114	11	0	0
18	0	4	1	30	5	10	14	165	106	8	0	0
19	0	4	2	138	5	9	16	140	97	7	0	0
20	0	4	5	125	4	9	65	122	85	5	0	0
21	0	4	5	64	4	8	46	111	76	13	0	0
22	0	3	5	11	4	8	80	100	70	38	0	0
23	0	2	5	8	4	8	156	89	66	30	0	0
24	0	2	5	7	3	8	117	84	64	21	0	0
25	0	2	5	7	2	10	103	284	57	17	0	0
26	0	2	5	7	2	9	85	368	34	18	0	0
27	0	2	5	7	6	10	63	1411	23	15	0	0
28	0	1	5	6	13	11	54	1078	19	11	0	0
29	0	1	5	6	11	12	233	549	16	9	0	0
30	0	1	5	6		12	296	370	14	7	0	0
31	0		5	6		19		261		5	0	
<i>Total</i>	12	69	77	504	161	457	2009	12988	6431	391	2	0
<i>Max</i>	0	4	5	138	13	28	296	1551	1006	38	0	0
<i>Min</i>	0	0	1	5	2	8	14	84	14	4	0	0
<i>Avg</i>	0	2	2	16	6	15	67	419	214	13	0	0
<i>Runoff</i>	0.0	0.0	0.0	0.2	0.1	0.2	0.7	4.4	2.2	0.1	0.0	0.0

**Appendix D-2. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 1997</b>												
1	0	0	5	5	29	545	56	31	79	180	0	0
2	0	0	5	5	65	417	55	20	80	152	0	0
3	0	0	6	6	119	331	54	365	88	112	0	0
4	0	0	6	7	182	241	55	319	87	88	0	0
5	0	3	5	9	208	165	57	176	79	71	0	0
6	0	5	6	10	101	138	60	128	76	62	0	0
7	0	5	6	9	65	118	51	106	170	52	0	0
8	0	6	6	12	44	109	38	100	157	43	0	0
9	0	11	5	12	27	207	34	83	325	34	0	117
10	0	13	6	12	23	557	33	71	201	27	0	83
11	0	13	6	12	20	369	36	67	146	23	0	44
12	0	13	6	12	17	239	47	67	135	21	0	20
13	0	13	5	12	18	181	45	62	505	16	0	13
14	0	14	5	12	14	353	31	59	451	15	0	11
15	0	15	5	12	14	284	28	53	270	14	0	9
16	0	16	5	12	18	177	29	41	182	12	0	6
17	0	16	5	12	23	150	29	39	140	10	0	4
18	0	17	4	12	30	135	29	41	118	7	34	2
19	0	17	5	12	48	121	32	46	110	6	9	1
20	0	18	5	12	137	117	32	55	101	4	2	1
21	0	18	5	15	669	112	29	45	92	3	0	7
22	0	18	5	67	708	102	28	34	82	6	0	13
23	0	18	7	136	465	86	26	32	73	6	0	13
24	0	16	25	157	310	78	25	32	67	4	0	13
25	0	9	20	116	208	80	23	56	69	0	0	13
26	0	6	11	76	280	73	20	331	66	0	0	12
27	0	5	5	52	1207	68	20	266	62	0	0	11
28	0	5	5	36	845	69	23	136	58	0	0	11
29	0	5	5	24		71	24	104	56	0	0	10
30	0	5	5	22		65	30	87	58	0	0	9
31	0		5	22		60		83		0	0	
<i>Total</i>	0	299	203	930	5895	5820	1081	3135	4182	969	45	426
<i>Max</i>	0	18	25	157	1207	557	60	365	505	180	34	117
<i>Min</i>	0	0	4	5	14	60	20	20	56	0	0	0
<i>Avg</i>	0	10	7	30	211	188	36	101	139	31	1	14
<i>Runoff</i>	0.0	0.1	0.1	0.3	2.0	2.0	0.4	1.1	1.4	0.3	0.0	0.1

**Appendix D-2. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 1998</b>												
1	8	14	243	64	74	102	287	562	115	116	15	0
2	8	15	198	63	73	97	202	580	108	106	16	0
3	7	17	166	62	66	92	163	787	102	96	18	0
4	6	19	140	60	64	87	173	1115	94	88	21	0
5	6	20	114	59	64	80	174	595	89	79	22	0
6	6	21	97	106	63	75	157	406	84	72	22	0
7	6	20	80	271	60	74	145	539	77	111	23	0
8	5	21	68	415	58	88	140	821	72	144	22	0
9	4	21	71	478	56	267	131	647	129	100	16	0
10	3	21	75	341	55	206	120	396	335	85	12	0
11	3	21	80	217	58	160	111	305	252	79	10	0
12	3	21	89	162	150	135	106	234	596	73	7	0
13	4	21	90	132	122	128	104	215	467	68	6	0
14	5	21	90	115	97	133	146	199	362	63	5	0
15	7	21	84	113	87	135	163	170	1312	58	4	0
16	8	21	78	105	84	132	127	152	897	55	4	0
17	7	19	73	98	118	284	114	136	610	51	4	0
18	5	19	68	86	234	720	104	125	375	43	6	0
19	6	18	65	77	203	624	99	118	492	36	9	0
20	6	18	61	73	181	615	94	113	430	30	10	0
21	6	18	57	72	161	909	89	108	295	27	8	0
22	6	18	57	69	144	705	85	104	302	24	7	0
23	6	18	58	66	128	476	80	295	776	22	5	0
24	7	17	58	64	118	351	77	716	493	21	3	0
25	8	16	60	60	111	267	75	368	303	19	1	0
26	7	15	61	59	108	204	73	237	202	18	0	0
27	9	16	61	58	108	167	70	198	155	17	0	0
28	12	16	62	61	106	500	65	174	133	16	0	0
29	13	94	72	72		613	64	151	119	15	0	0
30	13	245	82	77		361	253	135	118	14	0	0
31	12		69	75		252		125		14	0	
<i>Total</i>	212	863	2729	3829	2952	9041	3790	10825	9895	1757	275	0
<i>Max</i>	13	245	243	478	234	909	287	1115	1312	144	23	0
<i>Min</i>	3	14	57	58	55	74	64	104	72	14	0	0
<i>Avg</i>	7	29	88	124	105	292	126	349	330	57	9	0
<i>Runoff</i>	0.1	0.3	0.9	1.3	1.0	3.0	1.3	3.6	3.3	0.6	0.1	0.0

**Appendix D-2. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 1999</b>												
1	0	0	3	3	123	51	48	132	63	118	3	0
2	0	0	3	3	132	48	48	122	102	111	1	0
3	0	1	3	3	131	80	54	115	127	103	1	0
4	0	1	3	3	117	101	103	109	171	93	1	0
5	0	1	3	3	98	90	98	107	470	80	1	0
6	0	1	3	3	93	92	256	103	246	69	1	0
7	1	1	3	3	338	92	175	110	162	62	1	0
8	1	1	3	3	511	88	140	107	129	55	1	0
9	0	1	3	3	376	92	299	99	113	50	1	0
10	0	2	3	3	271	83	269	89	104	47	1	0
11	0	2	3	3	200	70	191	77	137	41	1	0
12	0	2	3	3	160	67	146	81	316	37	1	0
13	0	3	3	3	131	80	125	222	491	34	141	0
14	0	4	3	3	114	93	117	278	754	32	94	0
15	0	5	3	3	108	102	250	201	492	29	49	0
16	0	5	3	3	103	111	773	159	286	25	31	0
17	0	5	3	3	97	114	806	125	206	21	19	0
18	0	5	3	3	90	100	550	105	164	20	12	0
19	0	5	3	4	83	80	382	99	141	17	8	0
20	0	5	3	5	74	74	291	94	126	14	6	0
21	0	4	4	5	67	73	314	87	116	13	4	0
22	0	4	3	19	62	68	308	79	108	11	4	0
23	0	4	3	205	61	63	210	72	102	8	4	0
24	0	4	3	403	61	60	158	67	273	6	6	0
25	0	3	3	258	59	56	138	64	826	5	18	0
26	0	3	3	166	57	53	128	62	383	4	11	0
27	0	3	3	164	55	52	121	60	236	6	7	0
28	0	3	2	150	53	52	233	58	187	6	5	0
29	0	3	2	115		51	211	56	150	5	4	0
30	0	3	2	103		44	153	54	129	5	2	0
31	0		3	95		43		52		4	2	
<i>Total</i>	4	86	99	1747	3825	2323	7096	3245	7309	1133	436	0
<i>Max</i>	1	5	4	403	511	114	806	278	826	118	141	0
<i>Min</i>	0	0	2	3	53	43	48	52	63	4	1	0
<i>Avg</i>	0	3	3	56	137	75	237	105	244	37	14	0
<i>Runoff</i>	0.0	0.0	0.0	0.6	1.3	0.8	2.4	1.1	2.4	0.4	0.1	0.0

**Appendix D-2. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 2000</b>												
1	0	8	12	16	28	46	45	102	123	135	13	1
2	0	8	13	15	28	42	47	100	112	123	10	1
3	0	7	14	15	28	38	48	98	102	113	8	0
4	0	7	14	20	28	38	46	96	93	103	6	0
5	0	7	16	20	29	38	43	95	150	337	12	0
6	0	8	18	19	29	36	43	94	159	331	13	0
7	1	7	21	18	29	34	43	92	129	200	9	0
8	2	7	21	19	29	34	42	91	116	153	6	0
9	2	7	18	23	29	34	37	90	107	134	5	0
10	2	7	17	24	29	33	36	89	98	120	4	23
11	7	7	16	24	30	30	37	88	90	466	2	6
12	8	7	18	22	34	29	39	88	90	267	2	4
13	8	7	19	20	41	29	39	262	386	171	1	4
14	8	7	18	18	39	30	40	221	357	144	1	2
15	8	6	18	18	35	30	41	153	328	123	1	1
16	8	6	19	18	34	29	41	127	207	108	1	1
17	11	6	21	17	32	26	49	113	156	94	2	1
18	13	5	21	17	95	23	86	105	129	83	4	1
19	12	5	21	19	205	31	88	99	113	76	3	1
20	12	5	18	23	134	71	85	93	110	71	3	1
21	11	5	16	26	112	117	117	89	601	63	3	1
22	10	5	19	27	97	106	124	85	608	51	5	1
23	10	6	17	27	80	94	114	82	329	42	6	1
24	9	7	17	27	68	87	118	79	332	36	5	1
25	9	7	17	28	59	79	148	77	409	32	4	7
26	8	6	17	28	54	68	131	76	337	27	5	11
27	8	6	17	28	53	67	118	157	275	23	5	8
28	8	6	17	28	47	65	110	365	207	19	3	6
29	8	5	16	28	45	56	103	253	172	15	2	5
30	8	4	16	28		49	94	175	150	14	1	4
31	8		15	28		46		142		13	1	
<i>Total</i>	200	189	532	685	1578	1534	2153	3875	6573	3686	148	92
<i>Max</i>	13	8	21	28	205	117	148	365	608	466	13	23
<i>Min</i>	0	4	12	15	28	23	36	76	90	13	1	0
<i>Avg</i>	6	6	17	22	54	49	72	125	219	119	5	3
<i>Runoff</i>	0.1	0.1	0.2	0.2	0.5	0.5	0.7	1.3	2.2	1.2	0.0	0.0



**Appendix D-2. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 2001</b>												
1	4	16	30	62	369	333	81	30	25	15	1	0
2	4	15	29	62	256	264	76	31	27	12	3	0
3	3	9	26	62	211	223	75	28	28	13	4	0
4	3	9	28	62	155	193	71	26	45	16	2	0
5	39	9	27	62	142	168	71	29	96	13	1	0
6	68	13	27	62	126	152	76	29	254	10	1	0
7	48	37	30	62	130	139	75	28	291	8	0	1
8	34	37	30	62	147	131	73	26	181	7	0	0
9	25	64	23	62	408	121	70	24	136	7	0	1
10	22	125	25	62	449	115	71	24	116	7	0	1
11	19	100	50	62	262	111	74	31	103	5	0	0
12	16	84	104	62	200	106	74	30	92	3	0	0
13	14	90	104	62	166	105	64	24	83	3	0	0
14	12	91	86	62	248	93	61	25	76	2	0	0
15	47	81	73	111	384	94	69	28	71	2	0	0
16	46	75	72	113	283	136	64	29	65	1	0	0
17	36	64	46	90	210	191	56	27	56	1	0	0
18	29	52	36	80	169	176	51	33	51	5	1	1
19	26	48	35	73	156	159	56	40	46	3	0	1
20	27	43	35	58	141	146	62	37	40	2	0	1
21	27	32	34	90	125	135	59	39	57	1	0	1
22	25	30	34	80	122	125	51	35	56	1	0	1
23	23	29	33	41	114	118	50	29	46	1	2	1
24	23	29	33	40	403	110	50	29	36	1	1	1
25	25	36	32	49	2011	102	43	26	31	1	0	1
26	26	46	32	35	838	97	44	28	27	0	0	1
27	21	41	31	32	620	92	45	31	24	0	0	1
28	17	37	29	28	443	90	41	25	22	1	0	0
29	17	36	28	198		91	37	22	20	2	0	0
30	17	32	27	819		86	39	20	18	3	0	0
31	15		26	690		84		21		1	0	
<i>Total</i>	756	1409	1255	3498	9289	4287	1828	883	2218	146	21	15
<i>Max</i>	68	125	104	819	2011	333	81	40	291	16	4	1
<i>Min</i>	3	9	23	28	114	84	37	20	18	0	0	0
<i>Avg</i>	24	47	40	113	332	138	61	28	74	5	1	0
<i>Runoff</i>	0.3	0.5	0.4	1.2	3.1	1.4	0.6	0.3	0.7	0.0	0.0	0.0

**Appendix D-2. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 2002</b>												
1	0	52	217	62	965	109	161	319	171	69	0	7
2	0	46	140	49	576	177	145	264	144	65	0	5
3	0	38	109	49	392	393	118	209	125	60	0	3
4	0	34	93	52	295	272	103	172	111	54	0	2
5	1	32	81	49	220	201	98	150	188	47	0	1
6	1	30	74	49	178	205	94	169	255	39	0	1
7	1	29	69	41	153	216	93	389	183	34	0	1
8	1	27	64	42	135	187	118	418	148	30	0	0
9	1	23	53	42	127	282	181	825	128	27	0	0
10	1	23	48	38	120	316	145	644	118	23	0	0
11	2	22	43	31	113	235	133	545	403	19	0	0
12	3	19	43	31	107	186	123	1716	1451	16	0	0
13	36	18	55	33	100	159	110	1644	834	13	0	0
14	97	19	82	33	95	144	106	993	671	11	0	0
15	76	18	162	27	95	132	103	629	431	9	0	0
16	119	17	160	23	88	114	95	482	315	7	1	0
17	112	15	357	23	79	110	90	517	251	6	0	0
18	81	14	388	22	73	104	87	488	204	5	0	0
19	68	16	274	22	227	98	88	373	174	4	1	0
20	52	14	192	22	895	97	86	298	149	3	0	0
21	40	15	148	25	744	89	203	249	130	3	0	0
22	33	15	133	22	432	82	325	210	119	2	0	0
23	33	14	128	23	318	86	219	185	112	2	149	0
24	89	17	112	23	264	85	178	163	105	2	412	0
25	243	18	99	19	217	88	204	147	101	1	194	0
26	144	13	94	19	178	83	164	130	95	1	114	0
27	97	13	90	19	150	92	422	120	89	4	78	0
28	79	12	84	20	126	214	1066	118	81	1	54	0
29	70	17	74	21		314	750	476	76	1	33	0
30	61	182	70	41		256	443	298	72	1	19	0
31	54		71	616		193		219		0	11	
<i>Total</i>	1593	822	3806	1587	7464	5321	6252	13560	7435	559	1068	24
<i>Max</i>	243	182	388	616	965	393	1066	1716	1451	69	412	7
<i>Min</i>	0	12	43	19	73	82	86	118	72	0	0	0
<i>Avg</i>	51	27	123	51	267	172	208	437	248	18	34	1
<i>Runoff</i>	0.5	0.3	1.3	0.5	2.5	1.8	2.1	4.5	2.5	0.2	0.4	0.0

**Appendix D-2. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 2003</b>												
1	0	0	2	24	11	15	45	29	110	34	2	241
2	0	0	2	18	13	14	41	29	85	32	2	125
3	0	0	2	16	14	13	36	25	78	29	1	66
4	0	0	2	15	15	13	36	30	69	26	1	28
5	0	1	2	15	14	13	62	232	58	22	1	13
6	0	1	2	11	12	12	67	189	53	18	1	8
7	0	1	2	9	10	12	90	131	56	16	0	5
8	0	1	2	8	9	13	124	105	52	13	0	3
9	0	1	2	10	8	14	102	157	45	14	0	2
10	0	2	2	10	6	15	88	292	41	207	0	2
11	0	3	2	9	6	17	79	359	66	174	0	1
12	0	3	2	8	5	26	73	221	629	104	0	1
13	0	4	2	7	5	54	63	156	726	75	0	1
14	0	4	2	7	4	86	57	132	622	54	0	1
15	0	4	2	7	4	76	56	156	355	40	0	1
16	0	3	3	7	4	67	56	149	243	29	0	1
17	0	3	3	7	3	57	55	126	181	22	0	1
18	0	3	6	7	3	48	44	112	148	19	0	1
19	1	3	15	7	4	47	38	103	127	17	0	1
20	0	3	21	7	5	117	40	107	110	13	0	1
21	0	3	15	7	7	151	44	95	99	19	0	0
22	0	3	11	7	9	126	42	88	90	25	0	0
23	0	3	8	6	11	101	33	82	82	17	0	0
24	0	3	8	6	14	87	33	77	75	11	0	0
25	0	4	8	5	17	78	41	74	69	8	0	0
26	0	3	8	5	17	71	38	68	66	6	0	1
27	0	3	8	4	16	66	30	63	58	5	0	1
28	0	3	8	4	15	66	28	60	52	5	0	0
29	1	3	8	5		57	29	70	45	4	1	1
30	1	3	7	7		42	27	63	39	3	0	1
31	0		28	10		40		124		2	6	
<i>Total</i>	9	72	199	274	262	1611	1598	3706	4529	1063	17	507
<i>Max</i>	1	4	28	24	17	151	124	359	726	207	6	241
<i>Min</i>	0	0	2	4	3	12	27	25	39	2	0	0
<i>Avg</i>	0	2	6	9	9	52	53	120	151	34	1	17
<i>Runoff</i>	0.0	0.0	0.1	0.1	0.1	0.5	0.5	1.2	1.5	0.4	0.0	0.2

**Appendix D-2. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 2004</b>												
1	1	2	91	107	38	50	459	53	236	67	6	207
2	1	2	81	105	36	47	354	50	167	63	4	152
3	1	2	78	100	32	33	285	50	131	59	3	118
4	1	2	77	260	29	59	231	46	113	57	3	95
5	1	2	76	404	28	397	187	49	105	48	3	79
6	1	2	70	260	28	333	166	47	98	40	3	69
7	1	3	68	188	27	228	150	43	89	35	2	55
8	1	3	69	157	27	166	135	39	83	31	2	41
9	1	3	69	131	26	138	115	39	78	33	2	32
10	1	3	71	111	25	113	106	39	84	153	5	26
11	1	3	65	107	25	105	100	40	417	151	2	22
12	1	4	56	100	24	92	92	42	451	106	2	20
13	1	3	54	88	23	83	89	45	267	83	1	17
14	2	3	55	85	22	81	84	220	187	106	1	15
15	1	3	54	82	22	75	82	480	395	106	1	14
16	2	3	54	76	21	76	84	314	1216	78	1	14
17	2	3	43	74	20	75	82	232	980	63	2	12
18	2	188	40	72	20	72	77	199	531	47	2	11
19	1	665	37	70	55	64	74	530	333	35	2	10
20	1	363	36	67	170	64	69	463	253	27	4	8
21	1	244	35	66	148	57	75	295	201	22	4	8
22	1	184	41	64	112	50	68	229	164	24	3	7
23	1	162	227	62	89	57	66	177	135	19	3	7
24	1	332	272	61	68	60	59	147	118	13	3	7
25	2	271	181	59	62	63	65	533	106	11	213	7
26	2	200	138	58	57	686	65	614	102	8	1200	6
27	2	163	119	56	51	1291	58	347	91	8	593	6
28	2	136	112	54	44	827	57	250	83	7	445	6
29	2	117	120	49	44	655	56	188	76	6	495	6
30	2	110	133	45		594	52	165	71	6	521	6
31	2		119	40		592		264		7	306	
<i>Total</i>	43	3182	2743	3256	1374	7285	3641	6226	7361	1520	3838	1081
<i>Max</i>	2	665	272	404	170	1291	459	614	1216	153	1200	207
<i>Min</i>	1	2	35	40	20	33	52	39	71	6	1	6
<i>Avg</i>	1	106	88	105	47	235	121	201	245	49	124	36
<i>Runoff</i>	0.0	1.1	0.9	1.1	0.5	2.4	1.2	2.1	2.5	0.5	1.3	0.4

**Appendix D-2. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 2005</b>												
1	5	347	816	67	76	96	97	37	23	6	0	0
2	5	781	570	67	71	86	94	33	22	5	0	1
3	5	593	395	178	70	81	86	32	25	5	0	11
4	5	521	311	530	68	82	86	30	24	4	0	13
5	4	441	271	1050	85	80	85	29	23	3	0	14
6	4	338	256	1447	143	74	82	30	21	2	0	14
7	4	275	875	842	217	79	79	32	19	2	0	15
8	4	218	1127	474	428	72	76	32	19	1	0	14
9	5	182	620	353	365	64	73	33	19	1	0	14
10	4	165	412	338	269	64	73	37	18	1	0	14
11	4	151	320	483	203	68	71	36	18	1	0	14
12	10	133	275	1054	185	66	74	34	18	2	0	13
13	14	119	225	1547	263	56	72	33	18	1	0	14
14	17	110	180	1414	777	48	63	35	75	1	1	17
15	21	104	162	787	520	45	58	33	86	1	0	16
16	22	102	150	453	337	45	56	30	72	1	0	16
17	16	99	135	339	257	49	57	28	58	1	0	16
18	81	94	129	257	193	49	58	28	45	1	0	15
19	267	104	115	195	161	49	58	36	37	1	7	19
20	200	123	109	164	147	43	57	43	31	1	10	18
21	148	113	107	149	145	38	55	41	27	1	4	16
22	120	107	94	131	139	43	64	36	22	1	3	16
23	109	105	90	102	128	75	65	34	16	1	1	14
24	97	180	86	114	123	125	57	31	14	1	1	15
25	84	479	82	113	115	200	57	28	13	1	0	21
26	84	394	78	156	108	219	55	27	11	1	0	21
27	312	522	75	121	103	159	49	27	9	1	0	17
28	297	734	72	104	103	138	41	26	8	1	0	14
29	297	528	71	98		117	40	25	7	1	0	16
30	366	570	71	90		108	40	25	6	0	0	13
31	330		72	81		109		23		0	0	
<i>Total</i>	2940	8731	8350	13299	5800	2627	1978	986	802	48	35	433
<i>Max</i>	366	781	1127	1547	777	219	97	43	86	6	10	21
<i>Min</i>	4	94	71	67	68	38	40	23	6	0	0	0
<i>Avg</i>	95	291	269	429	207	85	66	32	27	2	1	14
<i>Runoff</i>	1.0	2.9	2.8	4.5	1.9	0.9	0.7	0.3	0.3	0.0	0.0	0.1

**Appendix D-2. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 2006</b>												
1	18	63	78	45	70	25	117	145	144	11	117	60
2	24	60	60	48	65	25	109	163	146	9	83	42
3	73	53	45	50	57	23	117	152	129	8	64	33
4	28	43	25	34	47	19	133	141	105	11	42	28
5	16	31	13	24	38	17	125	127	90	9	26	24
6	5	14	13	19	28	17	201	111	81	7	18	24
7	23	10	14	16	23	17	662	96	75	5	12	24
8	49	11	15	15	21	18	477	90	71	4	8	24
9	46	8	16	13	19	32	328	87	67	4	8	24
10	44	6	16	10	31	124	204	86	64	3	15	24
11	45	5	18	8	42	160	152	164	62	8	14	24
12	42	5	19	8	39	378	130	253	57	30	11	24
13	27	5	22	8	29	386	107	202	51	46	7	25
14	25	5	25	41	29	271	99	157	45	40	6	26
15	42	9	24	75	28	166	98	128	44	21	5	27
16	48	49	20	59	28	132	113	110	40	12	3	28
17	47	58	17	35	42	112	279	101	37	8	3	29
18	31	42	17	31	55	95	183	104	37	5	756	32
19	33	36	17	30	57	92	361	126	34	3	711	51
20	48	29	99	29	57	89	252	124	30	3	340	55
21	54	23	102	29	53	87	162	105	28	3	191	45
22	53	21	78	29	45	77	128	91	25	7	103	34
23	53	16	59	29	33	76	113	82	22	4	78	26
24	37	14	41	28	24	79	106	79	19	2	58	20
25	43	13	27	26	23	75	99	79	16	2	37	15
26	51	11	19	20	23	69	91	79	16	145	25	14
27	52	11	33	16	22	66	84	77	21	1578	18	13
28	46	87	56	16	24	66	78	74	18	1162	240	12
29	46	141	70	32		64	75	70	14	500	186	11
30	47	102	69	74		58	74	67	12	305	113	10
31	53		49	75		73		70		186	79	
<i>Total</i>	1250	979	1177	969	1051	2989	5256	3539	1599	4141	3377	827
<i>Max</i>	73	141	102	75	70	386	662	253	146	1578	756	60
<i>Min</i>	5	5	13	8	19	17	74	67	12	2	3	10
<i>Avg</i>	40	33	38	31	38	96	175	114	53	134	109	28
<i>Runoff</i>	0.4	0.3	0.4	0.3	0.4	1.0	1.8	1.2	0.5	1.4	1.1	0.3

**Appendix D-2. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 2007</b>												
1	10	78	1069	601	101	703	744	138	51	191	1	0
2	9	79	1110	418	96	1171	588	115	47	136	0	0
3	8	81	707	317	94	645	405	99	46	90	0	0
4	9	82	487	291	91	438	313	92	44	74	0	0
5	10	84	350	544	88	331	249	88	41	64	0	0
6	10	85	284	483	86	247	204	79	33	46	0	0
7	11	87	232	353	83	185	173	73	31	34	0	0
8	12	89	178	292	81	146	149	71	30	26	0	0
9	13	94	158	245	78	129	129	69	26	20	0	0
10	13	97	139	194	76	147	108	68	23	17	0	0
11	12	172	181	177	74	165	112	65	22	12	0	0
12	11	254	634	160	71	153	167	60	21	9	0	0
13	10	250	729	435	69	141	156	53	19	8	0	0
14	9	239	615	567	67	126	140	49	18	6	0	0
15	8	234	427	1026	65	109	143	54	17	5	0	0
16	7	388	324	878	60	94	142	108	15	4	0	0
17	299	420	270	586	56	87	131	108	13	3	0	0
18	453	335	224	342	53	80	119	83	12	3	0	0
19	326	244	191	250	49	78	100	76	13	3	0	3
20	252	136	174	198	46	81	90	72	10	2	0	10
21	204	96	506	172	43	78	85	68	8	2	0	11
22	154	86	997	150	43	80	82	64	9	1	0	12
23	107	79	1069	141	74	100	79	65	25	1	0	12
24	90	74	658	140	173	186	76	65	104	1	0	10
25	80	71	455	139	1086	202	83	65	162	1	0	12
26	75	71	340	137	967	169	204	65	143	1	0	14
27	80	70	275	136	602	136	305	65	161	1	0	14
28	91	67	244	135	493	130	266	65	180	1	0	14
29	93	67	207	134		744	200	66	278	1	0	14
30	87	223	183	112		436	161	58	262	1	0	14
31	81		366	107		582		53		1	0	
<i>Total</i>	2632	4434	13781	9859	4967	8097	5905	2319	1863	763	8	142
<i>Max</i>	453	420	1110	1026	1086	1171	744	138	278	191	1	14
<i>Min</i>	7	67	139	107	43	78	76	49	8	1	0	0
<i>Avg</i>	85	148	445	318	177	261	197	75	62	25	0	5
<i>Runoff</i>	0.9	1.5	4.6	3.3	1.7	2.7	2.0	0.8	0.6	0.3	0.0	0.0

**Appendix D-2. Concluded**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Friends Creek (102), Water Year 2008</b>												
1	14	1	1	22	66	181	214	69	405	39	39	1
2	14	1	1	22	66	282	193	77	253	36	33	0
3	43	1	1	22	66	356	174	79	1276	33	27	1
4	57	1	1	23	66	447	169	68	4360	32	22	4
5	62	1	1	22	852	287	148	59	2595	29	15	23
6	65	1	1	21	3227	201	130	58	1227	25	11	34
7	68	1	1	22	1283	160	118	61	1467	101	9	17
8	69	1	0	223	700	140	101	65	2303	455	8	8
9	71	1	1	604	590	113	94	65	1068	790	7	5
10	73	1	1	480	468	93	141	67	703	824	7	3
11	76	1	1	349	359	97	360	117	564	403	6	2
12	77	1	2	286	255	154	279	217	471	554	5	2
13	78	1	25	241	192	211	212	191	391	1213	4	3
14	80	1	29	198	130	228	174	161	317	1012	3	1065
15	82	1	16	164	81	214	153	183	266	549	2	2512
16	95	1	11	131	66	174	145	260	231	330	2	1292
17	105	1	10	100	404	158	130	258	189	236	1	717
18	126	1	9	86	710	475	114	204	161	175	1	499
19	105	1	9	75	406	746	104	164	139	133	1	356
20	105	1	10	72	251	732	90	131	117	104	1	269
21	115	1	7	70	160	506	84	103	97	88	1	200
22	100	2	37	68	100	367	80	91	90	139	1	138
23	140	2	141	67	74	280	76	85	83	160	1	94
24	148	1	104	67	60	236	73	84	75	120	1	80
25	152	1	74	67	45	206	76	83	70	87	1	70
26	165	1	41	67	37	179	81	84	69	78	1	60
27	100	1	32	67	27	157	76	76	65	70	1	51
28	3	1	26	67	23	284	75	73	63	72	1	44
29	1	1	22	66	27	284	71	78	55	69	1	38
30	1	1	21	66		240	66	77	47	56	1	38
31	1		21	66		206		386		45	1	
<i>Total</i>	2393	27	655	3901	10792	8393	4002	3775	19216	8054	212	7627
<i>Max</i>	165	2	141	604	3227	746	360	386	4360	1213	39	2512
<i>Min</i>	1	1	0	21	23	93	66	58	47	25	1	0
<i>Avg</i>	77	1	21	126	372	271	133	122	641	260	7	254
<i>Runoff</i>	0.8	0.0	0.2	1.3	3.6	2.8	1.3	1.3	6.4	2.7	0.1	2.6

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**Appendix D-3. Mean Daily and Monthly Discharge (cfs) and Runoff (inches) for Goose Creek (Station 103)**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Goose Creek (103), Water Year 1993</b>												
1	-	-	-	-	-	-	-	50	43	69	29	10
2	-	-	-	-	-	-	-	40	34	118	27	10
3	-	-	-	-	-	-	-	40	32	200	24	10
4	-	-	-	-	-	-	-	40	32	150	20	10
5	-	-	-	-	-	-	-	40	49	100	18	10
6	-	-	-	-	-	-	-	40	180	82	15	10
7	-	-	-	-	-	-	-	40	131	68	14	10
8	-	-	-	-	-	-	-	40	96	50	12	10
9	-	-	-	-	-	-	-	40	77	50	9	10
10	-	-	-	-	-	-	-	40	66	50	10	28
11	-	-	-	-	-	-	-	40	57	40	10	23
12	-	-	-	-	-	-	-	40	51	40	10	18
13	-	-	-	-	-	-	-	40	47	275	10	20
14	-	-	-	-	-	-	-	40	43	150	10	26
15	-	-	-	-	-	-	-	40	40	75	10	80
16	-	-	-	-	-	-	-	40	37	50	10	400
17	-	-	-	-	-	-	-	40	34	50	10	200
18	-	-	-	-	-	-	-	40	32	50	10	100
19	-	-	-	-	-	-	-	40	74	350	10	50
20	-	-	-	-	-	-	-	40	200	150	10	50
21	-	-	-	-	-	-	-	40	150	75	10	50
22	-	-	-	-	-	-	-	40	100	50	10	50
23	-	-	-	-	-	-	-	36	72	50	10	50
24	-	-	-	-	-	-	-	39	57	50	10	100
25	-	-	-	-	-	-	-	39	49	125	10	50
26	-	-	-	-	-	-	-	34	43	180	10	50
27	-	-	-	-	-	-	-	31	37	90	10	200
28	-	-	-	-	-	-	-	31	35	75	10	225
29	-	-	-	-	-	-	-	31	33	55	10	110
30	-	-	-	-	-	-	-	29	75	45	10	60
31	-	-	-	-	-	-	-	30		35	10	
<i>Total</i>	-	-	-	-	-	-	-	1189	2005	2997	387	2029
<i>Max</i>	-	-	-	-	-	-	-	50	200	350	29	400
<i>Min</i>	-	-	-	-	-	-	-	29	32	35	9	10
<i>Avg</i>	-	-	-	-	-	-	-	38	67	97	12	68
<i>Runoff</i>	-	-	-	-	-	-	-	1.0	1.7	2.5	0.3	1.7

**Appendix D-3. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Goose Creek (103), Water Year 1994</b>												
1	50	50	50	32	40	50	20	125	29	10	0	0
2	50	50	75	30	40	40	20	150	27	10	0	0
3	50	49	200	29	20	20	20	75	26	10	0	0
4	50	46	100	28	10	20	100	75	24	9	0	0
5	67	46	50	27	10	20	20	50	23	8	0	0
6	57	44	50	24	10	20	20	75	23	15	0	0
7	52	37	40	24	10	50	90	100	22	55	0	0
8	50	34	30	20	10	125	20	500	21	35	0	0
9	50	32	30	20	10	60	20	250	22	21	0	0
10	300	30	30	21	10	30	30	125	26	15	0	0
11	150	29	30	21	10	30	200	70	23	13	0	0
12	75	29	30	20	10	20	100	70	21	11	0	0
13	50	29	30	19	10	20	1400	80	20	11	0	0
14	50	28	30	17	10	20	600	70	22	10	0	0
15	50	154	100	13	10	20	300	70	21	9	0	0
16	78	400	75	18	10	20	150	70	19	8	0	0
17	250	200	60	17	10	20	75	50	18	7	0	0
18	125	200	45	18	10	20	75	25	17	6	0	0
19	100	100	35	17	10	20	50	25	16	6	0	0
20	75	75	30	16	10	20	50	25	15	6	0	0
21	75	75	30	17	10	20	50	25	14	5	0	0
22	200	75	64	18	10	20	50	25	13	4	0	0
23	100	75	59	18	50	20	66	25	12	3	0	0
24	50	70	53	18	100	20	58	25	11	2	0	0
25	50	70	49	20	75	20	55	35	17	1	0	0
26	50	70	48	30	75	20	50	56	15	0	0	0
27	50	250	39	100	50	30	48	60	11	0	0	0
28	50	100	36	75	40	125	300	43	10	0	0	0
29	50	75	33	350		60	150	37	8	0	0	0
30	50	50	32	175		50	250	34	8	0	0	0
31	50		29	90		20		32		0	0	
<i>Total</i>	2554	2569	1593	1343	680	1050	4438	2477	555	291	0	0
<i>Max</i>	300	400	200	350	100	125	1400	500	29	55	0	0
<i>Min</i>	50	28	29	13	10	20	20	25	8	0	0	0
<i>Avg</i>	82	86	51	43	24	34	148	80	19	9	0	0
<i>Runoff</i>	2.1	2.1	1.3	1.1	0.6	0.9	3.7	2.1	0.5	0.2	0.0	0.0

**Appendix D-3. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Goose Creek (103), Water Year 1995</b>												
1	0	0	13	13	24	12	19	27	85	19	6	0
2	0	0	13	14	24	13	19	26	72	18	5	0
3	0	0	13	15	23	13	18	24	69	18	5	0
4	0	0	12	15	22	13	18	23	59	18	6	0
5	0	3	12	15	21	10	16	22	53	18	6	0
6	0	14	11	15	21	10	17	21	48	16	7	0
7	0	11	20	15	22	10	17	21	44	15	18	0
8	0	10	55	15	22	300	18	21	39	14	25	0
9	0	10	42	15	22	170	18	225	35	14	20	0
10	0	13	34	15	20	115	17	172	118	14	15	0
11	0	12	29	14	19	89	17	164	164	14	13	0
12	0	11	24	13	19	73	25	123	96	13	11	0
13	0	11	22	13	19	59	75	107	68	13	10	0
14	0	13	20	13	19	48	40	144	54	12	9	0
15	0	14	18	13	18	41	30	110	45	12	8	0
16	0	13	20	14	17	37	75	119	39	11	7	0
17	0	12	34	15	16	34	250	970	36	11	7	0
18	0	12	31	18	14	32	200	559	33	11	7	0
19	0	10	25	18	14	31	400	462	32	10	5	0
20	0	10	23	19	14	30	250	255	31	10	5	0
21	0	16	21	19	13	28	250	180	30	10	5	0
22	0	16	19	19	13	25	125	142	29	10	3	0
23	0	14	18	19	13	24	65	118	26	10	2	0
24	0	14	17	19	13	22	30	411	26	9	1	0
25	0	13	17	19	12	20	30	311	26	8	1	0
26	0	12	16	19	12	20	30	187	25	8	1	0
27	0	12	15	19	13	21	31	148	24	7	0	0
28	0	18	15	20	13	22	28	221	22	7	0	0
29	0	17	14	21		21	27	151	21	7	0	0
30	0	14	14	22		20	27	118	20	6	0	0
31	0		14	23		20		101		6	0	
<i>Total</i>	0	325	650	518	492	1383	2184	5683	1470	369	208	0
<i>Max</i>	0	18	55	23	24	300	400	970	164	19	25	0
<i>Min</i>	0	0	11	13	12	10	16	21	20	6	0	0
<i>Avg</i>	0	11	21	17	18	45	73	183	49	12	7	0
<i>Runoff</i>	0.0	0.3	0.5	0.4	0.4	1.1	1.8	4.7	1.2	0.3	0.2	0.0

**Appendix D-3. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Goose Creek (103), Water Year 1996</b>												
1	0	1	1	7	16	7	25	40	56	13	5	0
2	0	3	1	7	16	6	24	32	53	13	4	0
3	0	4	1	7	16	6	20	26	107	12	3	0
4	0	1	1	7	16	5	17	23	104	11	1	0
5	0	1	1	7	16	15	14	23	75	11	0	0
6	0	0	1	7	16	24	13	23	62	10	0	0
7	0	0	1	7	16	13	13	25	55	10	0	0
8	0	0	1	7	17	12	13	38	51	10	0	0
9	0	0	0	7	14	10	12	45	55	9	0	0
10	0	0	0	7	12	10	12	316	84	8	0	0
11	0	34	0	7	11	9	11	301	58	7	0	0
12	0	20	0	7	10	9	12	161	47	7	0	0
13	0	13	0	7	10	9	12	122	39	7	0	0
14	0	8	2	7	9	9	11	111	34	7	0	0
15	0	6	2	7	9	9	11	98	30	6	0	0
16	0	5	2	7	9	9	11	83	28	6	0	0
17	0	5	2	13	9	9	10	71	26	6	0	0
18	0	6	3	93	8	9	10	60	25	5	1	0
19	0	6	5	107	8	9	10	52	22	4	4	0
20	0	6	6	50	8	9	10	46	20	2	2	0
21	0	6	6	26	7	9	10	39	18	15	0	0
22	0	5	6	19	7	9	56	34	18	14	0	0
23	0	4	7	16	7	9	57	32	17	11	0	0
24	0	3	7	16	7	9	16	51	22	9	3	0
25	0	3	7	15	7	10	13	66	22	9	5	0
26	0	2	7	13	7	9	13	69	19	8	1	0
27	0	2	7	16	7	8	13	366	17	8	1	0
28	0	1	7	16	7	8	13	198	16	8	0	0
29	0	1	7	16	7	8	82	130	15	7	0	0
30	0	1	7	16		8	70	92	14	7	0	0
31	1		7	16		11		67		6	0	
<i>Total</i>	1	149	104	555	305	295	614	2841	1207	266	32	0
<i>Max</i>	1	34	7	107	17	24	82	366	107	15	5	0
<i>Min</i>	0	0	0	7	7	5	10	23	14	2	0	0
<i>Avg</i>	0	5	3	18	11	10	20	92	40	9	1	0
<i>Runoff</i>	0.0	0.1	0.1	0.5	0.3	0.2	0.5	2.4	1.0	0.2	0.0	0.0

**Appendix D-3. Continued**

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<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Goose Creek (103), Water Year 1997</b>												
1	0	0	12	7	26	149	18	13	32	15	0	0
2	0	0	12	8	35	120	18	12	39	14	0	4
3	0	0	11	9	42	98	18	58	41	14	0	11
4	0	0	11	10	90	77	18	58	35	13	0	8
5	0	0	11	13	74	65	18	40	32	13	0	6
6	0	0	11	13	44	55	17	30	39	12	0	3
7	0	3	10	14	31	49	16	25	52	12	0	1
8	0	3	11	15	25	43	14	25	90	11	0	11
9	0	5	11	16	21	108	13	21	133	11	0	78
10	0	3	11	16	20	132	13	18	88	10	0	33
11	0	1	11	16	19	92	13	19	64	9	0	19
12	0	1	10	16	16	66	13	18	103	8	0	13
13	0	0	9	16	16	60	14	18	131	7	0	11
14	0	0	8	16	15	108	13	17	87	7	0	9
15	0	0	8	17	13	74	13	15	59	7	0	7
16	0	0	8	18	13	55	13	14	50	6	0	6
17	0	1	8	18	12	50	13	15	40	5	12	6
18	0	0	11	18	17	44	13	15	35	4	20	5
19	0	0	11	18	24	40	14	16	31	2	12	4
20	0	0	11	18	96	39	13	13	29	1	8	8
21	0	0	11	18	285	36	13	13	27	3	5	11
22	0	0	10	74	193	31	12	12	25	8	3	9
23	0	0	10	133	128	28	12	12	23	6	1	8
24	0	0	18	88	97	26	12	13	21	3	0	7
25	0	1	15	59	74	27	11	17	20	1	0	7
26	0	2	12	49	121	23	11	39	19	0	0	7
27	0	3	6	41	456	23	11	117	18	0	0	6
28	0	3	1	36	208	24	12	70	18	0	0	6
29	0	3	3	33		22	11	50	17	0	0	6
30	0	8	3	30		19	13	39	16	0	0	5
31	0		7	29		18		34		0	0	
<i>Total</i>	0	41	301	885	2210	1802	409	874	1412	200	61	315
<i>Max</i>	0	8	18	133	456	149	18	117	133	15	20	78
<i>Min</i>	0	0	1	7	12	18	11	12	16	0	0	0
<i>Avg</i>	0	1	10	29	79	58	14	28	47	6	2	11
<i>Runoff</i>	0.0	0.0	0.2	0.7	1.8	1.5	0.3	0.7	1.2	0.2	0.1	0.3

**Appendix D-3. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Goose Creek (103), Water Year 1998</b>												
1	5	6	104	20	25	32	91	199	39	41	1	0
2	4	6	66	19	22	31	72	209	38	36	0	0
3	4	6	51	18	21	30	63	614	34	33	0	0
4	4	5	39	17	21	27	87	397	33	31	0	0
5	4	6	32	24	20	24	75	224	33	27	1	0
6	4	8	26	45	19	23	63	158	30	27	2	0
7	3	7	22	48	18	23	57	246	28	35	3	0
8	3	9	20	164	18	59	59	294	28	45	2	0
9	3	9	20	178	17	126	53	179	59	32	1	0
10	4	8	22	113	17	135	44	130	62	27	0	0
11	3	8	27	78	30	78	40	107	73	23	0	0
12	3	7	33	59	49	56	38	89	173	21	0	0
13	5	7	32	44	40	52	38	83	125	19	0	0
14	6	8	27	39	33	53	54	69	158	17	0	0
15	4	8	24	36	31	51	54	61	556	16	0	0
16	3	6	22	32	31	48	49	54	416	15	0	0
17	3	6	20	29	40	141	39	47	296	14	0	0
18	3	5	19	25	64	310	35	44	189	13	0	0
19	3	6	18	23	56	177	34	42	300	12	0	0
20	3	6	16	22	51	296	32	40	159	11	0	0
21	3	8	15	22	49	283	33	37	120	10	0	0
22	2	7	17	20	44	201	31	43	128	9	0	0
23	2	6	16	20	40	138	29	84	193	10	0	0
24	2	5	26	19	36	112	29	142	119	8	0	0
25	2	6	58	18	32	96	28	111	92	7	0	0
26	5	7	43	18	32	79	28	77	72	6	0	0
27	6	7	35	18	35	65	24	61	61	5	0	0
28	5	13	31	23	33	224	23	53	52	5	0	0
29	5	30	29	28		163	26	48	48	3	0	0
30	4	100	25	26		112	169	45	50	2	0	0
31	3		20	25		91		44		2	0	
<i>Total</i>	114	326	957	1270	922	3333	1496	4031	3765	562	11	0
<i>Max</i>	6	100	104	178	64	310	169	614	556	45	3	0
<i>Min</i>	2	5	15	17	17	23	23	37	28	2	0	0
<i>Avg</i>	4	11	31	41	33	108	50	130	126	18	0	0
<i>Runoff</i>	0.1	0.3	0.8	1.1	0.8	2.8	1.2	3.4	3.1	0.5	0.0	0.0

**Appendix D-3. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Goose Creek (103), Water Year 1999</b>												
1	0	0	0	0	28	15	17	41	20	41	0	0
2	0	0	0	0	34	17	15	37	69	36	0	0
3	0	0	0	0	33	36	16	35	48	30	0	0
4	0	1	0	0	25	31	16	33	47	26	0	0
5	0	0	0	0	19	28	15	33	160	23	0	0
6	0	0	0	0	19	30	20	37	87	21	0	0
7	0	0	0	0	95	27	16	37	53	19	0	0
8	0	0	0	0	127	29	14	32	40	17	0	0
9	0	0	0	0	82	30	59	28	33	16	0	0
10	0	0	0	0	58	22	74	26	30	14	0	0
11	0	0	0	0	50	20	51	26	29	13	0	0
12	0	0	0	0	46	20	42	25	28	12	1	0
13	0	0	0	0	38	27	36	42	295	12	22	0
14	0	0	0	0	34	28	33	59	223	11	9	0
15	0	0	0	0	31	32	84	48	125	11	3	0
16	0	0	0	0	29	38	212	40	85	10	1	0
17	0	0	0	1	26	36	172	37	59	8	0	0
18	0	0	0	2	24	27	128	33	45	8	0	0
19	0	0	0	3	22	23	102	29	37	7	0	0
20	0	0	0	3	20	23	79	28	32	6	0	0
21	0	0	0	9	18	23	83	28	29	6	0	0
22	0	0	0	20	17	21	71	30	27	6	0	0
23	0	0	0	42	18	20	57	30	38	5	0	0
24	0	0	0	54	17	19	46	28	209	4	0	0
25	0	0	0	32	17	19	42	24	218	3	0	0
26	0	0	0	28	16	18	40	21	127	3	0	0
27	0	0	0	35	18	17	47	20	113	5	0	0
28	0	0	0	29	17	17	85	19	77	2	0	0
29	0	0	0	18		16	59	18	55	1	0	0
30	0	0	0	15		15	46	18	43	1	0	0
31	0		0	17		17		18		0	0	
<i>Total</i>	0	2	1	310	978	742	1778	958	2479	379	36	0
<i>Max</i>	0	1	0	54	127	38	212	59	295	41	22	0
<i>Min</i>	0	0	0	0	16	15	14	18	20	0	0	0
<i>Avg</i>	0	0	0	10	35	24	59	31	83	12	1	0
<i>Runoff</i>	0.0	0.0	0.0	0.3	0.8	0.6	1.5	0.8	2.1	0.3	0.0	0.0

**Appendix D-3. Concluded**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Goose Creek (103), Water Year 2000</b>												
1	0	0	0	1	0	8	7	26	45	40	2	0
2	0	0	0	1	0	6	7	23	39	38	1	0
3	0	0	0	1	0	6	7	21	35	36	1	0
4	0	0	0	1	0	6	6	21	36	34	1	0
5	0	0	5	0	1	6	6	20	45	44	1	0
6	0	0	4	0	1	5	6	19	34	39	1	0
7	0	0	1	0	1	5	6	19	31	34	1	0
8	0	0	1	0	1	5	5	20	30	31	0	0
9	0	0	0	1	1	6	4	30	29	30	0	0
10	0	0	1	1	1	4	4	41	27	28	0	7
11	0	0	0	0	2	4	7	32	27	28	0	6
12	0	0	0	0	5	4	7	44	51	26	0	3
13	0	0	0	0	5	4	7	98	144	23	0	End of data
14	0	0	1	0	5	4	7	51	106	21	0	
15	0	0	1	0	5	4	7	38	101	19	0	
16	0	0	1	0	5	4	7	34	59	17	0	
17	0	0	2	0	4	3	15	32	43	16	0	
18	0	0	1	0	50	3	15	29	37	15	2	
19	0	0	1	0	56	5	13	26	34	14	0	
20	0	0	2	0	22	29	18	23	44	13	0	
21	0	0	1	0	15	25	28	22	218	12	0	
22	0	0	1	0	13	15	22	22	146	11	0	
23	0	0	1	0	10	13	19	23	142	11	1	
24	0	0	1	0	9	13	58	21	267	10	0	
25	0	0	1	0	8	11	56	19	171	9	0	
26	0	0	1	0	8	10	34	19	117	7	1	
27	0	0	1	0	7	11	27	160	82	6	5	
28	0	0	1	0	7	10	22	182	61	6	0	
29	0	0	2	0	7	8	18	108	52	5	0	
30	0	0	3	0		7	15	72	45	6	0	
31	0	0	2	0		7		54		6	0	
<i>Total</i>	1	0	32	13	247	249	460	1350	2298	637	19	
<i>Max</i>	0	0	5	1	56	29	58	182	267	44	5	
<i>Min</i>	0	0	0	0	0	3	4	19	27	5	0	
<i>Avg</i>	0	0	1	0	9	8	15	44	77	21	1	
<i>Runoff</i>	0.0	0.0	0.0	0.0	0.2	0.2	0.4	1.1	1.9	0.5	0.0	



**Appendix D-4. Mean Daily and Monthly Discharge (cfs) and Runoff (inches) for Camp Creek (Station 104)**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Camp Creek (104), Water Year 1993</b>												
1	-	-	-	-	-	-	-	64	20	69	16	20
2	-	-	-	-	-	-	-	60	19	156	14	75
3	-	-	-	-	-	-	-	59	19	102	12	300
4	-	-	-	-	-	-	-	60	28	64	10	250
5	-	-	-	-	-	-	-	94	105	48	9	100
6	-	-	-	-	-	-	-	74	76	40	8	75
7	-	-	-	-	-	-	-	61	56	35	7	50
8	-	-	-	-	-	-	-	53	45	43	5	25
9	-	-	-	-	-	-	-	46	39	34	10	16
10	-	-	-	-	-	-	-	42	33	27	20	13
11	-	-	-	-	-	-	-	39	30	24	80	11
12	-	-	-	-	-	-	-	38	27	39	200	11
13	-	-	-	-	-	-	-	36	25	200	1200	15
14	-	-	-	-	-	-	-	33	23	180	400	46
15	-	-	-	-	-	-	-	32	21	160	200	378
16	-	-	-	-	-	-	-	29	20	140	100	262
17	-	-	-	-	-	-	-	27	19	170	80	117
18	-	-	-	-	-	-	-	27	43	120	40	77
19	-	-	-	-	-	-	-	25	44	170	60	57
20	-	-	-	-	-	-	-	24	40	70	220	46
21	-	-	-	-	-	-	-	22	62	41	140	37
22	-	-	-	-	-	-	-	21	42	35	70	32
23	-	-	-	-	-	-	-	23	33	36	20	61
24	-	-	-	-	-	-	-	23	28	84	15	56
25	-	-	-	-	-	-	-	20	25	134	10	65
26	-	-	-	-	-	-	-	18	22	79	5	133
27	-	-	-	-	-	-	-	18	20	48	5	268
28	-	-	-	-	-	-	-	18	19	35	5	200
29	-	-	-	-	-	-	-	17	44	26	5	109
30	-	-	-	-	-	-	-	18	40	20	5	76
31	-	-	-	-	-	-	-	25		17	5	
<i>Total</i>	-	-	-	-	-	-	-	1142	1065	2446	2976	2981
<i>Max</i>	-	-	-	-	-	-	-	94	105	200	1200	378
<i>Min</i>	-	-	-	-	-	-	-	17	19	17	5	11
<i>Avg</i>	-	-	-	-	-	-	-	37	35	79	96	99
<i>Runoff</i>	-	-	-	-	-	-	-	0.9	0.8	1.9	2.4	2.4

**Appendix D-4. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Camp Creek (104), Water Year 1994</b>												
1	62	31	55	17	31	11	11	215	16	4	0	0
2	49	28	193	17	18	10	11	123	15	4	0	0
3	41	27	263	16	15	9	11	93	14	4	0	0
4	39	27	220	16	10	26	12	72	13	3	0	0
5	33	25	204	14	5	90	12	59	13	3	0	0
6	30	21	130	14	5	95	12	56	13	2	0	0
7	29	19	94	12	5	131	12	318	12	2	0	0
8	28	19	74	12	5	138	20	288	13	2	0	0
9	142	17	62	12	20	95	22	134	15	1	0	0
10	220	17	55	12	15	66	79	94	13	1	0	0
11	115	17	44	12	5	51	200	71	12	1	0	0
12	81	17	41	11	5	43	1883	69	12	1	0	0
13	61	16	39	10	5	39	515	58	13	0	0	0
14	51	89	41	8	5	36	221	50	12	0	0	0
15	45	161	48	10	5	32	181	44	11	0	0	0
16	104	102	44	10	5	25	159	37	10	0	0	0
17	354	143	40	11	5	21	106	33	10	0	0	0
18	271	180	39	10	5	21	84	31	9	0	0	0
19	140	125	39	9	5	19	66	28	9	0	0	0
20	115	89	38	10	10	18	52	26	8	0	0	0
21	228	66	37	11	15	17	45	24	8	0	0	0
22	156	53	34	11	15	15	38	22	7	0	0	0
23	106	46	31	11	15	14	34	21	7	0	0	0
24	82	41	29	12	70	13	32	20	10	0	0	0
25	66	40	28	43	60	12	29	32	9	0	0	0
26	57	142	23	96	60	12	28	35	7	0	0	0
27	49	163	21	71	30	12	225	25	6	0	0	0
28	46	108	19	607	15	12	203	22	5	0	0	0
29	42	78	19	170		13	286	20	5	0	0	0
30	36	60	17	51		12	186	18	4	0	0	0
31	34		19	27		11		17		0	0	
<i>Total</i>	2913	1965	2038	1349	464	1117	4776	2156	310	30	0	0
<i>Max</i>	354	180	263	607	70	138	1883	318	16	4	0	0
<i>Min</i>	28	16	17	8	5	9	11	17	4	0	0	0
<i>Avg</i>	94	65	66	44	17	36	159	70	10	1	0	0
<i>Runoff</i>	2.3	1.6	1.6	1.1	0.4	0.9	3.8	1.7	0.2	0.0	0.0	0.0

**Appendix D-4. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Camp Creek (104), Water Year 1995</b>												
1	0	0	4	5	14	3	10	16	49	13	0	0
2	0	0	4	5	13	2	10	15	45	11	0	0
3	0	0	4	4	12	3	9	14	39	11	0	0
4	0	0	3	4	12	3	9	13	34	10	0	0
5	0	0	2	4	11	3	7	12	32	9	0	0
6	0	1	1	4	10	3	7	12	29	8	0	0
7	0	1	12	4	8	83	8	11	27	7	0	0
8	0	2	29	4	8	167	7	11	24	6	0	0
9	0	2	25	4	8	94	7	96	22	5	0	0
10	0	2	19	4	8	68	7	134	20	5	0	0
11	0	2	15	4	8	58	6	127	19	4	0	0
12	0	2	12	6	8	47	22	100	17	4	0	0
13	0	2	10	102	8	37	23	92	16	3	0	0
14	0	2	9	250	8	31	17	211	15	2	0	0
15	0	2	8	210	7	27	14	124	14	2	0	0
16	0	2	7	118	5	24	13	144	13	1	0	0
17	0	2	20	83	3	21	14	1726	12	1	0	0
18	0	2	22	60	3	19	63	1032	11	1	0	0
19	0	2	16	84	3	17	87	628	11	0	0	0
20	0	2	15	124	3	17	54	373	10	0	0	0
21	0	3	12	76	3	16	49	196	14	0	0	0
22	0	7	11	48	3	14	37	98	18	0	0	0
23	0	7	10	36	4	13	33	104	33	0	0	0
24	0	5	9	30	4	11	30	527	50	0	0	0
25	0	5	8	24	3	11	26	421	35	0	0	0
26	0	4	7	21	3	10	21	240	24	0	0	0
27	0	3	6	20	3	10	20	200	18	0	0	0
28	0	8	6	19	3	11	17	416	17	0	0	0
29	0	8	5	16		11	16	256	16	0	0	0
30	0	5	5	15		11	16	127	14	0	0	0
31	0		5	14		11		84		0	0	
<i>Total</i>	0	81	320	1402	188	856	658	7560	698	104	1	0
<i>Max</i>	0	8	29	250	14	167	87	1726	50	13	0	0
<i>Min</i>	0	0	1	4	3	2	6	11	10	0	0	0
<i>Avg</i>	0	3	10	45	7	28	22	244	23	3	0	0
<i>Runoff</i>	0.0	0.1	0.3	1.1	0.1	0.7	0.5	6.0	0.6	0.1	0.0	0.0

**Appendix D-4. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Camp Creek (104), Water Year 1996</b>												
1	0	0	0	0	9	8	45	61	53	6	0	0
2	0	0	0	0	9	6	32	42	548	5	0	0
3	0	0	0	0	9	6	23	35	285	5	0	0
4	0	0	0	0	9	5	17	119	120	4	0	0
5	0	0	0	0	9	4	14	100	72	3	0	0
6	0	0	0	0	9	12	11	63	58	3	0	0
7	0	0	0	0	9	16	10	48	51	3	0	0
8	0	0	0	0	9	16	9	228	41	2	0	0
9	0	0	0	0	9	17	7	331	38	1	0	0
10	0	0	0	0	6	15	6	722	60	1	0	0
11	0	0	0	0	4	9	5	616	55	0	0	0
12	0	0	0	0	3	5	5	169	44	0	0	0
13	0	0	0	0	3	4	5	106	35	0	0	0
14	0	0	0	0	1	4	5	89	30	0	0	0
15	0	0	0	0	1	3	4	77	26	0	0	0
16	0	0	0	0	1	3	4	67	22	0	0	0
17	0	0	0	0	1	3	4	57	21	0	0	0
18	0	0	0	28	1	3	3	47	19	0	0	0
19	0	0	0	68	1	2	3	39	17	0	0	0
20	0	0	0	45	1	2	5	34	15	0	0	0
21	0	0	0	25	0	2	6	29	13	0	0	0
22	0	0	0	17	0	2	27	24	13	0	0	0
23	0	0	0	12	0	2	48	22	12	0	2	0
24	0	0	0	12	0	3	33	33	14	0	1	0
25	0	0	0	12	0	4	27	77	12	0	0	0
26	0	0	0	11	0	4	20	120	10	0	0	0
27	0	0	0	9	2	3	16	670	9	0	4	0
28	0	0	0	9	8	2	13	293	8	0	2	0
29	0	0	0	9	9	2	108	131	8	0	0	0
30	0	0	0	9		2	105	78	7	0	0	0
31	0		0	9		5		57		0	0	
<i>Total</i>	0	0	1	278	125	173	622	4584	1717	35	9	0
<i>Max</i>	0	0	0	68	9	17	108	722	548	6	4	0
<i>Min</i>	0	0	0	0	0	2	3	22	7	0	0	0
<i>Avg</i>	0	0	0	9	4	6	21	148	57	1	0	0
<i>Runoff</i>	0.0	0.0	0.0	0.2	0.1	0.1	0.5	3.6	1.4	0.0	0.0	0.0

**Appendix D-4. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Camp Creek (104), Water Year 1997</b>												
1	0	0	17	1	19	133	11	4	15	18	0	11
2	0	0	14	2	49	106	11	4	16	17	0	22
3	0	0	11	2	72	78	11	48	19	16	0	29
4	0	0	7	3	210	59	11	67	17	14	0	25
5	0	0	5	15	126	46	11	42	16	13	0	22
6	0	0	5	26	52	38	11	29	14	12	0	18
7	0	0	4	17	31	33	10	22	14	11	0	16
8	0	3	4	7	21	29	8	20	82	10	0	20
9	0	3	4	2	18	60	7	18	197	9	0	31
10	0	1	4	2	16	118	7	15	86	8	0	40
11	0	0	4	2	15	73	7	14	64	7	0	35
12	0	0	4	2	13	51	7	14	114	6	0	30
13	0	0	4	2	12	46	8	12	203	5	0	26
14	0	0	3	2	11	146	7	12	84	4	0	23
15	0	0	3	2	9	89	6	10	58	4	0	21
16	0	0	3	2	7	54	5	8	50	4	0	19
17	0	0	3	2	6	45	5	7	41	3	16	19
18	0	0	3	2	6	39	5	7	37	3	39	18
19	0	0	3	2	15	34	5	7	33	3	31	17
20	0	0	3	2	47	32	6	7	31	2	24	17
21	0	0	3	6	186	30	5	5	28	2	20	29
22	0	0	2	51	171	24	5	5	25	2	19	30
23	0	0	2	103	101	19	5	5	23	2	17	27
24	0	0	2	71	68	18	5	5	21	2	15	25
25	0	0	2	51	52	18	4	5	21	2	15	23
26	0	0	3	40	127	17	4	7	20	2	13	22
27	0	0	2	32	729	16	3	24	18	2	13	22
28	0	0	2	20	228	16	4	20	18	1	14	21
29	0	0	1	13		16	4	16	17	1	14	20
30	0	10	1	13		14	4	13	17	1	12	19
31	0		1	13		12		13		0	12	
<i>Total</i>	0	19	129	515	2416	1509	201	485	1398	182	272	699
<i>Max</i>	0	10	17	103	729	146	11	67	203	18	39	40
<i>Min</i>	0	0	1	1	6	12	3	4	14	0	0	11
<i>Avg</i>	0	1	4	17	86	49	7	16	47	6	9	23
<i>Runoff</i>	0.0	0.0	0.1	0.4	1.9	1.2	0.2	0.4	1.1	0.1	0.2	0.6

**Appendix D-4. Continued**

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<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Camp Creek (104), Water Year 1998</b>												
1	19	23	95	38	45	48	105	159	48	30	13	0
2	19	25	67	37	43	48	88	223	46	28	12	0
3	19	25	56	36	39	47	81	1267	41	26	11	0
4	19	25	49	36	39	44	161	660	40	28	11	0
5	19	26	44	48	38	42	121	234	39	43	11	0
6	20	26	40	114	38	41	96	147	38	39	11	0
7	20	30	37	96	37	41	85	615	36	52	11	0
8	17	33	35	175	36	66	77	495	35	67	11	0
9	16	33	35	214	35	167	70	214	55	48	11	0
10	16	33	36	134	34	149	60	124	63	39	11	0
11	20	33	46	98	38	108	55	98	64	35	10	0
12	22	33	47	77	48	91	54	82	268	32	9	0
13	18	33	45	64	45	81	53	167	206	30	8	0
14	18	33	42	59	42	81	53	92	227	29	8	0
15	19	35	39	55	40	80	52	74	1046	27	7	0
16	19	36	37	50	40	74	51	64	689	26	7	0
17	19	35	36	46	47	151	46	56	408	24	6	0
18	18	34	35	43	76	369	42	53	155	23	5	0
19	18	34	34	41	72	212	42	51	436	22	5	0
20	18	34	33	40	65	370	42	64	167	20	4	0
21	18	34	32	39	62	463	42	51	101	19	4	0
22	18	34	32	38	58	263	41	60	123	18	3	0
23	18	36	35	38	55	156	40	183	70	22	2	0
24	18	36	41	36	51	123	39	874	55	19	2	0
25	18	33	80	35	48	105	39	267	49	17	1	0
26	19	33	64	35	47	91	39	116	44	16	1	0
27	22	33	55	35	49	79	37	88	40	16	1	0
28	23	39	49	45	48	400	35	71	36	15	1	0
29	23	56	46	50		284	44	61	33	15	1	0
30	23	79	43	50		141	121	56	31	13	0	0
31	23		39	46		110		53		13	0	
<i>Total</i>	599	1033	1403	1950	1315	4524	1912	6819	4691	852	195	1
<i>Max</i>	23	79	95	214	76	463	161	1267	1046	67	13	0
<i>Min</i>	16	23	32	35	34	41	35	51	31	13	0	0
<i>Avg</i>	19	34	45	63	47	146	64	220	156	27	6	0
<i>Runoff</i>	0.5	0.8	1.1	1.5	1.0	3.6	1.5	5.4	3.7	0.7	0.2	0.0

**Appendix D-4. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Camp Creek (104), Water Year 1999</b>												
1	0	0	0	0	54	35	26	51	28	23	0	0
2	0	0	0	0	56	36	23	48	91	23	0	0
3	0	0	0	0	53	73	25	46	83	16	0	0
4	0	0	0	0	44	61	24	44	64	10	0	0
5	0	0	0	0	36	53	21	43	117	6	0	0
6	0	0	0	0	35	54	29	41	85	3	0	0
7	0	0	0	0	110	52	28	38	64	1	0	0
8	0	0	0	0	181	49	27	34	53	1	0	0
9	0	0	0	0	121	50	32	30	47	0	0	0
10	0	0	0	0	89	42	32	30	42	0	0	0
11	0	0	0	0	78	39	32	30	40	0	0	0
12	0	0	0	0	111	42	32	30	36	0	0	0
13	0	0	0	0	79	56	31	39	40	0	90	0
14	0	0	0	0	61	54	31	61	49	0	46	0
15	0	0	0	0	56	50	67	51	38	0	3	0
16	0	0	0	0	53	48	290	46	33	0	0	0
17	0	0	0	0	51	46	219	43	29	0	0	0
18	0	0	0	1	48	44	150	40	25	0	0	0
19	0	0	0	2	44	42	115	35	22	0	0	0
20	0	0	0	2	40	40	95	32	21	0	0	0
21	0	0	0	4	37	39	101	32	19	0	0	0
22	0	0	0	57	35	37	95	44	18	0	0	0
23	0	0	0	175	35	35	79	51	16	0	0	0
24	0	0	0	174	34	33	64	45	36	0	0	0
25	0	0	0	105	33	32	59	38	45	0	0	0
26	0	0	0	72	32	31	56	34	29	0	0	0
27	0	0	0	65	34	31	53	30	50	0	0	0
28	0	0	0	56	35	31	65	28	48	0	0	0
29	0	0	0	43		30	60	26	35	0	0	0
30	0	0	0	37		29	52	25	24	0	0	0
31	0		0	36		27		26		0	0	
<i>Total</i>	0	0	0	829	1677	1321	2014	1187	1329	83	138	0
<i>Max</i>	0	0	0	175	181	73	290	61	117	23	90	0
<i>Min</i>	0	0	0	0	32	27	21	25	16	0	0	0
<i>Avg</i>	0	0	0	27	60	43	67	38	44	3	4	0
<i>Runoff</i>	0.0	0.0	0.0	0.7	1.3	1.0	1.6	0.9	1.1	0.1	0.1	0.0

**Appendix D-4. Continued**

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<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Camp Creek (104), Water Year 2000</b>												
1	0	0	0	0	0	14	2	15	71	32	0	0
2	0	0	0	0	0	9	3	15	58	28	0	0
3	0	0	0	0	0	6	3	10	49	24	0	0
4	0	0	0	0	0	6	3	9	46	21	0	0
5	0	0	0	0	0	5	2	7	82	26	0	0
6	0	0	0	0	0	3	2	6	69	33	0	0
7	0	0	0	0	0	2	2	7	52	22	0	0
8	0	0	0	0	0	3	1	7	45	15	0	0
9	0	0	0	0	0	3	1	7	40	10	0	0
10	0	0	0	0	1	2	1	6	35	7	0	0
11	0	0	0	0	15	1	2	5	36	8	0	0
12	0	0	0	0	18	1	2	8	44	16	0	0
13	0	0	0	0	16	1	1	62	100	8	0	0
14	0	0	0	0	12	2	2	46	81	3	0	0
15	0	0	0	0	6	2	2	32	62	1	0	0
16	0	0	0	0	1	2	1	26	49	0	0	0
17	0	0	0	0	1	1	20	22	39	0	0	0
18	0	0	0	0	42	1	29	20	32	0	0	0
19	0	0	0	0	83	3	20	42	28	0	0	0
20	0	0	0	0	55	45	18	30	29	0	0	0
21	0	0	0	0	41	54	18	21	109	0	0	0
22	0	0	0	0	35	37	14	19	96	0	0	0
23	0	0	0	0	29	30	13	22	76	0	0	0
24	0	0	0	0	25	25	30	19	122	0	0	0
25	0	0	0	0	20	22	40	12	103	0	0	0
26	0	0	0	0	17	17	30	10	80	0	0	0
27	0	0	0	0	18	18	26	80	67	0	0	0
28	0	0	0	0	17	17	22	360	53	0	0	0
29	0	0	0	0	14	9	18	200	45	0	0	0
30	0	0	0	0		4	14	119	38	0	0	0
31	0		0	0		3		88		0	0	
<i>Total</i>	0	0	0	1	466	346	341	1331	1836	257	0	0
<i>Max</i>	0	0	0	0	83	54	40	360	122	33	0	0
<i>Min</i>	0	0	0	0	0	1	1	5	28	0	0	0
<i>Avg</i>	0	0	0	0	16	11	11	43	61	8	0	0
<i>Runoff</i>	0.0	0.0	0.0	0.0	0.4	0.3	0.3	1.1	1.5	0.2	0.0	0.0



**Appendix D-4. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Camp Creek (104), Water Year 2001</b>												
1	0	0	12	5	105	103	21	6	4	0	0	0
2	0	0	10	4	82	90	18	6	5	0	0	0
3	0	0	9	4	67	81	18	5	4	0	0	0
4	0	0	9	3	49	74	15	4	4	0	0	0
5	0	0	10	2	42	63	15	4	13	0	0	0
6	8	0	11	2	34	54	18	4	46	0	0	0
7	7	1	11	2	37	49	18	5	77	0	0	0
8	2	2	10	1	49	46	16	5	48	0	0	0
9	1	15	9	1	126	42	14	4	33	0	0	0
10	0	69	6	1	141	39	14	3	25	0	0	0
11	0	54	26	1	92	37	20	5	21	0	0	0
12	0	40	85	0	70	36	19	5	17	0	0	0
13	0	39	59	0	56	36	12	3	13	0	0	0
14	0	43	41	3	90	31	10	3	11	0	0	0
15	0	34	30	31	128	31	14	4	10	0	0	0
16	1	30	20	44	102	41	9	4	7	0	0	0
17	3	27	10	40	83	55	7	4	5	0	0	0
18	2	22	4	36	68	53	5	5	4	0	0	0
19	1	21	4	32	54	50	7	7	4	0	0	0
20	1	19	4	29	46	46	10	6	2	0	0	0
21	1	17	4	24	39	43	8	6	2	0	0	0
22	1	17	4	20	38	40	4	6	3	0	0	0
23	1	13	4	17	33	37	3	4	2	0	0	0
24	0	11	4	17	149	34	3	4	1	0	0	0
25	0	13	4	17	1164	31	2	4	0	0	0	0
26	0	21	5	17	288	29	2	4	0	0	0	0
27	0	24	5	17	169	27	2	6	0	0	0	0
28	0	21	5	17	126	26	1	5	0	0	0	0
29	0	18	5	53		27	1	3	0	0	0	0
30	0	15	5	463		25	1	2	0	0	0	0
31	0		5	228		24		2		0	0	
<i>Total</i>	31	588	429	1131	3527	1395	309	137	360	0	0	0
<i>Max</i>	8	69	85	463	1164	103	21	7	77	0	0	0
<i>Min</i>	0	0	4	0	33	24	1	2	0	0	0	0
<i>Avg</i>	1	20	14	36	126	45	10	4	12	0	0	0
<i>Runoff</i>	0.0	0.5	0.3	0.9	2.8	1.1	0.2	0.1	0.3	0.0	0.0	0.0

**Appendix D-4. Concluded**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Camp Creek (104), Water Year 2002</b>												
1	0	12	40	22	298	51	124	120	35	10	End of data	
2	0	12	28	22	201	68	101	95	32	8		
3	0	9	22	23	148	144	76	72	28	7		
4	0	6	19	24	116	100	63	60	27	5		
5	0	5	16	23	84	75	55	52	30	4		
6	0	5	15	17	68	74	50	59	30	2		
7	0	4	14	16	58	77	47	135	26	1		
8	0	4	13	17	48	71	66	150	24	0		
9	0	5	11	12	44	112	102	240	23	0		
10	0	6	9	10	44	131	77	194	22	0		
11	0	7	9	7	45	92	67	187	109	0		
12	0	6	9	7	48	78	60	699	311	0		
13	0	6	12	8	37	68	52	650	199	0		
14	0	4	21	8	34	60	48	309	224	0		
15	1	5	43	7	34	54	45	184	134	0		
16	5	5	40	5	30	47	40	166	96	0		
17	14	5	95	5	25	47	37	229	71	0		
18	12	8	138	6	22	44	35	180	56	0		
19	7	4	99	6	100	41	34	138	45	0		
20	3	2	69	5	393	42	32	107	37	0		
21	1	2	54	6	294	37	65	85	32	0		
22	1	2	48	5	183	33	106	72	29	0		
23	0	4	46	5	141	35	74	64	26	0		
24	9	4	38	5	115	34	65	56	23	0		
25	72	4	34	3	94	34	73	49	30	0		
26	66	2	31	3	79	34	59	43	30	0		
27	40	1	29	3	65	32	122	40	24	0		
28	27	1	26	4	58	60	364	53	18	0		
29	20	3	24	4		178	223	66	14	0		
30	16	23	23	8		219	152	47	12	0		
31	14		22	173		164		40		0		
<i>Total</i>	306	169	1101	471	2907	2333	2515	4639	1796	38		
<i>Max</i>	72	23	138	173	393	219	364	699	311	10		
<i>Min</i>	0	1	9	3	22	32	32	40	12	0		
<i>Avg</i>	10	6	36	15	104	75	84	150	60	1		
<i>Runoff</i>	0.2	0.1	0.9	0.4	2.3	1.9	2.0	3.7	1.4	0.0		

