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Environmental
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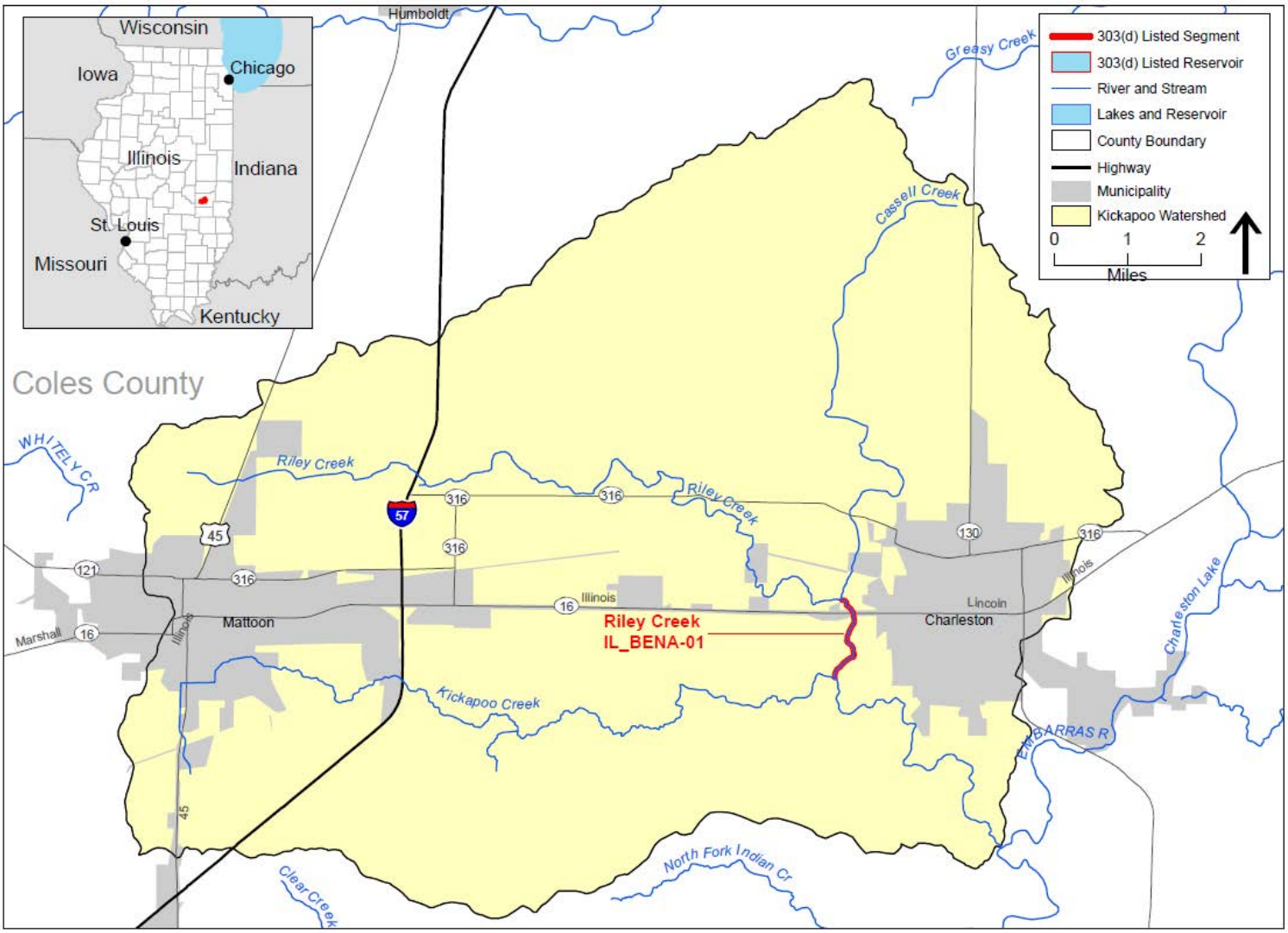
Kickapoo Creek Watershed
Watershed Protection Plan



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Abbreviations

BMP	best management practice
CBOD	carbonaceous biochemical oxygen demand
CDL	cropland data layer
cfs	cubic feet per second
CPS	Conservation Practice Standard
CWA	Clean Water Act
DO	dissolved oxygen
EPA	U.S. Environmental Protection Agency
fIBI	Fish Index of Biotic Integrity
GIS	geographic information system
HUC	hydrologic unit code
IDA	Illinois Department of Agriculture
ILCS	Illinois Compiled Statues
Illinois EPA	Illinois Environmental Protection Agency
IPCB	Illinois Pollution Control Board
LA	load allocation
LC	loading capacity
MBI	Macroinvertebrate Biotic Index
MGD	million gallons per day
mg/L	milligrams per liter
mIBI	Macroinvertebrate Index of Biotic Integrity
mL	milliliters
MOS	margin of safety

NASS	National Agricultural Statistics Service
NMP	nutrient management plan
NPDES	National Pollutant Discharge Elimination System
NLRS	Nutrient Loss Reduction Strategy
NRCS	Natural Resources Conservation Service
RC	reserve capacity
SOD	sediment oxygen demand
SSURGO	Soil Survey Geographic Database
STAR	Saving Tomorrow's Agriculture Resources
STP	sanitary treatment plant
SWCD	Soil and Water Conservation District
TMDL	total maximum daily load
TSS	total suspended solids
USGS	U.S. Geological Survey
WASCOB	water and sediment control basin
WBP	watershed-based plan
WLA	waste load allocation
WPP	watershed protection plan
°F	degrees Fahrenheit
µg/L	micrograms per liter

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Executive Summary

A total maximum daily load (TMDL) is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards. TMDLs are a requirement of Section 303(d) of the Clean Water Act (CWA). To meet this requirement, the Illinois Environmental Protection Agency (Illinois EPA) must identify water bodies not meeting water quality standards and then establish TMDLs for restoration of water quality. Illinois EPA develops a list, known as the 303(d) list, of water bodies not meeting water quality standards every 2 years, which is included in the Integrated Water Quality Report. Water bodies on the 303(d) list are then targeted for TMDL development. In accordance with U.S. Environmental Protection Agency (EPA) guidance, the report assigns all waters of the state to one of five categories; 303(d)-listed water bodies make up category five in the Integrated Report.

Water bodies listed as impaired in the 2018 Integrated Water Quality Report and 303(d) List[1] were originally targeted for TMDL development in 2019. A Stage 1 TMDL report was initiated for the Kickapoo Creek watershed (HUC 0512011206) based on the 2018 303(d) list. Stage 1 of TMDL development reviews and documents the physical characteristics of a watershed as well as available historical data in comparison to applicable water quality standards. **Table ES-1** contains information on the 2018 impaired water body that was investigated for this report:

Table ES-1 Impaired Water Body in the Kickapoo Creek Watershed

Segment ID	Segment Name	Potential Causes of Impairment	Designated Use	Potential Sources (as identified by the 2018 303(d) list)
IL_BENA-01	Riley Creek	Dissolved Oxygen (DO)	Aquatic Life	Industrial Point Source Discharge, Municipal Point Source Discharge, Crop Production (Crop Land or Dry Land), Agriculture, Urban Runoff/Storm Sewers

Since the completion of Stage 1, the 2020/2022 Illinois Integrated Water Quality Report and 303(d) List was approved on June 30, 2022.[2] Riley Creek (segment IL_BENA-01) is no longer on the 303(d) list and is listed as a Category 2 water, which means that all designated uses that were assessed are supported. This report did not progress beyond Stage 1 of TMDL development because of the delisting of the impaired segment and was replaced with a watershed protection plan (WPP). The intent of the WPP is to ensure that watershed practices maintain water quality and continue meeting the designated uses through nutrient control and erosion prevention. High nutrient and sediment loads pose the highest risks to future DO levels and aquatic life in this watershed.

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[1] Illinois EPA. 2018. *Illinois Integrated Water Quality Report and Section 303(d) List, 2018*. https://epa.illinois.gov/content/dam/soi/en/web/epa/topics/water-quality/watershed-management/tmdls/documents/2018-cycle-integrated-report-final-20210201.pdf

[2] Illinois EPA. 2022. *Illinois Integrated Water Quality Report and Section 303(d) List, 2020/2022*. https://epa.illinois.gov/content/dam/soi/en/web/epa/topics/water-quality/watershed-management/tmdls/documents/2020-2022-ir-final-6-01-22.pdf

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Section 1

Goals and Objectives for the Kickapoo Creek Watershed

1.1 Total Maximum Daily Load Overview

Total maximum daily load (TMDL) is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards. TMDLs are a requirement of Section 303(d) of the Clean Water Act (CWA). To meet this requirement, the Illinois Environmental Protection Agency (Illinois EPA) must identify water bodies not meeting water quality standards and then establish TMDLs for restoration of water quality. Illinois EPA develops a list, known as the 303(d) list, of water bodies not meeting water quality standards every 2 years, which is included in the Integrated Water Quality Report. Water bodies on the 303(d) list are then targeted for TMDL development. In accordance with U.S. Environmental Protection Agency (EPA) guidance, the report assigns all waters of the state to one of five categories; 303(d)-listed water bodies make up category five in the Integrated Report.

In general, the TMDL is a quantitative assessment of water quality impairments, contributing sources, and pollutant reductions needed to attain water quality standards. The TMDL specifies the amount of pollutant or other stressor that needs to be reduced to meet water quality standards, allocates pollutant control or management responsibilities among sources in a watershed, and provides a scientific and policy basis for taking actions needed to restore a water body.

Water quality standards are laws or regulations that states authorize to enhance water quality and protect public health and welfare. Water quality standards provide the foundation for accomplishing two of the principal goals of the CWA. These goals are to:

- Restore and maintain the chemical, physical, and biological integrity of the nation's waters
- Where attainable, achieve water quality that promotes protection and propagation of fish, shellfish, and wildlife, and provides for recreation in and on the water

Water quality standards consist of three elements:

- Designated beneficial use or uses of a water body or segment of a water body
- Water quality criteria necessary to protect the use or uses of that particular water body
- Antidegradation policy

Examples of designated uses are primary contact (swimming), protection of aquatic life, and public and food processing water supply. Water quality criteria describe the quality of water that will support a designated use. Water quality criteria can be expressed as numeric limits or as a narrative statement. Antidegradation policies are adopted so that water quality improvements are conserved, maintained, and protected.

1.2 Total Maximum Daily Load Goals and Objectives

Illinois EPA has a three-stage approach to TMDL development. The stages are:

Stage 1 – Watershed Characterization, Data Analysis, Methodology Selection

Stage 2 – Data Collection (optional)

Stage 3 – Model Calibration, TMDL Scenarios, Implementation Plan

Water bodies listed as impaired in the 2018 Integrated Water Quality Report and 303(d) List[3] were originally targeted for Stage 1 TMDL development in 2019. Illinois EPA uses the U.S. Geological Survey (USGS) 10-digit hydrologic unit code (HUC) to group subbasins into TMDL watersheds. This report presents Stage 1 of the TMDL development process for the Kickapoo Creek watershed (HUC 0512011206). The following water body segment in the Kickapoo Creek watershed was targeted for TMDL development based on the 2018 303(d) list:

- Riley Creek (IL_BENA-01)

This water body segment is shown on **Figure 1-1**. **Table 1-1** lists the water body segment and potential causes and sources of impairment.

Table 1-1 Impaired Water Body in the Kickapoo Creek Watershed

Segment ID	Segment Name	Potential Causes of Impairment	Designated Use	Potential Sources (as identified by the 2018 303(d) list)
IL_BENA-01	Riley Creek	Dissolved Oxygen (DO)	Aquatic Life	Industrial Point Source Discharge, Municipal Point Source Discharge, Crop Production (Crop Land or Dry Land), Agriculture, Urban Runoff/Storm Sewers

[3] Illinois EPA. 2018. *Illinois Integrated Water Quality Report and Section 303(d) List, 2018.* https://epa.illinois.gov/content/dam/soi/en/web/epa/topics/water-quality/watershed-management/tmdls/documents/2018-cycle-integrated-report-final-20210201.pdf

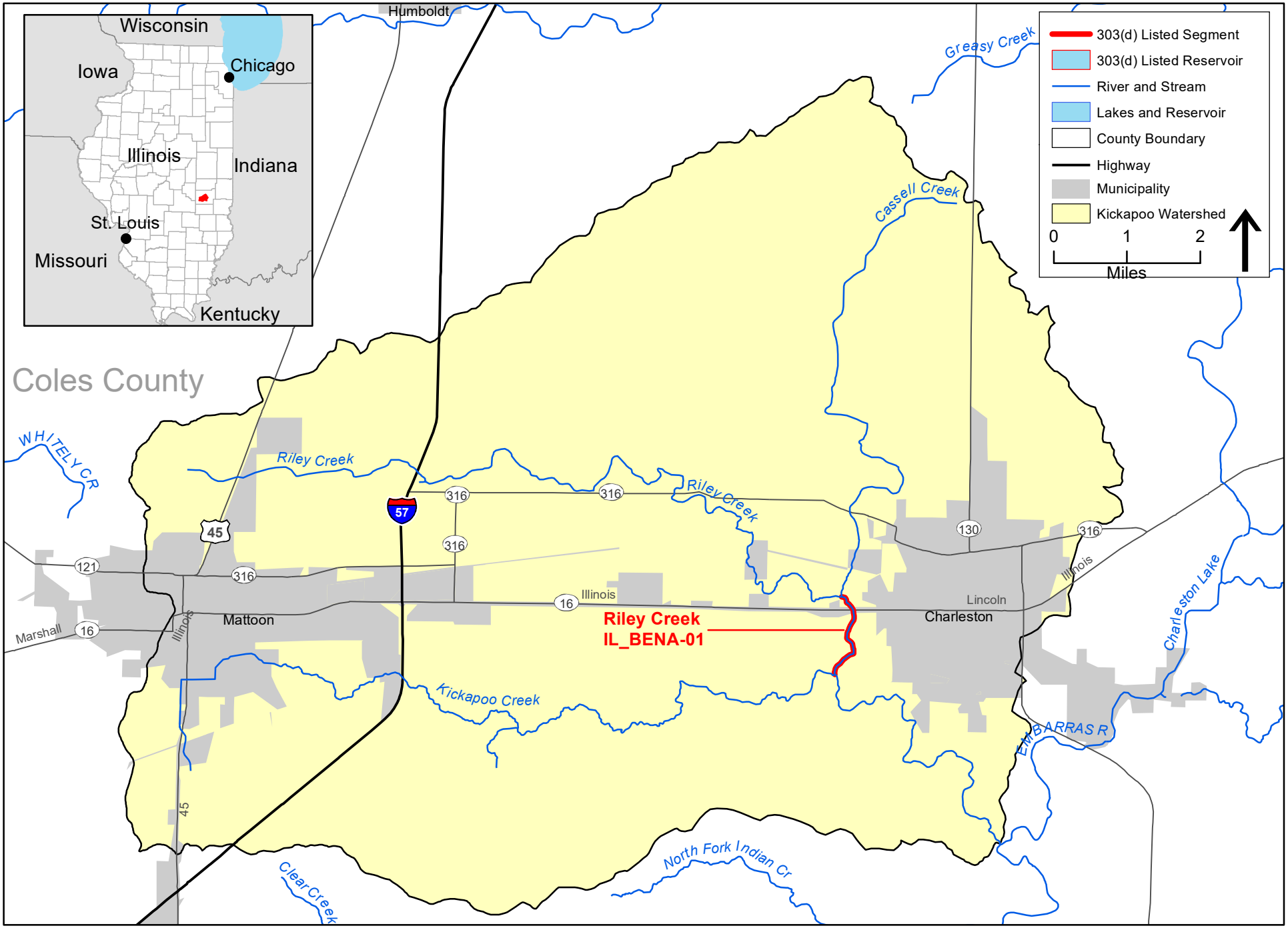

Figure 1-1: Kickapoo Creek Watershed
HUC 0512011206

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A TMDL for an impaired segment specifies the following elements:

- Loading capacity (LC), or the maximum amount of pollutant loading a water body can receive without violating water quality standards
- Waste load allocation (WLA), or the portion of the TMDL allocated to existing or future point sources
- Load allocation (LA), or the portion of the TMDL allocated to existing or future nonpoint sources and natural background
- Margin of safety (MOS), or an accounting of uncertainty about the relationship between pollutant loads and receiving water quality
- Reserve capacity (RC), or a portion of the load explicitly set aside to account for growth in the watershed

These elements are combined into the following equation:

$$\mathbf{TMDL = LC = \Sigma WLA + \Sigma LA + MOS + RC}$$

TMDL development takes into account the seasonal variability of pollutant loads so that water quality standards are met during all seasons of the year. Also, reasonable assurance that the TMDL will be achieved is described in a watershed-based plan (WBP). Data compiled during Stage 1 showed that historical DO concentrations in Riley Creek segment IL_ BENA-01 have not recently violated the water quality standard (see discussion in Section 5) and a TMDL was not developed (refer to Section 6). Since the completion of Stage 1, the 2020/2022 Illinois Integrated Water Quality Report and 303(d) List was approved on June 30, 2022.[4] Riley Creek (segment IL_BENA-01) is no longer on the 303(d) list and is listed as a Category 2 water, which means that all designated uses that were assessed are supported. This report did not progress beyond Stage 1 of TMDL development because of the delisting of the impaired segment and was replaced with a watershed protection plan (WPP) to ensure that watershed practices maintain water quality and continue meeting the designated uses. A WPP is included in the report as Section 7 to describe how designated uses can continue to be supported through nutrient control and erosion prevention. The WPP includes applicable best management practices (BMPs) to maintain and improve water quality.

1.3 Report Overview

The remaining sections of this report are summarized as follows:

- **Section 2 Kickapoo Creek Watershed Description** provides a description of the watershed's location, topography, geology, land use, soils, population, and hydrology.

[4] Illinois EPA. 2022. *Illinois Integrated Water Quality Report and Section 303(d) List, 2020/2022*. https://epa.illinois.gov/content/dam/soi/en/web/epa/topics/water-quality/watershed-management/tmdls/documents/2020-2022-ir-final-6-01-22.pdf

- **Section 3 Kickapoo Creek Watershed Public Participation** discusses public participation activities that occurred throughout the TMDL/WPP development process.
- **Section 4 Kickapoo Creek Watershed Water Quality Standards** defines the water quality standards for the impaired water body.
- **Section 5 Kickapoo Creek Watershed Data and Potential Pollution Sources** presents the available/relevant water quality data, discusses the characteristics of the impaired stream segment in the watershed, and describes the point and nonpoint sources with potential to contribute to the watershed load.
- **Section 6 Approach to Developing Total Maximum Daily Loads and Identifying Data Needs** discusses delisting the segment from the 303(d) list and recommends not proceeding further with Stages 2 and 3 of TMDL development.
- **Section 7 Watershed Protection Plan for Riley Creek Subbasin in the Kickapoo Creek Watershed** includes continued implementation actions, point and nonpoint source monitoring, management measures, and BMPs to be used to protect and maintain water quality in the watershed.

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Section 2

Kickapoo Creek Watershed Description

2.1 Location

The Kickapoo Creek watershed (HUC 0512011206 shown in **Figure 1-1**) is in east-central Illinois, flows in an easterly direction, and drains approximately 65,500 acres (102 square miles), all of which are within Coles County.

2.2 Topography

Topography is an important factor in watershed management because stream types, precipitation, and soil types can vary significantly with elevation. Elevation data are available from USGS[5] for each 1:24,000 topographic quadrangle in the United States. Elevation data for the Kickapoo Creek watershed were obtained by overlaying the National Elevation Dataset grid onto the geographic information system (GIS)-delineated watershed. **Figure 2-1** shows the elevations within the watershed.

Elevation in the Kickapoo Creek watershed ranges from approximately 794 feet above sea level in the southwestern portion of the watershed to 560 feet at the confluence of Kickapoo Creek with the Embarras River at the southeastern extent of the watershed.

2.3 Land Use

Land use data for the Kickapoo Creek watershed were extracted from the U.S. Department of Agriculture's National Agriculture Statistics Service (NASS) 2018 cropland data layer (CDL).[6] The CDL is a raster-based, georeferenced, crop-specific land cover data layer created to provide acreage estimates to the Agricultural Statistics Board for the state's major commodities, and to produce digital, crop-specific, categorized georeferenced output products. This information is made available to all agencies and to the public free of charge and represents the most accurate and up-to-date land cover datasets available at a national scale. The most recent available CDL dataset was produced in 2018 and includes 23 separate land use classes applicable to the watershed. The available resolution of the land cover dataset is 30 square meters.

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5 USGS. 3D Elevation Program webpage. https://www.usgs.gov/3d-elevation-program

6 NASS CDL. https://www.nass.usda.gov/Research_and_Science/Cropland/Release/index.php

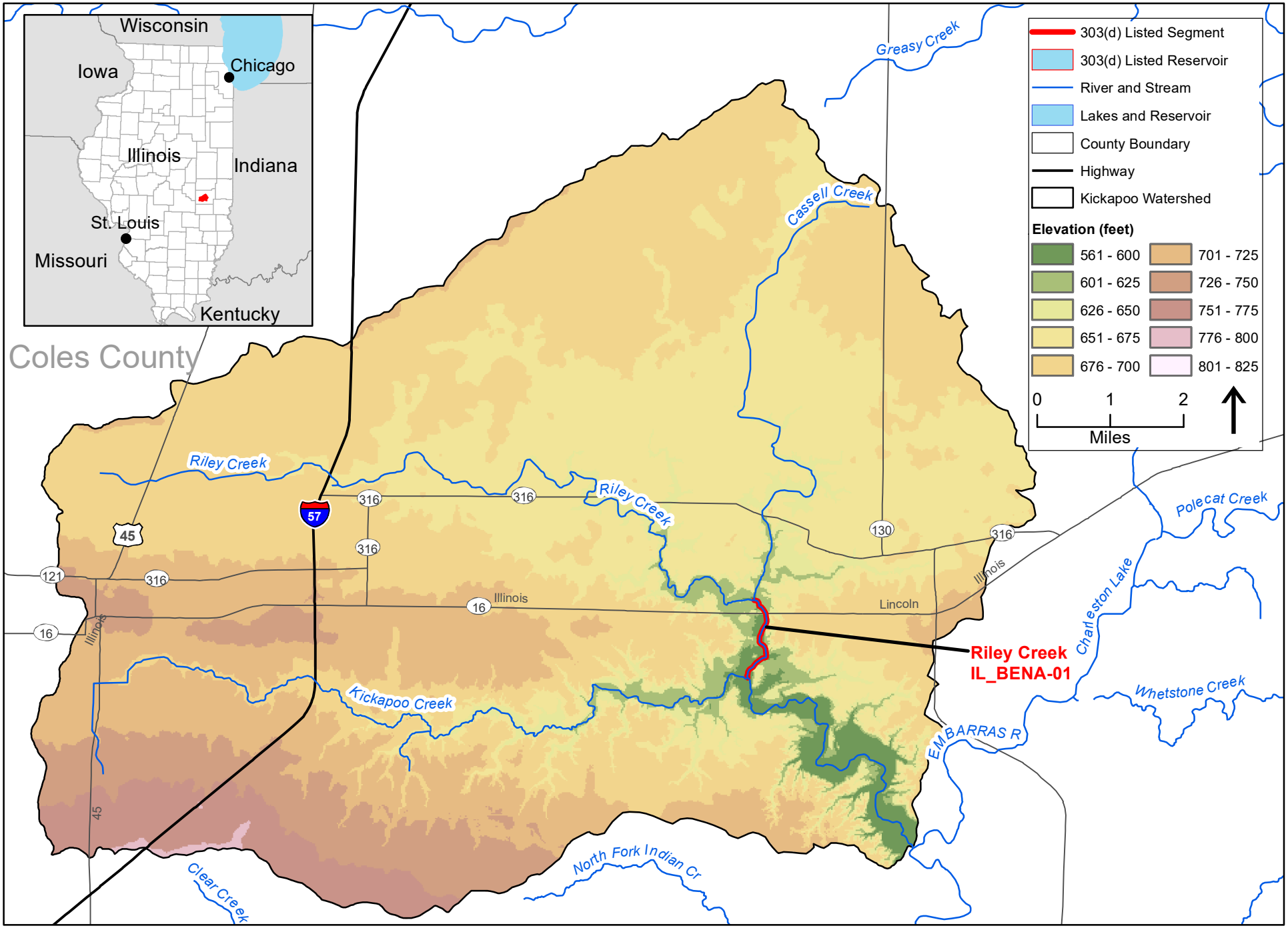

Figure 2-1: Kickapoo Creek Watershed, Elevation

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The land use of the Kickapoo Creek watershed was determined by overlaying the Illinois statewide 2018 CDL onto the GIS-delineated watershed. **Table 2-1** contains the main categories of land uses within the Kickapoo Creek watershed and includes the area of each land cover category and percentage of the watershed area. **Figure 2-2** illustrates the land uses of the watershed. **Appendix A** contains a table of all land uses in the watershed.

Table 2-1 Land Cover and Land Use in the Kickapoo Creek Watershed

Land Cover Category	Area (Acres)	Percentage
Soybeans	22,057	33.7%
Corn	20,712	31.7%
Developed/Low Intensity	6,200	9.5%
Deciduous Forest	6,064	9.3%
Developed/Open Space	3,875	5.9%
Grass/Pasture	3,569	5.5%
Developed/Medium Intensity	1,905	2.9%
Developed/High Intensity	591	0.9%
Other	458	0.7%
Total	**65,431**	**100%**

The land cover data reveal that the largest percentage of watershed area is used for crop production (65 percent). Approximately 9 percent of the watershed area is forest and 5.5 percent of the watershed area is grass or pasture. Nearly 20 percent of the watershed area is developed or urban in nature, while wetlands, marshes, and open water make up the remainder of the Kickapoo Creek watershed.

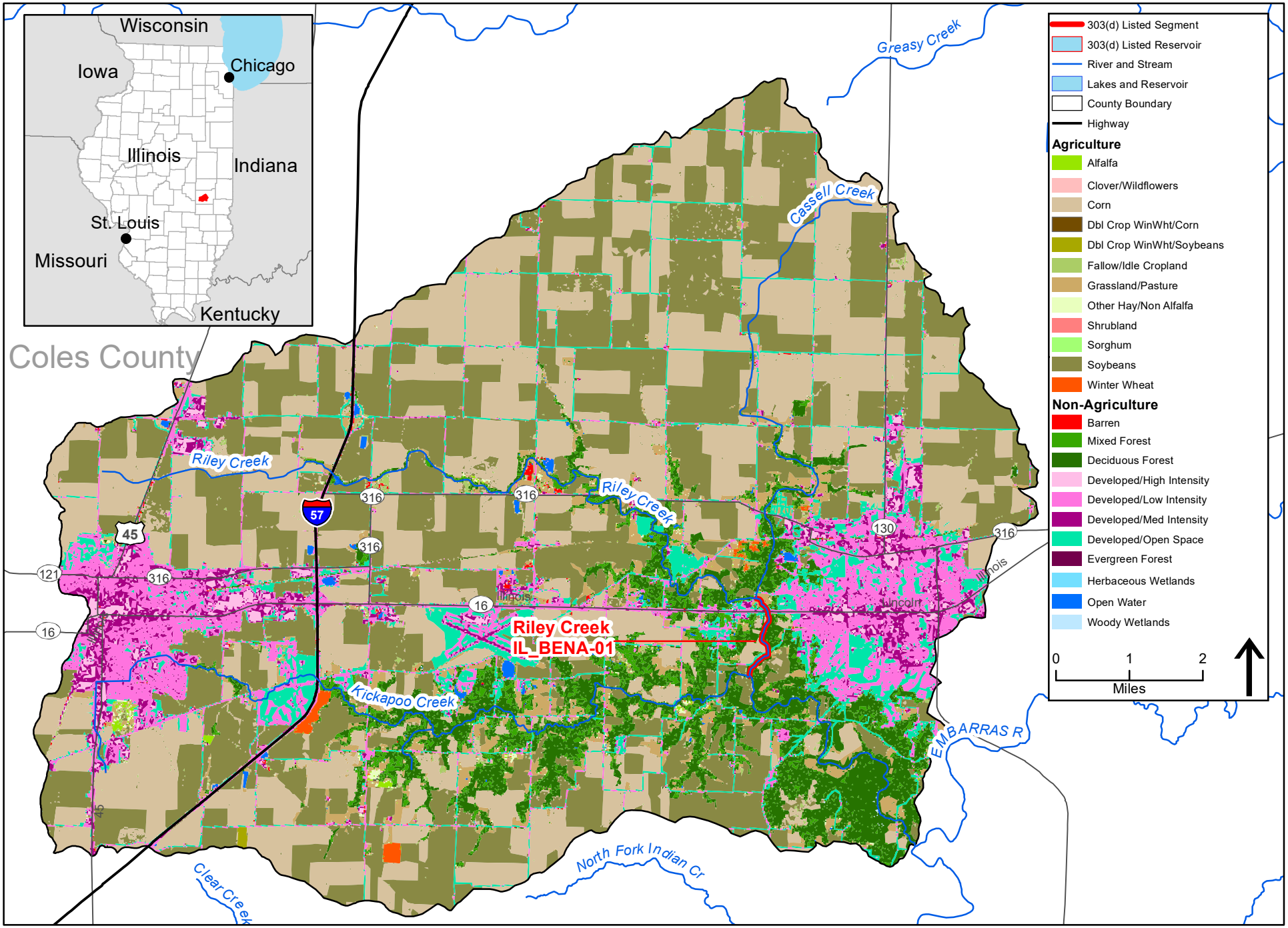

Figure 2-2: Kickapoo Creek Watershed, Land Use

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2.3.1 Subbasin Land Use

The subbasin area draining to the impaired segment of Riley Creek (IL_BENA-01) was further delineated through GIS (see **Figure 2-2**). Land cover data was then intersected with the subbasin boundary to determine the major land uses contributing runoff to the impaired waterbody, as shown in **Table 2-2**. **Appendix A** contains a table of all land uses in the subbasin.

Table 2-2 Land Cover and Land Use in the Riley Creek (IL_BENA-01) Subbasin

Land Cover Category	Area (Acres)	Percentage
Soybeans	15,468	37.4%
Corn	15,259	36.9%
Developed/Low Intensity	3,721	9.0%
Developed/Open Space	2,155	5.2%
Deciduous Forest	1,477	3.6%
Grass/Pasture	1,471	3.6%
Developed/Medium Intensity	1,205	2.9%
Developed/High Intensity	410	1.0%
Other	207	0.5%
Total	**41,373**	**100%**

2.4 Soils

Soils data are available through the Natural Resources Conservation Service's (NRCS's) Soil Survey Geographic Database (SSURGO).[7] For SSURGO data, field mapping methods using national standards are used to construct the soil maps. Mapping scales generally range from 1:12,000 to 1:63,360, making SSURGO the most detailed level of soil mapping done by NRCS.

Attributes of the spatial coverage can be linked to the SSURGO databases, which provides information on various chemical and physical soil characteristics for each map unit and soil series. Of particular interest for TMDL development are the hydrologic soil groups and the K-factor of the Universal Soil Loss Equation. The following sections describe and summarize the specified soil characteristics for the Kickapoo Creek watershed.

2.4.1 Soil Characteristics

Appendix B contains a table of the SSURGO soil series for the Kickapoo Creek watershed. A total of 40 soil types exist in the watershed. Drummer silty clay loam with 0 to 2 percent slopes is the most common soil type and makes up approximately 32 percent of the watershed. Raub silt loam (0 to 2 percent slopes), Dana silt loam (0 to 2 percent slopes, eroded), and Xenia silt loam (Bloomington Ridged Plain, 2 to 5 percent slopes) are the other most common soil types in the watershed (15.9, 8.9, and 7.4 percent of the watershed, respectively). The other soil types each represent less than 6 percent of the total watershed area. The table in **Appendix B** also contains the area, dominant hydrologic soil group, and K-factor range. Each of these characteristics are described in more detail in the paragraphs that follow.

[7] NRCS SSURGO. https://www.nrcs.usda.gov/resources/data-and-reports/soil-survey-geographic-database-ssurgo

Figure 2-3 shows the hydrologic soils groups found within the Kickapoo Creek watershed. Hydrologic soil groups are used to estimate runoff from precipitation. Soils are assigned to one of four groups according to the infiltration of water when the soils are thoroughly wet and receive precipitation from long-duration storms:

- Group A: Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.
- Group B: Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.
- Group C: Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted.
- Group D: Soils in this group have high runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted.

While hydrologic soil groups A, B, C, B/D, and C/D are all found within the Kickapoo Creek watershed, groups B/D and C are the most common types, representing 55 and 34 percent of the watershed, respectively. Group C/D, A, and B cover smaller portions of the watershed, at 5.4, 1.9, and 1.8 percent, respectively. The most common type, group B/D, is a dual hydrologic soil groups because, while these soils have a water table within 60 centimeters of the surface (similar to group D soils) these soils can be adequately drained to the point that they resemble group B soils, which exhibit "moderately low runoff potential when thoroughly wet" and water can move through the soil unimpeded. The first letter of the soil group applies to the drained condition and the second letter to the undrained condition. For the purpose of hydrologic soil group, adequately drained means that the seasonal high-water table is kept at 24 inches below the surface.[8]

A commonly used soil attribute is the K-factor, which is a measure of soil erodibility and quantifies the relative susceptibility of soil to sheet and rill erosion. Values of K range from 0.02 to 0.69, from least erodible to most erodible, respectively, and are influenced by elements including texture, organic matter content, structure, and saturated hydraulic conductivity.[9] The distribution of K-factor values in the Kickapoo Creek watershed range from 0.21 to 0.43, as shown in **Figure 2-4**.

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[8] NRCS. 2007. *Hydrology National Engineering Handbook*. Part 630, Hydrologic Soil Groups. https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=22526.wba

[9] Institute of Water Research. Michigan State University. 2002. RUSLE Online Soil Erosion Assessment Tool. http://www.iwr.msu.edu/rusle/kfactor.htm

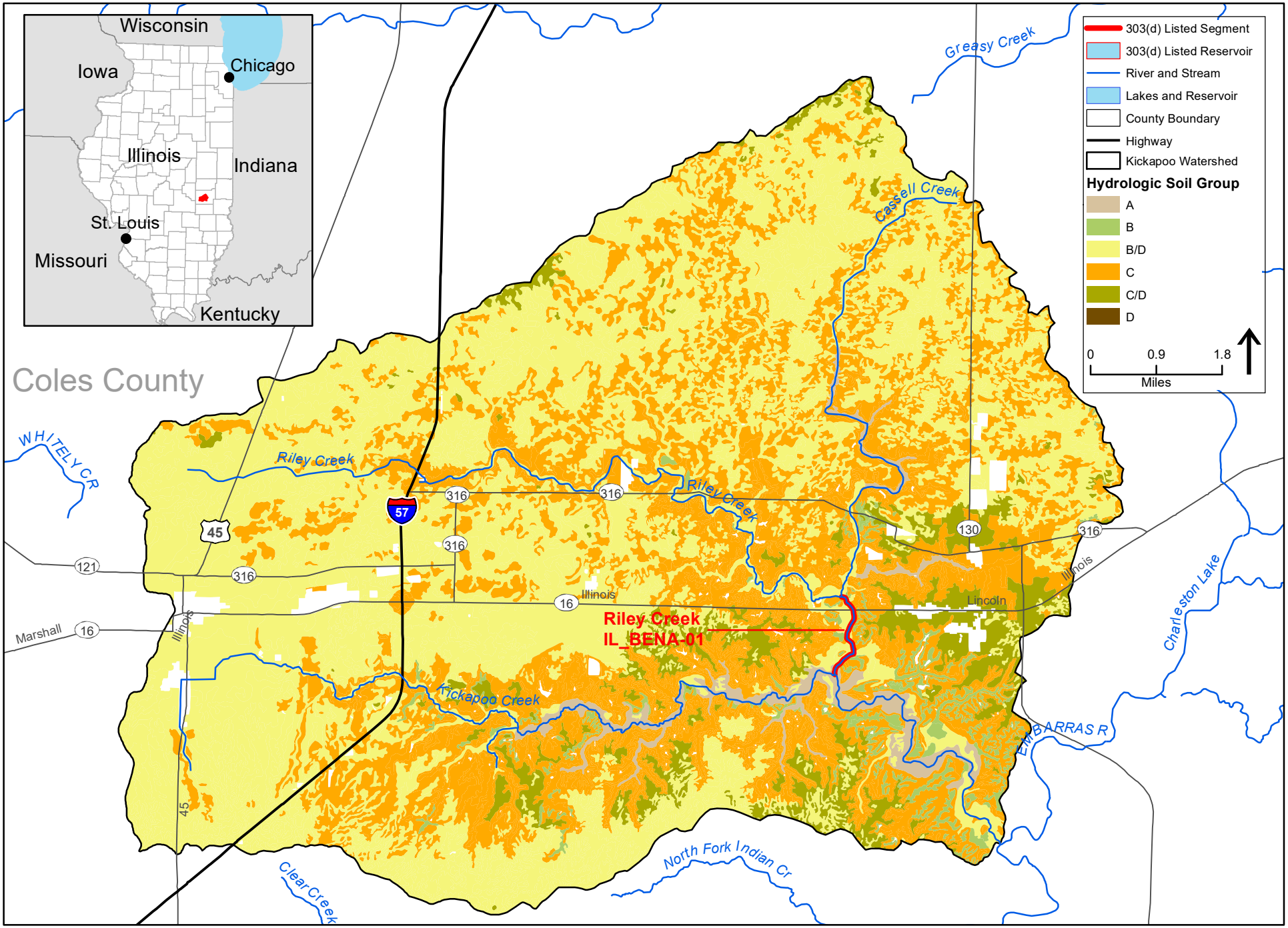

Figure 2-3: Kickapoo Creek Watershed, Soils

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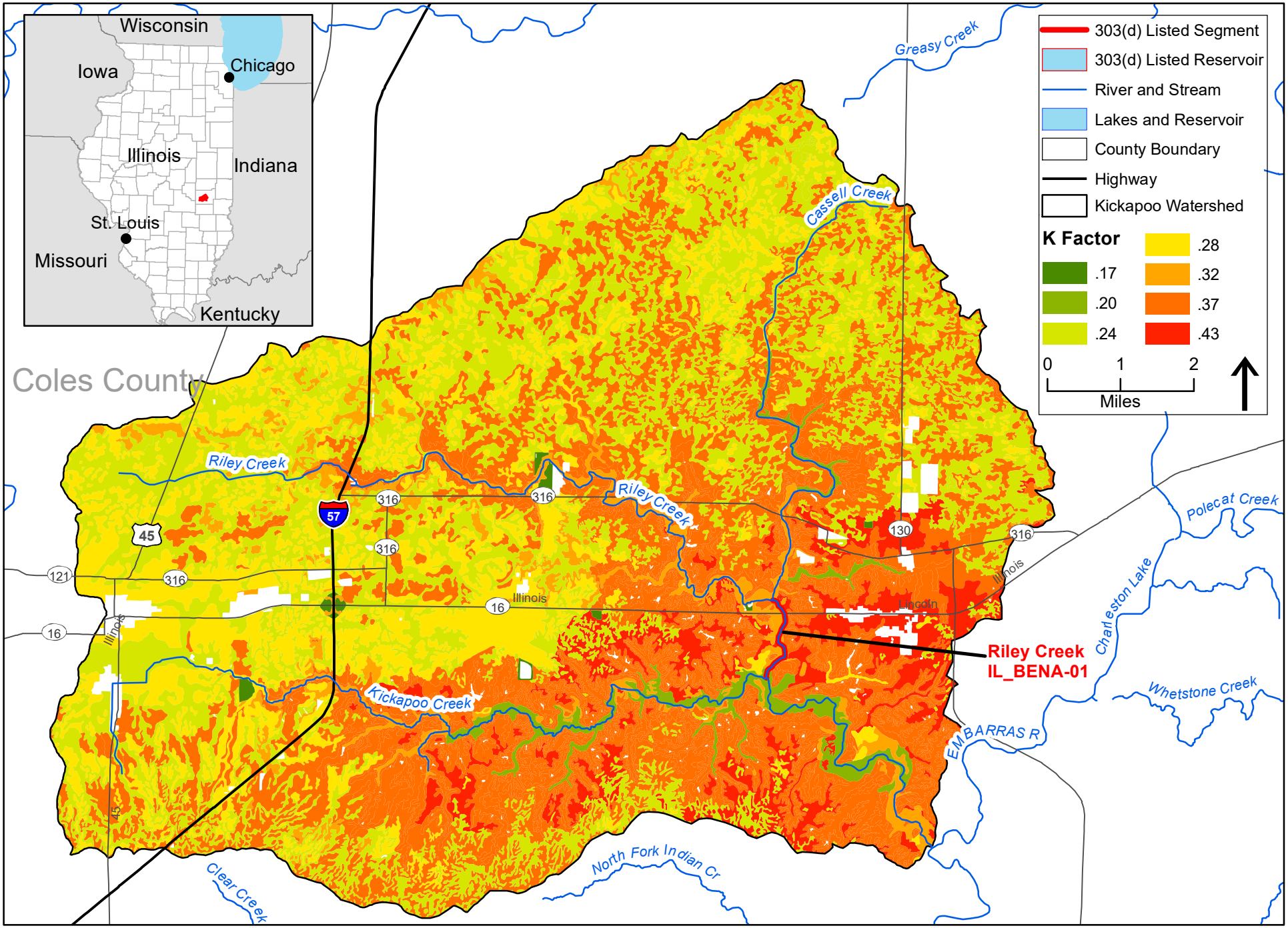

Figure 2-4: Kickapoo Creek Watershed, K-Factor Ranges

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2.5 Population

Census 2015 TIGER/Line data[10] from the U.S. Census Bureau were retrieved. Geographic shapefiles of census block groups[11] were downloaded for the entire state of Illinois. All census block groups having geographic center points (centroids) within the watershed were selected and tallied to provide an estimate of populations in all census blocks both completely and partially contained by the watershed boundary. Given that the optimal size of a census block group is 1,500 people, and 30 block group centroids are within the watershed, it is estimated that approximately 45,000 people reside in the Kickapoo Creek watershed. The major municipalities in the watershed are shown in **Figure 1-1**. The largest urban development in the watershed is the City of Charleston, Illinois, with a population of approximately 17,300, according to the 2020 census.[12]

2.6 Climate and Streamflow

2.6.1 Climate

Central Illinois has a temperate climate with hot summers and cold, moderately snowy winters. Monthly precipitation data from the Mattoon Charleston Coles County Airport, Illinois station (station USW00053802) in Coles County were extracted from the National Centers for Environmental Information (formerly known as the National Climatic Data Center) database[13] for 1998 through 2019. The data station, between Mattoon and Charleston, is near the center of the Kickapoo Creek watershed and is expected to be representative of climate throughout the watershed.

Table 2-3 contains average monthly precipitation along with average high and low temperatures for the period of record. Average annual precipitation is approximately 35 inches. June is historically the wettest month, while January and February are the driest. July is historically the warmest month, with an average maximum temperature of 85 degrees Fahrenheit (°F), while January is typically the coldest month, with an average minimum temperature of 20°F.

Table 2-3 Average Monthly Climate Data between Mattoon and Charleston, Illinois

Month	Average Total Precipitation (inches)	Average Daily Maximum Temperature (°F)	Average Daily Minimum Temperature (°F)
January	1.8	35.8	20.4
February	1.7	40.3	23.9
March	2.2	52.0	33.0
April	4.0	64.7	43.9
May	4.0	74.5	54.5
June	5.0	82.6	62.5
July	3.7	85.4	65.1
August	2.5	84.4	62.8

[10] U.S. Census Bureau. TIGER/Line Shapefiles. https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.html

[11] U.S. Census Bureau. 2010 Census – Block Maps. https://www.census.gov/geographies/reference-maps/2010/geo/2010-census-block-maps.html

[12] U.S. Census Bureau. QuickFacts. https://www.census.gov/quickfacts/fact/table/charlestoncityillinois,IL,US/PST045221

[13] National Centers for Environmental Information. Station USW00053802 precipitation data. https://www.ncdc.noaa.gov/cdo-web/datatools/findstation

Month	Average Total Precipitation (inches)	Average Daily Maximum Temperature (°F)	Average Daily Minimum Temperature (°F)
September	2.6	79.6	56.6
October	3.1	66.2	45.4
November	2.4	52.8	35.1
December	2.0	39.7	25.5
Annual	**35.0[1]**	**63.2**	**44.1**

Note:
[1] Average annual total.

2.6.2 Streamflow

Analysis of the Kickapoo Creek watershed requires an understanding of flow throughout the drainage area. There are two USGS gages within the watershed, however, both of these gages have limited data (USGS 2019). **Table 2-4** provides information about the stations.

Table 2-4 Streamflow Gages in the Kickapoo Creek Watershed[1]

Gage Number	Name	Available Data	Period of Record	Data Count
03343805	Kickapoo Creek near Mattoon, IL	Gage Height, Discharge	2014–2016	18
03343820	Kickapoo Creek at 1320E Road near Charleston, IL	Gage Height, Discharge	2010–2016	63

Note:
[1] USGS. National Water Information System. Daily Streamflow Data for Illinois. https://waterdata.usgs.gov/IL/nwis/current/?type=dailydischarge&group_key=basin_cd

There are six USGS gages in adjacent watersheds (**Figure 2-5**) with similar characteristics to those of the Kickapoo Creek watershed that have available discharge data and may be used to estimate streamflow for TMDL development for the impaired segment of Riley Creek (IL_BENA-01). These gages are summarized in **Table 2-5** and their stream flows are shown in **Figure 2-6**.

Table 2-5 Streamflow Gages in the Watersheds Adjacent to the Kickapoo Creek Watershed

Gage Number	Name	Drainage Area (square miles)	Approximate Distance from Kickapoo Watershed (miles)	Period of Record	Minimum Monthly Flow (cfs)	Maximum Monthly Flow (cfs)
03343400	Embarras River near Camargo, IL	186	14	1969–2019	23	1,119
05590800	Lake Fork at Atwood, IL	149	20	1972–2019	35	597
05591200	Kaskaskia River at Cook Mills, IL	473	5	1970–2019	41	1,613
05591550	Whitley Creek near Allenville, IL	35	7	1980–2019	Less than 1	241
05591700	West Okaw River near Lovington, IL	112	21	1970–2019	8	525
05592000	Kaskaskia River at Shelbyville, IL	1,054	21	1970–2019	301	1,944

cfs – cubic feet per second

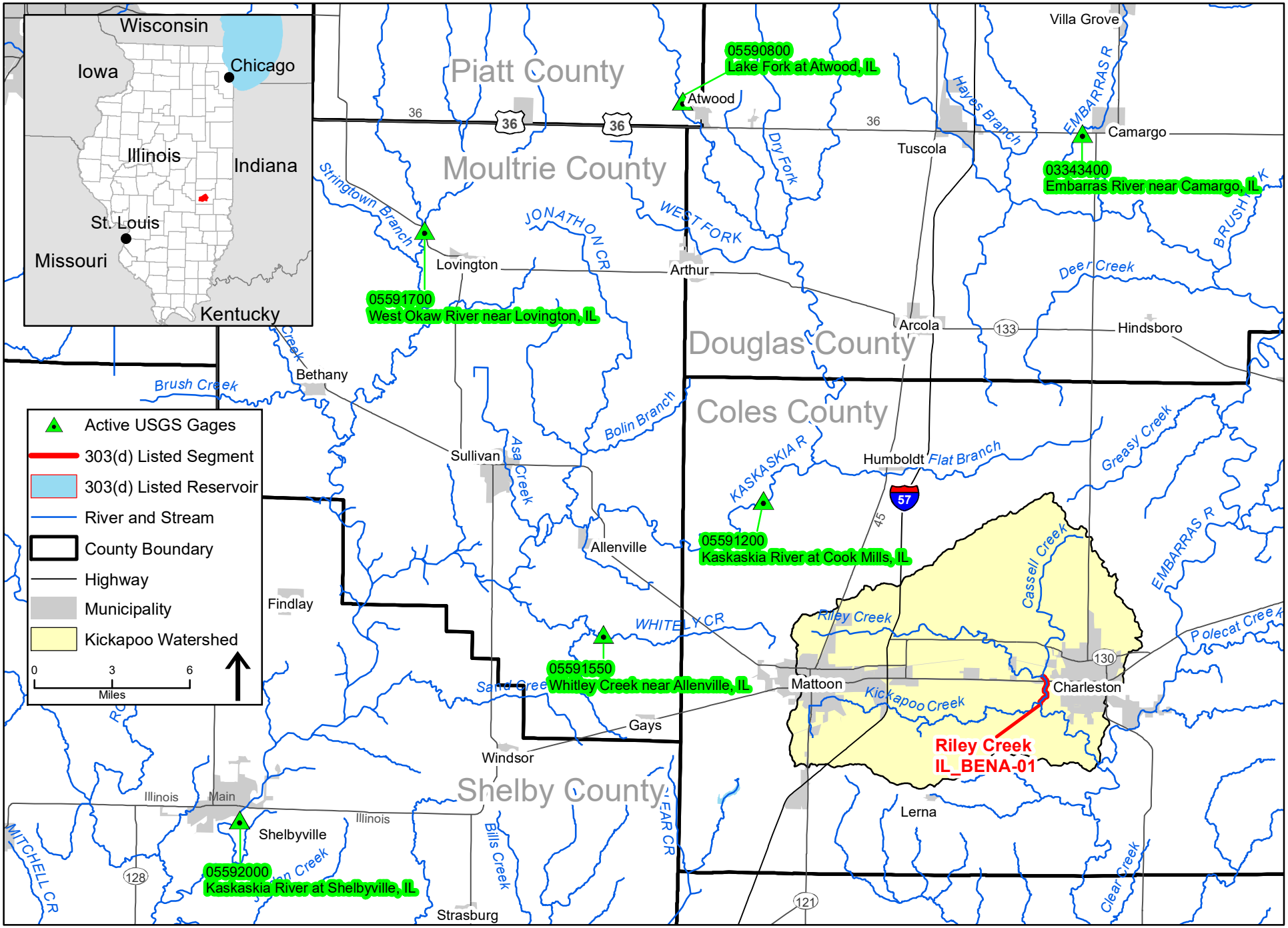

Figure 2-5: Kickapoo Creek Watershed, Active USGS Gages

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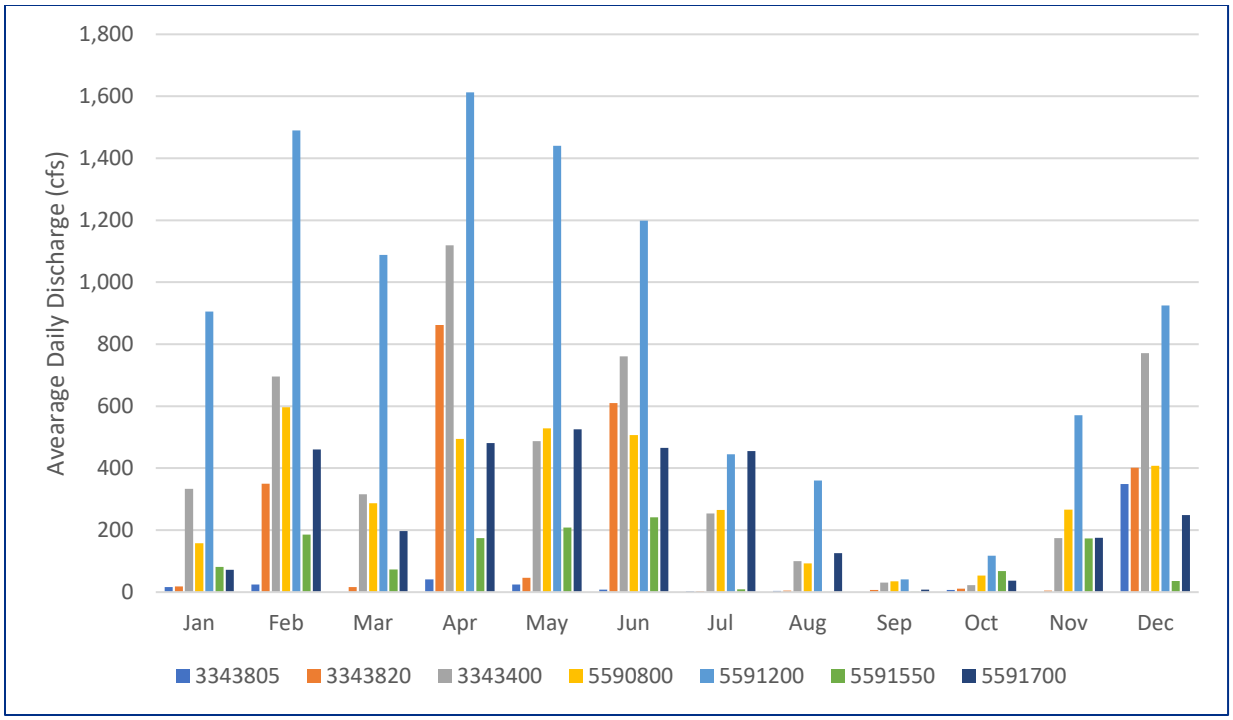

Figure 2-6 Annual Streamflow Trends at Gages in Proximity to the Kickapoo Creek Watershed

USGS gages 05591550 (Whitley Creek near Allenville, IL) and 05591700 (West Okaw River near Lovington, IL) have drainage areas and maximum and minimum monthly flows that are similar to the existing gages within the Kickapoo Creek watershed. Data from these gages provide estimated flow values for subbasins in the Kickapoo Creek watershed using the drainage area ratio method, represented by the following equation:

$$Q_{gaged}\left(\frac{Area_{ungaged}}{Area_{gaged}}\right) = Q_{ungaged}$$

Where,

Q_{gaged}	=	Streamflow of the gaged basin
$Q_{ungaged}$	=	Streamflow of the ungaged basin
$Area_{gaged}$	=	Area of the gaged basin
$Area_{ungaged}$	=	Area of the ungaged basin

The assumption behind the equation is that the flow per unit area is equivalent in watersheds with similar characteristics. Therefore, the flow per unit area in the gaged watershed multiplied by the area of the ungaged watershed estimates the flow for the ungaged watershed. As flow data are needed for TMDL development and/or watershed-based planning, data downloaded through the USGS for the surrogate gage for the available period of record will be adjusted to account for point source influence in the watershed upstream of the gaging station. Average daily flows from all National Pollutant Discharge Elimination System (NPDES) permitted facilities upstream of the surrogate USGS gages are subtracted from the gaged flow prior to flow-per-unit-area calculations.

