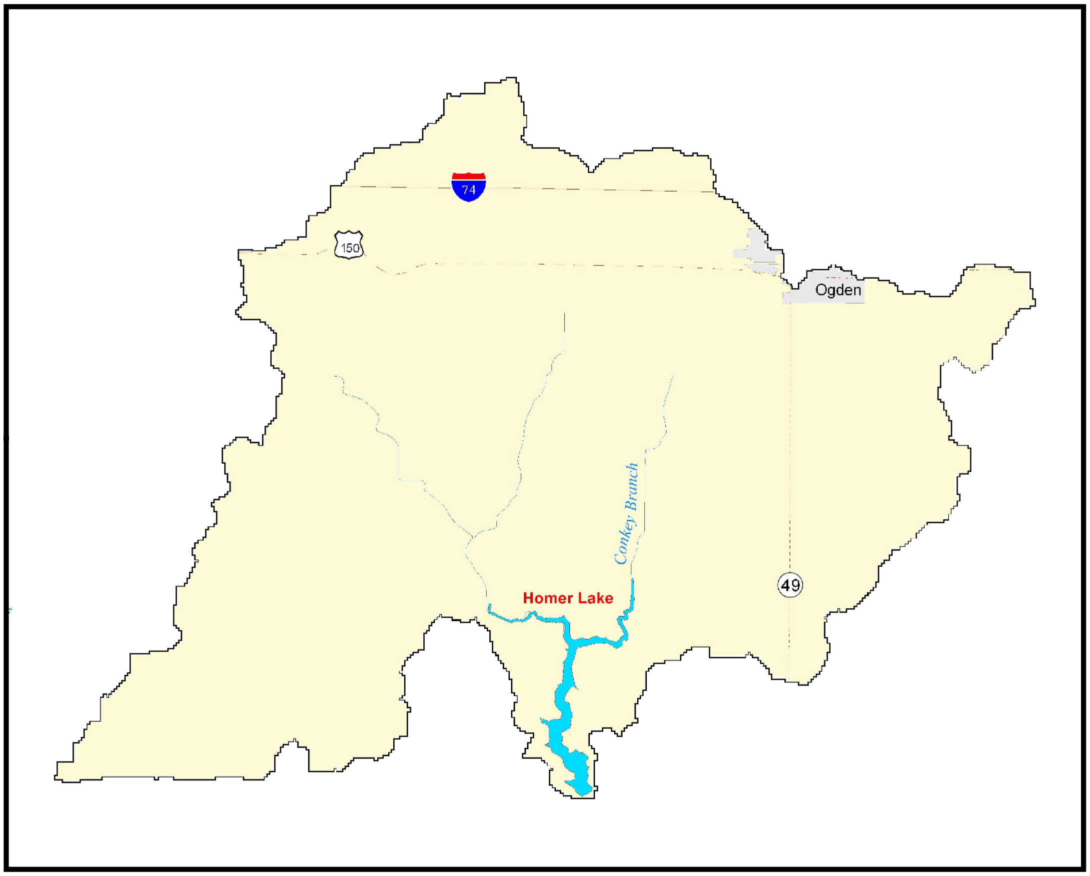
Illinois
Environmental
Protection Agency

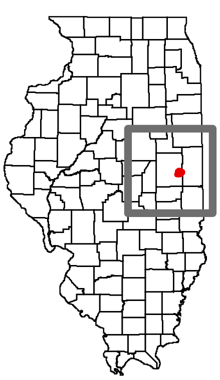
Bureau of Water
P.O. Box 19276
Springfield, IL 62794-9276

January 2008

IEPA/BOW/07-8-003

HOMER LAKE WATERSHED TMDL REPORT





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TMDL Development for Homer Lake in the Salt Fork Vermilion River Watershed, Illinois

This file contains the following documents:

1) U.S. EPA Approval letter for Stage Three TMDL Report

2) Stage One Report: Watershed Characterization and Water Quality Analysis

3) Stage Three Report: TMDL Development

4) Homer Lake TMDL Implementation Plan

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

WW-16J

2006

Ms. Marcia Willhite
Bureau of Water
IEPA
1021 North Grand Avenue East
Springfield, IL 62794-9276

Dear Ms. Willhite:

The United States Environmental Protection Agency (U.S. EPA) has reviewed the final Total Maximum Daily Load (TMDL) from the Illinois Environmental Protection Agency (IEPA) for Homer Lake in Illinois. The TMDL is for Homer Lake (RBO) for phosphorus and addresses phosphorus, excessive algal growth, and total suspended solids (TSS) that impair multiple uses. Based on this review, U.S. EPA has determined that Illinois' TMDL for phosphorus meets the requirements of Section 303(d) of the Clean Water Act and U.S. EPA's implementing regulations at 40 C.F.R. Part 130. Therefore, U.S. EPA hereby approves the TMDL addressing three impairments for Homer Lake. The statutory and regulatory requirements, and U.S. EPA's review of Illinois' compliance with each requirement, are described in the enclosed decision document.

We wish to acknowledge Illinois' effort in submitting this TMDL and look forward to future TMDL submissions by the State of Illinois. If you have any questions, please contact Mr. Kevin Pierard, Chief of the Watersheds and Wetlands Branch at 312-886-4448.

Sincerely yours,

for Jo Lynn Traub
Director, Water Division

Enclosure

cc: Bruce Yurdin, IEPA

TMDL Development for the Salt Fork Vermilion River Watershed

Stage One Report: Watershed Characterization and Water Quality Analysis

FINAL STAGE ONE REPORT
March 2006

TMDL Development for the Salt Fork Vermilion River Watershed

Stage One Report: Watershed Characterization and Water Quality Analysis

FINALSTAGE ONE REPORT

March 8, 2006

Submitted to:
Illinois Environmental Protection Agency
1021 N. Grand Avenue East
Springfield, IL 62702

Submitted by:
Tetra Tech, Inc.
Water Resources TMDL Center

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Key Findings

As part of the Section 303(d) listing process, the Illinois Environmental Protection Agency has identified ten waterbodies in the Salt Fork Vermilion River watershed as impaired:

- Spoon Branch (segment BPJD02)
- Boneyard Creek (segment BPJCA)
- Saline Branch (segment BPJC08)
- Saline Branch (segment BPJC06)
- Salt Fork Vermilion River (segment BPJ09)
- Salt Fork Vermilion River (segment BPJ12)
- Homer Lake (segment RBO)
- Salt Fork Vermilion River (segment BPJ10)
- Salt Fork Vermilion River (segment BPJ08)
- Salt Fork Vermilion River (segment BPJ03)

The purpose of this report is to describe the watershed in which these waters are located and review the available water quality data to confirm the impairments. This report also identifies several potential options for proceeding with developing total maximum daily loads (TMDLs) for these waters.

Among the key findings described in this report are the following:

- Many of the 303(d) listings are for parameters without numeric water quality standards and therefore TMDLs are not being developed at this time.

- Many of the 303(d) listings are associated with a fish kill that occurred in the watershed in July 2002. Because this was a known, one-time event, TMDLs are not recommended for these listings unless ambient data also suggest impaired conditions.

- Insufficient data are available to determine the impairment status for three segment/cause combinations and additional sampling data are recommended:

    - Dissolved Oxygen for Spoon Branch (segment BPJD02)
    - Dissolved Oxygen for Saline Branch (BPJC08)
    - pH for Salt Fork Vermilion River (BPJ08)

- Sufficient data are available to proceed with TMDL development for the following segment/cause combinations:

    - Boron TMDL for Saline Branch (segment BPJC06)
    - Total Phosphorus TMDL for Homer Lake (segment RBO)
    - Nitrate TMDL for Salt Fork Vermilion River (segment BPJ10)
    - Nitrate TMDL for Salt Fork Vermilion River (segment BPJ08)
    - Nitrate TMDL for Salt Fork Vermilion River (segment BPJ03)

- Proposed technical approaches for TMDL development include both simple and advanced water quality models as well as a non-modeling approach.

1 Introduction

The Salt Fork Vermilion River watershed (ILBPJ03) is located in east-central Illinois and drains approximately 500 square miles. Approximately 362 square miles (73 percent) are in eastern Champaign County and 138 square miles are in western Vermilion County.

As part of the Section 303(d) listing process, the Illinois Environmental Protection Agency (Illinois EPA) has identified ten waterbodies in the watershed as impaired:

- Boneyard Creek (segment BPJCA)
- Homer Lake (segment RBO)
- Saline Branch (segment BPJC06)
- Saline Branch (segment BPJC08)
- Salt Fork Vermilion River (segment BPJ03)
- Salt Fork Vermilion River (segment BPJ08)
- Salt Fork Vermilion River (segment BPJ09)
- Salt Fork Vermilion River (segment BPJ10)
- Salt Fork Vermilion River (segment BPJ12)
- Spoon Branch (segment BPJD02)

Table 1-1 shows the potential causes of impairment for each listed waterbody. They include dissolved oxygen, habitat assessment, DDT, hexachlor, PCB, total nitrogen, boron, total ammonia, fish kills, total suspended solids (TSS), dieldrin, methoxychlor, total phosphorus (TP), pH, excessive algal growth, nitrate, and iron.

The Clean Water Act and USEPA regulations require that states develop total maximum daily loads (TMDLs) for waters on the Section 303(d) lists. Illinois EPA is currently developing TMDLs for pollutants that have numeric water quality standards. Of the 17 causes of impairment in the Salt Fork River watershed, dissolved oxygen, boron, total ammonia, nitrate, TP (lakes only), pH, and iron have numeric water quality standards. Illinois EPA believes that addressing impairments with numeric water quality standards should lead to an overall improvement in water quality due to the interrelated nature of some of the other listed pollutants. For example, many best management practices are effective at reducing loads of multiple pollutants.

A TMDL is defined as “the sum of the individual wasteload allocations for point sources and load allocations for nonpoint sources and natural background” such that the capacity of the waterbody to assimilate pollutant loadings is not exceeded. A TMDL is also required to be developed with seasonal variations and must include a margin of safety that addresses the uncertainty in the analysis. The overall goals and objectives in developing the Salt Fork Vermilion River TMDLs include:

- Assess the water quality of the impaired waterbodies and identify key issues associated with the impairments and potential pollutant sources.

- Use the best available science and available data to determine the maximum load the waterbodies can receive and fully support all of their designated uses.

- Use the best available science and available data to determine current loads of pollutants to the impaired waterbodies.

- If current loads exceed the maximum allowable load, determine the load reduction that is needed.

- Identify feasible and cost-effective actions that can be taken to reduce loads.

- Inform and involve the public throughout the project to ensure that key concerns are addressed and the best available information is used.

- Submit a final TMDL report to USEPA for review and approval.

The project is being initiated in three stages. Stage One involves the characterization of the watershed, an assessment of the available water quality data, and identification of potential technical approaches. Stage Two will involve additional data collection, if necessary. Stage Three will involve model development and calibration, TMDL scenarios, and implementation planning. This report documents the results of Stage One.

Table 1-1. 2004 303(d) List Information for the Salt Fork Vermilion River Watershed (ILBPJ03).

Segment (Area)	Name	Designated Uses and Support Status	Causes of Impairment	Potential Sources of Impairment
BPJD02 (13.8 miles)	Spoon Branch	Aquatic Life Support (Partial)	Dissolved Oxygen, Habitat Assessment	Agriculture, Hydromodification
BPJCA (3.2 miles)	Boneyard Creek	Aquatic Life Support (Not Supporting)	Habitat Assessment, DDT, Hexachlor, PCB	Urban Runoff/Storm Sewers, Hydromodification, Contaminated Sediments
BPJC08 (15.5 miles)	Saline Branch	Aquatic Life Support (Partial)	Total Nitrogen, Dissolved Oxygen, Habitat Assessment	Agriculture, Hydromodification
BPJC06 (10.3 miles)	Saline Branch	Aquatic Life Support (Partial)	Boron, Total Ammonia, Habitat Assessment, Fish Kills, TSS, DDT, Dieldrin, Methoxychlor, Total Phosphorus	Municipal Point Sources, Agriculture, Hydromodification, Channelization, Contaminated Sediments, Source Unknown
BPJ09 (13.7 miles)	Salt Fork Vermilion River	Aquatic Life Support (Partial), Fish Consumption (Partial)	Total Ammonia, Total Nitrogen, pH, Fish Kills, TSS, Total Phosphorus	Municipal Point Sources, Agriculture
BPJ12 (3.07 miles)	Salt Fork Vermilion River	Aquatic Life Support (Partial), Fish Consumption (Not Assessed)	Total Ammonia, Total Nitrogen, pH, Fish Kills, TSS, Total Phosphorus	Municipal Point Sources, Agriculture
RBO (80.80 acres)	Homer Lake	Overall Use (Partial), Aquatic Life Support (Full), Fish Consumption (Full), Primary Contact (Partial), Secondary Contact (Partial), Drinking Water Supply (Not Assessed)	TSS, Excessive Algal Growth, Total Phosphorus	Agriculture– crop related sources, Construction– land development, Habitat modification, Forest/grassland/ parkland
BPJ10 (13.6 miles)	Salt Fork Vermilion River	Aquatic Life Support (Partial), Drinking Water Supply (Partial)	Total Ammonia, Total Nitrogen, Nitrate, pH, Fish Kills, TSS, Total Phosphorus	Municipal Point Sources, Agriculture, Source Unknown
BPJ08 (3.17 miles)	Salt Fork Vermilion River	Aquatic Life Support (Partial), Drinking Water Supply (Partial)	Iron, Total Ammonia, Total Nitrogen, Nitrate, pH, Fish Kills, TSS, Total Phosphorus	Municipal Point Sources, Agriculture, Source Unknown
BPJ03 (9.97 miles)	Salt Fork Vermilion River	Aquatic Life Support (Partial), Fish Consumption (Not Assessed), Drinking Water Supply (Partial)	Iron, Total Nitrogen, Nitrate, Fish Kills, TSS, Total Phosphorus	Municipal Point Sources, Agriculture, Source Unknown

Source: Illinois EPA, 2004.

2 Watershed Characteristics

The physical characteristics of the Salt Fork Vermilion River watershed are described in the following sections. For the purposes of this characterization, the watershed was subdivided into ten subwatersheds according to the respective Illinois water body segment identifications. These subwatersheds correspond to the upstream contributing areas of Spoon Branch (BPJD02), Boneyard Creek (BPJCA), Saline Branch (BPJC08), Saline Branch (BPJC06), Salt Fork Vermilion River (BPJ09), Homer Lake (RBO), Salt Fork Vermilion River (BPJ10), Salt Fork Vermilion River (BPJ08), and Salt Fork Vermilion River (BPJ03). The subwatersheds were defined using digital elevation data, and the delineation process is discussed in section 3.2.2. This type of watershed subdivision allows for a more pertinent discussion of land use and soils information for each of the listed waterbodies.

2.1 Location

The Salt Fork Vermilion River watershed (Figure 2-1) is located in east-central Illinois and drains approximately 500 square miles. Approximately 362 square miles (73 percent) are in eastern Champaign County and 138 square miles are in western Vermilion County.

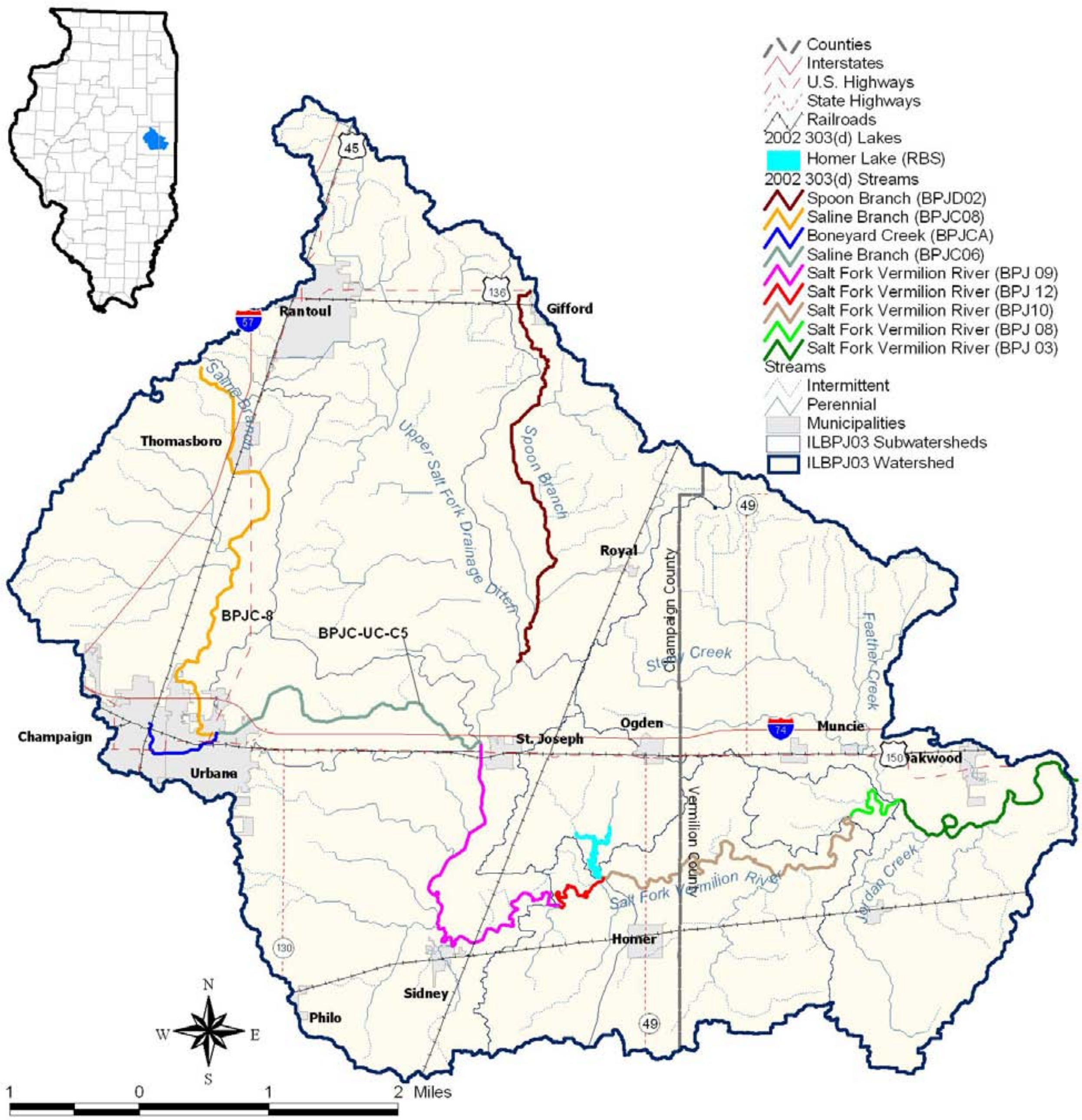

Figure 2-1. Location of the Salt Fork Vermilion River watershed.

2.2 Topography

Topography is an important factor in watershed management because stream types, precipitation, and soil types can vary significantly by elevation. Digital elevation models (DEM) containing 30-meter grid resolution elevation data were used to assess the topography of the Salt Fork Vermilion River watershed. Elevation in the Salt Fork Vermilion River watershed ranges from 836 feet above sea level in the headwaters to 523 feet at the most downstream point of the watershed (Figure 2-2). The absolute elevation change is 122 feet over the 46.8-mile stream length of Salt Fork Vermilion River, which yields a stream gradient of 2.6 feet per mile. Stream gradients for Saline Branch and Spoon Branch are 3.1 feet per mile and 8.9 feet per mile, respectively.

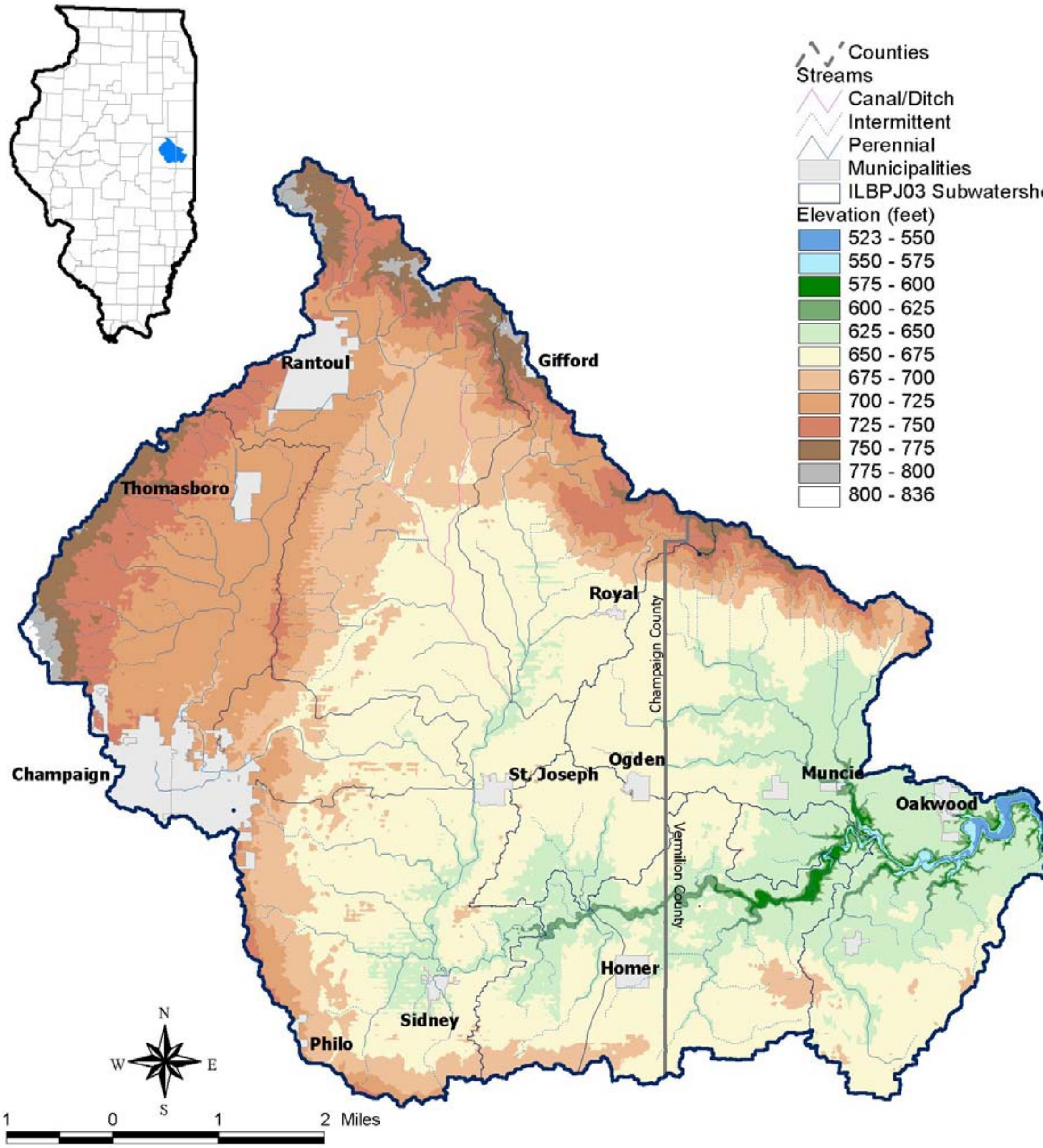

Figure 2-2. Elevation in the Salt Fork Vermilion River watershed.

2.3 Land Use and Land Cover

General land cover data for the Salt Fork Vermilion River watershed were extracted from the Illinois Natural History Survey's GAP Analysis Land cover database (INHS, 2003). This database was derived from satellite imagery taken during 1999 and 2000 and is the most current detailed land cover data known to be available for the watershed. Each 98-foot by 98-foot pixel contained within the satellite image is classified according to its reflective characteristics. Figure 2-3 displays land use and land cover in the watershed. A complete listing of the Illinois GAP land cover categories is provided in Appendix A.

The land cover data reveal that approximately 448 square miles (or nearly 88 percent of the total watershed area) are devoted to agricultural activities. Approximately 8 percent of the watershed is classified as rural grasslands and 7 percent is classified as urban. Land use and land cover are described and summarized for each of the listed water bodies, and their respective subwatershed areas, in the following sections.

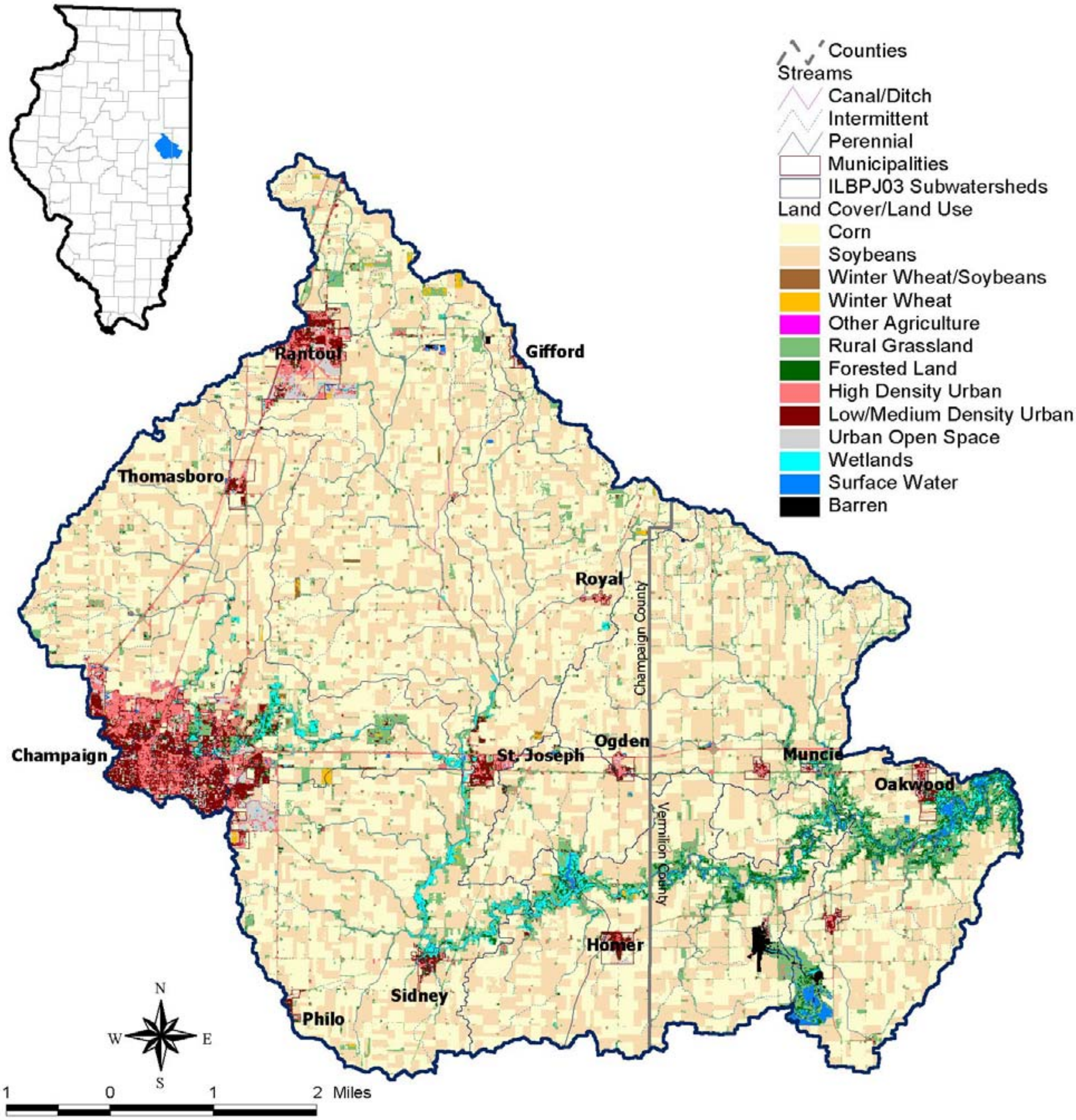

Figure 2-3. GAP land use/land cover in the Salt Fork Vermilion River watershed.

2.3.1 Spoon Branch (BPJD02)

Land use and land cover in the Spoon Branch subwatershed is summarized in Table 2-1. Corn and soybeans dominate land cover, accounting for 49 and 42 percent of subwatershed area, respectively. Rural grassland and urban land uses represent six and two percent of the subwatershed area, respectively. All other cover types represent less than one percent of the subwatershed area.

Table 2-1. Land Use and Land Cover in the Spoon Branch Subwatershed (Segment BPJD02).

Land Use / Land Cover Description	Area		Percent of Watershed Area
	Acres	Square Miles	
Corn	13,725.7	21.4	49.66
Soybeans	11,612.3	18.1	42.01
Rural Grassland	1,609.5	2.5	5.82
Urban	524.4	0.8	1.90
Winter Wheat	52.0	0.1	0.19
Wetlands	37.6	0.1	0.14
Forested Land	35.4	0.1	0.13
Barren	20.9	<0.1	0.08
Winter Wheat/Soybeans	11.8	<0.1	0.04
Surface Water	10.7	<0.1	0.04
Total	**27,640.2**	**43.2**	**100.00**

2.3.2 Boneyard Creek (Illinois Water Body Segment BPJCA)

Urban land use is the dominant cover type in the Boneyard Creek subwatershed and accounts for 97 percent of the total subwatershed area (Table 2-2). Forested lands account for approximately three percent of the subwatershed area and all other land use types are less than 1 percent.

Table 2-2. Land Use and Land Cover in the Boneyard Creek Subwatershed (Segment BPJCA).

Land Use / Land Cover Description	Watershed Area		Percent of Watershed Area
	Acres	Square Miles	
Urban	3,597.2	5.6	96.56
Forested Land	109.4	0.2	2.94
Wetlands	12.0	<0.1	0.32
Soybeans	2.2	<0.1	0.06
Corn	1.3	<0.1	0.04
Winter Wheat	1.3	<0.1	0.04
Rural Grassland	1.1	<0.1	0.03
Surface Water	0.7	<0.1	0.02
Total	**3,725.3**	**5.8**	**100.00**

2.3.3 Saline Branch (Illinois Water Body Segment BPJC08)

Of the 62 square miles draining the upper Saline Branch subwatershed, slightly less than 83 percent are dedicated to agricultural activities. The dominant crop types are corn and soybeans (see Table 2-3), with each representing approximately 41 percent of the subwatershed acreage. Urban lands account for 12 percent of the subwatershed area, while rural grasslands account for approximately 5 percent of the subwatershed area.

Table 2-3. Land Use and Land Cover in the Saline Branch Subwatershed (Segment BPJC08).

Land Use / Land Cover Description	Watershed Area		Percent of Watershed Area
	Acres	Square Miles	
Corn	16,499.2	25.8	41.28
Soybeans	16,200.5	25.3	40.53
Urban	4,656.9	7.3	11.65
Rural Grassland	1,953.3	3.1	4.89
Forested Land	344.0	0.5	0.86
Wetlands	231.5	0.4	0.58
Surface Water	63.4	0.1	0.16
Winter Wheat	16.5	<0.1	0.04
Winter Wheat/Soybeans	4.4	<0.1	0.01
Total	**39,969.8**	**62.5**	**100.00**

2.3.4 Saline Branch (Illinois Water Body Segment BPJC06)

The lower Saline Branch subwatershed drains approximately 90 square miles (Table 2-4). Of this area, approximately 65 square miles are dedicated to agricultural land use, representing nearly 72 percent of the total watershed area. Urban lands account for slightly less than 18 percent of the watershed area, while rural grassland, forested land uses, and wetlands account for approximately seven percent, two percent, and two percent of the watershed area, respectively.

Table 2-4. Land Use and Land Cover in the Saline Branch Subwatershed within Illinois (Segment BPJC06).

Land Use / Land Cover Description	Watershed Area		Percent of Watershed Area
	Acres	Square Miles	
Corn	21,212.2	33.1	36.75
Soybeans	20,418.4	31.9	35.37
Urban	10,249.0	16.0	17.76
Rural Grassland	3,843.9	6.0	6.66
Forested Land	902.7	1.4	1.56
Wetlands	879.1	1.4	1.52
Surface Water	102.5	0.2	0.18
Winter Wheat	81.8	0.1	0.14
Winter Wheat/Soybeans	32.0	0.1	0.06
Total	**57,721.7**	**90.2**	**100.00**

2.3.5 Salt Fork Vermilion River (Illinois Water Body Segment BPJ09)

Land use and land cover in the Salt Fork Vermilion River (BPJ09) subwatershed is summarized in Table 2-5. The table shows that agricultural land uses account for 250 square miles, representing nearly 83 percent of the subwatershed area. Corn and soybeans dominate land cover, accounting for 40 and 38 percent of subwatershed area, respectively. Urban land uses represent nine percent, while rural grasslands and wetlands characterize six percent and one percent of subwatershed area, respectively. All other cover types represent less that one percent of the subwatershed area.

Table 2-5. Land Use and Land Cover in the Salt Fork Vermilion River Subwatershed (Segment BPJ09).

Land Use / Land Cover Description	Watershed Area		Percent of Watershed Area
	Acres	Square Miles	
Corn	85,591.4	133.7	44.03
Soybeans	74,266.5	116.0	38.21
Urban	17,662.1	27.6	9.09
Rural Grassland	12,295.3	19.2	6.33
Wetlands	2,018.7	3.2	1.04
Forested Land	1,667.5	2.6	0.86
Winter Wheat	487.3	0.8	0.25
Surface Water	193.5	0.3	0.10
Winter Wheat/Soybeans	153.2	0.2	0.08
Barren	45.1	0.1	0.02
Total	**194,380.5**	**303.7**	**100.00**

2.3.6 Salt Fork Vermilion River (Illinois Water Body Segment BPJ12)

Land use and land cover in the Salt Fork Vermilion River (BPJ12) subwatershed is summarized in Table 2-6. The table shows that agricultural land uses account for 265 square miles, representing nearly 83 percent of the subwatershed area. Urban land uses represent nearly nine percent, while rural grasslands and wetlands characterize six percent and one percent of subwatershed area, respectively. All other cover types represent approximately one percent of the subwatershed area.

Table 2-6. Land Use and Land Cover in the Salt Fork Vermilion River Subwatershed (Segment BPJ12).

Land Use / Land Cover Description	Watershed Area		Percent of Watershed Area
	Acres	Square Miles	
Corn	90,399.8	141.2	44.05
Soybeans	78,799.5	123.1	38.40
Urban	17,831.5	27.9	8.69
Rural Grassland	13,016.5	20.3	6.34
Wetlands	2,377.6	3.7	1.16
Forested Land	1,889.5	3.0	0.92
Winter Wheat	499.3	0.8	0.24
Surface Water	194.4	0.3	0.09
Winter Wheat/Soybeans	153.2	0.2	0.07
Barren	45.1	0.1	0.02
Total	**205,206.5**	**320.6**	**100.00**

2.3.7 Homer Lake (Illinois Water Body Segment RBO)

Land use and land cover in the Homer Lake subwatershed is summarized in Table 2-7. The table shows that agricultural land uses account for nearly 87 percent of the subwatershed area. Rural grassland, urban land uses, and wetlands represent seven percent, three percent, and two percent of the subwatershed area, respectively. All other cover types represent less that one percent of the subwatershed area. Land use around the lake is mostly wetlands, forest, and rural grasslands.

Table 2-7. Land Use and Land Cover in the Homer Lake Subwatershed (Segment RBO).

Land Use / Land Cover Description	Watershed Area		Percent of Watershed Area
	Acres	Square Miles	
Corn	5,251.4	8.2	46.35
Soybeans	4,637.8	7.2	40.93
Rural Grassland	753.0	1.2	6.65
Urban	334.5	0.5	2.95
Wetlands	162.1	0.3	1.43
Surface Water	98.7	0.2	0.87
Forested Land	90.1	0.1	0.79
Winter Wheat	2.2	<0.1	0.02
Winter Wheat/Soybeans	1.1	<0.1	0.01
Total	**11,331.0**	**17.7**	**100.00**

2.3.8 Salt Fork Vermilion River (Illinois Water Body Segment BPJ10)

The Salt Fork Vermilion River subwatershed (segment BPJ10) drains more than 380 square miles of the entire watershed. Approximately 82 percent of the subwatershed area is dedicated to agricultural activities. Urban land uses account for nearly eight percent of the subwatershed area, while rural grassland account for 16,916 acres (6.93 percent) of the subwatershed area. Wetlands and forest land each account for approximately 3,000 acres (1.23 percent) of the subwatershed area.

Table 2-8. Land Use and Land Cover in the Salt Fork Vermilion River Subwatershed (Segment BPJ10).

Land Use / Land Cover Description	Watershed Area		Percent of Watershed Area
	Acres	Square Miles	
Corn	106,726.2	166.8	43.74
Soybeans	93,874.3	146.7	38.47
Urban	18,855.0	29.5	7.73
Rural Grassland	16,916.8	26.4	6.93
Wetlands	3,005.7	4.7	1.23
Forested Land	2,997.9	4.7	1.23
Surface Water	527.3	0.8	0.22
Winter Wheat	522.4	0.8	0.21
Barren	420.3	0.7	0.17
Winter Wheat/Soybeans	160.3	0.3	0.07
Other Agriculture	2.2	<0.1	<0.01
Total	**244,008.4**	**381.3**	**100.00**

2.3.9 Salt Fork Vermilion River (Illinois Water Body Segment BPJ08)

Of the 389 square miles draining segment BPJ08, slightly greater than 82 percent are dedicated to agricultural activities. Urban lands account for almost eight percent of the subwatershed area, while rural grassland, forested land uses, and wetlands account for approximately seven percent, one percent, and one percent of the subwatershed area, respectively.

Table 2-9. Land Use and Land Cover in the Salt Fork Vermilion River Subwatershed (Segment BPJ08).

Land Use / Land Cover Description	Watershed Area		Percent of Watershed Area
	Acres	Square Miles	
Corn	109,207.2	170.6	43.86
Soybeans	95,386.3	149.0	38.31
Urban	18,898.6	29.5	7.59
Rural Grassland	17,419.2	27.2	7.00
Forested Land	3,255.4	5.1	1.31
Wetlands	3,102.8	4.8	1.25
Surface Water	605.8	0.9	0.24
Winter Wheat	522.4	0.8	0.21
Barren	420.3	0.7	0.17
Winter Wheat/Soybeans	160.3	0.3	0.06
Other Agriculture	3.8	<0.1	<0.01
Total	**248,982.3**	**389.0**	**100.00**

2.3.10 Salt Fork Vermilion River (Illinois Water Body Segment BPJ03)

The lower Salt Fork Vermilion River subwatershed represents the entire Salt Fork Vermilion River watershed and drains approximately 500 square miles (Figure 2-1). Of this area, approximately 82 percent are dedicated to agricultural activities. Rural grasslands account for slightly less than eight percent of the watershed area, while urban land uses, forested lands, and wetlands account for more than seven percent, slightly less than two percent, and one percent of the watershed area.

Table 2-10. Land Use and Land Cover in the Salt Fork Vermilion River Subwatershed (Segment BPJ03).

Land Use / Land Cover Description	Watershed Area		Percent of Watershed Area
	Acres	Square Miles	
Corn	140,132.9	219.0	43.84
Soybeans	121,319.7	189.6	37.96
Rural Grassland	24,667.3	38.5	7.72
Urban	20,907.5	32.7	6.54
Forested Land	5,669.3	8.9	1.77
Wetlands	3,985.5	6.2	1.25
Surface Water	1,689.7	2.6	0.53
Barren	550.2	0.9	0.17
Winter Wheat	524.6	0.8	0.16
Winter Wheat/Soybeans	175.2	0.3	0.05
Other Agriculture	9.8	<0.1	<0.01
Total	**319,631.7**	**499.4**	**100.00**

2.4 Tillage Practices and Agricultural Best Management Practices

Tillage system practices are not available specifically for the Salt Fork Vermilion River watershed; however, county-wide tillage system surveys have been undertaken by the Illinois Department of Agriculture (2002; 2004). It is assumed that the general tillage practice trends evidenced throughout Champaign and Vermilion Counties are applicable to the Salt Fork Vermilion River watershed and the results of these surveys are presented in Table 2-11. The percentage of fields using conventional versus reduced tillage practices remained fairly similar between 2002 and 2004.

The Conservation Reserve Program (CRP) is a voluntary program for agricultural landowners and a number of farmers in the Salt Fork River watershed participate in the program. Through CRP, farmers receive annual rental payments and cost-share assistance to establish long-term, resource conserving covers on eligible farmland. The extent of various CRP practices in the watershed is provided below (Sharyl Walker, Champaign County Soil and Water Conservation District, personal communications April 22, 2005):

- Grass filter strips: 2436 acres
- Tree buffers: 170 acres
- Grass waterways: 354 acres

Table 2-11. Percentage of Agricultural Fields Surveyed with Indicated Tillage System in Champaign and Vermilion Counties, Illinois, in 2002 and 2004.

Champaign County 2002 Transect Survey				
Crop Field Type	Tillage Practice			
	Conventional	Reduced-till	Mulch-till	No-till
Corn	74	20	4	2
Soybean	14	41	23	22
Small Grain	0	0	100	0
Champaign Count 2004 Transect Survey				
Crop Field Type	Tillage Practice			
	Conventional	Reduced-till	Mulch-till	No-till
Corn	73	21	3	3
Soybean	5	31	32	32
Small Grain	0	0	0	100
Vermilion County 2002 Transect Survey				
Crop Field Type	Tillage Practice			
	Conventional	Reduced-till	Mulch-till	No-till
Corn	92	6	1	2
Soybean	31	24	9	36
Small Grain	50	0	0	50
Vermilion County 2004 Transect Survey				
Crop Field Type	Tillage Practice			
	Conventional	Reduced-till	Mulch-till	No-till
Corn	89	8	2	0
Soybean	21	24	14	41
Small Grain	100	0	0	0

Source: Illinois Department of Agriculture, 2002; 2004.

2.5 Soils

Soils data and GIS coverages from the Natural Resources Conservation Service (NRCS) were used to characterize soils in the Salt Fork Vermilion River watershed. General soils data and map unit delineations for the country are provided as part of the State Soil Geographic (STATSGO) database. GIS coverages provide locations for the soil map units at a scale of 1:250,000 (USDA, 1995) and a map unit is composed of several soil series having similar properties. It should be noted that map units can be highly variable and the following maps are meant as general representations. Figure 2-4 displays the STATSGO soil map units in the Salt Fork Vermilion River watershed. Identification fields in the GIS coverage can be linked to a database that provides information on chemical and physical soil characteristics for each map unit. Of particular interest for water resource studies are the hydrologic soil group, the K-factor of the Universal Soil Loss Equation, and depth to water table. The following sections describe and summarize the specified soil characteristics for each of the listed water bodies, and their respective subwatersheds, in the Salt Fork Vermilion River watershed.

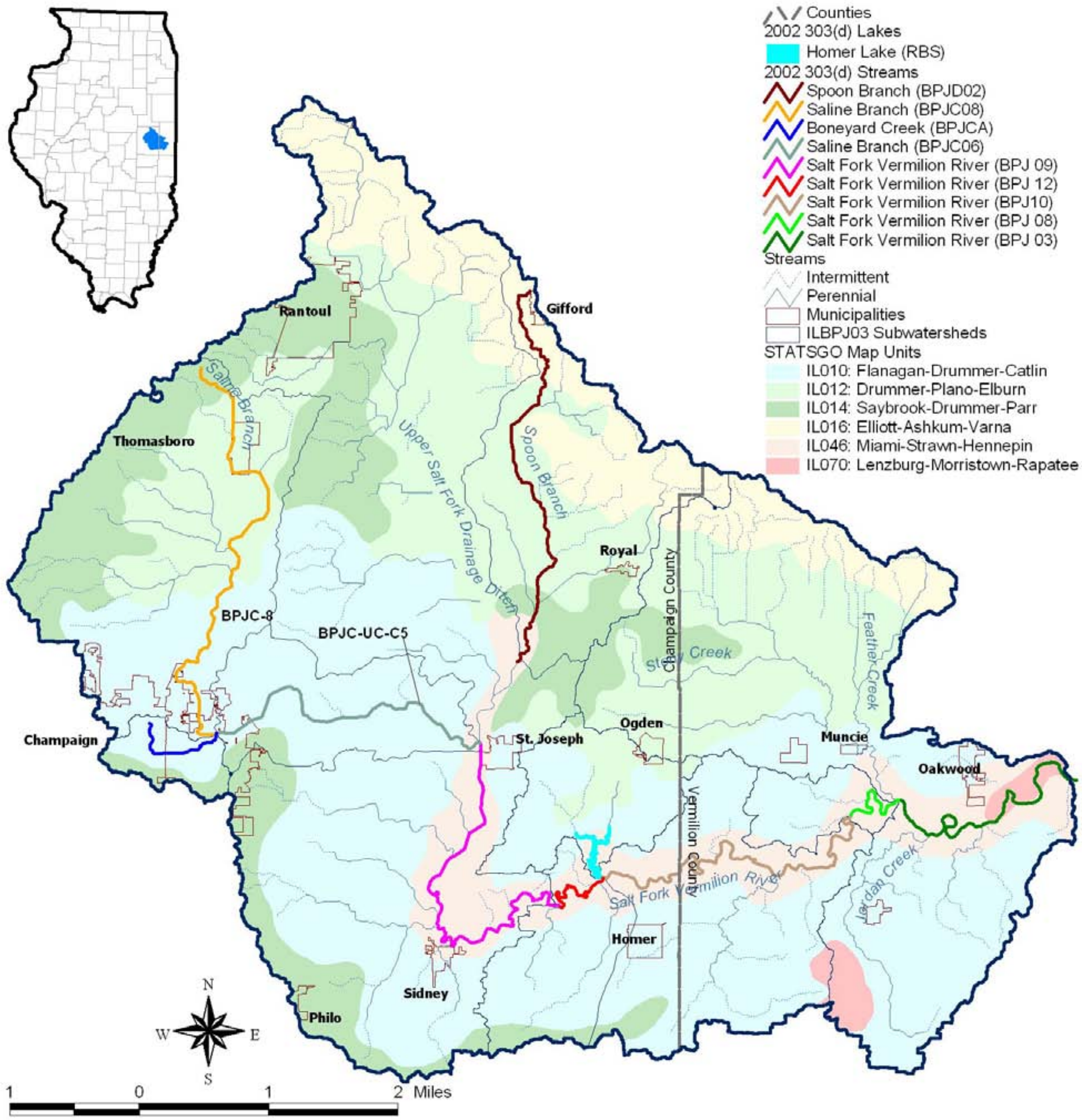

Figure 2-4. Distribution of STATSGO Map Units in the Salt Fork Vermilion River watershed.

2.5.1 Hydrologic Soil Group

The hydrologic soil group classification is a means for grouping soils by similar infiltration and runoff characteristics during periods of prolonged wetting. Typically, clay soils that are poorly drained have lower infiltration rates, while well-drained sandy soils have the greatest infiltration rates. NRCS (2001) has defined four hydrologic groups for soils as listed in Table 2-12. In addition, soils with tile drainage in Illinois should be designated as Class B soils (i.e., due to the presence of tile drainage the soil takes on the attribute of a Class B soil ((McKenna, personal communications, December 15, 2004)). Figure 2-5 presents the general distribution of hydrologic soil groups in the Salt Fork Vermilion River watershed.

The figure shows the dominant hydrologic group in the basin is B. Hydrologic group C soils are found only in the northernmost region of the watershed.

Table 2-12. NRCS Hydrologic Soil Groups.

Hydrologic Soil Group	Description
A	Soils with high infiltrations rates. Usually deep, well drained sands or gravels. Little runoff.
B	Soils with moderate infiltration rates. Usually moderately deep, moderately well drained soils.
C	Soils with slow infiltration rates. Soils with finer textures and slow water movement.
D	Soils with very slow infiltration rates. Soils with high clay content and poor drainage. High amounts of runoff.

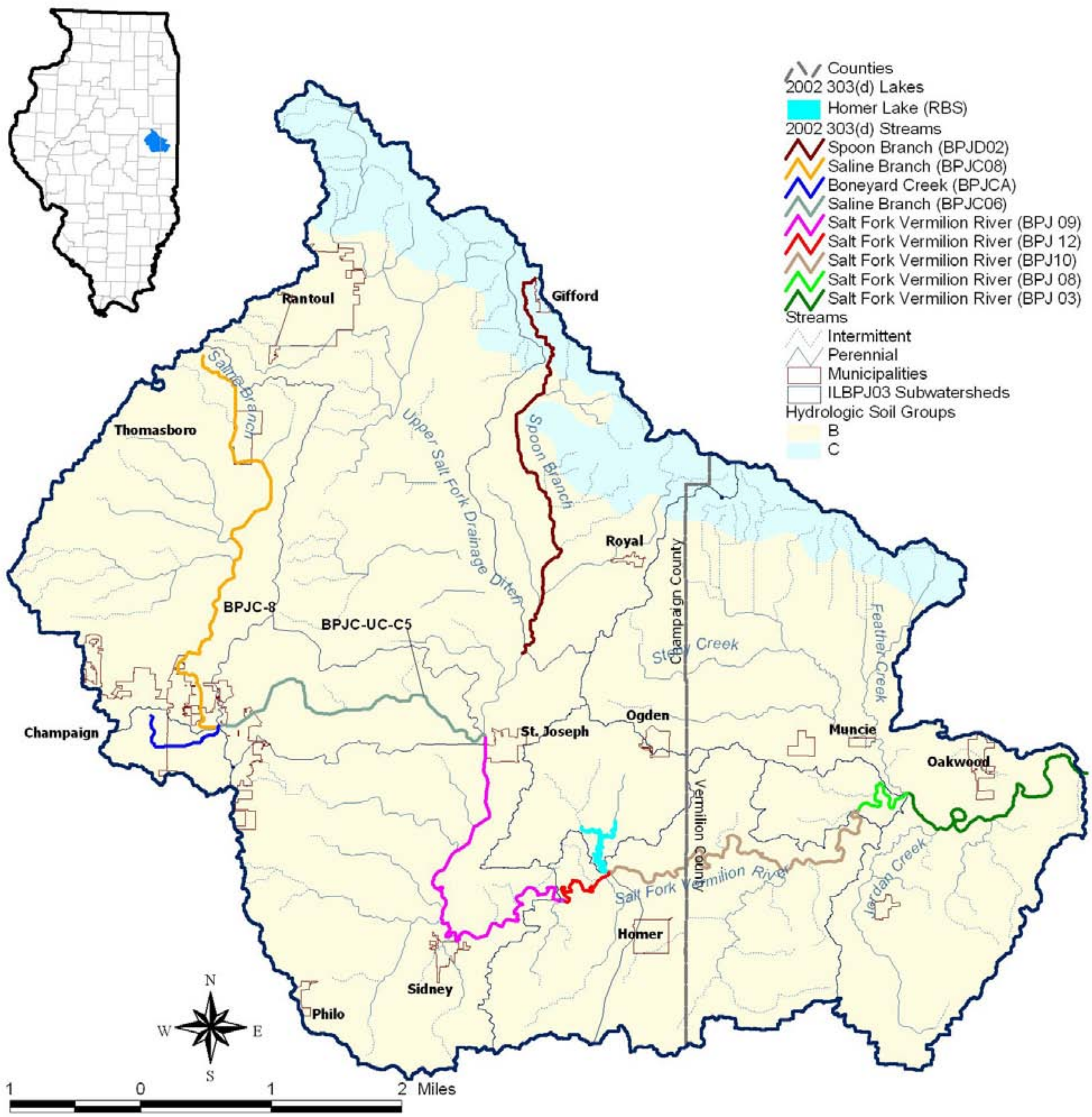

Figure 2-5. Hydrologic soil group distribution in the Salt Fork Vermilion River watershed.

2.5.2 K-Factor

A commonly used soil attribute is the K-factor, a component of the Universal Soil Loss Equation (USLE) (Wischmeier and Smith, 1978). The K-factor is a dimensionless measure of a soil's natural susceptibility to erosion, and factor values may range from 0 for water surfaces to 1.00 (although in practice, maximum factor values do not generally exceed 0.67). Large K-factor values reflect greater inherent soil erodibility. The distribution of K-factor values in the Salt Fork Vermilion River watershed is shown in Figure 2-6. The figure indicates that soils with moderate erosion potential (e.g., K-factors ranging from 0.20 to 0.37) comprise more than 99 percent of the watershed. Figure 2-6 also shows that less than one percent of K-factor values exceed 0.37.

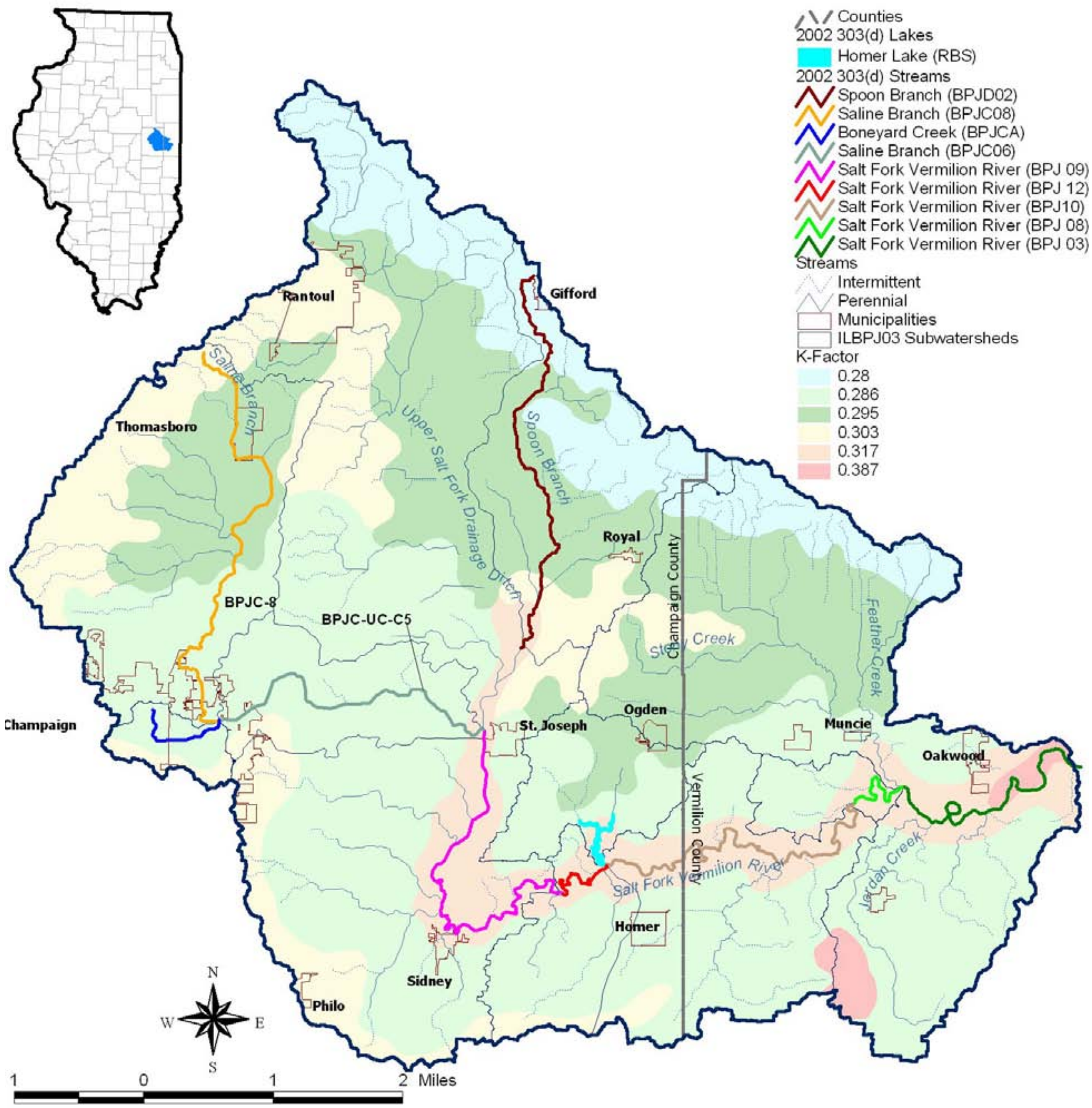

Figure 2-6. USLE K-Factor distribution in the Salt Fork Vermilion River watershed.

2.5.3 Depth to Water Table

Water table depth as described in the STATSGO database is the range in depth to the seasonally high water table level for a specified month. The STATSGO database reports depth to water table as both a minimum and maximum depth. Values were summarized to reflect the weighted sum of the minimum depth to water table for the surface layer of all soil sequences composing a single STATSGO map unit. Figure 2-7 displays the distribution of depth to water table for the basin and shows that depths range from 2.44 feet to 6 feet and generally increase moving from the headwaters down stream. Minimum depths occur along the northeast margin of the watershed and maximum depths occur in two localized areas; one southwest of Fairmount and the second at mouth of the Salt Fork Vermilion.

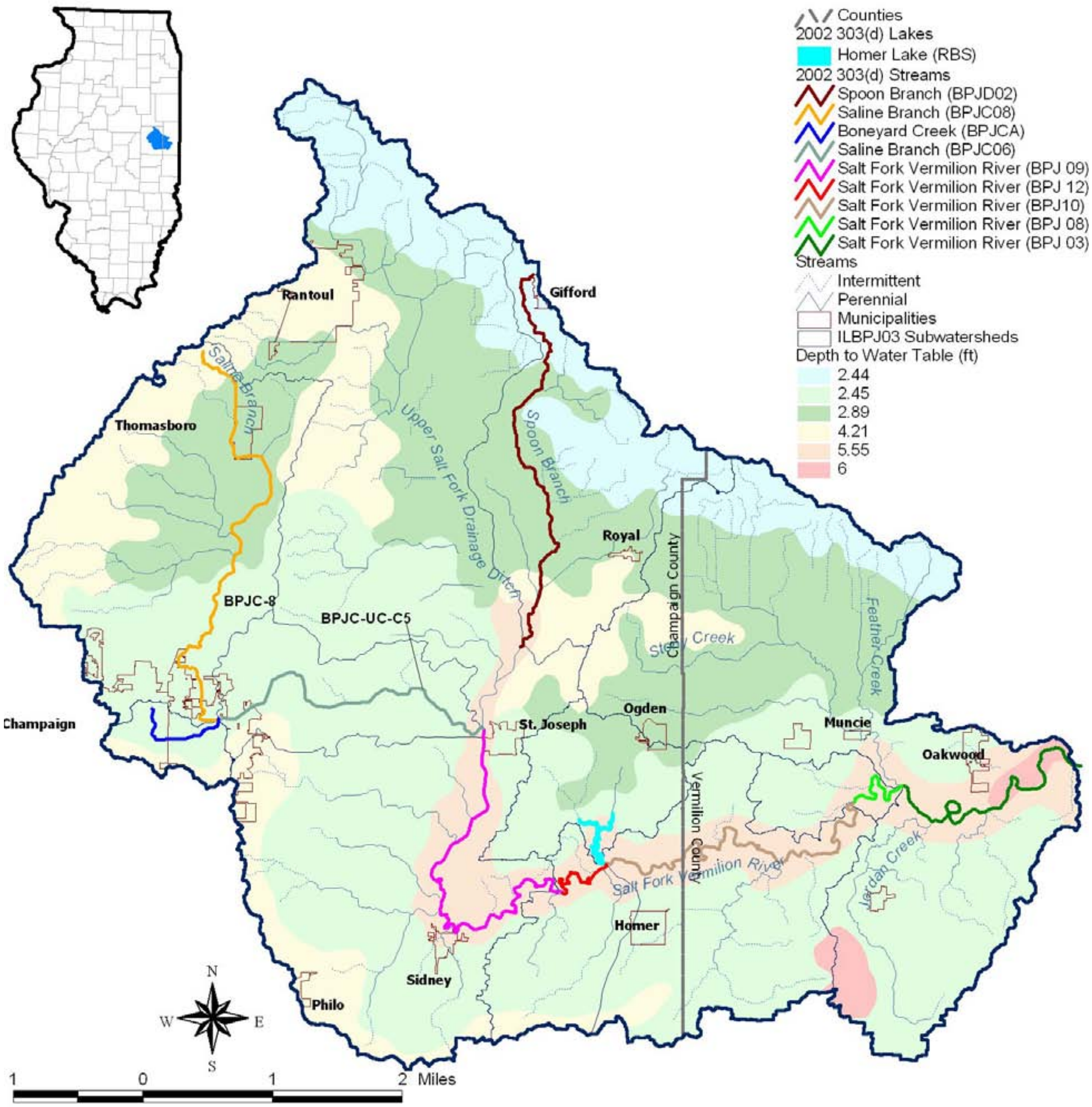

Figure 2-7. Depth to water table in the Salt Fork Vermilion River watershed

2.6 Population

Total watershed population is not directly available but may be calculated from the 2000 U.S. Census data. The 2000 U.S. Census data were downloaded for all towns, cities, and counties whose boundaries lie wholly or partially in the watershed (Census, 2000). Urban and nonurban populations were estimated for the watershed area and were summed to obtain an estimate of total watershed population. The following paragraphs describe how urban and nonurban population estimates were determined from town, city, and county Census data.

Urban watershed population is the sum of population for all towns and cities located entirely in the watershed. In the instance where a city or town is located partially in the watershed, a population weighting method was used to estimate a place's contribution to urban watershed population. Nonurban population for each county was determined by first subtracting the total county urban population from the total county population. Since only portions of counties are found in the watershed, a nonurban population weighting method was also used to estimate each county's contribution of nonurban population to the total watershed population. It is assumed that the nonurban population for each county is uniformly distributed throughout the nonurban portion of the county.

Watershed population is summarized in Table 2-13 for the contributing watershed of each waterbody segment. Approximately 94,000 people are estimated to reside in the Salt Fork Vermilion River watershed. The watershed's urban and nonurban population totals are given for each county in Table 2-13. Table 2-13 indicates that 15,924 people, or 16.85 percent of the population, live in nonurban areas, while 78,596 people (83.15 percent) reside in urban areas.

Table 2-13. ILBPJ03 Watershed Population Summarized by County.

County	Watershed Population	Percent Watershed Population [a]	Nonurban Population	Percent Nonurban Population [a]	Urban Population	Percent Urban Population [a]
Champaign	88,100	93.21	12,172	12.88	75,928	80.33
Vermilion	6,421	6.79	3,753	3.97	2,668	2.82
Total	**94,521**	**100.00**	**15,925**	**16.85**	**78,596**	**83.15**

[a] Percentages are a proportion of the total watershed population.
Source: U.S. 2000 Census and GIS analysis.

The urban population centers in the watershed are shown in Figure 2-1 and Table 2-14. Urbana and Champaign are the largest urban areas in the watershed and account for 30,846 people and 26,952 people, respectively. Other urban centers include Rantoul, St. Joseph, Thomasboro, Homer, Sidney, and Oakwood. All other urban centers have populations less than 1,000. Table 2-14 also provides information on population change for the ten-year period between 1990 and 2000 and indicates that the estimated watershed population remained fairly stable during this period.

Table 2-14. Population Centers and Population Change in the ILBPJ03 Watershed.

County	Municipality	1990 Population	2000 Population	Absolute Change	Percent Change
Champaign County	Nonurban	11,539	12,172	633	5.49
	Urbana	30,803	30,846	43	0.14
	Champaign	25,349	26,952	1,603	6.32
	Rantoul	13,205	9,864	-3,341	-25.3
	St. Joseph	2,052	2,912	860	41.91
	Thomasboro	1,250	1,233	-17	-1.36
	Homer	1,264	1,200	-64	-5.06
	Sidney	1,027	1,062	35	3.41
	Ogden	671	743	72	10.73
	Philo	338	432	94	27.82
	Gifford	399	385	-14	-3.55
	Royal	217	279	62	28.57
	Ludlow	20	20	0	0.31
Vermilion County	Nonurban	4,369	3,753	-615	-14.09
	Oakwood	1,395	1,367	-28	-2.02
	Fairmount	678	640	-38	-5.6
	Fithian	512	506	-6	-1.17
	Muncie	182	155	-27	-14.84
	Total	**95,269**	**94,521**	**-748**	**-0.79**

Source: U.S. 2000 Census and GIS analysis.

3 Climate and Hydrology

3.1 Climate

East central Illinois has a temperate climate with hot summers and cold, snowy winters. Average annual precipitation is 41.06 inches. On average there are 124 days with at least 0.01 inches of precipitation. Annual average snowfall is 26.2 inches. Monthly variation of total precipitation, snowfall, and temperature is presented for Urbana (Cooperative ID 118740) in Figure 3-1 below. The figure shows that although precipitation occurs throughout the year, May through August are the wettest months. Much of the annual snowfall occurs in the months of December through February, with the most snow typically occurring in January.

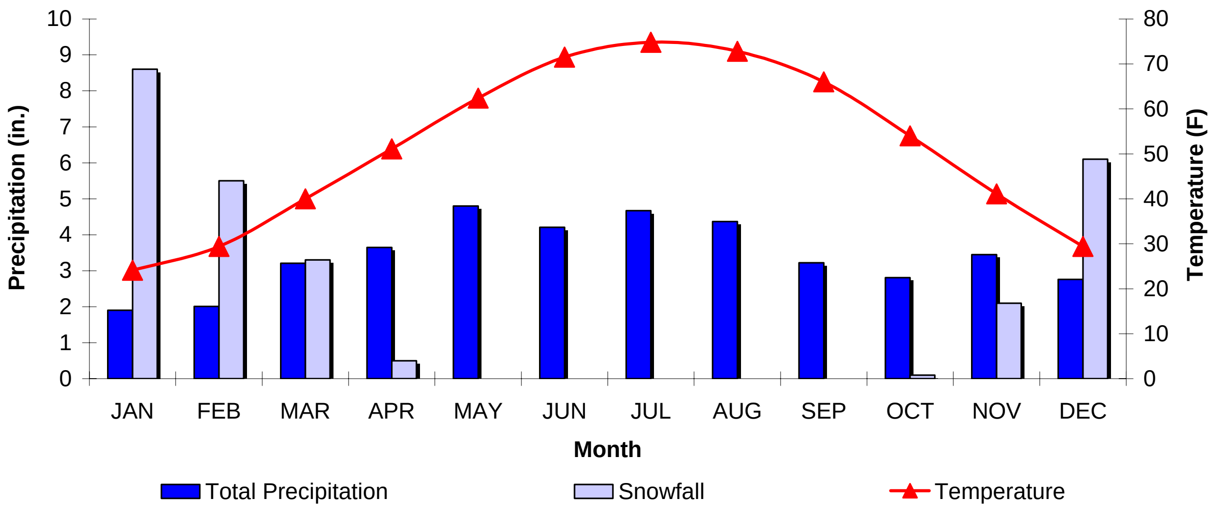

Figure 3-1. Climate summary for the Urbana Station (118740).

3.2 Hydrology

This section presents information related to the general hydrology, streams types, and subbasins found within the Salt Fork Vermilion River watershed.

3.2.1 Stream Types

The National Hydrography Data (NHD) provided by USEPA and USGS identified five different stream types in the Salt Fork Vermilion River Basin (Table 3-1 and Figure 3-2) (NHD, 2003). Approximately 50 percent of the streams were classified as perennial streams and 50 percent were classified as intermittent streams. Perennial streams flow year-round whereas intermittent streams have flow only for short periods during the course of a year, usually initiated by rainfall. Several streams were also classified as canals/ditches, artificial paths, and connectors.

Table 3-1. Summary of Stream Type in the Salt Fork Vermilion River Basin.

Stream Type	Stream Length (miles)	Percent
Perennial Stream	255.2	52.64
Intermittent Stream	213.8	44.10
Canal/Ditch	14.3	2.95
Artificial Path	1.1	0.22
Connector	0.4	0.09
Total	484.8	**100.00**

Figure 3-2. Stream types in the Salt Fork Vermilion River watershed.

3.2.2 Subbasin Delineation

Subbasins were delineated using the ArcView interface for the Soil Water Assessment Tool (SWAT) model. The SWAT interface requires digital elevation data (DEM) for the entire Salt Fork Vermilion River watershed and these data were downloaded from the GEOCommunity <www.geocomm.com> web site. Subbasin delineation is based on the DEM data coupled with a "burn-in" of the National Hydrography Data set (NHD) spatial database of stream reaches to ensure that the resulting subbasin boundaries conform to both topographic and stream segment. The SWAT delineated subbasins conformed very well to the Illinois 12-digit Hydrologic Unit Code (HUC) subbasins in the lower portion of the Salt Fork Vermilion River Watershed. In the middle and upper reaches of the watershed, however, the SWAT delineated basins poorly represented the 12-digit HUC boundaries. This is most likely the result of the combination of minor errors in the DEM coverage and the low relief in this portion of the watershed. As a result, a combination of the SWAT delineated basins and the Illinois 12-digit HUC coverage was used to define the drainage areas for each impaired waterbody (Figure 2-1).

3.2.3 Tile Drainage

The Salt Fork Vermilion River watershed, as with many other watersheds in Illinois, is extensively underlain by drain tile designed to remove standing water from the soil surface for agricultural purposes. Subsurface drainage is designed to remove excess water from the soil profile. The water table level is controlled through a series of drainage pipes (tile or tubing) that are installed below the soil surface, usually just below the root zone. In Illinois, subsurface drainage pipes are typically installed at a depth of 3 to 4 feet and at a spacing of 80 to 120 feet. The subsurface drainage network generally outlets to an open ditch or stream.

Researchers at the University of Illinois and elsewhere have studied the impact of tile drainage on hydrology and water quality. Some impacts are relatively well understood while others are not. Zucker and Brown (1998) provided the following summary of the impacts (statements compare agricultural land with subsurface drainage to that without subsurface drainage):

- The percentage of rain that falls on a site with subsurface drainage and leaves the site through the subsurface drainage system can range up to 63 percent.
- The reduction in the total runoff that leaves the site as overland flow ranges from 29 to 65 percent.
- The reduction in the peak runoff rate ranges from 15 to 30 percent.
- Total discharge (total of runoff and subsurface drainage) is similar to flows on land without subsurface drainage, if flows are considered over a sufficient period of time before, during, and after the rainfall/runoff event.
- The reduction in sediment loss by water erosion from a site ranges between 16 to 65 percent. This reduction relates to the reduction in total runoff and peak runoff rate.
- The reduction in loss of phosphorus ranges up to 45 percent, and is related to the reductions in total runoff, peak runoff rate, and soil loss. However, in high phosphorus content soils, dissolved phosphorus levels in tile flow can be high.
- In terms of total nutrient loss, by reducing runoff volume and peak runoff rate, the reduction in soil-bound nutrients is 30 to 50 percent.
- In terms of total nitrogen losses (sum of all nitrogen species), there is a reduction. However, nitrate-N, a soluble nitrogen ion, has great potential to move wherever water moves. Numerous studies throughout the Midwest and southeast U.S., and Canada document that the presence of a subsurface drainage system enhances the movement of nitrate-N to surface waters. Proper management of drainage waters along with selected in-field best management practices helps reduce this potential loss.

3.2.4 Flow Data

The USGS National Water Information System (NWIS) online database lists three flow gages with current and historic flow data in the Salt Fork Vermilion River basin (Table 3-2 and Figure 4-1). Flow data for the entire period of record at USGS gage 3336900 is shown in Figure 3-3 and indicates no significant trend in flow over the period of record.

Figure 3-4 shows average daily flow values for both gages on the Salt Fork Vermilion River. It is important to note that the periods of record for the two gages do not overlap and that no current flow data exists. However, no significant trend occurs at gage 3336900 and, assuming that flow conditions at gage

3338000 show a similar trend, it is appropriate to compare the magnitude of flow between the two gages. The figure shows that flow increases from the upstream station (USGS 3336900) to the downstream station (USGS 3338000) because of the increase in contributing drainage area. Flow at both gages is at its maximum in the spring (March through May) as a result of increased precipitation. Flows decrease throughout the summer (June through August) and reach their minimum in late August. Discharge then slightly increases again throughout the fall (September through November).

Table 3-2. Current and historical USGS gages on the Salt Fork Vermilion River.

Station ID	Station Location	Start	End	Drainage Area (mi^2)
3336900	Salt Fork Vermilion River near St. Joseph, IL	1958	1991	134
3338000	Salt Fork Vermilion River near Homer, IL	1944	1958	340
3337000	Boneyard Creek at Urbana, IL	1948	2004	4.46
3337100	Boneyard Creek at Lincoln Ave at Urbana, Il	2001	2004	4.78

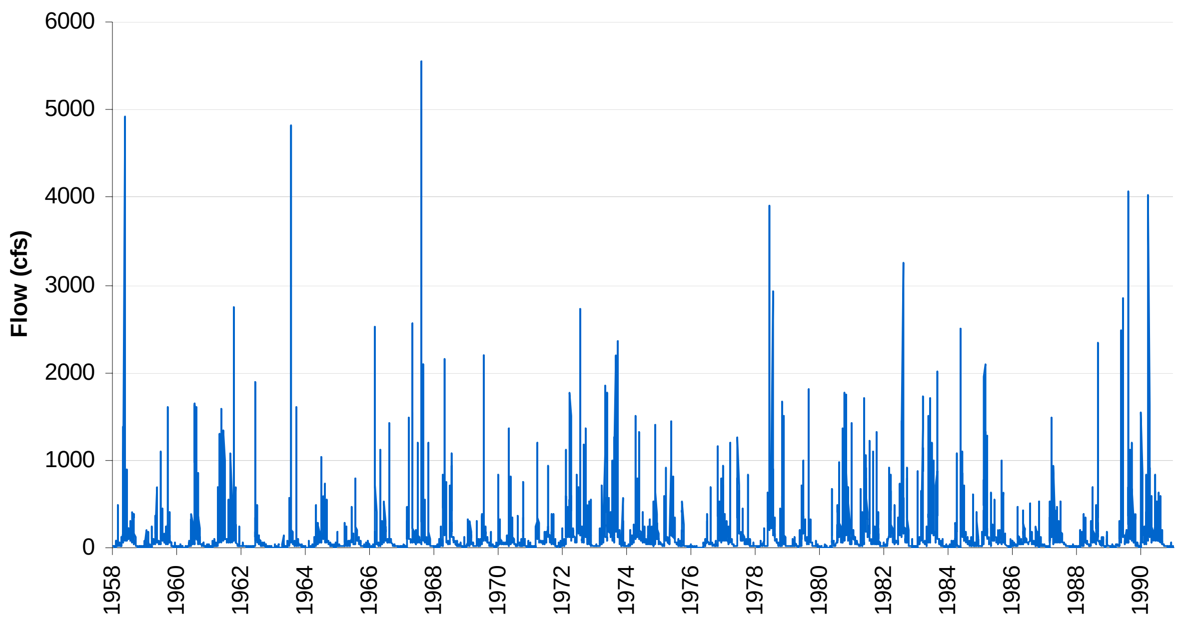

Figure 3-3. Historical flow data for USGS gage 3336900.