**Appendix D-5. Mean Daily and Monthly Discharge (cfs) and Runoff (inches) for Sangamon River near Mahomet (Station 105)**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Mahomet (105), Water Year 1993</b>												
1	-	-	-	-	-	-	-	626	348	2610	319	115
2	-	-	-	-	-	-	-	550	247	3263	273	94
3	-	-	-	-	-	-	-	505	363	5046	236	207
4	-	-	-	-	-	-	-	479	631	3828	199	2233
5	-	-	-	-	-	-	-	500	641	2277	183	3045
6	-	-	-	-	-	-	-	1106	1246	1305	158	1972
7	-	-	-	-	-	-	-	1003	1230	864	149	1494
8	-	-	-	-	-	-	-	748	842	667	136	2784
9	-	-	-	-	-	-	-	619	642	581	117	1914
10	-	-	-	-	-	-	-	522	745	492	106	1086
11	-	-	-	-	-	-	-	450	989	421	120	628
12	-	-	-	-	-	-	-	377	777	541	128	438
13	-	-	-	-	-	-	-	348	647	519	238	261
14	-	-	-	-	-	-	-	334	494	403	368	232
15	-	-	-	-	-	-	-	305	416	699	226	276
16	-	-	-	-	-	-	-	276	358	671	161	783
17	-	-	-	-	-	-	-	247	313	486	141	943
18	-	-	-	-	-	-	-	225	289	413	165	899
19	-	-	-	-	-	-	-	215	397	351	145	725
20	-	-	-	-	-	-	-	203	535	552	136	479
21	-	-	-	-	-	-	-	189	928	442	734	334
22	-	-	-	-	-	-	-	180	1080	322	757	290
23	-	-	-	-	-	-	-	174	747	267	387	247
24	-	-	-	-	-	-	-	162	508	428	273	276
25	-	-	-	-	-	-	-	218	406	970	225	261
26	-	-	-	-	-	-	-	203	351	3219	191	247
27	-	-	-	-	-	-	-	189	306	2407	167	392
28	-	-	-	-	-	-	-	174	273	1183	133	754
29	-	-	-	-	-	-	-	160	1002	709	115	957
30	-	-	-	-	-	-	-	218	3553	500	100	1063
31	-	-	-	-	-	-	-	276		389	109	
<i>Total</i>	-	-	-	-	-	-	-	11775	21302	36824	6895	25424
<i>Max</i>	-	-	-	-	-	-	-	1106	3553	5046	757	3045
<i>Min</i>	-	-	-	-	-	-	-	160	247	267	100	94
<i>Avg</i>	-	-	-	-	-	-	-	380	710	1188	222	847
<i>Runoff</i>	-	-	-	-	-	-	-	1.2	2.2	3.8	0.7	2.6

**Appendix D-5. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Mahomet (105), Water Year 1994</b>												
1	1015	355	754	232	289	104	162	444	136	46	19	22
2	653	319	1015	196	218	102	160	771	129	45	21	22
3	435	291	1450	174	189	116	155	700	120	39	20	22
4	363	287	1668	160	167	145	177	548	115	44	29	21
5	319	280	1450	145	145	363	191	457	112	46	28	21
6	290	271	1131	131	123	580	184	396	110	41	27	21
7	276	233	873	116	116	943	171	355	109	110	26	20
8	261	212	684	110	109	1211	155	564	103	229	26	20
9	580	200	573	113	102	1450	180	903	104	78	32	20
10	928	189	502	122	97	1088	206	745	138	54	30	19
11	1305	180	468	112	91	841	355	570	119	41	28	17
12	1015	177	390	106	86	667	554	474	107	35	28	15
13	732	178	355	102	81	551	13413	422	100	29	27	14
14	508	242	344	97	81	479	11180	365	96	28	44	13
15	421	583	397	94	102	406	2828	341	91	28	60	12
16	580	1108	655	93	290	354	1668	348	84	41	39	12
17	870	916	567	91	493	293	1337	303	78	29	28	11
18	1233	924	470	91	421	252	1047	270	75	23	28	8
19	1740	1668	496	93	464	254	844	249	73	23	28	6
20	3335	1378	500	93	499	216	695	233	70	16	27	5
21	2610	985	452	96	567	197	561	225	80	25	27	4
22	2030	734	413	100	564	197	484	213	77	21	26	3
23	1595	597	365	107	361	175	426	200	68	21	26	3
24	1421	509	323	123	260	167	373	190	64	20	25	2
25	1247	464	297	165	189	165	344	186	71	20	25	2
26	1073	468	276	381	145	154	313	202	68	20	25	2
27	798	1019	261	597	123	145	286	202	58	19	24	4
28	653	1740	247	393	112	207	273	171	57	19	24	3
29	537	1305	232	1183		236	273	155	52	18	23	1
30	454	943	203	1494		200	436	148	48	17	23	0
31	389		218	722		174		142		17	23	
<i>Total</i>	29661	18754	18029	7831	6480	12431	39428	11493	2712	1239	865	343
<i>Max</i>	3335	1740	1668	1494	567	1450	13413	903	138	229	60	22
<i>Min</i>	261	177	203	91	81	102	155	142	48	16	19	0
<i>Avg</i>	957	625	582	253	231	401	1314	371	90	40	28	11
<i>Runoff</i>	3.0	1.9	1.8	0.8	0.7	1.3	4.0	1.2	0.3	0.1	0.1	0.0

**Appendix D-5. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Mahomet (105), Water Year 1995</b>												
1	0	0	115	99	164	60	192	214	1034	258	18	20
2	0	0	98	101	165	62	176	203	669	185	18	19
3	0	0	85	100	156	64	162	187	452	155	18	19
4	0	7	75	101	147	75	157	171	385	141	24	18
5	0	35	68	102	141	84	139	162	340	136	100	18
6	0	139	64	102	141	86	131	151	321	126	99	18
7	0	238	443	102	148	590	132	144	335	112	142	18
8	0	158	1165	102	153	1371	136	143	290	101	341	18
9	0	112	1185	102	138	1416	189	608	250	91	363	18
10	0	102	954	102	119	1267	492	1179	1118	85	388	18
11	7	105	445	99	119	1047	1173	1403	1360	78	314	18
12	8	100	326	92	119	787	1309	2220	1201	71	160	18
13	5	79	251	504	119	460	1346	1846	629	66	102	17
14	2	70	202	1352	119	382	1227	1347	371	59	65	17
15	0	78	172	1660	107	327	894	1386	306	54	42	17
16	0	87	161	1700	97	289	450	1563	254	41	25	17
17	0	74	234	1433	90	249	384	2107	218	35	22	17
18	0	64	317	1152	77	217	833	2074	196	29	35	16
19	0	56	271	1114	78	202	1240	2406	181	29	174	16
20	0	47	215	1404	79	200	1237	2654	183	28	124	16
21	0	62	187	1570	75	189	1139	2388	227	26	137	16
22	0	107	163	1597	69	174	1046	1662	175	24	88	15
23	0	105	150	1240	66	180	587	1191	171	22	50	13
24	0	81	140	617	65	240	422	1356	1035	21	28	12
25	0	69	130	420	59	212	377	2732	727	20	21	12
26	0	61	122	361	58	189	317	3880	333	19	21	12
27	0	61	116	244	62	208	297	2777	235	19	21	12
28	0	106	113	228	62	356	265	1983	223	19	21	11
29	0	222	109	220		310	232	1567	326	19	21	11
30	0	158	102	220		252	224	1396	386	19	20	11
31	0		99	188		216		1179		18	20	
<i>Total</i>	23	2582	8279	18427	2990	11756	16903	44280	13931	2110	3022	477
<i>Max</i>	8	238	1185	1700	165	1416	1346	3880	1360	258	388	20
<i>Min</i>	0	0	64	92	58	60	131	143	171	18	18	11
<i>Avg</i>	1	86	267	594	107	379	563	1428	464	68	97	16
<i>Runoff</i>	0.0	0.3	0.8	1.9	0.3	1.2	1.7	4.5	1.4	0.2	0.3	0.0

**Appendix D-5. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Mahomet (105), Water Year 1996</b>												
1	11	47	51	42	134	64	190	288	1036	108	106	17
2	11	133	53	40	130	47	283	209	1241	101	57	17
3	10	303	47	40	127	35	237	169	1461	91	34	16
4	10	275	44	40	124	30	184	160	1644	80	21	16
5	10	160	38	40	121	56	143	154	1351	70	19	16
6	10	116	30	40	118	95	117	374	1085	63	18	16
7	9	100	28	40	116	122	108	372	766	58	18	16
8	9	82	25	40	111	121	102	438	450	53	18	16
9	9	62	25	40	112	123	88	1218	391	46	18	16
10	9	48	25	40	113	108	77	1532	373	37	18	16
11	9	110	25	40	105	75	70	4228	1034	29	18	16
12	9	414	25	40	87	58	69	4058	1053	23	17	15
13	9	369	25	40	68	53	69	2317	623	20	17	15
14	9	259	24	39	58	51	62	1515	420	19	17	15
15	8	192	32	39	57	49	58	1274	345	19	17	14
16	8	164	36	39	52	50	58	1238	303	24	17	14
17	7	146	27	46	45	54	55	1231	376	20	16	14
18	7	158	23	612	45	56	46	1126	645	19	30	14
19	7	185	42	1349	45	56	48	912	1171	18	94	14
20	7	163	77	1323	49	56	67	477	584	18	49	14
21	6	143	63	1037	43	51	72	390	326	29	21	14
22	6	124	55	393	34	57	94	345	267	187	19	14
23	6	110	55	239	29	61	303	310	231	218	18	14
24	6	99	55	316	33	64	295	286	206	122	18	13
25	6	78	51	241	37	82	214	306	178	91	18	13
26	5	73	44	160	35	90	180	337	152	75	18	13
27	5	75	44	153	45	70	141	1020	138	51	18	13
28	5	78	44	148	84	61	117	1460	129	33	18	13
29	21	66	44	145	85	59	173	2044	122	29	17	13
30	21	52	44	141		58	300	1751	114	31	17	13
31	21		44	137		72		1298		80	17	
<i>Total</i>	287	4387	1245	7077	2242	2084	4019	32834	18217	1861	819	439
<i>Max</i>	21	414	77	1349	134	123	303	4228	1644	218	106	17
<i>Min</i>	5	47	23	39	29	30	46	154	114	18	16	13
<i>Avg</i>	9	146	40	228	77	67	134	1059	607	60	26	15
<i>Runoff</i>	0	0	0	1	0	0	0	3	2	0	0	0

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**Appendix D-5. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Mahomet (105), Water Year 1997</b>												
1	13	0	67	28	163	2400	161	103	613	255	3	13
2	13	0	88	33	207	1577	151	99	667	261	2	12
3	13	0	80	46	415	1319	149	178	867	158	1	12
4	12	0	67	64	1036	1172	151	542	822	126	1	11
5	12	1	60	81	1294	1064	156	408	634	109	1	12
6	12	1	60	113	1242	818	162	294	509	99	1	12
7	12	36	64	88	875	460	158	209	836	84	1	13
8	11	58	57	71	367	405	139	176	713	71	1	21
9	11	74	52	105	260	706	125	163	819	112	1	21
10	11	57	49	96	214	1230	120	142	722	325	1	54
11	9	38	50	97	203	1216	123	126	552	130	1	77
12	8	22	97	97	181	1100	136	123	461	82	1	36
13	7	19	159	97	157	871	161	119	741	60	1	17
14	5	14	124	97	123	1196	167	113	852	54	1	13
15	4	10	106	97	112	1215	143	105	718	54	1	10
16	3	9	96	97	100	1062	133	94	508	55	1	7
17	3	8	85	97	82	602	128	84	404	38	316	5
18	2	7	72	97	90	444	122	84	336	28	628	3
19	1	7	69	97	221	396	126	91	292	26	514	2
20	1	7	69	96	620	371	153	89	250	17	186	2
21	1	7	66	87	1576	351	151	72	222	16	115	1
22	0	6	53	292	2079	323	138	61	202	15	77	1
23	0	5	57	1175	2103	278	126	57	178	13	47	1
24	0	5	65	1185	1540	236	118	57	159	11	35	1
25	0	5	66	1129	1242	230	111	122	168	10	36	1
26	0	9	126	995	1108	232	104	678	576	9	21	0
27	0	10	152	417	2143	202	97	1090	342	7	16	0
28	0	12	92	259	3001	200	102	1790	213	6	15	0
29	0	14	64	239		206	104	1752	167	5	14	0
30	0	33	49	232		197	100	1210	145	4	13	0
31	0		33	209		175		763		4	13	
<i>Total</i>	163	475	2393	7916	22755	22254	4016	10993	14687	2247	2061	357
<i>Max</i>	13	74	159	1185	3001	2400	167	1790	867	325	628	77
<i>Min</i>	0	0	33	28	82	175	97	57	145	4	1	0
<i>Avg</i>	5	16	77	255	813	718	134	355	490	72	66	12
<i>Runoff</i>	0.0	0.0	0.2	0.8	2.3	2.3	0.4	1.1	1.5	0.2	0.2	0.0

**Appendix D-5. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Mahomet (105), Water Year 1998</b>												
1	0	1	112	87	171	270	729	616	200	722	21	0
2	0	1	100	94	172	250	682	800	177	594	21	0
3	0	1	77	88	163	232	601	1183	164	532	21	0
4	0	1	59	76	153	212	648	2129	154	488	226	0
5	0	1	49	94	149	187	691	2257	149	450	139	0
6	0	1	37	328	142	168	635	1813	140	486	102	0
7	0	2	30	517	131	159	540	1726	130	770	65	0
8	0	2	23	774	123	214	578	2561	124	571	90	0
9	0	2	23	1188	117	465	869	3601	165	454	76	0
10	0	3	25	1241	112	722	1002	3023	363	356	46	0
11	0	3	33	1194	120	1356	694	1934	390	309	30	0
12	0	3	41	1153	172	2199	523	1025	958	242	16	0
13	0	4	39	925	285	1557	451	631	1267	203	13	0
14	0	4	30	394	267	954	521	501	1176	178	12	0
15	1	5	28	309	217	627	664	424	1619	157	10	0
16	1	6	33	271	193	549	565	381	2546	141	9	0
17	1	7	29	225	204	737	463	340	4811	127	8	0
18	1	7	25	194	347	1891	380	303	4615	115	7	0
19	1	7	23	173	485	2680	337	274	3482	106	6	0
20	1	7	21	158	456	2633	316	267	2433	98	5	0
21	1	7	20	144	410	2611	310	267	1577	83	4	0
22	1	7	24	139	357	2419	310	247	905	73	3	0
23	1	7	30	135	321	2101	284	278	1647	161	2	0
24	1	7	42	128	290	1604	257	380	2002	182	2	0
25	1	8	114	121	251	1100	240	540	1684	117	1	0
26	2	10	218	115	226	771	227	453	865	82	1	0
27	2	10	202	111	239	624	209	346	518	62	1	0
28	2	10	153	116	267	1110	181	291	510	52	1	0
29	1	16	131	139		1539	190	251	503	43	1	0
30	1	81	120	168		1201	335	242	1029	33	0	0
31	1		95	174		920		229		26	0	
<i>Total</i>	20	225	1990	10972	6541	34062	14431	29312	36304	8012	938	3
<i>Max</i>	2	81	218	1241	485	2680	1002	3601	4811	770	226	0
<i>Min</i>	0	1	20	76	112	159	181	229	124	26	0	0
<i>Avg</i>	1	7	64	354	234	1099	481	946	1210	258	30	0
<i>Runoff</i>	0.0	0.0	0.2	1.1	0.7	3.5	1.5	3.0	3.7	0.8	0.1	0.0



**Appendix D-5. Continued**

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<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Mahomet (105), Water Year 1999</b>												
1	0	0	2	1	473	211	113	287	136	202	29	13
2	0	0	2	1	603	193	112	272	372	274	26	12
3	0	0	2	1	625	343	110	259	781	308	23	11
4	0	3	2	1	520	452	109	248	829	222	22	10
5	0	11	2	1	371	366	109	241	666	176	22	7
6	0	16	2	1	300	354	110	237	626	152	21	3
7	0	12	2	1	486	391	112	228	486	136	21	2
8	0	11	2	1	1250	340	110	208	362	124	21	1
9	0	10	1	1	1385	318	126	190	294	114	21	1
10	0	10	1	1	1225	281	215	178	254	107	20	1
11	0	9	1	1	850	224	228	172	227	96	20	1
12	0	9	1	1	764	200	245	169	206	85	20	1
13	0	8	1	1	626	215	187	187	262	75	20	1
14	0	7	1	1	441	233	157	314	490	68	20	1
15	0	6	1	1	362	230	227	386	706	63	20	1
16	0	5	1	1	334	253	1094	320	796	62	21	1
17	0	5	1	1	324	316	2482	278	502	60	21	1
18	0	4	0	1	313	332	2841	299	314	59	20	1
19	1	4	0	1	279	272	2157	276	255	58	20	1
20	1	4	0	1	239	213	1423	234	226	62	20	1
21	0	3	1	7	205	197	904	211	202	48	19	1
22	0	3	1	614	182	183	694	216	183	45	19	1
23	0	3	1	1882	172	163	585	199	170	42	19	1
24	0	3	1	2229	166	152	487	190	195	40	18	1
25	0	3	1	1943	160	142	411	182	393	37	18	1
26	0	3	1	1492	150	130	370	166	479	35	17	1
27	0	2	1	869	147	125	347	152	382	33	17	1
28	0	2	1	693	177	123	343	143	375	38	16	2
29	0	2	1	567		121	309	138	286	38	15	20
30	0	2	1	409		116	280	133	229	35	15	17
31	0		1	336		114		132		33	14	
<i>Total</i>	7	161	38	11064	13130	7301	16998	6845	11684	2925	614	118
<i>Max</i>	1	16	2	2229	1385	452	2841	386	829	308	29	20
<i>Min</i>	0	0	0	1	147	114	109	132	136	33	14	1
<i>Avg</i>	0	5	1	357	469	236	567	221	389	94	20	4
<i>Runoff</i>	0.0	0.0	0.0	1.1	1.3	0.7	1.7	0.7	1.2	0.3	0.1	0.0

**Appendix D-5. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Mahomet (105), Water Year 2000</b>												
1	17	26	38	32	23	84	68	84	255	140	16	1
2	19	30	37	31	23	75	63	84	208	119	16	1
3	19	32	37	31	24	67	58	87	176	107	19	1
4	20	32	37	33	24	59	54	83	154	100	12	0
5	18	33	39	32	24	56	51	77	148	113	11	0
6	19	33	45	31	24	54	49	72	139	173	11	0
7	22	35	39	31	24	50	48	67	121	154	11	0
8	22	36	33	31	24	48	49	67	107	108	10	0
9	23	38	33	30	24	47	46	75	101	86	10	0
10	23	38	33	29	24	45	45	100	93	75	10	10
11	21	38	33	28	27	45	48	110	86	80	9	12
12	21	38	31	27	37	44	45	100	94	71	5	19
13	21	42	31	27	41	43	43	94	171	60	1	23
14	21	44	31	27	43	42	42	82	146	53	1	24
15	19	43	32	27	42	42	41	69	132	47	1	18
16	22	42	33	26	41	41	41	61	113	41	0	12
17	27	40	33	24	40	40	57	61	98	36	2	10
18	23	40	33	23	91	39	80	87	83	33	8	9
19	23	39	33	23	173	44	80	138	74	30	5	1
20	22	40	32	23	183	88	77	131	76	27	6	3
21	22	40	31	23	149	182	109	122	208	25	10	1
22	24	40	31	23	129	179	223	114	639	23	11	1
23	23	41	30	23	124	137	172	106	590	20	200	1
24	22	42	30	23	118	119	149	99	596	18	60	8
25	23	40	29	23	109	110	145	90	595	16	23	16
26	24	40	29	22	99	101	146	77	471	15	15	24
27	24	41	29	22	95	95	129	150	324	14	14	24
28	24	40	29	21	93	89	119	604	240	13	13	19
29	25	39	30	21	90	84	112	695	194	19	12	15
30	24	38	31	22		78	102	472	164	36	10	12
31	23		32	22		73		330		18	7	
<i>Total</i>	681	1138	1024	810	1964	2300	2491	4588	6594	1869	539	266
<i>Max</i>	27	44	45	33	183	182	223	695	639	173	200	24
<i>Min</i>	17	26	29	21	23	39	41	61	74	13	0	0
<i>Avg</i>	22	38	33	26	68	74	83	148	220	60	17	9
<i>Runoff</i>	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.5	0.7	0.2	0.1	0.0

**Appendix D-5. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Mahomet (105), Water Year 2001</b>												
1	11	22	75	139	1350	1169	183	124	238	73	15	25
2	11	22	72	157	1248	808	172	126	255	67	14	68
3	10	22	68	148	1147	633	161	124	333	71	13	32
4	11	26	68	127	749	540	153	124	378	88	11	19
5	22	24	70	104	489	479	144	115	485	99	9	14
6	45	26	70	84	452	415	151	132	602	90	9	10
7	43	36	69	67	421	363	301	147	916	68	8	8
8	37	43	67	54	557	328	544	132	1119	58	7	10
9	32	89	65	46	978	300	293	121	846	54	5	29
10	27	276	63	43	1805	272	230	107	531	49	4	24
11	22	327	99	43	2364	253	257	111	420	45	2	17
12	19	245	240	43	1495	243	594	105	356	41	3	17
13	17	192	206	44	801	242	550	98	303	38	2	12
14	17	190	162	45	780	234	381	92	258	34	1	8
15	25	176	136	56	1126	216	321	91	231	31	0	3
16	27	151	119	151	1129	233	301	92	212	27	0	0
17	31	126	102	174	913	361	268	93	183	26	0	0
18	31	108	89	117	615	528	229	112	160	28	3	1
19	27	95	79	80	465	528	208	250	152	27	10	3
20	26	86	72	71	399	468	206	267	143	25	8	1
21	28	77	66	67	336	406	202	201	142	23	14	4
22	28	70	61	64	294	352	196	165	163	21	12	11
23	28	68	57	62	275	311	179	134	180	21	14	8
24	33	65	55	62	583	280	175	113	148	20	11	3
25	43	65	53	61	3206	249	160	124	125	19	14	0
26	54	74	53	61	4673	223	147	130	108	18	18	0
27	62	84	55	64	3547	215	146	211	97	17	14	0
28	64	86	62	83	1910	206	139	370	89	15	15	0
29	42	84	73	333		200	126	301	84	16	15	0
30	23	78	91	1122		197	119	233	80	15	14	0
31	23		114	1674		190		196		17	45	
<i>Total</i>	919	3034	2730	5444	34106	11444	7233	4740	9339	1239	308	327
<i>Max</i>	64	327	240	1674	4673	1169	594	370	1119	99	45	68
<i>Min</i>	10	22	53	43	275	190	119	91	80	15	0	0
<i>Avg</i>	30	101	88	176	1218	369	241	153	311	40	10	14
<i>Runoff</i>	0.1	0.3	0.3	0.6	3.5	1.2	0.7	0.5	1.0	0.1	0.0	0.0

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**Appendix D-5. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Mahomet (105), Water Year 2002</b>												
1	0	186	277	157	1621	372	589	1328	278	159	48	67
2	0	184	358	147	2088	373	486	823	260	142	36	57
3	0	175	269	152	1732	803	422	612	242	128	28	49
4	0	156	217	160	1140	968	352	497	230	117	23	44
5	7	136	185	165	688	786	314	428	253	107	21	39
6	10	129	165	147	517	607	294	405	383	95	18	35
7	7	123	151	133	444	705	280	407	420	85	16	31
8	14	119	137	118	384	883	300	370	336	77	15	31
9	14	116	125	112	338	1046	425	455	286	71	14	31
10	13	111	114	120	322	1372	504	786	271	67	13	29
11	14	102	103	105	328	1398	446	922	318	68	12	27
12	23	99	99	92	342	1000	396	1468	606	58	12	24
13	28	93	105	90	329	679	353	3714	867	52	11	23
14	83	86	128	87	284	580	320	4352	1447	47	12	21
15	210	85	199	82	266	515	305	2954	1284	43	13	20
16	239	84	281	77	257	454	282	1783	947	39	25	20
17	188	81	346	71	235	400	258	1231	586	35	20	19
18	202	78	666	67	211	377	241	1015	442	32	15	21
19	144	75	671	66	405	346	231	961	365	31	52	23
20	110	73	495	73	1560	331	223	831	314	31	97	25
21	89	71	372	70	1842	313	278	651	277	35	181	26
22	78	68	312	67	1669	278	436	547	252	29	101	26
23	75	66	299	68	1214	266	452	488	234	32	1157	24
24	197	69	306	64	767	264	374	456	219	31	1292	21
25	491	67	275	64	595	267	344	428	204	41	1439	18
26	912	67	239	59	512	251	311	384	265	39	883	17
27	750	68	222	56	460	243	434	344	287	33	321	16
28	406	62	208	56	412	302	1359	333	362	32	197	15
29	301	65	195	60		610	1731	367	233	42	136	15
30	246	90	182	79		769	1824	330	182	43	103	15
31	206		169	627		749		299		55	81	
<i>Total</i>	5055	2985	7870	3493	20961	18308	14563	29969	12649	1895	6390	827
<i>Max</i>	912	186	671	627	2088	1398	1824	4352	1447	159	1439	67
<i>Min</i>	7	62	99	56	211	243	223	299	182	29	11	15
<i>Avg</i>	187	100	254	113	749	591	485	967	422	61	206	28
<i>Runoff</i>	0.5	0.3	0.8	0.4	2.1	1.9	1.5	3.1	1.3	0.2	0.7	0.1

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**Appendix D-5. Concluded**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Mahomet (105), Water Year 2003</b>												
1	14	19	25	79	47	31	55	End of data				
2	18	21	24	86	53	32	53					
3	15	22	25	69	54	32	53					
4	16	21	26	62	54	33	52					
5	17	24	25	54	52	39	138					
6	16	24	25	52	49	44	427					
7	17	23	25	47	47	48	387					
8	18	25	24	45	45	62	539					
9	16	28	24	43	42	87	518					
10	15	29	24	41	40	133	395					
11	15	26	24	40	40	157	309					
12	15	23	24	40	39	90	254					
13	13	25	24	39	39	93	209					
14	13	28	24	38	39	89	175					
15	13	29	24	37	44	86	156					
16	12	27	25	37	50	74	143					
17	12	27	25	37	44	68	137					
18	13	28	33	37	39	68	125					
19	18	28	58	37	38	67	112					
20	16	28	86	37	38	65	113					
21	16	28	86	37	41	63	117					
22	17	29	67	37	62	106	111					
23	18	28	53	37	84	130	99					
24	17	29	48	37	86	106	90					
25	18	29	45	37	79	88	97					
26	17	28	42	36	64	78	111					
27	17	27	39	36	49	75	108					
28	17	27	37	37	36	72	95					
29	19	26	35	39		69	88					
30	20	25	36	41		67	85					
31	19		55	43		61						
<i>Total</i>	497	781	1138	1371	1392	2310	5349					
<i>Max</i>	20	29	86	86	86	157	539					
<i>Min</i>	12	19	24	36	36	31	52					
<i>Avg</i>	16	26	37	44	50	75	178					
<i>Runoff</i>	0.1	0.1	0.1	0.1	0.1	0.2	0.5					

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**Appendix D-6. Mean Daily and Monthly Discharge (cfs) and Runoff (inches) for Big Ditch (Station 106)**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Big Ditch (106), Water Year 1993</b>												
1	-	-	-	-	-	-	-	100	16	956	18	8
2	-	-	-	-	-	-	-	50	28	615	17	18
3	-	-	-	-	-	-	-	50	29	345	15	419
4	-	-	-	-	-	-	-	100	122	154	14	121
5	-	-	-	-	-	-	-	75	247	90	13	52
6	-	-	-	-	-	-	-	50	87	53	12	51
7	-	-	-	-	-	-	-	25	53	41	12	42
8	-	-	-	-	-	-	-	25	41	39	11	30
9	-	-	-	-	-	-	-	25	37	31	11	24
10	-	-	-	-	-	-	-	25	30	25	11	19
11	-	-	-	-	-	-	-	25	30	24	12	16
12	-	-	-	-	-	-	-	25	38	20	61	16
13	-	-	-	-	-	-	-	100	28	279	41	15
14	-	-	-	-	-	-	-	75	24	161	22	131
15	-	-	-	-	-	-	-	50	21	104	17	492
16	-	-	-	-	-	-	-	25	19	100	16	148
17	-	-	-	-	-	-	-	25	18	50	15	81
18	-	-	-	-	-	-	-	25	51	100	13	53
19	-	-	-	-	-	-	-	25	33	50	14	40
20	-	-	-	-	-	-	-	20	37	30	54	34
21	-	-	-	-	-	-	-	20	33	18	24	29
22	-	-	-	-	-	-	-	20	23	17	18	26
23	-	-	-	-	-	-	-	80	20	74	15	24
24	-	-	-	-	-	-	-	100	19	190	13	21
25	-	-	-	-	-	-	-	60	17	600	8	49
26	-	-	-	-	-	-	-	20	16	300	0	102
27	-	-	-	-	-	-	-	15	16	100	0	172
28	-	-	-	-	-	-	-	15	260	75	0	88
29	-	-	-	-	-	-	-	14	218	50	0	52
30	-	-	-	-	-	-	-	16	270	25	0	50
31	-	-	-	-	-	-	-	24		20	5	
<i>Total</i>	-	-	-	-	-	-	-	1304	1881	4736	483	2423
<i>Max</i>	-	-	-	-	-	-	-	100	270	956	61	492
<i>Min</i>	-	-	-	-	-	-	-	14	16	17	0	8
<i>Avg</i>	-	-	-	-	-	-	-	42	63	153	16	81
<i>Runoff</i>	-	-	-	-	-	-	-	1.3	1.8	4.6	0.5	2.4

**Appendix D-6. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Big Ditch (106), Water Year 1994</b>												
1	50	7	35	18	13	20	10	70	14	0	1	0
2	50	6	186	17	13	20	25	60	12	0	1	0
3	25	6	126	16	10	20	120	60	6	0	1	0
4	25	6	113	15	10	20	65	54	3	0	1	0
5	25	4	103	14	10	20	65	46	3	0	1	0
6	25	2	66	14	10	30	65	41	3	2	1	0
7	25	5	48	14	10	50	40	130	2	13	0	0
8	50	10	41	13	10	118	30	105	3	13	1	0
9	130	16	38	13	10	66	75	69	4	12	1	0
10	65	16	39	13	10	20	150	53	4	9	0	0
11	50	16	40	13	10	10	500	46	4	4	0	0
12	40	16	41	10	10	10	2500	39	4	2	0	0
13	30	16	42	9	10	10	1414	36	3	1	3	0
14	25	92	43	9	10	10	490	34	2	2	8	0
15	25	86	43	9	10	10	311	32	1	2	1	0
16	100	48	35	9	10	10	200	28	1	1	0	0
17	300	130	32	9	10	10	133	26	1	1	0	0
18	130	100	36	9	10	10	104	25	1	1	0	0
19	65	80	34	9	10	10	78	23	0	1	0	0
20	120	70	33	9	20	10	60	22	0	1	0	0
21	150	60	32	9	20	10	50	21	0	1	0	0
22	75	50	29	9	25	10	43	21	0	1	0	0
23	50	40	25	10	50	10	38	20	0	1	0	0
24	25	30	24	11	30	10	36	19	1	1	0	0
25	25	32	23	77	30	10	40	19	0	1	0	0
26	20	197	22	87	30	10	120	18	0	1	0	0
27	20	112	22	77	30	75	500	16	0	1	0	0
28	15	66	22	233	20	30	250	15	0	1	0	0
29	12	47	21	13		10	150	15	0	1	0	0
30	11	38	20	13		10	150	15	0	1	0	0
31	10		19	13		10		14		1	0	
<i>Total</i>	1767	1406	1431	793	450	679	7812	1193	72	69	22	5
<i>Max</i>	300	197	186	233	50	118	2500	130	14	13	8	0
<i>Min</i>	10	2	19	9	10	10	10	14	0	0	0	0
<i>Avg</i>	57	47	46	26	16	22	260	38	2	2	1	0
<i>Runoff</i>	1.7	1.4	1.4	0.8	0.4	0.7	7.7	1.2	0.1	0.1	0.0	0.0

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**Appendix D-6. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Big Ditch (106), Water Year 1995</b>												
1	0	0	4	5	14	3	16	17	41	14	0	0
2	0	1	4	5	14	4	15	14	36	13	0	0
3	0	0	3	5	13	4	14	16	33	13	0	0
4	0	1	3	5	12	2	13	17	29	13	0	0
5	0	11	2	5	12	2	12	16	27	12	0	0
6	0	23	5	5	13	2	12	15	29	12	0	0
7	0	12	112	5	13	222	11	15	26	11	23	0
8	0	8	53	5	14	146	17	15	22	11	19	0
9	0	6	35	5	14	67	17	98	21	10	19	0
10	3	10	28	5	15	51	211	64	221	10	35	0
11	0	10	20	5	12	46	199	45	80	8	18	0
12	0	6	17	8	12	37	215	36	44	7	12	0
13	0	4	14	284	12	30	106	34	34	6	7	0
14	0	6	13	478	12	24	64	46	28	6	3	0
15	0	7	12	185	8	21	46	33	24	5	1	0
16	0	6	16	104	1	20	36	38	21	4	1	0
17	0	5	30	70	0	17	33	295	20	3	7	0
18	0	4	21	52	1	16	166	195	19	2	23	0
19	0	2	17	210	3	16	89	263	18	1	24	0
20	0	1	15	172	4	16	64	112	20	1	20	0
21	0	14	13	90	5	14	62	70	17	1	14	0
22	0	11	12	50	4	13	45	50	16	1	10	0
23	0	8	12	30	4	15	37	42	69	2	7	0
24	0	6	11	24	3	22	32	376	55	1	5	0
25	0	5	11	21	3	16	25	267	29	1	3	0
26	0	3	10	20	3	15	24	126	22	0	2	0
27	0	8	9	19	3	31	22	90	19	0	1	0
28	0	12	9	18	3	33	19	150	17	2	1	0
29	0	8	6	15		23	19	87	16	1	1	0
30	0	5	6	14		20	18	59	15	1	0	0
31	0		6	14		18		48		0	0	
<i>Total</i>	8	199	527	1936	226	964	1658	2749	1069	173	258	3
<i>Max</i>	3	23	112	478	15	222	215	376	221	14	35	0
<i>Min</i>	0	0	2	5	0	2	11	14	15	0	0	0
<i>Avg</i>	0	7	17	62	8	31	55	89	36	6	8	0
<i>Runoff</i>	0.0	0.2	0.5	1.9	0.2	0.9	1.6	2.7	1.0	0.2	0.3	0.0

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**Appendix D-6. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Big Ditch (106), Water Year 1996</b>												
1	0	13	10	10	18	16	36	26	39	13	6	2
2	0	31	8	10	18	11	24	21	196	11	5	2
3	0	34	8	10	18	10	19	19	107	11	4	3
4	0	17	7	10	18	7	15	18	64	11	3	3
5	1	13	7	10	18	8	12	58	45	11	2	3
6	1	12	6	10	18	35	12	61	38	11	1	2
7	0	11	11	10	24	31	12	27	34	11	1	3
8	0	9	11	10	16	20	11	107	30	11	1	4
9	0	7	11	10	7	14	10	162	28	10	1	6
10	0	8	11	10	2	11	10	764	30	10	1	4
11	0	38	11	10	0	7	9	344	97	9	1	4
12	0	34	11	10	0	5	8	146	51	8	1	3
13	0	23	11	10	0	5	6	99	37	7	1	3
14	0	19	11	10	0	5	4	73	31	6	1	3
15	0	18	11	11	0	5	5	80	26	9	1	3
16	0	16	11	14	0	5	4	77	28	11	1	2
17	0	17	11	23	0	5	4	58	58	10	1	3
18	0	21	11	129	0	4	7	44	41	9	4	3
19	0	17	10	146	0	4	7	36	31	8	16	3
20	0	16	10	64	1	3	7	32	26	7	8	3
21	1	15	10	34	4	8	6	27	23	10	4	3
22	2	13	10	25	4	7	33	24	22	17	3	3
23	0	13	10	30	6	10	35	23	20	13	3	3
24	0	12	10	44	9	11	24	24	19	12	2	2
25	0	11	10	29	9	13	22	35	18	11	2	2
26	0	12	10	23	10	12	17	30	17	9	2	2
27	9	12	10	26	14	8	14	305	16	7	2	4
28	9	10	10	22	19	8	13	181	15	6	3	6
29	2	9	10	19	19	8	36	133	15	6	3	5
30	0	10	10	18		7	36	68	15	8	3	3
31	4		10	18		12		46		11	3	
<i>Total</i>	33	491	308	819	252	314	459	3147	1219	304	87	95
<i>Max</i>	9	38	11	146	24	35	36	764	196	17	16	6
<i>Min</i>	0	7	6	10	0	3	4	18	15	6	1	2
<i>Avg</i>	1	16	10	26	9	10	15	102	41	10	3	3
<i>Runoff</i>	0.0	0.5	0.3	0.8	0.2	0.3	0.5	3.1	1.2	0.3	0.1	0.1

**Appendix D-6. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Big Ditch (106), Water Year 1997</b>												
1	3	0	11	8	25	124	15	10	49	111	1	0
2	3	0	11	9	64	85	14	4	112	43	1	14
3	3	0	10	11	60	60	14	61	79	28	1	8
4	2	0	9	11	214	43	14	44	53	23	0	0
5	2	0	8	16	88	29	16	31	42	20	0	0
6	2	1	7	15	36	20	15	23	150	19	0	0
7	2	6	6	16	25	16	13	20	431	17	0	0
8	2	12	6	15	20	14	12	20	307	16	0	1
9	2	7	8	15	18	47	12	17	167	25	0	8
10	1	4	6	15	17	110	12	15	91	18	0	11
11	1	2	14	15	16	59	13	15	60	15	0	2
12	1	1	20	15	15	42	13	15	65	14	0	1
13	1	1	14	15	14	41	13	14	124	14	0	1
14	1	4	12	15	13	164	12	13	63	13	0	1
15	1	6	12	15	12	65	11	12	47	14	0	0
16	1	2	12	15	12	44	11	12	39	13	0	0
17	1	2	12	15	11	39	12	12	33	13	21	0
18	1	2	11	15	16	35	12	12	31	12	57	0
19	2	1	11	15	31	32	15	12	27	12	15	0
20	2	1	11	15	316	31	14	12	25	11	13	0
21	1	1	11	86	474	29	13	11	23	10	11	0
22	1	1	12	317	238	23	12	11	21	10	10	0
23	2	1	12	273	115	22	12	11	20	9	8	0
24	3	1	36	132	69	21	12	11	19	7	7	0
25	3	1	58	84	48	22	11	83	73	5	6	0
26	1	4	40	72	250	19	11	95	188	5	5	0
27	1	4	25	61	699	19	11	153	60	4	4	0
28	1	4	14	51	184	20	10	65	39	2	2	0
29	1	3	11	43		18	9	60	30	1	1	0
30	2	7	9	36		16	10	45	42	1	1	0
31	1		8	29		16		62		1	0	
<i>Total</i>	53	77	448	1466	3099	1324	374	981	2513	506	165	53
<i>Max</i>	3	12	58	317	699	164	16	153	431	111	57	14
<i>Min</i>	1	0	6	8	11	14	9	4	19	1	0	0
<i>Avg</i>	2	3	14	47	111	43	12	32	84	16	5	2
<i>Runoff</i>	0.1	0.1	0.4	1.4	3.0	1.3	0.4	1.0	2.5	0.5	0.2	0.1

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**Appendix D-6. Continued**

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<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Big Ditch (106), Water Year 1998</b>												
1	0	0	78	6	10	21	58	96	24	51	9	2
2	0	0	20	5	11	21	48	134	23	41	7	2
3	0	0	12	5	14	20	43	537	21	35	9	2
4	0	0	10	5	15	19	57	423	20	32	146	2
5	0	0	9	7	15	18	50	180	20	28	34	2
6	0	0	8	50	15	18	43	115	20	82	27	2
7	0	0	7	68	15	17	40	339	19	106	21	2
8	0	0	7	57	14	47	39	467	18	54	43	2
9	0	0	7	112	14	219	36	164	34	38	22	1
10	0	0	11	49	14	111	31	99	31	39	18	1
11	0	0	14	35	24	68	30	68	60	32	15	1
12	0	0	14	28	25	50	28	53	141	26	12	1
13	0	0	12	22	18	43	27	43	76	23	11	1
14	0	0	11	21	17	45	55	37	100	21	10	1
15	0	0	10	18	17	46	47	34	369	19	8	1
16	0	0	9	16	17	43	39	32	1315	18	9	1
17	0	0	9	14	24	340	32	28	604	16	8	1
18	0	0	9	13	58	376	30	28	258	16	7	1
19	0	0	9	13	40	145	29	26	419	14	6	1
20	0	0	9	12	35	425	26	27	165	13	6	1
21	0	0	9	12	33	284	25	26	104	13	5	3
22	0	0	10	11	31	162	25	25	104	14	4	3
23	0	0	11	11	28	101	23	38	338	56	4	2
24	0	0	16	11	25	71	22	51	108	24	4	1
25	0	0	36	11	23	59	22	41	70	17	3	1
26	0	0	117	11	22	50	22	34	54	14	2	2
27	0	0	55	9	23	42	20	31	44	13	2	1
28	0	9	17	8	22	348	19	29	38	12	2	1
29	0	19	12	8		148	25	27	104	11	2	1
30	0	46	9	8		85	103	29	92	11	2	1
31	0		6	8		61		26		10	2	
<i>Total</i>	2	77	571	662	623	3506	1095	3289	4793	898	461	41
<i>Max</i>	0	46	117	112	58	425	103	537	1315	106	146	3
<i>Min</i>	0	0	6	5	10	17	19	25	18	10	2	1
<i>Avg</i>	0	3	18	21	22	113	37	106	160	29	15	1
<i>Runoff</i>	0.0	0.1	0.6	0.6	0.6	3.4	1.1	3.2	4.7	0.9	0.5	0.0

**Appendix D-6. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Big Ditch (106), Water Year 1999</b>												
1	1	4	2	1	104	21	17	16	20	6	1	1
2	1	3	1	1	83	22	17	16	100	6	1	1
3	1	3	1	2	65	73	17	16	43	5	1	1
4	1	3	1	2	46	44	18	15	39	5	1	1
5	1	3	1	2	38	38	16	15	88	4	1	1
6	2	3	1	2	35	43	17	15	45	3	1	1
7	2	2	2	2	199	38	16	14	31	3	1	1
8	2	2	2	2	187	35	16	13	25	2	1	1
9	2	2	2	2	107	34	18	12	21	2	1	1
10	1	4	2	2	73	27	15	11	19	2	1	1
11	1	7	2	3	66	26	30	11	18	2	1	1
12	1	4	2	5	117	26	23	11	17	2	1	1
13	1	3	2	9	59	27	20	17	17	1	1	1
14	1	3	2	12	46	27	19	20	17	1	2	1
15	1	3	1	15	42	27	79	20	15	1	2	1
16	1	3	1	19	39	34	438	20	14	1	1	1
17	1	2	1	25	39	38	355	22	13	1	1	1
18	1	2	1	32	35	31	170	34	12	1	1	1
19	1	2	1	43	33	26	114	26	12	1	1	1
20	2	2	2	56	29	26	80	22	11	1	1	1
21	2	2	2	135	26	25	69	20	10	1	1	1
22	2	2	1	1183	24	23	58	18	9	1	1	1
23	2	2	1	870	24	22	48	17	9	1	1	1
24	2	2	1	318	21	22	40	17	9	1	2	1
25	2	2	1	178	21	19	38	15	9	1	1	1
26	2	2	1	119	21	18	36	14	8	1	2	1
27	2	2	1	110	21	18	34	13	8	1	2	1
28	2	2	1	83	22	18	31	12	8	1	2	1
29	3	2	1	58		18	26	12	7	1	1	1
30	3	2	1	47		17	24	12	6	2	1	3
31	5		1	53		16		12		1	1	
<i>Total</i>	56	75	42	3392	1623	880	1897	507	658	65	36	23
<i>Max</i>	5	7	2	1183	199	73	438	34	100	6	2	3
<i>Min</i>	1	2	1	1	21	16	15	11	6	1	1	1
<i>Avg</i>	2	2	1	109	58	28	63	16	22	2	1	1
<i>Runoff</i>	0.1	0.1	0.0	3.3	1.6	0.9	1.9	0.5	0.6	0.1	0.0	0.0

**Appendix D-6. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Big Ditch (106), Water Year 2000</b>												
1	3	1	0	0	0	5	5	7	52	17	2	1
2	2	1	0	0	0	4	5	7	45	15	2	1
3	2	1	0	1	0	4	5	7	38	13	1	1
4	2	1	0	1	0	4	4	6	36	11	1	1
5	3	1	1	2	0	3	4	6	35	12	1	0
6	3	1	2	2	0	3	4	6	30	13	1	0
7	2	1	1	2	0	2	4	7	25	8	1	1
8	2	1	1	1	0	2	4	8	23	7	1	1
9	2	1	1	1	4	2	4	17	21	6	1	1
10	2	1	1	1	6	2	4	40	19	6	1	2
11	3	1	1	1	5	2	4	24	16	6	0	3
12	2	1	1	0	4	2	4	22	34	5	0	3
13	2	1	1	0	3	2	3	20	80	5	0	4
14	1	1	1	0	2	2	4	18	47	4	0	4
15	1	1	2	0	1	2	4	15	29	4	0	3
16	1	1	1	0	2	2	4	16	20	4	0	2
17	1	1	1	0	2	2	12	16	14	4	0	2
18	1	1	1	0	13	1	10	16	10	3	2	2
19	1	1	1	0	41	2	8	15	8	3	1	2
20	1	1	1	0	11	25	10	14	14	3	3	2
21	1	1	1	0	8	18	11	14	104	3	2	2
22	1	1	1	0	10	11	8	16	136	2	1	2
23	1	1	1	0	10	9	9	18	82	2	2	2
24	1	1	1	0	7	9	9	18	170	2	3	3
25	1	1	1	0	6	8	9	17	127	2	3	3
26	1	1	1	0	5	7	7	16	81	2	4	4
27	1	1	1	0	5	7	8	113	52	1	3	5
28	1	1	0	0	6	7	8	147	37	1	3	4
29	1	1	0	0	5	5	7	96	29	2	2	3
30	1	0	0	0		5	6	74	22	4	2	3
31	1		0	0		5		61		3	2	
<i>Total</i>	48	19	22	19	157	162	186	879	1435	172	46	65
<i>Max</i>	3	1	2	2	41	25	12	147	170	17	4	5
<i>Min</i>	1	0	0	0	0	1	3	6	8	1	0	0
<i>Avg</i>	2	1	1	1	5	5	6	28	48	6	1	2
<i>Runoff</i>	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.9	1.4	0.2	0.0	0.1

**Appendix D-6. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Big Ditch (106), Water Year 2001</b>												
1	3	3	10	13	82	71	15	5	12	7	1	3
2	3	3	9	13	53	54	14	4	15	6	1	3
3	2	1	10	13	53	45	14	3	13	7	1	2
4	3	0	10	12	25	39	12	3	35	7	1	1
5	4	0	13	12	29	31	13	4	54	7	1	1
6	6	0	14	12	23	27	16	3	106	7	1	1
7	6	0	14	11	28	25	15	3	95	7	1	1
8	4	1	9	11	61	23	13	3	58	6	1	1
9	4	17	8	11	171	21	13	3	45	7	1	2
10	4	69	8	11	129	20	15	3	38	6	1	5
11	4	31	16	10	62	19	38	4	35	6	1	5
12	3	21	42	10	42	19	31	3	31	5	1	2
13	3	23	19	10	34	19	22	3	28	4	1	2
14	3	23	18	10	112	17	20	3	25	3	1	1
15	4	18	18	9	117	17	19	4	23	3	1	1
16	4	17	16	73	78	25	17	4	19	3	1	1
17	4	14	15	40	51	32	15	4	17	2	1	1
18	4	12	14	23	36	34	15	37	15	2	1	1
19	4	12	14	18	31	30	15	36	15	2	1	1
20	4	10	14	15	25	27	15	23	14	2	1	1
21	4	10	14	11	22	24	14	19	13	2	1	1
22	4	9	14	8	22	22	13	13	12	2	1	2
23	4	8	15	6	19	21	14	11	11	1	1	2
24	4	8	15	5	324	19	11	10	10	2	1	1
25	3	9	15	6	798	18	11	9	10	1	3	1
26	4	14	15	6	195	18	11	11	9	1	1	1
27	3	13	14	6	137	17	11	21	8	1	2	1
28	3	11	14	6	100	17	9	14	8	1	1	1
29	3	11	14	64		17	9	11	8	2	1	1
30	3	10	14	404		16	10	9	7	3	1	1
31	3		13	139		16		10		2	1	
<i>Total</i>	111	377	447	996	2855	799	459	293	788	116	30	50
<i>Max</i>	6	69	42	404	798	71	38	37	106	7	3	5
<i>Min</i>	2	0	8	5	19	16	9	3	7	1	1	1
<i>Avg</i>	4	13	14	32	102	26	15	9	26	4	1	2
<i>Runoff</i>	0.1	0.4	0.4	1.0	2.8	0.8	0.5	0.3	0.8	0.1	0.0	0.0

**Appendix D-6. Continued**

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<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Big Ditch (106), Water Year 2002</b>												
1	1	7	28	11	328	38	63	83	52	27	1	2
2	1	6	14	12	137	62	56	70	51	22	1	2
3	1	6	11	13	97	118	46	57	50	18	1	2
4	1	5	9	13	73	70	41	52	49	15	1	2
5	2	5	8	11	56	54	39	48	78	12	1	2
6	2	4	7	9	47	68	37	51	85	10	1	1
7	3	4	7	12	41	76	37	49	70	8	1	1
8	2	4	6	14	36	65	49	48	64	7	1	1
9	1	4	5	10	35	129	62	72	62	6	1	1
10	1	3	5	7	36	92	50	65	64	6	1	1
11	1	4	5	5	38	65	46	119	170	6	1	1
12	2	3	5	6	38	57	43	580	183	4	1	1
13	6	3	9	6	31	53	38	326	353	4	1	1
14	40	3	18	6	30	48	37	172	190	3	1	1
15	33	3	37	4	30	43	36	115	117	3	1	1
16	31	3	28	4	26	38	33	95	91	3	1	2
17	35	2	78	5	20	38	32	105	74	3	1	2
18	16	2	84	6	19	35	33	108	64	3	1	3
19	9	2	55	5	217	34	33	88	57	3	3	3
20	6	2	40	5	463	34	31	72	52	3	8	4
21	5	2	34	4	189	31	64	64	49	3	2	4
22	4	3	33	3	113	29	67	60	47	3	2	4
23	4	2	34	4	85	30	52	56	46	3	126	3
24	13	2	29	4	70	29	49	53	43	2	66	3
25	78	3	23	3	58	26	46	51	41	3	30	2
26	38	2	17	3	53	26	42	48	75	2	13	2
27	20	2	20	4	48	27	161	47	73	2	7	2
28	13	2	18	4	43	53	338	57	54	3	4	2
29	10	3	14	4		114	150	74	38	3	3	2
30	8	31	13	19		112	104	59	32	3	2	2
31	7		12	353		79		54		2	2	
<i>Total</i>	394	129	706	571	2457	1774	1914	2997	2477	192	282	58
<i>Max</i>	78	31	84	353	463	129	338	580	353	27	126	4
<i>Min</i>	1	2	5	3	19	26	31	47	32	2	1	1
<i>Avg</i>	13	4	23	18	88	57	64	97	83	6	9	2
<i>Runoff</i>	0.4	0.1	0.7	0.6	2.4	1.7	1.9	2.9	2.4	0.2	0.3	0.1

**Appendix D-6. Concluded**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Big Ditch (106), Water Year 2003</b>												
1	2	1	0	3	8	4	1	5	11	21		
2	2	1	0	2	7	3	1	4	11	18		
3	2	1	0	2	6	2	1	3	14	16		
4	2	1	0	2	6	2	8	16	13	13		
5	2	1	0	2	5	3	40	149	12	10		
6	2	1	0	1	4	6	12	68	12	120		
7	2	1	0	1	4	9	39	46	14	71		
8	1	1	0	1	3	13	31	35	14	39		
9	1	1	0	1	3	12	18	101	13	End of data		
10	1	1	0	1	2	9	12	194	13			
11	1	1	0	1	2	6	9	136	136			
12	1	1	1	1	2	4	7	76	245			
13	1	0	0	1	2	3	5	55	127			
14	1	0	0	1	1	2	5	46	118			
15	1	1	0	1	1	2	4	40	76			
16	1	1	0	1	1	2	4	34	60			
17	1	1	0	1	1	2	4	32	51			
18	1	1	1	1	1	2	3	29	46			
19	1	1	8	2	1	2	3	26	42			
20	1	1	3	2	2	2	6	22	38			
21	1	0	2	3	3	2	5	19	36			
22	1	1	1	3	4	1	3	19	35			
23	1	1	2	4	5	1	3	18	34			
24	1	1	2	5	7	1	3	18	33			
25	1	0	2	5	8	1	7	17	32			
26	1	0	2	6	7	1	7	15	31			
27	1	0	2	7	6	1	5	14	30			
28	1	0	2	7	5	1	5	15	29			
29	1	0	2	7		1	5	16	28			
30	1	0	6	8		1	4	15	24			
31	2		9	8		1		15				
<i>Total</i>	37	19	54	95	107	100	259	1296	1376			
<i>Max</i>	2	1	9	8	8	13	40	194	245			
<i>Min</i>	1	0	0	1	1	1	1	3	11			
<i>Avg</i>	1	1	2	3	4	3	9	42	46			
<i>Runoff</i>	0.0	0.0	0.1	0.1	0.1	0.1	0.3	1.3	1.4			



**Appendix D-7. Mean Daily and Monthly Discharge (cfs) and Runoff (inches) for Sangamon River near Monticello (Station 111)**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 1993</b>												
1	75	554	738	1430	713	330	927	1050	472	2340	448	192
2	68	2180	662	1440	626	346	1330	969	492	3860	384	206
3	62	2580	592	1180	557	531	1650	868	461	5010	337	667
4	59	2470	538	2890	510	1630	1920	856	685	5510	298	1320
5	57	2470	483	5340	476	2430	1690	963	1490	4350	266	1670
6	54	2320	451	6110	450	3360	1160	1240	1710	3100	244	2050
7	52	2000	431	5650	433	3750	841	1380	1710	2050	224	2010
8	52	1510	409	3490	419	3420	743	1100	1470	1100	205	1620
9	53	1010	388	2280	402	2920	724	817	934	738	187	1700
10	53	966	384	1690	390	2450	739	699	770	591	183	1720
11	45	1680	371	1150	378	2070	690	620	871	522	183	917
12	45	2480	351	853	440	1780	620	578	838	555	309	520
13	45	3370	316	826	545	1500	575	550	690	551	604	456
14	46	3210	302	813	606	1160	1730	530	585	730	500	558
15	55	3010	376	700	562	892	2270	500	506	875	363	1520
16	105	2630	971	620	524	795	2510	460	453	796	292	1890
17	155	2100	1380	540	474	820	2560	435	412	901	316	1820
18	163	1480	1480	490	395	818	2360	416	552	751	277	1450
19	127	1040	1440	440	403	766	1930	398	633	747	259	900
20	114	851	1070	392	380	731	2130	381	747	702	864	670
21	102	785	799	1220	385	738	2220	361	930	576	1070	573
22	85	984	674	2090	423	786	1950	338	1020	477	915	510
23	77	1690	595	2560	361	1670	1570	341	866	446	596	554
24	73	1870	514	3310	320	2060	1200	361	598	900	477	514
25	73	1970	468	3400	302	2260	2350	357	494	1610	394	505
26	74	2010	366	2750	300	2330	2860	321	437	1840	335	782
27	73	1780	330	2170	310	1920	2730	293	396	2280	289	1530
28	69	1440	360	1690	320	1400	2410	281	378	2430	249	1760
29	67	1100	416	1260		1030	1780	268	833	1560	236	1720
30	65	860	573	957		841	1270	273	1440	709	217	1630
31	60		1140	806		792		403		523	192	
<i>Total</i>	2303	54400	19368	60537	12404	48326	49439	18407	23873	49130	11713	33934
<i>Max</i>	163	3370	1480	6110	713	3750	2860	1380	1710	5510	1070	2050
<i>Min</i>	45	554	302	392	300	330	575	268	378	446	183	192
<i>Avg</i>	74	1813	625	1953	443	1559	1648	594	796	1585	378	1131
<i>Runoff</i>	0.2	3.8	1.3	4.2	0.9	3.3	3.4	1.3	1.6	3.4	0.8	2.3

**Appendix D-7. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 1994</b>												
1	1200	520	1010	300	556	170	254	1720	241	81	24	41
2	799	484	1260	270	403	160	245	1590	230	84	24	23
3	651	463	1990	250	321	180	258	1360	219	79	23	18
4	571	449	2140	230	279	268	265	1020	208	71	31	17
5	516	438	2200	210	232	667	282	837	202	69	51	22
6	469	412	2110	200	210	1090	281	765	199	68	46	20
7	433	382	1810	180	190	1520	271	1460	193	137	39	21
8	416	360	1320	170	180	1990	298	1970	202	462	33	19
9	932	344	1000	175	165	2070	336	1710	239	287	39	17
10	1690	332	866	190	155	1780	587	1380	232	180	40	18
11	1710	323	769	180	145	1150	1090	996	213	133	46	17
12	1640	320	687	170	138	809	5990	868	205	106	32	15
13	1290	333	632	165	133	701	12500	757	208	87	26	14
14	830	556	638	160	133	643	14000	665	192	81	23	14
15	659	1280	713	150	171	598	8000	619	176	72	55	13
16	793	1570	829	150	361	520	3730	566	165	61	75	12
17	1710	1590	797	150	629	451	2590	505	156	60	57	10
18	2440	1960	726	150	604	417	2120	459	147	55	40	9
19	4450	2130	716	150	626	372	1710	422	141	51	31	10
20	4530	2290	716	150	741	340	1400	396	137	48	28	10
21	3640	2110	681	155	811	319	1020	380	132	60	24	10
22	2770	1450	635	160	725	305	858	355	132	61	23	10
23	2320	978	568	170	539	287	748	337	128	51	21	13
24	2030	811	514	214	397	273	665	323	131	49	22	11
25	1660	745	491	383	316	255	600	376	130	42	21	11
26	1240	1120	446	941	219	244	555	372	123	38	20	16
27	951	1840	392	963	190	267	1720	333	116	33	17	24
28	800	2010	350	1930	180	303	1760	300	104	31	18	28
29	704	1980	330	2220		325	1800	278	96	28	19	23
30	630	1510	320	1790		293	1570	263	88	25	24	17
31	568		330	1200		266		252		23	56	
<i>Total</i>	45042	31090	27986	13876	9749	19033	67503	23634	5085	2713	1028	502
<i>Max</i>	4530	2290	2200	2220	811	2070	14000	1970	241	462	75	41
<i>Min</i>	416	320	320	150	133	160	245	252	88	23	17	9
<i>Avg</i>	1453	1036	903	448	348	614	2250	762	170	88	33	17
<i>Runoff</i>	3.1	2.1	1.9	1.0	0.7	1.3	4.7	1.6	0.4	0.2	0.1	0.0

**Appendix D-7. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 1995</b>												
1	14	19	218	163	339	124	326	405	1410	472	53	28
2	12	18	176	146	338	114	303	388	1030	360	53	24
3	13	20	153	127	325	112	287	364	874	306	53	22
4	13	39	139	107	306	110	270	340	766	278	57	21
5	12	55	129	103	272	125	251	320	684	263	85	20
6	11	108	124	101	216	134	237	304	622	247	155	19
7	12	224	236	103	200	575	231	290	608	222	265	24
8	19	268	742	107	190	1580	233	296	569	200	391	21
9	15	205	995	123	180	1780	257	844	503	185	493	18
10	15	187	991	109	175	1800	316	1410	846	175	476	19
11	16	171	734	111	170	1520	724	1700	1550	166	492	19
12	27	160	543	140	167	1040	992	1830	1530	159	328	19
13	25	144	417	406	162	830	1240	2370	1150	148	199	18
14	19	138	341	1500	161	701	1320	2760	734	140	139	16
15	15	137	294	2270	160	596	1090	2090	585	131	103	13
16	14	138	276	2500	160	522	730	1910	501	120	80	13
17	14	140	348	2550	161	464	622	5640	444	109	73	12
18	14	124	437	2270	162	415	849	5080	406	102	66	12
19	13	108	442	1790	163	385	1360	4850	378	93	140	12
20	12	100	378	1940	166	377	1430	3660	359	86	221	12
21	13	124	327	2110	166	356	1410	3330	421	84	186	13
22	12	151	291	2240	156	332	1150	2980	395	81	175	13
23	9	174	264	2050	154	314	908	2330	373	83	117	11
24	11	163	244	1110	147	331	758	2940	635	78	84	10
25	11	140	228	662	141	352	657	3520	827	75	66	11
26	11	122	212	537	141	325	572	3570	637	70	53	11
27	11	122	199	490	142	331	524	4540	479	68	46	12
28	10	152	192	450	142	406	476	4040	396	67	41	14
29	10	210	184	405		474	437	2970	426	64	38	12
30	11	283	174	357		408	420	2240	517	65	34	10
31	19		164	335		359		1880		59	30	
<i>Total</i>	433	4144	10592	27412	5362	17292	20380	71191	20655	4756	4792	479
<i>Max</i>	27	283	995	2550	339	1800	1430	5640	1550	472	493	28
<i>Min</i>	9	18	124	101	141	110	231	290	359	59	30	10
<i>Avg</i>	14	138	342	884	192	558	679	2296	689	153	155	16
<i>Runoff</i>	0.0	0.3	0.7	1.9	0.4	1.2	1.4	4.9	1.4	0.3	0.3	0.0

**Appendix D-7. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 1996</b>												
1	10	36	82	55	140	157	314	690	1600	227	154	26
2	10	65	79	60	120	136	472	564	1790	212	140	24
3	12	174	81	56	100	119	483	464	1960	195	99	22
4	10	338	76	52	90	95	402	644	1920	179	80	20
5	10	272	73	47	83	120	321	604	1950	165	70	21
6	14	186	68	45	85	177	258	583	1680	153	62	20
7	11	146	62	42	95	201	223	713	1140	143	56	20
8	11	121	60	40	100	160	205	994	882	136	51	19
9	10	107	45	39	120	140	188	1740	801	127	46	24
10	10	93	42	37	130	191	171	2280	887	117	41	25
11	12	99	41	36	154	166	159	3780	967	107	38	23
12	11	212	40	36	138	144	157	5370	1090	98	35	21
13	10	474	42	38	120	133	153	4540	945	92	33	19
14	24	391	47	40	107	126	144	2820	797	90	32	18
15	23	295	52	44	97	121	138	2090	692	89	31	17
16	19	243	58	48	92	116	133	1680	607	85	29	16
17	14	215	63	60	88	116	126	1500	599	84	30	17
18	11	198	65	244	85	120	120	1390	638	75	40	17
19	8	221	63	849	84	122	123	1120	868	67	95	16
20	14	237	53	1040	93	124	143	887	917	65	128	16
21	18	212	49	953	100	118	150	758	635	55	87	16
22	14	187	47	717	95	115	253	672	508	150	60	15
23	11	163	45	556	90	121	429	615	470	500	64	16
24	10	145	44	479	89	126	579	606	466	286	65	16
25	16	129	44	560	93	142	487	774	409	231	38	15
26	19	113	46	390	99	149	400	863	346	167	33	15
27	25	109	47	325	114	147	326	1930	307	136	143	21
28	21	109	48	290	138	129	280	2340	282	109	54	22
29	22	109	50	226	166	124	607	2010	262	93	37	21
30	42	97	52	190		121	739	2190	244	90	30	21
31	41		54	160		142		2100		88		29
<i>Total</i>	492	5496	1718	7754	3105	4218	8683	49311	26659	4411	1901	608
<i>Max</i>	42	474	82	1040	166	201	739	5370	1960	500	154	29
<i>Min</i>	8	36	40	36	83	95	120	464	244	55	29	15
<i>Avg</i>	16	183	55	250	107	136	289	1591	889	142	63	20
<i>Runoff</i>	0.0	0.4	0.1	0.5	0.2	0.3	0.6	3.4	1.8	0.3	0.1	0.0

**Appendix D-7. Continued**

A-90

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 1997</b>												
1	26	9	96	102	299	3740	311	203	1180	321	44	47
2	23	8	119	103	396	2990	294	186	927	460	41	71
3	20	8	123	108	663	2200	286	424	1050	353	39	101
4	18	8	104	128	1020	1760	287	777	1170	275	39	72
5	16	9	94	172	1380	1380	299	820	1080	235	39	54
6	14	13	88	190	1320	1070	302	622	868	210	37	46
7	14	28	110	207	1120	870	281	454	846	195	36	40
8	14	56	80	156	737	769	266	379	1280	177	36	83
9	13	55	68	142	495	906	240	330	1750	167	36	176
10	11	61	60	130	403	1580	227	293	1510	312	33	155
11	10	46	63	120	340	1600	232	264	1170	340	34	158
12	7	33	68	105	300	1430	247	250	1020	197	34	140
13	6	24	140	95	250	1130	252	239	1470	156	34	99
14	6	19	204	88	230	1400	272	228	1440	137	34	75
15	6	16	168	82	210	1590	258	208	1320	129	37	62
16	4	13	145	77	200	1400	237	189	1040	120	36	53
17	4	15	133	72	194	1060	227	180	771	116	134	49
18	4	15	115	69	211	861	219	174	649	102	614	43
19	8	15	80	66	289	770	221	180	570	96	725	40
20	6	14	84	64	632	714	229	173	510	90	459	43
21	6	14	87	70	1710	666	256	159	460	87	237	50
22	8	13	86	291	2320	599	242	142	421	103	170	45
23	7	12	90	755	2540	515	223	132	386	85	128	42
24	6	14	96	1030	2530	450	207	131	350	82	106	38
25	7	16	126	992	2060	434	191	147	347	78	97	33
26	7	21	178	875	1690	410	177	447	575	72	91	29
27	7	21	211	616	2830	389	172	1080	676	65	77	26
28	11	21	170	443	3250	372	174	1410	460	59	67	23
29	11	27	140	350		371	176	1880	361	55	60	22
30	11	59	120	285		356	175	2130	327	51	54	22
31	10		108	277		335		1810		48	51	
<i>Total</i>	318	682	3554	8260	29619	34117	7180	16041	25984	4973	3659	1937
<i>Max</i>	26	61	211	1030	3250	3740	311	2130	1750	460	725	176
<i>Min</i>	4	8	60	64	194	335	172	131	327	48	33	22
<i>Avg</i>	10	23	115	266	1058	1101	239	517	866	160	118	65
<i>Runoff</i>	0.0	0.0	0.2	0.6	2.0	2.4	0.5	1.1	1.8	0.3	0.3	0.1

**Appendix D-7. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 1998</b>												
1	21	24	441	155	324	460	1760	1180	430	1290	79	24
2	19	24	337	174	316	447	1370	1780	395	1270	71	23
3	16	26	264	165	299	422	1150	3610	359	927	67	22
4	15	25	215	161	286	392	1280	4470	341	670	84	21
5	14	24	173	187	277	359	1320	3290	335	587	268	19
6	15	27	143	455	263	331	1210	3080	310	570	195	19
7	19	26	124	671	246	309	1030	3350	288	686	138	18
8	18	33	113	1140	229	420	931	4110	275	910	114	19
9	18	34	108	2020	217	1020	1020	3710	369	751	131	18
10	16	34	116	2110	208	1700	1280	4330	525	593	108	17
11	16	33	142	1980	239	1960	1400	3660	670	495	88	17
12	17	31	161	1630	351	1950	1000	2690	1410	422	76	17
13	20	29	163	901	403	1560	776	1950	1910	367	66	16
14	20	29	148	635	440	1020	767	1130	2030	325	59	16
15	19	29	131	534	395	885	881	824	4080	292	53	16
16	19	27	122	479	365	843	926	710	3830	262	50	15
17	18	28	119	422	385	1050	775	626	4320	234	50	14
18	17	28	109	373	562	2580	650	559	5840	210	51	14
19	19	29	102	332	695	3230	574	519	6160	190	46	12
20	19	31	95	300	734	4560	532	511	4520	174	42	13
21	20	32	89	283	689	5130	517	478	3250	158	39	16
22	19	30	99	269	622	4370	507	494	2460	149	38	15
23	16	30	111	261	560	3650	483	836	2360	159	35	14
24	16	31	132	244	502	3110	448	1910	2390	257	34	19
25	17	30	301	230	452	2530	425	1670	2490	218	32	18
26	22	33	348	221	419	1940	410	1020	2210	158	30	15
27	23	32	377	215	430	1360	380	767	1330	130	29	12
28	23	43	328	251	436	2080	350	626	817	113	28	13
29	24	96	276	288		2800	369	543	700	102	26	12
30	27	237	238	316		2520	729	495	959	95	24	12
31	26		196	328		2100		476		87	24	
<i>Total</i>	588	1165	5821	17730	11344	57088	25250	55404	57363	12851	2175	496
<i>Max</i>	27	237	441	2110	734	5130	1760	4470	6160	1290	268	24
<i>Min</i>	14	24	89	155	208	309	350	476	275	87	24	12
<i>Avg</i>	19	39	188	572	405	1842	842	1787	1912	415	70	17
<i>Runoff</i>	0.0	0.1	0.4	1.2	0.8	3.9	1.7	3.8	4.0	0.9	0.2	0.0

**Appendix D-7. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 1999</b>												
1	12	16	11	8	573	293	189	480	235	374	34	19
2	12	26	11	10	751	314	188	436	531	349	31	18
3	10	29	11	9	822	442	189	409	909	446	28	17
4	9	28	11	8	784	625	192	384	1120	377	26	16
5	11	24	11	8	613	613	184	375	1560	288	25	15
6	13	21	11	9	471	554	197	359	1310	239	24	14
7	12	18	12	10	671	559	190	353	971	206	25	15
8	13	18	11	9	1500	553	192	316	700	181	40	14
9	12	19	9	9	1850	519	272	282	543	161	29	14
10	17	22	9	8	1860	459	322	261	455	144	23	13
11	14	19	10	8	1710	397	406	247	405	128	22	13
12	13	21	9	8	1370	359	411	240	364	115	36	13
13	12	22	9	7	1100	386	370	300	558	103	418	13
14	11	32	9	7	824	413	312	444	876	94	148	13
15	11	29	8	7	635	417	439	587	967	86	69	12
16	10	26	8	7	552	428	1330	565	1080	77	52	11
17	9	23	8	9	510	471	2270	489	1030	74	39	11
18	10	20	8	15	484	486	3190	472	628	69	32	9
19	11	18	9	23	446	447	3410	455	451	64	29	9
20	11	16	8	26	395	377	2760	402	378	67	26	10
21	11	15	10	38	347	340	2200	359	334	78	25	10
22	11	15	9	175	311	315	1590	448	300	61	23	10
23	11	14	9	902	293	291	1120	413	301	52	23	9
24	12	13	9	2030	279	268	859	367	485	47	24	9
25	12	12	8	2890	270	247	730	330	802	43	25	9
26	15	10	7	2410	253	228	647	299	838	39	41	8
27	14	10	7	1980	251	213	611	268	771	48	32	9
28	14	9	6	1310	259	206	686	245	684	44	40	15
29	14	9	6	891		202	633	229	559	51	32	13
30	14	11	5	674		193	538	218	433	48	26	13
31	13		6	528		187		214		39	22	
<i>Total</i>	373	565	273	14031	20184	11802	26627	11246	20578	4192	1469	373
<i>Max</i>	17	32	12	2890	1860	625	3410	587	1560	446	418	19
<i>Min</i>	9	9	5	7	251	187	184	214	235	39	22	8
<i>Avg</i>	12	19	9	453	721	381	888	363	686	135	47	12
<i>Runoff</i>	0.0	0.0	0.0	1.0	1.4	0.8	1.8	0.8	1.4	0.3	0.1	0.0

**Appendix D-7. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 2000</b>												
1	13	5	6	11	7	138	98	160	542	292	28	12
2	10	5	6	12	7	124	94	155	422	252	23	10
3	14	5	6	19	7	113	94	141	343	222	22	9
4	16	4	5	19	8	107	92	142	308	200	24	8
5	15	5	11	21	9	98	85	133	375	244	22	8
6	14	5	23	20	10	91	84	123	326	244	19	7
7	13	6	25	19	10	85	80	118	270	272	18	7
8	22	6	28	17	10	81	77	115	235	219	17	7
9	20	6	27	18	11	80	69	119	206	175	16	6
10	18	6	22	17	15	79	67	157	187	154	15	13
11	17	6	17	16	28	72	77	170	180	157	14	24
12	15	6	15	15	35	67	80	179	184	150	12	24
13	13	6	14	14	45	68	71	288	491	133	11	23
14	12	5	16	13	46	66	70	236	469	113	12	27
15	10	6	18	12	45	66	69	181	429	99	12	26
16	9	7	18	11	44	62	69	153	314	86	11	21
17	8	7	18	11	37	58	94	139	243	75	11	15
18	9	6	18	11	126	52	140	134	202	66	13	12
19	8	6	18	11	367	63	143	147	176	61	13	11
20	7	6	18	11	351	145	143	138	179	54	11	10
21	7	6	15	11	301	261	161	224	625	49	11	8
22	6	5	15	10	241	306	218	214	821	43	16	8
23	6	7	13	10	212	262	293	188	1010	38	30	8
24	5	6	12	10	196	217	292	165	1510	33	220	10
25	5	6	11	8	176	189	321	146	1380	30	79	17
26	5	6	10	8	159	165	280	133	1060	27	43	19
27	5	5	10	7	152	162	254	356	761	25	33	30
28	5	5	10	7	144	150	222	1160	547	23	23	29
29	5	6	11	6	140	134	193	1610	426	20	20	22
30	4	6	12	6		119	171	1200	346	25	18	17
31	4		12	6		108		758		43	15	
<i>Total</i>	318	168	460	385	2939	3788	4201	9282	14567	3624	832	446
<i>Max</i>	22	7	28	21	367	306	321	1610	1510	292	220	30
<i>Min</i>	4	4	5	6	7	52	67	115	176	20	11	6
<i>Avg</i>	10	6	15	12	101	122	140	299	486	117	27	15
<i>Runoff</i>	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.6	1.0	0.3	0.1	0.0