The resulting estimates account for flows associated with precipitation and overland runoff only. Average daily flows from permitted NPDES discharges upstream of the impaired segments in the Kickapoo Creek watershed can then be added back into the equation to more accurately reflect estimated daily streamflow conditions in a given segment.

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Section 3

Kickapoo Creek Watershed Public Participation

Public knowledge, acceptance, and follow-through are necessary to implement a plan to meet recommended TMDLs, WBPs, or WPPs. It is important to involve the public as early in the process as possible to achieve maximum cooperation and respond to concerns regarding the purpose of the process and the regulatory authority to implement any recommendations.

Illinois EPA and CDM Smith held a virtual public meeting on June 30, 2021, to present Stage 1 of TMDL development. An additional virtual public meeting was held on January 17, 2024 to present the final results of the TMDL process and report. **Appendix D** contains a Responsiveness Summary to present comments received throughout the public participation process and how the comments have been addressed, where applicable.

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Section 4

Kickapoo Creek Watershed Water Quality Standards

4.1 Illinois Water Quality Standards

Water quality standards are developed and enforced by the state to protect the "designated uses" of the state's waterways. In Illinois, the Illinois Pollution Control Board (IPCB) is responsible for setting the standards. Illinois is required to update water quality standards every 3 years in accordance with the CWA. The standards requiring modifications are identified and prioritized by Illinois EPA in conjunction with EPA. New standards are then developed or revised during the 3-year period.

Illinois EPA is also responsible for developing scientifically based water quality criteria and proposing them to IPCB for adoption into state rules and regulations. The Illinois water quality standards are established in Title 35 of the Illinois Administrative Code: Environmental Protection; Subtitle C, Water Pollution; Chapter I, Pollution Control Board; Part 302, Water Quality Standards.[14]

4.2 Designated Uses

The waters of Illinois are classified into four primary categories of narrative and numeric water quality standards for surface waters: General Use Standards, Public and Food Processing Water Supplies Standards, Secondary Contact and Indigenous Aquatic Life Standards, and Lake Michigan Basin Water Quality Standards.[15] Segment IL_BENA-01 of Riley Creek was listed on the 2018 303(d) list for impairment of the aquatic life designated use by low DO under the General Use Standard.

4.2.1 General Use

The General Use classification is defined by IPCB as standards that "are intended to protect aquatic life, wildlife, agricultural, primary contact, secondary contact, and most industrial uses." They are also intended to "ensure the aesthetic quality of the state's aquatic environment and to protect human health from disease or other harmful effects that could occur from ingesting aquatic organisms taken from surface waters of the state."[16]

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[14] Illinois Pollution Control Board. Title 35 Procedural and Environmental Rules. https://pcb.illinois.gov/SLR/IPCBandIEPAEnvironmentalRegulationsTitle35

[15] Illinois Numeric Water Quality Standards for Surface Waters. https://pcb.illinois.gov/documents/dsweb/Get/Document-33354/

[16] Illinois EPA, *Integrated Report*, 9. https://epa.illinois.gov/content/dam/soi/en/web/epa/topics/water-quality/watershed-management/tmdls/documents/2020-2022-ir-final-6-01-22.pdf

4.3 Illinois Water Quality Standards

According to the Illinois EPA Integrated Report,[17] aquatic life use assessments in streams are typically based on the interpretation of biological information, physiochemical water data, and physical habitat. The primary biological measures used are the Fish Index of Biotic Integrity (fIBI), the Macroinvertebrate Index of Biotic Integrity (mIBI), and the Macroinvertebrate Biotic Index (MBI). Physical habitat information used in assessments includes quantitative and qualitative measures of stream bottom composition and qualitative descriptors of channel and riparian conditions. Physiochemical water data used include measures of conventional parameters (e.g., DO, pH, and temperature), priority pollutants, nonpriority pollutants, and other pollutants.

Table 4-1 presents the numeric water quality standards of the potential cause of impairment for segment IL_BENA-01 of Riley Creek in the Kickapoo Creek watershed.

Table 4-1 Summary of Numeric Water Quality Standards for Potential Causes of Stream Impairments in the Kickapoo Creek Watershed

Parameter	Units	General Use Water Quality Standard	Regulatory Reference[1]
DO	mg/L	*March through July* ≥5.0 minimum, and ≥6.25 7-day daily mean averaged over 7 days *August through February* ≥4.0 minimum, ≥4.5 7-day minimum averaged over 7 days, and ≥6.0 30-day daily mean[1]	302.206©[2]

Notes:

1 302.206(d) provides further information on detailed calculations for determining the acute and chronic standards for DO.

2 Riley Creek is subject to Section 302, Appendix D: Stream Segments for Enhanced Dissolved Oxygen Protection.

mg/L – milligrams per liter

The 2020/2022 Illinois Integrated Water Quality Report and 303(d) list was approved in June 2022.[18] Riley Creek segment IL_BENA-01 is now a Category 2 water, indicating that all designated uses that were assessed are supported.

4.4 Potential Pollutant Sources

Although Riley Creek segment IL_BENA-01 is no longer listed as impaired, **Table 4-2** provides a summary of the potential sources associated with the 2018 listed potential causes for the 303(d)-listed segment in this watershed. Past pollutant sources provide insight into future water quality risks in the watershed.

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17 Illinois EPA, *Integrated Report*, 17. https://epa.illinois.gov/content/dam/soi/en/web/epa/topics/water-quality/watershed-management/tmdls/documents/2020-2022-ir-final-6-01-22.pdf

18 Illinois EPA, *Integrated Report*. https://epa.illinois.gov/content/dam/soi/en/web/epa/topics/water-quality/watershed-management/tmdls/documents/2018-cycle-integrated-report-final-20210201.pdf

Table 4-2 Impaired Waterbody in the Kickapoo Creek Watershed

Segment ID	Segment Name	Potential Causes of Impairment	Designated Use	Potential Sources (as identified by the 2018 303(d) list)
IL_BENA-01	Riley Creek	DO	Aquatic Life	Industrial Point Source Discharge, Municipal Point Source Discharge, Crop Production (Crop Land or Dry Land), Agriculture, Urban Runoff/Storm Sewers

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Section 5

Kickapoo Creek Watershed Data and Potential Pollution Sources

To further characterize the Kickapoo Creek watershed, a wide range of data were collected and reviewed. Water quality data for the impaired stream, as well as information on potential point and nonpoint sources within the watershed, were compiled from a variety of data sources. This information is presented and discussed in further detail in the remainder of this section.

5.1 Water Quality Data

Illinois EPA monitoring programs that contribute data to the assessment of streams include the Ambient Water Quality Monitoring Network, the Pesticide Monitoring Subnetwork, Facility-Related Stream Surveys, Intensive River Basin Surveys, and the Fish Contaminant Monitoring Program.[19] Much of the data used for this report came from the Ambient Water Quality and Lake Monitoring Programs and Intensive Basin Surveys. The Ambient Water Quality Network and Ambient Lake Monitoring Programs include 146 fixed stream stations statewide that are sampled every 6 weeks. Additional data are collected during Intensive River Basin Surveys, which are typically conducted on a 5-year cycle and focus on basins where intensive data are currently lacking or where historical data need updating. Additional information on Illinois EPA's monitoring programs can be found in the Illinois Water Monitoring Strategy report.[20]

Data from a total of four historic water quality stations on or upgradient of the impaired stream within the Kickapoo Creek watershed were located and reviewed for this report. These water quality data were provided by Illinois EPA. **Figure 5-1** shows the water quality data stations within the watershed that contain data relevant to the impaired segment. The data summary provided in this section includes all available date ranges of collected data.

One stream segment within the Kickapoo Creek watershed, Riley Creek segment IL_BENA-01 (**Figure 5-2**), is addressed in this report. There is one water quality station on the segment with data from 2001 through 2016. Two stations with available DO data exist on the segment of Riley Creek upstream of the impaired segment, and one additional station exists on Cassell Creek, which is also upstream of the impaired segment. The data summarized in this section include water quality data for the parameter of concern (DO).

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[19] Illinois EPA. River and stream webpage. https://epa.illinois.gov/topics/water-quality/monitoring/river-and-stream.html

[20] Illinois EPA. 2014. *Illinois Water Monitoring Strategy 2015–2020*. https://www2.illinois.gov/epa/Documents/epa.state.il.us/water/water-quality/monitoring-strategy/monitoring-strategy-2015-2020.pdf

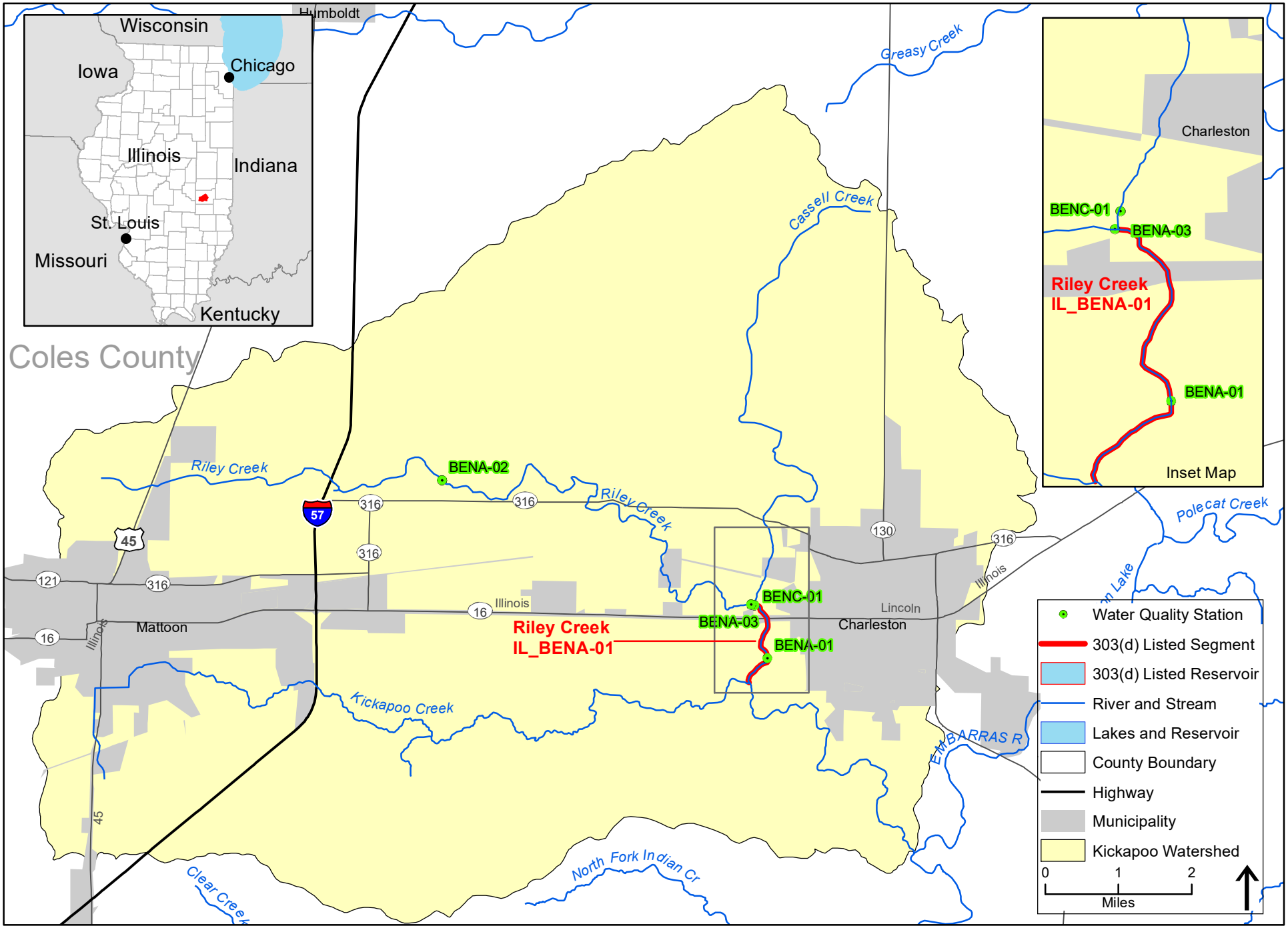

Figure 5-1: Kickapoo Creek Watershed Water Quality Stations

CDM Smith

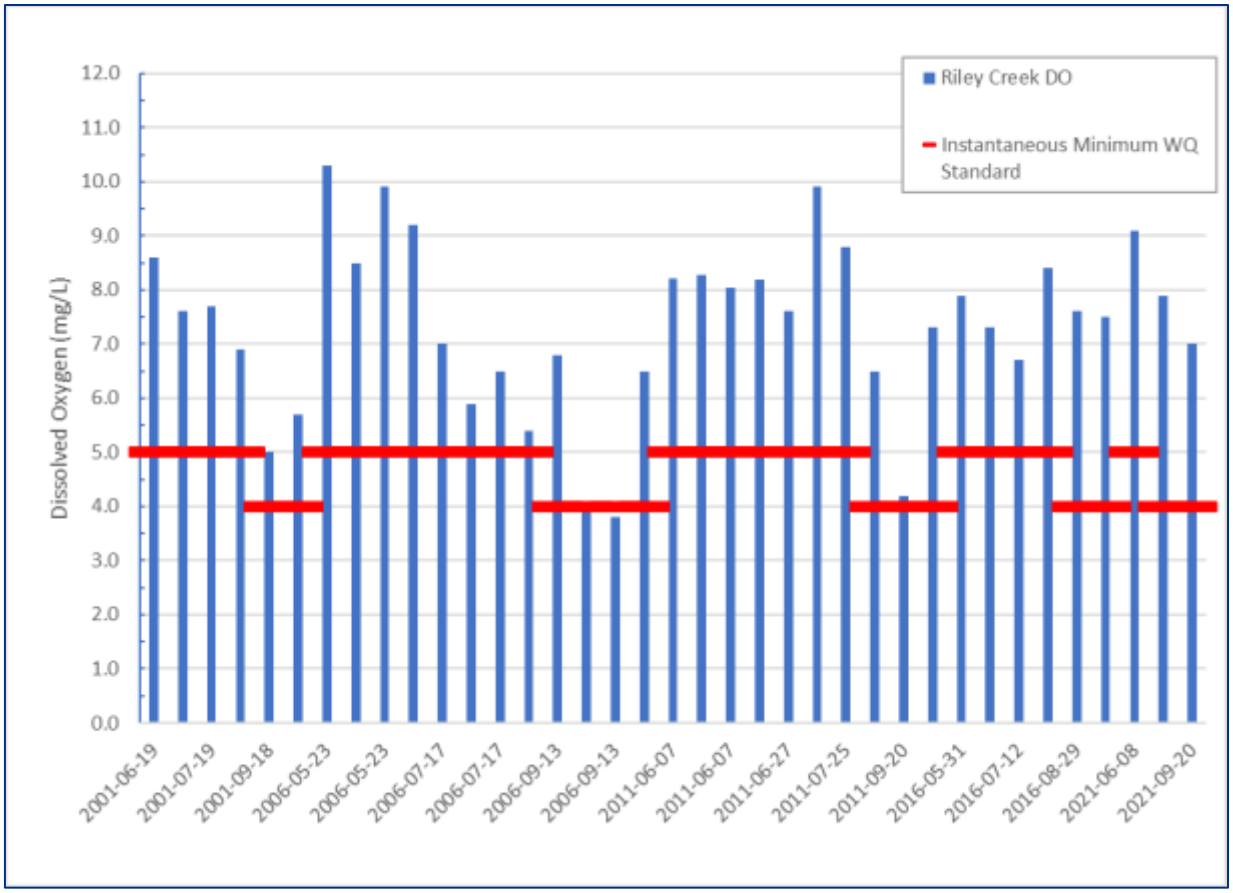

Figure 5-2 Dissolved Oxygen Measurements and Instantaneous Minimum Water Quality Standards in Riley Creek

All historical water quality data for the 2018 303(d)-listed segment in the Kickapoo Creek watershed are provided in **Appendix C**.

5.1.1 Dissolved Oxygen

Riley Creek segment IL_BENA-01 was listed in 2018 for impairment of the aquatic life use because of low DO concentrations. **Table 5-1** summarizes available historical DO data on this segment. The general use water quality standard for DO provides seasonal instantaneous minimum and minimum weekly (7-day) average concentrations for DO in streams. The instantaneous minimum standards of 5.0 mg/L for March through July and 4.0 mg/L for August through February were used to identify exceedances. Since only one exceedance of the instantaneous standard was identified, the dataset was also assessed for the 7-day average minimum standard of 6.25 mg/L for March through July and 4.5 mg/L for August through February. Only one exceedance was identified using the 7-day average minimum standard as well.

Table 5-1 Existing Dissolved Oxygen Data for Riley Creek Segment IL_BENA-01

Illinois Water Quality Standard (mg/L)	Period of Record and Number of Data Points	Mean (mg/L)	Maximum (mg/L)	Minimum (mg/L)	Number of Exceedances	Sample Locations
5.0[1], 4.0[2]	2001–2021; 37	7.34	10.30	3.80	1	BENA-01, BENA-02, BENA-03, BENC-01

Notes:
[1] Instantaneous minimum, March–July.
[2] Instantaneous minimum, August–February.

The summary of data presented in **Table 5-1** reflects single samples from locations on the segment and upstream of the segment compared to the standard during the appropriate months. One exceedance was reported in the available dataset for Riley Creek segment IL_BENA-01, representing 3 percent of available DO measurements. **Figure 5-2** shows the DO measurements collected over time on the segment.

All DO samples were collected between May and September when stream temperatures are typically higher and sampling conditions are more favorable. Stream flows are typically higher at the beginning of the summer, in May and June, and lower in July, August, and September. The one exception below the instantaneous minimum occurred in September 2006, when the 4.0 mg/L standard applied. All DO measurements in the last decade have been above the applicable water quality standard.

5.2 Point Sources

There is one active wastewater treatment plant that discharges upstream of Riley Creek. **Table 5-2** contains permit information for this point source while **Figure 5-3** shows the location of the facility.

Table 5-2 Permitted Facilities Discharging to or Upstream of the Impaired Segment in the Kickapoo Creek Watershed

Facility ID	Facility Name	Design Average/Maximum Flow (MGD)	Receiving Water
IL0021644	CHARLESTON SANITARY TREATMENT PLANT (STP)	3.3/6.0	Cassell Creek

MGD – million gallons per day

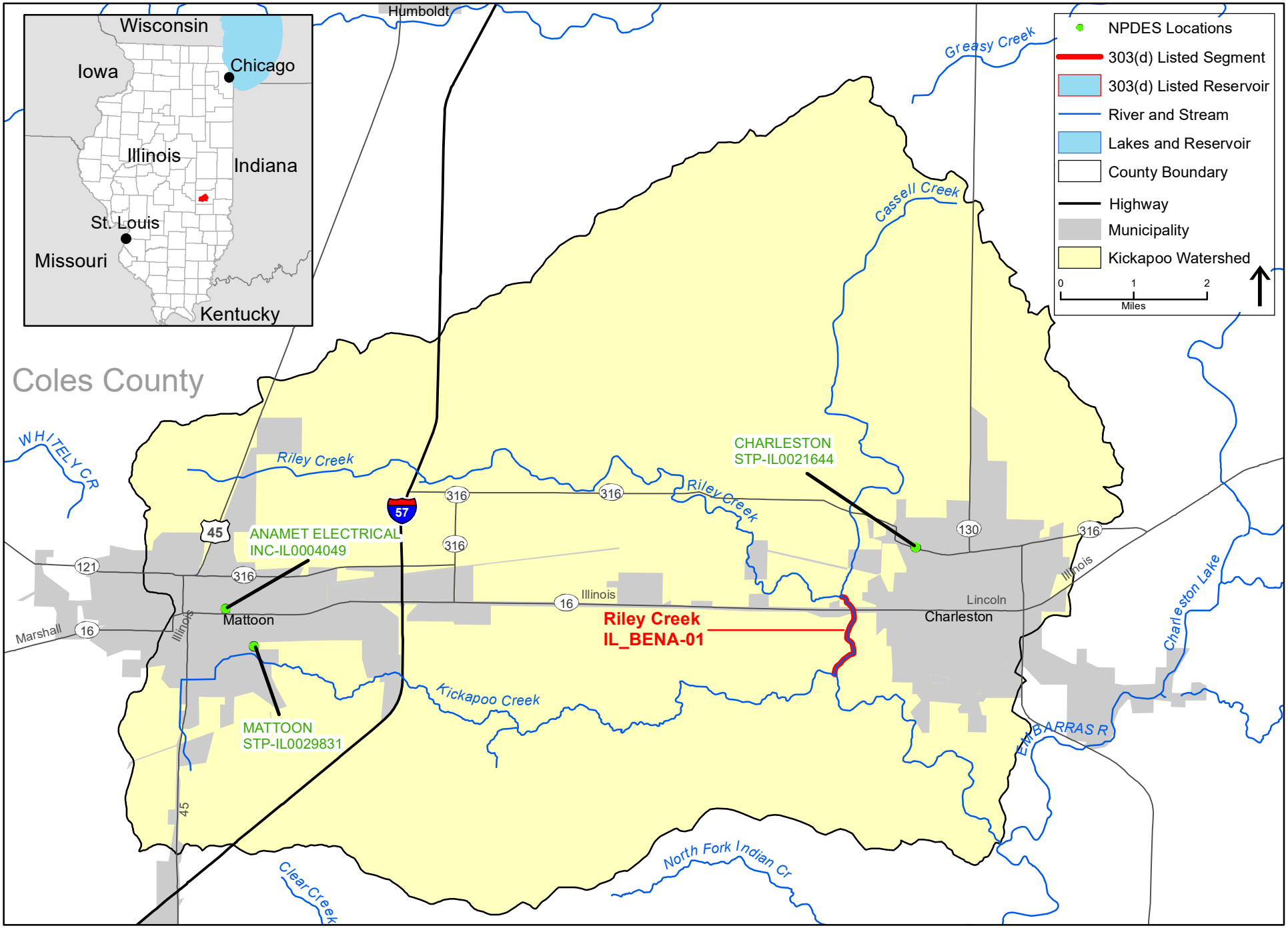

Figure 5-3: Kickapoo Creek Watershed
Major NPDES Discharge Locations

CDM Smith

5.3 Nonpoint Sources

There are many potential nonpoint sources of loading of oxygen-demanding materials to Riley Creek in the Kickapoo Creek watershed. This section will discuss site-specific cropping practices, animal operations, and area septic systems. Data were collected through communication with the local NRCS, Soil and Water Conservation Districts (SWCDs), and county health departments.

5.3.1 Crop Information

Approximately 66 percent of the land within the Kickapoo Creek watershed is devoted to agriculture. Of the agricultural lands, soybean and corn monocultures account for approximately 34 percent and 32 percent of the watershed, respectively. Tillage practices can be categorized as conventional till, reduced till, mulch till, and no till. The percentage of each tillage practice for corn, soybeans, and small grains by county are generated by the Illinois Department of Agriculture (IDA) from county transect surveys.[21] Data specific to the Kickapoo Creek watershed were not available; however, Coles County practices were available and are shown in **Table 5-3**.

Table 5-3 Tillage Practices in Coles County, Illinois

Tillage System	Corn		Soybean		Small Grain	
	2015	2018	2015	2018	2015	2018
Conventional Till	95.5%	76.2%	19.0%	16.4%	0.0%	0.0%
Reduced Till	4.1%	21.2%	32.0%	34.6%	0.0%	0.0%
Mulch Till	0.0%	2.6%	35.0%	38.3%	0.0%	0.0%
No Till	0.4%	0.0%	14.0%	10.8%	0.0%	0.0%

According to the County Transect Survey Summary Report,[22] fields planted conventionally leave less than 15 percent of the soil surfaced covered with crop residue after planting, while mulch till leaves at least 30 percent of the residue from the previous crop remaining on the soil surface after being tilled and planted. Reduced till falls between conventional and mulch (greater than 15 percent but less than 30 percent), and no-till practices leave the soil virtually undisturbed from harvest through planting. Residue is important because it shields the ground from the eroding effects of rain and helps retain moisture for crops. Data indicate a transition toward reduced and mulch tilling in Coles County over the past 5 years and reductions in conventional till practices. Erosion control practices can reduce the amount of sediment and nutrients entering a receiving water. Sedimentation and excess nutrients can both impact DO levels in streams.

Information on field tiling practices was also sought as field drains can influence the timing and amount of water delivered to area streams and reservoirs and deliver dissolved nutrients from fields to receiving waters. The local SWCD reported that the use of tile drainage is common and an estimated 80 percent of the agricultural land within the watershed likely uses tile drainage.[23]

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[21] IDA. 2018. Illinois Soil Conservation Transect Surveys. https://agr.illinois.gov/resources/landwater/illinois-soil-conservation-transect-survey-reports.html

[22] IDA. 2018. Illinois Soil Conservation Transect Survey Reports. https://agr.illinois.gov/resources/landwater/illinois-soil-conservation-transect-survey-reports.html

[23] Spaniol, L. 2019, November 12. Coles County Soil and Water Conservation District Resource Conservationist. Email correspondence.

5.3.2 Animal Operations

Information on commercial animal operations is available from the NASS. Knowing the number of animal units in a watershed is useful in TMDL development as grazing animals have the potential to increase erosion and contribute nutrients through manure. Data specific to the Kickapoo Creek watershed were not available; however, Coles County animal populations were reviewed and are presented in **Table 5-4**.[24,25]

Table 5-4 Coles County Animal Population

Livestock Type	2012	2017	Percent Change
Cattle and Calves	2,875	4,007	39.4%
Beef	1,312	2,083	58.8%
Dairy	98	110	12.2%
Hogs and Pigs	(D)	9,219	--
Poultry	42	21	-50.0%
Sheep and Lambs	251	113	-55.0%
Horses and Ponies	447	230	-48.5%

(D) – Withheld to avoid disclosing data for individual farms

Communications with local SWCD officials have provided more watershed-specific details. In Coles County, which encompasses the entirety of the Kickapoo Creek watershed, SWCD officials stated that there are very few cattle operations but there are several small horse farms and some goat hobby farms. Officials were not aware of any commercial poultry operations within the watershed nor commercial hog production facilities, although there are likely some small hog production operations for personal consumption, 4-H, and/or Future Farmers of America.[26]

5.3.3 Septic Systems

Many households in rural areas of Illinois that are not connected to municipal sewers make use of on-site sewage disposal systems or septic systems. There are many types of septic systems, but the most common is composed of a septic tank draining to a septic field where nutrient removal occurs. The degree of nutrient removal in these systems is limited by soils, and system upkeep and maintenance.

Across the United States, septic systems have been found to be a significant source of phosphorous pollution, which can contribute to low DO. Animal waste, urban runoff, and permitted point sources can also contribute. The information on the extent of sewered and unsewered municipalities was obtained from the Coles County Health Department.[27] Health department officials stated that the townships of Mattoon, Lafayette, and Charleston had 203, 814, and 781 permitted private septic systems, respectively. Of these townships, however, only the northern parts of Charleston likely flow into the impaired segment IL_BENA-01 of Riley Creek. There was no information regarding septic systems outside of these townships, but given that

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[24] NASS. 2019. 2017 Census of Agriculture, Illinois State and County Data. https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_2_County_Level/Illinois/

[25] NASS. 2014. 2012 Census of Agriculture, Illinois State and County Data. 2012 – Illinois AgCensus (cornell.edu)

[26] Spaniol, L. 2019, November 12. Coles County Soil and Water Conservation District Resource Conservationist. Email correspondence.

[27] Spear, G. 2019, November 12. Coles County Health Department. Email correspondence.

these areas are rural, it is likely that septic systems are prevalent throughout the Kickapoo Creek watershed.

5.4 Watershed Studies and Other Watershed Information

Previous efforts completed within the watershed are listed below. This list may not be exhaustive.

2002 – The Illinois State Water Survey conducted a 2-year watershed monitoring study of the Kickapoo Creek watershed to assist the Embarras River Ecosystem Partnership–Conservation 2000 Ecosystem Program in establishing a baseline of hydrologic and water quality data. The data was intended to provide an understanding of the cumulative impacts of future best management practices (BMPs) to be implemented in the watershed. The study found that the Mattoon wastewater treatment plant contributes 27 percent of the flow of Kickapoo Creek at the gage that the study installed, with flows ranging from 10 to 60 percent on a monthly basis.[28]

2011 – The Embarras River Watershed Management Plan was developed by the City of Charleston and the Embarras River Management Association and was created to update a similar plan that was written in 1996 to work toward restoring waters impaired by nonpoint sources of pollution. The plan includes a Kickapoo Creek Subwatershed Implementation Plan that recommends projects such as detention basins, streambank stabilization, and wetland/floodplain restoration to combat issues such as erosion and excess nitrogen, phosphorus, and sediment loading.[29]

2012 – Section 319 funds were used near Charleston to implement BMPs to reduce severe bank erosion and increase stream habitat. The project included the construction of two rock riffles and bank protection within 2,000 feet of Kickapoo Creek, as well as pre- and postbiological and geomorphological restoration monitoring.[30]

2022 - The Embarras River Watershed Management Plan was updated in 2022 through 319 grants funds awarded to the Coles County SWCD. The updated plan was completed by the Illinois Farm Bureau, Northwater Consulting, and Illinois Extension as partners, along with support from private groups, county Farm Bureaus, and SWCD boards throughout the watershed. The plan gives focus and direction for the coming 10 years to address multiple resource concerns in the watershed, with particular emphasis placed on water quality due to the Embarras River Watershed's listing as a phosphorus priority watershed in the Illinois NLRS.[31]

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[28] Illinois State Water Survey Watershed Science Section. 2004. *Sediment and Water Quality Monitoring for the Hurricane and Kickapoo Creek Watersheds, Coles and Cumberland Counties, Illinois*. https://www.isws.illinois.edu/pubdoc/CR/ISWSCR2004-05.pdf

[29] Illinois EPA, V3 Companies Ltd, and Northwater Consulting. 2011. *Embarrass River Watershed Management Plan*. https://epa.illinois.gov/content/dam/soi/en/web/epa/topics/water-quality/watershed-management/watershed-based-planning/documents/embarraswmp-final-version110111.pdf

[30] Illinois Department of Natural Resources. 2012. *Kickapoo Creek Restoration Project, Charleston, Illinois* https://dnr.illinois.gov/content/dam/soi/en/web/dnr/programs/nrda/documents/vesuvius-kickapoocr319projectfinalreport6-29-12.pdf

[31] Northwater. 2022. http://www.colescountyswcd.org/resources/embarras-river-watershed-plan/

Section 6

Approach to Developing Total Maximum Daily Loads and Identifying Data Needs

Illinois EPA is currently developing TMDLs for pollutants that have numeric water quality standards. Riley Creek segment IL_BENA-01, in the Kickapoo Creek watershed, was listed in 2018 for impairment of the aquatic life use because of low DO, which has a numeric water quality standard. **Table 1-1** lists the potential causes of impairment as identified in the 2018 303(d) list.

The available dataset for impairment on Riley Creek (IL_BENA-01) showed that this segment is no longer impaired by low DO, and it was recommended that this segment be removed from the 303(d) list.

Since the completion of Stage 1, the 2020/2022 Illinois Integrated Water Quality Report and 303(d) List was approved in June 2022.[33] Riley Creek is no longer on the 303(d) list and is listed a "Category 2" water, indicating that all designated uses that were assessed are supported. No additional stages of TMDL development were completed based on the updated status, however, a WPP was developed to protect and maintain water quality and designated uses through nutrient control and reduced erosion in the watershed and is included as Section 7 of this report.

[33] Illinois EPA, *Integrated Report*. https://epa.illinois.gov/content/dam/soi/en/web/epa/topics/water-quality/watershed-management/tmdls/documents/2020-2022-ir-final-6-01-22.pdf

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Section 7

Watershed Protection Plan for Riley Creek Subbasin in the Kickapoo Creek Watershed

7.1 Protection Plan

As presented in Section 5 of this report, data show that Riley Creek (segment IL_BENA-01) is no longer impaired and the segment has since been removed from the 2020/2022 303(d) list. As a result, a TMDL was not developed. This protection plan has been developed to help guide the implementation of recommended BMPs intended to protect and maintain the water quality in the subbasin.

High phosphorus concentrations in receiving streams often result in excessive algae growth, typically periphyton in smaller streams and phytoplankton in larger rivers. Excessive algae growth is known to cause water column DO depletions as the algae respire. Effective ways to maintain adequate DO levels in rural watersheds often requires efforts to restrict total phosphorus loads from entering water bodies. While no numeric standard exists for total phosphorus in streams, Illinois has developed a Nutrient Loss Reduction Strategy (NLRS). The NLRS contains an interim goal of reducing total phosphorus loads within the state by 25 percent by 2025, with an overall long-term goal of establishing a 45 percent reduction in nitrogen and phosphorus loads.

Given that the Kickapoo Creek watershed area is dominated by agricultural land uses, water quality protection in this area will largely be driven by implementation and maintenance of agricultural BMPs. This WPP provides information on nonpoint source nutrient load reduction BMPs that will continue to protect and maintain DO concentrations that support the aquatic life use within Riley Creek segment IL_BENA-01.

7.2 Adaptive Management

Watershed planning is an iterative and adaptive process that requires continuous monitoring and evaluation of success criteria to help improve results as lessons are learned throughout implementation. Adaptive management conforms to EPA guidelines as it is a systematic process for continually improving management policies and practices through learning from the outcomes of operational programs. Some defining characteristics of an adaptive management approach include:

- Acknowledgment of uncertainty about what policy or practice is “best” for the particular management issue
- Thoughtful selection of the policies or practices to be applied (the assessment and design stages of the cycle)

- Careful implementation of a plan of action designed to reveal the critical knowledge that is currently lacking
- Monitoring of key response indicators
- Analysis of the management outcomes in consideration of the original objectives and incorporation of the results into future decisions

Implementation actions, management measures, and continued monitoring are all discussed throughout the remainder of this section to outline an adaptive management program for the Riley Creek subbasin. The point and nonpoint source BMPs presented herein are voluntary measures that should be taken by dischargers and/or landowners within or upstream of the Riley Creek IL_BENA-01 segment.

7.3 Best Management Practice Recommendations

Implementation actions, point source controls, management measures, and/or BMPs are used to control the generation or distribution of pollutants within a watershed. BMPs are either structural, such as wetlands, sediment basins, fencing, or filter strips; or managerial, such as conservation tillage practices, nutrient management plans (NMPs), or crop rotation. Both structural and managerial BMPs require effective management to be successful in reducing pollutant loading to water resources.[34]

It is typically most effective to install a combination of nonpoint source controls and BMPs or a BMP system. A BMP system is a combination of two or more individual BMPs that are used to control pollutants from a single critical source. If the watershed has more than one identified pollutant but the transport mechanism is the same, then a BMP system that establishes controls for the transport mechanism can be employed.[27] The following subsections describe BMPs that the state and watershed stakeholders will pursue for the management of total phosphorus loads to continue to minimize DO depletions within the Riley Creek subbasin.

7.3.1 Recommendations for Total Phosphorus Management

Phosphorus is a nutrient critical to healthy ecosystems at low concentrations, however, overenrichment of phosphorus can result in aquatic ecosystem degradation when nitrogen is also available in sufficient quantities. Nutrient enrichment can result in rapid algal growth as available nutrients and carbon dioxide are consumed. This response can alter pH, decrease DO (which is critical to other aquatic biota), alter the diurnal DO pattern, and even create anoxic conditions. In addition, nutrient enrichment can reduce water clarity and light penetration and is aesthetically displeasing.

Inputs of phosphorus originate from both point and nonpoint sources. Most of the phosphorus discharged by point discharges is soluble and originates from anthropogenic sources. For example, effluents from municipal sewage treatment plants are often a contributor of phosphorous loads to area waterways. Contributions from failed on-site wastewater treatment (septic) systems can also be a significant source (nonpoint), especially if they are concentrated in

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[34] Osmond, D.L., D.L.K. Hoag, A.E. Luloff, D.W. Meals, and K. Neas. 2015. "Farmers' Use of Nutrient Management: Lessons from Watershed Case Studies." *Journal of Environmental Quality*, February. DOI: http://dx.doi.org/10.2134/jeq2014.02.0091

a small area. Phosphorus from nonpoint sources is generally insoluble or particulate. Most of this phosphorus is bound tightly to soil particles and enters streams from erosion although some may come from sources such as tile drainage in the dissolved form. Phosphorus loading from nonpoint sources is typically intermittent and is most often associated with stormwater runoff. Sediment loads associated with nonpoint runoff can impact the physical attributes of the stream, reduce the opportunities for physical reaeration within a stream channel, and act as a transport mechanism for phosphorus.

Phosphorus loads in the Riley Creek subbasin originate primarily from external sources. As presented in previous sections, external sources of total phosphorus likely include point source discharges, crop production/agriculture, and potentially urban runoff/storm sewers. To continue to effectively manage total phosphorus loads into Riley Creek and in turn mitigate against potential DO depletions, management measures must primarily address loading through sediment and surface runoff controls.

7.3.1.1 Point Sources of Oxygen-Demanding Materials

There is one active municipal point source discharger that discharges into Cassell Creek upstream of Riley Creek segment IL_BENA-01. **Table 7-1** contains facility and permit information for the Charleston STP.

Table 7-1 Permit Information for Charleston STP

Facility	NPDES Permit Number	Design Average Flow (MGD)	Design Maximum Flow (MGD)	CBOD Daily Maximum (mg/L)	DO Daily Minimum[1] (mg/L)	DO Daily Minimum[2] (mg/L)
Charleston STP	IL0021644	3.3	6.0	24	5.0	3.5

Notes:
[1] March – July.
[2] August – February.
CBOD – carbonaceous biochemical oxygen demand

The permit also contains limits for ammonia and has monitoring requirements for total phosphorus and total nitrogen. The average total phosphorus concentration in discharge effluent at the Charleston STP is 2.3 mg/L based on discharge monitoring report data submitted from November 2020 to October 2021. Continued monitoring and evaluation of oxygen-demanding constituents to receiving waters will provide Illinois EPA and interested watershed group members data and information to use when considering water quality goals for segment IL_BENA-01 of Riley Creek.

7.3.1.2 Nonpoint Sources of Phosphorus

There are many potential nonpoint sources of phosphorus within the Riley Creek subbasin. The following section presents information on watershed cropping practices and other BMPs that help reduce nutrient loads and improve DO levels in area waterways.

BMPs for treatment of these nonpoint sources include:

- Nutrient management

- Conservation tillage practices
- Filter strips and riparian buffers
- Farming/soil retention practices
- Wetlands
- Water and sediment control basins (WASCOBs)
- Phosphorus-based lawn fertilizer restrictions

Nutrient Management: Nutrient management programs are available for management of nutrient loads within the Riley Creek subbasin. Crop management of nitrogen and phosphorus originating in the agricultural portions of the watershed can be accomplished through NMPs that focus on increasing the efficiency with which applied nutrients are used by crops, thereby reducing the amount available to be transported to both surface water and groundwater.

The overall goal of nutrient reduction from agriculture should be to increase the efficiency of nutrient use by balancing nutrient inputs in feed and fertilizer with outputs in crops and animal produce, and to manage the concentration of nutrients in the soil. The four "Rs" of nutrient management are applying the right fertilizer source at the right rate at the right time and in the right place. It is not unusual for crops in fields or portions of fields to show nutrient deficiencies during periods of the growing season, even where an adequate NMP is followed. The fact that nutrients are applied does not necessarily mean they are available. Plants obtain most of their nutrients and water from the soil through their root system. Any factor that restricts root growth and activity has the potential to restrict nutrient availability and result in increased nutrient runoff.

Reducing nutrient loss in agricultural runoff may be brought about by source and transport control measures, such as filter strips or grassed waterways. The NMPs account for all inputs and outputs of nutrients to determine reductions. NMPs typically include the following:

- Review of aerial photography and soil maps
- Regular soil testing to determine areas where adequate or excessive fertilization has taken place, monitor where nutrient buildup in soils occurs, and aid in determining fertilization maintenance requirements; appropriate soils sampling and analysis techniques are described in the Illinois Agronomy Handbook (http://extension.cropsciences.illinois.edu/handbook/).
- Review of current and/or planned crop rotation practices
- Establishment of yield goals and associated nutrient application rates, which can help minimize the potential for excessive buildup of phosphorus and reallocate phosphorus sources to fields or areas where the greatest agronomic benefits can be produced
- Development of nutrient budgets with planned application rates, application methods, and timing and form of nutrient application

- Identification of sensitive areas and restrictions on application when land is snow covered, frozen, or saturated

Regional differences in phosphorus-supplying power are shown in Figure 8-4 of the Illinois Agronomy Handbook.[35] The differences were broadly defined primarily based on variability in parent material, degree of weathering, native vegetation, and natural drainages. For example, soils developed under forest cover appear to have more available subsoil phosphorus than those developed under grass. Soil test values are used to determine when buildup and maintenance of soil phosphorus is needed to supplement soils with low phosphorus-supplying power. Specific application amounts should be determined by periodic soil testing.

Subsoil levels of phosphorus in the southern Illinois region may be rather high by soil test in some soils, but this is partially offset by conditions that restrict rooting. Yet, excessively high phosphorus soil test levels should not be maintained. While soil test procedures were designed to predict where phosphorus is needed and not to predict environmental problems, the likelihood of phosphorus loss increases with high phosphorus test levels. Environmental decisions regarding phosphorus applications should include such factors as distance from a significant lake or stream, infiltration rate, slope, and residue cover. One possible problem with using soil test values to predict environmental problems is in sample depth. Normally samples are collected to a 7-inch depth for predicting nutritional needs. For environmental purposes, it would often be better to collect the samples from a 1- or 2-inch depth, which is the depth that will influence phosphorus runoff. Another potential problem is variability in soil test levels within fields in relation to the dominant runoff and sediment-producing zones. Several fertilizer placement recommendations are described in the Illinois Agronomy Handbook. However, given the propensity of phosphorus to bind tightly to soil particles and subsequently enter streams through erosion, the deep fertilizer placement technique may be most appropriate in areas where phosphorus is a concern. Under the deep placement technique, fertilizer is placed 4 to 8 inches deep into the soil rather than being spread near the surface.

Conservation Tillage Practices: Conservation tillage practices also help to manage nutrient and sediment loads into receiving waters by reducing erosion of soils. **Table 7-2** shows the areas (acres) in the watershed that are under cultivation along with the percent of the corresponding watershed area that is cultivated. Crop residuals or living vegetation cover on the soil surface protects against soil detachment from water and wind erosion.

Table 7-2 Cultivated Areas for the Riley Creek Subbasin

Stream Segment	Segment ID	Land Cover Area (acres)	Cultivated Area (acres)	Percent Cultivated
Riley Creek	IL_BENA-01	41,373	30,727	74%

Conservation tillage practices are no till and reduced till. No till is the practice of limiting soil disturbance to manage the amount, orientation, and distribution of crop and plant residue on the

[35] Fernandez, F.G., and R.G. Hoeft. Under revision. "Managing Soil pH and Crop Nutrients." Chapter 8 in *Illinois Agronomy Handbook*. Illinois Extension and Outreach Department of Crop Sciences. http://extension.cropsciences.illinois.edu/handbook/pdfs/chapter08.pdf

soil surface year-round.[36] Reduced till is managing the amount, orientation, and distribution of crop and other plant residue on the soil surface year-round, while limiting the soil-disturbing activities used to grow and harvest crops in systems where the field surface is tilled prior to planting.[37]

The no-till practice consists only of an in-row soil tillage operation during the planting activities and a seed row/furrow closing device. No full-width tillage is performed from the time of harvest or termination of one cash crop to the time of harvest/termination of the next cash crop in the rotation regardless of the depth of the tillage operation. Limited tillage is allowed to close or level ruts from harvesting equipment; however, no more than 25 percent of the field may be tilled for this purpose.

As noted above, the reduced-till practice consists of managing plant residue on the soil surface while limiting soil-disturbing activities. The practice includes tillage methods commonly referred to as mulch tillage or conservation tillage, where the entire soil surface is disturbed by tillage operations such as chisel plowing, field cultivating, tandem disking, or vertical tillage. It also includes tillage/planting systems with few tillage operations (e.g., ridge till) but which do not meet the criteria for the no-till practice as described above and in Illinois NRCS Conservation Practice Standard (CPS) 329.[38]

In both the no-till and reduced-till practices, removal of residue from the row area prior to or as part of the planting operation is acceptable. In the no-till practice, however, the disturbed portion of the row width should not exceed one-third of the crop row width. In either practice, none of the residue should be burned. To reduce erosion to the targeted level, the current approved water and/or wind erosion prediction technology should be used to determine the amount of randomly distributed surface residue needed, the period of the year the residue needs to be present in the field, and the amount of surface soil disturbance allowed. All residues will be uniformly distributed over the entire field. Residue should not be shredded after harvest because shredding makes it susceptible to movement by wind or water, and areas where the shredded residue accumulates may interfere with planting of the next crop.

If the no-till BMP is selected for use by a landowner, a separate plan shall be prepared for each area that will use this practice. Additional guidance and minimum plan elements are discussed in Illinois NRCS CPS 329.[39] If the reduced-till BMP is selected for use by a landowner, a separate plan shall be prepared for each area that will use this practice. Additional guidance and minimum plan elements are discussed in Illinois NRCS CPS 345.[40]

Conservation tillage practices can remove up to 45 percent of the phosphorus from runoff. The 2018 Illinois Department of Agriculture's soil transect survey estimated that conventional till accounts for 76 percent of cultivated land. To maintain water quality, tillage practices already in

[36] NRCS. 2016a. Conservation Practice Standard. Residue and Tillage Management, No Till. Code 329. https://www.nrcs.usda.gov/resources/guides-and-instructions/residue-and-tillage-management-no-till-ac-329-conservation

[37] NRCS. 2016b. Conservation Practice Standard. Residue and Tillage Management, Reduced Till. Code 345. https://www.nrcs.usda.gov/resources/guides-and-instructions/residue-and-tillage-management-reduced-till-ac-345-conservation

[38] NRCS. 2016a.

[39] NRCS. 2016b.

[40] NRCS. 2016b.

place should be continued, and practices should be assessed and improved upon for all agricultural areas in the Kickapoo Creek Watershed subbasins.

Filter Strips: Filter strips can be used as a control for both sediment and nutrient pollutant loads from runoff. Filter strips are strips or areas of permanent herbaceous vegetation situated between cropland, grazing land, or disturbed land and environmentally sensitive areas, such as waterways. The filter strips are permanently designated plantings to treat runoff and are not part of an adjacent cropland's rotation.

The filter strip vegetation may consist of a single species or a mixture of grasses, legumes, and/or other forbs that are appropriately adapted to the soil and climate, and to the farm chemicals used in the adjacent land. Approved seed listings are provided in the Illinois NRCS CPS 393.[41] Applicable maintenance shall be performed, as needed, to ensure the strips continue to function properly, including removal of state-listed noxious weeds, gully repair, removal of excess sediment, and reseeding. Overland flow entering the filter strip should be primarily sheet flow; areas of concentrated flow should be dispersed as part of the maintenance activities so as not to circumvent the filter strip. Harvesting of the filter strip vegetation, where appropriate, will help to encourage dense growth, maintain an upright growth habit, and remove contaminants and unwanted nutrients contained in the plant tissue. Prescribed burning may be used to manage and maintain the filter strip when an approved burn plan has been developed.

The installation of filter strips adjacent to the receiving waters and any contributing tributaries can result in considerable reduction of overland contributions of sediments, suspended solids, and nutrients to a receiving water. Filter strips implemented along streams and their tributaries slow and filter runoff and provide bank stabilization, thereby decreasing erosion and resedimentation; however, they should not be installed on unstable channel banks already eroding because of undercutting of the bank toe. When used in support of a riparian forest buffer, filter strips can also restore or maintain sheet flow.

The Illinois NRCS CPS 393 describes filter strip requirements based on land slope; the requirements are designed to achieve a minimum flow through time of 15 to 30 minutes at a one-half inch depth. **Table 7-3** provides a summary of the guidance for filter strip width, or flow length, as a function of slope.[42]

Table 7-3 Filter Strip Flow Lengths Based on Land Slope

Percent Slope	Filter Strip Flow Length (feet)	
	Minimum	Maximum
0.5%	36	72
1.0%	54	108
2.0%	72	144
3.0%	90	180
4.0%	108	216
5.0% or greater	117	234

[41] NRCS. 2017a. Conservation Practice Standard. Filter Strip. Code 393. https://efotg.sc.egov.usda.gov/api/CPSFile/5609/393_IL_CPS_Filter_Strip_2017

[42] NRCS. 2017a.

In conjunction with the available land use, topography, and soil information discussed in Section 2, mapping software was used to buffer stream segments and tributaries to an appropriate and reasonable width to determine the total area found in the subbasin. Owing to the wide range of soil types and slopes found throughout the watershed, the appropriate buffer widths estimated in GIS were based on the maximum buffer area of 234 feet adjacent to the segment's major tributaries.

Not all land use types within the buffer areas are candidates for conversion to filter strips. Existing forests and undisturbed grasslands already function as filter strips and conversion of developed residential or commercial lands is often not feasible. In general, agricultural lands are the land use type most conducive to conversion to buffer strips and will likely provide the greatest benefit to water quality once converted. Therefore, GIS software was used to extract the approximate acreage of agricultural lands surrounding potential tributaries and buffer areas of the stream segments within the Riley Creek subbasin.

There is approximately 13.8 acres of agricultural land within the buffer width area of Riley Creek segment IL_BENA-01 and an additional 887 acres of agricultural land within upstream segment buffer width areas within the greater Kickapoo Creek watershed available for filter strip installation. Landowners are encouraged to evaluate their land adjacent to a waterway to determine the practicality of installing or extending filter strips to achieve effective flow lengths as described in the NRCS guidance provided in **Table 7-4**. **Figure 7-1** shows the buffered areas and agricultural lands suitable for conversion to filter strips within the watershed.

Table 7-4 Filter Strip details for the Kickapoo Creek Watershed

Stream Segment	Segment ID	Average Stream Slope (%)	Filter Strip Flow Length (feet)	Total Buffer Area (acres)	Agricultural Land in Buffer (acres)
Riley Creek	IL_BENA-01	6.9	234	81.7	13.8
Riley Creek	IL_BENA-02	2.6	180	481	312
Riley Creek	IL_BENA-03	5.6	234	303	58.8
Union Drainage District No. 3	IL_BENAA	3.5	216	295	214
Cassell Creek	IL_BENC-01	3.8	216	485	302

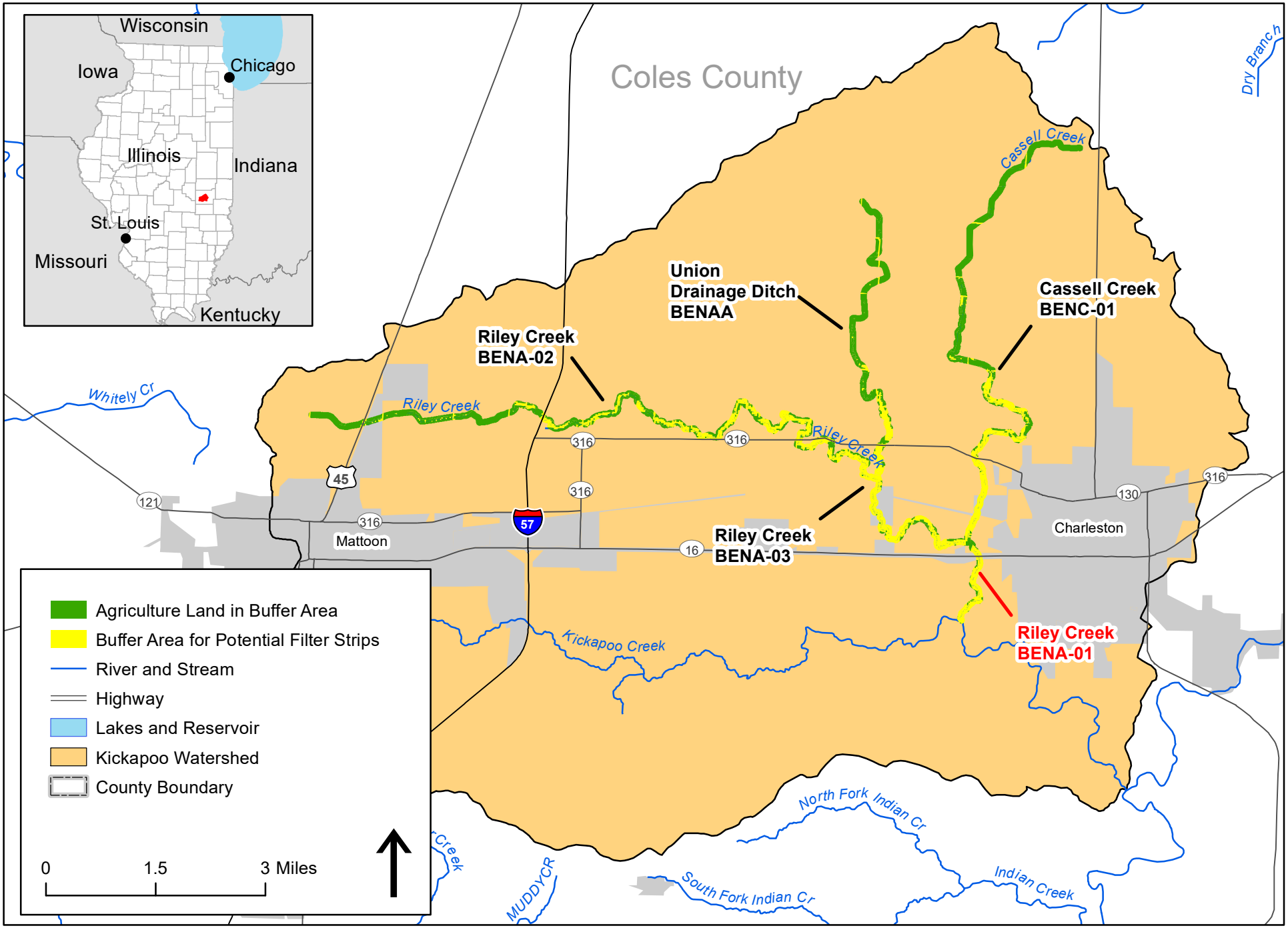

Figure 7-1: Kickapoo Creek Watershed
Buffer Areas and Agricultural Lands Potentially Suitable for Conversion to Filter Strips

CDM Smith

If the filter strip BMP is selected for use by a landowner, a separate plan should be prepared for each area that will use this practice. Additional guidance and minimum plan elements are discussed in Illinois NRCS CPS 393, including site preparation; seed, seeding rates, and mixtures; lime and fertilizer; seedbed preparation and seeding; and operation and maintenance.