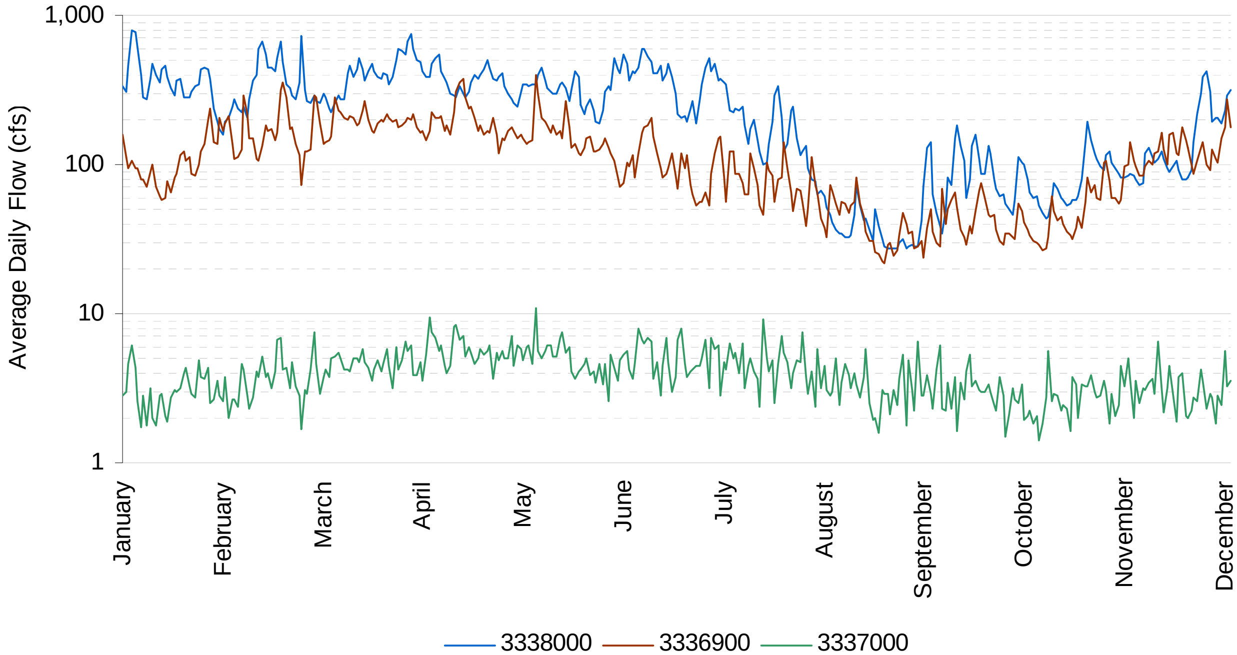

Figure 3-4. Average daily flow for USGS gages 3336900 and 3338000.

4 Inventory and Assessment of Water Quality Data

This section presents a summary of the available water quality data for all the listed waterbodies in the Salt Fork Vermilion River watershed. A description of the parameters of concern and the applicable water quality standards is presented first, followed by an analysis of the available water quality data. A complete listing of the water quality data is provided in Appendix B.

4.1 Parameters of Concern

The following sections provide a summary of the parameters identified on the Illinois 2004 303(d) list as causing impairments within the Salt Fork Vermilion River watershed. The purpose of these sections is to provide an overview of the parameters, units, sampling methods, and potential sources associated with each cause of impairment. The relevance of each cause of impairment to the various beneficial uses is also briefly discussed.

4.1.1 Nutrients/Organic Enrichment/Low DO/Excessive Algal Growth

The term *nutrients* usually refers to the various forms of nitrogen and phosphorus found in a waterbody. Both nitrogen and phosphorus are necessary for aquatic life, and both elements are needed at some level in a waterbody to sustain life. The natural amount of nutrients in a waterbody varies depending on the type of system. A pristine mountain spring might have little to almost no nutrients, whereas a lowland, mature stream flowing through wetland areas might have naturally high nutrient concentrations. Various forms of nitrogen and phosphorus can exist at one time in a waterbody, although not all forms can be used by aquatic life. Common phosphorus sampling parameters are total phosphorus (TP), dissolved phosphorus, and orthophosphate.

The dissolved phosphorus component of total phosphorus is the form that is most readily available to plants. It consists of soluble phosphorus that is not bound to particulates. In waterbodies with relatively short residence times, such as fast-flowing streams, dissolved phosphorus is of greater interest than TP because it is the only form that is readily available to support algal growth. However, in lakes and reservoirs, where residence times are much longer, particulate phosphorus can be transformed to dissolved phosphorus through microbial action. TP is therefore considered an adequate estimation of bioavailable phosphorus within lakes (USEPA, 1999).

Common nitrogen sampling parameters are total nitrogen (TN), nitrite (NO_2), nitrate (NO_3), total Kjeldahl nitrogen (TKN), and ammonia (NH_3). Concentrations are measured in the lab and are typically reported in milligrams per liter.

Nutrients generally do not pose a direct threat to the beneficial uses of a waterbody. However, excess nutrients can cause an undesirable abundance of plant and algae growth. This process is called eutrophication or organic enrichment. Organic enrichment can have many effects on a stream or lake. One possible effect of eutrophication is low dissolved oxygen concentrations. Aquatic organisms need oxygen to live and they can experience lowered reproduction rates and mortality with lowered dissolved oxygen concentrations. Dissolved oxygen concentrations are measured in the field and are typically reported in milligrams per liter. Ammonia, which is toxic to fish at high concentrations, can be released from decaying organic matter when eutrophication occurs. Recreational uses can be impaired because of eutrophication. Nuisance plant and algae growth can interfere with swimming, boating, and fishing. Nutrients generally do not pose a threat to agricultural uses.

Nitrogen and phosphorus exist in rocks and soils and are naturally weathered and transported into waterbodies. Organic matter is also a natural source of nutrients. Systems rich with organic matter (e.g., wetlands and bogs) can have naturally high nutrient concentrations. Phosphorus and nitrogen are potentially released into the environment through different anthropogenic sources including septic systems, wastewater treatment plants, fertilizer application, and animal feeding operations.

4.1.2 Sedimentation/Siltation

Extreme sedimentation can impair aquatic life, drinking water, and recreational designated uses. Excessive sediments deposited on the bottom of streams and lakes can choke spawning gravels, thereby reducing fish survival and growth rates, impair fish food sources, and reduce habitat complexity in stream channels. Furthermore, high sediment levels can clog fish gills, causing direct physical harm. Related to drinking water supply, sediments can cause taste and odor problems, block water supply intakes, foul treatment systems, and fill reservoirs. High levels of sediment can impair swimming and boating by altering channel form, creating hazards due to reductions in water clarity, and adversely affecting the general aesthetics of the waterbody.

Sediment is delivered to a receiving waterbody through various erosional processes such as sheetwash, gully and rill erosion, wind, landslides, and human excavation. Additionally, sediments are often produced through the stream channel and stream bank erosion, and by channel disturbance.

4.1.3 Boron

Boron is a naturally occurring dark brown/black substance found throughout the environment. It only occurs in combined form, usually as borax, colemanite, boronatrocalcite, and boracite. The highest concentrations of boron are found in sediments and sedimentary rock, particularly clay rich marine sediments. Boron can also be found naturally in soils at concentrations of 5 to 150 parts per million (ppm). Anthropogenic sources of boron in the environment include sewage sludge and effluents, coal combustion, glass, cleaning compounds and agrochemicals.

Generally, environmental concentrations of boron found in surface water are below levels identified as toxic to aquatic organisms. Boron retention in soil depends on the concentration in the soil solution, soil pH, texture, organic matter, cation exchange capacity, type of clay and mineral coating on the clay. Boron is an essential trace element for the growth of terrestrial crop plants and some algae, fungi and bacteria, but can be toxic in excess. Toxicity to aquatic organisms, including vertebrates, invertebrates and plants can vary depending on the organism's life stage and environment with early stages more sensitive to boron than later ones (Government of British Columbia, 2003). Boron concentrations are also typically associated with chlorides, which suggests that concentrations might be controlled by evaporative processes (USGS, 2003).

4.1.4 pH

The pH of a sample of water is a measure of the concentration of hydrogen ions. The pH of water determines the solubility (amount that can be dissolved in the water) and biological availability (amount that can be utilized by aquatic life) of chemical constituents such as nutrients (phosphorus, nitrogen, and carbon) and heavy metals (lead, copper, cadmium, etc.). For example, in addition to affecting how much and what form of phosphorus is most abundant in the water, pH may also determine whether aquatic life can use it. In the case of heavy metals, the degree to which they are soluble determines their toxicity. Metals tend to be more toxic at lower pH because they are more soluble. A pH range of 6.5 to 9.0 appears to provide protection for the life of freshwater fish and bottom dwelling invertebrates.

4.1.5 Iron

Iron is a trace element required by both plants and animals. It is a vital part of the oxygen transport mechanism in the blood (hemoglobin) of all vertebrate and some invertebrate animals. Ferrous and ferric ions are the primary forms of concern in the aquatic environment. Other forms may be in either organic or inorganic wastewater streams. The ferrous form can persist in water with no dissolved oxygen and usually originates from groundwater or mines that are pumped or drained. Taste thresholds of iron in water are 0.1 mg/L for ferrous iron and 0.2 mg/L ferric iron, giving a bitter or an astringent taste. Black or brown swamp waters may contain low iron concentrations in the presence or absence of dissolved oxygen, but this iron form has little effect on aquatic life.

4.1.6 DDT

DichloroDiphenylTrichloroethane (DDT) is an insecticide that was first synthesized in the early 1900s. DDT is effective against many organisms, but is especially effective against the Anopheles mosquito that transmits malaria and was therefore widely used during most of the last century. However, DDT is a "hard" insecticide in that its residues accumulate in the environment because it is concentrated by lower organisms such as plankton and accumulates in the fatty tissues of fish and birds. The toxicity of DDT was first noted in 1949 by the U.S. Fish and Wildlife and the insecticide was eventually banned in 1972 by the USEPA.

4.2 Applicable Water Quality Standards

A description of the designated use support for waters within Illinois and a narrative of Illinois EPA's water quality standards are presented in this section. Additionally, numerical water quality criteria for the parameters of interest in this TMDL are listed as well.

4.2.1 Use Support Guidelines

To assess the designated use support for Illinois waterbodies the Illinois EPA uses rules and regulations adopted by the Illinois Pollution Control Board (IPCB). The following are the use support designations provided by the IPCB for waterbodies in the Salt Fork Vermilion River watershed:

a. *General Use Standards* - These standards protect for aquatic life, wildlife, agricultural, primary contact (where physical configuration of the waterbody permits it, any recreational or other water use in which there is prolonged and intimate contact with the water involving considerable risk of ingesting water in quantities sufficient to pose a significant health hazard, such as swimming and water skiing), secondary contact (any recreational or other water use in which contact with the water is either incidental or accidental and in which the probability of ingesting appreciable quantities of water is minimal, such as fishing, commercial and recreational boating, and any limited contact incident to shoreline activity), and most industrial uses. These standards are also designed to ensure the aesthetic quality of the state's aquatic environment.

b. *Public and Food Processing Water Supply Standards* **-** These standards protect for any water use in which water is withdrawn from surface waters of the state for human consumption or for processing of food products intended for human consumption.

4.2.2 Numeric Standards

Numeric water quality standards for the State of Illinois for general use and Public and food processing and water supply are presented in Table 4-1.

Table 4-1. Illinois Numeric Water Quality Standards.

Parameter	Units	General Use	Public and Food Processing Water Supply
Boron	μg/L	1,000	1,000
DDT	μg/L	None	50
Dissolved Iron	μg/L	1,000	300
Dissolved Oxygen	mg/L	6.0 minimum for at least 16 hours in any 24 hour period; 5.0 minimum	6.0 minimum for at least 16 hours in any 24 hour period; 5.0 minimum
Nitrates	mg/L	None	10.0
pH	SU	6.5 minimum 9.0 maximum	6.5 minimum 9.0 maximum
Total Ammonia[1]	mg/L	15	15
Total Phosphorus[2]	mg/L	0.05	0.05

[1]The allowable concentration of total ammonia varies with water temperature and pH. In general, as both temperature and pH decrease, the allowable concentration of ammonia increases.
[2]The total phosphorus standard only applies to lakes.

4.3 Assessment Methodology

Illinois EPA assesses whether streams are fully supporting their aquatic life uses primarily based on biological information, supplemented by chemical water data and physical habitat information. The primary biological measures used are the Index of Biotic Integrity for fish and the Macroinvertebrate Biotic Index. Physical habitat information used in making assessments includes quantitative measures of stream-bottom composition and qualitative descriptors of channel and riparian conditions. Chemical water data includes measures of “conventional” parameters (i.e., dissolved oxygen, pH, temperature) as well as a variety of other pollutants.

For a large majority of streams, the assessment of aquatic life use relies more on biological information than on chemical water data or habitat information. Conversely, chemical data (from water and sediment) and habitat information play primary roles in determining potential causes and sources of aquatic life use impairment (Illinois EPA, 2004b). In other words, if the biological data indicate impaired conditions the chemical data are used for identifying causes based on comparison to numeric water quality standards or guidelines.

4.4 Water Quality Assessment

Water quality data for each listed waterbody in the Salt Fork Vermilion River watershed were downloaded from the STORET and USGS NWIS databases and obtained directly from Illinois EPA. The location of the monitoring stations located within the watershed is shown in Figure 4-1, Figure 4-2 displays the location of sites in the vicinity of Urbana/Champaign, and Figure 4-3 displays the monitoring stations located in Homer Lake. Summary statistics, including the period of record, for all available water quality data are presented in this section, and are organized by impaired waterbody segment. The individual results of each sampling event are provided in Appendix B.

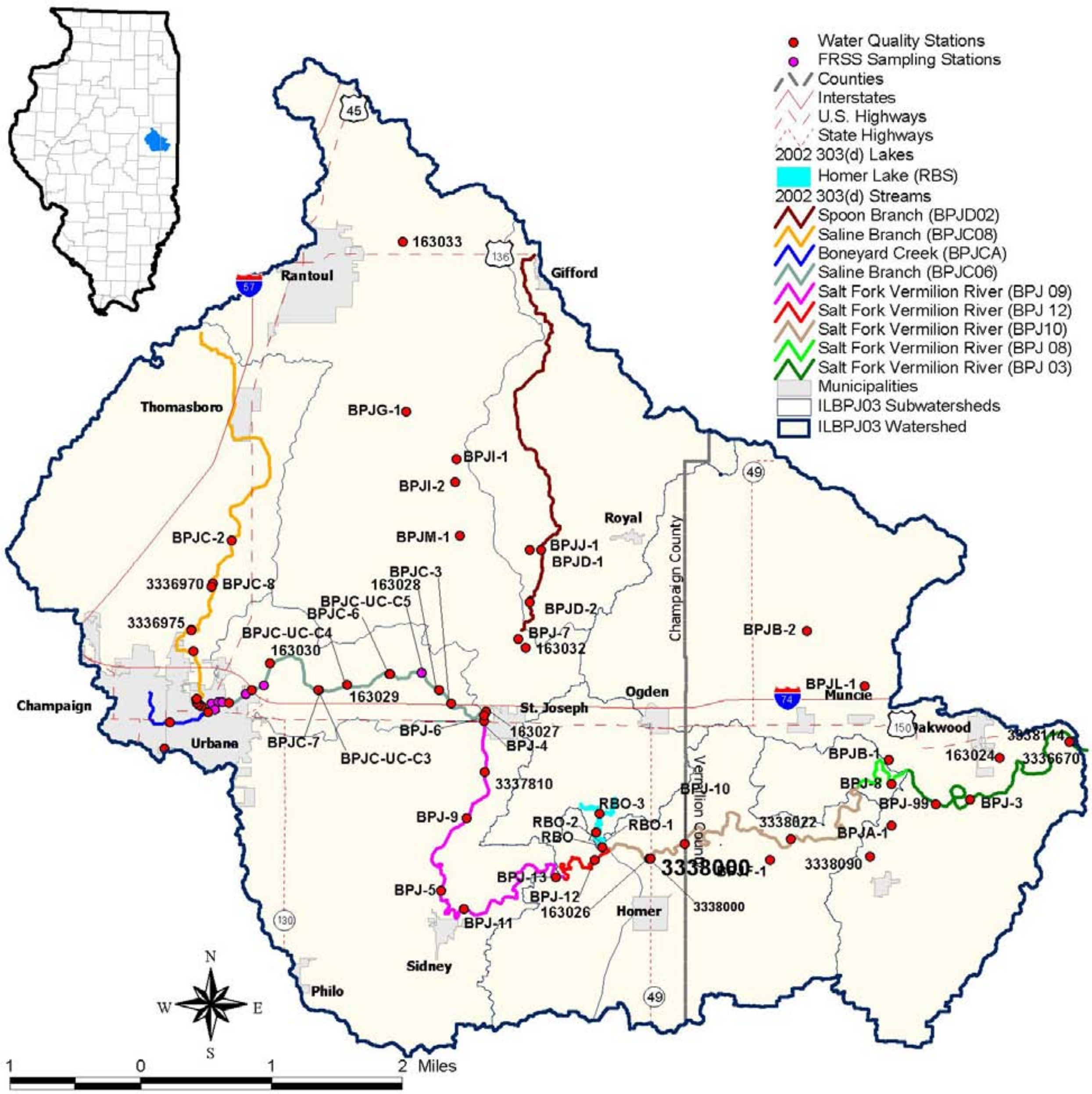

Figure 4-1. Water quality sampling stations in the Salt Fork Vermilion River watershed.

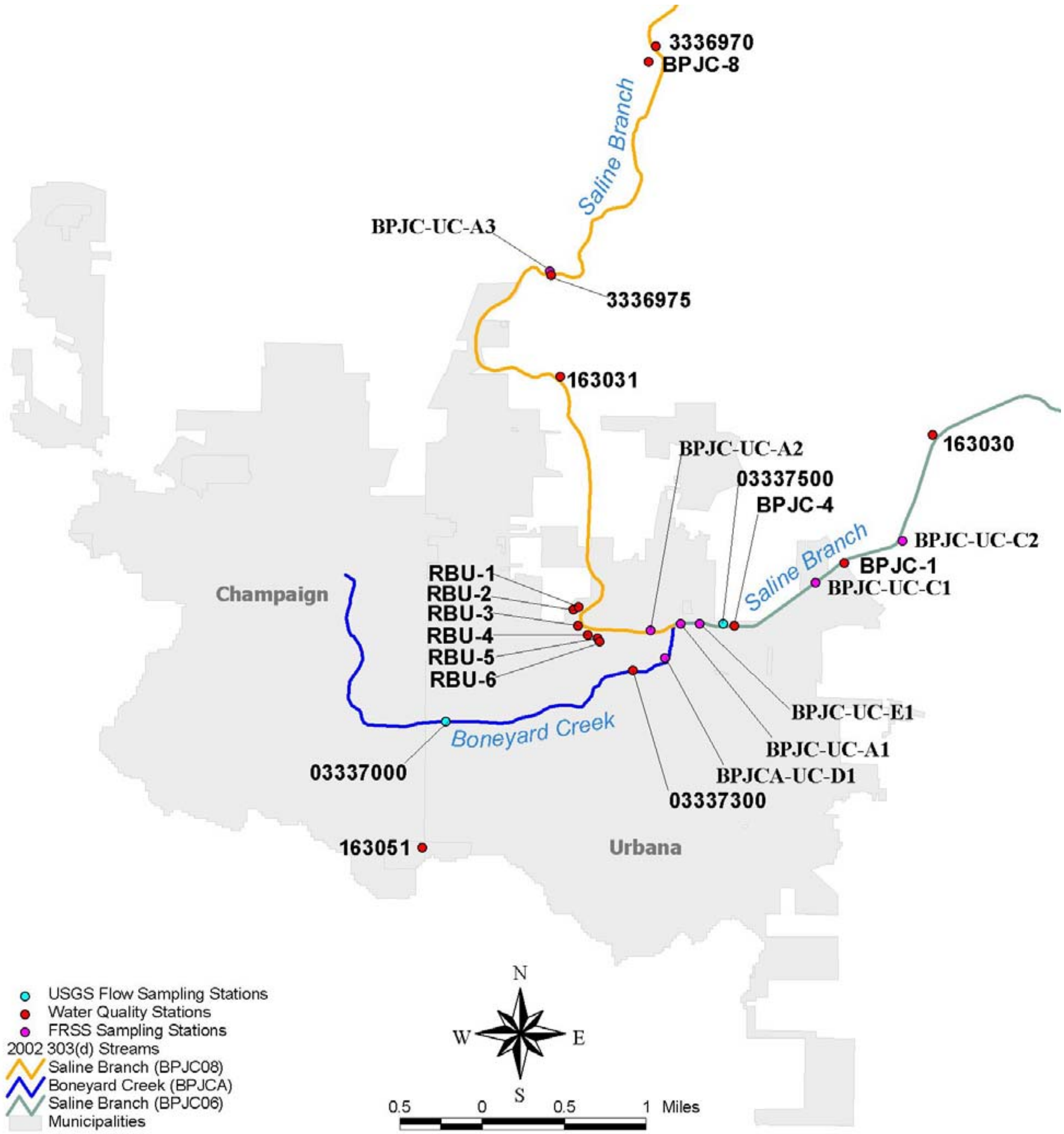

Figure 4-2. Water quality sampling stations in the vicinity of Urbana/Champaign.

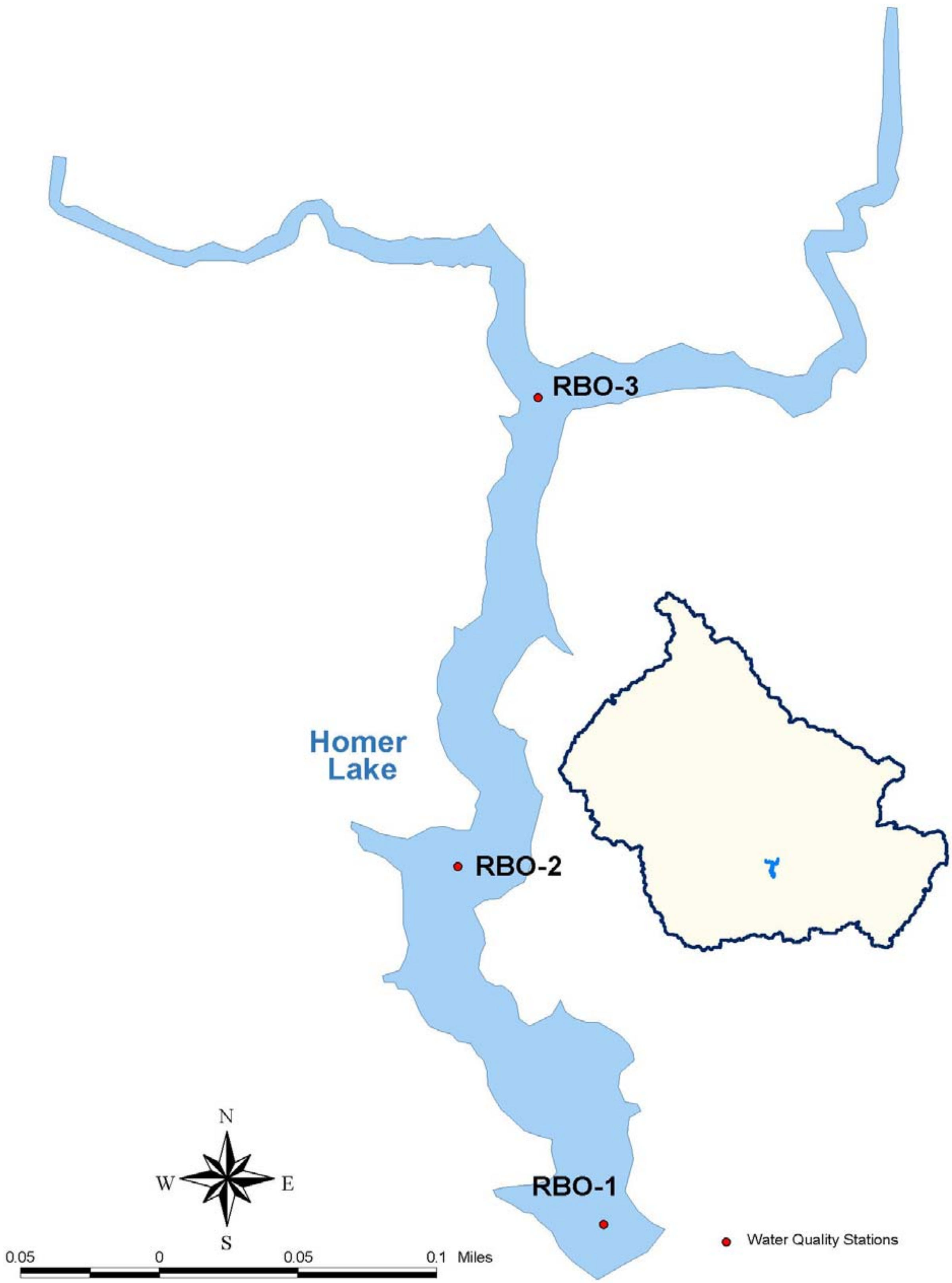

Figure 4-3. Water quality sampling stations in Homer Lake (Segment RB0).

4.4.1 Spoon Branch (BPJD02)

Spoon Branch is listed as being impaired due to dissolved oxygen and habitat. Water quality data collected in Spoon Branch at Illinois EPA monitoring stations BPJD-02 are available from 1986 to 2001. A summary of these data is presented in the selections below.

4.4.1.1 Dissolved Oxygen

The applicable water quality standard for dissolved oxygen (DO) in Illinois has two parts:

- A minimum concentration of 5.0 mg/L must be maintained.
- Concentrations shall not be less than 6.0 mg/L during at least 16 hours in any 24-hour period.

Table 4-2 and Table 4-3 summarize the available DO data in Spoon Branch and the data are presented graphically in Table 4-3. Relatively few data are available but one of the available six samples violated the water quality standard. This occurred on August 14, 2001 when flow was 1.27 cfs. There are insufficient data to assess the 6.0 mg/L 24-hour standard. Additional data are required to confirm the DO impairment for this segment.

Table 4-2. Summary Statistics for Dissolved Oxygen in Spoon Branch (Segment BPJD02).

Parameter	Samples (Count)	Start	End	Minimum (mg/L)	Average (mg/L)	Maximum (mg/L)	CV*
Dissolved Oxygen	6	8/7/1986	10/3/2001	4.80	7.81	10.30	0.29

*CV = standard deviation/average

Table 4-3. Dissolved Oxygen Violations in Spoon Branch (Segment BPJD02).

Parameter	Samples (Count)	Violations (Count)	Percent Violating	Samples (Count), 1998 to Present	Violations (Count), 1998 to present	Percent Violating, 1998 to Present
Dissolved Oxygen	6	1	16.00	3	1	33

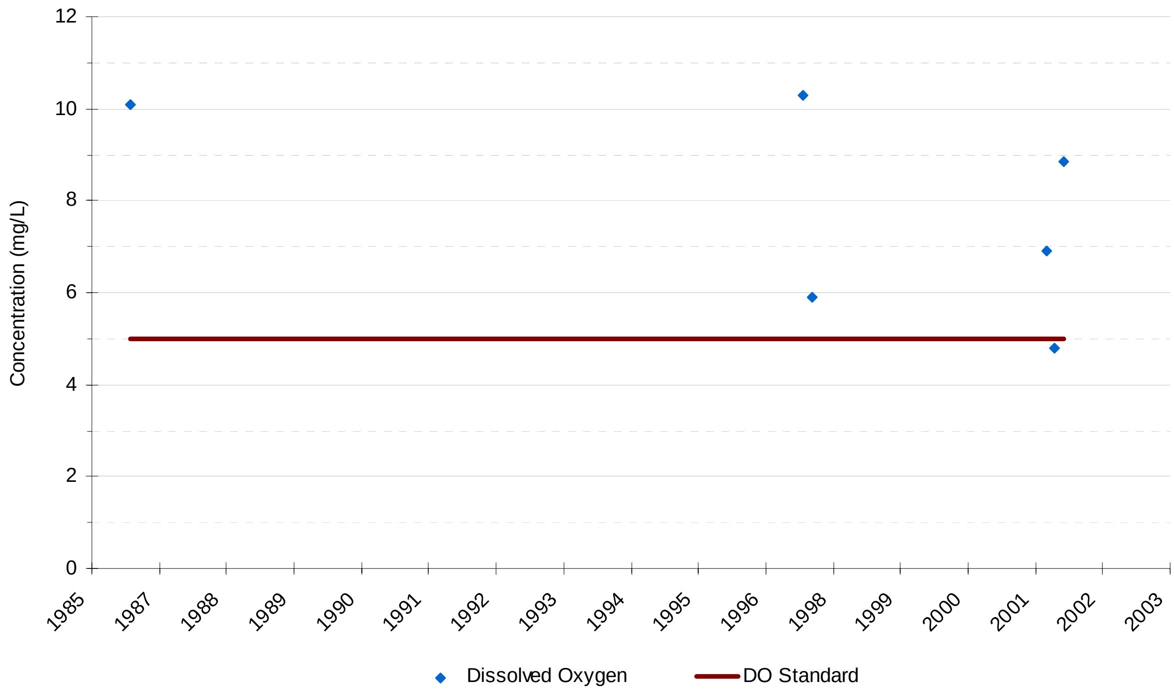

Figure 4-4. Dissolved oxygen observations in Spoon Branch (Segment BPJD02).

4.4.2 Boneyard Creek (BPJCA)

Boneyard Creek runs through the urbanized area of Champaign/Urbana and is listed as being impaired due to habitat assessment, DDT, hexachlor, and PCB. The DDT, hexachlor, and PCB listings were made based on impaired biological conditions and elevated concentrations of bed sediments using the process described in section 4.3. The bed sediment concentrations exceeded the "Highly Elevated" concentrations listed in Table 1, Classification of Illinois EPA Sieved Stream Sediment Data Collected from 1982 Through 1995 (Short, 1997). These values are not standards, but rather criteria that are used solely to identify potential causes of impairment. However, since Illinois does not have numeric water quality standards for DDT, hexachlor, or PCBs, these data are not presented in this report and no TMDL will be developed for these parameters at this time.

4.4.3 Saline Branch (BPJC08)

Water quality data collected in Saline Branch at Illinois EPA monitoring station BPJC08, USEPA monitoring station 163031, and USGS monitoring stations 03336970 and 03336975 are available from 1966 to 2001. Additionally, Facility-Related Stream Survey (FRSS) data are available at stations BPJC-UC-A2 and BPJC-UC-A3. A summary of all the water quality data is presented in the following sections. This stream segment is listed for dissolved oxygen, total nitrogen, and poor habitat but only the dissolved oxygen data are presented below because no numeric water quality standards exist for total nitrogen or habitat.

4.4.3.1 Dissolved Oxygen

Table 4-4 and Table 4-5 summarize the available dissolved oxygen data in Saline Branch. Additionally, Figure 4-5 presents the data graphically and Figure 4-6 presents monthly mean and median concentrations.

A review of the data reveals that three violations of the 5.0 mg/L minimum dissolved oxygen standard occurred in Saline Branch segment BPJC08 over the period of record. (A fourth violation also occurred just downstream of segment BPJC08 at the BPJC-UC-A1 monitoring station). The most recent of these violations occurred on August 13, 2001 and there are insufficient data to assess the 6.0 mg/L 24-hour standard. Additional data are required to confirm the DO impairment for this segment.

Table 4-4. Summary Statistics for Dissolved Oxygen in Saline Branch (Segment BPJC08).

Parameter	Samples (Count)	Start	End	Minimum (mg/L)	Average (mg/L)	Maximum (mg/L)	CV*
Dissolved Oxygen	14	4/12/1966	10/3/2001	4.10	9.11	18.80	0.49
Dissolved Oxygen (FRSS Data)	9	10/23/1960	8/13/1997	3.90	8.24	12.10	0.32

*CV = standard deviation/average

Table 4-5. Dissolved Oxygen Violations (Segment BPJC08).

Parameter	Samples (Count)	Violations (Count)	Percent Violating	Samples (Count), 1998 to Present	Violations (Count), 1998 to present	Percent Violating, 1998 to Present
Dissolved Oxygen	14	2	14.29	3	1	33.33
Dissolved Oxygen (FRSS Data)	9	1	11.11	0	0	0.00

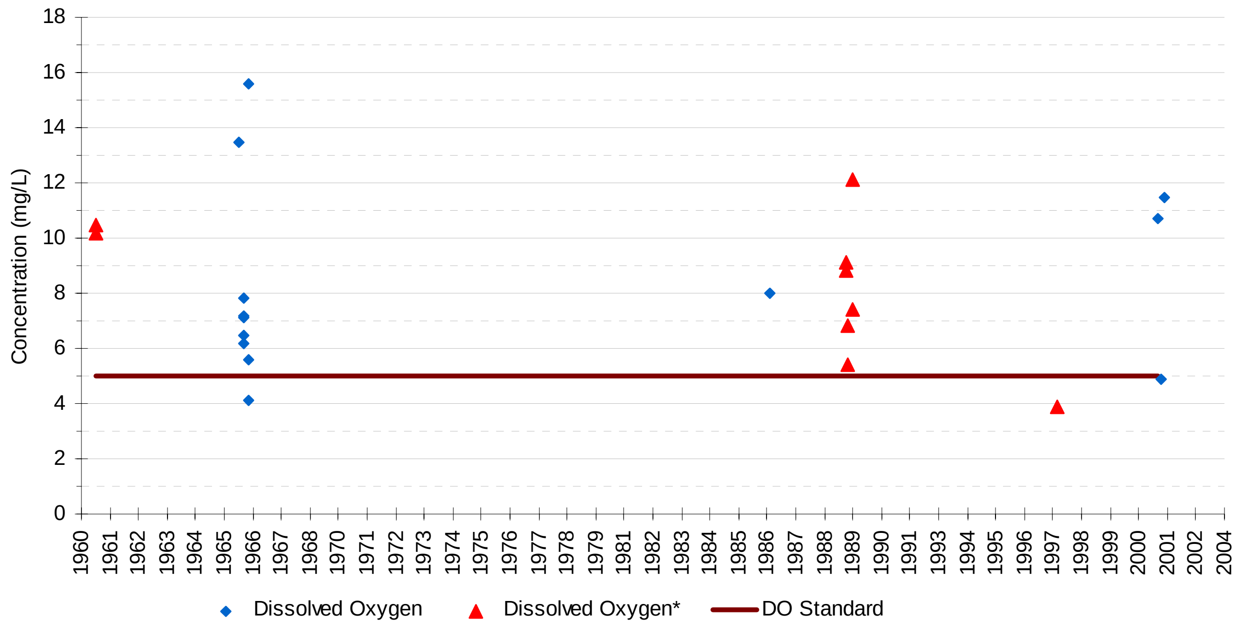

Figure 4-5. Dissolved oxygen observations in Saline Branch (BPJC08) (*indicates FRSS data).

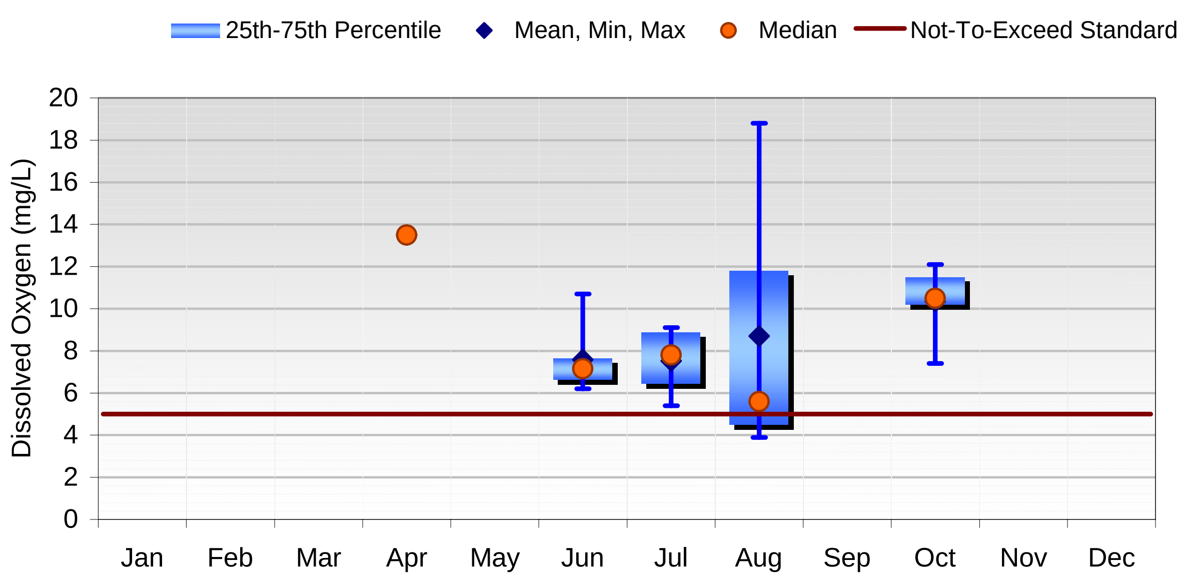

Figure 4-6. Monthly statistics for dissolved oxygen in Saline Branch (Segment BPJC08), 1966–2001.

4.4.4 Saline Branch (BPJC06)

Water quality data collected in Saline Branch at Illinois EPA monitoring stations BPJC-01, BPJC-03, BPJC-04 BPJC-06 and BPJC-07 and U.S. EPA monitoring stations 163028, 163029, and 163030 are available from 1966 to 2004. Additional FRSS water quality data was collected at stations BPJC-UC-A1, BPJC-UC-C1, BPJC-UC-C2, BPJC-UC-C3, BPJC-UC-C4, and BPJC-UC-C5. This segment is listed as impaired by boron, total ammonia, total nitrogen, habitat assessment, fish kills, TSS, DDT, dieldrin, methoxychlor, and total phosphorus. The DDT, dieldrin, and methoxychlor listings were made based on impaired biological conditions and elevated concentrations of bed sediments using the process described in section 4.3. However, since Illinois does not have numeric water quality standards for DDT, dieldrin, and methoxychlor, these data are not presented in this report and no TMDL will be developed for these parameters at this time.

A summary of a fish kill that prompted several of the 303(d) listings is provided below, followed by a review of the available data for all parameters with numeric water quality standards is presented below.

4.4.4.1 Fish Kill

On July 12, 2002, the Illinois EPA regional office in Champaign was informed of a fish kill in the Saline Branch. After notifying the Illinois Department of Natural Resources (“DNR”), the Illinois EPA met with personnel from the Urbana & Champaign Sanitary District (UCSD). UCSD’s wastewater treatment facility (“Northeast WWTF”) discharged effluent with concentrations and mass loading of ammonia-nitrogen in excess of allowable limits. This discharge resulted from the flow of ammonia-laden wastewater to the UCSD Northeast WWTF from the University of Illinois Abbott power plant, where a contractor was cleaning boilers with powerful chemical agents. Receiving waters for the UCSD Northeast WWTF discharge is the Saline Branch, then the Salt Fork River and then the Vermillion River segment of the Wabash river drainage basin. The DNR commenced a fish kill investigation that spanned the Saline Branch and later, on July 16 through 19, 2002, the Salt Fork River. The Illinois EPA also inspected the affected reaches of the Saline Branch and the Salt Fork and took water chemistry samples. UCSD filed a non-compliance report on July 17, 2002 as required by the standard conditions of its NPDES permit and indicated the excursion on its monthly Discharge Monitoring Report (“DMR”). The non-compliance report indicated that the downstream ammonia nitrogen concentration was measured at an elevated level of 16.1 mg/L.

DNR found that the release resulted in the death of 79,935 fish with a value of $41,492.15 on July 14, 2002 plus investigation costs of $1,269.63. Fish species observed during the fish kill investigation included smallmouth bass, longear sunfish, bluegill, white crappie, rosyface shiner, spotfin shiner, stonerollers, hornyhead chubs, greenside darter, logperch, orangethroat darter, johnny darter, golden redhorse, silver redhorse, northern hog sucker, white sucker, spotted sucker, grass pickerill, carp, yellow bullheads, stripe shiners and gizzard shad. The upper limit of the fish kill was located at T19N R9E Section 9 in the Saline Branch at the UCSD WWTF, with the lower limit occurring at the confluence of the Saline Branch and the Salt Fork River at T19N R10E Section 10SE.

DNR further found that the release resulted in the death of 35,508 fish with a value of $53,094.43 on July 16 to 19, 2002 plus investigation costs of $2,633.73. Fish species observed during the fish kill investigation included smallmouth bass, longear sunfish, rock bass, bluegill, shorthead redhorse, silver redhorse, golden redhorse, river redhorse, madtoms, emerald shiner, creek chub, carp, stripe shiner, greenside darter, bluebreast darter, johnny darter, slenderhead darter, northern hog sucker and white sucker. The upper limit of the fish kill was located at T18N R10E Section 2NE on Road 2300E in the Salt Fork River, with the lower limit occurring at T19N R12W Section 30NW.

The Illinois EPA has referred this case to the Office of the Illinois Attorney General for further enforcement proceedings. The Illinois EPA, the Illinois Department of Natural Resources, and the Attorney General are pursuing claims for violations of the Illinois Environmental Protection Act and claims for Natural Resource Damage under the federal Comprehensive Environmental Response Compensation and Liability Act.

The State expects to soon reach an agreed resolution with UCSD and the University. However, litigation will continue with respect to CEDA, Inc. (CEDA, Inc. is the contractor who performed the boiler cleaning, which led to the ammonia release).

Based on data from ambient stations BPJ-07 and BPJ-03, along with biological samples collected at BPJ-03 in 2001, the Salt Fork Vermilion River would have been rated as fully supporting the aquatic life use. However, five segments downstream from the confluence with Saline Branch were assessed as partially supporting the aquatic life use based on the extensive fish kill on Saline Branch (BPJC) and Salt Fork (BPJ) in July 2002.

Because the spill resulted in the release of a slug of high ammonia wastes, sampling attempted to follow the slug downstream as the fish kill occurred. The assignment of causes related to the fish kill (ammonia and pH), were extrapolated to the effected segments (note that ammonia and pH were mistakenly left off BPJ-03). No actual data was collected from segment BPJ-12 as part of the investigation nor was there any fixed, continuous monitoring conducted to measure exposure times. Figure 4-7 shows the locations of the fish kill sampling sites in the Saline Branch and Salt Fork Vermilion River and Table 4-6 presents the results of stream sampling in the Saline Branch (Segment BPJC06) following the ammonia discharge.

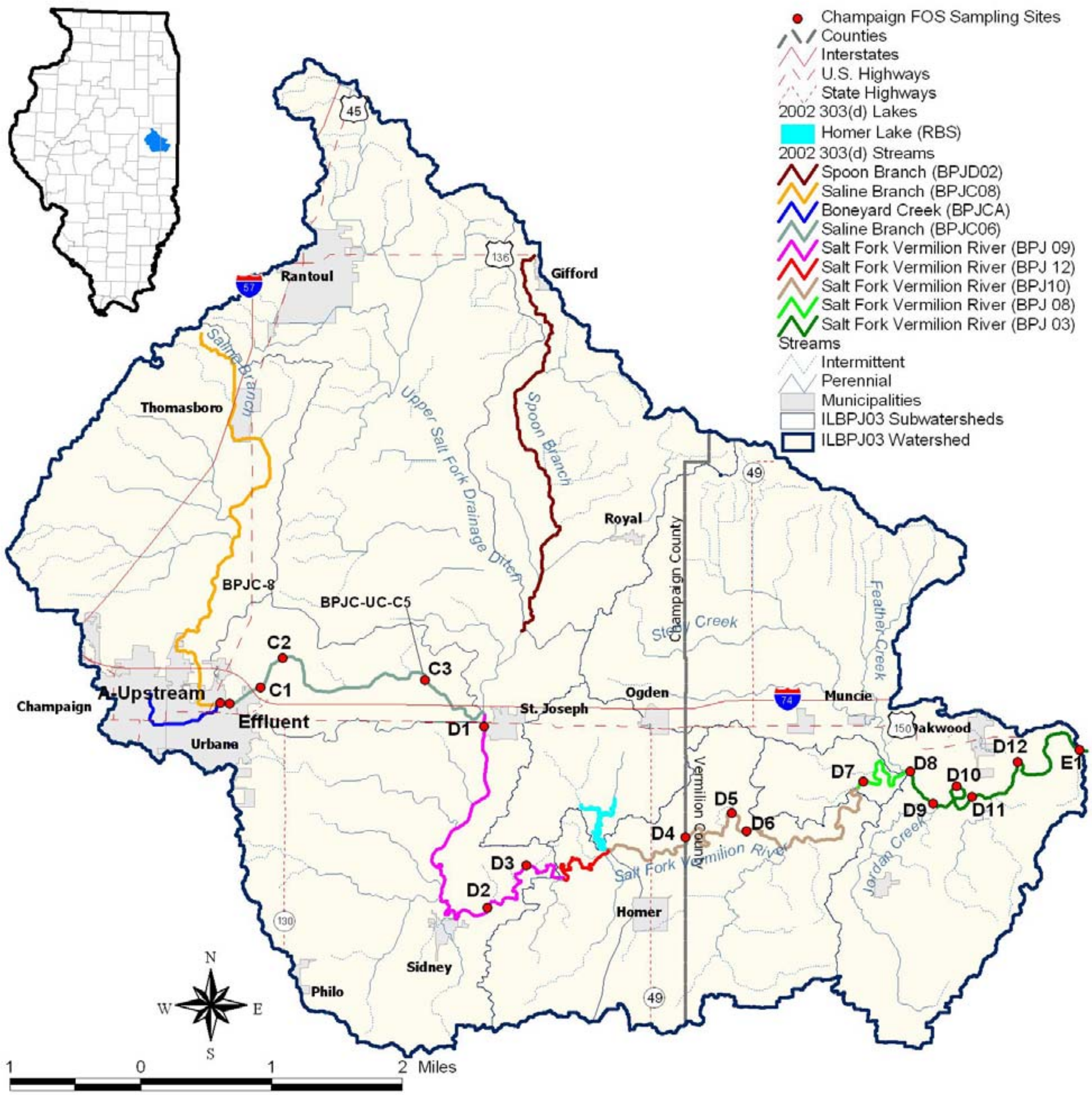

Figure 4-7. Location of Champaign Field Operations Section (FOS) sampling sites on the Salt Fork Vermilion River.

Table 4-6. Sample results collected by Champaign Field Operations Section from the Saline Branch (Segment BPJC06).

Station	Waterbody Segment	Date	pH	Water Temp (C)	Total Ammonia N mg/L	Chronic Standard (mg/L)	Acute Standard (mg/L)
A-upstream	BPJC-06	7/12/02	7.1	22.4	0.21	3.41	15
Effluent	BPJC-06	7/12/02			30		
C1	BPJC-06	7/12/02	8.4	22.6	18*	0.77	3.9
C2	BPJC-06	7/12/02	8.3	22.8	19*	0.89	4.7
C3	BPJC-06	7/12/02	8.3	23.9	11*	0.83	4.7

*exceedence of General Use Acute Ammonia Standard

4.4.4.2 Boron

The applicable water quality standard for boron in Illinois is a maximum concentration of 1,000 µg/L. Table 4-7 and Table 4-8 summarize the available boron data in Saline Branch segment BPJC06. Additionally, Figure 4-8 presents a graphical representation of the boron sampling activity. All data were taken at station BPJC06 except for the FRSS data, which represents data from multiple stations (refer to Figure 4-1, Figure 4-2, and Appendix B for details) . A review of the data indicates that approximately five percent of all boron samples violated the water quality standard, including 11 percent of the 54 samples collected after January 1, 1998 (Table 4-8).

Table 4-7. Summary Statistics for Boron in Saline Branch (Segment BPJC06).

Parameter	Samples (Count)	Start	End	Minimum (µg/L)	Average (µg/L)	Maximum (µg/L)	CV*
Boron	313	12/15/1977	1/29/2004	0.00	376.90	1504.00	0.84
Boron (FRSS Data)	27	7/6/1989	8/13/1997	0.50	456.83	970.00	0.77

*CV = standard deviation/average

Table 4-8. Boron Violations (Segment BPJC06).

Parameter	Samples (Count)	Violations (Count)	Percent Violating	Samples (Count), 1998 to Present	Violations (Count), 1998 to present	Percent Violating, 1998 to Present
Boron	313	16	5.11	54	6	11.11
Boron (FRSS Data)	27	0	0.00	0	0	0

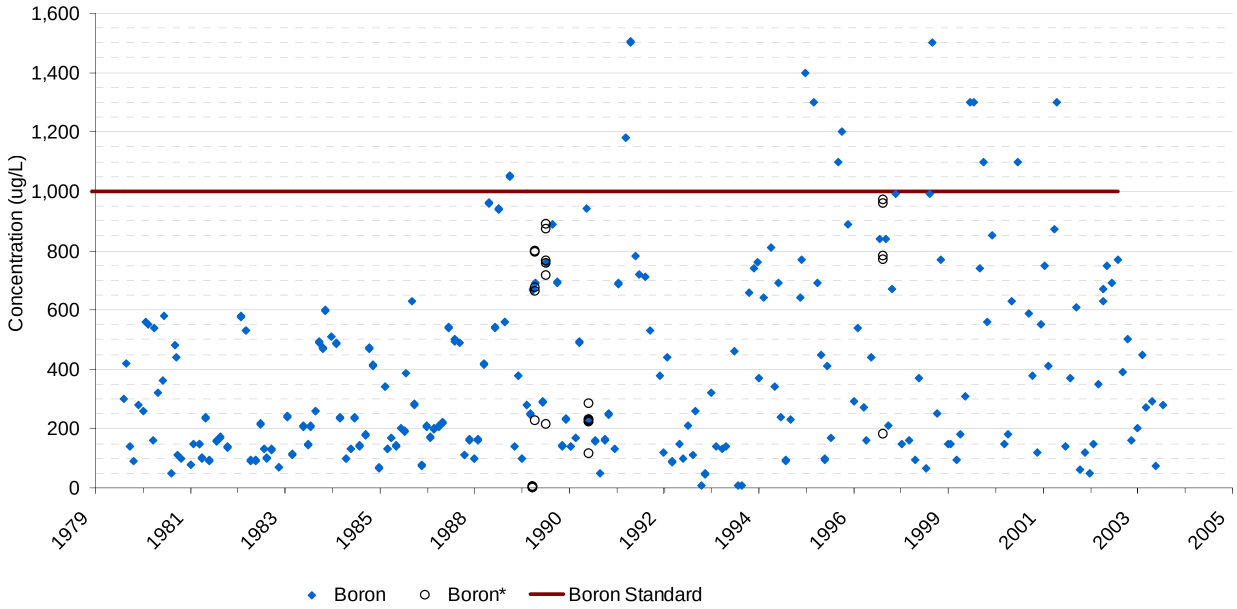

Figure 4-8. Boron observations in Saline Branch (Segment BPJC06) (* indicates FRSS data).

Monthly median and mean boron concentrations for the period of record are presented in Figure 4-9. The figure shows that the water quality standard of 1000 µg/L has been exceeded in January, July, August, October, and December. Additionally, median and mean monthly boron concentrations display seasonal variability with minimum concentrations from March through May, increasing concentrations from June through August, and decreasing concentrations through the rest of the year.

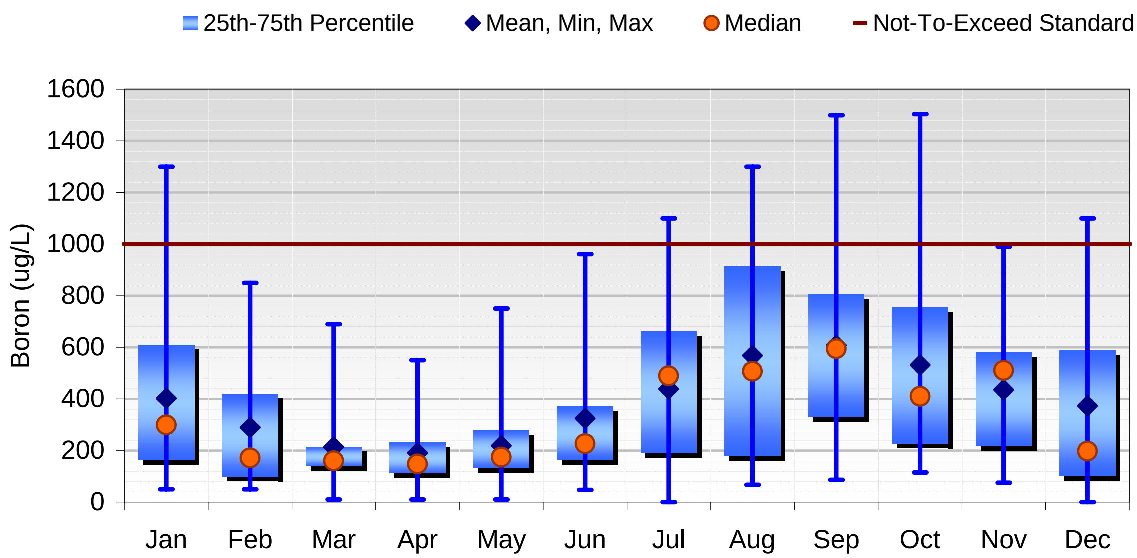

Figure 4-9. Monthly statistics for boron in Saline Branch (Segment BPJC06), 1977-2004.

Additional boron data have been sampled along Saline Branch in response to seepage that has been identified at the closed Urbana Municipal Landfill. A citizen complaint in September 2002 lead to the discovery of a “black oily substance…oozing from the old landfill and into Saline Creek which borders the north side of the landfill" (IEPA, 2002a). Follow-up sampling confirmed that this substance was a petroleum product with high concentrations of arsenic, lead, mercury, and benzene (IEPA, 2002b). A clear liquid was also observed to be oozing from the north side of the landfill into a small creek that eventually discharges to Saline Branch. As a result of this incident the City of Urbana constructed a leachate interceptor trench that collects the leachate for periodic pumping and treatment. A small drainage ditch cutting through the landfill was also re-constructed and two new groundwater monitoring wells were installed. The construction of the trench, ditch, and monitoring wells was completed in June 2005. Periodic sampling has also occurred at monitoring sites upstream and downstream of the landfill as shown in Figure 4-10 and Table 4-9. None of these sampling data have exceeded the water quality standard and there is no clear pattern as to whether boron concentrations increase or decrease moving downstream past the landfill.

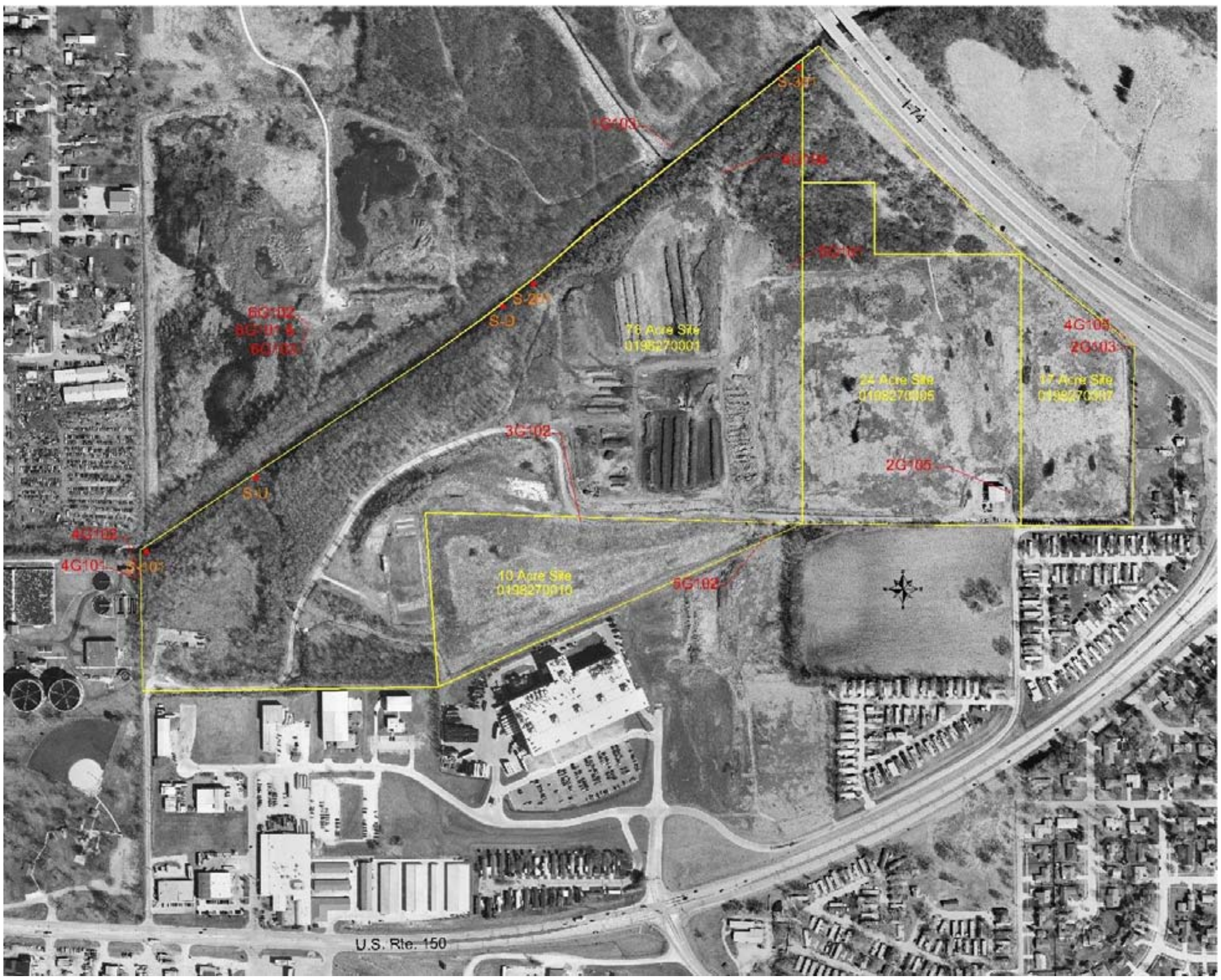

Figure 4-10. Location of monitoring sites for closed Urbana Municipal Landfill.

Table 4-9. Boron sampling upstream and downstream of closed Urbana Municipal Landfill.

Site	Date	Result (µg/L)
Split sample	10/23/2002	570
Site 101 (Upstream Saline Ditch)	4/8/2003	370
Site 102 Downstream Saline Ditch	4/8/2003	410
Site 101 (Upstream Saline Ditch)	7/16/2003	410
Site 102 Downstream Saline Ditch	7/16/2003	320
Site 101 (Upstream Saline Ditch)	10/16/2003	320
Site 102 Downstream Saline Ditch	10/16/2003	390
Site 101 (Upstream Saline Ditch)	1/26/2004	520
Site 102 Downstream Saline Ditch	1/26/2004	340
Site 101 (Upstream Saline Ditch)	4/30/2004	420
Site 102 Downstream Saline Ditch	4/30/2004	350
Site 101 (Upstream Saline Ditch)	9/2/2004	720
Site 102 Downstream Saline Ditch	9/2/2004	690
Site 101 (Upstream Saline Ditch)	2/25/2005	370
Site 102 Downstream Saline Ditch	2/25/2005	380
Site 101 (Upstream Saline Ditch)	4/15/2005	280
Site 102 Downstream Saline Ditch	4/15/2005	300

4.4.4.3 Total Ammonia

The applicable water quality standard for total ammonia in Illinois consists of a maximum concentration of 15 mg/L and acute, chronic, and sub-chronic allowable concentrations that vary depending on temperature, pH, and the life stage of aquatic organisms. The chronic ammonia standard is based on the average of at least four samples collected at weekly intervals for a 30 day sampling period while the sub-chronic standard is evaluated by comparing samples from four consecutive days to the calculated sub-chronic standard. Insufficient data are available for Saline Branch segment BPJC06 to directly address either the chronic or sub-chronic total ammonia standard; therefore only the 15 mg/L maximum concentration and the acute standards are applied.

Table 4-10 and Table 4-11 summarize the available total ammonia data in Saline Branch. Additionally, Figure 4-11 presents a graphical representation of the total ammonia sampling activity as well as the corresponding acute water quality standard (which varies with pH and temperature). A review of the data reveals that 3.49 percent of historic total ammonia samples violated the water quality standard. However, none of the 44 ammonia samples taken since January 1, 1998 violated the calculated acute standard.

Monthly median and mean total ammonia concentrations for the period of record are presented in Figure 4-12. The figure shows that the water quality standard of 15 mg/L has only been exceeded in September. Additionally, median and mean monthly total ammonia concentrations display seasonal variability. Median and mean monthly total ammonia concentrations are elevated yet fairly steady during the fall and winter. Concentrations are at their minimum in July, increase in August and September, then decrease in October and November, and are elevated in December through February.

The ammonia listing for Saline Branch segment BPJC06 is related to a fish kill that occurred in this segment on July 12, 2002. Section 4.4.4.1 discusses the details of the spill and Table 4-6 presents the results of ammonia sampling that occurred immediately after the fish kill. Table 4-6 indicates that three ammonia samples exceed the general use acute ammonia standard and a fourth sample of 30 mg/L exceeded the 15 mg/L maximum ammonia standard. However, because this was a known, one-time event, and because the other data for this segment do not suggest ammonia impairment, no TMDL will be developed.

Table 4-10. Summary Statistics for Total Ammonia and Related Nutrients in Saline Branch (Segment BPJC06).

Parameter	Samples (Count)	Start	End	Minimum (mg/L)	Average (mg/L)	Maximum (mg/L)	CV*
Ammonia	258	6/14/1966	1/29/2004	0.01	1.17	17.00	2.03
Ammonia (FRSS Data)	28	7/6/1989	8/13/1997	0.04	0.21	0.68	0.81

*CV = standard deviation/average

Table 4-11. Total Ammonia Violations (Segment BPJC06).

Parameter	Samples (Count)	Violations (Count)	Percent Violating	Samples (Count), 1998 to Present	Violations (Count), 1998 to present	Percent Violating, 1998 to Present
Ammonia	258	9	3.49	44	0	0.00
Ammonia (FRSS Data)	28	0	0.00	0	0	0

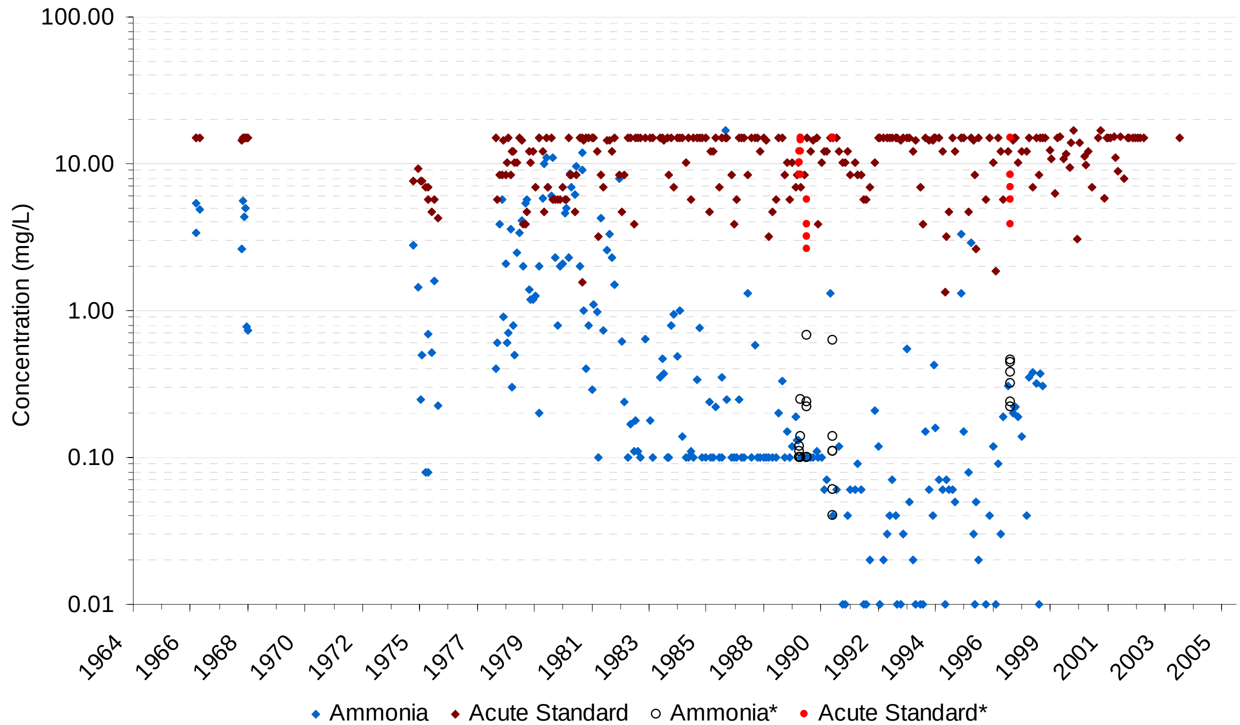

Figure 4-11. Total ammonia observations in Saline Branch (Segment BPJC06) (* indicates FRSS data).

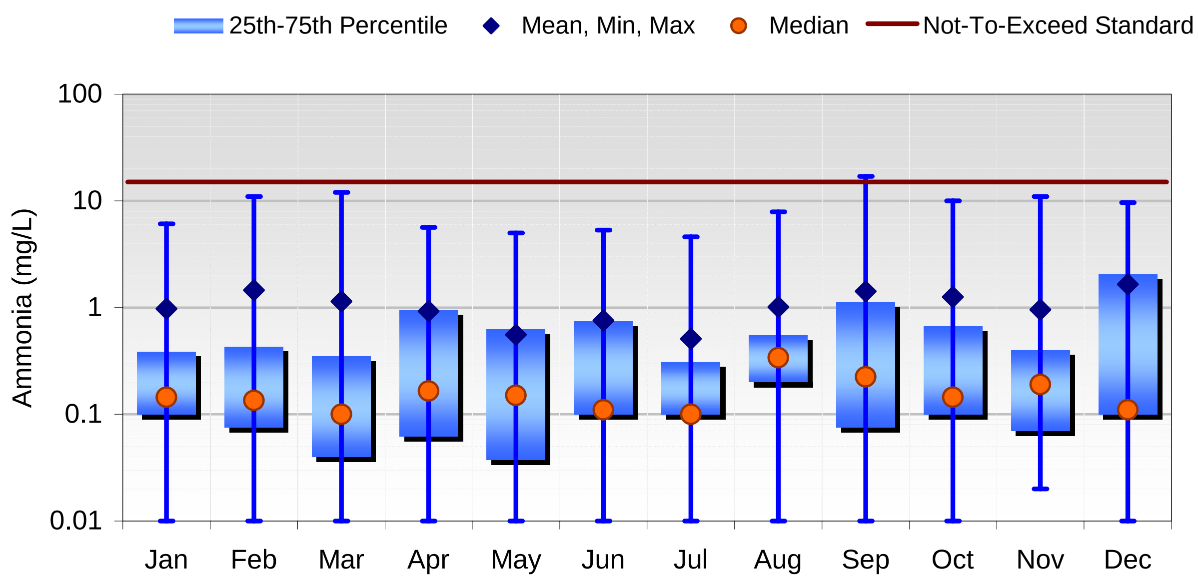

Figure 4-12. Monthly statistics for total ammonia in Saline Branch (Segment BPJC06), 1966–2004.

4.4.5 Salt Fork Vermilion River (BPJ09)

Water quality data collected in the Salt Fork Vermilion River segment BPJ09 are from Illinois EPA monitoring stations BPJ-04, BPJ-05, BPJ-06, BPJ-09, BPJ-11, BPJ-13, U.S. EPA monitoring station 163027, and USGS monitoring station 03337810. The data cover the period from 1966 to 1997. This segment is listed as impaired by pH, total ammonia, total nitrogen, fish kills, TSS, and total phosphorus. A review of the data for parameters with numeric water quality standards is presented below.

4.4.5.1 pH

The applicable water quality standard for pH in Illinois is a minimum of 6.5 and a maximum of 9.0. Table 4-12 and Table 4-13 summarize the available pH data in the Salt Fork Vermilion River segment BPJ09. Additionally, Figure 4-13 presents a graphical representation of the pH sampling activity. No samples have ever exceeded the pH standard. Monthly median and mean pH concentrations for the period of record are presented in Figure 4-14 and show little variation throughout the year.

The pH listing for the Salt Fork Vermilion River (segment BPJ09) is related to the same fish kill that was discussed in Section 4.4.4.1. pH data from the July 12, 2002 fish kill for segment BPJ09 are presented in Table 4-14 and, although no violations were observed, violations were observed in segments BPJ08 and BPJ03 downstream and were extrapolated to BPJ09. However, because this was a known, one-time event, and because the other data for this segment do not suggest a pH impairment, no TMDL will be developed.

Table 4-12. Summary Statistics for pH in Salt Fork Vermilion River (Segment BPJ09).

Parameter	Samples (Count)	Start	End	Minimum (mg/L)	Average (mg/L)	Maximum (mg/L)	CV*
pH	105	4/13/1966	9/2/1997	6.80	7.94	8.70	0.04

*CV = standard deviation/average

Table 4-13. pH Violations (Segment BPJ09).

Parameter	Samples (Count)	Violations (Count)	Percent Violating	Samples (Count), 1998 to Present	Violations (Count), 1998 to present	Percent Violating, 1998 to Present
pH	105	0	0.00	0	0	0

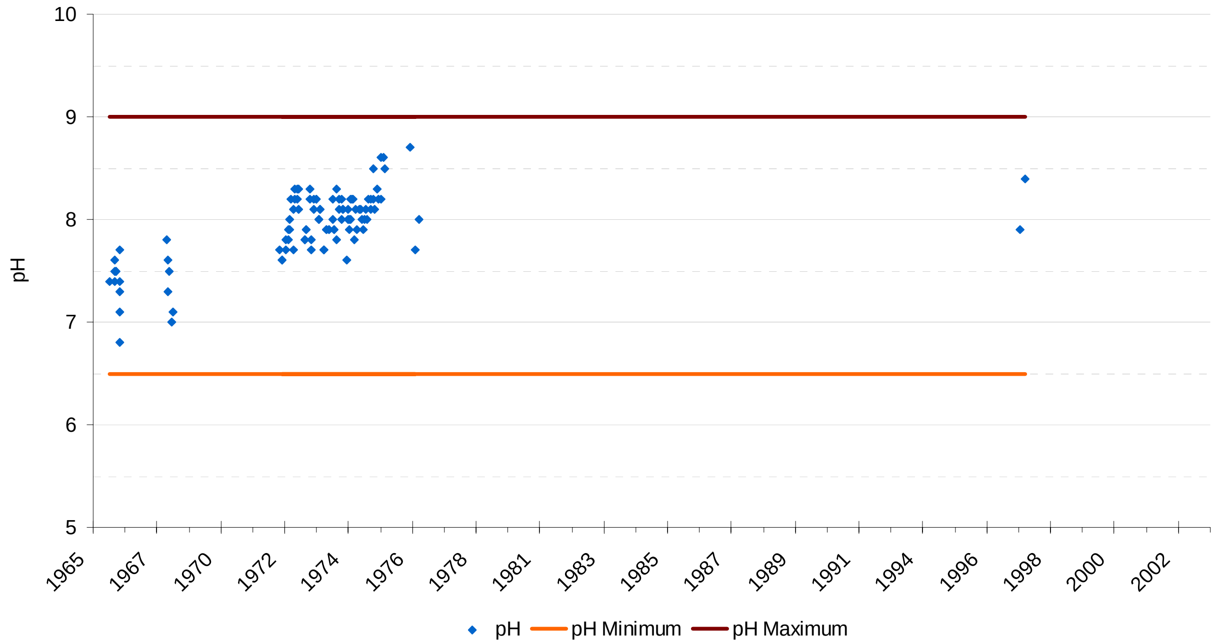

Figure 4-13. pH observations in Salt Fork Vermilion River (Segment BPJ09).

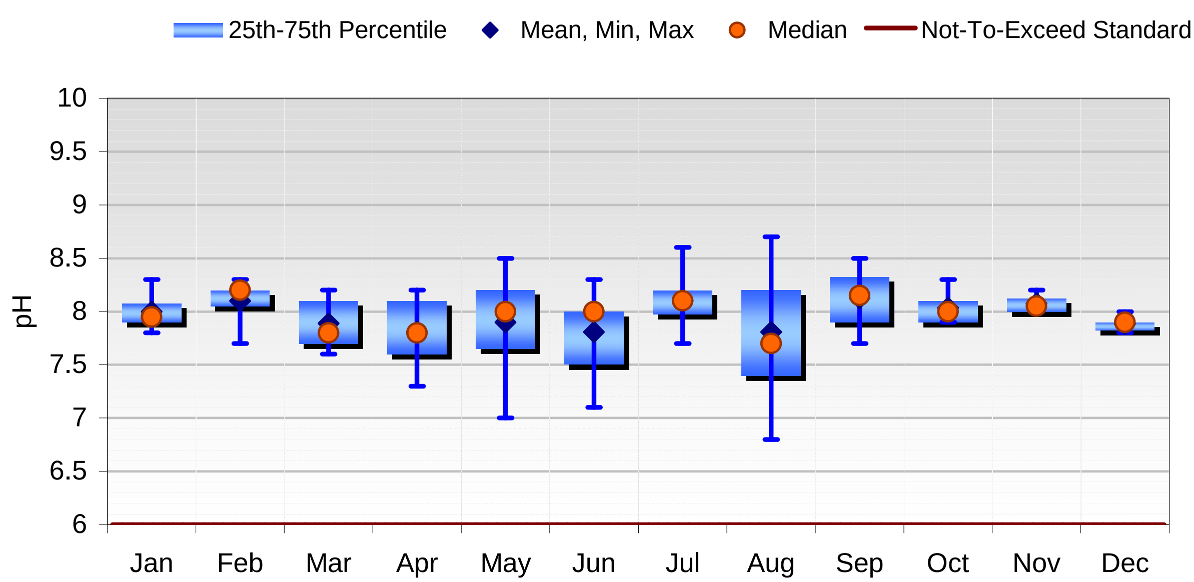

Figure 4-14. Monthly statistics for pH in Salt Fork Vermilion River (Segment BPJ09), 1966–1997.