**Appendix D-7. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 2001</b>												
1	14	23	108	60	2180	2860	299	170	210	103	17	38
2	13	22	103	59	2100	2120	284	169	209	93	20	21
3	11	22	98	63	2070	1490	268	167	227	107	17	61
4	14	21	96	70	1760	1110	250	164	344	107	14	34
5	29	20	95	81	1040	917	242	162	449	116	12	20
6	59	30	72	70	702	790	246	154	707	121	12	14
7	87	46	100	58	671	683	253	174	1010	105	12	25
8	74	63	93	52	731	606	565	177	1230	84	11	10
9	60	92	79	48	1330	543	546	161	1310	91	11	15
10	51	336	97	48	2110	486	364	149	981	72	11	17
11	43	490	105	49	2500	449	337	148	676	64	10	20
12	36	436	120	50	2950	425	464	142	548	58	9	11
13	31	350	150	53	2400	418	734	130	463	51	9	10
14	26	320	170	61	1610	394	581	125	398	44	8	9
15	35	286	195	104	1960	378	448	122	352	39	8	6
16	46	252	180	149	2040	419	397	120	317	35	8	5
17	48	213	160	170	1890	548	367	121	281	36	8	5
18	48	177	140	150	1410	732	327	135	248	33	9	6
19	44	156	130	135	899	831	296	166	225	30	7	5
20	42	139	120	120	715	782	286	292	206	28	9	5
21	38	120	110	110	593	696	279	276	204	25	10	5
22	35	97	100	98	508	609	266	228	214	25	11	5
23	33	103	88	92	452	534	254	197	226	29	21	5
24	30	104	88	86	896	474	236	175	220	27	13	6
25	28	100	81	80	4670	425	225	161	186	23	12	5
26	26	108	80	77	5380	388	211	178	161	20	10	4
27	24	120	75	75	5950	358	203	184	141	20	13	4
28	21	124	70	74	4330	343	195	291	130	19	13	4
29	19	122	65	142		330	183	376	119	19	11	3
30	21	115	63	1540		320	173	288	112	18	13	3
31	26		61	2360		310		233		17	16	
<i>Total</i>	1112	4607	3292	6384	55847	21768	9779	5735	12104	1659	365	378
<i>Max</i>	87	490	195	2360	5950	2860	734	376	1310	121	21	61
<i>Min</i>	11	20	61	48	452	310	173	120	112	17	7	3
<i>Avg</i>	36	154	106	206	1995	702	326	185	403	54	12	13
<i>Runoff</i>	0.1	0.3	0.2	0.4	3.9	1.5	0.7	0.4	0.8	0.1	0.0	0.0

**Appendix D-7. Continued**

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<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 2002</b>												
1	3	328	283	230	2440	897	1720	2520	593	306	66	148
2	3	304	524	210	2970	894	1320	2170	552	270	59	120
3	3	287	550	220	3250	1510	1000	1580	515	243	44	100
4	3	268	445	211	3030	2010	816	1120	483	219	33	83
5	7	243	381	206	2420	2050	703	897	526	198	28	71
6	4	220	342	202	1700	1780	632	836	653	175	24	63
7	4	208	313	195	1150	1540	587	1050	747	155	20	55
8	5	199	291	182	930	1680	625	1170	701	140	18	48
9	5	192	269	180	803	1980	806	1500	601	127	16	45
10	9	184	250	176	738	2320	883	1760	574	114	14	45
11	9	176	233	181	712	2450	885	1820	722	106	13	40
12	14	166	221	162	728	2460	803	2930	1560	102	12	36
13	22	160	230	140	712	2120	726	4069	1660	88	12	33
14	22	154	261	156	650	1600	665	4860	2070	78	14	29
15	72	144	343	144	591	1270	623	5120	2250	70	13	27
16	236	139	456	131	554	1070	582	3750	2039	64	21	27
17	228	137	670	117	513	934	536	2970	1650	57	31	28
18	207	134	1020	90	459	851	496	2370	1090	51	26	35
19	205	135	1370	109	737	794	471	1980	794	46	30	31
20	152	125	1190	108	2430	753	454	1760	669	42	75	33
21	115	122	865	121	3220	710	551	1530	584	43	152	32
22	92	117	670	113	3240	649	863	1240	519	49	206	31
23	85	113	550	109	2980	602	912	1040	477	42	850	30
24	127	118	470	110	2510	590	842	918	443	39	2000	28
25	432	116	400	102	1930	613	784	844	418	41	2100	25
26	963	114	360	96	1480	594	706	785	402	50	1960	22
27	1360	110	400	91	1170	561	828	717	501	54	1440	20
28	1080	115	450	89	1010	655	2030	686	498	43	625	18
29	647	126	350	92		1330	2410	777	496	60	367	16
30	492	170	280	118		2040	2470	735	363	56	257	16
31	410		250	852		1980		654		56	190	
<i>Total</i>	7016	5124	14687	5243	45057	41287	27729	56158	25150	3184	10716	1335
<i>Max</i>	1360	328	1370	852	3250	2460	2470	5120	2250	306	2100	148
<i>Min</i>	3	110	221	89	459	561	454	654	363	39	12	16
<i>Avg</i>	226	171	474	169	1609	1332	924	1812	838	103	346	45
<i>Runoff</i>	0.5	0.4	1.0	0.4	3.1	2.8	1.9	3.9	1.7	0.2	0.7	0.1

**Appendix D-7. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 2003</b>												
1	16	15	21	107	41	57	111	126	232	139	118	698
2	15	13	22	127	45	60	104	123	193	137	108	979
3	16	13	22	130	50	56	97	121	181	127	148	1150
4	19	15	21	95	60	54	96	133	172	116	278	862
5	16	20	21	107	72	56	99	397	163	104	272	500
6	15	19	21	89	65	62	233	730	155	94	218	334
7	15	21	18	83	56	72	458	726	153	254	151	252
8	14	22	19	82	51	82	527	552	143	413	115	204
9	15	21	19	83	46	96	639	562	138	263	96	171
10	16	19	19	79	41	110	555	933	134	945	84	147
11	15	23	20	54	38	130	428	1550	245	2230	76	129
12	14	28	20	62	35	160	347	1680	1160	2750	69	114
13	13	23	20	60	31	182	292	1550	1670	2850	64	103
14	15	21	19	56	34	230	251	1230	1540	2510	60	96
15	12	20	19	52	38	198	223	940	1370	1470	55	91
16	12	21	21	49	35	179	207	798	1320	601	54	86
17	11	23	21	46	32	161	202	734	1100	367	53	81
18	16	24	37	44	30	147	185	590	695	338	46	75
19	25	23	62	41	32	144	168	486	505	598	41	69
20	18	24	92	38	37	181	168	468	404	829	37	65
21	19	24	115	36	44	186	168	383	338	755	34	63
22	17	26	114	34	56	170	165	342	294	683	31	64
23	17	25	93	32	80	197	152	313	263	497	28	61
24	19	25	76	31	100	207	140	286	235	358	26	59
25	25	25	63	30	85	183	142	265	214	292	25	57
26	22	24	67	30	73	157	146	246	197	239	23	67
27	21	24	53	31	76	142	150	605	181	199	22	85
28	19	22	54	32	60	140	146	603	167	178	20	267
29	24	22	53	33		132	135	602	157	160	38	266
30	21	22	58	35		119	128	600	147	144	38	199
31	23		89	38		114		599		132	207	
<i>Total</i>	535	647	1369	1846	1443	4164	6862	19272	13866	20772	2635	7394
<i>Max</i>	25	28	115	130	100	230	639	1680	1670	2850	278	1150
<i>Min</i>	11	13	18	30	30	54	96	121	134	94	20	57
<i>Avg</i>	17	22	44	60	52	134	229	622	462	670	85	246
<i>Runoff</i>	0.0	0.0	0.1	0.1	0.1	0.3	0.5	1.3	1.0	1.4	0.2	0.5

**Appendix D-7. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 2004</b>												
1	157	103	620	799	200	226	3730	298	1850	309	70	235
2	132	96	524	677	195	227	3300	293	2410	289	67	160
3	120	95	458	613	190	220	3050	296	3400	276	63	119
4	112	92	428	889	185	243	2510	291	3390	264	60	94
5	109	97	419	1760	180	666	1860	294	2370	259	57	79
6	103	99	406	1910	175	1190	1270	287	1000	243	53	69
7	93	116	404	1500	170	1350	980	271	680	227	56	62
8	84	143	415	945	165	1070	832	251	572	210	48	55
9	79	137	413	753	160	749	725	238	497	212	45	50
10	76	127	418	615	157	575	635	231	505	393	45	45
11	73	119	440	531	153	479	572	230	1760	578	41	41
12	71	116	487	492	151	414	524	238	2710	622	43	38
13	72	112	451	451	150	364	488	295	3160	500	41	36
14	82	126	406	413	149	339	456	582	3790	900	35	33
15	82	153	383	386	148	319	427	958	3920	637	30	33
16	106	138	364	360	147	312	405	1320	3420	431	29	31
17	129	130	340	350	146	303	384	1420	2370	322	27	28
18	118	332	323	368	145	295	365	1110	2140	260	26	24
19	106	1230	304	350	200	281	348	1610	2230	231	24	23
20	101	1950	284	288	250	269	342	1500	1930	190	28	25
21	97	2440	261	288	406	257	368	1230	999	163	27	23
22	93	2730	267	295	411	245	460	954	748	144	27	21
23	91	2360	529	258	336	236	509	767	631	130	25	20
24	89	1830	1070	301	291	233	437	674	539	115	27	19
25	91	1800	1310	259	272	246	403	1250	494	103	38	18
26	89	1890	1090	295	259	1530	380	2130	474	94	112	17
27	93	1750	772	277	244	4740	362	2240	441	87	169	18
28	100	1230	646	241	230	4530	340	2240	399	81	190	16
29	112	873	789	230	223	5070	320	1910	362	75	322	16
30	116	723	1090	220		4390	303	993	333	77	460	16
31	111		1020	210		4780		1090		75	368	
<i>Total</i>	3087	23137	17131	17324	6088	36148	27085	27491	49524	8497	2653	1464
<i>Max</i>	157	2730	1310	1910	411	5070	3730	2240	3920	900	460	235
<i>Min</i>	71	92	261	210	145	220	303	230	333	75	24	16
<i>Avg</i>	100	771	553	559	210	1166	903	887	1651	274	86	49
<i>Runoff</i>	0.2	1.6	1.2	1.2	0.4	2.5	1.9	1.9	3.4	0.6	0.2	0.1

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**Appendix D-7. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 2005</b>												
1	15	514	3110	230	370	548	409	342	129	124	47	7
2	14	798	2870	246	343	503	431	316	124	92	38	7
3	13	1100	2520	377	327	452	413	295	124	67	30	6
4	14	1250	2220	1160	320	422	450	276	125	54	27	6
5	13	1260	1850	2360	344	404	424	261	121	50	25	6
6	12	1050	1460	4440	456	387	384	249	115	45	21	5
7	12	824	1800	4740	675	379	358	241	109	41	20	5
8	14	645	2650	3960	1150	365	334	236	103	39	25	5
9	13	513	2880	2980	1570	346	313	230	100	34	22	4
10	12	432	3270	2280	1680	326	296	228	103	29	18	4
11	12	389	2600	2010	1490	318	284	221	120	25	15	4
12	15	349	1920	3170	1120	313	314	220	107	30	14	4
13	20	306	1400	6620	1060	299	380	209	105	36	15	3
14	20	273	1000	9360	2140	278	356	199	191	48	16	5
15	20	251	774	10800	2450	262	350	192	251	58	19	7
16	26	238	662	7530	2540	252	324	186	219	47	22	5
17	30	231	593	3880	2400	249	300	178	172	40	21	7
18	49	234	543	2670	1980	247	288	170	138	40	18	8
19	121	321	493	1960	1450	244	276	176	119	96	78	16
20	136	427	449	1330	1030	237	267	196	106	170	27	11
21	157	474	401	909	875	227	380	287	98	80	20	10
22	134	430	380	729	857	226	620	268	90	55	19	11
23	119	372	279	595	848	299	821	225	83	113	16	11
24	111	442	260	511	795	500	949	199	76	172	16	8
25	102	944	240	480	729	624	858	181	71	97	14	20
26	105	1260	230	470	670	766	687	167	66	70	13	17
27	197	1590	220	460	618	738	561	158	61	56	11	14
28	268	2230	210	470	580	647	468	151	55	111	10	23
29	373	2410	210	473		547	408	146	52	146	9	23
30	450	2780	210	440		485	373	140	128	93	8	18
31	527		220	404		448		134		62	8	
<i>Total</i>	3124	24337	37924	78044	30867	12338	13076	6677	3461	2220	662	279
<i>Max</i>	527	2780	3270	10800	2540	766	949	342	251	172	78	23
<i>Min</i>	12	231	210	230	320	226	267	134	52	25	8	3
<i>Avg</i>	101	811	1223	2518	1102	398	436	215	115	72	21	9
<i>Runoff</i>	0.2	1.7	2.6	5.4	2.1	0.9	0.9	0.5	0.2	0.2	0.0	0.0

**Appendix D-7. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 2006</b>												
1	16	18	211	242	444	147	383	377	190	70	194	92
2	18	23	164	253	367	146	414	410	190	57	144	75
3	17	33	127	235	323	139	467	461	184	49	109	61
4	15	43	105	213	286	130	561	526	177	51	87	49
5	12	39	79	199	256	122	678	487	166	43	71	43
6	9	40	70	184	228	119	742	424	157	63	59	37
7	7	30	66	167	207	119	1250	382	151	53	51	33
8	7	31	62	154	189	129	1420	350	144	42	44	70
9	6	46	59	144	176	186	1370	329	139	34	69	71
10	6	59	55	133	170	571	1230	316	133	31	70	51
11	5	47	54	125	165	914	932	351	134	55	62	46
12	5	38	57	118	160	1230	719	361	131	86	52	43
13	5	32	58	118	153	1490	601	349	129	274	76	38
14	5	28	57	128	149	1490	563	331	120	299	68	53
15	5	37	57	147	146	1490	793	304	111	225	54	57
16	4	38	56	236	163	1870	1030	291	105	154	43	43
17	4	46	53	261	238	1840	1160	329	99	111	33	35
18	4	77	45	249	339	1200	1230	405	99	86	89	37
19	3	82	40	271	280	761	1530	370	97	70	80	32
20	9	70	35	279	200	607	1870	323	92	58	66	26
21	8	62	32	248	260	539	1590	289	89	53	47	24
22	6	55	30	249	245	476	1000	263	84	53	39	28
23	6	50	34	318	219	431	722	245	79	45	32	27
24	6	44	39	319	195	396	601	233	74	38	27	25
25	6	40	52	282	174	367	527	234	70	33	23	27
26	6	38	71	248	158	340	474	240	76	147	21	71
27	5	39	101	214	149	318	430	246	70	1580	38	67
28	6	67	150	195	148	313	393	232	78	1820	455	54
29	5	83	209	241		301	362	207	113	909	345	43
30	4	179	237	366		293	370	192	87	451	162	37
31	14		249	490		323		186		280	115	
<i>Total</i>	233	1514	2714	7026	6187	18797	25412	10043	3568	7320	2825	1395
<i>Max</i>	18	179	249	490	444	1870	1870	526	190	1820	455	92
<i>Min</i>	3	18	30	118	146	119	362	186	70	31	21	24
<i>Avg</i>	8	50	88	227	221	606	847	324	119	236	91	47
<i>Runoff</i>	0.0	0.1	0.2	0.5	0.4	1.3	1.8	0.7	0.3	0.5	0.2	0.1

**Appendix D-7. Continued**

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<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 2007</b>												
1	32	178	959	1240	433	1800	983	1210	215	448	51	12
2	28	166	1590	1440	389	1650	1040	771	198	326	46	11
3	25	154	1840	1470	322	1850	1110	604	187	249	40	10
4	24	143	2140	1370	325	1800	1120	521	180	201	35	10
5	22	137	2100	1450	297	1770	919	466	173	171	33	10
6	60	133	1580	1630	292	1080	747	420	163	149	33	12
7	59	132	962	1650	275	710	623	381	157	131	29	15
8	45	131	682	1570	258	586	540	353	144	116	27	17
9	35	128	557	1300	250	520	479	337	132	105	25	13
10	29	131	491	1010	236	563	436	323	124	94	23	11
11	29	148	468	817	228	677	469	304	115	85	22	12
12	27	161	658	714	225	730	551	287	108	77	20	12
13	24	252	1020	983	213	666	619	265	104	70	18	12
14	22	267	1250	1510	185	610	643	249	99	65	17	11
15	26	247	1360	2380	170	573	611	251	94	57	17	9
16	45	287	1330	2780	161	528	574	259	88	51	17	8
17	188	420	1050	2740	178	468	536	243	83	64	17	8
18	348	548	794	2500	190	408	493	226	82	68	17	7
19	718	471	656	1920	201	382	450	211	82	97	17	7
20	690	371	577	1250	214	375	411	201	83	246	22	6
21	467	309	816	880	220	389	375	195	81	345	18	6
22	344	271	1630	733	246	397	351	187	89	233	20	5
23	273	246	2370	647	328	484	337	178	137	149	29	5
24	239	228	2840	579	445	1060	323	166	343	110	35	5
25	211	215	3060	521	800	1530	337	158	441	89	28	6
26	196	202	2520	479	1500	2030	615	156	317	76	22	6
27	193	190	1890	480	1800	1990	1070	242	354	70	17	5
28	203	180	1320	464	1900	1620	1360	432	480	67	15	6
29	220	175	952	434		1210	1770	350	783	60	18	7
30	220	246	768	333		928	1740	286	703	59	15	6
31	202		862	331		846		241		54	13	
<i>Total</i>	5244	6867	41092	37605	12281	30230	21632	10473	6339	4182	756	269
<i>Max</i>	718	548	3060	2780	1900	2030	1770	1210	783	448	51	17
<i>Min</i>	22	128	468	331	161	375	323	156	81	51	13	5
<i>Avg</i>	169	229	1326	1213	439	975	721	338	211	135	24	9
<i>Runoff</i>	0.4	0.5	2.8	2.6	0.9	2.1	1.5	0.7	0.4	0.3	0.1	0.0

**Appendix D-7. Concluded**

A-101-V

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Monticello (111), Water Year 2008</b>												
1	7	15	113	477	267	588	805	327	1910	332	296	42
2	7	16	105	379	274	780	840	334	1450	286	258	45
3	10	15	99	263	279	1180	738	399	2440	263	230	49
4	7	14	122	306	352	1590	657	441	11500	260	228	129
5	9	13	197	390	2770	1670	586	367	8340	244	214	311
6	8	11	186	354	10000	1440	523	323	5390	224	188	256
7	8	10	158	400	10300	911	474	308	4530	760	171	211
8	9	10	133	1040	8210	670	436	376	4670	1230	155	154
9	8	10	121	3480	4530	551	415	657	4000	2560	142	128
10	7	8	113	7960	2520	492	465	891	3260	1830	131	108
11	6	8	120	7810	2040	473	978	1090	2620	945	121	95
12	6	9	353	4190	1360	562	1190	1480	2020	1580	114	111
13	5	10	850	2590	944	750	1080	1610	1320	3230	107	160
14	6	11	1040	2000	716	917	851	1680	950	2280	100	1940
15	5	15	1420	1560	660	929	696	1690	783	1690	93	5250
16	9	28	1570	1120	497	835	613	1610	679	1120	85	5600
17	7	39	1010	850	1020	755	550	1550	593	762	79	5320
18	15	37	591	692	1680	1160	499	1410	527	588	75	4020
19	10	30	454	564	1690	1850	462	1100	479	491	72	2900
20	14	25	391	424	1820	2030	435	896	441	443	67	2010
21	11	47	370	403	1280	1900	423	784	408	397	63	1090
22	16	40	587	487	736	1650	390	676	388	845	66	773
23	22	278	1010	405	532	1210	360	603	364	998	61	612
24	18	433	1220	356	433	918	338	707	335	596	57	478
25	15	295	1410	330	395	770	336	715	320	447	54	387
26	15	210	1300	316	363	673	392	655	314	372	50	330
27	13	167	765	306	339	634	445	579	318	323	47	290
28	13	151	568	294	309	878	424	590	319	288	46	262
29	14	139	527	297	328	870	381	603	391	266	46	242
30	13	124	566	268		752	349	617	417	378	48	227
31	12		547	292		679		1550		364	43	
<i>Total</i>	321	2218	18016	40603	56644	31067	17131	26618	61476	26392	3507	33530
<i>Max</i>	22	433	1570	7960	10300	2030	1190	1690	11500	3230	296	5600
<i>Min</i>	5	8	99	263	267	473	336	308	314	224	43	42
<i>Avg</i>	10	74	581	1310	1953	1002	571	859	2049	851	113	1118
<i>Runoff</i>	0.0	0.2	1.2	2.8	3.9	2.1	1.2	1.8	4.2	1.8	0.2	2.3



**Appendix D-8. Mean Daily and Monthly Discharge (cfs) and Runoff (inches) for Sangamon River near Fisher (Station 112)**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 1993</b>												
1	22	83	330	659	324	140	764	379	170	2250	188	65
2	21	550	280	492	264	183	1350	348	250	3480	163	143
3	20	1080	249	389	240	508	965	330	435	2640	137	1540
4	20	1300	230	1910	219	1340	686	345	442	1570	126	2100
5	19	1290	210	4860	203	1890	558	763	859	900	109	1360
6	19	1250	190	2610	201	1950	471	692	848	596	103	1030
7	19	1180	180	1300	190	1750	402	516	581	460	94	1920
8	19	995	169	1000	187	1310	375	427	443	401	81	1320
9	18	760	161	760	173	1010	394	360	514	339	73	749
10	18	540	168	600	171	858	369	310	682	290	83	433
11	17	490	169	490	171	758	329	260	536	373	88	302
12	17	710	134	400	304	625	284	240	446	358	164	180
13	16	1220	128	350	383	547	251	230	341	278	254	160
14	16	1690	170	300	328	457	679	210	287	482	156	190
15	21	1300	370	270	274	381	1250	190	247	463	111	540
16	32	980	717	240	253	375	1300	170	216	335	97	650
17	32	730	863	210	213	455	920	155	199	285	114	620
18	29	550	656	195	195	410	665	148	274	242	100	500
19	22	393	478	185	185	354	563	140	369	381	94	330
20	18	340	401	180	180	324	674	130	640	305	506	230
21	16	320	340	600	183	303	657	124	745	222	522	200
22	17	880	303	1510	190	400	551	120	515	184	267	170
23	17	920	268	1730	146	1170	472	112	350	295	188	190
24	17	1010	217	1920	140	1500	424	150	280	669	155	180
25	16	1100	205	1360	133	967	1070	140	242	2220	132	170
26	17	900	210	867	130	702	1310	130	211	1660	115	270
27	19	710	200	655	130	576	788	120	188	816	92	520
28	22	560	173	549	133	490	577	110	691	489	79	660
29	24	470	164	481		423	474	150	2450	345	69	733
30	30	370	381	400		373	432	190	1800	268	75	700
31	35		673	362		354		240		220	79	
<i>Total</i>	645	24671	9387	27834	5843	22883	20004	7929	16251	23816	4614	18155
<i>Max</i>	35	1690	863	4860	383	1950	1350	763	2450	3480	522	2100
<i>Min</i>	16	83	128	180	130	140	251	110	170	184	69	65
<i>Avg</i>	21	822	303	898	209	738	667	256	542	768	149	605
<i>Runoff</i>	0.1	3.8	1.4	4.2	0.9	3.5	3.1	1.2	2.5	3.6	0.7	2.8

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**Appendix D-8. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 1994</b>												
1	450	220	700	135	150	70	110	532	89	31	7	11
2	300	201	1000	120	130	80	107	483	83	27	17	5
3	250	198	1150	110	115	100	122	378	79	30	35	4
4	220	193	1000	100	100	250	132	315	77	32	19	4
5	200	187	780	90	85	400	127	273	76	28	16	4
6	190	161	602	80	80	650	118	245	75	76	15	8
7	180	146	472	76	75	835	107	389	71	158	11	5
8	400	138	395	78	70	1000	124	623	72	54	13	2
9	640	130	346	84	67	750	142	514	95	37	11	1
10	900	124	323	77	63	580	245	393	82	28	9	1
11	700	122	269	73	59	460	382	327	74	24	7	1
12	505	123	245	70	56	380	9250	291	69	20	11	1
13	350	167	237	67	56	330	7710	252	66	19	12	1
14	290	402	274	65	70	280	1950	235	63	19	51	0
15	400	764	452	64	200	244	1150	240	58	28	33	0
16	600	632	391	63	340	202	922	209	54	20	17	0
17	850	637	324	63	290	174	722	186	52	16	10	0
18	1200	1150	342	64	320	175	582	172	50	16	8	0
19	2300	950	345	64	344	149	479	161	48	14	7	0
20	1800	679	312	66	391	136	387	155	55	14	7	0
21	1400	506	285	69	389	136	334	147	53	24	13	0
22	1100	412	252	74	249	121	294	138	47	23	9	0
23	980	351	223	85	179	115	257	131	44	18	7	0
24	860	320	205	114	130	114	237	128	49	13	7	5
25	740	323	190	263	100	106	216	139	47	13	6	17
26	550	703	180	412	85	100	197	139	40	13	5	11
27	450	1200	170	271	77	143	188	118	39	11	6	5
28	370	900	160	816	72	163	188	107	36	10	8	4
29	313	650	140	1030		138	301	102	33	8	6	3
30	268	520	150	498		120	306	98	32	7	6	1
31	245		160	199		112		94		7	10	
<i>Total</i>	20001	13209	12074	5440	4342	8613	27386	7714	1808	839	396	92
<i>Max</i>	2300	1200	1150	1030	391	1000	9250	623	95	158	51	17
<i>Min</i>	180	122	140	63	56	70	107	94	32	7	5	0
<i>Avg</i>	645	440	389	175	155	278	913	249	60	27	13	3
<i>Runoff</i>	3.1	2.0	1.8	0.8	0.7	1.3	4.2	1.2	0.3	0.1	0.1	0.0

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**Appendix D-8. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 1995</b>												
1	1	47	82	86	158	54	167	193	497	211	22	15
2	3	58	72	65	153	47	156	184	429	165	19	12
3	4	47	65	58	140	54	143	163	373	142	30	11
4	4	46	59	55	134	60	136	153	320	132	126	11
5	2	72	55	53	99	59	116	146	292	128	145	10
6	3	231	56	54	92	65	120	135	281	107	92	8
7	4	195	458	57	88	497	113	129	274	93	202	8
8	7	102	836	59	85	1150	143	130	236	85	437	15
9	28	72	615	56	82	912	227	452	212	82	416	16
10	25	74	453	57	80	581	364	1360	638	80	408	13
11	14	78	342	63	79	488	583	2340	833	79	217	10
12	7	63	255	88	77	431	854	1450	486	72	120	7
13	3	54	211	278	75	370	836	862	343	66	80	7
14	5	54	176	981	73	314	567	1340	278	60	61	7
15	6	67	155	1410	72	272	426	1430	234	55	50	6
16	4	60	148	1100	72	242	350	909	204	51	42	5
17	2	53	241	732	72	214	299	1230	182	48	40	6
18	2	49	264	529	74	191	515	1490	168	44	196	6
19	7	43	211	664	78	187	853	2210	158	40	128	4
20	14	38	185	1390	72	180	675	1940	151	38	169	4
21	12	54	163	1150	71	176	583	1210	149	40	114	5
22	9	78	146	660	65	162	485	753	144	39	71	7
23	9	60	137	412	68	205	392	551	163	39	54	7
24	12	53	126	312	63	216	343	1750	507	39	44	10
25	13	50	117	258	58	190	294	3500	323	40	37	13
26	13	44	109	226	62	177	260	2270	212	42	32	3
27	12	46	103	211	62	234	253	1330	179	34	29	2
28	12	205	101	203	61	289	221	1110	294	45	25	2
29	12	180	92	166		238	205	1090	435	36	23	2
30	12	108	86	165		208	202	764	320	28	20	2
31	19		86	152		183		580		26	17	
<i>Total</i>	280	2381	6205	11750	2365	8646	10881	33154	9315	2186	3466	233
<i>Max</i>	28	231	836	1410	158	1150	854	3500	833	211	437	16
<i>Min</i>	1	38	55	53	58	47	113	129	144	26	17	2
<i>Avg</i>	9	79	200	379	84	279	363	1069	311	71	112	8
<i>Runoff</i>	0.0	0.4	0.9	1.8	0.4	1.3	1.7	5.1	1.4	0.3	0.5	0.0

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**Appendix D-8. Continued**

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<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 1996</b>												
1	1	134	73	30	50	60	203	210	479	98	93	5
2	2	240	67	28	47	50	234	165	1270	92	68	5
3	2	342	67	26	42	42	194	145	1520	86	54	4
4	2	203	61	24	40	49	158	135	1100	79	44	3
5	3	131	58	23	41	71	121	159	730	74	37	4
6	3	104	57	22	44	132	105	329	524	69	31	3
7	8	95	49	21	48	80	101	262	442	65	26	3
8	7	77	45	20	55	55	94	344	372	61	22	4
9	5	60	42	19	60	99	86	871	327	57	18	6
10	4	62	40	18	70	80	79	1950	328	50	15	7
11	4	277	39	18	60	70	75	3820	525	45	13	3
12	4	401	41	19	55	65	77	1770	466	42	12	2
13	4	294	43	20	48	63	75	1170	394	40	14	2
14	3	219	45	22	45	62	67	925	323	40	13	1
15	6	185	48	24	44	63	67	845	274	50	11	1
16	5	161	50	30	42	67	70	929	244	43	9	1
17	4	157	44	88	40	72	59	776	252	37	9	3
18	4	202	52	573	40	71	57	589	998	33	24	2
19	4	188	73	716	43	70	77	464	588	30	62	2
20	9	164	60	467	46	69	92	381	340	25	44	1
21	25	142	50	281	44	69	78	340	267	97	26	1
22	20	120	44	200	42	75	179	305	230	317	17	2
23	15	110	38	191	42	78	320	270	198	166	13	2
24	14	94	34	238	44	81	233	247	180	111	11	1
25	18	88	32	153	47	104	194	266	157	105	10	2
26	20	89	30	157	51	88	164	299	137	81	8	2
27	41	93	28	113	62	79	123	807	128	64	8	19
28	45	87	28	95	85	74	108	1890	120	62	8	20
29	30	71	28	80	70	74	166	1470	112	61	7	9
30	19	68	29	70		70	260	995	106	84	5	3
31	53		29	60		77		638		156	5	
<i>Total</i>	383	4658	1424	3846	1447	2259	3916	23766	13131	2420	736	122
<i>Max</i>	53	401	73	716	85	132	320	3820	1520	317	93	20
<i>Min</i>	1	60	28	18	40	42	57	135	106	25	5	1
<i>Avg</i>	12	155	46	124	50	73	131	767	438	78	24	4
<i>Runoff</i>	0.1	0.7	0.2	0.6	0.2	0.3	0.6	3.6	2.0	0.4	0.1	0.0

**Appendix D-8. Continued**

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<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 1997</b>												
1	2	15	41	44	140	1300	136	92	484	201	15	22
2	1	13	44	53	160	994	132	77	652	139	15	21
3	3	11	38	70	350	805	131	290	817	107	15	20
4	3	11	30	75	550	631	132	385	650	94	14	17
5	3	11	30	118	665	502	137	258	486	87	16	16
6	3	10	41	130	613	411	151	193	410	80	15	16
7	4	34	27	100	369	341	135	149	438	75	10	14
8	2	59	22	86	250	312	114	143	452	70	8	15
9	2	43	20	74	161	362	108	131	647	368	7	62
10	4	22	22	60	135	746	105	110	514	170	10	103
11	5	14	41	50	110	689	114	104	397	90	10	66
12	5	10	175	45	94	484	146	105	391	72	10	47
13	4	7	121	41	80	393	172	96	747	64	15	37
14	5	7	89	37	74	618	144	91	771	60	11	30
15	3	5	76	34	68	635	129	83	487	67	9	27
16	1	7	66	31	63	437	125	72	375	56	10	24
17	1	8	60	29	61	358	117	72	308	47	384	22
18	2	7	47	28	112	323	112	73	264	42	762	23
19	3	7	40	26	355	295	139	78	231	40	253	21
20	2	7	31	26	423	282	149	71	208	37	133	21
21	3	6	32	56	1360	263	136	60	195	33	96	22
22	2	8	35	251	1760	237	123	55	177	38	72	18
23	5	6	45	749	1300	199	113	55	158	43	57	17
24	12	6	140	770	802	181	107	57	146	40	47	17
25	7	11	130	445	551	195	97	318	142	34	42	17
26	5	16	100	271	530	177	88	999	182	30	39	15
27	5	12	78	210	2370	166	90	1880	150	27	35	14
28	5	11	65	160	2140	169	95	1550	127	24	31	12
29	14	9	57	140		181	89	1100	118	22	28	11
30	7	13	51	130		158	86	747	115	19	25	7
31	11		47	130		148		564		16	23	
<i>Total</i>	132	405	1841	4469	15646	12992	3652	10058	11239	2292	2217	774
<i>Max</i>	14	59	175	770	2370	1300	172	1880	817	368	762	103
<i>Min</i>	1	5	20	26	61	148	86	55	115	16	7	7
<i>Avg</i>	4	13	59	144	559	419	122	324	375	74	72	26
<i>Runoff</i>	0.0	0.1	0.3	0.7	2.4	2.0	0.6	1.5	1.7	0.3	0.3	0.1

**Appendix D-8. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 1998</b>												
1	15	23	63	73	130	181	564	338	138	644	21	6
2	26	20	54	63	132	171	535	444	129	355	19	6
3	23	17	45	54	123	162	435	716	119	256	18	5
4	7	15	40	55	120	148	520	1510	114	236	19	5
5	9	14	37	91	116	132	577	1170	109	228	19	5
6	8	12	31	293	107	123	461	740	101	250	24	5
7	8	12	31	333	99	119	390	1130	93	351	33	4
8	9	12	29	578	93	182	794	2750	88	285	42	4
9	9	11	28	1150	87	832	1080	2350	184	220	29	4
10	9	11	29	938	84	1200	723	1300	312	183	24	5
11	10	10	30	552	95	875	497	796	518	149	20	3
12	10	9	29	353	204	544	396	527	1040	127	17	2
13	10	8	28	267	226	408	348	408	928	113	15	2
14	11	8	30	212	187	392	524	330	689	100	14	2
15	16	10	34	207	159	394	520	289	1130	86	15	2
16	13	11	30	173	150	353	402	261	2760	78	15	7
17	18	11	28	154	160	663	329	226	3800	68	14	4
18	15	10	28	136	291	2270	271	207	2280	60	12	3
19	14	10	29	122	351	2050	248	196	1370	55	12	3
20	21	11	30	114	306	1900	231	202	988	49	12	4
21	21	11	31	109	267	1780	236	189	651	44	11	5
22	18	12	33	105	231	1740	225	450	479	49	10	4
23	16	12	37	100	211	1330	204	1100	1210	99	9	3
24	18	11	41	94	190	935	191	950	1160	70	9	4
25	21	11	136	86	169	690	180	520	646	47	8	4
26	23	10	163	82	162	530	178	253	388	38	7	6
27	33	10	121	81	181	445	155	218	297	33	6	7
28	33	13	98	91	194	723	140	190	245	31	6	5
29	29	40	84	116		931	150	171	507	27	6	3
30	29	50	75	130		800	215	159	791	24	6	4
31	25		58	127		590		153		22	6	
<i>Total</i>	528	425	1560	7039	4825	23593	11719	20243	23264	4377	479	126
<i>Max</i>	33	50	163	1150	351	2270	1080	2750	3800	644	42	7
<i>Min</i>	7	8	28	54	84	119	140	153	88	22	6	2
<i>Avg</i>	17	14	50	227	172	761	391	653	775	141	15	4
<i>Runoff</i>	0.1	0.1	0.2	1.1	0.7	3.6	1.8	3.1	3.6	0.7	0.1	0.0

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**Appendix D-8. Continued**

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<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 1999</b>												
1	4	13	11	4	358	178	104	225	98	206	12	4
2	3	9	10	4	440	162	100	214	632	347	10	2
3	4	9	10	4	433	315	95	203	916	237	9	2
4	4	8	9	4	327	313	103	192	503	173	9	1
5	5	8	8	3	239	253	91	188	495	138	8	1
6	8	7	8	4	211	296	99	181	454	120	7	1
7	16	9	10	4	381	287	100	168	315	105	7	1
8	10	10	11	4	930	244	96	151	251	92	8	1
9	7	12	9	4	906	240	185	137	215	84	9	0
10	4	19	7	4	689	206	226	130	186	75	8	0
11	3	21	6	3	491	168	225	127	164	66	7	0
12	3	13	5	3	472	159	198	127	180	59	10	0
13	3	11	6	3	354	177	154	186	341	54	23	0
14	3	7	6	3	276	186	141	320	739	49	17	0
15	3	6	6	3	249	187	263	291	943	45	10	0
16	3	6	6	4	234	222	1130	240	587	40	7	0
17	3	7	6	6	234	284	2030	215	318	36	7	0
18	3	8	5	10	222	265	1440	208	250	37	5	0
19	7	7	7	11	198	204	982	176	214	33	5	1
20	6	7	9	12	174	177	720	156	187	31	4	1
21	4	7	10	35	152	172	566	148	165	31	4	1
22	3	7	8	130	139	153	507	146	148	28	4	2
23	3	9	6	700	136	139	431	134	136	24	3	3
24	3	9	6	1000	131	132	370	137	245	21	5	2
25	3	9	5	800	125	119	327	125	536	19	25	2
26	4	9	4	600	116	111	303	111	341	17	31	2
27	3	9	3	445	132	109	284	102	370	17	16	2
28	5	9	3	455	200	107	268	96	292	21	8	4
29	12	9	3	334		104	261	92	234	24	5	7
30	13	10	2	251		101	241	88	175	19	3	8
31	19		3	226		100		89		15	3	
<i>Total</i>	174	284	206	5071	8949	5870	12040	5103	10630	2263	289	48
<i>Max</i>	19	21	11	1000	930	315	2030	320	943	347	31	8
<i>Min</i>	3	6	2	3	116	100	91	88	98	15	3	0
<i>Avg</i>	6	9	7	164	320	189	401	165	354	73	9	2
<i>Runoff</i>	0.0	0.0	0.0	0.8	1.4	0.9	1.8	0.8	1.6	0.3	0.0	0.0

**Appendix D-8. Continued**

A-109

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 2000</b>												
1	5	3	5	7	3	32	23	47	161	65	7	1
2	3	3	4	7	3	28	23	55	137	58	5	0
3	4	3	5	10	3	23	24	52	116	56	5	0
4	9	4	5	9	4	22	23	48	106	60	4	0
5	9	3	12	7	4	21	21	44	107	108	3	0
6	5	3	19	5	4	19	20	40	94	128	4	0
7	3	4	13	5	4	18	21	38	80	77	5	0
8	3	4	8	5	4	16	22	39	75	57	4	0
9	4	5	7	5	4	17	19	42	70	48	3	0
10	6	7	6	7	5	17	17	54	64	44	3	0
11	7	6	7	6	7	15	17	53	61	43	3	1
12	5	5	6	6	11	14	17	50	62	40	2	6
13	4	5	6	5	14	15	15	46	65	36	2	14
14	3	4	6	4	13	15	14	36	67	31	2	5
15	2	5	7	3	12	14	16	30	65	27	1	3
16	3	5	8	3	13	14	17	29	62	23	1	2
17	3	5	9	4	16	15	24	31	53	20	2	1
18	6	5	8	3	24	12	35	34	46	18	3	0
19	5	6	7	4	120	15	31	105	43	16	6	0
20	4	6	7	4	95	71	37	163	44	15	3	0
21	4	5	5	2	67	131	197	95	260	14	2	0
22	4	5	4	2	57	83	157	71	488	12	1	0
23	3	5	4	2	53	61	106	66	275	10	2	0
24	3	6	4	2	48	52	92	63	282	9	3	0
25	2	7	4	3	42	48	110	51	306	8	4	2
26	2	6	4	3	34	40	89	41	204	7	4	3
27	2	5	4	2	36	39	74	205	143	6	3	3
28	3	5	5	2	38	37	68	544	109	6	2	1
29	3	5	5	2	33	33	58	421	91	6	2	1
30	3	4	6	2		26	50	268	77	6	1	1
31	3		8	3		24		200		9	1	
<i>Total</i>	123	142	207	135	772	987	1437	3061	3813	1062	90	47
<i>Max</i>	9	7	19	10	120	131	197	544	488	128	7	14
<i>Min</i>	2	3	4	2	3	12	14	29	43	6	1	0
<i>Avg</i>	4	5	7	4	27	32	48	99	127	34	3	2
<i>Runoff</i>	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.5	0.6	0.2	0.0	0.0



**Appendix D-8. Continued**

A-110

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 2001</b>												
1	0	5	27	25	1510	687	128	98	158	59	11	82
2	0	6	26	24	1200	522	119	98	212	56	9	30
3	0	7	26	23	737	430	115	90	310	53	8	15
4	3	7	28	23	448	378	105	81	289	78	8	9
5	8	7	29	26	447	335	99	106	469	81	9	6
6	8	9	27	27	344	284	136	130	721	60	7	5
7	12	17	27	25	421	252	627	114	1090	51	5	8
8	10	24	28	24	616	232	291	103	842	47	5	12
9	6	27	22	21	1450	211	185	90	511	46	6	10
10	4	151	21	21	2050	189	162	83	366	45	4	16
11	3	147	23	22	1300	187	377	84	298	39	3	9
12	3	85	36	24	748	176	567	80	246	34	3	6
13	2	68	63	25	484	188	352	70	208	31	2	3
14	2	82	50	26	558	171	253	67	184	28	2	3
15	2	67	45	32	885	160	230	72	171	25	2	2
16	3	54	42	47	786	196	216	74	153	23	2	2
17	3	46	43	59	534	397	183	71	136	22	7	2
18	3	35	30	54	369	445	160	133	126	22	5	2
19	3	31	31	47	303	402	156	232	118	25	15	4
20	2	30	29	41	266	344	156	165	108	23	12	11
21	1	24	26	34	215	297	149	141	110	21	6	6
22	1	24	24	32	196	259	139	129	146	19	5	5
23	1	22	21	31	183	230	137	109	125	19	9	3
24	2	21	23	32	384	208	134	121	106	19	15	4
25	2	22	23	29	3420	183	118	133	92	18	9	5
26	2	27	22	28	3030	168	120	151	83	17	10	3
27	2	33	25	29	1420	160	117	357	76	14	16	3
28	2	33	28	32	948	150	106	311	72	15	8	3
29	3	30	29	57		151	96	207	71	15	5	3
30	3	29	29	749		147	94	166	64	16	4	3
31	3		27	1520		140		151		14	32	
<i>Total</i>	101	1170	930	3189	25252	8279	5827	4017	7661	1035	243	274
<i>Max</i>	12	151	63	1520	3420	687	627	357	1090	81	32	82
<i>Min</i>	0	5	21	21	183	140	94	67	64	14	2	2
<i>Avg</i>	3	39	30	103	902	267	194	130	255	33	8	9
<i>Runoff</i>	0	0	0	0	4	1	1	1	1	0	0	0

**Appendix D-8. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 2002</b>												
1	2	123	323	85	1510	244	404	759	226	113	38	42
2	2	119	213	82	1290	317	351	588	210	99	28	37
3	2	106	156	83	915	827	295	478	200	88	23	32
4	5	93	127	86	627	774	245	397	186	80	20	29
5	9	88	110	93	429	529	225	348	232	70	17	24
6	17	83	102	89	336	486	212	327	420	62	15	22
7	12	80	92	79	281	733	203	312	335	56	13	20
8	10	79	84	70	233	805	229	281	265	51	12	19
9	7	73	78	87	205	983	429	553	232	49	11	17
10	7	67	70	77	202	1210	415	879	225	52	10	15
11	11	66	67	65	215	889	354	720	243	44	9	14
12	22	61	65	58	232	616	315	2100	404	39	9	13
13	49	57	70	59	199	511	275	3620	608	36	8	12
14	171	57	83	59	169	446	253	2100	1010	33	11	12
15	225	57	168	57	167	394	243	1320	879	29	17	12
16	140	55	177	51	154	329	215	971	587	26	14	13
17	187	53	340	49	136	294	196	810	427	23	12	12
18	133	49	589	57	118	275	181	824	344	22	13	14
19	98	49	440	57	299	243	179	798	286	27	52	17
20	76	50	302	52	1130	240	166	635	246	27	286	18
21	63	47	227	52	1270	215	217	513	217	20	96	19
22	66	47	195	51	950	185	411	456	199	17	50	14
23	160	46	217	48	659	186	336	418	186	22	577	12
24	201	45	207	49	496	180	281	395	171	40	1610	10
25	880	48	165	47	406	173	271	358	159	31	881	9
26	887	48	180	44	358	161	235	319	222	20	320	9
27	400	41	145	44	315	162	350	292	268	18	187	8
28	249	40	120	44	276	294	1370	284	214	19	120	8
29	191	41	105	45		421	1470	283	145	39	83	8
30	151	132	97	53		590	1080	261	125	60	63	8
31	129		90	709		521		244		52	51	
<i>Total</i>	4563	2000	5404	2581	13577	14233	11406	22643	9471	1364	4657	500
<i>Max</i>	887	132	589	709	1510	1210	1470	3620	1010	113	1610	42
<i>Min</i>	2	40	65	44	118	161	166	244	125	17	8	8
<i>Avg</i>	147	67	174	83	485	459	380	730	316	44	150	17
<i>Runoff</i>	1	0	1	0	2	2	2	3	1	0	1	0

A-111

**Appendix D-8. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 2003</b>												
1	7	9	9	69	18	17	40	61	82	70	53	356
2	7	8	7	47	20	16	40	74	72	62	48	623
3	6	8	8	35	24	15	35	62	76	56	206	320
4	7	7	8	30	37	15	42	57	76	50	203	184
5	9	8	7	27	33	18	361	242	68	45	132	117
6	10	11	7	25	19	23	344	354	62	324	76	81
7	8	12	7	24	14	27	370	247	65	242	56	60
8	7	10	7	19	12	50	517	190	64	113	45	49
9	8	10	8	22	11	78	373	309	61	352	40	41
10	6	11	7	25	11	67	283	546	55	1900	35	36
11	6	14	7	17	10	58	228	924	73	2450	31	32
12	7	13	7	15	9	62	189	822	226	1520	28	29
13	6	12	8	14	10	64	156	469	314	678	26	25
14	6	11	9	13	10	65	135	337	800	313	26	25
15	6	11	9	13	10	48	123	454	884	232	25	26
16	6	11	9	12	9	43	116	393	415	182	22	22
17	6	12	9	12	9	45	109	298	271	144	20	20
18	6	12	10	12	9	44	92	248	215	411	19	18
19	5	11	56	11	10	40	81	216	184	738	17	18
20	7	11	68	11	12	42	87	194	154	342	16	16
21	6	12	43	10	16	104	91	192	133	260	15	15
22	5	11	29	10	25	147	80	167	121	261	14	15
23	4	10	21	10	36	114	66	153	109	202	12	15
24	4	9	18	9	42	85	61	142	97	177	11	15
25	4	9	17	10	31	74	74	133	86	137	8	14
26	5	9	17	10	21	72	78	122	80	113	6	14
27	6	9	15	12	18	62	65	111	76	96	6	79
28	5	8	13	13	17	57	59	106	68	86	5	79
29	6	8	13	14		58	57	109	67	81	57	49
30	9	9	15	15		48	54	100	75	69	201	37
31	9		65	15		40		96		60	100	
<i>Total</i>	200	306	531	580	502	1698	4406	7928	5129	11766	1559	2430
<i>Max</i>	10	14	68	69	42	147	517	924	884	2450	206	623
<i>Min</i>	4	7	7	9	9	15	35	57	55	45	5	14
<i>Avg</i>	6	10	17	19	18	55	147	256	171	380	50	81
<i>Runoff</i>	0.0	0.0	0.1	0.1	0.1	0.3	0.7	1.2	0.8	1.8	0.2	0.4

A-112

**Appendix D-8. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 2004</b>												
1	31	28	263	253	68	78	1490	108	2770	106	25	30
2	27	25	22	241	66	85	1100	108	1690	98	21	22
3	26	27	209	231	63	71	763	111	906	94	19	17
4	28	32	204	342	61	80	548	116	468	96	23	14
5	26	55	203	654	60	531	431	110	364	86	26	12
6	22	86	212	445	58	706	364	100	313	75	18	11
7	20	74	217	349	57	460	321	91	271	73	14	9
8	19	60	222	277	54	321	287	84	240	67	13	8
9	18	50	222	233	55	254	246	83	214	62	12	7
10	18	43	246	196	54	204	215	80	209	198	16	6
11	16	52	305	184	52	184	198	82	1310	251	13	7
12	15	93	255	180	51	159	181	87	2460	135	10	7
13	15	114	221	157	51	138	170	127	1740	95	10	7
14	22	79	212	149	51	134	159	311	926	102	9	6
15	45	70	194	146	50	124	145	811	457	120	9	6
16	39	68	187	132	50	118	138	718	408	86	9	8
17	32	61	165	132	52	118	132	430	1260	75	8	12
18	31	557	152	139	58	113	123	324	911	67	8	7
19	28	1630	144	101	90	103	117	437	415	57	8	5
20	25	1680	123	120	230	97	123	475	309	51	9	5
21	23	1130	127	110	270	92	266	361	265	47	12	5
22	23	693	138	92	156	81	231	291	237	43	10	5
23	23	513	429	103	110	80	174	287	200	40	8	4
24	22	911	684	92	107	82	148	243	177	36	8	4
25	23	959	461	98	96	81	146	695	171	32	23	5
26	35	646	338	94	85	921	139	1280	171	30	82	4
27	40	483	280	87	79	2560	126	932	147	29	58	3
28	40	407	261	83	73	1560	116	467	133	27	32	3
29	39	345	333	78	71	129	111	322	122	24	43	4
30	32	307	356	74		1190	102	369	113	25	63	4
31	29		291	70		1400		2350		28	45	
<i>Total</i>	832	11278	7676	5642	2378	12254	8810	12390	19377	2355	662	246
<i>Max</i>	45	1680	684	654	270	2560	1490	2350	2770	251	82	30
<i>Min</i>	15	25	22	70	50	71	102	80	113	24	8	3
<i>Avg</i>	27	376	248	182	82	395	294	400	646	76	21	8
<i>Runoff</i>	0.1	1.7	1.2	0.9	0.4	1.9	1.3	1.9	3.0	0.4	0.1	0.0

**Appendix D-8. Continued**

A-114

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 2005</b>												
1	3	180	1310	10	132	232	178	153	59	34	9	3
2	3	660	1310	139	124	197	207	141	57	26	8	2
3	4	781	1000	371	121	177	240	131	59	22	7	2
4	3	549	719	1290	124	175	195	122	59	20	7	2
5	2	478	542	1710	168	171	173	114	56	19	9	2
6	2	372	503	2310	263	156	157	112	53	20	15	2
7	3	291	1250	1630	353	163	145	111	50	17	8	2
8	3	223	2570	1050	688	153	133	106	48	15	6	2
9	5	183	1650	708	793	133	122	100	47	13	5	2
10	5	166	1080	578	573	129	118	112	47	11	5	2
11	4	152	751	750	415	137	114	108	46	10	5	2
12	5	132	553	2010	365	129	118	94	45	16	6	2
13	15	115	448	6310	447	117	158	90	45	27	12	2
14	16	102	351	7590	1300	106	161	92	62	24	14	2
15	10	95	302	2460	1380	100	140	87	69	21	11	3
16	10	93	279	1180	1040	98	127	82	51	16	8	4
17	11	91	251	741	758	100	120	78	43	13	7	5
18	17	88	235	480	531	100	117	75	39	16	6	3
19	68	119	213	398	403	98	113	103	38	16	7	3
20	60	188	181	334	355	94	109	189	34	11	9	3
21	45	159	236	284	409	87	286	135	32	10	10	6
22	36	132	161	253	425	87	575	108	30	50	9	3
23	33	124	137	177	378	98	349	97	28	32	6	2
24	38	162	140	170	340	118	478	88	28	17	4	2
25	41	534	130	169	310	155	355	80	26	13	4	15
26	34	549	120	170	280	215	287	76	23	12	4	9
27	98	909	110	175	252	190	237	73	22	56	4	7
28	146	1660	110	183	252	171	200	70	22	42	4	5
29	163	1470	110	177		151	180	67	52	22	4	6
30	200	1200	115	164		137	170	65	55	15	3	9
31	187		120	145		172		62		11	3	
<i>Total</i>	1269	11957	16987	34209	12979	4346	6362	3121	1325	647	215	111
<i>Max</i>	41	399	548	1104	464	140	212	101	44	21	7	4
<i>Min</i>	200	1660	2570	7590	1380	232	649	189	69	56	15	15
<i>Avg</i>	2	88	110	103	121	87	109	62	22	10	3	2
<i>Runoff</i>	0.2	1.8	2.6	5.2	2.0	0.7	1.0	0.5	0.2	0.1	0.0	0.0

**Appendix D-8. Continued**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 2006</b>												
1	5	7	64	107	183	62	184	217	83	26	27	12
2	4	13	49	90	160	62	157	268	78	23	21	10
3	3	7	43	91	142	58	281	353	70	21	18	9
4	3	6	37	88	122	52	415	295	63	28	16	8
5	3	4	33	80	106	52	326	246	58	29	14	9
6	2	12	31	69	91	56	320	215	59	25	13	63
7	2	32	30	63	82	55	736	193	55	21	12	35
8	2	16	29	62	79	56	863	179	50	20	12	23
9	2	10	29	58	75	77	582	169	49	19	12	16
10	2	7	28	51	74	336	400	165	56	18	13	12
11	2	10	30	48	75	355	322	175	52	29	17	14
12	2	9	30	52	71	533	278	201	45	174	18	30
13	2	8	29	54	67	1190	233	181	42	187	16	24
14	2	8	28	133	68	1860	590	160	41	120	14	19
15	2	11	29	182	67	1140	806	153	38	65	12	15
16	3	47	29	153	91	726	552	179	36	44	10	13
17	3	47	27	148	130	492	1490	185	36	34	9	11
18	2	31	25	219	90	367	1460	177	36	28	10	13
19	2	24	22	164	120	303	938	158	36	24	12	15
20	2	20	20	133	110	262	627	139	34	22	12	14
21	4	17	21	159	90	236	469	125	33	22	9	13
22	5	16	24	227	87	202	384	113	31	21	9	12
23	3	14	26	189	76	179	327	103	28	20	10	29
24	2	14	30	163	68	170	284	102	27	18	8	50
25	2	12	40	138	65	157	255	129	27	16	8	43
26	2	11	54	104	61	141	230	145	84	15	8	31
27	2	12	64	91	60	132	211	120	51	24	11	24
28	2	36	79	90	63	140	192	100	35	71	13	21
29	2	159	119	172		132	179	89	29	82	15	19
30	2	106	96	304		125	194	83		47	13	17
31	3		95	233		160		80		37	12	
<i>Total</i>	74	725	1290	3915	2573	9868	14285	5197	1362	1330	403	624
<i>Max</i>	5	159	119	304	183	1860	1490	353	84	187	27	63
<i>Min</i>	2	4	20	48	60	52	157	80	27	15	8	8
<i>Avg</i>	2	24	42	126	92	318	476	168	47	43	13	21
<i>Runoff</i>	0.0	0.1	0.2	0.6	0.4	1.5	2.2	0.8	0.2	0.2	0.1	0.1

**Appendix D-8. Continued**

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<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 2007</b>												
1	16	85	1250	921	170	742	746	498	96	84	17	5
2	16	72	1830	908	150	1840	920	411	90	56	16	5
3	24	66	1340	624	138	1530	685	347	87	43	14	5
4	57	62	866	503	134	670	558	310	86	38	13	5
5	34	60	521	860	128	316	441	281	85	35	13	5
6	25	59	393	1020	121	263	362	235	75	30	12	6
7	21	59	324	775	115	218	304	207	66	26	12	7
8	19	61	258	565	110	178	259	198	65	24	11	10
9	17	59	236	454	105	194	226	183	55	22	10	11
10	16	54	218	365	100	334	205	174	49	20	10	10
11	17	149	210	325	92	387	233	165	48	20	9	7
12	23	217	546	303	84	306	431	152	46	18	9	6
13	24	168	1010	760	76	279	400	140	43	15	8	6
14	23	141	1010	1190	70	265	348	135	41	14	8	5
15	20	163	713	1750	67	238	341	136	39	13	11	4
16	20	300	479	2010	65	196	310	137	38	12	9	4
17	403	362	388	1250	70	165	275	126	35	17	9	4
18	840	269	328	719	76	147	251	114	35	89	8	4
19	522	210	287	475	90	150	217	110	42	423	8	3
20	323	173	262	374	102	190	187	108	38	377	15	3
21	230	149	649	331	135	177	171	102	31	157	31	2
22	186	134	1880	305	160	177	166	96	35	88	22	2
23	158	123	2620	266	267	792	163	89	47	54	13	2
24	132	113	1720	243	443	1800	153	85	82	38	10	3
25	111	105	1110	219	901	1580	501	86	126	30	10	3
26	103	96	757	205	2040	1160	1460	95	113	25	18	3
27	121	86	531	227	1540	807	1890	158	98	23	11	3
28	140	81	424	197	893	579	1420	188	84	25	9	3
29	125	80	358	190		460	975	140	103	26	7	3
30	105	241	317	200		396	642	117	121	26	7	3
31	100		453	220		425		102		21	6	
<i>Total</i>	3971	3997	23288	18754	8442	16961	15240	5425	1999	1889	364	140
<i>Max</i>	840	362	2620	2010	2040	1840	1890	498	126	423	31	11
<i>Min</i>	16	54	210	190	65	147	153	85	31	12	6	2
<i>Avg</i>	128	133	751	605	302	547	508	175	67	61	12	5
<i>Runoff</i>	0.6	0.6	3.6	2.9	1.3	2.6	2.3	0.8	0.3	0.3	0.1	0.0

**Appendix D-8. Concluded**

<i>Day</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sept</i>
<b>Sangamon River near Fisher (112), Water Year 2008</b>												
1	4	12	55	274	200	200	283	138	613	133	67	14
2	4	11	64	219	180	566	234	141	361	121	68	13
3	5	11	199	180	155	1040	211	170	374	113	89	13
4	7	11	191	190	179	1040	205	147	2060	104	59	18
5	6	11	154	204	2470	556	183	133	2820	96	50	100
6	4	11	112	294	7480	314	170	126	1950	90	45	66
7	4	12	86	475	4210	236	163	123	1510	342	40	35
8	4	13	73	4750	1420	199	153	387	2100	359	35	29
9	4	15	62	7660	977	181	159	675	1580	226	32	27
10	4	18	154	3020	809	167	179	460	955	155	31	24
11	4	25	396	1540	578	168	564	716	621	125	28	22
12	4	27	1590	1160	340	291	477	1310	431	348	26	28
13	4	54	1730	896	240	468	340	1160	343	852	25	68
14	4	69	1230	691	180	457	274	770	288	646	23	1460
15	6	63	768	517	160	406	235	574	250	296	22	5890
16	7	52	531	422	169	333	215	724	228	201	21	4080
17	7	43	403	372	719	310	197	671	198	163	20	2080
18	7	43	338	327	1660	694	181	488	182	141	19	996
19	14	42	302	277	897	992	182	385	171	127	18	440
20	11	42	261	270	352	1020	180	345	159	125	18	293
21	9	86	372	250	237	700	165	303	150	133	17	274
22	8	552	807	230	222	485	156	258	144	130	18	207
23	8	432	1350	210	182	359	149	236	136	114	18	162
24	8	243	1090	190	149	296	143	298	126	97	17	131
25	8	167	573	180	143	264	144	274	127	85	16	115
26	9	137	416	170	143	234	185	246	141	78	15	103
27	10	127	372	160	133	209	170	224	133	70	14	93
28	13	107	345	160	124	240	158	249	276	62	14	84
29	14	96	408	170	123	226	150	227	222	57	17	77
30	12	72	371	188		207	139	206	158	68	19	76
31	11		322	228		206		636		81	15	
<i>Total</i>	221	2604	15125	25874	24831	13064	6344	12800	18807	5738	916	17018
<i>Max</i>	14	552	1730	7660	7480	1040	564	1310	2820	852	89	5890
<i>Min</i>	4	11	55	160	123	167	139	123	126	57	14	13
<i>Avg</i>	7	87	488	835	856	421	211	413	627	185	30	567
<i>Runoff</i>	0.0	0.4	2.3	4.0	3.8	2.0	1.0	2.0	2.9	0.9	0.1	2.6

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**Appendix E. Nitrate-N Sample Concentrations  
(WY 1993-2008) by Station**

**Table E-1. Nitrate-N Sample Concentrations (WY 1993-2008)  
for Long Creek (Station 101)**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/06/93	13:55	-	-	10.73	Grab
05/14/93	10:15	-	-	11.98	Grab
06/04/93	12:32	-	-	9.10	Grab
06/15/93	12:32	-	-	13.50	Grab
06/21/93	12:50	-	-	12.00	Grab
06/29/93	15:56	-	-	10.69	Grab
07/07/93	11:12	-	-	10.62	Grab
07/22/93	11:33	-	-	7.07	Grab
07/28/93	10:37	-	-	6.75	Grab
08/10/93	15:29	-	-	2.89	Grab
08/17/93	12:02	-	-	1.47	Grab
08/23/93	12:43	-	-	0.94	Grab
09/01/93	11:56	-	-	0.74	Grab
09/10/93	13:08	-	-	7.44	Grab
09/16/93	12:56	-	-	8.06	Grab
09/28/93	11:21	-	-	7.22	Grab
10/06/93	11:49	-	-	8.03	Grab
10/13/93	10:51	-	-	6.94	Grab
10/25/93	13:17	-	-	7.10	Grab
11/10/93	13:25	-	-	6.40	Grab
11/16/93	13:17	-	-	7.92	Grab
11/24/93	10:41	-	-	8.43	Grab
12/08/93	13:20	-	-	7.88	Grab
12/17/93	10:38	-	-	7.19	Grab
12/23/93	10:58	-	-	7.61	Grab
01/10/94	11:32	-	-	6.10	Grab
01/28/94	11:24	-	-	3.98	Grab
02/03/94	15:00	-	-	6.82	Grab
02/10/94	12:15	-	-	5.85	Grab
02/17/94	11:44	-	-	5.58	Grab
02/24/94	11:38	-	-	6.54	Grab
03/01/94	13:30	-	-	6.29	Grab
03/08/94	11:39	-	-	8.68	Grab
03/17/94	10:50	-	-	7.19	Grab
03/23/94	15:22	-	-	7.26	Grab
03/29/94	10:19	-	-	6.39	Grab
04/04/94	14:26	-	-	5.89	Grab
04/11/94	14:28	-	-	5.29	Grab
04/18/94	11:18	-	-	7.32	Grab
04/25/94	11:29	-	-	8.31	Grab

**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/29/94	14:46	-	-	8.42	Grab
05/02/94	10:52	-	-	10.07	Grab
05/09/94	10:53	-	-	10.31	Grab
05/16/94	11:00	-	-	9.98	Grab
05/23/94	10:27	-	-	10.24	Grab
05/31/94	11:54	-	-	9.91	Grab
06/06/94	15:39	-	-	9.66	Grab
06/13/94	13:08	-	-	11.57	Grab
06/20/94	12:55	-	-	10.33	Grab
06/27/94	9:30	-	-	9.58	Grab
07/06/94	9:46	-	-	7.63	Grab
07/12/94	13:57	-	-	6.49	Grab
07/26/94	7:21	-	-	0.91	Grab
08/01/94	11:43	-	-	0.10	Grab
10/18/94	14:15	-	-	<0.02	Grab
10/26/94	11:25	-	-	<0.02	Grab
11/01/94	15:26	-	-	0.04	Grab
11/07/94	15:41	-	-	0.92	Grab
11/07/94	15:43	-	-	0.93	Grab
11/14/94	11:45	-	-	0.83	Grab
11/21/94	14:16	-	-	1.86	Grab
11/28/94	12:35	-	-	2.84	Grab
12/05/94	10:48	-	-	2.12	Grab
12/07/94	12:27	-	-	2.30	Grab
12/07/94	12:30	-	-	2.39	Grab
12/07/94	12:33	-	-	2.41	Grab
12/07/94	12:36	-	-	2.42	Grab
12/08/94	0:00	-	-	3.67	Grab
12/08/94	15:17	-	-	3.10	Grab
12/08/94	15:17	-	-	3.21	Grab
12/08/94	18:00	-	-	3.45	Grab
12/09/94	0:00	-	-	3.87	Grab
12/09/94	6:00	-	-	3.60	Grab
12/09/94	15:00	-	-	3.87	Grab
12/10/94	6:00	-	-	3.69	Grab
12/10/94	12:00	-	-	3.74	Grab
12/10/94	21:00	-	-	3.80	Grab
12/12/94	10:38	-	-	3.81	Grab
12/16/94	11:36	-	-	3.54	Grab
12/16/94	11:40	-	-	3.30	Grab
12/17/94	0:08	-	-	3.82	Grab

**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
12/17/94	16:15	-	-	6.51	Grab
12/18/94	8:00	-	-	6.37	Grab
12/19/94	8:15	-	-	5.98	Grab
12/19/94	11:33	-	-	5.59	Grab
01/17/95	10:21	-	-	5.80	Grab
01/17/95	11:29	-	-	9.28	Grab
01/23/95	14:55	-	-	9.57	Grab
02/01/95	11:36	-	-	8.58	Grab
02/16/95	11:26	-	-	7.17	Grab
02/22/95	10:42	-	-	6.14	Grab
02/27/95	11:29	-	-	5.98	Grab
02/27/95	11:42	-	-	5.59	Grab
02/27/95	14:00	-	-	5.58	Grab
02/27/95	16:00	-	-	5.53	Grab
02/27/95	18:00	-	-	5.51	Grab
02/27/95	20:00	-	-	5.50	Grab
02/27/95	22:00	-	-	5.51	Grab
02/28/95	0:01	-	-	5.53	Grab
02/28/95	2:00	-	-	5.54	Grab
02/28/95	4:00	-	-	5.56	Grab
02/28/95	6:00	-	-	5.59	Grab
02/28/95	8:00	-	-	5.55	Grab
02/28/95	10:00	-	-	5.50	Grab
02/28/95	12:00	-	-	5.47	Grab
02/28/95	14:00	-	-	5.77	Grab
02/28/95	16:00	-	-	5.69	Grab
02/28/95	18:00	-	-	5.96	Grab
02/28/95	20:00	-	-	5.79	Grab
02/28/95	22:00	-	-	5.69	Grab
03/01/95	0:01	-	-	5.74	Grab
03/07/95	10:17	-	-	4.34	Grab
03/07/95	10:28	-	-	4.70	Grab
03/07/95	12:00	-	-	5.54	Grab
03/07/95	16:00	-	-	7.63	Grab
03/07/95	20:00	-	-	8.75	Grab
03/08/95	0:01	-	-	9.37	Grab
03/08/95	10:51	-	-	10.47	Grab
03/08/95	16:19	-	-	11.03	Grab
03/16/95	11:36	-	-	8.90	Grab
03/22/95	15:29	-	-	8.75	Grab
03/28/95	12:48	-	-	7.41	Grab

**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/05/95	12:30	-	-	7.41	Grab
04/07/95	12:57	-	-	6.90	Grab
04/27/95	15:40	-	-	9.38	Grab
05/02/95	10:22	-	-	9.00	Grab
05/08/95	15:55	-	-	7.18	Grab
05/20/95	13:48	-	-	10.77	Grab
05/22/95	10:24	-	-	11.59	Grab
05/31/95	11:40	-	-	9.90	Grab
06/07/95	14:36	-	-	11.96	Grab
06/12/95	10:53	-	-	12.12	Grab
06/21/95	14:50	-	-	10.92	Grab
06/27/95	14:34	-	-	10.07	Grab
07/10/95	14:03	-	-	7.57	Grab
07/18/95	10:02	-	-	3.71	Grab
07/25/95	14:49	-	-	1.44	Grab
08/02/95	9:55	-	-	1.88	Grab
08/15/95	13:28	-	-	1.54	Grab
08/22/95	11:16	-	-	0.21	Grab
09/06/95	15:12	-	-	<0.02	Grab
10/24/95	14:09	-	-	<0.02	Grab
11/01/95	14:27	-	-	0.12	Grab
11/07/95	14:26	-	-	0.62	Grab
11/15/95	12:07	-	-	0.47	Grab
11/22/95	9:38	-	-	0.52	Grab
11/28/95	12:45	-	-	0.29	Grab
12/05/95	13:35	-	-	0.07	Grab
01/17/96	13:32	-	-	4.63	Grab
01/23/96	10:08	-	-	4.79	Grab
02/14/96	12:06	-	-	4.12	Grab
02/20/96	14:46	-	-	2.85	Grab
02/27/96	12:03	-	-	8.80	Grab
03/05/96	13:58	-	-	4.52	Grab
03/12/96	13:08	-	-	7.60	Grab
03/18/96	13:17	-	-	6.65	Grab
03/27/96	10:20	-	-	5.60	Grab
04/02/96	13:58	-	-	10.69	Grab
04/09/96	12:04	-	-	8.81	Grab
04/15/96	12:43	-	-	7.79	Grab
04/22/96	13:34	-	-	8.14	Grab
04/30/96	16:08	-	-	13.89	Grab
05/07/96	13:13	-	-	11.89	Grab

**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/08/96	14:50	-	-	1.74	Grab
05/08/96	18:50	-	-	1.43	Grab
05/09/96	11:13	-	-	5.46	Grab
05/09/96	13:30	-	-	5.09	Grab
05/14/96	11:23	-	-	11.22	Grab
05/21/96	14:36	-	-	13.37	Grab
05/29/96	9:59	-	-	10.21	Grab
06/04/96	15:40	-	-	12.22	Grab
06/11/96	13:08	-	-	10.67	Grab
06/18/96	13:58	-	-	13.47	Grab
06/25/96	13:08	-	-	12.45	Grab
07/01/96	16:10	-	-	12.70	Grab
07/10/96	13:20	-	-	11.10	Grab
07/16/96	11:48	-	-	7.27	Grab
07/22/96	14:27	-	-	4.17	Grab
07/30/96	11:35	-	-	1.68	Grab
08/05/96	15:07	-	-	0.57	Grab
08/13/96	10:38	-	-	0.03	Grab
08/20/96	14:46	-	-	0.21	Grab
08/27/96	11:22	-	-	0.14	Grab
10/16/96	15:22	-	-	<0.02	Grab
10/22/96	13:36	-	-	<0.02	Grab
10/30/96	10:39	-	-	<0.02	Grab
11/19/96	14:20	-	-	0.09	Grab
12/03/96	11:15	-	-	0.25	Grab
12/18/96	10:27	-	-	0.05	Grab
01/03/97	15:47	-	-	0.05	Grab
01/22/97	15:22	-	-	1.25	Grab
02/04/97	15:06	-	-	4.95	Grab
02/18/97	14:43	-	-	5.47	Grab
02/27/97	11:14	-	-	6.17	Grab
03/04/97	15:05	-	-	11.48	Grab
03/11/97	14:48	-	-	11.68	Grab
03/19/97	13:31	-	-	11.52	Grab
03/25/97	11:22	-	-	10.92	Grab
04/01/97	13:56	-	-	9.77	Grab
04/09/97	12:58	-	-	8.86	Grab
04/14/97	15:05	-	-	8.82	Grab
04/22/97	12:50	-	-	7.68	Grab
05/06/97	14:32	-	-	11.90	Grab
05/13/97	13:21	-	-	10.13	Grab

**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/20/97	12:32	-	-	8.96	Grab
05/28/97	13:45	-	-	7.61	Grab
06/03/97	15:35	-	-	10.01	Grab
06/09/97	13:50	-	-	14.41	Grab
06/17/97	13:54	-	-	12.75	Grab
06/25/97	10:47	-	-	10.40	Grab
07/01/97	10:19	-	-	7.25	Grab
07/08/97	15:14	-	-	6.05	Grab
07/15/97	14:50	-	-	2.18	Grab
07/21/97	11:55	-	-	0.73	Grab
07/28/97	15:31	-	-	0.34	Grab
08/05/97	14:41	-	-	0.10	Grab
08/12/97	14:08	-	-	0.09	Grab
08/19/97	15:10	-	-	0.12	Grab
09/03/97	15:00	-	-	0.78	Grab
09/10/97	14:41	-	-	0.16	Grab
09/12/97	12:00	-	-	0.04	Grab
10/15/97	12:56	-	-	0.04	Grab
10/28/97	14:59	-	-	0.04	Grab
11/04/97	13:49	-	-	0.04	Grab
12/04/97	15:13	-	-	2.50	Grab
12/16/97	14:35	-	-	1.97	Grab
12/29/97	14:31	-	-	3.94	Grab
01/06/98	14:57	-	-	6.24	Grab
01/27/98	15:03	-	-	8.31	Grab
01/29/98	12:27	-	-	9.47	Grab
02/03/98	15:55	-	-	9.81	Grab
02/10/98	14:43	-	-	8.49	Grab
02/17/98	15:11	-	-	7.27	Grab
02/24/98	13:34	-	-	11.65	Grab
03/03/98	14:31	-	-	10.51	Grab
03/17/98	15:22	-	-	6.32	Grab
03/24/98	13:01	-	-	9.55	Grab
04/02/98	15:19	-	-	10.14	Grab
04/08/98	14:43	-	-	7.21	Grab
04/14/98	14:27	-	-	9.57	Grab
04/21/98	13:54	-	-	11.88	Grab
04/29/98	15:13	-	-	9.42	Grab
05/05/98	12:50	-	-	11.10	Grab
05/12/98	15:00	-	-	10.86	Grab
05/19/98	14:59	-	-	13.70	Grab



**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/27/98	14:45	-	-	14.53	Grab
06/03/98	13:38	-	-	12.33	Grab
06/10/98	11:26	-	-	12.22	Grab
06/17/98	12:16	-	-	9.23	Grab
07/01/98	15:09	-	-	10.37	Grab
07/07/98	10:31	-	-	11.48	Grab
07/15/98	15:22	-	-	10.72	Grab
07/22/98	14:59	-	-	7.17	Grab
07/28/98	11:17	-	-	6.26	Grab
08/04/98	14:46	-	-	5.88	Grab
08/12/98	12:35	-	-	4.83	Grab
08/26/98	15:27	-	-	3.01	Grab
09/02/98	12:52	-	-	1.38	Grab
09/09/98	14:28	-	-	0.48	Grab
09/16/98	15:00	-	-	0.23	Grab
09/22/98	15:47	-	-	0.27	Grab
09/30/98	14:25	-	-	0.20	Grab
10/06/98	14:50	-	-	0.33	Grab
10/14/98	14:45	-	-	0.19	Grab
10/20/98	14:04	-	-	<0.09	Grab
10/29/98	10:57	-	-	<0.09	Grab
11/04/98	15:06	-	-	4.03	Grab
11/18/98	14:51	-	-	7.20	Grab
11/23/98	14:43	-	-	6.41	Grab
12/01/98	14:22	-	-	5.93	Grab
12/09/98	13:55	-	-	5.69	Grab
12/15/98	14:29	-	-	6.48	Grab
01/19/99	15:16	-	-	5.48	Grab
01/26/99	13:16	-	-	11.54	Grab
02/03/99	13:31	-	-	11.77	Grab
02/09/99	14:48	-	-	11.42	Grab
02/17/99	15:17	-	-	11.81	Grab
02/24/99	14:54	-	-	11.10	Grab
03/03/99	11:48	-	-	10.19	Grab
03/10/99	14:44	-	-	9.85	Grab
03/16/99	14:57	-	-	9.90	Grab
03/24/99	15:49	-	-	9.81	Grab
03/30/99	15:13	-	-	9.09	Grab
04/06/99	15:09	-	-	10.77	Grab
04/13/99	15:26	-	-	10.31	Grab
04/20/99	15:12	-	-	13.60	Grab