Riparian Buffers: Similar to filter strips, riparian vegetation buffers enhance infiltration of runoff and subsequent trapping of nonpoint source pollutants such as phosphorus. The vegetation also serves to reinforce streambank soils, which helps minimize erosion. The primary difference between filter strips and riparian buffers are the types of vegetation plantings used within the buffer area. Riparian buffers leverage woody vegetation such as trees and shrubs. The total buffer area for the Riley Creek stream segment within the Kickapoo Creek watershed is also shown in **Table 7-4**. There are 81.7 acres within 234 feet of the stream segment. Approximately 13.8 of these acres are currently classified as agricultural. Upstream segments have significantly more agricultural land within the buffer width areas surrounding the stream. Conversion of agricultural lands in upstream segments could also have a beneficial water quality impact downstream on Riley Creek segment IL_BENA-01. Other land uses that are potentially suitable for conversion to buffer strips include forested areas, parks, and open space (**Figure 7-2**). Landowners should assess parcels adjacent to the stream channels and maintain or improve existing riparian areas, or potentially convert cultivated lands.

Soil Retention: Soil retention practices help to manage nutrient loads into receiving streams by reducing soil erosion. As indicated in **Table 7-2**, approximately 30,727 acres of the Riley Creek segment IL_BENA-01 subbasin are under cultivation, which accounts for about 74 percent of the watershed area. Farming practices in the watershed will be reviewed to determine methods being used, where they can be improved upon, and what additional practices will help to reduce nutrient loads through soil retention.

Any farming/soil retention method with the capability to reduce sediment and suspended solids entering waterways also have the potential to reduce nutrient loads. In addition to conservation tillage and buffer strips (riparian or filter strips), other examples of soil retention methods include:

- **Field borders**: A minimum 30-foot strip of permanent vegetation, such as stiff-stemmed, upright grasses, grass/legumes, forbs, and/or shrubs, established at the edge or around the perimeter of a cropland or grazing fields to reduce erosion from wind and water and protect soils and water quality.
- **Contour farming**: Aligning ridges, furrows, and roughness formed by tillage, planting, and other operations to alter the velocity and/or direction of water flow to or around hillslopes in areas where crops are grown on sloping lands.[43]

[43] NRCS. 2021a. Conservation Practice Standard. Contour Farming. Code 330. https://efotg.sc.egov.usda.gov/api/CPSFile/32990/330_IL_CPS_(Con)tour_Farming_2021

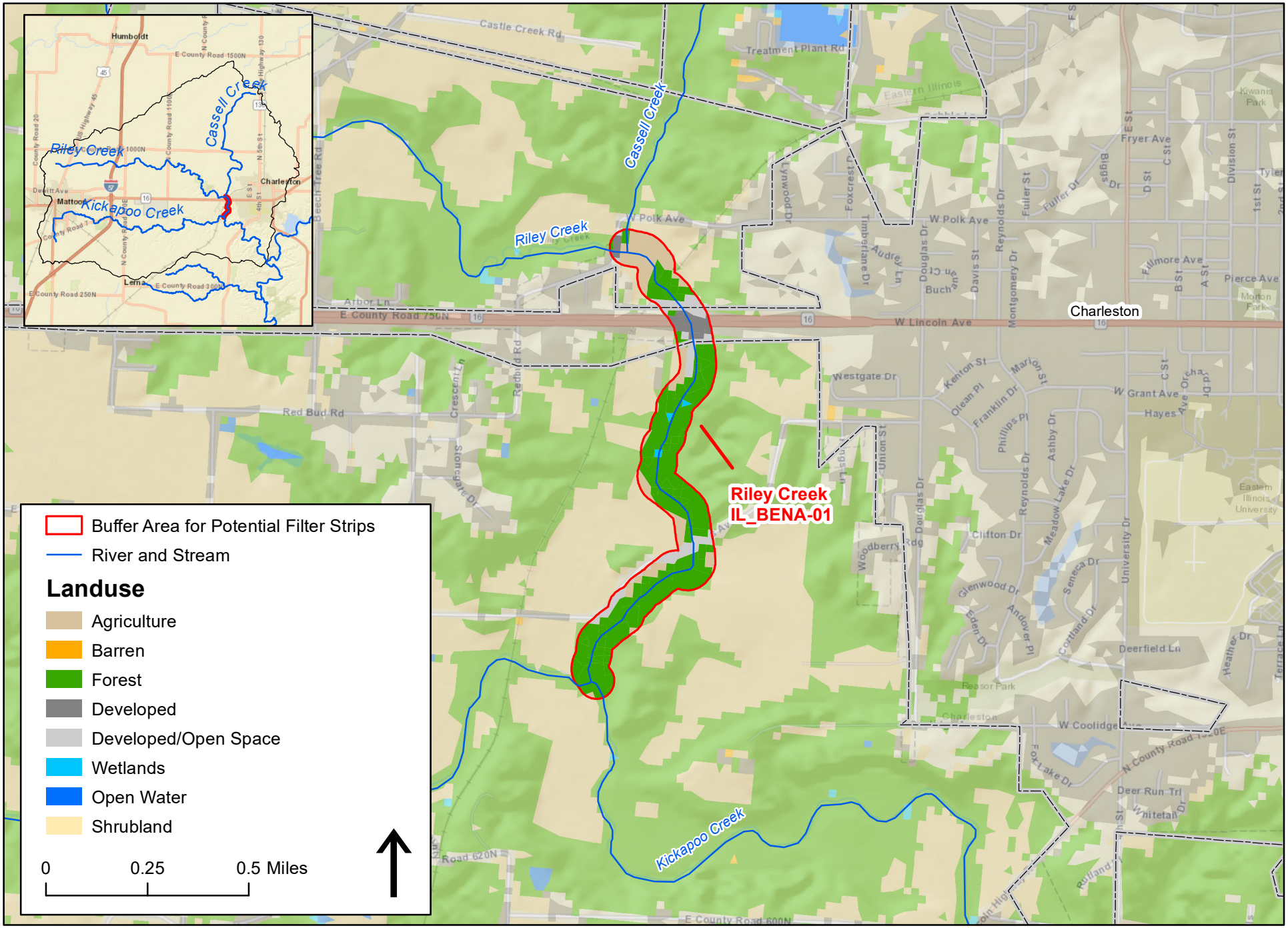

Figure 7-2: Riley Creek
Buffer Areas and Agricultural Lands Potentially Suitable for Conversion to Filter Strips

CDM Smith

- **Conservation crop rotation**: A planned sequence of at least two different crops grown on the same ground over a period (i.e., the rotation cycle). Applies to all cropland where at least one annually planted crop is included in the rotation. To recover excess nutrients from the soil profile and reduce water quality degradation, crops with quick germination and root system formation, a rooting depth sufficient to reach the nutrients not removed by the previous crop, and nutrient requirements that readily use the excess nutrients should be used.

- **Strip cropping**: A practice of growing planned rotations of erosion-resistant and erosion-susceptible crops or fallow in a systematic arrangement of approximately equal strips (two or more) across a field. Strip cropping can reduce sheet, rill, and wind erosion, and the transport of sediment and other water- and wind-borne contaminants. Strip cropping can be applicable on steeper slopes but is less effective on slopes exceeding 12 percent.[44]

- **Cover cropping**: A cover crop consists of grasses, legumes, and forbs planted for seasonal vegetative cover that may either be established between successive production crops, or companion- or relay-planted into production crops. The cover crop should be established as soon as practical prior to or after harvest of the production crop and terminated as late as practical to maximize plant biomass production and nutrient uptake while allowing time to prepare the field for the next production crop.[45]

- **Terracing**: A soil conservation practice that may consist of an earthen embankment, channel, or combination of ridges and channels constructed across high gradient slopes that can prevent runoff of precipitation from causing serious erosion. Terraces reduce both the volume and velocity of water moving across the soil surface, which reduces peak discharge rates by temporarily storing runoff and allowing associated sediment and other contaminants to settle out behind the terrace ridge rather than directly entering receiving waters.[46]

- **Critical area planting**: The establishment of permanent vegetation on sites that have or are expected to have high erosion rates, and/or on sites that have physical, chemical, or biological conditions that prevent the establishment of vegetation using normal practices.[47]

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[44] NRCS. 2017b. Conservation Practice Standard. Stripcropping. Code 585. https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143_026849

[45] NRCS. 2016c. Conservation Practice Standard. Cover Crop. Code 340. https://efotg.sc.egov.usda.gov/api/CPSFile/14651/340_OK_CPS_Cover_Crop_2016

[46] NRCS. 2021b. Conservation Practice Standard. Terrace. Code 600. https://efotg.sc.egov.usda.gov/api/CPSFile/31209/600_IL_CPS_Terrace_2021

[47] NRCS. 2022. Conservation Practice Standard. Critical Area Planting. Code 342. https://efotg.sc.egov.usda.gov/api/CPSFile/35815/342_IL_CPS_Critical_Area_Planting_2022

- **Sediment basins**: A basin formed by an embankment or excavation, or combination of these, with a constructed engineered outlet that captures and detains sediment-laden runoff or other debris for a sufficient period. Sediment basins act as the last line of defense for capturing sediment when erosion has already occurred, and must have sediment storage capacity, detention storage, and temporary flood storage capacities. For maximum sediment retention, the basin should be designed so that the detention storage remains full of water between storm events. If site conditions, safety concerns, or local laws preclude a permanent pool of water, all or a portion of the detention and sediment storage may be designed to be dewatered between storm events.

Wetlands: The use of wetlands as a structural control is also useful for management of nutrient loading within a watershed. To treat loads from agricultural or developed land runoff, wetlands are constructed at select locations where more focused runoff occurs (e.g., downstream of a tile drainage system, at select stormwater outfalls). Wetlands are effective BMPs for phosphorus and sediment control because they:

- Prevent floods by temporarily storing water, allowing the water to evaporate or percolate into the ground
- Improve water quality through natural pollution control such as plant nutrient uptake
- Filter sediment
- Slow overland flow of water thereby reducing soil erosion

A properly designed and functioning wetland provides very efficient treatment of pollutants. Design of wetland systems is critical to the sustainable functionality of the system and should consider soils in the proposed location, hydraulic retention time, and space requirements. In general, soils classified as hydric are most suitable for wetland construction. Areas near waterways that are not currently classified as wetlands but have hydric soils present are typically strong candidates for potential wetland construction. Existing wetland areas may also be candidates for reconstruction or enhancement to improve their nutrient uptake capacity. Geospatial analysis of soil classifications was conducted for buffer distances surrounding Riley Creek segment IL_BENA-01 within the Kickapoo Creek watershed; no hydric soils were present. However, these geospatial data layers are intended for use on a larger scale, and on-site soil investigation and wetland delineation is typically necessary to verify the suitability of a given area for wetland construction.

Constructed wetlands, which comprise the second or third stage of a nonpoint source treatment system, can be very effective at improving water quality. Studies have shown that artificial wetlands designed and constructed specifically to remove pollutants from surface water runoff have removal rates of greater than 90 percent for suspended solids, up to 90 percent for total phosphorus, 20 to 80 percent of orthophosphate, and 10 to 75 percent for nitrogen

species.[48,49,50,51] Although the removal rate for phosphorus is low in long-term studies, the rate can be improved if sheet flow is maintained to the wetland, and vegetation and substrate are monitored to ensure the wetland is operating optimally. Sediment or vegetation removal may be necessary if the wetland removal efficiency is lessened over time.[52] Guidelines for wetland design suggest a wetland to watershed ratio of 0.6 percent for nutrient and sediment removal from agricultural runoff.

WASCOBs: WASCOBs are earth embankments or combination ridge and channel systems constructed across the slopes of minor watercourses to reduce watercourse and gully erosion. These basins act as water detention basins and trap sediments (and the pollutants bound to the sediment) prior to reaching a receiving water. A WASCOB reduces gully erosion by controlling flow within the drainage area; the basins may be installed singly or in series as part of a system. The practice applies to sites where the topography is generally irregular, runoff and sediment damage land and improvements, and watercourse or gully erosion is a problem. Adequate and stable outlets from the basin are required to convey runoff water to a point where it will not cause damage. Additionally, sheet and rill erosion should be controlled by other conservation practices (i.e., the WASCOB would be part of another conservation system that adequately addresses resource concerns both above and below the basin). However, if land ownership or physical conditions preclude treatment of the upper portion of a slope, a WASCOB may be used to separate the upper area from and permit treatment of the lower slope.

WASCOBS should, at a minimum, be designed to be large enough to control runoff from at least a 10-year, 24-hour storm using a combination of flood storage and discharge through the outlet. Additionally, the WASCOB must be designed to have the capacity to store at least the anticipated 10-year sediment accumulation. Otherwise, periodic sediment removal is required as part of the maintenance activities in order to maintain the required capacity. Locations are determined based on slopes, erosion areas, crop management, and soil survey data.

When using a WASCOB, a separate plan is prepared for each treatment unit that will use this practice. Local NRCS personnel will provide information and advice for design and installation. Illinois NRCS CPS 638[53] provides additional information on design and maintenance requirements for WASCOBs, and information on cropping activity recommendations and requirements around the basin. Maintenance includes reseeding or planting the basins to maintain vegetation, where specified, and periodically checking them, especially after large storms, to determine the need for embankment repairs or mechanical removal of excess sediment. Inlets and outlets should be cleaned regularly. Damaged components should be replaced promptly.

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[48] Johnson, R., R. Evans, and K. Bass. 1996. *Constructed Wetlands Demonstration Project for NPS Pollution Control*. North Carolina Department of Natural Resources: Division of Water Quality.

[49] Moore, J.A., and D. Smith. 2006. *Understanding Natural Wetlands*. Oregon State University Extension Service. EC1407. https://catalog.extension.oregonstate.edu/sites/catalog/files/project/pdf/ec1407.pdf

[50] EPA. 2003a. *National Management Measures to Control Nonpoint Source Pollution from Agriculture*. Office of Water. EPA 841-B-03-004.

[51] Kovosic, D.A., M.B. David, L.E. Gentry, K.M. Starks, and R.A. Cooke. 2000. "Effectiveness of Constructed Wetlands in Reducing N and P Export from Agricultural Tile Drainage." *Journal of Environmental Quality*. 29:1262–1274.

[52] EPA. 2003a.

[53] NRCS. 2018. Conservation Practice Standard. Water and Sediment Control Basin. Code 638. https://efotg.sc.egov.usda.gov/api/CPSFile/5838/638_IL_CPS_Water_and_Sediment_(Con)trol_Basin_2018

Fertilizer Restrictions: Runoff from urban and developed areas likely includes phosphorus-based fertilizers applied to residential lawns, golf courses, and other surfaces. If used too close to a receiving waterbody, phosphorus present in stormwater runoff will enter the waterbody. Illinois has a statute in place that governs the use of phosphorus-based fertilizers in urban areas: the Lawn Care Products Application and Notice Act (415 Illinois Compiled Statues [ILCS] 65)[54]. This act includes the following prohibitions for phosphorus-based fertilizers (see the act for limited exceptions):

- They shall not be applied to lawns unless it can be demonstrated by soil test that the lawn is lacking in phosphorus when compared against the standard established by the University of Illinois; see the act for exceptions.
- They shall not be applied to impervious surfaces.
- They shall not be applied within 3 feet of any waterbody if a spray, drop, or rotary spreader is used. If other equipment is used, the fertilizer may not be applied within 15 feet of a water body.
- They shall not be applied when the ground is frozen or saturated.

Appropriate lawn markers for the application event and notifications to potentially affected adjacent properties are required.

7.4 Watershed-Specific Priority Areas and Projects

Section 5.4 of this report summarized previous watershed studies that have been completed within the watershed along with reference information to find additional details. The Kickapoo Creek watershed is within the larger Embarras River Watershed. A watershed management plan was developed for the Embarras River Watershed in 2011 and was recently updated in late 2022. The 2011 plan included a Kickapoo Creek subwatershed plan that recommended a number of stakeholder-identified focus areas for BMP implementation (**Table 7-5**). The stakeholder-identified areas were located across the City of Charleston and along Kickapoo Creek.[55]

[54] Illinois Compiled Statues. Environmental Safety (415 ILCS 65) Lawn Care Products Application and Notice Act. https://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1597&ChapterID=36

[55] V3 Companies and Northwater Consulting. 2011. https://epa.illinois.gov/content/dam/soi/en/web/epa/topics/water-quality/watershed-management/watershed-based-planning/documents/embarraswmp-final-version110111.pdf

Table 7-5 Kickapoo Creek Subwatershed Estimated Load Reductions for Stakeholder Identified Priority Projects

Project Type	Stakeholder	Length (ft)	Area (acres)	Nitrogen (lbs)	Phosphorus (lbs)	Sediment (lbs)	Project Details
Detention	Charleston		876	35,041	14,016	657	Detention in crop field, high priority
Detention Basin	Charleston		86	3,459	1,384	65	Detention in crop ground to alleviate flooding
Detention Basin	Charleston		12	464	185	9	Detention or floodplain restoration
Stabilization /Detention	Charleston		59	2,368	947	44	Ravine - install detention structures and stabilize ravine
Wetland/ Floodplain Restoration	Charleston		46	2,551	742	83	Floodplain restoration including wetlands
Streambank Stabilization	Coles SWCD/NRCS	42,102		37,891	15,157	6,315	Kickapoo Creek

Source: Embarras River Watershed Management Plan, 2011

The 2022 updated plan also included additional detail for the Riley Creek subbasin. Modeling was performed by the Wetlands Initiative in 2020 to evaluate the contributing watershed for project opportunities. Practices identified include:

- Grassed Waterways – 307 locations totaling 241,021 feet
- WASCOBs – 3 sites, 980 feet
- Contoured buffer strips – 1.9 acres
- Cover crop – 674 acres
- Drainage Water Management – 2,886 acres
- Saturated buffers – 117 sites
- Wetlands – 2.6 acres

Additional calculations were computed in the 2022 report to provide estimates of the loads treated by stakeholder identified projects. This information is presented in **Table 7-6**. The 2022 report estimated BMP implementation costs at $67.50/acre. This figure can be used for planning purposes as additional water quality projects are proposed or identified for future watershed protection.

Table 7-6 Load Reduction Estimates For Stakeholder-Identified Implementation Projects in the Kickapoo Creek Subbasin

Nitrogen (lbs)	Phosphorus (lbs)	Sediment (tons)
110	75	60

Source: Embarras River Watershed Management Plan 2022.

7.5 Information and Education

Successful public outreach and education campaigns that support watershed protection include a holistic approach that considers more than just water quality goals within a watershed. Stakeholder engagement and cooperation improves when outreach strategies also address broader stakeholder concerns such as water supply availability and aesthetics. Watershed plans that incorporate this holistic approach are more successful in changing social behaviors and implementing multi-benefit BMPs that help with maintaining healthy water quality conditions while also protecting other important resources such as drinking water sources, agricultural resources, forests and rangeland, and parks and open space.

Existing training and education programs can be leveraged to help bolster communication between agricultural producers and other landowners and industries and encourage them to learn and support successful implementation of the protection plan. Saving Tomorrow's Agriculture Resources (STAR) for example, is a group developed by the Coles County SWCD and farmers to encourage improvements in on-farm soil health and downstream water quality. The STAR program offers farmers and landowners a user friendly and confidential tool to evaluate conservation land management practices on their properties.

Additionally, the Coles County SWCD, with support from the University of Illinois Extension and Illinois Farm Bureau, received a Section 319 grant in 2021 to update the Embarrass River Watershed Management Plan,[56] which includes the Kickapoo Creek subbasin as a priority watershed. Watershed planning meetings will be held in support of the plan update providing opportunities for public outreach and education within the Kickapoo Creek watershed area.

7.6 Monitoring

Successful WPP implementation relies on continued monitoring of in-stream conditions to document any changes in water quality over time. Project monitoring to assess effectiveness includes:

- Tracking implementation of BMPs in the watershed
- Estimating effectiveness of BMPs
- Continued monitoring of point source discharges in the watershed
- Monitoring storm-based high flow events
- Low-flow monitoring of total phosphorus and DO throughout the watershed
- Establishing a baseline from which decisions can be made regarding the need for additional incentives for implementation of BMPs
- Measuring the extent of voluntary implementation efforts

[56] Illinois EPA et al., *Embarrass Watershed Plan*. https://epa.illinois.gov/content/dam/soi/en/web/epa/topics/water-quality/watershed-management/watershed-based-planning/documents/embarraswmp-final-version110111.pdf

- Determining the extent to which management measures are properly maintained and operated

Estimating the effectiveness of the BMPs implemented in the watershed will be completed by monitoring before and after any BMP is incorporated into the watershed. Additional monitoring will be conducted on specific structural systems such as a sediment control basin. Inflow and outflow measurements will determine site-specific removal efficiency.

Illinois EPA conducts Intensive River Basin Surveys every 5 years. Additionally, select ambient sites are monitored nine times a year. Continuation of this state monitoring program will assess stream water quality as improvements in the watershed are completed. This data will also be used to assess whether water quality standards are being attained.

Appendix A

Land Use Categories

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Appendix A
Land Use Categories

Table A-1: Kickapoo Creek TMDL Watershed Land Use

Land Cover Category	acres	Percent
Soybeans	22,057	33.7%
Corn	20,712	31.7%
Developed/Low Intensity	6,200	9.5%
Deciduous Forest	6,064	9.3%
Developed/Open Space	3,875	5.9%
Grass/Pasture	3,569	5.5%
Developed/Med Intensity	1,905	2.9%
Developed/High Intensity	591	0.9%
Open Water	160	0.2%
Double Crop Winter Wheat/Soybeans	100	0.2%
Other Hay/Non Alfalfa	63	0.1%
Winter Wheat	48	<0.1%
Alfalfa	35	<0.1%
Barren	28	<0.1%
Herbaceous Wetlands	17	<0.1%
Woody Wetlands	10	<0.1%
Sod/Grass Seed	1.3	<0.1%
Sorghum	0.9	<0.1%
Shrubland	0.3	<0.1%
Clover/Wildflowers	0.2	<0.1%
Evergreen Forest	0.2	<0.1%
Pumpkins	0.2	<0.1%
Grapes	0.1	<0.1%

Table A-2: Segment IL_BENA-01 Subbasin Land Use

Land Cover Category	acres	Percentage
Soybeans	15,468	37.4%
Corn	15,259	36.9%
Developed/Low Intensity	3,721	9.0%
Developed/Open Space	2,155	5.2%
Deciduous Forest	1,477	3.6%
Grass/Pasture	1,471	3.6%
Developed/Medium Intensity	1,205	2.9%
Developed/High Intensity	410	1.0%
Open Water	96	0.2%
Winter Wheat	29	<0.1%
Double Crop Winter Wheat/Soybeans	26	<0.1%
Other Hay/Non Alfalfa	22	<0.1%
Barren	22	<0.1%
Herbaceous Wetlands	4.8	<0.1%
Alfalfa	3.1	<0.1%
Woody Wetlands	2.5	<0.1%
Sorghum	0.9	<0.1%
Evergreen Forest	0.2	<0.1%
Pumpkins	0.2	<0.1%

Appendix B

Soil Characteristics

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MUKEY	MUSYM	Mapunit Name	Hydro Group	K-Factor	Acres	Percent
1428391	152A	Drummer silty clay loam, 0 to 2 percent slopes	B/D	0.33	21,099	32.2%
1428407	481A	Raub silt loam, non-densic substratum, 0 to 2 percent slopes	B/D	0.34	10,387	15.9%
1428382	56B2	Dana silt loam, 2 to 5 percent slopes, eroded	C	0.38	5,797	8.9%
1428398	291B	Xenia silt loam, Bloomington Ridged Plain, 2 to 5 percent slopes	C	0.4	4,855	7.4%
1428403	348B	Wingate silt loam, 2 to 5 percent slopes	C	0.38	3,700	5.6%
1428408	496A	Fincastle silt loam, udic moisture class, 0 to 2 percent slopes	C/D	0.42	3,143	4.8%
1428404	353A	Toronto silt loam, Bloomington Ridged Plain, 0 to 2 percent slopes	B/D	0.4	2,674	4.1%
1547460	618C2	Senachwine silt loam, 5 to 10 percent slopes, eroded	C	0.39	2,436	3.7%
1547456	618F	Senachwine silt loam, 18 to 35 percent slopes	C	0.38	1,615	2.5%
1428381	56B	Dana silt loam, 2 to 5 percent slopes	C	0.36	1,526	2.3%
1547462	618G	Senachwine silt loam, 35 to 60 percent slopes	C	0.39	1,475	2.3%
1428406	3451cA	Lawson silt loam, cool mesic, 0 to 2 percent slopes, frequently flooded	B/D	0.42	1,302	2.0%
1428399	3304A	Landes fine sandy loam, 0 to 2 percent slopes, frequently flooded	A	0.21	1,261	1.9%
1428409	533	Urban land	<Null>	<Null>	847	1.3%
1428401	322C2	Russell silt loam, Bloomington Ridged Plain, 5 to 10 percent slopes, eroded	B	0.36	592	0.9%
1547465	668B2	Somonauk silt loam, 2 to 5 percent slopes, eroded	C	0.33	358	0.5%
1428400	322B	Russell silt loam, Bloomington Ridged Plain, 2 to 5 percent slopes	B	0.4	342	0.5%
1428392	244A	Hartsburg silty clay loam, 0 to 2 percent slopes	B/D	0.4	244	0.4%
1428393	154A	Flanagan silt loam, 0 to 2 percent slopes	C/D	0.39	218	0.3%
1428419	W	Water	<Null>	<Null>	203	0.3%
1428416	3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	B/D	0.39	191	0.3%
1428413	871B	Lenzburg gravelly loam, 1 to 5 percent slopes	C	0.36	160	0.2%
1547458	618D2	Senachwine silt loam, 10 to 18 percent slopes, eroded	C	0.39	146	0.2%
1428402	330A	Peotone silty clay loam, 0 to 2 percent slopes	C/D	0.31	145	0.2%
1547470	3424A	Shoals silt loam, 0 to 2 percent slopes, frequently flooded	B/D	0.43	130	0.2%
1428411	570C2	Martinsville loam, 5 to 10 percent slopes, eroded	B	0.32	128	0.2%
1428387	7373B	Camden silt loam, sandy substratum, 2 to 5 percent slopes, rarely flooded	C	0.35	126	0.2%
1428415	3073A	Ross silt loam, 0 to 2 percent slopes, frequently flooded	B	0.26	78	0.1%
1428414	871D	Lenzburg loam, 7 to 20 percent slopes	C	0.36	62	0.1%
1547459	618C3	Senachwine clay loam, 5 to 10 percent slopes, severely eroded	C	0.37	41	0.1%
1428417	3226A	Wirt silt loam, 0 to 2 percent slopes, frequently flooded	B	0.43	41	0.1%
1547463	830	Landfill	<Null>	<Null>	39	0.1%
1428386	7132A	Starks silt loam, 0 to 2 percent slopes, rarely flooded	C/D	0.36	30	0.0%

MUKEY	MUSYM	Mapunit Name	Hydro Group	K-Factor	Acres	Percent
1547472	M-W	Miscellaneous water	<Null>	<Null>	29	0.0%
1547471	7570B	Martinsville silt loam, 2 to 5 percent slopes, rarely flooded	B	0.35	25	0.0%
1428395	219A	Millbrook silt loam, 0 to 2 percent slopes	C/D	0.32	16	0.0%
1603180	132A	Starks silt loam, 0 to 2 percent slopes	C/D	0.37	16	0.0%
1428418	3284A	Tice silty clay loam, 0 to 2 percent slopes, frequently flooded	B/D	0.4	9	0.0%
1547457	618D3	Senachwine clay loam, 10 to 18 percent slopes, severely eroded	C	0.38	6	0.0%
1547466	722A	Drummer-Milford silty clay loams, 0 to 2 percent slopes	B/D	0.34	0	0.0%

Hydro Group	Acres	Percent
<Null>	1,119	1.7%
A	1,261	1.9%
B	1,206	1.8%
B/D	36,037	55.0%
C	22,303	34.1%
C/D	3,567	5.4%

Appendix C

Water Quality Data

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Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BEN-01		19-Jun-01	ALKALINITY, CARBONATE AS CACO3,Total mg/l	Total			
BEN-01		19-Jun-01	ALUMINUM,Dissolved ug/l	Dissolved		K	
BEN-01		19-Jun-01	ALUMINUM,Total ug/l	Total			
BEN-01		19-Jun-01	ARSENIC,Total	Total			
BEN-01		19-Jun-01	BARIUM,Dissolved ug/l	Dissolved			
BEN-01		19-Jun-01	BARIUM,Total ug/l	Total			
BEN-01		19-Jun-01	BERYLLIUM,Dissolved ug/l	Dissolved		K	
BEN-01		19-Jun-01	BERYLLIUM,Total ug/l	Total		K	
BEN-01		19-Jun-01	BORON,Dissolved ug/l	Dissolved			
BEN-01		19-Jun-01	BORON,Total ug/l	Total			
BEN-01		19-Jun-01	CADMIUM,Dissolved ug/l	Dissolved		K	
BEN-01		19-Jun-01	CADMIUM,Total ug/l	Total		K	
BEN-01		19-Jun-01	CALCIUM,Dissolved mg/l	Dissolved			
BEN-01		19-Jun-01	CALCIUM,Total mg/l	Total			
BEN-01		19-Jun-01	CARBON, TOTAL ORGANIC mg/l				
BEN-01		19-Jun-01	CHLORIDE,Total mg/l	Total			
BEN-01		19-Jun-01	CHLOROPHYLL (A+B+C),Filterable	Filterable			
BEN-01		19-Jun-01	CHLOROPHYLL A, CORRECTED FOR PHEOPHYTIN ug/l				
BEN-01		19-Jun-01	CHLOROPHYLL A, UNCORRECTED FOR PHEOPHYTIN,Fixed	Fixed			
BEN-01		19-Jun-01	CHLOROPHYLL-B				
BEN-01		19-Jun-01	CHLOROPHYLL-C				
BEN-01		19-Jun-01	CHROMIUM,Dissolved ug/l	Dissolved		K	
BEN-01		19-Jun-01	CHROMIUM,Total ug/l	Total		K	
BEN-01		19-Jun-01	COBALT,Dissolved ug/l	Dissolved		K	
BEN-01		19-Jun-01	COBALT,Total ug/l	Total		K	
BEN-01		19-Jun-01	CONDUCTANCE, SPECIFIC umho/cm				
BEN-01		19-Jun-01	COPPER,Dissolved ug/l	Dissolved		K	
BEN-01		19-Jun-01	COPPER,Total ug/l	Total		K	
BEN-01		19-Jun-01	CYANIDE			K	
BEN-01		19-Jun-01	DEPTH ft				
BEN-01		19-Jun-01	DISSOLVED OXYGEN (DO) mg/l				
BEN-01		19-Jun-01	FLUORIDES				
BEN-01		19-Jun-01	HARDNESS, CA,MG mg/l			C	
BEN-01		19-Jun-01	IRON,Dissolved ug/l	Dissolved		K	
BEN-01		19-Jun-01	IRON,Total ug/l	Total			
BEN-01		19-Jun-01	LEAD,Total ug/l	Total		K	
BEN-01		19-Jun-01	MAGNESIUM,Dissolved mg/l	Dissolved			
BEN-01		19-Jun-01	MAGNESIUM,Total mg/l	Total			
BEN-01		19-Jun-01	MANGANESE,Dissolved ug/l	Dissolved			
BEN-01		19-Jun-01	MANGANESE,Total ug/l	Total			
BEN-01		19-Jun-01	MERCURY,Total	Total		KQ	
BEN-01		19-Jun-01	NICKEL,Dissolved ug/l	Dissolved		K	
BEN-01		19-Jun-01	NICKEL,Total ug/l	Total		K	
BEN-01		19-Jun-01	NITROGEN, AMMONIA (NH3),Total mg/l	Total		K	
BEN-01		19-Jun-01	NITROGEN, NITRITE (NO2) + NITRATE (NO3) mg/l				
BEN-01		19-Jun-01	PH				
BEN-01		19-Jun-01	PHENOLS				
BEN-01		19-Jun-01	PHEOPHYTIN-A				
BEN-01		19-Jun-01	PHOSPHORUS AS P,Dissolved mg/l	Dissolved			
BEN-01		19-Jun-01	PHOSPHORUS AS P,Total mg/l	Total			
BEN-01		19-Jun-01	POTASSIUM,Dissolved mg/l	Dissolved			
BEN-01		19-Jun-01	POTASSIUM,Total mg/l	Total			
BEN-01		19-Jun-01	SILVER,Dissolved ug/l	Dissolved		K	
BEN-01		19-Jun-01	SILVER,Total ug/l	Total		K	
BEN-01		19-Jun-01	SODIUM,Dissolved mg/l	Dissolved			
BEN-01		19-Jun-01	SODIUM,Total mg/l	Total			
BEN-01		19-Jun-01	SOLIDS, FIXED				
BEN-01		19-Jun-01	SOLIDS, FIXED,Total mg/l	Total			
BEN-01		19-Jun-01	SOLIDS, FIXED,Volatile mg/l	Volatile			
BEN-01		19-Jun-01	STRONTIUM,Dissolved ug/l	Dissolved			
BEN-01		19-Jun-01	STRONTIUM,Total ug/l	Total			
BEN-01		19-Jun-01	SULFATE				
BEN-01		19-Jun-01	TEMPERATURE, AIR deg C				
BEN-01		19-Jun-01	TEMPERATURE, WATER deg C				
BEN-01		19-Jun-01	TURBIDITY FTU				
BEN-01		19-Jun-01	VANADIUM,Dissolved ug/l	Dissolved		K	
BEN-01		19-Jun-01	VANADIUM,Total ug/l	Total		K	
BEN-01		19-Jun-01	ZINC,Dissolved ug/l	Dissolved		K	
BEN-01		19-Jun-01	ZINC,Total ug/l	Total		K	

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-01		19-Jun-01	ALKALINITY, CARBONATE AS CACO3,Total mg/l	Total			
BENA-01		19-Jun-01	ALUMINUM,Dissolved ug/l	Dissolved		K	
BENA-01		19-Jun-01	ALUMINUM,Total ug/l	Total			
BENA-01		19-Jun-01	ARSENIC,Total	Total			
BENA-01		19-Jun-01	BARIUM,Dissolved ug/l	Dissolved			
BENA-01		19-Jun-01	BARIUM,Total ug/l	Total			
BENA-01		19-Jun-01	BERYLLIUM,Dissolved ug/l	Dissolved		K	
BENA-01		19-Jun-01	BERYLLIUM,Total ug/l	Total		K	
BENA-01		19-Jun-01	BORON,Dissolved ug/l	Dissolved			
BENA-01		19-Jun-01	BORON,Total ug/l	Total			
BENA-01		19-Jun-01	CADMIUM,Dissolved ug/l	Dissolved		K	
BENA-01		19-Jun-01	CADMIUM,Total ug/l	Total		K	
BENA-01		19-Jun-01	CALCIUM,Dissolved mg/l	Dissolved			
BENA-01		19-Jun-01	CALCIUM,Total mg/l	Total			
BENA-01		19-Jun-01	CARBON, TOTAL ORGANIC mg/l				
BENA-01		19-Jun-01	CHLORIDE,Total mg/l	Total			
BENA-01		19-Jun-01	CHLOROPHYLL (A+B+C),Filterable	Filterable			
BENA-01		19-Jun-01	CHLOROPHYLL A, CORRECTED FOR PHEOPHYTIN ug/l				
BENA-01		19-Jun-01	CHLOROPHYLL A, UNCORRECTED FOR PHEOPHYTIN,Fixed	Fixed			
BENA-01		19-Jun-01	CHLOROPHYLL-B				
BENA-01		19-Jun-01	CHLOROPHYLL-C				
BENA-01		19-Jun-01	CHROMIUM,Dissolved ug/l	Dissolved		K	
BENA-01		19-Jun-01	CHROMIUM,Total ug/l	Total		K	
BENA-01		19-Jun-01	COBALT,Dissolved ug/l	Dissolved		K	
BENA-01		19-Jun-01	COBALT,Total ug/l	Total		K	
BENA-01		19-Jun-01	CONDUCTANCE, SPECIFIC umho/cm				
BENA-01		19-Jun-01	COPPER,Dissolved ug/l	Dissolved		K	
BENA-01		19-Jun-01	COPPER,Total ug/l	Total		K	
BENA-01		19-Jun-01	CYANIDE			K	
BENA-01		19-Jun-01	DEPTH ft				
BENA-01		19-Jun-01	DISSOLVED OXYGEN (DO) mg/l				
BENA-01		19-Jun-01	FLUORIDES				
BENA-01		19-Jun-01	HARDNESS, CA,MG mg/l			C	
BENA-01		19-Jun-01	IRON,Dissolved ug/l	Dissolved		K	
BENA-01		19-Jun-01	IRON,Total ug/l	Total			
BENA-01		19-Jun-01	LEAD,Total ug/l	Total		K	
BENA-01		19-Jun-01	MAGNESIUM,Dissolved mg/l	Dissolved			
BENA-01		19-Jun-01	MAGNESIUM,Total mg/l	Total			
BENA-01		19-Jun-01	MANGANESE,Dissolved ug/l	Dissolved		K	
BENA-01		19-Jun-01	MANGANESE,Total ug/l	Total			
BENA-01		19-Jun-01	MERCURY,Total	Total		KQ	
BENA-01		19-Jun-01	NICKEL,Dissolved ug/l	Dissolved		K	
BENA-01		19-Jun-01	NICKEL,Total ug/l	Total		K	
BENA-01		19-Jun-01	NITROGEN, AMMONIA (NH3),Total mg/l	Total			
BENA-01		19-Jun-01	NITROGEN, NITRITE (NO2) + NITRATE (NO3) mg/l				
BENA-01		19-Jun-01	PH				
BENA-01		19-Jun-01	PHENOLS				
BENA-01		19-Jun-01	PHEOPHYTIN-A				
BENA-01		19-Jun-01	PHOSPHORUS AS P,Dissolved mg/l	Dissolved			
BENA-01		19-Jun-01	PHOSPHORUS AS P,Total mg/l	Total			
BENA-01		19-Jun-01	POTASSIUM,Dissolved mg/l	Dissolved			
BENA-01		19-Jun-01	POTASSIUM,Total mg/l	Total			
BENA-01		19-Jun-01	SILVER,Dissolved ug/l	Dissolved		K	
BENA-01		19-Jun-01	SILVER,Total ug/l	Total		K	
BENA-01		19-Jun-01	SODIUM,Dissolved mg/l	Dissolved			
BENA-01		19-Jun-01	SODIUM,Total mg/l	Total			
BENA-01		19-Jun-01	SOLIDS, FIXED				
BENA-01		19-Jun-01	SOLIDS, FIXED,Total mg/l	Total			
BENA-01		19-Jun-01	SOLIDS, FIXED,Volatile mg/l	Volatile			
BENA-01		19-Jun-01	STRONTIUM,Dissolved ug/l	Dissolved			
BENA-01		19-Jun-01	STRONTIUM,Total ug/l	Total			
BENA-01		19-Jun-01	SULFATE			K	
BENA-01		19-Jun-01	TEMPERATURE, AIR deg C				
BENA-01		19-Jun-01	TEMPERATURE, WATER deg C				
BENA-01		19-Jun-01	TURBIDITY FTU				
BENA-01		19-Jun-01	VANADIUM,Dissolved ug/l	Dissolved		K	
BENA-01		19-Jun-01	VANADIUM,Total ug/l	Total		K	
BENA-01		19-Jun-01	ZINC,Dissolved ug/l	Dissolved		K	
BENA-01		19-Jun-01	ZINC,Total ug/l	Total		K	

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-02		19-Jun-01	ALKALINITY, CARBONATE AS CACO3,Total mg/l	Total			
BENA-02		19-Jun-01	ALUMINUM,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jun-01	ALUMINUM,Total ug/l	Total			
BENA-02		19-Jun-01	ARSENIC,Total	Total			
BENA-02		19-Jun-01	BARIUM,Dissolved ug/l	Dissolved			
BENA-02		19-Jun-01	BARIUM,Total ug/l	Total			
BENA-02		19-Jun-01	BERYLLIUM,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jun-01	BERYLLIUM,Total ug/l	Total		K	
BENA-02		19-Jun-01	BORON,Dissolved ug/l	Dissolved			
BENA-02		19-Jun-01	BORON,Total ug/l	Total			
BENA-02		19-Jun-01	CADMIUM,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jun-01	CADMIUM,Total ug/l	Total		K	
BENA-02		19-Jun-01	CALCIUM,Dissolved mg/l	Dissolved			
BENA-02		19-Jun-01	CALCIUM,Total mg/l	Total			
BENA-02		19-Jun-01	CARBON, TOTAL ORGANIC mg/l				
BENA-02		19-Jun-01	CHLORIDE,Total mg/l	Total			
BENA-02		19-Jun-01	CHLOROPHYLL (A+B+C),Filterable	Filterable			
BENA-02		19-Jun-01	CHLOROPHYLL A, CORRECTED FOR PHEOPHYTIN ug/l				
BENA-02		19-Jun-01	CHLOROPHYLL A, UNCORRECTED FOR PHEOPHYTIN,Fixed	Fixed			
BENA-02		19-Jun-01	CHLOROPHYLL-B				
BENA-02		19-Jun-01	CHLOROPHYLL-C				
BENA-02		19-Jun-01	CHROMIUM,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jun-01	CHROMIUM,Total ug/l	Total		K	
BENA-02		19-Jun-01	COBALT,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jun-01	COBALT,Total ug/l	Total		K	
BENA-02		19-Jun-01	CONDUCTANCE, SPECIFIC umho/cm				
BENA-02		19-Jun-01	COPPER,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jun-01	COPPER,Total ug/l	Total		K	
BENA-02		19-Jun-01	CYANIDE			K	
BENA-02		19-Jun-01	DEPTH ft				
BENA-02		19-Jun-01	DISSOLVED OXYGEN (DO) mg/l				
BENA-02		19-Jun-01	FLUORIDES				
BENA-02		19-Jun-01	HARDNESS, CA,MG mg/l			C	
BENA-02		19-Jun-01	IRON,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jun-01	IRON,Total ug/l	Total			
BENA-02		19-Jun-01	LEAD,Total ug/l	Total		K	
BENA-02		19-Jun-01	MAGNESIUM,Dissolved mg/l	Dissolved			
BENA-02		19-Jun-01	MAGNESIUM,Total mg/l	Total			
BENA-02		19-Jun-01	MANGANESE,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jun-01	MANGANESE,Total ug/l	Total			
BENA-02		19-Jun-01	MERCURY,Total	Total		KQ	
BENA-02		19-Jun-01	NICKEL,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jun-01	NICKEL,Total ug/l	Total		K	
BENA-02		19-Jun-01	NITROGEN, AMMONIA (NH3),Total mg/l	Total		K	
BENA-02		19-Jun-01	NITROGEN, NITRITE (NO2) + NITRATE (NO3) mg/l				
BENA-02		19-Jun-01	PH				
BENA-02		19-Jun-01	PHENOLS				
BENA-02		19-Jun-01	PHEOPHYTIN-A				
BENA-02		19-Jun-01	PHOSPHORUS AS P,Dissolved mg/l	Dissolved			
BENA-02		19-Jun-01	PHOSPHORUS AS P,Total mg/l	Total			
BENA-02		19-Jun-01	POTASSIUM,Dissolved mg/l	Dissolved			
BENA-02		19-Jun-01	POTASSIUM,Total mg/l	Total		K	
BENA-02		19-Jun-01	SILVER,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jun-01	SILVER,Total ug/l	Total		K	
BENA-02		19-Jun-01	SODIUM,Dissolved mg/l	Dissolved			
BENA-02		19-Jun-01	SODIUM,Total mg/l	Total			
BENA-02		19-Jun-01	SOLIDS, FIXED				
BENA-02		19-Jun-01	SOLIDS, FIXED,Total mg/l	Total			
BENA-02		19-Jun-01	SOLIDS, FIXED,Volatile mg/l	Volatile			
BENA-02		19-Jun-01	STRONTIUM,Dissolved ug/l	Dissolved			
BENA-02		19-Jun-01	STRONTIUM,Total ug/l	Total			
BENA-02		19-Jun-01	SULFATE				
BENA-02		19-Jun-01	TEMPERATURE, AIR deg C				
BENA-02		19-Jun-01	TEMPERATURE, WATER deg C				
BENA-02		19-Jun-01	TURBIDITY FTU				
BENA-02		19-Jun-01	VANADIUM,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jun-01	VANADIUM,Total ug/l	Total		K	
BENA-02		19-Jun-01	ZINC,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jun-01	ZINC,Total ug/l	Total		K	

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-02		19-Jul-01	ALKALINITY, CARBONATE AS CACO3,Total mg/l	Total			
BENA-02		19-Jul-01	ALUMINUM,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jul-01	ALUMINUM,Total ug/l	Total			
BENA-02		19-Jul-01	ARSENIC,Total	Total			
BENA-02		19-Jul-01	BARIUM,Dissolved ug/l	Dissolved			
BENA-02		19-Jul-01	BARIUM,Total ug/l	Total			
BENA-02		19-Jul-01	BERYLLIUM,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jul-01	BERYLLIUM,Total ug/l	Total		K	
BENA-02		19-Jul-01	BORON,Dissolved ug/l	Dissolved			
BENA-02		19-Jul-01	BORON,Total ug/l	Total			
BENA-02		19-Jul-01	CADMIUM,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jul-01	CADMIUM,Total ug/l	Total		K	
BENA-02		19-Jul-01	CALCIUM,Dissolved mg/l	Dissolved			
BENA-02		19-Jul-01	CALCIUM,Total mg/l	Total			
BENA-02		19-Jul-01	CARBON, TOTAL ORGANIC mg/l				
BENA-02		19-Jul-01	CHLORIDE,Total mg/l	Total			
BENA-02		19-Jul-01	CHLOROPHYLL (A+B+C),Filterable	Filterable			
BENA-02		19-Jul-01	CHLOROPHYLL A, CORRECTED FOR PHEOPHYTIN ug/l			K	
BENA-02		19-Jul-01	CHLOROPHYLL A, UNCORRECTED FOR PHEOPHYTIN,Fixed	Fixed			
BENA-02		19-Jul-01	CHLOROPHYLL-B				
BENA-02		19-Jul-01	CHLOROPHYLL-C				
BENA-02		19-Jul-01	CHROMIUM,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jul-01	CHROMIUM,Total ug/l	Total		K	
BENA-02		19-Jul-01	COBALT,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jul-01	COBALT,Total ug/l	Total		K	
BENA-02		19-Jul-01	CONDUCTANCE, SPECIFIC umho/cm				
BENA-02		19-Jul-01	COPPER,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jul-01	COPPER,Total ug/l	Total		K	
BENA-02		19-Jul-01	CYANIDE			K	
BENA-02		19-Jul-01	DEPTH ft				
BENA-02		19-Jul-01	DISSOLVED OXYGEN (DO) mg/l				
BENA-02		19-Jul-01	FLUORIDES				
BENA-02		19-Jul-01	HARDNESS, CA,MG mg/l			C	
BENA-02		19-Jul-01	IRON,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jul-01	IRON,Total ug/l	Total			
BENA-02		19-Jul-01	LEAD,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jul-01	LEAD,Total ug/l	Total		K	
BENA-02		19-Jul-01	MAGNESIUM,Dissolved mg/l	Dissolved			
BENA-02		19-Jul-01	MAGNESIUM,Total mg/l	Total			
BENA-02		19-Jul-01	MANGANESE,Dissolved ug/l	Dissolved			
BENA-02		19-Jul-01	MANGANESE,Total ug/l	Total			
BENA-02		19-Jul-01	MERCURY,Total	Total		KQ	
BENA-02		19-Jul-01	NICKEL,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jul-01	NICKEL,Total ug/l	Total		K	
BENA-02		19-Jul-01	NITROGEN, AMMONIA (NH3),Total mg/l	Total			
BENA-02		19-Jul-01	NITROGEN, NITRITE (NO2) + NITRATE (NO3) mg/l				
BENA-02		19-Jul-01	PH				
BENA-02		19-Jul-01	PHENOLS			K	
BENA-02		19-Jul-01	PHEOPHYTIN-A				
BENA-02		19-Jul-01	PHOSPHORUS AS P,Dissolved mg/l	Dissolved			
BENA-02		19-Jul-01	PHOSPHORUS AS P,Total mg/l	Total			
BENA-02		19-Jul-01	POTASSIUM,Dissolved mg/l	Dissolved			
BENA-02		19-Jul-01	POTASSIUM,Total mg/l	Total			
BENA-02		19-Jul-01	SILVER,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jul-01	SILVER,Total ug/l	Total		K	
BENA-02		19-Jul-01	SODIUM,Dissolved mg/l	Dissolved			
BENA-02		19-Jul-01	SODIUM,Total mg/l	Total			
BENA-02		19-Jul-01	SOLIDS, FIXED				
BENA-02		19-Jul-01	SOLIDS, FIXED,Total mg/l	Total			
BENA-02		19-Jul-01	SOLIDS, FIXED,Volatile mg/l	Volatile			
BENA-02		19-Jul-01	STRONTIUM,Dissolved ug/l	Dissolved			
BENA-02		19-Jul-01	STRONTIUM,Total ug/l	Total			
BENA-02		19-Jul-01	SULFATE				
BENA-02		19-Jul-01	TEMPERATURE, AIR deg C				
BENA-02		19-Jul-01	TEMPERATURE, WATER deg C				
BENA-02		19-Jul-01	TURBIDITY NTU				
BENA-02		19-Jul-01	VANADIUM,Dissolved ug/l	Dissolved		K	
BENA-02		19-Jul-01	VANADIUM,Total ug/l	Total		K	
BENA-02		19-Jul-01	ZINC,Dissolved ug/l	Dissolved		K	

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-02		19-Jul-01	ZINC,Total ug/l	Total		K	
BENA-03		19-Jul-01	ALKALINITY, CARBONATE AS CACO3,Total mg/l	Total			
BENA-03		19-Jul-01	ALUMINUM,Dissolved ug/l	Dissolved			
BENA-03		19-Jul-01	ALUMINUM,Total ug/l	Total		K	
BENA-03		19-Jul-01	ARSENIC,Total	Total			
BENA-03		19-Jul-01	BARIUM,Dissolved ug/l	Dissolved			
BENA-03		19-Jul-01	BARIUM,Total ug/l	Total			
BENA-03		19-Jul-01	BERYLLIUM,Dissolved ug/l	Dissolved		K	
BENA-03		19-Jul-01	BERYLLIUM,Total ug/l	Total		K	
BENA-03		19-Jul-01	BORON,Dissolved ug/l	Dissolved			
BENA-03		19-Jul-01	BORON,Total ug/l	Total			
BENA-03		19-Jul-01	CADMIUM,Dissolved ug/l	Dissolved		K	
BENA-03		19-Jul-01	CADMIUM,Total ug/l	Total		K	
BENA-03		19-Jul-01	CALCIUM,Dissolved mg/l	Dissolved			
BENA-03		19-Jul-01	CALCIUM,Total mg/l	Total			
BENA-03		19-Jul-01	CARBON, TOTAL ORGANIC mg/l				
BENA-03		19-Jul-01	CHLORIDE,Total mg/l	Total			
BENA-03		19-Jul-01	CHLOROPHYLL (A+B+C),Filterable	Filterable			
BENA-03		19-Jul-01	CHLOROPHYLL A, CORRECTED FOR PHEOPHYTIN ug/l				
BENA-03		19-Jul-01	CHLOROPHYLL A, UNCORRECTED FOR PHEOPHYTIN,Fixed	Fixed			
BENA-03		19-Jul-01	CHLOROPHYLL-B			K	
BENA-03		19-Jul-01	CHLOROPHYLL-C				
BENA-03		19-Jul-01	CHROMIUM,Dissolved ug/l	Dissolved		K	
BENA-03		19-Jul-01	CHROMIUM,Total ug/l	Total		K	
BENA-03		19-Jul-01	COBALT,Dissolved ug/l	Dissolved		K	
BENA-03		19-Jul-01	COBALT,Total ug/l	Total		K	
BENA-03		19-Jul-01	CONDUCTANCE, SPECIFIC umho/cm				
BENA-03		19-Jul-01	COPPER,Dissolved ug/l	Dissolved		K	
BENA-03		19-Jul-01	COPPER,Total ug/l	Total		K	
BENA-03		19-Jul-01	CYANIDE			K	
BENA-03		19-Jul-01	DEPTH ft				
BENA-03		19-Jul-01	DISSOLVED OXYGEN (DO) mg/l				
BENA-03		19-Jul-01	FLUORIDES				
BENA-03		19-Jul-01	HARDNESS, CA,MG mg/l			C	
BENA-03		19-Jul-01	IRON,Dissolved ug/l	Dissolved			
BENA-03		19-Jul-01	IRON,Total ug/l	Total		K	
BENA-03		19-Jul-01	LEAD,Dissolved ug/l	Dissolved		K	
BENA-03		19-Jul-01	LEAD,Total ug/l	Total		K	
BENA-03		19-Jul-01	MAGNESIUM,Dissolved mg/l	Dissolved			
BENA-03		19-Jul-01	MAGNESIUM,Total mg/l	Total			
BENA-03		19-Jul-01	MANGANESE,Dissolved ug/l	Dissolved			
BENA-03		19-Jul-01	MANGANESE,Total ug/l	Total			
BENA-03		19-Jul-01	MERCURY,Total	Total		KQ	
BENA-03		19-Jul-01	NICKEL,Dissolved ug/l	Dissolved		K	
BENA-03		19-Jul-01	NICKEL,Total ug/l	Total		K	
BENA-03		19-Jul-01	NITROGEN, AMMONIA (NH3),Total mg/l	Total		K	
BENA-03		19-Jul-01	NITROGEN, NITRITE (NO2) + NITRATE (NO3) mg/l				
BENA-03		19-Jul-01	PH				
BENA-03		19-Jul-01	PHENOLS			K	
BENA-03		19-Jul-01	PHEOPHYTIN-A			K	
BENA-03		19-Jul-01	PHOSPHORUS AS P,Dissolved mg/l	Dissolved			
BENA-03		19-Jul-01	PHOSPHORUS AS P,Total mg/l	Total			
BENA-03		19-Jul-01	POTASSIUM,Dissolved mg/l	Dissolved			
BENA-03		19-Jul-01	POTASSIUM,Total mg/l	Total			
BENA-03		19-Jul-01	SILVER,Dissolved ug/l	Dissolved		K	
BENA-03		19-Jul-01	SILVER,Total ug/l	Total		K	
BENA-03		19-Jul-01	SODIUM,Dissolved mg/l	Dissolved			
BENA-03		19-Jul-01	SODIUM,Total mg/l	Total			
BENA-03		19-Jul-01	SOLIDS, FIXED				
BENA-03		19-Jul-01	SOLIDS, FIXED,Total mg/l	Total			
BENA-03		19-Jul-01	SOLIDS, FIXED,Volatile mg/l	Volatile			
BENA-03		19-Jul-01	STRONTIUM,Dissolved ug/l	Dissolved			
BENA-03		19-Jul-01	STRONTIUM,Total ug/l	Total			
BENA-03		19-Jul-01	SULFATE				
BENA-03		19-Jul-01	TEMPERATURE, AIR deg C				
BENA-03		19-Jul-01	TEMPERATURE, WATER deg C				
BENA-03		19-Jul-01	TURBIDITY NTU				
BENA-03		19-Jul-01	VANADIUM,Dissolved ug/l	Dissolved		K	
BENA-03		19-Jul-01	VANADIUM,Total ug/l	Total		K	