Table 4-14. Sample results collected by Champaign Field Operations Section (FOS) from the Salt Fork Vermilion River (Segment BPJ09).

Station	Waterbody Segment	Date	pH	Water Temp (C)	Total Ammonia N (mg/L)	Chronic Standard (mg/L)	Acute Standard (mg/L)
D-1	BPJ-09	7/12/02	8.4	24.5	1.9	0.68	3.9
D-1	BPJ-09	7/13/02	8.4	23.5	5.6*	0.72	3.9
D-2	BPJ-09	7/16/02	8.4	25.3	0.13	0.64	3.9
D-3	BPJ-09	7/16/02	8.7	27.3	0.13	0.34	2.2

*exceedence of Ammonia Standard

4.4.5.2 Total Ammonia

As discussed in section 4.4.4.3 the applicable water quality standard for total ammonia in Illinois consists of a maximum concentration of 15 mg/L and an acute, chronic, and sub-chronic allowable concentration that vary in accordance with temperature, pH, and current life stage of aquatic organisms.

Table 4-15 and Table 4-16 summarize the available total ammonia data in the Salt Fork Vermilion River segment BPJ09. Additionally, Figure 4-15 presents a graphical representation of the total ammonia sampling activity and monthly median and mean total ammonia concentrations for the period of record are presented in Figure 4-16. None of these data have exceeded water quality standards.

The ammonia listing for Salt Fork River segment BJP09 is related to the July 12, 2002 fish kill. Section 4.4.4.1 discusses the details of the spill and Table 4-15 presents the results of ammonia sampling that occurred immediately after the fish kill. Table 4-14 indicates that one ammonia sample exceeded the acute standard. However, because this was a known, one-time event, and because the other data for this segment do not suggest an ammonia impairment, no TMDL will be developed.

Table 4-15. Summary Statistics for Total Ammonia and Related Nutrients in Salt Fork Vermilion River (Segment BPJ09).

Parameter	Samples (Count)	Start	End	Minimum (mg/L)	Average (mg/L)	Maximum (mg/L)	CV*
Ammonia	30	6/14/1966	9/2/1997	0.00	0.90	5.80	1.48

*CV = standard deviation/average

Table 4-16. Total Ammonia Violations (Segment BPJ09).

Parameter	Samples (Count)	Violations (Count)	Percent Violating	Samples (Count), 1998 to Present	Violations (Count), 1998 to present	Percent Violating, 1998 to Present
Ammonia	30	0	0.00	0	0	0

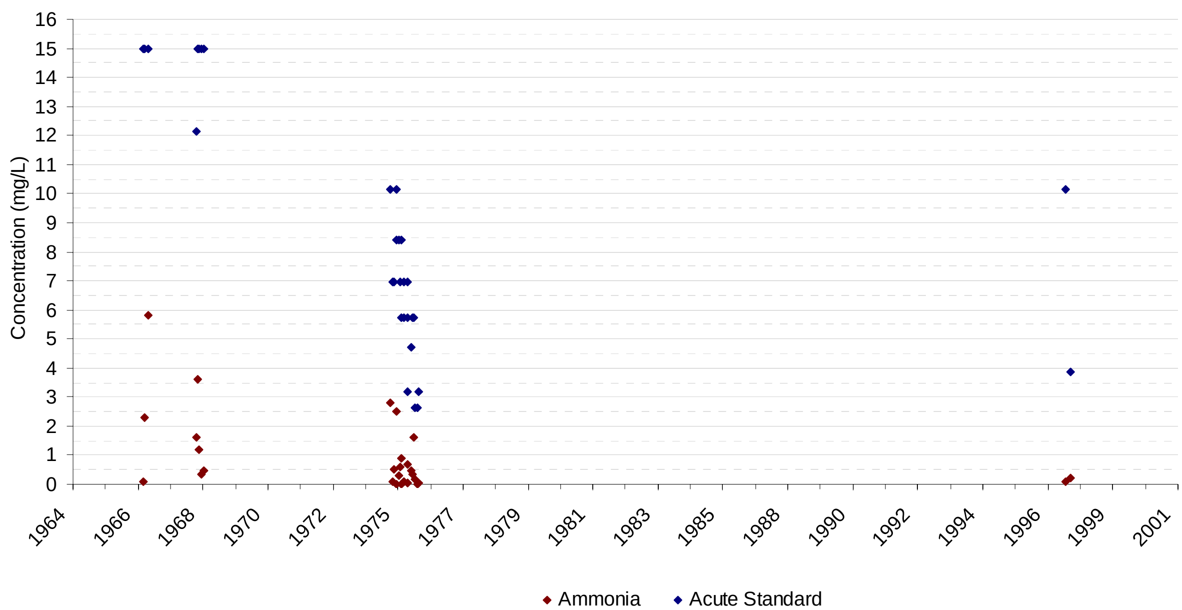

Figure 4-15. Total ammonia observations in Salt Fork Vermilion River (Segment BPJ09).

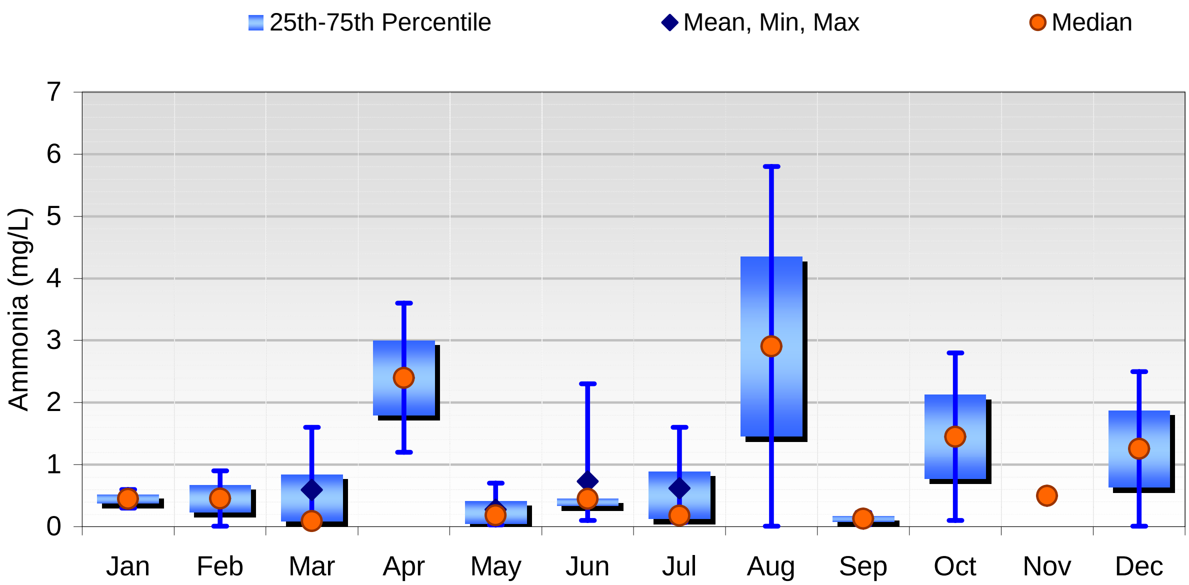

Figure 4-16. Monthly statistics for total ammonia in Salt Fork Vermilion River (Segment BPJ09), 1966–1997.

4.4.6 Salt Fork Vermilion River (BPJ12)

Segment BPJ12 of the Salt fork Vermilion River is listed for total ammonia, total nitrogen, pH, fish kills, TSS, and total phosphorus. A review of the available data for parameters with water quality standards is presented below.

4.4.6.1 Total Ammonia

Only one ambient total ammonia sample is available for this segment of the Salt Fork Vermilion River. A value of 0.1 mg/L was observed on August 6, 1986 and is well below the 15 mg/L acute standard.

The ammonia listing for Salt Fork River segment BJP12 is related to the July 12, 2002 fish kill. Section 4.4.4.1 discusses the details of the spill and Table 4-17 presents the results of ammonia sampling. Table 4-17 shows that three ammonia samples in downstream segment BPJ10 exceeded both the acute and the chronic ammonia standard. These data were extrapolated to segment BPJ12 (where no data were collected). However, because this was a known, one-time event, and because the other data for this segment do not suggest an ammonia impairment, no TMDL will be developed.

Table 4-17. Sample results collected by Champaign Field Operations Section for the Salt Fork Vermilion River (Segment BPJ10).

Station	Waterbody Segment	Date	pH	Water Temp (C)	Total Ammonia N (mg/L)	Chronic Standard (mg/L)	Acute Standard (mg/L)
D-4	BPJ-10	7/16/02	8.9	27.1	4.3*	0.25	1.6
D-5	BPJ-10	7/16/02	8.8	27.3	3.1*	0.29	1.8
D-6	BPJ-10	7/16/02	9.0	28.2	4.3*	0.20	1.3

*Violation of ammonia standard.

4.4.6.2 pH

Only one ambient pH sample is available for this segment of the Salt Fork Vermilion River. A value of 7.5 was observed on August 6, 1986 and is within the range specified by water quality standards.

The pH cause for this segment is listed because of pH sampling following the fish kill on July 12, 2002. Section 4.4.4.1 discusses the details of the spill and Table 4-17 presents the results of pH sampling. Table 4-17 shows one pH sample in downstream segment BPJ10 is equal to the maximum pH standard of 9.0. No pH data were collected in segment BPJ12. Because the spill was a known, one-time event, no TMDL will be developed.

4.4.7 Homer Lake (RBO)

Homer Lake was constructed in 1969, has a surface area of approximately 80.8 acres, and is located in the Salt Fork River Forest Preserve in Champaign County. The lake drains an area of approximately 9,280 acres. The shore length for Homer Lake is approximately 5.3 miles, the average depth is 8 feet, and the maximum depth is 24 feet. Homer Lake's storage capacity is approximately 221 million gallons with a retention time of approximately 36.5 days (INHS, 1992).

Water quality data collected in the Homer Lake at Illinois EPA monitoring stations RBO-1, RBO-2, RBO-3 are available from 1989 to 2001. The locations of these sampling stations are shown in Figure 4-3 and a summary of these data is presented in the sections below. Data are presented for total phosphorus (the only parameter with water quality standards) as well as TSS and excessive algal growth because of the interrelated nature of these parameters.

4.4.7.1 Total Phosphorus

The applicable water quality standard for total phosphorus (TP) in Illinois lakes is 0.05 mg/L. Table 4-18 presents the period of record and a statistical summary for all available TP and related parameters. Additionally, Figure 4-17 presents a graphical representation of the TP sampling activity in Homer Lake. A review of the data reveals that approximately 62 percent of TP samples violated the water quality standard, including 75 percent of recent samples (Table 4-19). TP concentrations at the surface (one foot depth) are typically similar to TP concentrations at deeper samples.

Table 4-18. Summary of total phosphorus and other nutrient-related parameters for Homer Lake (Segment RBO).

Parameter	Samples (Count)	Start	End	Minimum (mg/L)	Average (mg/L)	Maximum (mg/L)	CV*
Total Phosphorus	233	4/24/1989	10/30/2001	0.01	0.09	0.46	0.91
Dissolved Phosphorus	106	4/24/1989	10/30/2001	0.00	0.03	0.25	1.49

*CV = standard deviation/average

Table 4-19. Violations of the total phosphorus standard in Homer Lake (Segment RBO).

Parameter	Samples (Count)	Violations (Count)	Percent Violating	Samples (Count), 1998 to Present	Violations (Count), 1998 to present	Percent Violating, 1998 to Present
Total Phosphorus	233	144	61.80	52	39	75.00
Total Phosphorus (1-foot Depth)	196	118	60.20	41	32	78.05

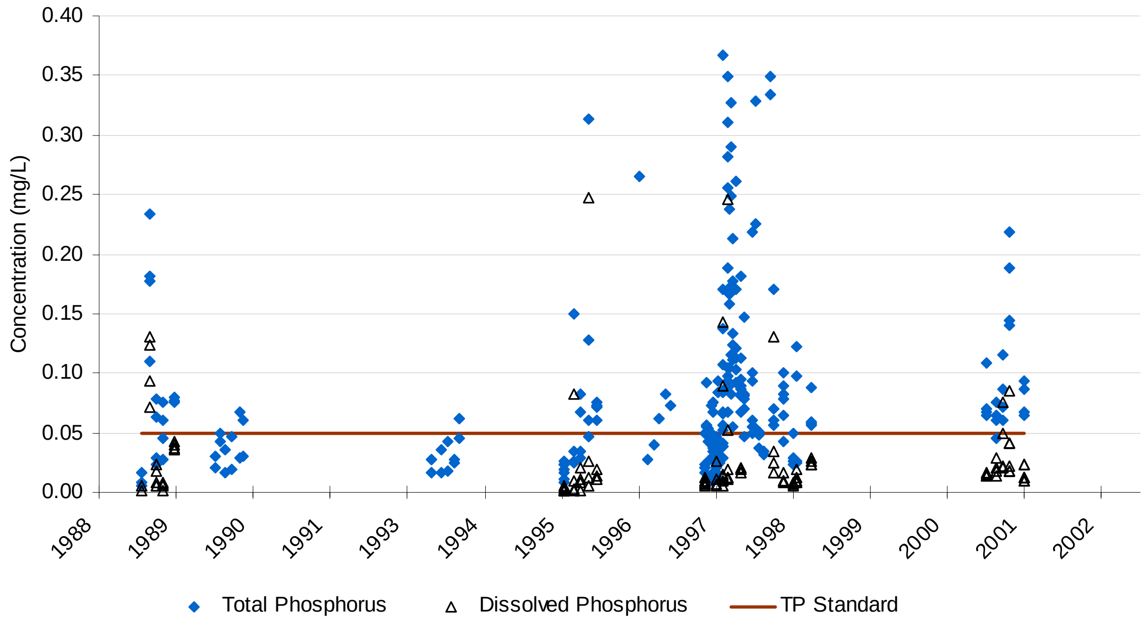

Figure 4-17. Total phosphorus and dissolved phosphorus sampling in Homer Lake (Segment RBO).

Monthly median and mean TP concentrations for the period of record are presented in Figure 4-18. The figure shows that the water quality standard of 0.05 mg/L has been exceeded in all months except February. Additionally, median and mean monthly TP concentrations display seasonal variability. Median and mean monthly TP concentrations are relatively constant during late spring (April) through mid-summer (July). TP concentrations are highest in August, September, January, and March. Note that only two samples were taken in the months of February and March.

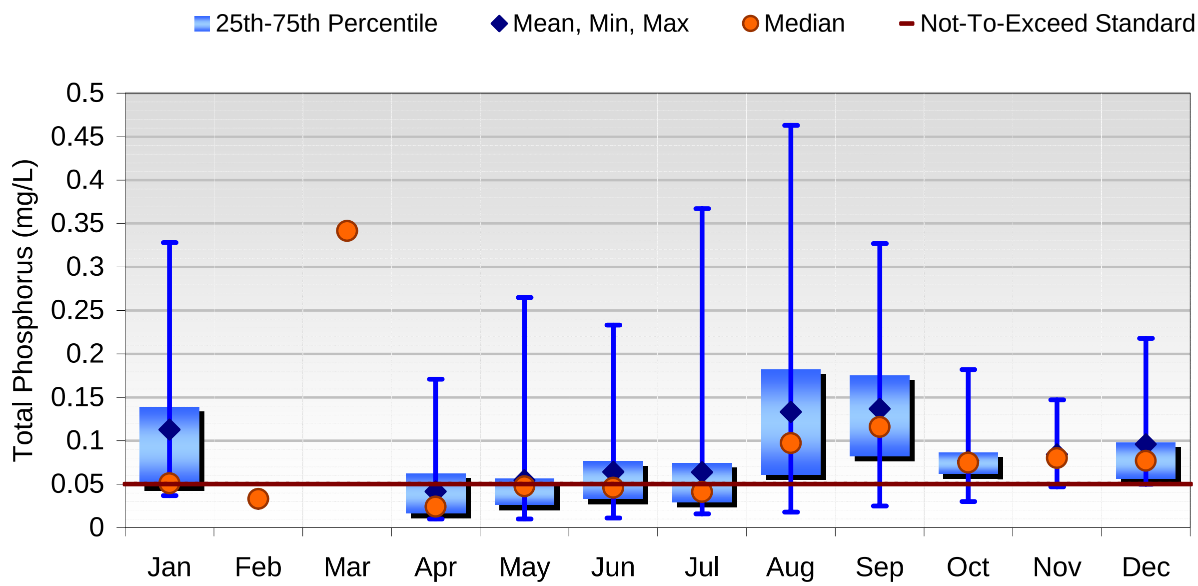

Figure 4-18. Monthly statistics for total phosphorus in the Homer Lake (Segment RBO), 1989–2001

4.4.7.2 Dissolved Phosphorus

As stated in section 4.1.1, dissolved phosphorus (DP) is an important component of the total phosphorus (TP) measure. Mean and median dissolved phosphorus concentrations sampled in the Homer Lake are shown in Figure 4-19. DP data are available from April, June through August, and October. The figure shows that mean and median DP concentrations are similar in each sampled month.

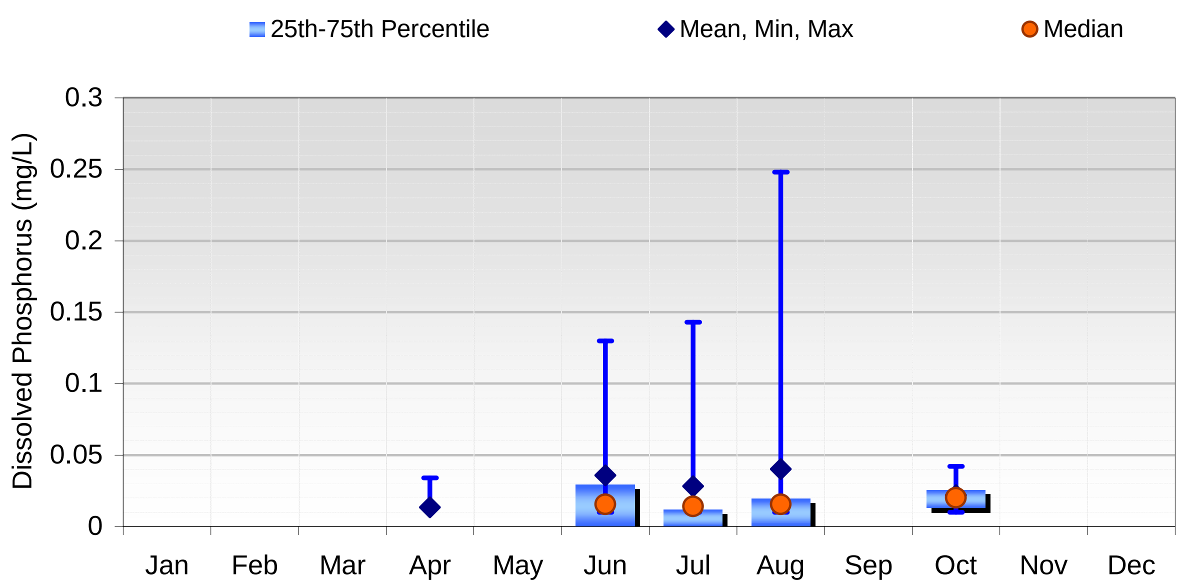

Figure 4-19. Dissolved phosphorus monthly statistics in the Homer Lake (Segment RBO), 1989–2001.

The proportion of DP to TP is quite variable over the period of record as shown in Figure 4-20. The percentage of DP ranges from approximately five percent to nearly 80 percent. However, a significant number of observations record dissolved phosphorus contributions greater than 30 percent of TP in Homer Lake.

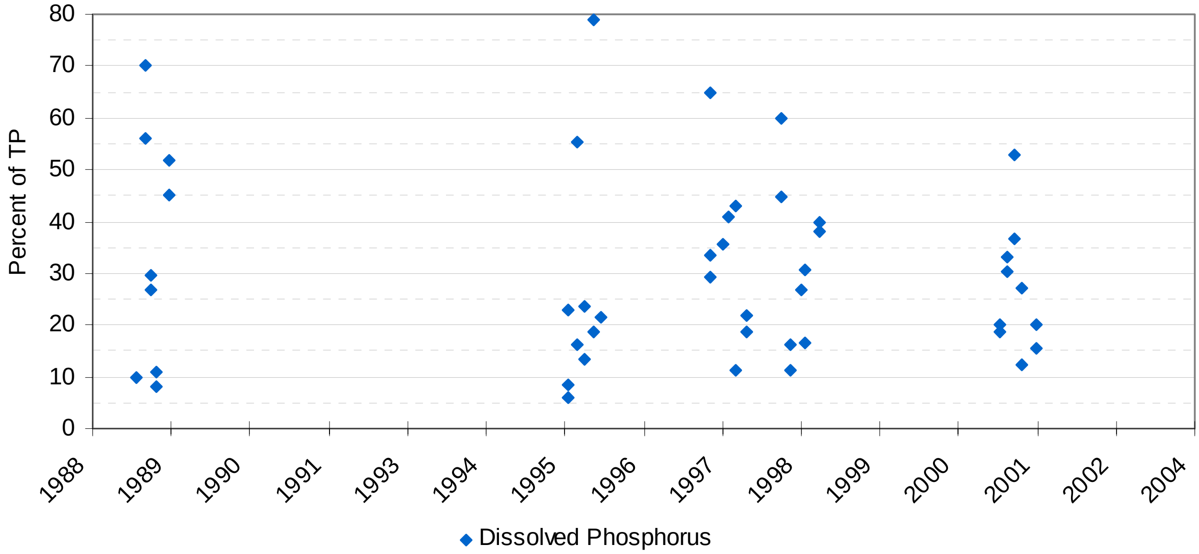

Figure 4-20. Proportion of dissolved phosphorus in total phosphorus for the Homer Lake (Segment RBO).

4.4.7.3 Total Nitrogen (TN)-to-Total Phosphorus (TP) Ratio

Eutrophication in freshwater systems is typically controlled by either nitrogen or phosphorus. The limiting nutrient is defined as the nutrient that limits plant growth when it is not available in sufficient quantities. Controlling this nutrient can often slow the rate of eutrophication and improve conditions in the waterbody. An initial identification of the limiting nutrient can be made by comparing the levels of nutrients in the waterbody with the plant stoichiometry. The ratio of nitrogen to phosphorus in biomass is approximately 7.2:1. Therefore, a nitrogen:phosphorus ration in water that is less than 7.2 suggests that nitrogen is limiting. In contrast, a ratio greater than 7.2 suggests that phosphorus is the limiting nutrient (Chapra, 1997).

The variability of the TN:TP ratios in Homer Lake are presented in Figure 4-21. Figure 4-21 illustrates that TN:TP ratios are quite variable over the period of record, as well as over the course of a year. Almost all TN:TP ratios are greater than 10, however, strongly suggesting that phosphorus is the limiting nutrient in the Homer Lake.

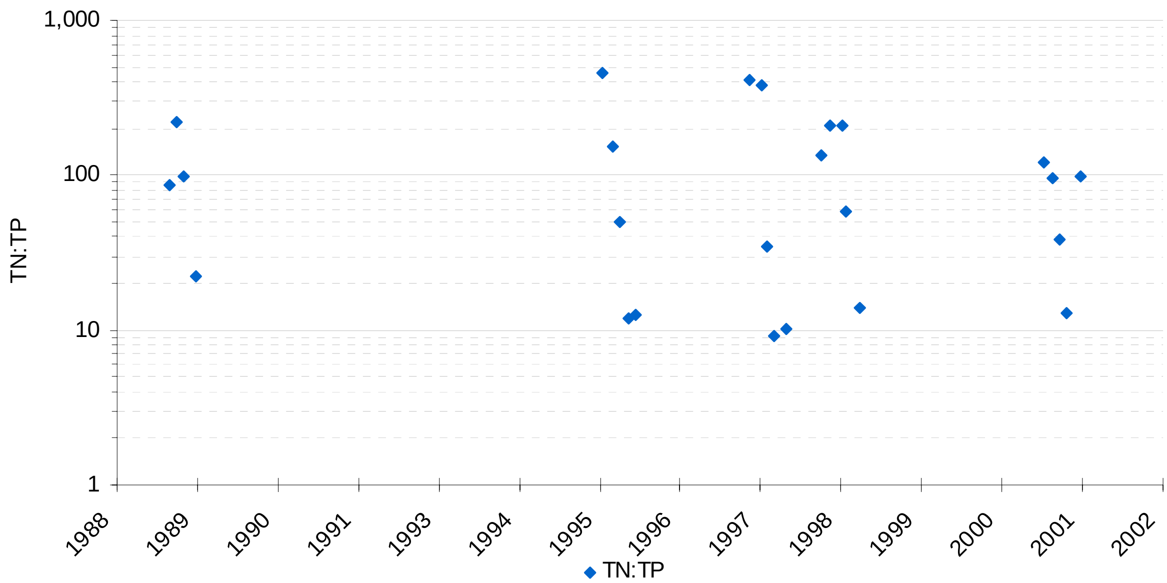

Figure 4-21. TN:TP ratios over the period of record in the Homer Lake (Segment RBO).

4.4.7.4 Excessive Algal Growth

The dominant pigment in algal cells is chlorophyll-*a*, which is easy to measure and is a valuable surrogate measure for algal biomass. Chlorophyll-*a* is desirable as an indicator because algae are either the direct (e.g. nuisance algal blooms) or indirect (e.g. high/low dissolved oxygen, pH, and high turbidity) cause of most problems related to excessive nutrient enrichment. Both seasonal mean and instantaneous maximum concentrations can be used to determine impairments. The Illinois water quality standard for general use states that “waters of the state shall be free from algal growth of other than natural origin” (Section 302.203). Table 4-20 presents a summary of the chlorophyll-*a* collected in Homer Lake. Figure 4-22 displays the sampling frequency for chlorophyll-*a* in Homer. Monthly median and mean chlorophyll-*a* concentrations are presented in Figure 4-23, which shows that median and mean chlorophyll-*a* increase in magnitude and variability during the summer months of June through August, remain relatively high in September through November, and then decrease sharply in December through March. The relationship between chlorophyll-*a* and TP is graphically displayed in Figure 4-24. The figure shows that, in general, as the concentration of TP increases the concentration of chlorophyll-*a* correspondingly increases.

There is no numeric waters quality standard for chlorophyll-*a* to address the excessive algal growth impairment for Homer Lake. A “chlorophyll-a” TMDL will therefore not be developed. However, it is important to note that since there is a direct relationship between TP concentrations and chlorophyll-*a* concentrations, chlorophyll-*a* concentrations are likely to decrease when TP concentrations decrease.

Table 4-20. Summary Statistics for Chlorophyll-*a* in the Homer Lake (Segment RBO).

Parameter	Samples (Count)	Start	End	Minimum (µg/L)	Average (µg/L)	Maximum (µg/L)	CV*
Chlorophyll-a	120	4/24/1989	10/30/2001	0.00	42.96	240.30	0.88

*CV = standard deviation/average

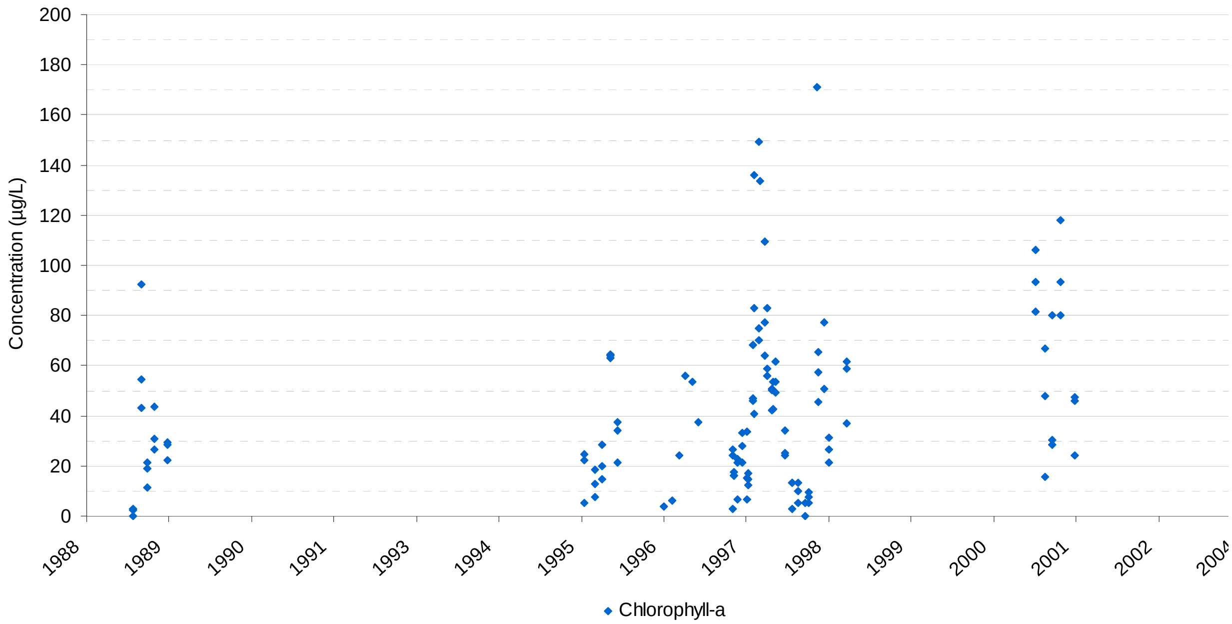

Figure 4-22. Chlorophyll-*a* sampling observations in the Homer Lake (Segment RBO).

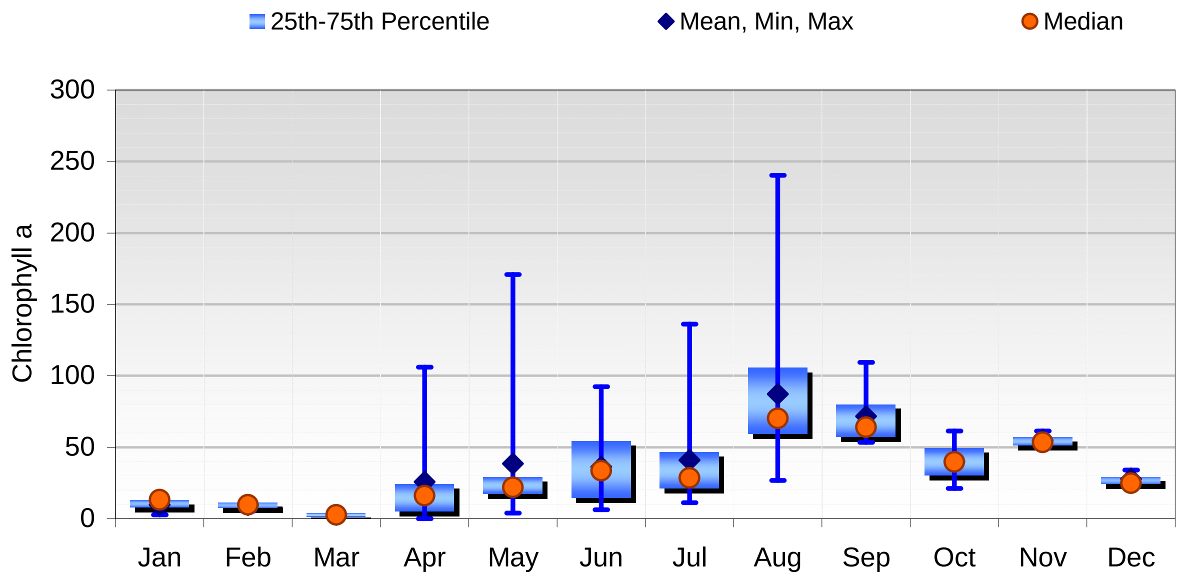

Figure 4-23. Monthly mean and median chlorophyll-*a* concentrations in the Homer Lake (Segment RBO), 1989–2001.

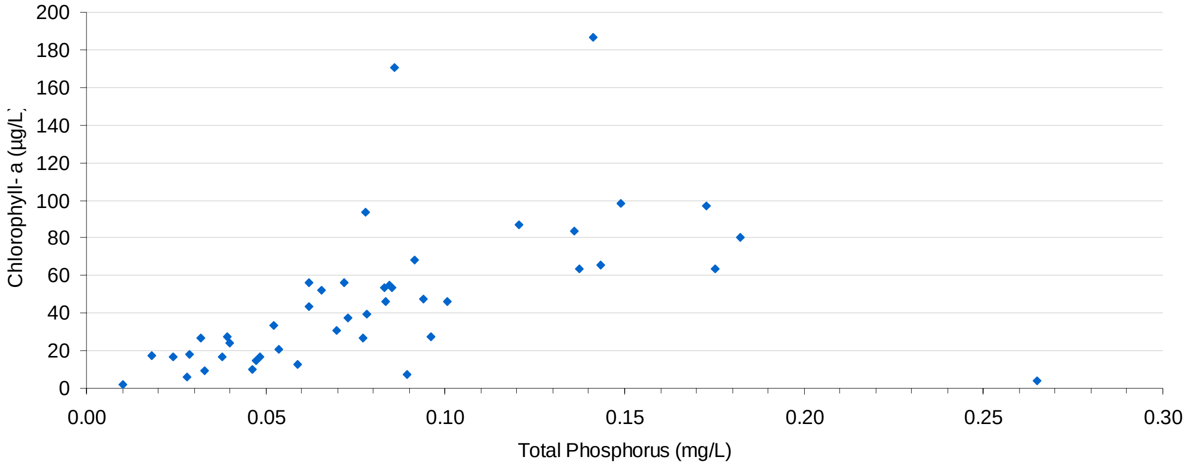

Figure 4-24. Relationship between chlorophyll-a concentration and TP concentration in the Homer Lake (Segment RBO), 1989–2001.

4.4.7.5 Total Suspended Solids

A summary of the total suspended solids (TSS) data collected in Homer Lake is given in Table 4-21. Figure 4-25 displays the sampling frequency for TSS in Homer Lake, and indicates that TSS concentrations are highly variable over the period of record. Monthly median and mean TSS concentrations are presented in Figure 4-26. The figure shows that median TSS concentrations are fairly constant throughout the year with the highest concentrations occurring in March. Average TSS concentrations are greatest in the month of January. It is important to note that two TSS samples collected on January 8, 1998 had concentrations of 278 mg/L and 270 mg/L, which significantly raises the average monthly TSS concentration. The average January TSS concentration is only 9.5 mg/L excluding these two samples. A TMDL will not be developed for TSS since there is no numeric water quality standard but the data are presented here because high TP loadings are often associated with TSS loadings.

Table 4-21. Summary Statistics for Total Suspended Solids in the Homer Lake (Segment RBO).

Parameter	Samples (Count)	Start	End	Minimum (mg/L)	Average (mg/L)	Maximum (mg/L)	CV*
Suspended Solids	234	4/24/1989	10/30/2001	1.00	22.56	278.00	1.35

*CV = standard deviation/average

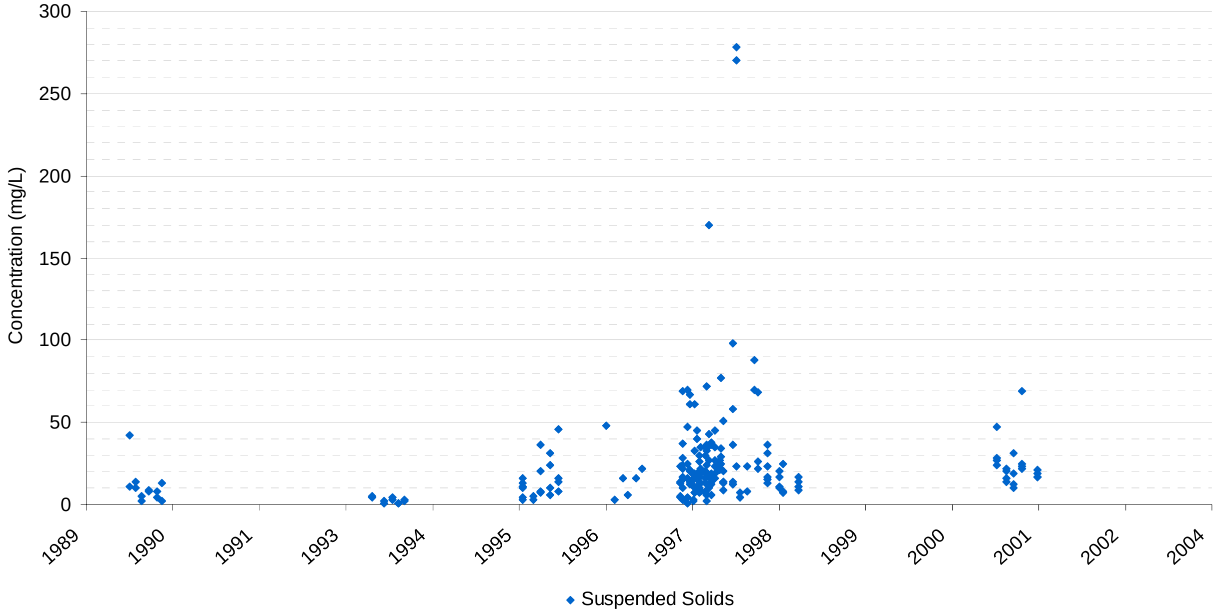

Figure 4-25. Total suspended solids sampling observations in the Homer Lake (Segment RBO).

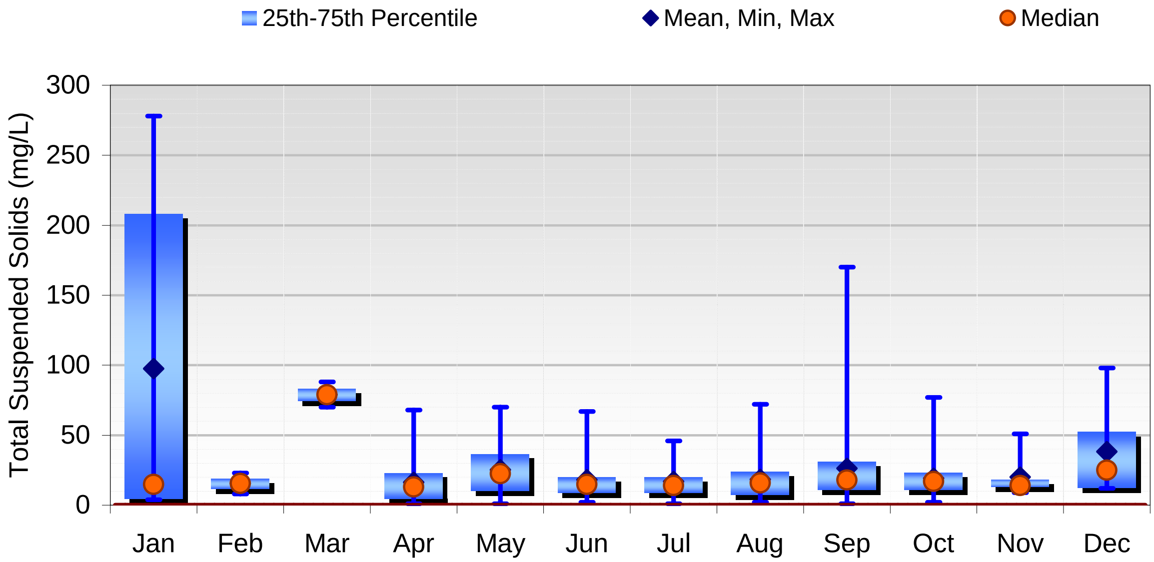

Figure 4-26. Monthly mean and median total suspended solids concentrations in the Homer Lake (Segment RBO), 1989–2001 .

4.4.8 Salt Fork Vermilion River (BPJ10)

Water quality data collected in Salt Fork Vermilion River at Illinois EPA monitoring station BPJ-10, U.S. EPA monitoring station 163026, and USGS monitoring stations 03338000 and 0338022 are available from 1966 to 1997. A summary of these data is presented in the sections below. This segment is listed as impaired by pH, total ammonia, nitrates, total nitrogen, total phosphorus, fish kills, and TSS.

4.4.8.1 pH

Table 4-22 and Table 4-23 summarize the available pH data in the Salt Fork Vermilion River. Relatively few data are available but no pH samples have violated the water quality standard. Monthly median and mean pH concentrations for the period of record are presented in Figure 4-28.

The pH cause for this segment is listed because of pH sampling following the fish kill on July 12, 2002. Section 4.4.4.1 discusses the details of the spill and Table 4-24 presents the sampling results immediately following the spill in segments BPJ10. Table 4-24 shows one pH sample is equal to the maximum pH standard of 9.0. Because the spill was a known, one-time event, and because other pH data do not suggest impaired conditions, no TMDL will be developed.

Table 4-22. Summary Statistics for pH in Salt Fork Vermilion River (Segment BPJ10).

Parameter	Samples (Count)	Start	End	Minimum (mg/L)	Average (mg/L)	Maximum (mg/L)	CV*
pH	16	4/13/1966	9/2/1997	7.20	7.49	8.10	0.03

*CV = standard deviation/average

Table 4-23. pH Violations in the Salt Fork Vermilion River (Segment BPJ10).

Parameter	Samples (Count)	Violations (Count)	Percent Violating	Samples (Count), 1998 to Present	Violations (Count), 1998 to present	Percent Violating, 1998 to Present
pH	16	0	0.00	0	0	0.00

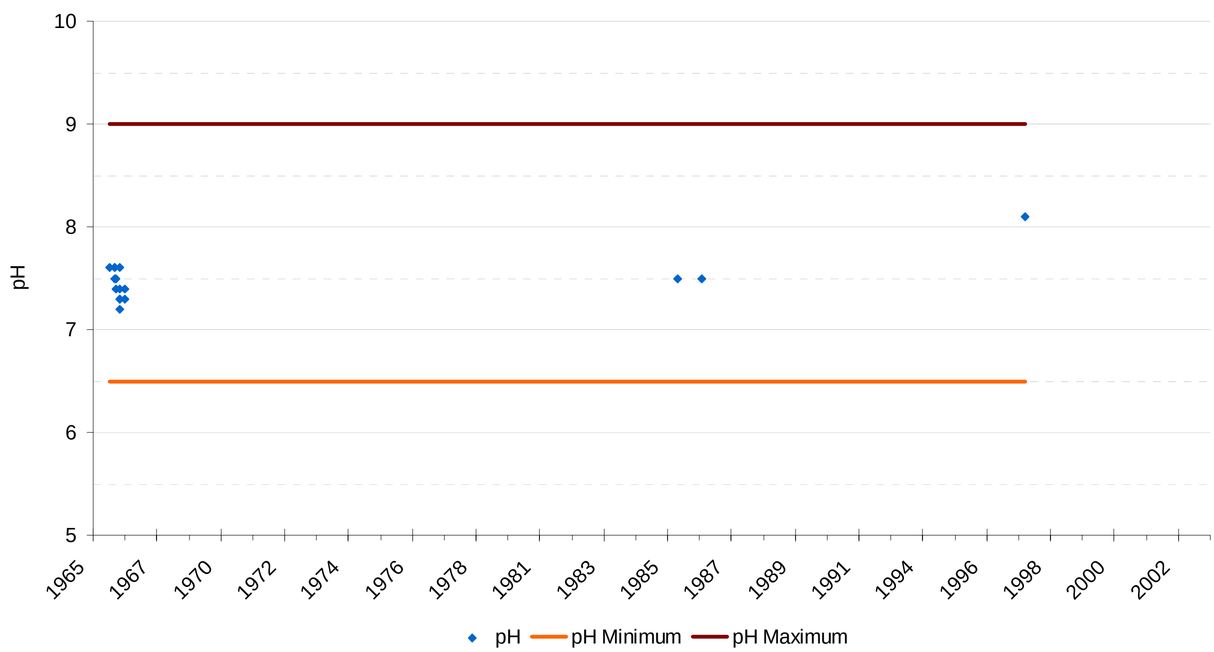

Figure 4-27. pH observations in Salt Fork Vermilion River (Segment BPJ10).

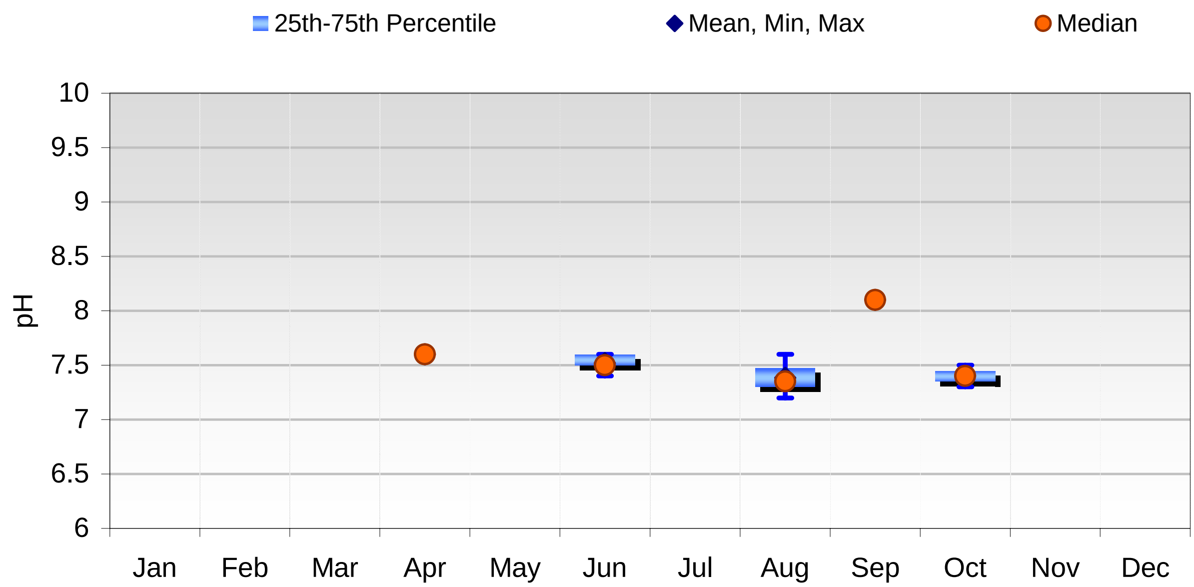

Figure 4-28. Monthly statistics for pH in Salt Fork Vermilion River (Segment BPJ10), 1966–1997.

Table 4-24. Sample results collected by Champaign Field Operations Section for the Salt Fork Vermilion River (Segment BPJ10).

Station	Waterbody Segment	Date	pH	Water Temp (C)	Total Ammonia N (mg/L)	Chronic Standard (mg/L)	Acute Standard (mg/L)
D-4	BPJ-10	7/16/02	8.9	27.1	4.3*	0.25	1.6
D-5	BPJ-10	7/16/02	8.8	27.3	3.1*	0.29	1.8
D-6	BPJ-10	7/16/02	9.0	28.2	4.3*	0.20	1.3

*violation of ammonia standard

4.4.8.2 Total Ammonia

Only four ambient total ammonia samples are available for this segment of the Salt Fork Vermilion River. These samples are presented in Table 4-25 and indicate that no samples have exceeded the water quality standards.

Table 4-25. Ammonia sampling in the Salt Fork Vermilion River (Segment BPJ10).

Date	Ammonia (mg/L)	Temperature (°C)	pH	Acute Standard (mg/L)
10/9/1985	0.1	14.4	7.5	15.00
8/6/1986	0.1	22	7.5	15.00
7/7/1997	0.09	24.1	NA	15.00
9/2/1997	0.12	24	8.1	6.95

The ammonia listing for Salt Fork River segment BJP10 is related to the July 12, 2002 fish kill. Section 4.4.4.1 discusses the details of the spill and Table 4-24 presents the results of ammonia sampling. Table 4-24 shows that three ammonia samples exceeded both the acute and the chronic ammonia standard. However, because this was a known, one-time event, and because the other data for this segment do not suggest an ammonia impairment, no TMDL will be developed.

4.4.8.3 Nitrate

Only four nitrate+nitrite samples are available for this segment of the Salt Fork Vermilion River. These samples are presented in Table 4-26 and indicate that no samples have exceeded the water quality standards. The nitrate listing for this segment is based on an extrapolation of nitrate data collected in downstream segment BPJ03.

Table 4-26. Nitrate sampling in the Salt Fork Vermilion River (Segment BPJ10).

Date	Nitrate + Nitrite (mg/L)	Nitrate Standard (mg/L)
10/9/1985	4.8	10
8/6/1986	2.7	10
7/7/1997	9.4	10
9/2/1997	5.1	10

4.4.9 Salt Fork Vermilion River (BPJ08)

Water quality data collected in Salt Fork Vermilion River at Illinois EPA monitoring station BPJ-8 are available from 1985 to 2001. This segment is listed as impaired by total iron, pH, total ammonia, nitrates, total nitrogen, total phosphorus, fish kills, and TSS. A summary of the available data for parameters with numeric water quality standards is presented below.

4.4.9.1 Iron

The applicable water quality standard for dissolved iron in Illinois is 1,000 μg/L and 300 μg/L for waterbodies designated as general use and public and food processing water supply, respectively. All available dissolved iron data for the Salt Fork Vermilion River segment BPJ08 are presented in Table 4-27 and indicate that all samples have been below the detection limit of 50 μg/L. The iron listing for this segment is based on an extrapolation of iron data collected in downstream segment BPJ03.

Table 4-27. Iron sampling in the Salt Fork Vermilion River (Segment BPJ08).

Date	Dissolved Iron (μg/L)
10/23/1985	50
8/5/1986	50
7/3/2001	50
8/15/2001	50
10/11/2001	50

4.4.9.2 pH

The applicable water quality standard for pH in Illinois is a maximum of 9.0 and a minimum of 6.5. All available pH data for the Salt Fork Vermilion River segment BPJ08 are presented in Table 4-28 and indicate that one sample (on August 15, 2001) exceeded the maximum allowable value of 9.0 mg/L. An additional pH violation occurred during sampling following the July 12, 2002 fish kill. Section 4.4.4.1 discusses the details of the spill and Table 4-29 presents the results of sampling. Additional data are recommended to determine whether a pH TMDL is required for segment BPJ08.

Table 4-28. pH sampling in the Salt Fork Vermilion River (Segment BPJ08).

Date	pH
10/23/1985	7.50
8/5/1986	8.10
9/2/1997	8.30
7/3/2001	8.2
8/15/2001	9.2
10/11/2001	7.68

Table 4-29. Sample results collected by Champaign FOS, from the Salt Fork Vermilion River (Segment BPJ08).

Station	Waterbody Segment	Date	pH	Water Temp (C)	Total Ammonia N (mg/L)	Chronic Standard (mg/L)	Acute Standard (mg/L)
D-7	BPJ-08	7/17/02	9.1	28.3	2.5*	0.17	1.1

*exceedence of General Use Acute Ammonia Standard

4.4.9.3 Total Ammonia

All available total ammonia data for the Salt Fork Vermilion River segment BPJ08 are presented in Table 4-30 and indicate that no samples have exceeded the applicable acute water quality standards. Table 4-29 shows that one ammonia sample exceeded the general use acute ammonia standard and the general use chronic ammonia standard following the July 12, 2002 fish kill. However, because this was a known, one-time event, and because the other data for this segment do not suggest an ammonia impairment, no TMDL will be developed.

Table 4-30. Total ammonia sampling in the Salt Fork Vermilion River (Segment BPJ08).

Date	Ammonia (mg/L)	Temperature (°C)	pH	Acute Standard
10/23/1985	0.1	15.2	7.5	15.00
8/5/1986	0.1	23	8.1	6.95
9/2/1997	0.04	25.5	8.3	4.71
7/3/2001	0.01	22	8.2	5.73
8/15/2001	0.01	24.4	9.2	0.99
10/11/2001	0.26	14	7.68	14.94

4.4.9.4 Nitrate

All available nitrate+nitrite data for the Salt Fork Vermilion River segment BPJ08 are presented in Table 4-31 and indicate that no samples have exceeded the applicable acute water quality standard. The nitrate listing for this segment is based on an extrapolation of nitrate data collected in segment BPJ03.

Table 4-31. Nitrate+nitrite sampling in the Salt Fork Vermilion River (Segment BPJ08).

Date	Nitrate + Nitrite	Nitrate Standard
10/23/1985	6.6	10
8/5/1986	1.7	10
9/2/1997	4.6	10
7/3/2001	4.7	10
8/15/2001	1.16	10
10/11/2001	2	10

4.4.10 Salt Fork Vermilion River (BPJ03)

Water quality data collected in Salt Fork Vermilion River at Illinois EPA monitoring station BPJ-3 and BPJ-99, U.S. EPA station 116024, and USGS station 03338114 are available for the period 1966 to 2004. A summary of these data is presented in the sections below. This segment is listed as impaired by iron, total nitrogen, nitrates, total phosphorus, TSS, and fish kills. The Public and Food Processing Water Supply Standard applies to this segment.

4.4.10.1 Iron

The applicable water quality standard for dissolved iron in Illinois is 1,000 μg/L and 300 μg/L for waterbodies designated as general use and public and food processing water supply, respectively. Table 4-32 and Table 4-33 summarize all of the available iron data in the Salt Fork Vermilion River. Additionally, Figure 4-29 presents a graphical representation of the dissolved iron sampling activity. A review of the data reveals that one dissolved iron sample (from February 27, 2001) violated both the general use and public and food processing water supply water numeric quality standard. This sampling occurred three days after a large rainfall event and its magnitude may be a result of high stream flow. (The Champaign-Urbana climate station (station number 118740) recorded 1.85 inches of precipitation on February 24, 2001). Because this is the only violation of the water quality standard out of 185 samples, no TMDL will be developed at this time.

Table 4-32. Summary Statistics for Dissolved Iron in Salt Fork Vermilion River (Segment BPJ03).

Parameter	Samples (Count)	Start	End	Minimum (mg/L)	Average (mg/L)	Maximum (mg/L)	CV*
Dissolved Iron	185	7/11/1979	1/22/2004	10.00	69.68	3100.00	3.23

*CV = standard deviation/average

Table 4-33. Dissolved Iron Violations (Segment BPJ03).

Parameter	Samples (Count)	Violations (Count)	Percent Violating	Samples (Count), 1998 to Present	Violations (Count), 1998 to present	Percent Violating, 1998 to Present
Dissolved Iron	185	1	0.54	53	1	0.00

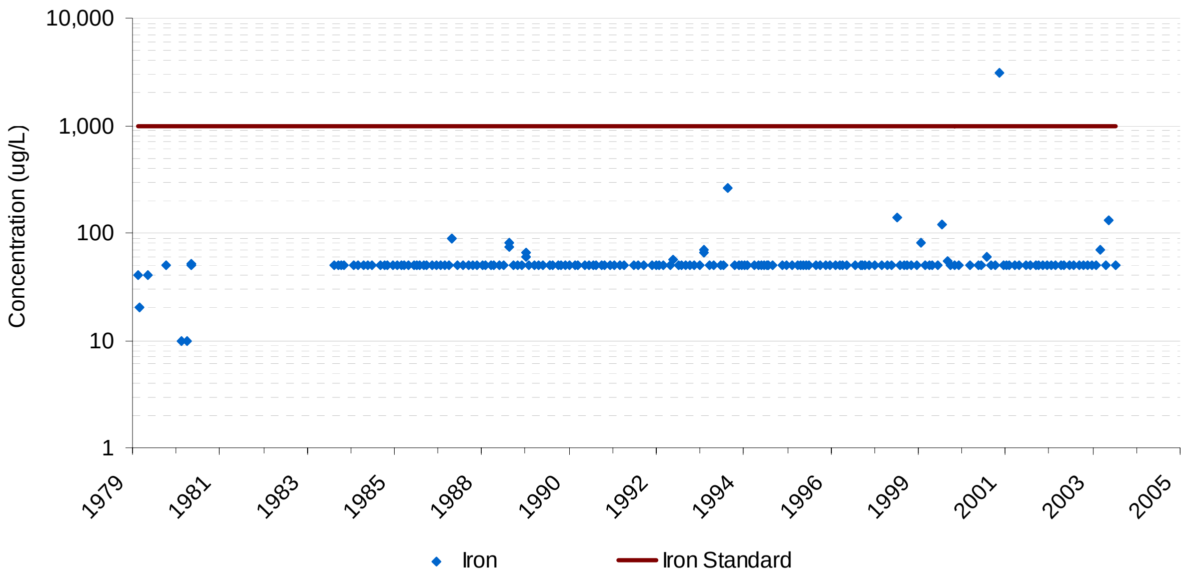

Figure 4-29. Iron observations in Salt Fork Vermilion River (Segment BPJ03).

4.4.10.2 Nitrate

The applicable numeric water quality standard for nitrate in Illinois public and food processing waterbodies is 10 mg/L. Nitrate plus nitrite samples are summarized in Table 4-34 and Table 4-35 and indicate that 57 (18.75 percent) samples violated the water quality standard. No recent samples exceeded the standard.

The historic sampling frequency of nitrate plus nitrite in the Salt Fork Vermilion River (segment BPJ03) is provided in Figure 4-30, and monthly statistics are presented in Figure 4-31. Figure 4-31 shows that mean and median nitrate plus nitrite concentrations rise from their minimum in August through their maximum in April. Concentrations then decrease from May through July.

Table 4-34. Summary Statistics for Nitrate and Total Nitrogen in Salt Fork Vermilion River (Segment BPJ03).

Parameter	Samples (Count)	Start	End	Minimum (mg/L)	Average (mg/L)	Maximum (mg/L)	CV*
Nitrate + Nitrite	304	8/31/1967	1/22/2004	0.01	6.94	18.00	0.51

*CV = standard deviation/average

Table 4-35. Nitrate Violations (Segment BPJ03).

Parameter	Samples (Count)	Violations (Count)	Percent Violating	Samples (Count), 1998 to Present	Violations (Count), 1998 to present	Percent Violating, 1998 to Present
Nitrate + Nitrite	304	57	18.75	34	0	0.00

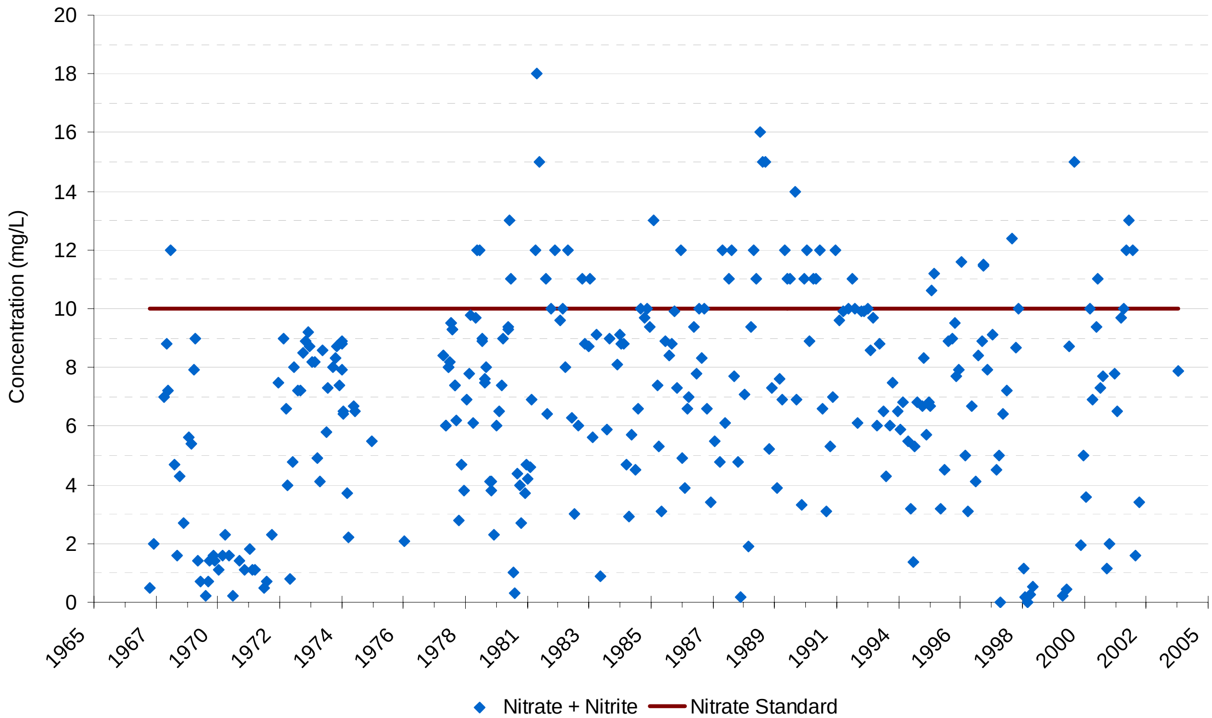

Figure 4-30. Nitrate + nitrite sampling frequency in Salt Fork Vermilion River (Segment BPJ03).

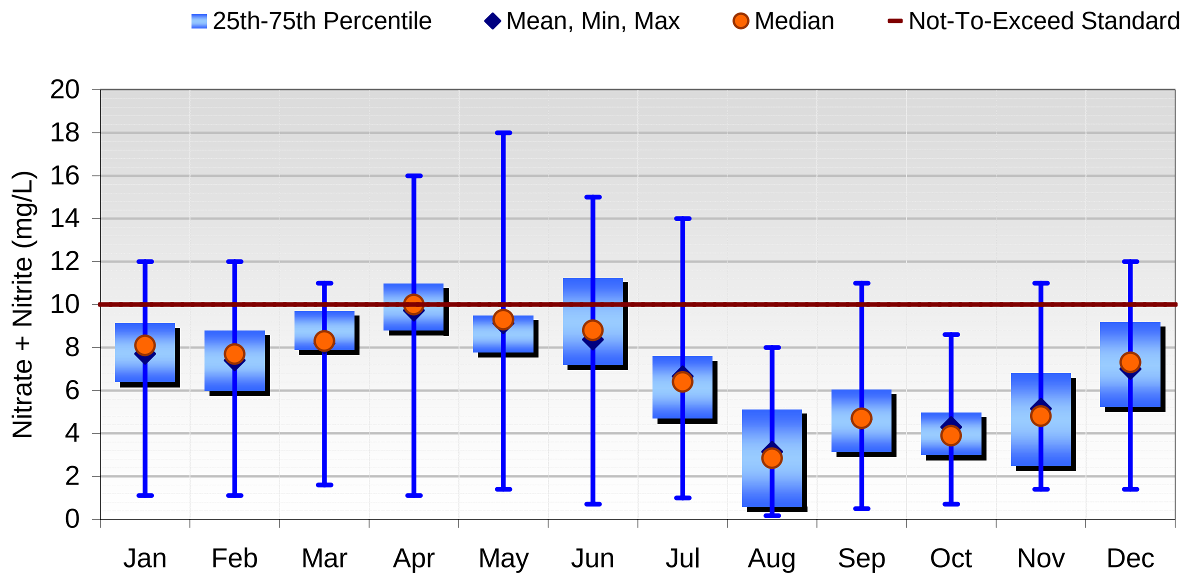

Figure 4-31. Monthly nitrate + nitrite statistics for Salt Fork Vermilion River (Segment BPJ03), 1967–2004.

4.4.10.3 Fish Kills

The listing for fish kills is related to the same spill that is discussed in Section 4.4.4.1. Table 4-36 presents the results of stream sampling in the Saline Branch (Segment BPJ03) following the fish kill event. These results were used to extrapolate impairments to several upstream segments as discuss previously.

Table 4-36. Sample results collected by Champaign Field Operations Section (FOS) from the Salt Fork Vermilion River (Segment BPJ03).

Station	Waterbody Segment	Date	pH	Water Temp (C)	Total Ammonia N (mg/L)	Chronic Standard (mg/L)	Acute Standard (mg/L)
D-8	BPJ-03	7/16/02	9.0	28.6	0.41	0.20	1.3
D-8	BPJ-03	7/17/02	9.1	28.8	2.3*	0.17	1.1
D-9	BPJ-03	7/17/02	8.9	26.8	2.4*	0.26	1.6
D-10	BPJ-03	7/17/02	9.1	27.9	2.2*	0.18	1.1
D-11A	BPJ-03	7/17/02	9.1	28.8	1.2*	0.17	1.1
D-11B	BPJ-03	7/17/02	9.1	29.0	1.5*	0.17	1.1

*exceedence of General Use Acute Ammonia Standard

4.4.11 Potential Pollutant Sources

Both point and nonpoint sources represent potential sources of pollutants in the Salt Fork Vermilion River watershed and are discussed further below.

4.4.11.1 Point Source Discharges

There are 21 National Pollution Discharge Elimination System (NPDES) point source dischargers in the Salt Fork Vermilion River. Figure 4-32 shows the locations of these facilities and a list of facilities and parameters reported to Illinois EPA for each facility are presented in Appendix C.

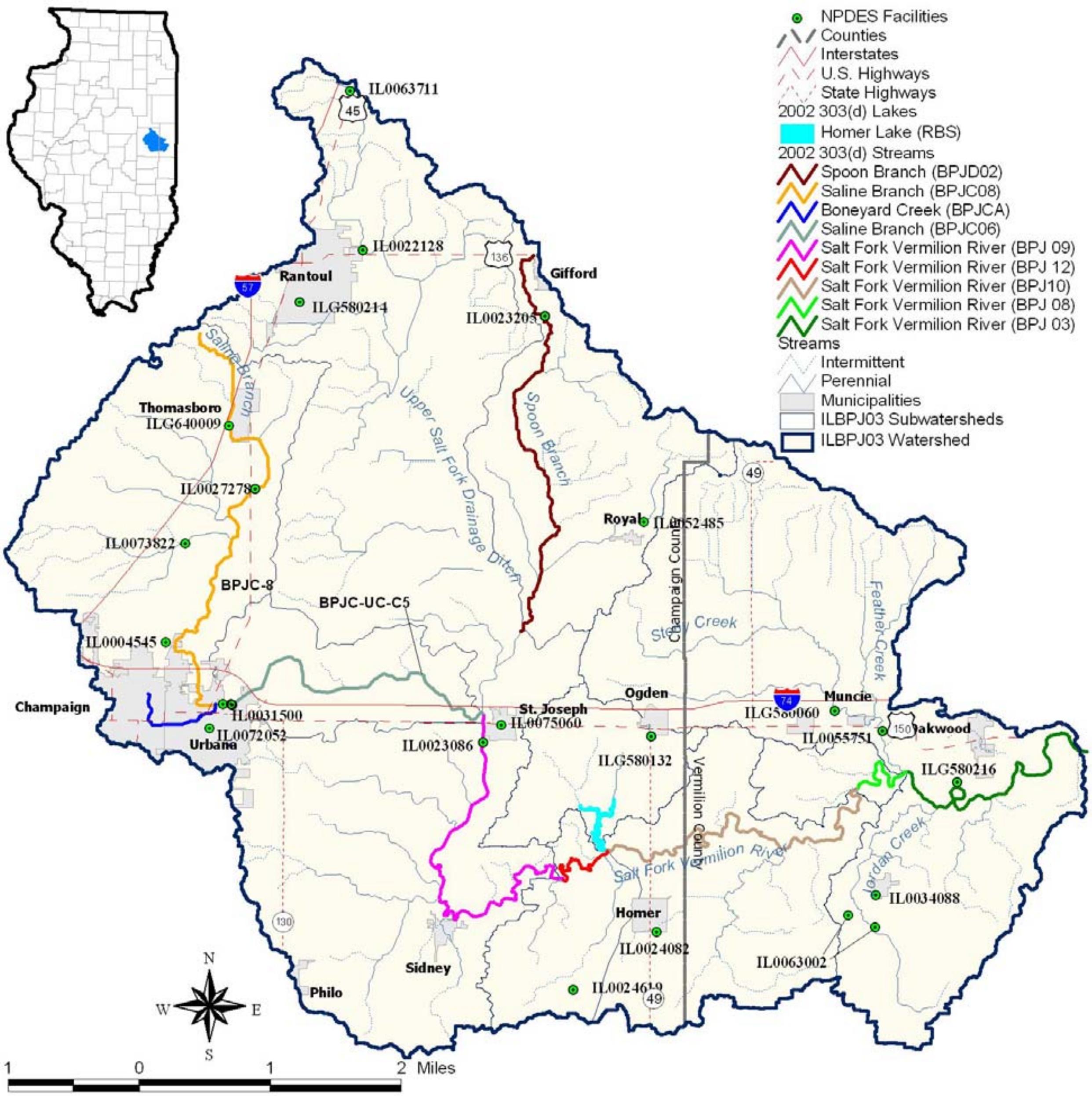

Figure 4-32. NPDES facilities in the Salt Fork Vermilion River watershed.

4.4.11.2 Nonpoint Sources

Potential nonpoint sources of sediments and nutrients in the Salt Fork Vermilion River watershed include sheet and rill erosion, stream channel erosion, fertilizer use, failing septic systems, livestock operations, storm water runoff, urban runoff, atmospheric deposition, internal lake recycling, and natural sources.

Potential anthropogenic sources of boron include sewage sludge and effluents, coal combustion, cleaning compounds and agrochemicals. The relative magnitude of each of these various sources has not yet been estimated and will be the focus of Stage 2 and 3 activities.

5 Identification of Data Gaps and Sampling Plan

Many of the listings in the Salt Fork Vermilion River watershed will not require TMDLs because they are either (1) for parameters without numeric water quality standards, or (2) associated with the July 12, 2002 fish kill. Additional data are required to determine whether TMDLs are required for other segment/cause combinations. A summary of the status for each of the listed segments in the watershed is provided in Table 5-1, including sampling recommendations. Sampling should be conducted by qualified personnel and might include representatives from Illinois EPA, local government agencies, or private consulting companies.

Table 5-1. Recommendations for next steps on BPJ03 303(d) listed segments.

Segment	Name	Causes of Impairment	Status and Recommendations
BPJD02	Spoon Branch	Dissolved Oxygen	Stage 2 – Collect Additional Data
		Habitat Assessment	No TMDL – No Numeric WQS
BPJCA	Boneyard Creek	Habitat Assessment	No TMDL – No Numeric WQS
		DDT	No TMDL – No Numeric WQS
		Hexachlor	No TMDL – No Numeric WQS
		PCB	No TMDL – No Numeric WQS
BPJC08	Saline Branch	Total Nitrogen	No TMDL – No Numeric WQS
		Dissolved Oxygen	Stage 2 – Collect Additional Data
		Habitat Assessment	No TMDL – No Numeric WQS
BPJC06	Saline Branch	Boron	Stage 3 – Develop Boron TMDL
		Total Ammonia	No TMDL – Listed Based on Fish Kill
		Habitat Assessment	No TMDL – No Numeric WQS
		Fish Kills	No TMDL – No Numeric WQS
		TSS	No TMDL – No Numeric WQS
		DDT	No TMDL – No Numeric WQS
		Dieldrin	No TMDL – No Numeric WQS
		Methoxychlor	No TMDL – No Numeric WQS
		Total Phosphorus	No TMDL – No Numeric WQS
BPJ09	Salt Fork Vermilion River	Total Ammonia	No TMDL – Listed Based on Fish Kill
		Total Nitrogen	No TMDL – No Numeric WQS
		pH	No TMDL – Listed Based on Fish Kill
		Fish Kills	No TMDL – No Numeric WQS
		TSS	No TMDL – No Numeric WQS
		Total Phosphorus	No TMDL – No Numeric WQS
BPJ12	Salt Fork Vermilion River	Total Ammonia	No TMDL – Listed Based on Fish Kill
		Total Nitrogen	No TMDL – No Numeric WQS
		pH	No TMDL – Listed Based on Fish Kill
		Fish Kills	No TMDL – No Numeric WQS
		TSS	No TMDL – No Numeric WQS

Segment	Name	Causes of Impairment	Status and Recommendations
		Total Phosphorus	No TMDL – No Numeric WQS
RBO	Homer Lake	TSS	No TMDL – No Numeric WQS
		Excessive Algal Growth	No TMDL – No Numeric WQS
		Total Phosphorus	Stage 3 – Develop TMDL
BPJ10	Salt Fork Vermilion River	Total Ammonia	No TMDL – Listed Based on Fish Kill
		Total Nitrogen	No TMDL – No Numeric WQS
		Nitrate	Stage 3 – Develop TMDL
		pH	No TMDL – Listed Based on Fish Kill
		Fish Kills	No TMDL – No Numeric WQS
		TSS	No TMDL – No Numeric WQS
		Total Phosphorus	No TMDL – No Numeric WQS
BPJ08	Salt Fork Vermilion River	Iron	No TMDL – < 1% Samples Exceed WQS
		Total Ammonia	No TMDL – Listed Based on Fish Kill
		Total Nitrogen	No TMDL – No Numeric WQS
		Nitrate	Stage 3 – Develop TMDL
		pH	Stage 2 – Collect Additional Data
		Fish Kills	No TMDL – No Numeric WQS
		TSS	No TMDL – No Numeric WQS
		Total Phosphorus	No TMDL – No Numeric WQS
BPJ03	Salt Fork Vermilion River	Iron	No TMDL – < 1% Samples Exceed WQS
		Total Nitrogen	No TMDL – No Numeric WQS
		Nitrate	Stage 3 – Develop TMDL
		Fish Kills	No TMDL – No Numeric WQS
		TSS	No TMDL – No Numeric WQS
		Total Phosphorus	No TMDL – No Numeric WQS

5.1 Stage 2 Recommendations

The following specific sampling recommendations are made for segments that require additional data to either confirm the impairment or to develop a TMDL.

5.1.1 Spoon Branch (BPJD02): Dissolved Oxygen

Additional DO data are required in segment BPJD02 at two to three locations to evaluate current conditions and to confirm whether or not the segment is impaired. Potential stations include BPJD-1 and BPJD-2. Samples should be collected two times a month from April through September to capture the expected seasonal variation in water quality parameters related to nutrient loading, eutrophication and oxygen-demanding processes. Water samples should be analyzed to determine concentrations of TP, soluble reactive phosphorus, chlorophyll-a, periphyton, nitrate/nitrite nitrogen, and total Kjeldahl nitrogen. In the field, measurements should be made using a Hydrolab to obtain pH, temperature and dissolved oxygen. Flow should also be sampled. A diel DO survey would also be very useful to determine the extent to which excessive algal growths result in large swings in concentrations. Cross-sections of the stream should also be made once during the summer at approximately 0.5 mile intervals in preparation for potential water quality modeling of the stream.