**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/27/99	15:39	-	-	12.39	Grab
05/05/99	15:35	-	-	11.24	Grab
05/11/99	15:13	-	-	13.05	Grab
05/18/99	14:39	-	-	12.46	Grab
05/25/99	14:35	-	-	12.78	Grab
06/01/99	12:53	-	-	12.54	Grab
06/03/99	13:50	-	-	12.83	Grab
06/09/99	11:10	-	-	13.30	Grab
06/15/99	15:15	-	-	12.41	Grab
07/01/99	13:04	-	-	10.34	Grab
07/08/99	14:10	-	-	9.16	Grab
07/13/99	15:11	-	-	6.90	Grab
07/21/99	13:57	-	-	3.14	Grab
07/27/99	14:56	-	-	1.31	Grab
08/03/99	14:22	-	-	0.43	Grab
08/11/99	14:00	-	-	0.29	Grab
08/17/99	13:49	-	-	1.20	Grab
08/25/99	11:24	-	-	0.84	Grab
08/31/99	14:51	-	-	0.41	Grab
09/07/99	14:43	-	-	0.16	Grab
09/15/99	15:04	-	-	<0.11	Grab
09/22/99	14:26	-	-	0.17	Grab
09/28/99	14:55	-	-	<0.11	Grab
10/05/99	14:30	-	-	0.17	Grab
10/13/99	11:04	-	-	0.45	Grab
10/18/99	14:58	-	-	0.13	Grab
10/26/99	14:28	52	-	<0.13	Grab
11/01/99	14:50	63	-	<0.13	Grab
11/08/99	13:53	56	-	<0.13	Grab
11/15/99	13:50	49	-	<0.13	Grab
11/22/99	13:25	53	-	<0.13	Grab
11/29/99	14:27	42	-	<0.13	Grab
12/06/99	14:35	45	-	0.18	Grab
12/13/99	14:01	43	-	0.22	Grab
12/20/99	14:37	36	-	0.50	Grab
01/03/00	14:18	42	-	0.66	Grab
01/10/00	13:49	43	-	1.01	Grab
01/18/00	13:31	36	-	0.65	Grab
02/01/00	12:32	35	-	0.70	Grab
02/09/00	14:14	36	-	0.78	Grab
02/15/00	12:32	37	-	1.07	Grab

**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
02/22/00	14:42	48	-	4.52	Grab
02/29/00	13:41	52	-	3.09	Grab
03/07/00	13:52	59	-	2.33	Grab
03/14/00	13:36	47	-	2.25	Grab
03/21/00	14:57	49	-	5.23	Grab
03/28/00	13:30	50	-	3.86	Grab
04/04/00	13:47	52	-	2.81	Grab
04/11/00	13:36	50	-	2.78	Grab
04/18/00	13:53	55	-	1.64	Grab
04/25/00	14:31	60	-	3.30	Grab
05/02/00	14:34	67	-	2.51	Grab
05/09/00	14:08	71	-	1.44	Grab
05/16/00	14:12	66	-	5.52	Grab
05/23/00	9:52	66	-	3.46	Grab
05/30/00	13:30	66	-	11.17	Grab
06/06/00	14:43	62	-	10.73	Grab
06/13/00	13:40	76	-	9.05	Grab
06/21/00	8:40	68	-	6.16	Grab
06/29/00	10:19	68	-	10.22	Grab
07/05/00	9:29	-	-	2.54	Grab
07/12/00	10:08	73	-	5.82	Grab
07/19/00	10:43	70	-	7.79	Grab
07/26/00	10:29	70	-	4.98	Grab
08/02/00	9:55	75	-	1.81	Grab
08/08/00	9:39	73	-	1.43	Grab
08/15/00	12:51	79	-	0.32	Grab
08/22/00	13:35	71	-	0.20	Grab
08/29/00	14:28	82	-	0.15	Grab
09/05/00	12:30	73	-	<0.06	Grab
09/13/00	9:31	64	-	0.12	Grab
09/19/00	11:57	65	-	0.09	Grab
09/26/00	13:45	57	-	2.63	Grab
10/03/00	12:12	67	-	3.02	Grab
10/05/00	10:48	60	-	3.58	Grab
10/10/00	14:00	54	-	10.25	Grab
10/17/00	12:35	59	-	7.94	Grab
10/24/00	13:30	65	-	6.52	Grab
10/30/00	14:56	58	-	5.15	Grab
11/08/00	11:49	52	-	6.59	Grab
11/14/00	15:29	47	-	10.12	Grab
11/20/00	14:05	41	-	9.98	Grab

**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
11/28/00	14:17	43	-	9.79	Grab
12/05/00	14:40	37	-	9.55	Grab
12/14/00	13:30	34	-	9.65	Grab
12/18/00	12:45	32	-	9.06	Grab
01/16/01	15:45	37	-	7.31	Grab
01/23/01	14:22	37	-	7.97	Grab
01/31/01	16:06	38	-	7.35	Grab
02/06/01	15:41	43	-	8.52	Grab
02/14/01	16:34	43	-	11.23	Grab
02/20/01	15:07	44	-	11.03	Grab
02/24/01	15:24	44	-	5.31	Grab
02/24/01	16:36	44	-	5.00	Grab
03/06/01	15:20	40	-	11.41	Grab
03/15/01	13:23	-	-	11.35	Grab
03/21/01	16:12	49	7.9	11.11	Grab
03/27/01	15:25	45	8.20	10.67	Grab
04/03/01	13:54	54	-	9.87	Grab
04/10/01	13:48	65	-	9.04	Grab
04/17/01	14:15	50	7.91	12.45	Grab
04/24/01	12:55	58	8.00	10.85	Grab
05/01/01	13:52	67	-	10.56	Grab
05/09/01	14:20	67	7.69	9.53	Grab
05/14/01	10:45	59	-	9.26	Grab
05/21/01	12:03	64	7.48	9.93	Grab
05/30/01	13:55	62	-	8.59	Grab
06/05/01	9:00	60	8.05	13.06	Grab
06/14/01	8:41	75	-	12.65	Grab
06/20/01	10:27	71	8.25	12.36	Grab
07/02/01	14:51	71	-	9.27	Grab
07/10/01	14:55	82	8.32	4.94	Grab
07/18/01	9:25	73	-	1.58	Grab
07/24/01	10:24	79	8.00	0.41	Grab
08/01/01	12:30	81	-	0.18	Grab
08/08/01	13:49	81	8.13	0.10	Grab
08/22/01	12:01	73	-	0.22	Grab
09/06/01	12:56	72	-	0.18	Grab
09/12/01	12:17	67	8.20	0.24	Grab
09/19/01	11:31	64	-	0.23	Grab
09/26/01	10:36	54	8.00	0.08	Grab
10/04/01	12:25	61	-	<0.06	Grab
10/11/01	11:45	62	8.28	0.08	Grab

**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
10/17/01	12:00	51	-	4.67	Grab
10/24/01	14:03	61	7.92	4.17	Grab
11/01/01	15:04	57	-	4.98	Grab
11/07/01	14:33	55	8.37	4.13	Grab
11/14/01	8:42	52	-	3.43	Grab
11/20/01	9:23	45	7.98	2.81	Grab
11/27/01	14:50	48	-	2.32	Grab
12/04/01	15:07	55	7.99	7.09	Grab
12/11/01	14:18	42	-	6.34	Grab
12/20/01	8:40	43	-	10.17	Grab
12/26/01	14:57	36	8.00	9.95	Grab
01/02/02	15:20	33	-	9.37	Grab
01/08/02	15:26	36	-	8.57	Grab
01/15/02	15:32	38	8.01	8.58	Grab
01/22/02	13:49	40	-	7.86	Grab
01/29/02	14:54	47	8.12	6.82	Grab
01/31/02	7:54	-	-	5.88	Grab
01/31/02	19:09	42	-	8.70	Grab
02/04/02	15:03	39	-	12.61	Grab
02/13/02	13:54	42	8.18	10.72	Grab
02/19/02	15:01	45	-	6.94	Grab
02/20/02	6:55	46	-	8.75	Grab
02/20/02	18:57	45	-	10.41	Grab
02/22/02	14:03	43	-	12.55	Grab
02/25/02	14:47	45	7.85	12.32	Grab
03/05/02	14:08	42	-	11.88	Grab
03/12/02	14:58	46	7.92	12.52	Grab
03/19/02	14:32	47	-	11.49	Grab
03/27/02	14:14	45	7.97	11.02	Grab
03/28/02	18:01	45	-	11.28	Grab
03/29/02	7:41	42	-	12.28	Grab
03/29/02	16:30	46	-	12.55	Grab
03/30/02	6:45	43	-	12.76	Grab
04/02/02	13:35	48	-	12.73	Grab
04/09/02	6:55	49	-	11.96	Grab
04/16/02	13:24	69	8.19	11.03	Grab
04/20/02	6:43	59	-	9.69	Grab
04/21/02	8:44	51	-	4.15	Grab
04/21/02	11:25	52	-	4.55	Grab
04/21/02	17:29	49	-	6.70	Grab
04/22/02	7:52	49	-	10.93	Grab

**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/23/02	13:30	53	-	12.56	Grab
04/24/02	17:37	59	-	4.41	Grab
04/24/02	19:27	59	-	4.36	Grab
04/25/02	7:25	51	-	6.51	Grab
04/25/02	14:00	55	-	9.00	Grab
04/25/02	16:39	56	-	9.46	Grab
04/26/02	6:20	50	-	11.17	Grab
04/27/02	15:16	51	-	4.66	Grab
04/27/02	17:46	51	-	3.77	Grab
04/28/02	6:55	53	-	6.18	Grab
04/28/02	18:06	51	-	8.77	Grab
04/30/02	13:51	56	7.70	10.87	Grab
05/01/02	17:36	55	-	11.08	Grab
05/06/02	11:34	58	-	9.23	Grab
05/06/02	17:24	54	-	8.36	Grab
05/07/02	12:56	67	-	2.90	Grab
05/07/02	18:08	67	-	3.73	Grab
05/08/02	7:35	60	-	7.31	Grab
05/09/02	6:38	63	-	2.26	Grab
05/09/02	10:28	63	-	2.61	Grab
05/09/02	17:46	63	-	4.26	Grab
05/10/02	6:48	55	-	7.35	Grab
05/12/02	10:54	63	-	0.73	Grab
05/12/02	21:09	64	-	1.66	Grab
05/13/02	9:15	55	-	2.32	Grab
05/14/02	13:28	57	7.33	5.87	Grab
05/21/02	9:51	52	-	10.03	Grab
05/28/02	13:28	64	8.04	11.12	Grab
06/04/02	14:59	73	-	11.58	Grab
06/11/02	7:51	70	8.07	11.17	Grab
06/11/02	21:19	68	-	5.40	Grab
06/12/02	7:15	65	-	11.74	Grab
06/12/02	18:41	68	-	12.89	Grab
06/13/02	7:41	64	-	12.56	Grab
06/18/02	13:17	67	-	13.17	Grab
06/25/02	13:29	74	8.18	12.15	Grab
07/02/02	13:11	79	-	11.20	Grab
07/09/02	13:05	81	-	7.95	Grab
07/16/02	7:37	70	8.15	4.62	Grab
07/30/02	13:04	80	7.94	0.23	Grab
08/06/02	13:43	79	-	0.11	Grab

**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
08/14/02	13:13	73	8.05	<0.06	Grab
08/19/02	11:20	72	-	<0.06	Grab
08/27/02	12:48	76	8.06	0.10	Grab
09/24/02	13:14	66	7.86	<0.06	Grab
10/08/02	13:30	61	7.75	<0.06	Grab
10/15/02	13:27	57	-	<0.06	Grab
10/22/02	13:57	50	7.66	<0.06	Grab
10/28/02	14:06	50	-	<0.06	Grab
11/06/02	15:00	45	7.59	<0.06	Grab
11/12/02	14:44	48	-	<0.06	Grab
11/19/02	14:15	46	7.63	<0.06	Grab
11/25/02	15:19	37	-	<0.06	Grab
12/03/02	14:53	34	-	<0.06	Grab
12/10/02	14:39	40	7.44	<0.06	Grab
12/17/02	14:59	37	-	0.08	Grab
12/23/02	14:39	37	7.83	0.31	Grab
12/30/02	14:10	43	-	0.43	Grab
01/22/03	13:41	32	-	0.08	Grab
01/28/03	15:07	38	7.23	0.18	Grab
02/04/03	14:52	35	-	0.40	Grab
02/10/03	14:30	38	7.53	0.25	Grab
02/18/03	14:06	36	-	0.75	Grab
02/25/03	14:46	39	7.57	1.07	Grab
03/04/03	15:02	37	-	0.56	Grab
03/11/03	14:43	41	7.87	0.18	Grab
03/18/03	14:10	59	-	0.55	Grab
03/25/03	15:09	57	8.14	0.72	Grab
03/31/03	14:31	52	-	0.34	Grab
04/07/03	13:54	48	7.58	0.17	Grab
04/15/03	12:58	68	-	0.18	Grab
04/22/03	12:28	59	-	0.20	Grab
04/29/03	13:37	66	-	0.92	Grab
05/04/03	19:18	-	-	0.43	Grab
05/05/03	13:02	61	-	3.89	Grab
05/06/03	12:46	63	-	3.94	Grab
05/14/03	11:00	60	-	12.64	Grab
05/20/03	13:24	65	7.87	9.68	Grab
05/27/03	13:58	63	-	9.37	Grab
06/03/03	13:33	57	-	6.73	Grab
06/10/03	13:36	71	7.92	6.01	Grab
06/17/03	14:30	68	-	11.52	Grab

**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/24/03	13:22	76	8.06	10.31	Grab
07/01/03	13:13	75	-	8.43	Grab
07/08/03	12:51	84	8.02	4.28	Grab
07/09/03	21:56	77	-	2.80	Grab
07/10/03	6:44	71	-	2.48	Grab
07/10/03	11:07	72	-	3.41	Grab
07/15/03	10:55	75	-	5.53	Grab
07/22/03	12:19	75	8.04	1.82	Grab
07/29/03	12:50	74	8.06	1.01	Grab
08/05/03	13:09	72	-	0.29	Grab
08/12/03	12:10	71	7.91	0.19	Grab
08/19/03	12:16	77	-	0.15	Grab
09/01/03	6:41	66	-	0.21	Grab
09/01/03	13:36	68	-	0.51	Grab
09/01/03	16:48	68	-	0.59	Grab
09/02/03	7:15	68	-	0.67	Grab
09/10/03	11:12	69	8.00	0.33	Grab
09/16/03	11:20	66	-	0.11	Grab
09/30/03	13:18	55	-	<0.07	Grab
10/07/03	10:13	57	7.69	<0.07	Grab
10/14/03	10:12	55	-	0.20	Grab
10/21/03	12:06	60	7.45	<0.07	Grab
10/28/03	10:46	50	-	<0.07	Grab
11/05/03	12:40	55	7.38	<0.07	Grab
11/10/03	10:35	42	7.32	<0.07	Grab
11/18/03	12:50	57	7.68	1.12	Grab
11/21/03	10:05	-	-	5.38	Grab
12/02/03	13:05	41	7.83	4.25	Grab
12/09/03	10:45	-	-	3.14	Grab
12/17/03	12:05	-	8.115	3.15	Grab
12/22/03	10:50	-	-	2.74	Grab
12/30/03	12:00	-	8.08	9.57	Grab
01/06/04	13:50	-	-	12.65	Grab
01/13/04	11:40	-	8.00	11.98	Grab
01/21/04	10:35	-	-	12.54	Grab
02/17/04	15:05	-	-	7.63	Grab
02/24/04	12:10	40	7.85	10.32	Grab
03/03/04	14:00	-	-	9.42	Grab
03/09/04	12:30	45	7.49	13.18	Grab
03/16/04	10:10	-	-	11.47	Grab
03/23/04	12:07	47	7.87	9.77	Grab



**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/29/04	11:55	-	-	10.13	Grab
04/07/04	14:18	67	8.11	13.44	Grab
04/15/04	9:44	-	-	11.28	Grab
04/19/04	11:10	-	-	11.01	Grab
04/27/04	11:10	-	-	11.01	Grab
05/04/04	10:47	-	-	9.95	Grab
05/11/04	9:45	-	-	9.23	Grab
05/18/04	12:18	67	8.02	16.07	Grab
05/25/04	11:26	66	8.07	13.16	Grab
06/02/04	9:42	-	-	15.01	Grab
06/07/04	10:45	-	-	14.61	Grab
06/14/04	10:38	73	-	12.71	Grab
06/21/04	9:45	64	-	9.96	Grab
06/28/04	9:21	66	-	9.30	Grab
07/13/04	10:59	79	7.94	6.15	Grab
07/20/04	10:05	72	8.14	4.40	Grab
07/27/04	10:22	67	8.71	2.78	Grab
08/04/04	9:28	74	7.91	0.84	Grab
08/10/04	10:55	69	-	0.27	Grab
08/17/04	9:53	68	7.93	0.12	Grab
08/24/04	10:03	72	7.81	0.15	Grab
08/26/04	9:42	70	7.74	0.63	Grab
08/31/04	11:33	69	7.95	3.29	Grab
09/07/04	11:08	70	8.16	2.41	Grab
09/14/04	10:05	70	8.05	1.59	Grab
09/22/04	11:28	65	7.93	0.97	Grab
10/05/04	10:50	54	8.06	0.53	Grab
10/12/04	10:02	55	7.75	0.30	Grab
10/20/04	11:00	58	7.76	8.33	Grab
10/26/04	15:01	62	7.66	6.90	Grab
11/03/04	13:40	56	8.00	8.15	Grab
11/09/04	11:30	53	8.01	8.87	Grab
11/23/04	11:10	52	8.12	8.35	Grab
12/01/04	11:25	41	7.93	4.34	Grab
12/07/04	13:00	49	7.29	1.74	Grab
12/15/04	11:38	38	8.57	8.32	Grab
12/21/04	11:20	36	7.89	9.18	Grab
12/28/04	11:45	35	8.89	8.16	Grab
01/04/05	11:56	43	6.46	8.70	Grab
01/11/05	12:05	42	7.61	8.86	Grab
01/12/05	13:40	43	7.37	4.30	Grab

**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
01/12/05	15:18	43	7.39	4.73	Grab
01/19/05	12:25	37	7.67	8.75	Grab
01/25/05	13:05	39	7.91	8.90	Grab
02/02/05	11:49	31	7.85	7.71	Grab
02/08/05	11:12	39	7.6	7.21	Grab
02/16/05	12:55	42	7.61	8.21	Grab
02/22/05	11:42	40	7.77	8.77	Grab
03/02/05	10:56	36	7.77	8.55	Grab
03/08/05	11:50	41	7.78	7.96	Grab
03/15/05	11:06	38	7.49	7.60	Grab
03/22/05	11:36	42	6.81	6.70	Grab
03/29/05	12:55	52	8.09	8.32	Grab
04/05/05	10:20	57	7.99	7.57	Grab
04/12/05	13:15	59	8.14	7.49	Grab
04/20/05	10:33	65	8.07	7.55	Grab
04/26/05	10:13	54	8.38	7.42	Grab
05/03/05	10:33	50	8.23	6.63	Grab
05/11/05	10:40	72	7.91	5.67	Grab
05/18/05	10:50	63	7.92	6.63	Grab
05/25/05	9:57	63	7.92	6.62	Grab
06/01/05	9:55	66	7.93	5.87	Grab
06/08/05	11:27	76	7.95	4.55	Grab
06/15/05	9:38	68	7.74	8.43	Grab
06/22/05	12:04	73	8.01	6.91	Grab
06/29/05	10:30	77	7.99	4.61	Grab
07/05/05	11:45	74	7.95	2.78	Grab
07/12/05	11:15	71	8.03	1.36	Grab
07/19/05	11:43	77	7.76	0.77	Grab
10/24/05	13:03	50	8.1	2.22	Grab
10/31/05	12:25	52	7.91	1.16	Grab
11/07/05	12:45	54	7.87	2.27	Grab
11/14/05	12:17	48	7.90	1.59	Grab
11/21/05	16:34	44	7.91	2.57	Grab
11/28/05	13:28	50	7.7	2.22	Grab
12/05/05	12:45	32	8.06	3.53	Grab
12/27/05	13:15	39	7.73	3.39	Grab
01/03/06	16:45	44	8.05	4.55	Grab
01/09/06	13:59	41	7.93	4.15	Grab
01/17/06	13:13	38	7.86	4.42	Grab
01/23/06	12:49	39	7.90	5.76	Grab
01/31/06	12:57	41	7.91	7.74	Grab

**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
02/06/06	14:20	36	7.79	7.28	Grab
02/14/06	14:23	39	8.10	6.40	Grab
02/22/06	14:00	36	7.69	6.75	Grab
02/27/06	12:46	40	8.11	5.46	Grab
03/06/06	14:04	40	8.04	4.90	Grab
03/14/06	15:16	45	7.71	12.37	Grab
03/20/06	12:45	42	7.78	11.85	Grab
03/27/06	13:16	43	7.89	11.16	Grab
04/03/06	14:11	47	7.64	10.31	Grab
04/10/06	13:23	53	7.50	11.23	Grab
04/24/06	13:20	60	7.98	12.74	Grab
05/01/06	13:07	55	7.85	11.77	Grab
05/08/06	11:42	59	7.94	12.24	Grab
05/15/06	11:49	52	7.9	11.69	Grab
05/22/06	12:52	61	8.16	10.85	Grab
06/01/06	12:51	65	7.23	10.92	Grab
06/05/06	14:00	65	7.69	14.64	Grab
06/13/06	13:30	66	8.07	13.31	Grab
06/19/06	13:05	71	7.88	10.14	Grab
06/27/06	11:45	69	8.08	10.26	Grab
07/05/06	12:13	72	7.75	3.38	Grab
07/13/06	12:27	74	7.61	4.37	Grab
07/18/06	13:28	80	7.94	5.59	Grab
07/25/06	13:39	79	7.96	3.94	Grab
08/01/06	13:21	84	7.92	1.02	Grab
08/07/06	13:10	76	7.91	0.30	Grab
08/14/06	12:55	74	7.92	0.23	Grab
08/22/06	12:55	70	7.8	0.36	Grab
08/30/06	13:38	70	7.89	0.51	Grab
09/05/06	12:34	66	7.74	0.43	Grab
09/12/06	12:35	70	7.78	0.16	Grab
09/18/06	13:16	67	7.97	0.14	Grab
09/25/06	11:38	69	7.87	0.13	Grab
10/03/06	12:12	67	7.84	0.07	Grab
10/10/06	12:18	59	7.84	<0.07	Grab
10/16/06	13:13	48	7.77	0.07	Grab
10/23/06	12:53	45	7.65	0.44	Grab
10/31/06	12:22	49	7.63	0.33	Grab
11/08/06	12:52	52	7.78	0.34	Grab
11/14/06	13:42	45	7.72	0.37	Grab
11/20/06	15:00	43	7.96	3.81	Grab

**Table E-1. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
11/27/06	12:40	54	7.69	2.31	Grab
12/05/06	14:16	38	7.92	8.49	Grab
12/12/06	14:08	48	7.68	7.80	Grab
12/19/06	12:18	43	7.89	7.58	Grab
12/27/06	12:51	42	7.78	10.54	Grab
01/02/07	12:41	43	7.85	10.81	Grab
01/08/07	12:43	43	7.76	11.41	Grab
01/16/07	11:13	36	7.58	10.28	Grab
01/22/07	16:00	39	7.95	11.78	Grab
01/29/07	13:20	35	8.47	11.94	Grab
02/26/07	12:32	34	7.84	4.49	Grab
03/06/07	13:42	36	7.82	8.92	Grab
03/13/07	12:23	44	7.82	10.75	Grab
03/20/07	10:43	46	7.93	8.61	Grab
03/27/07	15:00	63	8.12	8.88	Grab
04/10/07	11:12	45	8.14	9.55	Grab
04/16/07	12:22	51	8.39	11.27	Grab
04/24/07	12:50	65	8.2	10.12	Grab
05/01/07	10:45	66	8.11	9.13	Grab
05/09/07	12:09	69	8.21	8.67	Grab
05/29/07	12:54	68	7.81	7.22	Grab
06/12/07	11:43	71	8.16	5.10	Grab
06/19/07	11:57	76	8.08	2.01	Grab
07/03/07	12:30	73	8.04	3.77	Grab
07/26/07	11:10	73	7.85	0.19	Grab
08/02/07	10:57	76	7.80	0.12	Grab
08/09/07	9:47	81	7.88	0.08	Grab
10/24/07	11:30	54	7.97	<0.07	Grab
10/31/07	13:05	52	7.75	<0.07	Grab
11/06/07	14:45	45	7.68	<0.07	Grab
11/14/07	12:35	53	7.51	<0.07	Grab
11/27/07	14:32	40	7.80	1.81	Grab
12/03/07	14:20	37	8.21	2.36	Grab
12/19/07	16:00	35	7.90	8.81	Grab
12/26/07	13:55	39	7.85	11.22	Grab
01/16/08	18:20	-	-	13.84	Grab
02/06/08	14:25	-	-	4.90	Grab
02/13/08	18:02	34	-	12.14	Grab
02/19/08	14:09	-	-	12.07	Grab
03/19/08	11:27	41	8.18	9.02	Grab
03/26/08	13:41	47	8.17	13.31	Grab

**Table E-1. Concluded**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/09/08	14:15	-	-	13.79	Grab
04/23/08	12:20	63	8.01	13.20	Grab
04/30/08	12:10	54	8.59	11.84	Grab
06/17/08	11:20	-	-	14.63	Grab
06/25/08	11:58	-	8.52	14.71	Grab
07/01/08	11:45	69	7.93	14.72	Grab

**Notes:**

\*Grab: Weighted Bottle (dip sample in extreme low flow conditions)

**Table E-2. Nitrate-N Samples Concentrations (WY 1993-2008)  
for Friends Creek (Station 102)**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/16/93	15:55	-	-	8.15	Grab
05/07/93	11:48	-	-	11.40	Grab
05/14/93	12:32	-	-	10.17	Grab
06/04/93	14:45	-	-	9.00	Grab
06/15/93	15:30	-	-	11.30	Grab
06/21/93	14:27	-	-	10.32	Grab
06/29/93	13:58	-	-	9.35	Grab
07/07/93	10:22	-	-	10.36	Grab
07/15/93	15:50	-	-	8.67	Grab
07/28/93	13:14	-	-	8.34	Grab
08/10/93	12:29	-	-	7.73	Grab
08/17/93	14:30	-	-	7.64	Grab
08/23/93	15:17	-	-	6.34	Grab
09/01/93	10:44	-	-	5.79	Grab
09/10/93	11:19	-	-	6.86	Grab
09/15/93	12:41	-	-	6.41	Grab
09/16/93	15:43	-	-	6.32	Grab
09/24/93	14:41	-	-	7.03	Grab
09/28/93	15:28	-	-	6.54	Grab
09/29/93	10:10	-	-	0.22	Grab
10/06/93	10:55	-	-	6.98	Grab
10/12/93	14:56	-	-	6.04	Grab
10/20/93	13:07	-	-	5.45	Grab
10/27/93	10:32	-	-	6.88	Grab
11/05/93	11:13	-	-	6.17	Grab
11/09/93	15:12	-	-	6.54	Grab
11/16/93	10:12	-	-	6.88	Grab
11/24/93	9:45	-	-	7.80	Grab
12/01/93	14:31	-	-	7.92	Grab
12/08/93	15:14	-	-	7.28	Grab
12/16/93	14:53	-	-	7.48	Grab
12/27/93	14:51	-	-	6.91	Grab
01/10/94	14:19	-	-	6.85	Grab
01/28/94	15:55	-	-	4.58	Grab
02/03/94	14:10	-	-	7.05	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
02/10/94	14:25	-	-	6.75	Grab
02/17/94	13:58	-	-	5.15	Grab
02/24/94	10:20	-	-	6.61	Grab
03/01/94	14:45	-	-	6.71	Grab
03/08/94	10:44	-	-	8.24	Grab
03/18/94	10:13	-	-	7.36	Grab
03/23/94	14:31	-	-	7.50	Grab
03/28/94	10:41	-	-	7.04	Grab
04/04/94	13:39	-	-	6.68	Grab
04/11/94	13:37	-	-	7.62	Grab
04/13/94	10:50	-	-	7.33	Grab
04/18/94	12:57	-	-	8.36	Grab
04/25/94	10:36	-	-	8.89	Grab
04/28/94	13:50	-	-	7.69	Grab
04/29/94	13:11	-	-	10.39	Grab
05/02/94	15:54	-	-	10.32	Grab
05/09/94	10:13	-	-	10.75	Grab
05/17/94	13:03	-	-	10.60	Grab
05/24/94	15:05	-	-	10.89	Grab
05/31/94	14:52	-	-	10.51	Grab
06/02/94	14:42	-	-	10.57	Grab
06/06/94	14:41	-	-	10.05	Grab
06/13/94	9:47	-	-	12.54	Grab
06/20/94	12:10	-	-	10.15	Grab
06/27/94	8:14	-	-	9.32	Grab
07/06/94	8:57	-	-	7.01	Grab
07/12/94	13:10	-	-	7.70	Grab
07/26/94	8:59	-	-	0.22	Grab
08/01/94	10:34	-	-	0.80	Grab
09/07/94	9:33	-	-	0.40	Grab
10/12/94	13:00	-	-	0.24	Grab
10/18/94	13:39	-	-	0.31	Grab
10/25/94	13:49	-	-	0.51	Grab
11/01/94	16:13	-	-	1.24	Grab
11/06/94	13:24	-	-	0.86	Grab
11/07/94	14:20	-	-	4.53	Grab
11/14/94	13:17	-	-	3.99	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
11/21/94	13:13	-	-	3.52	Grab
11/28/94	13:43	-	-	5.11	Grab
12/05/94	12:38	-	-	4.91	Grab
12/07/94	14:47	-	-	4.50	Grab
12/08/94	14:38	-	-	6.89	Grab
12/13/94	12:29	-	-	6.99	Grab
12/21/94	11:13	-	-	6.31	Grab
01/03/95	12:56	-	-	6.54	Grab
01/12/95	10:47	-	-	5.19	Grab
01/17/95	13:30	-	-	8.34	Grab
01/24/95	10:06	-	-	8.00	Grab
02/01/95	12:49	-	-	8.10	Grab
02/08/95	12:49	-	-	8.40	Grab
02/16/95	12:47	-	-	7.69	Grab
02/22/95	13:46	-	-	7.31	Grab
02/28/95	11:21	-	-	6.82	Grab
03/07/95	13:15	-	-	8.01	Grab
03/08/95	12:37	-	-	8.96	Grab
03/16/95	13:20	-	-	8.75	Grab
03/22/95	13:38	-	-	8.52	Grab
03/28/95	13:34	-	-	8.05	Grab
04/05/95	11:06	-	-	8.31	Grab
04/12/95	14:41	-	-	7.74	Grab
04/27/95	14:52	-	-	9.08	Grab
05/02/95	11:36	-	-	8.91	Grab
05/09/95	10:07	-	-	13.37	Grab
05/20/95	15:09	-	-	8.60	Grab
05/22/95	11:05	-	-	9.43	Grab
05/26/95	11:05	-	-	9.52	Grab
05/31/95	10:42	-	-	10.90	Grab
06/05/95	14:12	-	-	11.70	Grab
06/12/95	11:45	-	-	12.36	Grab
06/21/95	14:04	-	-	11.52	Grab
06/27/95	13:47	-	-	10.46	Grab
07/11/95	10:26	-	-	8.22	Grab
07/18/95	11:09	-	-	5.60	Grab
07/25/95	13:01	-	-	3.64	Grab



**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
08/02/95	10:55	-	-	1.81	Grab
08/08/95	14:55	-	-	3.86	Grab
08/15/95	14:19	-	-	2.10	Grab
08/22/95	12:00	-	-	0.63	Grab
10/27/95	15:23	-	-	0.73	Grab
11/01/95	14:41	-	-	0.57	Grab
11/07/95	13:09	-	-	0.70	Grab
11/15/95	10:44	-	-	3.96	Grab
11/20/95	13:44	-	-	3.68	Grab
11/28/95	11:48	-	-	2.70	Grab
12/05/95	12:57	-	-	1.49	Grab
12/14/95	11:13	-	-	0.76	Grab
12/18/95	14:20	-	-	1.00	Grab
12/28/95	13:04	-	-	4.34	Grab
01/09/96	13:54	-	-	3.11	Grab
01/17/96	12:47	-	-	3.19	Grab
01/23/96	11:05	-	-	8.52	Grab
01/30/96	10:47	-	-	8.86	Grab
02/07/96	12:45	-	-	8.51	Grab
02/08/96	11:41	-	-	8.14	Grab
02/14/96	11:30	-	-	6.55	Grab
02/22/96	9:53	-	-	5.94	Grab
02/27/96	11:20	-	-	5.23	Grab
03/05/96	13:20	-	-	6.70	Grab
03/11/96	15:15	-	-	7.94	Grab
03/18/96	12:40	-	-	7.36	Grab
03/27/96	11:35	-	-	7.34	Grab
04/02/96	12:39	-	-	10.72	Grab
04/09/96	11:25	-	-	9.43	Grab
04/15/96	13:43	-	-	8.65	Grab
04/23/96	12:54	-	-	12.74	Grab
04/30/96	15:10	-	-	13.47	Grab
05/07/96	14:37	-	-	12.74	Grab
05/08/96	13:53	-	-	8.20	Grab
05/08/96	18:16	-	-	7.69	Grab
05/09/96	15:08	-	-	13.34	Grab
05/14/96	14:15	-	-	13.96	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/21/96	13:35	-	-	14.19	Grab
05/28/96	15:50	-	-	10.60	Grab
06/04/96	14:56	-	-	12.82	Grab
06/10/96	12:43	-	-	7.15	Grab
06/18/96	15:56	-	-	14.58	Grab
06/25/96	13:55	-	-	13.64	Grab
07/01/96	15:28	-	-	13.77	Grab
07/10/96	14:40	-	-	12.03	Grab
07/22/96	15:15	-	-	8.68	Grab
07/30/96	10:54	-	-	7.79	Grab
08/05/96	14:05	-	-	4.48	Grab
08/13/96	9:51	-	-	1.57	Grab
08/20/96	13:57	-	-	0.33	Grab
08/27/96	10:30	-	-	0.15	Grab
10/16/96	14:38	-	-	0.88	Grab
10/22/96	12:50	-	-	0.56	Grab
11/08/96	11:21	-	-	0.45	Grab
11/13/96	13:40	-	-	0.13	Grab
11/18/96	13:18	-	-	0.11	Grab
12/03/96	10:25	-	-	3.75	Grab
12/10/96	11:35	-	-	6.74	Grab
12/18/96	11:20	-	-	5.82	Grab
12/27/96	13:15	-	-	8.22	Grab
01/03/97	15:47	-	-	5.37	Grab
01/08/97	14:40	-	-	7.71	Grab
01/22/97	14:24	-	-	4.54	Grab
02/04/97	14:12	-	-	5.67	Grab
02/05/97	14:45	-	-	6.27	Grab
02/18/97	13:56	-	-	7.88	Grab
02/21/97	14:58	-	-	9.22	Grab
02/27/97	12:18	-	-	6.65	Grab
03/04/97	14:23	-	-	10.92	Grab
03/11/97	14:10	-	-	11.58	Grab
03/19/97	14:15	-	-	11.81	Grab
03/25/97	10:18	-	-	11.45	Grab
04/01/97	12:56	-	-	10.84	Grab
04/08/97	15:26	-	-	10.63	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/15/97	10:56	-	-	10.31	Grab
04/22/97	10:39	-	-	10.20	Grab
05/01/97	15:10	-	-	10.49	Grab
05/06/97	13:24	-	-	12.30	Grab
05/13/97	12:17	-	-	11.56	Grab
05/20/97	13:10	-	-	11.99	Grab
05/28/97	14:45	-	-	13.38	Grab
06/03/97	14:39	-	-	12.60	Grab
06/09/97	13:10	-	-	14.78	Grab
06/17/97	13:10	-	-	14.22	Grab
06/25/97	9:37	-	-	13.09	Grab
07/01/97	11:07	-	-	9.35	Grab
07/08/97	14:12	-	-	11.95	Grab
07/15/97	13:50	-	-	9.20	Grab
07/22/97	11:52	-	-	4.15	Grab
07/28/97	14:40	-	-	3.14	Grab
08/05/97	13:20	-	-	0.54	Grab
08/12/97	13:27	-	-	0.33	Grab
08/19/97	14:12	-	-	1.95	Grab
08/26/97	15:00	-	-	0.56	Grab
09/03/97	14:15	-	-	0.23	Grab
09/10/97	13:53	-	-	4.86	Grab
09/12/97	13:02	-	-	2.81	Grab
09/24/97	14:18	-	-	3.08	Grab
10/01/97	14:15	-	-	2.61	Grab
10/07/97	13:49	-	-	0.98	Grab
10/15/97	13:44	-	-	0.11	Grab
10/21/97	15:05	-	-	0.09	Grab
10/28/97	15:40	-	-	<0.04	Grab
11/04/97	14:42	-	-	0.16	Grab
11/12/97	14:33	-	-	3.93	Grab
11/18/97	14:03	-	-	4.25	Grab
11/25/97	14:54	-	-	3.51	Grab
12/04/97	14:25	-	-	9.95	Grab
12/09/97	11:25	-	-	9.12	Grab
12/16/97	13:43	-	-	8.95	Grab
12/22/97	13:41	-	-	8.88	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
12/29/97	13:50	-	-	9.86	Grab
01/06/98	14:07	-	-	9.66	Grab
01/14/98	14:14	-	-	11.24	Grab
01/23/98	10:45	-	-	10.26	Grab
01/27/98	14:13	-	-	9.90	Grab
01/29/98	13:56	-	-	9.77	Grab
02/03/98	15:15	-	-	10.32	Grab
02/10/98	13:55	-	-	9.85	Grab
02/17/98	14:20	-	-	9.74	Grab
02/24/98	12:37	-	-	11.08	Grab
03/03/98	15:20	-	-	10.52	Grab
03/17/98	14:36	-	-	9.65	Grab
03/19/98	15:06	-	-	11.03	Grab
03/24/98	13:58	-	-	10.95	Grab
04/02/98	14:35	-	-	11.19	Grab
04/08/98	13:54	-	-	12.93	Grab
04/14/98	13:40	-	-	10.71	Grab
04/21/98	14:40	-	-	12.42	Grab
04/29/98	14:27	-	-	10.72	Grab
05/05/98	13:55	-	-	12.99	Grab
05/12/98	14:06	-	-	13.00	Grab
05/19/98	14:13	-	-	13.27	Grab
05/27/98	13:49	-	-	14.73	Grab
06/03/98	14:30	-	-	13.12	Grab
06/09/98	14:36	-	-	14.04	Grab
06/17/98	13:17	-	-	10.30	Grab
06/22/98	15:01	-	-	10.45	Grab
07/07/98	15:26	-	-	12.10	Grab
07/15/98	14:25	-	-	7.80	Grab
07/22/98	13:40	-	-	4.26	Grab
07/28/98	12:23	-	-	2.19	Grab
08/04/98	14:02	-	-	1.32	Grab
08/12/98	11:29	-	-	0.70	Grab
08/26/98	14:32	-	-	0.54	Grab
09/02/98	11:49	-	-	0.94	Grab
09/09/98	13:33	-	-	1.11	Grab
09/16/98	14:17	-	-	0.96	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
09/22/98	14:58	-	-	1.05	Grab
09/30/98	15:19	-	-	1.26	Grab
10/06/98	14:05	-	-	1.17	Grab
10/14/98	13:58	-	-	0.98	Grab
10/20/98	13:09	-	-	0.46	Grab
10/29/98	11:44	-	-	0.23	Grab
11/04/98	14:11	-	-	0.65	Grab
11/18/98	13:54	-	-	3.83	Grab
11/23/98	13:46	-	-	3.13	Grab
12/01/98	13:27	-	-	0.52	Grab
12/09/98	13:16	-	-	<0.09	Grab
12/15/98	13:42	-	-	<0.09	Grab
01/19/99	14:20	-	-	0.72	Grab
01/26/99	11:42	-	-	11.30	Grab
02/03/99	12:03	-	-	11.37	Grab
02/09/99	13:57	-	-	11.74	Grab
02/17/99	14:32	-	-	12.47	Grab
02/24/99	13:20	-	-	11.98	Grab
03/03/99	12:57	-	-	11.38	Grab
03/10/99	13:34	-	-	11.41	Grab
03/16/99	14:12	-	-	11.54	Grab
03/24/99	15:11	-	-	11.85	Grab
03/30/99	14:15	-	-	11.41	Grab
04/06/99	14:24	-	-	13.32	Grab
04/13/99	14:27	-	-	13.32	Grab
04/20/99	14:29	-	-	15.35	Grab
04/27/99	14:46	-	-	14.80	Grab
05/05/99	14:50	-	-	14.63	Grab
05/11/99	14:26	-	-	14.83	Grab
05/18/99	13:47	-	-	14.70	Grab
05/25/99	13:47	-	-	14.78	Grab
06/01/99	11:44	-	-	14.20	Grab
06/03/99	14:35	-	-	16.82	Grab
06/09/99	10:21	-	-	15.22	Grab
06/15/99	14:20	-	-	13.46	Grab
07/01/99	11:50	-	-	13.62	Grab
07/08/99	12:50	-	-	13.55	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
07/13/99	14:30	-	-	11.93	Grab
07/21/99	13:15	-	-	6.84	Grab
07/27/99	14:05	-	-	2.67	Grab
08/03/99	15:11	-	-	0.78	Grab
08/11/99	13:12	-	-	1.05	Grab
08/17/99	12:56	-	-	5.25	Grab
08/25/99	10:43	-	-	1.35	Grab
08/31/99	14:07	-	-	0.77	Grab
09/07/99	13:55	-	-	0.96	Grab
09/15/99	14:33	-	-	1.76	Grab
09/22/99	13:45	-	-	1.79	Grab
09/28/99	14:15	-	-	0.75	Grab
10/05/99	13:46	-	-	1.27	Grab
10/13/99	10:14	-	-	1.89	Grab
10/18/99	14:21	-	-	4.08	Grab
10/26/99	13:45	51	-	4.00	Grab
11/01/99	13:54	63	-	1.19	Grab
11/08/99	13:09	58	-	0.56	Grab
11/15/99	13:04	50	-	0.20	Grab
11/22/99	12:12	52	-	0.48	Grab
11/29/99	13:13	42	-	0.24	Grab
12/06/99	13:26	45	-	1.57	Grab
12/13/99	12:53	45	-	2.06	Grab
12/20/99	13:49	39	-	3.68	Grab
01/03/00	13:08	43	-	3.58	Grab
01/10/00	12:49	48	-	3.49	Grab
01/18/00	12:34	35	-	2.84	Grab
01/25/00	12:20	33	-	2.77	Grab
02/01/00	11:46	33	-	2.40	Grab
02/09/00	13:37	42	-	2.49	Grab
02/15/00	11:53	39	-	5.29	Grab
02/22/00	14:05	50	-	9.28	Grab
02/29/00	12:50	50	-	8.71	Grab
03/07/00	12:47	57	-	8.39	Grab
03/14/00	12:15	47	-	8.83	Grab
03/21/00	14:19	49	-	10.59	Grab
03/28/00	12:11	47	-	9.25	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/04/00	12:40	48	-	9.03	Grab
04/11/00	12:25	50	-	8.40	Grab
04/18/00	13:15	52	-	9.88	Grab
04/25/00	13:52	56	-	11.98	Grab
05/02/00	13:49	62	-	10.45	Grab
05/09/00	13:25	71	-	8.90	Grab
05/16/00	13:10	62	-	12.55	Grab
05/23/00	10:46	68	-	10.81	Grab
05/30/00	12:48	67	-	13.85	Grab
06/06/00	13:43	63	-	13.68	Grab
06/13/00	14:33	-	-	11.93	Grab
06/21/00	12:50	67	-	8.74	Grab
06/29/00	13:04	-	-	12.89	Grab
07/05/00	12:35	73	-	6.37	Grab
07/12/00	12:22	70	-	10.08	Grab
07/19/00	13:15	70	-	11.02	Grab
07/26/00	12:33	72	-	9.78	Grab
08/02/00	12:14	77	-	6.32	Grab
08/08/00	11:46	75	-	4.75	Grab
08/15/00	13:50	80	-	2.59	Grab
08/22/00	12:45	73	-	0.71	Grab
08/29/00	15:50	79	-	0.61	Grab
09/05/00	14:05	73	-	1.04	Grab
09/13/00	10:31	67	-	1.97	Grab
09/19/00	13:37	75	-	2.25	Grab
09/26/00	14:48	58	-	7.89	Grab
10/03/00	13:08	68	-	0.21	Grab
10/05/00	13:30	60	-	6.43	Grab
10/10/00	14:45	51	-	10.53	Grab
10/17/00	14:33	60	-	8.85	Grab
10/24/00	14:25	64	-	7.08	Grab
10/30/00	15:40	58	-	5.79	Grab
11/08/00	12:45	51	-	6.89	Grab
11/14/00	16:10	-	-	11.14	Grab
11/20/00	15:02	38	-	11.11	Grab
11/28/00	15:06	41	-	10.12	Grab
12/05/00	15:30	33	-	10.25	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
12/14/00	14:40	34	-	10.93	Grab
12/18/00	13:32	32	-	10.54	Grab
12/26/00	12:05	-	-	11.11	Grab
01/02/01	14:10	32	-	9.77	Grab
01/10/01	13:48	34	-	9.19	Grab
01/16/01	16:30	35	-	9.22	Grab
01/23/01	15:22	35	-	9.76	Grab
01/31/01	15:27	35	-	7.21	Grab
02/06/01	14:46	43	-	10.27	Grab
02/14/01	15:55	42	-	11.15	Grab
02/20/01	15:50	43	-	11.73	Grab
02/24/01	14:32	41	-	5.67	Grab
03/06/01	14:25	39	-	11.95	Grab
03/15/01	12:22	-	-	11.83	Grab
03/21/01	16:55	48	7.86	12.17	Grab
03/27/01	16:20	45	8.08	11.97	Grab
04/03/01	14:54	55	-	11.53	Grab
04/10/01	14:38	65	-	10.60	Grab
04/17/01	15:05	53	8.1	10.94	Grab
04/24/01	13:42	61	8.07	9.99	Grab
05/01/01	14:42	70	-	9.86	Grab
05/09/01	16:39	69	7.75	9.15	Grab
05/14/01	12:51	61	-	9.61	Grab
05/21/01	14:14	66	8.03	9.66	Grab
05/30/01	14:46	62	-	9.20	Grab
06/05/01	11:43	60	7.24	11.37	Grab
06/14/01	9:30	71	-	12.68	Grab
06/20/01	11:11	71	8.32	11.07	Grab
07/02/01	13:48	70	-	8.24	Grab
07/10/01	14:03	82	8.37	4.95	Grab
07/18/01	10:12	73	-	1.84	Grab
07/24/01	9:44	82	7.97	0.74	Grab
08/01/01	11:55	82	-	0.49	Grab
08/08/01	12:48	83	7.98	0.64	Grab
08/16/01	12:54	70	-	0.82	Grab
08/22/01	13:12	80	-	1.26	Grab
08/29/01	12:15	76	8.40	1.46	Grab



**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
09/06/01	12:19	77	-	1.49	Grab
09/12/01	11:35	71	8.41	1.72	Grab
09/19/01	12:08	67	-	1.81	Grab
09/26/01	11:19	60	8.05	1.85	Grab
10/04/01	11:48	65	-	1.86	Grab
10/11/01	12:40	66	8.33	1.66	Grab
10/17/01	12:36	53	-	8.51	Grab
10/24/01	13:22	63	7.76	2.09	Grab
11/01/01	14:22	57	-	8.51	Grab
11/07/01	13:37	56	8.48	8.08	Grab
11/14/01	10:02	54	-	8.10	Grab
11/20/01	8:19	43	8.09	7.43	Grab
11/27/01	14:00	47	-	7.29	Grab
12/04/01	14:15	52	8.15	9.43	Grab
12/11/01	13:30	43	-	9.28	Grab
12/20/01	9:30	43		10.74	Grab
12/26/01	14:11	36	8.10	10.41	Grab
01/02/02	13:46	35		10.45	Grab
01/08/02	14:36	37		10.14	Grab
01/15/02	14:47	38	8.17	9.82	Grab
01/22/02	13:08	40		9.82	Grab
01/29/02	12:36	46	8.18	9.47	Grab
01/31/02	8:26	39	-	10.34	Grab
01/31/02	18:27	-	-	11.87	Grab
02/01/02	8:18	-	-	11.87	Grab
02/04/02	14:09	39	-	12.50	Grab
02/13/02	12:55	44	8.13	11.63	Grab
02/19/02	14:17	44	-	9.91	Grab
02/20/02	7:41	47	-	11.73	Grab
02/20/02	18:10	46	-	11.30	Grab
02/21/02	7:35	42	-	11.30	Grab
02/22/02	13:24	43	-	12.09	Grab
02/25/02	12:55	46	7.83	12.19	Grab
03/05/02	12:31	42	-	12.57	Grab
03/12/02	14:14	47	7.90	12.38	Grab
03/19/02	13:48	47	-	11.92	Grab
03/27/02	13:34	45	8.27	10.93	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/28/02	17:23	46	-	12.12	Grab
03/29/02	10:02	46	-	12.79	Grab
03/29/02	17:05	46	-	12.70	Grab
03/30/02	7:21	43	-	12.68	Grab
04/02/02	12:57	47	-	12.35	Grab
04/09/02	7:36	49	-	12.37	Grab
04/16/02	11:23	67	8.21	11.79	Grab
04/21/02	9:21	51	-	10.86	Grab
04/23/02	12:51	52	-	13.32	Grab
04/24/02	16:59	56	-	12.82	Grab
04/25/02	8:12	51	-	12.98	Grab
04/27/02	14:36	50	-	10.28	Grab
04/28/02	7:30	51	-	13.98	Grab
04/28/02	15:39	50	-	15.43	Grab
04/29/02	6:23	48	-	15.84	Grab
04/30/02	13:13	54	7.61	15.28	Grab
05/01/02	16:55	55	-	14.71	Grab
05/06/02	12:16	59	-	13.93	Grab
05/07/02	12:18	60	-	14.55	Grab
05/07/02	18:51	59	-	15.64	Grab
05/09/02	7:14	59	-	9.75	Grab
05/09/02	13:05	60	-	11.39	Grab
05/10/02	7:28	53	-	14.75	Grab
05/12/02	10:05	60	-	5.92	Grab
05/12/02	17:11	62	-	6.82	Grab
05/13/02	9:52	54	-	8.65	Grab
05/14/02	12:44	58	7.35	11.36	Grab
05/21/02	8:56	52	-	14.54	Grab
05/28/02	12:37	65	8.15	14.67	Grab
06/04/02	12:59	72	-	14.68	Grab
06/11/02	10:00	67	8.14	14.08	Grab
06/11/02	19:05	67	-	6.52	Grab
06/11/02	20:43	67	-	6.55	Grab
06/12/02	7:54	67	-	5.60	Grab
06/12/02	18:11	70	-	9.08	Grab
06/13/02	8:23	64	-	10.83	Grab
06/13/02	16:20	67	-	9.37	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/14/02	6:33	63	-	10.69	Grab
06/18/02	11:39	65	-	14.07	Grab
06/25/02	12:41	73	8.23	14.28	Grab
07/02/02	12:31	77	-	12.52	Grab
07/09/02	11:30	80	-	9.71	Grab
07/16/02	9:14	72	8.27	7.14	Grab
07/30/02	11:28	80	8.05	0.72	Grab
08/06/02	12:44	81	-	0.78	Grab
08/14/02	11:56	70	7.67	1.78	Grab
08/19/02	10:35	70	-	1.54	Grab
08/23/02	5:45	-	-	1.44	Grab
08/27/02	11:00	75	8.29	4.22	Grab
09/03/02	11:27	77	-	2.05	Grab
09/10/02	10:36	79	8.18	0.78	Grab
09/17/02	11:20	70	-	1.56	Grab
09/24/02	12:15	63	7.97	1.67	Grab
10/01/02	11:27	73	-	2.12	Grab
10/08/02	11:44	57	7.72	1.84	Grab
10/15/02	11:35	54	-	1.55	Grab
10/22/02	11:47	50	7.69	1.44	Grab
10/28/02	12:11	52	-	0.91	Grab
11/06/02	12:13	48	7.58	0.90	Grab
11/12/02	12:50	50	-	<0.06	Grab
11/19/02	12:33	49	7.36	0.07	Grab
11/25/02	13:20	39	-	0.07	Grab
12/03/02	12:50	35	-	<0.06	Grab
12/10/02	12:29	39	7.88	0.15	Grab
12/17/02	12:26	37	-	<0.06	Grab
12/23/02	12:14	37	7.91	5.33	Grab
12/30/02	12:30	42	-	4.63	Grab
01/07/03	13:37	35	-	5.65	Grab
01/14/03	11:44	33	7.95	6.57	Grab
01/22/03	11:37	32	-	6.90	Grab
01/28/03	11:54	37	7.43	6.69	Grab
02/04/03	12:59	33	-	4.68	Grab
02/10/03	12:26	35	7.80	5.58	Grab
02/18/03	11:57	35	-	4.04	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
02/25/03	13:47	35	7.59	6.01	Grab
03/04/03	12:55	34	-	5.17	Grab
03/11/03	12:35	37	7.95	4.96	Grab
03/18/03	12:43	57	-	6.17	Grab
03/20/03	18:10	50	-	7.91	Grab
03/20/03	21:44	50	-	7.89	Grab
03/21/03	7:41	48	-	8.06	Grab
03/25/03	12:45	56	8.03	7.33	Grab
03/31/03	12:53	50	-	7.19	Grab
04/07/03	13:06	44	7.91	7.30	Grab
04/15/03	12:11	65	-	6.95	Grab
04/22/03	10:31	52	-	6.94	Grab
04/29/03	11:57	63	-	6.18	Grab
05/04/03	20:00	-	-	4.83	Grab
05/05/03	6:09	-	-	9.68	Grab
05/05/03	14:25	59	-	13.74	Grab
05/06/03	6:19	-	-	12.52	Grab
05/06/03	11:00	59	-	11.89	Grab
05/14/03	10:20	59	-	12.21	Grab
05/20/03	12:31	64	8.11	11.19	Grab
05/27/03	12:50	62	-	10.04	Grab
06/03/03	12:35	55	-	11.34	Grab
06/10/03	11:00	69	8.18	9.10	Grab
06/11/03	23:20	68	-	8.92	Grab
06/12/03	8:25	64	-	6.53	Grab
06/12/03	16:10	-	-	8.52	Grab
06/13/03	6:38	-	-	11.31	Grab
06/17/03	13:30	66	-	12.31	Grab
06/24/03	11:54	75	8.2	11.51	Grab
07/01/03	12:35	75	-	9.85	Grab
07/08/03	12:03	84	8.19	7.03	Grab
07/09/03	21:15	75	-	5.02	Grab
07/10/03	7:28	70	-	5.97	Grab
07/10/03	13:50	72	-	7.44	Grab
07/15/03	9:43	73	-	9.68	Grab
07/22/03	9:34	74	8.28	6.46	Grab
07/29/03	9:40	73	8.22	3.80	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
08/05/03	9:16	72	-	1.39	Grab
08/12/03	9:18	71	7.86	0.99	Grab
08/19/03	10:02	75	-	1.22	Grab
08/26/03	9:46	79	7.94	0.96	Grab
08/31/03	12:56	-	-	0.75	Grab
09/01/03	5:50	66	-	0.88	Grab
09/01/03	14:22	66	-	1.41	Grab
09/02/03	9:20	66	-	4.02	Grab
09/10/03	12:17	71	8.37	2.59	Grab
09/16/03	10:41	68	-	1.17	Grab
09/23/03	12:40	66	8.15	0.92	Grab
09/30/03	11:03	55	-	0.08	Grab
10/07/03	12:58	65	8.06	0.26	Grab
10/14/03	9:26	57	-	0.86	Grab
10/21/03	12:46	62	7.38	0.11	Grab
10/28/03	10:03	50	-	<0.07	Grab
11/05/03	13:15	53	7.06	0.15	Grab
11/10/03	10:00	42	7.26	0.12	Grab
11/18/03	13:25	57	7.59	4.72	Grab
11/21/03	10:45	-	-	7.97	Grab
12/02/03	10:42	42	8.1	8.84	Grab
12/09/03	11:55	-	-	8.41	Grab
12/17/03	12:45	-	8.277	8.44	Grab
12/22/03	11:28	-	-	8.20	Grab
12/30/03	13:00	-	7.85	9.07	Grab
01/06/04	14:30	-	-	10.59	Grab
01/13/04	12:10	-	8.28	9.84	Grab
01/21/04	11:05	-	-	9.33	Grab
01/28/04	11:10	-	-	9.92	Grab
02/04/04	10:10	-	-	9.39	Grab
02/10/04	11:35	-	-	9.00	Grab
02/17/04	15:40	-	-	8.38	Grab
02/24/04	12:45	42	7.81	7.95	Grab
03/03/04	14:30	-	-	7.62	Grab
03/09/04	13:00	47	7.90	10.44	Grab
03/16/04	10:35	-	-	9.60	Grab
03/23/04	12:50	50	8.35	9.32	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/29/04	12:25	-		10.49	Grab
04/07/04	15:24	62	7.98	10.99	Grab
04/15/04	10:40	-	-	10.58	Grab
04/19/04	13:10	-	-	10.07	Grab
04/27/04	10:40	-	-	9.72	Grab
05/04/04	11:26	-	-	9.24	Grab
05/11/04	9:05	-	-	7.40	Grab
05/18/04	11:36	67	7.91	13.84	Grab
05/25/04	10:44	70	7.56	9.95	Grab
06/02/04	10:15	-	-	13.52	Grab
06/07/04	10:15	-	-	13.17	Grab
06/14/04	10:08	68	-	13.06	Grab
06/21/04	9:10	64	-	12.35	Grab
06/28/04	10:05	67	-	12.23	Grab
07/13/04	9:52	77	8.19	9.44	Grab
07/20/04	9:22	72	8.33	8.69	Grab
07/27/04	11:09	69	8.69	5.87	Grab
08/04/04	10:15	77	8.05	2.73	Grab
08/10/04	9:50	-	-	1.03	Grab
08/17/04	9:00	67	7.91	0.57	Grab
08/24/04	10:45	71	7.69	0.47	Grab
08/26/04	9:00	73	7.44	1.38	Grab
08/31/04	10:25	74	8.00	5.60	Grab
09/07/04	10:05	69	8.38	6.36	Grab
09/14/04	11:45	72	8.28	5.85	Grab
09/22/04	9:36	68	8.26	4.98	Grab
09/28/04	9:51	61	8.45	4.91	Grab
10/05/04	10:02	54	8.90	4.34	Grab
10/12/04	9:14	55	8.04	3.32	Grab
10/20/04	10:07	58	7.33	8.01	Grab
10/26/04	15:50	61	7.86	6.82	Grab
11/03/04	12:59	57	7.54	6.82	Grab
11/09/04	10:33	53	8.6	7.49	Grab
11/16/04	11:12	52	7.58	7.64	Grab
11/23/04	12:02	52	8.04	7.40	Grab
12/01/04	12:30	45	-	6.10	Grab
12/07/04	12:10	49	7.68	3.03	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
12/15/04	10:57	40	7.54	7.71	Grab
12/21/04	10:34	37	8.66	7.95	Grab
12/28/04	10:38	35	8.48	8.49	Grab
01/04/05	11:00	44	7.78	9.20	Grab
01/11/05	11:16	43	7.58	8.35	Grab
01/12/05	10:08	43	7.44	6.03	Grab
01/12/05	12:15	43	7.37	5.78	Grab
01/19/05	11:31	37	8.00	8.10	Grab
01/25/05	11:52	40	7.73	8.73	Grab
02/02/05	10:51	35	7.90	8.51	Grab
02/08/05	10:24	41	7.39	9.14	Grab
02/16/05	12:09	42	7.68	8.66	Grab
02/22/05	10:38	40	7.75	8.59	Grab
03/02/05	11:43	37	8.01	8.57	Grab
03/08/05	10:56	41	8.67	8.41	Grab
03/15/05	10:22	38	8.35	8.38	Grab
03/22/05	10:55	42	8.15	7.99	Grab
03/29/05	10:30	52	8.09	8.96	Grab
04/05/05	9:39	55	8.05	8.20	Grab
04/12/05	9:40	58	8.09	8.11	Grab
04/20/05	9:35	65	8.11	7.50	Grab
04/26/05	9:31	53	8.09	7.99	Grab
05/03/05	9:35	47	8.08	7.74	Grab
05/11/05	9:58	72	8.13	6.41	Grab
05/18/05	9:54	65	8.04	6.33	Grab
05/25/05	10:34	65	8.12	6.03	Grab
06/01/05	9:05	69	8.06	5.50	Grab
06/08/05	9:35	76	8.13	4.46	Grab
06/15/05	11:08	72	8.05	8.00	Grab
06/22/05	10:02	77	7.78	5.34	Grab
06/29/05	8:43	78	8.1	2.60	Grab
07/05/05	10:00	75	7.98	1.03	Grab
07/12/05	9:15	70	7.73	1.08	Grab
07/19/05	10:00	79	7.73	0.19	Grab
10/24/05	9:45	49	7.97	1.43	Grab
10/31/05	10:36	52	7.97	1.58	Grab
11/07/05	11:04	53	7.72	1.08	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
11/14/05	10:45	46	7.82	0.65	Grab
11/21/05	14:29	44	7.96	4.17	Grab
11/28/05	10:53	50	7.88	2.66	Grab
12/05/05	10:42	31	8.32	5.83	Grab
12/12/05	12:57	31	7.91	5.62	Grab
12/20/05	12:15	32	7.97	5.56	Grab
12/27/05	10:35	-	8.08	6.28	Grab
01/03/06	14:09	45	8.04	6.72	Grab
01/09/06	11:07	40	8.16	6.67	Grab
01/17/06	10:55	40	8.05	7.54	Grab
01/23/06	10:21	37	7.71	6.90	Grab
01/31/06	10:27	42	8.00	7.70	Grab
02/06/06	10:30	33	7.85	7.32	Grab
02/14/06	11:59	36	8.13	7.00	Grab
02/22/06	10:26	36	8.07	7.24	Grab
02/27/06	10:16	38	7.98	6.78	Grab
03/06/06	10:26	39	7.95	6.74	Grab
03/14/06	13:48	44	7.67	11.54	Grab
03/20/06	10:09	41	7.61	9.99	Grab
03/27/06	10:31	43	7.90	9.32	Grab
04/03/06	10:00	48	7.86	9.81	Grab
04/06/06	14:25	51	-	10.04	Grab
04/10/06	10:29	50	7.83	12.36	Grab
04/19/06	10:08	59	7.52	11.86	Grab
04/19/06	12:13	59	7.53	12.02	Grab
04/24/06	9:55	57	7.97	11.94	Grab
05/01/06	9:58	54	7.88	12.81	Grab
05/08/06	9:11	59	7.91	11.59	Grab
05/15/06	9:40	52	8.05	12.88	Grab
05/22/06	9:42	58	7.94	12.01	Grab
06/01/06	8:58	63	7.80	14.67	Grab
06/05/06	9:53	65	7.81	12.84	Grab
06/13/06	9:02	63	8.22	11.33	Grab
06/19/06	9:53	71	8.10	9.35	Grab
06/27/06	9:26	67	8.14	7.37	Grab
07/05/06	9:42	71	8.01	5.20	Grab
07/10/06	9:41	73	8.19	3.55	Grab



**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
07/13/06	10:55	73	7.80	6.17	Grab
07/18/06	10:13	79	8.03	5.45	Grab
07/25/06	9:56	75	7.9	4.39	Grab
08/01/06	9:30	77	7.96	6.29	Grab
08/07/06	10:46	75	7.93	5.68	Grab
08/14/06	10:46	74	8.13	4.89	Grab
08/22/06	11:10	71	7.84	5.83	Grab
08/30/06	10:30	68	7.97	6.77	Grab
09/05/06	10:00	65	8.4	6.51	Grab
09/12/06	10:06	69	7.99	5.49	Grab
09/18/06	10:46	67	8.14	5.58	Grab
09/25/06	9:40	69	8.43	6.52	Grab
10/03/06	9:35	69	8.06	5.41	Grab
10/10/06	14:17	60	8.25	4.45	Grab
10/16/06	11:05	49	8.15	5.25	Grab
10/23/06	10:29	47	8.15	7.27	Grab
10/31/06	9:51	54	8.07	7.09	Grab
11/08/06	10:30	55	8.15	6.75	Grab
11/14/06	11:59	48	8.07	7.25	Grab
11/20/06	12:30	46	8.17	7.84	Grab
11/27/06	11:03	54	8.26	7.29	Grab
12/05/06	11:02	39	7.95	8.94	Grab
12/12/06	11:05	43	7.65	8.03	Grab
12/19/06	10:33	43	8.03	8.44	Grab
12/27/06	10:08	41	7.86	8.47	Grab
01/02/07	10:38	43	7.87	8.80	Grab
01/08/07	11:05	43	7.85	9.16	Grab
01/16/07	10:38	37	7.86	7.30	Grab
01/22/07	14:20	37	8.1	9.31	Grab
01/29/07	11:46	33	8.19	9.44	Grab
02/21/07	11:26	35	8.39	8.41	Grab
02/26/07	10:42	33	7.64	2.83	Grab
03/06/07	11:36	36	7.77	5.98	Grab
03/13/07	10:43	55	8.06	8.18	Grab
03/20/07	8:58	44	8.15	7.89	Grab
03/27/07	14:28	60	8.16	8.44	Grab
04/02/07	12:46	56	7.78	9.84	Grab

**Table E-2. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/10/07	9:36	44	8.17	9.67	Grab
04/16/07	13:31	53	8.26	9.72	Grab
04/24/07	10:40	63	8.27	9.28	Grab
05/01/07	9:05	64	8.14	10.36	Grab
05/09/07	10:38	68	8.27	9.55	Grab
05/15/07	12:20	71	8.3	9.10	Grab
05/21/07	11:40	66	8.4	9.65	Grab
05/29/07	11:10	72	8.39	9.29	Grab
06/12/07	9:15	73	8.27	7.35	Grab
06/19/07	8:55	75	8.23	5.07	Grab
06/26/07	8:03	74	8.12	9.92	Grab
07/03/07	10:00	73	8.13	9.20	Grab
07/26/07	8:46	72	7.93	0.73	Grab
08/02/07	8:25	74	7.52	0.24	Grab
08/09/07	8:24	78	7.77	0.36	Grab
08/21/07	9:34	75	7.64	0.46	Grab
08/29/07	8:49	74	7.78	0.40	Grab
09/11/07	10:32	67	7.84	0.88	Grab
09/18/07	12:10	69	8.31	0.93	Grab
09/20/07	9:50	71	8.03	0.42	Grab
09/25/07	12:59	70	8.13	0.23	Grab
10/03/07	9:50	63	7.82	0.56	Grab
10/09/07	10:15	64	8.10	1.34	Grab
10/17/07	9:15	58	7.99	1.49	Grab
10/24/07	10:35	52	8.38	1.57	Grab
10/31/07	10:58	51	7.87	1.03	Grab
11/06/07	12:30	43	8.52	0.89	Grab
11/14/07	11:16	53	7.72	<0.07	Grab
11/27/07	12:15	41	8.33	0.83	Grab
12/03/07	13:25	38	7.90	0.76	Grab
12/19/07	11:35	33	8.32	8.56	Grab
12/26/07	15:00	35	7.86	9.78	Grab
01/08/08	12:24	-	-	8.98	Grab
01/16/08	13:40	-	-	12.23	Grab
01/22/08	14:45	32	8.7	11.34	Grab
02/05/08	15:35	-	-	4.89	Grab
02/06/08	10:15	-	-	2.35	Grab

**Table E-2. Concluded**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
02/06/08	15:30	-	-	2.68	Grab
02/13/08	15:50	37	8.64	11.22	Grab
02/19/08	11:55	-	-	9.39	Grab
03/03/08	11:30	-	-	9.93	Grab
03/13/08	14:25	46	7.92	12.16	Grab
03/26/08	9:25	45	8.09	12.80	Grab
04/09/08	11:40	48	8.52	12.50	Grab
04/23/08	9:29	59	7.75	12.24	Grab
04/30/08	11:23	52	8.42	11.95	Grab
06/17/08	10:35	-	-	13.10	Grab
06/25/08	10:08	-	8.12	13.95	Grab
07/01/08	10:18	69	8.20	13.38	Grab

**Notes:**

\*Grab: Weighted Bottle (dip sample in extreme low flow conditions)

**Table E-3. Nitrate-N Sample Concentrations (WY 1993-2008)  
for Goose Creek near De Land (Station 103)**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/16/93	16:40	-	-	9.98	Grab
05/07/93	12:28	-	-	12.06	Grab
05/14/93	13:10	-	-	11.07	Grab
06/04/93	15:23	-	-	14.10	Grab
06/16/93	10:56	-	-	11.39	Grab
06/22/93	9:35	-	-	11.25	Grab
06/29/93	13:11	-	-	10.03	Grab
07/06/93	15:08	-	-	11.79	Grab
07/15/93	11:25	-	-	10.78	Grab
07/28/93	14:47	-	-	9.08	Grab
08/10/93	11:28	-	-	7.23	Grab
08/17/93	15:12	-	-	8.32	Grab
08/23/93	15:58	-	-	7.76	Grab
08/31/93	14:39	-	-	7.74	Grab
09/10/93	10:25	-	-	7.52	Grab
09/14/93	14:45	-	-	6.79	Grab
09/15/93	14:18	-	-	6.87	Grab
09/16/93	11:06	-	-	7.32	Grab
09/24/93	9:46	-	-	7.46	Grab
09/29/93	14:50	-	-	7.70	Grab
10/06/93	14:08	-	-	7.90	Grab
10/12/93	12:23	-	-	6.37	Grab
10/20/93	11:15	-	-	6.25	Grab
10/21/93	13:54	-	-	6.55	Grab
10/27/93	11:24	-	-	6.95	Grab
11/05/93	10:16	-	-	6.76	Grab
11/09/93	14:01	-	-	6.70	Grab
11/15/93	15:13	-	-	6.75	Grab
11/24/93	11:44	-	-	8.53	Grab
12/01/93	13:48	-	-	8.52	Grab
12/03/93	14:55	-	-	8.43	Grab
12/10/93	11:12	-	-	7.90	Grab
12/16/93	12:55	-	-	7.94	Grab
12/28/93	14:18	-	-	7.57	Grab
01/12/94	12:29	-	-	7.80	Grab
01/21/94	12:51	-	-	9.08	Grab
02/03/94	13:07	-	-	7.30	Grab
02/15/94	14:26	-	-	5.73	Grab
02/22/94	13:57	-	-	7.01	Grab
02/28/94	14:30	-	-	7.36	Grab
03/07/94	14:41	-	-	8.46	Grab

**Table E-3. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/17/94	12:52	-	-	8.28	Grab
03/23/94	13:23	-	-	8.13	Grab
03/28/94	12:07	-	-	7.67	Grab
04/04/94	12:53	-	-	7.41	Grab
04/11/94	13:07	-	-	7.67	Grab
04/12/94	18:46	-	-	5.24	Grab
04/13/94	13:32	-	-	7.39	Grab
04/18/94	13:35	-	-	7.91	Grab
04/25/94	13:58	-	-	8.96	Grab
04/29/94	12:25	-	-	10.22	Grab
05/03/94	13:13	-	-	10.24	Grab
05/09/94	12:47	-	-	10.94	Grab
05/16/94	12:48	-	-	10.83	Grab
05/24/94	13:50	-	-	10.97	Grab
06/03/94	12:54	-	-	10.85	Grab
06/06/94	13:33	-	-	10.17	Grab
06/13/94	14:50	-	-	10.05	Grab
06/20/94	11:33	-	-	8.82	Grab
06/27/94	11:15	-	-	8.36	Grab
07/06/94	10:49	-	-	4.66	Grab
07/12/94	11:55	-	-	8.49	Grab
07/26/94	9:47	-	-	0.90	Grab
08/01/94	9:59	-	-	<0.02	Grab
09/07/94	8:45	-	-	<0.02	Grab
10/18/94	12:55	-	-	<0.02	Grab
10/25/94	12:37	-	-	<0.02	Grab
11/01/94	16:45	-	-	0.12	Grab
11/06/94	15:26	-	-	5.88	Grab
11/07/94	13:22	-	-	6.04	Grab
11/07/94	13:33	-	-	7.71	Grab
11/14/94	13:50	-	-	5.98	Grab
11/21/94	12:23	-	-	5.90	Grab
11/28/94	14:18	-	-	6.87	Grab
12/05/94	13:33	-	-	6.90	Grab
12/07/94	16:17	-	-	8.63	Grab
12/08/94	12:38	-	-	8.52	Grab
12/08/94	12:38	-	-	8.15	Grab
12/08/94	15:15	-	-	8.46	Grab
12/09/94	0:15	-	-	8.34	Grab
12/09/94	6:15	-	-	8.28	Grab
12/09/94	15:15	-	-	8.25	Grab
12/10/94	0:15	-	-	8.36	Grab