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-03		19-Jul-01	ZINC,Dissolved ug/l	Dissolved		K	
BENA-03		19-Jul-01	ZINC,Total ug/l	Total		K	
BEN-01		02-Aug-01	ALKALINITY, CARBONATE AS CACO3,Total mg/l	Total			
BEN-01		02-Aug-01	ALUMINUM,Dissolved ug/l	Dissolved		K	
BEN-01		02-Aug-01	ALUMINUM,Total ug/l	Total			
BEN-01		02-Aug-01	ARSENIC,Total	Total			
BEN-01		02-Aug-01	BARIUM,Dissolved ug/l	Dissolved			
BEN-01		02-Aug-01	BARIUM,Total ug/l	Total			
BEN-01		02-Aug-01	BERYLLIUM,Dissolved ug/l	Dissolved		K	
BEN-01		02-Aug-01	BERYLLIUM,Total ug/l	Total		K	
BEN-01		02-Aug-01	BORON,Dissolved ug/l	Dissolved			
BEN-01		02-Aug-01	BORON,Total ug/l	Total			
BEN-01		02-Aug-01	CADMIUM,Dissolved ug/l	Dissolved		K	
BEN-01		02-Aug-01	CADMIUM,Total ug/l	Total		K	
BEN-01		02-Aug-01	CALCIUM,Dissolved mg/l	Dissolved			
BEN-01		02-Aug-01	CALCIUM,Total mg/l	Total			
BEN-01		02-Aug-01	CARBON, TOTAL ORGANIC mg/l				
BEN-01		02-Aug-01	CHLORIDE,Total mg/l	Total			
BEN-01		02-Aug-01	CHLOROPHYLL (A+B+C),Filterable	Filterable			
BEN-01		02-Aug-01	CHLOROPHYLL A, CORRECTED FOR PHEOPHYTIN ug/l				
BEN-01		02-Aug-01	CHLOROPHYLL A, UNCORRECTED FOR PHEOPHYTIN,Fixed	Fixed			
BEN-01		02-Aug-01	CHLOROPHYLL-B				
BEN-01		02-Aug-01	CHLOROPHYLL-C			K	
BEN-01		02-Aug-01	CHROMIUM,Dissolved ug/l	Dissolved		K	
BEN-01		02-Aug-01	CHROMIUM,Total ug/l	Total		K	
BEN-01		02-Aug-01	COBALT,Dissolved ug/l	Dissolved		K	
BEN-01		02-Aug-01	COBALT,Total ug/l	Total		K	
BEN-01		02-Aug-01	CONDUCTANCE, SPECIFIC umho/cm				
BEN-01		02-Aug-01	COPPER,Dissolved ug/l	Dissolved		K	
BEN-01		02-Aug-01	COPPER,Total ug/l	Total		K	
BEN-01		02-Aug-01	CYANIDE			K	
BEN-01		02-Aug-01	DEPTH ft				
BEN-01		02-Aug-01	DISSOLVED OXYGEN (DO) mg/l				
BEN-01		02-Aug-01	FLUORIDES				
BEN-01		02-Aug-01	HARDNESS, CA,MG mg/l			C	
BEN-01		02-Aug-01	IRON,Dissolved ug/l	Dissolved		K	
BEN-01		02-Aug-01	IRON,Total ug/l	Total			
BEN-01		02-Aug-01	LEAD,Dissolved ug/l	Dissolved		K	
BEN-01		02-Aug-01	LEAD,Total ug/l	Total		K	
BEN-01		02-Aug-01	MAGNESIUM,Dissolved mg/l	Dissolved			
BEN-01		02-Aug-01	MAGNESIUM,Total mg/l	Total			
BEN-01		02-Aug-01	MANGANESE,Dissolved ug/l	Dissolved			
BEN-01		02-Aug-01	MANGANESE,Total ug/l	Total			
BEN-01		02-Aug-01	MERCURY,Total	Total			
BEN-01		02-Aug-01	NICKEL,Dissolved ug/l	Dissolved		K	
BEN-01		02-Aug-01	NICKEL,Total ug/l	Total		K	
BEN-01		02-Aug-01	NITROGEN, AMMONIA (NH3),Total mg/l	Total		K	
BEN-01		02-Aug-01	NITROGEN, NITRITE (NO2) + NITRATE (NO3) mg/l				
BEN-01		02-Aug-01	PH				
BEN-01		02-Aug-01	PHEOPHYTIN-A			K	
BEN-01		02-Aug-01	PHOSPHORUS AS P,Dissolved mg/l	Dissolved			
BEN-01		02-Aug-01	PHOSPHORUS AS P,Total mg/l	Total			
BEN-01		02-Aug-01	POTASSIUM,Dissolved mg/l	Dissolved			
BEN-01		02-Aug-01	POTASSIUM,Total mg/l	Total			
BEN-01		02-Aug-01	SILVER,Dissolved ug/l	Dissolved		K	
BEN-01		02-Aug-01	SILVER,Total ug/l	Total		K	
BEN-01		02-Aug-01	SODIUM,Dissolved mg/l	Dissolved			
BEN-01		02-Aug-01	SODIUM,Total mg/l	Total			
BEN-01		02-Aug-01	SOLIDS, FIXED				
BEN-01		02-Aug-01	SOLIDS, FIXED,Total mg/l	Total			
BEN-01		02-Aug-01	SOLIDS, FIXED,Volatile mg/l	Volatile			
BEN-01		02-Aug-01	STRONTIUM,Dissolved ug/l	Dissolved			
BEN-01		02-Aug-01	STRONTIUM,Total ug/l	Total			
BEN-01		02-Aug-01	SULFATE			K	
BEN-01		02-Aug-01	TEMPERATURE, AIR deg C				
BEN-01		02-Aug-01	TEMPERATURE, WATER deg C				
BEN-01		02-Aug-01	TURBIDITY NTU				
BEN-01		02-Aug-01	VANADIUM,Dissolved ug/l	Dissolved		K	
BEN-01		02-Aug-01	VANADIUM,Total ug/l	Total		K	

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BEN-01		02-Aug-01	ZINC,Dissolved ug/l	Dissolved		K	
BEN-01		02-Aug-01	ZINC,Total ug/l	Total		K	
BEN-01		18-Sep-01	CHLOROPHYLL (A+B+C),Filterable	Filterable			
BEN-01		18-Sep-01	CHLOROPHYLL A, CORRECTED FOR PHEOPHYTIN ug/l			K	
BEN-01		18-Sep-01	CHLOROPHYLL A, UNCORRECTED FOR PHEOPHYTIN,Fixed	Fixed		K	
BEN-01		18-Sep-01	CHLOROPHYLL-B			K	
BEN-01		18-Sep-01	CHLOROPHYLL-C			K	
BEN-01		18-Sep-01	DEPTH ft				
BEN-01		18-Sep-01	PHEOPHYTIN-A			K	
BENA-02		18-Sep-01	ALKALINITY, CARBONATE AS CACO3,Total mg/l	Total			
BENA-02		18-Sep-01	ALUMINUM,Dissolved ug/l	Dissolved		K	
BENA-02		18-Sep-01	ALUMINUM,Total ug/l	Total			
BENA-02		18-Sep-01	ARSENIC,Total	Total			
BENA-02		18-Sep-01	BARIUM,Dissolved ug/l	Dissolved			
BENA-02		18-Sep-01	BARIUM,Total ug/l	Total			
BENA-02		18-Sep-01	BERYLLIUM,Dissolved ug/l	Dissolved		K	
BENA-02		18-Sep-01	BERYLLIUM,Total ug/l	Total		K	
BENA-02		18-Sep-01	BORON,Dissolved ug/l	Dissolved			
BENA-02		18-Sep-01	BORON,Total ug/l	Total			
BENA-02		18-Sep-01	CADMIUM,Dissolved ug/l	Dissolved		K	
BENA-02		18-Sep-01	CADMIUM,Total ug/l	Total		K	
BENA-02		18-Sep-01	CALCIUM,Dissolved mg/l	Dissolved			
BENA-02		18-Sep-01	CALCIUM,Total mg/l	Total			
BENA-02		18-Sep-01	CARBON, TOTAL ORGANIC mg/l				
BENA-02		18-Sep-01	CHLORIDE,Total mg/l	Total			
BENA-02		18-Sep-01	CHLOROPHYLL (A+B+C),Filterable	Filterable			
BENA-02		18-Sep-01	CHLOROPHYLL A, CORRECTED FOR PHEOPHYTIN ug/l				
BENA-02		18-Sep-01	CHLOROPHYLL A, UNCORRECTED FOR PHEOPHYTIN,Fixed	Fixed			
BENA-02		18-Sep-01	CHLOROPHYLL-B			K	
BENA-02		18-Sep-01	CHLOROPHYLL-C			K	
BENA-02		18-Sep-01	CHROMIUM,Dissolved ug/l	Dissolved		K	
BENA-02		18-Sep-01	CHROMIUM,Total ug/l	Total		K	
BENA-02		18-Sep-01	COBALT,Dissolved ug/l	Dissolved		K	
BENA-02		18-Sep-01	COBALT,Total ug/l	Total		K	
BENA-02		18-Sep-01	CONDUCTANCE, SPECIFIC umho/cm				
BENA-02		18-Sep-01	COPPER,Dissolved ug/l	Dissolved		K	
BENA-02		18-Sep-01	COPPER,Total ug/l	Total		K	
BENA-02		18-Sep-01	CYANIDE			K	
BENA-02		18-Sep-01	DEPTH ft				
BENA-02		18-Sep-01	DISSOLVED OXYGEN (DO) mg/l				
BENA-02		18-Sep-01	FLUORIDES				
BENA-02		18-Sep-01	HARDNESS, CA,MG mg/l			C	
BENA-02		18-Sep-01	IRON,Dissolved ug/l	Dissolved			
BENA-02		18-Sep-01	IRON,Total ug/l	Total			
BENA-02		18-Sep-01	LEAD,Dissolved ug/l	Dissolved		K	
BENA-02		18-Sep-01	LEAD,Total ug/l	Total		K	
BENA-02		18-Sep-01	MAGNESIUM,Dissolved mg/l	Dissolved			
BENA-02		18-Sep-01	MAGNESIUM,Total mg/l	Total			
BENA-02		18-Sep-01	MANGANESE,Dissolved ug/l	Dissolved			
BENA-02		18-Sep-01	MANGANESE,Total ug/l	Total			
BENA-02		18-Sep-01	MERCURY,Total	Total		K	
BENA-02		18-Sep-01	NICKEL,Dissolved ug/l	Dissolved		K	
BENA-02		18-Sep-01	NICKEL,Total ug/l	Total		K	
BENA-02		18-Sep-01	NITROGEN, AMMONIA (NH3),Total mg/l	Total			
BENA-02		18-Sep-01	NITROGEN, NITRITE (NO2) + NITRATE (NO3) mg/l				
BENA-02		18-Sep-01	PH				
BENA-02		18-Sep-01	PHENOLS			K	
BENA-02		18-Sep-01	PHEOPHYTIN-A				
BENA-02		18-Sep-01	PHOSPHORUS AS P,Dissolved mg/l	Dissolved			
BENA-02		18-Sep-01	PHOSPHORUS AS P,Total mg/l	Total			
BENA-02		18-Sep-01	POTASSIUM,Dissolved mg/l	Dissolved			
BENA-02		18-Sep-01	POTASSIUM,Total mg/l	Total			
BENA-02		18-Sep-01	SILVER,Dissolved ug/l	Dissolved		K	
BENA-02		18-Sep-01	SILVER,Total ug/l	Total		K	
BENA-02		18-Sep-01	SODIUM,Dissolved mg/l	Dissolved			
BENA-02		18-Sep-01	SODIUM,Total mg/l	Total			
BENA-02		18-Sep-01	SOLIDS, FIXED				
BENA-02		18-Sep-01	SOLIDS, FIXED,Total mg/l	Total			
BENA-02		18-Sep-01	SOLIDS, FIXED,Volatile mg/l	Volatile			

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-02		18-Sep-01	STRONTIUM,Dissolved ug/l	Dissolved			
BENA-02		18-Sep-01	STRONTIUM,Total ug/l	Total			
BENA-02		18-Sep-01	SULFATE				
BENA-02		18-Sep-01	TEMPERATURE, AIR deg C				
BENA-02		18-Sep-01	TEMPERATURE, WATER deg C				
BENA-02		18-Sep-01	TURBIDITY NTU				
BENA-02		18-Sep-01	VANADIUM,Dissolved ug/l	Dissolved		K	
BENA-02		18-Sep-01	VANADIUM,Total ug/l	Total		K	
BENA-02		18-Sep-01	ZINC,Dissolved ug/l	Dissolved		K	
BENA-02		18-Sep-01	ZINC,Total ug/l	Total		K	
BENA-03		18-Sep-01	ALKALINITY, CARBONATE AS CACO3,Total mg/l	Total			
BENA-03		18-Sep-01	ALUMINUM,Dissolved ug/l	Dissolved		K	
BENA-03		18-Sep-01	ALUMINUM,Total ug/l	Total			
BENA-03		18-Sep-01	ARSENIC,Total	Total		K	
BENA-03		18-Sep-01	BARIUM,Dissolved ug/l	Dissolved			
BENA-03		18-Sep-01	BARIUM,Total ug/l	Total			
BENA-03		18-Sep-01	BERYLLIUM,Dissolved ug/l	Dissolved		K	
BENA-03		18-Sep-01	BERYLLIUM,Total ug/l	Total		K	
BENA-03		18-Sep-01	BORON,Dissolved ug/l	Dissolved			
BENA-03		18-Sep-01	BORON,Total ug/l	Total			
BENA-03		18-Sep-01	CADMIUM,Dissolved ug/l	Dissolved		K	
BENA-03		18-Sep-01	CADMIUM,Total ug/l	Total		K	
BENA-03		18-Sep-01	CALCIUM,Dissolved mg/l	Dissolved			
BENA-03		18-Sep-01	CALCIUM,Total mg/l	Total			
BENA-03		18-Sep-01	CARBON, TOTAL ORGANIC mg/l				
BENA-03		18-Sep-01	CHLORIDE,Total mg/l	Total			
BENA-03		18-Sep-01	CHLOROPHYLL (A+B+C),Filterable	Filterable			
BENA-03		18-Sep-01	CHLOROPHYLL A, CORRECTED FOR PHEOPHYTIN ug/l				
BENA-03		18-Sep-01	CHLOROPHYLL A, UNCORRECTED FOR PHEOPHYTIN,Fixed	Fixed			
BENA-03		18-Sep-01	CHLOROPHYLL-B				
BENA-03		18-Sep-01	CHLOROPHYLL-C			K	
BENA-03		18-Sep-01	CHROMIUM,Dissolved ug/l	Dissolved		K	
BENA-03		18-Sep-01	CHROMIUM,Total ug/l	Total		K	
BENA-03		18-Sep-01	COBALT,Dissolved ug/l	Dissolved		K	
BENA-03		18-Sep-01	COBALT,Total ug/l	Total		K	
BENA-03		18-Sep-01	CONDUCTANCE, SPECIFIC umho/cm				
BENA-03		18-Sep-01	COPPER,Dissolved ug/l	Dissolved		K	
BENA-03		18-Sep-01	COPPER,Total ug/l	Total		K	
BENA-03		18-Sep-01	CYANIDE			K	
BENA-03		18-Sep-01	DEPTH ft				
BENA-03		18-Sep-01	DISSOLVED OXYGEN (DO) mg/l				
BENA-03		18-Sep-01	FLUORIDES				
BENA-03		18-Sep-01	HARDNESS, CA,MG mg/l			C	
BENA-03		18-Sep-01	IRON,Dissolved ug/l	Dissolved		K	
BENA-03		18-Sep-01	IRON,Total ug/l	Total			
BENA-03		18-Sep-01	LEAD,Dissolved ug/l	Dissolved		K	
BENA-03		18-Sep-01	LEAD,Total ug/l	Total		K	
BENA-03		18-Sep-01	MAGNESIUM,Dissolved mg/l	Dissolved			
BENA-03		18-Sep-01	MAGNESIUM,Total mg/l	Total			
BENA-03		18-Sep-01	MANGANESE,Dissolved ug/l	Dissolved			
BENA-03		18-Sep-01	MANGANESE,Total ug/l	Total			
BENA-03		18-Sep-01	MERCURY,Total	Total		K	
BENA-03		18-Sep-01	NICKEL,Dissolved ug/l	Dissolved		K	
BENA-03		18-Sep-01	NICKEL,Total ug/l	Total		K	
BENA-03		18-Sep-01	NITROGEN, AMMONIA (NH3),Total mg/l	Total		K	
BENA-03		18-Sep-01	NITROGEN, NITRITE (NO2) + NITRATE (NO3) mg/l				
BENA-03		18-Sep-01	PH				
BENA-03		18-Sep-01	PHENOLS			K	
BENA-03		18-Sep-01	PHEOPHYTIN-A			K	
BENA-03		18-Sep-01	PHOSPHORUS AS P,Dissolved mg/l	Dissolved			
BENA-03		18-Sep-01	PHOSPHORUS AS P,Total mg/l	Total			
BENA-03		18-Sep-01	POTASSIUM,Dissolved mg/l	Dissolved			
BENA-03		18-Sep-01	POTASSIUM,Total mg/l	Total			
BENA-03		18-Sep-01	SILVER,Dissolved ug/l	Dissolved		K	
BENA-03		18-Sep-01	SILVER,Total ug/l	Total		K	
BENA-03		18-Sep-01	SODIUM,Dissolved mg/l	Dissolved			
BENA-03		18-Sep-01	SODIUM,Total mg/l	Total			
BENA-03		18-Sep-01	SOLIDS, FIXED				
BENA-03		18-Sep-01	SOLIDS, FIXED,Total mg/l	Total			

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-03		18-Sep-01	SOLIDS, FIXED,Volatile mg/l	Volatile			
BENA-03		18-Sep-01	STRONTIUM,Dissolved ug/l	Dissolved			
BENA-03		18-Sep-01	STRONTIUM,Total ug/l	Total			
BENA-03		18-Sep-01	SULFATE				
BENA-03		18-Sep-01	TEMPERATURE, AIR deg C				
BENA-03		18-Sep-01	TEMPERATURE, WATER deg C				
BENA-03		18-Sep-01	TURBIDITY NTU				
BENA-03		18-Sep-01	VANADIUM,Dissolved ug/l	Dissolved		K	
BENA-03		18-Sep-01	VANADIUM,Total ug/l	Total		K	
BENA-03		18-Sep-01	ZINC,Dissolved ug/l	Dissolved		K	
BENA-03		18-Sep-01	ZINC,Total ug/l	Total		K	
BEN-01	Kickapoo Creek	23-May-06	Alkalinity, total		mg/l		0
BEN-01	KICKAPOO CREEK	23-May-06	Aluminum	Dissolved	ug/l	J	20
BEN-01	KICKAPOO CREEK	23-May-06	Aluminum	Total	ug/l		20
BEN-01	KICKAPOO CREEK	23-May-06	Arsenic	Total	ug/l	ND	0.06
BEN-01	KICKAPOO CREEK	23-May-06	Barium	Dissolved	ug/l		1
BEN-01	KICKAPOO CREEK	23-May-06	Barium	Total	ug/l		1
BEN-01	KICKAPOO CREEK	23-May-06	Beryllium	Dissolved	ug/l	ND	1
BEN-01	KICKAPOO CREEK	23-May-06	Beryllium	Total	ug/l	ND	1
BEN-01	KICKAPOO CREEK	23-May-06	Boron	Dissolved	ug/l		4
BEN-01	KICKAPOO CREEK	23-May-06	Boron	Total	ug/l		4
BEN-01	KICKAPOO CREEK	23-May-06	Cadmium	Dissolved	ug/l	ND	1
BEN-01	KICKAPOO CREEK	23-May-06	Cadmium	Total	ug/l	ND	1
BEN-01	KICKAPOO CREEK	23-May-06	Calcium	Dissolved	ug/l		18
BEN-01	KICKAPOO CREEK	23-May-06	Calcium	Total	ug/l		18
BEN-01	Kickapoo Creek	23-May-06	Carbon, organic	Total	mg/l		0.5
BEN-01	Kickapoo Creek	23-May-06	Chloride	Total	mg/l		1
BEN-01	KICKAPOO CREEK	23-May-06	Chlorophyll a, corrected for pheophytin	Total	ug/l		1
BEN-01	KICKAPOO CREEK	23-May-06	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		1
BEN-01	KICKAPOO CREEK	23-May-06	Chlorophyll-b	Total	ug/l	ND	1
BEN-01	KICKAPOO CREEK	23-May-06	Chlorophyll-c	Total	ug/l	ND	1
BEN-01	KICKAPOO CREEK	23-May-06	Chromium	Dissolved	ug/l	ND	2
BEN-01	KICKAPOO CREEK	23-May-06	Chromium	Total	ug/l	ND	2
BEN-01	KICKAPOO CREEK	23-May-06	Cobalt	Dissolved	ug/l	ND	3
BEN-01	KICKAPOO CREEK	23-May-06	Cobalt	Total	ug/l	ND	3
BEN-01	KICKAPOO CREEK	23-May-06	Copper	Dissolved	ug/l	ND	3
BEN-01	KICKAPOO CREEK	23-May-06	Copper	Total	ug/l	ND	3
BEN-01	Kickapoo Creek	23-May-06	Cyanide	Total	mg/l	ND	0.003
BEN-01		23-May-06	Dissolved oxygen (DO)		mg/l		
BEN-01	Kickapoo Creek	23-May-06	Fluorides	Total	mg/l		0.05
BEN-01	KICKAPOO CREEK	23-May-06	Hardness, Ca + Mg	Total	ug/l	C	
BEN-01	KICKAPOO CREEK	23-May-06	Iron	Dissolved	ug/l	ND	33
BEN-01	KICKAPOO CREEK	23-May-06	Iron	Total	ug/l		33
BEN-01	KICKAPOO CREEK	23-May-06	Lead	Dissolved	ug/l	ND	5
BEN-01	KICKAPOO CREEK	23-May-06	Lead	Total	ug/l	ND	5
BEN-01	KICKAPOO CREEK	23-May-06	Magnesium	Dissolved	ug/l		9
BEN-01	KICKAPOO CREEK	23-May-06	Magnesium	Total	ug/l		9
BEN-01	KICKAPOO CREEK	23-May-06	Manganese	Dissolved	ug/l		1
BEN-01	KICKAPOO CREEK	23-May-06	Manganese	Total	ug/l		1
BEN-01	KICKAPOO CREEK	23-May-06	Nickel	Dissolved	ug/l	ND	5
BEN-01	KICKAPOO CREEK	23-May-06	Nickel	Total	ug/l	ND	5
BEN-01	Kickapoo Creek	23-May-06	Nitrogen, ammonia as N	Total	mg/l		0.04
BEN-01	Kickapoo Creek	23-May-06	Nitrogen, Kjeldahl	Total	mg/l		0.4
BEN-01	Kickapoo Creek	23-May-06	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	mg/l		0.5
BEN-01		23-May-06	pH				
BEN-01	Kickapoo Creek	23-May-06	Phenols	Total	ug/l	ND	4
BEN-01	KICKAPOO CREEK	23-May-06	Pheophytin-a	Total	ug/l	ND	1
BEN-01	Kickapoo Creek	23-May-06	Phosphorus as P	Dissolved	mg/l		0.01
BEN-01	Kickapoo Creek	23-May-06	Phosphorus as P	Total	mg/l		0.01
BEN-01	KICKAPOO CREEK	23-May-06	Potassium	Dissolved	ug/l	ND	2000
BEN-01	KICKAPOO CREEK	23-May-06	Potassium	Total	ug/l	ND	2000
BEN-01	KICKAPOO CREEK	23-May-06	Silver	Dissolved	ug/l	ND	3
BEN-01	KICKAPOO CREEK	23-May-06	Silver	Total	ug/l	ND	3
BEN-01	KICKAPOO CREEK	23-May-06	Sodium	Dissolved	ug/l		370
BEN-01	KICKAPOO CREEK	23-May-06	Sodium	Total	ug/l		370
BEN-01	Kickapoo Creek	23-May-06	Solids, suspended, volatile		mg/l	ND	6
BEN-01	Kickapoo Creek	23-May-06	Solids, Total Suspended (TSS)		mg/l		5
BEN-01		23-May-06	Specific conductance		umho/cm		
BEN-01	KICKAPOO CREEK	23-May-06	Strontium	Dissolved	ug/l		1

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BEN-01	KICKAPOO CREEK	23-May-06	Strontium	Total	ug/l		1
BEN-01	Kickapoo Creek	23-May-06	Sulfate	Total	mg/l		1
BEN-01		23-May-06	Temperature, air		deg C		
BEN-01	Kickapoo Creek	23-May-06	Temperature, sample		deg C		
BEN-01	KICKAPOO CREEK	23-May-06	Temperature, sample		deg C		
BEN-01	KICKAPOO CREEK	23-May-06	Temperature, sample		deg C		
BEN-01		23-May-06	Temperature, water		deg C		
BEN-01		23-May-06	Turbidity		NTU		
BEN-01	KICKAPOO CREEK	23-May-06	Vanadium	Dissolved	ug/l	ND	3
BEN-01	KICKAPOO CREEK	23-May-06	Vanadium	Total	ug/l	ND	3
BEN-01	KICKAPOO CREEK	23-May-06	Zinc	Dissolved	ug/l	J	2
BEN-01	KICKAPOO CREEK	23-May-06	Zinc	Total	ug/l	J	2
BENA-01	Riley Creek	23-May-06	Alkalinity, total		mg/l		0
BENA-01	RILEY CREEK	23-May-06	Aluminum	Dissolved	ug/l	J	20
BENA-01	RILEY CREEK	23-May-06	Aluminum	Total	ug/l		20
BENA-01	RILEY CREEK	23-May-06	Arsenic	Total	ug/l		0.06
BENA-01	RILEY CREEK	23-May-06	Barium	Dissolved	ug/l		1
BENA-01	RILEY CREEK	23-May-06	Barium	Total	ug/l		1
BENA-01	RILEY CREEK	23-May-06	Beryllium	Dissolved	ug/l	ND	1
BENA-01	RILEY CREEK	23-May-06	Beryllium	Total	ug/l	ND	1
BENA-01	RILEY CREEK	23-May-06	Boron	Dissolved	ug/l		4
BENA-01	RILEY CREEK	23-May-06	Boron	Total	ug/l		4
BENA-01	RILEY CREEK	23-May-06	Cadmium	Dissolved	ug/l	ND	1
BENA-01	RILEY CREEK	23-May-06	Cadmium	Total	ug/l	ND	1
BENA-01	RILEY CREEK	23-May-06	Calcium	Dissolved	ug/l		18
BENA-01	RILEY CREEK	23-May-06	Calcium	Total	ug/l		18
BENA-01	Riley Creek	23-May-06	Carbon, organic	Total	mg/l		0.5
BENA-01	Riley Creek	23-May-06	Chloride	Total	mg/l		1
BENA-01	RILEY CREEK	23-May-06	Chlorophyll a, corrected for pheophytin	Total	ug/l		1
BENA-01	RILEY CREEK	23-May-06	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		1
BENA-01	RILEY CREEK	23-May-06	Chlorophyll-b	Total	ug/l	ND	1
BENA-01	RILEY CREEK	23-May-06	Chlorophyll-c	Total	ug/l	ND	1
BENA-01	RILEY CREEK	23-May-06	Chromium	Dissolved	ug/l	ND	2
BENA-01	RILEY CREEK	23-May-06	Chromium	Total	ug/l	ND	2
BENA-01	RILEY CREEK	23-May-06	Cobalt	Dissolved	ug/l	ND	3
BENA-01	RILEY CREEK	23-May-06	Cobalt	Total	ug/l	ND	3
BENA-01	RILEY CREEK	23-May-06	Copper	Dissolved	ug/l	ND	3
BENA-01	RILEY CREEK	23-May-06	Copper	Total	ug/l	ND	3
BENA-01	Riley Creek	23-May-06	Cyanide	Total	mg/l	ND	0.003
BENA-01		23-May-06	Dissolved oxygen (DO)		mg/l		
BENA-01	Riley Creek	23-May-06	Fluorides	Total	mg/l		0.05
BENA-01	RILEY CREEK	23-May-06	Hardness, Ca + Mg	Total	ug/l	C	
BENA-01	RILEY CREEK	23-May-06	Iron	Dissolved	ug/l	ND	33
BENA-01	RILEY CREEK	23-May-06	Iron	Total	ug/l		33
BENA-01	RILEY CREEK	23-May-06	Lead	Dissolved	ug/l	ND	5
BENA-01	RILEY CREEK	23-May-06	Lead	Total	ug/l	ND	5
BENA-01	RILEY CREEK	23-May-06	Magnesium	Dissolved	ug/l		9
BENA-01	RILEY CREEK	23-May-06	Magnesium	Total	ug/l		9
BENA-01	RILEY CREEK	23-May-06	Manganese	Dissolved	ug/l		1
BENA-01	RILEY CREEK	23-May-06	Manganese	Total	ug/l		1
BENA-01	RILEY CREEK	23-May-06	Nickel	Dissolved	ug/l	ND	5
BENA-01	RILEY CREEK	23-May-06	Nickel	Total	ug/l	ND	5
BENA-01	Riley Creek	23-May-06	Nitrogen, ammonia as N	Total	mg/l		0.04
BENA-01	Riley Creek	23-May-06	Nitrogen, Kjeldahl	Total	mg/l		0.4
BENA-01	Riley Creek	23-May-06	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	mg/l		0.5
BENA-01		23-May-06	pH				
BENA-01	Riley Creek	23-May-06	Phenols	Total	ug/l	ND	4
BENA-01	RILEY CREEK	23-May-06	Pheophytin-a	Total	ug/l	ND	1
BENA-01	Riley Creek	23-May-06	Phosphorus as P	Dissolved	mg/l		0.01
BENA-01	Riley Creek	23-May-06	Phosphorus as P	Total	mg/l		0.01
BENA-01	RILEY CREEK	23-May-06	Potassium	Dissolved	ug/l	ND	2000
BENA-01	RILEY CREEK	23-May-06	Potassium	Total	ug/l	ND	2000
BENA-01	RILEY CREEK	23-May-06	Silver	Dissolved	ug/l	ND	3
BENA-01	RILEY CREEK	23-May-06	Silver	Total	ug/l	ND	3
BENA-01	RILEY CREEK	23-May-06	Sodium	Dissolved	ug/l		370
BENA-01	RILEY CREEK	23-May-06	Sodium	Total	ug/l		370
BENA-01	Riley Creek	23-May-06	Solids, suspended, volatile		mg/l	ND	6
BENA-01	Riley Creek	23-May-06	Solids, Total Suspended (TSS)		mg/l	ND	5
BENA-01		23-May-06	Specific conductance		umho/cm		

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-01	RILEY CREEK	23-May-06	Strontium	Dissolved	ug/l		1
BENA-01	RILEY CREEK	23-May-06	Strontium	Total	ug/l		1
BENA-01	Riley Creek	23-May-06	Sulfate	Total	mg/l		1
BENA-01		23-May-06	Temperature, air		deg C		
BENA-01	Riley Creek	23-May-06	Temperature, sample		deg C		
BENA-01	RILEY CREEK	23-May-06	Temperature, sample		deg C		
BENA-01	RILEY CREEK	23-May-06	Temperature, sample		deg C		
BENA-01		23-May-06	Temperature, water		deg C		
BENA-01		23-May-06	Turbidity		NTU		
BENA-01	RILEY CREEK	23-May-06	Vanadium	Dissolved	ug/l	ND	3
BENA-01	RILEY CREEK	23-May-06	Vanadium	Total	ug/l	ND	3
BENA-01	RILEY CREEK	23-May-06	Zinc	Dissolved	ug/l	J	2
BENA-01	RILEY CREEK	23-May-06	Zinc	Total	ug/l	J	2
BENA-02	Riley Creek	23-May-06	Alkalinity, total		mg/l		0
BENA-02	RILEY CREEK	23-May-06	Aluminum	Dissolved	ug/l	J	20
BENA-02	RILEY CREEK	23-May-06	Aluminum	Total	ug/l		20
BENA-02	RILEY CREEK	23-May-06	Arsenic	Total	ug/l	J	0.06
BENA-02	RILEY CREEK	23-May-06	Barium	Dissolved	ug/l		1
BENA-02	RILEY CREEK	23-May-06	Barium	Total	ug/l		1
BENA-02	RILEY CREEK	23-May-06	Beryllium	Dissolved	ug/l	ND	1
BENA-02	RILEY CREEK	23-May-06	Beryllium	Total	ug/l	ND	1
BENA-02	RILEY CREEK	23-May-06	Boron	Dissolved	ug/l	J	4
BENA-02	RILEY CREEK	23-May-06	Boron	Total	ug/l		4
BENA-02	RILEY CREEK	23-May-06	Cadmium	Dissolved	ug/l	ND	1
BENA-02	RILEY CREEK	23-May-06	Cadmium	Total	ug/l	ND	1
BENA-02	RILEY CREEK	23-May-06	Calcium	Dissolved	ug/l		18
BENA-02	RILEY CREEK	23-May-06	Calcium	Total	ug/l		18
BENA-02	Riley Creek	23-May-06	Carbon, organic	Total	mg/l		0.5
BENA-02	Riley Creek	23-May-06	Chloride	Total	mg/l		1
BENA-02	RILEY CREEK	23-May-06	Chlorophyll a, corrected for pheophytin	Total	ug/l		1
BENA-02	RILEY CREEK	23-May-06	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		1
BENA-02	RILEY CREEK	23-May-06	Chlorophyll-b	Total	ug/l	ND	1
BENA-02	RILEY CREEK	23-May-06	Chlorophyll-c	Total	ug/l	ND	1
BENA-02	RILEY CREEK	23-May-06	Chromium	Dissolved	ug/l	ND	2
BENA-02	RILEY CREEK	23-May-06	Chromium	Total	ug/l	ND	2
BENA-02	RILEY CREEK	23-May-06	Cobalt	Dissolved	ug/l	ND	3
BENA-02	RILEY CREEK	23-May-06	Cobalt	Total	ug/l	ND	3
BENA-02	RILEY CREEK	23-May-06	Copper	Dissolved	ug/l	ND	3
BENA-02	RILEY CREEK	23-May-06	Copper	Total	ug/l	ND	3
BENA-02	Riley Creek	23-May-06	Cyanide	Total	mg/l	ND	0.003
BENA-02		23-May-06	Dissolved oxygen (DO)		mg/l		
BENA-02	Riley Creek	23-May-06	Fluorides	Total	mg/l		0.05
BENA-02	RILEY CREEK	23-May-06	Hardness, Ca + Mg	Total	ug/l	C	
BENA-02	RILEY CREEK	23-May-06	Iron	Dissolved	ug/l	ND	33
BENA-02	RILEY CREEK	23-May-06	Iron	Total	ug/l		33
BENA-02	RILEY CREEK	23-May-06	Lead	Dissolved	ug/l	ND	5
BENA-02	RILEY CREEK	23-May-06	Lead	Total	ug/l	ND	5
BENA-02	RILEY CREEK	23-May-06	Magnesium	Dissolved	ug/l		9
BENA-02	RILEY CREEK	23-May-06	Magnesium	Total	ug/l		9
BENA-02	RILEY CREEK	23-May-06	Manganese	Dissolved	ug/l		1
BENA-02	RILEY CREEK	23-May-06	Manganese	Total	ug/l		1
BENA-02	RILEY CREEK	23-May-06	Nickel	Dissolved	ug/l	ND	5
BENA-02	RILEY CREEK	23-May-06	Nickel	Total	ug/l	ND	5
BENA-02	Riley Creek	23-May-06	Nitrogen, ammonia as N	Total	mg/l		0.04
BENA-02	Riley Creek	23-May-06	Nitrogen, Kjeldahl	Total	mg/l		0.4
BENA-02	Riley Creek	23-May-06	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	mg/l		0.5
BENA-02		23-May-06	pH				
BENA-02	Riley Creek	23-May-06	Phenols	Total	ug/l	ND	4
BENA-02	RILEY CREEK	23-May-06	Pheophytin-a	Total	ug/l		1
BENA-02	Riley Creek	23-May-06	Phosphorus as P	Dissolved	mg/l	J	0.01
BENA-02	Riley Creek	23-May-06	Phosphorus as P	Total	mg/l		0.01
BENA-02	RILEY CREEK	23-May-06	Potassium	Dissolved	ug/l	ND	2000
BENA-02	RILEY CREEK	23-May-06	Potassium	Total	ug/l	ND	2000
BENA-02	RILEY CREEK	23-May-06	Silver	Dissolved	ug/l	ND	3
BENA-02	RILEY CREEK	23-May-06	Silver	Total	ug/l	ND	3
BENA-02	RILEY CREEK	23-May-06	Sodium	Dissolved	ug/l		370
BENA-02	RILEY CREEK	23-May-06	Sodium	Total	ug/l		370
BENA-02	Riley Creek	23-May-06	Solids, suspended, volatile		mg/l		6
BENA-02	Riley Creek	23-May-06	Solids, Total Suspended (TSS)		mg/l		5

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-02		23-May-06	Specific conductance		umho/cm		
BENA-02	RILEY CREEK	23-May-06	Strontium	Dissolved	ug/l		1
BENA-02	RILEY CREEK	23-May-06	Strontium	Total	ug/l		1
BENA-02	Riley Creek	23-May-06	Sulfate	Total	mg/l		1
BENA-02		23-May-06	Temperature, air		deg C		
BENA-02	Riley Creek	23-May-06	Temperature, sample		deg C		
BENA-02	RILEY CREEK	23-May-06	Temperature, sample		deg C		
BENA-02	RILEY CREEK	23-May-06	Temperature, sample		deg C		
BENA-02		23-May-06	Temperature, water		deg C		
BENA-02		23-May-06	Turbidity		NTU		
BENA-02	RILEY CREEK	23-May-06	Vanadium	Dissolved	ug/l	ND	3
BENA-02	RILEY CREEK	23-May-06	Vanadium	Total	ug/l	ND	3
BENA-02	RILEY CREEK	23-May-06	Zinc	Dissolved	ug/l	J	2
BENA-02	RILEY CREEK	23-May-06	Zinc	Total	ug/l	J	2
BENA-03	Riley Creek	23-May-06	Alkalinity, total		mg/l		0
BENA-03	RILEY CREEK	23-May-06	Aluminum	Dissolved	ug/l	J	20
BENA-03	RILEY CREEK	23-May-06	Aluminum	Total	ug/l		20
BENA-03	RILEY CREEK	23-May-06	Arsenic	Total	ug/l	J	0.06
BENA-03	RILEY CREEK	23-May-06	Barium	Dissolved	ug/l		1
BENA-03	RILEY CREEK	23-May-06	Barium	Total	ug/l		1
BENA-03	RILEY CREEK	23-May-06	Beryllium	Dissolved	ug/l	ND	1
BENA-03	RILEY CREEK	23-May-06	Beryllium	Total	ug/l	ND	1
BENA-03	RILEY CREEK	23-May-06	Boron	Dissolved	ug/l	J	4
BENA-03	RILEY CREEK	23-May-06	Boron	Total	ug/l		4
BENA-03	RILEY CREEK	23-May-06	Cadmium	Dissolved	ug/l	ND	1
BENA-03	RILEY CREEK	23-May-06	Cadmium	Total	ug/l	ND	1
BENA-03	RILEY CREEK	23-May-06	Calcium	Dissolved	ug/l		18
BENA-03	RILEY CREEK	23-May-06	Calcium	Total	ug/l		18
BENA-03	Riley Creek	23-May-06	Carbon, organic	Total	mg/l		0.5
BENA-03	Riley Creek	23-May-06	Chloride	Total	mg/l		1
BENA-03	RILEY CREEK	23-May-06	Chlorophyll a, corrected for pheophytin	Total	ug/l		1
BENA-03	RILEY CREEK	23-May-06	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		1
BENA-03	RILEY CREEK	23-May-06	Chlorophyll-b	Total	ug/l	ND	1
BENA-03	RILEY CREEK	23-May-06	Chlorophyll-c	Total	ug/l	ND	1
BENA-03	RILEY CREEK	23-May-06	Chromium	Dissolved	ug/l	ND	2
BENA-03	RILEY CREEK	23-May-06	Chromium	Total	ug/l	ND	2
BENA-03	RILEY CREEK	23-May-06	Cobalt	Dissolved	ug/l	ND	3
BENA-03	RILEY CREEK	23-May-06	Cobalt	Total	ug/l	ND	3
BENA-03	RILEY CREEK	23-May-06	Copper	Dissolved	ug/l	ND	3
BENA-03	RILEY CREEK	23-May-06	Copper	Total	ug/l	ND	3
BENA-03	Riley Creek	23-May-06	Cyanide	Total	mg/l	ND	0.003
BENA-03		23-May-06	Dissolved oxygen (DO)		mg/l		
BENA-03	Riley Creek	23-May-06	Fluorides	Total	mg/l		0.05
BENA-03	RILEY CREEK	23-May-06	Hardness, Ca + Mg	Total	ug/l	C	
BENA-03	RILEY CREEK	23-May-06	Iron	Dissolved	ug/l	ND	33
BENA-03	RILEY CREEK	23-May-06	Iron	Total	ug/l		33
BENA-03	RILEY CREEK	23-May-06	Lead	Dissolved	ug/l	ND	5
BENA-03	RILEY CREEK	23-May-06	Lead	Total	ug/l	ND	5
BENA-03	RILEY CREEK	23-May-06	Magnesium	Dissolved	ug/l		9
BENA-03	RILEY CREEK	23-May-06	Magnesium	Total	ug/l		9
BENA-03	RILEY CREEK	23-May-06	Manganese	Dissolved	ug/l		1
BENA-03	RILEY CREEK	23-May-06	Manganese	Total	ug/l		1
BENA-03	RILEY CREEK	23-May-06	Nickel	Dissolved	ug/l	ND	5
BENA-03	RILEY CREEK	23-May-06	Nickel	Total	ug/l	ND	5
BENA-03	Riley Creek	23-May-06	Nitrogen, ammonia as N	Total	mg/l	J	0.04
BENA-03	Riley Creek	23-May-06	Nitrogen, Kjeldahl	Total	mg/l		0.4
BENA-03	Riley Creek	23-May-06	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	mg/l		0.5
BENA-03		23-May-06	pH				
BENA-03	Riley Creek	23-May-06	Phenols	Total	ug/l	ND	4
BENA-03	RILEY CREEK	23-May-06	Pheophytin-a	Total	ug/l	ND	1
BENA-03	Riley Creek	23-May-06	Phosphorus as P	Dissolved	mg/l	J	0.01
BENA-03	Riley Creek	23-May-06	Phosphorus as P	Total	mg/l		0.01
BENA-03	RILEY CREEK	23-May-06	Potassium	Dissolved	ug/l	ND	2000
BENA-03	RILEY CREEK	23-May-06	Potassium	Total	ug/l	ND	2000
BENA-03	RILEY CREEK	23-May-06	Silver	Dissolved	ug/l	ND	3
BENA-03	RILEY CREEK	23-May-06	Silver	Total	ug/l	ND	3
BENA-03	RILEY CREEK	23-May-06	Sodium	Dissolved	ug/l		370
BENA-03	RILEY CREEK	23-May-06	Sodium	Total	ug/l		370
BENA-03	Riley Creek	23-May-06	Solids, suspended, volatile		mg/l	ND	6

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-03	Riley Creek	23-May-06	Solids, Total Suspended (TSS)		mg/l	ND	5
BENA-03		23-May-06	Specific conductance		umho/cm		
BENA-03	RILEY CREEK	23-May-06	Strontium	Dissolved	ug/l		1
BENA-03	RILEY CREEK	23-May-06	Strontium	Total	ug/l		1
BENA-03	Riley Creek	23-May-06	Sulfate	Total	mg/l		1
BENA-03		23-May-06	Temperature, air		deg C		
BENA-03	Riley Creek	23-May-06	Temperature, sample		deg C		
BENA-03	RILEY CREEK	23-May-06	Temperature, sample		deg C		
BENA-03	RILEY CREEK	23-May-06	Temperature, sample		deg C		
BENA-03		23-May-06	Temperature, water		deg C		
BENA-03		23-May-06	Turbidity		NTU		
BENA-03	RILEY CREEK	23-May-06	Vanadium	Dissolved	ug/l	ND	3
BENA-03	RILEY CREEK	23-May-06	Vanadium	Total	ug/l	ND	3
BENA-03	RILEY CREEK	23-May-06	Zinc	Dissolved	ug/l	J	2
BENA-03	RILEY CREEK	23-May-06	Zinc	Total	ug/l	J	2
BENC-01	Riley-Cassell Creek	23-May-06	Alkalinity, total		mg/l		0
BENC-01	RILEY	23-May-06	Aluminum	Dissolved	ug/l	J	20
BENC-01	RILEY	23-May-06	Aluminum	Total	ug/l	J	20
BENC-01	RILEY	23-May-06	Arsenic	Total	ug/l	J	0.06
BENC-01	RILEY	23-May-06	Barium	Dissolved	ug/l		1
BENC-01	RILEY	23-May-06	Barium	Total	ug/l		1
BENC-01	RILEY	23-May-06	Beryllium	Dissolved	ug/l	ND	1
BENC-01	RILEY	23-May-06	Beryllium	Total	ug/l	ND	1
BENC-01	RILEY	23-May-06	Boron	Dissolved	ug/l		4
BENC-01	RILEY	23-May-06	Boron	Total	ug/l		4
BENC-01	RILEY	23-May-06	Cadmium	Dissolved	ug/l	ND	1
BENC-01	RILEY	23-May-06	Cadmium	Total	ug/l	ND	1
BENC-01	RILEY	23-May-06	Calcium	Dissolved	ug/l		18
BENC-01	RILEY	23-May-06	Calcium	Total	ug/l		18
BENC-01	Riley-Cassell Creek	23-May-06	Carbon, organic	Total	mg/l		0.5
BENC-01	Riley-Cassell Creek	23-May-06	Chloride	Total	mg/l		1
BENC-01	RILEY CREEK	23-May-06	Chlorophyll a, corrected for pheophytin	Total	ug/l		1
BENC-01	RILEY CREEK	23-May-06	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		1
BENC-01	RILEY CREEK	23-May-06	Chlorophyll-b	Total	ug/l	ND	1
BENC-01	RILEY CREEK	23-May-06	Chlorophyll-c	Total	ug/l	ND	1
BENC-01	RILEY	23-May-06	Chromium	Dissolved	ug/l	ND	2
BENC-01	RILEY	23-May-06	Chromium	Total	ug/l	ND	2
BENC-01	RILEY	23-May-06	Cobalt	Dissolved	ug/l	ND	3
BENC-01	RILEY	23-May-06	Cobalt	Total	ug/l	ND	3
BENC-01	RILEY	23-May-06	Copper	Dissolved	ug/l	ND	3
BENC-01	RILEY	23-May-06	Copper	Total	ug/l	ND	3
BENC-01	Riley-Cassell Creek	23-May-06	Cyanide	Total	mg/l	ND	0.003
BENC-01		23-May-06	Dissolved oxygen (DO)		mg/l		
BENC-01	Riley-Cassell Creek	23-May-06	Fluorides	Total	mg/l		0.05
BENC-01	RILEY	23-May-06	Hardness, Ca + Mg	Total	ug/l	C	
BENC-01	RILEY	23-May-06	Iron	Dissolved	ug/l	ND	33
BENC-01	RILEY	23-May-06	Iron	Total	ug/l		33
BENC-01	RILEY	23-May-06	Lead	Dissolved	ug/l	ND	5
BENC-01	RILEY	23-May-06	Lead	Total	ug/l	ND	5
BENC-01	RILEY	23-May-06	Magnesium	Dissolved	ug/l		9
BENC-01	RILEY	23-May-06	Magnesium	Total	ug/l		9
BENC-01	RILEY	23-May-06	Manganese	Dissolved	ug/l		1
BENC-01	RILEY	23-May-06	Manganese	Total	ug/l		1
BENC-01	RILEY	23-May-06	Nickel	Dissolved	ug/l	ND	5
BENC-01	RILEY	23-May-06	Nickel	Total	ug/l	ND	5
BENC-01	Riley-Cassell Creek	23-May-06	Nitrogen, ammonia as N	Total	mg/l		0.04
BENC-01	Riley-Cassell Creek	23-May-06	Nitrogen, Kjeldahl	Total	mg/l		0.4
BENC-01	Riley-Cassell Creek	23-May-06	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	mg/l		0.5
BENC-01		23-May-06	pH				
BENC-01	Riley-Cassell Creek	23-May-06	Phenols	Total	ug/l	ND	4
BENC-01	RILEY CREEK	23-May-06	Pheophytin-a	Total	ug/l	ND	1
BENC-01	Riley-Cassell Creek	23-May-06	Phosphorus as P	Dissolved	mg/l		0.01
BENC-01	Riley-Cassell Creek	23-May-06	Phosphorus as P	Total	mg/l		0.01
BENC-01	RILEY	23-May-06	Potassium	Dissolved	ug/l	ND	2000
BENC-01	RILEY	23-May-06	Potassium	Total	ug/l	ND	2000
BENC-01	RILEY	23-May-06	Selenium	Total	ug/l	J	0.18
BENC-01	RILEY	23-May-06	Silver	Dissolved	ug/l	ND	3
BENC-01	RILEY	23-May-06	Silver	Total	ug/l	ND	3
BENC-01	RILEY	23-May-06	Sodium	Dissolved	ug/l		370