5.1.2 Saline Branch (BPJC08): Dissolved Oxygen

Additional DO data are required in segment BPJC08 at two to three locations to evaluate current conditions and to confirm whether or not the segment is impaired. Potential stations include BPJC-8, BPJC-UC-A3 and BPJC-UC-A2. Samples should be collected two times a month from April through September to capture the expected seasonal variation in water quality parameters related to nutrient loading, eutrophication and oxygen-demanding processes. Water samples should be analyzed to determine concentrations of TP, soluble reactive phosphorus, chlorophyll-a, periphyton, nitrate/nitrite nitrogen, and total Kjeldahl nitrogen. In the field, measurements should be made using a Hydrolab to obtain pH, temperature and dissolved oxygen. Flow should also be sampled. A diel DO survey would also be very useful to determine the extent to which excessive algal growths result in large swings in concentrations. Cross-sections of the stream should also be made once during the summer at approximately 0.5 mile intervals.

5.1.3 Salt Fork Vermilion River (BPJ08): pH

Additional pH data are required in segment BPJ08 at station BPJ-8 to evaluate current conditions and to confirm whether or not the segment is impaired. Samples should be collected two times a month from April through September to capture the expected seasonal variation in water quality. The source of the high pH is unknown at this time but might be due to excessive algal growth. Therefore water samples should be analyzed to determine concentrations of TP, soluble reactive phosphorus, chlorophyll-a, periphyton, nitrate/nitrite nitrogen, and total Kjeldahl nitrogen. In the field, measurements should be made using a Hydrolab to obtain pH, temperature and dissolved oxygen. Flow should also be sampled. A diel pH and DO survey would also be very useful to determine the extent to which excessive algal growths result in large swings in concentrations. Cross-sections of the stream should also be made once during the summer at approximately 0.5 mile intervals.

6 Technical Approach

Table 5-1 indicates that the following segment/cause combinations require TMDLs:

- Boron TMDL for Saline Branch (segment BPJC06)
- Total Phosphorus TMDL for Homer Lake (segment RBO)
- Nitrate TMDL for Salt Fork Vermilion River (segment BPJ10)
- Nitrate TMDL for Salt Fork Vermilion River (segment BPJ08)
- Nitrate TMDL for Salt Fork Vermilion River (segment BPJ03)

The following segment/cause combinations also potentially require TMDLs depending on the results of Stage 2 sampling:

- Dissolved Oxygen for Spoon Branch (segment BPJD02)
- Dissolved Oxygen for Saline Branch (BPJC08)
- pH for Salt Fork Vermilion River (BPJ08)

Table 6-1 summarizes potential technical approaches for developing TMDLs in the Salt Fork Vermilion River watershed. Both simple and more advanced approach options are identified and a descriptions of the models included in the table are provided below.

Table 6-1. Potential technical approaches for developing TMDLs in the Salt Fork Vermilion River watershed.

Segment	Name	Causes of Impairment	Simple Approach	Advanced Approach
BPJD02	Spoon Branch	Dissolved Oxygen	QUAL2E	LSPC/HSPF
BPJC08	Saline Branch	Dissolved Oxygen	QUAL2E	LSPC/HSPF
BPJC06	Saline Branch	Boron	Mass Balance Approach	LSPC/HSPF
RBO	Homer Lake	Total Phosphorus	Non-Modeling Estimate of Loads and BATHTUB	LSPC/HSPF and Lake2K
BPJ10	Salt Fork Vermilion River	Nitrate	QUAL2E	LSPC/HSPF
BPJ08	Salt Fork Vermilion River	pH	QUAL2E	LSPC/HSPF
		Nitrate	QUAL2E	LSPC/HSPF
BPJ03	Salt Fork Vermilion River	Nitrate	QUAL2E	LSPC/HSPF

QUAL2E: The Enhanced Stream Water Quality Model (QUAL2E) is applicable to well mixed, dendritic streams. It simulates the major reactions of nutrient cycles, algal production, benthic and carbonaceous demand, atmospheric reaeration and their effects on the dissolved oxygen balance. It can predict up to 15 water quality parameters including dissolved oxygen and nitrate as N. It is intended as a water quality planning tool for developing TMDLs and can also be used in conjunction with field sampling for identifying the magnitude and quality characteristics of nonpoint sources. By operating the model dynamically, the user can study diurnal dissolved oxygen variations and algal growth. The major limitation of QUAL2E is that it is a steady-state model and therefore only provides information for one flow condition.

LSPC/HSPF. The Loading Simulation Program in C++ (LSPC) is essentially a re-coded C++ version of the Hydrologic Simulation Program Fortran (HSPF) model. LSPC integrates a geographical information system (GIS), comprehensive data storage and management capabilities, the original HSPF algorithms, and a data analysis/post-processing system into a convenient PC-based windows interface. LSPC's algorithms are identical to a subset of those in the HSPF model. HSPF is a comprehensive watershed and receiving water quality modeling framework that was originally developed in the mid-1970's. During the past several years it has been used to develop hundreds of USEPA-approved TMDLs and it is generally considered one of the most advanced hydrologic and watershed loading model available. LSPC/HSPF is a continuous model and therefore allows for an evaluation of water quality over a range of flow conditions. LSPC/HSPF is preferred for the Salt Fork Vermilion River because it allows for more advanced simulations of dissolved oxygen and nitrate concentrations compared to other continuous models, such as the Soil and Water Assessment Tool (SWAT). LSPC/HSPF has also been successfully applied to develop TMDLs in heavily tiled watersheds, such as the Salt Fork Vermilion River watershed.

BATHTUB is a lake model that performs steady-state water and phosphorus balance calculations in a spatially segmented hydraulic network, which accounts for advective and diffusive transport, and nutrient sedimentation. In addition, the BATHUB model automatically incorporates internal phosphorus loadings into its calculations. Eutrophication-related water quality conditions are predicted using empirical relationships previously developed and tested for reservoir applications (Walker, 1985).

LAKE2K is a model that is designed to compute seasonal trends of water quality in stratified lakes (Chapra and Martin, 2004). A beta version of the model has recently been released and is supported by the U.S. EPA Office of Research and Development. LAKE2K is implemented within the Microsoft Windows environment and uses Microsoft Excel as the graphical user interface. The model requires information on lake elevation, area, volume, inflows, meteorology, and initial water quality conditions. Daily water quality output is provided for three vertical layers (epilminion, metalimnion, and hypolimnion), including daily predictions of TP, dissolved oxygen, and three phytoplankton groups. LAKE2K also includes a sediment diagenesis model for nutrient release during low dissolved oxygen conditions.

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Appendix A: Illinois GAP Land Cover Description

Table A-1. Values and class names in the Illinois Gap Analysis Project Land Cover 1999-2000 Arc/Info GRID coverage.

GRID VALUE	LAND COVER CATEGORY
	AGRICULTURAL LAND
11	Corn
12	Soybeans
13	Winter Wheat
14	Other Small Grains and Hay
15	Winter Wheat/Soybeans
16	Other Agriculture
17	Rural Grassland
	FORESTED LAND
22	Dry Upland
23	Dry-Mesic Upland
24	Mesic Upland
25	Partial Canopy/Savannah Upland
26	Coniferous
	URBAN LAND
31	High Density
32	Low/Medium Density (excluding TM Scene 2331)
33	Medium Density (TM Scene 2331)
34	Low Density (TM Scene 2331)
35	Urban Open Space
	WETLAND
41	Shallow Marsh/Wet Meadow
42	Deep Marsh
43	Seasonally/Temporarily Flooded
45	Mesic Floodplain Forest
46	Wet-Mesic Floodplain Forest
47	Wet Floodplain Forest
48	Swamp
49	Shallow Water
	OTHER
51	Surface Water
52	Barren and Exposed Land
53	Clouds
53	Cloud Shadows

Appendix B: Water Quality Data for the Salt Fork Vermilion River Watershed

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-10	163026	pH	4/13/1966	11:50 AM	0.0	7.6	NA
BPJ-10	163026	pH	6/14/1966	12:43 PM	0.0	7.6	NA
BPJ-10	163026	pH	6/16/1966	7:45 AM	0.0	7.6	NA
BPJ-10	163026	pH	6/20/1966	9:25 AM	0.0	7.5	NA
BPJ-10	163026	pH	6/22/1966	7:50 AM	0.0	7.4	NA
BPJ-10	163026	pH	6/24/1966	8:50 AM	0.0	7.5	NA
BPJ-10	163026	pH	8/15/1966	2:00 PM	0.0	7.3	NA
BPJ-10	163026	pH	8/16/1966	7:50 AM	0.0	7.6	NA
BPJ-10	163026	pH	8/17/1966	10:45 AM	0.0	7.4	NA
BPJ-10	163026	pH	8/18/1966	9:30 AM	0.0	7.3	NA
BPJ-10	163026	pH	8/19/1966	10:45 AM	0.0	7.2	NA
BPJ-10	163026	Temperature	4/13/1966	11:50 AM	0.0	7	° C
BPJ-10	163026	Temperature	6/14/1966	12:43 PM	0.0	23	° C
BPJ-10	163026	Temperature	6/16/1966	7:45 AM	0.0	18	° C
BPJ-10	163026	Temperature	6/20/1966	9:25 AM	0.0	22	° C
BPJ-10	163026	Temperature	6/22/1966	7:50 AM	0.0	22	° C
BPJ-10	163026	Temperature	6/24/1966	8:50 AM	0.0	23	° C
BPJ-10	163026	Temperature	8/15/1966	2:00 PM	0.0	27	° C
BPJ-10	163026	Temperature	8/16/1966	7:50 AM	0.0	23	° C
BPJ-10	163026	Temperature	8/17/1966	10:45 AM	0.0	25	° C
BPJ-10	163026	Temperature	8/18/1966	9:30 AM	0.0	25	° C
BPJ-10	163026	Temperature	8/19/1966	10:45 AM	0.0	25	° C
BPJ-10	3338000	Flow	10/12/1966	10:30 AM	0.0	33	cfs
BPJ-10	3338000	Flow	10/3/1972	3:00 PM	0.0	314	cfs
BPJ-10	3338000	Flow	2/18/1976	12:10 PM	0.0	3430	cfs
BPJ-10	3338000	pH	10/12/1966	10:10 AM	0.0	7.4	NA
BPJ-10	3338000	Temperature	10/12/1966	10:10 AM	0.0	11.5	° C
BPJ-10	3338000	Temperature	10/3/1972	3:00 PM	0.0	16	° C
BPJ-10	3338000	Temperature	2/18/1976	12:10 PM	0.0	5	° C
BPJ-10	3338022	pH	10/12/1966	8:45 AM	0.0	7.3	NA
BPJ-10	3338022	Temperature	10/12/1966	8:45 AM	0.0	11	° C
BPJ-10	BPJ-10	Ammonia	10/9/1985	9:30 AM	0.0	0.1	mg/L
BPJ-10	BPJ-10	Ammonia	7/7/1997	2:20 PM	0.0	0.09	mg/L
BPJ-10	BPJ-10	Ammonia	9/2/1997	3:00 PM	0.0	0.12	mg/L
BPJ-10	BPJ-10	Flow	10/9/1985	10:00 AM	0.0	27.8	cfs
BPJ-10	BPJ-10	Nitrate + Nitrite	10/9/1985	9:30 AM	0.0	4.8	mg/L
BPJ-10	BPJ-10	Nitrate + Nitrite	8/6/1986		0.0	2.7	mg/L
BPJ-10	BPJ-10	Nitrate + Nitrite	7/7/1997	2:20 PM	0.0	9.4	mg/L
BPJ-10	BPJ-10	Nitrate + Nitrite	9/2/1997	3:00 PM	0.0	5.1	mg/L
BPJ-10	BPJ-10	pH	10/9/1985	9:30 AM	0.0	7.5	NA
BPJ-10	BPJ-10	pH	8/6/1986		0.0	7.5	NA
BPJ-10	BPJ-10	pH	9/2/1997	3:00 PM	0.0	8.1	NA
BPJ-10	BPJ-10	Temperature	10/9/1985	9:30 AM	0.0	14.4	° C
BPJ-10	BPJ-10	Temperature	7/7/1997	2:20 PM	0.0	24.1	° C
BPJ-10	BPJ-10	Temperature	9/2/1997	3:00 PM	0.0	24	° C
BPJ-10	D-4	Ammonia	7/16/2002		0.0	4.3	mg/L
BPJ-10	D-4	pH	7/16/2002		0.0	8.9	NA
BPJ-10	D-4	Temperature	7/16/2002		0.0	27.1	° C
BPJ-10	D-5	Ammonia	7/16/2002		0.0	3.1	mg/L
BPJ-10	D-5	pH	7/16/2002		0.0	8.8	NA
BPJ-10	D-5	Temperature	7/16/2002		0.0	27.3	° C
BPJ-10	D-6	Ammonia	7/16/2002		0.0	4.3	mg/L
BPJ-10	D-6	pH	7/16/2002		0.0	9	NA
BPJ-10	D-6	Temperature	7/16/2002		0.0	28.2	° C
BPJ-12	BPJ-12	Ammonia	8/6/1986	8:30 AM	0.0	0.1	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-12	BPJ-12	Flow	8/6/1986	8:15 AM	0.0	33.3	cfs
BPJ-12	BPJ-12	pH	8/6/1986	8:30 AM	0.0	7.5	NA
BPJ-12	BPJ-12	Temperature	8/6/1986	8:30 AM	0.0	22	° C
BPJ-3	163024	pH	4/13/1966	12:55 PM	0.0	8.2	NA
BPJ-3	163024	pH	6/15/1966	10:45 AM	0.0	7.6	NA
BPJ-3	163024	pH	6/17/1966	7:00 AM	0.0	7.8	NA
BPJ-3	163024	pH	6/20/1966	10:00 AM	0.0	8	NA
BPJ-3	163024	pH	6/21/1966	6:45 AM	0.0	7.9	NA
BPJ-3	163024	pH	6/22/1966	7:10 AM	0.0	7.9	NA
BPJ-3	163024	pH	6/23/1966	11:00 AM	0.0	8	NA
BPJ-3	163024	pH	6/24/1966	9:30 AM	0.0	7.9	NA
BPJ-3	163024	pH	8/16/1966	1:00 PM	0.0	6.7	NA
BPJ-3	163024	pH	8/17/1966	11:21 AM	0.0	7.9	NA
BPJ-3	163024	pH	8/18/1966	12:43 PM	0.0	7.4	NA
BPJ-3	163024	pH	8/19/1966	12:14 PM	0.0	7.8	NA
BPJ-3	163024	Temperature	4/13/1966	12:55 PM	0.0	7	° C
BPJ-3	163024	Temperature	6/15/1966	10:45 AM	0.0	21	° C
BPJ-3	163024	Temperature	6/17/1966	7:00 AM	0.0	18	° C
BPJ-3	163024	Temperature	6/20/1966	10:00 AM	0.0	23	° C
BPJ-3	163024	Temperature	6/21/1966	6:45 AM	0.0	22	° C
BPJ-3	163024	Temperature	6/22/1966	7:10 AM	0.0	22	° C
BPJ-3	163024	Temperature	6/23/1966	11:00 AM	0.0	21	° C
BPJ-3	163024	Temperature	6/24/1966	9:30 AM	0.0	24	° C
BPJ-3	163024	Temperature	8/16/1966	1:00 PM	0.0	27	° C
BPJ-3	163024	Temperature	8/17/1966	11:21 AM	0.0	25	° C
BPJ-3	163024	Temperature	8/18/1966	12:43 PM	0.0	27	° C
BPJ-3	163024	Temperature	8/19/1966	12:14 PM	0.0	26	° C
BPJ-3	3338114	pH	10/13/1966	12:00 AM	0.0	7.3	NA
BPJ-3	3338114	Temperature	10/13/1966	12:00 AM	0.0	14	° C
BPJ-3	BPJ-3	Flow	11/4/1975	2:25 PM	0.0	130	cfs
BPJ-3	BPJ-3	Flow	12/3/1975	10:30 AM	0.0	762	cfs
BPJ-3	BPJ-3	Flow	12/3/1975	10:30 AM	0.0	762	cfs
BPJ-3	BPJ-3	Flow	2/17/1976	11:20 AM	0.0	4389.99	cfs
BPJ-3	BPJ-3	Flow	2/17/1976	11:20 AM	0.0	4390	cfs
BPJ-3	BPJ-3	Flow	4/7/1976	11:30 AM	0.0	321	cfs
BPJ-3	BPJ-3	Flow	5/11/1976	10:35 AM	0.0	128	cfs
BPJ-3	BPJ-3	Flow	7/9/1976	11:20 AM	0.0	174	cfs
BPJ-3	BPJ-3	Flow	8/6/1976	2:50 PM	0.0	68	cfs
BPJ-3	BPJ-3	Flow	8/6/1976	2:50 PM	0.0	68	cfs
BPJ-3	BPJ-3	Flow	9/2/1976	11:20 AM	0.0	31	cfs
BPJ-3	BPJ-3	Flow	3/28/1978	11:00 AM	0.0	1840	cfs
BPJ-3	BPJ-3	Flow	4/17/1978	3:00 PM	0.0	359	cfs
BPJ-3	BPJ-3	Flow	5/10/1978	3:00 PM	0.0	680	cfs
BPJ-3	BPJ-3	Flow	5/10/1978	3:00 PM	0.0	680	cfs
BPJ-3	BPJ-3	Flow	5/17/1978	10:30 AM	0.0	1180	cfs
BPJ-3	BPJ-3	Flow	5/26/1978	2:00 PM	0.0	459	cfs
BPJ-3	BPJ-3	Flow	5/26/1978	2:00 PM	0.0	459	cfs
BPJ-3	BPJ-3	Flow	6/26/1978	2:00 PM	0.0	210	cfs
BPJ-3	BPJ-3	Flow	7/5/1978	2:40 PM	0.0	238	cfs
BPJ-3	BPJ-3	Flow	7/14/1978	11:00 AM	0.0	2400	cfs
BPJ-3	BPJ-3	Flow	7/14/1978	3:00 PM	0.0	2370	cfs
BPJ-3	BPJ-3	Flow	8/1/1978	1:10 PM	0.0	129	cfs
BPJ-3	BPJ-3	Flow	8/16/1978	11:00 AM	0.0	112	cfs
BPJ-3	BPJ-3	Flow	9/13/1978	10:30 AM	0.0	42	cfs
BPJ-3	BPJ-3	Flow	9/13/1978	10:30 AM	0.0	42	cfs

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Flow	10/11/1978	2:40 PM	0.0	58	cfs
BPJ-3	BPJ-3	Flow	10/19/1978	11:00 AM	0.0	57	cfs
BPJ-3	BPJ-3	Flow	11/21/1978	2:25 PM	0.0	184	cfs
BPJ-3	BPJ-3	Flow	11/30/1978	1:00 PM	0.0	184	cfs
BPJ-3	BPJ-3	Flow	12/21/1978	12:00 PM	0.0	191	cfs
BPJ-3	BPJ-3	Flow	1/11/1979	12:00 PM	0.0	100	cfs
BPJ-3	BPJ-3	Flow	1/17/1979	12:40 PM	0.0	1.39	cfs
BPJ-3	BPJ-3	Flow	1/17/1979	12:40 PM	0.0	1.4	cfs
BPJ-3	BPJ-3	Flow	2/14/1979	1:30 PM	0.0	98	cfs
BPJ-3	BPJ-3	Flow	2/15/1979	11:00 AM	0.0	98	cfs
BPJ-3	BPJ-3	Flow	3/7/1979	11:30 AM	0.0	3730	cfs
BPJ-3	BPJ-3	Flow	3/14/1979	11:00 AM	0.0	1510	cfs
BPJ-3	BPJ-3	Flow	4/10/1979	10:00 AM	0.0	850	cfs
BPJ-3	BPJ-3	Flow	4/16/1979	2:40 PM	0.0	1750	cfs
BPJ-3	BPJ-3	Flow	5/2/1979	12:00 PM	0.0	804	cfs
BPJ-3	BPJ-3	Flow	5/23/1979	11:40 AM	0.0	302	cfs
BPJ-3	BPJ-3	Flow	6/5/1979	1:00 PM	0.0	178	cfs
BPJ-3	BPJ-3	Flow	6/5/1979	2:00 PM	0.0	178.1	cfs
BPJ-3	BPJ-3	Flow	7/11/1979	10:15 AM	0.0	83	cfs
BPJ-3	BPJ-3	Flow	7/17/1979	12:00 PM	0.0	207	cfs
BPJ-3	BPJ-3	Flow	7/30/1979	1:30 PM	0.0	450	cfs
BPJ-3	BPJ-3	Flow	8/6/1979	11:00 AM	0.0	973	cfs
BPJ-3	BPJ-3	Flow	8/15/1979	4:10 PM	0.0	170	cfs
BPJ-3	BPJ-3	Flow	9/17/1979	10:00 AM	0.0	83	cfs
BPJ-3	BPJ-3	Flow	10/15/1979	2:30 PM	0.0	34	cfs
BPJ-3	BPJ-3	Flow	10/16/1979	10:00 AM	0.0	25	cfs
BPJ-3	BPJ-3	Flow	11/8/1979	12:00 PM	0.0	22	cfs
BPJ-3	BPJ-3	Flow	12/6/1979	11:00 AM	0.0	119	cfs
BPJ-3	BPJ-3	Flow	12/10/1979	12:30 PM	0.0	83.6	cfs
BPJ-3	BPJ-3	Flow	12/10/1979	12:30 PM	0.0	84	cfs
BPJ-3	BPJ-3	Flow	1/17/1980	10:00 AM	0.0	95	cfs
BPJ-3	BPJ-3	Flow	2/27/1980	2:00 PM	0.0	296	cfs
BPJ-3	BPJ-3	Flow	3/13/1980	10:00 AM	0.0	651	cfs
BPJ-3	BPJ-3	Flow	4/1/1980	9:30 AM	0.0	2480	cfs
BPJ-3	BPJ-3	Flow	5/7/1980	8:00 AM	0.0	245	cfs
BPJ-3	BPJ-3	Flow	5/9/1980	3:20 PM	0.0	216	cfs
BPJ-3	BPJ-3	Flow	5/27/1980	1:00 PM	0.0	315	cfs
BPJ-3	BPJ-3	Flow	6/16/1980	2:00 PM	0.0	665	cfs
BPJ-3	BPJ-3	Flow	6/27/1980	9:45 AM	0.0	179	cfs
BPJ-3	BPJ-3	Flow	7/24/1980	11:00 AM	0.0	50	cfs
BPJ-3	BPJ-3	Flow	8/11/1980	10:30 AM	0.0	31.7	cfs
BPJ-3	BPJ-3	Flow	8/11/1980	10:30 AM	0.0	32	cfs
BPJ-3	BPJ-3	Flow	8/12/1980	11:00 AM	0.0	31	cfs
BPJ-3	BPJ-3	Flow	8/14/1980	2:00 PM	0.0	40	cfs
BPJ-3	BPJ-3	Flow	8/14/1980	2:00 PM	0.0	40.3	cfs
BPJ-3	BPJ-3	Flow	9/11/1980	1:00 PM	0.0	31	cfs
BPJ-3	BPJ-3	Flow	10/3/1980	10:00 AM	0.0	25	cfs
BPJ-3	BPJ-3	Flow	10/28/1980	11:00 AM	0.0	25	cfs
BPJ-3	BPJ-3	Flow	11/17/1980	9:30 AM	0.0	29	cfs
BPJ-3	BPJ-3	Flow	12/31/1980	1:00 PM	0.0	114	cfs
BPJ-3	BPJ-3	Flow	9/30/1981	3:00 PM	0.0	6040	cfs
BPJ-3	BPJ-3	Flow	10/19/1981	12:20 PM	0.0	807	cfs
BPJ-3	BPJ-3	Flow	11/10/1981	2:00 PM	0.0	1120	cfs
BPJ-3	BPJ-3	Flow	11/25/1981	8:00 AM	0.0	229	cfs
BPJ-3	BPJ-3	Flow	1/6/1982	2:00 PM	0.0	1750	cfs

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Flow	3/17/1982	2:00 PM	0.0	2750	cfs
BPJ-3	BPJ-3	Flow	3/17/1982	4:00 PM	0.0	3040	cfs
BPJ-3	BPJ-3	Flow	4/14/1982	2:00 PM	0.0	880	cfs
BPJ-3	BPJ-3	Flow	4/28/1982	12:40 PM	0.0	369	cfs
BPJ-3	BPJ-3	Flow	5/20/1982	2:00 PM	0.0	180	cfs
BPJ-3	BPJ-3	Flow	6/24/1982	2:00 PM	0.0	295	cfs
BPJ-3	BPJ-3	Flow	8/11/1982	3:00 PM	0.0	215	cfs
BPJ-3	BPJ-3	Flow	9/2/1982	10:15 AM	0.0	76	cfs
BPJ-3	BPJ-3	Flow	9/23/1982	2:00 PM	0.0	40	cfs
BPJ-3	BPJ-3	Flow	10/14/1982	1:00 PM	0.0	51	cfs
BPJ-3	BPJ-3	Flow	11/4/1982	2:00 PM	0.0	1660	cfs
BPJ-3	BPJ-3	Flow	12/21/1982	2:00 PM	0.0	1790	cfs
BPJ-3	BPJ-3	Flow	1/13/1983	11:20 AM	0.0	329	cfs
BPJ-3	BPJ-3	Flow	2/4/1983	10:30 AM	0.0	2710	cfs
BPJ-3	BPJ-3	Flow	3/4/1983	3:35 PM	0.0	204	cfs
BPJ-3	BPJ-3	Flow	3/16/1983	11:00 AM	0.0	1310	cfs
BPJ-3	BPJ-3	Flow	4/13/1983	9:00 AM	0.0	2340	cfs
BPJ-3	BPJ-3	Flow	5/4/1983	1:00 PM	0.0	10000	cfs
BPJ-3	BPJ-3	Flow	5/16/1983	1:30 PM	0.0	1350	cfs
BPJ-3	BPJ-3	Flow	8/11/1983	1:25 PM	0.0	40	cfs
BPJ-3	BPJ-3	Flow	9/14/1983	4:00 PM	0.0	34	cfs
BPJ-3	BPJ-3	Flow	11/2/1983	2:00 PM	0.0	110	cfs
BPJ-3	BPJ-3	Flow	12/8/1983	2:00 PM	0.0	600	cfs
BPJ-3	BPJ-3	Flow	3/15/1984	10:00 AM	0.0	720	cfs
BPJ-3	BPJ-3	Flow	4/19/1984	8:00 AM	0.0	1260	cfs
BPJ-3	BPJ-3	Flow	5/10/1984	9:00 AM	0.0	1010	cfs
BPJ-3	BPJ-3	Flow	6/21/1984	8:00 AM	0.0	725	cfs
BPJ-3	BPJ-3	Flow	7/18/1984	11:00 AM	0.0	49	cfs
BPJ-3	BPJ-3	Flow	8/22/1984	11:00 AM	0.0	35	cfs
BPJ-3	BPJ-3	Flow	9/19/1984	9:00 AM	0.0	30	cfs
BPJ-3	BPJ-3	Flow	11/7/1984	11:00 AM	0.0	50	cfs
BPJ-3	BPJ-3	Flow	12/13/1984	9:00 AM	0.0	85	cfs
BPJ-3	BPJ-3	Flow	1/16/1985	11:00 AM	0.0	60	cfs
BPJ-3	BPJ-3	Flow	3/6/1985	10:00 AM	0.0	2850	cfs
BPJ-3	BPJ-3	Flow	4/15/1985	11:00 AM	0.0	825	cfs
BPJ-3	BPJ-3	Flow	5/23/1985	9:00 AM	0.0	182	cfs
BPJ-3	BPJ-3	Flow	7/2/1985	9:00 AM	0.0	205	cfs
BPJ-3	BPJ-3	Flow	8/19/1985	1:30 PM	0.0	343	cfs
BPJ-3	BPJ-3	Flow	9/16/1985	1:00 PM	0.0	50	cfs
BPJ-3	BPJ-3	Flow	10/16/1985	1:00 PM	0.0	140	cfs
BPJ-3	BPJ-3	Flow	12/10/1985	11:00 AM	0.0	770	cfs
BPJ-3	BPJ-3	Flow	1/15/1986	2:00 PM	0.0	173	cfs
BPJ-3	BPJ-3	Flow	2/20/1986	1:00 PM	0.0	733	cfs
BPJ-3	BPJ-3	Flow	3/25/1986	1:00 PM	0.0	404	cfs
BPJ-3	BPJ-3	Flow	4/30/1986	12:30 PM	0.0	158	cfs
BPJ-3	BPJ-3	Flow	6/17/1986	1:00 PM	0.0	414	cfs
BPJ-3	BPJ-3	Flow	7/15/1986	12:30 PM	0.0	1850	cfs
BPJ-3	BPJ-3	Flow	8/5/1986	8:00 AM	0.0	40.9	cfs
BPJ-3	BPJ-3	Flow	9/10/1986	1:00 PM	0.0	20	cfs
BPJ-3	BPJ-3	Flow	10/7/1986	10:30 AM	0.0	263	cfs
BPJ-3	BPJ-3	Flow	12/2/1986	1:00 PM	0.0	1540	cfs
BPJ-3	BPJ-3	Flow	1/13/1987	12:30 PM	0.0	120	cfs
BPJ-3	BPJ-3	Flow	2/17/1987	1:00 PM	0.0	429	cfs
BPJ-3	BPJ-3	Flow	3/24/1987	10:00 AM	0.0	182	cfs
BPJ-3	BPJ-3	Flow	4/28/1987	10:00 AM	0.0	389	cfs

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Flow	6/2/1987	1:00 PM	0.0	118	cfs
BPJ-3	BPJ-3	Flow	7/20/1987	11:20 AM	0.0	44	cfs
BPJ-3	BPJ-3	Flow	7/20/1987	11:00 AM	0.0	37	cfs
BPJ-3	BPJ-3	Flow	9/9/1987	1:30 PM	0.0	41	cfs
BPJ-3	BPJ-3	Flow	11/3/1987	11:00 AM	0.0	49	cfs
BPJ-3	BPJ-3	Flow	12/10/1987	11:00 AM	0.0	1040	cfs
BPJ-3	BPJ-3	Flow	1/21/1988	10:30 AM	0.0	2820	cfs
BPJ-3	BPJ-3	Flow	3/7/1988	10:00 AM	0.0	516	cfs
BPJ-3	BPJ-3	Flow	4/5/1988	9:00 AM	0.0	976	cfs
BPJ-3	BPJ-3	Flow	5/19/1988	10:00 AM	0.0	176	cfs
BPJ-3	BPJ-3	Flow	6/23/1988	10:30 AM	0.0	57	cfs
BPJ-3	BPJ-3	Flow	8/11/1988	10:00 AM	0.0	109	cfs
BPJ-3	BPJ-3	Flow	9/15/1988	10:30 AM	0.0	26	cfs
BPJ-3	BPJ-3	Flow	11/10/1988	10:00 AM	0.0	79	cfs
BPJ-3	BPJ-3	Flow	12/14/1988	11:00 AM	0.0	50	cfs
BPJ-3	BPJ-3	Flow	1/19/1989	11:00 AM	0.0	180	cfs
BPJ-3	BPJ-3	Flow	2/23/1989	10:30 AM	0.0	250	cfs
BPJ-3	BPJ-3	Flow	4/13/1989	11:00 AM	0.0	675	cfs
BPJ-3	BPJ-3	Flow	5/10/1989	10:30 AM	0.0	954	cfs
BPJ-3	BPJ-3	Flow	6/20/1989	8:00 AM	0.0	225	cfs
BPJ-3	BPJ-3	Flow	8/2/1989	11:00 AM	0.0	44	cfs
BPJ-3	BPJ-3	Flow	9/14/1989	11:00 AM	0.0	375	cfs
BPJ-3	BPJ-3	Flow	11/8/1989	10:30 AM	0.0	69	cfs
BPJ-3	BPJ-3	Flow	12/12/1989	1:00 PM	0.0	97	cfs
BPJ-3	BPJ-3	Flow	1/24/1990	11:00 AM	0.0	125	cfs
BPJ-3	BPJ-3	Flow	2/28/1990	11:30 AM	0.0	1210	cfs
BPJ-3	BPJ-3	Flow	3/28/1990	11:00 AM	0.0	389	cfs
BPJ-3	BPJ-3	Flow	5/9/1990	11:00 AM	0.0	343	cfs
BPJ-3	BPJ-3	Flow	7/3/1990	11:30 AM	0.0	825	cfs
BPJ-3	BPJ-3	Flow	8/2/1990	11:30 AM	0.0	127	cfs
BPJ-3	BPJ-3	Flow	11/14/1991	12:30 PM	0.0	790	cfs
BPJ-3	BPJ-3	Flow	12/18/1991	1:00 PM	0.0	1180	cfs
BPJ-3	BPJ-3	Flow	2/4/1992	1:00 PM	0.0	1140	cfs
BPJ-3	BPJ-3	Flow	3/17/1992	1:15 PM	0.0	1140	cfs
BPJ-3	BPJ-3	Flow	6/3/1992	1:05 PM	0.0	71	cfs
BPJ-3	BPJ-3	Flow	7/13/1992	9:00 AM	0.0	450	cfs
BPJ-3	BPJ-3	Flow	8/12/1992	11:15 AM	0.0	89	cfs
BPJ-3	BPJ-3	Flow	9/23/1992	10:30 AM	0.0	36	cfs
BPJ-3	BPJ-3	Iron	7/11/1979	10:15 AM	0.0	40	µg/L
BPJ-3	BPJ-3	Iron	7/30/1979	1:30 PM	0.0	20	µg/L
BPJ-3	BPJ-3	Iron	10/15/1979	2:30 PM	0.0	40	µg/L
BPJ-3	BPJ-3	Iron	4/1/1980	9:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/11/1980	10:30 AM	0.0	10	µg/L
BPJ-3	BPJ-3	Iron	10/3/1980	10:00 AM	0.0	10	µg/L
BPJ-3	BPJ-3	Iron	11/17/1980	9:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	11/17/1980	9:30 AM	0.0	51	µg/L
BPJ-3	BPJ-3	Iron	6/21/1984	8:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	7/18/1984	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/22/1984	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/19/1984	9:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	12/13/1984	9:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	1/16/1985	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/6/1985	10:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	4/15/1985	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	5/23/1985	9:00 AM	0.0	50	µg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Iron	8/19/1985	1:30 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/16/1985	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	10/16/1985	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	12/10/1985	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	1/15/1986	2:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	2/20/1986	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/25/1986	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	4/30/1986	12:30 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	6/17/1986	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	7/15/1986	12:30 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/4/1986	8:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/10/1986	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	10/7/1986	10:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	12/2/1986	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	1/13/1987	12:30 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	2/17/1987	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/24/1987	10:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	4/28/1987	10:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	6/2/1987	1:00 PM	0.0	90	µg/L
BPJ-3	BPJ-3	Iron	6/2/1987	1:00 PM	0.0	89	µg/L
BPJ-3	BPJ-3	Iron	7/20/1987	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/9/1987	1:30 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	11/3/1987	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	12/10/1987	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	1/21/1988	10:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/7/1988	10:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	4/5/1988	9:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	5/19/1988	10:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	6/23/1988	10:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/11/1988	10:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/15/1988	10:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	11/10/1988	10:00 AM	0.0	75	µg/L
BPJ-3	BPJ-3	Iron	11/10/1988	10:00 AM	0.0	80	µg/L
BPJ-3	BPJ-3	Iron	12/14/1988	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	1/19/1989	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	2/23/1989	10:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	4/13/1989	11:00 AM	0.0	65	µg/L
BPJ-3	BPJ-3	Iron	4/13/1989	11:00 AM	0.0	60	µg/L
BPJ-3	BPJ-3	Iron	5/10/1989	10:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	6/20/1989	8:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/2/1989	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/14/1989	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	11/8/1989	10:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	12/12/1989	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	1/24/1990	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	2/28/1990	11:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/28/1990	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	5/9/1990	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	7/3/1990	11:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/2/1990	11:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/26/1990	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	11/1/1990	10:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	12/10/1990	12:30 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	1/16/1991	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/5/1991	10:30 AM	0.0	50	µg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Iron	4/3/1991	12:45 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	5/22/1991	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	6/26/1991	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/21/1991	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/30/1991	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	12/18/1991	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	2/4/1992	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/17/1992	1:15 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	6/3/1992	1:05 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	7/13/1992	9:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/12/1992	11:15 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/23/1992	10:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	11/18/1992	12:15 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	12/16/1992	12:00 PM	0.0	57	µg/L
BPJ-3	BPJ-3	Iron	2/1/1993	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/9/1993	12:30 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	4/7/1993	1:45 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	5/24/1993	1:15 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	6/28/1993	11:15 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/18/1993	1:45 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/28/1993	12:30 PM	0.0	70	µg/L
BPJ-3	BPJ-3	Iron	9/28/1993	12:30 PM	0.0	66	µg/L
BPJ-3	BPJ-3	Iron	11/15/1993	11:15 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	12/20/1993	12:30 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/2/1994	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/29/1994	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	4/28/1994	12:30 PM	0.0	260	µg/L
BPJ-3	BPJ-3	Iron	6/30/1994	11:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/15/1994	2:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/6/1994	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/26/1994	12:30 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	11/2/1994	12:15 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	1/4/1995	12:30 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	2/1/1995	12:30 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	2/27/1995	12:30 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/29/1995	12:15 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	4/26/1995	10:45 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	5/11/1995	12:15 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	6/14/1995	12:45 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/7/1995	11:15 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	10/16/1995	10:45 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	12/12/1995	12:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	1/29/1996	11:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	2/29/1996	10:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/28/1996	10:45 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	4/19/1996	12:45 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	5/20/1996	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	7/19/1996	10:45 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/26/1996	11:45 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	10/9/1996	10:45 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	11/25/1996	9:45 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	1/7/1997	9:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	2/19/1997	9:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/13/1997	9:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	4/30/1997	9:15 AM	0.0	50	µg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Iron	7/8/1997	9:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/27/1997	9:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/18/1997	9:45 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	10/15/1997	9:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	11/20/1997	8:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	1/6/1998	2:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/13/1998	1:00 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	4/29/1998	10:15 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	6/4/1998	7:00 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/4/1998	11:45 AM	0.0	140	µg/L
BPJ-3	BPJ-3	Iron	8/31/1998	12:15 PM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/28/1998	11:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	11/4/1998	8:30 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	12/8/1998	10:45 AM	0.0	50	µg/L
BPJ-3	BPJ-3	Iron	2/1/1999		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/3/1999		0.0	82	µg/L
BPJ-3	BPJ-3	Iron	4/8/1999		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	5/18/1999		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	6/21/1999		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/12/1999		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/15/1999		0.0	120	µg/L
BPJ-3	BPJ-3	Iron	11/2/1999		0.0	55	µg/L
BPJ-3	BPJ-3	Iron	11/30/1999		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	1/3/2000		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	2/14/2000		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	6/1/2000		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/15/2000		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/13/2000		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	10/30/2000		0.0	60	µg/L
BPJ-3	BPJ-3	Iron	12/13/2000		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	1/17/2001		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	2/27/2001		0.0	3100	µg/L
BPJ-3	BPJ-3	Iron	3/29/2001		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	5/2/2001		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	5/29/2001		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	7/19/2001		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	8/20/2001		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	10/24/2001		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	11/28/2001		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	1/17/2002		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	2/19/2002		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	3/27/2002		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	5/8/2002		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	6/13/2002		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	7/22/2002		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/4/2002		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	10/8/2002		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	11/21/2002		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	1/8/2003		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	2/20/2003		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	4/1/2003		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	5/6/2003		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	6/18/2003		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	7/30/2003		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	9/4/2003		0.0	70	µg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Iron	10/23/2003		0.0	50	µg/L
BPJ-3	BPJ-3	Iron	11/20/2003		0.0	130	µg/L
BPJ-3	BPJ-3	Iron	1/22/2004		0.0	50	µg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/31/1967	2:00 PM	0.0	0.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/2/1967	1:00 PM	0.0	2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/4/1968	2:00 PM	0.0	7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/10/1968	1:00 PM	0.0	8.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/1/1968	1:00 PM	0.0	7.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/5/1968	1:00 PM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/24/1968	1:00 PM	0.0	4.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/28/1968	2:00 PM	0.0	1.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/2/1968	1:00 PM	0.0	4.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/21/1968	1:00 PM	0.0	2.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/15/1969	2:00 PM	0.0	5.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/26/1969	1:00 PM	0.0	5.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/31/1969	1:00 PM	0.0	7.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/22/1969	2:00 PM	0.0	9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/28/1969	1:00 PM	0.0	1.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/30/1969	1:00 PM	0.0	0.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/28/1969	1:00 PM	0.0	0.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/29/1969	1:00 PM	0.0	0.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/22/1969	12:00 PM	0.0	1.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/1/1969	1:00 PM	0.0	1.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/17/1969	1:00 PM	0.0	1.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/16/1970	1:00 PM	0.0	1.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/30/1970	2:00 PM	0.0	1.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/14/1970	2:00 PM	0.0	2.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/24/1970	2:00 PM	0.0	1.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/13/1970	2:00 PM	0.0	0.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/2/1970	1:00 PM	0.0	1.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/19/1971	2:00 PM	0.0	1.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/24/1971	2:00 PM	0.0	1.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/26/1971	2:00 PM	0.0	1.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/3/1971	2:00 PM	0.0	1.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/22/1971	2:00 PM	0.0	0.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/28/1971	11:00 AM	0.0	0.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/29/1971	10:00 AM	0.0	2.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/29/1972	10:00 AM	0.0	7.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/30/1972	2:00 PM	0.0	9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/5/1972	1:00 AM	0.0	6.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/27/1972	3:00 PM	0.0	4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/22/1972	1:00 PM	0.0	0.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/20/1972	2:00 PM	0.0	4.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/17/1972	8:00 AM	0.0	8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/30/1972	11:00 AM	0.0	7.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/4/1973	12:00 PM	0.0	7.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/14/1973	12:00 PM	0.0	8.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/15/1973	12:00 PM	0.0	8.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/11/1973	3:00 PM	0.0	9.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/9/1973	10:00 AM	0.0	8.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/6/1973	10:00 AM	0.0	8.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/11/1973	9:00 AM	0.0	8.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/17/1973	10:00 AM	0.0	4.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/20/1973	1:00 PM	0.0	4.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/24/1973	3:00 PM	0.0	8.6	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Nitrate + Nitrite	12/4/1973	2:00 PM	0.0	5.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/28/1973	10:00 AM	0.0	7.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/27/1974	1:00 PM	0.0	8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/26/1974	1:00 PM	0.0	8.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/18/1974	1:00 PM	0.0	8.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/29/1974	3:00 PM	0.0	7.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/19/1974	3:00 PM	0.0	8.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/28/1974	3:00 PM	0.0	7.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/2/1974	12:00 PM	0.0	8.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/10/1974	5:00 PM	0.0	6.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/17/1974	9:00 AM	0.0	6.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/27/1974	11:00 AM	0.0	3.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/24/1974	12:00 PM	0.0	2.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/21/1974	2:00 PM	0.0	6.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/17/1974	9:00 AM	0.0	6.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/15/1975	2:00 PM	0.0	5.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/14/1976	10:00 AM	0.0	2.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/18/1978	12:00 PM	0.0	8.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/18/1978	12:00 PM	0.0	8.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/22/1978	12:00 PM	0.0	6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/22/1978	12:00 PM	0.0	6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/28/1978	11:00 AM	0.0	8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/28/1978	11:00 AM	0.0	8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/17/1978	3:00 PM	0.0	8.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/10/1978	3:00 PM	0.0	9.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/10/1978	3:00 PM	0.0	9.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/26/1978	2:00 PM	0.0	9.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/26/1978	2:00 PM	0.0	9.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/26/1978	2:00 PM	0.0	7.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/26/1978	2:00 PM	0.0	7.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/14/1978	3:00 PM	0.0	6.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/16/1978	11:00 AM	0.0	2.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/21/1978	2:00 PM	0.0	4.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/19/1978	11:00 AM	0.0	3.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/30/1978	1:00 PM	0.0	6.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/21/1978	12:00 PM	0.0	7.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/11/1979	12:00 PM	0.0	9.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/15/1979	11:00 AM	0.0	6.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/14/1979	11:00 AM	0.0	9.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/10/1979	10:00 AM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/2/1979	12:00 PM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/5/1979	1:00 PM	0.0	8.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/5/1979	2:00 PM	0.0	9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/17/1979	12:00 PM	0.0	7.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/17/1979	1:00 PM	0.0	7.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/6/1979	11:00 AM	0.0	8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/17/1979	10:00 AM	0.0	4.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/16/1979	10:00 AM	0.0	4.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/16/1979	11:00 AM	0.0	3.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/8/1979	12:00 PM	0.0	2.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/6/1979	11:00 AM	0.0	6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/17/1980	10:00 AM	0.0	6.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/27/1980	2:00 PM	0.0	7.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/13/1980	10:00 AM	0.0	9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/7/1980	8:00 AM	0.0	9.3	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Nitrate + Nitrite	5/7/1980	10:00 AM	0.0	9.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/27/1980	1:00 PM	0.0	13	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/16/1980	2:00 PM	0.0	11	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/24/1980	11:00 AM	0.0	1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/12/1980	11:00 AM	0.0	0.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/11/1980	1:00 PM	0.0	4.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/3/1980	10:00 AM	0.0	4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/28/1980	11:00 AM	0.0	2.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/9/1980	4:00 PM	0.0	3.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/31/1980	1:00 PM	0.0	4.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/22/1981	1:00 PM	0.0	4.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/19/1981	8:00 AM	0.0	4.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/17/1981	10:00 AM	0.0	6.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/23/1981	1:00 PM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/21/1981	3:00 PM	0.0	18	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/25/1981	9:00 AM	0.0	15	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/4/1981	9:00 AM	0.0	11	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/30/1981	3:00 PM	0.0	6.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/10/1981	2:00 PM	0.0	10	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/6/1982	2:00 PM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/17/1982	2:00 PM	0.0	9.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/14/1982	2:00 PM	0.0	10	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/20/1982	2:00 PM	0.0	8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/24/1982	2:00 PM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/11/1982	3:00 PM	0.0	6.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/23/1982	2:00 PM	0.0	3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/4/1982	2:00 PM	0.0	6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/21/1982	2:00 PM	0.0	11	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/4/1983	10:30 AM	0.0	8.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/16/1983	11:00 AM	0.0	8.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/13/1983	9:00 AM	0.0	11	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/4/1983	1:00 PM	0.0	5.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/22/1983	9:00 AM	0.0	9.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/18/1983	12:00 PM	0.0	0.89	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/2/1983	2:00 PM	0.0	5.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/8/1983	2:00 PM	0.0	9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/15/1984	10:00 AM	0.0	8.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/19/1984	8:00 AM	0.0	9.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/10/1984	9:00 AM	0.0	8.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/21/1984	8:00 AM	0.0	8.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/18/1984	11:00 AM	0.0	4.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/22/1984	11:00 AM	0.0	2.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/19/1984	9:00 AM	0.0	5.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/7/1984	11:00 AM	0.0	4.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/13/1984	9:00 AM	0.0	6.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/16/1985	11:00 AM	0.0	10	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/6/1985	10:00 AM	0.0	9.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/15/1985	11:00 AM	0.0	10	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/23/1985	9:00 AM	0.0	9.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/2/1985	9:00 AM	0.0	13	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/19/1985	1:30 PM	0.0	7.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/16/1985	1:00 PM	0.0	5.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/16/1985	1:00 PM	0.0	3.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/10/1985	11:00 AM	0.0	8.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/15/1986	2:00 PM	0.0	8.4	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Nitrate + Nitrite	2/20/1986	1:00 PM	0.0	8.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/25/1986	1:00 PM	0.0	9.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/30/1986	12:30 PM	0.0	7.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/17/1986	1:00 PM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/15/1986	12:30 PM	0.0	4.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/4/1986	8:00 AM	0.0	3.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/10/1986	1:00 PM	0.0	6.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/7/1986	10:30 AM	0.0	7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/2/1986	1:00 PM	0.0	9.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/13/1987	12:30 PM	0.0	7.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/17/1987	1:00 PM	0.0	10	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/24/1987	10:00 AM	0.0	8.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/28/1987	10:00 AM	0.0	10	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/2/1987	1:00 PM	0.0	6.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/20/1987	11:00 AM	0.0	3.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/9/1987	1:30 PM	0.0	5.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/3/1987	11:00 AM	0.0	4.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/10/1987	11:00 AM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/21/1988	10:30 AM	0.0	6.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/7/1988	10:00 AM	0.0	11	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/5/1988	9:00 AM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/19/1988	10:00 AM	0.0	7.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/23/1988	10:30 AM	0.0	4.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/11/1988	10:00 AM	0.0	0.16	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/15/1988	10:30 AM	0.0	7.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/10/1988	10:00 AM	0.0	1.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/14/1988	11:00 AM	0.0	9.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/19/1989	11:00 AM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/23/1989	10:30 AM	0.0	11	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/13/1989	11:00 AM	0.0	16	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/10/1989	10:30 AM	0.0	15	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/20/1989	8:00 AM	0.0	15	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/2/1989	11:00 AM	0.0	5.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/14/1989	11:00 AM	0.0	7.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/8/1989	10:30 AM	0.0	3.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/12/1989	1:00 PM	0.0	7.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/24/1990	11:00 AM	0.0	6.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/28/1990	11:30 AM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/28/1990	11:00 AM	0.0	11	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/9/1990	11:00 AM	0.0	11	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/3/1990	11:30 AM	0.0	14	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/2/1990	11:30 AM	0.0	6.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/26/1990	11:00 AM	0.0	3.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/1/1990	10:00 AM	0.0	11	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/10/1990	12:30 PM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/16/1991	1:00 PM	0.0	8.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/5/1991	10:30 AM	0.0	11	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/3/1991	12:45 PM	0.0	11	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/22/1991	1:00 PM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/26/1991	1:00 PM	0.0	6.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/21/1991	1:00 PM	0.0	3.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/30/1991	1:00 PM	0.0	5.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/14/1991	12:30 PM	0.0	7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/18/1991	1:00 PM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/4/1992	1:00 PM	0.0	9.6	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Nitrate + Nitrite	3/17/1992	1:15 PM	0.0	9.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/3/1992	1:05 PM	0.0	10	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/13/1992	9:00 AM	0.0	11	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/12/1992	11:15 AM	0.0	10	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/23/1992	10:30 AM	0.0	6.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/18/1992	12:15 PM	0.0	9.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/16/1992	12:00 PM	0.0	9.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/1/1993	1:00 PM	0.0	10	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/9/1993	12:30 PM	0.0	8.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/7/1993	1:45 PM	0.0	9.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/24/1993	1:15 PM	0.0	6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/28/1993	11:15 AM	0.0	8.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/18/1993	1:45 PM	0.0	6.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/28/1993	12:30 PM	0.0	4.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/15/1993	11:15 AM	0.0	6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/20/1993	12:30 PM	0.0	7.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/2/1994	1:00 PM	0.0	6.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/29/1994	11:00 AM	0.0	5.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/28/1994	12:30 PM	0.0	6.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/30/1994	11:30 AM	0.0	5.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/15/1994	2:00 PM	0.0	3.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/6/1994	1:00 PM	0.0	1.37	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/26/1994	12:30 PM	0.0	5.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/2/1994	12:15 PM	0.0	6.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/4/1995	12:30 PM	0.0	6.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/1/1995	12:30 PM	0.0	8.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/27/1995	12:30 PM	0.0	5.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/29/1995	12:15 PM	0.0	6.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/26/1995	10:45 AM	0.0	6.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/11/1995	12:15 PM	0.0	10.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/14/1995	12:45 PM	0.0	11.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/7/1995	11:15 AM	0.0	3.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/16/1995	10:45 AM	0.0	4.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/12/1995	12:00 PM	0.0	8.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/29/1996	11:00 AM	0.0	9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/29/1996	10:30 AM	0.0	9.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/28/1996	10:45 AM	0.0	7.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/19/1996	12:45 PM	0.0	7.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/20/1996	1:00 PM	0.0	11.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/19/1996	10:45 AM	0.0	5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/26/1996	11:45 AM	0.0	3.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/9/1996	10:45 AM	0.0	6.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/25/1996	9:45 AM	0.0	4.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/7/1997	9:30 AM	0.0	8.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/19/1997	9:30 AM	0.0	8.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/13/1997	9:30 AM	0.0	11.47	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/13/1997	9:30 AM	0.0	11.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	4/30/1997	9:15 AM	0.0	7.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/8/1997	9:30 AM	0.0	9.1	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/27/1997	9:30 AM	0.0	4.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/18/1997	9:45 AM	0.0	5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/15/1997	9:00 AM	0.0	0.01	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/20/1997	8:00 AM	0.0	6.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/6/1998	2:00 PM	0.0	7.2	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/13/1998	1:00 PM	0.0	12.4	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Nitrate + Nitrite	4/29/1998	10:15 AM	0.0	8.66	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/4/1998	7:00 AM	0.0	10.02	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/4/1998	11:45 AM	0.0	1.17	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/31/1998	12:15 PM	0.0	0.17	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/28/1998	11:30 AM	0.0	0.01	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/4/1998	8:30 AM	0.0	0.27	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/8/1998	10:45 AM	0.0	0.53	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/3/2000	12:00 AM	0.0	0.23	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/14/2000	12:00 AM	0.0	0.46	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/24/2000	12:00 AM	0.0	8.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/1/2000	12:00 AM	0.0	15	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/15/2000	12:00 AM	0.0	1.96	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/13/2000	12:00 AM	0.0	5.02	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/30/2000	12:00 AM	0.0	3.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	12/13/2000	12:00 AM	0.0	10	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/17/2001	12:00 AM	0.0	6.9	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/27/2001	12:00 AM	0.0	9.4	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/29/2001	12:00 AM	0.0	11	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/2/2001	12:00 AM	0.0	7.3	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/29/2001	12:00 AM	0.0	7.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/19/2001	12:00 AM	0.0	1.14	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	8/20/2001	12:00 AM	0.0	1.99	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	10/24/2001	12:00 AM	0.0	7.8	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	11/28/2001	12:00 AM	0.0	6.5	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/17/2002	12:00 AM	0.0	9.7	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	2/19/2002	12:00 AM	0.0	10	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	3/27/2002	12:00 AM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	5/8/2002	12:00 AM	0.0	13	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	6/13/2002	12:00 AM	0.0	12	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	7/22/2002	12:00 AM	0.0	1.6	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	9/4/2002	12:00 AM	0.0	3.39	mg/L
BPJ-3	BPJ-3	Nitrate + Nitrite	1/22/2004		0.0	7.86	mg/L
BPJ-3	BPJ-3	pH	12/3/1958	1:00 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	8/10/1959	1:00 AM	0.0	8.6	NA
BPJ-3	BPJ-3	pH	12/1/1959	1:00 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	7/28/1960	1:00 AM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	6/20/1961	1:00 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	3/13/1962	1:00 AM	0.0	7.3	NA
BPJ-3	BPJ-3	pH	12/17/1962	1:00 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	4/30/1963	1:00 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	9/30/1963	1:00 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	9/23/1964	3:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	11/18/1964	2:00 PM	0.0	7.6	NA
BPJ-3	BPJ-3	pH	1/27/1965	1:00 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	4/28/1965	1:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	6/23/1965	1:00 PM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	10/6/1965	1:00 PM	0.0	8.6	NA
BPJ-3	BPJ-3	pH	12/20/1965	2:00 PM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	1/31/1966	2:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	3/10/1966	1:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	5/5/1966	1:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	7/7/1966	1:00 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	8/18/1966	3:00 PM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	9/8/1966	2:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	10/12/1966	1:00 AM	0.0	7.4	NA

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	pH	11/17/1966	1:00 PM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	2/21/1967	2:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	5/3/1967	2:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	6/14/1967	2:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	8/31/1967	2:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	11/2/1967	1:00 PM	0.0	7.6	NA
BPJ-3	BPJ-3	pH	3/4/1968	2:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	4/10/1968	1:00 PM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	5/1/1968	1:00 PM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	6/5/1968	1:00 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	7/24/1968	1:00 PM	0.0	8.8	NA
BPJ-3	BPJ-3	pH	8/28/1968	2:00 PM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	10/2/1968	1:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	11/21/1968	1:00 PM	0.0	7.4	NA
BPJ-3	BPJ-3	pH	1/15/1969	2:00 PM	0.0	7.7	NA
BPJ-3	BPJ-3	pH	2/26/1969	1:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	3/31/1969	1:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	4/22/1969	2:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	5/28/1969	1:00 PM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	6/30/1969	1:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	8/28/1969	1:00 PM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	9/29/1969	1:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	10/22/1969	12:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	12/1/1969	1:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	12/17/1969	1:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	2/16/1970	1:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	3/30/1970	2:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	5/14/1970	2:00 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	6/24/1970	2:00 PM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	8/13/1970	2:00 PM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	11/2/1970	1:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	1/19/1971	2:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	3/24/1971	2:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	4/26/1971	2:00 PM	0.0	8.7	NA
BPJ-3	BPJ-3	pH	6/3/1971	2:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	9/22/1971	2:00 PM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	10/28/1971	11:00 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	12/29/1971	10:00 AM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	3/29/1972	10:00 AM	0.0	7.6	NA
BPJ-3	BPJ-3	pH	5/30/1972	2:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	7/5/1972	1:00 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	7/27/1972	3:00 PM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	8/22/1972	1:00 PM	0.0	8.6	NA
BPJ-3	BPJ-3	pH	9/20/1972	2:00 PM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	10/17/1972	8:00 AM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	11/30/1972	11:00 AM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	1/4/1973	12:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	2/14/1973	12:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	3/15/1973	12:00 PM	0.0	7.6	NA
BPJ-3	BPJ-3	pH	4/11/1973	3:00 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	5/9/1973	10:00 AM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	6/6/1973	10:00 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	7/11/1973	9:00 AM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	8/17/1973	10:00 AM	0.0	8	NA
BPJ-3	BPJ-3	pH	9/20/1973	1:00 PM	0.0	8.4	NA

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	pH	10/24/1973	3:00 PM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	12/4/1973	2:00 PM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	12/28/1973	10:00 AM	0.0	8	NA
BPJ-3	BPJ-3	pH	2/27/1974	1:00 PM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	3/26/1974	1:00 PM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	4/18/1974	1:00 PM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	5/29/1974	3:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	6/19/1974	3:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	6/28/1974	3:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	7/2/1974	12:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	7/10/1974	5:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	7/17/1974	9:00 AM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	8/27/1974	11:00 AM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	9/24/1974	12:00 PM	0.0	8.6	NA
BPJ-3	BPJ-3	pH	11/21/1974	2:00 PM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	12/17/1974	9:00 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	1/28/1975	10:00 AM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	3/26/1975	2:00 PM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	5/1/1975	2:00 PM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	6/3/1975	2:00 PM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	6/27/1975	2:00 PM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	7/15/1975	2:00 PM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	9/14/1976	10:00 AM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	1/18/1978	12:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	1/18/1978	12:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	2/22/1978	12:00 PM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	2/22/1978	12:00 PM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	3/28/1978	11:00 AM	0.0	8	NA
BPJ-3	BPJ-3	pH	3/28/1978	11:00 AM	0.0	8	NA
BPJ-3	BPJ-3	pH	4/17/1978	3:00 PM	0.0	8.6	NA
BPJ-3	BPJ-3	pH	5/10/1978	3:00 PM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	5/10/1978	3:00 PM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	5/26/1978	2:00 PM	0.0	7.5	NA
BPJ-3	BPJ-3	pH	5/26/1978	2:00 PM	0.0	7.5	NA
BPJ-3	BPJ-3	pH	6/26/1978	2:00 PM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	6/26/1978	2:00 PM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	7/14/1978	3:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	8/16/1978	11:00 AM	0.0	8.6	NA
BPJ-3	BPJ-3	pH	9/21/1978	2:00 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	10/19/1978	11:00 AM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	11/30/1978	1:00 PM	0.0	8.6	NA
BPJ-3	BPJ-3	pH	12/21/1978	12:00 PM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	1/11/1979	12:00 PM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	2/15/1979	11:00 AM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	3/14/1979	11:00 AM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	4/10/1979	10:00 AM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	5/2/1979	12:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	7/11/1979	10:15 AM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	7/17/1979	12:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	7/30/1979	1:30 PM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	8/6/1979	11:00 AM	0.0	7.2	NA
BPJ-3	BPJ-3	pH	9/17/1979	10:00 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	10/15/1979	2:30 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	10/16/1979	10:00 AM	0.0	6.6	NA
BPJ-3	BPJ-3	pH	11/8/1979	12:00 PM	0.0	7.9	NA

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	pH	12/6/1979	11:00 AM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	2/27/1980	2:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	3/13/1980	10:00 AM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	4/1/1980	9:30 AM	0.0	7.5	NA
BPJ-3	BPJ-3	pH	5/7/1980	8:00 AM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	5/27/1980	1:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	6/16/1980	2:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	7/24/1980	11:00 AM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	8/11/1980	10:30 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	8/12/1980	11:00 AM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	9/11/1980	1:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	10/3/1980	10:00 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	10/28/1980	11:00 AM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	11/17/1980	9:30 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	12/9/1980	4:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	12/31/1980	1:00 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	1/22/1981	1:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	2/19/1981	8:00 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	3/17/1981	10:00 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	4/23/1981	1:00 PM	0.0	7.4	NA
BPJ-3	BPJ-3	pH	5/21/1981	3:00 PM	0.0	7.7	NA
BPJ-3	BPJ-3	pH	6/25/1981	9:00 AM	0.0	7.5	NA
BPJ-3	BPJ-3	pH	9/4/1981	9:00 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	9/30/1981	3:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	11/10/1981	2:00 PM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	1/6/1982	2:00 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	3/17/1982	2:00 PM	0.0	7.5	NA
BPJ-3	BPJ-3	pH	4/14/1982	2:00 PM	0.0	7.7	NA
BPJ-3	BPJ-3	pH	5/20/1982	2:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	6/24/1982	2:00 PM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	8/11/1982	3:00 PM	0.0	7.7	NA
BPJ-3	BPJ-3	pH	9/23/1982	2:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	11/4/1982	2:00 PM	0.0	7.5	NA
BPJ-3	BPJ-3	pH	12/21/1982	2:00 PM	0.0	7.6	NA
BPJ-3	BPJ-3	pH	2/4/1983	10:30 AM	0.0	7.3	NA
BPJ-3	BPJ-3	pH	3/16/1983	11:00 AM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	4/13/1983	9:00 AM	0.0	7.7	NA
BPJ-3	BPJ-3	pH	5/4/1983	1:00 PM	0.0	7.2	NA
BPJ-3	BPJ-3	pH	6/22/1983	9:00 AM	0.0	7.4	NA
BPJ-3	BPJ-3	pH	8/18/1983	12:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	11/2/1983	2:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	12/8/1983	2:00 PM	0.0	7.4	NA
BPJ-3	BPJ-3	pH	3/15/1984	10:00 AM	0.0	7.3	NA
BPJ-3	BPJ-3	pH	4/19/1984	8:00 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	5/10/1984	9:00 AM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	6/21/1984	8:00 AM	0.0	7.7	NA
BPJ-3	BPJ-3	pH	7/18/1984	11:00 AM	0.0	8.9	NA
BPJ-3	BPJ-3	pH	8/22/1984	11:00 AM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	9/19/1984	9:00 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	11/7/1984	11:00 AM	0.0	7.5	NA
BPJ-3	BPJ-3	pH	12/13/1984	9:00 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	1/16/1985	11:00 AM	0.0	7.2	NA
BPJ-3	BPJ-3	pH	3/6/1985	10:00 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	4/15/1985	11:00 AM	0.0	7.5	NA
BPJ-3	BPJ-3	pH	5/23/1985	9:00 AM	0.0	8.5	NA

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	pH	7/2/1985	9:00 AM	0.0	7.7	NA
BPJ-3	BPJ-3	pH	8/19/1985	1:30 PM	0.0	6.8	NA
BPJ-3	BPJ-3	pH	9/16/1985	1:00 PM	0.0	7.6	NA
BPJ-3	BPJ-3	pH	10/16/1985	1:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	1/15/1986	2:00 PM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	2/20/1986	1:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	3/25/1986	1:00 PM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	4/30/1986	12:30 PM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	6/17/1986	1:00 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	7/15/1986	12:30 PM	0.0	7.6	NA
BPJ-3	BPJ-3	pH	8/4/1986	8:00 AM	0.0	8	NA
BPJ-3	BPJ-3	pH	9/10/1986	1:00 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	10/7/1986	10:30 AM	0.0	7.4	NA
BPJ-3	BPJ-3	pH	12/2/1986	1:00 PM	0.0	7.5	NA
BPJ-3	BPJ-3	pH	1/13/1987	12:30 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	2/17/1987	1:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	3/24/1987	10:00 AM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	4/28/1987	10:00 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	6/2/1987	1:00 PM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	7/20/1987	11:00 AM	0.0	8	NA
BPJ-3	BPJ-3	pH	7/20/1987	11:20 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	9/9/1987	1:30 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	11/3/1987	11:00 AM	0.0	7.5	NA
BPJ-3	BPJ-3	pH	12/10/1987	11:00 AM	0.0	7.6	NA
BPJ-3	BPJ-3	pH	1/21/1988	10:30 AM	0.0	7.3	NA
BPJ-3	BPJ-3	pH	3/7/1988	10:00 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	4/5/1988	9:00 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	5/19/1988	10:00 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	6/23/1988	10:30 AM	0.0	8	NA
BPJ-3	BPJ-3	pH	8/11/1988	10:00 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	9/15/1988	10:30 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	11/10/1988	10:00 AM	0.0	7.3	NA
BPJ-3	BPJ-3	pH	12/14/1988	11:00 AM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	1/19/1989	11:00 AM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	2/23/1989	10:30 AM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	4/13/1989	11:00 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	6/20/1989	8:00 AM	0.0	7.7	NA
BPJ-3	BPJ-3	pH	8/2/1989	11:00 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	9/14/1989	11:00 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	11/8/1989	10:30 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	12/12/1989	1:00 PM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	1/24/1990	11:00 AM	0.0	7.6	NA
BPJ-3	BPJ-3	pH	2/28/1990	11:30 AM	0.0	6.7	NA
BPJ-3	BPJ-3	pH	3/28/1990	11:00 AM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	5/9/1990	11:00 AM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	7/3/1990	11:30 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	8/2/1990	11:30 AM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	9/26/1990	11:00 AM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	11/1/1990	10:00 AM	0.0	7.5	NA
BPJ-3	BPJ-3	pH	12/10/1990	12:30 PM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	1/16/1991	1:00 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	3/5/1991	10:30 AM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	4/3/1991	12:45 PM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	5/22/1991	1:00 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	6/26/1991	1:00 PM	0.0	8.6	NA

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	pH	8/21/1991	1:00 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	9/30/1991	1:00 PM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	11/14/1991	12:30 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	12/18/1991	1:00 PM	0.0	8.6	NA
BPJ-3	BPJ-3	pH	2/4/1992	1:00 PM	0.0	8.7	NA
BPJ-3	BPJ-3	pH	3/17/1992	1:15 PM	0.0	8.8	NA
BPJ-3	BPJ-3	pH	6/3/1992	1:05 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	7/13/1992	9:00 AM	0.0	7.4	NA
BPJ-3	BPJ-3	pH	8/12/1992	11:15 AM	0.0	7.6	NA
BPJ-3	BPJ-3	pH	9/23/1992	10:30 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	11/18/1992	12:15 PM	0.0	6.8	NA
BPJ-3	BPJ-3	pH	12/16/1992	12:00 PM	0.0	7.4	NA
BPJ-3	BPJ-3	pH	2/1/1993	1:00 PM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	3/9/1993	12:30 PM	0.0	6.6	NA
BPJ-3	BPJ-3	pH	4/7/1993	1:45 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	5/24/1993	1:15 PM	0.0	7.5	NA
BPJ-3	BPJ-3	pH	6/28/1993	11:15 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	8/18/1993	1:45 PM	0.0	7.7	NA
BPJ-3	BPJ-3	pH	9/28/1993	12:30 PM	0.0	7.5	NA
BPJ-3	BPJ-3	pH	11/15/1993	11:15 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	12/20/1993	12:30 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	3/2/1994	1:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	3/29/1994	11:00 AM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	4/28/1994	12:30 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	6/30/1994	11:30 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	8/15/1994	2:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	9/6/1994	1:00 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	9/26/1994	12:30 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	11/2/1994	12:15 PM	0.0	7.7	NA
BPJ-3	BPJ-3	pH	1/4/1995	12:30 PM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	2/1/1995	12:30 PM	0.0	8.7	NA
BPJ-3	BPJ-3	pH	2/27/1995	12:30 PM	0.0	8.6	NA
BPJ-3	BPJ-3	pH	3/29/1995	12:15 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	4/26/1995	10:45 AM	0.0	7.7	NA
BPJ-3	BPJ-3	pH	5/11/1995	12:15 PM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	6/14/1995	12:45 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	9/7/1995	11:15 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	10/16/1995	10:45 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	12/12/1995	12:00 PM	0.0	8.2	NA
BPJ-3	BPJ-3	pH	1/29/1996	11:00 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	2/29/1996	10:30 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	3/28/1996	10:45 AM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	4/19/1996	12:45 PM	0.0	8.4	NA
BPJ-3	BPJ-3	pH	5/20/1996	1:00 PM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	7/19/1996	10:45 AM	0.0	8.5	NA
BPJ-3	BPJ-3	pH	8/26/1996	11:45 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	10/9/1996	10:45 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	11/25/1996	9:45 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	1/7/1997	9:30 AM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	2/19/1997	9:30 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	3/13/1997	9:30 AM	0.0	7.7	NA
BPJ-3	BPJ-3	pH	4/30/1997	9:15 AM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	7/8/1997	9:30 AM	0.0	7.9	NA
BPJ-3	BPJ-3	pH	8/27/1997	9:30 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	9/18/1997	9:45 AM	0.0	8	NA