**Table E-3. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
12/10/94	6:15	-	-	8.19	Grab
12/10/94	12:15	-	-	8.49	Grab
12/10/94	21:15	-	-	8.39	Grab
12/12/94	12:00	-	-	7.95	Grab
12/16/94	13:02	-	-	8.08	Grab
12/16/94	13:15	-	-	7.48	Grab
12/16/94	20:00	-	-	7.45	Grab
12/17/94	4:00	-	-	7.80	Grab
12/17/94	8:00	-	-	7.84	Grab
12/17/94	16:15	-	-	8.05	Grab
12/18/94	0:01	-	-	8.03	Grab
12/18/94	16:15	-	-	7.92	Grab
12/19/94	12:00	-	-	8.09	Grab
12/19/94	13:27	-	-	7.79	Grab
01/03/95	13:44	-	-	8.22	Grab
01/11/95	12:43	-	-	7.65	Grab
01/17/95	14:22	-	-	9.26	Grab
01/23/95	13:22	-	-	9.31	Grab
02/01/95	13:22	-	-	8.94	Grab
02/16/95	13:22	-	-	8.98	Grab
02/22/95	14:21	-	-	7.91	Grab
02/26/95	11:45	-	-	8.24	Grab
02/26/95	15:45	-	-	8.19	Grab
02/26/95	19:45	-	-	8.26	Grab
02/26/95	23:45	-	-	8.27	Grab
02/27/95	3:45	-	-	8.20	Grab
02/27/95	7:45	-	-	8.14	Grab
02/27/95	11:45	-	-	7.91	Grab
02/27/95	15:45	-	-	7.99	Grab
02/27/95	19:45	-	-	8.06	Grab
02/27/95	23:45	-	-	8.10	Grab
02/28/95	3:45	-	-	8.22	Grab
02/28/95	7:45	-	-	8.34	Grab
02/28/95	10:45	-	-	8.16	Grab
03/07/95	11:25	-	-	9.24	Grab
03/07/95	11:32	-	-	9.32	Grab
03/07/95	12:00	-	-	9.40	Grab
03/07/95	16:00	-	-	9.54	Grab
03/07/95	20:00	-	-	9.81	Grab
03/08/95	10:42	-	-	10.29	Grab
03/08/95	16:07	-	-	10.53	Grab
03/09/95	12:00	-	-	10.06	Grab

**Table E-3. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/09/95	16:00	-	-	9.75	Grab
03/09/95	20:00	-	-	9.83	Grab
03/10/95	0:01	-	-	9.81	Grab
03/10/95	4:00	-	-	9.89	Grab
03/10/95	8:00	-	-	9.94	Grab
03/16/95	14:35	-	-	9.82	Grab
03/22/95	12:47	-	-	9.48	Grab
03/28/95	14:27	-	-	9.32	Grab
04/05/95	9:37	-	-	9.57	Grab
04/07/95	14:02	-	-	8.97	Grab
04/12/95	13:32	-	-	9.47	Grab
04/27/95	14:13	-	-	10.29	Grab
05/02/95	12:25	-	-	10.24	Grab
05/09/95	13:46	-	-	16.06	Grab
05/17/95	15:36	-	-	7.13	Grab
05/22/95	14:14	-	-	11.54	Grab
05/31/95	10:06	-	-	12.20	Grab
06/05/95	13:33	-	-	12.41	Grab
06/12/95	12:41	-	-	12.59	Grab
06/21/95	13:05	-	-	12.49	Grab
06/27/95	13:09	-	-	11.56	Grab
07/10/95	12:31	-	-	8.18	Grab
07/18/95	11:56	-	-	3.81	Grab
07/25/95	11:18	-	-	1.39	Grab
08/02/95	11:40	-	-	<0.02	Grab
08/07/95	12:23	-	-	4.25	Grab
08/08/95	14:20	-	-	4.77	Grab
08/15/95	15:08	-	-	1.92	Grab
08/22/95	13:10	-	-	0.15	Grab
08/31/95	14:10	-	-	<0.02	Grab
09/06/95	13:19	-	-	<0.02	Grab
09/12/95	12:17	-	-	<0.02	Grab
09/19/95	11:25	-	-	<0.02	Grab
09/26/95	13:19	-	-	<0.02	Grab
10/24/95	11:49	-	-	<0.02	Grab
10/31/95	12:16	-	-	<0.02	Grab
11/07/95	11:50	-	-	1.60	Grab
11/15/95	9:49	-	-	3.87	Grab
11/20/95	12:54	-	-	2.36	Grab
11/28/95	11:00	-	-	2.86	Grab
12/05/95	11:25	-	-	2.09	Grab
12/14/95	10:30	-	-	4.11	Grab

**Table E-3. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
01/17/96	11:40	-	-	4.14	Grab
01/17/96	22:00	-	-	5.68	Grab
01/18/96	16:00	-	-	5.78	Grab
01/21/96	16:00	-	-	8.70	Grab
01/22/96	12:20	-	-	8.57	Grab
01/23/96	13:23	-	-	8.18	Grab
01/25/96	0:00	-	-	7.88	Grab
02/08/96	11:10	-	-	8.27	Grab
02/09/96	10:34	-	-	6.76	Grab
02/11/96	12:00	-	-	4.80	Grab
02/13/96	9:47	-	-	6.17	Grab
02/14/96	10:46	-	-	6.37	Grab
02/20/96	13:21	-	-	6.31	Grab
02/21/96	8:00	-	-	5.70	Grab
02/24/96	12:00	-	-	4.51	Grab
02/25/96	12:00	-	-	4.47	Grab
02/26/96	12:00	-	-	4.68	Grab
02/27/96	0:00	-	-	4.74	Grab
02/28/96	11:16	-	-	5.05	Grab
03/05/96	11:38	-	-	5.96	Grab
03/09/96	6:00	-	-	11.72	Grab
03/10/96	0:00	-	-	7.52	Grab
03/11/96	0:00	-	-	6.90	Grab
03/11/96	14:41	-	-	6.97	Grab
03/15/96	18:00	-	-	6.46	Grab
03/16/96	0:00	-	-	6.57	Grab
03/18/96	11:45	-	-	6.51	Grab
03/22/96	15:12	-	-	6.84	Grab
03/24/96	6:00	-	-	6.50	Grab
03/25/96	18:00	-	-	6.14	Grab
03/27/96	13:15	-	-	6.42	Grab
03/28/96	2:00	-	-	6.53	Grab
03/30/96	10:00	-	-	6.16	Grab
03/30/96	22:00	-	-	6.11	Grab
03/31/96	2:00	-	-	6.11	Grab
03/31/96	6:00	-	-	6.11	Grab
03/31/96	10:00	-	-	5.81	Grab
03/31/96	14:00	-	-	5.73	Grab
03/31/96	18:00	-	-	6.46	Grab
03/31/96	22:00	-	-	7.61	Grab
04/01/96	11:14	-	-	8.49	Grab
04/02/96	2:00	-	-	8.78	Grab



**Table E-3. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/05/96	10:00	-	-	8.72	Grab
04/05/96	14:00	-	-	8.63	Grab
04/08/96	2:00	-	-	8.43	Grab
04/11/96	20:00	-	-	8.10	Grab
04/14/96	21:00	-	-	7.42	Grab
04/17/96	15:39	-	-	7.38	Grab
04/21/96	9:00	-	-	6.50	Grab
04/22/96	15:00	-	-	8.94	Grab
04/23/96	11:37	-	-	9.41	Grab
04/23/96	15:00	-	-	8.99	Grab
04/24/96	23:00	-	-	8.90	Grab
04/25/96	15:00	-	-	8.86	Grab
04/26/96	7:00	-	-	8.78	Grab
04/29/96	15:00	-	-	11.47	Grab
04/30/96	7:00	-	-	11.44	Grab
04/30/96	14:25	-	-	11.50	Grab
05/01/96	9:00	-	-	11.07	Grab
05/03/96	9:00	-	-	10.37	Grab
05/05/96	9:00	-	-	11.35	Grab
05/06/96	13:45	-	-	10.80	Grab
05/08/96	3:00	-	-	10.53	Grab
05/10/96	15:00	-	-	8.06	Grab
05/11/96	3:00	-	-	10.96	Grab
05/11/96	15:00	-	-	13.10	Grab
05/12/96	3:00	-	-	13.64	Grab
05/12/96	15:00	-	-	13.87	Grab
05/13/96	3:00	-	-	14.01	Grab
05/13/96	15:03	-	-	13.82	Grab
05/16/96	9:00	-	-	14.08	Grab
05/20/96	12:11	-	-	13.81	Grab
05/21/96	15:00	-	-	15.04	Grab
05/24/96	3:00	-	-	13.90	Grab
05/26/96	3:00	-	-	14.93	Grab
05/26/96	15:00	-	-	13.86	Grab
05/27/96	3:00	-	-	13.52	Grab
05/27/96	9:00	-	-	9.08	Grab
05/27/96	15:00	-	-	10.84	Grab
05/28/96	9:00	-	-	20.38	Grab
05/28/96	14:36	-	-	11.90	Grab
06/04/96	13:32	-	-	14.74	Grab
06/06/96	14:00	-	-	15.13	Grab
06/08/96	14:00	-	-	17.66	Grab

**Table E-3. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/11/96	12:09	-	-	14.22	Grab
06/12/96	2:00	-	-	17.00	Grab
06/16/96	2:00	-	-	16.72	Grab
06/18/96	12:32	-	-	13.95	Grab
06/20/96	2:00	-	-	13.49	Grab
06/23/96	2:00	-	-	12.09	Grab
06/25/96	11:25	-	-	13.78	Grab
06/26/96	2:00	-	-	14.44	Grab
06/29/96	2:00	-	-	13.73	Grab
07/01/96	14:52	-	-	13.18	Grab
07/03/96	14:00	-	-	13.44	Grab
07/06/96	8:00	-	-	13.46	Grab
07/08/96	11:21	-	-	11.50	Grab
07/12/96	14:00	-	-	11.21	Grab
07/14/96	14:00	-	-	11.08	Grab
07/15/96	14:24	-	-	8.86	Grab
07/18/96	1:00	-	-	7.55	Grab
07/22/96	1:00	-	-	5.79	Grab
07/22/96	13:00	-	-	6.09	Grab
07/22/96	13:03	-	-	8.54	Grab
07/23/96	1:00	-	-	7.61	Grab
07/25/96	13:00	-	-	8.69	Grab
07/29/96	15:19	-	-	8.92	Grab
08/02/96	1:00	-	-	6.90	Grab
08/05/96	13:14	-	-	4.29	Grab
08/06/96	1:00	-	-	3.78	Grab
08/12/96	13:18	-	-	<0.02	Grab
08/19/96	1:00	-	-	0.96	Grab
08/19/96	13:00	-	-	1.03	Grab
08/20/96	13:12	-	-	0.17	Grab
08/26/96	15:10	-	-	4.34	Grab
09/09/96	13:26	-	-	0.02	Grab
10/16/96	13:30	-	-	<0.02	Grab
10/22/96	11:19	-	-	<0.02	Grab
11/12/96	15:29	-	-	7.05	Grab
11/18/96	14:00	-	-	6.21	Grab
12/02/96	13:56	-	-	8.84	Grab
12/10/96	12:16	-	-	9.16	Grab
12/18/96	12:01	-	-	8.51	Grab
12/30/96	15:30	-	-	8.46	Grab
01/07/97	14:10	-	-	9.05	Grab
01/22/97	13:38	-	-	5.90	Grab

**Table E-3. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
02/04/97	13:26	-	-	5.56	Grab
02/05/97	13:56	-	-	7.11	Grab
02/13/97	14:15	-	-	9.16	Grab
02/13/97	14:15	-	-	9.11	Grab
02/18/97	13:06	-	-	8.62	Grab
02/21/97	14:05	-	-	8.58	Grab
02/27/97	12:59	-	-	6.38	Grab
02/28/97	10:20	-	-	7.61	Grab
03/04/97	13:41	-	-	10.39	Grab
03/11/97	13:29	-	-	11.28	Grab
03/20/97	9:57	-	-	11.43	Grab
03/25/97	12:31	-	-	11.12	Grab
04/01/97	12:20	-	-	10.61	Grab
04/09/97	11:28	-	-	10.56	Grab
04/15/97	12:08	-	-	9.93	Grab
04/22/97	13:47	-	-	9.82	Grab
05/01/97	16:21	-	-	10.60	Grab
05/06/97	12:32	-	-	10.95	Grab
05/13/97	11:37	-	-	10.19	Grab
05/20/97	14:26	-	-	9.34	Grab
05/28/97	15:28	-	-	13.70	Grab
06/03/97	13:53	-	-	12.79	Grab
06/09/97	12:43	-	-	14.66	Grab
06/17/97	12:31	-	-	13.69	Grab
06/24/97	12:25	-	-	12.13	Grab
07/01/97	11:58	-	-	10.67	Grab
07/08/97	13:30	-	-	9.65	Grab
07/15/97	12:23	-	-	4.82	Grab
07/22/97	12:37	-	-	1.92	Grab
07/28/97	13:53	-	-	0.37	Grab
08/05/97	12:47	-	-	<0.08	Grab
08/12/97	12:45	-	-	<0.08	Grab
08/19/97	13:26	-	-	4.25	Grab
08/26/97	13:57	-	-	0.16	Grab
09/03/97	13:25	-	-	1.09	Grab
09/10/97	13:12	-	-	6.12	Grab
09/12/97	13:37	-	-	3.14	Grab
09/24/97	13:31	-	-	4.73	Grab
10/01/97	13:36	-	-	3.66	Grab
10/07/97	13:11	-	-	1.41	Grab
10/15/97	14:23	-	-	0.79	Grab
10/21/97	12:56	-	-	1.07	Grab

**Table E-3. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
10/27/97	15:15	-	-	1.70	Grab
11/04/97	12:47	-	-	1.93	Grab
11/12/97	13:52	-	-	4.21	Grab
11/18/97	13:15	-	-	4.95	Grab
11/25/97	14:14	-	-	4.39	Grab
12/04/97	13:44	-	-	9.31	Grab
12/09/97	12:11	-	-	8.42	Grab
12/16/97	13:04	-	-	8.40	Grab
12/22/97	12:59	-	-	8.17	Grab
12/29/97	13:07	-	-	9.47	Grab
01/06/98	13:21	-	-	9.29	Grab
01/14/98	13:27	-	-	10.93	Grab
01/27/98	13:34	-	-	9.82	Grab
02/03/98	14:35	-	-	10.11	Grab
02/10/98	13:06	-	-	9.74	Grab
02/17/98	13:04	-	-	9.54	Grab
02/19/98	12:39	-	-	11.30	Grab
02/24/98	14:29	-	-	10.61	Grab
03/03/98	13:20	-	-	10.46	Grab
03/11/98	13:43	-	-	11.78	Grab
03/17/98	13:49	-	-	9.37	Grab
03/19/98	12:50	-	-	10.72	Grab
03/24/98	14:55	-	-	9.39	Grab
04/02/98	13:48	-	-	11.98	Grab
04/08/98	13:13	-	-	12.10	Grab
04/14/98	15:28	-	-	11.85	Grab
04/21/98	12:48	-	-	11.91	Grab
04/29/98	13:51	-	-	10.12	Grab
05/05/98	14:28	-	-	11.04	Grab
05/12/98	13:24	-	-	11.63	Grab
05/19/98	13:28	-	-	12.42	Grab
05/27/98	13:07	-	-	14.10	Grab
06/03/98	15:10	-	-	12.15	Grab
06/09/98	13:55	-	-	12.55	Grab
06/17/98	14:07	-	-	9.86	Grab
06/22/98	14:25	-	-	11.13	Grab
07/08/98	9:52	-	-	11.98	Grab
07/15/98	13:41	-	-	11.31	Grab
07/22/98	12:59	-	-	8.02	Grab
07/28/98	13:00	-	-	5.44	Grab
08/04/98	13:20	-	-	0.95	Grab
08/12/98	13:33	-	-	<0.09	Grab

**Table E-3. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
08/26/98	11:10	-	-	<0.09	Grab
09/02/98	13:49	-	-	<0.09	Grab
09/09/98	12:55	-	-	<0.09	Grab
09/16/98	13:27	-	-	<0.09	Grab
11/04/98	13:27	-	-	<0.09	Grab
11/18/98	13:07	-	-	<0.09	Grab
11/23/98	13:05	-	-	<0.09	Grab
12/01/98	12:44	-	-	<0.09	Grab
12/09/98	12:31	-	-	<0.09	Grab
12/15/98	13:03	-	-	<0.09	Grab
12/21/98	12:27	-	-	<0.09	Grab
01/26/99	11:01	-	-	10.95	Grab
02/03/99	11:23	-	-	11.21	Grab
02/09/99	13:11	-	-	13.49	Grab
02/17/99	13:51	-	-	13.19	Grab
02/24/99	12:41	-	-	12.81	Grab
03/03/99	13:42	-	-	12.32	Grab
03/10/99	12:48	-	-	12.79	Grab
03/16/99	13:42	-	-	12.61	Grab
03/24/99	14:30	-	-	12.99	Grab
03/30/99	13:35	-	-	12.49	Grab
04/06/99	13:35	-	-	12.09	Grab
04/13/99	13:48	-	-	13.61	Grab
04/20/99	13:58	-	-	16.14	Grab
04/27/99	13:54	-	-	15.15	Grab
05/05/99	14:12	-	-	15.07	Grab
05/11/99	13:47	-	-	15.48	Grab
05/18/99	13:09	-	-	14.60	Grab
05/25/99	13:07	-	-	15.23	Grab
06/01/99	13:48	-	-	14.46	Grab
06/03/99	12:02	-	-	17.97	Grab
06/09/99	12:42	-	-	16.49	Grab
06/15/99	13:37	-	-	15.11	Grab
07/01/99	11:06	-	-	14.00	Grab
07/08/99	12:00	-	-	14.41	Grab
07/13/99	13:45	-	-	12.76	Grab
07/21/99	12:26	-	-	6.50	Grab
07/27/99	13:26	-	-	1.23	Grab
08/03/99	13:05	-	-	<0.11	Grab
08/11/99	12:29	-	-	<0.11	Grab
08/17/99	12:13	-	-	4.58	Grab
08/25/99	10:06	-	-	0.11	Grab
08/31/99	13:32	-	-	<0.11	Grab

**Table E-3. Concluded**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
09/07/99	13:16	-	-	<0.11	Grab
09/15/99	13:57	-	-	0.11	Grab
10/05/99	13:03	-	-	<0.11	Grab
10/13/99	12:14	-	-	4.86	Grab
10/18/99	13:45	-	-	2.98	Grab
10/26/99	13:05	54	-	5.06	Grab
11/01/99	16:50	66	-	1.76	Grab
11/08/99	15:37	62	-	1.37	Grab
11/15/99	15:01	48	-	0.44	Grab
11/22/99	14:33	55	-	0.35	Grab
11/29/99	15:35	40	-	0.29	Grab
12/06/99	15:34	43	-	5.60	Grab
12/13/99	15:03	42	-	7.24	Grab
12/20/99	15:36	33	-	8.67	Grab
01/03/00	15:22	41	-	6.37	Grab
01/10/00	14:40	45	-	7.73	Grab
01/18/00	14:32	35	-	8.63	Grab
02/15/00	13:37	34	-	8.13	Grab
02/22/00	15:41	51	-	10.21	Grab
02/29/00	15:05	56	-	9.92	Grab
03/07/00	14:46	65	-	9.79	Grab
03/14/00	14:23	52	-	9.90	Grab
03/21/00	15:58	49	-	11.41	Grab
03/28/00	14:18	48	-	10.59	Grab
04/04/00	14:49	53	-	10.31	Grab
04/11/00	15:42	53	-	8.97	Grab
04/18/00	14:51	53	-	10.57	Grab
04/25/00	15:35	61	-	12.13	Grab
05/02/00	15:42	70	-	11.03	Grab
05/09/00	15:12	66	-	9.32	Grab
05/16/00	15:20	65	-	12.90	Grab
05/23/00	12:51	65	-	11.42	Grab
05/30/00	14:29	71	-	15.29	Grab
06/06/00	15:46	70	-	13.98	Grab
06/13/00	15:39	72	-	15.54	Grab
06/21/00	16:29	67	-	13.70	Grab
06/29/00	16:28	71	-	13.71	Grab
07/05/00	15:25	75	-	11.55	Grab
07/12/00	14:29	78	-	10.90	Grab
07/20/00	9:36	70	-	8.36	Grab
07/26/00	13:40	84	-	4.74	Grab
08/02/00	13:45	88	-	0.26	Grab

**Notes:**

\*Grab: Weighted Bottle (dip sample in extreme low flow conditions)

**Table E-4. Nitrate-N Sample Concentrations (WY 1993-2008)  
for Camp Creek near White Heath (Station 104)**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/19/93	12:00	-	-	10.98	Grab
05/07/93	14:10	-	-	12.59	Grab
05/14/93	14:50	-	-	12.24	Grab
06/04/93	16:22	-	-	10.90	Grab
06/16/93	12:30	-	-	11.59	Grab
06/21/93	15:15	-	-	12.99	Grab
06/29/93	11:41	-	-	13.69	Grab
07/06/93	13:48	-	-	11.95	Grab
07/15/93	10:44	-	-	10.75	Grab
07/22/93	15:12	-	-	10.08	Grab
07/29/93	15:39	-	-	10.87	Grab
08/09/93	15:14	-	-	8.64	Grab
08/18/93	9:51	-	-	8.36	Grab
08/24/93	11:00	-	-	8.64	Grab
08/31/93	13:23	-	-	8.11	Grab
09/08/93	14:30	-	-	8.29	Grab
09/14/93	13:41	-	-	7.09	Grab
09/15/93	10:11	-	-	3.84	Grab
09/16/93	10:04	-	-	5.36	Grab
09/24/93	10:33	-	-	7.67	Grab
09/29/93	13:37	-	-	7.52	Grab
10/06/93	15:43	-	-	7.88	Grab
10/12/93	13:46	-	-	7.46	Grab
10/18/93	15:00	-	-	6.17	Grab
10/19/93	12:22	-	-	6.96	Grab
10/21/93	15:30	-	-	5.87	Grab
10/27/93	13:26	-	-	8.09	Grab
11/02/93	14:20	-	-	7.37	Grab
11/09/93	12:24	-	-	7.60	Grab
11/15/93	13:47	-	-	6.97	Grab
11/24/93	13:26	-	-	9.26	Grab
12/01/93	11:57	-	-	8.89	Grab
12/10/93	9:37	-	-	8.27	Grab
12/16/93	11:16	-	-	8.52	Grab
12/27/93	14:40	-	-	8.63	Grab
01/12/94	11:16	-	-	8.07	Grab

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
02/03/94	11:50	-	-	7.27	Grab
02/15/94	12:11	-	-	5.55	Grab
02/22/94	12:01	-	-	7.98	Grab
02/28/94	13:09	-	-	7.73	Grab
03/07/94	13:46	-	-	8.60	Grab
03/17/94	13:30	-	-	8.72	Grab
03/23/94	11:50	-	-	8.38	Grab
03/28/94	13:25	-	-	7.66	Grab
04/04/94	11:24	-	-	7.05	Grab
04/11/94	11:56	-	-	9.23	Grab
04/12/94	15:09	-	-	4.66	Grab
04/13/94	14:06	-	-	8.89	Grab
04/18/94	14:11	-	-	9.26	Grab
04/25/94	14:24	-	-	9.46	Grab
04/29/94	16:18	-	-	10.54	Grab
05/03/94	11:54	-	-	11.04	Grab
05/09/94	13:19	-	-	11.41	Grab
05/16/94	13:36	-	-	11.32	Grab
05/24/94	12:25	-	-	11.59	Grab
06/03/94	11:52	-	-	11.33	Grab
06/06/94	11:52	-	-	10.92	Grab
06/13/94	15:32	-	-	10.34	Grab
06/20/94	10:50	-	-	9.73	Grab
06/27/94	11:44	-	-	9.36	Grab
07/05/94	12:26	-	-	6.43	Grab
07/12/94	10:05	-	-	4.04	Grab
07/26/94	10:16	-	-	0.38	Grab
08/01/94	9:22	-	-	<0.02	Grab
11/01/94	14:23	-	-	<0.02	Grab
11/06/94	12:16	-	-	0.12	Grab
11/07/94	12:34	-	-	7.36	Grab
11/14/94	14:40	-	-	5.98	Grab
11/21/94	10:53	-	-	5.23	Grab
11/28/94	15:02	-	-	5.63	Grab
12/05/94	14:19	-	-	5.69	Grab
12/05/94	14:23	-	-	5.73	Grab
12/07/94	17:06	-	-	6.98	Grab



**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
12/08/94	16:33	-	-	7.87	Grab
12/08/94	16:33	-	-	8.22	ISCO
12/08/94	19:00	-	-	8.34	ISCO
12/08/94	22:00	-	-	8.19	ISCO
12/09/94	1:00	-	-	7.65	ISCO
12/09/94	7:00	-	-	8.30	ISCO
12/09/94	16:00	-	-	7.85	ISCO
12/10/94	1:00	-	-	7.86	ISCO
12/10/94	7:00	-	-	7.74	ISCO
12/10/94	16:00	-	-	8.00	ISCO
12/12/94	13:03	-	-	7.32	Grab
12/16/94	14:30	-	-	6.98	ISCO
12/16/94	14:31	-	-	7.32	Grab
12/17/94	0:01	-	-	6.80	ISCO
12/17/94	4:00	-	-	7.11	ISCO
12/18/94	8:15	-	-	7.83	ISCO
12/19/94	0:01	-	-	7.76	ISCO
12/19/94	12:00	-	-	8.02	ISCO
12/19/94	14:06	-	-	7.49	Grab
01/17/95	15:04	-	-	9.93	Grab
01/23/95	12:45	-	-	9.52	Grab
02/01/95	14:01	-	-	9.24	Grab
02/08/95	10:32	-	-	9.19	Grab
02/16/95	13:58	-	-	8.71	Grab
02/22/95	15:21	-	-	8.30	Grab
02/26/95	11:03	-	-	8.01	ISCO
02/26/95	15:03	-	-	8.05	ISCO
02/26/95	19:03	-	-	8.08	ISCO
02/26/95	23:03	-	-	8.04	ISCO
02/27/95	3:03	-	-	7.97	ISCO
02/27/95	7:03	-	-	8.14	ISCO
02/27/95	11:03	-	-	8.05	ISCO
02/27/95	15:03	-	-	7.95	ISCO
02/27/95	19:03	-	-	8.08	ISCO
02/27/95	23:03	-	-	7.84	ISCO
02/28/95	3:03	-	-	7.85	ISCO
02/28/95	7:03	-	-	7.84	ISCO

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
02/28/95	10:07	-	-	7.70	Grab
03/07/95	12:00	-	-	9.06	Grab
03/07/95	12:10	-	-	9.24	ISCO
03/07/95	16:10	-	-	9.71	ISCO
03/07/95	20:10	-	-	10.67	ISCO
03/08/95	11:14	-	-	11.39	Grab
03/08/95	15:47	-	-	11.75	Grab
03/09/95	16:10	-	-	11.18	ISCO
03/09/95	20:10	-	-	11.26	ISCO
03/10/95	0:10	-	-	11.08	ISCO
03/10/95	4:10	-	-	10.92	ISCO
03/10/95	8:10	-	-	10.87	ISCO
03/10/95	12:10	-	-	10.88	ISCO
03/16/95	15:06	-	-	9.91	Grab
03/22/95	11:12	-	-	9.47	Grab
03/28/95	14:48	-	-	9.06	Grab
04/04/95	10:53	-	-	8.85	Grab
04/07/95	14:48	-	-	8.82	Grab
04/12/95	11:53	-	-	8.77	Grab
04/25/95	11:35	-	-	10.44	Grab
05/02/95	13:35	-	-	10.39	Grab
05/04/95	9:58	-	-	10.02	Grab
05/10/95	11:03	-	-	14.21	Grab
05/17/95	15:00	-	-	4.01	Grab
05/22/95	14:45	-	-	13.73	Grab
05/26/95	11:37	-	-	12.11	Grab
05/31/95	8:55	-	-	13.31	Grab
06/05/95	12:17	-	-	13.13	Grab
06/13/95	13:25	-	-	12.65	Grab
06/21/95	11:44	-	-	12.13	Grab
06/27/95	12:08	-	-	11.95	Grab
06/27/95	12:08	-	-	11.96	Grab
07/10/95	11:16	-	-	8.73	Grab
07/18/95	13:20	-	-	4.26	Grab
07/25/95	10:45	-	-	2.48	Grab
08/02/95	13:04	-	-	0.51	Grab
08/07/95	13:34	-	-	0.76	Grab

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
08/08/95	10:45	-	-	3.54	Grab
08/15/95	15:57	-	-	0.79	Grab
08/22/95	13:35	-	-	0.46	Grab
09/06/95	12:10	-	-	<0.02	Grab
09/12/95	11:03	-	-	0.04	Grab
10/27/95	11:21	-	-	0.49	Grab
10/31/95	11:05	-	-	0.67	Grab
10/31/95	11:20	-	-	0.70	ISCO
11/02/95	8:00	-	-	2.90	ISCO
11/03/95	0:00	-	-	4.55	ISCO
11/03/95	4:00	-	-	3.88	ISCO
11/04/95	20:00	-	-	4.56	ISCO
11/07/95	11:07	-	-	4.36	Grab
11/07/95	12:00	-	-	4.41	ISCO
11/10/95	12:00	-	-	3.44	ISCO
11/13/95	6:00	-	-	5.17	ISCO
11/13/95	10:29	-	-	4.84	Grab
11/14/95	13:46	-	-	0.35	Grab
11/15/95	9:18	-	-	0.46	Grab
11/20/95	12:01	-	-	1.81	Grab
11/28/95	10:30	-	-	1.66	Grab
12/05/95	10:50	-	-	0.73	Grab
01/18/96	15:09	-	-	5.84	Grab
01/23/96	14:07	-	-	9.03	Grab
02/14/96	10:16	-	-	6.03	Grab
02/20/96	12:23	-	-	6.71	Grab
02/27/96	10:19	-	-	6.14	Grab
03/05/96	11:04	-	-	8.28	Grab
03/11/96	13:53	-	-	9.07	Grab
03/18/96	11:14	-	-	8.63	Grab
03/28/96	10:25	-	-	8.06	Grab
04/02/96	10:48	-	-	12.11	Grab
04/03/96	0:00	-	-	11.55	ISCO
04/04/96	16:00	-	-	11.29	ISCO
04/05/96	8:00	-	-	11.22	ISCO
04/07/96	12:00	-	-	10.94	ISCO
04/09/96	10:43	-	-	10.54	Grab

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/12/96	19:00	-	-	9.72	ISCO
04/16/96	13:23	-	-	10.16	Grab
04/20/96	11:00	-	-	9.00	ISCO
04/23/96	10:58	-	-	13.70	Grab
04/23/96	13:00	-	-	12.72	ISCO
04/24/96	13:00	-	-	12.82	ISCO
04/28/96	13:00	-	-	11.24	ISCO
04/29/96	21:00	-	-	13.52	ISCO
04/30/96	13:34	-	-	16.26	Grab
04/30/96	15:00	-	-	16.00	ISCO
04/30/96	21:00	-	-	15.67	ISCO
05/01/96	3:00	-	-	15.63	ISCO
05/01/96	9:00	-	-	15.25	ISCO
05/01/96	21:00	-	-	14.90	ISCO
05/02/96	9:00	-	-	14.63	ISCO
05/02/96	21:00	-	-	14.41	ISCO
05/03/96	9:00	-	-	14.18	ISCO
05/03/96	15:00	-	-	14.04	ISCO
05/03/96	21:00	-	-	14.03	ISCO
05/04/96	3:00	-	-	12.78	ISCO
05/04/96	9:00	-	-	8.97	ISCO
05/04/96	15:00	-	-	12.77	ISCO
05/04/96	21:00	-	-	14.37	ISCO
05/05/96	3:00	-	-	14.92	ISCO
05/05/96	9:00	-	-	15.18	ISCO
05/05/96	21:00	-	-	15.38	ISCO
05/06/96	12:41	-	-	15.02	ISCO
05/07/96	3:00	-	-	14.98	ISCO
05/08/96	3:00	-	-	14.57	ISCO
05/08/96	15:00	-	-	10.60	ISCO
05/08/96	21:00	-	-	6.34	ISCO
05/09/96	3:00	-	-	9.60	ISCO
05/09/96	9:00	-	-	12.84	ISCO
05/10/96	3:00	-	-	15.21	ISCO
05/10/96	9:00	-	-	12.87	ISCO
05/10/96	12:40	-	-	6.94	Grab
05/10/96	15:00	-	-	5.41	ISCO

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/10/96	21:00	-	-	5.34	ISCO
05/11/96	3:00	-	-	6.14	ISCO
05/11/96	9:00	-	-	7.73	ISCO
05/11/96	15:00	-	-	10.44	ISCO
05/11/96	21:00	-	-	12.27	ISCO
05/13/96	15:00	-	-	14.86	ISCO
05/15/96	15:00	-	-	16.00	ISCO
05/17/96	10:06	-	-	15.99	Grab
05/19/96	3:00	-	-	15.58	ISCO
05/21/96	12:29	-	-	15.71	Grab
05/28/96	13:48	-	-	13.27	Grab
05/29/96	3:00	-	-	13.77	ISCO
05/31/96	3:00	-	-	16.69	ISCO
06/01/96	21:00	-	-	14.92	ISCO
06/02/96	3:00	-	-	5.00	ISCO
06/02/96	9:00	-	-	4.35	ISCO
06/02/96	15:00	-	-	6.01	ISCO
06/03/96	3:00	-	-	12.50	ISCO
06/03/96	21:00	-	-	11.82	ISCO
06/04/96	12:28	-	-	15.02	Grab
06/06/96	9:00	-	-	15.82	ISCO
06/08/96	9:00	-	-	16.68	ISCO
06/11/96	11:17	-	-	15.28	Grab
06/13/96	3:00	-	-	14.44	ISCO
06/16/96	3:00	-	-	14.12	ISCO
06/18/96	11:30	-	-	15.61	Grab
06/20/96	3:00	-	-	16.20	ISCO
06/23/96	3:00	-	-	15.88	ISCO
06/25/96	10:54	-	-	14.90	Grab
06/27/96	3:00	-	-	15.98	ISCO
06/30/96	3:00	-	-	14.97	ISCO
07/01/96	14:17	-	-	14.84	Grab
07/04/96	3:00	-	-	13.28	ISCO
07/06/96	15:00	-	-	14.23	ISCO
07/08/96	13:18	-	-	13.11	Grab
07/10/96	21:00	-	-	10.61	ISCO
07/13/96	3:00	-	-	10.72	ISCO

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
07/15/96	13:25	-	-	9.82	Grab
07/21/96	3:00	-	-	6.14	ISCO
07/22/96	3:00	-	-	5.32	ISCO
07/22/96	16:11	-	-	5.99	Grab
07/23/96	3:00	-	-	6.26	ISCO
07/24/96	15:00	-	-	6.45	ISCO
07/25/96	15:00	-	-	8.32	ISCO
07/29/96	14:23	-	-	7.03	Grab
08/01/96	3:00	-	-	5.89	ISCO
08/05/96	12:03	-	-	3.13	Grab
08/07/96	15:00	-	-	2.09	ISCO
08/12/96	14:12	-	-	0.50	Grab
08/18/96	15:00	-	-	0.80	ISCO
08/19/96	3:00	-	-	1.30	ISCO
08/20/96	12:01	-	-	1.79	Grab
08/26/96	14:06	-	-	2.88	Grab
10/16/96	12:06	-	-	<0.02	Grab
10/22/96	10:18	-	-	<0.02	Grab
11/12/96	14:26	-	-	7.15	Grab
11/18/96	14:26	-	-	6.60	Grab
11/25/96	10:07	-	-	5.30	Grab
12/02/96	13:10	-	-	8.84	Grab
12/10/96	13:32	-	-	8.94	Grab
12/18/96	14:09	-	-	8.70	Grab
12/30/96	14:51	-	-	7.67	Grab
01/07/97	13:34	-	-	9.46	Grab
01/22/97	13:00	-	-	6.03	Grab
02/04/97	12:53	-	-	4.34	Grab
02/05/97	13:24	-	-	7.32	Grab
02/13/97	13:32	-	-	9.93	Grab
02/18/97	12:13	-	-	9.90	Grab
02/21/97	13:40	-	-	9.67	Grab
02/27/97	13:44	-	-	5.41	Grab
02/28/97	13:07	-	-	9.62	Grab
03/04/97	13:11	-	-	11.92	Grab
03/11/97	12:58	-	-	12.92	Grab
03/14/97	10:37	-	-	9.20	Grab

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/19/97	15:10	-	-	12.36	Grab
03/25/97	13:16	-	-	12.00	Grab
04/01/97	11:18	-	-	11.55	Grab
04/09/97	10:52	-	-	11.50	Grab
04/15/97	12:59	-	-	10.94	Grab
04/22/97	15:12	-	-	10.53	Grab
05/01/97	13:45	-	-	9.77	Grab
05/06/97	11:33	-	-	12.44	Grab
05/13/97	10:58	-	-	11.80	Grab
05/20/97	15:28	-	-	10.58	Grab
05/28/97	16:16	-	-	13.54	Grab
06/03/97	12:59	-	-	12.82	Grab
06/09/97	11:38	-	-	16.36	Grab
06/17/97	11:18	-	-	15.10	Grab
06/24/97	13:27	-	-	13.70	Grab
07/01/97	13:39	-	-	11.93	Grab
07/08/97	12:28	-	-	10.55	Grab
07/15/97	13:12	-	-	6.52	Grab
07/22/97	14:20	-	-	1.90	Grab
07/28/97	13:15	-	-	0.48	Grab
08/05/97	16:15	-	-	0.07	Grab
08/12/97	11:48	-	-	0.08	Grab
08/19/97	12:14	-	-	7.18	Grab
08/26/97	12:54	-	-	4.66	Grab
09/03/97	12:11	-	-	3.17	Grab
09/10/97	12:13	-	-	6.69	Grab
09/12/97	14:26	-	-	4.72	Grab
09/24/97	12:40	-	-	6.88	Grab
10/01/97	12:52	-	-	5.18	Grab
10/07/97	12:13	-	-	3.22	Grab
10/15/97	15:10	-	-	1.63	Grab
10/21/97	12:15	-	-	2.32	Grab
10/27/97	14:21	-	-	2.49	Grab
11/04/97	12:15	-	-	2.86	Grab
11/12/97	13:17	-	-	4.73	Grab
11/18/97	12:12	-	-	4.94	Grab
11/25/97	13:39	-	-	4.31	Grab

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
12/04/97	13:07	-	-	9.65	Grab
12/09/97	13:08	-	-	8.56	Grab
12/16/97	12:05	-	-	8.70	Grab
12/22/97	12:02	-	-	8.43	Grab
12/29/97	11:56	-	-	10.12	Grab
01/06/98	12:41	-	-	11.19	Grab
01/14/98	12:48	-	-	11.56	Grab
01/27/98	12:55	-	-	10.36	Grab
02/03/98	13:21	-	-	11.16	Grab
02/10/98	12:01	-	-	10.65	Grab
02/17/98	11:59	-	-	10.20	Grab
02/24/98	15:19	-	-	11.57	Grab
03/03/98	12:45	-	-	11.13	Grab
03/11/98	13:04	-	-	12.82	Grab
03/17/98	13:08	-	-	10.24	Grab
03/19/98	15:42	-	-	10.69	Grab
03/24/98	15:37	-	-	10.19	Grab
04/02/98	13:13	-	-	11.94	Grab
04/08/98	12:17	-	-	12.63	Grab
04/14/98	12:44	-	-	10.68	Grab
04/21/98	11:44	-	-	12.25	Grab
04/29/98	13:13	-	-	10.30	Grab
05/05/98	15:14	-	-	11.10	Grab
05/12/98	12:43	-	-	11.84	Grab
05/19/98	12:23	-	-	12.09	Grab
05/27/98	12:01	-	-	12.78	Grab
06/03/98	12:01	-	-	11.83	Grab
06/09/98	12:45	-	-	12.75	Grab
06/17/98	16:03	-	-	9.67	Grab
06/22/98	13:56	-	-	11.74	Grab
07/08/98	10:43	-	-	10.81	Grab
07/15/98	12:43	-	-	10.64	Grab
07/22/98	12:22	-	-	8.10	Grab
07/28/98	13:53	-	-	6.51	Grab
08/04/98	12:14	-	-	2.96	Grab
08/12/98	14:22	-	-	0.80	Grab
08/26/98	12:16	-	-	<0.09	Grab



**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
09/02/98	14:30	-	-	<0.09	Grab
09/09/98	12:08	-	-	<0.09	Grab
09/16/98	12:48	-	-	<0.09	Grab
09/22/98	13:49	-	-	<0.09	Grab
09/30/98	12:13	-	-	<0.09	Grab
10/06/98	12:56	-	-	<0.09	Grab
10/14/98	12:26	-	-	<0.09	Grab
10/20/98	11:35	-	-	<0.09	Grab
10/29/98	13:26	-	-	0.18	Grab
11/04/98	12:56	-	-	<0.09	Grab
11/18/98	12:11	-	-	0.73	Grab
11/23/98	12:10	-	-	0.34	Grab
12/01/98	11:51	-	-	0.65	Grab
12/09/98	11:35	-	-	0.13	Grab
12/15/98	12:05	-	-	0.25	Grab
12/21/98	11:36	-	-	1.94	Grab
01/26/99	10:24	-	-	11.69	Grab
02/03/99	10:25	-	-	11.29	Grab
02/10/99	10:55	-	-	12.87	Grab
02/17/99	13:16	-	-	12.52	Grab
02/24/99	11:50	-	-	12.37	Grab
03/03/99	14:26	-	-	12.82	Grab
03/10/99	11:40	-	-	12.76	Grab
03/16/99	12:04	-	-	12.38	Grab
03/24/99	17:03	-	-	12.44	Grab
03/30/99	12:58	-	-	12.16	Grab
04/06/99	12:58	-	-	11.10	Grab
04/13/99	13:13	-	-	11.33	Grab
04/14/99	11:21	-	-	11.55	Grab
04/14/99	11:42	-	-	11.14	ISCO
04/14/99	18:00	-	-	11.05	ISCO
04/15/99	0:01	-	-	10.95	ISCO
04/15/99	6:00	-	-	10.98	ISCO
04/15/99	12:00	-	-	10.11	ISCO
04/15/99	18:00	-	-	12.49	ISCO
04/16/99	0:01	-	-	13.47	ISCO
04/16/99	6:00	-	-	15.42	ISCO

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/16/99	12:00	-	-	16.42	ISCO
04/16/99	18:00	-	-	16.76	ISCO
04/17/99	0:01	-	-	16.90	ISCO
04/17/99	6:00	-	-	17.61	ISCO
04/17/99	12:00	-	-	17.59	ISCO
04/17/99	14:11	-	-	16.96	Grab
04/17/99	14:26	-	-	17.75	ISCO
04/17/99	23:00	-	-	17.83	ISCO
04/18/99	7:00	-	-	17.64	ISCO
04/18/99	15:00	-	-	17.51	ISCO
04/18/99	23:00	-	-	17.28	ISCO
04/19/99	7:00	-	-	17.15	ISCO
04/19/99	15:00	-	-	17.52	ISCO
04/19/99	23:00	-	-	17.05	ISCO
04/20/99	7:00	-	-	16.82	ISCO
04/20/99	12:30	-	-	16.04	Grab
04/27/99	12:56	-	-	14.77	Grab
05/05/99	13:39	-	-	14.45	Grab
05/11/99	12:18	-	-	14.21	Grab
05/18/99	12:33	-	-	13.73	Grab
05/21/99	10:29	-	-	14.29	Grab
05/21/99	10:42	-	-	14.13	ISCO
05/21/99	12:00	-	-	14.15	ISCO
05/21/99	20:00	-	-	14.19	ISCO
05/22/99	4:00	-	-	13.75	ISCO
05/22/99	12:00	-	-	14.15	ISCO
05/22/99	20:00	-	-	14.48	ISCO
05/23/99	4:00	-	-	14.75	ISCO
05/23/99	12:00	-	-	14.57	ISCO
05/23/99	20:00	-	-	14.45	ISCO
05/24/99	4:00	-	-	14.38	ISCO
05/24/99	10:30	-	-	14.99	ISCO
05/24/99	10:47	-	-	14.87	Grab
05/25/99	0:01	-	-	14.97	ISCO
05/25/99	12:00	-	-	14.80	ISCO
05/25/99	12:19	-	-	14.67	Grab
05/26/99	0:01	-	-	14.68	ISCO

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/26/99	12:00	-	-	14.62	ISCO
05/27/99	0:01	-	-	14.35	ISCO
05/27/99	9:30	-	-	14.40	Grab
05/27/99	9:43	-	-	14.35	ISCO
05/28/99	0:01	-	-	14.19	ISCO
05/29/99	0:01	-	-	14.01	ISCO
05/30/99	0:01	-	-	13.77	ISCO
05/30/99	0:01	-	-	13.90	ISCO
05/31/99	0:01	-	-	13.92	ISCO
05/31/99	12:00	-	-	13.80	ISCO
06/01/99	12:00	-	-	13.73	ISCO
06/01/99	14:27	-	-	13.81	Grab
06/01/99	14:38	-	-	14.02	ISCO
06/01/99	18:00	-	-	14.02	ISCO
06/02/99	0:01	-	-	13.86	ISCO
06/02/99	6:00	-	-	16.45	ISCO
06/02/99	12:00	-	-	16.91	ISCO
06/02/99	15:23	-	-	17.51	Grab
06/02/99	18:00	-	-	18.30	ISCO
06/03/99	0:01	-	-	18.30	ISCO
06/03/99	6:00	-	-	17.68	ISCO
06/03/99	10:57	-	-	17.48	Grab
06/03/99	11:30	-	-	17.39	ISCO
06/05/99	12:00	-	-	14.07	ISCO
06/05/99	20:00	-	-	16.58	ISCO
06/06/99	4:00	-	-	16.64	ISCO
06/06/99	12:00	-	-	16.36	ISCO
06/06/99	20:00	-	-	16.29	ISCO
06/07/99	4:00	-	-	15.99	ISCO
06/07/99	12:00	-	-	15.79	ISCO
06/07/99	14:40	-	-	16.16	Grab
06/07/99	14:47	-	-	16.33	ISCO
06/07/99	20:00	-	-	16.00	ISCO
06/08/99	6:26	-	-	15.79	ISCO
06/08/99	11:00	-	-	15.79	Grab
06/08/99	11:30	-	-	15.64	ISCO
06/09/99	12:00	-	-	15.41	ISCO

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/09/99	13:16	-	-	15.58	Grab
06/10/99	12:00	-	-	15.36	ISCO
06/11/99	12:00	-	-	15.15	ISCO
06/11/99	15:38	-	-	15.18	ISCO
06/11/99	15:40	-	-	15.16	Grab
06/12/99	12:00	-	-	14.62	ISCO
06/13/99	0:01	-	-	14.63	ISCO
06/13/99	12:00	-	-	14.27	ISCO
06/13/99	18:00	-	-	13.53	ISCO
06/14/99	0:01	-	-	13.26	ISCO
06/14/99	6:00	-	-	14.36	ISCO
06/14/99	11:08	-	-	15.32	ISCO
06/14/99	11:18	-	-	14.78	Grab
06/15/99	12:00	-	-	15.20	ISCO
06/15/99	13:03	-	-	14.86	Grab
06/16/99	12:00	-	-	14.71	ISCO
06/17/99	12:00	-	-	14.54	ISCO
06/18/99	12:00	-	-	14.17	ISCO
06/19/99	7:46	-	-	14.28	ISCO
06/19/99	8:00	-	-	14.27	Grab
06/19/99	12:00	-	-	14.24	ISCO
06/20/99	12:00	-	-	13.97	ISCO
06/21/99	12:00	-	-	13.74	ISCO
06/22/99	12:00	-	-	13.46	ISCO
06/23/99	0:01	-	-	13.25	ISCO
06/23/99	12:00	-	-	13.12	ISCO
06/24/99	0:01	-	-	12.61	ISCO
06/24/99	12:00	-	-	11.53	ISCO
06/24/99	15:39	-	-	12.56	ISCO
06/24/99	15:53	-	-	12.21	Grab
06/24/99	20:00	-	-	11.80	ISCO
06/25/99	12:00	-	-	15.64	ISCO
06/26/99	12:00	-	-	14.59	ISCO
06/26/99	20:00	-	-	14.15	ISCO
06/27/99	4:00	-	-	13.91	ISCO
06/27/99	12:00	-	-	11.95	ISCO
06/28/99	12:00	-	-	14.21	ISCO

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/28/99	15:40	-	-	13.88	ISCO
06/28/99	15:48	-	-	14.08	Grab
06/28/99	20:00	-	-	13.73	ISCO
06/29/99	12:00	-	-	13.57	ISCO
06/30/99	12:00	-	-	13.48	ISCO
07/01/99	4:00	-	-	12.65	ISCO
07/01/99	12:00	-	-	12.13	ISCO
07/01/99	14:20	-	-	12.04	Grab
07/01/99	14:27	-	-	12.20	ISCO
07/01/99	20:00	-	-	12.25	ISCO
07/02/99	12:00	-	-	12.71	ISCO
07/03/99	12:00	-	-	12.15	ISCO
07/04/99	12:00	-	-	11.58	ISCO
07/05/99	12:00	-	-	11.02	ISCO
07/06/99	10:57	-	-	10.92	ISCO
07/06/99	11:05	-	-	10.45	Grab
07/07/99	12:00	-	-	10.32	ISCO
07/08/99	12:00	-	-	9.96	ISCO
07/08/99	15:35	-	-	10.27	Grab
07/09/99	12:00	-	-	9.32	ISCO
07/10/99	12:00	-	-	8.90	ISCO
07/11/99	12:00	-	-	8.49	ISCO
07/12/99	12:00	-	-	8.02	ISCO
07/13/99	12:31	-	-	7.50	Grab
07/15/99	12:00	-	-	6.31	ISCO
07/16/99	12:00	-	-	5.91	ISCO
07/17/99	0:00	-	-	4.30	ISCO
07/17/99	12:00	-	-	5.14	ISCO
07/18/99	0:00	-	-	3.54	ISCO
07/18/99	12:00	-	-	3.83	ISCO
07/19/99	0:00	-	-	2.48	ISCO
07/19/99	12:00	-	-	2.83	ISCO
07/20/99	13:42	-	-	1.83	Grab
07/20/99	23:00	-	-	1.67	ISCO
07/21/99	11:00	-	-	1.66	ISCO
07/21/99	11:09	-	-	1.57	Grab
07/22/99	12:00	-	-	1.24	ISCO

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
07/23/99	9:00	-	-	0.94	ISCO
07/23/99	9:10	-	-	1.00	ISCO
07/23/99	12:00	-	-	0.92	ISCO
07/24/99	12:00	-	-	0.71	ISCO
07/26/99	0:00	-	-	0.36	ISCO
07/26/99	12:00	-	-	0.41	ISCO
07/27/99	0:00	-	-	0.27	ISCO
07/27/99	12:00	-	-	0.36	ISCO
07/27/99	12:47	-	-	0.36	Grab
07/27/99	12:47	-	-	0.29	Grab
07/27/99	18:00	-	-	0.31	ISCO
07/28/99	6:00	-	-	0.28	ISCO
07/28/99	12:00	-	-	0.30	ISCO
07/28/99	13:39	-	-	0.26	Grab
07/28/99	13:52	-	-	0.48	ISCO
07/28/99	20:00	-	-	0.36	ISCO
07/29/99	4:00	-	-	0.36	ISCO
07/29/99	12:00	-	-	0.34	ISCO
07/29/99	20:00	-	-	0.26	ISCO
07/30/99	12:00	-	-	0.51	ISCO
07/31/99	12:00	-	-	0.26	ISCO
08/01/99	12:00	-	-	0.25	ISCO
08/02/99	11:13	-	-	0.15	Grab
08/03/99	12:00	-	-	0.20	ISCO
08/03/99	12:04	-	-	<0.11	Grab
08/04/99	12:00	-	-	0.18	ISCO
08/05/99	12:00	-	-	<0.11	ISCO
08/05/99	14:47	-	-	<0.11	Grab
08/05/99	15:00	-	-	0.29	ISCO
08/06/99	12:00	-	-	0.16	ISCO
08/07/99	0:00	-	-	0.22	ISCO
08/07/99	12:00	-	-	<0.11	ISCO
08/08/99	12:00	-	-	0.19	ISCO
08/09/99	12:00	-	-	0.34	ISCO
08/10/99	12:00	-	-	0.25	ISCO
08/11/99	0:00	-	-	0.15	ISCO
08/11/99	11:22	-	-	0.20	Grab

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
08/11/99	11:35	-	-	0.23	ISCO
08/12/99	0:00	-	-	0.71	ISCO
08/13/99	0:00	-	-	3.23	ISCO
08/13/99	12:00	-	-	1.98	ISCO
08/14/99	12:00	-	-	4.38	ISCO
08/15/99	12:00	-	-	4.63	ISCO
08/16/99	12:00	-	-	4.55	ISCO
08/17/99	12:00	-	-	4.02	ISCO
08/17/99	15:42	-	-	3.71	Grab
08/17/99	15:46	-	-	3.62	ISCO
08/19/99	12:00	-	-	2.81	ISCO
08/20/99	12:00	-	-	2.53	ISCO
08/21/99	12:00	-	-	1.92	ISCO
08/22/99	12:00	-	-	1.58	ISCO
08/23/99	0:00	-	-	0.94	ISCO
08/23/99	10:50	-	-	1.18	Grab
08/23/99	11:03	-	-	1.17	ISCO
08/23/99	18:00	-	-	1.04	ISCO
08/24/99	0:00	-	-	0.65	ISCO
08/24/99	6:00	-	-	0.85	ISCO
08/24/99	12:00	-	-	0.76	ISCO
08/24/99	12:16	-	-	0.77	Grab
08/25/99	0:00	-	-	0.45	ISCO
08/25/99	6:00	-	-	0.66	ISCO
08/25/99	12:00	-	-	0.58	ISCO
08/26/99	10:06	-	-	0.56	ISCO
08/26/99	10:07	-	-	0.44	Grab
08/26/99	10:12	-	-	0.55	ISCO
08/27/99	12:00	-	-	0.40	ISCO
08/28/99	12:00	-	-	0.30	ISCO
08/29/99	12:00	-	-	0.21	ISCO
08/30/99	12:00	-	-	0.16	ISCO
08/31/99	12:00	-	-	0.12	ISCO
08/31/99	12:11	-	-	<0.11	Grab
08/31/99	12:26	-	-	0.13	ISCO
09/01/99	12:00	-	-	0.21	ISCO
09/02/99	12:00	-	-	0.46	ISCO

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
09/03/99	12:00	-	-	0.21	ISCO
09/04/99	12:00	-	-	0.16	ISCO
09/05/99	12:00	-	-	0.13	ISCO
09/06/99	12:00	-	-	0.14	ISCO
09/07/99	10:30	-	-	<0.11	ISCO
09/07/99	12:11	-	-	<0.11	Grab
09/08/99	12:00	-	-	<0.11	ISCO
09/09/99	12:00	-	-	<0.11	ISCO
09/10/99	12:00	-	-	<0.11	ISCO
09/11/99	12:00	-	-	<0.11	ISCO
09/12/99	0:00	-	-	<0.11	ISCO
09/12/99	12:00	-	-	<0.11	ISCO
09/13/99	11:04	-	-	<0.11	ISCO
09/13/99	11:06	-	-	<0.11	Grab
09/13/99	11:11	-	-	<0.11	ISCO
09/14/99	12:00	-	-	<0.11	ISCO
09/15/99	12:00	-	-	<0.11	ISCO
09/16/99	12:00	-	-	<0.11	ISCO
09/17/99	12:00	-	-	<0.11	ISCO
09/18/99	12:00	-	-	<0.11	ISCO
09/19/99	12:00	-	-	<0.11	ISCO
09/20/99	12:00	-	-	<0.11	ISCO
09/22/99	12:00	-	-	<0.11	ISCO
09/23/99	12:00	-	-	<0.11	ISCO
09/24/99	12:00	-	-	<0.11	ISCO
09/25/99	12:00	-	-	<0.11	ISCO
09/26/99	12:00	-	-	<0.11	ISCO
09/27/99	0:00	-	-	<0.11	ISCO
09/27/99	12:00	-	-	<0.11	ISCO
09/28/99	0:00	-	-	0.24	ISCO
09/28/99	12:00	-	-	<0.11	ISCO
09/28/99	12:46	-	-	<0.11	Grab
09/28/99	12:58	-	-	<0.11	ISCO
09/29/99	0:00	-	-	<0.11	ISCO
09/30/99	12:00	-	-	<0.11	ISCO
10/01/99	12:00	-	-	<0.11	ISCO
10/02/99	0:00	-	-	<0.11	ISCO



**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
10/02/99	12:00	-	-	<0.11	ISCO
10/03/99	0:00	-	-	0.15	ISCO
10/03/99	12:00	-	-	<0.11	ISCO
10/04/99	10:40	-	-	<0.11	ISCO
10/04/99	10:41	-	-	0.13	Grab
10/05/99	12:00	-	-	<0.11	ISCO
10/05/99	12:25	-	-	<0.11	Grab
10/08/99	0:00	-	-	0.48	ISCO
10/08/99	12:00	-	-	<0.11	ISCO
10/09/99	12:00	-	-	<0.11	ISCO
10/10/99	12:00	-	-	1.74	ISCO
10/11/99	12:00	-	-	1.21	ISCO
10/12/99	12:00	-	-	0.70	ISCO
10/13/99	12:00	-	-	0.36	ISCO
10/13/99	12:47	-	-	0.34	Grab
10/13/99	12:59	-	-	0.38	ISCO
10/14/99	12:00	-	-	0.21	ISCO
10/16/99	12:00	-	-	<0.11	ISCO
10/17/99	12:00	-	-	<0.11	ISCO
10/18/99	11:55	-	-	<0.11	ISCO
10/18/99	12:00	-	-	<0.13	ISCO
10/18/99	12:02	-	-	<0.11	Grab
10/19/99	12:00	-	-	<0.13	ISCO
10/20/99	12:00	-	-	<0.13	ISCO
10/21/99	12:00	-	-	<0.13	ISCO
10/22/99	12:00	-	-	<0.13	ISCO
10/23/99	12:00	-	-	<0.13	ISCO
10/24/99	12:00	-	-	<0.13	ISCO
10/25/99	0:00	-	-	<0.13	ISCO
10/25/99	12:12	46	-	<0.13	Grab
10/26/99	12:00	-	-	<0.13	ISCO
10/26/99	12:31	51	-	<0.13	Grab
10/27/99	12:00	-	-	<0.13	ISCO
10/28/99	12:00	-	-	<0.13	ISCO
10/29/99	12:00	-	-	<0.13	ISCO
10/30/99	12:00	-	-	<0.13	ISCO
10/31/99	11:00	-	-	<0.13	ISCO

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
11/01/99	12:00	-	-	<0.13	ISCO
11/01/99	12:16	61	-	<0.13	Grab
11/02/99	12:00	-	-	<0.13	ISCO
11/03/99	12:00	-	-	<0.13	ISCO
11/04/99	12:00	-	-	<0.13	ISCO
11/05/99	12:00	-	-	<0.13	ISCO
11/06/99	12:00	-	-	<0.13	ISCO
11/07/99	12:00	-	-	<0.13	ISCO
11/08/99	11:39	56	-	<0.13	Grab
11/08/99	12:00	-	-	<0.13	ISCO
11/09/99	12:00	-	-	<0.13	ISCO
11/10/99	12:00	-	-	<0.13	ISCO
11/11/99	12:00	-	-	<0.13	ISCO
11/12/99	12:00	-	-	<0.13	ISCO
11/13/99	12:00	-	-	<0.13	ISCO
11/14/99	12:00	-	-	<0.13	ISCO
11/15/99	11:33	46	-	<0.13	Grab
11/15/99	12:00	-	-	<0.13	ISCO
11/16/99	12:00	-	-	<0.13	ISCO
11/17/99	12:00	-	-	<0.13	ISCO
11/18/99	12:00	-	-	<0.13	ISCO
11/19/99	12:00	-	-	<0.13	ISCO
11/20/99	12:00	-	-	<0.13	ISCO
11/21/99	12:00	-	-	<0.13	ISCO
11/22/99	10:44	48	-	<0.13	Grab
11/22/99	11:00	-	-	<0.13	ISCO
11/23/99	12:00	-	-	<0.13	ISCO
11/24/99	12:00	-	-	0.16	ISCO
11/25/99	12:00	-	-	0.21	ISCO
11/26/99	12:00	-	-	0.14	ISCO
11/27/99	12:00	-	-	<0.13	ISCO
11/28/99	12:00	-	-	<0.13	ISCO
11/29/99	12:02	-	-	0.17	ISCO
11/29/99	12:05	40	-	0.15	Grab
11/30/99	12:02	-	-	0.14	ISCO
12/01/99	12:02	-	-	0.19	ISCO
12/02/99	0:02	-	-	0.29	ISCO

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
12/06/99	11:37	43	-	1.37	Grab
12/06/99	12:10	-	-	1.34	ISCO
12/07/99	12:00	-	-	1.24	ISCO
12/08/99	12:00	-	-	1.23	ISCO
12/09/99	12:00	-	-	1.20	ISCO
12/10/99	12:00	-	-	1.22	ISCO
12/11/99	12:00	-	-	1.32	ISCO
12/12/99	12:00	-	-	1.30	ISCO
12/13/99	11:32	41	-	1.32	Grab
12/13/99	12:00	-	-	1.39	ISCO
12/14/99	12:00	-	-	1.68	ISCO
12/15/99	12:00	-	-	3.49	ISCO
12/16/99	12:00	-	-	0.23	ISCO
12/17/99	12:00	-	-	0.29	ISCO
12/18/99	12:00	-	-	1.79	ISCO
12/19/99	12:00	-	-	2.92	ISCO
12/20/99	11:43	35	-	3.39	Grab
12/20/99	12:00	-	-	3.37	ISCO
01/03/00	11:52	34	-	3.55	Grab
01/10/00	11:36	38	-	4.50	Grab
01/10/00	11:55	-	-	4.73	ISCO
01/11/00	12:00	-	-	4.77	ISCO
01/12/00	12:00	-	-	4.96	ISCO
01/13/00	12:00	-	-	4.94	ISCO
01/15/00	12:00	-	-	4.68	ISCO
01/16/00	12:00	-	-	4.64	ISCO
02/22/00	12:48	46	-	9.34	Grab
02/22/00	13:00	-	-	9.39	ISCO
02/23/00	12:00	-	-	9.01	ISCO
02/24/00	12:00	-	-	8.81	ISCO
02/25/00	12:00	-	-	8.57	ISCO
02/26/00	0:00	-	-	8.42	ISCO
02/26/00	12:00	-	-	8.28	ISCO
02/27/00	0:00	-	-	7.85	ISCO
02/27/00	12:00	-	-	8.22	ISCO
02/28/00	12:00	-	-	8.14	ISCO
02/29/00	11:30	49	-	8.01	Grab

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
02/29/00	11:44	-	-	8.26	ISCO
03/01/00	12:00	-	-	8.43	ISCO
03/02/00	12:00	-	-	8.36	ISCO
03/03/00	12:00	-	-	8.23	ISCO
03/04/00	12:00	-	-	8.39	ISCO
03/05/00	12:00	-	-	8.41	ISCO
03/06/00	12:00	-	-	8.23	ISCO
03/07/00	11:32	55	-	7.95	Grab
03/07/00	12:00	-	-	8.07	ISCO
03/08/00	12:00	-	-	7.79	ISCO
03/09/00	12:00	-	-	7.67	ISCO
03/10/00	12:00	-	-	7.64	ISCO
03/11/00	12:00	-	-	7.79	ISCO
03/12/00	12:00	-	-	7.91	ISCO
03/13/00	12:00	-	-	8.13	ISCO
03/14/00	11:08	46	-	8.08	Grab
03/14/00	11:26	-	-	7.86	ISCO
03/15/00	12:00	-	-	7.66	ISCO
03/16/00	12:00	-	-	7.51	ISCO
03/17/00	12:00	-	-	7.46	ISCO
03/18/00	12:00	-	-	7.26	ISCO
03/19/00	12:00	-	-	7.28	ISCO
03/20/00	0:00	-	-	6.94	ISCO
03/20/00	12:00	-	-	8.67	ISCO
03/21/00	0:00	-	-	10.10	ISCO
03/21/00	11:46	48	-	10.33	Grab
03/28/00	15:28	47	-	8.99	Grab
04/04/00	11:15	50	-	8.33	Grab
04/06/00	13:45	-	-	8.76	ISCO
04/07/00	12:00	-	-	8.43	ISCO
04/08/00	12:00	-	-	8.53	ISCO
04/09/00	12:00	-	-	8.20	ISCO
04/10/00	12:00	-	-	8.14	ISCO
04/11/00	10:49	49	-	7.76	Grab
04/11/00	12:00	-	-	7.89	ISCO
04/12/00	12:00	-	-	7.60	ISCO
04/13/00	12:00	-	-	7.60	ISCO

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/14/00	12:00	-	-	7.60	ISCO
04/15/00	12:00	-	-	7.42	ISCO
04/16/00	12:00	-	-	7.11	ISCO
04/17/00	0:00	-	-	6.63	ISCO
04/17/00	12:00	-	-	6.81	ISCO
04/18/00	0:00	-	-	8.80	ISCO
04/18/00	11:25	51	-	9.37	Grab
04/18/00	12:00	-	-	9.39	ISCO
04/19/00	12:00	-	-	9.46	ISCO
04/20/00	0:00	-	-	9.22	ISCO
04/20/00	12:00	-	-	8.94	ISCO
04/21/00	0:00	-	-	8.65	ISCO
04/21/00	12:00	-	-	8.56	ISCO
04/22/00	12:00	-	-	8.74	ISCO
04/23/00	12:00	-	-	8.72	ISCO
04/24/00	0:00	-	-	8.48	ISCO
04/24/00	12:00	-	-	8.51	ISCO
04/25/00	0:00	-	-	9.91	ISCO
04/25/00	11:02	53	-	10.36	Grab
04/25/00	12:00	-	-	10.45	ISCO
04/26/00	12:00	-	-	10.04	ISCO
04/27/00	12:00	-	-	9.63	ISCO
04/28/00	12:00	-	-	9.60	ISCO
04/29/00	12:00	-	-	9.29	ISCO
04/30/00	12:00	-	-	8.89	ISCO
05/01/00	12:00	-	-	8.76	ISCO
05/02/00	11:11	61	-	8.92	Grab
05/02/00	12:00	-	-	8.89	ISCO
05/03/00	12:00	-	-	8.72	ISCO
05/04/00	12:00	-	-	8.30	ISCO
05/05/00	12:00	-	-	7.96	ISCO
05/06/00	12:00	-	-	7.66	ISCO
05/07/00	12:00	-	-	7.51	ISCO
05/08/00	12:00	-	-	7.47	ISCO
05/09/00	10:55	71	-	7.44	Grab
05/09/00	12:00	-	-	7.78	ISCO
05/10/00	12:00	-	-	7.87	ISCO

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/11/00	12:00	-	-	7.84	ISCO
05/12/00	12:00	-	-	7.86	ISCO
05/13/00	12:00	-	-	15.29	ISCO
05/14/00	12:00	-	-	13.27	ISCO
05/15/00	12:00	-	-	11.89	ISCO
05/16/00	11:14	63	-	10.86	Grab
05/16/00	12:00	-	-	10.71	ISCO
05/17/00	0:00	-	-	10.63	ISCO
05/17/00	12:00	-	-	10.37	ISCO
05/18/00	0:00	-	-	10.22	ISCO
05/18/00	12:00	-	-	10.17	ISCO
05/19/00	12:00	-	-	11.82	ISCO
05/20/00	0:00	-	-	13.28	ISCO
05/20/00	12:00	-	-	12.02	ISCO
05/21/00	0:00	-	-	11.44	ISCO
05/21/00	12:00	-	-	10.98	ISCO
05/22/00	0:00	-	-	10.95	ISCO
05/22/00	12:00	-	-	10.82	ISCO
05/23/00	0:00	-	-	10.45	ISCO
05/23/00	7:51	65	-	10.31	Grab
05/23/00	12:00	-	-	10.25	ISCO
05/24/00	0:00	-	-	10.01	ISCO
05/24/00	12:00	-	-	9.90	ISCO
05/25/00	0:00	-	-	11.16	ISCO
05/25/00	12:00	-	-	10.68	ISCO
05/26/00	0:00	-	-	9.98	ISCO
05/26/00	12:00	-	-	9.75	ISCO
05/27/00	0:00	-	-	9.13	ISCO
05/27/00	12:00	-	-	12.23	ISCO
05/28/00	0:00	-	-	12.91	ISCO
05/28/00	11:33	63	-	8.10	Grab
05/28/00	12:00	-	-	8.20	ISCO
05/28/00	17:53	63	-	10.96	Grab
05/29/00	0:00	-	-	13.77	ISCO
05/29/00	12:00	-	-	15.30	ISCO
05/30/00	0:00	-	-	15.27	ISCO
05/30/00	10:17	65	-	14.94	Grab

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/30/00	12:00	-	-	15.24	ISCO
05/31/00	0:00	-	-	15.21	ISCO
05/31/00	12:00	-	-	14.86	ISCO
06/01/00	0:00	-	-	14.61	ISCO
06/01/00	12:00	-	-	14.49	ISCO
06/02/00	0:00	-	-	14.47	ISCO
06/02/00	12:00	-	-	14.36	ISCO
06/03/00	0:00	-	-	14.14	ISCO
06/03/00	12:00	-	-	14.04	ISCO
06/04/00	0:00	-	-	14.02	ISCO
06/04/00	12:00	-	-	13.75	ISCO
06/05/00	0:00	-	-	12.93	ISCO
06/05/00	12:00	-	-	13.99	ISCO
06/06/00	0:00	-	-	14.57	ISCO
06/06/00	11:05	60	-	14.23	Grab
06/13/00	10:40	71	-	11.57	Grab
06/13/00	12:00	-	-	11.87	ISCO
06/14/00	12:00	-	-	13.92	ISCO
06/15/00	12:00	-	-	13.59	ISCO
06/16/00	12:00	-	-	13.25	ISCO
06/17/00	12:00	-	-	12.98	ISCO
06/18/00	12:00	-	-	12.74	ISCO
06/19/00	12:00	-	-	12.46	ISCO
06/20/00	14:15	71	-	11.81	Grab
06/21/00	0:00	-	-	10.77	ISCO
06/21/00	12:00	-	-	10.60	ISCO
06/22/00	0:00	-	-	12.08	ISCO
06/22/00	12:00	-	-	13.19	ISCO
06/23/00	0:00	-	-	13.46	ISCO
06/23/00	12:00	-	-	13.09	ISCO
06/24/00	0:00	-	-	8.80	ISCO
06/24/00	12:00	-	-	10.73	ISCO
06/25/00	0:00	-	-	11.60	ISCO
06/25/00	12:00	-	-	11.98	ISCO
06/26/00	0:00	-	-	12.55	ISCO
06/26/00	12:00	-	-	12.25	ISCO
06/26/00	16:41	69	-	12.26	Grab
06/27/00	0:00	-	-	12.67	ISCO

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/28/00	0:00	-	-	12.85	ISCO
06/29/00	0:00	-	-	12.76	ISCO
06/30/00	0:00	-	-	12.57	ISCO
07/01/00	0:00	-	-	12.31	ISCO
07/02/00	0:00	-	-	12.04	ISCO
07/03/00	0:00	-	-	11.72	ISCO
07/03/00	16:00	78	-	11.49	Grab
07/04/00	0:00	-	-	11.45	ISCO
07/05/00	0:00	-	-	10.93	ISCO
07/05/00	12:00	-	-	10.38	ISCO
07/06/00	12:00	-	-	10.71	ISCO
07/07/00	0:00	-	-	11.60	ISCO
07/08/00	0:00	-	-	11.20	ISCO
07/09/00	0:00	-	-	10.62	ISCO
07/10/00	0:00	-	-	10.23	ISCO
07/10/00	13:33	80	-	9.97	Grab
07/11/00	0:00	-	-	10.01	ISCO
07/12/00	0:00	-	-	9.62	ISCO
07/13/00	0:00	-	-	9.47	ISCO
07/14/00	0:00	-	-	9.91	ISCO
07/15/00	0:00	-	-	9.60	ISCO
07/16/00	0:00	-	-	8.91	ISCO
07/17/00	0:00	-	-	8.44	ISCO
07/17/00	15:06	79	-	7.98	Grab
07/18/00	0:00	-	-	8.39	ISCO
07/19/00	0:00	-	-	7.60	ISCO
07/20/00	0:00	-	-	7.25	ISCO
07/21/00	0:00	-	-	6.81	ISCO
07/22/00	0:00	-	-	6.07	ISCO
07/23/00	0:00	-	-	5.74	ISCO
07/24/00	0:00	-	-	5.22	ISCO
07/27/00	10:21	73	-	3.39	Grab
07/28/00	0:00	-	-	2.99	ISCO
07/29/00	0:00	-	-	2.28	ISCO
07/30/00	0:00	-	-	1.79	ISCO
07/31/00	0:00	-	-	0.81	ISCO
07/31/00	10:20	75	-	0.83	Grab
08/07/00	12:40	78	-	0.85	Grab



**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
08/08/00	0:00	-	-	0.80	ISCO
08/09/00	0:00	-	-	0.59	ISCO
08/10/00	0:00	-	-	0.43	ISCO
08/11/00	0:00	-	-	0.30	ISCO
08/12/00	0:00	-	-	0.19	ISCO
08/13/00	0:00	-	-	0.11	ISCO
08/14/00	0:00	-	-	<0.06	ISCO
08/14/00	10:18	-	-	0.06	ISCO
08/15/00	10:34	78	-	0.06	Grab
08/22/00	10:17	72	-	0.07	Grab
08/22/00	12:00	-	-	<0.06	ISCO
08/29/00	10:56	75	-	0.20	Grab
08/29/00	11:20	-	-	0.16	ISCO
09/05/00	10:22	68	-	<0.06	Grab
09/12/00	13:11	75	-	<0.06	Grab
09/19/00	9:44	64	-	<0.06	Grab
09/26/00	11:07	56	-	0.39	Grab
10/03/00	9:57	-	-	0.41	Grab
10/10/00	10:05	48	-	8.43	Grab
10/17/00	10:40	58	-	4.61	Grab
10/24/00	10:50	64	-	4.67	Grab
10/30/00	12:09	56	-	3.35	Grab
11/08/00	13:58	51	-	2.98	Grab
11/14/00	12:47	44	-	10.47	Grab
11/20/00	11:06	35	-	10.54	Grab
11/28/00	11:14	39	-	9.76	Grab
12/05/00	11:25	34	-	10.18	Grab
01/16/01	12:40	33	-	8.24	Grab
01/31/01	11:55	35	-	7.12	Grab
02/06/01	11:40	42	7.8	9.96	Grab
02/14/01	13:47	42	7.8	11.68	Grab
02/20/01	11:51	41	-	12.55	Grab
02/27/01	17:00	39	7.92	11.42	Grab
03/06/01	11:23	37	-	12.65	Grab
03/15/01	10:46	-	-	12.36	Grab
03/21/01	12:42	46	7.75	12.50	Grab
03/27/01	12:45	43	8.04	12.32	Grab
04/03/01	10:51	53	-	12.01	Grab