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENC-01	RILEY	23-May-06	Sodium	Total	ug/l		370
BENC-01	Riley-Cassell Creek	23-May-06	Solids, suspended, volatile		mg/l	ND	6
BENC-01	Riley-Cassell Creek	23-May-06	Solids, Total Suspended (TSS)		mg/l	ND	5
BENC-01		23-May-06	Specific conductance		umho/cm		
BENC-01	RILEY	23-May-06	Strontium	Dissolved	ug/l		1
BENC-01	RILEY	23-May-06	Strontium	Total	ug/l		1
BENC-01	Riley-Cassell Creek	23-May-06	Sulfate	Total	mg/l		1
BENC-01		23-May-06	Temperature, air		deg C		
BENC-01	Riley-Cassell Creek	23-May-06	Temperature, sample		deg C		
BENC-01	RILEY	23-May-06	Temperature, sample		deg C		
BENC-01	RILEY	23-May-06	Temperature, sample		deg C		
BENC-01		23-May-06	Temperature, water		deg C		
BENC-01		23-May-06	Turbidity		NTU		
BENC-01	RILEY	23-May-06	Vanadium	Dissolved	ug/l	ND	3
BENC-01	RILEY	23-May-06	Vanadium	Total	ug/l	ND	3
BENC-01	RILEY	23-May-06	Zinc	Dissolved	ug/l	J	2
BENC-01	RILEY	23-May-06	Zinc	Total	ug/l		2
BENA-01	Riley Creek	17-Jul-06	Alkalinity, total		mg/l		0
BENA-01	RILEY CREEK	17-Jul-06	Aluminum	Dissolved	ug/l	J	20
BENA-01	RILEY CREEK	17-Jul-06	Aluminum	Total	ug/l		20
BENA-01	RILEY CREEK	17-Jul-06	Arsenic	Total	ug/l		0.06
BENA-01	RILEY CREEK	17-Jul-06	Barium	Dissolved	ug/l		1
BENA-01	RILEY CREEK	17-Jul-06	Barium	Total	ug/l		1
BENA-01	RILEY CREEK	17-Jul-06	Beryllium	Dissolved	ug/l	ND	1
BENA-01	RILEY CREEK	17-Jul-06	Beryllium	Total	ug/l	ND	1
BENA-01	RILEY CREEK	17-Jul-06	Boron	Dissolved	ug/l		4
BENA-01	RILEY CREEK	17-Jul-06	Boron	Total	ug/l		4
BENA-01	RILEY CREEK	17-Jul-06	Cadmium	Dissolved	ug/l	ND	1
BENA-01	RILEY CREEK	17-Jul-06	Cadmium	Total	ug/l	ND	1
BENA-01	RILEY CREEK	17-Jul-06	Calcium	Dissolved	ug/l		18
BENA-01	RILEY CREEK	17-Jul-06	Calcium	Total	ug/l		18
BENA-01	Riley Creek	17-Jul-06	Carbon, organic	Total	mg/l		0.5
BENA-01	Riley Creek	17-Jul-06	Chloride	Total	mg/l		1
BENA-01	RILEY CREEK	17-Jul-06	Chlorophyll a, corrected for pheophytin	Total	ug/l		1
BENA-01	RILEY CREEK	17-Jul-06	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		1
BENA-01	RILEY CREEK	17-Jul-06	Chlorophyll-b	Total	ug/l	ND	1
BENA-01	RILEY CREEK	17-Jul-06	Chlorophyll-c	Total	ug/l	ND	1
BENA-01	RILEY CREEK	17-Jul-06	Chromium	Dissolved	ug/l	ND	2
BENA-01	RILEY CREEK	17-Jul-06	Chromium	Total	ug/l	ND	2
BENA-01	RILEY CREEK	17-Jul-06	Cobalt	Dissolved	ug/l	ND	3
BENA-01	RILEY CREEK	17-Jul-06	Cobalt	Total	ug/l	ND	3
BENA-01	RILEY CREEK	17-Jul-06	Copper	Dissolved	ug/l	ND	3
BENA-01	RILEY CREEK	17-Jul-06	Copper	Total	ug/l	J	3
BENA-01	Riley Creek	17-Jul-06	Cyanide	Total	mg/l	ND	0.003
BENA-01		17-Jul-06	Dissolved oxygen (DO)		mg/l		
BENA-01	Riley Creek	17-Jul-06	Fluorides	Total	mg/l		0.05
BENA-01	RILEY CREEK	17-Jul-06	Hardness, Ca + Mg	Total	ug/l	C	
BENA-01	RILEY CREEK	17-Jul-06	Iron	Dissolved	ug/l	ND	33
BENA-01	RILEY CREEK	17-Jul-06	Iron	Total	ug/l		33
BENA-01	RILEY CREEK	17-Jul-06	Lead	Dissolved	ug/l	ND	5
BENA-01	RILEY CREEK	17-Jul-06	Lead	Total	ug/l	ND	5
BENA-01	RILEY CREEK	17-Jul-06	Magnesium	Dissolved	ug/l		9
BENA-01	RILEY CREEK	17-Jul-06	Magnesium	Total	ug/l		9
BENA-01	RILEY CREEK	17-Jul-06	Manganese	Dissolved	ug/l		1
BENA-01	RILEY CREEK	17-Jul-06	Manganese	Total	ug/l		1
BENA-01	RILEY CREEK	17-Jul-06	Nickel	Dissolved	ug/l		5
BENA-01	RILEY CREEK	17-Jul-06	Nickel	Total	ug/l	ND	5
BENA-01	Riley Creek	17-Jul-06	Nitrogen, ammonia as N	Total	mg/l		0.04
BENA-01	Riley Creek	17-Jul-06	Nitrogen, Kjeldahl	Total	mg/l	ND	0.75
BENA-01	Riley Creek	17-Jul-06	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	mg/l		0.1
BENA-01		17-Jul-06	pH				
BENA-01	Riley Creek	17-Jul-06	Phenols	Total	ug/l	J	4
BENA-01	RILEY CREEK	17-Jul-06	Pheophytin-a	Total	ug/l	ND	1
BENA-01	Riley Creek	17-Jul-06	Phosphorus as P	Dissolved	mg/l		0.01
BENA-01	Riley Creek	17-Jul-06	Phosphorus as P	Total	mg/l		0.01
BENA-01	RILEY CREEK	17-Jul-06	Potassium	Dissolved	ug/l		2000
BENA-01	RILEY CREEK	17-Jul-06	Potassium	Total	ug/l		2000
BENA-01	RILEY CREEK	17-Jul-06	Silver	Dissolved	ug/l	ND	3
BENA-01	RILEY CREEK	17-Jul-06	Silver	Total	ug/l	ND	3

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-01	RILEY CREEK	17-Jul-06	Sodium	Dissolved	ug/l		370
BENA-01	RILEY CREEK	17-Jul-06	Sodium	Total	ug/l		370
BENA-01	Riley Creek	17-Jul-06	Solids, suspended, volatile		mg/l	ND	6
BENA-01	Riley Creek	17-Jul-06	Solids, Total Suspended (TSS)		mg/l		5
BENA-01		17-Jul-06	Specific conductance		umho/cm		
BENA-01	RILEY CREEK	17-Jul-06	Strontium	Dissolved	ug/l		1
BENA-01	RILEY CREEK	17-Jul-06	Strontium	Total	ug/l		1
BENA-01	Riley Creek	17-Jul-06	Sulfate	Total	mg/l		2
BENA-01		17-Jul-06	Temperature, air		deg C		
BENA-01	Riley Creek	17-Jul-06	Temperature, sample		deg C		
BENA-01	RILEY CREEK	17-Jul-06	Temperature, sample		deg C		
BENA-01	RILEY CREEK	17-Jul-06	Temperature, sample		deg C		
BENA-01		17-Jul-06	Temperature, water		deg C		
BENA-01		17-Jul-06	Turbidity		NTU		
BENA-01	RILEY CREEK	17-Jul-06	Vanadium	Dissolved	ug/l	ND	3
BENA-01	RILEY CREEK	17-Jul-06	Vanadium	Total	ug/l	ND	3
BENA-01	RILEY CREEK	17-Jul-06	Zinc	Dissolved	ug/l		2
BENA-01	RILEY CREEK	17-Jul-06	Zinc	Total	ug/l		2
BENA-03	Riley Creek	17-Jul-06	Alkalinity, total		mg/l		0
BENA-03	RILEY CREEK	17-Jul-06	Aluminum	Dissolved	ug/l	J	20
BENA-03	RILEY CREEK	17-Jul-06	Aluminum	Total	ug/l		20
BENA-03	RILEY CREEK	17-Jul-06	Arsenic	Total	ug/l		0.06
BENA-03	RILEY CREEK	17-Jul-06	Barium	Dissolved	ug/l		1
BENA-03	RILEY CREEK	17-Jul-06	Barium	Total	ug/l		1
BENA-03	RILEY CREEK	17-Jul-06	Beryllium	Dissolved	ug/l	ND	1
BENA-03	RILEY CREEK	17-Jul-06	Beryllium	Total	ug/l	ND	1
BENA-03	RILEY CREEK	17-Jul-06	Boron	Dissolved	ug/l		4
BENA-03	RILEY CREEK	17-Jul-06	Boron	Total	ug/l		4
BENA-03	RILEY CREEK	17-Jul-06	Cadmium	Dissolved	ug/l	ND	1
BENA-03	RILEY CREEK	17-Jul-06	Cadmium	Total	ug/l	ND	1
BENA-03	RILEY CREEK	17-Jul-06	Calcium	Dissolved	ug/l		18
BENA-03	RILEY CREEK	17-Jul-06	Calcium	Total	ug/l		18
BENA-03	Riley Creek	17-Jul-06	Carbon, organic	Total	mg/l		0.5
BENA-03	Riley Creek	17-Jul-06	Chloride	Total	mg/l		1
BENA-03	RILEY CREEK	17-Jul-06	Chlorophyll a, corrected for pheophytin	Total	ug/l		1
BENA-03	RILEY CREEK	17-Jul-06	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		1
BENA-03	RILEY CREEK	17-Jul-06	Chlorophyll-b	Total	ug/l	ND	1
BENA-03	RILEY CREEK	17-Jul-06	Chlorophyll-c	Total	ug/l	ND	1
BENA-03	RILEY CREEK	17-Jul-06	Chromium	Dissolved	ug/l	ND	2
BENA-03	RILEY CREEK	17-Jul-06	Chromium	Total	ug/l	ND	2
BENA-03	RILEY CREEK	17-Jul-06	Cobalt	Dissolved	ug/l	ND	3
BENA-03	RILEY CREEK	17-Jul-06	Cobalt	Total	ug/l	ND	3
BENA-03	RILEY CREEK	17-Jul-06	Copper	Dissolved	ug/l	ND	3
BENA-03	RILEY CREEK	17-Jul-06	Copper	Total	ug/l	J	3
BENA-03	Riley Creek	17-Jul-06	Cyanide	Total	mg/l	ND	0.003
BENA-03		17-Jul-06	Dissolved oxygen (DO)		mg/l		
BENA-03	Riley Creek	17-Jul-06	Fluorides	Total	mg/l		0.05
BENA-03	RILEY CREEK	17-Jul-06	Hardness, Ca + Mg	Total	ug/l	C	
BENA-03	RILEY CREEK	17-Jul-06	Iron	Dissolved	ug/l	ND	33
BENA-03	RILEY CREEK	17-Jul-06	Iron	Total	ug/l		33
BENA-03	RILEY CREEK	17-Jul-06	Lead	Dissolved	ug/l	ND	5
BENA-03	RILEY CREEK	17-Jul-06	Lead	Total	ug/l	ND	5
BENA-03	RILEY CREEK	17-Jul-06	Magnesium	Dissolved	ug/l		9
BENA-03	RILEY CREEK	17-Jul-06	Magnesium	Total	ug/l		9
BENA-03	RILEY CREEK	17-Jul-06	Manganese	Dissolved	ug/l		1
BENA-03	RILEY CREEK	17-Jul-06	Manganese	Total	ug/l		1
BENA-03	RILEY CREEK	17-Jul-06	Nickel	Dissolved	ug/l		5
BENA-03	RILEY CREEK	17-Jul-06	Nickel	Total	ug/l	ND	5
BENA-03	Riley Creek	17-Jul-06	Nitrogen, ammonia as N	Total	mg/l		0.04
BENA-03	Riley Creek	17-Jul-06	Nitrogen, Kjeldahl	Total	mg/l	ND	0.75
BENA-03	Riley Creek	17-Jul-06	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	mg/l		0.1
BENA-03		17-Jul-06	pH				
BENA-03	Riley Creek	17-Jul-06	Phenols	Total	ug/l	J	4
BENA-03	RILEY CREEK	17-Jul-06	Pheophytin-a	Total	ug/l	ND	1
BENA-03	Riley Creek	17-Jul-06	Phosphorus as P	Dissolved	mg/l		0.01
BENA-03	Riley Creek	17-Jul-06	Phosphorus as P	Total	mg/l		0.01
BENA-03	RILEY CREEK	17-Jul-06	Potassium	Dissolved	ug/l		2000
BENA-03	RILEY CREEK	17-Jul-06	Potassium	Total	ug/l		2000
BENA-03	RILEY CREEK	17-Jul-06	Silver	Dissolved	ug/l	ND	3

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-03	RILEY CREEK	17-Jul-06	Silver	Total	ug/l	ND	3
BENA-03	RILEY CREEK	17-Jul-06	Sodium	Dissolved	ug/l		370
BENA-03	RILEY CREEK	17-Jul-06	Sodium	Total	ug/l		370
BENA-03	Riley Creek	17-Jul-06	Solids, suspended, volatile		mg/l		6
BENA-03	Riley Creek	17-Jul-06	Solids, Total Suspended (TSS)		mg/l		5
BENA-03		17-Jul-06	Specific conductance		umho/cm		
BENA-03	RILEY CREEK	17-Jul-06	Strontium	Dissolved	ug/l		1
BENA-03	RILEY CREEK	17-Jul-06	Strontium	Total	ug/l		1
BENA-03	Riley Creek	17-Jul-06	Sulfate	Total	mg/l		2
BENA-03		17-Jul-06	Temperature, air		deg C		
BENA-03	Riley Creek	17-Jul-06	Temperature, sample		deg C		
BENA-03	RILEY CREEK	17-Jul-06	Temperature, sample		deg C		
BENA-03	RILEY CREEK	17-Jul-06	Temperature, sample		deg C		
BENA-03		17-Jul-06	Temperature, water		deg C		
BENA-03		17-Jul-06	Turbidity		NTU		
BENA-03	RILEY CREEK	17-Jul-06	Vanadium	Dissolved	ug/l	ND	3
BENA-03	RILEY CREEK	17-Jul-06	Vanadium	Total	ug/l	ND	3
BENA-03	RILEY CREEK	17-Jul-06	Zinc	Dissolved	ug/l		2
BENA-03	RILEY CREEK	17-Jul-06	Zinc	Total	ug/l		2
BENC-01	Cassel Cr.	17-Jul-06	Alkalinity, total		mg/l		0
BENC-01	CASSEL CREEK	17-Jul-06	Aluminum	Dissolved	ug/l	ND	20
BENC-01	CASSEL CREEK	17-Jul-06	Aluminum	Total	ug/l		20
BENC-01	CASSEL CREEK	17-Jul-06	Arsenic	Total	ug/l		0.06
BENC-01	CASSEL CREEK	17-Jul-06	Barium	Dissolved	ug/l		1
BENC-01	CASSEL CREEK	17-Jul-06	Barium	Total	ug/l		1
BENC-01	CASSEL CREEK	17-Jul-06	Beryllium	Dissolved	ug/l	ND	1
BENC-01	CASSEL CREEK	17-Jul-06	Beryllium	Total	ug/l	ND	1
BENC-01	CASSEL CREEK	17-Jul-06	Boron	Dissolved	ug/l		4
BENC-01	CASSEL CREEK	17-Jul-06	Boron	Total	ug/l		4
BENC-01	CASSEL CREEK	17-Jul-06	Cadmium	Dissolved	ug/l	ND	1
BENC-01	CASSEL CREEK	17-Jul-06	Cadmium	Total	ug/l	ND	1
BENC-01	CASSEL CREEK	17-Jul-06	Calcium	Dissolved	ug/l		18
BENC-01	CASSEL CREEK	17-Jul-06	Calcium	Total	ug/l		18
BENC-01	Cassel Cr.	17-Jul-06	Carbon, organic	Total	mg/l		0.5
BENC-01	Cassel Cr.	17-Jul-06	Chloride	Total	mg/l		1
BENC-01	CASSEL CREEK	17-Jul-06	Chlorophyll a, corrected for pheophytin	Total	ug/l		1
BENC-01	CASSEL CREEK	17-Jul-06	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		1
BENC-01	CASSEL CREEK	17-Jul-06	Chlorophyll-b	Total	ug/l	ND	1
BENC-01	CASSEL CREEK	17-Jul-06	Chlorophyll-c	Total	ug/l	ND	1
BENC-01	CASSEL CREEK	17-Jul-06	Chromium	Dissolved	ug/l	ND	2
BENC-01	CASSEL CREEK	17-Jul-06	Chromium	Total	ug/l	ND	2
BENC-01	CASSEL CREEK	17-Jul-06	Cobalt	Dissolved	ug/l	ND	3
BENC-01	CASSEL CREEK	17-Jul-06	Cobalt	Total	ug/l	ND	3
BENC-01	CASSEL CREEK	17-Jul-06	Copper	Dissolved	ug/l	ND	3
BENC-01	CASSEL CREEK	17-Jul-06	Copper	Total	ug/l	J	3
BENC-01	Cassel Cr.	17-Jul-06	Cyanide	Total	mg/l	ND	0.003
BENC-01		17-Jul-06	Dissolved oxygen (DO)		mg/l		
BENC-01	Cassel Cr.	17-Jul-06	Fluorides	Total	mg/l		0.05
BENC-01	CASSEL CREEK	17-Jul-06	Hardness, Ca + Mg	Total	ug/l	C	
BENC-01	CASSEL CREEK	17-Jul-06	Iron	Dissolved	ug/l	ND	33
BENC-01	CASSEL CREEK	17-Jul-06	Iron	Total	ug/l		33
BENC-01	CASSEL CREEK	17-Jul-06	Lead	Dissolved	ug/l	ND	5
BENC-01	CASSEL CREEK	17-Jul-06	Lead	Total	ug/l	ND	5
BENC-01	CASSEL CREEK	17-Jul-06	Magnesium	Dissolved	ug/l		9
BENC-01	CASSEL CREEK	17-Jul-06	Magnesium	Total	ug/l		9
BENC-01	CASSEL CREEK	17-Jul-06	Manganese	Dissolved	ug/l		1
BENC-01	CASSEL CREEK	17-Jul-06	Manganese	Total	ug/l		1
BENC-01	CASSEL CREEK	17-Jul-06	Nickel	Dissolved	ug/l	ND	5
BENC-01	CASSEL CREEK	17-Jul-06	Nickel	Total	ug/l	ND	5
BENC-01	Cassel Cr.	17-Jul-06	Nitrogen, ammonia as N	Total	mg/l		0.04
BENC-01	Cassel Cr.	17-Jul-06	Nitrogen, Kjeldahl	Total	mg/l		0.75
BENC-01	Cassel Cr.	17-Jul-06	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	mg/l		0.25
BENC-01		17-Jul-06	pH				
BENC-01	Cassel Cr.	17-Jul-06	Phenols	Total	ug/l	ND	4
BENC-01	CASSEL CREEK	17-Jul-06	Pheophytin-a	Total	ug/l	ND	1
BENC-01	Cassel Cr.	17-Jul-06	Phosphorus as P	Dissolved	mg/l		0.05
BENC-01	Cassel Cr.	17-Jul-06	Phosphorus as P	Total	mg/l		0.05
BENC-01	CASSEL CREEK	17-Jul-06	Potassium	Dissolved	ug/l	ND	2000
BENC-01	CASSEL CREEK	17-Jul-06	Potassium	Total	ug/l	ND	2000

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENC-01	CASSEL CREEK	17-Jul-06	Silver	Dissolved	ug/l	ND	3
BENC-01	CASSEL CREEK	17-Jul-06	Silver	Total	ug/l	ND	3
BENC-01	CASSEL CREEK	17-Jul-06	Sodium	Dissolved	ug/l		370
BENC-01	CASSEL CREEK	17-Jul-06	Sodium	Total	ug/l		370
BENC-01	Cassel Cr.	17-Jul-06	Solids, suspended, volatile		mg/l	ND	6
BENC-01	Cassel Cr.	17-Jul-06	Solids, Total Suspended (TSS)		mg/l		5
BENC-01		17-Jul-06	Specific conductance		umho/cm		
BENC-01	CASSEL CREEK	17-Jul-06	Strontium	Dissolved	ug/l		1
BENC-01	CASSEL CREEK	17-Jul-06	Strontium	Total	ug/l		1
BENC-01	Cassel Cr.	17-Jul-06	Sulfate	Total	mg/l		2
BENC-01		17-Jul-06	Temperature, air		deg C		
BENC-01	Cassel Cr.	17-Jul-06	Temperature, sample		deg C		
BENC-01	CASSEL CREEK	17-Jul-06	Temperature, sample		deg C		
BENC-01	CASSEL CREEK	17-Jul-06	Temperature, sample		deg C		
BENC-01		17-Jul-06	Temperature, water		deg C		
BENC-01		17-Jul-06	Turbidity		NTU		
BENC-01	CASSEL CREEK	17-Jul-06	Vanadium	Dissolved	ug/l	ND	3
BENC-01	CASSEL CREEK	17-Jul-06	Vanadium	Total	ug/l	ND	3
BENC-01	CASSEL CREEK	17-Jul-06	Zinc	Dissolved	ug/l		2
BENC-01	CASSEL CREEK	17-Jul-06	Zinc	Total	ug/l		2
BENA-02	Riley Creek	18-Jul-06	Alkalinity, total		mg/l		0
BENA-02	RILEY CREEK	18-Jul-06	Aluminum	Dissolved	ug/l	ND	20
BENA-02	RILEY CREEK	18-Jul-06	Aluminum	Total	ug/l		20
BENA-02	RILEY CREEK	18-Jul-06	Arsenic	Total	ug/l		0.06
BENA-02	RILEY CREEK	18-Jul-06	Barium	Dissolved	ug/l		1
BENA-02	RILEY CREEK	18-Jul-06	Barium	Total	ug/l		1
BENA-02	RILEY CREEK	18-Jul-06	Beryllium	Dissolved	ug/l	ND	1
BENA-02	RILEY CREEK	18-Jul-06	Beryllium	Total	ug/l	ND	1
BENA-02	RILEY CREEK	18-Jul-06	Boron	Dissolved	ug/l		4
BENA-02	RILEY CREEK	18-Jul-06	Boron	Total	ug/l		4
BENA-02	RILEY CREEK	18-Jul-06	Cadmium	Dissolved	ug/l	ND	1
BENA-02	RILEY CREEK	18-Jul-06	Cadmium	Total	ug/l	ND	1
BENA-02	RILEY CREEK	18-Jul-06	Calcium	Dissolved	ug/l		18
BENA-02	RILEY CREEK	18-Jul-06	Calcium	Total	ug/l		18
BENA-02	Riley Creek	18-Jul-06	Carbon, organic	Total	mg/l		0.5
BENA-02	Riley Creek	18-Jul-06	Chloride	Total	mg/l		1
BENA-02	RILEY CREEK	18-Jul-06	Chlorophyll a, corrected for pheophytin	Total	ug/l		1
BENA-02	RILEY CREEK	18-Jul-06	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		1
BENA-02	RILEY CREEK	18-Jul-06	Chlorophyll-b	Total	ug/l	ND	1
BENA-02	RILEY CREEK	18-Jul-06	Chlorophyll-c	Total	ug/l	ND	1
BENA-02	RILEY CREEK	18-Jul-06	Chromium	Dissolved	ug/l	ND	2
BENA-02	RILEY CREEK	18-Jul-06	Chromium	Total	ug/l	ND	2
BENA-02	RILEY CREEK	18-Jul-06	Cobalt	Dissolved	ug/l	ND	3
BENA-02	RILEY CREEK	18-Jul-06	Cobalt	Total	ug/l	ND	3
BENA-02	RILEY CREEK	18-Jul-06	Copper	Dissolved	ug/l	ND	3
BENA-02	RILEY CREEK	18-Jul-06	Copper	Total	ug/l	J	3
BENA-02	Riley Creek	18-Jul-06	Cyanide	Total	mg/l	ND	0.003
BENA-02		18-Jul-06	Dissolved oxygen (DO)		mg/l		
BENA-02	Riley Creek	18-Jul-06	Fluorides	Total	mg/l		0.05
BENA-02	RILEY CREEK	18-Jul-06	Hardness, Ca + Mg	Total	ug/l	C	
BENA-02	RILEY CREEK	18-Jul-06	Iron	Dissolved	ug/l	ND	33
BENA-02	RILEY CREEK	18-Jul-06	Iron	Total	ug/l		33
BENA-02	RILEY CREEK	18-Jul-06	Lead	Dissolved	ug/l	ND	5
BENA-02	RILEY CREEK	18-Jul-06	Lead	Total	ug/l		5
BENA-02	RILEY CREEK	18-Jul-06	Magnesium	Dissolved	ug/l		9
BENA-02	RILEY CREEK	18-Jul-06	Magnesium	Total	ug/l		9
BENA-02	RILEY CREEK	18-Jul-06	Manganese	Dissolved	ug/l		1
BENA-02	RILEY CREEK	18-Jul-06	Manganese	Total	ug/l		1
BENA-02	RILEY CREEK	18-Jul-06	Nickel	Dissolved	ug/l	ND	5
BENA-02	RILEY CREEK	18-Jul-06	Nickel	Total	ug/l	ND	5
BENA-02	Riley Creek	18-Jul-06	Nitrogen, ammonia as N	Total	mg/l		0.04
BENA-02	Riley Creek	18-Jul-06	Nitrogen, Kjeldahl	Total	mg/l	ND	0.75
BENA-02	Riley Creek	18-Jul-06	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	mg/l		0.1
BENA-02		18-Jul-06	pH				
BENA-02	Riley Creek	18-Jul-06	Phenols	Total	ug/l	ND	4
BENA-02	RILEY CREEK	18-Jul-06	Pheophytin-a	Total	ug/l		1
BENA-02	Riley Creek	18-Jul-06	Phosphorus as P	Dissolved	mg/l		0.01
BENA-02	Riley Creek	18-Jul-06	Phosphorus as P	Total	mg/l		0.01
BENA-02	RILEY CREEK	18-Jul-06	Potassium	Dissolved	ug/l	ND	2000

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-02	RILEY CREEK	18-Jul-06	Potassium	Total	ug/l	ND	2000
BENA-02	RILEY CREEK	18-Jul-06	Silver	Dissolved	ug/l	ND	3
BENA-02	RILEY CREEK	18-Jul-06	Silver	Total	ug/l	ND	3
BENA-02	RILEY CREEK	18-Jul-06	Sodium	Dissolved	ug/l		370
BENA-02	RILEY CREEK	18-Jul-06	Sodium	Total	ug/l		370
BENA-02	Riley Creek	18-Jul-06	Solids, suspended, volatile		mg/l	ND	6
BENA-02	Riley Creek	18-Jul-06	Solids, Total Suspended (TSS)		mg/l		5
BENA-02		18-Jul-06	Specific conductance		umho/cm		
BENA-02	RILEY CREEK	18-Jul-06	Strontium	Dissolved	ug/l		1
BENA-02	RILEY CREEK	18-Jul-06	Strontium	Total	ug/l		1
BENA-02	Riley Creek	18-Jul-06	Sulfate	Total	mg/l		2
BENA-02		18-Jul-06	Temperature, air		deg C		
BENA-02	Riley Creek	18-Jul-06	Temperature, sample		deg C		
BENA-02	RILEY CREEK	18-Jul-06	Temperature, sample		deg C		
BENA-02	RILEY CREEK	18-Jul-06	Temperature, sample		deg C		
BENA-02		18-Jul-06	Temperature, water		deg C		
BENA-02		18-Jul-06	Turbidity		NTU		
BENA-02	RILEY CREEK	18-Jul-06	Vanadium	Dissolved	ug/l	ND	3
BENA-02	RILEY CREEK	18-Jul-06	Vanadium	Total	ug/l	ND	3
BENA-02	RILEY CREEK	18-Jul-06	Zinc	Dissolved	ug/l		2
BENA-02	RILEY CREEK	18-Jul-06	Zinc	Total	ug/l		2
BEN-01		20-Jul-06	Dissolved oxygen (DO)		mg/l		
BEN-01		20-Jul-06	pH				
BEN-01		20-Jul-06	Specific conductance		umho/cm		
BEN-01		20-Jul-06	Temperature, air		deg C		
BEN-01		20-Jul-06	Temperature, water		deg C		
BEN-01	Kickapoo Creek	27-Jul-06	Alkalinity, total		mg/l		0
BEN-01	KICKAPOO CREEK	27-Jul-06	Aluminum	Dissolved	ug/l	J	20
BEN-01	KICKAPOO CREEK	27-Jul-06	Aluminum	Total	ug/l		20
BEN-01	KICKAPOO CREEK	27-Jul-06	Arsenic	Total	ug/l	J	0.06
BEN-01	KICKAPOO CREEK	27-Jul-06	Barium	Dissolved	ug/l		1
BEN-01	KICKAPOO CREEK	27-Jul-06	Barium	Total	ug/l		1
BEN-01	KICKAPOO CREEK	27-Jul-06	Beryllium	Dissolved	ug/l	ND	1
BEN-01	KICKAPOO CREEK	27-Jul-06	Beryllium	Total	ug/l	ND	1
BEN-01	KICKAPOO CREEK	27-Jul-06	Boron	Dissolved	ug/l		4
BEN-01	KICKAPOO CREEK	27-Jul-06	Boron	Total	ug/l		4
BEN-01	KICKAPOO CREEK	27-Jul-06	Cadmium	Dissolved	ug/l	ND	1
BEN-01	KICKAPOO CREEK	27-Jul-06	Cadmium	Total	ug/l	ND	1
BEN-01	KICKAPOO CREEK	27-Jul-06	Calcium	Dissolved	ug/l		18
BEN-01	KICKAPOO CREEK	27-Jul-06	Calcium	Total	ug/l		18
BEN-01	Kickapoo Creek	27-Jul-06	Carbon, organic	Total	mg/l		0.5
BEN-01	Kickapoo Creek	27-Jul-06	Chloride	Total	mg/l		1
BEN-01	KICKAPOO CREEK	27-Jul-06	Chlorophyll a, corrected for pheophytin	Total	ug/l		1
BEN-01	KICKAPOO CREEK	27-Jul-06	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		1
BEN-01	KICKAPOO CREEK	27-Jul-06	Chlorophyll-b	Total	ug/l	ND	1
BEN-01	KICKAPOO CREEK	27-Jul-06	Chlorophyll-c	Total	ug/l	ND	1
BEN-01	KICKAPOO CREEK	27-Jul-06	Chromium	Dissolved	ug/l	ND	2
BEN-01	KICKAPOO CREEK	27-Jul-06	Chromium	Total	ug/l	ND	2
BEN-01	KICKAPOO CREEK	27-Jul-06	Cobalt	Dissolved	ug/l	ND	3
BEN-01	KICKAPOO CREEK	27-Jul-06	Cobalt	Total	ug/l	ND	3
BEN-01	KICKAPOO CREEK	27-Jul-06	Copper	Dissolved	ug/l		3
BEN-01	KICKAPOO CREEK	27-Jul-06	Copper	Total	ug/l	J	3
BEN-01	Kickapoo Creek	27-Jul-06	Cyanide	Total	mg/l	ND	0.003
BEN-01		27-Jul-06	Dissolved oxygen (DO)		mg/l		
BEN-01	Kickapoo Creek	27-Jul-06	Fluorides	Total	mg/l		0.05
BEN-01	KICKAPOO CREEK	27-Jul-06	Hardness, Ca + Mg	Total	ug/l	C	
BEN-01	KICKAPOO CREEK	27-Jul-06	Iron	Dissolved	ug/l	ND	33
BEN-01	KICKAPOO CREEK	27-Jul-06	Iron	Total	ug/l		33
BEN-01	KICKAPOO CREEK	27-Jul-06	Lead	Dissolved	ug/l	ND	5
BEN-01	KICKAPOO CREEK	27-Jul-06	Lead	Total	ug/l	ND	5
BEN-01	KICKAPOO CREEK	27-Jul-06	Magnesium	Dissolved	ug/l		9
BEN-01	KICKAPOO CREEK	27-Jul-06	Magnesium	Total	ug/l		9
BEN-01	KICKAPOO CREEK	27-Jul-06	Manganese	Dissolved	ug/l		1
BEN-01	KICKAPOO CREEK	27-Jul-06	Manganese	Total	ug/l		1
BEN-01	KICKAPOO CREEK	27-Jul-06	Nickel	Dissolved	ug/l	ND,z	5
BEN-01	KICKAPOO CREEK	27-Jul-06	Nickel	Total	ug/l	ND	5
BEN-01	Kickapoo Creek	27-Jul-06	Nitrogen, ammonia as N	Total	mg/l		0.04
BEN-01	Kickapoo Creek	27-Jul-06	Nitrogen, Kjeldahl	Total	mg/l		0.75
BEN-01	Kickapoo Creek	27-Jul-06	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	mg/l		0.1

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BEN-01		27-Jul-06	pH				
BEN-01	Kickapoo Creek	27-Jul-06	Phenols	Total	ug/l	ND	4
BEN-01	KICKAPOO CREEK	27-Jul-06	Pheophytin-a	Total	ug/l	ND	1
BEN-01	Kickapoo Creek	27-Jul-06	Phosphorus as P	Dissolved	mg/l		0.01
BEN-01	Kickapoo Creek	27-Jul-06	Phosphorus as P	Total	mg/l		0.05
BEN-01	KICKAPOO CREEK	27-Jul-06	Potassium	Dissolved	ug/l		2000
BEN-01	KICKAPOO CREEK	27-Jul-06	Potassium	Total	ug/l	z	2000
BEN-01	KICKAPOO CREEK	27-Jul-06	Silver	Dissolved	ug/l	ND	3
BEN-01	KICKAPOO CREEK	27-Jul-06	Silver	Total	ug/l	ND	3
BEN-01	KICKAPOO CREEK	27-Jul-06	Sodium	Dissolved	ug/l		370
BEN-01	KICKAPOO CREEK	27-Jul-06	Sodium	Total	ug/l		370
BEN-01	Kickapoo Creek	27-Jul-06	Solids, suspended, volatile		mg/l	ND	6
BEN-01	Kickapoo Creek	27-Jul-06	Solids, Total Suspended (TSS)		mg/l		5
BEN-01		27-Jul-06	Specific conductance		umho/cm		
BEN-01	KICKAPOO CREEK	27-Jul-06	Strontium	Dissolved	ug/l		1
BEN-01	KICKAPOO CREEK	27-Jul-06	Strontium	Total	ug/l		1
BEN-01	Kickapoo Creek	27-Jul-06	Sulfate	Total	mg/l		2
BEN-01		27-Jul-06	Temperature, air		deg C		
BEN-01	KICKAPOO CREEK	27-Jul-06	Temperature, sample		deg C		
BEN-01	KICKAPOO CREEK	27-Jul-06	Temperature, sample		deg C		
BEN-01		27-Jul-06	Temperature, water		deg C		
BEN-01		27-Jul-06	Turbidity		NTU		
BEN-01	KICKAPOO CREEK	27-Jul-06	Vanadium	Dissolved	ug/l	ND	3
BEN-01	KICKAPOO CREEK	27-Jul-06	Vanadium	Total	ug/l	ND	3
BEN-01	KICKAPOO CREEK	27-Jul-06	Zinc	Dissolved	ug/l		2
BEN-01	KICKAPOO CREEK	27-Jul-06	Zinc	Total	ug/l		2
BEN-01	Kickapoo Creek	13-Sep-06	Alkalinity, total		mg/l		0
BEN-01	KICKAPOO CREEK	13-Sep-06	Aluminum	Dissolved	ug/l	J	20
BEN-01	KICKAPOO CREEK	13-Sep-06	Aluminum	Total	ug/l		20
BEN-01	KICKAPOO CREEK	13-Sep-06	Arsenic	Total	ug/l		0.06
BEN-01	KICKAPOO CREEK	13-Sep-06	Barium	Dissolved	ug/l		1
BEN-01	KICKAPOO CREEK	13-Sep-06	Barium	Total	ug/l		1
BEN-01	KICKAPOO CREEK	13-Sep-06	Beryllium	Dissolved	ug/l	ND	1
BEN-01	KICKAPOO CREEK	13-Sep-06	Beryllium	Total	ug/l	ND	1
BEN-01	KICKAPOO CREEK	13-Sep-06	Boron	Dissolved	ug/l		4
BEN-01	KICKAPOO CREEK	13-Sep-06	Boron	Total	ug/l		4
BEN-01	KICKAPOO CREEK	13-Sep-06	Cadmium	Dissolved	ug/l	ND	1
BEN-01	KICKAPOO CREEK	13-Sep-06	Cadmium	Total	ug/l	ND	1
BEN-01	KICKAPOO CREEK	13-Sep-06	Calcium	Dissolved	ug/l		18
BEN-01	KICKAPOO CREEK	13-Sep-06	Calcium	Total	ug/l		18
BEN-01	Kickapoo Creek	13-Sep-06	Carbon, organic	Total	mg/l		0.5
BEN-01	Kickapoo Creek	13-Sep-06	Chloride	Total	mg/l		1
BEN-01	KICKAPOO CREEK	13-Sep-06	Chlorophyll a, corrected for pheophytin	Total	ug/l		1
BEN-01	KICKAPOO CREEK	13-Sep-06	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		1
BEN-01	KICKAPOO CREEK	13-Sep-06	Chlorophyll-b	Total	ug/l	ND	1
BEN-01	KICKAPOO CREEK	13-Sep-06	Chlorophyll-c	Total	ug/l	ND	1
BEN-01	KICKAPOO CREEK	13-Sep-06	Chromium	Dissolved	ug/l	ND	2
BEN-01	KICKAPOO CREEK	13-Sep-06	Chromium	Total	ug/l	ND	2
BEN-01	KICKAPOO CREEK	13-Sep-06	Cobalt	Dissolved	ug/l	ND	3
BEN-01	KICKAPOO CREEK	13-Sep-06	Cobalt	Total	ug/l	ND	3
BEN-01	KICKAPOO CREEK	13-Sep-06	Copper	Dissolved	ug/l	J	3
BEN-01	KICKAPOO CREEK	13-Sep-06	Copper	Total	ug/l	ND	3
BEN-01	Kickapoo Creek	13-Sep-06	Cyanide	Total	mg/l	ND	0.003
BEN-01		13-Sep-06	Dissolved oxygen (DO)		mg/l		
BEN-01	Kickapoo Creek	13-Sep-06	Fluorides	Total	mg/l		0.05
BEN-01	KICKAPOO CREEK	13-Sep-06	Hardness, Ca + Mg	Total	ug/l	C	
BEN-01	KICKAPOO CREEK	13-Sep-06	Iron	Dissolved	ug/l	ND,z	33
BEN-01	KICKAPOO CREEK	13-Sep-06	Iron	Total	ug/l		33
BEN-01	KICKAPOO CREEK	13-Sep-06	Lead	Dissolved	ug/l	ND	5
BEN-01	KICKAPOO CREEK	13-Sep-06	Lead	Total	ug/l	ND	5
BEN-01	KICKAPOO CREEK	13-Sep-06	Magnesium	Dissolved	ug/l		9
BEN-01	KICKAPOO CREEK	13-Sep-06	Magnesium	Total	ug/l		9
BEN-01	KICKAPOO CREEK	13-Sep-06	Manganese	Dissolved	ug/l		1
BEN-01	KICKAPOO CREEK	13-Sep-06	Manganese	Total	ug/l		1
BEN-01	KICKAPOO CREEK	13-Sep-06	Nickel	Dissolved	ug/l	ND	5
BEN-01	KICKAPOO CREEK	13-Sep-06	Nickel	Total	ug/l		5
BEN-01	Kickapoo Creek	13-Sep-06	Nitrogen, ammonia as N	Total	mg/l		0.04
BEN-01	Kickapoo Creek	13-Sep-06	Nitrogen, Kjeldahl	Total	mg/l		0.75
BEN-01	Kickapoo Creek	13-Sep-06	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	mg/l		0.2

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BEN-01		13-Sep-06	pH				
BEN-01	Kickapoo Creek	13-Sep-06	Phenols	Total	ug/l	ND	4
BEN-01	KICKAPOO CREEK	13-Sep-06	Pheophytin-a	Total	ug/l	ND	1
BEN-01	Kickapoo Creek	13-Sep-06	Phosphorus as P	Dissolved	mg/l		0.05
BEN-01	Kickapoo Creek	13-Sep-06	Phosphorus as P	Total	mg/l		0.05
BEN-01	KICKAPOO CREEK	13-Sep-06	Potassium	Dissolved	ug/l		2000
BEN-01	KICKAPOO CREEK	13-Sep-06	Potassium	Total	ug/l		2000
BEN-01	KICKAPOO CREEK	13-Sep-06	Silver	Dissolved	ug/l	ND	3
BEN-01	KICKAPOO CREEK	13-Sep-06	Silver	Total	ug/l	ND	3
BEN-01	KICKAPOO CREEK	13-Sep-06	Sodium	Dissolved	ug/l		370
BEN-01	KICKAPOO CREEK	13-Sep-06	Sodium	Total	ug/l		370
BEN-01	Kickapoo Creek	13-Sep-06	Solids, suspended, volatile		mg/l	ND	6
BEN-01	Kickapoo Creek	13-Sep-06	Solids, Total Suspended (TSS)		mg/l		5
BEN-01		13-Sep-06	Specific conductance		umho/cm		
BEN-01	KICKAPOO CREEK	13-Sep-06	Strontium	Dissolved	ug/l		1
BEN-01	KICKAPOO CREEK	13-Sep-06	Strontium	Total	ug/l		1
BEN-01	Kickapoo Creek	13-Sep-06	Sulfate	Total	mg/l		1
BEN-01		13-Sep-06	Temperature, air		deg C		
BEN-01	Kickapoo Creek	13-Sep-06	Temperature, sample		deg C		
BEN-01	Kickapoo Creek	13-Sep-06	Temperature, sample		deg C		
BEN-01	Kickapoo Creek	13-Sep-06	Temperature, sample		deg C		
BEN-01	Kickapoo Creek	13-Sep-06	Temperature, sample		deg C		
BEN-01	Kickapoo Creek	13-Sep-06	Temperature, sample		deg C		
BEN-01	KICKAPOO CREEK	13-Sep-06	Temperature, sample		deg C		
BEN-01	KICKAPOO CREEK	13-Sep-06	Temperature, sample		deg C		
BEN-01		13-Sep-06	Temperature, water		deg C		
BEN-01		13-Sep-06	Turbidity		NTU		
BEN-01	KICKAPOO CREEK	13-Sep-06	Vanadium	Dissolved	ug/l	ND	3
BEN-01	KICKAPOO CREEK	13-Sep-06	Vanadium	Total	ug/l	ND	3
BEN-01	KICKAPOO CREEK	13-Sep-06	Zinc	Dissolved	ug/l		2
BEN-01	KICKAPOO CREEK	13-Sep-06	Zinc	Total	ug/l		2
BENA-01	Riley Creek	13-Sep-06	Alkalinity, total		mg/l		0
BENA-01	RILEY CREEK	13-Sep-06	Aluminum	Dissolved	ug/l	J	20
BENA-01	RILEY CREEK	13-Sep-06	Aluminum	Total	ug/l		20
BENA-01	RILEY CREEK	13-Sep-06	Arsenic	Total	ug/l		0.06
BENA-01	RILEY CREEK	13-Sep-06	Barium	Dissolved	ug/l		1
BENA-01	RILEY CREEK	13-Sep-06	Barium	Total	ug/l		1
BENA-01	RILEY CREEK	13-Sep-06	Beryllium	Dissolved	ug/l	ND	1
BENA-01	RILEY CREEK	13-Sep-06	Beryllium	Total	ug/l	ND	1
BENA-01	RILEY CREEK	13-Sep-06	Boron	Dissolved	ug/l		4
BENA-01	RILEY CREEK	13-Sep-06	Boron	Total	ug/l		4
BENA-01	RILEY CREEK	13-Sep-06	Cadmium	Dissolved	ug/l	ND	1
BENA-01	RILEY CREEK	13-Sep-06	Cadmium	Total	ug/l	ND	1
BENA-01	RILEY CREEK	13-Sep-06	Calcium	Dissolved	ug/l		18
BENA-01	RILEY CREEK	13-Sep-06	Calcium	Total	ug/l		18
BENA-01	Riley Creek	13-Sep-06	Carbon, organic	Total	mg/l		0.5
BENA-01	Riley Creek	13-Sep-06	Chloride	Total	mg/l		1
BENA-01	RILEY CREEK	13-Sep-06	Chlorophyll a, corrected for pheophytin	Total	ug/l		1
BENA-01	RILEY CREEK	13-Sep-06	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		1
BENA-01	RILEY CREEK	13-Sep-06	Chlorophyll-b	Total	ug/l	ND	1
BENA-01	RILEY CREEK	13-Sep-06	Chlorophyll-c	Total	ug/l	ND	1
BENA-01	RILEY CREEK	13-Sep-06	Chromium	Dissolved	ug/l	ND	2
BENA-01	RILEY CREEK	13-Sep-06	Chromium	Total	ug/l	ND	2
BENA-01	RILEY CREEK	13-Sep-06	Cobalt	Dissolved	ug/l	ND	3
BENA-01	RILEY CREEK	13-Sep-06	Cobalt	Total	ug/l	ND	3
BENA-01	RILEY CREEK	13-Sep-06	Copper	Dissolved	ug/l	ND	3
BENA-01	RILEY CREEK	13-Sep-06	Copper	Total	ug/l	ND	3
BENA-01	Riley Creek	13-Sep-06	Cyanide	Total	mg/l	ND	0.003
BENA-01		13-Sep-06	Dissolved oxygen (DO)		mg/l		
BENA-01	Riley Creek	13-Sep-06	Fluorides	Total	mg/l		0.05
BENA-01	RILEY CREEK	13-Sep-06	Hardness, Ca + Mg	Total	ug/l	C	
BENA-01	RILEY CREEK	13-Sep-06	Iron	Dissolved	ug/l	ND,z	33
BENA-01	RILEY CREEK	13-Sep-06	Iron	Total	ug/l		33
BENA-01	RILEY CREEK	13-Sep-06	Lead	Dissolved	ug/l	ND	5
BENA-01	RILEY CREEK	13-Sep-06	Lead	Total	ug/l	ND	5
BENA-01	RILEY CREEK	13-Sep-06	Magnesium	Dissolved	ug/l		9
BENA-01	RILEY CREEK	13-Sep-06	Magnesium	Total	ug/l		9
BENA-01	RILEY CREEK	13-Sep-06	Manganese	Dissolved	ug/l		1
BENA-01	RILEY CREEK	13-Sep-06	Manganese	Total	ug/l		1

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-01	RILEY CREEK	13-Sep-06	Nickel	Dissolved	ug/l	ND	5
BENA-01	RILEY CREEK	13-Sep-06	Nickel	Total	ug/l	ND	5
BENA-01	Riley Creek	13-Sep-06	Nitrogen, ammonia as N	Total	mg/l		0.04
BENA-01	Riley Creek	13-Sep-06	Nitrogen, Kjeldahl	Total	mg/l		0.75
BENA-01	Riley Creek	13-Sep-06	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	mg/l		0.1
BENA-01		13-Sep-06	pH				
BENA-01	Riley Creek	13-Sep-06	Phenols	Total	ug/l	ND	4
BENA-01	RILEY CREEK	13-Sep-06	Pheophytin-a	Total	ug/l		1
BENA-01	Riley Creek	13-Sep-06	Phosphorus as P	Dissolved	mg/l		0.05
BENA-01	Riley Creek	13-Sep-06	Phosphorus as P	Total	mg/l		0.05
BENA-01	RILEY CREEK	13-Sep-06	Potassium	Dissolved	ug/l		2000
BENA-01	RILEY CREEK	13-Sep-06	Potassium	Total	ug/l		2000
BENA-01	RILEY CREEK	13-Sep-06	Silver	Dissolved	ug/l	ND	3
BENA-01	RILEY CREEK	13-Sep-06	Silver	Total	ug/l	ND	3
BENA-01	RILEY CREEK	13-Sep-06	Sodium	Dissolved	ug/l		370
BENA-01	RILEY CREEK	13-Sep-06	Sodium	Total	ug/l		370
BENA-01	Riley Creek	13-Sep-06	Solids, suspended, volatile		mg/l	ND	6
BENA-01	Riley Creek	13-Sep-06	Solids, Total Suspended (TSS)		mg/l		5
BENA-01		13-Sep-06	Specific conductance		umho/cm		
BENA-01	RILEY CREEK	13-Sep-06	Strontium	Dissolved	ug/l		1
BENA-01	RILEY CREEK	13-Sep-06	Strontium	Total	ug/l		1
BENA-01	Riley Creek	13-Sep-06	Sulfate	Total	mg/l		1
BENA-01		13-Sep-06	Temperature, air		deg C		
BENA-01	Riley Creek	13-Sep-06	Temperature, sample		deg C		
BENA-01	Riley Creek	13-Sep-06	Temperature, sample		deg C		
BENA-01	Riley Creek	13-Sep-06	Temperature, sample		deg C		
BENA-01	Riley Creek	13-Sep-06	Temperature, sample		deg C		
BENA-01	Riley Creek	13-Sep-06	Temperature, sample		deg C		
BENA-01	RILEY CREEK	13-Sep-06	Temperature, sample		deg C		
BENA-01	RILEY CREEK	13-Sep-06	Temperature, sample		deg C		
BENA-01		13-Sep-06	Temperature, water		deg C		
BENA-01		13-Sep-06	Turbidity		NTU		
BENA-01	RILEY CREEK	13-Sep-06	Vanadium	Dissolved	ug/l	ND	3
BENA-01	RILEY CREEK	13-Sep-06	Vanadium	Total	ug/l	ND	3
BENA-01	RILEY CREEK	13-Sep-06	Zinc	Dissolved	ug/l		2
BENA-01	RILEY CREEK	13-Sep-06	Zinc	Total	ug/l		2
BENA-02	Riley Creek	13-Sep-06	Alkalinity, total		mg/l		0
BENA-02	RILEY CREEK	13-Sep-06	Aluminum	Dissolved	ug/l	J	20
BENA-02	RILEY CREEK	13-Sep-06	Aluminum	Total	ug/l		20
BENA-02	RILEY CREEK	13-Sep-06	Arsenic	Total	ug/l		0.06
BENA-02	RILEY CREEK	13-Sep-06	Barium	Dissolved	ug/l		1
BENA-02	RILEY CREEK	13-Sep-06	Barium	Total	ug/l		1
BENA-02	RILEY CREEK	13-Sep-06	Beryllium	Dissolved	ug/l	ND	1
BENA-02	RILEY CREEK	13-Sep-06	Beryllium	Total	ug/l	ND	1
BENA-02	RILEY CREEK	13-Sep-06	Boron	Dissolved	ug/l		4
BENA-02	RILEY CREEK	13-Sep-06	Boron	Total	ug/l		4
BENA-02	RILEY CREEK	13-Sep-06	Cadmium	Dissolved	ug/l	ND	1
BENA-02	RILEY CREEK	13-Sep-06	Cadmium	Total	ug/l	ND	1
BENA-02	RILEY CREEK	13-Sep-06	Calcium	Dissolved	ug/l		18
BENA-02	RILEY CREEK	13-Sep-06	Calcium	Total	ug/l		18
BENA-02	Riley Creek	13-Sep-06	Carbon, organic	Total	mg/l		0.5
BENA-02	Riley Creek	13-Sep-06	Chloride	Total	mg/l		1
BENA-02	RILEY CREEK	13-Sep-06	Chlorophyll a, corrected for pheophytin	Total	ug/l		1
BENA-02	RILEY CREEK	13-Sep-06	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		1
BENA-02	RILEY CREEK	13-Sep-06	Chlorophyll-b	Total	ug/l	ND	1
BENA-02	RILEY CREEK	13-Sep-06	Chlorophyll-c	Total	ug/l	ND	1
BENA-02	RILEY CREEK	13-Sep-06	Chromium	Dissolved	ug/l	ND	2
BENA-02	RILEY CREEK	13-Sep-06	Chromium	Total	ug/l	ND	2
BENA-02	RILEY CREEK	13-Sep-06	Cobalt	Dissolved	ug/l	ND	3
BENA-02	RILEY CREEK	13-Sep-06	Cobalt	Total	ug/l	ND	3
BENA-02	RILEY CREEK	13-Sep-06	Copper	Dissolved	ug/l	ND	3
BENA-02	RILEY CREEK	13-Sep-06	Copper	Total	ug/l	ND	3
BENA-02	Riley Creek	13-Sep-06	Cyanide	Total	mg/l	ND	0.003
BENA-02		13-Sep-06	Dissolved oxygen (DO)		mg/l		
BENA-02	Riley Creek	13-Sep-06	Fluorides	Total	mg/l		0.05
BENA-02	RILEY CREEK	13-Sep-06	Hardness, Ca + Mg	Total	ug/l	C	
BENA-02	RILEY CREEK	13-Sep-06	Iron	Dissolved	ug/l	ND,z	33
BENA-02	RILEY CREEK	13-Sep-06	Iron	Total	ug/l		33
BENA-02	RILEY CREEK	13-Sep-06	Lead	Dissolved	ug/l	ND	5