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	pH	10/15/1997	9:00 AM	0.0	8	NA
BPJ-3	BPJ-3	pH	11/20/1997	8:00 AM	0.0	8	NA
BPJ-3	BPJ-3	pH	1/6/1998	2:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	3/13/1998	1:00 PM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	4/29/1998	10:15 AM	0.0	8.1	NA
BPJ-3	BPJ-3	pH	6/4/1998	7:00 AM	0.0	8.3	NA
BPJ-3	BPJ-3	pH	8/4/1998	11:45 AM	0.0	7.1	NA
BPJ-3	BPJ-3	pH	8/31/1998	12:15 PM	0.0	8	NA
BPJ-3	BPJ-3	pH	9/28/1998	11:30 AM	0.0	7.8	NA
BPJ-3	BPJ-3	pH	11/4/1998	8:30 AM	0.0	7.4	NA
BPJ-3	BPJ-3	pH	12/8/1998	10:45 AM	0.0	7.5	NA
BPJ-3	BPJ-3	pH	1/3/2000	12:00 AM	0.0	8.12	NA
BPJ-3	BPJ-3	pH	2/14/2000	12:00 AM	0.0	7.96	NA
BPJ-3	BPJ-3	pH	3/24/2000	12:00 AM	0.0	8	NA
BPJ-3	BPJ-3	pH	6/1/2000	12:00 AM	0.0	7.65	NA
BPJ-3	BPJ-3	pH	8/15/2000	12:00 AM	0.0	8.22	NA
BPJ-3	BPJ-3	pH	9/13/2000	12:00 AM	0.0	7.69	NA
BPJ-3	BPJ-3	pH	10/30/2000	12:00 AM	0.0	7.71	NA
BPJ-3	BPJ-3	pH	12/13/2000	12:00 AM	0.0	7.87	NA
BPJ-3	BPJ-3	pH	1/17/2001	12:00 AM	0.0	7.34	NA
BPJ-3	BPJ-3	pH	2/27/2001	12:00 AM	0.0	7.3	NA
BPJ-3	BPJ-3	pH	3/29/2001	12:00 AM	0.0	8.39	NA
BPJ-3	BPJ-3	pH	5/2/2001	12:00 AM	0.0	8.24	NA
BPJ-3	BPJ-3	pH	5/29/2001	12:00 AM	0.0	8.01	NA
BPJ-3	BPJ-3	pH	7/19/2001	12:00 AM	0.0	8.81	NA
BPJ-3	BPJ-3	pH	8/20/2001	12:00 AM	0.0	8.12	NA
BPJ-3	BPJ-3	pH	10/24/2001	12:00 AM	0.0	7.76	NA
BPJ-3	BPJ-3	pH	11/28/2001	12:00 AM	0.0	7.67	NA
BPJ-3	BPJ-3	pH	1/17/2002	12:00 AM	0.0	7.97	NA
BPJ-3	BPJ-3	pH	2/19/2002	12:00 AM	0.0	7.78	NA
BPJ-3	BPJ-3	pH	3/27/2002	12:00 AM	0.0	7.19	NA
BPJ-3	BPJ-3	pH	5/8/2002	12:00 AM	0.0	7.54	NA
BPJ-3	BPJ-3	pH	6/13/2002	12:00 AM	0.0	7.33	NA
BPJ-3	BPJ-3	pH	7/22/2002	12:00 AM	0.0	8.89	NA
BPJ-3	BPJ-3	pH	9/4/2002	12:00 AM	0.0	8.13	NA
BPJ-3	BPJ-3	pH	10/8/2002	12:00 AM	0.0	8.12	NA
BPJ-3	BPJ-3	pH	11/21/2002	12:00 AM	0.0	8.22	NA
BPJ-3	BPJ-3	Temperature	12/3/1958	1:00 AM	0.0	3.3	° C
BPJ-3	BPJ-3	Temperature	8/10/1959	1:00 AM	0.0	25.6	° C
BPJ-3	BPJ-3	Temperature	12/1/1959	1:00 AM	0.0	1.1	° C
BPJ-3	BPJ-3	Temperature	7/28/1960	1:00 AM	0.0	26.7	° C
BPJ-3	BPJ-3	Temperature	6/20/1961	1:00 AM	0.0	17.8	° C
BPJ-3	BPJ-3	Temperature	3/13/1962	1:00 AM	0.0	3.3	° C
BPJ-3	BPJ-3	Temperature	12/17/1962	1:00 AM	0.0	3.3	° C
BPJ-3	BPJ-3	Temperature	4/30/1963	1:00 AM	0.0	13.3	° C
BPJ-3	BPJ-3	Temperature	9/30/1963	1:00 AM	0.0	16.7	° C
BPJ-3	BPJ-3	Temperature	9/23/1964	3:00 PM	0.0	23.9	° C
BPJ-3	BPJ-3	Temperature	11/18/1964	2:00 PM	0.0	10	° C
BPJ-3	BPJ-3	Temperature	1/27/1965	1:00 PM	0.0	0.6	° C
BPJ-3	BPJ-3	Temperature	4/28/1965	1:00 PM	0.0	11.1	° C
BPJ-3	BPJ-3	Temperature	6/23/1965	1:00 PM	0.0	24.4	° C
BPJ-3	BPJ-3	Temperature	10/6/1965	1:00 PM	0.0	13.3	° C
BPJ-3	BPJ-3	Temperature	12/20/1965	2:00 PM	0.0	1.1	° C
BPJ-3	BPJ-3	Temperature	1/31/1966	2:00 PM	0.0	0	° C
BPJ-3	BPJ-3	Temperature	3/10/1966	1:00 PM	0.0	7.2	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Temperature	5/5/1966	1:00 PM	0.0	16.7	° C
BPJ-3	BPJ-3	Temperature	7/7/1966	1:00 PM	0.0	26.7	° C
BPJ-3	BPJ-3	Temperature	8/18/1966	3:00 PM	0.0	28.9	° C
BPJ-3	BPJ-3	Temperature	9/8/1966	2:00 PM	0.0	21.1	° C
BPJ-3	BPJ-3	Temperature	10/12/1966	1:00 AM	0.0	11.5	° C
BPJ-3	BPJ-3	Temperature	11/17/1966	1:00 PM	0.0	11.1	° C
BPJ-3	BPJ-3	Temperature	2/21/1967	2:00 PM	0.0	1.7	° C
BPJ-3	BPJ-3	Temperature	5/3/1967	2:00 PM	0.0	14.4	° C
BPJ-3	BPJ-3	Temperature	6/14/1967	2:00 PM	0.0	24.4	° C
BPJ-3	BPJ-3	Temperature	8/31/1967	2:00 PM	0.0	20.6	° C
BPJ-3	BPJ-3	Temperature	11/2/1967	1:00 PM	0.0	10	° C
BPJ-3	BPJ-3	Temperature	3/4/1968	2:00 PM	0.0	4.4	° C
BPJ-3	BPJ-3	Temperature	4/10/1968	1:00 PM	0.0	12.8	° C
BPJ-3	BPJ-3	Temperature	5/1/1968	1:00 PM	0.0	18.9	° C
BPJ-3	BPJ-3	Temperature	6/5/1968	1:00 PM	0.0	21.1	° C
BPJ-3	BPJ-3	Temperature	7/24/1968	1:00 PM	0.0	27.8	° C
BPJ-3	BPJ-3	Temperature	8/28/1968	2:00 PM	0.0	22.8	° C
BPJ-3	BPJ-3	Temperature	10/2/1968	1:00 PM	0.0	19.4	° C
BPJ-3	BPJ-3	Temperature	11/21/1968	1:00 PM	0.0	4.4	° C
BPJ-3	BPJ-3	Temperature	1/15/1969	2:00 PM	0.0	0	° C
BPJ-3	BPJ-3	Temperature	2/26/1969	1:00 PM	0.0	5.6	° C
BPJ-3	BPJ-3	Temperature	3/31/1969	1:00 PM	0.0	3.9	° C
BPJ-3	BPJ-3	Temperature	4/22/1969	2:00 PM	0.0	12.2	° C
BPJ-3	BPJ-3	Temperature	5/28/1969	1:00 PM	0.0	24.4	° C
BPJ-3	BPJ-3	Temperature	6/30/1969	1:00 PM	0.0	27.2	° C
BPJ-3	BPJ-3	Temperature	8/28/1969	1:00 PM	0.0	26.7	° C
BPJ-3	BPJ-3	Temperature	9/29/1969	1:00 PM	0.0	17.2	° C
BPJ-3	BPJ-3	Temperature	10/22/1969	12:00 PM	0.0	11.1	° C
BPJ-3	BPJ-3	Temperature	12/1/1969	1:00 PM	0.0	3.9	° C
BPJ-3	BPJ-3	Temperature	12/17/1969	1:00 PM	0.0	2.2	° C
BPJ-3	BPJ-3	Temperature	2/16/1970	1:00 PM	0.0	0.6	° C
BPJ-3	BPJ-3	Temperature	3/30/1970	2:00 PM	0.0	6.7	° C
BPJ-3	BPJ-3	Temperature	5/14/1970	2:00 PM	0.0	18.3	° C
BPJ-3	BPJ-3	Temperature	6/24/1970	2:00 PM	0.0	24.4	° C
BPJ-3	BPJ-3	Temperature	8/13/1970	2:00 PM	0.0	27.2	° C
BPJ-3	BPJ-3	Temperature	11/2/1970	1:00 PM	0.0	8.9	° C
BPJ-3	BPJ-3	Temperature	1/19/1971	2:00 PM	0.0	0	° C
BPJ-3	BPJ-3	Temperature	3/24/1971	2:00 PM	0.0	4.4	° C
BPJ-3	BPJ-3	Temperature	4/26/1971	2:00 PM	0.0	16.7	° C
BPJ-3	BPJ-3	Temperature	6/3/1971	2:00 PM	0.0	25	° C
BPJ-3	BPJ-3	Temperature	9/22/1971	2:00 PM	0.0	18.3	° C
BPJ-3	BPJ-3	Temperature	10/28/1971	11:00 AM	0.0	15	° C
BPJ-3	BPJ-3	Temperature	12/29/1971	10:00 AM	0.0	3.9	° C
BPJ-3	BPJ-3	Temperature	3/29/1972	10:00 AM	0.0	6.1	° C
BPJ-3	BPJ-3	Temperature	5/30/1972	2:00 PM	0.0	21.1	° C
BPJ-3	BPJ-3	Temperature	7/5/1972	1:00 AM	0.0	21.1	° C
BPJ-3	BPJ-3	Temperature	7/27/1972	3:00 PM	0.0	25	° C
BPJ-3	BPJ-3	Temperature	8/22/1972	1:00 PM	0.0	28.3	° C
BPJ-3	BPJ-3	Temperature	9/20/1972	2:00 PM	0.0	25	° C
BPJ-3	BPJ-3	Temperature	10/17/1972	8:00 AM	0.0	12.8	° C
BPJ-3	BPJ-3	Temperature	11/30/1972	11:00 AM	0.0	5.6	° C
BPJ-3	BPJ-3	Temperature	1/4/1973	12:00 PM	0.0	2.8	° C
BPJ-3	BPJ-3	Temperature	2/14/1973	12:00 PM	0.0	3.9	° C
BPJ-3	BPJ-3	Temperature	3/15/1973	12:00 PM	0.0	12.2	° C
BPJ-3	BPJ-3	Temperature	4/11/1973	3:00 PM	0.0	7.2	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Temperature	5/9/1973	10:00 AM	0.0	15	° C
BPJ-3	BPJ-3	Temperature	6/6/1973	10:00 AM	0.0	17.8	° C
BPJ-3	BPJ-3	Temperature	7/11/1973	9:00 AM	0.0	23.9	° C
BPJ-3	BPJ-3	Temperature	8/17/1973	10:00 AM	0.0	21.1	° C
BPJ-3	BPJ-3	Temperature	9/20/1973	1:00 PM	0.0	17.8	° C
BPJ-3	BPJ-3	Temperature	10/24/1973	3:00 PM	0.0	16.7	° C
BPJ-3	BPJ-3	Temperature	12/4/1973	2:00 PM	0.0	11.7	° C
BPJ-3	BPJ-3	Temperature	12/28/1973	10:00 AM	0.0	3.9	° C
BPJ-3	BPJ-3	Temperature	2/27/1974	1:00 PM	0.0	2.8	° C
BPJ-3	BPJ-3	Temperature	3/26/1974	1:00 PM	0.0	5	° C
BPJ-3	BPJ-3	Temperature	4/18/1974	1:00 PM	0.0	12.2	° C
BPJ-3	BPJ-3	Temperature	5/29/1974	3:00 PM	0.0	17.8	° C
BPJ-3	BPJ-3	Temperature	6/19/1974	3:00 PM	0.0	21.7	° C
BPJ-3	BPJ-3	Temperature	6/28/1974	3:00 PM	0.0	20	° C
BPJ-3	BPJ-3	Temperature	7/2/1974	12:00 PM	0.0	22.8	° C
BPJ-3	BPJ-3	Temperature	7/10/1974	5:00 PM	0.0	25	° C
BPJ-3	BPJ-3	Temperature	7/17/1974	9:00 AM	0.0	23.9	° C
BPJ-3	BPJ-3	Temperature	8/27/1974	11:00 AM	0.0	25.6	° C
BPJ-3	BPJ-3	Temperature	9/24/1974	12:00 PM	0.0	15.6	° C
BPJ-3	BPJ-3	Temperature	11/21/1974	2:00 PM	0.0	7.2	° C
BPJ-3	BPJ-3	Temperature	11/21/1974	2:00 PM	0.0	45	° F
BPJ-3	BPJ-3	Temperature	12/17/1974	9:00 AM	0.0	4.4	° C
BPJ-3	BPJ-3	Temperature	12/17/1974	9:00 AM	0.0	40	° F
BPJ-3	BPJ-3	Temperature	3/26/1975	2:00 PM	0.0	4.4	° C
BPJ-3	BPJ-3	Temperature	3/26/1975	2:00 PM	0.0	40	° F
BPJ-3	BPJ-3	Temperature	6/3/1975	2:00 PM	0.0	19.4	° C
BPJ-3	BPJ-3	Temperature	6/3/1975	2:00 PM	0.0	67	° F
BPJ-3	BPJ-3	Temperature	6/27/1975	2:00 PM	0.0	26.1	° C
BPJ-3	BPJ-3	Temperature	6/27/1975	2:00 PM	0.0	79	° F
BPJ-3	BPJ-3	Temperature	7/15/1975	2:00 PM	0.0	21.1	° C
BPJ-3	BPJ-3	Temperature	7/15/1975	2:00 PM	0.0	70	° F
BPJ-3	BPJ-3	Temperature	11/4/1975	2:25 PM	0.0	16	° C
BPJ-3	BPJ-3	Temperature	12/3/1975	10:30 AM	0.0	3	° C
BPJ-3	BPJ-3	Temperature	2/17/1976	11:20 AM	0.0	2	° C
BPJ-3	BPJ-3	Temperature	4/7/1976	11:30 AM	0.0	14	° C
BPJ-3	BPJ-3	Temperature	5/11/1976	10:35 AM	0.0	15	° C
BPJ-3	BPJ-3	Temperature	7/9/1976	11:20 AM	0.0	23.5	° C
BPJ-3	BPJ-3	Temperature	8/6/1976	2:50 PM	0.0	24	° C
BPJ-3	BPJ-3	Temperature	9/2/1976	11:20 AM	0.0	20	° C
BPJ-3	BPJ-3	Temperature	9/14/1976	10:00 AM	0.0	21	° C
BPJ-3	BPJ-3	Temperature	1/18/1978	12:00 PM	0.0	0	° C
BPJ-3	BPJ-3	Temperature	2/22/1978	12:00 PM	0.0	1	° C
BPJ-3	BPJ-3	Temperature	2/22/1978	12:00 PM	0.0	1	° C
BPJ-3	BPJ-3	Temperature	3/28/1978	11:00 AM	0.0	7	° C
BPJ-3	BPJ-3	Temperature	3/28/1978	11:00 AM	0.0	7	° C
BPJ-3	BPJ-3	Temperature	4/17/1978	3:00 PM	0.0	12	° C
BPJ-3	BPJ-3	Temperature	5/10/1978	3:00 PM	0.0	14.5	° C
BPJ-3	BPJ-3	Temperature	5/17/1978	10:30 AM	0.0	16	° C
BPJ-3	BPJ-3	Temperature	5/26/1978	2:00 PM	0.0	21	° C
BPJ-3	BPJ-3	Temperature	6/26/1978	2:00 PM	0.0	24	° C
BPJ-3	BPJ-3	Temperature	7/5/1978	2:40 PM	0.0	25	° C
BPJ-3	BPJ-3	Temperature	7/14/1978	11:00 AM	0.0	20	° C
BPJ-3	BPJ-3	Temperature	7/14/1978	3:00 PM	0.0	21.5	° C
BPJ-3	BPJ-3	Temperature	8/1/1978	1:10 PM	0.0	26	° C
BPJ-3	BPJ-3	Temperature	8/16/1978	11:00 AM	0.0	24.5	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Temperature	9/13/1978	10:30 AM	0.0	23	° C
BPJ-3	BPJ-3	Temperature	9/21/1978	2:00 PM	0.0	21	° C
BPJ-3	BPJ-3	Temperature	10/11/1978	2:40 PM	0.0	15	° C
BPJ-3	BPJ-3	Temperature	10/19/1978	11:00 AM	0.0	10	° C
BPJ-3	BPJ-3	Temperature	11/21/1978	2:25 PM	0.0	6	° C
BPJ-3	BPJ-3	Temperature	11/30/1978	1:00 PM	0.0	4.5	° C
BPJ-3	BPJ-3	Temperature	12/21/1978	12:00 PM	0.0	3.5	° C
BPJ-3	BPJ-3	Temperature	1/11/1979	12:00 PM	0.0	1	° C
BPJ-3	BPJ-3	Temperature	1/17/1979	12:40 PM	0.0	10	° C
BPJ-3	BPJ-3	Temperature	2/14/1979	1:30 PM	0.0	0	° C
BPJ-3	BPJ-3	Temperature	2/15/1979	11:00 AM	0.0	0.5	° C
BPJ-3	BPJ-3	Temperature	3/7/1979	11:30 AM	0.0	1	° C
BPJ-3	BPJ-3	Temperature	3/14/1979	11:00 AM	0.0	6	° C
BPJ-3	BPJ-3	Temperature	4/10/1979	10:00 AM	0.0	9	° C
BPJ-3	BPJ-3	Temperature	4/16/1979	2:40 PM	0.0	7	° C
BPJ-3	BPJ-3	Temperature	5/2/1979	12:00 PM	0.0	16.5	° C
BPJ-3	BPJ-3	Temperature	5/23/1979	11:40 AM	0.0	17	° C
BPJ-3	BPJ-3	Temperature	6/5/1979	1:00 PM	0.0	23.5	° C
BPJ-3	BPJ-3	Temperature	7/11/1979	10:15 AM	0.0	24	° C
BPJ-3	BPJ-3	Temperature	7/17/1979	12:00 PM	0.0	25	° C
BPJ-3	BPJ-3	Temperature	7/30/1979	1:30 PM	0.0	27.5	° C
BPJ-3	BPJ-3	Temperature	8/6/1979	11:00 AM	0.0	24.5	° C
BPJ-3	BPJ-3	Temperature	8/15/1979	4:10 PM	0.0	20.5	° C
BPJ-3	BPJ-3	Temperature	9/17/1979	10:00 AM	0.0	18	° C
BPJ-3	BPJ-3	Temperature	10/15/1979	2:30 PM	0.0	12	° C
BPJ-3	BPJ-3	Temperature	10/16/1979	10:00 AM	0.0	11	° C
BPJ-3	BPJ-3	Temperature	11/8/1979	12:00 PM	0.0	7	° C
BPJ-3	BPJ-3	Temperature	12/6/1979	11:00 AM	0.0	3.5	° C
BPJ-3	BPJ-3	Temperature	12/10/1979	12:30 PM	0.0	11	° C
BPJ-3	BPJ-3	Temperature	1/17/1980	10:00 AM	0.0	5.5	° C
BPJ-3	BPJ-3	Temperature	2/27/1980	2:00 PM	0.0	2	° C
BPJ-3	BPJ-3	Temperature	3/13/1980	10:00 AM	0.0	2	° C
BPJ-3	BPJ-3	Temperature	4/1/1980	9:30 AM	0.0	5.5	° C
BPJ-3	BPJ-3	Temperature	5/7/1980	8:00 AM	0.0	18	° C
BPJ-3	BPJ-3	Temperature	5/9/1980	3:20 PM	0.0	15	° C
BPJ-3	BPJ-3	Temperature	5/27/1980	1:00 PM	0.0	21	° C
BPJ-3	BPJ-3	Temperature	6/16/1980	2:00 PM	0.0	22	° C
BPJ-3	BPJ-3	Temperature	6/27/1980	9:45 AM	0.0	25	° C
BPJ-3	BPJ-3	Temperature	7/24/1980	11:00 AM	0.0	28	° C
BPJ-3	BPJ-3	Temperature	8/11/1980	10:30 AM	0.0	26.5	° C
BPJ-3	BPJ-3	Temperature	8/12/1980	11:00 AM	0.0	28	° C
BPJ-3	BPJ-3	Temperature	8/14/1980	2:00 PM	0.0	25	° C
BPJ-3	BPJ-3	Temperature	9/11/1980	1:00 PM	0.0	23.5	° C
BPJ-3	BPJ-3	Temperature	10/3/1980	10:00 AM	0.0	14.5	° C
BPJ-3	BPJ-3	Temperature	10/28/1980	11:00 AM	0.0	6.5	° C
BPJ-3	BPJ-3	Temperature	11/17/1980	9:30 AM	0.0	4.5	° C
BPJ-3	BPJ-3	Temperature	12/9/1980	4:00 PM	0.0	4.5	° C
BPJ-3	BPJ-3	Temperature	1/22/1981	1:00 PM	0.0	1	° C
BPJ-3	BPJ-3	Temperature	2/19/1981	8:00 AM	0.0	1	° C
BPJ-3	BPJ-3	Temperature	3/17/1981	10:00 AM	0.0	6	° C
BPJ-3	BPJ-3	Temperature	4/23/1981	1:00 PM	0.0	14.5	° C
BPJ-3	BPJ-3	Temperature	5/21/1981	3:00 PM	0.0	15	° C
BPJ-3	BPJ-3	Temperature	6/25/1981	9:00 AM	0.0	21	° C
BPJ-3	BPJ-3	Temperature	9/4/1981	9:00 AM	0.0	20	° C
BPJ-3	BPJ-3	Temperature	9/30/1981	3:00 PM	0.0	17	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Temperature	10/19/1981	12:20 PM	0.0	13	° C
BPJ-3	BPJ-3	Temperature	11/10/1981	2:00 PM	0.0	8.5	° C
BPJ-3	BPJ-3	Temperature	11/25/1981	8:00 AM	0.0	4	° C
BPJ-3	BPJ-3	Temperature	1/6/1982	2:00 PM	0.0	3.5	° C
BPJ-3	BPJ-3	Temperature	3/17/1982	2:00 PM	0.0	8	° C
BPJ-3	BPJ-3	Temperature	3/17/1982	4:00 PM	0.0	7	° C
BPJ-3	BPJ-3	Temperature	4/14/1982	2:00 PM	0.0	11	° C
BPJ-3	BPJ-3	Temperature	4/28/1982	12:40 PM	0.0	13	° C
BPJ-3	BPJ-3	Temperature	5/20/1982	2:00 PM	0.0	24	° C
BPJ-3	BPJ-3	Temperature	6/24/1982	2:00 PM	0.0	22	° C
BPJ-3	BPJ-3	Temperature	8/11/1982	3:00 PM	0.0	22	° C
BPJ-3	BPJ-3	Temperature	9/2/1982	10:15 AM	0.0	24	° C
BPJ-3	BPJ-3	Temperature	9/23/1982	2:00 PM	0.0	16	° C
BPJ-3	BPJ-3	Temperature	10/14/1982	1:00 PM	0.0	15	° C
BPJ-3	BPJ-3	Temperature	11/4/1982	2:00 PM	0.0	9	° C
BPJ-3	BPJ-3	Temperature	12/21/1982	2:00 PM	0.0	3.5	° C
BPJ-3	BPJ-3	Temperature	1/13/1983	11:20 AM	0.0	6	° C
BPJ-3	BPJ-3	Temperature	2/4/1983	10:30 AM	0.0	0.5	° C
BPJ-3	BPJ-3	Temperature	3/4/1983	3:35 PM	0.0	13	° C
BPJ-3	BPJ-3	Temperature	3/16/1983	11:00 AM	0.0	9	° C
BPJ-3	BPJ-3	Temperature	4/13/1983	9:00 AM	0.0	10	° C
BPJ-3	BPJ-3	Temperature	5/4/1983	1:00 PM	0.0	13	° C
BPJ-3	BPJ-3	Temperature	5/16/1983	1:30 PM	0.0	20	° C
BPJ-3	BPJ-3	Temperature	6/22/1983	9:00 AM	0.0	21	° C
BPJ-3	BPJ-3	Temperature	8/11/1983	1:25 PM	0.0	28	° C
BPJ-3	BPJ-3	Temperature	8/18/1983	12:00 PM	0.0	26	° C
BPJ-3	BPJ-3	Temperature	9/14/1983	4:00 PM	0.0	16	° C
BPJ-3	BPJ-3	Temperature	11/2/1983	2:00 PM	0.0	14	° C
BPJ-3	BPJ-3	Temperature	12/8/1983	2:00 PM	0.0	5	° C
BPJ-3	BPJ-3	Temperature	3/15/1984	10:00 AM	0.0	2.5	° C
BPJ-3	BPJ-3	Temperature	4/19/1984	8:00 AM	0.0	7	° C
BPJ-3	BPJ-3	Temperature	5/10/1984	9:00 AM	0.0	12	° C
BPJ-3	BPJ-3	Temperature	6/21/1984	8:00 AM	0.0	24.5	° C
BPJ-3	BPJ-3	Temperature	7/18/1984	11:00 AM	0.0	22	° C
BPJ-3	BPJ-3	Temperature	8/22/1984	11:00 AM	0.0	23.5	° C
BPJ-3	BPJ-3	Temperature	9/19/1984	9:00 AM	0.0	16	° C
BPJ-3	BPJ-3	Temperature	11/7/1984	11:00 AM	0.0	7	° C
BPJ-3	BPJ-3	Temperature	12/13/1984	9:00 AM	0.0	4	° C
BPJ-3	BPJ-3	Temperature	1/16/1985	11:00 AM	0.0	0	° C
BPJ-3	BPJ-3	Temperature	3/6/1985	10:00 AM	0.0	3	° C
BPJ-3	BPJ-3	Temperature	4/15/1985	11:00 AM	0.0	13	° C
BPJ-3	BPJ-3	Temperature	5/23/1985	9:00 AM	0.0	16	° C
BPJ-3	BPJ-3	Temperature	7/2/1985	9:00 AM	0.0	22	° C
BPJ-3	BPJ-3	Temperature	8/19/1985	1:30 PM	0.0	21	° C
BPJ-3	BPJ-3	Temperature	9/16/1985	1:00 PM	0.0	18	° C
BPJ-3	BPJ-3	Temperature	10/16/1985	1:00 PM	0.0	15	° C
BPJ-3	BPJ-3	Temperature	12/10/1985	11:00 AM	0.0	5	° C
BPJ-3	BPJ-3	Temperature	1/15/1986	2:00 PM	0.0	0	° C
BPJ-3	BPJ-3	Temperature	2/20/1986	1:00 PM	0.0	5	° C
BPJ-3	BPJ-3	Temperature	3/25/1986	1:00 PM	0.0	11	° C
BPJ-3	BPJ-3	Temperature	4/30/1986	12:30 PM	0.0	18	° C
BPJ-3	BPJ-3	Temperature	6/17/1986	1:00 PM	0.0	23	° C
BPJ-3	BPJ-3	Temperature	7/15/1986	12:30 PM	0.0	23	° C
BPJ-3	BPJ-3	Temperature	8/4/1986	8:00 AM	0.0	22	° C
BPJ-3	BPJ-3	Temperature	9/10/1986	1:00 PM	0.0	21	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Temperature	10/7/1986	10:30 AM	0.0	14	° C
BPJ-3	BPJ-3	Temperature	12/2/1986	1:00 PM	0.0	7	° C
BPJ-3	BPJ-3	Temperature	1/13/1987	12:30 PM	0.0	0	° C
BPJ-3	BPJ-3	Temperature	2/17/1987	1:00 PM	0.0	1	° C
BPJ-3	BPJ-3	Temperature	3/24/1987	10:00 AM	0.0	12	° C
BPJ-3	BPJ-3	Temperature	4/28/1987	10:00 AM	0.0	15	° C
BPJ-3	BPJ-3	Temperature	6/2/1987	1:00 PM	0.0	26	° C
BPJ-3	BPJ-3	Temperature	7/20/1987	11:00 AM	0.0	28	° C
BPJ-3	BPJ-3	Temperature	9/9/1987	1:30 PM	0.0	24	° C
BPJ-3	BPJ-3	Temperature	11/3/1987	11:00 AM	0.0	15	° C
BPJ-3	BPJ-3	Temperature	12/10/1987	11:00 AM	0.0	8	° C
BPJ-3	BPJ-3	Temperature	1/21/1988	10:30 AM	0.0	3	° C
BPJ-3	BPJ-3	Temperature	3/7/1988	10:00 AM	0.0	4	° C
BPJ-3	BPJ-3	Temperature	4/5/1988	9:00 AM	0.0	11	° C
BPJ-3	BPJ-3	Temperature	5/19/1988	10:00 AM	0.0	20	° C
BPJ-3	BPJ-3	Temperature	6/23/1988	10:30 AM	0.0	29	° C
BPJ-3	BPJ-3	Temperature	8/11/1988	10:00 AM	0.0	28	° C
BPJ-3	BPJ-3	Temperature	9/15/1988	10:30 AM	0.0	19	° C
BPJ-3	BPJ-3	Temperature	11/10/1988	10:00 AM	0.0	8.8	° C
BPJ-3	BPJ-3	Temperature	12/14/1988	11:00 AM	0.0	1	° C
BPJ-3	BPJ-3	Temperature	1/19/1989	11:00 AM	0.0	3	° C
BPJ-3	BPJ-3	Temperature	2/23/1989	10:30 AM	0.0	0	° C
BPJ-3	BPJ-3	Temperature	4/13/1989	11:00 AM	0.0	8	° C
BPJ-3	BPJ-3	Temperature	6/20/1989	8:00 AM	0.0	22	° C
BPJ-3	BPJ-3	Temperature	8/2/1989	11:00 AM	0.0	25.2	° C
BPJ-3	BPJ-3	Temperature	9/14/1989	11:00 AM	0.0	16.2	° C
BPJ-3	BPJ-3	Temperature	11/8/1989	10:30 AM	0.0	9.6	° C
BPJ-3	BPJ-3	Temperature	12/12/1989	1:00 PM	0.0	0.2	° C
BPJ-3	BPJ-3	Temperature	1/24/1990	11:00 AM	0.0	3.9	° C
BPJ-3	BPJ-3	Temperature	2/28/1990	11:30 AM	0.0	4.3	° C
BPJ-3	BPJ-3	Temperature	3/28/1990	11:00 AM	0.0	8.1	° C
BPJ-3	BPJ-3	Temperature	5/9/1990	11:00 AM	0.0	18.3	° C
BPJ-3	BPJ-3	Temperature	7/3/1990	11:30 AM	0.0	23.1	° C
BPJ-3	BPJ-3	Temperature	8/2/1990	11:30 AM	0.0	23.1	° C
BPJ-3	BPJ-3	Temperature	9/26/1990	11:00 AM	0.0	16.5	° C
BPJ-3	BPJ-3	Temperature	11/1/1990	10:00 AM	0.0	12.1	° C
BPJ-3	BPJ-3	Temperature	12/10/1990	12:30 PM	0.0	6	° C
BPJ-3	BPJ-3	Temperature	1/16/1991	1:00 PM	0.0	4.3	° C
BPJ-3	BPJ-3	Temperature	3/5/1991	10:30 AM	0.0	3.6	° C
BPJ-3	BPJ-3	Temperature	4/3/1991	12:45 PM	0.0	10.9	° C
BPJ-3	BPJ-3	Temperature	5/22/1991	1:00 PM	0.0	20.3	° C
BPJ-3	BPJ-3	Temperature	6/26/1991	1:00 PM	0.0	27.3	° C
BPJ-3	BPJ-3	Temperature	8/21/1991	1:00 PM	0.0	24.9	° C
BPJ-3	BPJ-3	Temperature	9/30/1991	1:00 PM	0.0	18.9	° C
BPJ-3	BPJ-3	Temperature	11/14/1991	12:30 PM	0.0	6.2	° C
BPJ-3	BPJ-3	Temperature	12/18/1991	1:00 PM	0.0	0.9	° C
BPJ-3	BPJ-3	Temperature	2/4/1992	1:00 PM	0.0	3.7	° C
BPJ-3	BPJ-3	Temperature	3/17/1992	1:15 PM	0.0	9.6	° C
BPJ-3	BPJ-3	Temperature	6/3/1992	1:05 PM	0.0	22	° C
BPJ-3	BPJ-3	Temperature	7/13/1992	9:00 AM	0.0	21.1	° C
BPJ-3	BPJ-3	Temperature	8/12/1992	11:15 AM	0.0	22.7	° C
BPJ-3	BPJ-3	Temperature	9/23/1992	10:30 AM	0.0	16.6	° C
BPJ-3	BPJ-3	Temperature	11/18/1992	12:15 PM	0.0	9.5	° C
BPJ-3	BPJ-3	Temperature	12/16/1992	12:00 PM	0.0	6.5	° C
BPJ-3	BPJ-3	Temperature	2/1/1993	1:00 PM	0.0	3.3	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Temperature	3/9/1993	12:30 PM	0.0	4.6	° C
BPJ-3	BPJ-3	Temperature	4/7/1993	1:45 PM	0.0	10.3	° C
BPJ-3	BPJ-3	Temperature	5/24/1993	1:15 PM	0.0	18.5	° C
BPJ-3	BPJ-3	Temperature	6/28/1993	11:15 AM	0.0	20.5	° C
BPJ-3	BPJ-3	Temperature	8/18/1993	1:45 PM	0.0	23.2	° C
BPJ-3	BPJ-3	Temperature	9/28/1993	12:30 PM	0.0	14.1	° C
BPJ-3	BPJ-3	Temperature	11/15/1993	11:15 AM	0.0	10.2	° C
BPJ-3	BPJ-3	Temperature	12/20/1993	12:30 PM	0.0	4.9	° C
BPJ-3	BPJ-3	Temperature	3/2/1994	1:00 PM	0.0	1.05	° C
BPJ-3	BPJ-3	Temperature	3/2/1994	1:00 PM	0.0	1.1	° C
BPJ-3	BPJ-3	Temperature	3/29/1994	11:00 AM	0.0	7.07	° C
BPJ-3	BPJ-3	Temperature	3/29/1994	11:00 AM	0.0	7.1	° C
BPJ-3	BPJ-3	Temperature	4/28/1994	12:30 PM	0.0	14.1	° C
BPJ-3	BPJ-3	Temperature	6/30/1994	11:30 AM	0.0	24.8	° C
BPJ-3	BPJ-3	Temperature	8/15/1994	2:00 PM	0.0	24.4	° C
BPJ-3	BPJ-3	Temperature	9/6/1994	1:00 PM	0.0	21.2	° C
BPJ-3	BPJ-3	Temperature	9/26/1994	12:30 PM	0.0	15.8	° C
BPJ-3	BPJ-3	Temperature	11/2/1994	12:15 PM	0.0	9.3	° C
BPJ-3	BPJ-3	Temperature	1/4/1995	12:30 PM	0.0	0	° C
BPJ-3	BPJ-3	Temperature	2/1/1995	12:30 PM	0.0	2.6	° C
BPJ-3	BPJ-3	Temperature	2/27/1995	12:30 PM	0.0	6.8	° C
BPJ-3	BPJ-3	Temperature	3/29/1995	12:15 PM	0.0	8.3	° C
BPJ-3	BPJ-3	Temperature	4/26/1995	10:45 AM	0.0	12.5	° C
BPJ-3	BPJ-3	Temperature	5/11/1995	12:15 PM	0.0	14.8	° C
BPJ-3	BPJ-3	Temperature	6/14/1995	12:45 PM	0.0	20.1	° C
BPJ-3	BPJ-3	Temperature	9/7/1995	11:15 AM	0.0	23.1	° C
BPJ-3	BPJ-3	Temperature	10/16/1995	10:45 AM	0.0	10.5	° C
BPJ-3	BPJ-3	Temperature	12/12/1995	12:00 PM	0.0	0.28	° C
BPJ-3	BPJ-3	Temperature	12/12/1995	12:00 PM	0.0	0.3	° C
BPJ-3	BPJ-3	Temperature	1/29/1996	11:00 AM	0.0	0.16	° C
BPJ-3	BPJ-3	Temperature	1/29/1996	11:00 AM	0.0	0.2	° C
BPJ-3	BPJ-3	Temperature	2/29/1996	10:30 AM	0.0	2.4	° C
BPJ-3	BPJ-3	Temperature	3/28/1996	10:45 AM	0.0	5.6	° C
BPJ-3	BPJ-3	Temperature	4/19/1996	12:45 PM	0.0	15.1	° C
BPJ-3	BPJ-3	Temperature	5/20/1996	1:00 PM	0.0	22.4	° C
BPJ-3	BPJ-3	Temperature	7/19/1996	10:45 AM	0.0	27.3	° C
BPJ-3	BPJ-3	Temperature	8/26/1996	11:45 AM	0.0	25.4	° C
BPJ-3	BPJ-3	Temperature	10/9/1996	10:45 AM	0.0	11.6	° C
BPJ-3	BPJ-3	Temperature	11/25/1996	9:45 AM	0.0	3.5	° C
BPJ-3	BPJ-3	Temperature	1/7/1997	9:30 AM	0.0	0	° C
BPJ-3	BPJ-3	Temperature	1/7/1997	9:30 AM	0.0	-0.03	° C
BPJ-3	BPJ-3	Temperature	2/19/1997	9:30 AM	0.0	5.1	° C
BPJ-3	BPJ-3	Temperature	3/13/1997	9:30 AM	0.0	6.1	° C
BPJ-3	BPJ-3	Temperature	4/30/1997	9:15 AM	0.0	15	° C
BPJ-3	BPJ-3	Temperature	7/8/1997	9:30 AM	0.0	23	° C
BPJ-3	BPJ-3	Temperature	8/27/1997	9:30 AM	0.0	23	° C
BPJ-3	BPJ-3	Temperature	9/18/1997	9:45 AM	0.0	21.1	° C
BPJ-3	BPJ-3	Temperature	10/15/1997	9:00 AM	0.0	10.2	° C
BPJ-3	BPJ-3	Temperature	11/20/1997	8:00 AM	0.0	1.5	° C
BPJ-3	BPJ-3	Temperature	1/6/1998	2:00 PM	0.0	10.2	° C
BPJ-3	BPJ-3	Temperature	3/13/1998	1:00 PM	0.0	2.5	° C
BPJ-3	BPJ-3	Temperature	4/29/1998	10:15 AM	0.0	13	° C
BPJ-3	BPJ-3	Temperature	6/4/1998	7:00 AM	0.0	17.9	° C
BPJ-3	BPJ-3	Temperature	8/4/1998	11:45 AM	0.0	21.2	° C
BPJ-3	BPJ-3	Temperature	8/31/1998	12:15 PM	0.0	24.4	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-3	BPJ-3	Temperature	9/28/1998	11:30 AM	0.0	22.1	° C
BPJ-3	BPJ-3	Temperature	11/4/1998	8:30 AM	0.0	7.1	° C
BPJ-3	BPJ-3	Temperature	12/8/1998	10:45 AM	0.0	8.6	° C
BPJ-3	BPJ-3	Temperature	1/3/2000	12:00 AM	0.0	3.14	° C
BPJ-3	BPJ-3	Temperature	2/14/2000	12:00 AM	0.0	-0.11	° C
BPJ-3	BPJ-3	Temperature	3/24/2000	12:00 AM	0.0	11.16	° C
BPJ-3	BPJ-3	Temperature	6/1/2000	12:00 AM	0.0	18.72	° C
BPJ-3	BPJ-3	Temperature	8/15/2000	12:00 AM	0.0	24.97	° C
BPJ-3	BPJ-3	Temperature	9/13/2000	12:00 AM	0.0	20.4	° C
BPJ-3	BPJ-3	Temperature	10/30/2000	12:00 AM	0.0	12.49	° C
BPJ-3	BPJ-3	Temperature	12/13/2000	12:00 AM	0.0	-0.24	° C
BPJ-3	BPJ-3	Temperature	1/17/2001	12:00 AM	0.0	-0.26	° C
BPJ-3	BPJ-3	Temperature	2/27/2001	12:00 AM	0.0	4.27	° C
BPJ-3	BPJ-3	Temperature	3/29/2001	12:00 AM	0.0	6.13	° C
BPJ-3	BPJ-3	Temperature	5/2/2001	12:00 AM	0.0	21.16	° C
BPJ-3	BPJ-3	Temperature	5/29/2001	12:00 AM	0.0	17.36	° C
BPJ-3	BPJ-3	Temperature	7/19/2001	12:00 AM	0.0	26.26	° C
BPJ-3	BPJ-3	Temperature	8/20/2001	12:00 AM	0.0	20.8	° C
BPJ-3	BPJ-3	Temperature	10/24/2001	12:00 AM	0.0	15.7	° C
BPJ-3	BPJ-3	Temperature	11/28/2001	12:00 AM	0.0	6.16	° C
BPJ-3	BPJ-3	Temperature	1/17/2002	12:00 AM	0.0	0.76	° C
BPJ-3	BPJ-3	Temperature	2/19/2002	12:00 AM	0.0	4.76	° C
BPJ-3	BPJ-3	Temperature	3/27/2002	12:00 AM	0.0	2.52	° C
BPJ-3	BPJ-3	Temperature	5/8/2002	12:00 AM	0.0	14.7	° C
BPJ-3	BPJ-3	Temperature	6/13/2002	12:00 AM	0.0	19	° C
BPJ-3	BPJ-3	Temperature	7/22/2002	12:00 AM	0.0	28.6	° C
BPJ-3	BPJ-3	Temperature	9/4/2002	12:00 AM	0.0	23.4	° C
BPJ-3	BPJ-3	Temperature	10/8/2002	12:00 AM	0.0	13.4	° C
BPJ-3	BPJ-3	Temperature	11/21/2002	12:00 AM	0.0	6.17	° C
BPJ-3	D-10	pH	7/17/2002		0.0	9.1	NA
BPJ-3	D-10	Temperature	7/17/2002		0.0	27.9	° C
BPJ-3	D-11A	pH	7/17/2002		0.0	9.1	NA
BPJ-3	D-11A	Temperature	7/17/2002		0.0	28.8	° C
BPJ-3	D-11B	pH	7/17/2002		0.0	9.1	NA
BPJ-3	D-11B	Temperature	7/17/2002		0.0	29	° C
BPJ-3	D-8	pH	7/16/2002		0.0	9	NA
BPJ-3	D-8	pH	7/17/2002		0.0	9.1	NA
BPJ-3	D-8	Temperature	7/16/2002		0.0	28.6	° C
BPJ-3	D-8	Temperature	7/17/2002		0.0	28.8	° C
BPJ-3	D-9	pH	7/17/2002		0.0	8.9	NA
BPJ-3	D-9	Temperature	7/17/2002		0.0	26.8	° C
BPJ-8	BPJ-8	Ammonia	10/23/1985	10:00 AM	0.0	0.1	mg/L
BPJ-8	BPJ-8	Ammonia	8/5/1986	11:00 AM	0.0	0.1	mg/L
BPJ-8	BPJ-8	Ammonia	9/2/1997	2:30 PM	0.0	0.04	mg/L
BPJ-8	BPJ-8	Ammonia	7/3/2001	12:00 AM	0.0	0.01	mg/L
BPJ-8	BPJ-8	Ammonia	8/15/2001	12:00 AM	0.0	0.01	mg/L
BPJ-8	BPJ-8	Ammonia	10/11/2001	12:00 AM	0.0	0.26	mg/L
BPJ-8	BPJ-8	Flow	10/23/1985	10:40 AM	0.0	163.8	cfs
BPJ-8	BPJ-8	Flow	8/5/1986	10:30 AM	0.0	40.3	cfs
BPJ-8	BPJ-8	Iron	10/23/1985	10:00 AM	0.0	50	µg/L
BPJ-8	BPJ-8	Iron	8/5/1986	11:00 AM	0.0	50	µg/L
BPJ-8	BPJ-8	Iron	7/3/2001		0.0	50	µg/L
BPJ-8	BPJ-8	Iron	8/15/2001		0.0	50	µg/L
BPJ-8	BPJ-8	Iron	10/11/2001		0.0	50	µg/L
BPJ-8	BPJ-8	Nitrate + Nitrite	10/23/1985	10:00 AM	0.0	6.6	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-8	BPJ-8	Nitrate + Nitrite	8/5/1986	11:00 AM	0.0	1.7	mg/L
BPJ-8	BPJ-8	Nitrate + Nitrite	9/2/1997	2:30 PM	0.0	4.6	mg/L
BPJ-8	BPJ-8	Nitrate + Nitrite	7/3/2001	12:00 AM	0.0	4.7	mg/L
BPJ-8	BPJ-8	Nitrate + Nitrite	8/15/2001	12:00 AM	0.0	1.16	mg/L
BPJ-8	BPJ-8	Nitrate + Nitrite	10/11/2001	12:00 AM	0.0	2	mg/L
BPJ-8	BPJ-8	pH	10/23/1985	10:00 AM	0.0	7.5	NA
BPJ-8	BPJ-8	pH	8/5/1986	11:00 AM	0.0	8.1	NA
BPJ-8	BPJ-8	pH	9/2/1997	2:30 PM	0.0	8.3	NA
BPJ-8	BPJ-8	pH	7/3/2001	12:00 AM	0.0	8.2	NA
BPJ-8	BPJ-8	pH	8/15/2001	12:00 AM	0.0	9.2	NA
BPJ-8	BPJ-8	pH	10/11/2001	12:00 AM	0.0	7.68	NA
BPJ-8	BPJ-8	Temperature	10/23/1985	10:00 AM	0.0	15.2	° C
BPJ-8	BPJ-8	Temperature	8/5/1986	11:00 AM	0.0	23	° C
BPJ-8	BPJ-8	Temperature	9/2/1997	2:30 PM	0.0	25.5	° C
BPJ-8	BPJ-8	Temperature	7/3/2001	12:00 AM	0.0	22	° C
BPJ-8	BPJ-8	Temperature	8/15/2001	12:00 AM	0.0	24.4	° C
BPJ-8	BPJ-8	Temperature	10/11/2001	12:00 AM	0.0	14	° C
BPJ-8	D-7	Ammonia	7/17/2002		0.0	2.5	mg/L
BPJ-8	D-7	pH	7/17/2002		0.0	9.1	NA
BPJ-8	D-7	Temperature	7/17/2002		0.0	28.3	° C
BPJ-9	163027	Ammonia	6/14/1966	11:20 AM	0.0	0.1	mg/L
BPJ-9	163027	Ammonia	6/20/1966	9:00 AM	0.0	2.3	mg/L
BPJ-9	163027	Ammonia	8/15/1966	1:35 PM	0.0	5.8	mg/L
BPJ-9	163027	Ammonia	3/20/1968	8:00 AM	0.0	1.6	mg/L
BPJ-9	163027	Ammonia	4/2/1968	7:40 AM	0.0	3.6	mg/L
BPJ-9	163027	Ammonia	4/15/1968	12:25 PM	0.0	1.2	mg/L
BPJ-9	163027	Ammonia	5/28/1968	8:40 AM	0.0	0.32	mg/L
BPJ-9	163027	Ammonia	6/19/1968	8:30 AM	0.0	0.46	mg/L
BPJ-9	163027	pH	4/13/1966	11:20 AM	0.0	7.4	NA
BPJ-9	163027	pH	6/14/1966	11:20 AM	0.0	7.5	NA
BPJ-9	163027	pH	6/16/1966	8:02 AM	0.0	7.4	NA
BPJ-9	163027	pH	6/20/1966	9:00 AM	0.0	7.6	NA
BPJ-9	163027	pH	6/22/1966	8:10 AM	0.0	7.5	NA
BPJ-9	163027	pH	6/24/1966	8:40 AM	0.0	7.5	NA
BPJ-9	163027	pH	8/15/1966	1:35 PM	0.0	7.3	NA
BPJ-9	163027	pH	8/16/1966	8:15 AM	0.0	7.7	NA
BPJ-9	163027	pH	8/17/1966	10:15 AM	0.0	7.4	NA
BPJ-9	163027	pH	8/18/1966	10:00 AM	0.0	6.8	NA
BPJ-9	163027	pH	8/19/1966	10:15 AM	0.0	7.1	NA
BPJ-9	163027	pH	3/20/1968	8:00 AM	0.0	7.8	NA
BPJ-9	163027	pH	4/2/1968	7:40 AM	0.0	7.3	NA
BPJ-9	163027	pH	4/15/1968	12:25 PM	0.0	7.6	NA
BPJ-9	163027	pH	5/2/1968	8:00 AM	0.0	7.5	NA
BPJ-9	163027	pH	5/28/1968	8:40 AM	0.0	7	NA
BPJ-9	163027	pH	6/19/1968	8:30 AM	0.0	7.1	NA
BPJ-9	163027	Temperature	4/13/1966	11:20 AM	0.0	7.5	° C
BPJ-9	163027	Temperature	6/14/1966	11:20 AM	0.0	21.5	° C
BPJ-9	163027	Temperature	6/16/1966	8:02 AM	0.0	18	° C
BPJ-9	163027	Temperature	6/20/1966	9:00 AM	0.0	21	° C
BPJ-9	163027	Temperature	6/22/1966	8:10 AM	0.0	22	° C
BPJ-9	163027	Temperature	6/24/1966	8:40 AM	0.0	23	° C
BPJ-9	163027	Temperature	8/15/1966	1:35 PM	0.0	28	° C
BPJ-9	163027	Temperature	8/16/1966	8:15 AM	0.0	23	° C
BPJ-9	163027	Temperature	8/17/1966	10:15 AM	0.0	24	° C
BPJ-9	163027	Temperature	8/18/1966	10:00 AM	0.0	25	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-9	163027	Temperature	8/19/1966	10:15 AM	0.0	23	° C
BPJ-9	163027	Temperature	3/20/1968	8:00 AM	0.0	8	° C
BPJ-9	163027	Temperature	4/2/1968	7:40 AM	0.0	6	° C
BPJ-9	163027	Temperature	4/15/1968	12:25 PM	0.0	11	° C
BPJ-9	163027	Temperature	5/2/1968	8:00 AM	0.0	13	° C
BPJ-9	163027	Temperature	5/28/1968	8:40 AM	0.0	11	° C
BPJ-9	163027	Temperature	6/19/1968	8:30 AM	0.0	19	° C
BPJ-9	3337810	Flow	11/4/1975	10:40 AM	0.0	75	cfs
BPJ-9	3337810	Flow	12/2/1975	11:20 AM	0.0	450	cfs
BPJ-9	3337810	Flow	2/17/1976	1:25 PM	0.0	2730	cfs
BPJ-9	3337810	Flow	4/7/1976	10:20 AM	0.0	156	cfs
BPJ-9	3337810	Flow	5/10/1976	4:00 PM	0.0	70	cfs
BPJ-9	3337810	Flow	7/9/1976	9:30 AM	0.0	94	cfs
BPJ-9	3337810	Flow	8/16/1976	9:30 AM	0.0	34	cfs
BPJ-9	3337810	Flow	9/1/1976	9:40 AM	0.0	40	cfs
BPJ-9	3337810	Temperature	11/4/1975	10:40 AM	0.0	18	° C
BPJ-9	3337810	Temperature	12/2/1975	11:20 AM	0.0	3	° C
BPJ-9	3337810	Temperature	2/17/1976	1:25 PM	0.0	2	° C
BPJ-9	3337810	Temperature	4/7/1976	10:20 AM	0.0	13	° C
BPJ-9	3337810	Temperature	5/10/1976	4:00 PM	0.0	15	° C
BPJ-9	3337810	Temperature	7/9/1976	9:30 AM	0.0	23	° C
BPJ-9	3337810	Temperature	8/16/1976	9:30 AM	0.0	19	° C
BPJ-9	3337810	Temperature	9/1/1976	9:40 AM	0.0	21	° C
BPJ-9	BPJ-4	Ammonia	10/9/1974	12:00 PM	0.0	2.8	mg/L
BPJ-9	BPJ-4	Ammonia	12/11/1974	12:00 PM	0.0	2.5	mg/L
BPJ-9	BPJ-4	Ammonia	1/14/1975	12:00 PM	0.0	0.3	mg/L
BPJ-9	BPJ-4	Ammonia	2/11/1975	1:00 PM	0.0	0.9	mg/L
BPJ-9	BPJ-4	Ammonia	3/25/1975	2:00 PM	0.0	0.09	mg/L
BPJ-9	BPJ-4	Ammonia	5/2/1975	1:00 PM	0.0	0.05	mg/L
BPJ-9	BPJ-4	Ammonia	5/9/1975	2:00 PM	0.0	0.7	mg/L
BPJ-9	BPJ-4	Ammonia	6/18/1975	11:00 AM	0.0	0.45	mg/L
BPJ-9	BPJ-4	Ammonia	7/25/1975	2:00 PM	0.0	1.6	mg/L
BPJ-9	BPJ-4	Ammonia	9/23/1975	11:00 AM	0.0	0.03	mg/L
BPJ-9	BPJ-4	pH	2/7/1972	2:00 PM	0.0	7.7	NA
BPJ-9	BPJ-4	pH	3/13/1972	4:00 PM	0.0	7.6	NA
BPJ-9	BPJ-4	pH	4/24/1972	3:00 PM	0.0	7.7	NA
BPJ-9	BPJ-4	pH	5/25/1972	1:00 PM	0.0	7.9	NA
BPJ-9	BPJ-4	pH	6/12/1972	2:00 PM	0.0	8	NA
BPJ-9	BPJ-4	pH	7/25/1972	12:00 PM	0.0	8.1	NA
BPJ-9	BPJ-4	pH	8/17/1972	1:00 PM	0.0	8.3	NA
BPJ-9	BPJ-4	pH	9/12/1972	4:00 PM	0.0	8.3	NA
BPJ-9	BPJ-4	pH	10/4/1972	1:00 AM	0.0	8.1	NA
BPJ-9	BPJ-4	pH	12/14/1972	3:00 PM	0.0	7.8	NA
BPJ-9	BPJ-4	pH	1/3/1973	5:00 PM	0.0	7.9	NA
BPJ-9	BPJ-4	pH	2/20/1973	3:00 PM	0.0	8.3	NA
BPJ-9	BPJ-4	pH	3/12/1973	1:00 PM	0.0	7.8	NA
BPJ-9	BPJ-4	pH	4/12/1973	4:00 PM	0.0	8.2	NA
BPJ-9	BPJ-4	pH	5/16/1973	1:00 PM	0.0	8.2	NA
BPJ-9	BPJ-4	pH	6/8/1973	11:00 AM	0.0	8	NA
BPJ-9	BPJ-4	pH	7/3/1973	10:00 AM	0.0	8.1	NA
BPJ-9	BPJ-4	pH	8/17/1973	11:00 AM	0.0	7.7	NA
BPJ-9	BPJ-4	pH	9/17/1973	3:00 PM	0.0	7.9	NA
BPJ-9	BPJ-4	pH	10/18/1973	12:00 PM	0.0	7.9	NA
BPJ-9	BPJ-4	pH	11/28/1973	4:00 PM	0.0	8.2	NA
BPJ-9	BPJ-4	pH	12/27/1973	2:00 PM	0.0	7.9	NA

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-9	BPJ-4	pH	1/18/1974	1:00 PM	0.0	8.3	NA
BPJ-9	BPJ-4	pH	2/15/1974	1:00 PM	0.0	8.2	NA
BPJ-9	BPJ-4	pH	3/19/1974	10:00 AM	0.0	8	NA
BPJ-9	BPJ-4	pH	4/9/1974	1:00 PM	0.0	8.1	NA
BPJ-9	BPJ-4	pH	5/24/1974	1:00 PM	0.0	7.6	NA
BPJ-9	BPJ-4	pH	6/14/1974	11:00 AM	0.0	8.1	NA
BPJ-9	BPJ-4	pH	7/26/1974	8:00 AM	0.0	8.2	NA
BPJ-9	BPJ-4	pH	8/13/1974	12:00 PM	0.0	8.2	NA
BPJ-9	BPJ-4	pH	10/9/1974	12:00 PM	0.0	7.9	NA
BPJ-9	BPJ-4	pH	12/11/1974	12:00 PM	0.0	8	NA
BPJ-9	BPJ-4	pH	1/14/1975	12:00 PM	0.0	8	NA
BPJ-9	BPJ-4	pH	2/11/1975	1:00 PM	0.0	8	NA
BPJ-9	BPJ-4	pH	3/25/1975	2:00 PM	0.0	8.1	NA
BPJ-9	BPJ-4	pH	5/2/1975	1:00 PM	0.0	8.2	NA
BPJ-9	BPJ-4	pH	5/9/1975	2:00 PM	0.0	8.1	NA
BPJ-9	BPJ-4	pH	6/18/1975	11:00 AM	0.0	8.3	NA
BPJ-9	BPJ-4	pH	7/25/1975	2:00 PM	0.0	8.2	NA
BPJ-9	BPJ-4	pH	9/23/1975	11:00 AM	0.0	8.5	NA
BPJ-9	BPJ-4	pH	8/5/1976	12:00 PM	0.0	8.7	NA
BPJ-9	BPJ-4	pH	9/27/1976	12:00 PM	0.0	7.7	NA
BPJ-9	BPJ-4	Temperature	2/7/1972	2:00 PM	0.0	0.6	° C
BPJ-9	BPJ-4	Temperature	3/13/1972	4:00 PM	0.0	8.3	° C
BPJ-9	BPJ-4	Temperature	4/24/1972	3:00 PM	0.0	15	° C
BPJ-9	BPJ-4	Temperature	5/25/1972	1:00 PM	0.0	20	° C
BPJ-9	BPJ-4	Temperature	6/12/1972	2:00 PM	0.0	18.3	° C
BPJ-9	BPJ-4	Temperature	7/25/1972	12:00 PM	0.0	25.6	° C
BPJ-9	BPJ-4	Temperature	8/17/1972	1:00 PM	0.0	28.9	° C
BPJ-9	BPJ-4	Temperature	9/12/1972	4:00 PM	0.0	26.1	° C
BPJ-9	BPJ-4	Temperature	10/4/1972	1:00 AM	0.0	19.4	° C
BPJ-9	BPJ-4	Temperature	12/14/1972	3:00 PM	0.0	5	° C
BPJ-9	BPJ-4	Temperature	1/3/1973	5:00 PM	0.0	6.7	° C
BPJ-9	BPJ-4	Temperature	2/20/1973	3:00 PM	0.0	4.4	° C
BPJ-9	BPJ-4	Temperature	3/12/1973	1:00 PM	0.0	7.8	° C
BPJ-9	BPJ-4	Temperature	4/12/1973	4:00 PM	0.0	7.8	° C
BPJ-9	BPJ-4	Temperature	5/16/1973	1:00 PM	0.0	13.3	° C
BPJ-9	BPJ-4	Temperature	6/8/1973	11:00 AM	0.0	17.8	° C
BPJ-9	BPJ-4	Temperature	7/3/1973	10:00 AM	0.0	23.9	° C
BPJ-9	BPJ-4	Temperature	8/17/1973	11:00 AM	0.0	21.1	° C
BPJ-9	BPJ-4	Temperature	9/17/1973	3:00 PM	0.0	16.1	° C
BPJ-9	BPJ-4	Temperature	10/18/1973	12:00 PM	0.0	13.3	° C
BPJ-9	BPJ-4	Temperature	11/28/1973	4:00 PM	0.0	8.9	° C
BPJ-9	BPJ-4	Temperature	12/27/1973	2:00 PM	0.0	5.6	° C
BPJ-9	BPJ-4	Temperature	1/18/1974	1:00 PM	0.0	5.6	° C
BPJ-9	BPJ-4	Temperature	2/15/1974	1:00 PM	0.0	3.9	° C
BPJ-9	BPJ-4	Temperature	4/9/1974	1:00 PM	0.0	8.3	° C
BPJ-9	BPJ-4	Temperature	5/24/1974	1:00 PM	0.0	16.1	° C
BPJ-9	BPJ-4	Temperature	6/14/1974	11:00 AM	0.0	19.4	° C
BPJ-9	BPJ-4	Temperature	8/13/1974	12:00 PM	0.0	26.1	° C
BPJ-9	BPJ-4	Temperature	10/9/1974	12:00 PM	0.0	13.9	° C
BPJ-9	BPJ-4	Temperature	10/9/1974	12:00 PM	0.0	57	° F
BPJ-9	BPJ-4	Temperature	12/11/1974	12:00 PM	0.0	5.6	° C
BPJ-9	BPJ-4	Temperature	12/11/1974	12:00 PM	0.0	42	° F
BPJ-9	BPJ-4	Temperature	1/14/1975	12:00 PM	0.0	0	° C
BPJ-9	BPJ-4	Temperature	1/14/1975	12:00 PM	0.0	32	° F
BPJ-9	BPJ-4	Temperature	5/2/1975	1:00 PM	0.0	15.6	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-9	BPJ-4	Temperature	5/2/1975	1:00 PM	0.0	60	° F
BPJ-9	BPJ-4	Temperature	5/9/1975	2:00 PM	0.0	17.8	° C
BPJ-9	BPJ-4	Temperature	5/9/1975	2:00 PM	0.0	64	° F
BPJ-9	BPJ-4	Temperature	6/18/1975	11:00 AM	0.0	21.7	° C
BPJ-9	BPJ-4	Temperature	6/18/1975	11:00 AM	0.0	71	° F
BPJ-9	BPJ-4	Temperature	9/27/1976	12:00 PM	0.0	21	° C
BPJ-9	BPJ-5	Ammonia	10/29/1974	9:00 AM	0.0	0.1	mg/L
BPJ-9	BPJ-5	Ammonia	11/21/1974	9:00 AM	0.0	0.5	mg/L
BPJ-9	BPJ-5	Ammonia	12/16/1974	2:00 PM	0.0	0	mg/L
BPJ-9	BPJ-5	Ammonia	1/28/1975	9:00 AM	0.0	0.6	mg/L
BPJ-9	BPJ-5	Ammonia	2/21/1975	9:00 AM	0.0	0	mg/L
BPJ-9	BPJ-5	Ammonia	3/26/1975	9:00 AM	0.0	0.09	mg/L
BPJ-9	BPJ-5	Ammonia	5/1/1975	2:00 PM	0.0	0.03	mg/L
BPJ-9	BPJ-5	Ammonia	6/27/1975	2:00 PM	0.0	0.34	mg/L
BPJ-9	BPJ-5	Ammonia	7/29/1975	8:00 AM	0.0	0.18	mg/L
BPJ-9	BPJ-5	Ammonia	8/26/1975	2:00 PM	0.0	0.01	mg/L
BPJ-9	BPJ-5	pH	3/13/1972	4:00 PM	0.0	7.6	NA
BPJ-9	BPJ-5	pH	4/24/1972	2:00 PM	0.0	7.8	NA
BPJ-9	BPJ-5	pH	5/25/1972	2:00 PM	0.0	7.8	NA
BPJ-9	BPJ-5	pH	6/12/1972	3:00 PM	0.0	7.9	NA
BPJ-9	BPJ-5	pH	7/6/1972	11:00 AM	0.0	8.2	NA
BPJ-9	BPJ-5	pH	7/25/1972	1:00 AM	0.0	7.7	NA
BPJ-9	BPJ-5	pH	8/17/1972	12:00 PM	0.0	8.2	NA
BPJ-9	BPJ-5	pH	9/12/1972	4:00 PM	0.0	8.2	NA
BPJ-9	BPJ-5	pH	10/4/1972	1:00 AM	0.0	8.3	NA
BPJ-9	BPJ-5	pH	12/14/1972	4:00 PM	0.0	7.8	NA
BPJ-9	BPJ-5	pH	1/3/1973	4:00 PM	0.0	7.9	NA
BPJ-9	BPJ-5	pH	2/20/1973	4:00 PM	0.0	8.2	NA
BPJ-9	BPJ-5	pH	3/12/1973	1:00 PM	0.0	7.7	NA
BPJ-9	BPJ-5	pH	4/12/1973	4:00 PM	0.0	8.1	NA
BPJ-9	BPJ-5	pH	5/16/1973	2:00 PM	0.0	8.2	NA
BPJ-9	BPJ-5	pH	6/8/1973	11:00 AM	0.0	8	NA
BPJ-9	BPJ-5	pH	7/3/1973	11:00 AM	0.0	8.1	NA
BPJ-9	BPJ-5	pH	8/17/1973	12:00 PM	0.0	7.7	NA
BPJ-9	BPJ-5	pH	9/17/1973	4:00 PM	0.0	7.9	NA
BPJ-9	BPJ-5	pH	10/18/1973	12:00 PM	0.0	7.9	NA
BPJ-9	BPJ-5	pH	11/28/1973	4:00 PM	0.0	8	NA
BPJ-9	BPJ-5	pH	12/27/1973	1:00 PM	0.0	7.9	NA
BPJ-9	BPJ-5	pH	1/30/1974	3:00 PM	0.0	7.8	NA
BPJ-9	BPJ-5	pH	2/15/1974	1:00 PM	0.0	8.1	NA
BPJ-9	BPJ-5	pH	3/26/1974	9:00 AM	0.0	8.2	NA
BPJ-9	BPJ-5	pH	4/18/1974	9:00 AM	0.0	8.1	NA
BPJ-9	BPJ-5	pH	6/19/1974	3:00 PM	0.0	8	NA
BPJ-9	BPJ-5	pH	6/28/1974	4:00 PM	0.0	8	NA
BPJ-9	BPJ-5	pH	7/2/1974	11:00 AM	0.0	7.9	NA
BPJ-9	BPJ-5	pH	7/10/1974	6:00 PM	0.0	8	NA
BPJ-9	BPJ-5	pH	7/17/1974	9:00 AM	0.0	8.2	NA
BPJ-9	BPJ-5	pH	8/27/1974	3:00 PM	0.0	7.8	NA
BPJ-9	BPJ-5	pH	9/24/1974	9:00 AM	0.0	8.1	NA
BPJ-9	BPJ-5	pH	10/29/1974	9:00 AM	0.0	8.1	NA
BPJ-9	BPJ-5	pH	11/21/1974	9:00 AM	0.0	8.1	NA
BPJ-9	BPJ-5	pH	12/16/1974	2:00 PM	0.0	7.9	NA
BPJ-9	BPJ-5	pH	1/28/1975	9:00 AM	0.0	8.1	NA
BPJ-9	BPJ-5	pH	2/21/1975	9:00 AM	0.0	8.2	NA
BPJ-9	BPJ-5	pH	3/26/1975	9:00 AM	0.0	8.2	NA