**Table E-4. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/10/01	10:43	65	-	10.82	Grab
04/17/01	11:00	47	8.07	11.36	Grab
04/25/01	10:40	56	7.93	10.34	Grab
05/01/01	10:50	68	-	9.84	Grab
05/08/01	10:20	66	-	8.98	Grab
05/16/01	13:56	78	-	8.75	Grab
05/22/01	13:42	65	8.18	8.91	Grab
05/30/01	11:28	67	-	8.33	Grab
06/13/01	9:27	76	-	11.67	Grab
06/20/01	9:08	75	8.23	9.29	Grab
06/27/01	13:45	79	-	7.53	Grab
07/03/01	9:58	68	-	4.47	Grab
07/10/01	11:01	80	8.16	1.98	Grab
07/17/01	10:02	76	-	0.57	Grab
07/25/01	12:22	81	7.84	0.13	Grab
08/01/01	10:00	81	-	0.06	Grab
10/17/01	10:52	50	-	4.20	Grab
10/24/01	11:50	65	7.94	3.40	Grab
11/01/01	12:01	54	-	7.03	Grab
11/06/01	13:02	53	8.39	5.59	Grab
11/13/01	12:35	49	-	5.64	Grab
11/19/01	12:32	54	7.99	4.98	Grab
11/27/01	10:49	47	-	4.94	Grab
12/04/01	11:21	52	8.05	7.88	Grab
12/11/01	11:53	40	-	7.54	Grab
12/19/01	13:18	47	-	11.45	Grab
12/26/01	11:53	34	8.93	10.28	Grab
01/08/02	12:11	33	-	10.06	Grab
01/15/02	13:02	38	8.49	9.45	Grab
01/22/02	11:19	37	-	9.40	Grab
01/29/02	10:57	47	8.15	8.84	Grab
02/04/02	12:22	38	-	13.47	Grab
02/13/02	11:17	40	8.07	12.14	Grab
02/19/02	12:26	43	-	10.21	Grab
02/22/02	10:51	40	-	13.22	Grab
02/25/02	11:04	46	7.62	13.09	Grab
03/05/02	10:49	39	-	13.59	Grab
03/12/02	11:22	45	7.90	13.49	Grab
03/19/02	12:14	45	-	12.75	Grab

**Table E-4. Concluded**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/27/02	10:50	40	7.86	12.35	Grab
03/28/02	16:07	45	-	11.17	Grab
03/29/02	11:01	44	-	13.32	Grab
03/29/02	19:04	45	-	13.49	Grab
03/30/02	9:50	44	-	14.28	Grab
04/01/02	10:36	44	-	14.26	Grab
04/08/02	13:37	50	-	12.66	Grab
04/09/02	10:15	50	-	13.42	Grab
04/16/02	9:50	63	8.00	13.18	Grab
04/21/02	10:31	50	-	12.50	Grab
04/23/02	11:26	50	-	14.23	Grab
04/27/02	13:04	51	-	12.89	Grab
04/27/02	16:48	50	-	11.22	Grab
04/28/02	11:19	52	-	14.70	Grab
04/29/02	7:18	49	-	16.17	Grab
04/30/02	10:16	54	7.63	15.99	Grab
05/01/02	15:55	55	-	15.60	Grab
05/07/02	9:30	59	-	14.01	Grab
05/09/02	8:18	59	-	12.93	Grab
05/09/02	15:24	63	-	13.63	Grab
05/10/02	10:37	56	-	15.71	Grab
05/12/02	14:00	62	-	8.53	Grab
05/12/02	18:53	63	-	7.43	Grab
05/13/02	10:32	53	-	8.81	Grab
05/14/02	10:58	56	7.39	12.71	Grab
05/16/02	15:10	53	-	13.51	Grab
05/20/02	12:10	55	-	15.86	Grab
05/28/02	10:49	64	8.01	15.31	Grab
06/04/02	11:28	74	-	14.85	Grab
06/11/02	11:37	69	7.65	12.89	Grab
06/18/02	9:45	65	-	15.44	Grab
06/25/02	11:02	73	7.98	14.08	Grab
07/02/02	10:05	77	-	12.41	Grab
07/09/02	10:05	82	-	9.13	Grab
07/16/02	11:56	80	8.40	5.71	Grab
07/23/02	10:16	78	-	0.56	Grab

**Notes:**

\*Grab: Weighted Bottle (dip sample in extreme low flow conditions)

ISCO: Point sample, peristaltic pump

**Table E-5. Nitrate-N Sample Concentrations (WY 1998-2003)  
for Sangamon River at Shively Bridge near Mahomet (Station 105),  
May 1993 – September 2008**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/19/93	12:40	-	-	10.10	Grab
05/07/93	14:59	-	-	10.17	Grab
05/14/93	15:42	-	-	10.53	Grab
06/03/93	16:35	-	-	11.50	Grab
06/14/93	15:53	-	-	11.90	Grab
06/22/93	10:29	-	-	11.39	Grab
06/29/93	10:57	-	-	7.93	Grab
07/06/93	13:04	-	-	8.56	Grab
07/22/93	16:01	-	-	8.67	Grab
07/29/93	12:24	-	-	7.52	Grab
08/09/93	14:19	-	-	6.02	Grab
08/12/93	14:50	-	-	3.38	Grab
08/13/93	11:35	-	-	4.99	Grab
08/16/93	16:09	-	-	6.52	Grab
08/24/93	11:47	-	-	6.12	Grab
08/31/93	11:46	-	-	4.83	Grab
09/08/93	13:27	-	-	3.59	Grab
09/09/93	14:05	-	-	4.87	Grab
09/10/93	9:37	-	-	6.02	Grab
09/14/93	12:49	-	-	5.79	Grab
09/24/93	11:10	-	-	6.51	Grab
09/29/93	15:37	-	-	6.64	Grab
10/07/93	11:05	-	-	6.73	Grab
10/12/93	11:39	-	-	6.25	Grab
10/18/93	14:11	-	-	2.37	Grab
10/19/93	14:25	-	-	3.03	Grab
10/20/93	14:11	-	-	4.56	Grab
10/21/93	13:03	-	-	4.27	Grab
10/27/93	14:09	-	-	6.43	Grab
11/02/93	13:09	-	-	5.81	Grab
11/09/93	11:21	-	-	5.79	Grab
11/15/93	12:51	-	-	5.25	Grab
11/23/93	11:09	-	-	6.84	Grab
12/01/93	11:17	-	-	7.31	Grab
12/09/93	11:02	-	-	7.28	Grab
12/15/93	15:37	-	-	6.93	Grab

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
12/28/93	13:21	-	-	7.18	Grab
01/12/94	10:40	-	-	6.35	Grab
02/03/94	11:04	-	-	5.04	Grab
02/15/94	11:29	-	-	4.44	Grab
02/22/94	11:12	-	-	5.94	Grab
02/28/94	11:33	-	-	5.55	Grab
03/07/94	13:14	-	-	6.36	Grab
03/17/94	14:09	-	-	6.94	Grab
03/23/94	11:21	-	-	6.23	Grab
03/28/94	14:00	-	-	5.55	Grab
04/04/94	10:54	-	-	5.33	Grab
04/11/94	11:26	-	-	7.19	Grab
04/12/94	14:24	-	-	3.43	Grab
04/13/94	15:04	-	-	2.93	Grab
04/14/94	12:13	-	-	4.34	Grab
04/18/94	14:46	-	-	7.50	Grab
04/25/94	14:58	-	-	7.19	Grab
04/29/94	10:35	-	-	7.45	Grab
05/03/94	11:26	-	-	9.32	Grab
05/09/94	13:53	-	-	10.17	Grab
05/16/94	14:07	-	-	8.33	Grab
05/24/94	11:30	-	-	7.60	Grab
06/01/94	10:50	-	-	6.82	Grab
06/06/94	11:20	-	-	6.37	Grab
06/14/94	8:00	-	-	6.03	Grab
06/20/94	10:28	-	-	4.12	Grab
06/28/94	8:25	-	-	3.44	Grab
07/05/94	11:50	-	-	2.01	Grab
07/12/94	10:28	-	-	4.99	Grab
07/26/94	10:41	-	-	<0.02	Grab
08/01/94	8:38	-	-	<0.02	Grab
09/07/94	7:30	-	-	1.07	Grab
09/23/94	8:32	-	-	0.84	Grab
10/12/94	10:38	-	-	0.39	Grab
10/18/94	11:00	-	-	0.57	Grab
10/25/94	11:00	-	-	0.68	Grab
11/01/94	15:00	-	-	0.74	Grab

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
11/07/94	11:11	-	-	3.22	Grab
11/14/94	15:08	-	-	4.26	Grab
11/21/94	10:22	-	-	3.53	Grab
11/28/94	15:31	-	-	4.41	Grab
12/05/94	14:57	-	-	5.53	Grab
12/08/94	0:00	-	-	7.54	ISCO
12/08/94	11:39	-	-	6.25	Grab
12/08/94	11:40	-	-	6.47	ISCO
12/08/94	16:00	-	-	7.39	ISCO
12/08/94	20:00	-	-	7.46	ISCO
12/09/94	0:00	-	-	8.64	ISCO
12/09/94	4:00	-	-	7.93	ISCO
12/09/94	8:00	-	-	8.36	ISCO
12/09/94	16:00	-	-	9.00	ISCO
12/10/94	8:00	-	-	8.35	ISCO
12/10/94	16:00	-	-	8.31	ISCO
12/11/94	16:00	-	-	8.26	ISCO
12/12/94	12:00	-	-	8.33	ISCO
12/12/94	13:51	-	-	8.25	Grab
12/16/94	15:14	-	-	7.80	Grab
12/16/94	15:30	-	-	7.36	ISCO
12/17/94	8:00	-	-	6.94	ISCO
12/17/94	16:00	-	-	7.18	ISCO
12/18/94	0:01	-	-	7.30	ISCO
12/18/94	4:00	-	-	7.30	ISCO
12/18/94	8:00	-	-	7.41	ISCO
12/19/94	0:01	-	-	7.72	ISCO
12/19/94	12:00	-	-	7.85	ISCO
12/19/94	14:46	-	-	7.66	Grab
01/18/95	10:00	-	-	8.98	Grab
01/23/95	11:22	-	-	8.68	Grab
02/01/95	14:33	-	-	8.12	Grab
02/24/95	11:44	-	-	5.36	Grab
02/26/95	11:56	-	-	5.86	ISCO
02/26/95	15:56	-	-	5.60	ISCO
02/26/95	19:56	-	-	5.50	ISCO
02/26/95	23:56	-	-	5.85	ISCO

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
02/27/95	3:56	-	-	5.85	ISCO
02/27/95	7:56	-	-	5.79	ISCO
02/27/95	11:56	-	-	5.44	ISCO
02/27/95	15:56	-	-	5.41	ISCO
02/27/95	19:56	-	-	5.60	ISCO
02/27/95	23:56	-	-	5.79	ISCO
02/28/95	3:56	-	-	5.71	ISCO
02/28/95	7:56	-	-	5.78	ISCO
02/28/95	9:33	-	-	5.17	Grab
02/28/95	11:56	-	-	5.79	ISCO
02/28/95	15:56	-	-	5.78	ISCO
02/28/95	19:56	-	-	6.12	ISCO
02/28/95	23:56	-	-	6.10	ISCO
03/01/95	3:56	-	-	8.87	ISCO
03/07/95	14:31	-	-	4.64	Grab
03/07/95	14:44	-	-	4.51	ISCO
03/07/95	16:00	-	-	4.95	ISCO
03/07/95	20:00	-	-	6.18	ISCO
03/08/95	0:01	-	-	6.76	ISCO
03/08/95	12:00	-	-	8.08	ISCO
03/08/95	16:00	-	-	8.59	ISCO
03/08/95	20:00	-	-	9.02	ISCO
03/09/95	11:04	-	-	10.16	Grab
03/09/95	12:00	-	-	9.41	ISCO
03/09/95	16:00	-	-	9.82	ISCO
03/09/95	20:00	-	-	10.00	ISCO
03/10/95	0:01	-	-	10.14	ISCO
03/10/95	8:00	-	-	10.16	ISCO
03/10/95	12:00	-	-	10.33	ISCO
03/14/95	9:18	-	-	9.60	Grab
03/22/95	10:44	-	-	8.26	Grab
03/28/95	15:17	-	-	9.07	Grab
04/04/95	10:30	-	-	8.18	Grab
04/07/95	15:42	-	-	7.86	Grab
04/08/95	0:00	-	-	7.38	ISCO
04/08/95	4:00	-	-	7.72	ISCO
04/08/95	8:00	-	-	7.57	ISCO

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/08/95	12:00	-	-	7.43	ISCO
04/08/95	16:00	-	-	7.52	ISCO
04/08/95	20:00	-	-	7.60	ISCO
04/09/95	0:00	-	-	7.41	ISCO
04/09/95	4:00	-	-	7.37	ISCO
04/09/95	8:00	-	-	7.33	ISCO
04/09/95	12:00	-	-	7.31	ISCO
04/09/95	16:00	-	-	7.26	ISCO
04/09/95	20:00	-	-	7.31	ISCO
04/10/95	0:00	-	-	7.35	ISCO
04/10/95	4:00	-	-	7.42	ISCO
04/10/95	8:00	-	-	7.34	ISCO
04/10/95	12:00	-	-	7.70	ISCO
04/10/95	16:00	-	-	8.08	ISCO
04/10/95	20:00	-	-	7.29	ISCO
04/11/95	4:00	-	-	7.93	ISCO
04/11/95	8:00	-	-	9.32	ISCO
04/11/95	12:00	-	-	10.06	ISCO
04/11/95	16:00	-	-	10.33	ISCO
04/11/95	16:30	-	-	10.29	Grab
04/11/95	20:00	-	-	9.85	ISCO
04/12/95	0:01	-	-	10.10	ISCO
04/12/95	4:00	-	-	10.27	ISCO
04/12/95	8:00	-	-	9.21	ISCO
04/12/95	12:00	-	-	9.31	ISCO
04/12/95	16:00	-	-	9.64	ISCO
04/12/95	20:00	-	-	10.18	ISCO
04/13/95	0:01	-	-	10.31	ISCO
04/13/95	4:00	-	-	10.34	ISCO
04/13/95	8:00	-	-	10.57	ISCO
04/13/95	12:00	-	-	10.79	ISCO
04/13/95	16:00	-	-	10.80	ISCO
04/13/95	20:00	-	-	11.07	ISCO
04/14/95	0:01	-	-	11.22	ISCO
04/14/95	4:00	-	-	11.36	ISCO
04/14/95	8:00	-	-	11.31	ISCO
04/25/95	11:00	-	-	10.56	Grab



**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/02/95	14:26	-	-	9.51	Grab
05/10/95	11:42	-	-	11.01	Grab
05/17/95	12:05	-	-	7.33	Grab
05/17/95	14:25	-	-	7.71	Grab
05/22/95	15:25	-	-	11.45	Grab
05/30/95	15:30	-	-	11.11	Grab
06/05/95	10:34	-	-	11.08	Grab
06/12/95	14:36	-	-	11.10	Grab
06/21/95	11:11	-	-	9.25	Grab
06/27/95	11:31	-	-	10.09	Grab
07/10/95	10:42	-	-	7.84	Grab
07/18/95	14:09	-	-	4.62	Grab
07/25/95	10:10	-	-	2.89	Grab
08/02/95	13:48	-	-	1.52	Grab
08/04/95	0:00	-	-	0.68	ISCO
08/04/95	10:29	-	-	1.01	Grab
08/04/95	12:17	-	-	<0.02	ISCO
08/04/95	16:00	-	-	0.74	ISCO
08/04/95	20:00	-	-	0.75	ISCO
08/05/95	0:00	-	-	1.51	ISCO
08/05/95	4:00	-	-	0.71	ISCO
08/05/95	8:00	-	-	0.76	ISCO
08/05/95	12:00	-	-	1.01	ISCO
08/05/95	16:00	-	-	0.80	ISCO
08/05/95	20:00	-	-	0.94	ISCO
08/06/95	0:00	-	-	2.62	ISCO
08/06/95	8:00	-	-	2.31	ISCO
08/06/95	12:00	-	-	2.52	ISCO
08/06/95	16:00	-	-	2.51	ISCO
08/06/95	20:00	-	-	2.74	ISCO
08/07/95	0:00	-	-	2.48	ISCO
08/07/95	4:00	-	-	2.54	ISCO
08/07/95	8:00	-	-	2.44	ISCO
08/07/95	12:00	-	-	2.75	ISCO
08/07/95	16:00	-	-	3.01	ISCO
08/07/95	20:00	-	-	2.83	ISCO
08/08/95	0:00	-	-	3.90	ISCO

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
08/08/95	4:00	-	-	2.75	ISCO
08/08/95	8:00	-	-	3.57	ISCO
08/08/95	12:00	-	-	4.39	ISCO
08/08/95	20:00	-	-	3.67	ISCO
08/09/95	4:00	-	-	4.16	ISCO
08/09/95	12:00	-	-	3.42	ISCO
08/09/95	20:00	-	-	3.91	ISCO
08/10/95	0:00	-	-	4.90	ISCO
08/10/95	8:00	-	-	4.17	ISCO
08/10/95	20:00	-	-	4.18	ISCO
08/11/95	0:00	-	-	5.47	ISCO
08/11/95	8:00	-	-	4.95	ISCO
08/11/95	12:00	-	-	4.77	ISCO
08/11/95	18:00	-	-	5.19	ISCO
08/12/95	6:00	-	-	5.72	ISCO
08/12/95	12:00	-	-	5.26	ISCO
08/16/95	10:44	-	-	4.19	Grab
08/22/95	14:05	-	-	3.83	Grab
08/31/95	13:02	-	-	1.62	Grab
08/31/95	13:31	-	-	<0.02	Grab
09/06/95	11:40	-	-	0.31	Grab
09/12/95	10:29	-	-	0.48	Grab
09/19/95	10:19	-	-	0.39	Grab
09/26/95	10:36	-	-	1.03	Grab
10/05/95	14:36	-	-	0.94	Grab
10/11/95	11:01	-	-	0.75	Grab
10/17/95	10:42	-	-	0.22	Grab
10/24/95	10:33	-	-	0.38	Grab
10/27/95	10:22	-	-	0.42	Grab
10/31/95	10:05	-	-	0.25	Grab
11/01/95	6:00	-	-	0.51	ISCO
11/03/95	6:00	-	-	1.83	ISCO
11/06/95	6:00	-	-	7.86	ISCO
11/06/95	11:01	-	-	7.68	Grab
11/06/95	12:00	-	-	7.89	ISCO
11/09/95	12:00	-	-	6.94	ISCO
11/11/95	12:00	-	-	5.25	ISCO

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
11/13/95	6:00	-	-	7.76	ISCO
11/13/95	11:10	-	-	7.96	Grab
11/14/95	13:09	-	-	8.13	Grab
11/16/95	18:00	-	-	8.04	ISCO
11/19/95	10:00	-	-	7.60	ISCO
11/20/95	11:26	-	-	7.18	Grab
11/22/95	18:00	-	-	7.69	ISCO
11/26/95	2:00	-	-	6.89	ISCO
11/27/95	12:23	-	-	6.56	Grab
12/02/95	2:00	-	-	5.79	ISCO
12/05/95	10:17	-	-	5.39	Grab
12/07/95	18:00	-	-	4.90	ISCO
12/18/95	11:57	-	-	4.51	Grab
01/18/96	11:45	-	-	4.67	Grab
01/19/96	4:40	-	-	12.94	ISCO
01/19/96	12:30	-	-	8.04	Grab
01/22/96	11:16	-	-	9.98	Grab
01/23/96	14:42	-	-	9.18	Grab
01/26/96	11:00	-	-	8.40	ISCO
02/09/96	9:55	-	-	7.47	Grab
02/11/96	12:00	-	-	5.80	ISCO
02/14/96	9:46	-	-	5.18	Grab
02/20/96	11:49	-	-	5.69	Grab
02/22/96	16:00	-	-	5.60	ISCO
02/24/96	22:00	-	-	4.80	ISCO
02/26/96	22:00	-	-	5.01	ISCO
02/28/96	10:25	-	-	5.37	Grab
03/05/96	10:19	-	-	6.61	Grab
03/08/96	18:00	-	-	6.78	ISCO
03/11/96	0:00	-	-	7.38	ISCO
03/11/96	13:19	-	-	7.55	Grab
03/14/96	6:00	-	-	5.96	ISCO
03/16/96	6:00	-	-	5.35	ISCO
03/18/96	10:28	-	-	5.02	Grab
03/22/96	15:54	-	-	6.30	ISCO
03/24/96	0:00	-	-	6.25	ISCO
03/28/96	9:58	-	-	5.81	Grab

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/29/96	0:00	-	-	6.08	ISCO
03/31/96	0:00	-	-	4.79	ISCO
03/31/96	12:00	-	-	0.31	ISCO
04/01/96	0:00	-	-	8.06	ISCO
04/01/96	6:00	-	-	5.13	ISCO
04/01/96	12:00	-	-	5.77	ISCO
04/01/96	18:00	-	-	7.54	ISCO
04/02/96	10:16	-	-	8.12	Grab
04/04/96	12:00	-	-	9.28	ISCO
04/06/96	0:00	-	-	8.23	ISCO
04/09/96	10:06	-	-	7.67	Grab
04/12/96	13:00	-	-	6.88	ISCO
04/16/96	10:23	-	-	5.99	Grab
04/22/96	5:00	-	-	4.76	ISCO
04/23/96	10:26	-	-	7.27	Grab
04/24/96	5:00	-	-	10.13	ISCO
04/25/96	5:00	-	-	10.16	ISCO
04/26/96	5:00	-	-	9.68	ISCO
04/29/96	5:00	-	-	7.37	ISCO
04/30/96	12:14	-	-	9.71	Grab
05/01/96	5:00	-	-	9.77	ISCO
05/04/96	21:00	-	-	9.10	ISCO
05/05/96	5:00	-	-	8.94	ISCO
05/05/96	13:00	-	-	8.84	ISCO
05/05/96	21:00	-	-	8.89	ISCO
05/06/96	5:00	-	-	9.15	ISCO
05/06/96	13:00	-	-	10.37	ISCO
05/06/96	21:00	-	-	11.21	ISCO
05/07/96	5:00	-	-	10.67	ISCO
05/07/96	11:13	-	-	11.27	Grab
05/07/96	13:00	-	-	12.28	ISCO
05/08/96	5:00	-	-	11.89	ISCO
05/08/96	21:00	-	-	9.74	ISCO
05/09/96	13:00	-	-	12.52	ISCO
05/11/96	5:00	-	-	6.46	ISCO
05/12/96	5:00	-	-	5.60	ISCO
05/14/96	5:00	-	-	12.28	ISCO

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/14/96	15:08	-	-	12.42	Grab
05/18/96	5:00	-	-	13.48	ISCO
05/21/96	11:02	-	-	12.63	Grab
05/22/96	5:00	-	-	12.56	ISCO
05/24/96	13:00	-	-	12.27	ISCO
05/27/96	13:00	-	-	8.49	ISCO
05/28/96	5:00	-	-	10.35	ISCO
05/28/96	11:25	-	-	10.46	Grab
05/28/96	21:00	-	-	7.67	ISCO
05/29/96	11:14	-	-	9.54	Grab
05/30/96	5:00	-	-	12.64	ISCO
06/01/96	21:00	-	-	13.92	ISCO
06/02/96	13:00	-	-	9.14	ISCO
06/03/96	5:00	-	-	10.01	ISCO
06/03/96	21:00	-	-	8.61	ISCO
06/04/96	13:00	-	-	12.62	ISCO
06/05/96	5:00	-	-	13.69	ISCO
06/05/96	14:55	-	-	14.14	Grab
06/07/96	5:00	-	-	14.42	ISCO
06/10/96	5:00	-	-	13.85	ISCO
06/12/96	11:55	-	-	13.60	Grab
06/15/96	5:00	-	-	14.06	ISCO
06/19/96	5:00	-	-	6.83	ISCO
06/19/96	12:42	-	-	8.95	Grab
06/22/96	5:00	-	-	13.17	ISCO
06/24/96	21:00	-	-	12.49	ISCO
06/26/96	10:22	-	-	11.71	Grab
06/28/96	5:00	-	-	12.53	ISCO
07/01/96	5:00	-	-	11.35	ISCO
07/02/96	11:48	-	-	11.46	Grab
07/05/96	21:00	-	-	10.60	ISCO
07/10/96	15:49	-	-	8.66	Grab
07/11/96	9:00	-	-	8.35	ISCO
07/15/96	9:00	-	-	10.49	ISCO
07/16/96	10:05	-	-	6.53	Grab
07/21/96	9:00	-	-	4.49	ISCO
07/22/96	9:00	-	-	4.37	ISCO

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
07/22/96	12:01	-	-	4.81	Grab
07/22/96	21:00	-	-	6.77	ISCO
07/23/96	9:00	-	-	9.83	ISCO
07/24/96	9:00	-	-	12.47	ISCO
07/25/96	21:00	-	-	10.76	ISCO
07/29/96	13:32	-	-	7.01	Grab
08/04/96	9:00	-	-	8.60	ISCO
08/05/96	11:18	-	-	7.77	Grab
08/08/96	1:00	-	-	5.54	ISCO
08/12/96	11:52	-	-	2.52	Grab
08/19/96	1:00	-	-	1.72	ISCO
08/19/96	13:00	-	-	1.98	ISCO
08/20/96	11:14	-	-	1.94	Grab
08/26/96	13:19	-	-	1.43	Grab
09/03/96	15:57	-	-	0.51	Grab
09/09/96	14:45	-	-	0.77	Grab
09/17/96	13:58	-	-	1.14	Grab
09/24/96	11:46	-	-	0.97	Grab
10/01/96	10:15	-	-	0.53	Grab
10/09/96	14:41	-	-	0.95	Grab
10/16/96	11:29	-	-	0.51	Grab
10/21/96	15:31	-	-	0.33	Grab
10/30/96	14:03	-	-	0.08	Grab
11/06/96	12:02	-	-	0.19	Grab
11/12/96	13:40	-	-	0.57	Grab
11/18/96	15:02	-	-	0.96	Grab
11/25/96	11:45	-	-	0.88	Grab
12/02/96	12:25	-	-	2.48	Grab
12/10/96	14:12	-	-	5.61	Grab
12/18/96	14:52	-	-	8.01	Grab
12/30/96	14:10	-	-	7.75	Grab
01/07/97	12:56	-	-	8.11	Grab
01/22/97	11:55	-	-	3.48	Grab
02/04/97	11:50	-	-	5.64	Grab
02/05/97	12:44	-	-	4.51	Grab
02/13/97	12:56	-	-	7.77	Grab
02/18/97	11:34	-	-	7.83	Grab

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
02/21/97	13:03	-	-	4.95	Grab
02/27/97	14:26	-	-	4.65	Grab
02/28/97	14:47	-	-	5.11	Grab
03/03/97	13:42	-	-	10.27	Grab
03/04/97	12:36	-	-	10.85	Grab
03/10/97	15:22	-	-	10.32	Grab
03/11/97	12:22	-	-	11.51	Grab
03/14/97	10:07	-	-	9.44	Grab
03/20/97	10:36	-	-	11.30	Grab
03/25/97	13:54	-	-	10.48	Grab
04/01/97	10:44	-	-	9.74	Grab
04/08/97	11:23	-	-	9.43	Grab
04/15/97	13:37	-	-	9.83	Grab
04/22/97	15:46	-	-	9.24	Grab
05/01/97	17:05	-	-	7.84	Grab
05/03/97	14:30	-	-	6.36	Grab
05/03/97	14:42	-	-	6.12	ISCO
05/03/97	18:00	-	-	6.69	ISCO
05/04/97	0:01	-	-	8.19	ISCO
05/04/97	6:00	-	-	11.19	ISCO
05/04/97	12:00	-	-	12.71	ISCO
05/04/97	18:00	-	-	12.56	ISCO
05/05/97	0:01	-	-	13.16	ISCO
05/05/97	12:00	-	-	13.25	ISCO
05/06/97	10:49	-	-	12.00	Grab
05/06/97	18:00	-	-	12.14	ISCO
05/08/97	12:00	-	-	10.66	ISCO
05/10/97	6:00	-	-	11.79	ISCO
05/12/97	13:12	-	-	9.29	Grab
05/12/97	13:22	-	-	9.28	ISCO
05/14/97	6:00	-	-	9.52	ISCO
05/16/97	6:00	-	-	9.09	ISCO
05/18/97	6:00	-	-	8.39	ISCO
05/19/97	12:41	-	-	7.79	Grab
05/19/97	12:52	-	-	7.72	ISCO
05/20/97	18:00	-	-	7.41	ISCO
05/21/97	0:00	-	-	7.18	ISCO

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/21/97	12:00	-	-	7.29	ISCO
05/23/97	6:00	-	-	6.89	ISCO
05/24/97	0:00	-	-	6.70	ISCO
05/24/97	12:00	-	-	6.57	ISCO
05/24/97	18:00	-	-	6.85	ISCO
05/25/97	0:00	-	-	8.26	ISCO
05/25/97	6:00	-	-	6.67	ISCO
05/25/97	12:00	-	-	6.32	ISCO
05/25/97	18:00	-	-	6.45	ISCO
05/26/97	6:00	-	-	13.29	ISCO
05/27/97	13:31	-	-	15.05	Grab
05/27/97	13:39	-	-	15.47	ISCO
05/28/97	18:00	-	-	13.56	ISCO
05/30/97	0:00	-	-	14.75	ISCO
05/31/97	6:00	-	-	14.41	ISCO
06/01/97	12:00	-	-	14.26	ISCO
06/02/97	12:00	-	-	13.72	ISCO
06/02/97	14:04	-	-	13.60	Grab
06/02/97	14:14	-	-	13.88	ISCO
06/03/97	6:00	-	-	14.71	ISCO
06/04/97	0:01	-	-	15.37	ISCO
06/04/97	18:00	-	-	15.79	ISCO
06/05/97	12:00	-	-	15.45	ISCO
06/06/97	12:00	-	-	14.89	ISCO
06/07/97	0:01	-	-	14.63	ISCO
06/07/97	6:00	-	-	14.67	ISCO
06/07/97	12:00	-	-	7.34	ISCO
06/07/97	18:00	-	-	8.70	ISCO
06/08/97	0:01	-	-	12.11	ISCO
06/08/97	6:00	-	-	14.03	ISCO
06/08/97	12:00	-	-	13.90	ISCO
06/08/97	18:00	-	-	12.79	ISCO
06/09/97	0:01	-	-	11.35	ISCO
06/09/97	6:00	-	-	11.82	ISCO
06/09/97	11:01	-	-	12.85	Grab
06/09/97	11:07	-	-	13.11	ISCO
06/10/97	12:00	-	-	14.73	ISCO



**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/11/97	18:00	-	-	14.84	ISCO
06/12/97	18:00	-	-	14.56	ISCO
06/12/97	23:00	-	-	13.69	ISCO
06/13/97	5:00	-	-	12.41	ISCO
06/13/97	11:00	-	-	12.60	ISCO
06/13/97	13:34	-	-	11.88	Grab
06/13/97	13:45	-	-	11.76	ISCO
06/14/97	10:00	-	-	13.24	ISCO
06/15/97	6:00	-	-	13.67	ISCO
06/16/97	2:00	-	-	14.84	ISCO
06/16/97	22:00	-	-	14.51	ISCO
06/17/97	10:45	-	-	14.95	Grab
06/17/97	10:53	-	-	14.46	ISCO
06/19/97	18:00	-	-	13.65	ISCO
06/24/97	0:01	-	-	12.80	ISCO
06/24/97	11:14	-	-	12.76	Grab
06/24/97	11:15	-	-	11.90	ISCO
06/25/97	12:00	-	-	12.25	ISCO
06/25/97	18:00	-	-	11.71	ISCO
06/26/97	0:01	-	-	10.19	ISCO
06/26/97	6:00	-	-	7.87	ISCO
06/26/97	18:00	-	-	8.95	ISCO
06/27/97	6:00	-	-	11.36	ISCO
06/28/97	0:01	-	-	12.18	ISCO
06/29/97	6:00	-	-	12.60	ISCO
06/30/97	6:00	-	-	12.11	ISCO
07/01/97	14:13	-	-	9.81	Grab
07/08/97	11:28	-	-	10.46	Grab
07/08/97	11:45	-	-	10.24	ISCO
07/09/97	12:00	-	-	9.55	ISCO
07/10/97	0:01	-	-	9.57	ISCO
07/10/97	6:00	-	-	2.71	ISCO
07/10/97	12:00	-	-	4.67	ISCO
07/10/97	18:00	-	-	4.20	ISCO
07/11/97	0:01	-	-	4.77	ISCO
07/11/97	12:00	-	-	6.41	ISCO
07/12/97	6:00	-	-	8.46	ISCO

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
07/13/97	6:00	-	-	8.74	ISCO
07/14/97	18:00	-	-	7.60	ISCO
07/15/97	11:36	-	-	7.49	Grab
07/22/97	15:16	-	-	3.42	Grab
07/28/97	12:30	-	-	1.63	Grab
08/05/97	11:28	-	-	0.72	Grab
08/12/97	11:10	-	-	0.51	Grab
08/17/97	10:19	-	-	0.55	ISCO
08/17/97	12:00	-	-	0.49	ISCO
08/17/97	16:00	-	-	0.62	ISCO
08/17/97	20:00	-	-	0.97	ISCO
08/18/97	0:01	-	-	1.35	ISCO
08/18/97	4:00	-	-	1.83	ISCO
08/18/97	8:00	-	-	1.75	ISCO
08/18/97	12:00	-	-	1.69	ISCO
08/18/97	16:00	-	-	1.79	ISCO
08/18/97	20:00	-	-	2.06	ISCO
08/19/97	0:01	-	-	2.42	ISCO
08/19/97	4:00	-	-	2.98	ISCO
08/19/97	8:00	-	-	3.19	ISCO
08/19/97	11:26	-	-	3.66	Grab
08/19/97	12:00	-	-	3.64	ISCO
08/19/97	18:00	-	-	4.07	ISCO
08/20/97	0:01	-	-	4.53	ISCO
08/20/97	6:00	-	-	4.92	ISCO
08/20/97	12:00	-	-	5.04	ISCO
08/20/97	18:00	-	-	5.13	ISCO
08/21/97	0:01	-	-	5.16	ISCO
08/21/97	6:00	-	-	5.17	ISCO
08/21/97	12:00	-	-	5.15	ISCO
08/21/97	18:00	-	-	5.05	ISCO
08/26/97	12:05	-	-	3.02	Grab
09/03/97	11:36	-	-	1.07	Grab
09/10/97	11:24	-	-	0.31	Grab
09/12/97	15:19	-	-	1.83	Grab
09/24/97	11:59	-	-	1.13	Grab
10/01/97	11:28	-	-	0.54	Grab

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
10/07/97	11:28	-	-	0.42	Grab
10/16/97	11:23	-	-	0.22	Grab
10/21/97	11:01	-	-	0.39	Grab
10/27/97	13:16	-	-	0.38	Grab
11/04/97	10:53	-	-	0.38	Grab
11/12/97	12:00	-	-	0.37	Grab
11/18/97	11:37	-	-	0.44	Grab
11/25/97	13:00	-	-	0.32	Grab
12/04/97	12:24	-	-	3.90	Grab
12/09/97	13:52	-	-	4.66	Grab
12/16/97	11:32	-	-	5.13	Grab
12/22/97	11:28	-	-	4.23	Grab
12/29/97	11:20	-	-	9.33	Grab
01/06/98	11:16	-	-	6.47	Grab
01/14/98	12:06	-	-	11.05	Grab
01/27/98	12:22	-	-	8.55	Grab
02/03/98	12:31	-	-	9.80	Grab
02/10/98	11:27	-	-	9.02	Grab
02/17/98	11:24	-	-	9.56	Grab
02/19/98	11:15	-	-	10.73	Grab
02/25/98	16:51	-	-	10.55	Grab
03/03/98	11:37	-	-	9.69	Grab
03/11/98	12:19	-	-	11.86	Grab
03/17/98	12:27	-	-	10.79	Grab
03/19/98	11:10	-	-	7.26	Grab
03/23/98	12:58	-	-	7.04	Grab
04/02/98	12:33	-	-	9.95	Grab
04/08/98	11:41	-	-	11.86	Grab
04/14/98	11:58	-	-	9.97	Grab
04/21/98	11:08	-	-	11.39	Grab
04/29/98	12:37	-	-	9.11	Grab
05/05/98	15:55	-	-	10.80	Grab
05/12/98	12:04	-	-	11.10	Grab
05/19/98	11:44	-	-	12.15	Grab
05/27/98	11:26	-	-	12.31	Grab
06/03/98	11:26	-	-	11.71	Grab
06/09/98	12:05	-	-	8.32	Grab

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/16/98	12:02	-	-	10.15	Grab
06/22/98	13:25	-	-	11.53	Grab
07/08/98	11:27	-	-	9.77	Grab
07/15/98	11:49	-	-	9.52	Grab
07/22/98	11:48	-	-	6.49	Grab
07/28/98	14:30	-	-	5.58	Grab
08/04/98	11:39	-	-	1.41	Grab
08/12/98	15:01	-	-	3.87	Grab
08/25/98	15:38	-	-	0.09	Grab
09/02/98	15:09	-	-	0.32	Grab
09/09/98	11:33	-	-	0.54	Grab
09/16/98	10:59	-	-	0.72	Grab
09/21/98	13:42	-	-	0.88	Grab
09/21/98	14:00	-	-	0.85	ISCO
09/22/98	12:00	-	-	0.86	ISCO
09/23/98	12:00	-	-	0.94	ISCO
09/24/98	12:00	-	-	0.96	ISCO
09/25/98	12:00	-	-	0.73	ISCO
09/26/98	12:00	-	-	0.63	ISCO
09/27/98	12:00	-	-	0.89	ISCO
09/28/98	12:00	-	-	0.90	ISCO
09/29/98	12:00	-	-	0.92	ISCO
09/30/98	11:21	-	-	0.86	Grab
09/30/98	12:00	-	-	0.81	ISCO
10/01/98	12:00	-	-	0.92	ISCO
10/02/98	12:00	-	-	0.83	ISCO
10/03/98	12:00	-	-	0.75	ISCO
10/04/98	12:00	-	-	0.87	ISCO
10/05/98	12:00	-	-	0.91	ISCO
10/06/98	12:00	-	-	1.12	ISCO
10/06/98	12:19	-	-	1.30	Grab
10/07/98	12:00	-	-	1.30	ISCO
10/08/98	12:00	-	-	1.12	ISCO
10/09/98	12:00	-	-	1.13	ISCO
10/10/98	12:00	-	-	0.85	ISCO
10/11/98	12:00	-	-	0.76	ISCO
10/12/98	12:00	-	-	0.83	ISCO

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
10/13/98	12:00	-	-	0.91	ISCO
10/14/98	11:38	-	-	1.04	ISCO
10/14/98	11:50	-	-		Grab
10/15/98	12:00	-	-	1.07	ISCO
10/16/98	12:00	-	-	1.12	ISCO
10/17/98	12:00	-	-	1.29	ISCO
10/18/98	12:00	-	-	1.22	ISCO
10/19/98	12:00	-	-	1.16	ISCO
10/20/98	10:51	-	-	1.08	Grab
10/20/98	12:00	-	-	1.15	ISCO
10/21/98	12:00	-	-	1.00	ISCO
10/22/98	12:00	-	-	1.02	ISCO
10/23/98	12:00	-	-	1.21	ISCO
10/24/98	12:00	-	-	1.22	ISCO
10/25/98	12:00	-	-	1.07	ISCO
10/26/98	12:00	-	-	1.00	ISCO
10/27/98	12:00	-	-	0.98	ISCO
10/29/98	14:07	-	-	0.96	Grab
10/30/98	12:00	-	-	1.09	ISCO
10/31/98	12:00	-	-	1.01	ISCO
11/01/98	12:00	-	-	0.79	ISCO
11/02/98	12:00	-	-	0.54	ISCO
11/03/98	12:00	-	-	0.47	ISCO
11/04/98	12:00	-	-	0.42	ISCO
11/04/98	12:22	-	-	0.38	Grab
11/05/98	12:00	-	-	0.64	ISCO
11/06/98	12:00	-	-	0.65	ISCO
11/07/98	12:00	-	-	0.55	ISCO
11/08/98	12:00	-	-	0.63	ISCO
11/09/98	12:00	-	-	0.66	ISCO
11/10/98	12:00	-	-	0.62	ISCO
11/11/98	12:00	-	-	0.59	ISCO
11/12/98	10:55	-	-	0.56	Grab
11/12/98	12:00	-	-	0.70	ISCO
11/13/98	12:00	-	-	0.50	ISCO
11/14/98	12:00	-	-	0.35	ISCO
11/15/98	12:00	-	-	0.41	ISCO

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
11/16/98	12:00	-	-	0.46	ISCO
11/17/98	12:00	-	-	0.40	ISCO
11/18/98	11:20	-	-	0.41	Grab
11/18/98	12:00	-	-	0.46	ISCO
11/19/98	12:00	-	-	0.40	ISCO
11/20/98	12:00	-	-	0.40	ISCO
11/21/98	12:00	-	-	0.48	ISCO
11/22/98	12:00	-	-	0.57	ISCO
11/23/98	11:37	-	-	0.54	Grab
11/23/98	12:00	-	-	0.58	ISCO
11/24/98	12:00	-	-	0.54	ISCO
11/25/98	12:00	-	-	0.50	ISCO
12/01/98	11:09	-	-	0.35	Grab
12/09/98	11:01	-	-	0.29	Grab
12/15/98	11:31	-	-	0.60	Grab
12/21/98	10:58	-	-	1.20	Grab
01/25/99	11:47	-	-	9.63	Grab
01/25/99	12:00	-	-	9.61	ISCO
01/26/99	12:00	-	-	10.95	ISCO
01/27/99	12:00	-	-	11.41	ISCO
01/28/99	12:00	-	-	11.14	ISCO
01/29/99	12:00	-	-	10.65	ISCO
02/01/99	12:00	-	-	10.52	ISCO
02/02/99	11:24	-	-	10.93	Grab
02/02/99	12:00	-	-	11.17	ISCO
02/03/99	12:00	-	-	11.89	ISCO
02/08/99	0:01	-	-	9.11	ISCO
02/08/99	12:00	-	-	9.97	ISCO
02/09/99	11:58	-	-	11.11	Grab
02/09/99	12:00	-	-	11.62	ISCO
02/10/99	12:00	-	-	12.64	ISCO
02/11/99	12:00	-	-	12.82	ISCO
02/12/99	12:00	-	-	12.06	ISCO
02/13/99	12:00	-	-	12.38	ISCO
02/17/99	12:22	-	-	11.89	Grab
02/24/99	11:16	-	-	11.09	Grab
03/03/99	15:09	-	-	11.17	Grab

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/04/99	0:01	-	-	11.85	ISCO
03/04/99	12:00	-	-	11.88	ISCO
03/10/99	10:53	-	-	12.23	Grab
03/16/99	11:22	-	-	10.77	Grab
03/16/99	12:00	-	-	11.19	ISCO
03/17/99	12:00	-	-	11.42	ISCO
03/18/99	12:00	-	-	11.79	ISCO
03/19/99	12:00	-	-	11.52	ISCO
03/20/99	12:00	-	-	11.86	ISCO
03/21/99	12:00	-	-	11.53	ISCO
03/22/99	12:00	-	-	11.47	ISCO
03/23/99	12:00	-	-	11.32	ISCO
03/24/99	12:00	-	-	11.07	ISCO
03/25/99	10:42	-	-	10.93	Grab
03/25/99	12:00	-	-	10.97	ISCO
03/26/99	12:00	-	-	10.72	ISCO
03/27/99	12:00	-	-	10.56	ISCO
03/28/99	12:00	-	-	10.45	ISCO
03/29/99	12:00	-	-	10.37	ISCO
03/30/99	12:00	-	-	10.10	ISCO
03/30/99	12:06	-	-	10.23	Grab
03/31/99	12:00	-	-	10.28	ISCO
04/01/99	12:00	-	-	10.16	ISCO
04/02/99	12:00	-	-	9.94	ISCO
04/03/99	12:00	-	-	9.60	ISCO
04/04/99	12:00	-	-	9.32	ISCO
04/05/99	12:00	-	-	9.22	ISCO
04/05/99	13:26	-	-	9.36	Grab
04/06/99	12:21	-	-	8.64	Grab
04/06/99	13:00	-	-	8.59	ISCO
04/07/99	13:00	-	-	8.32	ISCO
04/08/99	13:40	-	-	8.73	Grab
04/09/99	12:00	-	-	8.72	ISCO
04/10/99	12:00	-	-	9.70	ISCO
04/11/99	12:00	-	-	12.51	ISCO
04/12/99	12:00	-	-	12.18	ISCO
04/13/99	12:39	-	-	12.15	Grab

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/14/99	13:21	-	-	11.84	Grab
04/14/99	13:41	-	-	11.68	ISCO
04/14/99	20:00	-	-	11.58	ISCO
04/15/99	4:00	-	-	11.35	ISCO
04/15/99	12:00	-	-	9.78	ISCO
04/15/99	20:00	-	-	9.50	ISCO
04/16/99	4:00	-	-	10.68	ISCO
04/16/99	12:17	-	-	13.43	ISCO
04/16/99	18:22	-	-	14.56	ISCO
04/17/99	0:42	-	-	14.97	ISCO
04/17/99	7:02	-	-	14.67	ISCO
04/17/99	13:22	-	-	14.85	ISCO
04/17/99	19:42	-	-	14.87	ISCO
04/18/99	1:02	-	-	14.96	ISCO
04/18/99	7:22	-	-	14.78	ISCO
04/18/99	13:33	-	-	14.74	Grab
04/18/99	14:05	-	-	14.59	ISCO
04/19/99	0:01	-	-	15.02	ISCO
04/19/99	12:00	-	-	15.44	ISCO
04/19/99	14:15	-	-	15.59	Grab
04/20/99	0:01	-	-	15.77	ISCO
04/20/99	11:45	-	-	15.36	Grab
04/20/99	12:00	-	-	15.63	ISCO
04/21/99	0:01	-	-	15.45	ISCO
04/21/99	12:00	-	-	14.96	ISCO
04/22/99	0:01	-	-	14.82	ISCO
04/22/99	12:00	-	-	14.64	ISCO
04/23/99	0:01	-	-	14.31	ISCO
04/23/99	12:00	-	-	14.18	ISCO
04/24/99	0:01	-	-	14.08	ISCO
04/24/99	12:00	-	-	13.97	ISCO
04/25/99	0:01	-	-	13.87	ISCO
04/26/99	11:34	-	-	13.89	Grab
04/26/99	11:47	-	-	13.82	ISCO
04/27/99	12:00	-	-	13.69	ISCO
04/27/99	12:16	-	-	13.81	Grab
04/28/99	12:00	-	-	13.23	ISCO



**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/29/99	12:00	-	-	13.03	ISCO
04/30/99	12:00	-	-	13.28	ISCO
05/01/99	12:00	-	-	13.33	ISCO
05/02/99	12:00	-	-	13.07	ISCO
05/03/99	0:01	-	-	13.18	ISCO
05/05/99	12:47	-	-	12.88	Grab
05/05/99	12:57	-	-	13.10	ISCO
05/06/99	12:00	-	-	12.73	ISCO
05/07/99	12:00	-	-	12.52	ISCO
05/08/99	12:00	-	-	12.26	ISCO
05/09/99	12:00	-	-	12.10	ISCO
05/10/99	12:00	-	-	11.90	ISCO
05/11/99	11:30	-	-	12.06	Grab
05/11/99	11:33	-	-	11.09	ISCO
05/12/99	12:00	-	-	10.85	ISCO
05/13/99	12:00	-	-	10.21	ISCO
05/14/99	12:00	-	-	10.90	ISCO
05/15/99	12:00	-	-	13.65	ISCO
05/16/99	12:00	-	-	14.63	ISCO
05/17/99	12:00	-	-	13.60	ISCO
05/17/99	12:42	-	-	14.30	Grab
05/18/99	0:01	-	-	13.37	ISCO
05/18/99	11:54	-	-	12.71	Grab
05/18/99	12:00	-	-	13.19	ISCO
05/19/99	0:01	-	-	13.70	ISCO
05/19/99	12:00	-	-	13.79	ISCO
05/20/99	0:01	-	-	13.67	ISCO
05/20/99	12:00	-	-	13.54	ISCO
05/21/99	0:01	-	-	13.35	ISCO
05/21/99	11:23	-	-	13.19	Grab
05/21/99	11:41	-	-	13.28	ISCO
05/22/99	8:18	-	-	12.40	Grab
05/22/99	12:00	-	-	12.68	ISCO
05/23/99	12:00	-	-	12.78	ISCO
05/24/99	12:00	-	-	12.53	ISCO
05/25/99	11:43	-	-	12.47	Grab
05/25/99	12:00	-	-	12.43	ISCO

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/27/99	12:00	-	-	13.05	ISCO
05/28/99	12:00	-	-	12.65	ISCO
05/29/99	12:00	-	-	12.44	ISCO
05/30/99	12:00	-	-	11.72	ISCO
05/31/99	12:00	-	-	11.63	ISCO
06/01/99	12:00	-	-	11.25	ISCO
06/01/99	15:16	-	-	10.78	Grab
06/02/99	12:00	-	-	11.07	ISCO
06/02/99	14:30	-	-	10.34	Grab
06/03/99	12:00	-	-	13.74	ISCO
06/04/99	12:00	-	-	17.12	ISCO
06/05/99	8:48	-	-	14.96	Grab
06/05/99	12:00	-	-	13.90	ISCO
06/06/99	12:00	-	-	15.74	ISCO
06/07/99	12:00	-	-	16.00	ISCO
06/08/99	12:00	-	-	14.63	ISCO
06/09/99	14:04	-	-	14.57	Grab
06/09/99	14:18	-	-	14.53	ISCO
06/10/99	0:01	-	-	14.30	ISCO
06/10/99	13:50	-	-	14.22	Grab
06/11/99	4:00	-	-	13.80	ISCO
06/11/99	20:00	-	-	13.42	ISCO
06/12/99	12:00	-	-	13.15	ISCO
06/12/99	21:48	-	-	13.40	Grab
06/13/99	4:00	-	-	12.96	ISCO
06/13/99	12:00	-	-	12.67	ISCO
06/13/99	21:19	-	-	12.61	Grab
06/13/99	21:22	-	-	<0.11	Grab
06/14/99	12:53	-	-	13.69	Grab
06/15/99	12:14	-	-	11.69	Grab
06/16/99	13:25	-	-	12.15	Grab
06/16/99	13:35	-	-	12.71	ISCO
06/17/99	4:00	-	-	13.69	ISCO
06/17/99	12:00	-	-	13.83	ISCO
06/17/99	20:00	-	-	14.03	ISCO
06/18/99	12:00	-	-	14.22	ISCO
06/18/99	20:00	-	-	14.26	ISCO

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/19/99	12:00	-	-	13.79	ISCO
06/19/99	12:00	-	-	14.07	ISCO
06/21/99	12:15	-	-	13.83	Grab
07/01/99	10:30	-	-	11.55	Grab
07/08/99	10:45	-	-	11.59	Grab
07/13/99	11:52	-	-	9.08	Grab
07/20/99	14:37	-	-	4.03	Grab
07/21/99	10:33	-	-	4.18	Grab
07/27/99	11:53	-	-	0.76	Grab
07/28/99	12:15	-	-	0.53	Grab
08/03/99	11:27	-	-	<0.11	Grab
08/11/99	10:46	-	-	0.64	Grab
08/17/99	11:37	-	-	0.75	Grab
08/24/99	11:41	-	-	0.67	Grab
08/31/99	11:33	-	-	0.26	Grab
09/07/99	11:32	-	-	0.28	Grab
09/15/99	11:51	-	-	0.63	Grab
09/22/99	11:54	-	-	0.68	Grab
09/28/99	12:09	-	-	0.33	Grab
10/05/99	11:49	-	-	0.50	Grab
10/13/99	13:34	-	-	0.33	Grab
10/26/99	11:55	49	-	1.19	Grab
11/01/99	11:22	60	-	0.41	Grab
11/08/99	10:49	53	-	<0.13	Grab
11/15/99	16:05	49	-	<0.13	Grab
11/22/99	10:12	48	-	0.16	Grab
11/29/99	11:25	42	-	0.61	Grab
12/06/99	11:01	44	-	1.54	Grab
12/13/99	10:59	41	-	1.05	Grab
12/20/99	11:12	36	-	0.96	Grab
01/03/00	11:10	39	-	1.19	Grab
01/10/00	10:57	39	-	1.77	Grab
01/18/00	10:40	34	-	2.04	Grab
01/30/00	14:18	34	-	2.09	Grab
02/15/00	10:29	34	-	4.22	Grab
02/22/00	12:18	39	-	9.21	Grab
02/29/00	10:58	-	-	6.14	Grab

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/07/00	15:23	57	-	6.49	Grab
03/14/00	10:33	46	-	5.68	Grab
03/21/00	11:14	47	-	8.11	Grab
03/28/00	11:30	51	-	8.31	Grab
04/04/00	10:34	51	-	6.88	Grab
04/11/00	10:11	49	-	5.98	Grab
04/18/00	10:45	56	-	4.60	Grab
04/25/00	10:21	55	-	11.46	Grab
05/02/00	10:21	61	-	8.84	Grab
05/09/00	10:01	71	-	6.34	Grab
05/16/00	10:10	63	-	8.39	Grab
05/23/00	13:34	67	-	12.44	Grab
05/28/00	10:43	63	-	13.82	Grab
05/30/00	9:32	64	-	16.91	Grab
06/06/00	10:35	62	-	12.39	Grab
06/16/00	13:16	73	-	10.75	Grab
06/20/00	13:35	71	-	8.48	Grab
06/26/00	13:31	71	-	12.90	Grab
07/03/00	12:48	78	-	10.74	Grab
07/10/00	10:57	76	-	8.67	Grab
07/17/00	13:56	78	-	5.65	Grab
07/24/00	14:53	73	-	2.53	Grab
08/02/00	8:44	-	-	1.95	Grab
08/07/00	10:07	75	-	0.97	Grab
08/15/00	9:30	75	-	0.89	Grab
08/22/00	9:40	71	-	0.65	Grab
08/29/00	10:17	74	-	1.65	Grab
09/05/00	9:44	68	-	0.79	Grab
09/12/00	9:19	70	-	1.54	Grab
09/19/00	9:00	64	-	2.15	Grab
09/26/00	9:33	-	-	1.99	Grab
10/03/00	9:11	64	-	3.43	Grab
10/05/00	14:15	62	-	2.39	Grab
10/10/00	9:30	48	-	5.19	Grab
10/17/00	9:57	57	-	3.13	Grab
10/24/00	10:18	62	-	2.75	Grab
10/30/00	11:36	55	-	0.41	Grab

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
11/08/00	14:50	52	-	0.92	Grab
11/14/00	12:05	44	-	10.33	Grab
11/20/00	10:22	34	-	10.36	Grab
11/28/00	10:32	38	-	8.61	Grab
12/05/00	10:40	32	-	8.69	Grab
12/14/00	9:45	32	-	8.91	Grab
01/16/01	11:53	33	-	6.21	Grab
02/06/01	17:05	-	-	9.35	Grab
02/09/01	13:05	-	-	8.28	Grab
02/14/01	13:05	40	-	9.91	Grab
02/20/01	10:56	39	-	12.17	Grab
02/24/01	12:18	38	-	9.60	Grab
02/25/01	12:41	43	-	4.20	Grab
02/25/01	14:28	43	-	4.26	Grab
02/25/01	16:25	43	-	4.38	Grab
02/25/01	17:26	43	-	4.42	Grab
02/25/01	18:20	43	-	4.52	Grab
02/26/01	13:02	42	-	4.69	Grab
02/26/01	14:32	42	-	4.68	Grab
02/26/01	15:41	43	-	4.69	Grab
02/27/01	12:16	39	-	7.09	Grab
02/27/01	14:27	39	-	7.44	Grab
02/27/01	14:45	39	8.10		Grab
02/28/01	14:20	37	-	10.20	Grab
02/28/01	15:00	37	-	10.22	Grab
02/28/01	16:31	37	-	10.32	Grab
03/01/01	10:11	36	-	10.99	Grab
03/01/01	10:56	36	-	11.03	Grab
03/01/01	11:32	37	-	11.03	Grab
03/01/01	13:57	37	-	11.06	Grab
03/01/01	14:53	37	-	11.10	Grab
03/01/01	15:50	37	-	11.08	Grab
03/02/01	9:47	39	-	11.18	Grab
03/02/01	12:00	39	-	11.22	Grab
03/02/01	14:00	39	-	11.20	Grab
03/02/01	15:43	39	-	11.26	Grab
03/06/01	10:38	37	-	12.08	Grab

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/15/01	10:18	-	-	11.37	Grab
03/21/01	11:44	45	7.81	13.30	Grab
03/27/01	11:49	40	8.15	11.83	Grab
04/03/01	9:24	49	-	10.82	Grab
04/10/01	10:00	64	-	10.95	Grab
04/17/01	10:15	50	7.95	12.35	Grab
04/17/01	15:53	52	-		Grab
04/24/01	10:38	61	7.9	10.19	Grab
05/01/01	10:06	66	-	9.69	Grab
05/09/01	10:40	65	7.27	8.56	Grab
05/16/01	10:51	69	-	7.84	Grab
05/22/01	14:35	64	8.22	12.09	Grab
06/06/01	14:35	64	7.92	16.81	Grab
06/13/01	10:16	74	-	15.53	Grab
06/19/01	10:30	76	8.18	12.41	Grab
06/27/01	10:28	73	-	10.54	Grab
07/03/01	10:37	69	-	6.99	Grab
07/10/01	10:12	80	8.18	5.80	Grab
07/17/01	9:25	75	-	1.79	Grab
07/25/01	11:40	81	8.34	<0.06	Grab
08/01/01	9:27	80	-	<0.06	Grab
08/08/01	10:31	81	8.14	0.32	Grab
08/16/01	9:15	71	-	0.58	Grab
08/22/01	8:26	71	-	<0.06	Grab
08/29/01	9:56	72	8.32	0.90	Grab
09/06/01	9:59	72	-	0.96	Grab
09/12/01	9:54	67	8.10	1.22	Grab
09/19/01	9:34	66	-	0.97	Grab
09/26/01	13:27	60	8.18	0.61	Grab
10/04/01	9:04	61	-	0.82	Grab
10/11/01	10:05	60	8.44	1.09	Grab
10/17/01	9:56	50	-	5.20	Grab
10/24/01	10:11	64	7.96	5.56	Grab
11/01/01	11:30	53	-	8.18	Grab
11/06/01	12:02	47	8.11	6.77	Grab
11/13/01	11:44	47	-	6.45	Grab
11/19/01	11:42	54	7.92	5.06	Grab

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
11/27/01	10:08	49	-	4.92	Grab
12/04/01	10:31	49	8.05	10.17	Grab
12/11/01	10:36	40	-	8.28	Grab
12/19/01	14:08	45	-	13.04	Grab
12/26/01	10:56	33	8.09	11.25	Grab
01/02/02	11:14	33	-	11.03	Grab
01/15/02	10:35	34	8.26	7.90	Grab
01/22/02	10:37	34	-	8.09	Grab
01/29/02	10:13	44	8.13	6.82	Grab
01/31/02	15:04	-	-	7.61	Grab
02/01/02	12:45	39	-	10.64	Grab
02/04/02	10:03	38	-	13.92	Grab
02/13/02	10:31	40	8.14	12.13	Grab
02/19/02	11:47	42	-	9.47	Grab
02/20/02	14:10	46	-	9.63	Grab
02/21/02	11:07	43	-	11.84	Grab
02/25/02	10:23	46	7.90	13.36	Grab
03/05/02	10:04	35	-	13.92	Grab
03/12/02	10:44	43	7.94	13.07	Grab
03/19/02	11:24	-	-	12.39	Grab
03/27/02	10:09	38	8.23	11.13	Grab
03/28/02	11:05	41	-	10.57	Grab
03/29/02	11:40	44	-	11.97	Grab
03/30/02	11:22	44	-	12.51	Grab
04/01/02	10:00	46	-	13.08	Grab
04/02/02	10:09	47	-	12.73	Grab
04/05/02	11:10	43	-	12.20	Grab
04/08/02	13:06	49	-	11.52	Grab
04/09/02	12:05	52	-	11.66	Grab
04/16/02	9:11	66	8.07	11.96	Grab
04/23/02	9:06	50	-	12.62	Grab
04/27/02	12:16	54	-	12.08	Grab
04/28/02	10:39	52	-	13.20	Grab
04/30/02	9:33	54	7.72	14.97	Grab
05/02/02	8:01	55	-	14.92	Grab
05/07/02	8:54	63	-	13.37	Grab
05/12/02	9:21	56	-	12.88	Grab

**Table E-5. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/13/02	11:45	57	-	11.48	Grab
05/14/02	10:14	58	7.37	9.70	Grab
05/16/02	14:35	60	-	13.56	Grab
05/20/02	11:34	55	-	15.87	Grab
05/28/02	10:06	64	8.11	14.01	Grab
06/04/02	10:53	75	-	13.36	Grab
06/05/02	12:41	71	-	12.15	Grab
06/11/02	12:15	71	8.02	13.93	Grab
06/12/02	11:37	69	-	12.20	Grab
06/13/02	15:13	67	-	11.01	Grab
06/14/02	7:51	66	-	9.85	Grab
06/18/02	9:04	67	-	14.61	Grab
06/25/02	8:49	75	8.14	13.19	Grab
07/02/02	9:14	78	-	11.23	Grab
07/09/02	9:24	80	-	7.94	Grab
07/16/02	12:37	77	8.23	5.05	Grab
07/23/02	9:26	77	-	2.27	Grab
07/30/02	9:24	79	8.00	1.94	Grab
08/06/02	10:29	77	-	2.46	Grab
08/14/02	9:50	73	8.07	1.43	Grab
08/19/02	9:10	72	-	0.77	Grab
08/23/02	9:24	75	-	1.35	Grab
08/23/02	16:35	75	-	1.96	Grab
08/24/02	6:35	75	-	2.66	Grab
08/25/02	10:54	-	-	3.21	Grab
08/27/02	9:22	75	8.01	5.32	Grab
08/28/02	14:04	77	-	5.55	Grab
09/03/02	10:05	75	-	3.97	Grab
09/10/02	9:13	77	8.15	1.78	Grab
09/17/02	9:43	68	-	1.55	Grab
09/24/02	9:27	61	8.12	1.11	Grab
10/01/02	10:07	68	-	0.93	Grab
10/08/02	9:43	56	7.77	0.98	Grab
10/15/02	9:46	52	-	1.34	Grab
10/22/02	10:01	49	7.72	0.86	Grab
10/28/02	10:39	50	-	1.19	Grab
11/06/02	10:23	45	7.57	0.99	Grab



**Table E-5. Concluded**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
11/12/02	11:06	48	-	0.23	Grab
11/19/02	11:02	46	-	0.16	Grab
11/25/02	10:23	41	-	0.60	Grab
12/03/02	11:07	34	-	1.18	Grab
12/10/02	10:53	36	7.54	1.72	Grab
12/17/02	10:57	36	-	1.52	Grab
12/23/02	10:31	38	7.71	2.20	Grab
12/30/02	10:37	37	-	3.72	Grab
01/07/03	10:21	35	-	5.59	Grab
02/04/03	11:13	34	-	3.58	Grab
02/10/03	10:37	35	7.58	3.11	Grab
02/25/03	10:47	35	7.29	2.93	Grab
03/04/03	10:57	36	-	3.03	Grab
03/11/03	10:29	35	7.57	2.80	Grab
03/18/03	11:04	54	-	2.91	Grab
03/25/03	10:30	57	7.86	5.41	Grab
03/31/03	11:10	48	-	3.98	Grab
04/07/03	9:29	44	7.54	10.23	Grab
04/15/03	10:03	59	-	8.11	Grab
04/22/03	8:58	55	-	5.98	Grab
04/29/03	9:08	59	-	6.05	Grab
05/05/03	11:37	59	-	4.77	Grab
05/06/03	9:33	53	-	11.46	Grab
05/13/03	13:47	59	-	14.04	Grab
05/20/03	11:14	65	7.99	11.14	Grab
05/27/03	10:08	62	-	9.86	Grab
06/03/03	10:43	59	-	8.50	Grab
06/10/03	9:09	67	8.09	7.18	Grab
06/11/03	22:30	70	-	5.57	Grab
06/12/03	11:26	66	-	8.20	Grab
06/17/03	10:35	69	-	13.71	Grab
06/24/03	10:09	75	8.12	10.78	Grab
07/01/03	9:59	73	-	7.84	Grab
07/08/03	10:27	80	7.76	7.49	Grab

**Notes:**

\*Grab: Weighted Bottle (dip sample in extreme low flow conditions)

ISCO: Point sample, peristaltic pump

**Table E-6. Nitrate-N Sample Concentrations (WY 1993-2008)  
for Big Ditch at Champaign County Road 700 East near Fisher (Station 106)**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/19/93	13:30	-	-	13.24	Grab
05/07/93	15:50	-	-	15.28	Grab
05/14/93	16:31	-	-	14.01	Grab
06/03/93	15:35	-	-	14.50	Grab
06/14/93	14:47	-	-	14.80	Grab
06/22/93	11:38	-	-	13.92	Grab
06/29/93	10:11	-	-	13.01	Grab
07/06/93	11:58	-	-	11.02	Grab
07/22/93	17:33	-	-	10.64	Grab
07/29/93	10:56	-	-	10.82	Grab
08/09/93	13:23	-	-	7.92	Grab
08/12/93	15:49	-	-	6.10	Grab
08/13/93	13:10	-	-	8.44	Grab
08/16/93	15:23	-	-	8.07	Grab
08/24/93	13:38	-	-	7.63	Grab
08/31/93	10:59	-	-	4.88	Grab
09/08/93	11:38	-	-	8.47	Grab
09/14/93	11:02	-	-	7.01	Grab
09/24/93	12:23	-	-	7.87	Grab
09/30/93	10:30	-	-	8.30	Grab
10/07/93	9:47	-	-	7.92	Grab
10/12/93	10:17	-	-	8.13	Grab
10/18/93	10:58	-	-	5.14	Grab
10/19/93	9:42	-	-	5.42	Grab
10/20/93	15:00	-	-	6.65	Grab
10/21/93	11:41	-	-	5.33	Grab
10/28/93	14:13	-	-	7.87	Grab
11/02/93	11:21	-	-	6.98	Grab
11/08/93	14:55	-	-	7.15	Grab
11/15/93	11:09	-	-	7.32	Grab
11/23/93	9:33	-	-	8.38	Grab
12/01/93	10:30	-	-	8.72	Grab
12/09/93	10:14	-	-	8.18	Grab
12/15/93	14:05	-	-	8.30	Grab
12/28/93	12:05	-	-	7.90	Grab
01/12/94	10:00	-	-	6.90	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
02/03/94	10:15	-	-	6.69	Grab
02/15/94	10:47	-	-	2.81	Grab
02/22/94	10:16	-	-	6.56	Grab
03/07/94	11:24	-	-	6.38	Grab
03/17/94	14:46	-	-	8.48	Grab
03/23/94	10:41	-	-	7.84	Grab
03/28/94	14:30	-	-	7.26	Grab
04/04/94	10:19	-	-	6.76	Grab
04/11/94	10:45	-	-	8.76	Grab
04/12/94	11:24	-	-	3.04	Grab
04/13/94	15:52	-	-	4.57	Grab
04/14/94	11:11	-	-	5.72	Grab
04/18/94	15:26	-	-	7.85	Grab
04/25/94	15:30	-	-	8.86	Grab
04/29/94	11:17	-	-	10.16	Grab
05/03/94	10:53	-	-	10.34	Grab
05/09/94	14:21	-	-	11.02	Grab
05/16/94	14:39	-	-	10.19	Grab
05/24/94	10:35	-	-	10.27	Grab
06/03/94	14:31	-	-	9.35	Grab
06/06/94	10:21	-	-	9.20	Grab
06/14/94	8:29	-	-	8.10	Grab
06/20/94	9:58	-	-	6.87	Grab
06/28/94	11:42	-	-	5.47	Grab
07/05/94	10:27	-	-	2.40	Grab
07/07/94	13:58	-	-	9.03	Grab
07/08/94	7:51	-	-	9.15	Grab
07/12/94	7:58	-	-	7.99	Grab
07/27/94	12:18	-	-	0.49	Grab
08/01/94	8:01	-	-	<0.02	Grab
08/04/94	9:30	-	-	<0.02	Grab
08/08/94	8:28	-	-	<0.02	Grab
08/22/94	8:09	-	-	<0.02	Grab
08/29/94	7:07	-	-	<0.02	Grab
09/07/94	6:15	-	-	<0.02	Grab
09/23/94	7:27	-	-	<0.02	Grab
09/26/94	14:50	-	-	<0.02	Grab
10/12/94	9:55	-	-	<0.02	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
10/18/94	10:13	-	-	<0.02	Grab
10/25/94	9:39	-	-	<0.02	Grab
11/01/94	16:29	-	-	0.07	Grab
11/07/94	10:29	-	-	5.60	Grab
11/14/94	16:32	-	-	6.21	Grab
11/21/94	9:47	-	-	7.04	Grab
11/29/94	10:24	-	-	6.38	Grab
12/05/94	15:48	-	-	6.53	Grab
12/13/94	15:04	-	-	8.76	Grab
12/21/94	9:44	-	-	8.49	Grab
01/11/95	10:17	-	-	7.19	Grab
01/18/95	14:22	-	-	9.93	Grab
01/23/95	10:35	-	-	9.94	Grab
02/01/95	16:13	-	-	9.79	Grab
02/16/95	15:09	-	-	8.41	Grab
02/24/95	11:05	-	-	7.30	Grab
02/27/95	14:44	-	-	7.87	Grab
03/07/95	15:31	-	-	11.17	Grab
03/08/95	14:35	-	-	12.70	Grab
03/09/95	12:30	-	-	12.70	Grab
03/14/95	11:06	-	-	10.92	Grab
03/22/95	9:24	-	-	10.04	Grab
03/22/95	9:28	-	-	10.06	Grab
03/29/95	11:43	-	-	10.99	Grab
04/04/95	9:58	-	-	10.25	Grab
04/10/95	11:38	-	-	10.64	Grab
04/10/95	15:07	-	-	9.68	Grab
04/11/95	9:55	-	-	12.72	Grab
04/11/95	15:57	-	-	12.90	Grab
04/12/95	10:57	-	-	13.04	Grab
04/25/95	10:19	-	-	12.54	Grab
05/02/95	15:25	-	-	12.12	Grab
05/10/95	12:44	-	-	13.58	Grab
05/17/95	11:30	-	-	12.84	Grab
05/23/95	11:47	-	-	14.33	Grab
05/30/95	14:52	-	-	15.10	Grab
06/05/95	11:12	-	-	14.26	Grab
06/12/95	15:16	-	-	15.13	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/21/95	10:24	-	-	13.96	Grab
06/27/95	10:50	-	-	12.67	Grab
07/10/95	9:59	-	-	8.23	Grab
07/18/95	15:09	-	-	3.39	Grab
07/25/95	9:32	-	-	0.81	Grab
08/02/95	14:50	-	-	<0.02	Grab
08/04/95	9:21	-	-	0.04	Grab
08/08/95	13:32	-	-	5.16	Grab
08/16/95	10:07	-	-	1.23	Grab
08/22/95	14:40	-	-	2.51	Grab
08/31/95	11:50	-	-	<0.02	Grab
09/06/95	11:01	-	-	<0.02	Grab
09/12/95	9:46	-	-	<0.02	Grab
09/19/95	9:44	-	-	<0.02	Grab
09/26/95	9:57	-	-	<0.02	Grab
10/05/95	15:41	-	-	<0.02	Grab
10/11/95	10:20	-	-	<0.02	Grab
10/17/95	9:35	-	-	<0.02	Grab
10/24/95	9:37	-	-	<0.02	Grab
10/27/95	0:00	-	-	0.38	ISCO
10/27/95	9:26	-	-	<0.02	Grab
10/28/95	20:00	-	-	1.29	ISCO
10/29/95	16:00	-	-	1.01	ISCO
10/31/95	4:00	-	-	0.33	ISCO
10/31/95	8:00	-	-	0.38	ISCO
10/31/95	9:15	-	-	0.44	Grab
10/31/95	11:00	-	-	0.57	ISCO
11/01/95	3:00	-	-	3.04	ISCO
11/02/95	7:00	-	-	7.62	ISCO
11/03/95	7:00	-	-	7.88	ISCO
11/03/95	11:00	-	-	8.38	ISCO
11/05/95	15:00	-	-	9.10	ISCO
11/07/95	3:00	-	-	8.63	ISCO
11/07/95	10:10	-	-	8.39	Grab
11/07/95	11:00	-	-	8.59	ISCO
11/08/95	17:00	-	-	7.80	ISCO
11/11/95	5:00	-	-	7.63	ISCO
11/13/95	11:58	-	-	9.01	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
11/14/95	12:22	-	-	8.71	Grab
11/16/95	12:00	-	-	8.34	ISCO
11/18/95	12:00	-	-	7.55	ISCO
11/20/95	10:45	-	-	7.56	Grab
11/23/95	12:00	-	-	7.86	ISCO
11/27/95	11:25	-	-	7.36	Grab
11/30/95	12:00	-	-	7.02	ISCO
12/05/95	9:38	-	-	6.19	Grab
12/07/95	18:00	-	-	5.22	ISCO
12/14/95	13:10	-	-	6.24	Grab
12/14/95	13:20	-	-	6.36	ISCO
12/18/95	11:12	-	-	4.87	Grab
12/18/95	18:00	-	-	5.37	ISCO
12/22/95	9:14	-	-	6.36	Grab
12/28/95	9:51	-	-	6.83	Grab
01/17/96	10:25	-	-	5.38	ISCO
01/17/96	18:00	-	-	5.65	ISCO
01/18/96	12:00	-	-	8.19	ISCO
01/19/96	12:00	-	-	11.33	Grab
01/21/96	18:00	-	-	11.17	ISCO
01/22/96	10:37	-	-	10.78	Grab
01/23/96	15:35	-	-	10.42	Grab
01/25/96	18:00	-	-	10.17	ISCO
01/29/96	13:17	-	-	10.07	Grab
02/08/96	9:42	-	-	8.67	Grab
02/09/96	9:00	-	-	8.06	ISCO
02/11/96	0:00	-	-	8.17	ISCO
02/13/96	10:59	-	-	8.28	Grab
02/14/96	9:16	-	-	8.60	Grab
02/20/96	11:07	-	-	7.93	Grab
02/21/96	8:00	-	-	7.55	ISCO
02/25/96	4:00	-	-	7.96	ISCO
02/26/96	8:00	-	-	8.10	ISCO
02/26/96	12:00	-	-	8.58	ISCO
02/27/96	0:00	-	-	9.69	ISCO
02/28/96	9:44	-	-	10.80	Grab
03/05/96	9:29	-	-	8.53	Grab
03/06/96	12:00	-	-	8.40	ISCO