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-02	RILEY CREEK	13-Sep-06	Lead	Total	ug/l	ND	5
BENA-02	RILEY CREEK	13-Sep-06	Magnesium	Dissolved	ug/l		9
BENA-02	RILEY CREEK	13-Sep-06	Magnesium	Total	ug/l		9
BENA-02	RILEY CREEK	13-Sep-06	Manganese	Dissolved	ug/l		1
BENA-02	RILEY CREEK	13-Sep-06	Manganese	Total	ug/l		1
BENA-02	RILEY CREEK	13-Sep-06	Nickel	Dissolved	ug/l	ND	5
BENA-02	RILEY CREEK	13-Sep-06	Nickel	Total	ug/l	ND	5
BENA-02	Riley Creek	13-Sep-06	Nitrogen, ammonia as N	Total	mg/l		0.04
BENA-02	Riley Creek	13-Sep-06	Nitrogen, Kjeldahl	Total	mg/l		0.75
BENA-02	Riley Creek	13-Sep-06	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	mg/l		0.01
BENA-02		13-Sep-06	pH				
BENA-02	Riley Creek	13-Sep-06	Phenols	Total	ug/l	ND	4
BENA-02	RILEY CREEK	13-Sep-06	Pheophytin-a	Total	ug/l		1
BENA-02	Riley Creek	13-Sep-06	Phosphorus as P	Dissolved	mg/l		0.01
BENA-02	Riley Creek	13-Sep-06	Phosphorus as P	Total	mg/l		0.01
BENA-02	RILEY CREEK	13-Sep-06	Potassium	Dissolved	ug/l		2000
BENA-02	RILEY CREEK	13-Sep-06	Potassium	Total	ug/l		2000
BENA-02	RILEY CREEK	13-Sep-06	Silver	Dissolved	ug/l	ND	3
BENA-02	RILEY CREEK	13-Sep-06	Silver	Total	ug/l	ND	3
BENA-02	RILEY CREEK	13-Sep-06	Sodium	Dissolved	ug/l		370
BENA-02	RILEY CREEK	13-Sep-06	Sodium	Total	ug/l		370
BENA-02	Riley Creek	13-Sep-06	Solids, suspended, volatile		mg/l	ND	6
BENA-02	Riley Creek	13-Sep-06	Solids, Total Suspended (TSS)		mg/l		5
BENA-02		13-Sep-06	Specific conductance		umho/cm		
BENA-02	RILEY CREEK	13-Sep-06	Strontium	Dissolved	ug/l		1
BENA-02	RILEY CREEK	13-Sep-06	Strontium	Total	ug/l		1
BENA-02	Riley Creek	13-Sep-06	Sulfate	Total	mg/l		1
BENA-02		13-Sep-06	Temperature, air		deg C		
BENA-02	Riley Creek	13-Sep-06	Temperature, sample		deg C		
BENA-02	Riley Creek	13-Sep-06	Temperature, sample		deg C		
BENA-02	Riley Creek	13-Sep-06	Temperature, sample		deg C		
BENA-02	Riley Creek	13-Sep-06	Temperature, sample		deg C		
BENA-02	Riley Creek	13-Sep-06	Temperature, sample		deg C		
BENA-02	RILEY CREEK	13-Sep-06	Temperature, sample		deg C		
BENA-02	RILEY CREEK	13-Sep-06	Temperature, sample		deg C		
BENA-02		13-Sep-06	Temperature, water		deg C		
BENA-02		13-Sep-06	Turbidity		NTU		
BENA-02	RILEY CREEK	13-Sep-06	Vanadium	Dissolved	ug/l	ND	3
BENA-02	RILEY CREEK	13-Sep-06	Vanadium	Total	ug/l	J	3
BENA-02	RILEY CREEK	13-Sep-06	Zinc	Dissolved	ug/l	J	2
BENA-02	RILEY CREEK	13-Sep-06	Zinc	Total	ug/l	J	2
BENA-03	Riley Creek	13-Sep-06	Alkalinity, total		mg/l		0
BENA-03	RILEY CREEK	13-Sep-06	Aluminum	Dissolved	ug/l	J	20
BENA-03	RILEY CREEK	13-Sep-06	Aluminum	Total	ug/l		20
BENA-03	RILEY CREEK	13-Sep-06	Arsenic	Total	ug/l		0.06
BENA-03	RILEY CREEK	13-Sep-06	Barium	Dissolved	ug/l		1
BENA-03	RILEY CREEK	13-Sep-06	Barium	Total	ug/l		1
BENA-03	RILEY CREEK	13-Sep-06	Beryllium	Dissolved	ug/l	ND	1
BENA-03	RILEY CREEK	13-Sep-06	Beryllium	Total	ug/l	ND	1
BENA-03	RILEY CREEK	13-Sep-06	Boron	Dissolved	ug/l		4
BENA-03	RILEY CREEK	13-Sep-06	Boron	Total	ug/l		4
BENA-03	RILEY CREEK	13-Sep-06	Cadmium	Dissolved	ug/l	ND	1
BENA-03	RILEY CREEK	13-Sep-06	Cadmium	Total	ug/l	ND	1
BENA-03	RILEY CREEK	13-Sep-06	Calcium	Dissolved	ug/l		18
BENA-03	RILEY CREEK	13-Sep-06	Calcium	Total	ug/l		18
BENA-03	Riley Creek	13-Sep-06	Carbon, organic	Total	mg/l		0.5
BENA-03	Riley Creek	13-Sep-06	Chloride	Total	mg/l		1
BENA-03	RILEY CREEK	13-Sep-06	Chlorophyll a, corrected for pheophytin	Total	ug/l		1
BENA-03	RILEY CREEK	13-Sep-06	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		1
BENA-03	RILEY CREEK	13-Sep-06	Chlorophyll-b	Total	ug/l	ND	1
BENA-03	RILEY CREEK	13-Sep-06	Chlorophyll-c	Total	ug/l	ND	1
BENA-03	RILEY CREEK	13-Sep-06	Chromium	Dissolved	ug/l	ND	2
BENA-03	RILEY CREEK	13-Sep-06	Chromium	Total	ug/l	ND	2
BENA-03	RILEY CREEK	13-Sep-06	Cobalt	Dissolved	ug/l	ND	3
BENA-03	RILEY CREEK	13-Sep-06	Cobalt	Total	ug/l	ND	3
BENA-03	RILEY CREEK	13-Sep-06	Copper	Dissolved	ug/l	ND	3
BENA-03	RILEY CREEK	13-Sep-06	Copper	Total	ug/l	ND	3
BENA-03	Riley Creek	13-Sep-06	Cyanide	Total	mg/l	ND	0.003
BENA-03		13-Sep-06	Dissolved oxygen (DO)		mg/l		

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-03	Riley Creek	13-Sep-06	Fluorides	Total	mg/l		0.05
BENA-03	RILEY CREEK	13-Sep-06	Hardness, Ca + Mg	Total	ug/l	C	
BENA-03	RILEY CREEK	13-Sep-06	Iron	Dissolved	ug/l	ND,z	33
BENA-03	RILEY CREEK	13-Sep-06	Iron	Total	ug/l		33
BENA-03	RILEY CREEK	13-Sep-06	Lead	Dissolved	ug/l	ND	5
BENA-03	RILEY CREEK	13-Sep-06	Lead	Total	ug/l	ND	5
BENA-03	RILEY CREEK	13-Sep-06	Magnesium	Dissolved	ug/l		9
BENA-03	RILEY CREEK	13-Sep-06	Magnesium	Total	ug/l		9
BENA-03	RILEY CREEK	13-Sep-06	Manganese	Dissolved	ug/l		1
BENA-03	RILEY CREEK	13-Sep-06	Manganese	Total	ug/l		1
BENA-03	RILEY CREEK	13-Sep-06	Nickel	Dissolved	ug/l	ND	5
BENA-03	RILEY CREEK	13-Sep-06	Nickel	Total	ug/l	ND	5
BENA-03	Riley Creek	13-Sep-06	Nitrogen, ammonia as N	Total	mg/l		0.04
BENA-03	Riley Creek	13-Sep-06	Nitrogen, Kjeldahl	Total	mg/l	ND	0.75
BENA-03	Riley Creek	13-Sep-06	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	mg/l		0.01
BENA-03		13-Sep-06	pH				
BENA-03	Riley Creek	13-Sep-06	Phenols	Total	ug/l	ND	4
BENA-03	RILEY CREEK	13-Sep-06	Pheophytin-a	Total	ug/l	ND	1
BENA-03	Riley Creek	13-Sep-06	Phosphorus as P	Dissolved	mg/l		0.01
BENA-03	Riley Creek	13-Sep-06	Phosphorus as P	Total	mg/l		0.01
BENA-03	RILEY CREEK	13-Sep-06	Potassium	Dissolved	ug/l		2000
BENA-03	RILEY CREEK	13-Sep-06	Potassium	Total	ug/l		2000
BENA-03	RILEY CREEK	13-Sep-06	Silver	Dissolved	ug/l	ND	3
BENA-03	RILEY CREEK	13-Sep-06	Silver	Total	ug/l	ND	3
BENA-03	RILEY CREEK	13-Sep-06	Sodium	Dissolved	ug/l		370
BENA-03	RILEY CREEK	13-Sep-06	Sodium	Total	ug/l		370
BENA-03	Riley Creek	13-Sep-06	Solids, suspended, volatile		mg/l		6
BENA-03	Riley Creek	13-Sep-06	Solids, Total Suspended (TSS)		mg/l		5
BENA-03		13-Sep-06	Specific conductance		umho/cm		
BENA-03	RILEY CREEK	13-Sep-06	Strontium	Dissolved	ug/l		1
BENA-03	RILEY CREEK	13-Sep-06	Strontium	Total	ug/l		1
BENA-03	Riley Creek	13-Sep-06	Sulfate	Total	mg/l		1
BENA-03		13-Sep-06	Temperature, air		deg C		
BENA-03	Riley Creek	13-Sep-06	Temperature, sample		deg C		
BENA-03	Riley Creek	13-Sep-06	Temperature, sample		deg C		
BENA-03	Riley Creek	13-Sep-06	Temperature, sample		deg C		
BENA-03	Riley Creek	13-Sep-06	Temperature, sample		deg C		
BENA-03	Riley Creek	13-Sep-06	Temperature, sample		deg C		
BENA-03	RILEY CREEK	13-Sep-06	Temperature, sample		deg C		
BENA-03	RILEY CREEK	13-Sep-06	Temperature, sample		deg C		
BENA-03		13-Sep-06	Temperature, water		deg C		
BENA-03		13-Sep-06	Turbidity		NTU		
BENA-03	RILEY CREEK	13-Sep-06	Vanadium	Dissolved	ug/l	ND	3
BENA-03	RILEY CREEK	13-Sep-06	Vanadium	Total	ug/l	ND	3
BENA-03	RILEY CREEK	13-Sep-06	Zinc	Dissolved	ug/l	J	2
BENA-03	RILEY CREEK	13-Sep-06	Zinc	Total	ug/l	J	2
BENC-01	Riley-Cassel Creek	13-Sep-06	Alkalinity, total		mg/l		0
BENC-01	RILEY	13-Sep-06	Aluminum	Dissolved	ug/l	J	20
BENC-01	RILEY	13-Sep-06	Aluminum	Total	ug/l		20
BENC-01	RILEY	13-Sep-06	Arsenic	Total	ug/l		0.06
BENC-01	RILEY	13-Sep-06	Barium	Dissolved	ug/l		1
BENC-01	RILEY	13-Sep-06	Barium	Total	ug/l		1
BENC-01	RILEY	13-Sep-06	Beryllium	Dissolved	ug/l	ND	1
BENC-01	RILEY	13-Sep-06	Beryllium	Total	ug/l	ND	1
BENC-01	RILEY	13-Sep-06	Boron	Dissolved	ug/l		4
BENC-01	RILEY	13-Sep-06	Boron	Total	ug/l		4
BENC-01	RILEY	13-Sep-06	Cadmium	Dissolved	ug/l	ND	1
BENC-01	RILEY	13-Sep-06	Cadmium	Total	ug/l	ND	1
BENC-01	RILEY	13-Sep-06	Calcium	Dissolved	ug/l		18
BENC-01	RILEY	13-Sep-06	Calcium	Total	ug/l		18
BENC-01	Riley-Cassel Creek	13-Sep-06	Carbon, organic	Total	mg/l		0.5
BENC-01	Riley-Cassel Creek	13-Sep-06	Chloride	Total	mg/l		1
BENC-01	RILEY	13-Sep-06	Chlorophyll a, corrected for pheophytin	Total	ug/l		1
BENC-01	RILEY	13-Sep-06	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		1
BENC-01	RILEY	13-Sep-06	Chlorophyll-b	Total	ug/l	ND	1
BENC-01	RILEY	13-Sep-06	Chlorophyll-c	Total	ug/l	ND	1
BENC-01	RILEY	13-Sep-06	Chromium	Dissolved	ug/l	ND	2
BENC-01	RILEY	13-Sep-06	Chromium	Total	ug/l	ND	2
BENC-01	RILEY	13-Sep-06	Cobalt	Dissolved	ug/l	ND	3

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENC-01	RILEY	13-Sep-06	Cobalt	Total	ug/l	ND	3
BENC-01	RILEY	13-Sep-06	Copper	Dissolved	ug/l	ND	3
BENC-01	RILEY	13-Sep-06	Copper	Total	ug/l	ND	3
BENC-01	Riley-Cassel Creek	13-Sep-06	Cyanide	Total	mg/l	ND	0.003
BENC-01		13-Sep-06	Dissolved oxygen (DO)		mg/l		
BENC-01	Riley-Cassel Creek	13-Sep-06	Fluorides	Total	mg/l		0.05
BENC-01	RILEY	13-Sep-06	Hardness, Ca + Mg	Total	ug/l	C	
BENC-01	RILEY	13-Sep-06	Iron	Dissolved	ug/l	ND,z	33
BENC-01	RILEY	13-Sep-06	Iron	Total	ug/l		33
BENC-01	RILEY	13-Sep-06	Lead	Dissolved	ug/l	ND	5
BENC-01	RILEY	13-Sep-06	Lead	Total	ug/l	ND	5
BENC-01	RILEY	13-Sep-06	Magnesium	Dissolved	ug/l		9
BENC-01	RILEY	13-Sep-06	Magnesium	Total	ug/l		9
BENC-01	RILEY	13-Sep-06	Manganese	Dissolved	ug/l		1
BENC-01	RILEY	13-Sep-06	Manganese	Total	ug/l		1
BENC-01	RILEY	13-Sep-06	Nickel	Dissolved	ug/l	ND	5
BENC-01	RILEY	13-Sep-06	Nickel	Total	ug/l	ND	5
BENC-01	Riley-Cassel Creek	13-Sep-06	Nitrogen, ammonia as N	Total	mg/l		0.04
BENC-01	Riley-Cassel Creek	13-Sep-06	Nitrogen, Kjeldahl	Total	mg/l		0.75
BENC-01	Riley-Cassel Creek	13-Sep-06	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	mg/l		0.2
BENC-01		13-Sep-06	pH				
BENC-01	Riley-Cassel Creek	13-Sep-06	Phenols	Total	ug/l	ND	4
BENC-01	RILEY	13-Sep-06	Pheophytin-a	Total	ug/l	ND	1
BENC-01	Riley-Cassel Creek	13-Sep-06	Phosphorus as P	Dissolved	mg/l		0.05
BENC-01	Riley-Cassel Creek	13-Sep-06	Phosphorus as P	Total	mg/l		0.05
BENC-01	RILEY	13-Sep-06	Potassium	Dissolved	ug/l		2000
BENC-01	RILEY	13-Sep-06	Potassium	Total	ug/l		2000
BENC-01	RILEY	13-Sep-06	Selenium	Total	ug/l	J	0.18
BENC-01	RILEY	13-Sep-06	Silver	Dissolved	ug/l	ND	3
BENC-01	RILEY	13-Sep-06	Silver	Total	ug/l	ND	3
BENC-01	RILEY	13-Sep-06	Sodium	Dissolved	ug/l		370
BENC-01	RILEY	13-Sep-06	Sodium	Total	ug/l		370
BENC-01	Riley-Cassel Creek	13-Sep-06	Solids, suspended, volatile		mg/l		6
BENC-01	Riley-Cassel Creek	13-Sep-06	Solids, Total Suspended (TSS)		mg/l		5
BENC-01		13-Sep-06	Specific conductance		umho/cm		
BENC-01	RILEY	13-Sep-06	Strontium	Dissolved	ug/l		1
BENC-01	RILEY	13-Sep-06	Strontium	Total	ug/l		1
BENC-01	Riley-Cassel Creek	13-Sep-06	Sulfate	Total	mg/l		1
BENC-01		13-Sep-06	Temperature, air		deg C		
BENC-01	Riley-Cassel Creek	13-Sep-06	Temperature, sample		deg C		
BENC-01	Riley-Cassel Creek	13-Sep-06	Temperature, sample		deg C		
BENC-01	Riley-Cassel Creek	13-Sep-06	Temperature, sample		deg C		
BENC-01	Riley-Cassel Creek	13-Sep-06	Temperature, sample		deg C		
BENC-01	Riley-Cassel Creek	13-Sep-06	Temperature, sample		deg C		
BENC-01	RILEY	13-Sep-06	Temperature, sample		deg C		
BENC-01	RILEY	13-Sep-06	Temperature, sample		deg C		
BENC-01		13-Sep-06	Temperature, water		deg C		
BENC-01		13-Sep-06	Turbidity		NTU		
BENC-01	RILEY	13-Sep-06	Vanadium	Dissolved	ug/l	ND	3
BENC-01	RILEY	13-Sep-06	Vanadium	Total	ug/l	ND	3
BENC-01	RILEY	13-Sep-06	Zinc	Dissolved	ug/l		2
BENC-01	RILEY	13-Sep-06	Zinc	Total	ug/l		2
BEN-01	KICKAPOO CREEK	07-Jun-11	Alkalinity, total		mg/l		1.46
BEN-01	KICKAPOO CREEK	07-Jun-11	Aluminum	Dissolved	ug/l	J	2.78
BEN-01	KICKAPOO CREEK	07-Jun-11	Aluminum	Total	ug/l		2.78
BEN-01	KICKAPOO CREEK	07-Jun-11	Ammonia-nitrogen	Total	mg/l	ND	0.02
BEN-01	KICKAPOO CREEK	07-Jun-11	Arsenic	Dissolved	ug/l	V	0.94
BEN-01	KICKAPOO CREEK	07-Jun-11	Arsenic	Total	ug/l	J	0.94
BEN-01	KICKAPOO CREEK	07-Jun-11	Barium	Dissolved	ug/l		0.13
BEN-01	KICKAPOO CREEK	07-Jun-11	Barium	Total	ug/l		0.13
BEN-01	KICKAPOO CREEK	07-Jun-11	Beryllium	Dissolved	ug/l	ND	0.08
BEN-01	KICKAPOO CREEK	07-Jun-11	Beryllium	Total	ug/l	ND	0.08
BEN-01	KICKAPOO CREEK	07-Jun-11	Boron	Dissolved	ug/l		2.73
BEN-01	KICKAPOO CREEK	07-Jun-11	Boron	Total	ug/l		2.73
BEN-01	KICKAPOO CREEK	07-Jun-11	Cadmium	Dissolved	ug/l	ND	0.18
BEN-01	KICKAPOO CREEK	07-Jun-11	Cadmium	Total	ug/l	ND	0.18
BEN-01	KICKAPOO CREEK	07-Jun-11	Calcium	Dissolved	ug/l		4.76
BEN-01	KICKAPOO CREEK	07-Jun-11	Calcium	Total	ug/l		4.76
BEN-01	KICKAPOO CREEK	07-Jun-11	Chloride	Total	mg/l		0.29

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BEN-01	KICKAPOO CREEK	07-Jun-11	Chlorophyll a, corrected for pheophytin	Total	ug/l		
BEN-01	KICKAPOO CREEK	07-Jun-11	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		
BEN-01	KICKAPOO CREEK	07-Jun-11	Chlorophyll b	Total	ug/l	J	
BEN-01	KICKAPOO CREEK	07-Jun-11	Chlorophyll c	Total	ug/l	J	
BEN-01	KICKAPOO CREEK	07-Jun-11	Chromium	Dissolved	ug/l	J	0.24
BEN-01	KICKAPOO CREEK	07-Jun-11	Chromium	Total	ug/l	J	0.24
BEN-01	KICKAPOO CREEK	07-Jun-11	Cobalt	Dissolved	ug/l	J	0.22
BEN-01	KICKAPOO CREEK	07-Jun-11	Cobalt	Total	ug/l	J	0.22
BEN-01	KICKAPOO CREEK	07-Jun-11	Copper	Dissolved	ug/l		0.79
BEN-01	KICKAPOO CREEK	07-Jun-11	Copper	Total	ug/l		0.79
BEN-01	KICKAPOO CREEK	07-Jun-11	Cyanide	Total	mg/l	J	0.002
BEN-01		07-Jun-11	Dissolved oxygen (DO)		mg/l		
BEN-01		07-Jun-11	Dissolved oxygen saturation		%		
BEN-01	KICKAPOO CREEK	07-Jun-11	Fluoride	Total	mg/l		0.02
BEN-01	KICKAPOO CREEK	07-Jun-11	Hardness, Ca, Mg		ug/l	C	
BEN-01	KICKAPOO CREEK	07-Jun-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BEN-01	KICKAPOO CREEK	07-Jun-11	Iron	Dissolved	ug/l	J,J6	3.06
BEN-01	KICKAPOO CREEK	07-Jun-11	Iron	Total	ug/l	J6	3.06
BEN-01	KICKAPOO CREEK	07-Jun-11	Kjeldahl nitrogen	Total	mg/l	J	0.098
BEN-01	KICKAPOO CREEK	07-Jun-11	Lead	Dissolved	ug/l		0.67
BEN-01	KICKAPOO CREEK	07-Jun-11	Lead	Total	ug/l		0.67
BEN-01	KICKAPOO CREEK	07-Jun-11	Magnesium	Dissolved	ug/l		4.69
BEN-01	KICKAPOO CREEK	07-Jun-11	Magnesium	Total	ug/l		4.69
BEN-01	KICKAPOO CREEK	07-Jun-11	Manganese	Dissolved	ug/l		0.05
BEN-01	KICKAPOO CREEK	07-Jun-11	Manganese	Total	ug/l		0.05
BEN-01	KICKAPOO CREEK	07-Jun-11	Nickel	Dissolved	ug/l	J	0.41
BEN-01	KICKAPOO CREEK	07-Jun-11	Nickel	Total	ug/l	J	0.41
BEN-01	KICKAPOO CREEK	07-Jun-11	Organic carbon	Total	mg/l		0.02
BEN-01		07-Jun-11	pH		none		
BEN-01	KICKAPOO CREEK	07-Jun-11	Phenols	Total	ug/l	J	1.53
BEN-01	KICKAPOO CREEK	07-Jun-11	Pheophytin a	Total	ug/l	J	
BEN-01	KICKAPOO CREEK	07-Jun-11	Phosphorus	Dissolved	mg/l		0.002
BEN-01	KICKAPOO CREEK	07-Jun-11	Phosphorus	Total	mg/l		0.002
BEN-01	KICKAPOO CREEK	07-Jun-11	Potassium	Dissolved	ug/l		8.13
BEN-01	KICKAPOO CREEK	07-Jun-11	Potassium	Total	ug/l		8.13
BEN-01	KICKAPOO CREEK	07-Jun-11	Silver	Dissolved	ug/l	J	0.38
BEN-01	KICKAPOO CREEK	07-Jun-11	Silver	Total	ug/l	J	0.38
BEN-01	KICKAPOO CREEK	07-Jun-11	Sodium	Dissolved	ug/l		231
BEN-01	KICKAPOO CREEK	07-Jun-11	Sodium	Total	ug/l		231
BEN-01		07-Jun-11	Specific conductance		umho/cm		
BEN-01	KICKAPOO CREEK	07-Jun-11	Strontium	Dissolved	ug/l		0.38
BEN-01	KICKAPOO CREEK	07-Jun-11	Strontium	Total	ug/l		0.38
BEN-01	KICKAPOO CREEK	07-Jun-11	Sulfate	Total	mg/l		1.63
BEN-01		07-Jun-11	Temperature, air		deg C		
BEN-01	KICKAPOO CREEK	07-Jun-11	Temperature, sample		deg C		
BEN-01		07-Jun-11	Temperature, water		deg C		
BEN-01	KICKAPOO CREEK	07-Jun-11	Total suspended solids		mg/l		
BEN-01		07-Jun-11	Turbidity		NTU		
BEN-01	KICKAPOO CREEK	07-Jun-11	Vanadium	Dissolved	ug/l	J	0.19
BEN-01	KICKAPOO CREEK	07-Jun-11	Vanadium	Total	ug/l	J	0.19
BEN-01	KICKAPOO CREEK	07-Jun-11	Volatile suspended solids		mg/l	Q	
BEN-01	KICKAPOO CREEK	07-Jun-11	Zinc	Dissolved	ug/l	J	0.35
BEN-01	KICKAPOO CREEK	07-Jun-11	Zinc	Total	ug/l		0.35
BENA-01	RILEY CREEK	07-Jun-11	Alkalinity, total		mg/l		1.46
BENA-01	RILEY CREEK	07-Jun-11	Aluminum	Dissolved	ug/l		2.78
BENA-01	RILEY CREEK	07-Jun-11	Aluminum	Total	ug/l		2.78
BENA-01	RILEY CREEK	07-Jun-11	Ammonia-nitrogen	Total	mg/l	ND	0.02
BENA-01	RILEY CREEK	07-Jun-11	Arsenic	Dissolved	ug/l	V	0.94
BENA-01	RILEY CREEK	07-Jun-11	Arsenic	Total	ug/l	V	0.94
BENA-01	RILEY CREEK	07-Jun-11	Barium	Dissolved	ug/l		0.13
BENA-01	RILEY CREEK	07-Jun-11	Barium	Total	ug/l		0.13
BENA-01	RILEY CREEK	07-Jun-11	Beryllium	Dissolved	ug/l	ND	0.08
BENA-01	RILEY CREEK	07-Jun-11	Beryllium	Total	ug/l	ND	0.08
BENA-01	RILEY CREEK	07-Jun-11	Boron	Dissolved	ug/l		2.73
BENA-01	RILEY CREEK	07-Jun-11	Boron	Total	ug/l		2.73
BENA-01	RILEY CREEK	07-Jun-11	Cadmium	Dissolved	ug/l	ND	0.18
BENA-01	RILEY CREEK	07-Jun-11	Cadmium	Total	ug/l	ND	0.18
BENA-01	RILEY CREEK	07-Jun-11	Calcium	Dissolved	ug/l		4.76
BENA-01	RILEY CREEK	07-Jun-11	Calcium	Total	ug/l		4.76

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-01	RILEY CREEK	07-Jun-11	Chloride	Total	mg/l		0.29
BENA-01	RILEY CREEK	07-Jun-11	Chlorophyll a, corrected for pheophytin	Total	ug/l		
BENA-01	RILEY CREEK	07-Jun-11	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		
BENA-01	RILEY CREEK	07-Jun-11	Chlorophyll b	Total	ug/l		
BENA-01	RILEY CREEK	07-Jun-11	Chlorophyll c	Total	ug/l	J	
BENA-01	RILEY CREEK	07-Jun-11	Chromium	Dissolved	ug/l	J	0.24
BENA-01	RILEY CREEK	07-Jun-11	Chromium	Total	ug/l	J	0.24
BENA-01	RILEY CREEK	07-Jun-11	Cobalt	Dissolved	ug/l	J	0.22
BENA-01	RILEY CREEK	07-Jun-11	Cobalt	Total	ug/l	J	0.22
BENA-01	RILEY CREEK	07-Jun-11	Copper	Dissolved	ug/l		0.79
BENA-01	RILEY CREEK	07-Jun-11	Copper	Total	ug/l		0.79
BENA-01	RILEY CREEK	07-Jun-11	Cyanide	Total	mg/l	J	0.002
BENA-01		07-Jun-11	Dissolved oxygen (DO)		mg/l		
BENA-01		07-Jun-11	Dissolved oxygen saturation		%		
BENA-01	RILEY CREEK	07-Jun-11	Fluoride	Total	mg/l		0.02
BENA-01	RILEY CREEK	07-Jun-11	Hardness, Ca, Mg		ug/l	C	
BENA-01	RILEY CREEK	07-Jun-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BENA-01	RILEY CREEK	07-Jun-11	Iron	Dissolved	ug/l	J,J6	3.06
BENA-01	RILEY CREEK	07-Jun-11	Iron	Total	ug/l	J6	3.06
BENA-01	RILEY CREEK	07-Jun-11	Kjeldahl nitrogen	Total	mg/l	J	0.098
BENA-01	RILEY CREEK	07-Jun-11	Lead	Dissolved	ug/l	J	0.67
BENA-01	RILEY CREEK	07-Jun-11	Lead	Total	ug/l		0.67
BENA-01	RILEY CREEK	07-Jun-11	Magnesium	Dissolved	ug/l		4.69
BENA-01	RILEY CREEK	07-Jun-11	Magnesium	Total	ug/l		4.69
BENA-01	RILEY CREEK	07-Jun-11	Manganese	Dissolved	ug/l		0.05
BENA-01	RILEY CREEK	07-Jun-11	Manganese	Total	ug/l		0.05
BENA-01	RILEY CREEK	07-Jun-11	Nickel	Dissolved	ug/l	J	0.41
BENA-01	RILEY CREEK	07-Jun-11	Nickel	Total	ug/l	ND	0.41
BENA-01	RILEY CREEK	07-Jun-11	Organic carbon	Total	mg/l		0.02
BENA-01		07-Jun-11	pH		none		
BENA-01	RILEY CREEK	07-Jun-11	Phenols	Total	ug/l	J	1.53
BENA-01	RILEY CREEK	07-Jun-11	Pheophytin a	Total	ug/l	J	
BENA-01	RILEY CREEK	07-Jun-11	Phosphorus	Dissolved	mg/l		0.002
BENA-01	RILEY CREEK	07-Jun-11	Phosphorus	Total	mg/l		0.002
BENA-01	RILEY CREEK	07-Jun-11	Potassium	Dissolved	ug/l		8.13
BENA-01	RILEY CREEK	07-Jun-11	Potassium	Total	ug/l		8.13
BENA-01	RILEY CREEK	07-Jun-11	Silver	Dissolved	ug/l	J	0.38
BENA-01	RILEY CREEK	07-Jun-11	Silver	Total	ug/l	J	0.38
BENA-01	RILEY CREEK	07-Jun-11	Sodium	Dissolved	ug/l		231
BENA-01	RILEY CREEK	07-Jun-11	Sodium	Total	ug/l		231
BENA-01		07-Jun-11	Specific conductance		umho/cm		
BENA-01	RILEY CREEK	07-Jun-11	Strontium	Dissolved	ug/l		0.38
BENA-01	RILEY CREEK	07-Jun-11	Strontium	Total	ug/l		0.38
BENA-01	RILEY CREEK	07-Jun-11	Sulfate	Total	mg/l		1.63
BENA-01		07-Jun-11	Temperature, air		deg C		
BENA-01	RILEY CREEK	07-Jun-11	Temperature, sample		deg C		
BENA-01		07-Jun-11	Temperature, water		deg C		
BENA-01	RILEY CREEK	07-Jun-11	Total suspended solids		mg/l		
BENA-01		07-Jun-11	Turbidity		NTU		
BENA-01	RILEY CREEK	07-Jun-11	Vanadium	Dissolved	ug/l	J	0.19
BENA-01	RILEY CREEK	07-Jun-11	Vanadium	Total	ug/l	J	0.19
BENA-01	RILEY CREEK	07-Jun-11	Volatile suspended solids		mg/l	Q	
BENA-01	RILEY CREEK	07-Jun-11	Zinc	Dissolved	ug/l	J	0.35
BENA-01	RILEY CREEK	07-Jun-11	Zinc	Total	ug/l		0.35
BENA-03	RILEY CREEK	07-Jun-11	Alkalinity, total		mg/l		1.46
BENA-03	RILEY CREEK	07-Jun-11	Aluminum	Dissolved	ug/l		2.78
BENA-03	RILEY CREEK	07-Jun-11	Aluminum	Total	ug/l		2.78
BENA-03	RILEY CREEK	07-Jun-11	Ammonia-nitrogen	Total	mg/l	ND	0.02
BENA-03	RILEY CREEK	07-Jun-11	Arsenic	Dissolved	ug/l	V	0.94
BENA-03	RILEY CREEK	07-Jun-11	Arsenic	Total	ug/l	V	0.94
BENA-03	RILEY CREEK	07-Jun-11	Barium	Dissolved	ug/l		0.13
BENA-03	RILEY CREEK	07-Jun-11	Barium	Total	ug/l		0.13
BENA-03	RILEY CREEK	07-Jun-11	Beryllium	Dissolved	ug/l	ND	0.08
BENA-03	RILEY CREEK	07-Jun-11	Beryllium	Total	ug/l	ND	0.08
BENA-03	RILEY CREEK	07-Jun-11	Boron	Dissolved	ug/l		2.73
BENA-03	RILEY CREEK	07-Jun-11	Boron	Total	ug/l		2.73
BENA-03	RILEY CREEK	07-Jun-11	Cadmium	Dissolved	ug/l	ND	0.18
BENA-03	RILEY CREEK	07-Jun-11	Cadmium	Total	ug/l	ND	0.18
BENA-03	RILEY CREEK	07-Jun-11	Calcium	Dissolved	ug/l		4.76

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-03	RILEY CREEK	07-Jun-11	Calcium	Total	ug/l		4.76
BENA-03	RILEY CREEK	07-Jun-11	Chloride	Total	mg/l		0.29
BENA-03	RILEY CREEK	07-Jun-11	Chlorophyll a, corrected for pheophytin	Total	ug/l		
BENA-03	RILEY CREEK	07-Jun-11	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		
BENA-03	RILEY CREEK	07-Jun-11	Chlorophyll b	Total	ug/l	J	
BENA-03	RILEY CREEK	07-Jun-11	Chlorophyll c	Total	ug/l		
BENA-03	RILEY CREEK	07-Jun-11	Chromium	Dissolved	ug/l	J	0.24
BENA-03	RILEY CREEK	07-Jun-11	Chromium	Total	ug/l	J	0.24
BENA-03	RILEY CREEK	07-Jun-11	Cobalt	Dissolved	ug/l	J	0.22
BENA-03	RILEY CREEK	07-Jun-11	Cobalt	Total	ug/l	ND	0.22
BENA-03	RILEY CREEK	07-Jun-11	Copper	Dissolved	ug/l	J	0.79
BENA-03	RILEY CREEK	07-Jun-11	Copper	Total	ug/l		0.79
BENA-03	RILEY CREEK	07-Jun-11	Cyanide	Total	mg/l	ND	0.002
BENA-03		07-Jun-11	Dissolved oxygen (DO)		mg/l		
BENA-03		07-Jun-11	Dissolved oxygen saturation		%		
BENA-03	RILEY CREEK	07-Jun-11	Fluoride	Total	mg/l		0.02
BENA-03	RILEY CREEK	07-Jun-11	Hardness, Ca, Mg		ug/l	C	
BENA-03	RILEY CREEK	07-Jun-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l	Q	0.018
BENA-03	RILEY CREEK	07-Jun-11	Iron	Dissolved	ug/l	J,J6	3.06
BENA-03	RILEY CREEK	07-Jun-11	Iron	Total	ug/l	J6	3.06
BENA-03	RILEY CREEK	07-Jun-11	Kjeldahl nitrogen	Total	mg/l	J	0.098
BENA-03	RILEY CREEK	07-Jun-11	Lead	Dissolved	ug/l		0.67
BENA-03	RILEY CREEK	07-Jun-11	Lead	Total	ug/l	J	0.67
BENA-03	RILEY CREEK	07-Jun-11	Magnesium	Dissolved	ug/l		4.69
BENA-03	RILEY CREEK	07-Jun-11	Magnesium	Total	ug/l		4.69
BENA-03	RILEY CREEK	07-Jun-11	Manganese	Dissolved	ug/l		0.05
BENA-03	RILEY CREEK	07-Jun-11	Manganese	Total	ug/l		0.05
BENA-03	RILEY CREEK	07-Jun-11	Nickel	Dissolved	ug/l	J	0.41
BENA-03	RILEY CREEK	07-Jun-11	Nickel	Total	ug/l	ND	0.41
BENA-03	RILEY CREEK	07-Jun-11	Organic carbon	Total	mg/l		0.02
BENA-03		07-Jun-11	pH		none		
BENA-03	RILEY CREEK	07-Jun-11	Phenols	Total	ug/l	ND	1.53
BENA-03	RILEY CREEK	07-Jun-11	Pheophytin a	Total	ug/l	ND	0.5
BENA-03	RILEY CREEK	07-Jun-11	Phosphorus	Dissolved	mg/l		0.002
BENA-03	RILEY CREEK	07-Jun-11	Phosphorus	Total	mg/l		0.002
BENA-03	RILEY CREEK	07-Jun-11	Potassium	Dissolved	ug/l		8.13
BENA-03	RILEY CREEK	07-Jun-11	Potassium	Total	ug/l		8.13
BENA-03	RILEY CREEK	07-Jun-11	Silver	Dissolved	ug/l	J	0.38
BENA-03	RILEY CREEK	07-Jun-11	Silver	Total	ug/l	J	0.38
BENA-03	RILEY CREEK	07-Jun-11	Sodium	Dissolved	ug/l		231
BENA-03	RILEY CREEK	07-Jun-11	Sodium	Total	ug/l		231
BENA-03		07-Jun-11	Specific conductance		umho/cm		
BENA-03	RILEY CREEK	07-Jun-11	Strontium	Dissolved	ug/l		0.38
BENA-03	RILEY CREEK	07-Jun-11	Strontium	Total	ug/l		0.38
BENA-03	RILEY CREEK	07-Jun-11	Sulfate	Total	mg/l	J	1.63
BENA-03		07-Jun-11	Temperature, air		deg C		
BENA-03	RILEY CREEK	07-Jun-11	Temperature, sample		deg C		
BENA-03		07-Jun-11	Temperature, water		deg C		
BENA-03	RILEY CREEK	07-Jun-11	Total suspended solids		mg/l		
BENA-03		07-Jun-11	Turbidity		NTU		
BENA-03	RILEY CREEK	07-Jun-11	Vanadium	Dissolved	ug/l	J	0.19
BENA-03	RILEY CREEK	07-Jun-11	Vanadium	Total	ug/l	J	0.19
BENA-03	RILEY CREEK	07-Jun-11	Volatile suspended solids		mg/l	Q	
BENA-03	RILEY CREEK	07-Jun-11	Zinc	Dissolved	ug/l		0.35
BENA-03	RILEY CREEK	07-Jun-11	Zinc	Total	ug/l		0.35
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Alkalinity, total		mg/l		1.46
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Aluminum	Dissolved	ug/l	V	2.78
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Aluminum	Total	ug/l	V	2.78
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Ammonia-nitrogen	Total	mg/l	ND	0.02
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Arsenic	Dissolved	ug/l	J	0.94
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Arsenic	Total	ug/l	J	0.94
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Barium	Dissolved	ug/l		0.13
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Barium	Total	ug/l		0.13
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Beryllium	Dissolved	ug/l	ND	0.08
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Beryllium	Total	ug/l	ND	0.08
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Boron	Dissolved	ug/l		2.73
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Boron	Total	ug/l		2.73
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Cadmium	Dissolved	ug/l	ND	0.18
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Cadmium	Total	ug/l	ND	0.18

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Calcium	Dissolved	ug/l		4.76
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Calcium	Total	ug/l		4.76
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Chloride	Total	mg/l		0.29
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Chlorophyll a, corrected for pheophytin	Total	ug/l		
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Chlorophyll b	Total	ug/l	J	
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Chlorophyll c	Total	ug/l	J	
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Chromium	Dissolved	ug/l	J	0.24
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Chromium	Total	ug/l	ND	0.24
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Cobalt	Dissolved	ug/l	J	0.22
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Cobalt	Total	ug/l	ND	0.22
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Copper	Dissolved	ug/l	J	0.79
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Copper	Total	ug/l	J	0.79
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Cyanide	Total	mg/l	ND	0.002
BENC-01		07-Jun-11	Dissolved oxygen (DO)		mg/l		
BENC-01		07-Jun-11	Dissolved oxygen saturation		%		
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Fluoride	Total	mg/l		0.02
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Hardness, Ca, Mg		ug/l	C	
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Iron	Dissolved	ug/l	J6	3.06
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Iron	Total	ug/l	J6	3.06
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Kjeldahl nitrogen	Total	mg/l	J	0.098
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Lead	Dissolved	ug/l	ND,V	0.67
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Lead	Total	ug/l	ND,V	0.67
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Magnesium	Dissolved	ug/l		4.69
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Magnesium	Total	ug/l		4.69
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Manganese	Dissolved	ug/l		0.05
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Manganese	Total	ug/l		0.05
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Nickel	Dissolved	ug/l	ND	0.41
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Nickel	Total	ug/l	J	0.41
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Organic carbon	Total	mg/l		0.02
BENC-01		07-Jun-11	pH		none		
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Phenols	Total	ug/l	J	1.53
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Pheophytin a	Total	ug/l	J	
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Phosphorus	Dissolved	mg/l		0.002
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Phosphorus	Total	mg/l		0.002
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Potassium	Dissolved	ug/l		8.13
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Potassium	Total	ug/l		8.13
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Silver	Dissolved	ug/l	ND	0.38
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Silver	Total	ug/l	ND	0.38
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Sodium	Dissolved	ug/l		231
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Sodium	Total	ug/l		231
BENC-01		07-Jun-11	Specific conductance		umho/cm		
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Strontium	Dissolved	ug/l		0.38
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Strontium	Total	ug/l		0.38
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Sulfate	Total	mg/l		1.63
BENC-01		07-Jun-11	Temperature, air		deg C		
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Temperature, sample		deg C		
BENC-01		07-Jun-11	Temperature, water		deg C		
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Total suspended solids		mg/l		
BENC-01		07-Jun-11	Turbidity		NTU		
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Vanadium	Dissolved	ug/l	ND	0.19
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Vanadium	Total	ug/l	ND	0.19
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Volatile suspended solids		mg/l	Q	
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Zinc	Dissolved	ug/l	J,V	0.35
BENC-01	RILEY CASSELL CREEK	07-Jun-11	Zinc	Total	ug/l	J,V	0.35
BENA-01	RILEY CREEK	14-Jun-11	Ammonia-nitrogen	Total	mg/l	ND	0.02
BENA-01	RILEY CREEK	14-Jun-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BENA-01	RILEY CREEK	14-Jun-11	Kjeldahl nitrogen	Total	mg/l	J	0.098
BENA-01	RILEY CREEK	14-Jun-11	Phosphorus	Total	mg/l		0.002
BENA-01	RILEY CREEK	14-Jun-11	Temperature, sample		deg C		
BENA-01	RILEY CREEK	14-Jun-11	Total suspended solids		mg/l		
BENA-01	RILEY CREEK	14-Jun-11	Volatile suspended solids		mg/l	ND	4
BENA-03	RILEY CREEK	14-Jun-11	Ammonia-nitrogen	Total	mg/l	ND	0.02
BENA-03	RILEY CREEK	14-Jun-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BENA-03	RILEY CREEK	14-Jun-11	Kjeldahl nitrogen	Total	mg/l	ND	0.098
BENA-03	RILEY CREEK	14-Jun-11	Phosphorus	Total	mg/l		0.002
BENA-03	RILEY CREEK	14-Jun-11	Temperature, sample		deg C		
BENA-03	RILEY CREEK	14-Jun-11	Total suspended solids		mg/l	ND	4

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-03	RILEY CREEK	14-Jun-11	Volatile suspended solids		mg/l	ND	4
BENC-01	RILEY CASSELL CREEK	14-Jun-11	Ammonia-nitrogen	Total	mg/l	ND	0.02
BENC-01	RILEY CASSELL CREEK	14-Jun-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BENC-01	RILEY CASSELL CREEK	14-Jun-11	Kjeldahl nitrogen	Total	mg/l	J	0.098
BENC-01	RILEY CASSELL CREEK	14-Jun-11	Phosphorus	Total	mg/l		0.002
BENC-01	RILEY CASSELL CREEK	14-Jun-11	Temperature, sample		deg C		
BENC-01	RILEY CASSELL CREEK	14-Jun-11	Total suspended solids		mg/l	ND	4
BENC-01	RILEY CASSELL CREEK	14-Jun-11	Volatile suspended solids		mg/l	ND	4
BEN-01	KICKAPOO CREEK	15-Jun-11	Ammonia-nitrogen	Total	mg/l	ND	0.02
BEN-01	KICKAPOO CREEK	15-Jun-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l	Q	0.018
BEN-01	KICKAPOO CREEK	15-Jun-11	Kjeldahl nitrogen	Total	mg/l	J	0.098
BEN-01	KICKAPOO CREEK	15-Jun-11	Phosphorus	Total	mg/l		0.002
BEN-01	KICKAPOO CREEK	15-Jun-11	Temperature, sample		deg C		
BEN-01	KICKAPOO CREEK	15-Jun-11	Total suspended solids		mg/l		
BEN-01	KICKAPOO CREEK	15-Jun-11	Volatile suspended solids		mg/l		
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Alkalinity, total		mg/l		1.46
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Aluminum	Dissolved	ug/l	J,V	2.78
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Aluminum	Total	ug/l	V	2.78
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Ammonia-nitrogen	Total	mg/l	J	0.02
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Arsenic	Dissolved	ug/l	V	0.94
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Arsenic	Total	ug/l	V	0.94
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Barium	Dissolved	ug/l		0.13
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Barium	Total	ug/l		0.13
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Beryllium	Dissolved	ug/l	ND	0.08
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Beryllium	Total	ug/l	ND	0.08
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Boron	Dissolved	ug/l	V	2.73
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Boron	Total	ug/l	V	2.73
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Cadmium	Dissolved	ug/l	J	0.18
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Cadmium	Total	ug/l	J	0.18
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Calcium	Dissolved	ug/l		4.76
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Calcium	Total	ug/l		4.76
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Chloride	Total	mg/l		0.29
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Chlorophyll a, corrected for pheophytin	Total	ug/l		
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Chlorophyll b	Total	ug/l	J	
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Chlorophyll c	Total	ug/l	J	
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Chromium	Dissolved	ug/l	ND	0.24
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Chromium	Total	ug/l	ND	0.24
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Cobalt	Dissolved	ug/l	J	0.22
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Cobalt	Total	ug/l	J	0.22
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Copper	Dissolved	ug/l	V	0.79
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Copper	Total	ug/l	V	0.79
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Cyanide	Total	mg/l	ND	0.002
BENC-01		22-Jun-11	Dissolved oxygen (DO)		mg/l		
BENC-01		22-Jun-11	Dissolved oxygen saturation		%		
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Fluoride	Total	mg/l		0.02
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Hardness, Ca, Mg		ug/l	C	
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Iron	Dissolved	ug/l	J,J6	3.06
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Iron	Total	ug/l	J6	3.06
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Kjeldahl nitrogen	Total	mg/l	ND,S	0.5
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Lead	Dissolved	ug/l	ND	0.67
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Lead	Total	ug/l	ND	0.67
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Magnesium	Dissolved	ug/l		4.69
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Magnesium	Total	ug/l		4.69
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Manganese	Dissolved	ug/l		0.05
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Manganese	Total	ug/l		0.05
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Nickel	Dissolved	ug/l	ND	0.41
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Nickel	Total	ug/l	ND	0.41
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Organic carbon	Total	mg/l		0.02
BENC-01		22-Jun-11	pH		none		
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Phenols	Total	ug/l	ND	1.53
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Pheophytin a	Total	ug/l	ND	0.5
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Phosphorus	Dissolved	mg/l		0.002
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Phosphorus	Total	mg/l		0.002
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Potassium	Dissolved	ug/l		8.13
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Potassium	Total	ug/l		8.13
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Silver	Dissolved	ug/l	J	0.38
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Silver	Total	ug/l	J	0.38

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Sodium	Dissolved	ug/l		231
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Sodium	Total	ug/l		231
BENC-01		22-Jun-11	Specific conductance		umho/cm		
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Strontium	Dissolved	ug/l		0.38
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Strontium	Total	ug/l		0.38
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Sulfate	Total	mg/l		1.63
BENC-01		22-Jun-11	Temperature, air		deg C		
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Temperature, sample		deg C		
BENC-01		22-Jun-11	Temperature, water		deg C		
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Total suspended solids		mg/l		
BENC-01		22-Jun-11	Turbidity		NTU		
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Vanadium	Dissolved	ug/l	ND	0.19
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Vanadium	Total	ug/l	ND	0.19
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Volatile suspended solids		mg/l		
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Zinc	Dissolved	ug/l	J,V	0.35
BENC-01	RILEY CASSELL CREEK	22-Jun-11	Zinc	Total	ug/l	ND,V	0.35
BENA-03	RILEY CREEK	27-Jun-11	Alkalinity, total		mg/l		1.46
BENA-03	RILEY CREEK	27-Jun-11	Aluminum	Dissolved	ug/l		2.78
BENA-03	RILEY CREEK	27-Jun-11	Aluminum	Total	ug/l		2.78
BENA-03	RILEY CREEK	27-Jun-11	Ammonia-nitrogen	Total	mg/l	ND	0.02
BENA-03	RILEY CREEK	27-Jun-11	Arsenic	Dissolved	ug/l	V	0.94
BENA-03	RILEY CREEK	27-Jun-11	Arsenic	Total	ug/l	V	0.94
BENA-03	RILEY CREEK	27-Jun-11	Barium	Dissolved	ug/l		0.13
BENA-03	RILEY CREEK	27-Jun-11	Barium	Total	ug/l		0.13
BENA-03	RILEY CREEK	27-Jun-11	Beryllium	Dissolved	ug/l	ND	0.08
BENA-03	RILEY CREEK	27-Jun-11	Beryllium	Total	ug/l	ND	0.08
BENA-03	RILEY CREEK	27-Jun-11	Boron	Dissolved	ug/l		2.73
BENA-03	RILEY CREEK	27-Jun-11	Boron	Total	ug/l		2.73
BENA-03	RILEY CREEK	27-Jun-11	Cadmium	Dissolved	ug/l	J	0.18
BENA-03	RILEY CREEK	27-Jun-11	Cadmium	Total	ug/l	J	0.18
BENA-03	RILEY CREEK	27-Jun-11	Calcium	Dissolved	ug/l		4.76
BENA-03	RILEY CREEK	27-Jun-11	Calcium	Total	ug/l		4.76
BENA-03	RILEY CREEK	27-Jun-11	Chloride	Total	mg/l		0.29
BENA-03	RILEY CREEK	27-Jun-11	Chlorophyll a, corrected for pheophytin	Total	ug/l	J3	
BENA-03	RILEY CREEK	27-Jun-11	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		
BENA-03	RILEY CREEK	27-Jun-11	Chlorophyll b	Total	ug/l		
BENA-03	RILEY CREEK	27-Jun-11	Chlorophyll c	Total	ug/l		
BENA-03	RILEY CREEK	27-Jun-11	Chromium	Dissolved	ug/l	ND	0.24
BENA-03	RILEY CREEK	27-Jun-11	Chromium	Total	ug/l	J	0.24
BENA-03	RILEY CREEK	27-Jun-11	Cobalt	Dissolved	ug/l	J	0.22
BENA-03	RILEY CREEK	27-Jun-11	Cobalt	Total	ug/l		0.22
BENA-03	RILEY CREEK	27-Jun-11	Copper	Dissolved	ug/l	V	0.79
BENA-03	RILEY CREEK	27-Jun-11	Copper	Total	ug/l	V	0.79
BENA-03	RILEY CREEK	27-Jun-11	Cyanide	Total	mg/l	J	0.002
BENA-03		27-Jun-11	Dissolved oxygen (DO)		mg/l		
BENA-03		27-Jun-11	Dissolved oxygen saturation		%		
BENA-03	RILEY CREEK	27-Jun-11	Fluoride	Total	mg/l		0.02
BENA-03	RILEY CREEK	27-Jun-11	Hardness, Ca, Mg		ug/l	C	
BENA-03	RILEY CREEK	27-Jun-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BENA-03	RILEY CREEK	27-Jun-11	Iron	Dissolved	ug/l		3.06
BENA-03	RILEY CREEK	27-Jun-11	Iron	Total	ug/l		3.06
BENA-03	RILEY CREEK	27-Jun-11	Kjeldahl nitrogen	Total	mg/l	S	0.5
BENA-03	RILEY CREEK	27-Jun-11	Lead	Dissolved	ug/l	V	0.67
BENA-03	RILEY CREEK	27-Jun-11	Lead	Total	ug/l	V	0.67
BENA-03	RILEY CREEK	27-Jun-11	Magnesium	Dissolved	ug/l	J6	4.69
BENA-03	RILEY CREEK	27-Jun-11	Magnesium	Total	ug/l	J6	4.69
BENA-03	RILEY CREEK	27-Jun-11	Manganese	Dissolved	ug/l		0.05
BENA-03	RILEY CREEK	27-Jun-11	Manganese	Total	ug/l		0.05
BENA-03	RILEY CREEK	27-Jun-11	Nickel	Dissolved	ug/l	ND	0.41
BENA-03	RILEY CREEK	27-Jun-11	Nickel	Total	ug/l		0.41
BENA-03	RILEY CREEK	27-Jun-11	Organic carbon	Total	mg/l		0.02
BENA-03		27-Jun-11	pH		none		
BENA-03	RILEY CREEK	27-Jun-11	Phenols	Total	ug/l	ND	1.53
BENA-03	RILEY CREEK	27-Jun-11	Pheophytin a	Total	ug/l	J3	
BENA-03	RILEY CREEK	27-Jun-11	Phosphorus	Dissolved	mg/l		0.002
BENA-03	RILEY CREEK	27-Jun-11	Phosphorus	Total	mg/l		0.002
BENA-03	RILEY CREEK	27-Jun-11	Potassium	Dissolved	ug/l		8.13
BENA-03	RILEY CREEK	27-Jun-11	Potassium	Total	ug/l		8.13
BENA-03	RILEY CREEK	27-Jun-11	Silver	Dissolved	ug/l	J,V	0.38