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-9	BPJ-5	pH	5/1/1975	2:00 PM	0.0	8.5	NA
BPJ-9	BPJ-5	pH	6/27/1975	2:00 PM	0.0	8.2	NA
BPJ-9	BPJ-5	pH	7/29/1975	8:00 AM	0.0	8.6	NA
BPJ-9	BPJ-5	pH	8/26/1975	2:00 PM	0.0	8.6	NA
BPJ-9	BPJ-5	pH	11/18/1976	3:00 PM	0.0	8	NA
BPJ-9	BPJ-5	Temperature	3/13/1972	4:00 PM	0.0	8.3	° C
BPJ-9	BPJ-5	Temperature	4/24/1972	2:00 PM	0.0	15	° C
BPJ-9	BPJ-5	Temperature	5/25/1972	2:00 PM	0.0	21.1	° C
BPJ-9	BPJ-5	Temperature	6/12/1972	3:00 PM	0.0	20	° C
BPJ-9	BPJ-5	Temperature	7/6/1972	11:00 AM	0.0	21.7	° C
BPJ-9	BPJ-5	Temperature	7/25/1972	1:00 AM	0.0	25	° C
BPJ-9	BPJ-5	Temperature	8/17/1972	12:00 PM	0.0	29.4	° C
BPJ-9	BPJ-5	Temperature	9/12/1972	4:00 PM	0.0	25.6	° C
BPJ-9	BPJ-5	Temperature	10/4/1972	1:00 AM	0.0	18.3	° C
BPJ-9	BPJ-5	Temperature	12/14/1972	4:00 PM	0.0	5	° C
BPJ-9	BPJ-5	Temperature	1/3/1973	4:00 PM	0.0	5	° C
BPJ-9	BPJ-5	Temperature	2/20/1973	4:00 PM	0.0	6.1	° C
BPJ-9	BPJ-5	Temperature	3/12/1973	1:00 PM	0.0	8.3	° C
BPJ-9	BPJ-5	Temperature	4/12/1973	4:00 PM	0.0	7.8	° C
BPJ-9	BPJ-5	Temperature	5/16/1973	2:00 PM	0.0	14.4	° C
BPJ-9	BPJ-5	Temperature	6/8/1973	11:00 AM	0.0	18.3	° C
BPJ-9	BPJ-5	Temperature	7/3/1973	11:00 AM	0.0	24.4	° C
BPJ-9	BPJ-5	Temperature	8/17/1973	12:00 PM	0.0	21.7	° C
BPJ-9	BPJ-5	Temperature	9/17/1973	4:00 PM	0.0	16.7	° C
BPJ-9	BPJ-5	Temperature	10/18/1973	12:00 PM	0.0	12.8	° C
BPJ-9	BPJ-5	Temperature	11/28/1973	4:00 PM	0.0	10.6	° C
BPJ-9	BPJ-5	Temperature	12/27/1973	1:00 PM	0.0	5.6	° C
BPJ-9	BPJ-5	Temperature	1/30/1974	3:00 PM	0.0	6.7	° C
BPJ-9	BPJ-5	Temperature	2/15/1974	1:00 PM	0.0	3.3	° C
BPJ-9	BPJ-5	Temperature	3/26/1974	9:00 AM	0.0	3.9	° C
BPJ-9	BPJ-5	Temperature	4/18/1974	9:00 AM	0.0	11.1	° C
BPJ-9	BPJ-5	Temperature	6/19/1974	3:00 PM	0.0	21.1	° C
BPJ-9	BPJ-5	Temperature	6/28/1974	4:00 PM	0.0	19.4	° C
BPJ-9	BPJ-5	Temperature	7/2/1974	11:00 AM	0.0	21.1	° C
BPJ-9	BPJ-5	Temperature	7/10/1974	6:00 PM	0.0	24.4	° C
BPJ-9	BPJ-5	Temperature	7/17/1974	9:00 AM	0.0	23.3	° C
BPJ-9	BPJ-5	Temperature	8/27/1974	3:00 PM	0.0	26.1	° C
BPJ-9	BPJ-5	Temperature	9/24/1974	9:00 AM	0.0	12.2	° C
BPJ-9	BPJ-5	Temperature	11/21/1974	9:00 AM	0.0	6.7	° C
BPJ-9	BPJ-5	Temperature	11/21/1974	9:00 AM	0.0	44	° F
BPJ-9	BPJ-5	Temperature	12/16/1974	2:00 PM	0.0	3.3	° C
BPJ-9	BPJ-5	Temperature	12/16/1974	2:00 PM	0.0	38	° F
BPJ-9	BPJ-5	Temperature	2/21/1975	9:00 AM	0.0	3.3	° C
BPJ-9	BPJ-5	Temperature	2/21/1975	9:00 AM	0.0	38	° F
BPJ-9	BPJ-5	Temperature	3/26/1975	9:00 AM	0.0	3.3	° C
BPJ-9	BPJ-5	Temperature	3/26/1975	9:00 AM	0.0	38	° F
BPJ-9	BPJ-5	Temperature	5/1/1975	2:00 PM	0.0	17.2	° C
BPJ-9	BPJ-5	Temperature	5/1/1975	2:00 PM	0.0	63	° F
BPJ-9	BPJ-5	Temperature	6/27/1975	2:00 PM	0.0	26.1	° C
BPJ-9	BPJ-5	Temperature	6/27/1975	2:00 PM	0.0	79	° F
BPJ-9	BPJ-5	Temperature	7/29/1975	8:00 AM	0.0	25.6	° C
BPJ-9	BPJ-5	Temperature	7/29/1975	8:00 AM	0.0	78	° F
BPJ-9	BPJ-5	Temperature	8/26/1975	2:00 PM	0.0	28.9	° C
BPJ-9	BPJ-5	Temperature	8/26/1975	2:00 PM	0.0	84	° F
BPJ-9	BPJ-5	Temperature	11/18/1976	3:00 PM	0.0	4.5	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJ-9	BPJ-9	Ammonia	10/9/1985	1:00 PM	0.0	1.2	mg/L
BPJ-9	BPJ-9	Ammonia	7/8/1997	11:45 AM	0.0	0.07	mg/L
BPJ-9	BPJ-9	Ammonia	9/2/1997	2:45 PM	0.0	0.23	mg/L
BPJ-9	BPJ-9	Flow	10/9/1985	2:00 PM	0.0	31.8	cfs
BPJ-9	BPJ-9	pH	10/9/1985	1:00 PM	0.0	7.8	NA
BPJ-9	BPJ-9	pH	7/8/1997	11:45 AM	0.0	7.9	NA
BPJ-9	BPJ-9	pH	9/2/1997	2:45 PM	0.0	8.4	NA
BPJ-9	BPJ-9	Temperature	10/9/1985	1:00 PM	0.0	18.1	° C
BPJ-9	BPJ-9	Temperature	7/8/1997	11:45 AM	0.0	25	° C
BPJ-9	BPJ-9	Temperature	9/2/1997	2:45 PM	0.0	24.4	° C
BPJ-9	D-1	Ammonia	7/12/2002		0.0	1.9	mg/L
BPJ-9	D-1	Ammonia	7/13/2002		0.0	5.6	mg/L
BPJ-9	D-1	pH	7/12/2002		0.0	8.4	NA
BPJ-9	D-1	pH	7/13/2002		0.0	8.4	NA
BPJ-9	D-1	Temperature	7/12/2002		0.0	24.5	° C
BPJ-9	D-1	Temperature	7/13/2002		0.0	23.5	° C
BPJ-9	D-2	Ammonia	7/16/2002		0.0	0.13	mg/L
BPJ-9	D-2	pH	7/16/2002		0.0	8.4	NA
BPJ-9	D-2	Temperature	7/16/2002		0.0	25.3	° C
BPJ-9	D-3	Ammonia	7/16/2002		0.0	0.13	mg/L
BPJ-9	D-3	pH	7/16/2002		0.0	8.7	NA
BPJ-9	D-3	Temperature	7/16/2002		0.0	27.3	° C
BPJC-6	163028	Ammonia	6/14/1966	10:15 AM	0.0	5	mg/L
BPJC-6	163028	Ammonia	6/20/1966	8:11 AM	0.0	5	mg/L
BPJC-6	163028	Ammonia	8/15/1966	12:50 PM	0.0	9.2	mg/L
BPJC-6	163028	Ammonia	3/20/1968	9:20 AM	0.0	2.8	mg/L
BPJC-6	163028	Ammonia	4/2/1968	8:40 AM	0.0	7.4	mg/L
BPJC-6	163028	Ammonia	4/15/1968	2:25 PM	0.0	2.2	mg/L
BPJC-6	163028	Ammonia	5/2/1968	9:35 AM	0.0	6.3	mg/L
BPJC-6	163028	Ammonia	5/28/1968	9:55 AM	0.0	0.6	mg/L
BPJC-6	163028	Ammonia	6/19/1968	10:00 AM	0.0	0.66	mg/L
BPJC-6	163028	Temperature	4/12/1966	5:25 PM	0.0	8.5	° C
BPJC-6	163028	Temperature	6/14/1966	10:15 AM	0.0	20	° C
BPJC-6	163028	Temperature	6/16/1966	8:56 AM	0.0	18	° C
BPJC-6	163028	Temperature	6/20/1966	8:10 AM	0.0	20	° C
BPJC-6	163028	Temperature	6/22/1966	9:00 AM	0.0	26	° C
BPJC-6	163028	Temperature	6/24/1966	7:50 AM	0.0	21	° C
BPJC-6	163028	Temperature	8/15/1966	12:50 PM	0.0	28	° C
BPJC-6	163028	Temperature	8/16/1966	10:20 AM	0.0	25	° C
BPJC-6	163028	Temperature	8/17/1966	8:55 AM	0.0	22	° C
BPJC-6	163028	Temperature	8/18/1966	11:15 AM	0.0	27	° C
BPJC-6	163028	Temperature	8/19/1966	9:15 AM	0.0	22	° C
BPJC-6	163028	Temperature	3/20/1968	9:20 AM	0.0	8	° C
BPJC-6	163028	Temperature	4/2/1968	8:40 AM	0.0	7	° C
BPJC-6	163028	Temperature	4/15/1968	2:25 PM	0.0	15	° C
BPJC-6	163028	Temperature	5/2/1968	9:35 AM	0.0	13	° C
BPJC-6	163028	Temperature	5/28/1968	9:55 AM	0.0	11	° C
BPJC-6	163028	Temperature	6/19/1968	10:00 AM	0.0	20	° C
BPJC-6	163029	Ammonia	6/14/1966	9:47 AM	0.0	5.5	mg/L
BPJC-6	163029	Ammonia	6/20/1966	7:55 AM	0.0	0.15	mg/L
BPJC-6	163029	Ammonia	3/20/1968	9:50 AM	0.0	2.3	mg/L
BPJC-6	163029	Ammonia	4/2/1968	9:35 AM	0.0	4.7	mg/L
BPJC-6	163029	Ammonia	4/15/1968	3:00 PM	0.0	4.5	mg/L
BPJC-6	163029	Ammonia	5/2/1968	9:55 AM	0.0	4.7	mg/L
BPJC-6	163029	Ammonia	5/28/1968	10:25 AM	0.0	0.63	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	163029	Ammonia	6/19/1968	10:30 AM	0.0	0.66	mg/L
BPJC-6	163029	Temperature	4/12/1966	5:40 PM	0.0	9.5	° C
BPJC-6	163029	Temperature	6/14/1966	9:47 AM	0.0	21	° C
BPJC-6	163029	Temperature	6/16/1966	9:20 AM	0.0	18	° C
BPJC-6	163029	Temperature	6/20/1966	7:55 AM	0.0	21	° C
BPJC-6	163029	Temperature	6/22/1966	9:25 AM	0.0	24	° C
BPJC-6	163029	Temperature	6/24/1966	7:50 AM	0.0	21	° C
BPJC-6	163029	Temperature	8/15/1966	12:25 PM	0.0	27	° C
BPJC-6	163029	Temperature	8/16/1966	10:45 AM	0.0	25	° C
BPJC-6	163029	Temperature	8/17/1966	8:35 AM	0.0	22	° C
BPJC-6	163029	Temperature	8/18/1966	11:30 AM	0.0	27	° C
BPJC-6	163029	Temperature	8/19/1966	9:00 AM	0.0	22	° C
BPJC-6	163029	Temperature	3/20/1968	9:50 AM	0.0	8	° C
BPJC-6	163029	Temperature	4/2/1968	9:35 AM	0.0	9	° C
BPJC-6	163029	Temperature	4/15/1968	3:00 PM	0.0	14	° C
BPJC-6	163029	Temperature	5/2/1968	9:55 AM	0.0	14	° C
BPJC-6	163029	Temperature	5/28/1968	10:25 AM	0.0	11	° C
BPJC-6	163029	Temperature	6/19/1968	10:30 AM	0.0	20	° C
BPJC-6	163030	Ammonia	6/14/1966	9:25 AM	0.0	5.5	mg/L
BPJC-6	163030	Ammonia	6/20/1966	7:40 AM	0.0	5	mg/L
BPJC-6	163030	Ammonia	8/15/1966	12:00 PM	0.0	0.63	mg/L
BPJC-6	163030	Ammonia	3/20/1968	10:15 AM	0.0	2.8	mg/L
BPJC-6	163030	Ammonia	4/2/1968	10:00 AM	0.0	4.8	mg/L
BPJC-6	163030	Ammonia	4/15/1968	3:15 PM	0.0	6.3	mg/L
BPJC-6	163030	Ammonia	5/2/1968	10:20 AM	0.0	4	mg/L
BPJC-6	163030	Ammonia	5/28/1968	10:45 AM	0.0	1.1	mg/L
BPJC-6	163030	Ammonia	6/19/1968	10:40 AM	0.0	0.9	mg/L
BPJC-6	163030	Temperature	4/12/1966	5:55 PM	0.0	10	° C
BPJC-6	163030	Temperature	6/14/1966	9:25 AM	0.0	20	° C
BPJC-6	163030	Temperature	6/16/1966	9:30 AM	0.0	18	° C
BPJC-6	163030	Temperature	6/20/1966	7:40 AM	0.0	20	° C
BPJC-6	163030	Temperature	6/22/1966	9:10 AM	0.0	22	° C
BPJC-6	163030	Temperature	6/24/1966	7:20 AM	0.0	21	° C
BPJC-6	163030	Temperature	8/15/1966	12:00 PM	0.0	27	° C
BPJC-6	163030	Temperature	8/16/1966	11:10 AM	0.0	25	° C
BPJC-6	163030	Temperature	8/17/1966	8:10 AM	0.0	22	° C
BPJC-6	163030	Temperature	8/18/1966	12:00 PM	0.0	28	° C
BPJC-6	163030	Temperature	8/19/1966	8:30 AM	0.0	22	° C
BPJC-6	163030	Temperature	3/20/1968	10:15 AM	0.0	8	° C
BPJC-6	163030	Temperature	4/2/1968	10:00 AM	0.0	9	° C
BPJC-6	163030	Temperature	4/15/1968	3:15 PM	0.0	14	° C
BPJC-6	163030	Temperature	5/2/1968	10:20 AM	0.0	15	° C
BPJC-6	163030	Temperature	5/28/1968	10:45 AM	0.0	12	° C
BPJC-6	163030	Temperature	6/19/1968	10:40 AM	0.0	20	° C
BPJC-6	A-upstream	Ammonia	7/12/2002		0.0	0.21	mg/L
BPJC-6	A-upstream	Temperature	7/12/2002		0.0	22.4	° C
BPJC-6	BPJC-3	Ammonia	10/9/1974	12:00 PM	0.0	5.6	mg/L
BPJC-6	BPJC-3	Ammonia	12/11/1974	12:00 PM	0.0	2.3	mg/L
BPJC-6	BPJC-3	Ammonia	1/14/1975	1:00 PM	0.0	0.4	mg/L
BPJC-6	BPJC-3	Ammonia	2/11/1975	2:00 PM	0.0	0.8	mg/L
BPJC-6	BPJC-3	Ammonia	3/25/1975	2:00 PM	0.0	0.08	mg/L
BPJC-6	BPJC-3	Ammonia	5/2/1975	2:00 PM	0.0	0.05	mg/L
BPJC-6	BPJC-3	Ammonia	5/9/1975	2:00 PM	0.0	0.69	mg/L
BPJC-6	BPJC-3	Ammonia	6/18/1975	9:00 AM	0.0	0.98	mg/L
BPJC-6	BPJC-3	Ammonia	7/25/1975	2:00 PM	0.0	1.6	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-3	Ammonia	9/23/1975	9:00 AM	0.0	0.42	mg/L
BPJC-6	BPJC-3	Ammonia	11/29/1977	4:00 PM	0.0	0.4	mg/L
BPJC-6	BPJC-3	Temperature	3/13/1972	2:00 PM	0.0	8.3	° C
BPJC-6	BPJC-3	Temperature	4/24/1972	1:00 PM	0.0	15	° C
BPJC-6	BPJC-3	Temperature	5/25/1972	10:00 AM	0.0	20.6	° C
BPJC-6	BPJC-3	Temperature	6/12/1972	1:00 PM	0.0	17.8	° C
BPJC-6	BPJC-3	Temperature	7/6/1972	9:00 AM	0.0	21.1	° C
BPJC-6	BPJC-3	Temperature	7/25/1972	10:00 AM	0.0	25.6	° C
BPJC-6	BPJC-3	Temperature	8/17/1972	10:00 AM	0.0	25	° C
BPJC-6	BPJC-3	Temperature	9/12/1972	2:00 PM	0.0	24.4	° C
BPJC-6	BPJC-3	Temperature	10/4/1972	1:00 AM	0.0	20	° C
BPJC-6	BPJC-3	Temperature	11/14/1972	3:00 PM	0.0	5	° C
BPJC-6	BPJC-3	Temperature	12/14/1972	2:00 PM	0.0	6.1	° C
BPJC-6	BPJC-3	Temperature	1/4/1973	9:00 AM	0.0	3.9	° C
BPJC-6	BPJC-3	Temperature	2/20/1973	1:00 PM	0.0	6.7	° C
BPJC-6	BPJC-3	Temperature	3/12/1973	11:00 AM	0.0	7.8	° C
BPJC-6	BPJC-3	Temperature	4/12/1973	3:00 PM	0.0	8.3	° C
BPJC-6	BPJC-3	Temperature	5/16/1973	1:00 PM	0.0	15	° C
BPJC-6	BPJC-3	Temperature	6/8/1973	11:00 AM	0.0	18.9	° C
BPJC-6	BPJC-3	Temperature	7/3/1973	10:00 AM	0.0	23.3	° C
BPJC-6	BPJC-3	Temperature	8/17/1973	9:00 AM	0.0	21.1	° C
BPJC-6	BPJC-3	Temperature	9/17/1973	2:00 PM	0.0	17.2	° C
BPJC-6	BPJC-3	Temperature	10/18/1973	12:00 PM	0.0	15.6	° C
BPJC-6	BPJC-3	Temperature	11/28/1973	5:00 PM	0.0	9.4	° C
BPJC-6	BPJC-3	Temperature	12/27/1973	2:00 PM	0.0	6.1	° C
BPJC-6	BPJC-3	Temperature	1/18/1974	1:00 PM	0.0	7.2	° C
BPJC-6	BPJC-3	Temperature	2/15/1974	2:00 PM	0.0	5	° C
BPJC-6	BPJC-3	Temperature	4/9/1974	12:00 PM	0.0	8.3	° C
BPJC-6	BPJC-3	Temperature	5/24/1974	1:00 PM	0.0	15.6	° C
BPJC-6	BPJC-3	Temperature	6/14/1974	10:00 AM	0.0	19.4	° C
BPJC-6	BPJC-3	Temperature	6/19/1974	5:00 PM	0.0	21.1	° C
BPJC-6	BPJC-3	Temperature	6/28/1974	4:00 PM	0.0	18.9	° C
BPJC-6	BPJC-3	Temperature	7/2/1974	2:00 PM	0.0	23.9	° C
BPJC-6	BPJC-3	Temperature	7/10/1974	6:00 PM	0.0	25	° C
BPJC-6	BPJC-3	Temperature	7/17/1974	3:00 PM	0.0	26.7	° C
BPJC-6	BPJC-3	Temperature	8/13/1974	12:00 PM	0.0	25.6	° C
BPJC-6	BPJC-3	Temperature	10/9/1974	12:00 PM	0.0	15.6	° C
BPJC-6	BPJC-3	Temperature	10/9/1974	12:00 PM	0.0	60	° F
BPJC-6	BPJC-3	Temperature	12/11/1974	12:00 PM	0.0	6.7	° C
BPJC-6	BPJC-3	Temperature	12/11/1974	12:00 PM	0.0	44	° F
BPJC-6	BPJC-3	Temperature	1/14/1975	1:00 PM	0.0	0	° C
BPJC-6	BPJC-3	Temperature	1/14/1975	1:00 PM	0.0	32	° F
BPJC-6	BPJC-3	Temperature	3/25/1975	2:00 PM	0.0	4.4	° C
BPJC-6	BPJC-3	Temperature	3/25/1975	2:00 PM	0.0	40	° F
BPJC-6	BPJC-3	Temperature	5/2/1975	2:00 PM	0.0	16.7	° C
BPJC-6	BPJC-3	Temperature	5/2/1975	2:00 PM	0.0	62	° F
BPJC-6	BPJC-3	Temperature	5/9/1975	2:00 PM	0.0	18.3	° C
BPJC-6	BPJC-3	Temperature	5/9/1975	2:00 PM	0.0	65	° F
BPJC-6	BPJC-3	Temperature	6/18/1975	9:00 AM	0.0	21.1	° C
BPJC-6	BPJC-3	Temperature	6/18/1975	9:00 AM	0.0	70	° F
BPJC-6	BPJC-3	Temperature	9/27/1976	1:00 PM	0.0	21.5	° C
BPJC-6	BPJC-3	Temperature	12/16/1976	10:00 AM	0.0	2	° C
BPJC-6	BPJC-3	Temperature	7/25/1977	11:00 AM	0.0	27	° C
BPJC-6	BPJC-3	Temperature	11/29/1977	4:00 PM	0.0	1	° C
BPJC-6	BPJC-4	Ammonia	10/9/1974	11:00 AM	0.0	0.8	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-4	Ammonia	12/12/1974	11:00 AM	0.0	0	mg/L
BPJC-6	BPJC-4	Ammonia	1/14/1975	11:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-4	Ammonia	2/11/1975	11:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-4	Ammonia	3/25/1975	2:00 PM	0.0	0.09	mg/L
BPJC-6	BPJC-4	Ammonia	5/9/1975	11:00 AM	0.0	0.14	mg/L
BPJC-6	BPJC-4	Ammonia	6/18/1975	11:00 AM	0.0	0.14	mg/L
BPJC-6	BPJC-4	Ammonia	7/25/1975	1:00 PM	0.0	1.5	mg/L
BPJC-6	BPJC-4	Ammonia	9/24/1975	1:00 PM	0.0	0.08	mg/L
BPJC-6	BPJC-4	Temperature	3/13/1972	12:00 PM	0.0	8.3	° C
BPJC-6	BPJC-4	Temperature	4/24/1972	9:00 AM	0.0	15	° C
BPJC-6	BPJC-4	Temperature	5/25/1972	7:00 AM	0.0	21.7	° C
BPJC-6	BPJC-4	Temperature	6/12/1972	10:00 AM	0.0	16.7	° C
BPJC-6	BPJC-4	Temperature	7/25/1972	8:00 AM	0.0	24.4	° C
BPJC-6	BPJC-4	Temperature	8/16/1972	9:00 PM	0.0	26.7	° C
BPJC-6	BPJC-4	Temperature	9/12/1972	10:00 AM	0.0	22.8	° C
BPJC-6	BPJC-4	Temperature	10/4/1972	1:00 AM	0.0	18.3	° C
BPJC-6	BPJC-4	Temperature	11/14/1972	2:00 PM	0.0	9.4	° C
BPJC-6	BPJC-4	Temperature	12/14/1972	1:00 PM	0.0	5	° C
BPJC-6	BPJC-4	Temperature	1/3/1973	6:00 PM	0.0	6.1	° C
BPJC-6	BPJC-4	Temperature	2/20/1973	9:00 AM	0.0	5	° C
BPJC-6	BPJC-4	Temperature	3/12/1973	2:00 PM	0.0	7.8	° C
BPJC-6	BPJC-4	Temperature	4/12/1973	3:00 PM	0.0	7.2	° C
BPJC-6	BPJC-4	Temperature	5/16/1973	11:00 AM	0.0	13.3	° C
BPJC-6	BPJC-4	Temperature	6/8/1973	12:00 PM	0.0	17.2	° C
BPJC-6	BPJC-4	Temperature	7/3/1973	9:00 AM	0.0	22.8	° C
BPJC-6	BPJC-4	Temperature	8/16/1973	5:00 PM	0.0	23.9	° C
BPJC-6	BPJC-4	Temperature	9/17/1973	2:00 PM	0.0	16.7	° C
BPJC-6	BPJC-4	Temperature	10/18/1973	2:00 PM	0.0	13.3	° C
BPJC-6	BPJC-4	Temperature	11/30/1973	12:00 PM	0.0	8.3	° C
BPJC-6	BPJC-4	Temperature	12/27/1973	3:00 PM	0.0	6.1	° C
BPJC-6	BPJC-4	Temperature	1/30/1974	1:00 PM	0.0	4.4	° C
BPJC-6	BPJC-4	Temperature	4/9/1974	12:00 PM	0.0	7.2	° C
BPJC-6	BPJC-4	Temperature	5/24/1974	12:00 PM	0.0	15	° C
BPJC-6	BPJC-4	Temperature	6/14/1974	11:00 AM	0.0	19.4	° C
BPJC-6	BPJC-4	Temperature	8/13/1974	1:00 PM	0.0	26.1	° C
BPJC-6	BPJC-4	Temperature	10/9/1974	11:00 AM	0.0	14.4	° C
BPJC-6	BPJC-4	Temperature	10/9/1974	11:00 AM	0.0	58	° F
BPJC-6	BPJC-4	Temperature	12/12/1974	11:00 AM	0.0	7.2	° C
BPJC-6	BPJC-4	Temperature	12/12/1974	11:00 AM	0.0	45	° F
BPJC-6	BPJC-4	Temperature	1/14/1975	11:00 AM	0.0	0	° C
BPJC-6	BPJC-4	Temperature	1/14/1975	11:00 AM	0.0	32	° F
BPJC-6	BPJC-4	Temperature	3/25/1975	2:00 PM	0.0	4.4	° C
BPJC-6	BPJC-4	Temperature	3/25/1975	2:00 PM	0.0	40	° F
BPJC-6	BPJC-4	Temperature	5/9/1975	11:00 AM	0.0	15.6	° C
BPJC-6	BPJC-4	Temperature	5/9/1975	11:00 AM	0.0	60	° F
BPJC-6	BPJC-4	Temperature	6/18/1975	11:00 AM	0.0	22.2	° C
BPJC-6	BPJC-4	Temperature	6/18/1975	11:00 AM	0.0	72	° F
BPJC-6	BPJC-4	Temperature	7/25/1975	1:00 PM	0.0	24.4	° C
BPJC-6	BPJC-4	Temperature	7/25/1975	1:00 PM	0.0	76	° F
BPJC-6	BPJC-4	Temperature	9/24/1975	1:00 PM	0.0	17.8	° C
BPJC-6	BPJC-4	Temperature	9/24/1975	1:00 PM	0.0	64	° F
BPJC-6	BPJC-6	Ammonia	12/15/1977	11:00 AM	0.0	0.6	mg/L
BPJC-6	BPJC-6	Ammonia	12/15/1977	11:00 AM	0.0	0.6	mg/L
BPJC-6	BPJC-6	Ammonia	1/20/1978	11:00 AM	0.0	3.9	mg/L
BPJC-6	BPJC-6	Ammonia	2/24/1978	11:00 AM	0.0	5.7	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Ammonia	2/24/1978	11:00 AM	0.0	5.7	mg/L
BPJC-6	BPJC-6	Ammonia	3/27/1978	10:00 AM	0.0	0.9	mg/L
BPJC-6	BPJC-6	Ammonia	3/27/1978	10:00 AM	0.0	0.9	mg/L
BPJC-6	BPJC-6	Ammonia	4/17/1978	11:00 AM	0.0	2.1	mg/L
BPJC-6	BPJC-6	Ammonia	5/10/1978	11:00 AM	0.0	0.6	mg/L
BPJC-6	BPJC-6	Ammonia	5/10/1978	11:00 AM	0.0	0.6	mg/L
BPJC-6	BPJC-6	Ammonia	5/26/1978	10:00 AM	0.0	0.7	mg/L
BPJC-6	BPJC-6	Ammonia	5/26/1978	10:00 AM	0.0	0.7	mg/L
BPJC-6	BPJC-6	Ammonia	6/26/1978	10:00 AM	0.0	3.6	mg/L
BPJC-6	BPJC-6	Ammonia	7/14/1978	11:00 AM	0.0	0.3	mg/L
BPJC-6	BPJC-6	Ammonia	7/28/1978	10:00 AM	0.0	0.8	mg/L
BPJC-6	BPJC-6	Ammonia	8/16/1978	4:00 PM	0.0	0.5	mg/L
BPJC-6	BPJC-6	Ammonia	9/27/1978	2:00 PM	0.0	2.5	mg/L
BPJC-6	BPJC-6	Ammonia	10/26/1978	10:00 AM	0.0	3.4	mg/L
BPJC-6	BPJC-6	Ammonia	12/6/1978	9:00 AM	0.0	4.1	mg/L
BPJC-6	BPJC-6	Ammonia	12/28/1978	1:00 PM	0.0	2	mg/L
BPJC-6	BPJC-6	Ammonia	1/31/1979	12:00 PM	0.0	5.4	mg/L
BPJC-6	BPJC-6	Ammonia	2/15/1979	2:00 PM	0.0	5.7	mg/L
BPJC-6	BPJC-6	Ammonia	3/14/1979	1:00 PM	0.0	1.4	mg/L
BPJC-6	BPJC-6	Ammonia	4/10/1979	2:00 PM	0.0	1.2	mg/L
BPJC-6	BPJC-6	Ammonia	5/10/1979	1:00 PM	0.0	1.2	mg/L
BPJC-6	BPJC-6	Ammonia	6/6/1979	12:00 PM	0.0	1.2	mg/L
BPJC-6	BPJC-6	Ammonia	6/6/1979	1:00 PM	0.0	1.3	mg/L
BPJC-6	BPJC-6	Ammonia	7/23/1979	12:00 PM	0.0	2	mg/L
BPJC-6	BPJC-6	Ammonia	8/7/1979	1:00 PM	0.0	0.2	mg/L
BPJC-6	BPJC-6	Ammonia	9/17/1979	12:00 PM	0.0	5.8	mg/L
BPJC-6	BPJC-6	Ammonia	10/11/1979	1:00 PM	0.0	10	mg/L
BPJC-6	BPJC-6	Ammonia	11/6/1979	12:00 PM	0.0	11	mg/L
BPJC-6	BPJC-6	Ammonia	12/6/1979	12:00 PM	0.0	6.9	mg/L
BPJC-6	BPJC-6	Ammonia	1/17/1980	12:00 PM	0.0	6.1	mg/L
BPJC-6	BPJC-6	Ammonia	2/11/1980	11:00 AM	0.0	11	mg/L
BPJC-6	BPJC-6	Ammonia	3/13/1980	11:00 AM	0.0	2.3	mg/L
BPJC-6	BPJC-6	Ammonia	4/9/1980	12:00 PM	0.0	0.8	mg/L
BPJC-6	BPJC-6	Ammonia	5/16/1980	1:00 PM	0.0	2	mg/L
BPJC-6	BPJC-6	Ammonia	7/1/1980	1:00 PM	0.0	2.1	mg/L
BPJC-6	BPJC-6	Ammonia	7/24/1980	3:00 PM	0.0	4.6	mg/L
BPJC-6	BPJC-6	Ammonia	8/13/1980	3:00 PM	0.0	5	mg/L
BPJC-6	BPJC-6	Ammonia	9/16/1980	2:00 PM	0.0	2.3	mg/L
BPJC-6	BPJC-6	Ammonia	10/3/1980	1:00 PM	0.0	8.6	mg/L
BPJC-6	BPJC-6	Ammonia	10/28/1980	3:00 PM	0.0	6.9	mg/L
BPJC-6	BPJC-6	Ammonia	12/10/1980	12:00 PM	0.0	6.2	mg/L
BPJC-6	BPJC-6	Ammonia	12/23/1980	2:00 PM	0.0	9.6	mg/L
BPJC-6	BPJC-6	Ammonia	2/18/1981	1:00 PM	0.0	2	mg/L
BPJC-6	BPJC-6	Ammonia	3/26/1981	1:00 PM	0.0	9.1	mg/L
BPJC-6	BPJC-6	Ammonia	3/31/1981	8:00 AM	0.0	12	mg/L
BPJC-6	BPJC-6	Ammonia	4/15/1981	12:00 PM	0.0	1	mg/L
BPJC-6	BPJC-6	Ammonia	5/20/1981	2:00 PM	0.0	0.4	mg/L
BPJC-6	BPJC-6	Ammonia	6/24/1981	4:00 PM	0.0	0.8	mg/L
BPJC-6	BPJC-6	Ammonia	8/6/1981	2:00 PM	0.0	0.29	mg/L
BPJC-6	BPJC-6	Ammonia	8/27/1981	3:00 PM	0.0	1.1	mg/L
BPJC-6	BPJC-6	Ammonia	10/20/1981	12:00 PM	0.0	0.98	mg/L
BPJC-6	BPJC-6	Ammonia	11/10/1981	2:00 PM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	12/3/1981	10:00 AM	0.0	4.3	mg/L
BPJC-6	BPJC-6	Ammonia	1/5/1982	4:00 PM	0.0	0.74	mg/L
BPJC-6	BPJC-6	Ammonia	3/9/1982	3:00 PM	0.0	2.6	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Ammonia	4/7/1982	12:00 PM	0.0	3.3	mg/L
BPJC-6	BPJC-6	Ammonia	5/12/1982	3:00 PM	0.0	2.3	mg/L
BPJC-6	BPJC-6	Ammonia	6/16/1982	2:00 PM	0.0	1.5	mg/L
BPJC-6	BPJC-6	Ammonia	8/24/1982	2:00 PM	0.0	7.9	mg/L
BPJC-6	BPJC-6	Ammonia	9/30/1982	2:00 PM	0.0	0.62	mg/L
BPJC-6	BPJC-6	Ammonia	11/9/1982	3:00 PM	0.0	0.24	mg/L
BPJC-6	BPJC-6	Ammonia	12/29/1982	1:00 PM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	2/3/1983	1:00 PM	0.0	0.17	mg/L
BPJC-6	BPJC-6	Ammonia	3/15/1983	2:00 PM	0.0	0.11	mg/L
BPJC-6	BPJC-6	Ammonia	4/12/1983	2:00 PM	0.0	0.18	mg/L
BPJC-6	BPJC-6	Ammonia	5/3/1983	2:00 PM	0.0	0.11	mg/L
BPJC-6	BPJC-6	Ammonia	6/21/1983	2:00 PM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	8/17/1983	2:00 PM	0.0	0.64	mg/L
BPJC-6	BPJC-6	Ammonia	11/3/1983	10:00 AM	0.0	0.18	mg/L
BPJC-6	BPJC-6	Ammonia	12/7/1983	2:00 PM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	3/15/1984	12:00 PM	0.0	0.35	mg/L
BPJC-6	BPJC-6	Ammonia	4/19/1984	12:00 PM	0.0	0.47	mg/L
BPJC-6	BPJC-6	Ammonia	5/10/1984	12:00 PM	0.0	0.37	mg/L
BPJC-6	BPJC-6	Ammonia	6/20/1984	2:00 PM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	7/19/1984	10:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	8/23/1984	10:00 AM	0.0	0.79	mg/L
BPJC-6	BPJC-6	Ammonia	9/18/1984	2:00 PM	0.0	0.94	mg/L
BPJC-6	BPJC-6	Ammonia	11/8/1984	11:00 AM	0.0	0.49	mg/L
BPJC-6	BPJC-6	Ammonia	12/12/1984	1:00 PM	0.0	1	mg/L
BPJC-6	BPJC-6	Ammonia	1/17/1985	11:00 AM	0.0	0.14	mg/L
BPJC-6	BPJC-6	Ammonia	3/7/1985	8:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	4/16/1985	10:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	5/22/1985	2:00 PM	0.0	0.11	mg/L
BPJC-6	BPJC-6	Ammonia	7/1/1985	2:00 PM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	8/20/1985	10:00 AM	0.0	0.34	mg/L
BPJC-6	BPJC-6	Ammonia	9/17/1985	10:00 AM	0.0	0.77	mg/L
BPJC-6	BPJC-6	Ammonia	10/17/1985	10:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	12/11/1985	10:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	1/29/1986	12:00 PM	0.0	0.24	mg/L
BPJC-6	BPJC-6	Ammonia	2/21/1986	9:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	3/26/1986	9:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	5/1/1986	9:30 AM	0.0	0.22	mg/L
BPJC-6	BPJC-6	Ammonia	6/18/1986	9:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	7/16/1986	9:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	7/31/1986	2:00 PM	0.0	0.35	mg/L
BPJC-6	BPJC-6	Ammonia	9/11/1986	9:00 AM	0.0	17	mg/L
BPJC-6	BPJC-6	Ammonia	10/8/1986	10:30 AM	0.0	0.25	mg/L
BPJC-6	BPJC-6	Ammonia	12/3/1986	9:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	1/14/1987	9:30 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	2/18/1987	8:30 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	3/25/1987	9:00 AM	0.0	0.25	mg/L
BPJC-6	BPJC-6	Ammonia	4/29/1987	10:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	6/3/1987	9:30 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	7/21/1987	11:00 AM	0.0	1.3	mg/L
BPJC-6	BPJC-6	Ammonia	9/10/1987	9:30 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	10/27/1987	11:00 AM	0.0	0.58	mg/L
BPJC-6	BPJC-6	Ammonia	12/2/1987	12:00 PM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	1/11/1988	12:00 PM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	2/23/1988	12:00 PM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	3/28/1988	12:30 PM	0.0	0.1	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Ammonia	5/16/1988	12:30 PM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	6/27/1988	1:00 PM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	8/15/1988	12:30 PM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	9/19/1988	12:30 PM	0.0	0.2	mg/L
BPJC-6	BPJC-6	Ammonia	11/9/1988	11:00 AM	0.0	0.33	mg/L
BPJC-6	BPJC-6	Ammonia	12/19/1988	10:30 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	1/26/1989	11:30 AM	0.0	0.15	mg/L
BPJC-6	BPJC-6	Ammonia	3/2/1989	10:30 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	4/5/1989	11:00 AM	0.0	0.12	mg/L
BPJC-6	BPJC-6	Ammonia	5/15/1989	11:00 AM	0.0	0.19	mg/L
BPJC-6	BPJC-6	Ammonia	6/7/1989	1:30 PM	0.0	0.13	mg/L
BPJC-6	BPJC-6	Ammonia	6/29/1989	11:30 AM	0.0	0.13	mg/L
BPJC-6	BPJC-6	Ammonia	7/28/1989	1:15 PM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	9/18/1989	10:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	10/24/1989	2:30 PM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	12/14/1989	11:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	1/23/1990	11:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	3/6/1990	11:00 AM	0.0	0.11	mg/L
BPJC-6	BPJC-6	Ammonia	4/3/1990	11:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	5/14/1990	11:00 AM	0.0	0.1	mg/L
BPJC-6	BPJC-6	Ammonia	6/25/1990	11:00 AM	0.0	0.06	mg/L
BPJC-6	BPJC-6	Ammonia	7/31/1990	11:00 AM	0.0	0.07	mg/L
BPJC-6	BPJC-6	Ammonia	9/25/1990	11:45 AM	0.0	1.3	mg/L
BPJC-6	BPJC-6	Ammonia	10/24/1990	11:00 AM	0.0	0.04	mg/L
BPJC-6	BPJC-6	Ammonia	12/11/1990	10:30 AM	0.0	0.06	mg/L
BPJC-6	BPJC-6	Ammonia	1/17/1991	9:30 AM	0.0	0.12	mg/L
BPJC-6	BPJC-6	Ammonia	3/6/1991	11:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	4/4/1991	8:15 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	5/23/1991	9:00 AM	0.0	0.04	mg/L
BPJC-6	BPJC-6	Ammonia	6/27/1991	9:15 AM	0.0	0.06	mg/L
BPJC-6	BPJC-6	Ammonia	8/22/1991	9:00 AM	0.0	0.06	mg/L
BPJC-6	BPJC-6	Ammonia	10/1/1991	9:00 AM	0.0	0.09	mg/L
BPJC-6	BPJC-6	Ammonia	11/15/1991	9:00 AM	0.0	0.06	mg/L
BPJC-6	BPJC-6	Ammonia	12/19/1991	9:15 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	2/5/1992	8:45 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	3/18/1992	9:15 AM	0.0	0.02	mg/L
BPJC-6	BPJC-6	Ammonia	6/4/1992	8:30 AM	0.0	0.21	mg/L
BPJC-6	BPJC-6	Ammonia	7/14/1992	11:30 AM	0.0	0.12	mg/L
BPJC-6	BPJC-6	Ammonia	8/13/1992	9:15 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	9/24/1992	9:15 AM	0.0	0.02	mg/L
BPJC-6	BPJC-6	Ammonia	11/19/1992	9:45 AM	0.0	0.03	mg/L
BPJC-6	BPJC-6	Ammonia	12/17/1992	10:15 AM	0.0	0.04	mg/L
BPJC-6	BPJC-6	Ammonia	2/2/1993	9:45 AM	0.0	0.07	mg/L
BPJC-6	BPJC-6	Ammonia	3/10/1993	9:00 AM	0.0	0.04	mg/L
BPJC-6	BPJC-6	Ammonia	4/6/1993	10:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	5/25/1993	9:45 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	6/29/1993	9:45 AM	0.0	0.03	mg/L
BPJC-6	BPJC-6	Ammonia	8/19/1993	10:45 AM	0.0	0.55	mg/L
BPJC-6	BPJC-6	Ammonia	9/29/1993	10:45 AM	0.0	0.05	mg/L
BPJC-6	BPJC-6	Ammonia	11/16/1993	10:00 AM	0.0	0.02	mg/L
BPJC-6	BPJC-6	Ammonia	12/21/1993	10:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	3/3/1994	10:15 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	3/30/1994	10:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	4/29/1994	10:00 AM	0.0	0.15	mg/L
BPJC-6	BPJC-6	Ammonia	7/1/1994	10:00 AM	0.0	0.06	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Ammonia	8/16/1994	9:00 AM	0.0	0.04	mg/L
BPJC-6	BPJC-6	Ammonia	9/7/1994	8:45 AM	0.0	0.43	mg/L
BPJC-6	BPJC-6	Ammonia	9/27/1994	8:30 AM	0.0	0.16	mg/L
BPJC-6	BPJC-6	Ammonia	11/3/1994	8:30 AM	0.0	0.07	mg/L
BPJC-6	BPJC-6	Ammonia	1/5/1995	10:45 AM	0.0	0.06	mg/L
BPJC-6	BPJC-6	Ammonia	2/2/1995	10:15 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	3/1/1995	10:15 AM	0.0	0.07	mg/L
BPJC-6	BPJC-6	Ammonia	3/28/1995	11:45 AM	0.0	0.06	mg/L
BPJC-6	BPJC-6	Ammonia	5/12/1995	10:00 AM	0.0	0.06	mg/L
BPJC-6	BPJC-6	Ammonia	6/15/1995	10:15 AM	0.0	0.05	mg/L
BPJC-6	BPJC-6	Ammonia	9/8/1995	9:00 AM	0.0	1.3	mg/L
BPJC-6	BPJC-6	Ammonia	9/22/1995	11:25 AM	0.0	3.3	mg/L
BPJC-6	BPJC-6	Ammonia	10/17/1995	10:30 AM	0.0	0.15	mg/L
BPJC-6	BPJC-6	Ammonia	1/3/1996	11:00 AM	0.0	0.08	mg/L
BPJC-6	BPJC-6	Ammonia	1/30/1996	10:00 AM	0.0	2.9	mg/L
BPJC-6	BPJC-6	Ammonia	2/28/1996	10:45 AM	0.0	0.03	mg/L
BPJC-6	BPJC-6	Ammonia	3/29/1996	10:15 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	4/18/1996	12:00 PM	0.0	0.05	mg/L
BPJC-6	BPJC-6	Ammonia	5/21/1996	11:45 AM	0.0	0.02	mg/L
BPJC-6	BPJC-6	Ammonia	8/27/1996	11:15 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	10/10/1996	10:45 AM	0.0	0.04	mg/L
BPJC-6	BPJC-6	Ammonia	12/2/1996	10:30 AM	0.0	0.12	mg/L
BPJC-6	BPJC-6	Ammonia	1/8/1997	10:30 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	2/20/1997	10:30 AM	0.0	0.09	mg/L
BPJC-6	BPJC-6	Ammonia	3/17/1997	10:30 AM	0.0	0.03	mg/L
BPJC-6	BPJC-6	Ammonia	5/1/1997	10:45 AM	0.0	0.19	mg/L
BPJC-6	BPJC-6	Ammonia	7/7/1997	10:45 AM	0.0	0.31	mg/L
BPJC-6	BPJC-6	Ammonia	9/2/1997	10:15 AM	0.0	0.2	mg/L
BPJC-6	BPJC-6	Ammonia	9/19/1997	10:45 AM	0.0	0.22	mg/L
BPJC-6	BPJC-6	Ammonia	10/15/1997	11:00 AM	0.0	0.22	mg/L
BPJC-6	BPJC-6	Ammonia	11/20/1997	10:30 AM	0.0	0.19	mg/L
BPJC-6	BPJC-6	Ammonia	1/7/1998	8:00 AM	0.0	0.14	mg/L
BPJC-6	BPJC-6	Ammonia	3/11/1998	4:00 PM	0.0	0.04	mg/L
BPJC-6	BPJC-6	Ammonia	4/29/1998	1:00 PM	0.0	0.35	mg/L
BPJC-6	BPJC-6	Ammonia	6/4/1998	10:45 AM	0.0	0.38	mg/L
BPJC-6	BPJC-6	Ammonia	8/5/1998	11:45 AM	0.0	0.32	mg/L
BPJC-6	BPJC-6	Ammonia	9/3/1998	11:15 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	9/30/1998	11:30 AM	0.0	0.37	mg/L
BPJC-6	BPJC-6	Ammonia	11/4/1998	11:15 AM	0.0	0.31	mg/L
BPJC-6	BPJC-6	Ammonia	12/9/1998	10:00 AM	0.0	0.08	mg/L
BPJC-6	BPJC-6	Ammonia	1/4/2000	12:00 AM	0.0	0.02	mg/L
BPJC-6	BPJC-6	Ammonia	2/14/2000	12:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	3/24/2000	12:00 AM	0.0	0.13	mg/L
BPJC-6	BPJC-6	Ammonia	5/30/2000	12:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	6/23/2000	12:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	7/31/2000	12:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	9/18/2000	12:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	12/14/2000	12:00 AM	0.0	2.2	mg/L
BPJC-6	BPJC-6	Ammonia	1/18/2001	12:00 AM	0.0	0.42	mg/L
BPJC-6	BPJC-6	Ammonia	3/1/2001	12:00 AM	0.0	0.11	mg/L
BPJC-6	BPJC-6	Ammonia	4/5/2001	12:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	5/3/2001	12:00 AM	0.0	0.24	mg/L
BPJC-6	BPJC-6	Ammonia	5/30/2001	12:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	7/23/2001	12:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	8/15/2001	12:00 AM	0.0	0.01	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Ammonia	9/17/2001	12:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	10/25/2001	12:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	11/29/2001	12:00 AM	0.0	1.3	mg/L
BPJC-6	BPJC-6	Ammonia	1/22/2002	12:00 AM	0.0	0.05	mg/L
BPJC-6	BPJC-6	Ammonia	2/20/2002	12:00 AM	0.0	0.22	mg/L
BPJC-6	BPJC-6	Ammonia	4/2/2002	12:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	5/14/2002	12:00 AM	0.0	0.03	mg/L
BPJC-6	BPJC-6	Ammonia	6/18/2002	12:00 AM	0.0	0.01	mg/L
BPJC-6	BPJC-6	Ammonia	7/24/2002	12:00 AM	0.0	0.03	mg/L
BPJC-6	BPJC-6	Ammonia	9/10/2002	12:00 AM	0.0	0.02	mg/L
BPJC-6	BPJC-6	Ammonia	9/10/2002	12:00 AM	0.0	0.03	mg/L
BPJC-6	BPJC-6	Ammonia	1/29/2004		0.0	0.17	mg/L
BPJC-6	BPJC-6	Boron	12/15/1977	11:00 AM	0.0	0	µg/L
BPJC-6	BPJC-6	Boron	2/24/1978	11:00 AM	0.0	600	µg/L
BPJC-6	BPJC-6	Boron	3/27/1978	10:00 AM	0.0	100	µg/L
BPJC-6	BPJC-6	Boron	5/10/1978	11:00 AM	0.0	200	µg/L
BPJC-6	BPJC-6	Boron	1/17/1980	12:00 PM	0.0	300	µg/L
BPJC-6	BPJC-6	Boron	2/11/1980	11:00 AM	0.0	420	µg/L
BPJC-6	BPJC-6	Boron	3/13/1980	11:00 AM	0.0	140	µg/L
BPJC-6	BPJC-6	Boron	4/9/1980	12:00 PM	0.0	90	µg/L
BPJC-6	BPJC-6	Boron	5/16/1980	1:00 PM	0.0	280	µg/L
BPJC-6	BPJC-6	Boron	7/1/1980	1:00 PM	0.0	260	µg/L
BPJC-6	BPJC-6	Boron	7/24/1980	3:00 PM	0.0	560	µg/L
BPJC-6	BPJC-6	Boron	8/13/1980	3:00 PM	0.0	550	µg/L
BPJC-6	BPJC-6	Boron	9/16/1980	2:00 PM	0.0	160	µg/L
BPJC-6	BPJC-6	Boron	10/3/1980	1:00 PM	0.0	540	µg/L
BPJC-6	BPJC-6	Boron	10/28/1980	3:00 PM	0.0	320	µg/L
BPJC-6	BPJC-6	Boron	12/10/1980	12:00 PM	0.0	360	µg/L
BPJC-6	BPJC-6	Boron	12/23/1980	2:00 PM	0.0	580	µg/L
BPJC-6	BPJC-6	Boron	2/18/1981	1:00 PM	0.0	50	µg/L
BPJC-6	BPJC-6	Boron	3/26/1981	1:00 PM	0.0	480	µg/L
BPJC-6	BPJC-6	Boron	3/31/1981	8:00 AM	0.0	440	µg/L
BPJC-6	BPJC-6	Boron	4/15/1981	12:00 PM	0.0	110	µg/L
BPJC-6	BPJC-6	Boron	5/20/1981	2:00 PM	0.0	100	µg/L
BPJC-6	BPJC-6	Boron	8/6/1981	2:00 PM	0.0	80	µg/L
BPJC-6	BPJC-6	Boron	8/6/1981	2:00 PM	0.0	78	µg/L
BPJC-6	BPJC-6	Boron	8/27/1981	3:00 PM	0.0	150	µg/L
BPJC-6	BPJC-6	Boron	10/20/1981	12:00 PM	0.0	148	µg/L
BPJC-6	BPJC-6	Boron	10/20/1981	12:00 PM	0.0	150	µg/L
BPJC-6	BPJC-6	Boron	11/10/1981	2:00 PM	0.0	100	µg/L
BPJC-6	BPJC-6	Boron	11/10/1981	2:00 PM	0.0	102	µg/L
BPJC-6	BPJC-6	Boron	12/3/1981	10:00 AM	0.0	235	µg/L
BPJC-6	BPJC-6	Boron	12/3/1981	10:00 AM	0.0	240	µg/L
BPJC-6	BPJC-6	Boron	1/5/1982	4:00 PM	0.0	90	µg/L
BPJC-6	BPJC-6	Boron	1/5/1982	4:00 PM	0.0	94	µg/L
BPJC-6	BPJC-6	Boron	3/9/1982	3:00 PM	0.0	158	µg/L
BPJC-6	BPJC-6	Boron	3/9/1982	3:00 PM	0.0	160	µg/L
BPJC-6	BPJC-6	Boron	4/7/1982	12:00 PM	0.0	172	µg/L
BPJC-6	BPJC-6	Boron	4/7/1982	12:00 PM	0.0	170	µg/L
BPJC-6	BPJC-6	Boron	6/16/1982	2:00 PM	0.0	137	µg/L
BPJC-6	BPJC-6	Boron	6/16/1982	2:00 PM	0.0	140	µg/L
BPJC-6	BPJC-6	Boron	9/30/1982	2:00 PM	0.0	575	µg/L
BPJC-6	BPJC-6	Boron	9/30/1982	2:00 PM	0.0	580	µg/L
BPJC-6	BPJC-6	Boron	11/9/1982	3:00 PM	0.0	530	µg/L
BPJC-6	BPJC-6	Boron	11/9/1982	3:00 PM	0.0	531	µg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Boron	12/29/1982	1:00 PM	0.0	90	µg/L
BPJC-6	BPJC-6	Boron	12/29/1982	1:00 PM	0.0	93	µg/L
BPJC-6	BPJC-6	Boron	2/3/1983	1:00 PM	0.0	90	µg/L
BPJC-6	BPJC-6	Boron	2/3/1983	1:00 PM	0.0	94	µg/L
BPJC-6	BPJC-6	Boron	3/15/1983	2:00 PM	0.0	215	µg/L
BPJC-6	BPJC-6	Boron	3/15/1983	2:00 PM	0.0	220	µg/L
BPJC-6	BPJC-6	Boron	4/12/1983	2:00 PM	0.0	130	µg/L
BPJC-6	BPJC-6	Boron	4/12/1983	2:00 PM	0.0	131	µg/L
BPJC-6	BPJC-6	Boron	5/3/1983	2:00 PM	0.0	100	µg/L
BPJC-6	BPJC-6	Boron	5/3/1983	2:00 PM	0.0	103	µg/L
BPJC-6	BPJC-6	Boron	6/21/1983	2:00 PM	0.0	128	µg/L
BPJC-6	BPJC-6	Boron	6/21/1983	2:00 PM	0.0	130	µg/L
BPJC-6	BPJC-6	Boron	8/17/1983	2:00 PM	0.0	68	µg/L
BPJC-6	BPJC-6	Boron	8/17/1983	2:00 PM	0.0	70	µg/L
BPJC-6	BPJC-6	Boron	11/3/1983	10:00 AM	0.0	240	µg/L
BPJC-6	BPJC-6	Boron	11/3/1983	10:00 AM	0.0	242	µg/L
BPJC-6	BPJC-6	Boron	12/7/1983	2:00 PM	0.0	110	µg/L
BPJC-6	BPJC-6	Boron	12/7/1983	2:00 PM	0.0	114	µg/L
BPJC-6	BPJC-6	Boron	3/15/1984	12:00 PM	0.0	206	µg/L
BPJC-6	BPJC-6	Boron	3/15/1984	12:00 PM	0.0	210	µg/L
BPJC-6	BPJC-6	Boron	4/19/1984	12:00 PM	0.0	150	µg/L
BPJC-6	BPJC-6	Boron	4/19/1984	12:00 PM	0.0	146	µg/L
BPJC-6	BPJC-6	Boron	5/10/1984	12:00 PM	0.0	206	µg/L
BPJC-6	BPJC-6	Boron	5/10/1984	12:00 PM	0.0	210	µg/L
BPJC-6	BPJC-6	Boron	6/20/1984	2:00 PM	0.0	260	µg/L
BPJC-6	BPJC-6	Boron	6/20/1984	2:00 PM	0.0	261	µg/L
BPJC-6	BPJC-6	Boron	7/19/1984	10:00 AM	0.0	490	µg/L
BPJC-6	BPJC-6	Boron	7/19/1984	10:00 AM	0.0	494	µg/L
BPJC-6	BPJC-6	Boron	8/23/1984	10:00 AM	0.0	470	µg/L
BPJC-6	BPJC-6	Boron	8/23/1984	10:00 AM	0.0	474	µg/L
BPJC-6	BPJC-6	Boron	9/18/1984	2:00 PM	0.0	600	µg/L
BPJC-6	BPJC-6	Boron	9/18/1984	2:00 PM	0.0	595	µg/L
BPJC-6	BPJC-6	Boron	11/8/1984	11:00 AM	0.0	512	µg/L
BPJC-6	BPJC-6	Boron	11/8/1984	11:00 AM	0.0	510	µg/L
BPJC-6	BPJC-6	Boron	12/12/1984	1:00 PM	0.0	486	µg/L
BPJC-6	BPJC-6	Boron	12/12/1984	1:00 PM	0.0	490	µg/L
BPJC-6	BPJC-6	Boron	1/17/1985	11:00 AM	0.0	235	µg/L
BPJC-6	BPJC-6	Boron	1/17/1985	11:00 AM	0.0	240	µg/L
BPJC-6	BPJC-6	Boron	3/7/1985	8:00 AM	0.0	98	µg/L
BPJC-6	BPJC-6	Boron	3/7/1985	8:00 AM	0.0	100	µg/L
BPJC-6	BPJC-6	Boron	4/16/1985	10:00 AM	0.0	130	µg/L
BPJC-6	BPJC-6	Boron	4/16/1985	10:00 AM	0.0	132	µg/L
BPJC-6	BPJC-6	Boron	5/22/1985	2:00 PM	0.0	235	µg/L
BPJC-6	BPJC-6	Boron	5/22/1985	2:00 PM	0.0	240	µg/L
BPJC-6	BPJC-6	Boron	7/1/1985	2:00 PM	0.0	140	µg/L
BPJC-6	BPJC-6	Boron	7/1/1985	2:00 PM	0.0	142	µg/L
BPJC-6	BPJC-6	Boron	8/20/1985	10:00 AM	0.0	180	µg/L
BPJC-6	BPJC-6	Boron	8/20/1985	10:00 AM	0.0	178	µg/L
BPJC-6	BPJC-6	Boron	9/17/1985	10:00 AM	0.0	470	µg/L
BPJC-6	BPJC-6	Boron	9/17/1985	10:00 AM	0.0	473	µg/L
BPJC-6	BPJC-6	Boron	10/17/1985	10:00 AM	0.0	410	µg/L
BPJC-6	BPJC-6	Boron	10/17/1985	10:00 AM	0.0	414	µg/L
BPJC-6	BPJC-6	Boron	12/11/1985	10:00 AM	0.0	67	µg/L
BPJC-6	BPJC-6	Boron	12/11/1985	10:00 AM	0.0	70	µg/L
BPJC-6	BPJC-6	Boron	1/29/1986	12:00 PM	0.0	340	µg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Boron	1/29/1986	12:00 PM	0.0	341	µg/L
BPJC-6	BPJC-6	Boron	2/21/1986	9:00 AM	0.0	133	µg/L
BPJC-6	BPJC-6	Boron	2/21/1986	9:00 AM	0.0	130	µg/L
BPJC-6	BPJC-6	Boron	3/26/1986	9:00 AM	0.0	170	µg/L
BPJC-6	BPJC-6	Boron	3/26/1986	9:00 AM	0.0	168	µg/L
BPJC-6	BPJC-6	Boron	5/1/1986	9:30 AM	0.0	140	µg/L
BPJC-6	BPJC-6	Boron	5/1/1986	9:30 AM	0.0	144	µg/L
BPJC-6	BPJC-6	Boron	6/18/1986	9:00 AM	0.0	200	µg/L
BPJC-6	BPJC-6	Boron	7/16/1986	9:00 AM	0.0	190	µg/L
BPJC-6	BPJC-6	Boron	7/16/1986	9:00 AM	0.0	193	µg/L
BPJC-6	BPJC-6	Boron	7/31/1986	2:00 PM	0.0	387	µg/L
BPJC-6	BPJC-6	Boron	9/11/1986	9:00 AM	0.0	630	µg/L
BPJC-6	BPJC-6	Boron	10/8/1986	10:30 AM	0.0	280	µg/L
BPJC-6	BPJC-6	Boron	10/8/1986	10:30 AM	0.0	284	µg/L
BPJC-6	BPJC-6	Boron	12/3/1986	9:00 AM	0.0	75	µg/L
BPJC-6	BPJC-6	Boron	12/3/1986	9:00 AM	0.0	80	µg/L
BPJC-6	BPJC-6	Boron	1/14/1987	9:30 AM	0.0	210	µg/L
BPJC-6	BPJC-6	Boron	1/14/1987	9:30 AM	0.0	207	µg/L
BPJC-6	BPJC-6	Boron	2/18/1987	8:30 AM	0.0	170	µg/L
BPJC-6	BPJC-6	Boron	2/18/1987	8:30 AM	0.0	171	µg/L
BPJC-6	BPJC-6	Boron	3/25/1987	9:00 AM	0.0	196	µg/L
BPJC-6	BPJC-6	Boron	3/25/1987	9:00 AM	0.0	200	µg/L
BPJC-6	BPJC-6	Boron	4/29/1987	10:00 AM	0.0	206	µg/L
BPJC-6	BPJC-6	Boron	4/29/1987	10:00 AM	0.0	210	µg/L
BPJC-6	BPJC-6	Boron	6/3/1987	9:30 AM	0.0	220	µg/L
BPJC-6	BPJC-6	Boron	6/3/1987	9:30 AM	0.0	224	µg/L
BPJC-6	BPJC-6	Boron	7/21/1987	11:00 AM	0.0	544	µg/L
BPJC-6	BPJC-6	Boron	7/21/1987	11:00 AM	0.0	540	µg/L
BPJC-6	BPJC-6	Boron	9/10/1987	9:30 AM	0.0	500	µg/L
BPJC-6	BPJC-6	Boron	9/10/1987	9:30 AM	0.0	495	µg/L
BPJC-6	BPJC-6	Boron	10/27/1987	11:00 AM	0.0	490	µg/L
BPJC-6	BPJC-6	Boron	12/2/1987	12:00 PM	0.0	110	µg/L
BPJC-6	BPJC-6	Boron	12/2/1987	12:00 PM	0.0	113	µg/L
BPJC-6	BPJC-6	Boron	1/11/1988	12:00 PM	0.0	160	µg/L
BPJC-6	BPJC-6	Boron	1/11/1988	12:00 PM	0.0	164	µg/L
BPJC-6	BPJC-6	Boron	2/23/1988	12:00 PM	0.0	98	µg/L
BPJC-6	BPJC-6	Boron	2/23/1988	12:00 PM	0.0	100	µg/L
BPJC-6	BPJC-6	Boron	3/28/1988	12:30 PM	0.0	160	µg/L
BPJC-6	BPJC-6	Boron	3/28/1988	12:30 PM	0.0	164	µg/L
BPJC-6	BPJC-6	Boron	5/16/1988	12:30 PM	0.0	420	µg/L
BPJC-6	BPJC-6	Boron	5/16/1988	12:30 PM	0.0	415	µg/L
BPJC-6	BPJC-6	Boron	6/27/1988	1:00 PM	0.0	960	µg/L
BPJC-6	BPJC-6	Boron	6/27/1988	1:00 PM	0.0	961	µg/L
BPJC-6	BPJC-6	Boron	8/15/1988	12:30 PM	0.0	540	µg/L
BPJC-6	BPJC-6	Boron	8/15/1988	12:30 PM	0.0	541	µg/L
BPJC-6	BPJC-6	Boron	9/19/1988	12:30 PM	0.0	937	µg/L
BPJC-6	BPJC-6	Boron	9/19/1988	12:30 PM	0.0	940	µg/L
BPJC-6	BPJC-6	Boron	11/9/1988	11:00 AM	0.0	560	µg/L
BPJC-6	BPJC-6	Boron	11/9/1988	11:00 AM	0.0	561	µg/L
BPJC-6	BPJC-6	Boron	12/19/1988	10:30 AM	0.0	1050	µg/L
BPJC-6	BPJC-6	Boron	12/19/1988	10:30 AM	0.0	1053	µg/L
BPJC-6	BPJC-6	Boron	1/26/1989	11:30 AM	0.0	140	µg/L
BPJC-6	BPJC-6	Boron	3/2/1989	10:30 AM	0.0	380	µg/L
BPJC-6	BPJC-6	Boron	3/2/1989	10:30 AM	0.0	379	µg/L
BPJC-6	BPJC-6	Boron	4/5/1989	11:00 AM	0.0	100	µg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Boron	4/5/1989	11:00 AM	0.0	98	µg/L
BPJC-6	BPJC-6	Boron	5/15/1989	11:00 AM	0.0	278	µg/L
BPJC-6	BPJC-6	Boron	5/15/1989	11:00 AM	0.0	280	µg/L
BPJC-6	BPJC-6	Boron	6/7/1989	1:30 PM	0.0	247	µg/L
BPJC-6	BPJC-6	Boron	6/7/1989	1:30 PM	0.0	250	µg/L
BPJC-6	BPJC-6	Boron	6/29/1989	11:30 AM	0.0	666	µg/L
BPJC-6	BPJC-6	Boron	6/29/1989	11:30 AM	0.0	670	µg/L
BPJC-6	BPJC-6	Boron	7/28/1989	1:15 PM	0.0	689	µg/L
BPJC-6	BPJC-6	Boron	7/28/1989	1:15 PM	0.0	690	µg/L
BPJC-6	BPJC-6	Boron	9/18/1989	10:00 AM	0.0	290	µg/L
BPJC-6	BPJC-6	Boron	9/18/1989	10:00 AM	0.0	286	µg/L
BPJC-6	BPJC-6	Boron	10/24/1989	2:30 PM	0.0	756	µg/L
BPJC-6	BPJC-6	Boron	10/24/1989	2:30 PM	0.0	760	µg/L
BPJC-6	BPJC-6	Boron	12/14/1989	11:00 AM	0.0	887	µg/L
BPJC-6	BPJC-6	Boron	12/14/1989	11:00 AM	0.0	890	µg/L
BPJC-6	BPJC-6	Boron	1/23/1990	11:00 AM	0.0	690	µg/L
BPJC-6	BPJC-6	Boron	1/23/1990	11:00 AM	0.0	694	µg/L
BPJC-6	BPJC-6	Boron	3/6/1990	11:00 AM	0.0	140	µg/L
BPJC-6	BPJC-6	Boron	3/6/1990	11:00 AM	0.0	143	µg/L
BPJC-6	BPJC-6	Boron	4/3/1990	11:00 AM	0.0	230	µg/L
BPJC-6	BPJC-6	Boron	4/3/1990	11:00 AM	0.0	233	µg/L
BPJC-6	BPJC-6	Boron	5/14/1990	11:00 AM	0.0	139	µg/L
BPJC-6	BPJC-6	Boron	5/14/1990	11:00 AM	0.0	140	µg/L
BPJC-6	BPJC-6	Boron	6/25/1990	11:00 AM	0.0	168	µg/L
BPJC-6	BPJC-6	Boron	6/25/1990	11:00 AM	0.0	170	µg/L
BPJC-6	BPJC-6	Boron	7/31/1990	11:00 AM	0.0	490	µg/L
BPJC-6	BPJC-6	Boron	7/31/1990	11:00 AM	0.0	493	µg/L
BPJC-6	BPJC-6	Boron	9/25/1990	11:45 AM	0.0	940	µg/L
BPJC-6	BPJC-6	Boron	10/24/1990	11:00 AM	0.0	228	µg/L
BPJC-6	BPJC-6	Boron	10/24/1990	11:00 AM	0.0	230	µg/L
BPJC-6	BPJC-6	Boron	12/11/1990	10:30 AM	0.0	156	µg/L
BPJC-6	BPJC-6	Boron	12/11/1990	10:30 AM	0.0	160	µg/L
BPJC-6	BPJC-6	Boron	1/17/1991	9:30 AM	0.0	50	µg/L
BPJC-6	BPJC-6	Boron	3/6/1991	11:00 AM	0.0	160	µg/L
BPJC-6	BPJC-6	Boron	3/6/1991	11:00 AM	0.0	163	µg/L
BPJC-6	BPJC-6	Boron	4/4/1991	8:15 AM	0.0	250	µg/L
BPJC-6	BPJC-6	Boron	4/4/1991	8:15 AM	0.0	246	µg/L
BPJC-6	BPJC-6	Boron	5/23/1991	9:00 AM	0.0	130	µg/L
BPJC-6	BPJC-6	Boron	6/27/1991	9:15 AM	0.0	690	µg/L
BPJC-6	BPJC-6	Boron	6/27/1991	9:15 AM	0.0	688	µg/L
BPJC-6	BPJC-6	Boron	8/22/1991	9:00 AM	0.0	1179	µg/L
BPJC-6	BPJC-6	Boron	8/22/1991	9:00 AM	0.0	1180	µg/L
BPJC-6	BPJC-6	Boron	10/1/1991	9:00 AM	0.0	1500	µg/L
BPJC-6	BPJC-6	Boron	10/1/1991	9:00 AM	0.0	1504	µg/L
BPJC-6	BPJC-6	Boron	11/15/1991	9:00 AM	0.0	780	µg/L
BPJC-6	BPJC-6	Boron	12/19/1991	9:15 AM	0.0	720	µg/L
BPJC-6	BPJC-6	Boron	2/5/1992	8:45 AM	0.0	710	µg/L
BPJC-6	BPJC-6	Boron	3/18/1992	9:15 AM	0.0	530	µg/L
BPJC-6	BPJC-6	Boron	6/4/1992	8:30 AM	0.0	380	µg/L
BPJC-6	BPJC-6	Boron	7/14/1992	11:30 AM	0.0	120	µg/L
BPJC-6	BPJC-6	Boron	8/13/1992	9:15 AM	0.0	440	µg/L
BPJC-6	BPJC-6	Boron	9/24/1992	9:15 AM	0.0	86	µg/L
BPJC-6	BPJC-6	Boron	9/24/1992	9:15 AM	0.0	90	µg/L
BPJC-6	BPJC-6	Boron	11/19/1992	9:45 AM	0.0	150	µg/L
BPJC-6	BPJC-6	Boron	12/17/1992	10:15 AM	0.0	99	µg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Boron	2/2/1993	9:45 AM	0.0	210	µg/L
BPJC-6	BPJC-6	Boron	3/10/1993	9:00 AM	0.0	110	µg/L
BPJC-6	BPJC-6	Boron	4/6/1993	10:00 AM	0.0	260	µg/L
BPJC-6	BPJC-6	Boron	5/25/1993	9:45 AM	0.0	10	µg/L
BPJC-6	BPJC-6	Boron	6/29/1993	9:45 AM	0.0	47	µg/L
BPJC-6	BPJC-6	Boron	6/29/1993	9:45 AM	0.0	50	µg/L
BPJC-6	BPJC-6	Boron	8/19/1993	10:45 AM	0.0	320	µg/L
BPJC-6	BPJC-6	Boron	9/29/1993	10:45 AM	0.0	140	µg/L
BPJC-6	BPJC-6	Boron	11/16/1993	10:00 AM	0.0	130	µg/L
BPJC-6	BPJC-6	Boron	12/21/1993	10:00 AM	0.0	140	µg/L
BPJC-6	BPJC-6	Boron	3/3/1994	10:15 AM	0.0	460	µg/L
BPJC-6	BPJC-6	Boron	3/30/1994	10:00 AM	0.0	10	µg/L
BPJC-6	BPJC-6	Boron	4/29/1994	10:00 AM	0.0	10	µg/L
BPJC-6	BPJC-6	Boron	7/1/1994	10:00 AM	0.0	660	µg/L
BPJC-6	BPJC-6	Boron	8/16/1994	9:00 AM	0.0	740	µg/L
BPJC-6	BPJC-6	Boron	9/7/1994	8:45 AM	0.0	760	µg/L
BPJC-6	BPJC-6	Boron	9/27/1994	8:30 AM	0.0	370	µg/L
BPJC-6	BPJC-6	Boron	11/3/1994	8:30 AM	0.0	640	µg/L
BPJC-6	BPJC-6	Boron	1/5/1995	10:45 AM	0.0	810	µg/L
BPJC-6	BPJC-6	Boron	2/2/1995	10:15 AM	0.0	340	µg/L
BPJC-6	BPJC-6	Boron	3/1/1995	10:15 AM	0.0	690	µg/L
BPJC-6	BPJC-6	Boron	3/28/1995	11:45 AM	0.0	240	µg/L
BPJC-6	BPJC-6	Boron	5/12/1995	10:00 AM	0.0	90	µg/L
BPJC-6	BPJC-6	Boron	5/12/1995	10:00 AM	0.0	93	µg/L
BPJC-6	BPJC-6	Boron	6/15/1995	10:15 AM	0.0	230	µg/L
BPJC-6	BPJC-6	Boron	9/8/1995	9:00 AM	0.0	640	µg/L
BPJC-6	BPJC-6	Boron	9/22/1995	11:25 AM	0.0	770	µg/L
BPJC-6	BPJC-6	Boron	10/17/1995	10:30 AM	0.0	1400	µg/L
BPJC-6	BPJC-6	Boron	1/3/1996	11:00 AM	0.0	1300	µg/L
BPJC-6	BPJC-6	Boron	1/30/1996	10:00 AM	0.0	690	µg/L
BPJC-6	BPJC-6	Boron	2/28/1996	10:45 AM	0.0	450	µg/L
BPJC-6	BPJC-6	Boron	3/29/1996	10:15 AM	0.0	100	µg/L
BPJC-6	BPJC-6	Boron	3/29/1996	10:15 AM	0.0	95	µg/L
BPJC-6	BPJC-6	Boron	4/18/1996	12:00 PM	0.0	410	µg/L
BPJC-6	BPJC-6	Boron	5/21/1996	11:45 AM	0.0	170	µg/L
BPJC-6	BPJC-6	Boron	7/19/1996	12:45 PM	0.0	1100	µg/L
BPJC-6	BPJC-6	Boron	8/27/1996	11:15 AM	0.0	1200	µg/L
BPJC-6	BPJC-6	Boron	10/10/1996	10:45 AM	0.0	890	µg/L
BPJC-6	BPJC-6	Boron	12/2/1996	10:30 AM	0.0	290	µg/L
BPJC-6	BPJC-6	Boron	1/8/1997	10:30 AM	0.0	540	µg/L
BPJC-6	BPJC-6	Boron	2/20/1997	10:30 AM	0.0	270	µg/L
BPJC-6	BPJC-6	Boron	3/17/1997	10:30 AM	0.0	160	µg/L
BPJC-6	BPJC-6	Boron	5/1/1997	10:45 AM	0.0	440	µg/L
BPJC-6	BPJC-6	Boron	7/7/1997	10:45 AM	0.0	840	µg/L
BPJC-6	BPJC-6	Boron	9/19/1997	10:45 AM	0.0	210	µg/L
BPJC-6	BPJC-6	Boron	10/15/1997	11:00 AM	0.0	670	µg/L
BPJC-6	BPJC-6	Boron	11/20/1997	10:30 AM	0.0	990	µg/L
BPJC-6	BPJC-6	Boron	1/7/1998	8:00 AM	0.0	150	µg/L
BPJC-6	BPJC-6	Boron	3/11/1998	4:00 PM	0.0	160	µg/L
BPJC-6	BPJC-6	Boron	4/29/1998	1:00 PM	0.0	94	µg/L
BPJC-6	BPJC-6	Boron	6/4/1998	10:45 AM	0.0	370	µg/L
BPJC-6	BPJC-6	Boron	8/5/1998	11:45 AM	0.0	67	µg/L
BPJC-6	BPJC-6	Boron	9/3/1998	11:15 AM	0.0	990	µg/L
BPJC-6	BPJC-6	Boron	9/30/1998	11:30 AM	0.0	1500	µg/L
BPJC-6	BPJC-6	Boron	11/4/1998	11:15 AM	0.0	250	µg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Boron	12/9/1998	10:00 AM	0.0	770	µg/L
BPJC-6	BPJC-6	Boron	2/2/1999		0.0	150	µg/L
BPJC-6	BPJC-6	Boron	3/4/1999		0.0	150	µg/L
BPJC-6	BPJC-6	Boron	4/19/1999		0.0	96	µg/L
BPJC-6	BPJC-6	Boron	5/19/1999		0.0	180	µg/L
BPJC-6	BPJC-6	Boron	6/28/1999		0.0	310	µg/L
BPJC-6	BPJC-6	Boron	8/11/1999		0.0	1300	µg/L
BPJC-6	BPJC-6	Boron	9/16/1999		0.0	1300	µg/L
BPJC-6	BPJC-6	Boron	11/3/1999		0.0	740	µg/L
BPJC-6	BPJC-6	Boron	12/1/1999		0.0	1100	µg/L
BPJC-6	BPJC-6	Boron	1/4/2000		0.0	560	µg/L
BPJC-6	BPJC-6	Boron	2/14/2000		0.0	850	µg/L
BPJC-6	BPJC-6	Boron	5/30/2000		0.0	150	µg/L
BPJC-6	BPJC-6	Boron	6/23/2000		0.0	180	µg/L
BPJC-6	BPJC-6	Boron	7/31/2000		0.0	630	µg/L
BPJC-6	BPJC-6	Boron	9/18/2000		0.0	1100	µg/L
BPJC-6	BPJC-6	Boron	12/14/2000		0.0	590	µg/L
BPJC-6	BPJC-6	Boron	1/18/2001		0.0	380	µg/L
BPJC-6	BPJC-6	Boron	3/1/2001		0.0	120	µg/L
BPJC-6	BPJC-6	Boron	4/5/2001		0.0	550	µg/L
BPJC-6	BPJC-6	Boron	5/3/2001		0.0	750	µg/L
BPJC-6	BPJC-6	Boron	5/30/2001		0.0	410	µg/L
BPJC-6	BPJC-6	Boron	7/23/2001		0.0	870	µg/L
BPJC-6	BPJC-6	Boron	8/15/2001		0.0	1300	µg/L
BPJC-6	BPJC-6	Boron	10/25/2001		0.0	140	µg/L
BPJC-6	BPJC-6	Boron	11/29/2001		0.0	370	µg/L
BPJC-6	BPJC-6	Boron	1/22/2002		0.0	610	µg/L
BPJC-6	BPJC-6	Boron	2/20/2002		0.0	62	µg/L
BPJC-6	BPJC-6	Boron	4/2/2002		0.0	120	µg/L
BPJC-6	BPJC-6	Boron	5/14/2002		0.0	50	µg/L
BPJC-6	BPJC-6	Boron	6/18/2002		0.0	150	µg/L
BPJC-6	BPJC-6	Boron	7/24/2002		0.0	350	µg/L
BPJC-6	BPJC-6	Boron	9/10/2002		0.0	670	µg/L
BPJC-6	BPJC-6	Boron	9/10/2002		0.0	630	µg/L
BPJC-6	BPJC-6	Boron	10/9/2002		0.0	750	µg/L
BPJC-6	BPJC-6	Boron	11/20/2002		0.0	690	µg/L
BPJC-6	BPJC-6	Boron	1/13/2003		0.0	770	µg/L
BPJC-6	BPJC-6	Boron	2/24/2003		0.0	390	µg/L
BPJC-6	BPJC-6	Boron	4/3/2003		0.0	500	µg/L
BPJC-6	BPJC-6	Boron	5/7/2003		0.0	160	µg/L
BPJC-6	BPJC-6	Boron	6/19/2003		0.0	200	µg/L
BPJC-6	BPJC-6	Boron	7/31/2003		0.0	450	µg/L
BPJC-6	BPJC-6	Boron	9/8/2003		0.0	270	µg/L
BPJC-6	BPJC-6	Boron	10/27/2003		0.0	290	µg/L
BPJC-6	BPJC-6	Boron	11/25/2003		0.0	75	µg/L
BPJC-6	BPJC-6	Boron	1/29/2004		0.0	280	µg/L
BPJC-6	BPJC-6	Flow	12/15/1977	11:00 AM	0.0	253	cfs
BPJC-6	BPJC-6	Flow	12/20/1977	9:15 AM	0.0	279	cfs
BPJC-6	BPJC-6	Flow	1/20/1978	11:00 AM	0.0	36	cfs
BPJC-6	BPJC-6	Flow	2/24/1978	11:00 AM	0.0	25	cfs
BPJC-6	BPJC-6	Flow	3/6/1978	1:20 PM	0.0	28	cfs
BPJC-6	BPJC-6	Flow	3/27/1978	10:00 AM	0.0	186	cfs
BPJC-6	BPJC-6	Flow	4/17/1978	11:00 AM	0.0	56	cfs
BPJC-6	BPJC-6	Flow	4/17/1978	11:00 AM	0.0	56	cfs
BPJC-6	BPJC-6	Flow	5/10/1978	11:00 AM	0.0	114	cfs

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Flow	5/19/1978	4:30 PM	0.0	116	cfs
BPJC-6	BPJC-6	Flow	5/26/1978	10:00 AM	0.0	56	cfs
BPJC-6	BPJC-6	Flow	5/26/1978	10:00 AM	0.0	56	cfs
BPJC-6	BPJC-6	Flow	6/21/1978	2:30 PM	0.0	57	cfs
BPJC-6	BPJC-6	Flow	6/21/1978	2:30 PM	0.0	57	cfs
BPJC-6	BPJC-6	Flow	6/26/1978	10:00 AM	0.0	25	cfs
BPJC-6	BPJC-6	Flow	7/14/1978	11:00 AM	0.0	153	cfs
BPJC-6	BPJC-6	Flow	7/28/1978	10:00 AM	0.0	25	cfs
BPJC-6	BPJC-6	Flow	8/8/1978	1:30 PM	0.0	26	cfs
BPJC-6	BPJC-6	Flow	8/16/1978	4:00 PM	0.0	34	cfs
BPJC-6	BPJC-6	Flow	8/31/1978	10:15 AM	0.0	21	cfs
BPJC-6	BPJC-6	Flow	9/12/1978	2:20 PM	0.0	27	cfs
BPJC-6	BPJC-6	Flow	9/27/1978	2:00 PM	0.0	19	cfs
BPJC-6	BPJC-6	Flow	10/6/1978	2:40 PM	0.0	25	cfs
BPJC-6	BPJC-6	Flow	10/26/1978	10:00 AM	0.0	33	cfs
BPJC-6	BPJC-6	Flow	11/27/1978	3:35 PM	0.0	46	cfs
BPJC-6	BPJC-6	Flow	12/6/1978	9:00 AM	0.0	35	cfs
BPJC-6	BPJC-6	Flow	12/22/1978	1:40 PM	0.0	25	cfs
BPJC-6	BPJC-6	Flow	12/28/1978	1:00 PM	0.0	22	cfs
BPJC-6	BPJC-6	Flow	1/31/1979	12:00 PM	0.0	32	cfs
BPJC-6	BPJC-6	Flow	2/15/1979	2:00 PM	0.0	27	cfs
BPJC-6	BPJC-6	Flow	2/20/1979	2:30 PM	0.0	28	cfs
BPJC-6	BPJC-6	Flow	3/5/1979	2:45 PM	0.0	778	cfs
BPJC-6	BPJC-6	Flow	3/14/1979	1:00 PM	0.0	295	cfs
BPJC-6	BPJC-6	Flow	4/10/1979	2:00 PM	0.0	195	cfs
BPJC-6	BPJC-6	Flow	4/18/1979	1:45 PM	0.0	232	cfs
BPJC-6	BPJC-6	Flow	4/23/1979	11:30 AM	0.0	115	cfs
BPJC-6	BPJC-6	Flow	5/10/1979	1:00 PM	0.0	113	cfs
BPJC-6	BPJC-6	Flow	5/22/1979	1:45 PM	0.0	70	cfs
BPJC-6	BPJC-6	Flow	6/6/1979	12:00 PM	0.0	201	cfs
BPJC-6	BPJC-6	Flow	7/23/1979	12:00 PM	0.0	156	cfs
BPJC-6	BPJC-6	Flow	8/7/1979	1:00 PM	0.0	113	cfs
BPJC-6	BPJC-6	Flow	8/15/1979	10:50 AM	0.0	32	cfs
BPJC-6	BPJC-6	Flow	9/17/1979	12:00 PM	0.0	19	cfs
BPJC-6	BPJC-6	Flow	10/9/1979	12:05 PM	0.0	14.7	cfs
BPJC-6	BPJC-6	Flow	10/9/1979	12:05 PM	0.0	15	cfs
BPJC-6	BPJC-6	Flow	10/11/1979	1:00 PM	0.0	9.5	cfs
BPJC-6	BPJC-6	Flow	11/6/1979	12:00 PM	0.0	9.5	cfs
BPJC-6	BPJC-6	Flow	12/6/1979	12:00 PM	0.0	17	cfs
BPJC-6	BPJC-6	Flow	1/16/1980	1:15 PM	0.0	25	cfs
BPJC-6	BPJC-6	Flow	1/16/1980	1:15 PM	0.0	24.7	cfs
BPJC-6	BPJC-6	Flow	1/17/1980	12:00 PM	0.0	21	cfs
BPJC-6	BPJC-6	Flow	2/11/1980	11:00 AM	0.0	13	cfs
BPJC-6	BPJC-6	Flow	2/21/1980	4:40 PM	0.0	90	cfs
BPJC-6	BPJC-6	Flow	2/21/1980	4:40 PM	0.0	90.1	cfs
BPJC-6	BPJC-6	Flow	3/13/1980	11:00 AM	0.0	86	cfs
BPJC-6	BPJC-6	Flow	4/9/1980	12:00 PM	0.0	214	cfs
BPJC-6	BPJC-6	Flow	5/13/1980	11:35 AM	0.0	60.8	cfs
BPJC-6	BPJC-6	Flow	5/13/1980	11:35 AM	0.0	61	cfs
BPJC-6	BPJC-6	Flow	5/16/1980	1:00 PM	0.0	43	cfs
BPJC-6	BPJC-6	Flow	6/10/1980	12:30 PM	0.0	78.9	cfs
BPJC-6	BPJC-6	Flow	6/10/1980	12:30 PM	0.0	79	cfs
BPJC-6	BPJC-6	Flow	7/1/1980	1:00 PM	0.0	42	cfs
BPJC-6	BPJC-6	Flow	7/24/1980	3:00 PM	0.0	19	cfs
BPJC-6	BPJC-6	Flow	7/29/1980	10:20 AM	0.0	16.1	cfs