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/07/96	13:20	-	-	10.06	Grab
03/10/96	18:00	-	-	8.44	ISCO
03/11/96	12:01	-	-	8.34	Grab
03/18/96	9:42	-	-	8.70	Grab
03/22/96	16:35	-	-	8.36	ISCO
03/23/96	10:00	-	-	8.28	ISCO
03/24/96	6:00	-	-	8.22	ISCO
03/26/96	2:00	-	-	7.11	ISCO
03/27/96	14:01	-	-	7.46	Grab
03/28/96	2:00	-	-	7.78	ISCO
03/30/96	14:00	-	-	7.33	ISCO
03/31/96	2:00	-	-	7.26	ISCO
03/31/96	6:00	-	-	7.54	ISCO
03/31/96	10:00	-	-	7.29	ISCO
03/31/96	14:00	-	-	7.15	ISCO
03/31/96	18:00	-	-	9.08	ISCO
03/31/96	22:00	-	-	10.22	ISCO
04/01/96	2:00	-	-	9.54	ISCO
04/01/96	10:12	-	-	10.69	Grab
04/01/96	18:00	-	-	10.93	ISCO
04/02/96	2:00	-	-	10.87	ISCO
04/03/96	18:00	-	-	10.52	ISCO
04/05/96	6:00	-	-	10.41	ISCO
04/05/96	10:00	-	-	10.26	ISCO
04/07/96	22:00	-	-	9.94	ISCO
04/12/96	2:00	-	-	9.02	ISCO
04/14/96	4:00	-	-	8.56	ISCO
04/17/96	14:40	-	-	8.04	Grab
04/20/96	11:00	-	-	7.36	ISCO
04/22/96	11:00	-	-	7.59	ISCO
04/23/96	9:41	-	-	12.18	Grab
04/23/96	11:00	-	-	11.69	ISCO
04/24/96	19:00	-	-	11.22	ISCO
04/25/96	11:00	-	-	11.15	ISCO
04/26/96	3:00	-	-	10.83	ISCO
04/28/96	3:00	-	-	10.17	ISCO
04/29/96	11:00	-	-	11.65	ISCO
04/30/96	3:00	-	-	12.19	ISCO

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/30/96	11:07	-	-	12.46	Grab
05/01/96	7:00	-	-	12.10	ISCO
05/03/96	7:00	-	-	11.52	ISCO
05/05/96	7:00	-	-	10.83	ISCO
05/06/96	10:31	-	-	13.82	Grab
05/07/96	1:00	-	-	13.67	ISCO
05/08/96	1:00	-	-	13.20	ISCO
05/08/96	7:00	-	-	13.12	ISCO
05/08/96	13:00	-	-	13.41	ISCO
05/08/96	19:00	-	-	15.40	ISCO
05/09/96	1:00	-	-	14.14	ISCO
05/09/96	7:00	-	-	15.46	ISCO
05/09/96	19:00	-	-	15.13	ISCO
05/10/96	7:00	-	-	15.05	ISCO
05/10/96	13:00	-	-	15.56	ISCO
05/10/96	16:14	-	-	6.57	Grab
05/10/96	19:00	-	-	7.49	ISCO
05/11/96	1:00	-	-	10.11	ISCO
05/13/96	13:13	-	-	14.17	Grab
05/15/96	7:00	-	-	15.43	ISCO
05/15/96	19:00	-	-	13.36	ISCO
05/16/96	7:00	-	-	15.74	ISCO
05/16/96	19:00	-	-	15.62	ISCO
05/17/96	7:00	-	-	15.62	ISCO
05/20/96	13:27	-	-	15.11	Grab
05/21/96	7:00	-	-	14.93	ISCO
05/24/96	7:00	-	-	14.42	ISCO
05/26/96	7:00	-	-	15.06	ISCO
05/26/96	19:00	-	-	14.75	ISCO
05/27/96	7:00	-	-	6.61	ISCO
05/27/96	13:00	-	-	9.36	ISCO
05/27/96	19:00	-	-	12.21	ISCO
05/28/96	1:00	-	-	14.17	ISCO
05/28/96	7:00	-	-	14.79	ISCO
05/28/96	12:36	-	-	14.94	Grab
05/28/96	13:00	-	-	15.40	ISCO
05/28/96	19:00	-	-	12.74	ISCO
05/29/96	1:00	-	-	12.40	ISCO



**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/29/96	7:00	-	-	14.90	ISCO
05/30/96	13:00	-	-	16.97	ISCO
05/31/96	19:00	-	-	17.04	ISCO
06/01/96	7:00	-	-	16.94	ISCO
06/01/96	19:00	-	-	17.16	ISCO
06/02/96	1:00	-	-	11.80	ISCO
06/02/96	7:00	-	-	10.79	ISCO
06/02/96	19:00	-	-	15.18	ISCO
06/03/96	7:00	-	-	15.37	ISCO
06/04/96	7:00	-	-	18.03	ISCO
06/04/96	11:13	-	-	16.50	Grab
06/07/96	1:00	-	-	15.76	ISCO
06/09/96	1:00	-	-	13.86	ISCO
06/11/96	10:20	-	-	10.97	Grab
06/14/96	1:00	-	-	17.07	ISCO
06/17/96	1:00	-	-	13.11	ISCO
06/18/96	10:11	-	-	15.60	Grab
06/20/96	1:00	-	-	16.64	ISCO
06/23/96	1:00	-	-	14.95	ISCO
06/25/96	9:58	-	-	14.49	Grab
06/27/96	1:00	-	-	16.01	ISCO
06/30/96	1:00	-	-	14.51	ISCO
07/01/96	12:00	-	-	14.31	Grab
07/04/96	1:00	-	-	13.56	ISCO
07/06/96	13:00	-	-	12.49	ISCO
07/08/96	15:28	-	-	12.13	Grab
07/10/96	7:00	-	-	11.59	ISCO
07/13/96	7:00	-	-	9.44	ISCO
07/15/96	11:57	-	-	9.19	Grab
07/18/96	1:00	-	-	7.29	ISCO
07/22/96	1:00	-	-	9.42	ISCO
07/22/96	11:14	-	-	12.11	Grab
07/22/96	13:00	-	-	11.91	ISCO
07/23/96	1:00	-	-	12.07	ISCO
07/25/96	13:00	-	-	8.96	ISCO
07/29/96	12:03	-	-	6.49	Grab
08/03/96	13:00	-	-	5.39	ISCO
08/05/96	10:28	-	-	4.19	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
08/08/96	13:00	-	-	0.89	ISCO
08/12/96	11:03	-	-	0.14	Grab
08/19/96	1:00	-	-	4.89	ISCO
08/19/96	13:00	-	-	2.77	ISCO
08/20/96	10:28	-	-	4.82	Grab
08/26/96	12:17	-	-	<0.02	Grab
09/03/96	10:37	-	-	<0.02	Grab
09/09/96	15:34	-	-	<0.02	Grab
09/17/96	15:18	-	-	<0.02	Grab
09/24/96	11:07	-	-	<0.02	Grab
10/01/96	9:30	-	-	<0.02	Grab
10/09/96	14:00	-	-	<0.02	Grab
10/16/96	10:43	-	-	<0.02	Grab
10/21/96	14:18	-	-	<0.02	Grab
10/30/96	15:04	-	-	<0.02	Grab
11/06/96	11:24	-	-	<0.02	Grab
11/12/96	12:48	-	-	0.34	Grab
11/18/96	15:37	-	-	<0.02	Grab
12/02/96	11:26	-	-	6.22	Grab
12/10/96	15:58	-	-	5.16	Grab
12/30/96	13:03	-	-	7.53	Grab
01/07/97	11:52	-	-	10.45	Grab
01/22/97	11:15	-	-	5.12	Grab
02/04/97	11:12	-	-	4.79	Grab
02/05/97	11:56	-	-	6.60	Grab
02/13/97	12:03	-	-	9.74	Grab
02/18/97	10:55	-	-	8.87	Grab
02/21/97	12:25	-	-	7.71	Grab
02/27/97	15:38	-	-	7.80	Grab
03/04/97	11:45	-	-	12.01	Grab
03/10/97	14:44	-	-	13.02	Grab
03/11/97	11:40	-	-	13.14	Grab
03/14/97	9:34	-	-	9.14	Grab
03/20/97	11:16	-	-	12.96	Grab
03/25/97	14:56	-	-	12.39	Grab
04/01/97	9:59	-	-	11.52	Grab
04/08/97	10:41	-	-	10.62	Grab
04/15/97	14:32	-	-	10.06	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/23/97	11:03	-	-	10.15	Grab
05/01/97	17:40	-	-	8.49	Grab
05/03/97	13:23	-	-	12.95	Grab
05/03/97	13:42	-	-	12.63	ISCO
05/03/97	18:00	-	-	13.33	ISCO
05/04/97	0:01	-	-	13.97	ISCO
05/04/97	6:00	-	-	13.87	ISCO
05/04/97	12:00	-	-	13.58	ISCO
05/05/97	6:00	-	-	13.46	ISCO
05/06/97	10:15	-	-	12.31	Grab
05/06/97	12:00	-	-	12.78	ISCO
05/08/97	12:00	-	-	12.11	ISCO
05/10/97	6:00	-	-	7.82	ISCO
05/12/97	14:27	-	-	11.51	Grab
05/12/97	14:35	-	-	11.71	ISCO
05/14/97	6:00	-	-	11.38	ISCO
05/16/97	6:00	-	-	11.07	ISCO
05/18/97	6:00	-	-	10.58	ISCO
05/19/97	13:53	-	-	9.55	Grab
05/19/97	14:06	-	-	10.04	ISCO
05/20/97	18:00	-	-	9.41	ISCO
05/21/97	0:00	-	-	10.02	ISCO
05/23/97	6:00	-	-	9.78	ISCO
05/24/97	0:00	-	-	8.25	ISCO
05/24/97	12:00	-	-	9.37	ISCO
05/24/97	18:00	-	-	9.14	ISCO
05/25/97	0:00	-	-	17.39	ISCO
05/25/97	6:00	-	-	10.96	ISCO
05/25/97	12:00	-	-	14.41	ISCO
05/25/97	18:00	-	-	17.36	ISCO
05/26/97	6:00	-	-	16.95	ISCO
05/27/97	15:02	-	-	16.21	Grab
05/27/97	15:13	-	-	17.03	ISCO
05/28/97	18:00	-	-	16.36	ISCO
05/29/97	12:00	-	-	16.06	ISCO
05/30/97	0:01	-	-	16.01	ISCO
05/31/97	6:00	-	-	15.77	ISCO
06/01/97	12:00	-	-	15.90	ISCO

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/02/97	12:00	-	-	15.26	ISCO
06/02/97	15:08	-	-	15.32	Grab
06/02/97	15:18	-	-	16.92	ISCO
06/03/97	6:00	-	-	16.87	ISCO
06/04/97	0:01	-	-	16.86	ISCO
06/04/97	18:00	-	-	17.08	ISCO
06/05/97	12:00	-	-	16.48	ISCO
06/06/97	6:00	-	-	16.22	ISCO
06/06/97	18:00	-	-	15.83	ISCO
06/07/97	0:01	-	-	4.01	ISCO
06/07/97	6:00	-	-	9.51	ISCO
06/07/97	12:00	-	-	12.96	ISCO
06/07/97	18:00	-	-	13.91	ISCO
06/08/97	0:01	-	-	14.27	ISCO
06/08/97	6:00	-	-	14.59	ISCO
06/08/97	12:00	-	-	9.27	ISCO
06/08/97	18:00	-	-	10.75	ISCO
06/09/97	0:01	-	-	13.41	ISCO
06/09/97	6:00	-	-	14.12	ISCO
06/09/97	10:16	-	-	14.23	Grab
06/09/97	10:23	-	-	14.76	ISCO
06/10/97	12:00	-	-	15.70	ISCO
06/11/97	18:00	-	-	16.85	ISCO
06/12/97	12:00	-	-	16.16	ISCO
06/12/97	20:15	-	-	13.42	ISCO
06/13/97	2:15	-	-	13.67	ISCO
06/13/97	4:15	-	-	13.50	ISCO
06/13/97	6:15	-	-	13.76	ISCO
06/13/97	8:15	-	-	13.80	ISCO
06/13/97	10:15	-	-	14.58	ISCO
06/13/97	14:15	-	-	15.36	ISCO
06/13/97	14:32	-	-	14.79	Grab
06/13/97	14:40	-	-	15.47	ISCO
06/14/97	10:00	-	-	16.23	ISCO
06/15/97	6:00	-	-	16.15	ISCO
06/16/97	2:00	-	-	15.99	ISCO
06/16/97	16:00	-	-	16.34	ISCO
06/17/97	2:00	-	-	16.15	ISCO

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/17/97	10:05	-	-	16.31	Grab
06/17/97	10:12	-	-	16.39	ISCO
06/23/97	8:00	-	-	14.95	ISCO
06/24/97	10:05	-	-	14.64	Grab
06/24/97	10:17	-	-	14.73	ISCO
06/25/97	18:00	-	-	10.37	ISCO
06/26/97	0:01	-	-	7.35	ISCO
06/26/97	6:00	-	-	10.13	ISCO
06/27/97	0:01	-	-	13.21	ISCO
06/28/97	0:01	-	-	14.09	ISCO
06/29/97	6:00	-	-	14.15	ISCO
06/30/97	12:00	-	-	14.09	ISCO
06/30/97	16:51	-	-	13.94	ISCO
06/30/97	18:00	-	-	13.67	ISCO
06/30/97	20:00	-	-	10.06	ISCO
06/30/97	22:00	-	-	12.16	ISCO
07/01/97	0:01	-	-	6.74	ISCO
07/01/97	2:00	-	-	5.21	ISCO
07/01/97	4:00	-	-	7.46	ISCO
07/01/97	6:00	-	-	7.73	ISCO
07/01/97	8:00	-	-	8.26	ISCO
07/01/97	10:00	-	-	8.79	ISCO
07/01/97	12:00	-	-	9.21	ISCO
07/01/97	14:00	-	-	9.70	ISCO
07/01/97	15:24	-	-	10.83	Grab
07/08/97	10:33	-	-	12.94	Grab
07/15/97	10:21	-	-	9.99	Grab
07/22/97	16:11	-	-	5.97	Grab
07/23/97	11:11	-	-	7.04	Grab
07/28/97	11:16	-	-	1.91	Grab
08/05/97	10:51	-	-	<0.08	Grab
08/12/97	10:25	-	-	<0.08	Grab
08/19/97	10:43	-	-	5.49	Grab
08/26/97	11:24	-	-	1.70	Grab
09/03/97	10:54	-	-	<0.08	Grab
09/10/97	10:32	-	-	2.61	Grab
09/19/97	10:42	-	-	<0.04	Grab
09/24/97	11:07	-	-	<0.04	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
10/01/97	10:38	-	-	<0.04	Grab
10/07/97	10:45	-	-	<0.04	Grab
10/16/97	10:37	-	-	<0.04	Grab
10/21/97	10:14	-	-	<0.04	Grab
10/27/97	12:18	-	-	<0.04	Grab
11/04/97	10:02	-	-	<0.04	Grab
11/12/97	11:21	-	-	0.32	Grab
11/18/97	10:55	-	-	0.70	Grab
11/25/97	11:56	-	-	0.43	Grab
12/04/97	11:19	-	-	7.08	Grab
12/09/97	14:58	-	-	5.70	Grab
12/16/97	10:54	-	-	7.29	Grab
12/22/97	10:46	-	-	6.33	Grab
12/29/97	10:36	-	-	9.45	Grab
01/06/98	10:32	-	-	9.63	Grab
01/14/98	10:55	-	-	11.64	Grab
01/27/98	10:54	-	-	9.62	Grab
02/03/98	11:39	-	-	10.46	Grab
02/10/98	10:49	-	-	9.81	Grab
02/17/98	10:46	-	-	9.36	Grab
02/19/98	10:35	-	-	12.22	Grab
02/25/98	15:53	-	-	10.84	Grab
03/03/98	10:58	-	-	10.48	Grab
03/08/98	10:07	-	-	10.32	ISCO
03/08/98	12:00	-	-	10.53	ISCO
03/08/98	14:00	-	-	10.82	ISCO
03/08/98	16:00	-	-	11.48	ISCO
03/08/98	20:00	-	-	11.64	ISCO
03/08/98	22:00	-	-	11.38	ISCO
03/09/98	0:01	-	-	11.26	ISCO
03/09/98	2:00	-	-	10.02	ISCO
03/09/98	4:00	-	-	10.25	ISCO
03/09/98	6:00	-	-	11.41	ISCO
03/09/98	8:00	-	-	11.85	ISCO
03/09/98	10:00	-	-	11.76	ISCO
03/09/98	12:00	-	-	11.02	ISCO
03/11/98	10:50	-	-	13.22	Grab
03/17/98	11:04	-	-	9.86	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/17/98	11:13	-	-	8.43	ISCO
03/17/98	15:00	-	-	6.86	ISCO
03/17/98	18:00	-	-	7.54	ISCO
03/17/98	21:00	-	-	5.50	ISCO
03/18/98	0:01	-	-	5.76	ISCO
03/18/98	3:00	-	-	6.69	ISCO
03/18/98	6:00	-	-	7.33	ISCO
03/18/98	9:00	-	-	7.75	ISCO
03/18/98	12:00	-	-	8.00	ISCO
03/18/98	15:00	-	-	9.63	ISCO
03/18/98	18:00	-	-	8.54	ISCO
03/18/98	21:00	-	-	8.75	ISCO
03/19/98	0:01	-	-	9.07	ISCO
03/19/98	3:00	-	-	9.49	ISCO
03/19/98	9:55	-	-	11.29	Grab
03/19/98	10:05	-	-	9.70	ISCO
03/19/98	18:00	-	-	11.42	ISCO
03/19/98	22:00	-	-	10.14	ISCO
03/20/98	2:00	-	-	9.75	ISCO
03/20/98	6:00	-	-	8.64	ISCO
03/20/98	10:00	-	-	6.16	ISCO
03/20/98	14:00	-	-	5.29	ISCO
03/20/98	18:00	-	-	5.26	ISCO
03/20/98	22:00	-	-	6.22	ISCO
03/21/98	2:00	-	-	7.12	ISCO
03/21/98	6:00	-	-	7.73	ISCO
03/21/98	10:00	-	-	8.18	ISCO
03/21/98	14:00	-	-	7.46	ISCO
03/21/98	18:00	-	-	7.46	ISCO
03/23/98	11:56	-	-	10.30	Grab
04/02/98	11:24	-	-	11.83	Grab
04/08/98	11:03	-	-	13.46	Grab
04/14/98	10:57	-	-	10.15	Grab
04/15/98	13:05	-	-	12.31	Grab
04/21/98	10:30	-	-	12.75	Grab
04/29/98	10:48	-	-	11.90	ISCO
04/29/98	10:58	-	-	10.61	Grab
04/30/98	0:01	-	-	10.84	ISCO

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/30/98	10:52	-	-	15.54	Grab
04/30/98	12:00	-	-	14.80	ISCO
05/01/98	3:00	-	-	15.11	ISCO
05/01/98	15:00	-	-	14.96	ISCO
05/01/98	21:00	-	-	15.06	ISCO
05/02/98	3:00	-	-	14.29	ISCO
05/02/98	15:30	-	-	14.67	ISCO
05/02/98	15:36	-	-	13.39	Grab
05/03/98	2:00	-	-	14.77	ISCO
05/03/98	5:00	-	-	14.61	ISCO
05/03/98	8:00	-	-	12.99	ISCO
05/03/98	11:00	-	-	10.89	ISCO
05/03/98	14:00	-	-	10.34	ISCO
05/03/98	17:00	-	-	10.15	ISCO
05/03/98	20:00	-	-	10.88	ISCO
05/03/98	23:00	-	-	11.75	ISCO
05/04/98	2:00	-	-	12.29	ISCO
05/04/98	5:00	-	-	12.35	ISCO
05/04/98	6:20	-	-	12.78	ISCO
05/04/98	14:00	-	-	12.97	ISCO
05/04/98	22:00	-	-	13.66	ISCO
05/05/98	6:00	-	-	13.90	ISCO
05/05/98	14:00	-	-	14.08	ISCO
05/05/98	22:00	-	-	14.18	ISCO
05/06/98	6:00	-	-	14.45	ISCO
05/06/98	11:27	-	-	14.47	Grab
05/06/98	18:00	-	-	14.58	ISCO
05/07/98	0:01	-	-	14.94	ISCO
05/07/98	6:00	-	-	12.99	ISCO
05/07/98	12:00	-	-	14.23	ISCO
05/07/98	18:00	-	-	14.53	ISCO
05/08/98	0:01	-	-	13.86	ISCO
05/08/98	6:00	-	-	12.65	ISCO
05/08/98	12:00	-	-	11.94	ISCO
05/08/98	18:00	-	-	12.66	ISCO
05/09/98	6:00	-	-	13.93	ISCO
05/09/98	18:00	-	-	14.60	ISCO
05/12/98	10:56	-	-	13.55	Grab



**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/19/98	10:53	-	-	14.66	Grab
05/20/98	10:30	-	-	14.01	Grab
05/22/98	10:30	-	-	14.00	Grab
05/24/98	7:09	-	-	14.90	Grab
05/27/98	10:26	-	-	14.88	Grab
06/03/98	10:46	-	-	12.55	Grab
06/04/98	15:45	-	-	12.37	Grab
06/05/98	9:55	-	-	12.25	Grab
06/08/98	14:28	-	-	12.74	Grab
06/08/98	14:44	-	-	13.07	ISCO
06/08/98	18:00	-	-	13.06	ISCO
06/08/98	22:00	-	-	13.03	ISCO
06/09/98	2:00	-	-	12.42	ISCO
06/09/98	6:00	-	-	12.95	ISCO
06/09/98	10:00	-	-	13.83	ISCO
06/09/98	11:24	-	-	12.84	Grab
06/09/98	14:00	-	-	14.44	ISCO
06/09/98	15:48	-	-	13.49	Grab
06/09/98	18:00	-	-	14.01	ISCO
06/09/98	22:00	-	-	13.57	ISCO
06/10/98	2:00	-	-	13.99	ISCO
06/10/98	6:00	-	-	12.58	ISCO
06/10/98	10:00	-	-	13.85	ISCO
06/10/98	13:13	-	-	12.67	Grab
06/10/98	14:00	-	-	15.23	ISCO
06/11/98	2:00	-	-	14.72	ISCO
06/11/98	10:58	-	-	11.85	Grab
06/11/98	16:02	-	-	14.91	Grab
06/11/98	21:34	-	-	14.91	Grab
06/11/98	22:00	-	-	15.09	ISCO
06/12/98	2:00	-	-	16.60	ISCO
06/12/98	6:00	-	-	15.35	ISCO
06/12/98	10:59	-	-	15.39	Grab
06/12/98	16:52	-	-	13.33	Grab
06/12/98	22:00	-	-	16.58	ISCO
06/13/98	7:42	-	-	13.27	Grab
06/13/98	18:00	-	-	16.27	ISCO
06/14/98	2:00	-	-	16.02	ISCO

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/14/98	8:39	-	-	15.53	Grab
06/14/98	14:00	-	-	15.17	ISCO
06/14/98	20:09	-	-	13.69	Grab
06/14/98	22:00	-	-	12.08	ISCO
06/15/98	2:00	-	-	13.66	ISCO
06/15/98	6:00	-	-	12.86	ISCO
06/15/98	10:00	-	-	13.73	ISCO
06/15/98	12:44	-	-	11.77	Grab
06/15/98	14:00	-	-	14.30	ISCO
06/15/98	18:00	-	-	14.35	ISCO
06/15/98	22:00	-	-	15.11	ISCO
06/16/98	2:00	-	-	15.39	ISCO
06/16/98	6:00	-	-	6.96	ISCO
06/16/98	10:00	-	-	6.19	ISCO
06/16/98	10:42	-	-	5.74	Grab
06/16/98	14:00	-	-	5.69	ISCO
06/16/98	14:48	-	-	5.28	Grab
06/16/98	18:00	-	-	6.93	ISCO
06/16/98	22:00	-	-	7.56	ISCO
06/17/98	2:00	-	-	8.03	ISCO
06/17/98	6:00	-	-	6.64	ISCO
06/17/98	10:00	-	-	7.42	ISCO
06/17/98	10:31	-	-	7.26	Grab
06/17/98	14:00	-	-	9.17	ISCO
06/17/98	18:00	-	-	9.34	ISCO
06/17/98	22:00	-	-	9.68	ISCO
06/18/98	2:00	-	-	9.94	ISCO
06/18/98	6:00	-	-	10.26	ISCO
06/18/98	10:00	-	-	10.66	ISCO
06/18/98	14:20	-	-	10.32	Grab
06/19/98	10:17	-	-	7.55	Grab
06/19/98	14:05	-	-	9.20	Grab
06/20/98	12:05	-	-	11.40	Grab
06/21/98	7:30	-	-	11.94	Grab
06/22/98	12:08	-	-	15.67	Grab
07/08/98	12:41	-	-	11.36	Grab
07/15/98	11:08	-	-	11.27	Grab
07/22/98	10:47	-	-	7.59	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
07/28/98	15:10	-	-	7.89	Grab
08/04/98	13:58	-	-	3.14	Grab
08/12/98	15:57	-	-	5.97	Grab
08/25/98	15:01	-	-	0.18	Grab
09/02/98	16:13	-	-	<0.09	Grab
09/09/98	10:54	-	-	<0.09	Grab
09/16/98	10:12	-	-	<0.09	Grab
09/22/98	11:51	-	-	<0.09	Grab
09/30/98	10:41	-	-	<0.09	Grab
10/06/98	11:15	-	-	<0.09	Grab
10/14/98	10:38	-	-	<0.09	Grab
10/20/98	10:08	-	-	<0.09	Grab
10/29/98	15:17	-	-	<0.09	Grab
11/04/98	11:29	-	-	0.25	Grab
11/12/98	10:05	-	-	1.27	Grab
11/18/98	10:50	-	-	0.48	Grab
11/23/98	11:00	-	-	0.29	Grab
12/01/98	10:30	-	-	<0.09	Grab
12/09/98	10:22	-	-	<0.09	Grab
12/15/98	10:51	-	-	0.44	Grab
12/21/98	10:15	-	-	1.28	Grab
01/19/99	11:24	-	-	2.33	Grab
01/25/99	11:01	-	-	11.34	Grab
02/02/99	10:45	-	-	12.44	Grab
02/09/99	11:00	-	-	12.63	Grab
02/17/99	11:13	-	-	12.85	Grab
02/24/99	10:30	-	-	12.56	Grab
03/03/99	15:57	-	-	13.25	Grab
03/10/99	10:11	-	-	12.64	Grab
03/16/99	10:43	-	-	12.82	Grab
03/25/99	10:04	-	-	12.18	Grab
03/30/99	10:58	-	-	11.76	Grab
04/05/99	15:03	-	-	10.98	Grab
04/06/99	10:28	-	-	11.44	Grab
04/08/99	9:27	-	-	11.32	Grab
04/13/99	11:05	-	-	11.95	Grab
04/14/99	15:31	-	-	11.82	Grab
04/14/99	15:46	-	-	11.75	ISCO

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/14/99	18:00	-	-	11.64	ISCO
04/15/99	0:01	-	-	12.35	ISCO
04/15/99	6:00	-	-	11.57	ISCO
04/15/99	12:00	-	-	12.61	ISCO
04/15/99	18:00	-	-	13.96	ISCO
04/16/99	0:01	-	-	16.33	ISCO
04/16/99	6:00	-	-	17.80	ISCO
04/16/99	12:00	-	-	18.04	ISCO
04/16/99	18:00	-	-	16.77	ISCO
04/17/99	0:01	-	-	16.37	ISCO
04/17/99	6:00	-	-	16.17	ISCO
04/17/99	11:23	-	-	16.31	ISCO
04/17/99	16:00	-	-	16.42	ISCO
04/18/99	0:01	-	-	16.60	ISCO
04/18/99	8:00	-	-	16.56	ISCO
04/18/99	16:00	-	-	16.58	ISCO
04/19/99	0:01	-	-	16.58	ISCO
04/19/99	8:00	-	-	25.20	ISCO
04/19/99	16:00	-	-	16.41	ISCO
04/20/99	10:50	-	-	15.50	Grab
04/27/99	10:48	-	-	14.87	Grab
05/05/99	11:06	-	-	13.92	Grab
05/11/99	10:28	-	-	13.09	Grab
05/17/99	9:40	-	-	14.57	Grab
05/18/99	10:29	-	-	15.15	Grab
05/21/99	13:58	-	-	14.51	Grab
05/22/99	7:05	-	-	14.36	Grab
05/25/99	10:50	-	-	13.97	Grab
06/01/99	16:09	-	-	12.97	Grab
06/02/99	13:25	-	-	18.80	Grab
06/04/99	19:29	-	-	11.94	Grab
06/05/99	7:22	-	-	16.88	Grab
06/9/99	15:06	-	-	14.88	Grab
06/10/99	10:02	-	-	14.80	Grab
06/10/99	10:21	-	-	15.07	ISCO
06/10/99	18:00	-	-	15.12	ISCO
06/11/99	0:01	-	-	15.01	ISCO
06/11/99	12:00	-	-	14.83	ISCO

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/12/99	0:01	-	-	14.81	ISCO
06/12/99	12:00	-	-	14.53	ISCO
06/12/99	21:05	-	-	13.43	Grab
06/13/99	0:01	-	-	13.34	ISCO
06/13/99	12:00	-	-	13.84	ISCO
06/13/99	20:07	-	-	14.01	Grab
06/13/99	20:17	-	-	14.37	ISCO
06/14/99	9:57	-	-	13.75	Grab
06/14/99	12:00	-	-	14.09	ISCO
06/15/99	11:12	-	-	13.64	Grab
06/15/99	12:00	-	-	13.77	ISCO
06/16/99	12:00	-	-	13.30	ISCO
06/21/99	10:28	-	-	12.09	Grab
07/01/99	9:51	-	-	8.95	Grab
07/08/99	9:25	-	-	4.86	Grab
07/13/99	11:15	-	-	1.27	Grab
07/20/99	15:52	-	-	<0.11	Grab
07/21/99	9:58	-	-	<0.11	Grab
07/27/99	10:52	-	-	<0.11	Grab
07/28/99	10:37	-	-	<0.11	Grab
07/29/99	10:58	-	-	<0.11	Grab
08/03/99	10:47	-	-	<0.11	Grab
08/11/99	10:10	-	-	<0.11	Grab
08/17/99	10:51	-	-	<0.11	Grab
08/24/99	11:06	-	-	<0.11	Grab
08/31/99	10:56	-	-	<0.11	Grab
09/07/99	10:50	-	-	<0.11	Grab
09/15/99	10:20	-	-	<0.11	Grab
09/22/99	11:04	-	-	<0.11	Grab
09/28/99	11:11	-	-	<0.11	Grab
10/13/99	14:30	-	-	<0.11	Grab
10/18/99	10:31	-	-	<0.11	Grab
10/26/99	10:53	47	-	<0.13	Grab
11/01/99	10:47	60	-	<0.13	Grab
11/08/99	10:02	49	-	<0.13	Grab
11/15/99	10:44	43	-	<0.13	Grab
11/22/99	9:31	49	-	<0.13	Grab
11/29/99	10:45	37	-	<0.13	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
12/06/99	10:16	39	-	1.03	Grab
12/13/99	10:15	36	-	0.13	Grab
12/20/99	10:30	33	-	0.92	Grab
01/03/00	10:25	38	-	0.53	Grab
01/10/00	10:13	40	-	1.20	Grab
01/18/00	9:45	33	-	0.52	Grab
02/09/00	11:50	33	-	0.96	Grab
02/15/00	9:50	34	-	3.76	Grab
02/22/00	11:19	42	-	7.30	Grab
02/29/00	10:16	46	-	7.15	Grab
03/07/00	16:13	67	-	6.61	Grab
03/14/00	10:01	43	-	6.92	Grab
03/21/00	10:22	48	-	11.74	Grab
03/28/00	10:34	46	-	9.37	Grab
04/04/00	9:38	45	-	8.40	Grab
04/11/00	9:17	47	-	7.23	Grab
04/18/00	9:48	50	-	8.13	Grab
04/25/00	9:24	53	-	8.76	Grab
05/02/00	9:16	59	-	7.37	Grab
05/09/00	8:53	69	-	5.41	Grab
05/16/00	9:05	60	-	8.83	Grab
05/23/00	14:12	77	-	7.59	Grab
05/28/00	9:58	63	-	19.54	Grab
05/30/00	8:39	63	-	16.98	Grab
06/06/00	9:15	61	-	12.71	Grab
06/13/00	8:30	68	-	16.69	Grab
06/20/00	9:13	70	-	10.58	Grab
06/24/00	8:50	67	-	14.38	Grab
06/26/00	10:33	71	-	14.83	Grab
07/03/00	9:17	69	-	12.57	Grab
07/10/00	9:45	75	-	9.13	Grab
07/17/00	10:58	80	-	4.50	Grab
07/24/00	13:00	81	-	0.39	Grab
08/01/00	15:19	86	-	0.33	Grab
08/07/00	8:32	74	-	<0.06	Grab
08/15/00	8:20	76	-	<0.06	Grab
08/22/00	8:48	-	-	<0.06	Grab
08/29/00	9:16	75	-	<0.06	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
09/05/00	8:52	63	-	<0.06	Grab
09/12/00	8:16	70	-	<0.06	Grab
09/19/00	8:10	63	-	<0.06	Grab
09/26/00	8:38	51	-	<0.06	Grab
10/03/00	8:18	62	-	<0.06	Grab
10/05/00	15:03	-	-	<0.06	Grab
10/10/00	8:40	44	-	2.92	Grab
10/17/00	8:55	56	-	1.43	Grab
10/24/00	8:45	63	-	0.23	Grab
10/30/00	10:42	53	-	<0.06	Grab
11/08/00	16:35	52	-	1.99	Grab
11/09/00	12:12	47	-	2.07	Grab
11/09/00	13:55	46	-	3.00	Grab
11/09/00	16:04	46	-	7.87	Grab
11/10/00	20:30	-	-	11.71	ISCO
11/14/00	9:45	44	-	12.15	Grab
11/14/00	11:05	-	-	12.18	ISCO
11/20/00	9:22	33	-	12.18	Grab
11/28/00	9:15	38	-	11.19	Grab
12/05/00	9:20	32	-	10.66	Grab
12/13/00	9:15	32	-	10.86	Grab
01/16/01	10:48	33	-	8.18	Grab
01/23/01	10:40	35	-	9.20	Grab
01/29/01	18:28	-	-	2.70	ISCO
01/29/01	19:28	-	-	2.90	ISCO
01/29/01	20:28	-	-	2.48	ISCO
01/29/01	21:13	-	-	2.50	ISCO
01/29/01	21:28	-	-	2.46	ISCO
01/29/01	21:43	-	-	2.46	ISCO
01/29/01	21:58	-	-	2.45	ISCO
01/29/01	22:13	-	-	2.55	ISCO
01/29/01	22:28	-	-	2.58	ISCO
01/29/01	23:43	-	-	2.56	ISCO
01/30/01	10:10	34	-	3.88	Grab
01/30/01	12:46	-	-	4.39	ISCO
01/30/01	13:01	-	-	4.43	ISCO
01/30/01	13:16	-	-	4.49	ISCO
01/30/01	13:31	-	-	4.52	ISCO

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
01/30/01	13:46	-	-	4.56	ISCO
01/30/01	14:01	-	-	4.59	ISCO
01/30/01	14:46	-	-	4.73	ISCO
01/30/01	15:01	-	-	4.75	ISCO
01/30/01	15:16	-	-	4.77	ISCO
02/06/01	10:10	38	-	10.20	Grab
02/08/01	17:15	-	-	8.74	ISCO
02/09/01	10:30	44	-	10.35	Grab
02/09/01	12:28	-	-	10.52	ISCO
02/09/01	15:28	-	-	10.52	ISCO
02/13/01	15:05	42	-	12.92	Grab
02/14/01	12:08	42	-	11.68	Grab
02/14/01	15:28	-	-	11.66	ISCO
02/14/01	18:28	-	-	10.60	ISCO
02/14/01	21:28	-	-	10.80	ISCO
02/15/01	0:28	-	-	11.27	ISCO
02/15/01	3:28	-	-	11.63	ISCO
02/15/01	6:28	-	-	12.03	ISCO
02/16/01	22:13	-	-	13.82	ISCO
02/20/01	9:29	40	-	13.34	Grab
02/24/01	14:28	-	-	7.26	ISCO
02/24/01	15:13	-	-	5.85	ISCO
02/24/01	16:43	-	-	4.95	ISCO
02/24/01	18:13	-	-	5.04	ISCO
02/24/01	21:13	-	-	4.69	ISCO
02/24/01	23:13	-	-	4.45	ISCO
02/25/01	0:13	-	-	4.20	ISCO
02/25/01	3:13	-	-	4.51	ISCO
02/25/01	11:17	41	-	5.94	Grab
02/25/01	12:13	-	-	6.41	ISCO
02/25/01	15:13	-	-	7.36	ISCO
02/25/01	18:13	-	-	8.18	ISCO
02/25/01	21:13	-	-	8.81	ISCO
02/26/01	0:13	-	-	9.24	ISCO
02/26/01	3:13	-	-	9.58	ISCO
02/26/01	6:13	-	-	9.92	ISCO
02/26/01	9:13	-	-	10.24	ISCO
02/26/01	12:13	-	-	10.24	ISCO



**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
02/26/01	15:13	-	-	10.19	ISCO
02/26/01	18:13	-	-	10.25	ISCO
02/26/01	21:13	-	-	10.38	ISCO
02/27/01	10:40	-	7.89	10.68	Grab
03/01/01	7:58	-	-	11.87	ISCO
03/06/01	9:35	39	-	13.49	Grab
03/15/01	9:45	-	-	13.01	Grab
03/21/01	10:38	46	7.83	13.78	Grab
03/27/01	10:48	42	8.28	13.33	Grab
04/03/01	8:26	46	-	12.35	Grab
04/10/01	9:00	58	-	10.95	Grab
04/17/01	8:36	41	7.97	12.89	Grab
04/24/01	9:40	59	8.07	11.82	Grab
05/01/01	8:15	62	-	11.16	Grab
05/09/01	9:38	65	-	9.90	Grab
05/16/01	9:37	74	-	9.61	Grab
05/22/01	15:32	65	8.36	13.30	Grab
05/30/01	8:49	60	-	12.57	Grab
06/04/01	15:27	63	7.69	14.87	Grab
06/06/01	10:48	-	-	17.95	ISCO
06/06/01	10:50	67	6.36	18.07	Grab
06/06/01	11:39	-	-	18.10	ISCO
06/06/01	14:29	-	-	19.53	ISCO
06/06/01	17:29	-	-	18.05	ISCO
06/06/01	20:29	-	-	18.01	ISCO
06/06/01	23:29	-	-	18.39	ISCO
06/7/01	2:29	-	-	18.88	ISCO
06/7/01	5:29	-	-	18.73	ISCO
06/13/01	12:50	77	-	15.17	Grab
06/19/01	8:50	72	8.14	13.18	Grab
06/27/01	9:33	-	-	10.03	Grab
07/03/01	11:20	67	-	5.91	Grab
07/10/01	9:04	80	8.28	2.85	Grab
07/17/01	8:30	75	-	0.06	Grab
07/25/01	9:25	81	7.98	<0.06	Grab
08/01/01	8:26	78	-	<0.06	Grab
08/08/01	10:34	-	8.26	<0.06	Grab
08/16/01	8:34	69	-	<0.06	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
08/22/01	9:57	71	-	1.21	Grab
08/29/01	9:00	70	8.13	<0.06	Grab
09/06/01	9:10	72	-	<0.06	Grab
09/12/01	8:46	66	8.21	<0.06	Grab
09/19/01	8:54	65	-	<0.06	Grab
09/26/01	8:56	54	8.00	<0.06	Grab
10/04/01	9:23	61	-	<0.06	Grab
10/11/01	9:29	62	8.26	<0.06	Grab
10/17/01	9:08	48	-	5.84	Grab
10/24/01	10:01	66	8.25	4.10	Grab
10/25/01	3:41	-	-	6.38	ISCO
10/26/01	11:33	-	-	8.45	ISCO
11/01/01	10:41	54	-	7.79	Grab
11/06/01	10:36	49	8.37	6.66	Grab
11/13/01	10:22	47	-	6.41	Grab
11/19/01	10:36	52	8.15	4.32	Grab
11/27/01	9:20	47	-	3.85	Grab
12/04/01	9:30	52	8.25	9.40	Grab
12/11/01	9:25	35	-	8.61	Grab
12/17/01	15:40	-	-	12.82	ISCO
12/17/01	16:53	-	-	12.99	ISCO
12/17/01	19:53	-	-	13.17	ISCO
12/19/01	15:38	45	-	13.09	Grab
12/20/01	6:28	-	-	12.66	ISCO
12/26/01	9:53	33	8.06	12.13	Grab
01/02/02	9:52	33	-	12.01	Grab
01/08/02	9:19	33	-	11.24	Grab
01/15/02	9:34	34	8.31	10.09	Grab
01/22/02	9:28	34	-	9.70	Grab
01/29/02	9:14	46	8.07	8.75	Grab
01/31/02	14:05	39	-	11.57	Grab
02/01/02	13:28	40	-	12.96	Grab
02/04/02	9:13	36	-	14.90	Grab
02/13/02	9:08	39	8.17	14.03	Grab
02/19/02	10:04	43	-	12.42	Grab
02/19/02	12:45	-	-	12.75	ISCO
02/19/02	15:15	-	-	14.03	ISCO
02/19/02	15:45	-	-	13.86	ISCO

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
02/19/02	18:00	-	-	11.90	ISCO
02/19/02	18:45	-	-	11.26	ISCO
02/19/02	21:45	-	-	10.56	ISCO
02/20/02	0:45	-	-	9.72	ISCO
02/20/02	3:45	-	-	9.65	ISCO
02/20/02	6:45	-	-	10.31	ISCO
02/20/02	9:45	-	-	10.69	ISCO
02/20/02	12:45	-	-	11.10	ISCO
02/20/02	15:10	45	-	11.31	Grab
02/20/02	15:45	-	-	11.46	ISCO
02/20/02	18:45	-	-	11.69	ISCO
02/20/02	21:45	-	-	12.05	ISCO
02/21/02	0:45	-	-	12.42	ISCO
02/21/02	3:45	-	-	12.74	ISCO
02/21/02	6:45	-	-	12.96	ISCO
02/21/02	9:45	-	-	13.13	ISCO
02/21/02	12:45	-	-	13.20	ISCO
02/21/02	15:45	-	-	13.57	ISCO
02/21/02	18:45	-	-	13.63	ISCO
02/21/02	21:45	-	-	13.76	ISCO
02/22/02	0:45	-	-	13.89	ISCO
02/22/02	9:48	40	-	14.07	Grab
02/25/02	9:26	45	8.10	14.67	Grab
03/05/02	9:05	37	-	14.91	Grab
03/09/02	11:59	-	-	13.10	ISCO
03/09/02	14:59	-	-	13.10	ISCO
03/09/02	17:59	-	-	12.11	ISCO
03/09/02	20:59	-	-	12.29	ISCO
03/09/02	23:59	-	-	12.89	ISCO
03/10/02	8:59	-	-	14.37	ISCO
03/12/02	9:51	44	8.45	14.94	Grab
03/16/02	13:00	-	-	14.21	ISCO
03/19/02	9:06	45	-	14.30	Grab
03/27/02	9:15	38	8.31	12.44	Grab
03/28/02	13:18	45	-	12.19	Grab
03/28/02	21:30	-	-	14.80	ISCO
03/29/02	0:15	-	-	14.79	ISCO
03/29/02	3:15	-	-	14.70	ISCO

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/29/02	6:15	-	-	14.52	ISCO
03/29/02	9:15	-	-	14.78	ISCO
03/29/02	14:41	44	-	15.29	Grab
03/29/02	16:00	-	-	14.85	ISCO
03/29/02	19:00	-	-	14.84	ISCO
03/29/02	22:00	-	-	14.53	ISCO
03/30/02	1:00	-	-	13.94	ISCO
03/30/02	4:00	-	-	13.90	ISCO
03/30/02	7:00	-	-	13.57	ISCO
03/30/02	10:00	-	-	13.93	ISCO
03/30/02	13:00	-	-	14.36	ISCO
04/02/02	9:23	47	-	14.56	Grab
04/03/02	9:29	-	-	14.18	ISCO
04/08/02	12:28	48	-	13.76	Grab
04/16/02	8:12	62	7.78	13.85	Grab
04/23/02	8:15	48	-	16.00	Grab
04/27/02	11:32	50	-	14.42	Grab
04/27/02	14:59	-	-	14.20	ISCO
04/27/02	16:59	-	-	15.90	ISCO
04/27/02	17:59	-	-	17.34	ISCO
04/27/02	20:14	-	-	15.89	ISCO
04/27/02	20:59	-	-	15.48	ISCO
04/27/02	23:59	-	-	14.72	ISCO
04/28/02	2:59	-	-	15.14	ISCO
04/28/02	5:59	-	-	15.82	ISCO
04/28/02	8:26	51	-	16.29	Grab
04/28/02	8:59	-	-	16.18	ISCO
04/28/02	11:59	-	-	16.63	ISCO
04/28/02	14:59	-	-	16.81	ISCO
04/28/02	17:59	-	-	16.95	ISCO
04/28/02	20:59	-	-	17.12	ISCO
04/28/02	23:59	-	-	17.11	ISCO
04/29/02	2:59	-	-	17.22	ISCO
04/29/02	5:59	-	-	17.41	ISCO
04/29/02	8:59	-	-	17.30	ISCO
04/29/02	11:59	-	-	17.36	ISCO
04/29/02	14:59	-	-	17.31	ISCO
04/29/02	17:59	-	-	17.39	ISCO

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/30/02	8:32	51	7.58	17.52	Grab
04/30/02	8:59	-	-	17.30	ISCO
05/01/02	15:05	56	-	17.28	Grab
05/06/02	9:36	58	-	16.34	Grab
05/07/02	8:01	59	-	15.74	Grab
05/09/02	9:05	57	-	17.42	Grab
05/11/02	14:14	-	-	14.57	ISCO
05/11/02	17:14	-	-	17.06	ISCO
05/11/02	20:14	-	-	17.93	ISCO
05/11/02	23:14	-	-	16.64	ISCO
05/12/02	2:14	-	-	16.73	ISCO
05/12/02	5:14	-	-	17.31	ISCO
05/12/02	8:09	56	-	18.07	Grab
05/12/02	8:14	-	-	17.87	ISCO
05/12/02	9:29	-	-	16.22	ISCO
05/12/02	10:29	-	-	13.07	ISCO
05/12/02	11:14	-	-	13.15	ISCO
05/12/02	14:14	-	-	12.51	ISCO
05/12/02	16:00	-	-	13.89	ISCO
05/12/02	16:14	-	-	13.28	ISCO
05/12/02	19:14	-	-	12.83	ISCO
05/12/02	22:14	-	-	13.15	ISCO
05/13/02	1:14	-	-	13.90	ISCO
05/13/02	4:14	-	-	14.31	ISCO
05/13/02	7:14	-	-	14.74	ISCO
05/13/02	10:14	-	-	14.98	ISCO
05/13/02	13:14	-	-	15.48	ISCO
05/13/02	13:51	54	-	15.73	Grab
05/13/02	16:14	-	-	15.93	ISCO
05/13/02	19:14	-	-	16.07	ISCO
05/13/02	22:14	-	-	16.29	ISCO
05/14/02	1:14	-	-	16.28	ISCO
05/14/02	4:14	-	-	16.31	ISCO
05/14/02	7:14	-	-	16.36	ISCO
05/14/02	9:12	54	7.33	16.63	Grab
05/14/02	10:14	-	-	16.57	ISCO
05/14/02	13:14	-	-	16.62	ISCO
05/14/02	16:14	-	-	16.78	ISCO

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/14/02	19:14	-	-	16.53	ISCO
05/14/02	22:14	-	-	16.61	ISCO
05/15/02	1:14	-	-	16.63	ISCO
05/15/02	4:14	-	-	16.66	ISCO
05/15/02	7:14	-	-	16.88	ISCO
05/15/02	10:14	-	-	16.77	ISCO
05/15/02	13:14	-	-	17.05	ISCO
05/15/02	16:14	-	-	17.30	ISCO
05/15/02	19:14	-	-	17.16	ISCO
05/16/02	13:54	57	-	17.07	Grab
05/17/02	1:44	-	-	17.15	ISCO
05/17/02	4:44	-	-	16.87	ISCO
05/17/02	7:44	-	-	17.23	ISCO
05/18/02	0:29	-	-	18.04	ISCO
05/18/02	3:29	-	-	18.09	ISCO
05/18/02	6:29	-	-	17.90	ISCO
05/18/02	9:29	-	-	18.06	ISCO
05/18/02	12:29	-	-	18.19	ISCO
05/18/02	15:29	-	-	18.33	ISCO
05/20/02	10:41	55	-	18.25	Grab
05/26/02	18:44	-	-	16.98	ISCO
05/28/02	9:23	65	8.40	17.00	Grab
06/04/02	8:28	-	-	16.51	ISCO
06/04/02	8:48	70	-	16.56	Grab
06/11/02	12:44	-	-	16.83	ISCO
06/11/02	13:09	67	7.35	14.70	Grab
06/11/02	13:59	-	-	12.58	ISCO
06/11/02	15:44	-	-	11.68	ISCO
06/11/02	15:58	68	-	11.93	Grab
06/11/02	18:44	-	-	10.81	ISCO
06/11/02	21:44	-	-	11.36	ISCO
06/12/02	0:44	-	-	12.26	ISCO
06/12/02	3:44	-	-	13.50	ISCO
06/12/02	6:44	-	-	15.07	ISCO
06/12/02	9:44	-	-	15.45	ISCO
06/12/02	12:31	67	-	15.89	Grab
06/12/02	12:44	-	-	16.00	ISCO
06/12/02	15:44	-	-	16.51	ISCO

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/12/02	18:44	-	-	16.63	ISCO
06/12/02	21:44	-	-	16.70	ISCO
06/13/02	0:44	-	-	16.96	ISCO
06/13/02	3:44	-	-	17.31	ISCO
06/13/02	6:44	-	-	16.94	ISCO
06/13/02	7:44	-	-	9.71	ISCO
06/13/02	8:29	-	-	8.24	ISCO
06/13/02	9:44	-	-	7.56	ISCO
06/13/02	10:52	63	-	8.17	Grab
06/13/02	12:44	-	-	6.91	ISCO
06/13/02	14:23	66	-	7.63	Grab
06/13/02	15:44	-	-	8.39	ISCO
06/13/02	18:44	-	-	12.44	ISCO
06/13/02	21:44	-	-	13.45	ISCO
06/14/02	0:44	-	-	13.89	ISCO
06/14/02	3:44	-	-	14.44	ISCO
06/14/02	6:44	-	-	15.10	ISCO
06/14/02	8:28	62	-	15.59	Grab
06/14/02	9:44	-	-	15.71	ISCO
06/14/02	12:44	-	-	15.99	ISCO
06/14/02	15:44	-	-	16.50	ISCO
06/14/02	18:44	-	-	16.72	ISCO
06/14/02	21:44	-	-	16.80	ISCO
06/15/02	0:44	-	-	16.97	ISCO
06/15/02	3:44	-	-	17.08	ISCO
06/15/02	6:44	-	-	17.10	ISCO
06/15/02	9:44	-	-	17.04	ISCO
06/15/02	12:44	-	-	17.08	ISCO
06/15/02	15:44	-	-	16.69	ISCO
06/15/02	18:44	-	-	16.68	ISCO
06/18/02	8:21	64	-	17.71	Grab
06/25/02	7:57	70	7.91	16.08	Grab
06/26/02	6:45	-	-	9.84	ISCO
06/27/02	16:00	-	-	12.12	ISCO
06/29/02	16:45	-	-	14.40	ISCO
06/29/02	19:00	-	-	8.12	ISCO
06/29/02	22:00	-	-	6.87	ISCO
07/02/02	8:25	75	-	13.86	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
07/08/02	9:45	-	-	9.07	ISCO
07/09/02	8:40	77	-	9.57	Grab
07/16/02	13:46	89	8.89	3.77	Grab
07/23/02	8:26	77	-	<0.06	Grab
07/30/02	8:27	76	8.18	0.21	Grab
08/06/02	8:22	72	-	<0.06	Grab
08/14/02	8:38	72	7.84	<0.06	Grab
08/19/02	8:19	70	-	<0.06	Grab
08/23/02	7:15	-	-	3.93	ISCO
08/23/02	7:45	72	-	3.36	Grab
08/23/02	10:15	-	-	3.90	ISCO
08/23/02	12:40	73	-	3.75	Grab
08/23/02	13:15	-	-	3.85	ISCO
08/23/02	15:22	74	-	3.30	Grab
08/23/02	16:15	-	-	3.09	ISCO
08/23/02	19:15	-	-	3.34	ISCO
08/23/02	22:15	-	-	3.72	ISCO
08/24/02	1:15	-	-	4.40	ISCO
08/24/02	4:15	-	-	4.84	ISCO
08/24/02	7:43	73	-	5.23	Grab
08/27/02	8:23	73	8.02	6.03	Grab
09/03/02	8:18	75	-	0.86	Grab
09/10/02	8:23	75	7.88	<0.06	Grab
09/17/02	8:20	64	-	<0.06	Grab
09/24/02	8:21	57	8.00	<0.06	Grab
10/01/02	8:28	68	-	<0.06	Grab
10/08/02	8:35	52	7.96	<0.06	Grab
10/15/02	8:25	46	-	<0.06	Grab
10/22/02	8:14	47	7.78	<0.06	Grab
10/28/02	9:30	48	-	<0.06	Grab
11/06/02	9:22	43	8.00	<0.06	Grab
11/12/02	9:29	45	-	<0.06	Grab
11/19/02	9:12	41	8.03	<0.06	Grab
11/25/02	9:28	34	-	<0.06	Grab
12/03/02	9:54	34	-	<0.06	Grab
12/10/02	9:35	39	7.83	<0.06	Grab
12/17/02	9:09	34	-	<0.06	Grab
12/23/02	9:31	34	7.59	5.08	Grab



**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
12/30/02	9:41	36	-	4.16	Grab
01/07/03	9:22	34	-	5.60	Grab
02/04/03	10:02	34	-	3.96	Grab
02/10/03	9:40	34	7.64	4.51	Grab
02/25/03	9:44	35	7.80	3.42	Grab
03/04/03	9:05	36	-	2.85	Grab
03/11/03	9:27	35	7.55	4.64	Grab
03/18/03	9:31	54	-	3.50	Grab
03/25/03	9:14	56	8.16	2.69	Grab
03/31/03	9:14	43	-	3.01	Grab
04/07/03	8:39	55	7.27	8.95	Grab
04/15/03	8:27	57	-	6.81	Grab
04/22/03	8:09	48	-	6.37	Grab
04/29/03	8:18	56	-	6.65	Grab
05/04/03	20:55	-	-	7.41	ISCO
05/04/03	21:25	-	-	7.27	ISCO
05/05/03	0:25	-	-	13.45	ISCO
05/05/03	0:55	-	-	15.55	ISCO
05/05/03	3:55	-	-	16.51	ISCO
05/05/03	6:55	-	-	14.95	ISCO
05/05/03	8:07	54	-	14.90	Grab
05/05/03	9:59	-	-	15.29	ISCO
05/05/03	12:59	-	-	15.76	ISCO
05/05/03	15:59	-	-	15.79	ISCO
05/05/03	18:59	-	-	15.46	ISCO
05/05/03	21:59	-	-	15.20	ISCO
05/06/03	0:59	-	-	14.84	ISCO
05/06/03	8:40	55	-	14.20	Grab
05/09/03	6:29	-	-	14.46	Grab
05/09/03	7:59	-	-	15.04	Grab
05/09/03	9:47	61	-	13.45	Grab
05/09/03	10:59	-	-	12.31	ISCO
05/09/03	13:59	-	-	12.55	ISCO
05/09/03	16:59	-	-	13.41	ISCO
05/09/03	19:59	-	-	13.88	ISCO
05/10/03	3:29	-	-	13.74	ISCO
05/10/03	6:29	-	-	13.54	ISCO
05/10/03	9:29	-	-	13.83	ISCO

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/10/03	12:29	-	-	13.26	ISCO
05/10/03	15:29	-	-	14.86	ISCO
05/10/03	18:29	-	-	14.78	ISCO
05/10/03	21:29	-	-	14.49	ISCO
05/11/03	0:29	-	-	14.93	ISCO
05/13/03	10:00	55	-	14.63	Grab
05/20/03	8:32	61	7.98	12.62	Grab
05/27/03	8:58	61	-	11.44	Grab
06/03/03	9:03	55	-	10.42	Grab
06/10/03	8:21	64	7.92	8.59	Grab
06/11/03	21:52	69	-	8.34	Grab
06/12/03	0:29	-	-	11.03	ISCO
06/12/03	1:02	63	-	10.97	Grab
06/12/03	3:29	-	-	13.68	ISCO
06/12/03	6:29	-	-	16.63	ISCO
06/12/03	12:29	-	-	17.19	ISCO
06/12/03	12:30	-	-	17.07	Grab
06/12/03	15:29	-	-	17.08	ISCO
06/12/03	18:29	-	-	17.21	ISCO
06/12/03	21:29	-	-	17.22	ISCO
06/13/03	0:29	-	-	17.12	ISCO
06/13/03	3:09	-	-	16.84	ISCO
06/13/03	6:29	-	-	16.82	ISCO
06/13/03	9:29	-	-	16.66	ISCO
06/13/03	12:29	-	-	16.33	ISCO
06/13/03	15:29	-	-	16.32	ISCO
06/13/03	16:29	-	-	16.17	ISCO
06/13/03	19:29	-	-	16.21	ISCO
06/17/03	9:35	65	-	14.62	Grab
06/24/03	9:08	73	8.42	11.92	Grab
07/01/03	9:06	73	-	9.36	Grab
07/08/03	9:32	80	7.90	8.65	Grab
09/13/05	10:53	74	7.92	<0.07	Grab
09/21/05	10:00	71	8.06	<0.07	Grab
09/26/05	14:36	72	8.64	0.07	Grab
10/03/05	14:06	73	8.86	0.09	Grab
10/11/05	14:18	63	8.67	<0.07	Grab
10/17/05	13:48	63	8.40	<0.07	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
10/26/05	14:56	49	8.38	<0.07	Grab
10/31/05	14:31	55	8.17	<0.07	Grab
11/07/05	15:31	56	8.29	4.96	Grab
11/14/05	13:48	45	8.20	3.98	Grab
11/16/05	10:40	40	7.81	6.06	Grab
11/22/05	10:19	38	8.09	5.53	Grab
11/28/05	15:42	52	7.36	8.84	Grab
12/12/05	11:28	33	7.85	6.45	Grab
01/03/06	12:43	-	8.14	8.80	Grab
01/09/06	15:30	40	8.25	8.14	Grab
01/17/06	14:49	38	8.04	8.43	Grab
01/23/06	14:24	40	8.22	9.29	Grab
01/31/06	14:37	42	8.14	9.94	Grab
02/06/06	16:14	39	7.91	9.31	Grab
02/15/06	12:04	42	8.24	8.69	Grab
02/22/06	15:27	45	8.20	9.82	Grab
02/28/06	12:54	44	8.17	9.30	Grab
03/07/06	14:48	48	8.31	8.61	Grab
03/20/06	15:57	41	8.13	12.37	Grab
03/28/06	10:41	44	8.15	11.06	Grab
04/04/06	11:59	49	8.08	12.27	Grab
04/11/06	11:00	52	7.93	12.90	Grab
04/21/06	12:19	55	7.45	13.06	Grab
04/25/06	10:52	48	7.73	13.20	Grab
05/02/06	12:09	61	7.83	12.87	Grab
05/09/06	14:23	63	8.20	13.02	Grab
05/16/06	11:00	59	7.81	13.81	Grab
05/23/06	11:47	64	8.35	12.69	Grab
05/31/06	10:58	76	8.07	11.96	Grab
06/07/06	10:59	74	8.32	11.43	Grab
06/12/06	11:47	71	8.07	10.96	Grab
06/27/06	13:16	75	8.49	7.47	Grab
07/05/06	13:43	78	8.36	7.27	Grab
07/11/06	10:48	75	7.48	2.92	Grab
07/19/06	10:57	87	8.55	1.78	Grab
07/28/06	7:28	73	7.15	8.42	Grab
08/02/06	10:40	86	7.81	5.69	Grab
08/08/06	12:10	80	8.31	1.23	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
08/16/06	10:36	77	8.35	1.95	Grab
08/23/06	11:10	80	8.41	<0.07	Grab
08/29/06	10:46	71	7.98	0.43	Grab
09/06/06	7:55	62	7.89	0.19	Grab
09/13/06	10:52	66	7.97	2.19	Grab
09/19/06	11:28	59	8.20	0.96	Grab
09/26/06	11:34	65	8.26	0.87	Grab
10/02/06	10:25	65	8.06	0.40	Grab
10/11/06	10:55	58	8.15	1.25	Grab
10/17/06	13:44	56	7.45	8.69	Grab
10/24/06	11:44	46	8.16	7.66	Grab
11/01/06	12:10	44	8.62	6.82	Grab
11/06/06	15:38	50	8.32	6.88	Grab
11/13/06	13:12	46	8.36	7.71	Grab
11/21/06	12:00	44	8.24	8.88	Grab
11/29/06	11:15	58	8.11	7.90	Grab
12/06/06	13:46	44	7.85	<0.07	Grab
12/11/06	12:28	44	7.86	10.45	Grab
12/18/06	12:57	45	7.95	10.72	Grab
12/27/06	16:25	43	7.59	11.00	Grab
01/02/07	16:00	-	-	11.27	Grab
01/09/07	11:43	41	7.77	11.63	Grab
01/15/07	13:56	39	7.45	5.73	Grab
01/23/07	15:49	43	8.03	10.97	Grab
01/30/07	10:56	32	7.86	11.41	Grab
02/26/07	16:23	33	8.04	3.11	Grab
03/05/07	16:30	-	-	7.03	Grab
03/14/07	12:30	56	8.05	9.71	Grab
03/20/07	13:58	50	8.33	8.85	Grab
04/04/07	10:18	39	8.21	10.92	Grab
04/10/07	15:12	54	8.67	10.73	Grab
04/17/07	11:48	53	8.37	10.79	Grab
04/23/07	13:41	70	8.45	10.13	Grab
04/30/07	11:00	63	8.32	12.59	Grab
05/09/07	15:02	-	8.45	11.17	Grab
05/14/07	11:37	69	8.46	10.60	Grab
05/22/07	13:01	74	8.50	9.34	Grab
05/29/07	8:30	66	8.18	12.66	Grab

**Table E-6. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/05/07	9:05	66	8.50	10.06	Grab
06/20/07	10:11	75	8.52	5.00	Grab
06/27/07	11:10	74	7.86	10.04	Grab
07/03/07	16:05	81	8.40	9.09	Grab
07/11/07	9:45	74	8.41	3.64	Grab
07/18/07	9:15	68	7.66	4.88	Grab
07/24/07	10:52	78	8.65	2.57	Grab
07/31/07	13:20	84	8.65	0.13	Grab
08/07/07	9:10	82	8.00	<0.07	Grab
08/16/07	11:02	74	8.37	<0.07	Grab
08/22/07	9:55	81	7.78	<0.07	Grab
08/29/07	12:42	87	8.42	<0.07	Grab
09/04/07	11:55	80	8.26	<0.07	Grab
09/12/07	11:28	62	8.27	<0.07	Grab
09/19/07	10:59	72	7.74	<0.07	Grab
09/26/07	11:10	67	7.87	<0.07	Grab
10/03/07	16:42	75	8.87	<0.07	Grab
10/10/07	10:20	54	8.00	<0.07	Grab
10/17/07	12:50	66	8.22	<0.07	Grab
10/25/07	11:00	49	7.87	<0.07	Grab
10/30/07	10:55	48	7.91	<0.07	Grab
11/07/07	15:00	47	8.42	<0.07	Grab
11/13/07	14:01	56	8.28	0.49	Grab
11/27/07	11:08	42	8.20	8.05	Grab
12/04/07	13:10	39	8.33	8.70	Grab
12/18/07	11:25	-	-	11.46	Grab
12/27/07	10:20	40	8.10	11.98	Grab
01/08/08	17:37	-	-	4.27	Grab
01/10/08	11:39	-	-	8.30	Grab
01/16/08	8:40	-	-	12.00	Grab
01/23/08	14:27	39	8.53	11.74	Grab
01/31/08	10:40	31	8.42	10.31	Grab
02/07/08	11:15	-	-	4.91	Grab
02/14/08	11:42	37	8.59	9.91	Grab
02/19/08	10:45	-	-	8.22	Grab
03/03/08	13:40	41	7.65	7.40	Grab
03/13/08	12:40	46	8.25	11.86	Grab
03/27/08	9:34	44	8.63	11.81	Grab

**Table E-6. Concluded**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/02/08	10:45	45	8.02	12.06	Grab
04/10/08	9:55	42	8.09	11.28	Grab
04/24/08	11:37	63	8.30	11.41	Grab
05/07/08	11:05	60	8.45	11.94	Grab
05/19/08	10:20	-	7.81	14.81	Grab
05/28/08	10:00	55	7.93	13.44	Grab
06/02/08	11:55	-	-	14.70	Grab
06/11/08	11:48	69	7.94	11.47	Grab
06/26/08	9:50	72	8.31	12.97	Grab
07/07/08	13:53	-	-	6.83	Grab
07/17/08	15:11	-	7.84	11.43	Grab
07/31/08	9:40	73	8.33	7.74	Grab
08/06/08	13:10	85	8.00	5.97	Grab
08/14/08	9:55	69	7.72	2.18	Grab
08/19/08	13:33	85	8.43	0.16	Grab
08/26/08	14:50	82	8.42	<0.07	Grab
09/02/08	13:40	89	8.34	<0.07	Grab
09/11/08	13:50	72	8.21	<0.07	Grab
09/23/08	10:05	66	8.09	4.75	Grab
09/30/08	14:57	65	8.24	4.45	Grab

**Notes:**

\*Grab: Weighted Bottle (dip sample in extreme low flow conditions)

ISCO: Point sample, peristaltic pump

**Table E-7. Nitrate-N Sample Concentrations (WY 1993-2008)  
for Sangamon River USGS Station #05572000 near Monticello (Station 111)**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/19/93	10:40	-	-	9.44	Grab
05/07/93	13:20	-	-	9.26	Grab
05/14/93	13:50	-	-	10.39	Grab
06/16/93	11:35	-	-	10.48	Grab
06/22/93	15:05	-	-	11.27	Grab
06/29/93	12:41	-	-	9.06	Grab
07/06/93	14:30	-	-	7.07	Grab
07/15/93	15:15	-	-	6.69	Grab
07/22/93	14:08	-	-	8.34	Grab
07/29/93	13:17	-	-	6.62	Grab
08/10/93	10:44	-	-	5.60	Grab
08/18/93	10:25	-	-	6.22	Grab
08/24/93	9:49	-	-	5.93	Grab
08/31/93	14:05	-	-	5.26	Grab
09/08/93	15:17	-	-	3.40	Grab
09/14/93	14:16	-	-	5.37	Grab
09/16/93	10:39	-	-	4.16	Grab
09/22/93	14:50	-	-	6.18	Grab
09/29/93	14:08	-	-	5.73	Grab
10/06/93	14:51	-	-	6.54	Grab
10/12/93	14:18	-	-	6.23	Grab
10/18/93	15:25	-	-	3.57	Grab
10/20/93	10:15	-	-	3.30	Grab
10/27/93	12:09	-	-	5.99	Grab
11/02/93	15:04	-	-	5.48	Grab
11/09/93	13:39	-	-	5.61	Grab
11/15/93	14:38	-	-	4.86	Grab
11/24/93	12:18	-	-	7.49	Grab
12/01/93	13:21	-	-	7.16	Grab
12/10/93	10:22	-	-	6.96	Grab
12/16/93	11:54	-	-	6.97	Grab
12/28/93	15:10	-	-	6.55	Grab
02/15/94	13:30	-	-	4.19	Grab
02/22/94	12:48	-	-	6.27	Grab
02/28/94	13:49	-	-	5.49	Grab
03/07/94	14:20	-	-	6.38	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/17/94	13:10	-	-	6.78	Grab
03/23/94	13:04	-	-	6.40	Grab
03/28/94	13:06	-	-	5.60	Grab
04/04/94	11:56	-	-	5.43	Grab
04/11/94	12:45	-	-	6.27	Grab
04/13/94	13:49	-	-	2.69	Grab
04/14/94	13:36	-	-	2.92	Grab
04/18/94	13:51	-	-	7.03	Grab
04/25/94	13:15	-	-	6.91	Grab
04/29/94	12:49	-	-	7.52	Grab
05/03/94	12:51	-	-	9.13	Grab
05/09/94	13:02	-	-	9.54	Grab
05/16/94	13:10	-	-	8.69	Grab
05/24/94	13:30	-	-	8.37	Grab
06/01/94	11:44	-	-	7.84	Grab
06/06/94	13:19	-	-	7.04	Grab
06/13/94	15:08	-	-	7.15	Grab
06/20/94	11:22	-	-	5.37	Grab
06/27/94	11:29	-	-	4.84	Grab
07/06/94	11:12	-	-	2.42	Grab
07/12/94	11:31	-	-	5.52	Grab
07/26/94	10:02	-	-	<0.02	Grab
08/01/94	9:47	-	-	<0.02	Grab
09/07/94	8:33	-	-	0.64	Grab
09/23/94	9:54	-	-	0.04	Grab
10/12/94	11:56	-	-	<0.02	Grab
10/18/94	12:38	-	-	0.63	Grab
10/25/94	12:12	-	-	<0.02	Grab
11/01/94	15:29	-	-	<0.02	Grab
11/06/94	12:50	-	-	0.89	Grab
11/07/94	13:07	-	-	0.90	Grab
11/14/94	14:08	-	-	3.89	Grab
11/21/94	12:07	-	-	3.48	Grab
11/28/94	14:33	-	-	4.61	Grab
12/05/94	13:50	-	-	5.61	Grab
12/07/94	16:45	-	-	5.45	Grab
12/13/94	13:28	-	-	8.46	Grab
12/21/94	10:47	-	-	7.26	Grab