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-03	RILEY CREEK	27-Jun-11	Silver	Total	ug/l	ND,V	0.38
BENA-03	RILEY CREEK	27-Jun-11	Sodium	Dissolved	ug/l		231
BENA-03	RILEY CREEK	27-Jun-11	Sodium	Total	ug/l		231
BENA-03		27-Jun-11	Specific conductance		umho/cm		
BENA-03	RILEY CREEK	27-Jun-11	Strontium	Dissolved	ug/l		0.38
BENA-03	RILEY CREEK	27-Jun-11	Strontium	Total	ug/l		0.38
BENA-03	RILEY CREEK	27-Jun-11	Sulfate	Total	mg/l		1.63
BENA-03		27-Jun-11	Temperature, air		deg C		
BENA-03	RILEY CREEK	27-Jun-11	Temperature, sample		deg C		
BENA-03		27-Jun-11	Temperature, water		deg C		
BENA-03	RILEY CREEK	27-Jun-11	Total suspended solids		mg/l		
BENA-03		27-Jun-11	Turbidity		NTU		
BENA-03	RILEY CREEK	27-Jun-11	Vanadium	Dissolved	ug/l	ND	0.19
BENA-03	RILEY CREEK	27-Jun-11	Vanadium	Total	ug/l		0.19
BENA-03	RILEY CREEK	27-Jun-11	Volatile suspended solids		mg/l		
BENA-03	RILEY CREEK	27-Jun-11	Zinc	Dissolved	ug/l	ND,V	0.35
BENA-03	RILEY CREEK	27-Jun-11	Zinc	Total	ug/l	V	0.35
BEN-01	KICKAPOO CREEK	12-Jul-11	Ammonia-nitrogen	Total	mg/l	ND	0.02
BEN-01	KICKAPOO CREEK	12-Jul-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BEN-01	KICKAPOO CREEK	12-Jul-11	Kjeldahl nitrogen	Total	mg/l	J	0.098
BEN-01	KICKAPOO CREEK	12-Jul-11	Phosphorus	Total	mg/l		0.002
BEN-01	KICKAPOO CREEK	12-Jul-11	Temperature, sample		deg C		
BEN-01	KICKAPOO CREEK	12-Jul-11	Total suspended solids		mg/l		
BEN-01	KICKAPOO CREEK	12-Jul-11	Volatile suspended solids		mg/l	ND	4
BENA-01	RILEY CREEK	14-Jul-11	Alkalinity, total		mg/l		1.46
BENA-01	RILEY CREEK	14-Jul-11	Aluminum	Dissolved	ug/l	J	2.78
BENA-01	RILEY CREEK	14-Jul-11	Aluminum	Total	ug/l		2.78
BENA-01	RILEY CREEK	14-Jul-11	Ammonia-nitrogen	Total	mg/l	J	0.02
BENA-01	RILEY CREEK	14-Jul-11	Arsenic	Dissolved	ug/l		0.94
BENA-01	RILEY CREEK	14-Jul-11	Arsenic	Total	ug/l	J	0.94
BENA-01	RILEY CREEK	14-Jul-11	Barium	Dissolved	ug/l		0.13
BENA-01	RILEY CREEK	14-Jul-11	Barium	Total	ug/l		0.13
BENA-01	RILEY CREEK	14-Jul-11	Beryllium	Dissolved	ug/l	ND	0.08
BENA-01	RILEY CREEK	14-Jul-11	Beryllium	Total	ug/l	ND	0.08
BENA-01	RILEY CREEK	14-Jul-11	Boron	Dissolved	ug/l		2.73
BENA-01	RILEY CREEK	14-Jul-11	Boron	Total	ug/l		2.73
BENA-01	RILEY CREEK	14-Jul-11	Cadmium	Dissolved	ug/l	ND	0.18
BENA-01	RILEY CREEK	14-Jul-11	Cadmium	Total	ug/l	ND	0.18
BENA-01	RILEY CREEK	14-Jul-11	Calcium	Dissolved	ug/l		4.76
BENA-01	RILEY CREEK	14-Jul-11	Calcium	Total	ug/l		4.76
BENA-01	RILEY CREEK	14-Jul-11	Chloride	Total	mg/l		0.29
BENA-01	RILEY CREEK	14-Jul-11	Chlorophyll a, corrected for pheophytin	Total	ug/l		
BENA-01	RILEY CREEK	14-Jul-11	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		
BENA-01	RILEY CREEK	14-Jul-11	Chlorophyll b	Total	ug/l	J	
BENA-01	RILEY CREEK	14-Jul-11	Chlorophyll c	Total	ug/l	J	
BENA-01	RILEY CREEK	14-Jul-11	Chromium	Dissolved	ug/l	J	0.24
BENA-01	RILEY CREEK	14-Jul-11	Chromium	Total	ug/l	ND	0.24
BENA-01	RILEY CREEK	14-Jul-11	Cobalt	Dissolved	ug/l	ND	0.22
BENA-01	RILEY CREEK	14-Jul-11	Cobalt	Total	ug/l	ND	0.22
BENA-01	RILEY CREEK	14-Jul-11	Copper	Dissolved	ug/l	J	0.79
BENA-01	RILEY CREEK	14-Jul-11	Copper	Total	ug/l	J	0.79
BENA-01	RILEY CREEK	14-Jul-11	Cyanide	Total	mg/l	ND	0.002
BENA-01		14-Jul-11	Dissolved oxygen (DO)		mg/l		
BENA-01		14-Jul-11	Dissolved oxygen saturation		%		
BENA-01	RILEY CREEK	14-Jul-11	Fluoride	Total	mg/l		0.02
BENA-01	RILEY CREEK	14-Jul-11	Hardness, Ca, Mg		ug/l	C	
BENA-01	RILEY CREEK	14-Jul-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BENA-01	RILEY CREEK	14-Jul-11	Iron	Dissolved	ug/l		3.06
BENA-01	RILEY CREEK	14-Jul-11	Iron	Total	ug/l		3.06
BENA-01	RILEY CREEK	14-Jul-11	Kjeldahl nitrogen	Total	mg/l	J	0.098
BENA-01	RILEY CREEK	14-Jul-11	Lead	Dissolved	ug/l		0.67
BENA-01	RILEY CREEK	14-Jul-11	Lead	Total	ug/l	ND	0.67
BENA-01	RILEY CREEK	14-Jul-11	Magnesium	Dissolved	ug/l		4.69
BENA-01	RILEY CREEK	14-Jul-11	Magnesium	Total	ug/l		4.69
BENA-01	RILEY CREEK	14-Jul-11	Manganese	Dissolved	ug/l		0.05
BENA-01	RILEY CREEK	14-Jul-11	Manganese	Total	ug/l		0.05
BENA-01	RILEY CREEK	14-Jul-11	Nickel	Dissolved	ug/l	J	0.41
BENA-01	RILEY CREEK	14-Jul-11	Nickel	Total	ug/l	J	0.41
BENA-01	RILEY CREEK	14-Jul-11	Organic carbon	Total	mg/l		0.02

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-01		14-Jul-11	pH		none		
BENA-01	RILEY CREEK	14-Jul-11	Phenols	Total	ug/l	J	1.53
BENA-01	RILEY CREEK	14-Jul-11	Pheophytin a	Total	ug/l		
BENA-01	RILEY CREEK	14-Jul-11	Phosphorus	Dissolved	mg/l		0.002
BENA-01	RILEY CREEK	14-Jul-11	Phosphorus	Total	mg/l		0.002
BENA-01	RILEY CREEK	14-Jul-11	Potassium	Dissolved	ug/l		8.13
BENA-01	RILEY CREEK	14-Jul-11	Potassium	Total	ug/l		8.13
BENA-01	RILEY CREEK	14-Jul-11	Silver	Dissolved	ug/l	ND	0.38
BENA-01	RILEY CREEK	14-Jul-11	Silver	Total	ug/l	ND	0.38
BENA-01	RILEY CREEK	14-Jul-11	Sodium	Dissolved	ug/l		231
BENA-01	RILEY CREEK	14-Jul-11	Sodium	Total	ug/l		231
BENA-01		14-Jul-11	Specific conductance		umho/cm		
BENA-01	RILEY CREEK	14-Jul-11	Strontium	Dissolved	ug/l		0.38
BENA-01	RILEY CREEK	14-Jul-11	Strontium	Total	ug/l		0.38
BENA-01	RILEY CREEK	14-Jul-11	Sulfate	Total	mg/l		1.63
BENA-01		14-Jul-11	Temperature, air		deg C		
BENA-01	RILEY CREEK	14-Jul-11	Temperature, sample		deg C		
BENA-01		14-Jul-11	Temperature, water		deg C		
BENA-01	RILEY CREEK	14-Jul-11	Total suspended solids		mg/l		
BENA-01		14-Jul-11	Turbidity		NTU		
BENA-01	RILEY CREEK	14-Jul-11	Vanadium	Dissolved	ug/l	ND	0.19
BENA-01	RILEY CREEK	14-Jul-11	Vanadium	Total	ug/l	ND	0.19
BENA-01	RILEY CREEK	14-Jul-11	Volatile suspended solids		mg/l		
BENA-01	RILEY CREEK	14-Jul-11	Zinc	Dissolved	ug/l		0.35
BENA-01	RILEY CREEK	14-Jul-11	Zinc	Total	ug/l	V	0.35
BENA-03	RILEY CREEK	25-Jul-11	Alkalinity, total		mg/l		1.46
BENA-03	RILEY CREEK	25-Jul-11	Aluminum	Dissolved	ug/l	ND,V	2.78
BENA-03	RILEY CREEK	25-Jul-11	Aluminum	Total	ug/l	J,V	2.78
BENA-03	RILEY CREEK	25-Jul-11	Ammonia-nitrogen	Total	mg/l	J	0.02
BENA-03	RILEY CREEK	25-Jul-11	Arsenic	Dissolved	ug/l	J	0.94
BENA-03	RILEY CREEK	25-Jul-11	Arsenic	Total	ug/l	J	0.94
BENA-03	RILEY CREEK	25-Jul-11	Barium	Dissolved	ug/l		0.13
BENA-03	RILEY CREEK	25-Jul-11	Barium	Total	ug/l		0.13
BENA-03	RILEY CREEK	25-Jul-11	Beryllium	Dissolved	ug/l	ND	0.08
BENA-03	RILEY CREEK	25-Jul-11	Beryllium	Total	ug/l	ND	0.08
BENA-03	RILEY CREEK	25-Jul-11	Boron	Dissolved	ug/l	V	2.73
BENA-03	RILEY CREEK	25-Jul-11	Boron	Total	ug/l	V	2.73
BENA-03	RILEY CREEK	25-Jul-11	Cadmium	Dissolved	ug/l	ND	0.18
BENA-03	RILEY CREEK	25-Jul-11	Cadmium	Total	ug/l	ND	0.18
BENA-03	RILEY CREEK	25-Jul-11	Calcium	Dissolved	ug/l		4.76
BENA-03	RILEY CREEK	25-Jul-11	Calcium	Total	ug/l		4.76
BENA-03	RILEY CREEK	25-Jul-11	Chloride	Total	mg/l		0.29
BENA-03	RILEY CREEK	25-Jul-11	Chlorophyll a, corrected for pheophytin	Total	ug/l		
BENA-03	RILEY CREEK	25-Jul-11	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		
BENA-03	RILEY CREEK	25-Jul-11	Chlorophyll b	Total	ug/l	ND	0.5
BENA-03	RILEY CREEK	25-Jul-11	Chlorophyll c	Total	ug/l		
BENA-03	RILEY CREEK	25-Jul-11	Chromium	Dissolved	ug/l	ND	0.24
BENA-03	RILEY CREEK	25-Jul-11	Chromium	Total	ug/l	ND	0.24
BENA-03	RILEY CREEK	25-Jul-11	Cobalt	Dissolved	ug/l	J	0.22
BENA-03	RILEY CREEK	25-Jul-11	Cobalt	Total	ug/l	J	0.22
BENA-03	RILEY CREEK	25-Jul-11	Copper	Dissolved	ug/l	ND	0.79
BENA-03	RILEY CREEK	25-Jul-11	Copper	Total	ug/l	ND	0.79
BENA-03	RILEY CREEK	25-Jul-11	Cyanide	Total	mg/l	J,J7	0.002
BENA-03		25-Jul-11	Dissolved oxygen (DO)		mg/l		
BENA-03		25-Jul-11	Dissolved oxygen saturation		%		
BENA-03	RILEY CREEK	25-Jul-11	Fluoride	Total	mg/l		0.02
BENA-03	RILEY CREEK	25-Jul-11	Hardness, Ca, Mg		ug/l	C	
BENA-03	RILEY CREEK	25-Jul-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BENA-03	RILEY CREEK	25-Jul-11	Iron	Dissolved	ug/l	J,V	3.06
BENA-03	RILEY CREEK	25-Jul-11	Iron	Total	ug/l	V	3.06
BENA-03	RILEY CREEK	25-Jul-11	Kjeldahl nitrogen	Total	mg/l	J	0.098
BENA-03	RILEY CREEK	25-Jul-11	Lead	Dissolved	ug/l	V	0.67
BENA-03	RILEY CREEK	25-Jul-11	Lead	Total	ug/l	V	0.67
BENA-03	RILEY CREEK	25-Jul-11	Magnesium	Dissolved	ug/l		4.69
BENA-03	RILEY CREEK	25-Jul-11	Magnesium	Total	ug/l		4.69
BENA-03	RILEY CREEK	25-Jul-11	Manganese	Dissolved	ug/l		0.05
BENA-03	RILEY CREEK	25-Jul-11	Manganese	Total	ug/l		0.05
BENA-03	RILEY CREEK	25-Jul-11	Nickel	Dissolved	ug/l	ND	0.41
BENA-03	RILEY CREEK	25-Jul-11	Nickel	Total	ug/l	J	0.41

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-03	RILEY CREEK	25-Jul-11	Organic carbon	Total	mg/l		0.02
BENA-03		25-Jul-11	pH		none		
BENA-03	RILEY CREEK	25-Jul-11	Phenols	Total	ug/l	J	1.53
BENA-03	RILEY CREEK	25-Jul-11	Pheophytin a	Total	ug/l		
BENA-03	RILEY CREEK	25-Jul-11	Phosphorus	Dissolved	mg/l		0.002
BENA-03	RILEY CREEK	25-Jul-11	Phosphorus	Total	mg/l		0.002
BENA-03	RILEY CREEK	25-Jul-11	Potassium	Dissolved	ug/l		8.13
BENA-03	RILEY CREEK	25-Jul-11	Potassium	Total	ug/l		8.13
BENA-03	RILEY CREEK	25-Jul-11	Silver	Dissolved	ug/l	ND	0.38
BENA-03	RILEY CREEK	25-Jul-11	Silver	Total	ug/l	J	0.38
BENA-03	RILEY CREEK	25-Jul-11	Sodium	Dissolved	ug/l		231
BENA-03	RILEY CREEK	25-Jul-11	Sodium	Total	ug/l		231
BENA-03		25-Jul-11	Specific conductance		umho/cm		
BENA-03	RILEY CREEK	25-Jul-11	Strontium	Dissolved	ug/l		0.38
BENA-03	RILEY CREEK	25-Jul-11	Strontium	Total	ug/l		0.38
BENA-03	RILEY CREEK	25-Jul-11	Sulfate	Total	mg/l		1.63
BENA-03		25-Jul-11	Temperature, air		deg C		
BENA-03	RILEY CREEK	25-Jul-11	Temperature, sample		deg C		
BENA-03		25-Jul-11	Temperature, water		deg C		
BENA-03	RILEY CREEK	25-Jul-11	Total suspended solids		mg/l		
BENA-03		25-Jul-11	Turbidity		NTU		
BENA-03	RILEY CREEK	25-Jul-11	Vanadium	Dissolved	ug/l	ND	0.19
BENA-03	RILEY CREEK	25-Jul-11	Vanadium	Total	ug/l	ND	0.19
BENA-03	RILEY CREEK	25-Jul-11	Volatile suspended solids		mg/l	ND	4
BENA-03	RILEY CREEK	25-Jul-11	Zinc	Dissolved	ug/l	V	0.35
BENA-03	RILEY CREEK	25-Jul-11	Zinc	Total	ug/l	ND,V	0.35
BEN-01	KICKAPOO CREEK	28-Jul-11	Alkalinity, total		mg/l		1.46
BEN-01	KICKAPOO CREEK	28-Jul-11	Aluminum	Dissolved	ug/l	ND	2.78
BEN-01	KICKAPOO CREEK	28-Jul-11	Aluminum	Total	ug/l		2.78
BEN-01	KICKAPOO CREEK	28-Jul-11	Ammonia-nitrogen	Total	mg/l		0.02
BEN-01	KICKAPOO CREEK	28-Jul-11	Arsenic	Dissolved	ug/l		0.94
BEN-01	KICKAPOO CREEK	28-Jul-11	Arsenic	Total	ug/l	J	0.94
BEN-01	KICKAPOO CREEK	28-Jul-11	Barium	Dissolved	ug/l		0.13
BEN-01	KICKAPOO CREEK	28-Jul-11	Barium	Total	ug/l		0.13
BEN-01	KICKAPOO CREEK	28-Jul-11	Beryllium	Dissolved	ug/l	ND	0.08
BEN-01	KICKAPOO CREEK	28-Jul-11	Beryllium	Total	ug/l	ND	0.08
BEN-01	KICKAPOO CREEK	28-Jul-11	Boron	Dissolved	ug/l		2.73
BEN-01	KICKAPOO CREEK	28-Jul-11	Boron	Total	ug/l		2.73
BEN-01	KICKAPOO CREEK	28-Jul-11	Cadmium	Dissolved	ug/l	ND	0.18
BEN-01	KICKAPOO CREEK	28-Jul-11	Cadmium	Total	ug/l	ND	0.18
BEN-01	KICKAPOO CREEK	28-Jul-11	Calcium	Dissolved	ug/l		4.76
BEN-01	KICKAPOO CREEK	28-Jul-11	Calcium	Total	ug/l		4.76
BEN-01	KICKAPOO CREEK	28-Jul-11	Chloride	Total	mg/l		0.29
BEN-01	KICKAPOO CREEK	28-Jul-11	Chlorophyll a, corrected for pheophytin	Total	ug/l		
BEN-01	KICKAPOO CREEK	28-Jul-11	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		
BEN-01	KICKAPOO CREEK	28-Jul-11	Chlorophyll b	Total	ug/l		
BEN-01	KICKAPOO CREEK	28-Jul-11	Chlorophyll c	Total	ug/l		
BEN-01	KICKAPOO CREEK	28-Jul-11	Chromium	Dissolved	ug/l	ND	0.24
BEN-01	KICKAPOO CREEK	28-Jul-11	Chromium	Total	ug/l	ND	0.24
BEN-01	KICKAPOO CREEK	28-Jul-11	Cobalt	Dissolved	ug/l	J	0.22
BEN-01	KICKAPOO CREEK	28-Jul-11	Cobalt	Total	ug/l	J	0.22
BEN-01	KICKAPOO CREEK	28-Jul-11	Copper	Dissolved	ug/l	ND	0.79
BEN-01	KICKAPOO CREEK	28-Jul-11	Copper	Total	ug/l	ND	0.79
BEN-01	KICKAPOO CREEK	28-Jul-11	Cyanide	Total	mg/l	J	0.002
BEN-01		28-Jul-11	Dissolved oxygen (DO)		mg/l		
BEN-01		28-Jul-11	Dissolved oxygen saturation		%		
BEN-01	KICKAPOO CREEK	28-Jul-11	Fluoride	Total	mg/l		0.02
BEN-01	KICKAPOO CREEK	28-Jul-11	Hardness, Ca, Mg		ug/l	C	
BEN-01	KICKAPOO CREEK	28-Jul-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BEN-01	KICKAPOO CREEK	28-Jul-11	Iron	Dissolved	ug/l	J	3.06
BEN-01	KICKAPOO CREEK	28-Jul-11	Iron	Total	ug/l		3.06
BEN-01	KICKAPOO CREEK	28-Jul-11	Kjeldahl nitrogen	Total	mg/l	J6	0.098
BEN-01	KICKAPOO CREEK	28-Jul-11	Lead	Dissolved	ug/l	J,V	0.67
BEN-01	KICKAPOO CREEK	28-Jul-11	Lead	Total	ug/l	ND,V	0.67
BEN-01	KICKAPOO CREEK	28-Jul-11	Magnesium	Dissolved	ug/l	J6	4.69
BEN-01	KICKAPOO CREEK	28-Jul-11	Magnesium	Total	ug/l	J6	4.69
BEN-01	KICKAPOO CREEK	28-Jul-11	Manganese	Dissolved	ug/l		0.05
BEN-01	KICKAPOO CREEK	28-Jul-11	Manganese	Total	ug/l		0.05
BEN-01	KICKAPOO CREEK	28-Jul-11	Nickel	Dissolved	ug/l	J	0.41

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BEN-01	KICKAPOO CREEK	28-Jul-11	Nickel	Total	ug/l	J	0.41
BEN-01		28-Jul-11	pH		none		
BEN-01	KICKAPOO CREEK	28-Jul-11	Phenols	Total	ug/l	J	1.53
BEN-01	KICKAPOO CREEK	28-Jul-11	Pheophytin a	Total	ug/l		
BEN-01	KICKAPOO CREEK	28-Jul-11	Phosphorus	Dissolved	mg/l		0.002
BEN-01	KICKAPOO CREEK	28-Jul-11	Phosphorus	Total	mg/l		0.002
BEN-01	KICKAPOO CREEK	28-Jul-11	Potassium	Dissolved	ug/l		8.13
BEN-01	KICKAPOO CREEK	28-Jul-11	Potassium	Total	ug/l		8.13
BEN-01	KICKAPOO CREEK	28-Jul-11	Silver	Dissolved	ug/l	J	0.38
BEN-01	KICKAPOO CREEK	28-Jul-11	Silver	Total	ug/l	J	0.38
BEN-01	KICKAPOO CREEK	28-Jul-11	Sodium	Dissolved	ug/l		231
BEN-01	KICKAPOO CREEK	28-Jul-11	Sodium	Total	ug/l		231
BEN-01		28-Jul-11	Specific conductance		umho/cm		
BEN-01	KICKAPOO CREEK	28-Jul-11	Strontium	Dissolved	ug/l		0.38
BEN-01	KICKAPOO CREEK	28-Jul-11	Strontium	Total	ug/l		0.38
BEN-01	KICKAPOO CREEK	28-Jul-11	Sulfate	Total	mg/l		1.63
BEN-01		28-Jul-11	Temperature, air		deg C		
BEN-01	KICKAPOO CREEK	28-Jul-11	Temperature, sample		deg C		
BEN-01		28-Jul-11	Temperature, water		deg C		
BEN-01	KICKAPOO CREEK	28-Jul-11	Total suspended solids		mg/l	J3	
BEN-01		28-Jul-11	Turbidity		NTU		
BEN-01	KICKAPOO CREEK	28-Jul-11	Vanadium	Dissolved	ug/l	ND	0.19
BEN-01	KICKAPOO CREEK	28-Jul-11	Vanadium	Total	ug/l	ND	0.19
BEN-01	KICKAPOO CREEK	28-Jul-11	Volatile suspended solids		mg/l		
BEN-01	KICKAPOO CREEK	28-Jul-11	Zinc	Dissolved	ug/l	J,V	0.35
BEN-01	KICKAPOO CREEK	28-Jul-11	Zinc	Total	ug/l	J,V	0.35
BEN-01	KICKAPOO CREEK	16-Aug-11	Ammonia-nitrogen	Total	mg/l		0.02
BEN-01	KICKAPOO CREEK	16-Aug-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BEN-01	KICKAPOO CREEK	16-Aug-11	Kjeldahl nitrogen	Total	mg/l	J,J7	0.098
BEN-01	KICKAPOO CREEK	16-Aug-11	Phosphorus	Total	mg/l		0.002
BEN-01	KICKAPOO CREEK	16-Aug-11	Temperature, sample		deg C		
BEN-01	KICKAPOO CREEK	16-Aug-11	Total suspended solids		mg/l		
BEN-01	KICKAPOO CREEK	16-Aug-11	Volatile suspended solids		mg/l		
BENA-01	RILEY CREEK	16-Aug-11	Ammonia-nitrogen	Total	mg/l		0.02
BENA-01	RILEY CREEK	16-Aug-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BENA-01	RILEY CREEK	16-Aug-11	Kjeldahl nitrogen	Total	mg/l	J7	0.098
BENA-01	RILEY CREEK	16-Aug-11	Phosphorus	Total	mg/l		0.002
BENA-01	RILEY CREEK	16-Aug-11	Temperature, sample		deg C		
BENA-01	RILEY CREEK	16-Aug-11	Total suspended solids		mg/l		
BENA-01	RILEY CREEK	16-Aug-11	Volatile suspended solids		mg/l		
BENA-03	RILEY CREEK	17-Aug-11	Ammonia-nitrogen	Total	mg/l	ND	0.02
BENA-03	RILEY CREEK	17-Aug-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l	J	0.018
BENA-03	RILEY CREEK	17-Aug-11	Kjeldahl nitrogen	Total	mg/l	J7,ND	0.098
BENA-03	RILEY CREEK	17-Aug-11	Phosphorus	Total	mg/l		0.002
BENA-03	RILEY CREEK	17-Aug-11	Temperature, sample		deg C		
BENA-03	RILEY CREEK	17-Aug-11	Total suspended solids		mg/l	ND	4
BENA-03	RILEY CREEK	17-Aug-11	Volatile suspended solids		mg/l	ND	4
BENC-01	RILEY CASSELL CREEK	17-Aug-11	Ammonia-nitrogen	Total	mg/l	ND	0.02
BENC-01	RILEY CASSELL CREEK	17-Aug-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BENC-01	RILEY CASSELL CREEK	17-Aug-11	Kjeldahl nitrogen	Total	mg/l	J7	0.098
BENC-01	RILEY CASSELL CREEK	17-Aug-11	Phosphorus	Total	mg/l		0.002
BENC-01	RILEY CASSELL CREEK	17-Aug-11	Temperature, sample		deg C		
BENC-01	RILEY CASSELL CREEK	17-Aug-11	Total suspended solids		mg/l	ND	4
BENC-01	RILEY CASSELL CREEK	17-Aug-11	Volatile suspended solids		mg/l	ND	4
BEN-01	KICKAPOO CREEK	20-Sep-11	Alkalinity, total		mg/l		1.46
BEN-01	KICKAPOO CREEK	20-Sep-11	Aluminum	Dissolved	ug/l		2.78
BEN-01	KICKAPOO CREEK	20-Sep-11	Aluminum	Total	ug/l		2.78
BEN-01	KICKAPOO CREEK	20-Sep-11	Ammonia-nitrogen	Total	mg/l		0.02
BEN-01	KICKAPOO CREEK	20-Sep-11	Arsenic	Dissolved	ug/l		0.94
BEN-01	KICKAPOO CREEK	20-Sep-11	Arsenic	Total	ug/l		0.94
BEN-01	KICKAPOO CREEK	20-Sep-11	Barium	Dissolved	ug/l		0.13
BEN-01	KICKAPOO CREEK	20-Sep-11	Barium	Total	ug/l		0.13
BEN-01	KICKAPOO CREEK	20-Sep-11	Beryllium	Dissolved	ug/l	V	0.08
BEN-01	KICKAPOO CREEK	20-Sep-11	Beryllium	Total	ug/l	J,V	0.08
BEN-01	KICKAPOO CREEK	20-Sep-11	Boron	Dissolved	ug/l	V	2.73
BEN-01	KICKAPOO CREEK	20-Sep-11	Boron	Total	ug/l	V	2.73
BEN-01	KICKAPOO CREEK	20-Sep-11	Cadmium	Dissolved	ug/l	ND	0.18
BEN-01	KICKAPOO CREEK	20-Sep-11	Cadmium	Total	ug/l	ND	0.18
BEN-01	KICKAPOO CREEK	20-Sep-11	Calcium	Dissolved	ug/l		4.76

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BEN-01	KICKAPOO CREEK	20-Sep-11	Calcium	Total	ug/l		4.76
BEN-01	KICKAPOO CREEK	20-Sep-11	Chloride	Total	mg/l		0.29
BEN-01	KICKAPOO CREEK	20-Sep-11	Chlorophyll a, corrected for pheophytin	Total	ug/l		
BEN-01	KICKAPOO CREEK	20-Sep-11	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		
BEN-01	KICKAPOO CREEK	20-Sep-11	Chlorophyll b	Total	ug/l		
BEN-01	KICKAPOO CREEK	20-Sep-11	Chlorophyll c	Total	ug/l	J	
BEN-01	KICKAPOO CREEK	20-Sep-11	Chromium	Dissolved	ug/l	J	0.24
BEN-01	KICKAPOO CREEK	20-Sep-11	Chromium	Total	ug/l	ND	0.24
BEN-01	KICKAPOO CREEK	20-Sep-11	Cobalt	Dissolved	ug/l	J	0.22
BEN-01	KICKAPOO CREEK	20-Sep-11	Cobalt	Total	ug/l	J	0.22
BEN-01	KICKAPOO CREEK	20-Sep-11	Copper	Dissolved	ug/l	J	0.79
BEN-01	KICKAPOO CREEK	20-Sep-11	Copper	Total	ug/l	J	0.79
BEN-01	KICKAPOO CREEK	20-Sep-11	Cyanide	Total	mg/l	J	0.002
BEN-01		20-Sep-11	Dissolved oxygen (DO)		mg/l		
BEN-01		20-Sep-11	Dissolved oxygen saturation		%		
BEN-01	KICKAPOO CREEK	20-Sep-11	Fluoride	Total	mg/l		0.02
BEN-01	KICKAPOO CREEK	20-Sep-11	Hardness, Ca, Mg		ug/l	C	
BEN-01	KICKAPOO CREEK	20-Sep-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BEN-01	KICKAPOO CREEK	20-Sep-11	Iron	Dissolved	ug/l	V	3.06
BEN-01	KICKAPOO CREEK	20-Sep-11	Iron	Total	ug/l	V	3.06
BEN-01	KICKAPOO CREEK	20-Sep-11	Kjeldahl nitrogen	Total	mg/l		0.098
BEN-01	KICKAPOO CREEK	20-Sep-11	Lead	Dissolved	ug/l	J	0.67
BEN-01	KICKAPOO CREEK	20-Sep-11	Lead	Total	ug/l	J	0.67
BEN-01	KICKAPOO CREEK	20-Sep-11	Magnesium	Dissolved	ug/l		4.69
BEN-01	KICKAPOO CREEK	20-Sep-11	Magnesium	Total	ug/l		4.69
BEN-01	KICKAPOO CREEK	20-Sep-11	Manganese	Dissolved	ug/l		0.05
BEN-01	KICKAPOO CREEK	20-Sep-11	Manganese	Total	ug/l		0.05
BEN-01	KICKAPOO CREEK	20-Sep-11	Nickel	Dissolved	ug/l	J	0.41
BEN-01	KICKAPOO CREEK	20-Sep-11	Nickel	Total	ug/l	J	0.41
BEN-01	KICKAPOO CREEK	20-Sep-11	Organic carbon	Total	mg/l		0.02
BEN-01		20-Sep-11	pH		none		
BEN-01	KICKAPOO CREEK	20-Sep-11	Phenols	Total	ug/l	J	1.53
BEN-01	KICKAPOO CREEK	20-Sep-11	Pheophytin a	Total	ug/l		
BEN-01	KICKAPOO CREEK	20-Sep-11	Phosphorus	Dissolved	mg/l		0.002
BEN-01	KICKAPOO CREEK	20-Sep-11	Phosphorus	Total	mg/l		0.002
BEN-01	KICKAPOO CREEK	20-Sep-11	Potassium	Dissolved	ug/l		8.13
BEN-01	KICKAPOO CREEK	20-Sep-11	Potassium	Total	ug/l		8.13
BEN-01	KICKAPOO CREEK	20-Sep-11	Silver	Dissolved	ug/l	ND	0.38
BEN-01	KICKAPOO CREEK	20-Sep-11	Silver	Total	ug/l	J	0.38
BEN-01	KICKAPOO CREEK	20-Sep-11	Sodium	Dissolved	ug/l		231
BEN-01	KICKAPOO CREEK	20-Sep-11	Sodium	Total	ug/l		231
BEN-01		20-Sep-11	Specific conductance		umho/cm		
BEN-01	KICKAPOO CREEK	20-Sep-11	Strontium	Dissolved	ug/l		0.38
BEN-01	KICKAPOO CREEK	20-Sep-11	Strontium	Total	ug/l		0.38
BEN-01	KICKAPOO CREEK	20-Sep-11	Sulfate	Total	mg/l		1.63
BEN-01		20-Sep-11	Temperature, air		deg C		
BEN-01	KICKAPOO CREEK	20-Sep-11	Temperature, sample		deg C		
BEN-01		20-Sep-11	Temperature, water		deg C		
BEN-01	KICKAPOO CREEK	20-Sep-11	Total suspended solids		mg/l		
BEN-01		20-Sep-11	Turbidity		NTU		
BEN-01	KICKAPOO CREEK	20-Sep-11	Vanadium	Dissolved	ug/l	J,V	0.19
BEN-01	KICKAPOO CREEK	20-Sep-11	Vanadium	Total	ug/l	J,V	0.19
BEN-01	KICKAPOO CREEK	20-Sep-11	Volatile suspended solids		mg/l		
BEN-01	KICKAPOO CREEK	20-Sep-11	Zinc	Dissolved	ug/l	V	0.35
BEN-01	KICKAPOO CREEK	20-Sep-11	Zinc	Total	ug/l	V	0.35
BENA-01	RILEY CREEK	20-Sep-11	Alkalinity, total		mg/l		1.46
BENA-01	RILEY CREEK	20-Sep-11	Aluminum	Total	ug/l		2.78
BENA-01	RILEY CREEK	20-Sep-11	Ammonia-nitrogen	Total	mg/l		0.02
BENA-01	RILEY CREEK	20-Sep-11	Arsenic	Total	ug/l	J	0.94
BENA-01	RILEY CREEK	20-Sep-11	Barium	Total	ug/l		0.13
BENA-01	RILEY CREEK	20-Sep-11	Beryllium	Total	ug/l	J,V	0.08
BENA-01	RILEY CREEK	20-Sep-11	Boron	Total	ug/l		2.73
BENA-01	RILEY CREEK	20-Sep-11	Cadmium	Total	ug/l	ND	0.18
BENA-01	RILEY CREEK	20-Sep-11	Calcium	Total	ug/l		4.76
BENA-01	RILEY CREEK	20-Sep-11	Chloride	Total	mg/l		0.29
BENA-01	RILEY CREEK	20-Sep-11	Chlorophyll a, corrected for pheophytin	Total	ug/l		
BENA-01	RILEY CREEK	20-Sep-11	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		
BENA-01	RILEY CREEK	20-Sep-11	Chlorophyll b	Total	ug/l	ND	0.5
BENA-01	RILEY CREEK	20-Sep-11	Chlorophyll c	Total	ug/l	J	

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-01	RILEY CREEK	20-Sep-11	Chromium	Total	ug/l	J	0.24
BENA-01	RILEY CREEK	20-Sep-11	Cobalt	Total	ug/l	J	0.22
BENA-01	RILEY CREEK	20-Sep-11	Copper	Total	ug/l		0.79
BENA-01	RILEY CREEK	20-Sep-11	Cyanide	Total	mg/l	ND	0.002
BENA-01		20-Sep-11	Dissolved oxygen (DO)		mg/l		
BENA-01		20-Sep-11	Dissolved oxygen saturation		%		
BENA-01	RILEY CREEK	20-Sep-11	Fluoride	Total	mg/l		0.02
BENA-01	RILEY CREEK	20-Sep-11	Hardness, Ca, Mg		ug/l	C	
BENA-01	RILEY CREEK	20-Sep-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BENA-01	RILEY CREEK	20-Sep-11	Iron	Total	ug/l	V	3.06
BENA-01	RILEY CREEK	20-Sep-11	Kjeldahl nitrogen	Total	mg/l		0.098
BENA-01	RILEY CREEK	20-Sep-11	Lead	Total	ug/l	ND	0.67
BENA-01	RILEY CREEK	20-Sep-11	Magnesium	Total	ug/l		4.69
BENA-01	RILEY CREEK	20-Sep-11	Manganese	Total	ug/l		0.05
BENA-01	RILEY CREEK	20-Sep-11	Nickel	Total	ug/l	J	0.41
BENA-01		20-Sep-11	pH		none		
BENA-01	RILEY CREEK	20-Sep-11	Phenols	Total	ug/l	ND	1.53
BENA-01	RILEY CREEK	20-Sep-11	Pheophytin a	Total	ug/l	J	
BENA-01	RILEY CREEK	20-Sep-11	Phosphorus	Dissolved	mg/l		0.002
BENA-01	RILEY CREEK	20-Sep-11	Phosphorus	Total	mg/l		0.002
BENA-01	RILEY CREEK	20-Sep-11	Potassium	Total	ug/l		8.13
BENA-01	RILEY CREEK	20-Sep-11	Silver	Total	ug/l	J	0.38
BENA-01	RILEY CREEK	20-Sep-11	Sodium	Total	ug/l		231
BENA-01		20-Sep-11	Specific conductance		umho/cm		
BENA-01	RILEY CREEK	20-Sep-11	Strontium	Total	ug/l		0.38
BENA-01	RILEY CREEK	20-Sep-11	Sulfate	Total	mg/l		1.63
BENA-01		20-Sep-11	Temperature, air		deg C		
BENA-01	RILEY CREEK	20-Sep-11	Temperature, sample		deg C		
BENA-01		20-Sep-11	Temperature, water		deg C		
BENA-01	RILEY CREEK	20-Sep-11	Total suspended solids		mg/l	ND	4
BENA-01		20-Sep-11	Turbidity		NTU		
BENA-01	RILEY CREEK	20-Sep-11	Vanadium	Total	ug/l	ND,V	0.19
BENA-01	RILEY CREEK	20-Sep-11	Volatile suspended solids		mg/l	ND	4
BENA-01	RILEY CREEK	20-Sep-11	Zinc	Total	ug/l	V	0.35
BENA-03	RILEY CREEK	20-Sep-11	Alkalinity, total		mg/l		1.46
BENA-03	RILEY CREEK	20-Sep-11	Aluminum	Dissolved	ug/l	ND	2.78
BENA-03	RILEY CREEK	20-Sep-11	Aluminum	Total	ug/l	ND	2.78
BENA-03	RILEY CREEK	20-Sep-11	Ammonia-nitrogen	Total	mg/l		0.02
BENA-03	RILEY CREEK	20-Sep-11	Arsenic	Dissolved	ug/l		0.94
BENA-03	RILEY CREEK	20-Sep-11	Arsenic	Total	ug/l	J	0.94
BENA-03	RILEY CREEK	20-Sep-11	Barium	Dissolved	ug/l		0.13
BENA-03	RILEY CREEK	20-Sep-11	Barium	Total	ug/l		0.13
BENA-03	RILEY CREEK	20-Sep-11	Beryllium	Dissolved	ug/l	V	0.08
BENA-03	RILEY CREEK	20-Sep-11	Beryllium	Total	ug/l	J,V	0.08
BENA-03	RILEY CREEK	20-Sep-11	Boron	Dissolved	ug/l	V	2.73
BENA-03	RILEY CREEK	20-Sep-11	Boron	Total	ug/l	V	2.73
BENA-03	RILEY CREEK	20-Sep-11	Cadmium	Dissolved	ug/l	ND	0.18
BENA-03	RILEY CREEK	20-Sep-11	Cadmium	Total	ug/l	ND	0.18
BENA-03	RILEY CREEK	20-Sep-11	Calcium	Dissolved	ug/l		4.76
BENA-03	RILEY CREEK	20-Sep-11	Calcium	Total	ug/l		4.76
BENA-03	RILEY CREEK	20-Sep-11	Chloride	Total	mg/l		0.29
BENA-03	RILEY CREEK	20-Sep-11	Chlorophyll a, corrected for pheophytin	Total	ug/l		
BENA-03	RILEY CREEK	20-Sep-11	Chlorophyll a, uncorrected for pheophytin	Total	ug/l		
BENA-03	RILEY CREEK	20-Sep-11	Chlorophyll b	Total	ug/l	ND	0.5
BENA-03	RILEY CREEK	20-Sep-11	Chlorophyll c	Total	ug/l	ND	0.5
BENA-03	RILEY CREEK	20-Sep-11	Chromium	Dissolved	ug/l	ND	0.24
BENA-03	RILEY CREEK	20-Sep-11	Chromium	Total	ug/l	J	0.24
BENA-03	RILEY CREEK	20-Sep-11	Cobalt	Dissolved	ug/l	J	0.22
BENA-03	RILEY CREEK	20-Sep-11	Cobalt	Total	ug/l	J	0.22
BENA-03	RILEY CREEK	20-Sep-11	Copper	Dissolved	ug/l	ND	0.79
BENA-03	RILEY CREEK	20-Sep-11	Copper	Total	ug/l	ND	0.79
BENA-03		20-Sep-11	Dissolved oxygen (DO)		mg/l		
BENA-03		20-Sep-11	Dissolved oxygen saturation		%		
BENA-03	RILEY CREEK	20-Sep-11	Fluoride	Total	mg/l		0.02
BENA-03	RILEY CREEK	20-Sep-11	Hardness, Ca, Mg		ug/l	C	
BENA-03	RILEY CREEK	20-Sep-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BENA-03	RILEY CREEK	20-Sep-11	Iron	Dissolved	ug/l	J,V	3.06
BENA-03	RILEY CREEK	20-Sep-11	Iron	Total	ug/l	V	3.06
BENA-03	RILEY CREEK	20-Sep-11	Kjeldahl nitrogen	Total	mg/l	J	0.098

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-03	RILEY CREEK	20-Sep-11	Lead	Dissolved	ug/l	ND	0.67
BENA-03	RILEY CREEK	20-Sep-11	Lead	Total	ug/l	ND	0.67
BENA-03	RILEY CREEK	20-Sep-11	Magnesium	Dissolved	ug/l		4.69
BENA-03	RILEY CREEK	20-Sep-11	Magnesium	Total	ug/l		4.69
BENA-03	RILEY CREEK	20-Sep-11	Manganese	Dissolved	ug/l		0.05
BENA-03	RILEY CREEK	20-Sep-11	Manganese	Total	ug/l		0.05
BENA-03	RILEY CREEK	20-Sep-11	Nickel	Dissolved	ug/l	ND	0.41
BENA-03	RILEY CREEK	20-Sep-11	Nickel	Total	ug/l	J	0.41
BENA-03	RILEY CREEK	20-Sep-11	Organic carbon	Total	mg/l		0.02
BENA-03		20-Sep-11	pH		none		
BENA-03	RILEY CREEK	20-Sep-11	Phenols	Total	ug/l	J	1.53
BENA-03	RILEY CREEK	20-Sep-11	Pheophytin a	Total	ug/l	J	
BENA-03	RILEY CREEK	20-Sep-11	Phosphorus	Dissolved	mg/l		0.002
BENA-03	RILEY CREEK	20-Sep-11	Phosphorus	Total	mg/l		0.002
BENA-03	RILEY CREEK	20-Sep-11	Potassium	Dissolved	ug/l		8.13
BENA-03	RILEY CREEK	20-Sep-11	Potassium	Total	ug/l		8.13
BENA-03	RILEY CREEK	20-Sep-11	Silver	Dissolved	ug/l	J	0.38
BENA-03	RILEY CREEK	20-Sep-11	Silver	Total	ug/l	J	0.38
BENA-03	RILEY CREEK	20-Sep-11	Sodium	Dissolved	ug/l		231
BENA-03	RILEY CREEK	20-Sep-11	Sodium	Total	ug/l		231
BENA-03		20-Sep-11	Specific conductance		umho/cm		
BENA-03	RILEY CREEK	20-Sep-11	Strontium	Dissolved	ug/l		0.38
BENA-03	RILEY CREEK	20-Sep-11	Strontium	Total	ug/l		0.38
BENA-03	RILEY CREEK	20-Sep-11	Sulfate	Total	mg/l		1.63
BENA-03		20-Sep-11	Temperature, air		deg C		
BENA-03	RILEY CREEK	20-Sep-11	Temperature, sample		deg C		
BENA-03		20-Sep-11	Temperature, water		deg C		
BENA-03	RILEY CREEK	20-Sep-11	Total suspended solids		mg/l		
BENA-03		20-Sep-11	Turbidity		NTU		
BENA-03	RILEY CREEK	20-Sep-11	Vanadium	Dissolved	ug/l	J,V	0.19
BENA-03	RILEY CREEK	20-Sep-11	Vanadium	Total	ug/l	J,V	0.19
BENA-03	RILEY CREEK	20-Sep-11	Volatile suspended solids		mg/l		
BENA-03	RILEY CREEK	20-Sep-11	Zinc	Dissolved	ug/l	ND,V	0.35
BENA-03	RILEY CREEK	20-Sep-11	Zinc	Total	ug/l	ND,V	0.35
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Alkalinity, total		mg/l		1.46
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Aluminum	Dissolved	ug/l	ND	2.78
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Aluminum	Total	ug/l	J	2.78
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Ammonia-nitrogen	Total	mg/l		0.02
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Arsenic	Dissolved	ug/l	J	0.94
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Arsenic	Total	ug/l	J	0.94
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Barium	Dissolved	ug/l		0.13
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Barium	Total	ug/l		0.13
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Beryllium	Dissolved	ug/l	J,V	0.08
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Beryllium	Total	ug/l	J,V	0.08
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Boron	Dissolved	ug/l		2.73
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Boron	Total	ug/l		2.73
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Cadmium	Dissolved	ug/l	ND	0.18
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Cadmium	Total	ug/l	ND	0.18
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Calcium	Dissolved	ug/l		4.76
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Calcium	Total	ug/l		4.76
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Chloride	Total	mg/l		0.29
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Chlorophyll a, corrected for pheophytin	Total	ug/l	J	
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Chlorophyll a, uncorrected for pheophytin	Total	ug/l	J	
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Chlorophyll b	Total	ug/l	J	
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Chlorophyll c	Total	ug/l	J	
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Chromium	Dissolved	ug/l	J	0.24
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Chromium	Total	ug/l	J	0.24
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Cobalt	Dissolved	ug/l	J	0.22
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Cobalt	Total	ug/l	J	0.22
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Copper	Dissolved	ug/l		0.79
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Copper	Total	ug/l		0.79
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Cyanide	Total	mg/l	ND	0.002
BENC-01		20-Sep-11	Dissolved oxygen (DO)		mg/l		
BENC-01		20-Sep-11	Dissolved oxygen saturation		%		
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Fluoride	Total	mg/l		0.02
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Hardness, Ca, Mg		ug/l	C	
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Inorganic nitrogen (nitrate and nitrite)	Total	mg/l		0.018
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Iron	Dissolved	ug/l	V	3.06
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Iron	Total	ug/l	V	3.06

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Kjeldahl nitrogen	Total	mg/l		0.098
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Lead	Dissolved	ug/l	J	0.67
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Lead	Total	ug/l	ND	0.67
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Magnesium	Dissolved	ug/l		4.69
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Magnesium	Total	ug/l		4.69
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Manganese	Dissolved	ug/l		0.05
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Manganese	Total	ug/l		0.05
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Nickel	Dissolved	ug/l	J	0.41
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Nickel	Total	ug/l	J	0.41
BENC-01		20-Sep-11	pH		none		
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Phenols	Total	ug/l	ND	1.53
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Pheophytin a	Total	ug/l	J	
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Phosphorus	Dissolved	mg/l		0.002
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Phosphorus	Total	mg/l		0.002
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Potassium	Dissolved	ug/l		8.13
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Potassium	Total	ug/l		8.13
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Silver	Dissolved	ug/l	J	0.38
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Silver	Total	ug/l	J	0.38
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Sodium	Dissolved	ug/l		231
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Sodium	Total	ug/l		231
BENC-01		20-Sep-11	Specific conductance		umho/cm		
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Strontium	Dissolved	ug/l		0.38
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Strontium	Total	ug/l		0.38
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Sulfate	Total	mg/l		1.63
BENC-01		20-Sep-11	Temperature, air		deg C		
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Temperature, sample		deg C		
BENC-01		20-Sep-11	Temperature, water		deg C		
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Total suspended solids		mg/l		
BENC-01		20-Sep-11	Turbidity		NTU		
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Vanadium	Dissolved	ug/l	J,V	0.19
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Vanadium	Total	ug/l	ND,V	0.19
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Volatile suspended solids		mg/l		
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Zinc	Dissolved	ug/l	V	0.35
BENC-01	RILEY CASSELL CREEK	20-Sep-11	Zinc	Total	ug/l	V	0.35
BEN-01	KICKAPOO CREEK	5/31/2016	Alkalinity, total		242	mg/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Aluminum	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Aluminum	Total	84.6	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Ammonia-nitrogen	Total		mg/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Arsenic	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Arsenic	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Barium	Dissolved	58.8	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Barium	Total	58.1	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Beryllium	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Beryllium	Total	0.33	ug/l	J
BEN-01	KICKAPOO CREEK	5/31/2016	Boron	Dissolved	79.8	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Boron	Total	77.8	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Cadmium	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Cadmium	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Calcium	Dissolved	74000	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Calcium	Total	67800	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Chloride	Total	34.9	mg/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Chlorophyll a, corrected for pheophytin	Total	2.14	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Chlorophyll a, uncorrected for pheophytin	Total	3.31	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Chlorophyll b	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Chlorophyll c	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Chromium	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Chromium	Dissolved	4.69	ug/l	J
BEN-01	KICKAPOO CREEK	5/31/2016	Cobalt	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Cobalt	Total	1.47	ug/l	J
BEN-01	KICKAPOO CREEK	5/31/2016	Copper	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Copper	Total	1.8	ug/l	J
BEN-01	KICKAPOO CREEK	5/31/2016	Dissolved oxygen (DO)		8.5	mg/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Dissolved oxygen saturation		95	%	
BEN-01	KICKAPOO CREEK	5/31/2016	Fluoride	Total	0.2	mg/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Hardness, Ca, Mg		285000	ug/l	C
BEN-01	KICKAPOO CREEK	5/31/2016	Inorganic nitrogen (nitrate and nitrite)	Total	8.43	mg/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Iron	Dissolved	10.4	ug/l	J
BEN-01	KICKAPOO CREEK	5/31/2016	Iron	Total	147	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Kjeldahl nitrogen	Total	0.4	mg/l	J

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BEN-01	KICKAPOO CREEK	5/31/2016	Lead	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Lead	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Magnesium	Dissolved	30000	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Magnesium	Total	28200	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Manganese	Dissolved	15.2	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Manganese	Total	26.4	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Nickel	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Nickel	Total	1.31	ug/l	J
BEN-01	KICKAPOO CREEK	5/31/2016	Organic carbon	Total	2.57	mg/l	
BEN-01	KICKAPOO CREEK	5/31/2016	pH		8	None	
BEN-01	KICKAPOO CREEK	5/31/2016	Phenols	Total	3.8	ug/l	J
BEN-01	KICKAPOO CREEK	5/31/2016	Pheophytin a	Total	1.79	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Phosphorus	Dissolved	0.37	mg/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Phosphorus	Total	0.406	mg/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Potassium	Dissolved	2190	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Potassium	Total	2170	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Selenium	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Selenium	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Silver	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Silver	Total	0.56	ug/l	J
BEN-01	KICKAPOO CREEK	5/31/2016	Sodium	Dissolved	15400	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Sodium	Total	16000	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Specific conductance		618	umho/cm	
BEN-01	KICKAPOO CREEK	5/31/2016	Strontium	Dissolved	135	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Strontium	Total	135	ug/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Sulfate	Total	21.4	mg/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Temperature, air		26	deg C	
BEN-01	KICKAPOO CREEK	5/31/2016	Temperature, sample		4	deg C	
BEN-01	KICKAPOO CREEK	5/31/2016	Temperature, water		20.3	deg C	
BEN-01	KICKAPOO CREEK	5/31/2016	Total suspended solids		7	mg/l	
BEN-01	KICKAPOO CREEK	5/31/2016	Turbidity		5.07	NTU	
BEN-01	KICKAPOO CREEK	5/31/2016	Vanadium	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Vanadium	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Volatile suspended solids			mg/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Zinc	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	5/31/2016	Zinc	Total	20.7	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Alkalinity, total		253	mg/l	
BENA-01	RILEY CREEK	5/31/2016	Aluminum	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Aluminum	Total	137	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Ammonia-nitrogen	Total		mg/l	ND
BENA-01	RILEY CREEK	5/31/2016	Arsenic	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Arsenic	Total		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Barium	Dissolved	59.9	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Barium	Total	62.2	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Beryllium	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Beryllium	Total	0.36	ug/l	J
BENA-01	RILEY CREEK	5/31/2016	Boron	Dissolved	62.9	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Boron	Total	53.7	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Cadmium	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Cadmium	Total		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Calcium	Dissolved	76600	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Calcium	Total	73800	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Chloride	Total	31.6	mg/l	
BENA-01	RILEY CREEK	5/31/2016	Chlorophyll a, corrected for pheophytin	Total	2.4	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Chlorophyll a, uncorrected for pheophytin	Total	3.99	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Chlorophyll b	Total		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Chlorophyll c	Total		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Chromium	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Chromium	Total		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Cobalt	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Cobalt	Total	0.91	ug/l	J
BENA-01	RILEY CREEK	5/31/2016	Copper	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Copper	Total	1.41	ug/l	J
BENA-01	RILEY CREEK	5/31/2016	Dissolved oxygen (DO)		7.9	mg/l	
BENA-01	RILEY CREEK	5/31/2016	Dissolved oxygen saturation		87	%	
BENA-01	RILEY CREEK	5/31/2016	Fluoride	Total	0.19	mg/l	
BENA-01	RILEY CREEK	5/31/2016	Hardness, Ca, Mg		306000	ug/l	C
BENA-01	RILEY CREEK	5/31/2016	Inorganic nitrogen (nitrate and nitrite)	Total	10	mg/l	
BENA-01	RILEY CREEK	5/31/2016	Iron	Dissolved	9.83	ug/l	J

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-01	RILEY CREEK	5/31/2016	Iron	Total	212	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Kjeldahl nitrogen	Total	0.29	mg/l	J
BENA-01	RILEY CREEK	5/31/2016	Lead	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Lead	Total		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Magnesium	Dissolved	29700	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Magnesium	Total	29500	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Manganese	Dissolved	14.2	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Manganese	Total	30.5	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Nickel	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Nickel	Total		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Organic carbon	Total	2.23	mg/l	
BENA-01	RILEY CREEK	5/31/2016	pH		8	None	
BENA-01	RILEY CREEK	5/31/2016	Phenols	Total	4.04	ug/l	J
BENA-01	RILEY CREEK	5/31/2016	Pheophytin a	Total	2.46	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Phosphorus	Dissolved	0.231	mg/l	
BENA-01	RILEY CREEK	5/31/2016	Phosphorus	Total	0.252	mg/l	
BENA-01	RILEY CREEK	5/31/2016	Potassium	Dissolved	1440	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Potassium	Total	1500	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Selenium	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Selenium	Total		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Silver	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Silver	Total	1.09	ug/l	J
BENA-01	RILEY CREEK	5/31/2016	Sodium	Dissolved	11900	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Sodium	Total	12400	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Specific conductance		627	umho/cm	
BENA-01	RILEY CREEK	5/31/2016	Strontium	Dissolved	137	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Strontium	Total	140	ug/l	
BENA-01	RILEY CREEK	5/31/2016	Sulfate	Total	18.9	mg/l	
BENA-01	RILEY CREEK	5/31/2016	Temperature, air		24	deg C	
BENA-01	RILEY CREEK	5/31/2016	Temperature, sample		3	deg C	
BENA-01	RILEY CREEK	5/31/2016	Temperature, water		20	deg C	
BENA-01	RILEY CREEK	5/31/2016	Total suspended solids		12	mg/l	
BENA-01	RILEY CREEK	5/31/2016	Turbidity		7.4	NTU	
BENA-01	RILEY CREEK	5/31/2016	Vanadium	Total		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Vanadium	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Volatile suspended solids			mg/l	ND
BENA-01	RILEY CREEK	5/31/2016	Zinc	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	5/31/2016	Zinc	Total	18.5	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Alkalinity, total		251	mg/l	J3
BENA-03	RILEY CREEK	5/31/2016	Aluminum	Total	94.3	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Aluminum	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Ammonia-nitrogen	Total		mg/l	ND
BENA-03	RILEY CREEK	5/31/2016	Arsenic	Total		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Arsenic	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Barium	Dissolved	60.5	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Barium	Total	61.8	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Beryllium	Total	0.34	ug/l	J
BENA-03	RILEY CREEK	5/31/2016	Beryllium	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Boron	Total	39.2	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Boron	Dissolved	50.2	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Cadmium	Total		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Cadmium	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Calcium	Total	72900	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Calcium	Dissolved	75500	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Chloride	Total	29.2	mg/l	
BENA-03	RILEY CREEK	5/31/2016	Chlorophyll a, corrected for pheophytin	Total	1.6	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Chlorophyll a, uncorrected for pheophytin	Total	3.09	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Chlorophyll b	Total		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Chlorophyll c	Total		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Chromium	Total		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Chromium	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Cobalt	Total	0.81	ug/l	J
BENA-03	RILEY CREEK	5/31/2016	Cobalt	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Copper	Total	1.34	ug/l	J
BENA-03	RILEY CREEK	5/31/2016	Copper	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Dissolved oxygen (DO)		7.3	mg/l	
BENA-03	RILEY CREEK	5/31/2016	Dissolved oxygen saturation		80	%	
BENA-03	RILEY CREEK	5/31/2016	Fluoride	Total	0.17	mg/l	
BENA-03	RILEY CREEK	5/31/2016	Hardness, Ca, Mg		305000	ug/l	C