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Flow	7/29/1980	10:20 AM	0.0	16	cfs
BPJC-6	BPJC-6	Flow	8/13/1980	3:00 PM	0.0	16	cfs
BPJC-6	BPJC-6	Flow	9/8/1980	10:25 AM	0.0	15	cfs
BPJC-6	BPJC-6	Flow	9/16/1980	2:00 PM	0.0	100	cfs
BPJC-6	BPJC-6	Flow	10/28/1980	3:00 PM	0.0	28	cfs
BPJC-6	BPJC-6	Flow	12/23/1980	2:00 PM	0.0	11	cfs
BPJC-6	BPJC-6	Flow	2/18/1981	1:00 PM	0.0	126	cfs
BPJC-6	BPJC-6	Flow	3/26/1981	1:00 PM	0.0	14	cfs
BPJC-6	BPJC-6	Flow	3/31/1981	8:00 AM	0.0	20	cfs
BPJC-6	BPJC-6	Flow	4/15/1981	12:00 PM	0.0	147	cfs
BPJC-6	BPJC-6	Flow	5/20/1981	2:00 PM	0.0	283	cfs
BPJC-6	BPJC-6	Flow	6/24/1981	4:00 PM	0.0	298	cfs
BPJC-6	BPJC-6	Flow	8/6/1981	2:00 PM	0.0	880	cfs
BPJC-6	BPJC-6	Flow	8/27/1981	3:00 PM	0.0	140	cfs
BPJC-6	BPJC-6	Flow	10/19/1981	3:15 PM	0.0	129	cfs
BPJC-6	BPJC-6	Flow	10/20/1981	12:00 PM	0.0	101	cfs
BPJC-6	BPJC-6	Flow	11/10/1981	2:00 PM	0.0	680	cfs
BPJC-6	BPJC-6	Flow	12/1/1981	1:00 PM	0.0	72	cfs
BPJC-6	BPJC-6	Flow	12/3/1981	10:00 AM	0.0	50	cfs
BPJC-6	BPJC-6	Flow	1/5/1982	4:00 PM	0.0	298	cfs
BPJC-6	BPJC-6	Flow	1/7/1982	3:10 PM	0.0	171	cfs
BPJC-6	BPJC-6	Flow	3/9/1982	3:00 PM	0.0	138	cfs
BPJC-6	BPJC-6	Flow	3/9/1982	3:15 PM	0.0	134	cfs
BPJC-6	BPJC-6	Flow	4/7/1982	12:00 PM	0.0	108	cfs
BPJC-6	BPJC-6	Flow	4/27/1982	4:15 PM	0.0	90	cfs
BPJC-6	BPJC-6	Flow	5/12/1982	3:00 PM	0.0	63	cfs
BPJC-6	BPJC-6	Flow	6/16/1982	2:00 PM	0.0	116	cfs
BPJC-6	BPJC-6	Flow	10/18/1982	2:45 PM	0.0	16	cfs
BPJC-6	BPJC-6	Flow	11/9/1982	3:00 PM	0.0	25	cfs
BPJC-6	BPJC-6	Flow	12/29/1982	1:00 PM	0.0	208	cfs
BPJC-6	BPJC-6	Flow	2/3/1983	1:00 PM	0.0	200	cfs
BPJC-6	BPJC-6	Flow	2/18/1983	3:15 PM	0.0	75	cfs
BPJC-6	BPJC-6	Flow	3/15/1983	2:00 PM	0.0	40	cfs
BPJC-6	BPJC-6	Flow	4/12/1983	2:00 PM	0.0	142	cfs
BPJC-6	BPJC-6	Flow	5/3/1983	2:00 PM	0.0	830	cfs
BPJC-6	BPJC-6	Flow	5/20/1983	2:50 PM	0.0	257	cfs
BPJC-6	BPJC-6	Flow	6/21/1983	2:00 PM	0.0	388	cfs
BPJC-6	BPJC-6	Flow	8/11/1983	3:25 PM	0.0	41	cfs
BPJC-6	BPJC-6	Flow	8/17/1983	2:00 PM	0.0	830	cfs
BPJC-6	BPJC-6	Flow	9/14/1983	6:10 PM	0.0	27	cfs
BPJC-6	BPJC-6	Flow	11/3/1983	10:00 AM	0.0	41	cfs
BPJC-6	BPJC-6	Flow	12/7/1983	2:00 PM	0.0	233	cfs
BPJC-6	BPJC-6	Flow	3/15/1984	12:00 PM	0.0	46	cfs
BPJC-6	BPJC-6	Flow	4/19/1984	12:00 PM	0.0	259	cfs
BPJC-6	BPJC-6	Flow	5/10/1984	12:00 PM	0.0	43	cfs
BPJC-6	BPJC-6	Flow	6/20/1984	2:00 PM	0.0	208	cfs
BPJC-6	BPJC-6	Flow	7/19/1984	10:00 AM	0.0	8.4	cfs
BPJC-6	BPJC-6	Flow	8/23/1984	10:00 AM	0.0	6.4	cfs
BPJC-6	BPJC-6	Flow	9/18/1984	2:00 PM	0.0	6.4	cfs
BPJC-6	BPJC-6	Flow	11/8/1984	11:00 AM	0.0	11	cfs
BPJC-6	BPJC-6	Flow	12/12/1984	1:00 PM	0.0	14	cfs
BPJC-6	BPJC-6	Flow	1/17/1985	11:00 AM	0.0	53	cfs
BPJC-6	BPJC-6	Flow	3/7/1985	8:00 AM	0.0	199	cfs
BPJC-6	BPJC-6	Flow	4/16/1985	10:00 AM	0.0	86	cfs
BPJC-6	BPJC-6	Flow	5/22/1985	2:00 PM	0.0	36	cfs