**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
01/17/95	14:42	-	-	8.54	Grab
01/23/95	13:09	-	-	8.64	Grab
02/01/95	13:42	-	-	7.77	Grab
02/22/95	14:36	-	-	5.57	Grab
02/24/95	13:20	-	-	5.02	Grab
02/24/95	13:47	-	-	4.95	Grab
02/27/95	10:15	-	-	5.37	Grab
02/27/95	10:35	-	-	5.28	Grab
03/08/95	10:17	-	-	7.52	Grab
03/08/95	16:26	-	-	8.04	Grab
03/16/95	13:55	-	-	8.86	Grab
03/22/95	12:24	-	-	7.82	Grab
03/28/95	14:01	-	-	7.73	Grab
04/05/95	10:21	-	-	7.97	Grab
04/11/95	11:30	-	-	7.18	Grab
04/12/95	13:00	-	-	9.76	Grab
04/25/95	12:29	-	-	9.99	Grab
05/02/95	12:55	-	-	8.94	Grab
05/10/95	10:36	-	-	10.47	Grab
05/17/95	16:15	-	-	4.51	Grab
05/22/95	13:43	-	-	9.22	Grab
05/31/95	9:36	-	-	10.11	Grab
06/05/95	13:04	-	-	10.49	Grab
06/12/95	13:37	-	-	9.03	Grab
06/21/95	12:24	-	-	10.30	Grab
06/27/95	12:45	-	-	10.08	Grab
07/10/95	12:00	-	-	7.43	Grab
07/18/95	12:32	-	-	4.02	Grab
07/25/95	11:45	-	-	2.71	Grab
08/02/95	12:07	-	-	1.42	Grab
08/07/95	13:08	-	-	1.64	Grab
08/15/95	15:35	-	-	4.47	Grab
08/22/95	12:50	-	-	3.48	Grab
08/31/95	13:55	-	-	1.41	Grab
09/06/95	12:57	-	-	0.61	Grab
09/12/95	12:41	-	-	<0.02	Grab
09/19/95	11:47	-	-	<0.02	Grab
09/26/95	13:50	-	-	<0.02	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
10/05/95	13:32	-	-	<0.02	Grab
10/11/95	12:50	-	-	0.03	Grab
10/17/95	11:50	-	-	0.14	Grab
10/24/95	12:18	-	-	<0.02	Grab
10/31/95	12:42	-	-	0.09	Grab
11/01/95	13:13	-	-	0.30	Grab
11/02/95	13:54	-	-	0.19	Grab
11/07/95	12:10	-	-	7.51	Grab
11/15/95	10:04	-	-	8.13	Grab
11/20/95	13:11	-	-	7.07	Grab
11/28/95	11:15	-	-	6.35	Grab
12/05/95	11:55	-	-	5.13	Grab
12/15/95	8:50	-	-	5.04	Grab
12/18/95	13:47	-	-	5.28	Grab
01/18/96	14:47	-	-	3.83	Grab
01/23/96	13:44	-	-	9.43	Grab
02/14/96	11:03	-	-	4.98	Grab
02/20/96	13:45	-	-	4.93	Grab
02/27/96	10:46	-	-	4.21	Grab
03/05/96	12:12	-	-	6.27	Grab
03/11/96	14:17	-	-	7.06	Grab
03/18/96	12:00	-	-	4.80	Grab
03/28/96	11:20	-	-	5.75	Grab
04/02/96	14:57	-	-	7.52	Grab
04/09/96	11:39	-	-	7.43	Grab
04/16/96	14:16	-	-	5.74	Grab
04/23/96	12:07	-	-	7.92	Grab
05/01/96	13:57	-	-	10.62	Grab
05/07/96	15:36	-	-	11.15	Grab
05/09/96	15:55	-	-	11.49	Grab
05/13/96	15:41	-	-	8.29	Grab
05/21/96	15:52	-	-	12.59	Grab
05/28/96	16:17	-	-	8.98	Grab
06/04/96	16:30	-	-	10.25	Grab
06/11/96	13:58	-	-	12.49	Grab
06/19/96	11:48	-	-	13.21	Grab
06/25/96	11:52	-	-	12.01	Grab
07/02/96	11:10	-	-	11.46	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
07/08/96	12:35	-	-	9.60	Grab
07/15/96	15:25	-	-	6.87	Grab
07/22/96	15:46	-	-	4.18	Grab
07/30/96	12:52	-	-	7.65	Grab
08/05/96	15:56	-	-	7.84	Grab
08/13/96	11:49	-	-	3.18	Grab
08/27/96	12:30	-	-	1.21	Grab
09/03/96	15:11	-	-	0.41	Grab
09/09/96	13:47	-	-	0.16	Grab
09/17/96	12:57	-	-	0.22	Grab
09/24/96	15:26	-	-	0.45	Grab
10/01/96	11:45	-	-	0.72	Grab
10/09/96	15:38	-	-	0.38	Grab
10/16/96	13:56	-	-	0.08	Grab
10/22/96	15:05	-	-	0.02	Grab
10/30/96	11:59	-	-	<0.02	Grab
11/08/96	12:33	-	-	0.65	Grab
11/12/96	15:54	-	-	0.70	Grab
11/19/96	13:35	-	-	0.84	Grab
12/02/96	15:00	-	-	4.58	Grab
12/10/96	12:33	-	-	6.22	Grab
12/18/96	12:20	-	-	7.82	Grab
12/30/96	15:50	-	-	7.79	Grab
01/07/97	15:08	-	-	7.52	Grab
01/22/97	16:08	-	-	5.16	Grab
02/04/97	16:18	-	-	4.58	Grab
02/13/97	14:36	-	-	7.54	Grab
02/18/97	15:30	-	-	7.63	Grab
02/21/97	15:40	-	-	6.08	Grab
02/27/97	13:19	-	-	6.00	Grab
02/28/97	12:11	-	-	5.11	Grab
03/04/97	16:01	-	-	10.10	Grab
03/11/97	15:37	-	-	10.40	Grab
03/14/97	10:56	-	-	9.14	Grab
03/19/97	14:45	-	-	10.79	Grab
03/25/97	12:52	-	-	10.08	Grab
04/01/97	15:19	-	-	8.98	Grab
04/09/97	14:46	-	-	8.92	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/15/97	12:36	-	-	8.73	Grab
04/22/97	14:03	-	-	8.59	Grab
05/01/97	14:40	-	-	8.08	Grab
05/06/97	15:52	-	-	11.91	Grab
05/13/97	14:13	-	-	8.79	Grab
05/20/97	14:46	-	-	7.73	Grab
05/28/97	15:45	-	-	14.01	Grab
06/03/97	16:27	-	-	13.60	Grab
06/09/97	15:00	-	-	12.84	Grab
06/17/97	14:43	-	-	14.00	Grab
06/24/97	12:45	-	-	12.24	Grab
07/01/97	12:48	-	-	10.94	Grab
07/08/97	16:30	-	-	9.51	Grab
07/15/97	12:40	-	-	7.12	Grab
07/22/97	12:56	-	-	2.89	Grab
07/28/97	16:14	-	-	1.24	Grab
08/05/97	16:00	-	-	0.49	Grab
08/12/97	14:56	-	-	0.39	Grab
08/19/97	16:25	-	-	2.37	Grab
08/26/97	14:17	-	-	3.32	Grab
09/03/97	16:00	-	-	1.07	Grab
09/10/97	15:37	-	-	2.41	Grab
09/12/97	13:56	-	-	1.71	Grab
09/24/97	15:54	-	-	2.30	Grab
10/01/97	15:53	-	-	0.84	Grab
10/07/97	14:38	-	-	<0.04	Grab
10/15/97	14:44	-	-	<0.04	Grab
10/21/97	15:49	-	-	<0.04	Grab
10/27/97	15:33	-	-	<0.04	Grab
11/04/97	15:09	-	-	0.12	Grab
11/12/97	16:05	-	-	0.72	Grab
11/18/97	15:40	-	-	0.57	Grab
11/25/97	15:22	-	-	0.46	Grab
12/04/97	15:56	-	-	6.25	Grab
12/11/97	12:47	-	-	6.64	Grab
12/16/97	15:49	-	-	6.21	Grab
12/22/97	14:12	-	-	5.32	Grab
01/06/98	15:50	-	-	8.13	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method</i>
01/14/98	14:43	-	-	10.71	Grab
01/27/98	15:52	-	-	8.20	Grab
02/03/98	16:40	-	-	9.70	Grab
02/10/98	15:35	-	-	8.88	Grab
02/17/98	16:01	-	-	9.21	Grab
02/19/98	14:06	-	-	10.32	Grab
02/24/98	14:55	-	-	10.49	Grab
03/03/98	15:45	-	-	9.57	Grab
03/17/98	16:13	-	-	9.88	Grab
03/19/98	13:23	-	-	7.42	Grab
03/24/98	15:13	-	-	7.33	Grab
04/02/98	16:06	-	-	9.51	Grab
04/08/98	15:30	-	-	11.14	Grab
04/14/98	15:47	-	-	10.73	Grab
04/21/98	16:22	-	-	10.93	Grab
04/29/98	16:00	-	-	8.95	Grab
05/05/98	14:47	-	-	9.66	Grab
05/12/98	15:46	-	-	10.23	Grab
05/19/98	15:45	-	-	11.73	Grab
05/27/98	15:33	-	-	13.06	Grab
06/03/98	15:30	-	-	11.39	Grab
06/10/98	10:35	-	-	9.63	Grab
06/17/98	15:35	-	-	8.62	Grab
06/22/98	15:27	-	-	10.33	Grab
07/07/98	15:58	-	-	9.11	Grab
07/15/98	16:09	-	-	8.96	Grab
07/22/98	15:44	-	-	6.15	Grab
07/28/98	13:19	-	-	5.36	Grab
08/04/98	15:32	-	-	2.96	Grab
08/12/98	13:53	-	-	3.10	Grab
08/26/98	11:28	-	-	<0.09	Grab
09/02/98	14:05	-	-	<0.09	Grab
09/09/98	15:13	-	-	<0.09	Grab
09/16/98	15:50	-	-	<0.09	Grab
09/22/98	16:31	-	-	<0.09	Grab
09/30/98	15:47	-	-	0.27	Grab
10/06/98	15:37	-	-	0.26	Grab
10/14/98	15:40	-	-	0.38	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
10/20/98	15:10	-	-	0.32	Grab
10/29/98	13:09	-	-	<0.09	Grab
11/04/98	16:04	-	-	<0.09	Grab
11/18/98	15:43	-	-	0.19	Grab
11/23/98	15:35	-	-	<0.09	Grab
12/01/98	15:08	-	-	<0.09	Grab
12/09/98	14:46	-	-	<0.09	Grab
12/15/98	15:16	-	-	<0.09	Grab
01/26/99	15:47	-	-	9.97	Grab
02/03/99	15:50	-	-	11.09	Grab
02/09/99	15:50	-	-	10.26	Grab
02/17/99	16:12	-	-	11.67	Grab
02/24/99	15:47	-	-	10.88	Grab
03/03/99	14:00	-	-	10.71	Grab
03/10/99	15:50	-	-	12.07	Grab
03/16/99	16:03	-	-	10.65	Grab
03/24/99	16:36	-	-	10.70	Grab
03/30/99	16:00	-	-	9.63	Grab
04/06/99	15:59	-	-	8.57	Grab
04/13/99	16:19	-	-	11.60	Grab
04/20/99	16:01	-	-	14.54	Grab
04/27/99	16:33	-	-	13.37	Grab
05/05/99	16:23	-	-	12.63	Grab
05/11/99	16:05	-	-	12.05	Grab
05/18/99	15:33	-	-	13.03	Grab
05/25/99	15:32	-	-	12.40	Grab
06/09/99	11:56	-	-	14.50	Grab
06/15/99	16:04	-	-	13.08	Grab
07/01/99	13:50	-	-	11.94	Grab
07/21/99	15:00	-	-	4.54	Grab
07/27/99	15:51	-	-	1.32	Grab
08/03/99	15:40	-	-	<0.11	Grab
08/11/99	14:57	-	-	<0.11	Grab
08/17/99	14:49	-	-	1.10	Grab
08/25/99	12:41	-	-	0.35	Grab
08/31/99	15:47	-	-	<0.11	Grab
09/15/99	15:55	-	-	<0.11	Grab
09/22/99	15:36	-	-	0.18	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
09/28/99	15:51	-	-	0.19	Grab
10/05/99	15:53	56	-	<0.11	Grab
10/13/99	9:44	62	-	<0.11	Grab
10/18/99	13:20	54	-	<0.11	Grab
10/26/99	15:18	51	-	<0.13	Grab
11/01/99	13:17	67	-	0.32	Grab
11/08/99	12:27	59	-	0.17	Grab
11/15/99	12:27	52	-	<0.13	Grab
11/22/99	11:35	52	-	<0.13	Grab
11/29/99	12:37	40	-	<0.13	Grab
12/06/99	12:53	45	-	<0.13	Grab
12/13/99	12:23	40	-	0.84	Grab
12/20/99	12:28	35	-	1.17	Grab
01/03/00	12:31	36	-	1.35	Grab
01/10/00	12:22	38	-	1.31	Grab
01/18/00	12:05	33	-	1.18	Grab
02/15/00	11:23	34	-	3.52	Grab
02/22/00	13:34	44	-	7.89	Grab
02/29/00	12:19	51	-	6.38	Grab
03/07/00	12:16	56	-	6.41	Grab
03/14/00	11:48	46	-	6.14	Grab
03/21/00	13:34	48	-	7.74	Grab
03/28/00	14:38	49	-	8.40	Grab
04/04/00	11:56	50	-	7.08	Grab
04/11/00	11:44	50	-	6.13	Grab
04/18/00	12:22	51	-	6.72	Grab
04/25/00	12:48	60	-	11.26	Grab
05/02/00	12:58	63	-	8.85	Grab
05/09/00	12:25	72	-	6.77	Grab
05/16/00	12:20	64	-	9.78	Grab
05/23/00	12:13	-	-	12.51	Grab
05/28/00	12:11	62	-	10.09	Grab
05/30/00	11:57	-	-	15.37	Grab
06/06/00	12:48	65	-	12.65	Grab
06/13/00	12:20	75	-	10.57	Grab
06/21/00	15:47	71	-	9.31	Grab
06/29/00	15:56	71	-	12.18	Grab
07/05/00	16:59	76	-	9.52	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
07/12/00	8:56	75	-	8.09	Grab
07/20/00	8:40	71	-	5.08	Grab
07/26/00	8:25	71	-	2.55	Grab
08/02/00	15:18	81	-	0.69	Grab
08/08/00	13:40	75	-	0.78	Grab
08/15/00	15:24	83	-	<0.06	Grab
08/22/00	11:18	73	-	0.12	Grab
08/30/00	8:32	77	-	0.85	Grab
09/05/00	15:48	73	-	0.35	Grab
09/12/00	12:24	76	-	0.32	Grab
09/19/00	14:12	70	-	0.65	Grab
09/26/00	15:25	61	-	0.53	Grab
10/03/00	13:43	69	-	1.00	Grab
10/10/00	15:20	50	-	4.78	Grab
10/17/00	16:20	60	-	3.97	Grab
10/24/00	14:54	64	-	2.26	Grab
10/30/00	13:54	58	-	0.21	Grab
11/08/00	13:28	51	-	2.42	Grab
11/14/00	14:20	43	-	10.06	Grab
11/20/00	12:52	35	-	10.07	Grab
11/28/00	13:09	38	-	8.71	Grab
12/05/00	13:30	33	-	8.50	Grab
12/14/00	12:15	32	-	8.70	Grab
01/16/01	14:15	33	-	7.26	Grab
01/31/01	14:20	34	-	4.12	Grab
02/06/01	13:45	37	7.96	9.21	Grab
02/14/01	14:52	40	7.85	10.92	Grab
02/20/01	13:44	39	-	11.94	Grab
02/24/01	13:01	40	-	9.73	Grab
02/27/01	15:43	40	8.02	5.34	Grab
03/06/01	13:27	39	-	11.22	Grab
03/15/01	11:09	-	-	10.87	Grab
03/21/01	14:46	48	7.87	12.80	Grab
03/27/01	14:17	42	8.05	11.16	Grab
03/27/01	16:50	42	8.05		Grab
04/03/01	12:54	54	-	10.29	Grab
04/10/01	12:48	67	-	9.40	Grab
04/17/01	12:48	53	7.93	11.72	Grab



**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/25/01	9:19	57	7.92	9.44	Grab
05/01/01	12:39	70	-	8.95	Grab
05/09/01	13:02	70	7.59	7.85	Grab
05/16/01	12:37	76	-	7.34	Grab
05/21/01	14:40	67	8.06	10.45	Grab
05/22/01	12:58	64	8.28	12.31	Grab
05/30/01	15:23	62	-	16.00	Grab
06/05/01	12:25	61	8.12	13.10	Grab
06/14/01	10:27	78	-	14.03	Grab
06/19/01	13:19	79	8.27	11.66	Grab
06/27/01	14:55	-	-	9.73	Grab
07/03/01	8:44	70	-	7.02	Grab
07/10/01	13:14	82	8.33	5.08	Grab
07/18/01	8:18	77	-	1.57	Grab
07/24/01	8:47	82	8.25	<0.06	Grab
08/01/01	11:14	85	-	<0.06	Grab
08/08/01	14:42	80	8.16	<0.06	Grab
08/16/01	10:42	71	-	0.06	Grab
08/22/01	13:57	80	-	<0.06	Grab
08/29/01	12:58	77	7.92	0.08	Grab
09/06/01	11:40	76	-	0.22	Grab
09/12/01	10:59	70	8.53	0.52	Grab
09/19/01	10:35	66	-	0.29	Grab
09/26/01	11:48	62	8.22	0.24	Grab
10/04/01	11:03	64	-	<0.06	Grab
10/11/01	13:19	60	8.61	<0.06	Grab
10/17/01	13:02	51	-	3.23	Grab
10/24/01	15:03	58	7.76	5.17	Grab
11/01/01	13:49	54	-	7.58	Grab
11/07/01	12:20	55	8.24	6.01	Grab
11/07/01	12:42	55	8.24		Grab
11/13/01	14:02	49	-	5.67	Grab
11/19/01	14:32	53	8.00	4.49	Grab
11/27/01	13:21	47	-	3.89	Grab
12/04/01	13:29	52	8.07	9.62	Grab
12/11/01	12:53	41	-	7.49	Grab
12/19/01	10:29	45	-	11.34	Grab
12/26/01	13:22	33	8.51	10.47	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
01/15/02	13:54	34	8.16	7.55	Grab
01/22/02	12:20	37	-	7.69	Grab
01/29/02	11:52	45	8.05	6.75	Grab
02/01/02	10:35	38	-	10.54	Grab
02/04/02	13:15	35	-	13.45	Grab
02/13/02	12:09	40	8.14	11.54	Grab
02/19/02	13:32	42	-	10.17	Grab
02/20/02	10:43	45	-	10.02	Grab
02/21/02	8:24	42	-	10.16	Grab
02/22/02	15:07	42	-	11.90	Grab
02/25/02	12:04	46	7.77	12.84	Grab
03/05/02	11:49	36	-	13.43	Grab
03/12/02	13:22	42	7.75	12.30	Grab
03/19/02	13:07	46	-	11.98	Grab
03/27/02	12:47	40	7.95	10.86	Grab
03/28/02	16:50	44	-	10.75	Grab
03/29/02	15:38	44	-	11.53	Grab
03/30/02	7:50	43	-	11.99	Grab
04/01/02	11:31	45	-	12.84	Grab
04/02/02	12:20	47	-	12.66	Grab
04/05/02	10:28	43	-	12.09	Grab
04/08/02	14:21	50	-	11.44	Grab
04/09/02	8:10	50	-	11.62	Grab
04/16/02	10:41	67	8.05	11.62	Grab
04/21/02	9:59	57	-	10.41	Grab
04/23/02	12:12	51	-	12.48	Grab
04/25/02	8:47	52	-	12.80	Grab
04/27/02	13:55	53	-	12.08	Grab
04/28/02	14:33	51	-	12.37	Grab
04/30/02	12:31	56	7.69	14.09	Grab
05/02/02	7:01	50	-	14.88	Grab
05/07/02	11:39	63	-	12.25	Grab
05/10/02	9:36	59	-	13.23	Grab
05/12/02	12:14	60	-	11.64	Grab
05/14/02	11:56	58	7.51	11.36	Grab
05/16/02	15:40	60	-	11.91	Grab
05/20/02	14:33	55	-	14.76	Grab
05/28/02	11:45	65	8.02	13.63	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/04/02	12:19	75	-	13.08	Grab
06/11/02	10:37	70	8.13	13.86	Grab
06/12/02	10:21	68	-	10.89	Grab
06/13/02	9:05	67	-	12.64	Grab
06/14/02	7:05	65	-	10.85	Grab
06/18/02	10:53	68	-	13.68	Grab
06/25/02	11:58	77	8.18	12.93	Grab
07/02/02	11:59	80	-	11.20	Grab
07/09/02	10:54	81	-	8.02	Grab
07/16/02	10:56	77	8.21	4.98	Grab
07/23/02	12:11	79	-	2.44	Grab
07/30/02	10:39	80	8.08	1.41	Grab
08/06/02	11:02	80	-	0.95	Grab
08/14/02	10:53	73	8.04	0.71	Grab
08/19/02	9:55	72	-	0.77	Grab
08/23/02	11:25	76	-	3.02	Grab
08/23/02	17:16	75	-	3.06	Grab
08/24/02	5:51	74	-	2.63	Grab
08/25/02	10:25	-	-	3.04	Grab
08/27/02	10:13	75	7.91	4.27	Grab
08/28/02	13:15	77	-	4.77	Grab
09/03/02	10:47	77	-	3.76	Grab
09/10/02	10:07	80	8.24	1.87	Grab
09/17/02	10:43	68	-	0.96	Grab
09/24/02	10:29	63	8.32	0.98	Grab
10/01/02	10:53	70	-	0.53	Grab
10/08/02	10:48	57	8.15	0.44	Grab
10/15/02	10:49	52	-	0.43	Grab
10/22/02	10:56	49	7.98	0.42	Grab
10/28/02	11:32	50	-	0.31	Grab
11/06/02	11:21	45	7.67	0.12	Grab
11/12/02	11:57	48	-	<0.06	Grab
11/19/02	11:48	46	7.47	<0.06	Grab
11/25/02	12:38	39	-	<0.06	Grab
12/03/02	11:55	34	-	0.19	Grab
12/17/02	11:39	36	-	1.02	Grab
12/23/02	11:29	37	7.80	1.94	Grab
12/30/02	11:53	37	-	3.37	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
01/07/03	12:59	35	-	4.41	Grab
02/04/03	12:07	33	-	4.25	Grab
03/04/03	12:03	37	-	3.36	Grab
03/11/03	11:29	38	7.89	2.67	Grab
03/18/03	11:59	55	-	4.21	Grab
03/20/03	8:16	-	-	4.21	Grab
03/25/03	12:08	58	7.95	3.98	Grab
03/31/03	12:11	48	-	4.38	Grab
04/07/03	12:20	47	7.55	6.01	Grab
04/15/03	11:12	63	-	7.78	Grab
04/22/03	9:47	55	-	5.48	Grab
04/29/03	11:19	61	-	5.28	Grab
05/05/03	12:13	59	-	8.46	Grab
05/06/03	10:17	63	-	7.43	Grab
05/09/03	6:34	64	-	10.50	Grab
05/13/03	14:40	61	-	13.68	Grab
05/14/03	9:37	62	-	13.03	Grab
05/20/03	9:59	63	7.90	10.20	Grab
05/27/03	12:06	65	-	9.56	Grab
06/03/03	11:42	59	-	8.91	Grab
06/10/03	10:15	69	8.15	7.32	Grab
06/11/03	23:58	68	-	4.30	Grab
06/12/03	10:50	-	-	6.65	Grab
06/13/03	7:47	-	-	9.27	Grab
06/17/03	12:35	-	-	12.76	Grab
06/24/03	11:11	77	8.08	10.52	Grab
07/01/03	11:45	78	-	7.77	Grab
07/08/03	11:19	81	7.73	6.22	Grab
07/09/03	20:23	77	-	6.88	Grab
07/10/03	8:02	73	-	5.77	Grab
07/10/03	14:27	73	-	4.05	Grab
07/11/03	6:56	73	-	3.90	Grab
07/15/03	9:10	73	-	7.58	Grab
07/22/03	8:58	74	7.97	6.61	Grab
07/29/03	14:03	76	8.13	6.61	Grab
08/05/03	8:37	73	-	4.56	Grab
08/12/03	13:15	75	8.21	3.41	Grab
08/19/03	9:11	75	-	1.34	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
08/26/03	9:07	77	8.23	0.66	Grab
08/31/03	13:19	-	-	1.14	Grab
09/01/03	5:15	68	-	0.96	Grab
09/01/03	14:45	66	-	1.47	Grab
09/02/03	10:57	66	-	2.96	Grab
09/03/03	6:40	-	-	3.62	Grab
09/04/03	6:41	-	-	4.82	Grab
09/05/03	6:42	-	-	5.43	Grab
09/10/03	12:55	71	8.25	4.96	Grab
09/16/03	10:00	68	-	3.52	Grab
09/23/03	13:23	69	7.92	2.53	Grab
09/30/03	10:17	55	-	6.51	Grab
10/07/03	8:28	57	8.14	5.75	Grab
10/14/03	8:51	57	-	3.97	Grab
10/21/03	13:15	59	7.70	3.69	Grab
10/28/03	9:25	50	-	2.77	Grab
11/05/03	10:07	56	7.57	2.12	Grab
11/10/03	9:30	43	7.76	2.34	Grab
11/18/03	9:53	55	7.87	3.79	Grab
11/21/03	9:10	-	-	7.59	Grab
12/02/03	10:16	42	7.87	9.26	Grab
12/09/03	12:16	-	-	8.46	Grab
12/17/03	9:36	-	8.20	9.24	Grab
12/22/03	11:50	-	-	8.24	Grab
12/30/03	8:50	-	7.98	9.23	Grab
01/06/04	15:10	-	-	9.01	Grab
01/13/04	8:50	-	8.07	9.72	Grab
01/21/04	9:30	-	-	8.77	Grab
02/24/04	10:10	39	7.11	6.86	Grab
03/03/04	14:50	-	-	6.48	Grab
03/09/04	13:30	45	7.47	11.02	Grab
03/16/04	11:05	-	-	9.12	Grab
03/23/04	10:15	48	8.05	8.10	Grab
03/29/04	10:45	-	-	8.43	Grab
04/07/04	10:19	-	-	10.54	Grab
04/15/04	11:20	-	-	9.83	Grab
04/19/04	13:35	-	-	9.02	Grab
04/27/04	10:08	-	-	9.42	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/04/04	11:50	-	-	8.23	Grab
05/11/04	10:30	-	-	7.43	Grab
05/18/04	10:55	70	7.90	15.22	Grab
05/25/04	10:12	67	7.89	10.13	Grab
06/02/04	8:45	-	-	6.99	Grab
06/03/04	9:35	-	-	6.90	Grab
06/07/04	9:45	-	-	11.89	Grab
06/09/04	9:45	-	-	12.82	Grab
06/14/04	9:30	76	-	7.04	Grab
06/15/04	8:52	75	-	8.63	Grab
06/16/04	13:50	73	-	9.36	Grab
06/18/04	13:30	-	-	8.31	Grab
06/21/04	8:45	62	-	10.43	Grab
06/28/04	10:25	68	-	10.43	Grab
07/13/04	9:09	78	8.06	7.45	Grab
07/20/04	8:48	74	8.45	7.38	Grab
07/27/04	9:25	69	8.19	4.95	Grab
08/04/04	8:38	77	7.91	2.58	Grab
08/11/04	9:32	69	-	1.18	Grab
08/17/04	10:32	-	7.99	0.70	Grab
08/24/04	11:40	74	8.16	0.46	Grab
08/26/04	8:30	71	8.00	0.56	Grab
08/31/04	9:55	71	8.12	3.91	Grab
09/07/04	9:26	71	8.47	3.42	Grab
09/14/04	9:11	73	8.39	2.19	Grab
09/22/04	8:58	68	8.23	1.48	Grab
09/28/04	9:15	63	8.14	1.38	Grab
10/05/04	9:28	56	8.31	1.15	Grab
10/12/04	8:42	56	7.98	1.34	Grab
10/20/04	9:38	55	7.97	6.22	Grab
10/27/04	11:55	60	7.72	5.85	Grab
11/03/04	12:10	57	7.41	6.88	Grab
11/09/04	10:03	52	8.16	8.39	Grab
11/16/04	10:30	48	7.38	7.91	Grab
11/23/04	10:22	51	7.91	7.35	Grab
12/01/04	10:23	42	8.15	7.10	Grab
12/07/04	11:30	49	7.49	6.42	Grab
12/15/04	10:12	36	7.66	8.26	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
12/21/04	9:47	33	8.49	8.40	Grab
12/28/04	9:55	32	8.69	8.76	Grab
01/04/05	10:12	42	8.32	8.83	Grab
01/11/05	10:41	40	7.80	9.12	Grab
01/12/05	9:37	45	7.66	7.15	Grab
01/12/05	16:10	45	7.62	6.85	Grab
01/19/05	10:26	33	6.97	7.54	Grab
01/25/05	11:06	35	7.28	8.20	Grab
02/02/05	10:16	33	7.78	8.14	Grab
02/08/05	9:37	40	7.96	9.89	Grab
02/16/05	11:17	41	7.77	8.46	Grab
02/22/05	9:59	40	7.83	9.27	Grab
03/02/05	9:18	35	7.75	9.03	Grab
03/08/05	9:58	41	8.08	8.54	Grab
03/15/05	9:40	38	8.12	8.28	Grab
03/22/05	10:03	44	8.42	7.45	Grab
03/29/05	9:49	48	8.21	9.31	Grab
04/05/05	8:55	56	7.99	8.58	Grab
04/12/05	9:07	61	8.03	7.76	Grab
04/20/05	8:56	66	8.06	7.36	Grab
04/26/05	8:51	55	8.03	11.78	Grab
05/03/05	8:50	49	8.05	8.97	Grab
05/11/05	9:21	70	8.03	7.35	Grab
05/18/05	9:20	65	7.97	6.89	Grab
05/25/05	9:03	64	8.03	8.24	Grab
06/01/05	8:30	69	8.07	6.62	Grab
06/08/05	9:08	76	8.12	5.19	Grab
06/15/05	12:05	74	8.08	7.65	Grab
06/22/05	13:05	77	8.21	5.38	Grab
06/29/05	8:15	81	8.24	1.99	Grab
07/05/05	9:29	77	8.12	2.43	Grab
07/12/05	8:37	74	8.46	<0.07	Grab
07/19/05	9:26	80	8.13	<0.07	Grab
07/27/05	8:52	78	7.80	2.38	Grab
08/02/05	9:15	80	7.83	2.44	Grab
08/09/05	9:23	79	8.57	<0.07	Grab
08/23/05	9:28	79	7.74	0.28	Grab
08/30/05	13:41	74	7.65	0.36	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
09/06/05	13:55	78	8.06	0.27	Grab
09/12/05	12:00	78	7.89	0.09	Grab
09/20/05	9:00	71	7.88	0.22	Grab
09/26/05	11:56	71	7.88	1.09	Grab
10/03/05	13:20	70	7.71	1.12	Grab
10/11/05	12:18	59	7.76	0.58	Grab
10/17/05	11:40	61	7.95	0.42	Grab
10/24/05	8:39	49	7.74	0.36	Grab
10/31/05	9:51	55	8.07	0.88	Grab
11/07/05	10:08	53	7.53	1.63	Grab
11/14/05	10:05	46	7.74	0.41	Grab
11/21/05	13:45	42	7.95	3.10	Grab
11/28/05	10:16	47	7.94	2.57	Grab
01/04/06	10:52	42	8.06	8.38	Grab
01/09/06	10:18	39	8.05	7.18	Grab
01/17/06	10:05	36	8.13	6.49	Grab
01/23/06	9:40	37	8.07	8.83	Grab
01/31/06	9:27	41	7.95	8.40	Grab
02/06/06	9:31	35	8.04	8.91	Grab
02/14/06	11:07	35	8.26	7.71	Grab
02/22/06	9:36	34	7.99	9.07	Grab
02/27/06	9:17	38	7.96	7.43	Grab
03/06/06	9:36	38	8.11	6.91	Grab
03/14/06	13:03	47	8.06	11.80	Grab
03/20/06	9:26	43	8.12	11.51	Grab
03/27/06	9:48	43	7.95	10.15	Grab
04/03/06	9:13	50	8.02	9.57	Grab
04/05/06	9:21	50	7.90		Grab
04/06/06	18:00	-	-	11.40	Grab
04/07/06	12:52	55	7.61	11.85	Grab
04/10/06	9:40	51	7.77	13.72	Grab
04/19/06	9:15	60	7.80	8.14	Grab
04/20/06	14:15	60	7.64	12.18	Grab
04/24/06	9:05	60	8.08	11.96	Grab
05/01/06	9:10	56	8.10	10.82	Grab
05/08/06	8:26	60	8.05	12.12	Grab
05/15/06	12:46	53	8.20	11.49	Grab
05/22/06	8:55	61	8.26	11.29	Grab



**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/01/06	8:14	72	8.22	9.15	Grab
06/05/06	9:09	70	8.10	9.02	Grab
06/12/06	8:55	64	8.18	8.39	Grab
06/19/06	9:13	79	8.23	6.59	Grab
06/27/06	8:42	71	8.18	4.10	Grab
07/05/06	8:58	75	8.07	4.09	Grab
07/10/06	8:53	76	8.16	2.71	Grab
07/18/06	9:09	81	8.12	6.00	Grab
07/25/06	8:51	77	8.12	2.46	Grab
08/01/06	8:30	80	8.19	4.60	Grab
08/07/06	9:12	78	8.04	3.09	Grab
08/14/06	10:00	75	8.24	1.66	Grab
08/22/06	10:15	75	8.06	2.41	Grab
08/30/06	9:02	68	8.03	4.40	Grab
09/05/06	9:15	67	8.18	2.74	Grab
09/12/06	9:03	70	8.08	1.34	Grab
09/18/06	10:05	68	8.18	1.37	Grab
09/25/06	8:43	69	7.94	1.45	Grab
10/03/06	8:52	67	8.11	2.79	Grab
10/10/06	15:28	62	8.31	1.87	Grab
10/16/06	10:25	48	8.27	2.81	Grab
10/23/06	9:15	45	8.26	8.26	Grab
10/31/06	9:14	48	8.20	6.79	Grab
11/08/06	9:38	48	7.98	5.66	Grab
11/14/06	11:15	45	8.08	5.54	Grab
11/20/06	10:52	42	8.20	8.69	Grab
11/27/06	10:22	47	8.19	7.40	Grab
12/05/06	10:13	33	7.88	10.17	Grab
12/12/06	10:12	43	8.01	9.21	Grab
12/19/06	9:46	43	8.09	9.97	Grab
12/27/06	9:30	38	7.98	9.81	Grab
01/02/07	10:05	42	8.12	9.70	Grab
01/08/07	10:19	41	7.93	10.42	Grab
01/16/07	10:05	36	7.50	8.14	Grab
01/22/07	13:30	35	8.00	10.14	Grab
01/29/07	10:55	33	8.27	9.96	Grab
03/06/07	10:58	33	7.86	5.46	Grab
03/13/07	10:15	49	7.98	7.89	Grab

**Table E-7. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/20/07	8:18	44	8.10	8.38	Grab
03/27/07	13:58	64	7.93	10.22	Grab
04/02/07	2:18	57	7.97	10.98	Grab
04/10/07	8:58	43	8.25	10.60	Grab
04/16/07	13:51	50	8.25	10.77	Grab
04/24/07	9:47	63	8.28	9.37	Grab
04/26/07	8:30	-	8.26	8.97	Grab
05/01/07	8:25	67	8.05	11.83	Grab
05/09/07	9:58	68	8.26	10.22	Grab
05/15/07	11:48	72	8.25	9.43	Grab
05/21/07	10:58	68	8.39	8.92	Grab
05/29/07	10:25	70	8.23	10.86	Grab
06/12/07	8:44	72	8.22	7.26	Grab
06/19/07	8:20	75	8.13	4.66	Grab
06/26/07	10:15	72	8.23	6.60	Grab
07/03/07	9:19	75	8.06	8.60	Grab
07/26/07	7:50	73	7.99	4.54	Grab
08/01/07	9:37	78	7.68	2.34	Grab
08/09/07	7:49	80	7.87	0.79	Grab
08/15/07	8:51	76	7.91	0.38	Grab
08/21/07	8:40	76	8.06	0.53	Grab
08/29/07	7:55	75	8.03	0.44	Grab
09/04/07	8:40	74	8.08	0.51	Grab
09/11/07	9:40	68	7.83	0.47	Grab
09/18/07	9:10	68	7.86	0.39	Grab
09/25/07	10:20	74	7.99	0.09	Grab
10/09/07	9:35	70	7.75	0.13	Grab
10/17/07	8:35	63	8.11	<0.07	Grab
10/24/07	9:45	54	7.85	0.81	Grab
10/31/07	11:50	52	8.11	0.35	Grab
11/06/07	11:35	44	7.80	0.55	Grab
11/14/07	10:38	53	7.45	<0.07	Grab
11/27/07	15:30	39	7.98	9.39	Grab
12/03/07	15:30	35	8.05	7.22	Grab
12/19/07	11:00	34	8.29	9.90	Grab
12/26/07	11:20	35	8.71	10.57	Grab
01/10/08	9:45	-	-	3.12	Grab
01/16/08	12:45	-	-	9.60	Grab

**Table E-7. Concluded**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
02/06/08	16:12	-	-	2.10	Grab
02/13/08	14:55	33	8.80	7.99	Grab
02/19/08	15:00	-	-	4.72	Grab
03/13/08	17:20	45	8.16	9.94	Grab
03/26/08	14:45	45	8.31	10.88	Grab
04/09/08	9:15	49	8.70	10.05	Grab
04/23/08	8:43	62	7.75	9.40	Grab
04/30/08	10:45	52	8.04	9.34	Grab
05/20/08	8:55	56	7.91	12.24	Grab
05/27/08	8:13	58	8.36	11.25	Grab
06/04/08	9:04	-	-	2.90	Grab
06/10/08	11:58	-	-	7.03	Grab
06/17/08	9:45	-	7.66	11.59	Grab
06/25/08	10:08	73	7.91	10.97	Grab
07/01/08	9:20	72	7.65	10.02	Grab
07/09/08	9:15	71	7.56	4.53	Grab
07/17/08	10:45	-	-	8.93	Grab
07/28/08	10:12	76	7.81	7.82	Grab
08/06/08	8:55	78	7.68	5.57	Grab
08/12/08	9:58	71	7.73	4.10	Grab
08/19/08	8:30	70	7.69	2.28	Grab
08/26/08	9:20	70	7.68	0.98	Grab
09/02/08	10:28	78	8.00	0.61	Grab
09/22/08	10:25	67	7.59	4.35	Grab

**Notes:**

\*Grab: Weighted Bottle (dip sample in extreme low flow conditions)

**Table E-8. Nitrate-N Concentrations for the Monitored Stations and Daily Values from Lake Decatur for Sangamon River USGS Station #00570910 near Fisher (Station 112), May 1993 – September 2008**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
04/19/93	13:53	-	-	10.55	Grab
05/07/93	16:13	-	-	11.33	Grab
05/14/93	16:55	-	-	10.23	Grab
06/03/93	15:01	-	-	13.90	Grab
06/04/93	15:32	-	-	11.10	Grab
06/14/93	14:18	-	-	12.00	Grab
06/22/93	12:03	-	-	12.02	Grab
06/29/93	9:44	-	-	5.38	Grab
07/06/93	11:29	-	-	9.35	Grab
07/22/93	18:00	-	-	9.19	Grab
07/29/93	9:56	-	-	7.70	Grab
08/09/93	12:11	-	-	6.18	Grab
08/12/93	16:22	-	-	5.40	Grab
08/13/93	13:44	-	-	7.33	Grab
08/16/93	14:46	-	-	6.93	Grab
08/24/93	14:15	-	-	6.45	Grab
08/31/93	10:12	-	-	5.42	Grab
09/08/93	12:04	-	-	5.01	Grab
09/14/93	11:35	-	-	6.24	Grab
09/30/93	9:43	-	-	7.05	Grab
10/07/93	10:12	-	-	6.48	Grab
10/12/93	10:52	-	-	6.53	Grab
10/18/93	10:21	-	-	2.67	Grab
10/28/93	13:53	-	-	6.55	Grab
11/02/93	12:00	-	-	6.18	Grab
11/09/93	10:36	-	-	5.94	Grab
11/15/93	11:38	-	-	5.98	Grab
11/23/93	10:05	-	-	7.79	Grab
12/01/93	10:04	-	-	7.47	Grab
12/09/93	9:30	-	-	8.16	Grab
12/15/93	13:14	-	-	7.12	Grab
12/28/93	11:20	-	-	6.05	Grab
01/12/94	9:35	-	-	5.79	Grab
02/15/94	10:15	-	-	3.12	Grab
02/22/94	9:44	-	-	6.29	Grab
02/28/94	10:17	-	-	5.61	Grab
03/07/94	10:02	-	-	7.17	Grab

**Table E-8. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/17/94	15:06	-	-	7.14	Grab
03/23/94	10:29	-	-	6.49	Grab
03/28/94	14:52	-	-	6.14	Grab
04/04/94	10:07	-	-	5.62	Grab
04/11/94	10:32	-	-	6.99	Grab
04/12/94	9:59	-	-	1.33	Grab
04/14/94	11:30	-	-	6.87	Grab
04/18/94	15:45	-	-	7.81	Grab
04/25/94	15:46	-	-	7.46	Grab
04/29/94	10:56	-	-	7.09	Grab
05/03/94	10:41	-	-	9.08	Grab
05/09/94	14:42	-	-	9.82	Grab
05/16/94	14:57	-	-	8.26	Grab
05/24/94	10:10	-	-	7.79	Grab
06/01/94	9:50	-	-	6.83	Grab
06/06/94	10:02	-	-	6.36	Grab
06/14/94	9:24	-	-	5.91	Grab
06/20/94	9:49	-	-	4.28	Grab
06/28/94	12:10	-	-	3.42	Grab
07/05/94	10:05	-	-	1.45	Grab
07/12/94	9:44	-	-	1.74	Grab
07/27/94	12:03	-	-	<0.02	Grab
08/01/94	7:51	-	-	<0.02	Grab
08/22/94	8:00	-	-	<0.02	Grab
08/29/94	6:53	-	-	<0.02	Grab
09/07/94	7:04	-	-	<0.02	Grab
09/23/94	6:57	-	-	0.03	Grab
10/12/94	9:31	-	-	0.68	Grab
10/18/94	10:00	-	-	0.20	Grab
10/25/94	10:09	-	-	<0.02	Grab
11/07/94	10:15	-	-	4.97	Grab
11/14/94	15:40	-	-	4.03	Grab
11/21/94	9:35	-	-	3.83	Grab
11/28/94	16:03	-	-	5.53	Grab
12/05/94	15:28	-	-	5.44	Grab
12/13/94	14:52	-	-	8.09	Grab
12/21/94	9:59	-	-	7.58	Grab
01/03/95	15:41	-	-	6.81	Grab

**Table E-8. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
01/11/95	10:02	-	-	5.92	Grab
01/18/95	13:04	-	-	9.16	Grab
01/23/95	10:17	-	-	8.84	Grab
02/01/95	15:17	-	-	8.42	Grab
02/08/95	9:21	-	-	8.14	Grab
02/16/95	14:58	-	-	7.02	Grab
02/24/95	9:36	-	-	5.61	Grab
02/27/95	14:35	-	-	5.89	Grab
03/07/95	15:12	-	-	6.78	Grab
03/08/95	13:49	-	-	9.78	Grab
03/14/95	9:58	-	-	9.84	Grab
03/22/95	9:12	-	-	8.61	Grab
03/29/95	11:32	-	-	9.27	Grab
04/04/95	9:45	-	-	8.35	Grab
04/10/95	11:25	-	-	8.72	Grab
04/10/95	14:55	-	-	9.31	Grab
04/11/95	9:40	-	-	11.02	Grab
04/11/95	15:44	-	-	11.19	Grab
04/12/95	10:42	-	-	10.23	Grab
04/25/95	10:02	-	-	10.81	Grab
05/02/95	15:08	-	-	10.11	Grab
05/10/95	12:26	-	-	9.28	Grab
05/23/95	11:31	-	-	11.46	Grab
05/30/95	14:36	-	-	11.70	Grab
06/05/95	11:30	-	-	11.41	Grab
06/12/95	15:06	-	-	12.22	Grab
06/21/95	10:04	-	-	10.90	Grab
06/27/95	10:34	-	-	10.67	Grab
07/10/95	9:44	-	-	8.29	Grab
07/18/95	14:49	-	-	4.97	Grab
07/25/95	9:11	-	-	2.84	Grab
08/02/95	14:34	-	-	1.08	Grab
08/04/95	9:05	-	-	1.55	Grab
08/07/95	15:08	-	-	4.89	Grab
08/08/95	12:43	-	-	3.81	Grab
08/16/95	9:49	-	-	3.91	Grab
08/22/95	14:52	-	-	4.26	Grab
08/31/95	11:36	-	-	0.58	Grab

**Table E-8. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
09/06/95	10:19	-	-	<0.02	Grab
09/12/95	9:30	-	-	0.36	Grab
09/19/95	9:30	-	-	0.27	Grab
10/06/95	11:11	-	-	0.39	Grab
10/11/95	9:55	-	-	0.14	Grab
10/17/95	9:20	-	-	<0.02	Grab
10/24/95	9:14	-	-	0.15	Grab
11/01/95	10:22	-	-	3.46	Grab
11/07/95	9:50	-	-	7.25	Grab
11/14/95	12:03	-	-	8.22	Grab
11/20/95	10:24	-	-	7.50	Grab
11/28/95	9:43	-	-	6.65	Grab
12/05/95	9:18	-	-	5.25	Grab
12/12/95	11:00	-	-	6.97	Grab
12/18/95	10:56	-	-	4.54	Grab
12/28/95	9:20	-	-	6.09	Grab
01/18/96	13:06	-	-	6.06	Grab
01/23/96	15:18	-	-	8.94	Grab
01/29/96	13:00	-	-	8.53	Grab
02/14/96	9:05	-	-	5.63	Grab
02/20/96	10:48	-	-	5.70	Grab
02/27/96	9:20	-	-	4.83	Grab
03/05/96	9:09	-	-	6.99	Grab
03/11/96	11:36	-	-	6.83	Grab
03/18/96	9:24	-	-	5.71	Grab
03/28/96	9:25	-	-	6.64	Grab
04/02/96	9:27	-	-	9.13	Grab
04/09/96	9:13	-	-	7.77	Grab
04/16/96	9:35	-	-	6.62	Grab
04/23/96	9:25	-	-	10.84	Grab
04/30/96	10:47	-	-	10.02	Grab
05/01/96	9:56	-	-	10.16	Grab
05/07/96	10:20	-	-	10.82	Grab
05/08/96	10:22	-	-	10.22	Grab
05/08/96	15:03	-	-	9.99	Grab
05/13/96	12:53	-	-	12.80	Grab
05/21/96	10:02	-	-	12.66	Grab
05/28/96	12:11	-	-	8.94	Grab

**Table E-8. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
06/04/96	10:53	-	-	13.94	Grab
06/11/96	10:00	-	-	11.32	Grab
06/18/96	9:52	-	-	5.06	Grab
06/25/96	9:30	-	-	12.49	Grab
07/01/96	11:40	-	-	11.58	Grab
07/08/96	14:40	-	-	9.17	Grab
07/15/96	11:21	-	-	6.53	Grab
07/22/96	10:44	-	-	10.56	Grab
07/29/96	11:40	-	-	7.56	Grab
08/05/96	9:58	-	-	7.02	Grab
08/12/96	10:30	-	-	1.91	Grab
08/20/96	10:02	-	-	1.45	Grab
08/26/96	11:50	-	-	0.30	Grab
09/03/96	10:13	-	-	<0.02	Grab
09/09/96	15:48	-	-	<0.02	Grab
09/17/96	14:53	-	-	0.03	Grab
09/24/96	10:37	-	-	0.03	Grab
10/01/96	9:08	-	-	1.05	Grab
10/09/96	13:30	-	-	0.11	Grab
10/16/96	10:17	-	-	<0.02	Grab
10/21/96	13:36	-	-	<0.02	Grab
10/30/96	14:40	-	-	<0.02	Grab
11/06/96	10:35	-	-	<0.02	Grab
11/12/96	12:28	-	-	0.81	Grab
11/18/96	15:54	-	-	1.93	Grab
12/02/96	10:53	-	-	3.72	Grab
12/10/96	15:37	-	-	6.34	Grab
12/30/96	13:20	-	-	7.97	Grab
01/07/97	11:33	-	-	9.81	Grab
01/22/97	10:39	-	-	5.86	Grab
02/04/97	10:47	-	-	5.45	Grab
02/13/97	11:42	-	-	8.32	Grab
02/18/97	10:28	-	-	7.87	Grab
02/21/97	12:15	-	-	6.21	Grab
02/27/97	15:10	-	-	4.94	Grab
03/04/97	11:27	-	-	11.30	Grab
03/11/97	11:14	-	-	12.47	Grab
03/14/97	9:22	-	-	10.50	Grab



**Table E-8. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
03/20/97	11:02	-	-	11.89	Grab
03/25/97	14:27	-	-	10.94	Grab
04/01/97	9:36	-	-	10.32	Grab
04/08/97	10:15	-	-	10.12	Grab
04/15/97	14:10	-	-	10.24	Grab
04/23/97	10:41	-	-	9.70	Grab
05/01/97	17:59	-	-	8.47	Grab
05/06/97	9:49	-	-	11.73	Grab
05/12/97	14:04	-	-	9.61	Grab
05/19/97	13:30	-	-	8.02	Grab
05/27/97	14:19	-	-	12.87	Grab
06/02/97	14:48	-	-	14.19	Grab
06/09/97	9:56	-	-	14.39	Grab
06/17/97	9:50	-	-	15.21	Grab
06/24/97	9:38	-	-	13.28	Grab
07/01/97	14:59	-	-	10.27	Grab
07/08/97	10:08	-	-	10.06	Grab
07/15/97	9:50	-	-	7.16	Grab
07/22/97	10:46	-	-	3.15	Grab
07/28/97	10:49	-	-	2.39	Grab
08/05/97	10:23	-	-	<0.08	Grab
08/12/97	10:00	-	-	0.18	Grab
08/19/97	10:20	-	-	5.70	Grab
08/26/97	10:56	-	-	3.60	Grab
09/03/97	10:25	-	-	0.50	Grab
09/10/97	10:08	-	-	2.13	Grab
09/19/97	10:06	-	-	1.29	Grab
09/24/97	10:38	-	-	0.75	Grab
10/01/97	10:09	-	-	0.50	Grab
10/07/97	10:15	-	-	0.12	Grab
10/16/97	10:10	-	-	<0.04	Grab
10/21/97	9:53	-	-	0.31	Grab
10/27/97	11:59	-	-	0.28	Grab
11/04/97	9:39	-	-	0.24	Grab
11/12/97	10:58	-	-	0.43	Grab
11/18/97	10:33	-	-	0.35	Grab
11/25/97	11:37	-	-	0.47	Grab
12/04/97	10:53	-	-	5.34	Grab

**Table E-8. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
12/09/97	14:36	-	-	4.94	Grab
12/16/97	10:30	-	-	4.22	Grab
12/22/97	10:22	-	-	3.90	Grab
12/29/97	10:11	-	-	9.17	Grab
01/06/98	10:09	-	-	9.16	Grab
01/14/98	10:25	-	-	11.36	Grab
01/27/98	11:18	-	-	9.12	Grab
02/03/98	10:59	-	-	10.18	Grab
02/10/98	10:26	-	-	9.40	Grab
02/17/98	10:26	-	-	10.19	Grab
02/19/98	10:13	-	-	12.39	Grab
02/25/98	15:32	-	-	10.82	Grab
03/03/98	10:29	-	-	10.73	Grab
03/17/98	10:38	-	-	11.45	Grab
03/19/98	10:36	-	-	8.21	Grab
03/24/98	16:24	-	-	9.40	Grab
04/02/98	11:00	-	-	11.13	Grab
04/08/98	10:43	-	-	10.77	Grab
04/14/98	10:25	-	-	10.04	Grab
04/21/98	10:03	-	-	11.85	Grab
04/29/98	11:32	-	-	10.03	Grab
05/06/98	10:52	-	-	12.63	Grab
05/12/98	10:33	-	-	11.61	Grab
05/19/98	10:20	-	-	11.51	Grab
05/27/98	10:00	-	-	13.69	Grab
06/03/98	10:25	-	-	12.19	Grab
06/09/98	10:49	-	-	9.50	Grab
06/16/98	11:15	-	-	8.00	Grab
06/22/98	12:29	-	-	12.49	Grab
07/08/98	13:00	-	-	10.92	Grab
07/15/98	10:43	-	-	10.12	Grab
07/22/98	10:06	-	-	6.55	Grab
07/28/98	15:31	-	-	5.05	Grab
08/04/98	10:38	-	-	2.42	Grab
08/12/98	16:14	-	-	2.18	Grab
08/25/98	14:33	-	-	0.39	Grab
09/02/98	15:51	-	-	0.29	Grab
09/09/98	10:35	-	-	0.20	Grab

**Table E-8. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
09/16/98	9:45	-	-	0.18	Grab
09/22/98	11:34	-	-	0.20	Grab
09/30/98	10:14	-	-	0.25	Grab
10/06/98	10:56	-	-	0.25	Grab
10/14/98	10:15	-	-	0.56	Grab
10/20/98	9:36	-	-	0.13	Grab
10/29/98	14:56	-	-	0.25	Grab
11/04/98	11:07	-	-	0.28	Grab
11/12/98	9:45	-	-	1.08	Grab
11/18/98	10:25	-	-	0.43	Grab
11/23/98	10:41	-	-	0.65	Grab
12/01/98	10:09	-	-	0.74	Grab
12/09/98	10:01	-	-	0.43	Grab
12/15/98	10:33	-	-	0.45	Grab
12/21/98	10:00	-	-	0.81	Grab
01/25/99	10:40	-	-	11.22	Grab
02/02/99	10:16	-	-	11.95	Grab
02/09/99	10:30	-	-	12.56	Grab
02/17/99	10:46	-	-	12.39	Grab
02/24/99	10:10	-	-	11.74	Grab
03/03/99	15:39	-	-	12.08	Grab
03/10/99	9:49	-	-	12.68	Grab
03/16/99	10:20	-	-	12.19	Grab
03/25/99	9:44	-	-	11.65	Grab
03/30/99	10:30	-	-	10.96	Grab
04/06/99	10:53	-	-	9.47	Grab
04/08/99	10:06	-	-	9.73	Grab
04/13/99	11:29	-	-	12.62	Grab
04/14/99	14:33	-	-	12.16	Grab
04/15/99	1:12	-	-	11.54	Grab
04/15/99	11:57	-	-	11.77	Grab
04/16/99	11:18	-	-	15.53	Grab
04/17/99	12:05	-	-	14.58	Grab
04/18/99	12:19	-	-	15.94	Grab
04/19/99	11:35	-	-	16.32	Grab
04/20/99	10:17	-	-	15.91	Grab
04/27/99	10:07	-	-	14.70	Grab
05/05/99	10:44	-	-	13.69	Grab

**Table E-8. Continued**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
05/11/99	9:55	-	-	12.87	Grab
05/17/99	10:53	-	-	14.67	Grab
05/18/99	10:00	-	-	14.06	Grab
05/21/99	13:09	-	-	13.98	Grab
05/22/99	7:32	-	-	13.83	Grab
05/25/99	10:25	-	-	13.42	Grab
06/01/99	15:49	-	-	11.83	Grab
06/02/99	10:40	-	-	11.37	Grab
06/05/99	7:47	-	-	15.47	Grab
06/09/99	15:30	-	-	15.12	Grab
06/10/99	10:39	-	-	15.12	Grab
06/12/99	20:38	-	-	13.79	Grab
06/13/99	19:41	-	-	13.41	Grab
06/14/99	10:28	-	-	11.91	Grab
06/15/99	10:44	-	-	11.59	Grab
06/16/99	14:31	-	-	14.56	Grab
06/18/99	13:34	-	-	15.27	Grab
06/21/99	11:11	-	-	14.73	Grab
07/01/99	9:36	-	-	13.13	Grab
07/08/99	9:00	-	-	12.67	Grab
07/13/99	10:51	-	-	10.18	Grab
07/20/99	15:27	-	-	5.08	Grab
07/21/99	9:30	-	-	4.44	Grab
07/27/99	10:26	-	-	0.82	Grab
07/28/99	11:28	-	-	0.81	Grab
07/29/99	10:33	-	-	0.74	Grab
08/11/99	9:43	-	-	0.29	Grab
08/24/99	10:27	-	-	0.16	Grab
08/31/99	10:32	-	-	1.71	Grab
09/07/99	10:24	-	-	0.21	Grab
09/15/99	9:57	-	-	<0.11	Grab
09/22/99	10:36	-	-	<0.11	Grab
09/28/99	10:50	-	-	<0.11	Grab
10/05/99	10:27	-	-	0.22	Grab
10/13/99	14:11	-	-	0.24	Grab
10/18/99	10:11	-	-	<0.11	Grab
10/26/99	10:30	48	-	<0.13	Grab
11/01/99	10:18	59	-	<0.13	Grab

**Table E-8. Concluded**

<i>Date</i>	<i>Time (CST)</i>	<i>Water temp (F)</i>	<i>pH</i>	<i>Nitrate-N (mg/L)</i>	<i>Collection method*</i>
11/08/99	9:36	51	-	<0.13	Grab
11/15/99	10:21	48	-	<0.13	Grab
11/22/99	9:12	47	-	<0.13	Grab
11/29/99	10:22	40	-	0.14	Grab
12/06/99	9:54	43	-	0.16	Grab
12/13/99	9:56	39	-	0.19	Grab
12/20/99	10:08	34	-	0.85	Grab
01/03/00	10:07	34	-	2.05	Grab
01/10/00	9:52	36	-	1.08	Grab
01/18/00	9:20	33	-	0.95	Grab
02/15/00	9:33	33	-	3.23	Grab
02/22/00	10:59	36	-	8.53	Grab
02/29/00	9:59	49	-	7.05	Grab
03/07/00	15:55	58	-	7.16	Grab
03/14/00	9:36	43	-	6.74	Grab
03/21/00	9:59	48	-	9.51	Grab
03/28/00	10:18	50	-	8.68	Grab
04/04/00	9:08	48	-	7.48	Grab
04/11/00	8:55	48	-	6.49	Grab
04/18/00	9:31	50	-	4.94	Grab
04/25/00	8:57	54	-	11.61	Grab
05/02/00	8:37	59	-	9.35	Grab
05/09/00	8:25	71	-	7.85	Grab
05/16/00	8:32	63	-	8.52	Grab
05/23/00	14:46	70	-	11.89	Grab
05/28/00	9:45	60	-	15.25	Grab
05/30/00	8:20	65	-	16.86	Grab
06/06/00	8:56	61	-	12.97	Grab
06/13/00	8:10	74	-	9.77	Grab
06/20/00	8:38	73	-	8.68	Grab
06/26/00	10:15	73	-	13.74	Grab
07/03/00	8:18	76	-	10.65	Grab
07/10/00	10:06	77	-	8.51	Grab
07/17/00	11:44	78	-	5.51	Grab
07/24/00	12:46	71	-	2.18	Grab

**Notes:**

\*Grab: Weighted Bottle (dip sample in extreme low flow conditions)

**Appendix F. Annual Mean, Minimum, and Maximum Nitrate  
Concentrations (mg/L) by Station, WY 1993-2008**

**Table F-1. Annual Mean, Minimum, and Maximum Nitrate Concentrations (mg/L),  
WY 1993 – 2008, Tributary Stations**

<i>Station no.</i>	<i>Nitrate (mg/L)</i>			<i>Nitrate (mg/L)</i>			<i>Nitrate (mg/L)</i>		
	<i>Mean</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Min</i>	<i>Max</i>
	<b>Water Year 1993</b>			<b>Water Year 1994</b>			<b>Water Year 1995</b>		
101	7.58	0.74	13.50	7.37	0.10	11.57	5.44	0.02	12.12
102	7.83	0.22	11.40	7.44	0.22	12.54	6.46	0.02	13.37
103	9.31	6.79	14.10	7.56	0.02	10.97	7.53	0.02	16.06
104	9.63	3.84	13.69	8.02	0.02	11.59	7.89	0.02	14.21
106	10.30	4.88	15.28	6.19	0.02	11.02	7.66	0.02	15.13
	<b>Water Year 1996</b>			<b>Water Year 1997</b>			<b>Water Year 1998</b>		
101	5.91	0.02	13.89	5.34	0.02	14.41	7.09	0.04	14.53
102	7.23	0.15	14.58	7.11	0.11	14.78	7.51	0.04	14.73
103	8.72	0.02	20.38	7.62	0.02	14.66	7.84	0.09	14.10
104	9.94	0.30	16.69	8.34	0.02	16.36	7.86	0.09	12.82
106	7.56	0.02	12.46	11.46	0.02	17.39	9.49	0.04	15.54
	<b>Water Year 1999</b>			<b>Water Year 2000</b>			<b>Water Year 2001</b>		
101	7.04	0.09	13.60	2.55	0.06	11.17	7.40	0.08	13.06
102	7.96	0.09	16.82	6.03	0.20	13.85	7.80	0.21	12.68
103	8.21	0.09	17.97	7.96	0.11	15.54	-	-	-
104	7.53	0.09	18.30	6.30	0.06	15.30	8.14	0.06	12.65
106	9.91	0.09	25.20	4.98	0.06	19.54	8.68	0.06	19.53
	<b>Water Year 2002</b>			<b>Water Year 2003</b>			<b>Water Year 2004</b>		
101	7.45	0.06	13.17	2.06	0.06	12.64	6.65	0.07	16.07
102	9.81	0.72	15.84	5.49	0.06	13.74	7.40	0.07	13.84
103	-	-	-	-	-	-	-	-	-
104	11.32	0.56	16.17	-	-	-	-	-	-
106	12.40	0.06	17.34	10.35	0.06	17.22			
	<b>Water Year 2005</b>			<b>Water Year 2006</b>			<b>Water Year 2007</b>		
101	6.50	0.30	9.18	6.05	0.13	14.64	5.92	0.07	11.94
102	6.70	0.19	9.20	7.45	0.65	14.67	6.54	0.23	10.36
	<b>Water Year 2008</b>								
101	8.63	0.07	14.72						
102	7.21	0.07	13.95						

**Table F-2. Annual Mean, Minimum, and Maximum Nitrate Concentrations (mg/L),  
Water Years 1993 – 2008, River Stations**

<i>Station no.</i>	<i>Mean</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Min</i>	<i>Max</i>
	<b>Water Year 1993</b>			<b>Water Year 1994</b>			<b>Water Year 1995</b>		
112	8.44	5.01	13.90	5.29	0.02	9.82	6.66	0.02	12.22
105	7.43	3.38	11.90	5.42	0.02	10.17	7.11	0.39	10.33
111	7.18	3.40	11.27	5.55	0.02	9.54	3.41	0.02	8.64
SWTP	5.16	2.40	8.4	4.41	0.60	8.10	4.05	0.50	8.30
	<b>Water Year 1996</b>			<b>Water Year 1997</b>			<b>Water Year 1998</b>		
112	6.35	0.02	13.94	6.59	0.02	15.21	6.61	0.04	13.69
105	7.46	0.22	13.92	9.45	0.08	15.79	5.52	0.09	12.31
111	5.91	0.02	13.21	6.16	0.02	14.01	6.19	0.04	13.06
SWTP	4.28	0.50	11.80	4.12	0.40	10.60	5.23	0.60	11.10
	<b>Water Year 1999</b>			<b>Water Year 2000</b>			<b>Water Year 2001</b>		
112	8.20	0.11	16.32	5.74	0.11	16.86	-	-	-
105	4.32	0.29	12.82	4.77	0.13	16.91	7.42	0.06	16.81
111	6.22	0.09	14.54	4.29	0.06	15.37	6.79	0.06	16.00
SWTP	5.19	0.80	12.70	2.29	0.20	8.00	5.08	0.90	10.80
	<b>Water Year 2002</b>			<b>Water Year 2003</b>			<b>Water Year 2004</b>		
112	-	-	-	-	-	-	-	-	-
105	9.06	0.77	15.87	5.05	0.16	14.04	-	-	-
111	8.78	0.06	14.88	4.78	0.06	13.68	6.81	0.08	15.22
SWTP	6.58	1.00	13.00	2.46	1.00	8.60	5.30	1.30	11.20
	<b>Water Year 2005</b>			<b>Water Year 2006</b>			<b>Water Year 2007</b>		
111	6.96	0.07	11.78	6.71	0.36	13.72	6.71	0.09	11.83
SWTP	5.05	1.10	9.50	4.26	0.50	9.10	5.16	1.20	10.50
	<b>Water Year 2008</b>								
111	5.81	0.07	10.88						
SWTP	5.12	0.80	10.50						





## **Appendix G. Monthly Nitrate-N Yields (WY 1993-2008)**

**Table G. Monthly Nitrate-N Yields (WY 1993-2008)**

<i>Water year</i>	<i>Month</i>	<i>Station number (lbs/acre)</i>							
		<i>101</i>	<i>102</i>	<i>103</i>	<i>104</i>	<i>106</i>	<i>105</i>	<i>111</i>	<i>112</i>
	May-93	1.53	3.34	2.57	2.53	4.22	2.79	2.81	2.93
	Jun-93	1.02	1.89	4.38	2.25	5.83	5.21	3.80	6.07
	Jul-93	0.55	5.06	5.91	5.08	11.31	6.96	5.47	7.15
	Aug-93	0.01	0.99	0.55	4.85	0.77	0.77	1.06	1.00
	Sep-93	2.60	2.03	2.83	3.66	4.32	3.37	2.62	2.20
WY 94	Oct-93	3.88	3.78	3.25	3.71	2.59	3.26	3.58	3.82
	Nov-93	3.84	3.19	3.45	2.74	2.31	2.54	2.83	2.93
	Dec-93	3.05	2.83	2.40	3.12	2.61	2.96	3.00	2.98
	Jan-94	1.49	0.79	2.12	1.95	1.21	1.14	1.32	1.08
	Feb-94	0.58	0.53	0.87	0.57	0.53	0.78	0.80	0.75
	Mar-94	1.46	2.02	1.60	1.64	1.12	1.78	1.86	1.99
	Apr-94	7.81	8.41	6.49	6.90	12.01	5.12	5.80	5.80
	May-94	3.77	4.57	4.97	4.30	2.75	2.33	3.28	2.31
	Jun-94	1.37	1.24	1.00	0.57	0.12	0.33	0.51	0.33
	Jul-94	0.08	0.12	0.25	0.02	0.09	0.07	0.11	0.03
	Aug-94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WY 95	Sep-94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Oct-94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Nov-94	0.03	0.04	0.32	0.05	0.22	0.19	0.15	0.38
	Dec-94	0.16	0.34	0.97	0.41	0.92	1.43	1.10	1.50
	Jan-95	1.88	1.77	0.83	2.44	3.85	3.73	3.65	3.10
	Feb-95	0.31	0.32	0.77	0.30	0.42	0.42	0.49	0.57
	Mar-95	1.13	2.61	2.52	1.46	2.43	2.32	2.16	2.63
	Apr-95	0.74	1.45	3.91	1.08	4.30	3.50	9.55	3.70
	May-95	8.23	14.36	12.15	14.51	10.74	10.22	8.05	12.11
	Jun-95	1.02	3.01	3.37	1.58	5.17	3.31	4.96	3.61
	Jul-95	0.01	0.23	0.31	0.10	0.42	0.25	0.54	0.40
	Aug-95	0.00	0.03	0.07	0.00	0.19	0.21	0.12	0.34
WY 96	Sep-95	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
	Oct-95	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
	Nov-95	0.01	0.01	0.07	0.00	1.55	0.64	0.01	1.06
	Dec-95	0.00	0.01	0.06	0.00	0.80	0.15	0.36	0.28
	Jan-96	0.34	0.23	0.82	0.45	3.74	1.01	0.81	1.26
	Feb-96	0.14	0.08	0.29	0.17	1.22	0.29	2.83	0.34
	Mar-96	0.38	0.25	0.38	0.24	1.03	0.29	5.35	0.51
	Apr-96	2.47	1.67	0.98	1.22	1.84	0.73	0.98	1.13
	May-96	14.15	11.87	6.49	11.35	10.86	8.47	8.05	8.90
	Jun-96	5.54	5.84	3.20	4.66	6.10	5.05	4.96	4.82
	Jul-96	0.16	0.31	0.51	0.07	1.47	0.33	0.54	0.75
	Aug-96	0.00	0.00	0.01	0.00	0.18	0.06	0.12	0.07
	Sep-96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Table G. Continued**

<i>Water year</i>	<i>Month</i>	<i>Station number (lbs/acre)</i>							
		<i>101</i>	<i>102</i>	<i>103</i>	<i>104</i>	<i>106</i>	<i>105</i>	<i>111</i>	<i>112</i>
WY 97	Oct-96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Nov-96	0.00	0.01	0.05	0.02	0.01	0.01	0.01	0.01
	Dec-96	0.00	0.09	0.49	0.20	1.19	0.33	0.36	0.38
	Jan-97	0.02	0.41	1.24	0.71	2.87	1.05	0.81	1.20
	Feb-97	1.37	3.17	3.13	3.55	5.92	3.01	2.83	3.52
	Mar-97	3.42	5.02	3.72	2.83	5.56	5.40	5.35	5.09
	Apr-97	0.35	0.86	0.78	0.40	1.71	0.88	0.98	1.27
	May-97	0.96	2.82	1.79	1.01	3.22	2.45	2.51	3.50
	Jun-97	1.28	4.31	3.51	3.62	9.14	4.44	5.31	5.50
	Jul-97	0.01	0.55	0.21	0.20	1.26	0.34	0.49	0.52
Aug-97	0.00	0.00	0.01	0.15	0.03	0.09	0.09	0.18	
Sep-97	0.00	0.09	0.22	0.67	0.01	0.01	0.06	0.03	
WY 98	Oct-97	0.00	0.01	0.04	0.32	0.00	0.00	0.00	0.00
	Nov-97	0.00	0.19	0.24	0.78	0.00	0.00	0.01	0.01
	Dec-97	0.01	1.80	1.43	2.12	0.07	0.25	0.52	0.30
	Jan-98	1.32	2.93	2.38	3.76	1.66	2.18	2.47	2.39
	Feb-98	1.57	2.28	1.77	2.56	1.89	1.49	1.71	1.75
	Mar-98	8.03	7.18	6.45	8.90	8.99	7.27	7.57	8.06
	Apr-98	4.98	3.31	3.24	4.05	3.74	3.45	4.02	4.33
	May-98	8.72	11.01	10.55	14.45	10.70	7.82	9.60	8.59
	Jun-98	12.30	8.93	9.01	9.34	12.93	9.28	8.89	8.42
	Jul-98	1.87	0.87	0.60	0.89	2.47	1.63	1.47	1.23
Aug-98	0.28	0.02	0.00	0.00	0.39	0.08	0.07	0.03	
Sep-98	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.06	
WY 99	Oct-98	0.03	0.00	0.00	0.00	0.00	0.02	0.00	0.00
	Nov-98	1.14	0.02	0.00	0.00	0.01	0.01	0.00	0.01
	Dec-98	1.06	0.00	0.00	0.00	0.00	0.01	0.00	0.00
	Jan-99	7.93	0.79	0.46	1.75	4.57	2.61	2.17	1.11
	Feb-99	6.75	3.43	2.04	3.73	5.41	3.53	3.44	3.74
	Mar-99	2.03	2.02	1.08	2.93	3.30	2.17	1.97	2.32
	Apr-99	8.14	7.59	5.17	4.59	5.90	4.95	4.97	5.58
	May-99	3.65	3.63	1.96	3.05	1.56	2.02	2.19	2.42
	Jun-99	5.93	8.94	8.10	3.59	2.05	3.51	4.40	4.99
	Jul-99	0.37	0.77	0.37	0.07	0.03	0.35	0.39	0.46
Aug-99	0.07	0.05	0.00	0.02	0.00	0.01	0.01	0.01	
Sep-99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WY 00	Oct-99	0.01	0.05	0.00	0.00	0.00	0.00	0.00	0.00
	Nov-99	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	Dec-99	0.01	0.14	0.02	0.00	0.00	0.01	0.01	0.00
	Jan-00	0.03	0.16	0.02	0.00	0.00	0.01	0.01	0.01
	Feb-00	0.15	0.67	0.44	0.72	0.17	0.27	0.27	0.17
	Mar-00	0.29	1.07	0.50	0.56	0.34	0.39	0.42	0.28
Apr-00	0.12	1.59	0.90	0.55	0.33	0.41	0.51	0.38	

**Table G. Continued**

<i>Water year</i>	<i>Month</i>	<i>Station number (lbs/acre)</i>							
		<i>101</i>	<i>102</i>	<i>103</i>	<i>104</i>	<i>106</i>	<i>105</i>	<i>111</i>	<i>112</i>
	May-00	8.71	3.17	3.03	2.48	2.13	1.17	1.51	1.22
	Jun-00	19.76	5.27	6.11	4.22	4.38	1.68	2.53	1.48
	Jul-00	2.02	2.51	1.06	0.37	0.25	0.30	0.36	0.24
	Aug-00	0.15	0.04	0.00	0.00	0.00	0.02	0.01	0.00
	Sep-00	0.01	0.03		0.00	0.00	0.01	0.00	0.00
WY 01	Oct-00	0.33	0.45		0.02	0.02	0.06	0.04	
	Nov-00	1.47	1.04		0.89	0.75	0.52	0.56	
	Dec-00	0.46	1.01		0.78	1.86	0.55	0.44	
	Jan-01	1.31	2.23		1.55	1.81	0.63	0.55	
	Feb-01	3.87	6.01		7.21	6.51	6.59	8.13	
	Mar-01	1.44	3.25		3.11	2.31	3.09	3.96	
	Apr-01	2.96	1.48		0.66	1.22	1.83	1.55	
	May-01	12.05	0.63		0.22	0.49	1.03	0.93	
	Jun-01	3.36	1.96		0.61	0.17	2.92	2.28	
	Jul-01	0.08	0.04		0.00	1.84	0.10	0.09	
	Aug-01	0.00	0.00		0.00	1.42	0.00	0.00	
	Sep-01	0.00	0.00		0.00	7.06	0.01	0.00	
WY 02	Oct-01	0.20	0.42		0.21	5.54	0.31	0.23	
	Nov-01	0.14	0.48		0.17	6.46	0.45	0.44	
	Dec-01	2.22	2.86		1.83	0.63	1.91	2.21	
	Jan-02	0.77	1.18		0.79	2.74	0.64	0.61	
	Feb-02	5.14	6.53		6.48	0.08	5.41	7.89	
	Mar-02	4.86	4.91		5.44	0.00	5.05	7.57	
	Apr-02	5.43	6.09		6.18	0.00	4.15	5.25	
	May-02	9.26	11.97		10.63	10.97	8.88	11.28	
	Jun-02	2.97	5.85		4.59	7.30	3.57	4.83	
	Jul-02	0.12	0.32		0.05	0.23	0.25	0.24	
	Aug-02	0.00	0.15			0.16	0.38	0.40	
	Sep-02	0.00	0.00			0.00	0.04	0.04	
WY 03	Oct-02	0.00	0.00			0.00	0.01	0.00	
	Nov-02	0.00	0.00			0.00	0.01	0.00	
	Dec-02	0.00	0.03			0.02	0.05	0.03	
	Jan-03	0.00	0.13			0.12	0.17	0.13	
	Feb-03	0.01	0.10			0.09	0.10	0.10	
	Mar-03	0.01	0.83			0.07	0.19	0.25	
	Apr-03	0.01	0.82			0.44	1.12	0.65	
	May-03	1.38	3.00			0.00		2.81	
	Jun-03	1.83	3.36			0.00		1.84	
	Jul-03	0.13	0.54			0.00		1.98	
	Aug-03	0.00	0.00					0.09	
	Sep-03	0.01	0.06					0.39	

**Table G. Continued**

<i>Water year</i>	<i>Month</i>	<i>Station number (lbs/acre)</i>							
		<i>101</i>	<i>102</i>	<i>103</i>	<i>104</i>	<i>106</i>	<i>105</i>	<i>111</i>	<i>112</i>
WY 04	Oct-03	0.00	0.00					0.19	
	Nov-03	0.13	0.77					1.44	
	Dec-03	0.81	1.78					2.37	
	Jan-04	5.89	2.44					2.43	
	Feb-04	1.06	0.90					0.65	
	Mar-04	5.51	5.16					5.04	
	Apr-04	2.56	2.85					3.85	
	May-04	4.17	4.63					3.59	
	Jun-04	4.12	7.12					7.11	
	Jul-04	0.30	0.91					0.86	
	Aug-04	0.09	0.55					0.07	
Sep-04	0.03	0.45					0.04		
WY 05	Oct-04	0.75	1.24					0.19	
	Nov-04	6.21	4.79					3.02	
	Dec-04	4.73	4.17					4.43	
	Jan-05	8.55	6.38					9.63	
	Feb-05	3.47	3.81					4.29	
	Mar-05	1.55	1.67					1.62	
	Apr-05	1.11	1.19					1.80	
	May-05	0.43	0.49					0.80	
	Jun-05	0.84	0.31					0.29	
	Jul-05	0.03	0.00					0.03	
	Aug-05	0.00	0.00					0.00	
Sep-05	0.02	0.01					0.00		
WY 06	Oct-05	0.04	0.02					0.00	
	Nov-05	0.18	0.25					0.05	
	Dec-05	0.27	0.52					0.11	
	Jan-06	0.98	0.51					0.87	
	Feb-06	0.67	0.56					0.78	
	Mar-06	3.40	2.11					2.96	
	Apr-06	6.08	4.49					4.37	
	May-06	2.31	3.29					1.77	
	Jun-06	3.24	1.34					0.41	
	Jul-06	0.68	1.48					0.44	
	Aug-06	0.01	1.47					0.14	
Sep-06	0.00	0.38					0.04		
WY 07	Oct-06	0.00	1.17					0.37	
	Nov-06	0.03	2.43					0.76	
	Dec-06	3.27	8.76					6.26	
	Jan-07	5.81	6.52					5.59	
	Feb-07	1.31	2.03					1.54	
	Mar-07	2.26	4.64					3.70	
	Apr-07	0.89	4.30					3.42	

**Table G. Concluded**

<i>Water year</i>	<i>Month</i>	<i>Station number (lbs/acre)</i>							
		<i>101</i>	<i>102</i>	<i>103</i>	<i>104</i>	<i>106</i>	<i>105</i>	<i>111</i>	<i>112</i>
	May-07	0.07	1.67					1.60	
	Jun-07	0.02	1.04					0.62	
	Jul-07	0.00	0.29					0.41	
	Aug-07	0.00	0.00					0.01	
	Sep-07	0.00	0.01					0.00	
WY 08	Oct-07	0.00	0.21					0.00	
	Nov-07	0.01	0.00					0.12	
	Dec-07	1.12	0.31					2.60	
	Jan-08	3.71	3.20					4.00	
	Feb-08	6.50	4.91					4.35	
	Mar-08	5.06	7.33					5.03	
	Apr-08	4.63	3.69					2.52	
	May-08	3.26	3.47					5.10	
	Jun-08	16.79	17.29					8.64	
	Jul-08	5.05	5.86					3.20	
	Aug-08	0.16	0.07					0.19	
	Sep-08	4.35	1.91					1.28	