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-03	RILEY CREEK	5/31/2016	Inorganic nitrogen (nitrate and nitrite)	Total	9.68	mg/l	
BENA-03	RILEY CREEK	5/31/2016	Iron	Total	153	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Iron	Dissolved	8.58	ug/l	J
BENA-03	RILEY CREEK	5/31/2016	Kjeldahl nitrogen	Total	0.32	mg/l	J
BENA-03	RILEY CREEK	5/31/2016	Lead	Total		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Lead	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Magnesium	Total	29900	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Magnesium	Dissolved	30600	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Manganese	Total	23.3	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Manganese	Dissolved	11.1	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Nickel	Total		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Nickel	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Organic carbon	Total	2.16	mg/l	
BENA-03	RILEY CREEK	5/31/2016	pH		8	None	
BENA-03	RILEY CREEK	5/31/2016	Phenols	Total	4.53	ug/l	J
BENA-03	RILEY CREEK	5/31/2016	Pheophytin a	Total	2.32	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Phosphorus	Dissolved	0.054	mg/l	
BENA-03	RILEY CREEK	5/31/2016	Phosphorus	Total	0.068	mg/l	
BENA-03	RILEY CREEK	5/31/2016	Potassium	Total	978	ug/l	J
BENA-03	RILEY CREEK	5/31/2016	Potassium	Dissolved	903	ug/l	J
BENA-03	RILEY CREEK	5/31/2016	Selenium	Total		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Selenium	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Silver	Total		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Silver	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Sodium	Total	8920	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Sodium	Dissolved	8650	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Specific conductance		610	umho/cm	
BENA-03	RILEY CREEK	5/31/2016	Strontium	Total	141	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Strontium	Dissolved	138	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Sulfate	Total	15.8	mg/l	
BENA-03	RILEY CREEK	5/31/2016	Temperature, air		25	deg C	
BENA-03	RILEY CREEK	5/31/2016	Temperature, sample		3	deg C	
BENA-03	RILEY CREEK	5/31/2016	Temperature, water		20.2	deg C	
BENA-03	RILEY CREEK	5/31/2016	Total suspended solids		6	mg/l	
BENA-03	RILEY CREEK	5/31/2016	Turbidity		6.27	NTU	
BENA-03	RILEY CREEK	5/31/2016	Vanadium	Total		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Vanadium	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	5/31/2016	Volatile suspended solids			mg/l	ND
BENA-03	RILEY CREEK	5/31/2016	Zinc	Total	17.6	ug/l	
BENA-03	RILEY CREEK	5/31/2016	Zinc	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	6/6/2016	Ammonia-nitrogen	Total		mg/l	ND
BEN-01	KICKAPOO CREEK	6/6/2016	Inorganic nitrogen (nitrate and nitrite)	Total	10.2	mg/l	
BEN-01	KICKAPOO CREEK	6/6/2016	Kjeldahl nitrogen	Total	0.54	mg/l	
BEN-01	KICKAPOO CREEK	6/6/2016	Phosphorus	Total	0.26	mg/l	
BEN-01	KICKAPOO CREEK	6/6/2016	Temperature, sample		5	deg C	
BEN-01	KICKAPOO CREEK	6/6/2016	Total suspended solids		24	mg/l	
BEN-01	KICKAPOO CREEK	6/6/2016	Volatile suspended solids		4	mg/l	
BENA-01	RILEY CREEK	6/6/2016	Ammonia-nitrogen	Total		mg/l	ND
BENA-01	RILEY CREEK	6/6/2016	Inorganic nitrogen (nitrate and nitrite)	Total	11.8	mg/l	J3
BENA-01	RILEY CREEK	6/6/2016	Kjeldahl nitrogen	Total	0.6	mg/l	
BENA-01	RILEY CREEK	6/6/2016	Phosphorus	Total	0.178	mg/l	
BENA-01	RILEY CREEK	6/6/2016	Temperature, sample		5	deg C	
BENA-01	RILEY CREEK	6/6/2016	Total suspended solids		23	mg/l	
BENA-01	RILEY CREEK	6/6/2016	Volatile suspended solids		6	mg/l	
BENA-01	RILEY CREEK	7/12/2016	Alkalinity, total		195	mg/l	
BENA-01	RILEY CREEK	7/12/2016	Aluminum	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Aluminum	Total	68	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Ammonia-nitrogen	Total		mg/l	ND
BENA-01	RILEY CREEK	7/12/2016	Arsenic	Total	1.84	ug/l	J
BENA-01	RILEY CREEK	7/12/2016	Arsenic	Dissolved	1.79	ug/l	J
BENA-01	RILEY CREEK	7/12/2016	Barium	Dissolved	53.6	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Barium	Total	54.8	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Beryllium	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Beryllium	Total		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Boron	Dissolved	147	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Boron	Total	148	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Cadmium	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Cadmium	Total		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Calcium	Dissolved	63300	ug/l	

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-01	RILEY CREEK	7/12/2016	Calcium	Total	60400	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Chloride	Total	50.4	mg/l	
BENA-01	RILEY CREEK	7/12/2016	Chlorophyll a, corrected for pheophytin	Total	1.34	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Chlorophyll a, uncorrected for pheophytin	Total	1.71	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Chlorophyll b	Total		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Chlorophyll c	Total		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Chromium	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Chromium	Total		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Cobalt	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Cobalt	Total	0.79	ug/l	J
BENA-01	RILEY CREEK	7/12/2016	Copper	Dissolved	2.42	ug/l	J
BENA-01	RILEY CREEK	7/12/2016	Copper	Total	2.3	ug/l	J
BENA-01	RILEY CREEK	7/12/2016	Dissolved oxygen (DO)		6.7	mg/l	
BENA-01	RILEY CREEK	7/12/2016	Dissolved oxygen saturation		81	%	
BENA-01	RILEY CREEK	7/12/2016	Fluoride	Total	0.26	mg/l	
BENA-01	RILEY CREEK	7/12/2016	Hardness, Ca, Mg		253000	ug/l	C
BENA-01	RILEY CREEK	7/12/2016	Inorganic nitrogen (nitrate and nitrite)	Total	10.7	mg/l	
BENA-01	RILEY CREEK	7/12/2016	Iron	Dissolved	14.4	ug/l	J
BENA-01	RILEY CREEK	7/12/2016	Iron	Total	121	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Kjeldahl nitrogen	Total	0.49	mg/l	J
BENA-01	RILEY CREEK	7/12/2016	Lead	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Lead	Total		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Magnesium	Dissolved	26400	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Magnesium	Total	24900	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Manganese	Dissolved	32.3	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Manganese	Total	45.5	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Nickel	Dissolved	1.13	ug/l	J
BENA-01	RILEY CREEK	7/12/2016	Nickel	Total		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Organic carbon	Total	3.66	mg/l	
BENA-01	RILEY CREEK	7/12/2016	pH		7.9	None	
BENA-01	RILEY CREEK	7/12/2016	Phenols	Total	2.33	ug/l	J
BENA-01	RILEY CREEK	7/12/2016	Pheophytin a	Total	0.53	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Phosphorus	Dissolved	1.17	mg/l	
BENA-01	RILEY CREEK	7/12/2016	Phosphorus	Total	1.23	mg/l	
BENA-01	RILEY CREEK	7/12/2016	Potassium	Dissolved	4940	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Potassium	Total	4700	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Selenium	Total		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Selenium	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Silver	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Silver	Total	1.82	ug/l	J
BENA-01	RILEY CREEK	7/12/2016	Sodium	Dissolved	31300	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Sodium	Total	30900	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Specific conductance		624	umho/cm	
BENA-01	RILEY CREEK	7/12/2016	Strontium	Dissolved	131	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Strontium	Total	131	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Sulfate	Total	25.5	mg/l	
BENA-01	RILEY CREEK	7/12/2016	Temperature, air		29	deg C	
BENA-01	RILEY CREEK	7/12/2016	Temperature, sample		4	deg C	
BENA-01	RILEY CREEK	7/12/2016	Temperature, water		25.2	deg C	
BENA-01	RILEY CREEK	7/12/2016	Total suspended solids		7	mg/l	
BENA-01	RILEY CREEK	7/12/2016	Turbidity		5.52	NTU	
BENA-01	RILEY CREEK	7/12/2016	Vanadium	Total		ug/l	ND
BENA-01	RILEY CREEK	7/12/2016	Vanadium	Dissolved	8.4	ug/l	
BENA-01	RILEY CREEK	7/12/2016	Volatile suspended solids			mg/l	ND
BENA-01	RILEY CREEK	7/12/2016	Zinc	Dissolved	4.05	ug/l	J
BENA-01	RILEY CREEK	7/12/2016	Zinc	Total	9.67	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Alkalinity, total		208	mg/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Aluminum	Total	56.2	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Aluminum	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Ammonia-nitrogen	Total	0.07	mg/l	J
BEN-01	KICKAPOO CREEK	7/13/2016	Arsenic	Total	2.47	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Arsenic	Dissolved	2.6	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Barium	Total	55.5	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Barium	Dissolved	54.4	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Beryllium	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Beryllium	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Boron	Total	153	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Boron	Dissolved	146	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Cadmium	Total		ug/l	ND

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BEN-01	KICKAPOO CREEK	7/13/2016	Cadmium	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Calcium	Total	64200	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Calcium	Dissolved	63300	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Chloride	Total	47.2	mg/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Chlorophyll a, corrected for pheophytin	Total	0.8	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Chlorophyll a, uncorrected for pheophytin	Total	1.48	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Chlorophyll b	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Chlorophyll c	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Chromium	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Chromium	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Cobalt	Total	0.8	ug/l	J
BEN-01	KICKAPOO CREEK	7/13/2016	Cobalt	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Copper	Total	1.71	ug/l	J
BEN-01	KICKAPOO CREEK	7/13/2016	Copper	Dissolved	2.45	ug/l	J
BEN-01	KICKAPOO CREEK	7/13/2016	Dissolved oxygen (DO)		6.1	mg/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Dissolved oxygen saturation		74	%	
BEN-01	KICKAPOO CREEK	7/13/2016	Fluoride	Total	0.25	mg/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Hardness, Ca, Mg		263000	ug/l	C
BEN-01	KICKAPOO CREEK	7/13/2016	Inorganic nitrogen (nitrate and nitrite)	Total	7.63	mg/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Iron	Total	102	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Iron	Dissolved	12.9	ug/l	J
BEN-01	KICKAPOO CREEK	7/13/2016	Kjeldahl nitrogen	Total	0.45	mg/l	J
BEN-01	KICKAPOO CREEK	7/13/2016	Lead	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Lead	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Magnesium	Total	24900	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Magnesium	Dissolved	26300	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Manganese	Dissolved	41.4	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Manganese	Total	51.3	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Nickel	Dissolved	1.26	ug/l	J
BEN-01	KICKAPOO CREEK	7/13/2016	Nickel	Total	0.71	ug/l	J
BEN-01	KICKAPOO CREEK	7/13/2016	Organic carbon	Total	3.79	mg/l	
BEN-01	KICKAPOO CREEK	7/13/2016	pH		7.8	None	
BEN-01	KICKAPOO CREEK	7/13/2016	Phenols	Total	2.54	ug/l	J
BEN-01	KICKAPOO CREEK	7/13/2016	Pheophytin a	Total	1.07	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Phosphorus	Dissolved	1.07	mg/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Phosphorus	Total	1.09	mg/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Potassium	Total	4600	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Potassium	Dissolved	4600	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Selenium	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Selenium	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Silver	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Silver	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Sodium	Dissolved	28600	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Sodium	Total	28900	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Specific conductance		611	umho/cm	
BEN-01	KICKAPOO CREEK	7/13/2016	Strontium	Dissolved	132	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Strontium	Total	141	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Sulfate	Total	24.8	mg/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Temperature, air		28	deg C	
BEN-01	KICKAPOO CREEK	7/13/2016	Temperature, sample		1	deg C	
BEN-01	KICKAPOO CREEK	7/13/2016	Temperature, water		25	deg C	
BEN-01	KICKAPOO CREEK	7/13/2016	Total suspended solids		6	mg/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Turbidity		5.01	NTU	
BEN-01	KICKAPOO CREEK	7/13/2016	Vanadium	Total	1.32	ug/l	J
BEN-01	KICKAPOO CREEK	7/13/2016	Vanadium	Dissolved	9.54	ug/l	
BEN-01	KICKAPOO CREEK	7/13/2016	Volatile suspended solids			mg/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Zinc	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	7/13/2016	Zinc	Total	6.93	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Alkalinity, total		260	mg/l	J3
BENA-03	RILEY CREEK	7/13/2016	Aluminum	Total	238	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Aluminum	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Ammonia-nitrogen	Total		mg/l	ND
BENA-03	RILEY CREEK	7/13/2016	Arsenic	Dissolved	2.29	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Arsenic	Total	2.64	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Barium	Total	81.2	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Barium	Dissolved	66.8	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Beryllium	Total		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Beryllium	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Boron	Total	70.4	ug/l	

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-03	RILEY CREEK	7/13/2016	Boron	Dissolved	63.9	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Cadmium	Total		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Cadmium	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Calcium	Total	72200	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Calcium	Dissolved	68000	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Chloride	Total	27.6	mg/l	
BENA-03	RILEY CREEK	7/13/2016	Chlorophyll a, corrected for pheophytin	Total	12	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Chlorophyll a, uncorrected for pheophytin	Total	14.3	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Chlorophyll b	Total		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Chlorophyll c	Total	1.12	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Chromium	Total		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Chromium	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Cobalt	Total	0.8	ug/l	J
BENA-03	RILEY CREEK	7/13/2016	Cobalt	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Copper	Total		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Copper	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Dissolved oxygen (DO)		8.4	mg/l	
BENA-03	RILEY CREEK	7/13/2016	Dissolved oxygen saturation		103	%	
BENA-03	RILEY CREEK	7/13/2016	Fluoride	Total	0.18	mg/l	
BENA-03	RILEY CREEK	7/13/2016	Hardness, Ca, Mg		306000	ug/l	C
BENA-03	RILEY CREEK	7/13/2016	Inorganic nitrogen (nitrate and nitrite)	Total	0.516	mg/l	
BENA-03	RILEY CREEK	7/13/2016	Iron	Total	672	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Iron	Dissolved	16.8	ug/l	J
BENA-03	RILEY CREEK	7/13/2016	Kjeldahl nitrogen	Total	0.52	mg/l	
BENA-03	RILEY CREEK	7/13/2016	Lead	Total		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Lead	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Magnesium	Total	30500	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Magnesium	Dissolved	30900	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Manganese	Total	295	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Manganese	Dissolved	100	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Nickel	Total	0.86	ug/l	J
BENA-03	RILEY CREEK	7/13/2016	Nickel	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Organic carbon	Total	3.51	mg/l	
BENA-03	RILEY CREEK	7/13/2016	pH		8	None	
BENA-03	RILEY CREEK	7/13/2016	Phenols	Total	3.51	ug/l	J
BENA-03	RILEY CREEK	7/13/2016	Pheophytin a	Total	2.94	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Phosphorus	Total	0.188	mg/l	
BENA-03	RILEY CREEK	7/13/2016	Phosphorus	Dissolved	0.097	mg/l	
BENA-03	RILEY CREEK	7/13/2016	Potassium	Total	1800	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Potassium	Dissolved	1700	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Selenium	Total		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Selenium	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Silver	Total	0.99	ug/l	J
BENA-03	RILEY CREEK	7/13/2016	Silver	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Sodium	Total	15000	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Sodium	Dissolved	14800	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Specific conductance		555	umho/cm	
BENA-03	RILEY CREEK	7/13/2016	Strontium	Total	178	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Strontium	Dissolved	164	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Sulfate	Total	13.1	mg/l	
BENA-03	RILEY CREEK	7/13/2016	Temperature, air		32	deg C	
BENA-03	RILEY CREEK	7/13/2016	Temperature, sample		1	deg C	
BENA-03	RILEY CREEK	7/13/2016	Temperature, water		26.7	deg C	
BENA-03	RILEY CREEK	7/13/2016	Total suspended solids		55	mg/l	
BENA-03	RILEY CREEK	7/13/2016	Turbidity		7.02	NTU	
BENA-03	RILEY CREEK	7/13/2016	Vanadium	Total		ug/l	ND
BENA-03	RILEY CREEK	7/13/2016	Vanadium	Dissolved	9.65	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Volatile suspended solids		10	mg/l	
BENA-03	RILEY CREEK	7/13/2016	Zinc	Total	5.71	ug/l	
BENA-03	RILEY CREEK	7/13/2016	Zinc	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	8/1/2016	Ammonia-nitrogen	Total		mg/l	ND
BEN-01	KICKAPOO CREEK	8/1/2016	Inorganic nitrogen (nitrate and nitrite)	Total	7.55	mg/l	
BEN-01	KICKAPOO CREEK	8/1/2016	Kjeldahl nitrogen	Total	0.71	mg/l	
BEN-01	KICKAPOO CREEK	8/1/2016	Phosphorus	Total	1.1	mg/l	
BEN-01	KICKAPOO CREEK	8/1/2016	Temperature, sample		3	deg C	
BEN-01	KICKAPOO CREEK	8/1/2016	Total suspended solids		6	mg/l	
BEN-01	KICKAPOO CREEK	8/1/2016	Volatile suspended solids			mg/l	ND
BENA-01	RILEY CREEK	8/1/2016	Ammonia-nitrogen	Total		mg/l	ND
BENA-01	RILEY CREEK	8/1/2016	Inorganic nitrogen (nitrate and nitrite)	Total	11.1	mg/l	

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-01	RILEY CREEK	8/1/2016	Kjeldahl nitrogen	Total	0.76	mg/l	
BENA-01	RILEY CREEK	8/1/2016	Phosphorus	Total	1.51	mg/l	
BENA-01	RILEY CREEK	8/1/2016	Temperature, sample		3	deg C	
BENA-01	RILEY CREEK	8/1/2016	Total suspended solids		6	mg/l	
BENA-01	RILEY CREEK	8/1/2016	Volatile suspended solids			mg/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Alkalinity, total		195	mg/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Aluminum	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Aluminum	Total	166	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Ammonia-nitrogen	Total		mg/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Arsenic	Total	1.77	ug/l	J
BEN-01	KICKAPOO CREEK	8/29/2016	Arsenic	Dissolved	1.88	ug/l	J
BEN-01	KICKAPOO CREEK	8/29/2016	Barium	Total	52.3	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Barium	Dissolved	49.1	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Beryllium	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Beryllium	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Boron	Dissolved	106	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Boron	Total	109	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Cadmium	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Cadmium	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Calcium	Dissolved	55700	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Calcium	Total	56800	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Chloride	Total	29.6	mg/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Chlorophyll a, corrected for pheophytin	Total	3.2	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Chlorophyll a, uncorrected for pheophytin	Total	3.65	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Chlorophyll b	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Chlorophyll c	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Chromium	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Chromium	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Cobalt	Dissolved	1.15	ug/l	J
BEN-01	KICKAPOO CREEK	8/29/2016	Cobalt	Total	0.88	ug/l	J
BEN-01	KICKAPOO CREEK	8/29/2016	Copper	Dissolved	2.17	ug/l	J
BEN-01	KICKAPOO CREEK	8/29/2016	Copper	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Dissolved oxygen (DO)		7.6	mg/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Dissolved oxygen saturation		92	%	
BEN-01	KICKAPOO CREEK	8/29/2016	Fluoride	Total	0.18	mg/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Hardness, Ca, Mg		225000	ug/l	C
BEN-01	KICKAPOO CREEK	8/29/2016	Inorganic nitrogen (nitrate and nitrite)	Total	4.11	mg/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Iron	Dissolved	13.9	ug/l	J
BEN-01	KICKAPOO CREEK	8/29/2016	Iron	Total	318	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Kjeldahl nitrogen	Total	0.63	mg/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Lead	Dissolved	4.61	ug/l	J
BEN-01	KICKAPOO CREEK	8/29/2016	Lead	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Magnesium	Dissolved	19700	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Magnesium	Total	20100	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Manganese	Dissolved	25.1	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Manganese	Total	45	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Nickel	Dissolved	0.71	ug/l	J
BEN-01	KICKAPOO CREEK	8/29/2016	Nickel	Total	0.73	ug/l	J
BEN-01	KICKAPOO CREEK	8/29/2016	Organic carbon	Total	4.11	mg/l	
BEN-01	KICKAPOO CREEK	8/29/2016	pH		8	None	
BEN-01	KICKAPOO CREEK	8/29/2016	Phenols	Total	3	ug/l	J
BEN-01	KICKAPOO CREEK	8/29/2016	Pheophytin a	Total	0.53	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Phosphorus	Dissolved	0.549	mg/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Phosphorus	Total	0.602	mg/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Potassium	Dissolved	3540	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Potassium	Total	3540	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Selenium	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Selenium	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Silver	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Silver	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Sodium	Total	18900	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Sodium	Dissolved	18800	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Specific conductance		500	umho/cm	
BEN-01	KICKAPOO CREEK	8/29/2016	Strontium	Dissolved	111	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Strontium	Total	120	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Sulfate	Total	17.7	mg/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Temperature, air		28	deg C	
BEN-01	KICKAPOO CREEK	8/29/2016	Temperature, sample		5	deg C	
BEN-01	KICKAPOO CREEK	8/29/2016	Temperature, water		25.2	deg C	

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BEN-01	KICKAPOO CREEK	8/29/2016	Total suspended solids		14	mg/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Turbidity		12.5	NTU	
BEN-01	KICKAPOO CREEK	8/29/2016	Vanadium	Dissolved		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Vanadium	Total		ug/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Volatile suspended solids			mg/l	ND
BEN-01	KICKAPOO CREEK	8/29/2016	Zinc	Total	7.63	ug/l	
BEN-01	KICKAPOO CREEK	8/29/2016	Zinc	Dissolved	5.3	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Alkalinity, total		211	mg/l	
BENA-01	RILEY CREEK	8/29/2016	Aluminum	Total	190	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Aluminum	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Ammonia-nitrogen	Total		mg/l	ND
BENA-01	RILEY CREEK	8/29/2016	Arsenic	Total	1.65	ug/l	J
BENA-01	RILEY CREEK	8/29/2016	Arsenic	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Barium	Dissolved	52	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Barium	Total	58.5	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Beryllium	Total		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Beryllium	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Boron	Dissolved	92.4	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Boron	Total	101	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Cadmium	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Cadmium	Total		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Calcium	Dissolved	58700	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Calcium	Total	61100	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Chloride	Total	30	mg/l	
BENA-01	RILEY CREEK	8/29/2016	Chlorophyll a, corrected for pheophytin	Total	4.67	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Chlorophyll a, uncorrected for pheophytin	Total	5.36	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Chlorophyll b	Total		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Chlorophyll c	Total		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Chromium	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Chromium	Total		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Cobalt	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Cobalt	Total	0.82	ug/l	J
BENA-01	RILEY CREEK	8/29/2016	Copper	Dissolved	1.87	ug/l	J
BENA-01	RILEY CREEK	8/29/2016	Copper	Total	1.55	ug/l	J
BENA-01	RILEY CREEK	8/29/2016	Dissolved oxygen (DO)		7.6	mg/l	
BENA-01	RILEY CREEK	8/29/2016	Dissolved oxygen saturation		91	%	
BENA-01	RILEY CREEK	8/29/2016	Fluoride	Total	0.2	mg/l	
BENA-01	RILEY CREEK	8/29/2016	Hardness, Ca, Mg		245000	ug/l	C
BENA-01	RILEY CREEK	8/29/2016	Inorganic nitrogen (nitrate and nitrite)	Total	4.12	mg/l	
BENA-01	RILEY CREEK	8/29/2016	Iron	Dissolved	16.2	ug/l	J
BENA-01	RILEY CREEK	8/29/2016	Iron	Total	362	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Kjeldahl nitrogen	Total	0.64	mg/l	
BENA-01	RILEY CREEK	8/29/2016	Lead	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Lead	Total		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Magnesium	Dissolved	21300	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Magnesium	Total	22500	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Manganese	Dissolved	27.5	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Manganese	Total	54.2	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Nickel	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Nickel	Total		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Organic carbon	Total	4.4	mg/l	
BENA-01	RILEY CREEK	8/29/2016	pH		8	None	
BENA-01	RILEY CREEK	8/29/2016	Phenols	Total	3.27	ug/l	J
BENA-01	RILEY CREEK	8/29/2016	Pheophytin a	Total	0.85	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Phosphorus	Dissolved	0.529	mg/l	
BENA-01	RILEY CREEK	8/29/2016	Phosphorus	Total	0.571	mg/l	
BENA-01	RILEY CREEK	8/29/2016	Potassium	Dissolved	3360	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Potassium	Total	3590	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Selenium	Total		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Selenium	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Silver	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Silver	Total		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Sodium	Dissolved	17900	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Sodium	Total	18800	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Specific conductance		524	umho/cm	
BENA-01	RILEY CREEK	8/29/2016	Strontium	Dissolved	115	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Strontium	Total	128	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Sulfate	Total	16.8	mg/l	
BENA-01	RILEY CREEK	8/29/2016	Temperature, air		28	deg C	

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-01	RILEY CREEK	8/29/2016	Temperature, sample		5	deg C	
BENA-01	RILEY CREEK	8/29/2016	Temperature, water		24	deg C	
BENA-01	RILEY CREEK	8/29/2016	Total suspended solids		15	mg/l	
BENA-01	RILEY CREEK	8/29/2016	Turbidity		14.7	NTU	
BENA-01	RILEY CREEK	8/29/2016	Vanadium	Total		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Vanadium	Dissolved		ug/l	ND
BENA-01	RILEY CREEK	8/29/2016	Volatile suspended solids			mg/l	ND
BENA-01	RILEY CREEK	8/29/2016	Zinc	Total	8.4	ug/l	
BENA-01	RILEY CREEK	8/29/2016	Zinc	Dissolved	4.49	ug/l	J
BENA-03	RILEY CREEK	8/29/2016	Alkalinity, total		237	mg/l	
BENA-03	RILEY CREEK	8/29/2016	Aluminum	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Aluminum	Total	197	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Ammonia-nitrogen	Total		mg/l	ND
BENA-03	RILEY CREEK	8/29/2016	Arsenic	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Arsenic	Total	1.78	ug/l	J
BENA-03	RILEY CREEK	8/29/2016	Barium	Dissolved	64.3	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Barium	Total	72	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Beryllium	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Beryllium	Total		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Boron	Dissolved	54.8	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Boron	Total	59.9	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Cadmium	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Cadmium	Total		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Calcium	Dissolved	64700	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Calcium	Total	67100	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Chloride	Total	20.3	mg/l	
BENA-03	RILEY CREEK	8/29/2016	Chlorophyll a, corrected for pheophytin	Total	2.1	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Chlorophyll a, uncorrected for pheophytin	Total	3.2	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Chlorophyll b	Total		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Chlorophyll c	Total		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Chromium	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Chromium	Total		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Cobalt	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Cobalt	Total	0.88	ug/l	J
BENA-03	RILEY CREEK	8/29/2016	Copper	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Copper	Total		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Dissolved oxygen (DO)		7.5	mg/l	
BENA-03	RILEY CREEK	8/29/2016	Dissolved oxygen saturation		89	%	
BENA-03	RILEY CREEK	8/29/2016	Fluoride	Total	0.17	mg/l	
BENA-03	RILEY CREEK	8/29/2016	Hardness, Ca, Mg		270000	ug/l	C
BENA-03	RILEY CREEK	8/29/2016	Inorganic nitrogen (nitrate and nitrite)	Total	2.9	mg/l	
BENA-03	RILEY CREEK	8/29/2016	Iron	Dissolved	15.6	ug/l	J
BENA-03	RILEY CREEK	8/29/2016	Iron	Total	376	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Kjeldahl nitrogen	Total	0.5	mg/l	
BENA-03	RILEY CREEK	8/29/2016	Lead	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Lead	Total		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Magnesium	Dissolved	23600	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Magnesium	Total	24900	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Manganese	Dissolved	32.3	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Manganese	Total	63.1	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Nickel	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Nickel	Total		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Organic carbon	Total	4.26	mg/l	
BENA-03	RILEY CREEK	8/29/2016	pH		8	None	
BENA-03	RILEY CREEK	8/29/2016	Phenols	Total	3.19	ug/l	J
BENA-03	RILEY CREEK	8/29/2016	Pheophytin a	Total	1.68	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Phosphorus	Dissolved	0.137	mg/l	
BENA-03	RILEY CREEK	8/29/2016	Phosphorus	Total	0.168	mg/l	
BENA-03	RILEY CREEK	8/29/2016	Potassium	Dissolved	2280	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Potassium	Total	2390	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Selenium	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Selenium	Total		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Silver	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Silver	Total	0.75	ug/l	J
BENA-03	RILEY CREEK	8/29/2016	Sodium	Total	10200	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Sodium	Dissolved	9540	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Specific conductance		507	umho/cm	
BENA-03	RILEY CREEK	8/29/2016	Strontium	Total	139	ug/l	
BENA-03	RILEY CREEK	8/29/2016	Strontium	Dissolved	126	ug/l	

Station Code	Waterbody Name	Collection Date	Analyte	Sample Fraction	Result Units	Qualifier	Method Detection Limit
BENA-03	RILEY CREEK	8/29/2016	Sulfate	Total	12.8	mg/l	
BENA-03	RILEY CREEK	8/29/2016	Temperature, air		27	deg C	
BENA-03	RILEY CREEK	8/29/2016	Temperature, sample		5	deg C	
BENA-03	RILEY CREEK	8/29/2016	Temperature, water		23.7	deg C	
BENA-03	RILEY CREEK	8/29/2016	Total suspended solids		15	mg/l	
BENA-03	RILEY CREEK	8/29/2016	Turbidity		13.1	NTU	
BENA-03	RILEY CREEK	8/29/2016	Vanadium	Total		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Vanadium	Dissolved		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Volatile suspended solids			mg/l	ND
BENA-03	RILEY CREEK	8/29/2016	Zinc	Total		ug/l	ND
BENA-03	RILEY CREEK	8/29/2016	Zinc	Dissolved		ug/l	ND

Appendix D

Public Comments and Responsiveness Summary

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Appendix - D

Responsiveness Summary

Total Maximum Daily Load (TMDL) and Watershed Protection Plan (WPP) for:

1. Rock River/Pierce Lake Watershed
2. Kyte River Watershed
3. Saline Branch Watershed
4. Little Wabash River/Green Creek Watershed
5. Big Four Ditch Watershed
6. Kickapoo Creek Watershed
7. Salt Creek Watershed
8. Big Creek Watershed

The responsiveness summary responds to questions and comments received during the Stage 3 public comment period from January 17, 2024, through February 16, 2024.

What is a TMDL?

A Total Maximum Daily Load (TMDL) is the sum of the allowable amount of a pollutant that a water body can receive from all contributing sources and still meet water quality standards or designated uses. TMDL reports contain a plan detailing the actions necessary to reduce pollutant loads to the impaired water bodies and ensure compliance with applicable water quality standards.

A Watershed Protection Plan (WPP) report has been developed for the watersheds where a TMDL could not be developed as the waterbody segment is no longer impaired or recommended for delisting or recategorized to Category 4C (impairment due to non-pollutant).

The Clean Water Act and U.S. Environmental Protection Agency (U.S. EPA) regulations require that states develop TMDLs for waters on the Section 303(d) List. The Illinois Environmental Protection Agency (Illinois EPA) implements the TMDL program in accordance with Section 303(d) of the federal Clean Water Act and regulations thereunder.

Background

The 2018 Cycle TMDLs/ WPPs are as follows:

- **Rock River/Pierce Lake Watershed** (HUC: 0709000501)
  - Location:
    - Northern Illinois (Winnebago and Boon Counties).
  - Headwaters (North and South Kinnikinnick Creek):
    - Northwestern Boone county, over Illinois Route 76.
  - Headwaters (North Fork and South Fork Kent Creek):
    - Near Winnebago, IL.
  - Headwaters (Spring Creek North and Keith Creek):
    - The eastern edge of the city of Rockford, roughly near Interstate 90.
  - Course:
    - All segments untimely flow into the Rock River; North and South Kinnikinnick first, followed downriver by Spring Creek, and then the remainder at the far southern end of the watershed.
  - Downstream End:
    - The Rock River, in the middle of Rockford, IL.

- **Kyte River Watershed** (HUC: 0512011206)
  - Location:
    - Northern Illinois (Ogle and Lee Counties, with a small part in Dekalb County).
  - Headwaters (Kyte River):
    - The Rock River, just south of the Oregon, IL.
  - Headwaters (Beach Creek):
    - Where the Kyte river splits into Beach creek and Steward creek, near the border of Ogle and Lee counties.
  - Course:
    - The Kyte river forms as a branch of the Rock River just south of the city of Oregon and flows in a southeasterly direction.
    - Beach Creek forms after the Kyte river splits near the border between Ogle and Lee County and flows in a southwesterly direction.
  - Downstream end (Kyte river):
    - West of Rochelle at the border of Ogle and Leek County, where the river branches off into Beach creek and Steward creek.
  - Downstream end (Beach creek):
    - West of the village of Ashton.

- **Saline Branch Watershed** (HUC: 0512010902)
  - Location:
    - Northeast central Illinois (Champaign County).
  - Headwaters (Saline Branch):

        - North of Thomasboro and southwest of Rantoul, west of U.S. Route 45.
    - Headwaters (Boneyard Creek):
        - Champaign, IL, along U.S. Route 150.
    - Course:
        - The Saline Branch flows south from Thomasboro roughly along U.S. Route 45 and into the city of Urbana, where it meets with Boneyard Creek and then flows eastward.
    - Downstream end:
        - Confluence of Saline Branch and Boneyard creek in Urbana, IL.

- **Little Wabash River/Green Creek Watershed** (HUC: 0512011401)
    - Location:
        - Southeast central Illinois (Shelby, Effingham, Coles, and Cumberland Counties).
    - Headwaters:
        - Southwestern corner of Coles County, southwest of Mattoon.
    - Course:
        - The Little Wabash River flows southward from near Mattoon, though Paradise Lake, across Coles, Shelby and Effingham Counties, though the far western edge of Effingham, IL.
    - Downstream end:
        - West of Effingham, IL.

- **Big Four Ditch Watershed** (HUC: 0512010901)
    - Location:
        - Northeast Central Illinois (Ford, Livingston, Champaign, and Iroquois Counties)
    - Headwaters:
        - Southeast corner of Livingston County.
    - Course:
        - Flows in a south-easterly direction through Ford County toward the northeast border of Champaign County.
    - Downstream End:
        - Confluence of Prairie Creek and Middle Fork Vermilion River near the northeast border of Champaign County.

- **Kickapoo Creek Watershed** (HUC: 0512011206)
    - Location:
        - Southeast Central Illinois (Coles County)
    - Headwaters:
        - Confluence of Cassell Creek, .23 miles north of Illinois – 16.
    - Course:
        - Flows in an easterly direction in Coles County, between the municipalities of Mattoon and Charleston.

- Downstream end:
  - Confluence of Kickapoo Creek.

- **Salt Creek Watershed** (HUC: 0512011402)
  - Location:
    - Southeast central Illinois (Effingham and Cumberland Counties)
  - Headwaters:
    - Second Salt Creek near Lillyville, IL in the southwest corner of Cumberland County.
  - Course:
    - Primarily flows within Effingham County, with a portion in Cumberland County, and feeds into the Little Wabash River in south central Effingham County.
  - Downstream end:
    - Confluence of Little Water River.

- **Big Creek Watershed** (HUC: 0512011211)
  - Location:
    - Southeast Central Illinois (Crawford and Jasper Counties)
  - Headwaters:
    - Dogwood Creek north of Dogwood, IL in northwest Crawford County.
  - Course:
    - Flows primarily within Crawford County with a small portion in Jasper County, and feeds into Big Creek south of Oblong, IL in Crawford County.
  - Downstream End:
    - Confluence of Brush Creek.

The TMDLs and WPPs were developed for the following waterbody segments:

- **Rock River/Pierce Lake Watershed TMDL**
  - A Fecal Coliform TMDL was developed for the following segments:
    - IL_PR-99
    - IL_PR-01
    - IL_PSB-01
    - IL_PSA-01
    - IL_PU-03
    - IL_PT-01
    - IL_PZZG-03
  - A Total Phosphorus TMDL was developed for the following segments:
    - IL_RPC

- **Kyte River Watershed TMDL**
  - A Total Phosphorus and DO TMDL were developed for the following segments:

        - IL_PLB-C1
    - A Fecal Coliform TMDL was developed for the following segments:
        - IL_PL-03

- **Saline Branch Watershed TMDL**
    - A Dissolved Copper TMDL was developed for the following segment:
        - IL_BPJCA

- **Little Wabash River/Green Creek TMDL**
    - Dissolved Oxygen TMDLs were developed for the following segments:
        - IL_C-24
        - IL_RCG

- **Big Four Ditch Watershed WPP**
    - Included a WPP to address Dissolved Oxygen in the following segments:
        - IL_BPKP-01
        - IL_BPKP-02

- **Kickapoo Creek Watershed WPP**
    - Included a WPP to address Dissolved Oxygen in the following segment:
        - IL_BENA-01

- **Salt Creek Watershed WPP**
    - Included a WPP to address Manganese in the following segment:
        - IL_CPD-01
    - Included a WPP to address Total Phosphorus in the following segments:
        - IL_CPD-01
        - IL_CPD-03
        - IL_CPD-04
        - IL_CPC-TU-C1
        - IL_CP-04
        - IL_CP-EF-C2
        - IL_CP-EF-C4
        - IL_CP-TU-C3

- **Big Creek Watershed WPP**
    - Included a WPP to address Manganese, DO and Total Phosphorus in the following segment:
        - IL_BEDB-01

Initial TMDL development for the targeted watersheds began in 2019. During the development process, the 2020/2022 Illinois Integrated Water Quality Report and 303(d) List was approved by EPA on June 30, 2022. TMDLs were completed based on the updated 2020/2022 303(d) List. Illinois EPA develops TMDLs for parameters that have numeric water quality standards. TMDLs for parameters that do not have water

quality standards have been deferred until criteria are adopted. Load reduction goals and watershed protection plans have also been included in the reports where appropriate. Illinois EPA contracted with CDM Smith to complete the Stage 1 and Stage 3 TMDL reports.

Public Meetings

The Stage 1 public meeting was held virtually on June 30, 2021, and comments and questions received from the first public meeting have been addressed and incorporated into the Stage 3 TMDL/WPP reports.

The Stage-3 public meeting was conducted virtually using WebEx on January 17, 2024. The meeting started at 10:00 am and concluded at 12:00 pm, central time. Approximately 30 people attended the meeting, with the public notice period remaining open for 30 days until midnight of February 16, 2024. The draft Stage-3 TMDL report was available for review and comment on the Illinois EPA's webpage: https://epa.illinois.gov/public-notices/general-notices.html

In addition, a direct mailing was sent to NPDES permittees and stakeholders in the watersheds prior to the Stage 3 meeting. The notice gave the date, time, and purpose of the Stage-3 TMDL meeting.

The notice also provided references on how to obtain additional information about these TMDLs/WPPs, Illinois EPA's Total Maximum Daily Load Program, and other related information.

Questions and Comments Received During Public Notice

1. After reading through the WPP, the City of Paxton would be interested in learning more about potential wetland and/or WASCOB construction. The City of Paxton is currently considering several stormwater retention options as part of a comprehensive drainage plan.

   Response – Information on wetlands and WASCOBs is presented in the WPP (Section 7 of the Big Four Ditch Watershed report) in Section 7.3.1.2. Additional detail on WASCOBs and constructed wetlands can be found in the NRCS Conservation Practice Standards:

   WASCOBS:
   https://efotg.sc.egov.usda.gov/api/CPSFile/5838/638_IL_CPS_Water_and_Sediment_(Con)trol_Basin_2018

   Constructed Wetlands:
   https://www.nrcs.usda.gov/sites/default/files/2022-09/656_NHCP_CPS_Constructed_Wetland_2020_0.pdf

Stakeholders interested in pursuing water quality improvement projects are encouraged to contact their local NRCS/SWCD offices and the Illinois EPA Nonpoint Source Management Program.

Ford County SWCD: https://fordcountyswcd.tripod.com/

Illinois EPA Nonpoint Source Management: https://epa.illinois.gov/topics/water-quality/watershed-management/nonpoint-sources.html

Contact: Jeff Edstrom, IEPA/BOW-Watershed Management Section, Nonpoint Source Unit, email: Jeffrey.Edstrom@Illinois.gov, phone: (217)782-3362

2. The 2002 watershed report for North Fork Kent Creek and a 2008 draft modeling report for Kinnikinnick Creek and North Fork Kent Creek have been completed.

Response – Thank you for the information. Both reports have been listed with summary information in Section 5.5.

3. Upon reviewing the Stage 1 Draft report for the Rock River and Pierce Lake watershed, Winnebago County has identified the need for updated local water quality sample collection to reflect and monitor changes since the last recorded collection in 2013. The County will continue to engage with the IEPA throughout TMDL report stages (2 and 3), and collaborate with the agency to locally monitor, address and mitigate potential sources of impairment to preserve water quality, public health and mitigate subsequent issues through long term planning and environmental regulation. The continued collaboration and communication with the IEPA will inform future local planning efforts related to the criteria stated above.

Response – Thank you for the comment. Text has been incorporated into Section 9 (watershed protection plan) to reflect Winnebago County's engagement. Additional comments and information were provided by Winnebago County following the Stage 3 public meeting. Please refer to responses to comment #5 below.

4. I was glancing through the presentation on TMDLs that are underway and noticed a Keith Creek is listed for arsenic. Anything easy you can send me on the

cause of that impairment. To my knowledge, that is the only arsenic impairment listed for a creek in Illinois. (my knowledge may be limited)

Response – Additional investigation into the 2018 stream listing of Keith Creek for arsenic found that the listing was initially based on 2008 sediment data. Instream water quality data presented in Section 5 did not show impairment of the aquatic life use and TMDL development for water column arsenic did not continue beyond the Stage 1 report (Sections 1-6). Text has been included throughout the report to clarify the delisting.

5. After reviewing the Draft TMDL Phase 3 report bein completed for the Rock River/Pierce Lake watershed, I thought I would provide a few comments:

- There was a watershed study for an unnamed creek that was identified as Buckbee Creek, which was completed in 2013. This is a smaller drainageway/watershed just south of the Keith Creek watershed (that may be included in the overall Spring Creek watershed). That was identified more of flooding issue, as the stream itself is more intermittent in flow and much of it is channelized. There were a few priority areas identified in that study to address water quality.

Response – This information has been added to Section 5.5.

- The Region 1 Planning Council recently received an IEPA 319 grant for 2 site projects (bioswales) in the Buckbee Creek and the South Fork Kent Creek watersheds. Part of the grant includes a “watershed Education and Outreach” component, to look at BMP’s in the Agricultural, Suburban and Urban areas to address soil loss, stormwater runoff and nutrient management. The District is working with them on some of education and outreach.

Response – This information has been added to Section 9.4.2.2 and 9.6.

- The Region 1 Planning Council also has a “Climate Resiliency Forum” that is developing a “Climate Action Plan” to be completed by next winter. This also looks at vulnerabilities regarding increased stormwater runoff, and potential impacts across all sectors. The District is on that committee as well.

Response – This information has been added to Section 9.6.

- The Region 1 Planning Council and Winnebago County Health Department also did a “Small Community Water Assessment and Report.” While this mainly looks at groundwater, with the highly sensitive aquifers in the Region, it is addressing surface water management concerns. We sat on that committee as well.

Response – This information has been added to Section 9.6.

- Like you mention in Section 9.4.2. the District and NRCS have various state and federal programs. While those programs are popular and very much in use in the rural areas on the western side of this watershed, it is limited in much of the eastern side of the watershed, due to ownership, development pressures, etc. which typically limit investment in agricultural BMP’s. Also, cost is typically a factor, especially with streambank stabilization, as the actual costs often far exceed what a landowner can bare, even with cost share assistance (a streambank stabilization grant was funded for a project upstream of Pierce Lake several years ago, but was cancelled due to excessive cost/burden to the landowner.

Response – This information has been added to Section 9.4.2. and 9.4.3.

- The District also is hosting an Erosion & Sediment Control workshop (for construction sites) and a Producer workshop (crop ground) in March; and have tree, fish, seed and rain barrel sales this spring.

Response – This information has been added to Section 9.5.

- I realize many of these comments above don’t necessarily address fecal coliform directly, but they do provide overall watershed improvements.

Response – Thank you for all the local information provided for this report. The information has been incorporated throughout the watershed-based plan (Section 9).

6. Looking over the data for the copper issue and it seems like the data is mostly from 2006 (with one being from 2001) and there aren’t a lot of data points

overall. One of the points also seems like it could be an outlier, which the paragraph below the chart does point toward but it didn't help us understand why that was included or not re-sampled since it was significantly different.

Is there concern over the data being 18+ years old?

Or is there concern over one of the data points sampled at the same location as the others is quite different from the others? The time window is only a few months for all samples taken in 2006 so it seems like the October one is too different to not be either ruled out or have triggered a re-sample. October also showed a major spike in TP concentrations in the Boneyard. Is there any connection between the two measurements?

Or are there any concerns that only one section was sampled for copper as opposed to a wider selection of locations through the Boneyard Creek area?

Response – Copper was first listed as impacting Aquatic Life in the segment back in 2010 based on the available data from 2006. The listing was given a low priority ranking for TMDL development but has remained listed as a pollutant indicator. The HUC-10 watershed containing Boneyard Creek was slated for TMDL development in 2018 and the TMDL was calculated using available data as there has not been additional data collected since the time of the original listing to confirm or refute that copper continues to impact the aquatic life use. There is not enough data/information available at this time to conclusively determine if the high copper, high phosphorus, and low hardness values were outliers, sampling error, or a legitimate spike from an urban watershed source. The text throughout the report has been expanded to emphasize the limited amount of data and to strongly recommend monitoring as a starting place for TMDL implementation.

7. In the presentation you had suggested cities could send in some updates they have done in the recent past (i.e. since the 2006 sampling that was done for copper and phosphorous). Attached is a word doc that has a short timeline of what we've done since 2006, what we have in the works/hope to get done soon, and our ongoing activities. Let me know if you have any questions or need more information.

<u>City of Champaign Boneyard Creek Improvements Timeline since 2006</u>

2010: Scott Park Drainage Improvements implemented

2010: Second Street Detention Basin constructed

2012: Dredging of Healey Street Basin

2012-2020: Boneyard Creek Reporting to ACOE as part of permitting process for Boneyard Creek Projects

2018 – 2020: Bristol Park Basin constructed

2018 – 2020: Boneyard Creek Improvements (Bradley Avenue to Hickory Street, part of Phase D)

2020-2023: Boneyard Creek Improvements (Hickory Street to Neil Street, part of Phase D)

2023-2024: Boneyard Creek Improvement at Skelton Park (part of future Phase B/C, added onto a Champaign Park District improvement project in the same area to cause less overall disruption)

<u>City of Champaign Future Boneyard Creek Projects</u>

Boneyard Creek Improvements Phase B/C (Hill Street to Bradley Avenue): This project will include underground storage for storm water, a new wet detention basin and a new dry bottom detention basin (also doubles as a park area when dry) just north of Washington Street to alleviate localized flooding, provide for suspended particle settlement (basin), and trash removal (trash separator installed with the underground detention). In addition to the above, there will be an increase of open channel with native plantings of the Boneyard created with the moving of the Boneyard from piping underneath businesses on the northern end of the project to City property east of those businesses. Further, this phase of the project will also include wetland creation and repairs to the existing wetlands throughout the project length (all locations suggested by the EPA draft report on wetland construction as a mitigation option).

Boneyard Creek Improvements Phase A (University Avenue to Hill Street): This is the smallest section of the overall Boneyard Creek Improvement plan and will connect the Second Street Basin to the work already performed in advance for Phase B/C at Skelton Park (between Hill Street and Washington Street). This section will also move part of the Boneyard Creek out from pipes under a business and create open channel with native plantings. The overall stretch of the Boneyard Creek through this project phase will have the entire channel upgraded with improved bank stabilization and native plantings.

*Dredging of the Second Street Basin***:** The Second Street Basin has proven to be quite effective at retaining particulate matter from the storm water run off and keeping it from being released downstream. This project is still in the early

planning stages and care is being taken to make sure any plans are made to limit the impact on water quality downstream and limit the impact on native plant and animal life in the basin area.

*MS4 Group Planning***:** This activity is still in the preliminary phase of organizing either the entire MS4 group or a task force with a representative from each organization to come up with further ongoing plans to have more water test samples taken, more locations of sampling, and further implementation of BMPs (existing or new).

City of Champaign Continuous Boneyard Creek Management Projects

Boneyard Creek Community Day: Started in 2006 and typically run in April, this is a community event that is run by City staff and utilizes volunteers to pick up trash along Boneyard Creek. The usual locations for trash pick-up on this day run through the Second Street Basin, through Scott Park, and down south along the Boneyard Creek area in Campustown. More information can be found here: https://champaignil.gov/2023/05/05/2023-boneyard-creek-community-day/

America Recycles Day: An additional clean up day was added to the regular BCCD to align with the EPA's America Recycles Day in the Fall. The usual locations for this are focused more on the norther sections of the Boneyard Creek and go from University Avenue to as far north as volunteers wish to walk. More information can be found here: https://champaignil.gov/public-works/recycling/america-recycles-day/

National Flood Insurance Program: Participant since May 2016 and the region's only Class 5 city

MS4 Requirements: All minimum measures required to maintain the MS4 permitting requirements

Ongoing Maintenance projects: There are several ongoing maintenance projects for the Boneyard Creek areas that utilize city staff and third-party contractors to perform the work time, weather and budget permitting. Tasks include, but are not limited to, the following:

- Grass mowing
- Native plant management and maintenance
- Removal of invasive plant species
- Canada goose management in compliance with IDNR
- Trash removal from stream and surrounding native plantings
- Pump and equipment maintenance at/in the basins and water features
- Community outreach

- Channel repairs from human, animal, or natural damages

Response – Summary information of previous work has been included in Sections 5.4 and the timeline of improvements and future plans have been included throughout Section 9.

8. The City of Urbana would like to submit the following comments on the Draft Stage 3 TMDL Report and Watershed Protection Plan for the Saline Branch Watershed (HUC 0512010902):

- High levels of Cu may not actually be an issue for Boneyard Creek. The data used to determine that a TMDL was needed was from 2001-2006 (and included only 4 data points, where only 1 data point exceeded the water quality standard), so as the watershed-based plan points out, due to improvements in recent years in brake pads other materials that were large contributors of Cu in the past, this issue may no longer exist.
- A spike TP occurred in the October 2006 sampling, which is rationalized by it being the end of the agricultural growing season and during low stream flows. However, a spike also occurred in the Cu sampling during October 2006 and no further data was collected to see if these points were outliers tied to one specific event.

Response – Refer to the responses to similar comment addressed in comment/response #6.

The data used for the draft TMDL Report and Watershed Protection Plan for Saline Branch is over 17 years old. Numerous BMPs have been put in place along with other activities performed which would improve water quality within the watershed in the City of Urbana since the data was collected, including, but not limited to:

2007 – Urbana adopted a new Erosion & Sediment Control Ordinance to control water pollution from construction sites that disturb over 2,000 sq. ft.

2012 – Urbana adopted a Stormwater Utility Ordinance to provide dedicated funds for stormwater management & comply with the NPDES Phase II Stormwater Permit requirements.

2012-2014 – Urbana constructed the Boneyard Creek Crossing project along Boneyard Creek from Griggs to Broadway Avenue which included a new public

park and gathering space, channel naturalization and widening, gabion toe protection, stone landscaping, earth retaining walls, structural walls, storm sewers, and new landscaping.

2023 – Urbana repaired erosive bank conditions along Boneyard Creek with installation of riprap to stabilize the banks and J-Hooks in -stream to slow erosive flows.

2023 – Urbana passed an ordinance updating the Stormwater Utility with a revised fee structure and increased rate to more equitably bill property owners and more sustainably fund the stormwater management program.

Response – Summary information has been included in Sections 5.4 and the timeline of improvements has been included throughout Section 9.

9. I am attaching a watershed plan for the Salt Creek Watershed (HUC 0512011402) that was developed in 2020-2021 by Regina Cassidy as her capstone project for the Master of Urban and Regional Planning from University of Illinois. I hope this can be useful to you as you continue developing the TMDL for the Salt Creek.

Response – Thank you for the information. Ms Cassidy's watershed plan has been referenced and cited in Sections 5 and 9 of the Salt Creek Watershed Protection Plan report. Implementation information relevant to this study has also been referenced/included as Appendix F.

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