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Flow	7/1/1985	2:00 PM	0.0	190	cfs
BPJC-6	BPJC-6	Flow	8/20/1985	10:00 AM	0.0	70	cfs
BPJC-6	BPJC-6	Flow	9/17/1985	10:00 AM	0.0	21	cfs
BPJC-6	BPJC-6	Flow	10/17/1985	10:00 AM	0.0	19	cfs
BPJC-6	BPJC-6	Flow	12/11/1985	10:00 AM	0.0	890	cfs
BPJC-6	BPJC-6	Flow	1/29/1986	12:00 PM	0.0	18	cfs
BPJC-6	BPJC-6	Flow	2/21/1986	9:00 AM	0.0	87	cfs
BPJC-6	BPJC-6	Flow	3/26/1986	9:00 AM	0.0	56	cfs
BPJC-6	BPJC-6	Flow	5/1/1986	9:30 AM	0.0	145	cfs
BPJC-6	BPJC-6	Flow	6/18/1986	9:00 AM	0.0	47	cfs
BPJC-6	BPJC-6	Flow	7/16/1986	9:00 AM	0.0	92	cfs
BPJC-6	BPJC-6	Flow	7/31/1986	2:00 PM	0.0	57.6	cfs
BPJC-6	BPJC-6	Flow	9/11/1986	9:00 AM	0.0	13	cfs
BPJC-6	BPJC-6	Flow	1/14/1987	9:30 AM	0.0	50	cfs
BPJC-6	BPJC-6	Flow	2/18/1987	8:30 AM	0.0	77	cfs
BPJC-6	BPJC-6	Flow	3/25/1987	9:00 AM	0.0	57	cfs
BPJC-6	BPJC-6	Flow	4/29/1987	10:00 AM	0.0	74	cfs
BPJC-6	BPJC-6	Flow	6/3/1987	9:30 AM	0.0	53	cfs
BPJC-6	BPJC-6	Flow	7/21/1987	11:00 AM	0.0	14	cfs
BPJC-6	BPJC-6	Flow	9/10/1987	9:30 AM	0.0	18	cfs
BPJC-6	BPJC-6	Flow	10/27/1987	11:00 AM	0.0	11	cfs
BPJC-6	BPJC-6	Flow	12/2/1987	12:00 PM	0.0	111	cfs
BPJC-6	BPJC-6	Flow	1/11/1988	12:00 PM	0.0	49	cfs
BPJC-6	BPJC-6	Flow	2/23/1988	12:00 PM	0.0	138	cfs
BPJC-6	BPJC-6	Flow	3/28/1988	12:30 PM	0.0	76	cfs
BPJC-6	BPJC-6	Flow	5/16/1988	12:30 PM	0.0	41	cfs
BPJC-6	BPJC-6	Flow	6/27/1988	1:00 PM	0.0	9.5	cfs
BPJC-6	BPJC-6	Flow	8/15/1988	12:30 PM	0.0	1	cfs
BPJC-6	BPJC-6	Flow	9/19/1988	12:30 PM	0.0	16	cfs
BPJC-6	BPJC-6	Flow	11/9/1988	11:00 AM	0.0	7.2	cfs
BPJC-6	BPJC-6	Flow	12/19/1988	10:30 AM	0.0	6.7	cfs
BPJC-6	BPJC-6	Flow	1/26/1989	11:30 AM	0.0	70	cfs
BPJC-6	BPJC-6	Flow	3/2/1989	10:30 AM	0.0	16	cfs
BPJC-6	BPJC-6	Flow	4/5/1989	11:00 AM	0.0	206	cfs
BPJC-6	BPJC-6	Flow	5/15/1989	11:00 AM	0.0	47	cfs
BPJC-6	BPJC-6	Flow	6/7/1989	1:30 PM	0.0	68	cfs
BPJC-6	BPJC-6	Flow	6/29/1989	11:30 AM	0.0	16	cfs
BPJC-6	BPJC-6	Flow	7/28/1989	1:15 PM	0.0	16	cfs
BPJC-6	BPJC-6	Flow	9/18/1989	10:00 AM	0.0	77	cfs
BPJC-6	BPJC-6	Flow	1/23/1990	11:00 AM	0.0	41	cfs
BPJC-6	BPJC-6	Flow	3/6/1990	11:00 AM	0.0	128	cfs
BPJC-6	BPJC-6	Flow	4/3/1990	11:00 AM	0.0	84	cfs
BPJC-6	BPJC-6	Flow	5/14/1990	11:00 AM	0.0	255	cfs
BPJC-6	BPJC-6	Flow	6/25/1990	11:00 AM	0.0	179	cfs
BPJC-6	BPJC-6	Flow	7/31/1990	11:00 AM	0.0	63	cfs
BPJC-6	BPJC-6	Flow	10/1/1991	9:00 AM	0.0	20	cfs
BPJC-6	BPJC-6	Flow	11/15/1991	9:00 AM	0.0	75	cfs
BPJC-6	BPJC-6	Flow	12/19/1991	9:15 AM	0.0	30	cfs
BPJC-6	BPJC-6	Flow	2/5/1992	8:45 AM	0.0	30	cfs
BPJC-6	BPJC-6	Flow	3/18/1992	9:15 AM	0.0	30	cfs
BPJC-6	BPJC-6	Flow	6/4/1992	8:30 AM	0.0	40	cfs
BPJC-6	BPJC-6	Flow	7/14/1992	11:30 AM	0.0	115	cfs
BPJC-6	BPJC-6	Flow	8/13/1992	9:15 AM	0.0	50	cfs
BPJC-6	BPJC-6	Flow	9/24/1992	9:15 AM	0.0	25	cfs
BPJC-6	BPJC-6	Temperature	12/15/1977	11:00 AM	0.0	5	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Temperature	12/20/1977	9:15 AM	0.0	1	° C
BPJC-6	BPJC-6	Temperature	1/20/1978	11:00 AM	0.0	4	° C
BPJC-6	BPJC-6	Temperature	2/24/1978	11:00 AM	0.0	3.5	° C
BPJC-6	BPJC-6	Temperature	3/6/1978	1:20 PM	0.0	9.5	° C
BPJC-6	BPJC-6	Temperature	3/6/1978	1:20 PM	0.0	9.5	° C
BPJC-6	BPJC-6	Temperature	3/27/1978	10:00 AM	0.0	2	° C
BPJC-6	BPJC-6	Temperature	4/17/1978	11:00 AM	0.0	10.5	° C
BPJC-6	BPJC-6	Temperature	5/10/1978	11:00 AM	0.0	13	° C
BPJC-6	BPJC-6	Temperature	5/19/1978	4:30 PM	0.0	24	° C
BPJC-6	BPJC-6	Temperature	5/26/1978	10:00 AM	0.0	20	° C
BPJC-6	BPJC-6	Temperature	6/21/1978	2:30 PM	0.0	25.5	° C
BPJC-6	BPJC-6	Temperature	6/26/1978	10:00 AM	0.0	23	° C
BPJC-6	BPJC-6	Temperature	7/14/1978	11:00 AM	0.0	21	° C
BPJC-6	BPJC-6	Temperature	7/28/1978	10:00 AM	0.0	23	° C
BPJC-6	BPJC-6	Temperature	8/8/1978	1:30 PM	0.0	26	° C
BPJC-6	BPJC-6	Temperature	8/16/1978	4:00 PM	0.0	28	° C
BPJC-6	BPJC-6	Temperature	8/31/1978	10:15 AM	0.0	22	° C
BPJC-6	BPJC-6	Temperature	9/12/1978	2:20 PM	0.0	26.5	° C
BPJC-6	BPJC-6	Temperature	9/27/1978	2:00 PM	0.0	23.5	° C
BPJC-6	BPJC-6	Temperature	10/6/1978	2:40 PM	0.0	13	° C
BPJC-6	BPJC-6	Temperature	10/26/1978	10:00 AM	0.0	11	° C
BPJC-6	BPJC-6	Temperature	11/27/1978	3:35 PM	0.0	11	° C
BPJC-6	BPJC-6	Temperature	12/22/1978	1:40 PM	0.0	8	° C
BPJC-6	BPJC-6	Temperature	12/28/1978	1:00 PM	0.0	4	° C
BPJC-6	BPJC-6	Temperature	1/31/1979	12:00 PM	0.0	3.5	° C
BPJC-6	BPJC-6	Temperature	2/15/1979	2:00 PM	0.0	1.5	° C
BPJC-6	BPJC-6	Temperature	2/20/1979	2:30 PM	0.0	8	° C
BPJC-6	BPJC-6	Temperature	3/5/1979	2:45 PM	0.0	2	° C
BPJC-6	BPJC-6	Temperature	3/14/1979	1:00 PM	0.0	5.5	° C
BPJC-6	BPJC-6	Temperature	4/10/1979	2:00 PM	0.0	9	° C
BPJC-6	BPJC-6	Temperature	4/18/1979	1:45 PM	0.0	13	° C
BPJC-6	BPJC-6	Temperature	4/23/1979	11:30 AM	0.0	15	° C
BPJC-6	BPJC-6	Temperature	5/10/1979	1:00 PM	0.0	22	° C
BPJC-6	BPJC-6	Temperature	5/22/1979	1:45 PM	0.0	19	° C
BPJC-6	BPJC-6	Temperature	6/6/1979	12:00 PM	0.0	24.5	° C
BPJC-6	BPJC-6	Temperature	7/23/1979	12:00 PM	0.0	28	° C
BPJC-6	BPJC-6	Temperature	8/7/1979	1:00 PM	0.0	26.5	° C
BPJC-6	BPJC-6	Temperature	8/15/1979	10:50 AM	0.0	20	° C
BPJC-6	BPJC-6	Temperature	9/17/1979	12:00 PM	0.0	20.5	° C
BPJC-6	BPJC-6	Temperature	10/9/1979	12:05 PM	0.0	16	° C
BPJC-6	BPJC-6	Temperature	10/11/1979	1:00 PM	0.0	15.5	° C
BPJC-6	BPJC-6	Temperature	11/6/1979	12:00 PM	0.0	11	° C
BPJC-6	BPJC-6	Temperature	12/6/1979	12:00 PM	0.0	8.5	° C
BPJC-6	BPJC-6	Temperature	1/16/1980	1:15 PM	0.0	8	° C
BPJC-6	BPJC-6	Temperature	1/17/1980	12:00 PM	0.0	8	° C
BPJC-6	BPJC-6	Temperature	2/11/1980	11:00 AM	0.0	2	° C
BPJC-6	BPJC-6	Temperature	2/21/1980	4:40 PM	0.0	2	° C
BPJC-6	BPJC-6	Temperature	3/13/1980	11:00 AM	0.0	2	° C
BPJC-6	BPJC-6	Temperature	4/9/1980	12:00 PM	0.0	4.5	° C
BPJC-6	BPJC-6	Temperature	5/13/1980	11:35 AM	0.0	20.5	° C
BPJC-6	BPJC-6	Temperature	5/16/1980	1:00 PM	0.0	16.5	° C
BPJC-6	BPJC-6	Temperature	6/10/1980	12:30 PM	0.0	20.5	° C
BPJC-6	BPJC-6	Temperature	7/1/1980	1:00 PM	0.0	26.5	° C
BPJC-6	BPJC-6	Temperature	7/24/1980	3:00 PM	0.0	30	° C
BPJC-6	BPJC-6	Temperature	7/29/1980	10:20 AM	0.0	23	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Temperature	8/13/1980	3:00 PM	0.0	29	° C
BPJC-6	BPJC-6	Temperature	9/8/1980	10:25 AM	0.0	22.5	° C
BPJC-6	BPJC-6	Temperature	9/16/1980	2:00 PM	0.0	21	° C
BPJC-6	BPJC-6	Temperature	10/3/1980	1:00 PM	0.0	15	° C
BPJC-6	BPJC-6	Temperature	10/28/1980	3:00 PM	0.0	12	° C
BPJC-6	BPJC-6	Temperature	12/10/1980	12:00 PM	0.0	3.5	° C
BPJC-6	BPJC-6	Temperature	12/23/1980	2:00 PM	0.0	2	° C
BPJC-6	BPJC-6	Temperature	2/18/1981	1:00 PM	0.0	1	° C
BPJC-6	BPJC-6	Temperature	3/26/1981	1:00 PM	0.0	17	° C
BPJC-6	BPJC-6	Temperature	3/31/1981	8:00 AM	0.0	12.5	° C
BPJC-6	BPJC-6	Temperature	4/15/1981	12:00 PM	0.0	12.5	° C
BPJC-6	BPJC-6	Temperature	5/20/1981	2:00 PM	0.0	14	° C
BPJC-6	BPJC-6	Temperature	6/24/1981	4:00 PM	0.0	22	° C
BPJC-6	BPJC-6	Temperature	8/6/1981	2:00 PM	0.0	22	° C
BPJC-6	BPJC-6	Temperature	8/27/1981	3:00 PM	0.0	23.5	° C
BPJC-6	BPJC-6	Temperature	10/19/1981	3:15 PM	0.0	14	° C
BPJC-6	BPJC-6	Temperature	10/20/1981	12:00 PM	0.0	14	° C
BPJC-6	BPJC-6	Temperature	11/10/1981	2:00 PM	0.0	8.5	° C
BPJC-6	BPJC-6	Temperature	12/1/1981	1:00 PM	0.0	10	° C
BPJC-6	BPJC-6	Temperature	12/3/1981	10:00 AM	0.0	7.5	° C
BPJC-6	BPJC-6	Temperature	1/5/1982	4:00 PM	0.0	5.5	° C
BPJC-6	BPJC-6	Temperature	1/7/1982	3:10 PM	0.0	3.5	° C
BPJC-6	BPJC-6	Temperature	3/9/1982	3:00 PM	0.0	5.5	° C
BPJC-6	BPJC-6	Temperature	4/7/1982	12:00 PM	0.0	6.5	° C
BPJC-6	BPJC-6	Temperature	4/27/1982	4:15 PM	0.0	16	° C
BPJC-6	BPJC-6	Temperature	5/12/1982	3:00 PM	0.0	24	° C
BPJC-6	BPJC-6	Temperature	6/16/1982	2:00 PM	0.0	17.5	° C
BPJC-6	BPJC-6	Temperature	8/24/1982	2:00 PM	0.0	24.5	° C
BPJC-6	BPJC-6	Temperature	9/30/1982	2:00 PM	0.0	23.5	° C
BPJC-6	BPJC-6	Temperature	10/18/1982	2:45 PM	0.0	18	° C
BPJC-6	BPJC-6	Temperature	11/9/1982	3:00 PM	0.0	16	° C
BPJC-6	BPJC-6	Temperature	12/29/1982	1:00 PM	0.0	6	° C
BPJC-6	BPJC-6	Temperature	2/3/1983	1:00 PM	0.0	4	° C
BPJC-6	BPJC-6	Temperature	2/18/1983	3:15 PM	0.0	8	° C
BPJC-6	BPJC-6	Temperature	3/15/1983	2:00 PM	0.0	13	° C
BPJC-6	BPJC-6	Temperature	4/12/1983	2:00 PM	0.0	10	° C
BPJC-6	BPJC-6	Temperature	5/3/1983	2:00 PM	0.0	12	° C
BPJC-6	BPJC-6	Temperature	5/20/1983	2:50 PM	0.0	15	° C
BPJC-6	BPJC-6	Temperature	6/21/1983	2:00 PM	0.0	19	° C
BPJC-6	BPJC-6	Temperature	8/11/1983	3:25 PM	0.0	27	° C
BPJC-6	BPJC-6	Temperature	8/17/1983	2:00 PM	0.0	24	° C
BPJC-6	BPJC-6	Temperature	9/14/1983	6:10 PM	0.0	17	° C
BPJC-6	BPJC-6	Temperature	11/3/1983	10:00 AM	0.0	15	° C
BPJC-6	BPJC-6	Temperature	12/7/1983	2:00 PM	0.0	8	° C
BPJC-6	BPJC-6	Temperature	3/15/1984	12:00 PM	0.0	5	° C
BPJC-6	BPJC-6	Temperature	4/19/1984	12:00 PM	0.0	11	° C
BPJC-6	BPJC-6	Temperature	5/10/1984	12:00 PM	0.0	15	° C
BPJC-6	BPJC-6	Temperature	6/20/1984	2:00 PM	0.0	23.5	° C
BPJC-6	BPJC-6	Temperature	7/19/1984	10:00 AM	0.0	19	° C
BPJC-6	BPJC-6	Temperature	8/23/1984	10:00 AM	0.0	19.5	° C
BPJC-6	BPJC-6	Temperature	9/18/1984	2:00 PM	0.0	21	° C
BPJC-6	BPJC-6	Temperature	11/8/1984	11:00 AM	0.0	12	° C
BPJC-6	BPJC-6	Temperature	12/12/1984	1:00 PM	0.0	5	° C
BPJC-6	BPJC-6	Temperature	1/17/1985	11:00 AM	0.0	2	° C
BPJC-6	BPJC-6	Temperature	3/7/1985	8:00 AM	0.0	5	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Temperature	4/16/1985	10:00 AM	0.0	13	° C
BPJC-6	BPJC-6	Temperature	5/22/1985	2:00 PM	0.0	17	° C
BPJC-6	BPJC-6	Temperature	7/1/1985	2:00 PM	0.0	22	° C
BPJC-6	BPJC-6	Temperature	8/20/1985	10:00 AM	0.0	18	° C
BPJC-6	BPJC-6	Temperature	9/17/1985	10:00 AM	0.0	19	° C
BPJC-6	BPJC-6	Temperature	10/17/1985	10:00 AM	0.0	14	° C
BPJC-6	BPJC-6	Temperature	12/11/1985	10:00 AM	0.0	5	° C
BPJC-6	BPJC-6	Temperature	1/29/1986	12:00 PM	0.0	3	° C
BPJC-6	BPJC-6	Temperature	2/21/1986	9:00 AM	0.0	3	° C
BPJC-6	BPJC-6	Temperature	3/26/1986	9:00 AM	0.0	11	° C
BPJC-6	BPJC-6	Temperature	5/1/1986	9:30 AM	0.0	16	° C
BPJC-6	BPJC-6	Temperature	6/18/1986	9:00 AM	0.0	20	° C
BPJC-6	BPJC-6	Temperature	7/16/1986	9:00 AM	0.0	23	° C
BPJC-6	BPJC-6	Temperature	7/31/1986	2:00 PM	0.0	26	° C
BPJC-6	BPJC-6	Temperature	9/11/1986	9:00 AM	0.0	22	° C
BPJC-6	BPJC-6	Temperature	10/8/1986	10:30 AM	0.0	16	° C
BPJC-6	BPJC-6	Temperature	12/3/1986	9:00 AM	0.0	9	° C
BPJC-6	BPJC-6	Temperature	1/14/1987	9:30 AM	0.0	5	° C
BPJC-6	BPJC-6	Temperature	2/18/1987	8:30 AM	0.0	3	° C
BPJC-6	BPJC-6	Temperature	3/25/1987	9:00 AM	0.0	10	° C
BPJC-6	BPJC-6	Temperature	4/29/1987	10:00 AM	0.0	15	° C
BPJC-6	BPJC-6	Temperature	6/3/1987	9:30 AM	0.0	22	° C
BPJC-6	BPJC-6	Temperature	7/21/1987	11:00 AM	0.0	27	° C
BPJC-6	BPJC-6	Temperature	9/10/1987	9:30 AM	0.0	20	° C
BPJC-6	BPJC-6	Temperature	10/27/1987	11:00 AM	0.0	12	° C
BPJC-6	BPJC-6	Temperature	12/2/1987	12:00 PM	0.0	7	° C
BPJC-6	BPJC-6	Temperature	1/11/1988	12:00 PM	0.0	2	° C
BPJC-6	BPJC-6	Temperature	2/23/1988	12:00 PM	0.0	5	° C
BPJC-6	BPJC-6	Temperature	3/28/1988	12:30 PM	0.0	9	° C
BPJC-6	BPJC-6	Temperature	5/16/1988	12:30 PM	0.0	22	° C
BPJC-6	BPJC-6	Temperature	6/27/1988	1:00 PM	0.0	25	° C
BPJC-6	BPJC-6	Temperature	8/15/1988	12:30 PM	0.0	31	° C
BPJC-6	BPJC-6	Temperature	9/19/1988	12:30 PM	0.0	22	° C
BPJC-6	BPJC-6	Temperature	11/9/1988	11:00 AM	0.0	11	° C
BPJC-6	BPJC-6	Temperature	12/19/1988	10:30 AM	0.0	5	° C
BPJC-6	BPJC-6	Temperature	1/26/1989	11:30 AM	0.0	9	° C
BPJC-6	BPJC-6	Temperature	3/2/1989	10:30 AM	0.0	4	° C
BPJC-6	BPJC-6	Temperature	4/5/1989	11:00 AM	0.0	8.7	° C
BPJC-6	BPJC-6	Temperature	5/15/1989	11:00 AM	0.0	13.9	° C
BPJC-6	BPJC-6	Temperature	6/7/1989	1:30 PM	0.0	22.3	° C
BPJC-6	BPJC-6	Temperature	6/29/1989	11:30 AM	0.0	22.9	° C
BPJC-6	BPJC-6	Temperature	7/28/1989	1:15 PM	0.0	27.9	° C
BPJC-6	BPJC-6	Temperature	9/18/1989	10:00 AM	0.0	16.8	° C
BPJC-6	BPJC-6	Temperature	10/24/1989	2:30 PM	0.0	18.5	° C
BPJC-6	BPJC-6	Temperature	12/14/1989	11:00 AM	0.0	0.2	° C
BPJC-6	BPJC-6	Temperature	1/23/1990	11:00 AM	0.0	6.2	° C
BPJC-6	BPJC-6	Temperature	3/6/1990	11:00 AM	0.0	7	° C
BPJC-6	BPJC-6	Temperature	4/3/1990	11:00 AM	0.0	7.4	° C
BPJC-6	BPJC-6	Temperature	5/14/1990	11:00 AM	0.0	12.9	° C
BPJC-6	BPJC-6	Temperature	6/25/1990	11:00 AM	0.0	18.3	° C
BPJC-6	BPJC-6	Temperature	7/31/1990	11:00 AM	0.0	22.4	° C
BPJC-6	BPJC-6	Temperature	9/25/1990	11:45 AM	0.0	15.9	° C
BPJC-6	BPJC-6	Temperature	10/24/1990	11:00 AM	0.0	13.1	° C
BPJC-6	BPJC-6	Temperature	12/11/1990	10:30 AM	0.0	8.1	° C
BPJC-6	BPJC-6	Temperature	1/17/1991	9:30 AM	0.0	4	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Temperature	3/6/1991	11:00 AM	0.0	7.7	° C
BPJC-6	BPJC-6	Temperature	4/4/1991	8:15 AM	0.0	12.1	° C
BPJC-6	BPJC-6	Temperature	5/23/1991	9:00 AM	0.0	18.6	° C
BPJC-6	BPJC-6	Temperature	6/27/1991	9:15 AM	0.0	21.1	° C
BPJC-6	BPJC-6	Temperature	8/22/1991	9:00 AM	0.0	21.2	° C
BPJC-6	BPJC-6	Temperature	10/1/1991	9:00 AM	0.0	17.3	° C
BPJC-6	BPJC-6	Temperature	11/15/1991	9:00 AM	0.0	12.8	° C
BPJC-6	BPJC-6	Temperature	12/19/1991	9:15 AM	0.0	2	° C
BPJC-6	BPJC-6	Temperature	2/5/1992	8:45 AM	0.0	5.2	° C
BPJC-6	BPJC-6	Temperature	3/18/1992	9:15 AM	0.0	8	° C
BPJC-6	BPJC-6	Temperature	6/4/1992	8:30 AM	0.0	19.1	° C
BPJC-6	BPJC-6	Temperature	7/14/1992	11:30 AM	0.0	22.3	° C
BPJC-6	BPJC-6	Temperature	8/13/1992	9:15 AM	0.0	19.2	° C
BPJC-6	BPJC-6	Temperature	9/24/1992	9:15 AM	0.0	13.6	° C
BPJC-6	BPJC-6	Temperature	11/19/1992	9:45 AM	0.0	10.2	° C
BPJC-6	BPJC-6	Temperature	12/17/1992	10:15 AM	0.0	7.2	° C
BPJC-6	BPJC-6	Temperature	2/2/1993	9:45 AM	0.0	3.3	° C
BPJC-6	BPJC-6	Temperature	3/10/1993	9:00 AM	0.0	5.1	° C
BPJC-6	BPJC-6	Temperature	4/6/1993	10:00 AM	0.0	11.4	° C
BPJC-6	BPJC-6	Temperature	5/25/1993	9:45 AM	0.0	16.3	° C
BPJC-6	BPJC-6	Temperature	6/29/1993	9:45 AM	0.0	18.59	° C
BPJC-6	BPJC-6	Temperature	6/29/1993	9:45 AM	0.0	18.6	° C
BPJC-6	BPJC-6	Temperature	8/19/1993	10:45 AM	0.0	22.5	° C
BPJC-6	BPJC-6	Temperature	9/29/1993	10:45 AM	0.0	14.6	° C
BPJC-6	BPJC-6	Temperature	11/16/1993	10:00 AM	0.0	10.5	° C
BPJC-6	BPJC-6	Temperature	12/21/1993	10:00 AM	0.0	5.5	° C
BPJC-6	BPJC-6	Temperature	3/3/1994	10:15 AM	0.0	4.7	° C
BPJC-6	BPJC-6	Temperature	3/3/1994	10:15 AM	0.0	4.71	° C
BPJC-6	BPJC-6	Temperature	3/30/1994	10:00 AM	0.0	8.8	° C
BPJC-6	BPJC-6	Temperature	4/29/1994	10:00 AM	0.0	10.8	° C
BPJC-6	BPJC-6	Temperature	7/1/1994	10:00 AM	0.0	21.8	° C
BPJC-6	BPJC-6	Temperature	8/16/1994	9:00 AM	0.0	18	° C
BPJC-6	BPJC-6	Temperature	9/7/1994	8:45 AM	0.0	18	° C
BPJC-6	BPJC-6	Temperature	9/27/1994	8:30 AM	0.0	16.2	° C
BPJC-6	BPJC-6	Temperature	11/3/1994	8:30 AM	0.0	12.9	° C
BPJC-6	BPJC-6	Temperature	1/5/1995	10:45 AM	0.0	0	° C
BPJC-6	BPJC-6	Temperature	2/2/1995	10:15 AM	0.0	6.9	° C
BPJC-6	BPJC-6	Temperature	3/1/1995	10:15 AM	0.0	4.3	° C
BPJC-6	BPJC-6	Temperature	3/28/1995	11:45 AM	0.0	9.8	° C
BPJC-6	BPJC-6	Temperature	5/12/1995	10:00 AM	0.0	12.4	° C
BPJC-6	BPJC-6	Temperature	6/15/1995	10:15 AM	0.0	19.9	° C
BPJC-6	BPJC-6	Temperature	9/8/1995	9:00 AM	0.0	20	° C
BPJC-6	BPJC-6	Temperature	9/22/1995	11:25 AM	0.0	14.2	° C
BPJC-6	BPJC-6	Temperature	10/17/1995	10:30 AM	0.0	12.5	° C
BPJC-6	BPJC-6	Temperature	1/3/1996	11:00 AM	0.0	0.4	° C
BPJC-6	BPJC-6	Temperature	1/3/1996	11:00 AM	0.0	0.42	° C
BPJC-6	BPJC-6	Temperature	1/30/1996	10:00 AM	0.0	0.9	° C
BPJC-6	BPJC-6	Temperature	2/28/1996	10:45 AM	0.0	6.1	° C
BPJC-6	BPJC-6	Temperature	3/29/1996	10:15 AM	0.0	5.6	° C
BPJC-6	BPJC-6	Temperature	4/18/1996	12:00 PM	0.0	15.2	° C
BPJC-6	BPJC-6	Temperature	5/21/1996	11:45 AM	0.0	18.9	° C
BPJC-6	BPJC-6	Temperature	7/19/1996	12:45 PM	0.0	26.4	° C
BPJC-6	BPJC-6	Temperature	8/27/1996	11:15 AM	0.0	23.2	° C
BPJC-6	BPJC-6	Temperature	10/10/1996	10:45 AM	0.0	13.5	° C
BPJC-6	BPJC-6	Temperature	12/2/1996	10:30 AM	0.0	5.3	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-6	Temperature	1/8/1997	10:30 AM	0.0	1.2	° C
BPJC-6	BPJC-6	Temperature	1/8/1997	10:30 AM	0.0	1.19	° C
BPJC-6	BPJC-6	Temperature	2/20/1997	10:30 AM	0.0	5.4	° C
BPJC-6	BPJC-6	Temperature	3/17/1997	10:30 AM	0.0	6.8	° C
BPJC-6	BPJC-6	Temperature	5/1/1997	10:45 AM	0.0	12.6	° C
BPJC-6	BPJC-6	Temperature	7/7/1997	10:45 AM	0.0	21.5	° C
BPJC-6	BPJC-6	Temperature	9/2/1997	10:15 AM	0.0	22.1	° C
BPJC-6	BPJC-6	Temperature	9/19/1997	10:45 AM	0.0	19.8	° C
BPJC-6	BPJC-6	Temperature	10/15/1997	11:00 AM	0.0	11.8	° C
BPJC-6	BPJC-6	Temperature	11/20/1997	10:30 AM	0.0	8	° C
BPJC-6	BPJC-6	Temperature	1/7/1998	8:00 AM	0.0	9	° C
BPJC-6	BPJC-6	Temperature	3/11/1998	4:00 PM	0.0	5	° C
BPJC-6	BPJC-6	Temperature	4/29/1998	1:00 PM	0.0	12.5	° C
BPJC-6	BPJC-6	Temperature	6/4/1998	10:45 AM	0.0	16.6	° C
BPJC-6	BPJC-6	Temperature	8/5/1998	11:45 AM	0.0	21.5	° C
BPJC-6	BPJC-6	Temperature	9/3/1998	11:15 AM	0.0	19.8	° C
BPJC-6	BPJC-6	Temperature	9/30/1998	11:30 AM	0.0	19.6	° C
BPJC-6	BPJC-6	Temperature	11/4/1998	11:15 AM	0.0	9.8	° C
BPJC-6	BPJC-6	Temperature	12/9/1998	10:00 AM	0.0	7.9	° C
BPJC-6	BPJC-6	Temperature	1/4/2000	12:00 AM	0.0	5.94	° C
BPJC-6	BPJC-6	Temperature	2/14/2000	12:00 AM	0.0	5.69	° C
BPJC-6	BPJC-6	Temperature	3/24/2000	12:00 AM	0.0	13.64	° C
BPJC-6	BPJC-6	Temperature	5/30/2000	12:00 AM	0.0	16.8	° C
BPJC-6	BPJC-6	Temperature	6/23/2000	12:00 AM	0.0	20.61	° C
BPJC-6	BPJC-6	Temperature	7/31/2000	12:00 AM	0.0	22.94	° C
BPJC-6	BPJC-6	Temperature	9/18/2000	12:00 AM	0.0	18.5	° C
BPJC-6	BPJC-6	Temperature	12/14/2000	12:00 AM	0.0	4.31	° C
BPJC-6	BPJC-6	Temperature	1/18/2001	12:00 AM	0.0	3.41	° C
BPJC-6	BPJC-6	Temperature	3/1/2001	12:00 AM	0.0	4.23	° C
BPJC-6	BPJC-6	Temperature	4/5/2001	12:00 AM	0.0	13.13	° C
BPJC-6	BPJC-6	Temperature	5/3/2001	12:00 AM	0.0	19.22	° C
BPJC-6	BPJC-6	Temperature	5/30/2001	12:00 AM	0.0	16.68	° C
BPJC-6	BPJC-6	Temperature	7/23/2001	12:00 AM	0.0	25.47	° C
BPJC-6	BPJC-6	Temperature	8/15/2001	12:00 AM	0.0	20.2	° C
BPJC-6	BPJC-6	Temperature	9/17/2001	12:00 AM	0.0	18	° C
BPJC-6	BPJC-6	Temperature	10/25/2001	12:00 AM	0.0	12.1	° C
BPJC-6	BPJC-6	Temperature	11/29/2001	12:00 AM	0.0	10.2	° C
BPJC-6	BPJC-6	Temperature	1/22/2002	12:00 AM	0.0	5.77	° C
BPJC-6	BPJC-6	Temperature	2/20/2002	12:00 AM	0.0	7.45	° C
BPJC-6	BPJC-6	Temperature	4/2/2002	12:00 AM	0.0	9.1	° C
BPJC-6	BPJC-6	Temperature	5/14/2002	12:00 AM	0.0	12.2	° C
BPJC-6	BPJC-6	Temperature	6/18/2002	12:00 AM	0.0	18.4	° C
BPJC-6	BPJC-6	Temperature	7/24/2002	12:00 AM	0.0	21	° C
BPJC-6	BPJC-6	Temperature	9/10/2002	12:00 AM	0.0	22.8	° C
BPJC-6	BPJC-6	Temperature	9/10/2002	12:00 AM	0.0	23.6	° C
BPJC-6	BPJC-6	Temperature	10/9/2002	12:00 AM	0.0	15.5	° C
BPJC-6	BPJC-6	Temperature	11/20/2002	12:00 AM	0.0	10.8	° C
BPJC-6	BPJC-UC-A1	Ammonia	7/6/1989		0.0	0.12	mg/L
BPJC-6	BPJC-UC-A1	Ammonia	7/28/1989		0.0	0.25	mg/L
BPJC-6	BPJC-UC-A1	Ammonia	10/24/1989		0.0	0.68	mg/L
BPJC-6	BPJC-UC-A1	Ammonia	10/23/1990		0.0	0.11	mg/L
BPJC-6	BPJC-UC-A1	Ammonia	8/13/1997		0.0	0.46	mg/L
BPJC-6	BPJC-UC-A1	Boron	7/6/1989		0.0	97	µg/L
BPJC-6	BPJC-UC-A1	Boron	7/28/1989		0.0	228	µg/L
BPJC-6	BPJC-UC-A1	Boron	10/24/1989		0.0	212	µg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-UC-A1	Boron	10/23/1990		0.0	115	µg/L
BPJC-6	BPJC-UC-A1	Boron	8/13/1997		0.0	180	µg/L
BPJC-6	BPJC-UC-A1	Temperature	7/6/1989		0.0	18.5	° C
BPJC-6	BPJC-UC-A1	Temperature	7/28/1989		0.0	24.5	° C
BPJC-6	BPJC-UC-A1	Temperature	10/24/1989		0.0	14.5	° C
BPJC-6	BPJC-UC-A1	Temperature	10/23/1990		0.0	11	° C
BPJC-6	BPJC-UC-A1	Temperature	8/13/1997		0.0	21.3	° C
BPJC-6	BPJC-UC-C1	Ammonia	7/28/1989		0.0	0.1	mg/L
BPJC-6	BPJC-UC-C1	Ammonia	10/24/1989		0.0	0.24	mg/L
BPJC-6	BPJC-UC-C1	Ammonia	10/23/1990		0.0	0.63	mg/L
BPJC-6	BPJC-UC-C1	Ammonia	8/13/1997		0.0	0.38	mg/L
BPJC-6	BPJC-UC-C1	Boron	7/28/1989		0.0	797	µg/L
BPJC-6	BPJC-UC-C1	Boron	10/24/1989		0.0	870	µg/L
BPJC-6	BPJC-UC-C1	Boron	10/23/1990		0.0	282	µg/L
BPJC-6	BPJC-UC-C1	Boron	8/13/1997		0.0	960	µg/L
BPJC-6	BPJC-UC-C1	Temperature	7/28/1989		0.0	24.8	° C
BPJC-6	BPJC-UC-C1	Temperature	10/24/1989		0.0	19.3	° C
BPJC-6	BPJC-UC-C1	Temperature	10/23/1990		0.0	14.3	° C
BPJC-6	BPJC-UC-C1	Temperature	8/13/1997		0.0	22.2	° C
BPJC-6	BPJC-UC-C2	Ammonia	7/6/1989		0.0	0.11	mg/L
BPJC-6	BPJC-UC-C2	Ammonia	7/28/1989		0.0	0.14	mg/L
BPJC-6	BPJC-UC-C2	Ammonia	10/24/1989		0.0	0.22	mg/L
BPJC-6	BPJC-UC-C2	Ammonia	10/23/1990		0.0	0.14	mg/L
BPJC-6	BPJC-UC-C2	Ammonia	8/13/1997		0.0	0.32	mg/L
BPJC-6	BPJC-UC-C2	Boron	7/6/1989		0.0	422	µg/L
BPJC-6	BPJC-UC-C2	Boron	7/28/1989		0.0	792	µg/L
BPJC-6	BPJC-UC-C2	Boron	10/24/1989		0.0	887	µg/L
BPJC-6	BPJC-UC-C2	Boron	10/23/1990		0.0	221	µg/L
BPJC-6	BPJC-UC-C2	Boron	8/13/1997		0.0	970	µg/L
BPJC-6	BPJC-UC-C2	Temperature	7/6/1989		0.0	20.8	° C
BPJC-6	BPJC-UC-C2	Temperature	7/28/1989		0.0	25.6	° C
BPJC-6	BPJC-UC-C2	Temperature	10/24/1989		0.0	19.5	° C
BPJC-6	BPJC-UC-C2	Temperature	10/23/1990		0.0	13.3	° C
BPJC-6	BPJC-UC-C2	Temperature	8/13/1997		0.0	22.5	° C
BPJC-6	BPJC-UC-C3	Ammonia	7/6/1989		0.0	0.1	mg/L
BPJC-6	BPJC-UC-C3	Ammonia	7/28/1989		0.0	0.1	mg/L
BPJC-6	BPJC-UC-C3	Ammonia	10/24/1989		0.0	0.1	mg/L
BPJC-6	BPJC-UC-C3	Ammonia	10/23/1990		0.0	0.06	mg/L
BPJC-6	BPJC-UC-C3	Ammonia	8/13/1997		0.0	0.22	mg/L
BPJC-6	BPJC-UC-C3	Boron	7/6/1989		0.0	392	µg/L
BPJC-6	BPJC-UC-C3	Boron	7/28/1989		0.0	663	µg/L
BPJC-6	BPJC-UC-C3	Boron	10/24/1989		0.0	717	µg/L
BPJC-6	BPJC-UC-C3	Boron	10/23/1990		0.0	222	µg/L
BPJC-6	BPJC-UC-C3	Boron	8/13/1997		0.0	780	µg/L
BPJC-6	BPJC-UC-C3	Temperature	7/6/1989		0.0	22.2	° C
BPJC-6	BPJC-UC-C3	Temperature	7/28/1989		0.0	27.3	° C
BPJC-6	BPJC-UC-C3	Temperature	10/24/1989		0.0	18.2	° C
BPJC-6	BPJC-UC-C3	Temperature	10/23/1990		0.0	13.1	° C
BPJC-6	BPJC-UC-C3	Temperature	8/13/1997		0.0	23	° C
BPJC-6	BPJC-UC-C4	Ammonia	7/6/1989		0.0	0.1	mg/L
BPJC-6	BPJC-UC-C4	Ammonia	10/24/1989		0.0	0.1	mg/L
BPJC-6	BPJC-UC-C4	Ammonia	10/23/1990		0.0	0.04	mg/L
BPJC-6	BPJC-UC-C4	Ammonia	8/13/1997		0.0	0.24	mg/L
BPJC-6	BPJC-UC-C4	Boron	7/6/1989		0.0	247	µg/L
BPJC-6	BPJC-UC-C4	Boron	10/24/1989		0.0	756	µg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-6	BPJC-UC-C4	Boron	10/23/1990		0.0	228	µg/L
BPJC-6	BPJC-UC-C4	Boron	8/13/1997		0.0	770	µg/L
BPJC-6	BPJC-UC-C4	Temperature	7/6/1989		0.0	22.3	° C
BPJC-6	BPJC-UC-C4	Temperature	10/24/1989		0.0	18.5	° C
BPJC-6	BPJC-UC-C4	Temperature	10/23/1990		0.0	13.1	° C
BPJC-6	BPJC-UC-C4	Temperature	8/13/1997		0.0	23.1	° C
BPJC-6	BPJC-UC-C5	Ammonia	7/6/1989		0.0	0.1	mg/L
BPJC-6	BPJC-UC-C5	Ammonia	7/28/1989		0.0	0.1	mg/L
BPJC-6	BPJC-UC-C5	Ammonia	10/24/1989		0.0	0.1	mg/L
BPJC-6	BPJC-UC-C5	Ammonia	10/23/1990		0.0	0.11	mg/L
BPJC-6	BPJC-UC-C5	Boron	7/6/1989		0.0	279	µg/L
BPJC-6	BPJC-UC-C5	Boron	7/28/1989		0.0	675	µg/L
BPJC-6	BPJC-UC-C5	Boron	10/24/1989		0.0	766	µg/L
BPJC-6	BPJC-UC-C5	Boron	10/23/1990		0.0	231	µg/L
BPJC-6	BPJC-UC-C5	Temperature	7/6/1989		0.0	22.4	° C
BPJC-6	BPJC-UC-C5	Temperature	7/28/1989		0.0	28.2	° C
BPJC-6	BPJC-UC-C5	Temperature	10/24/1989		0.0	18.2	° C
BPJC-6	BPJC-UC-C5	Temperature	10/23/1990		0.0	13.3	° C
BPJC-6	C1	Ammonia	7/12/2002		0.0	18	mg/L
BPJC-6	C1	Temperature	7/12/2002		0.0	22.6	° C
BPJC-6	C2	Ammonia	7/12/2002		0.0	19	mg/L
BPJC-6	C2	Temperature	7/12/2002		0.0	22.8	° C
BPJC-6	C3	Ammonia	7/12/2002		0.0	11	mg/L
BPJC-6	C3	Temperature	7/12/2002		0.0	23.9	° C
BPJC-6	Effluent	Ammonia	7/12/2002		0.0	30	mg/L
BPJC-8	163031	Dissolved Oxygen	4/12/1966	12:50 PM	0.0	13.5	mg/L
BPJC-8	163031	Dissolved Oxygen	6/14/1966	8:45 AM	0.0	7.8	mg/L
BPJC-8	163031	Dissolved Oxygen	6/16/1966	9:50 AM	0.0	7.1	mg/L
BPJC-8	163031	Dissolved Oxygen	6/20/1966	7:25 AM	0.0	6.5	mg/L
BPJC-8	163031	Dissolved Oxygen	6/22/1966	10:15 AM	0.0	7.2	mg/L
BPJC-8	163031	Dissolved Oxygen	6/24/1966	7:05 AM	0.0	6.2	mg/L
BPJC-8	163031	Dissolved Oxygen	8/16/1966	11:45 AM	0.0	18.8	mg/L
BPJC-8	163031	Dissolved Oxygen	8/17/1966	7:35 AM	0.0	5.6	mg/L
BPJC-8	163031	Dissolved Oxygen	8/18/1966	12:30 PM	0.0	15.6	mg/L
BPJC-8	163031	Dissolved Oxygen	8/19/1966	8:05 AM	0.0	4.1	mg/L
BPJC-8	163031	Dissolved Phosphorus	6/14/1966	8:45 AM	0.0	0.19	mg/L
BPJC-8	163031	Dissolved Phosphorus	6/20/1966	7:25 AM	0.0	0.36	mg/L
BPJC-8	163031	Dissolved Phosphorus	8/15/1966	11:30 AM	0.0	0.42	mg/L
BPJC-8	163031	Total Phosphorus	6/14/1966	8:45 AM	0.0	0.19	mg/L
BPJC-8	163031	Total Phosphorus	6/20/1966	7:25 AM	0.0	0.42	mg/L
BPJC-8	163031	Total Phosphorus	8/15/1966	11:30 AM	0.0	0.79	mg/L
BPJC-8	3336970	Flow	10/1/1974	12:55 PM	0.0	1	cfs
BPJC-8	3336970	Flow	11/11/1974	3:50 PM	0.0	83	cfs
BPJC-8	3336970	Flow	12/6/1974	3:20 PM	0.0	17	cfs
BPJC-8	3336970	Flow	1/7/1975	10:00 AM	0.0	50	cfs
BPJC-8	3336970	Flow	2/14/1975	3:35 PM	0.0	45	cfs
BPJC-8	3336970	Flow	3/31/1975	4:05 PM	0.0	37	cfs
BPJC-8	3336970	Flow	5/9/1975	1:50 PM	0.0	32	cfs
BPJC-8	3336970	Flow	6/10/1975	8:35 AM	0.0	14	cfs
BPJC-8	3336970	Flow	7/28/1975	3:30 PM	0.0	4.4	cfs
BPJC-8	3336975	Flow	5/24/1977	11:20 AM	0.0	22	cfs
BPJC-8	3336975	Flow	6/22/1977	11:00 AM	0.0	4.4	cfs
BPJC-8	3336975	Flow	8/11/1977	3:50 PM	0.0	171	cfs
BPJC-8	BPJC-8	Dissolved Oxygen	8/7/1986	9:00 AM	0.0	8	mg/L
BPJC-8	BPJC-8	Dissolved Oxygen	6/26/2001	12:00 AM	0.0	10.7	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
BPJC-8	BPJC-8	Dissolved Oxygen	8/13/2001	12:00 AM	0.0	4.9	mg/L
BPJC-8	BPJC-8	Dissolved Oxygen	10/3/2001	12:00 AM	0.0	11.5	mg/L
BPJC-8	BPJC-8	Dissolved Phosphorus	8/7/1986	9:00 AM	0.0	0.01	mg/L
BPJC-8	BPJC-8	Dissolved Phosphorus	6/26/2001	12:00 AM	0.0	0.01	mg/L
BPJC-8	BPJC-8	Dissolved Phosphorus	8/13/2001	12:00 AM	0.0	0.17	mg/L
BPJC-8	BPJC-8	Dissolved Phosphorus	10/3/2001	12:00 AM	0.0	0.11	mg/L
BPJC-8	BPJC-8	Flow	8/7/1986	8:30 AM	0.0	1.6	cfs
BPJC-8	BPJC-8	Total Phosphorus	8/7/1986	9:00 AM	0.0	0.03	mg/L
BPJC-8	BPJC-8	Total Phosphorus	6/26/2001	12:00 AM	0.0	0.01	mg/L
BPJC-8	BPJC-8	Total Phosphorus	8/13/2001	12:00 AM	0.0	0.33	mg/L
BPJC-8	BPJC-8	Total Phosphorus	10/3/2001	12:00 AM	0.0	0.32	mg/L
BPJC-8	BPJC-UC-A2	Dissolved Oxygen	7/6/1989		0.0	8.8	mg/L
BPJC-8	BPJC-UC-A2	Dissolved Oxygen	7/28/1989		0.0	5.4	mg/L
BPJC-8	BPJC-UC-A2	Dissolved Oxygen	10/24/1989		0.0	7.4	mg/L
BPJC-8	BPJC-UC-A2	Dissolved Oxygen	10/23/1990		0.0	10.5	mg/L
BPJC-8	BPJC-UC-A2	Dissolved Oxygen	8/13/1997		0.0	3.9	mg/L
BPJC-8	BPJC-UC-A3	Dissolved Oxygen	7/6/1989		0.0	9.1	mg/L
BPJC-8	BPJC-UC-A3	Dissolved Oxygen	7/28/1989		0.0	6.8	mg/L
BPJC-8	BPJC-UC-A3	Dissolved Oxygen	10/24/1989		0.0	12.1	mg/L
BPJC-8	BPJC-UC-A3	Dissolved Oxygen	10/23/1990		0.0	10.2	mg/L
BPJD-2	BPJD-2	Dissolved Oxygen	8/7/1986	11:30 AM	0.0	10.1	mg/L
BPJD-2	BPJD-2	Dissolved Oxygen	7/7/1997	4:00 PM	0.0	10.3	mg/L
BPJD-2	BPJD-2	Dissolved Oxygen	9/2/1997	3:45 PM	0.0	5.9	mg/L
BPJD-2	BPJD-2	Dissolved Oxygen	6/26/2001	12:00 AM	0.0	6.9	mg/L
BPJD-2	BPJD-2	Dissolved Oxygen	8/14/2001	12:00 AM	0.0	4.8	mg/L
BPJD-2	BPJD-2	Dissolved Oxygen	10/3/2001	12:00 AM	0.0	8.84	mg/L
BPJD-2	BPJD-2	Dissolved Phosphorus	8/7/1986	11:30 AM	0.0	0.03	mg/L
BPJD-2	BPJD-2	Dissolved Phosphorus	6/26/2001	12:00 AM	0.0	0.03	mg/L
BPJD-2	BPJD-2	Dissolved Phosphorus	8/14/2001	12:00 AM	0.0	0.09	mg/L
BPJD-2	BPJD-2	Dissolved Phosphorus	10/3/2001	12:00 AM	0.0	0.55	mg/L
BPJD-2	BPJD-2	Flow	8/7/1986	11:00 AM	0.0	2.8	cfs
BPJD-2	BPJD-2	Total Phosphorus	8/7/1986	11:30 AM	0.0	0.08	mg/L
BPJD-2	BPJD-2	Total Phosphorus	7/7/1997	4:00 PM	0.0	0.04	mg/L
BPJD-2	BPJD-2	Total Phosphorus	9/2/1997	3:45 PM	0.0	0.03	mg/L
BPJD-2	BPJD-2	Total Phosphorus	6/26/2001	12:00 AM	0.0	0.04	mg/L
BPJD-2	BPJD-2	Total Phosphorus	8/14/2001	12:00 AM	0.0	0.14	mg/L
BPJD-2	BPJD-2	Total Phosphorus	10/3/2001	12:00 AM	0.0	0.63	mg/L
RBO	RBO-1	Chlorophyll-a	4/24/1989	10:45 AM	16.0	2.97	µg/L
RBO	RBO-1	Chlorophyll-a	6/5/1989	10:45 AM	5.0	92.5	µg/L
RBO	RBO-1	Chlorophyll-a	7/5/1989	10:45 AM	6.0	11.24	µg/L
RBO	RBO-1	Chlorophyll-a	8/7/1989	11:30 AM	4.0	30.71	µg/L
RBO	RBO-1	Chlorophyll-a	10/10/1989	10:30 AM	3.0	28.61	µg/L
RBO	RBO-1	Chlorophyll-a	4/25/1995	10:00 AM	5.0	22.1	µg/L
RBO	RBO-1	Chlorophyll-a	6/14/1995	11:00 AM	11.0	12.59	µg/L
RBO	RBO-1	Chlorophyll-a	7/19/1995	8:30 AM	6.0	19.83	µg/L
RBO	RBO-1	Chlorophyll-a	8/30/1995	8:40 AM	4.0	64.08	µg/L
RBO	RBO-1	Chlorophyll-a	10/6/1995	8:45 AM	4.0	37.47	µg/L
RBO	RBO-1	Chlorophyll-a	5/17/1996	2:45 PM	2.0	4.01	µg/L
RBO	RBO-1	Chlorophyll-a	6/26/1996	9:36 AM	7.0	6.23	µg/L
RBO	RBO-1	Chlorophyll-a	7/31/1996	1:35 PM	5.0	24.03	µg/L
RBO	RBO-1	Chlorophyll-a	8/26/1996	12:55 PM	4.0	56.07	µg/L
RBO	RBO-1	Chlorophyll-a	9/30/1996	2:30 PM	3.0	53.4	µg/L
RBO	RBO-1	Chlorophyll-a	10/29/1996	1:00 PM	3.0	37.38	µg/L
RBO	RBO-1	Chlorophyll-a	4/14/1997	9:03 AM	4.0	24.03	µg/L
RBO	RBO-1	Chlorophyll-a	4/21/1997	4:15 PM	6.0	17.44	µg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Chlorophyll-a	5/5/1997	8:30 AM	4.0	22.7	µg/L
RBO	RBO-1	Chlorophyll-a	5/28/1997	8:40 AM	4.0	28.03	µg/L
RBO	RBO-1	Chlorophyll-a	6/23/1997	10:15 AM	9.0	6.43	µg/L
RBO	RBO-1	Chlorophyll-a	6/30/1997	8:55 AM	6.0	16.91	µg/L
RBO	RBO-1	Chlorophyll-a	7/23/1997	10:15 AM	5.0	46.18	µg/L
RBO	RBO-1	Chlorophyll-a	7/28/1997	8:40 AM	5.0	40.94	µg/L
RBO	RBO-1	Chlorophyll-a	8/21/1997	10:02 AM	3.0	74.76	µg/L
RBO	RBO-1	Chlorophyll-a	9/15/1997	8:15 AM	4.0	109.47	µg/L
RBO	RBO-1	Chlorophyll-a	9/28/1997	10:30 AM	3.0	56.07	µg/L
RBO	RBO-1	Chlorophyll-a	10/23/1997	10:15 AM	3.0	50.54	µg/L
RBO	RBO-1	Chlorophyll-a	10/27/1997	8:20 AM	3.0	42.72	µg/L
RBO	RBO-1	Chlorophyll-a	11/10/1997	8:20 AM	4.0	49.4	µg/L
RBO	RBO-1	Chlorophyll-a	12/23/1997	9:30 AM	8.0	34.04	µg/L
RBO	RBO-1	Chlorophyll-a	1/26/1998	3:30 PM	9.0	13.35	µg/L
RBO	RBO-1	Chlorophyll-a	2/24/1998	9:15 AM	6.0	9.79	µg/L
RBO	RBO-1	Chlorophyll-a	3/30/1998	8:25 AM	1.0	0	µg/L
RBO	RBO-1	Chlorophyll-a	4/15/1998	9:45 AM	4.0	7.48	µg/L
RBO	RBO-1	Chlorophyll-a	5/30/1998	3:05 PM	3.0	170.88	µg/L
RBO	RBO-1	Chlorophyll-a	6/3/1998	11:15 AM	4.0	65.42	µg/L
RBO	RBO-1	Chlorophyll-a	6/29/1998	8:20 AM	4.0	50.7	µg/L
RBO	RBO-1	Chlorophyll-a	6/29/1998	8:40 AM	2.0	77.4	µg/L
RBO	RBO-1	Chlorophyll-a	7/27/1998	9:45 AM	6.0	21.4	µg/L
RBO	RBO-1	Chlorophyll-a	10/22/1998	9:39 AM	3.0	58.7	µg/L
RBO	RBO-1	Chlorophyll-a	4/25/2001	12:00 AM	3.0	93.3	µg/L
RBO	RBO-1	Chlorophyll-a	6/7/2001	12:00 AM	4.0	66.8	µg/L
RBO	RBO-1	Chlorophyll-a	7/11/2001	12:00 AM	4.0	30.3	µg/L
RBO	RBO-1	Chlorophyll-a	8/20/2001	12:00 AM	3.0	118	µg/L
RBO	RBO-1	Chlorophyll-a	10/30/2001	12:00 AM	4.0	46	µg/L
RBO	RBO-1	Dissolved Oxygen	4/24/1989	10:45 AM	13.0	11.7	mg/L
RBO	RBO-1	Dissolved Oxygen	4/24/1989	10:45 AM	19.0	5.6	mg/L
RBO	RBO-1	Dissolved Oxygen	4/24/1989	10:45 AM	15.0	9.7	mg/L
RBO	RBO-1	Dissolved Oxygen	4/24/1989	10:45 AM	11.0	12.2	mg/L
RBO	RBO-1	Dissolved Oxygen	4/24/1989	10:45 AM	9.0	12.6	mg/L
RBO	RBO-1	Dissolved Oxygen	4/24/1989	10:45 AM	7.0	12.3	mg/L
RBO	RBO-1	Dissolved Oxygen	4/24/1989	10:45 AM	0.0	11.5	mg/L
RBO	RBO-1	Dissolved Oxygen	4/24/1989	10:45 AM	17.0	7.5	mg/L
RBO	RBO-1	Dissolved Oxygen	6/5/1989	10:45 AM	0.0	15.1	mg/L
RBO	RBO-1	Dissolved Oxygen	6/5/1989	10:45 AM	11.0	3.1	mg/L
RBO	RBO-1	Dissolved Oxygen	6/5/1989	10:45 AM	15.0	1.8	mg/L
RBO	RBO-1	Dissolved Oxygen	6/5/1989	10:45 AM	17.0	1.4	mg/L
RBO	RBO-1	Dissolved Oxygen	6/5/1989	10:45 AM	13.0	2.4	mg/L
RBO	RBO-1	Dissolved Oxygen	6/5/1989	10:45 AM	9.0	2.9	mg/L
RBO	RBO-1	Dissolved Oxygen	6/5/1989	10:45 AM	7.0	3.2	mg/L
RBO	RBO-1	Dissolved Oxygen	6/5/1989	10:45 AM	3.0	14.2	mg/L
RBO	RBO-1	Dissolved Oxygen	6/5/1989	10:45 AM	5.0	6.5	mg/L
RBO	RBO-1	Dissolved Oxygen	7/5/1989	10:45 AM	11.0	2.4	mg/L
RBO	RBO-1	Dissolved Oxygen	7/5/1989	10:45 AM	9.0	4.4	mg/L
RBO	RBO-1	Dissolved Oxygen	7/5/1989	10:45 AM	17.0	2.3	mg/L
RBO	RBO-1	Dissolved Oxygen	7/5/1989	10:45 AM	15.0	2.5	mg/L
RBO	RBO-1	Dissolved Oxygen	7/5/1989	10:45 AM	7.0	6	mg/L
RBO	RBO-1	Dissolved Oxygen	7/5/1989	10:45 AM	0.0	7.1	mg/L
RBO	RBO-1	Dissolved Oxygen	7/5/1989	10:45 AM	5.0	8	mg/L
RBO	RBO-1	Dissolved Oxygen	7/5/1989	10:45 AM	3.0	7.6	mg/L
RBO	RBO-1	Dissolved Oxygen	7/5/1989	10:45 AM	13.0	2.2	mg/L
RBO	RBO-1	Dissolved Oxygen	8/7/1989	11:30 AM	0.0	9.5	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Dissolved Oxygen	8/7/1989	11:30 AM	1.0	8.9	mg/L
RBO	RBO-1	Dissolved Oxygen	8/7/1989	11:30 AM	3.0	8.8	mg/L
RBO	RBO-1	Dissolved Oxygen	8/7/1989	11:30 AM	7.0	8.7	mg/L
RBO	RBO-1	Dissolved Oxygen	8/7/1989	11:30 AM	9.0	8.5	mg/L
RBO	RBO-1	Dissolved Oxygen	8/7/1989	11:30 AM	11.0	6.1	mg/L
RBO	RBO-1	Dissolved Oxygen	8/7/1989	11:30 AM	13.0	0.6	mg/L
RBO	RBO-1	Dissolved Oxygen	10/10/1989	10:30 AM	11.0	9.3	mg/L
RBO	RBO-1	Dissolved Oxygen	10/10/1989	10:30 AM	15.0	9.1	mg/L
RBO	RBO-1	Dissolved Oxygen	10/10/1989	10:30 AM	0.0	9.2	mg/L
RBO	RBO-1	Dissolved Oxygen	10/10/1989	10:30 AM	17.0	8.8	mg/L
RBO	RBO-1	Dissolved Oxygen	4/25/1995	10:10 AM	0.0	8.4	mg/L
RBO	RBO-1	Dissolved Oxygen	4/25/1995	10:10 AM	1.0	8.5	mg/L
RBO	RBO-1	Dissolved Oxygen	4/25/1995	10:10 AM	10.0	7.7	mg/L
RBO	RBO-1	Dissolved Oxygen	4/25/1995	10:10 AM	11.0	6.8	mg/L
RBO	RBO-1	Dissolved Oxygen	4/25/1995	10:10 AM	12.0	7.6	mg/L
RBO	RBO-1	Dissolved Oxygen	4/25/1995	10:10 AM	13.0	8.2	mg/L
RBO	RBO-1	Dissolved Oxygen	4/25/1995	10:10 AM	14.0	8.3	mg/L
RBO	RBO-1	Dissolved Oxygen	6/14/1995	11:00 AM	1.0	10.9	mg/L
RBO	RBO-1	Dissolved Oxygen	6/14/1995	11:00 AM	11.0	1.9	mg/L
RBO	RBO-1	Dissolved Oxygen	6/14/1995	11:00 AM	15.0	0.4	mg/L
RBO	RBO-1	Dissolved Oxygen	6/14/1995	11:00 AM	14.0	0.5	mg/L
RBO	RBO-1	Dissolved Oxygen	6/14/1995	11:00 AM	13.0	0.8	mg/L
RBO	RBO-1	Dissolved Oxygen	6/14/1995	11:00 AM	12.0	1	mg/L
RBO	RBO-1	Dissolved Oxygen	6/14/1995	11:00 AM	9.0	9.1	mg/L
RBO	RBO-1	Dissolved Oxygen	6/14/1995	11:00 AM	8.0	12.3	mg/L
RBO	RBO-1	Dissolved Oxygen	6/14/1995	11:00 AM	3.0	11.1	mg/L
RBO	RBO-1	Dissolved Oxygen	6/14/1995	11:00 AM	0.0	10.7	mg/L
RBO	RBO-1	Dissolved Oxygen	6/14/1995	11:00 AM	10.0	5.8	mg/L
RBO	RBO-1	Dissolved Oxygen	6/14/1995	11:00 AM	5.0	11.2	mg/L
RBO	RBO-1	Dissolved Oxygen	7/19/1995	8:30 AM	6.0	10.8	mg/L
RBO	RBO-1	Dissolved Oxygen	7/19/1995	8:30 AM	13.0	0.2	mg/L
RBO	RBO-1	Dissolved Oxygen	7/19/1995	8:30 AM	12.0	1	mg/L
RBO	RBO-1	Dissolved Oxygen	7/19/1995	8:30 AM	11.0	2.3	mg/L
RBO	RBO-1	Dissolved Oxygen	7/19/1995	8:30 AM	10.0	3.7	mg/L
RBO	RBO-1	Dissolved Oxygen	7/19/1995	8:30 AM	9.0	7.5	mg/L
RBO	RBO-1	Dissolved Oxygen	7/19/1995	8:30 AM	7.0	9.3	mg/L
RBO	RBO-1	Dissolved Oxygen	7/19/1995	8:30 AM	3.0	10.3	mg/L
RBO	RBO-1	Dissolved Oxygen	7/19/1995	8:30 AM	2.0	10.2	mg/L
RBO	RBO-1	Dissolved Oxygen	7/19/1995	8:30 AM	1.0	10.1	mg/L
RBO	RBO-1	Dissolved Oxygen	7/19/1995	8:30 AM	0.0	9.7	mg/L
RBO	RBO-1	Dissolved Oxygen	7/19/1995	8:30 AM	8.0	9.5	mg/L
RBO	RBO-1	Dissolved Oxygen	8/30/1995	8:40 AM	9.0	2	mg/L
RBO	RBO-1	Dissolved Oxygen	8/30/1995	8:40 AM	7.0	3.6	mg/L
RBO	RBO-1	Dissolved Oxygen	8/30/1995	8:40 AM	10.0	0.2	mg/L
RBO	RBO-1	Dissolved Oxygen	8/30/1995	8:40 AM	8.0	2.9	mg/L
RBO	RBO-1	Dissolved Oxygen	8/30/1995	8:40 AM	5.0	7.3	mg/L
RBO	RBO-1	Dissolved Oxygen	8/30/1995	8:40 AM	4.0	8.3	mg/L
RBO	RBO-1	Dissolved Oxygen	8/30/1995	8:40 AM	0.0	10.2	mg/L
RBO	RBO-1	Dissolved Oxygen	8/30/1995	8:40 AM	1.0	10.1	mg/L
RBO	RBO-1	Dissolved Oxygen	8/30/1995	8:40 AM	6.0	5.1	mg/L
RBO	RBO-1	Dissolved Oxygen	8/30/1995	8:40 AM	14.0	0.1	mg/L
RBO	RBO-1	Dissolved Oxygen	10/6/1995	8:45 AM	12.0	6.2	mg/L
RBO	RBO-1	Dissolved Oxygen	10/6/1995	8:45 AM	14.0	3.9	mg/L
RBO	RBO-1	Dissolved Oxygen	10/6/1995	8:45 AM	10.0	6.8	mg/L
RBO	RBO-1	Dissolved Oxygen	10/6/1995	8:45 AM	8.0	7.4	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Dissolved Oxygen	10/6/1995	8:45 AM	6.0	7.9	mg/L
RBO	RBO-1	Dissolved Oxygen	10/6/1995	8:45 AM	0.0	7.7	mg/L
RBO	RBO-1	Dissolved Oxygen	10/6/1995	8:45 AM	15.0	2.3	mg/L
RBO	RBO-1	Dissolved Oxygen	4/14/1997	9:03 AM	0.0	11	mg/L
RBO	RBO-1	Dissolved Oxygen	4/14/1997	9:03 AM	1.0	10.9	mg/L
RBO	RBO-1	Dissolved Oxygen	4/14/1997	9:03 AM	7.0	10.7	mg/L
RBO	RBO-1	Dissolved Oxygen	4/14/1997	9:03 AM	11.0	10.8	mg/L
RBO	RBO-1	Dissolved Oxygen	4/14/1997	9:03 AM	13.0	10.3	mg/L
RBO	RBO-1	Dissolved Oxygen	4/21/1997	4:15 PM	15.0	7	mg/L
RBO	RBO-1	Dissolved Oxygen	4/21/1997	4:15 PM	13.0	8.3	mg/L
RBO	RBO-1	Dissolved Oxygen	4/21/1997	4:15 PM	16.0	5.8	mg/L
RBO	RBO-1	Dissolved Oxygen	4/21/1997	4:15 PM	14.0	7.7	mg/L
RBO	RBO-1	Dissolved Oxygen	4/21/1997	4:15 PM	9.0	11	mg/L
RBO	RBO-1	Dissolved Oxygen	4/21/1997	4:15 PM	7.0	12.2	mg/L
RBO	RBO-1	Dissolved Oxygen	4/21/1997	4:15 PM	0.0	12.5	mg/L
RBO	RBO-1	Dissolved Oxygen	4/21/1997	4:15 PM	1.0	12.4	mg/L
RBO	RBO-1	Dissolved Oxygen	4/21/1997	4:15 PM	11.0	10.1	mg/L
RBO	RBO-1	Dissolved Oxygen	5/5/1997	8:30 AM	0.0	9.1	mg/L
RBO	RBO-1	Dissolved Oxygen	5/5/1997	8:30 AM	3.0	9.2	mg/L
RBO	RBO-1	Dissolved Oxygen	5/5/1997	8:30 AM	7.0	8.8	mg/L
RBO	RBO-1	Dissolved Oxygen	5/5/1997	8:30 AM	9.0	8.7	mg/L
RBO	RBO-1	Dissolved Oxygen	5/28/1997	8:40 AM	11.0	7.4	mg/L
RBO	RBO-1	Dissolved Oxygen	5/28/1997	8:40 AM	13.0	4.8	mg/L
RBO	RBO-1	Dissolved Oxygen	5/28/1997	8:40 AM	9.0	8.4	mg/L
RBO	RBO-1	Dissolved Oxygen	5/28/1997	8:40 AM	5.0	9	mg/L
RBO	RBO-1	Dissolved Oxygen	5/28/1997	8:40 AM	1.0	9.5	mg/L
RBO	RBO-1	Dissolved Oxygen	5/28/1997	8:40 AM	0.0	9.3	mg/L
RBO	RBO-1	Dissolved Oxygen	5/28/1997	8:40 AM	14.0	2.8	mg/L
RBO	RBO-1	Dissolved Oxygen	5/28/1997	8:40 AM	7.0	8.6	mg/L
RBO	RBO-1	Dissolved Oxygen	6/11/1997	10:11 AM	5.0	10.7	mg/L
RBO	RBO-1	Dissolved Oxygen	6/11/1997	10:11 AM	14.0	0.5	mg/L
RBO	RBO-1	Dissolved Oxygen	6/11/1997	10:11 AM	13.0	1.3	mg/L
RBO	RBO-1	Dissolved Oxygen	6/11/1997	10:11 AM	11.0	2.3	mg/L
RBO	RBO-1	Dissolved Oxygen	6/11/1997	10:11 AM	7.0	5.8	mg/L
RBO	RBO-1	Dissolved Oxygen	6/11/1997	10:11 AM	3.0	11.5	mg/L
RBO	RBO-1	Dissolved Oxygen	6/11/1997	10:11 AM	1.0	11	mg/L
RBO	RBO-1	Dissolved Oxygen	6/11/1997	10:11 AM	0.0	11.2	mg/L
RBO	RBO-1	Dissolved Oxygen	6/11/1997	10:11 AM	9.0	2	mg/L
RBO	RBO-1	Dissolved Oxygen	6/23/1997	10:15 AM	9.0	7.9	mg/L
RBO	RBO-1	Dissolved Oxygen	6/23/1997	10:15 AM	11.0	4.4	mg/L
RBO	RBO-1	Dissolved Oxygen	6/23/1997	10:15 AM	13.0	1.3	mg/L
RBO	RBO-1	Dissolved Oxygen	6/23/1997	10:15 AM	17.0	0.5	mg/L
RBO	RBO-1	Dissolved Oxygen	6/23/1997	10:15 AM	5.0	9.4	mg/L
RBO	RBO-1	Dissolved Oxygen	6/23/1997	10:15 AM	3.0	9.5	mg/L
RBO	RBO-1	Dissolved Oxygen	6/23/1997	10:15 AM	0.0	9.6	mg/L
RBO	RBO-1	Dissolved Oxygen	6/23/1997	10:15 AM	15.0	0.7	mg/L
RBO	RBO-1	Dissolved Oxygen	6/23/1997	10:15 AM	7.0	8.9	mg/L
RBO	RBO-1	Dissolved Oxygen	6/30/1997	8:55 AM	3.0	7.8	mg/L
RBO	RBO-1	Dissolved Oxygen	6/30/1997	8:55 AM	13.0	1	mg/L
RBO	RBO-1	Dissolved Oxygen	6/30/1997	8:55 AM	11.0	2.8	mg/L
RBO	RBO-1	Dissolved Oxygen	6/30/1997	8:55 AM	9.0	4.2	mg/L
RBO	RBO-1	Dissolved Oxygen	6/30/1997	8:55 AM	5.0	7.3	mg/L
RBO	RBO-1	Dissolved Oxygen	6/30/1997	8:55 AM	1.0	7.6	mg/L
RBO	RBO-1	Dissolved Oxygen	6/30/1997	8:55 AM	0.0	8.1	mg/L
RBO	RBO-1	Dissolved Oxygen	6/30/1997	8:55 AM	7.0	6	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Dissolved Oxygen	7/14/1997	8:25 AM	9.0	2.5	mg/L
RBO	RBO-1	Dissolved Oxygen	7/14/1997	8:25 AM	3.0	12.8	mg/L
RBO	RBO-1	Dissolved Oxygen	7/14/1997	8:25 AM	13.0	0.2	mg/L
RBO	RBO-1	Dissolved Oxygen	7/14/1997	8:25 AM	11.0	0.8	mg/L
RBO	RBO-1	Dissolved Oxygen	7/14/1997	8:25 AM	5.0	11.9	mg/L
RBO	RBO-1	Dissolved Oxygen	7/14/1997	8:25 AM	1.0	13.1	mg/L
RBO	RBO-1	Dissolved Oxygen	7/14/1997	8:25 AM	0.0	13.4	mg/L
RBO	RBO-1	Dissolved Oxygen	7/14/1997	8:25 AM	7.0	7.6	mg/L
RBO	RBO-1	Dissolved Oxygen	7/23/1997	10:15 AM	13.0	0.4	mg/L
RBO	RBO-1	Dissolved Oxygen	7/23/1997	10:15 AM	0.0	8.5	mg/L
RBO	RBO-1	Dissolved Oxygen	7/23/1997	10:15 AM	1.0	8.4	mg/L
RBO	RBO-1	Dissolved Oxygen	7/23/1997	10:15 AM	3.0	8.3	mg/L
RBO	RBO-1	Dissolved Oxygen	7/23/1997	10:15 AM	7.0	7.9	mg/L
RBO	RBO-1	Dissolved Oxygen	7/23/1997	10:15 AM	9.0	7.8	mg/L
RBO	RBO-1	Dissolved Oxygen	7/23/1997	10:15 AM	11.0	1.1	mg/L
RBO	RBO-1	Dissolved Oxygen	7/28/1997	8:40 AM	7.0	11.1	mg/L
RBO	RBO-1	Dissolved Oxygen	7/28/1997	8:40 AM	11.0	0.9	mg/L
RBO	RBO-1	Dissolved Oxygen	7/28/1997	8:40 AM	13.0	0.2	mg/L
RBO	RBO-1	Dissolved Oxygen	7/28/1997	8:40 AM	9.0	3.5	mg/L
RBO	RBO-1	Dissolved Oxygen	7/28/1997	8:40 AM	3.0	11.7	mg/L
RBO	RBO-1	Dissolved Oxygen	7/28/1997	8:40 AM	0.0	11.4	mg/L
RBO	RBO-1	Dissolved Oxygen	7/28/1997	8:40 AM	1.0	11.6	mg/L
RBO	RBO-1	Dissolved Oxygen	7/28/1997	8:40 AM	5.0	10.6	mg/L
RBO	RBO-1	Dissolved Oxygen	8/11/1997	8:30 AM	0.0	3.4	mg/L
RBO	RBO-1	Dissolved Oxygen	8/11/1997	8:30 AM	3.0	3.1	mg/L
RBO	RBO-1	Dissolved Oxygen	8/11/1997	8:30 AM	5.0	3	mg/L
RBO	RBO-1	Dissolved Oxygen	8/11/1997	8:30 AM	9.0	2.9	mg/L
RBO	RBO-1	Dissolved Oxygen	8/11/1997	8:30 AM	13.0	2.8	mg/L
RBO	RBO-1	Dissolved Oxygen	8/21/1997	10:02 AM	3.0	6.1	mg/L
RBO	RBO-1	Dissolved Oxygen	8/21/1997	10:02 AM	7.0	6	mg/L
RBO	RBO-1	Dissolved Oxygen	8/21/1997	10:02 AM	1.0	6.2	mg/L
RBO	RBO-1	Dissolved Oxygen	8/21/1997	10:02 AM	0.0	6.4	mg/L
RBO	RBO-1	Dissolved Oxygen	8/25/1997	9:50 AM	1.0	8.9	mg/L
RBO	RBO-1	Dissolved Oxygen	8/25/1997	9:50 AM	3.0	7.3	mg/L
RBO	RBO-1	Dissolved Oxygen	8/25/1997	9:50 AM	5.0	6.3	mg/L
RBO	RBO-1	Dissolved Oxygen	8/25/1997	9:50 AM	7.0	6.2	mg/L
RBO	RBO-1	Dissolved Oxygen	8/25/1997	9:50 AM	9.0	6	mg/L
RBO	RBO-1	Dissolved Oxygen	8/25/1997	9:50 AM	11.0	6.1	mg/L
RBO	RBO-1	Dissolved Oxygen	8/25/1997	9:50 AM	0.0	8.4	mg/L
RBO	RBO-1	Dissolved Oxygen	9/15/1997	8:15 AM	7.0	2.3	mg/L
RBO	RBO-1	Dissolved Oxygen	9/15/1997	8:15 AM	11.0	0.2	mg/L
RBO	RBO-1	Dissolved Oxygen	9/15/1997	8:15 AM	9.0	0.9	mg/L
RBO	RBO-1	Dissolved Oxygen	9/15/1997	8:15 AM	0.0	5.3	mg/L
RBO	RBO-1	Dissolved Oxygen	9/15/1997	8:15 AM	1.0	5.1	mg/L
RBO	RBO-1	Dissolved Oxygen	9/15/1997	8:15 AM	3.0	4.8	mg/L
RBO	RBO-1	Dissolved Oxygen	9/15/1997	8:15 AM	5.0	4	mg/L
RBO	RBO-1	Dissolved Oxygen	9/28/1997	10:30 AM	0.0	6.1	mg/L
RBO	RBO-1	Dissolved Oxygen	9/28/1997	10:30 AM	1.0	6	mg/L
RBO	RBO-1	Dissolved Oxygen	9/28/1997	10:30 AM	3.0	5.7	mg/L
RBO	RBO-1	Dissolved Oxygen	9/28/1997	10:30 AM	5.0	5.6	mg/L
RBO	RBO-1	Dissolved Oxygen	9/28/1997	10:30 AM	7.0	4.9	mg/L
RBO	RBO-1	Dissolved Oxygen	9/28/1997	10:30 AM	9.0	4.7	mg/L
RBO	RBO-1	Dissolved Oxygen	9/28/1997	10:30 AM	13.0	4	mg/L
RBO	RBO-1	Dissolved Oxygen	10/14/1997	1:11 PM	1.0	5.6	mg/L
RBO	RBO-1	Dissolved Oxygen	10/14/1997	1:11 PM	13.0	4.2	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Dissolved Oxygen	10/14/1997	1:11 PM	11.0	4.9	mg/L
RBO	RBO-1	Dissolved Oxygen	10/14/1997	1:11 PM	9.0	5.5	mg/L
RBO	RBO-1	Dissolved Oxygen	10/14/1997	1:11 PM	3.0	5.7	mg/L
RBO	RBO-1	Dissolved Oxygen	10/14/1997	1:11 PM	0.0	5.9	mg/L
RBO	RBO-1	Dissolved Oxygen	10/14/1997	1:11 PM	5.0	5.8	mg/L
RBO	RBO-1	Dissolved Oxygen	10/23/1997	10:15 AM	0.0	9.3	mg/L
RBO	RBO-1	Dissolved Oxygen	10/23/1997	10:15 AM	1.0	9.2	mg/L
RBO	RBO-1	Dissolved Oxygen	10/23/1997	10:15 AM	9.0	9.4	mg/L
RBO	RBO-1	Dissolved Oxygen	10/23/1997	10:15 AM	11.0	9.6	mg/L
RBO	RBO-1	Dissolved Oxygen	10/23/1997	10:15 AM	13.0	9.7	mg/L
RBO	RBO-1	Dissolved Oxygen	10/27/1997	8:20 AM	5.0	8.9	mg/L
RBO	RBO-1	Dissolved Oxygen	10/27/1997	8:20 AM	3.0	9	mg/L
RBO	RBO-1	Dissolved Oxygen	10/27/1997	8:20 AM	1.0	9.2	mg/L
RBO	RBO-1	Dissolved Oxygen	10/27/1997	8:20 AM	0.0	9.3	mg/L
RBO	RBO-1	Dissolved Oxygen	10/27/1997	8:20 AM	11.0	8.8	mg/L
RBO	RBO-1	Dissolved Oxygen	11/10/1997	8:20 AM	0.0	11.6	mg/L
RBO	RBO-1	Dissolved Oxygen	11/10/1997	8:20 AM	1.0	11.1	mg/L
RBO	RBO-1	Dissolved Oxygen	11/10/1997	8:20 AM	3.0	11.3	mg/L
RBO	RBO-1	Dissolved Oxygen	11/10/1997	8:20 AM	5.0	10.7	mg/L
RBO	RBO-1	Dissolved Oxygen	11/10/1997	8:20 AM	7.0	10.8	mg/L
RBO	RBO-1	Dissolved Oxygen	11/10/1997	8:20 AM	9.0	10.6	mg/L
RBO	RBO-1	Dissolved Oxygen	11/10/1997	8:20 AM	13.0	11	mg/L
RBO	RBO-1	Dissolved Oxygen	12/23/1997	9:30 AM	5.0	12.1	mg/L
RBO	RBO-1	Dissolved Oxygen	12/23/1997	9:30 AM	7.0	12.2	mg/L
RBO	RBO-1	Dissolved Oxygen	12/23/1997	9:30 AM	1.0	12.4	mg/L
RBO	RBO-1	Dissolved Oxygen	12/23/1997	9:30 AM	0.0	12.7	mg/L
RBO	RBO-1	Dissolved Oxygen	12/23/1997	9:30 AM	11.0	12	mg/L
RBO	RBO-1	Dissolved Oxygen	1/26/1998	3:30 PM	0.0	11.4	mg/L
RBO	RBO-1	Dissolved Oxygen	1/26/1998	3:30 PM	1.0	10.4	mg/L
RBO	RBO-1	Dissolved Oxygen	1/26/1998	3:30 PM	7.0	10.6	mg/L
RBO	RBO-1	Dissolved Oxygen	1/26/1998	3:30 PM	15.0	10.5	mg/L
RBO	RBO-1	Dissolved Oxygen	2/24/1998	9:15 AM	0.0	12.2	mg/L
RBO	RBO-1	Dissolved Oxygen	2/24/1998	9:15 AM	1.0	12.1	mg/L
RBO	RBO-1	Dissolved Oxygen	2/24/1998	9:15 AM	3.0	12	mg/L
RBO	RBO-1	Dissolved Oxygen	2/24/1998	9:15 AM	9.0	11.9	mg/L
RBO	RBO-1	Dissolved Oxygen	3/30/1998	8:25 AM	5.0	7.7	mg/L
RBO	RBO-1	Dissolved Oxygen	3/30/1998	8:25 AM	15.0	7	mg/L
RBO	RBO-1	Dissolved Oxygen	3/30/1998	8:25 AM	13.0	7.2	mg/L
RBO	RBO-1	Dissolved Oxygen	3/30/1998	8:25 AM	11.0	7.3	mg/L
RBO	RBO-1	Dissolved Oxygen	3/30/1998	8:25 AM	1.0	7.9	mg/L
RBO	RBO-1	Dissolved Oxygen	3/30/1998	8:25 AM	0.0	7.8	mg/L
RBO	RBO-1	Dissolved Oxygen	3/30/1998	8:25 AM	9.0	7.6	mg/L
RBO	RBO-1	Dissolved Oxygen	4/15/1998	9:45 AM	15.0	8.1	mg/L
RBO	RBO-1	Dissolved Oxygen	4/15/1998	9:45 AM	17.0	7.8	mg/L
RBO	RBO-1	Dissolved Oxygen	4/15/1998	9:45 AM	13.0	8.5	mg/L
RBO	RBO-1	Dissolved Oxygen	4/15/1998	9:45 AM	7.0	8.8	mg/L
RBO	RBO-1	Dissolved Oxygen	4/15/1998	9:45 AM	5.0	8.9	mg/L
RBO	RBO-1	Dissolved Oxygen	4/15/1998	9:45 AM	3.0	9.4	mg/L
RBO	RBO-1	Dissolved Oxygen	4/15/1998	9:45 AM	1.0	9.8	mg/L
RBO	RBO-1	Dissolved Oxygen	4/15/1998	9:45 AM	0.0	9.9	mg/L
RBO	RBO-1	Dissolved Oxygen	6/3/1998	11:15 AM	1.0	10.5	mg/L
RBO	RBO-1	Dissolved Oxygen	6/3/1998	11:15 AM	3.0	10.4	mg/L
RBO	RBO-1	Dissolved Oxygen	6/3/1998	11:15 AM	5.0	9.3	mg/L
RBO	RBO-1	Dissolved Oxygen	6/3/1998	11:15 AM	7.0	8.3	mg/L
RBO	RBO-1	Dissolved Oxygen	6/3/1998	11:15 AM	9.0	5.5	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Dissolved Oxygen	6/3/1998	11:15 AM	11.0	1.9	mg/L
RBO	RBO-1	Dissolved Oxygen	6/3/1998	11:15 AM	13.0	1.6	mg/L
RBO	RBO-1	Dissolved Oxygen	6/3/1998	11:15 AM	0.0	10.7	mg/L
RBO	RBO-1	Dissolved Oxygen	7/27/1998	9:45 AM	11.0	2.7	mg/L
RBO	RBO-1	Dissolved Oxygen	7/27/1998	9:45 AM	15.0	0.4	mg/L
RBO	RBO-1	Dissolved Oxygen	7/27/1998	9:45 AM	13.0	0.6	mg/L
RBO	RBO-1	Dissolved Oxygen	7/27/1998	9:45 AM	7.0	7.6	mg/L
RBO	RBO-1	Dissolved Oxygen	7/27/1998	9:45 AM	5.0	7.7	mg/L
RBO	RBO-1	Dissolved Oxygen	7/27/1998	9:45 AM	0.0	7.9	mg/L
RBO	RBO-1	Dissolved Oxygen	7/27/1998	9:45 AM	9.0	5.5	mg/L
RBO	RBO-1	Dissolved Oxygen	7/27/1998	9:45 AM	14.0	0.5	mg/L
RBO	RBO-1	Dissolved Oxygen	8/13/1998	10:05 AM	15.0	2	mg/L
RBO	RBO-1	Dissolved Oxygen	8/13/1998	10:05 AM	0.0	9.4	mg/L
RBO	RBO-1	Dissolved Oxygen	8/13/1998	10:05 AM	3.0	9.2	mg/L
RBO	RBO-1	Dissolved Oxygen	8/13/1998	10:05 AM	5.0	8.4	mg/L
RBO	RBO-1	Dissolved Oxygen	8/13/1998	10:05 AM	7.0	7.5	mg/L
RBO	RBO-1	Dissolved Oxygen	8/13/1998	10:05 AM	9.0	5	mg/L
RBO	RBO-1	Dissolved Oxygen	8/13/1998	10:05 AM	11.0	2.6	mg/L
RBO	RBO-1	Dissolved Oxygen	8/13/1998	10:05 AM	13.0	2.2	mg/L
RBO	RBO-1	Dissolved Oxygen	10/22/1998	9:39 AM	13.0	9.1	mg/L
RBO	RBO-1	Dissolved Oxygen	10/22/1998	9:39 AM	0.0	8.1	mg/L
RBO	RBO-1	Dissolved Oxygen	10/22/1998	9:39 AM	11.0	8.4	mg/L
RBO	RBO-1	Dissolved Phosphorus	4/24/1989	10:45 AM	1.0	0	mg/L
RBO	RBO-1	Dissolved Phosphorus	4/24/1989	10:45 AM	17.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	6/5/1989	10:45 AM	1.0	0.09	mg/L
RBO	RBO-1	Dissolved Phosphorus	6/5/1989	10:45 AM	15.0	0.12	mg/L
RBO	RBO-1	Dissolved Phosphorus	7/5/1989	10:45 AM	1.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	7/5/1989	10:45 AM	17.0	0.02	mg/L
RBO	RBO-1	Dissolved Phosphorus	8/7/1989	11:30 AM	1.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	8/7/1989	11:30 AM	15.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	10/10/1989	10:30 AM	1.0	0.04	mg/L
RBO	RBO-1	Dissolved Phosphorus	10/10/1989	10:30 AM	15.0	0.04	mg/L
RBO	RBO-1	Dissolved Phosphorus	4/25/1995	12:00 AM	1.0	0	mg/L
RBO	RBO-1	Dissolved Phosphorus	4/25/1995	10:00 AM	14.0	0	mg/L
RBO	RBO-1	Dissolved Phosphorus	4/25/1995	10:00 AM	1.0	0	mg/L
RBO	RBO-1	Dissolved Phosphorus	6/14/1995	11:00 AM	1.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	6/14/1995	11:00 AM	14.0	0.08	mg/L
RBO	RBO-1	Dissolved Phosphorus	7/19/1995	8:30 AM	1.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	7/19/1995	8:30 AM	14.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	8/30/1995	8:40 AM	1.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	8/30/1995	8:40 AM	14.0	0.25	mg/L
RBO	RBO-1	Dissolved Phosphorus	10/6/1995	8:45 AM	1.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	4/21/1997	4:15 PM	1.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	4/21/1997	4:15 PM	14.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	6/23/1997	10:15 AM	1.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	7/23/1997	10:15 AM	1.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	7/23/1997	10:15 AM	13.0	0.09	mg/L
RBO	RBO-1	Dissolved Phosphorus	8/21/1997	10:02 AM	1.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	8/21/1997	10:02 AM	13.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	10/23/1997	10:15 AM	1.0	0.02	mg/L
RBO	RBO-1	Dissolved Phosphorus	10/23/1997	10:15 AM	14.0	0.02	mg/L
RBO	RBO-1	Dissolved Phosphorus	4/15/1998	9:45 AM	1.0	0.03	mg/L
RBO	RBO-1	Dissolved Phosphorus	4/15/1998	9:45 AM	15.0	0.03	mg/L
RBO	RBO-1	Dissolved Phosphorus	6/3/1998	11:15 AM	1.0	0.02	mg/L
RBO	RBO-1	Dissolved Phosphorus	6/3/1998	11:15 AM	13.0	0.01	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Dissolved Phosphorus	7/27/1998	9:45 AM	1.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	8/13/1998	10:05 AM	13.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	8/13/1998	10:05 AM	1.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	10/22/1998	9:39 AM	13.0	0.02	mg/L
RBO	RBO-1	Dissolved Phosphorus	10/22/1998	9:39 AM	1.0	0.03	mg/L
RBO	RBO-1	Dissolved Phosphorus	4/25/2001	12:00 AM	1.0	0.02	mg/L
RBO	RBO-1	Dissolved Phosphorus	4/25/2001	12:00 AM	14.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	6/7/2001	12:00 AM	1.0	0.02	mg/L
RBO	RBO-1	Dissolved Phosphorus	6/7/2001	12:00 AM	14.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	7/11/2001	12:00 AM	1.0	0.08	mg/L
RBO	RBO-1	Dissolved Phosphorus	7/11/2001	12:00 AM	14.0	0.02	mg/L
RBO	RBO-1	Dissolved Phosphorus	8/20/2001	12:00 AM	1.0	0.09	mg/L
RBO	RBO-1	Dissolved Phosphorus	8/20/2001	12:00 AM	14.0	0.02	mg/L
RBO	RBO-1	Dissolved Phosphorus	10/30/2001	12:00 AM	13.0	0.01	mg/L
RBO	RBO-1	Dissolved Phosphorus	10/30/2001	12:00 AM	1.0	0.02	mg/L
RBO	RBO-1	Nitrate + Nitrite	4/24/1989	10:45 AM	1.0	12	mg/L
RBO	RBO-1	Nitrate + Nitrite	4/24/1989	10:45 AM	17.0	11	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/5/1989	10:45 AM	1.0	13	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/5/1989	10:45 AM	15.0	11	mg/L
RBO	RBO-1	Nitrate + Nitrite	7/5/1989	10:45 AM	1.0	11	mg/L
RBO	RBO-1	Nitrate + Nitrite	7/5/1989	10:45 AM	17.0	6.4	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/7/1989	11:30 AM	1.0	4.4	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/7/1989	11:30 AM	15.0	4	mg/L
RBO	RBO-1	Nitrate + Nitrite	10/10/1989	10:30 AM	1.0	0.97	mg/L
RBO	RBO-1	Nitrate + Nitrite	10/10/1989	10:30 AM	15.0	0.98	mg/L
RBO	RBO-1	Nitrate + Nitrite	5/8/1990	7:45 AM	1.0	10	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/4/1990	10:30 AM	1.0	12	mg/L
RBO	RBO-1	Nitrate + Nitrite	7/2/1990	10:00 AM	1.0	12	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/1/1990	10:15 AM	1.0	7.6	mg/L
RBO	RBO-1	Nitrate + Nitrite	9/10/1990	10:35 AM	1.0	1.5	mg/L
RBO	RBO-1	Nitrate + Nitrite	10/2/1990	2:10 PM	1.0	0.56	mg/L
RBO	RBO-1	Nitrate + Nitrite	5/31/1993	11:30 AM	1.0	5.1	mg/L
RBO	RBO-1	Nitrate + Nitrite	7/27/1993	1:45 PM	1.0	5.6	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/30/1993	11:20 AM	1.0	14	mg/L
RBO	RBO-1	Nitrate + Nitrite	9/28/1993	8:45 AM	1.0	4.7	mg/L
RBO	RBO-1	Nitrate + Nitrite	10/25/1993	11:30 AM	1.0	5.4	mg/L
RBO	RBO-1	Nitrate + Nitrite	4/25/1995	11:40 AM	1.0	9.7	mg/L
RBO	RBO-1	Nitrate + Nitrite	4/25/1995	12:00 AM	1.0	8.9	mg/L
RBO	RBO-1	Nitrate + Nitrite	4/25/1995	10:00 AM	1.0	6.2	mg/L
RBO	RBO-1	Nitrate + Nitrite	4/25/1995	10:00 AM	14.0	7.9	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/14/1995	11:00 AM	1.0	8.8	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/14/1995	11:00 AM	14.0	5.6	mg/L
RBO	RBO-1	Nitrate + Nitrite	7/19/1995	8:30 AM	1.0	3.5	mg/L
RBO	RBO-1	Nitrate + Nitrite	7/19/1995	8:30 AM	14.0	1.07	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/30/1995	8:40 AM	1.0	0.01	mg/L
RBO	RBO-1	Nitrate + Nitrite	10/6/1995	8:45 AM	1.0	0.05	mg/L
RBO	RBO-1	Nitrate + Nitrite	10/6/1995	9:45 AM	13.0	0.04	mg/L
RBO	RBO-1	Nitrate + Nitrite	5/17/1996	2:45 PM	1.0	11.2	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/26/1996	9:36 AM	1.0	13.8	mg/L
RBO	RBO-1	Nitrate + Nitrite	7/31/1996	1:35 PM	1.0	7	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/26/1996	12:55 PM	1.0	2.3	mg/L
RBO	RBO-1	Nitrate + Nitrite	9/30/1996	2:30 PM	1.0	0.22	mg/L
RBO	RBO-1	Nitrate + Nitrite	10/29/1996	1:00 PM	1.0	0.1	mg/L
RBO	RBO-1	Nitrate + Nitrite	4/21/1997	4:15 PM	1.0	8.4	mg/L
RBO	RBO-1	Nitrate + Nitrite	5/3/1997	2:13 PM	1.0	7.3	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Nitrate + Nitrite	5/5/1997	8:30 AM	1.0	7.3	mg/L
RBO	RBO-1	Nitrate + Nitrite	5/5/1997	8:30 AM	15.0	8	mg/L
RBO	RBO-1	Nitrate + Nitrite	5/28/1997	8:40 AM	1.0	7.3	mg/L
RBO	RBO-1	Nitrate + Nitrite	5/28/1997	8:40 AM	14.0	6.9	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/6/1997	2:35 PM	1.0	7.9	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/7/1997	7:25 AM	1.0	8.4	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/23/1997	10:15 AM	1.0	9.7	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/23/1997	10:15 AM	15.0	8.8	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/30/1997	8:55 AM	1.0	8.6	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/30/1997	8:55 AM	14.0	8.1	mg/L
RBO	RBO-1	Nitrate + Nitrite	7/9/1997	8:00 AM	1.0	6.9	mg/L
RBO	RBO-1	Nitrate + Nitrite	7/22/1997	7:20 AM	1.0	0.02	mg/L
RBO	RBO-1	Nitrate + Nitrite	7/23/1997	10:15 AM	1.0	4.3	mg/L
RBO	RBO-1	Nitrate + Nitrite	7/28/1997	8:40 AM	1.0	3.3	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/17/1997	8:30 AM	1.0	0.79	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/17/1997	4:00 PM	1.0	0.75	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/21/1997	10:02 AM	1.0	0.62	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/21/1997	10:02 AM	13.0	0.6	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/25/1997	9:50 AM	13.0	0.44	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/25/1997	11:15 AM	1.0	0.45	mg/L
RBO	RBO-1	Nitrate + Nitrite	9/2/1997	3:30 PM	1.0	0.06	mg/L
RBO	RBO-1	Nitrate + Nitrite	9/3/1997	7:45 AM	1.0	0.07	mg/L
RBO	RBO-1	Nitrate + Nitrite	9/15/1997	8:15 AM	1.0	0.11	mg/L
RBO	RBO-1	Nitrate + Nitrite	9/28/1997	10:30 AM	1.0	0.01	mg/L
RBO	RBO-1	Nitrate + Nitrite	10/23/1997	10:15 AM	1.0	0.01	mg/L
RBO	RBO-1	Nitrate + Nitrite	10/27/1997	8:20 AM	11.0	0.01	mg/L
RBO	RBO-1	Nitrate + Nitrite	10/27/1997	10:00 AM	1.0	0.29	mg/L
RBO	RBO-1	Nitrate + Nitrite	11/10/1997	8:20 AM	1.0	0.01	mg/L
RBO	RBO-1	Nitrate + Nitrite	11/10/1997	10:30 AM	1.0	0.07	mg/L
RBO	RBO-1	Nitrate + Nitrite	12/23/1997	9:30 AM	1.0	0.01	mg/L
RBO	RBO-1	Nitrate + Nitrite	12/23/1997	11:30 AM	1.0	0.55	mg/L
RBO	RBO-1	Nitrate + Nitrite	1/8/1998	8:00 AM	1.0	0.01	mg/L
RBO	RBO-1	Nitrate + Nitrite	1/26/1998	3:30 PM	1.0	3.2	mg/L
RBO	RBO-1	Nitrate + Nitrite	4/15/1998	9:45 AM	1.0	12.6	mg/L
RBO	RBO-1	Nitrate + Nitrite	4/15/1998	9:45 AM	15.0	12.57	mg/L
RBO	RBO-1	Nitrate + Nitrite	5/30/1998	3:03 PM	1.0	13.44	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/3/1998	11:15 AM	1.0	13.02	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/3/1998	11:15 AM	13.0	12.91	mg/L
RBO	RBO-1	Nitrate + Nitrite	7/27/1998	9:45 AM	14.0	4.72	mg/L
RBO	RBO-1	Nitrate + Nitrite	7/27/1998	9:45 AM	1.0	6.18	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/13/1998	10:05 AM	1.0	3.29	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/13/1998	10:05 AM	13.0	3.11	mg/L
RBO	RBO-1	Nitrate + Nitrite	10/22/1998	9:39 AM	1.0	0.01	mg/L
RBO	RBO-1	Nitrate + Nitrite	4/25/2001	12:00 AM	1.0	8	mg/L
RBO	RBO-1	Nitrate + Nitrite	4/25/2001	12:00 AM	14.0	8.2	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/7/2001	12:00 AM	1.0	2.3	mg/L
RBO	RBO-1	Nitrate + Nitrite	6/7/2001	12:00 AM	14.0	2.2	mg/L
RBO	RBO-1	Nitrate + Nitrite	7/11/2001	12:00 AM	1.0	2.1	mg/L
RBO	RBO-1	Nitrate + Nitrite	7/11/2001	12:00 AM	14.0	1.79	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/20/2001	12:00 AM	1.0	0.01	mg/L
RBO	RBO-1	Nitrate + Nitrite	8/20/2001	12:00 AM	14.0	0.02	mg/L
RBO	RBO-1	Nitrate + Nitrite	10/30/2001	12:00 AM	1.0	4.3	mg/L
RBO	RBO-1	Nitrate + Nitrite	10/30/2001	12:00 AM	13.0	5.2	mg/L
RBO	RBO-1	Suspended Solids	4/24/1989	10:45 AM	1.0	1	mg/L
RBO	RBO-1	Suspended Solids	4/24/1989	10:45 AM	17.0	4	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Suspended Solids	6/5/1989	10:45 AM	1.0	8	mg/L
RBO	RBO-1	Suspended Solids	6/5/1989	10:45 AM	15.0	17	mg/L
RBO	RBO-1	Suspended Solids	7/5/1989	10:45 AM	1.0	6	mg/L
RBO	RBO-1	Suspended Solids	7/5/1989	10:45 AM	17.0	46	mg/L
RBO	RBO-1	Suspended Solids	8/7/1989	11:30 AM	1.0	10	mg/L
RBO	RBO-1	Suspended Solids	8/7/1989	11:30 AM	15.0	20	mg/L
RBO	RBO-1	Suspended Solids	10/10/1989	10:30 AM	15.0	11	mg/L
RBO	RBO-1	Suspended Solids	10/10/1989	10:30 AM	1.0	9	mg/L
RBO	RBO-1	Suspended Solids	5/8/1990	7:45 AM	1.0	11	mg/L
RBO	RBO-1	Suspended Solids	6/4/1990	10:30 AM	1.0	14	mg/L
RBO	RBO-1	Suspended Solids	7/2/1990	10:00 AM	1.0	5	mg/L
RBO	RBO-1	Suspended Solids	8/1/1990	10:15 AM	1.0	8	mg/L
RBO	RBO-1	Suspended Solids	9/10/1990	10:35 AM	1.0	4	mg/L
RBO	RBO-1	Suspended Solids	10/2/1990	2:10 PM	1.0	2	mg/L
RBO	RBO-1	Suspended Solids	5/31/1993	11:30 AM	1.0	4	mg/L
RBO	RBO-1	Suspended Solids	7/27/1993	1:45 PM	1.0	2	mg/L
RBO	RBO-1	Suspended Solids	8/30/1993	11:20 AM	1.0	4	mg/L
RBO	RBO-1	Suspended Solids	9/28/1993	8:45 AM	1.0	1	mg/L
RBO	RBO-1	Suspended Solids	10/25/1993	11:30 AM	1.0	3	mg/L
RBO	RBO-1	Suspended Solids	4/25/1995	10:00 AM	14.0	13	mg/L
RBO	RBO-1	Suspended Solids	4/25/1995	10:00 AM	1.0	11	mg/L
RBO	RBO-1	Suspended Solids	4/25/1995	12:00 AM	1.0	4	mg/L
RBO	RBO-1	Suspended Solids	4/25/1995	11:40 AM	1.0	3	mg/L
RBO	RBO-1	Suspended Solids	6/14/1995	11:00 AM	1.0	5	mg/L
RBO	RBO-1	Suspended Solids	7/19/1995	8:30 AM	1.0	7	mg/L
RBO	RBO-1	Suspended Solids	7/19/1995	8:30 AM	14.0	36	mg/L
RBO	RBO-1	Suspended Solids	8/30/1995	8:40 AM	1.0	10	mg/L
RBO	RBO-1	Suspended Solids	8/30/1995	8:40 AM	14.0	31	mg/L
RBO	RBO-1	Suspended Solids	10/6/1995	8:45 AM	1.0	8	mg/L
RBO	RBO-1	Suspended Solids	10/6/1995	9:45 AM	13.0	14	mg/L
RBO	RBO-1	Suspended Solids	5/17/1996	2:45 PM	1.0	48	mg/L
RBO	RBO-1	Suspended Solids	6/26/1996	9:36 AM	1.0	3	mg/L
RBO	RBO-1	Suspended Solids	7/31/1996	1:35 PM	1.0	16	mg/L
RBO	RBO-1	Suspended Solids	8/26/1996	12:55 PM	1.0	6	mg/L
RBO	RBO-1	Suspended Solids	9/30/1996	2:30 PM	1.0	16	mg/L
RBO	RBO-1	Suspended Solids	10/29/1996	1:00 PM	1.0	22	mg/L
RBO	RBO-1	Suspended Solids	4/21/1997	4:15 PM	1.0	14	mg/L
RBO	RBO-1	Suspended Solids	4/21/1997	4:15 PM	14.0	13	mg/L
RBO	RBO-1	Suspended Solids	5/3/1997	2:13 PM	1.0	17	mg/L
RBO	RBO-1	Suspended Solids	5/5/1997	8:30 AM	1.0	15	mg/L
RBO	RBO-1	Suspended Solids	5/5/1997	8:30 AM	15.0	22	mg/L
RBO	RBO-1	Suspended Solids	5/28/1997	8:40 AM	1.0	16	mg/L
RBO	RBO-1	Suspended Solids	5/28/1997	8:40 AM	14.0	70	mg/L
RBO	RBO-1	Suspended Solids	6/6/1997	2:35 PM	1.0	12	mg/L
RBO	RBO-1	Suspended Solids	6/7/1997	7:25 AM	1.0	14	mg/L
RBO	RBO-1	Suspended Solids	6/23/1997	10:15 AM	15.0	11	mg/L
RBO	RBO-1	Suspended Solids	6/23/1997	10:15 AM	1.0	2	mg/L
RBO	RBO-1	Suspended Solids	6/30/1997	8:55 AM	14.0	19	mg/L
RBO	RBO-1	Suspended Solids	6/30/1997	8:55 AM	1.0	7	mg/L
RBO	RBO-1	Suspended Solids	7/9/1997	8:00 AM	1.0	11	mg/L
RBO	RBO-1	Suspended Solids	7/22/1997	7:20 AM	1.0	20	mg/L
RBO	RBO-1	Suspended Solids	7/23/1997	10:15 AM	1.0	14	mg/L
RBO	RBO-1	Suspended Solids	7/23/1997	10:15 AM	13.0	17	mg/L
RBO	RBO-1	Suspended Solids	7/28/1997	8:40 AM	1.0	13	mg/L
RBO	RBO-1	Suspended Solids	7/28/1997	8:40 AM	13.0	22	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Suspended Solids	8/17/1997	8:30 AM	1.0	16	mg/L
RBO	RBO-1	Suspended Solids	8/17/1997	4:00 PM	1.0	13	mg/L
RBO	RBO-1	Suspended Solids	8/21/1997	10:02 AM	1.0	18	mg/L
RBO	RBO-1	Suspended Solids	8/21/1997	10:02 AM	13.0	19	mg/L
RBO	RBO-1	Suspended Solids	8/25/1997	9:50 AM	13.0	72	mg/L
RBO	RBO-1	Suspended Solids	8/25/1997	11:15 AM	1.0	17	mg/L
RBO	RBO-1	Suspended Solids	9/2/1997	3:30 PM	1.0	18	mg/L
RBO	RBO-1	Suspended Solids	9/3/1997	7:45 AM	1.0	27	mg/L
RBO	RBO-1	Suspended Solids	9/15/1997	8:15 AM	1.0	19	mg/L
RBO	RBO-1	Suspended Solids	9/15/1997	8:15 AM	13.0	14	mg/L
RBO	RBO-1	Suspended Solids	9/15/1997	9:50 AM	1.0	36	mg/L
RBO	RBO-1	Suspended Solids	9/28/1997	10:30 AM	1.0	16	mg/L
RBO	RBO-1	Suspended Solids	9/28/1997	10:30 AM	13.0	23	mg/L
RBO	RBO-1	Suspended Solids	9/28/1997	2:00 PM	1.0	45	mg/L
RBO	RBO-1	Suspended Solids	10/23/1997	10:15 AM	1.0	24	mg/L
RBO	RBO-1	Suspended Solids	10/23/1997	10:15 AM	14.0	25	mg/L
RBO	RBO-1	Suspended Solids	10/27/1997	8:20 AM	11.0	25	mg/L
RBO	RBO-1	Suspended Solids	10/27/1997	10:00 AM	1.0	77	mg/L
RBO	RBO-1	Suspended Solids	11/10/1997	8:20 AM	1.0	14	mg/L
RBO	RBO-1	Suspended Solids	11/10/1997	8:20 AM	13.0	13	mg/L
RBO	RBO-1	Suspended Solids	11/10/1997	10:30 AM	1.0	51	mg/L
RBO	RBO-1	Suspended Solids	12/23/1997	9:30 AM	1.0	12	mg/L
RBO	RBO-1	Suspended Solids	12/23/1997	9:30 AM	13.0	14	mg/L
RBO	RBO-1	Suspended Solids	12/23/1997	11:30 AM	1.0	58	mg/L
RBO	RBO-1	Suspended Solids	1/8/1998	8:00 AM	1.0	23	mg/L
RBO	RBO-1	Suspended Solids	1/26/1998	3:30 PM	1.0	4	mg/L
RBO	RBO-1	Suspended Solids	4/15/1998	9:45 AM	1.0	22	mg/L
RBO	RBO-1	Suspended Solids	5/30/1998	3:03 PM	1.0	23	mg/L
RBO	RBO-1	Suspended Solids	6/3/1998	11:15 AM	1.0	13	mg/L
RBO	RBO-1	Suspended Solids	6/3/1998	11:15 AM	13.0	15	mg/L
RBO	RBO-1	Suspended Solids	7/27/1998	9:45 AM	1.0	11	mg/L
RBO	RBO-1	Suspended Solids	7/27/1998	9:45 AM	14.0	17	mg/L
RBO	RBO-1	Suspended Solids	8/13/1998	10:05 AM	13.0	7	mg/L
RBO	RBO-1	Suspended Solids	8/13/1998	10:05 AM	1.0	8	mg/L
RBO	RBO-1	Suspended Solids	10/22/1998	9:39 AM	1.0	14	mg/L
RBO	RBO-1	Suspended Solids	10/22/1998	9:39 AM	13.0	17	mg/L
RBO	RBO-1	Suspended Solids	4/25/2001	12:00 AM	1.0	24	mg/L
RBO	RBO-1	Suspended Solids	4/25/2001	12:00 AM	14.0	28	mg/L
RBO	RBO-1	Suspended Solids	6/7/2001	12:00 AM	1.0	14	mg/L
RBO	RBO-1	Suspended Solids	6/7/2001	12:00 AM	14.0	20	mg/L
RBO	RBO-1	Suspended Solids	7/11/2001	12:00 AM	1.0	10	mg/L
RBO	RBO-1	Suspended Solids	7/11/2001	12:00 AM	14.0	12	mg/L
RBO	RBO-1	Suspended Solids	8/20/2001	12:00 AM	14.0	23	mg/L
RBO	RBO-1	Suspended Solids	8/20/2001	12:00 AM	1.0	22	mg/L
RBO	RBO-1	Suspended Solids	10/30/2001	12:00 AM	13.0	17	mg/L
RBO	RBO-1	Suspended Solids	10/30/2001	12:00 AM	1.0	17	mg/L
RBO	RBO-1	Temperature	4/24/1989	10:45 AM	13.0	11.6	° C
RBO	RBO-1	Temperature	4/24/1989	10:45 AM	19.0	9.5	° C
RBO	RBO-1	Temperature	4/24/1989	10:45 AM	15.0	11.2	° C
RBO	RBO-1	Temperature	4/24/1989	10:45 AM	11.0	12.1	° C
RBO	RBO-1	Temperature	4/24/1989	10:45 AM	9.0	12.6	° C
RBO	RBO-1	Temperature	4/24/1989	10:45 AM	7.0	13.5	° C
RBO	RBO-1	Temperature	4/24/1989	10:45 AM	3.0	14.4	° C
RBO	RBO-1	Temperature	4/24/1989	10:45 AM	0.0	14.5	° C
RBO	RBO-1	Temperature	4/24/1989	10:45 AM	17.0	9.8	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Temperature	6/5/1989	10:45 AM	1.0	22.4	° C
RBO	RBO-1	Temperature	6/5/1989	10:45 AM	11.0	16.6	° C
RBO	RBO-1	Temperature	6/5/1989	10:45 AM	15.0	14.7	° C
RBO	RBO-1	Temperature	6/5/1989	10:45 AM	13.0	15.5	° C
RBO	RBO-1	Temperature	6/5/1989	10:45 AM	17.0	14.4	° C
RBO	RBO-1	Temperature	6/5/1989	10:45 AM	9.0	17.5	° C
RBO	RBO-1	Temperature	6/5/1989	10:45 AM	7.0	18.4	° C
RBO	RBO-1	Temperature	6/5/1989	10:45 AM	3.0	22.2	° C
RBO	RBO-1	Temperature	6/5/1989	10:45 AM	0.0	22.3	° C
RBO	RBO-1	Temperature	6/5/1989	10:45 AM	5.0	21.5	° C
RBO	RBO-1	Temperature	7/5/1989	10:45 AM	11.0	20	° C
RBO	RBO-1	Temperature	7/5/1989	10:45 AM	17.0	14.7	° C
RBO	RBO-1	Temperature	7/5/1989	10:45 AM	13.0	17	° C
RBO	RBO-1	Temperature	7/5/1989	10:45 AM	15.0	15.2	° C
RBO	RBO-1	Temperature	7/5/1989	10:45 AM	18.0	14.6	° C
RBO	RBO-1	Temperature	7/5/1989	10:45 AM	7.0	24.5	° C
RBO	RBO-1	Temperature	7/5/1989	10:45 AM	5.0	25.8	° C
RBO	RBO-1	Temperature	7/5/1989	10:45 AM	3.0	26.4	° C
RBO	RBO-1	Temperature	7/5/1989	10:45 AM	0.0	27.1	° C
RBO	RBO-1	Temperature	7/5/1989	10:45 AM	16.0	14.8	° C
RBO	RBO-1	Temperature	7/5/1989	10:45 AM	9.0	23.5	° C
RBO	RBO-1	Temperature	8/7/1989	11:30 AM	0.0	26.5	° C
RBO	RBO-1	Temperature	8/7/1989	11:30 AM	5.0	26.4	° C
RBO	RBO-1	Temperature	8/7/1989	11:30 AM	11.0	25.9	° C
RBO	RBO-1	Temperature	8/7/1989	11:30 AM	13.0	20.7	° C
RBO	RBO-1	Temperature	8/7/1989	11:30 AM	15.0	18.8	° C
RBO	RBO-1	Temperature	8/7/1989	11:30 AM	17.0	17.2	° C
RBO	RBO-1	Temperature	10/10/1989	10:30 AM	5.0	14.1	° C
RBO	RBO-1	Temperature	10/10/1989	10:30 AM	15.0	14	° C
RBO	RBO-1	Temperature	10/10/1989	10:30 AM	1.0	14.3	° C
RBO	RBO-1	Temperature	10/10/1989	10:30 AM	0.0	14.2	° C
RBO	RBO-1	Temperature	4/25/1995	10:10 AM	13.0	10.8	° C
RBO	RBO-1	Temperature	4/25/1995	10:10 AM	0.0	12.7	° C
RBO	RBO-1	Temperature	4/25/1995	10:10 AM	14.0	10.7	° C
RBO	RBO-1	Temperature	4/25/1995	10:10 AM	12.0	10.9	° C
RBO	RBO-1	Temperature	4/25/1995	10:10 AM	11.0	11.5	° C
RBO	RBO-1	Temperature	4/25/1995	10:10 AM	10.0	12.2	° C
RBO	RBO-1	Temperature	4/25/1995	10:10 AM	4.0	12.6	° C
RBO	RBO-1	Temperature	4/25/1995	10:10 AM	15.0	10.6	° C
RBO	RBO-1	Temperature	6/14/1995	11:00 AM	2.0	22.8	° C
RBO	RBO-1	Temperature	6/14/1995	11:00 AM	15.0	12	° C
RBO	RBO-1	Temperature	6/14/1995	11:00 AM	14.0	12.4	° C
RBO	RBO-1	Temperature	6/14/1995	11:00 AM	11.0	13.3	° C
RBO	RBO-1	Temperature	6/14/1995	11:00 AM	13.0	12.6	° C
RBO	RBO-1	Temperature	6/14/1995	11:00 AM	16.0	11.9	° C
RBO	RBO-1	Temperature	6/14/1995	11:00 AM	12.0	13	° C
RBO	RBO-1	Temperature	6/14/1995	11:00 AM	9.0	16	° C
RBO	RBO-1	Temperature	6/14/1995	11:00 AM	8.0	19	° C
RBO	RBO-1	Temperature	6/14/1995	11:00 AM	3.0	22.6	° C
RBO	RBO-1	Temperature	6/14/1995	11:00 AM	1.0	23	° C
RBO	RBO-1	Temperature	6/14/1995	11:00 AM	0.0	23.1	° C
RBO	RBO-1	Temperature	6/14/1995	11:00 AM	5.0	22.5	° C
RBO	RBO-1	Temperature	6/14/1995	11:00 AM	10.0	14.3	° C
RBO	RBO-1	Temperature	7/19/1995	8:30 AM	11.0	24	° C
RBO	RBO-1	Temperature	7/19/1995	8:30 AM	16.0	14.3	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Temperature	7/19/1995	8:30 AM	15.0	15.1	° C
RBO	RBO-1	Temperature	7/19/1995	8:30 AM	14.0	16.4	° C
RBO	RBO-1	Temperature	7/19/1995	8:30 AM	12.0	21.9	° C
RBO	RBO-1	Temperature	7/19/1995	8:30 AM	10.0	26.3	° C
RBO	RBO-1	Temperature	7/19/1995	8:30 AM	9.0	27.4	° C
RBO	RBO-1	Temperature	7/19/1995	8:30 AM	1.0	27.8	° C
RBO	RBO-1	Temperature	7/19/1995	8:30 AM	0.0	27.7	° C
RBO	RBO-1	Temperature	7/19/1995	8:30 AM	13.0	18.5	° C
RBO	RBO-1	Temperature	8/30/1995	8:40 AM	10.0	25.5	° C
RBO	RBO-1	Temperature	8/30/1995	8:40 AM	15.0	17.7	° C
RBO	RBO-1	Temperature	8/30/1995	8:40 AM	16.0	16.7	° C
RBO	RBO-1	Temperature	8/30/1995	8:40 AM	14.0	19.2	° C
RBO	RBO-1	Temperature	8/30/1995	8:40 AM	13.0	20.5	° C
RBO	RBO-1	Temperature	8/30/1995	8:40 AM	12.0	21.8	° C
RBO	RBO-1	Temperature	8/30/1995	8:40 AM	11.0	24.2	° C
RBO	RBO-1	Temperature	8/30/1995	8:40 AM	8.0	27.2	° C
RBO	RBO-1	Temperature	8/30/1995	8:40 AM	7.0	27.6	° C
RBO	RBO-1	Temperature	8/30/1995	8:40 AM	6.0	27.7	° C
RBO	RBO-1	Temperature	8/30/1995	8:40 AM	5.0	28.1	° C
RBO	RBO-1	Temperature	8/30/1995	8:40 AM	0.0	28.4	° C
RBO	RBO-1	Temperature	8/30/1995	8:40 AM	4.0	28.3	° C
RBO	RBO-1	Temperature	8/30/1995	8:40 AM	9.0	26.3	° C
RBO	RBO-1	Temperature	10/6/1995	8:45 AM	0.0	18.2	° C
RBO	RBO-1	Temperature	10/6/1995	8:45 AM	2.0	18.3	° C
RBO	RBO-1	Temperature	10/6/1995	8:45 AM	10.0	18.1	° C
RBO	RBO-1	Temperature	10/6/1995	8:45 AM	12.0	18	° C
RBO	RBO-1	Temperature	10/6/1995	8:45 AM	14.0	17.8	° C
RBO	RBO-1	Temperature	10/6/1995	8:45 AM	15.0	17.3	° C
RBO	RBO-1	Temperature	4/14/1997	9:03 AM	0.0	9.8	° C
RBO	RBO-1	Temperature	4/14/1997	9:03 AM	3.0	9.5	° C
RBO	RBO-1	Temperature	4/14/1997	9:03 AM	5.0	9.3	° C
RBO	RBO-1	Temperature	4/21/1997	4:15 PM	0.0	14.5	° C
RBO	RBO-1	Temperature	4/21/1997	4:15 PM	3.0	14.3	° C
RBO	RBO-1	Temperature	4/21/1997	4:15 PM	5.0	13.9	° C
RBO	RBO-1	Temperature	4/21/1997	4:15 PM	7.0	13.6	° C
RBO	RBO-1	Temperature	4/21/1997	4:15 PM	9.0	12.1	° C
RBO	RBO-1	Temperature	4/21/1997	4:15 PM	11.0	11.3	° C
RBO	RBO-1	Temperature	4/21/1997	4:15 PM	13.0	10.9	° C
RBO	RBO-1	Temperature	4/21/1997	4:15 PM	15.0	10.8	° C
RBO	RBO-1	Temperature	4/21/1997	4:15 PM	16.0	10.7	° C
RBO	RBO-1	Temperature	5/5/1997	8:30 AM	9.0	13.4	° C
RBO	RBO-1	Temperature	5/5/1997	8:30 AM	15.0	12.8	° C
RBO	RBO-1	Temperature	5/5/1997	8:30 AM	13.0	13.1	° C
RBO	RBO-1	Temperature	5/5/1997	8:30 AM	0.0	13.5	° C
RBO	RBO-1	Temperature	5/5/1997	8:30 AM	7.0	13.3	° C
RBO	RBO-1	Temperature	5/5/1997	8:30 AM	3.0	13.6	° C
RBO	RBO-1	Temperature	5/28/1997	8:40 AM	0.0	17.2	° C
RBO	RBO-1	Temperature	5/28/1997	8:40 AM	9.0	17.1	° C
RBO	RBO-1	Temperature	5/28/1997	8:40 AM	11.0	16.9	° C
RBO	RBO-1	Temperature	5/28/1997	8:40 AM	13.0	16.3	° C
RBO	RBO-1	Temperature	5/28/1997	8:40 AM	14.0	16	° C
RBO	RBO-1	Temperature	6/11/1997	10:11 AM	3.0	20.3	° C
RBO	RBO-1	Temperature	6/11/1997	10:11 AM	14.0	15.8	° C
RBO	RBO-1	Temperature	6/11/1997	10:11 AM	13.0	15.9	° C
RBO	RBO-1	Temperature	6/11/1997	10:11 AM	11.0	16.1	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Temperature	6/11/1997	10:11 AM	9.0	16.6	° C
RBO	RBO-1	Temperature	6/11/1997	10:11 AM	5.0	19.9	° C
RBO	RBO-1	Temperature	6/11/1997	10:11 AM	1.0	20.8	° C
RBO	RBO-1	Temperature	6/11/1997	10:11 AM	0.0	20.9	° C
RBO	RBO-1	Temperature	6/11/1997	10:11 AM	7.0	17.8	° C
RBO	RBO-1	Temperature	6/23/1997	10:15 AM	5.0	26.6	° C
RBO	RBO-1	Temperature	6/23/1997	10:15 AM	17.0	16.1	° C
RBO	RBO-1	Temperature	6/23/1997	10:15 AM	15.0	16.9	° C
RBO	RBO-1	Temperature	6/23/1997	10:15 AM	13.0	18.1	° C
RBO	RBO-1	Temperature	6/23/1997	10:15 AM	11.0	20.4	° C
RBO	RBO-1	Temperature	6/23/1997	10:15 AM	7.0	25.3	° C
RBO	RBO-1	Temperature	6/23/1997	10:15 AM	3.0	26.7	° C
RBO	RBO-1	Temperature	6/23/1997	10:15 AM	1.0	27.4	° C
RBO	RBO-1	Temperature	6/23/1997	10:15 AM	0.0	27.5	° C
RBO	RBO-1	Temperature	6/23/1997	10:15 AM	9.0	23.1	° C
RBO	RBO-1	Temperature	6/30/1997	8:55 AM	0.0	27.2	° C
RBO	RBO-1	Temperature	6/30/1997	8:55 AM	3.0	27	° C
RBO	RBO-1	Temperature	6/30/1997	8:55 AM	7.0	26.7	° C
RBO	RBO-1	Temperature	6/30/1997	8:55 AM	9.0	25.9	° C
RBO	RBO-1	Temperature	6/30/1997	8:55 AM	11.0	24.6	° C
RBO	RBO-1	Temperature	6/30/1997	8:55 AM	13.0	22.5	° C
RBO	RBO-1	Temperature	7/14/1997	8:25 AM	0.0	27.5	° C
RBO	RBO-1	Temperature	7/14/1997	8:25 AM	13.0	23.7	° C
RBO	RBO-1	Temperature	7/14/1997	8:25 AM	11.0	24.4	° C
RBO	RBO-1	Temperature	7/14/1997	8:25 AM	9.0	24.8	° C
RBO	RBO-1	Temperature	7/14/1997	8:25 AM	7.0	25.5	° C
RBO	RBO-1	Temperature	7/14/1997	8:25 AM	5.0	26.4	° C
RBO	RBO-1	Temperature	7/14/1997	8:25 AM	1.0	27.6	° C
RBO	RBO-1	Temperature	7/14/1997	8:25 AM	3.0	27.3	° C
RBO	RBO-1	Temperature	7/23/1997	10:15 AM	0.0	28.1	° C
RBO	RBO-1	Temperature	7/23/1997	10:15 AM	11.0	27.7	° C
RBO	RBO-1	Temperature	7/23/1997	10:15 AM	13.0	25.1	° C
RBO	RBO-1	Temperature	7/23/1997	10:15 AM	15.0	23.8	° C
RBO	RBO-1	Temperature	7/28/1997	8:40 AM	0.0	30.2	° C
RBO	RBO-1	Temperature	7/28/1997	8:40 AM	13.0	25.2	° C
RBO	RBO-1	Temperature	7/28/1997	8:40 AM	11.0	24.4	° C
RBO	RBO-1	Temperature	7/28/1997	8:40 AM	9.0	28.2	° C
RBO	RBO-1	Temperature	8/11/1997	8:30 AM	0.0	24.2	° C
RBO	RBO-1	Temperature	8/11/1997	8:30 AM	1.0	24.3	° C
RBO	RBO-1	Temperature	8/21/1997	10:02 AM	0.0	23.2	° C
RBO	RBO-1	Temperature	8/21/1997	10:02 AM	1.0	23.3	° C
RBO	RBO-1	Temperature	8/25/1997	9:50 AM	0.0	22.9	° C
RBO	RBO-1	Temperature	8/25/1997	9:50 AM	3.0	22.5	° C
RBO	RBO-1	Temperature	8/25/1997	9:50 AM	5.0	22.4	° C
RBO	RBO-1	Temperature	8/25/1997	9:50 AM	9.0	22.3	° C
RBO	RBO-1	Temperature	9/15/1997	8:15 AM	7.0	21.9	° C
RBO	RBO-1	Temperature	9/15/1997	8:15 AM	13.0	21.5	° C
RBO	RBO-1	Temperature	9/15/1997	8:15 AM	9.0	21.8	° C
RBO	RBO-1	Temperature	9/15/1997	8:15 AM	0.0	22.1	° C
RBO	RBO-1	Temperature	9/15/1997	8:15 AM	11.0	21.6	° C
RBO	RBO-1	Temperature	9/28/1997	10:30 AM	0.0	20.4	° C
RBO	RBO-1	Temperature	9/28/1997	10:30 AM	5.0	20.3	° C
RBO	RBO-1	Temperature	9/28/1997	10:30 AM	7.0	20.1	° C
RBO	RBO-1	Temperature	9/28/1997	10:30 AM	13.0	20	° C
RBO	RBO-1	Temperature	10/14/1997	1:11 PM	0.0	18.3	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Temperature	10/14/1997	1:11 PM	5.0	18.2	° C
RBO	RBO-1	Temperature	10/14/1997	1:11 PM	9.0	18.1	° C
RBO	RBO-1	Temperature	10/14/1997	1:11 PM	11.0	18	° C
RBO	RBO-1	Temperature	10/23/1997	10:15 AM	0.0	12.9	° C
RBO	RBO-1	Temperature	10/23/1997	10:15 AM	11.0	12.8	° C
RBO	RBO-1	Temperature	10/27/1997	8:20 AM	0.0	10.4	° C
RBO	RBO-1	Temperature	10/27/1997	8:20 AM	1.0	10.3	° C
RBO	RBO-1	Temperature	11/10/1997	8:20 AM	0.0	7.9	° C
RBO	RBO-1	Temperature	12/23/1997	9:30 AM	0.0	3.4	° C
RBO	RBO-1	Temperature	1/26/1998	3:30 PM	0.0	3.4	° C
RBO	RBO-1	Temperature	1/26/1998	3:30 PM	3.0	3.3	° C
RBO	RBO-1	Temperature	1/26/1998	3:30 PM	15.0	3.5	° C
RBO	RBO-1	Temperature	2/24/1998	9:15 AM	0.0	6.4	° C
RBO	RBO-1	Temperature	3/30/1998	8:25 AM	0.0	15.2	° C
RBO	RBO-1	Temperature	3/30/1998	8:25 AM	15.0	10.7	° C
RBO	RBO-1	Temperature	3/30/1998	8:25 AM	13.0	10.9	° C
RBO	RBO-1	Temperature	3/30/1998	8:25 AM	11.0	11.6	° C
RBO	RBO-1	Temperature	3/30/1998	8:25 AM	9.0	12.6	° C
RBO	RBO-1	Temperature	3/30/1998	8:25 AM	7.0	13.7	° C
RBO	RBO-1	Temperature	3/30/1998	8:25 AM	5.0	14.3	° C
RBO	RBO-1	Temperature	3/30/1998	8:25 AM	1.0	15.1	° C
RBO	RBO-1	Temperature	3/30/1998	8:25 AM	3.0	14.6	° C
RBO	RBO-1	Temperature	4/15/1998	9:45 AM	9.0	13	° C
RBO	RBO-1	Temperature	4/15/1998	9:45 AM	13.0	12.6	° C
RBO	RBO-1	Temperature	4/15/1998	9:45 AM	15.0	12.3	° C
RBO	RBO-1	Temperature	4/15/1998	9:45 AM	5.0	13.3	° C
RBO	RBO-1	Temperature	4/15/1998	9:45 AM	7.0	13.1	° C
RBO	RBO-1	Temperature	4/15/1998	9:45 AM	3.0	13.8	° C
RBO	RBO-1	Temperature	4/15/1998	9:45 AM	0.0	14.2	° C
RBO	RBO-1	Temperature	6/3/1998	11:15 AM	7.0	21.6	° C
RBO	RBO-1	Temperature	6/3/1998	11:15 AM	13.0	15.2	° C
RBO	RBO-1	Temperature	6/3/1998	11:15 AM	0.0	22.4	° C
RBO	RBO-1	Temperature	6/3/1998	11:15 AM	9.0	20.3	° C
RBO	RBO-1	Temperature	6/3/1998	11:15 AM	5.0	22	° C
RBO	RBO-1	Temperature	6/3/1998	11:15 AM	3.0	22.3	° C
RBO	RBO-1	Temperature	6/3/1998	11:15 AM	11.0	16.6	° C
RBO	RBO-1	Temperature	7/27/1998	9:45 AM	5.0	26.3	° C
RBO	RBO-1	Temperature	7/27/1998	9:45 AM	15.0	18.4	° C
RBO	RBO-1	Temperature	7/27/1998	9:45 AM	14.0	19.7	° C
RBO	RBO-1	Temperature	7/27/1998	9:45 AM	16.0	17.9	° C
RBO	RBO-1	Temperature	7/27/1998	9:45 AM	13.0	20.6	° C
RBO	RBO-1	Temperature	7/27/1998	9:45 AM	9.0	26	° C
RBO	RBO-1	Temperature	7/27/1998	9:45 AM	3.0	26.4	° C
RBO	RBO-1	Temperature	7/27/1998	9:45 AM	0.0	26.6	° C
RBO	RBO-1	Temperature	7/27/1998	9:45 AM	11.0	25.3	° C
RBO	RBO-1	Temperature	8/13/1998	10:05 AM	15.0	21.6	° C
RBO	RBO-1	Temperature	8/13/1998	10:05 AM	0.0	27.3	° C
RBO	RBO-1	Temperature	8/13/1998	10:05 AM	3.0	27.2	° C
RBO	RBO-1	Temperature	8/13/1998	10:05 AM	5.0	27.1	° C
RBO	RBO-1	Temperature	8/13/1998	10:05 AM	7.0	26.9	° C
RBO	RBO-1	Temperature	8/13/1998	10:05 AM	9.0	26.4	° C
RBO	RBO-1	Temperature	8/13/1998	10:05 AM	11.0	25.4	° C
RBO	RBO-1	Temperature	8/13/1998	10:05 AM	13.0	23.9	° C
RBO	RBO-1	Temperature	10/22/1998	9:39 AM	5.0	14.8	° C
RBO	RBO-1	Temperature	10/22/1998	9:39 AM	0.0	14.9	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	TKN	4/24/1989	10:45 AM	1.0	0.9	mg/L
RBO	RBO-1	TKN	4/24/1989	10:45 AM	17.0	0.5	mg/L
RBO	RBO-1	TKN	6/5/1989	10:45 AM	1.0	2	mg/L
RBO	RBO-1	TKN	6/5/1989	10:45 AM	15.0	1	mg/L
RBO	RBO-1	TKN	7/5/1989	10:45 AM	1.0	0.8	mg/L
RBO	RBO-1	TKN	7/5/1989	10:45 AM	17.0	1.2	mg/L
RBO	RBO-1	TKN	8/7/1989	11:30 AM	1.0	1.1	mg/L
RBO	RBO-1	TKN	8/7/1989	11:30 AM	15.0	1.8	mg/L
RBO	RBO-1	TKN	10/10/1989	10:30 AM	15.0	0.7	mg/L
RBO	RBO-1	TKN	10/10/1989	10:30 AM	1.0	0.6	mg/L
RBO	RBO-1	TKN	4/25/1995	11:40 AM	1.0	0.19	mg/L
RBO	RBO-1	TKN	4/25/1995	10:00 AM	14.0	0.72	mg/L
RBO	RBO-1	TKN	4/25/1995	12:00 AM	1.0	0.1	mg/L
RBO	RBO-1	TKN	4/25/1995	10:00 AM	1.0	0.57	mg/L
RBO	RBO-1	TKN	6/14/1995	11:00 AM	1.0	0.67	mg/L
RBO	RBO-1	TKN	6/14/1995	11:00 AM	14.0	1.2	mg/L
RBO	RBO-1	TKN	7/19/1995	8:30 AM	1.0	0.29	mg/L
RBO	RBO-1	TKN	7/19/1995	8:30 AM	14.0	1.1	mg/L
RBO	RBO-1	TKN	8/30/1995	8:40 AM	1.0	1.1	mg/L
RBO	RBO-1	TKN	8/30/1995	8:40 AM	14.0	2.8	mg/L
RBO	RBO-1	TKN	10/6/1995	8:45 AM	1.0	0.76	mg/L
RBO	RBO-1	TKN	10/6/1995	9:45 AM	13.0	0.86	mg/L
RBO	RBO-1	TKN	4/21/1997	4:15 PM	1.0	0.64	mg/L
RBO	RBO-1	TKN	4/21/1997	4:15 PM	14.0	0.72	mg/L
RBO	RBO-1	TKN	5/3/1997	2:13 PM	1.0	0.68	mg/L
RBO	RBO-1	TKN	5/5/1997	8:30 AM	1.0	0.72	mg/L
RBO	RBO-1	TKN	5/5/1997	8:30 AM	15.0	0.92	mg/L
RBO	RBO-1	TKN	5/28/1997	8:40 AM	1.0	0.75	mg/L
RBO	RBO-1	TKN	5/28/1997	8:40 AM	14.0	0.77	mg/L
RBO	RBO-1	TKN	6/6/1997	2:35 PM	1.0	0.83	mg/L
RBO	RBO-1	TKN	6/7/1997	7:25 AM	1.0	0.68	mg/L
RBO	RBO-1	TKN	6/23/1997	10:15 AM	1.0	0.72	mg/L
RBO	RBO-1	TKN	6/23/1997	10:15 AM	15.0	0.6	mg/L
RBO	RBO-1	TKN	6/30/1997	8:55 AM	14.0	0.72	mg/L
RBO	RBO-1	TKN	6/30/1997	8:55 AM	1.0	0.56	mg/L
RBO	RBO-1	TKN	7/9/1997	8:00 AM	1.0	0.69	mg/L
RBO	RBO-1	TKN	7/22/1997	7:20 AM	1.0	0.52	mg/L
RBO	RBO-1	TKN	7/23/1997	10:15 AM	1.0	1	mg/L
RBO	RBO-1	TKN	7/23/1997	10:15 AM	13.0	0.96	mg/L
RBO	RBO-1	TKN	7/28/1997	8:40 AM	1.0	0.46	mg/L
RBO	RBO-1	TKN	7/28/1997	8:40 AM	13.0	0.41	mg/L
RBO	RBO-1	TKN	8/17/1997	8:30 AM	1.0	1	mg/L
RBO	RBO-1	TKN	8/17/1997	4:00 PM	1.0	0.83	mg/L
RBO	RBO-1	TKN	8/21/1997	10:02 AM	1.0	1.1	mg/L
RBO	RBO-1	TKN	8/21/1997	10:02 AM	13.0	1.2	mg/L
RBO	RBO-1	TKN	8/25/1997	9:50 AM	13.0	1	mg/L
RBO	RBO-1	TKN	8/25/1997	11:15 AM	1.0	1.1	mg/L
RBO	RBO-1	TKN	9/2/1997	3:30 PM	1.0	0.88	mg/L
RBO	RBO-1	TKN	9/3/1997	7:45 AM	1.0	1.4	mg/L
RBO	RBO-1	TKN	9/15/1997	8:15 AM	1.0	1.2	mg/L
RBO	RBO-1	TKN	9/15/1997	8:15 AM	13.0	0.93	mg/L
RBO	RBO-1	TKN	9/15/1997	9:50 AM	1.0	0.86	mg/L
RBO	RBO-1	TKN	9/28/1997	10:30 AM	1.0	1.1	mg/L
RBO	RBO-1	TKN	9/28/1997	10:30 AM	13.0	0.82	mg/L
RBO	RBO-1	TKN	9/28/1997	2:00 PM	1.0	1.4	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	TKN	10/23/1997	10:15 AM	1.0	0.86	mg/L
RBO	RBO-1	TKN	10/23/1997	10:15 AM	14.0	0.92	mg/L
RBO	RBO-1	TKN	10/27/1997	8:20 AM	11.0	1.1	mg/L
RBO	RBO-1	TKN	10/27/1997	10:00 AM	1.0	1.7	mg/L
RBO	RBO-1	TKN	11/10/1997	8:20 AM	1.0	0.66	mg/L
RBO	RBO-1	TKN	11/10/1997	8:20 AM	13.0	0.73	mg/L
RBO	RBO-1	TKN	11/10/1997	10:30 AM	1.0	1.39	mg/L
RBO	RBO-1	TKN	12/23/1997	9:30 AM	1.0	0.83	mg/L
RBO	RBO-1	TKN	12/23/1997	9:30 AM	13.0	1	mg/L
RBO	RBO-1	TKN	12/23/1997	11:30 AM	1.0	0.91	mg/L
RBO	RBO-1	TKN	1/8/1998	8:00 AM	1.0	1.1	mg/L
RBO	RBO-1	TKN	1/26/1998	3:30 PM	1.0	0.98	mg/L
RBO	RBO-1	TKN	1/26/1998	3:30 PM	15.0	1.1	mg/L
RBO	RBO-1	TKN	4/15/1998	9:45 AM	1.0	0.46	mg/L
RBO	RBO-1	TKN	4/15/1998	9:45 AM	15.0	0.45	mg/L
RBO	RBO-1	TKN	6/3/1998	11:15 AM	1.0	1.8	mg/L
RBO	RBO-1	TKN	6/3/1998	11:15 AM	13.0	1.5	mg/L
RBO	RBO-1	TKN	7/27/1998	9:45 AM	1.0	0.75	mg/L
RBO	RBO-1	TKN	7/27/1998	9:45 AM	14.0	1.2	mg/L
RBO	RBO-1	TKN	8/13/1998	10:05 AM	1.0	0.73	mg/L
RBO	RBO-1	TKN	8/13/1998	10:05 AM	13.0	0.8	mg/L
RBO	RBO-1	TKN	10/22/1998	9:39 AM	1.0	0.8	mg/L
RBO	RBO-1	TKN	10/22/1998	9:39 AM	13.0	0.81	mg/L
RBO	RBO-1	TKN	4/25/2001	12:00 AM	1.0	1.42	mg/L
RBO	RBO-1	TKN	4/25/2001	12:00 AM	14.0	1.22	mg/L
RBO	RBO-1	TKN	6/7/2001	12:00 AM	1.0	0.95	mg/L
RBO	RBO-1	TKN	6/7/2001	12:00 AM	14.0	0.84	mg/L
RBO	RBO-1	TKN	7/11/2001	12:00 AM	1.0	0.92	mg/L
RBO	RBO-1	TKN	7/11/2001	12:00 AM	14.0	1.53	mg/L
RBO	RBO-1	TKN	8/20/2001	12:00 AM	14.0	1.88	mg/L
RBO	RBO-1	TKN	8/20/2001	12:00 AM	1.0	2.42	mg/L
RBO	RBO-1	TKN	10/30/2001	12:00 AM	1.0	3.07	mg/L
RBO	RBO-1	TKN	10/30/2001	12:00 AM	13.0	2.23	mg/L
RBO	RBO-1	Total Phosphorus	4/24/1989	10:45 AM	1.0	0.01	mg/L
RBO	RBO-1	Total Phosphorus	6/5/1989	10:45 AM	1.0	0.18	mg/L
RBO	RBO-1	Total Phosphorus	6/5/1989	10:45 AM	15.0	0.18	mg/L
RBO	RBO-1	Total Phosphorus	7/5/1989	10:45 AM	1.0	0.02	mg/L
RBO	RBO-1	Total Phosphorus	7/5/1989	10:45 AM	17.0	0.08	mg/L
RBO	RBO-1	Total Phosphorus	8/7/1989	11:30 AM	1.0	0.03	mg/L
RBO	RBO-1	Total Phosphorus	8/7/1989	11:30 AM	15.0	0.06	mg/L
RBO	RBO-1	Total Phosphorus	10/10/1989	10:30 AM	1.0	0.08	mg/L
RBO	RBO-1	Total Phosphorus	10/10/1989	10:30 AM	15.0	0.08	mg/L
RBO	RBO-1	Total Phosphorus	5/8/1990	7:45 AM	1.0	0.02	mg/L
RBO	RBO-1	Total Phosphorus	6/4/1990	10:30 AM	1.0	0.04	mg/L
RBO	RBO-1	Total Phosphorus	7/2/1990	10:00 AM	1.0	0.02	mg/L
RBO	RBO-1	Total Phosphorus	8/1/1990	10:15 AM	1.0	0.02	mg/L
RBO	RBO-1	Total Phosphorus	9/10/1990	10:35 AM	1.0	0.03	mg/L
RBO	RBO-1	Total Phosphorus	10/2/1990	2:10 PM	1.0	0.03	mg/L
RBO	RBO-1	Total Phosphorus	5/31/1993	11:30 AM	1.0	0.02	mg/L
RBO	RBO-1	Total Phosphorus	7/27/1993	1:45 PM	1.0	0.02	mg/L
RBO	RBO-1	Total Phosphorus	8/30/1993	11:20 AM	1.0	0.02	mg/L
RBO	RBO-1	Total Phosphorus	9/28/1993	8:45 AM	1.0	0.03	mg/L
RBO	RBO-1	Total Phosphorus	10/25/1993	11:30 AM	1.0	0.06	mg/L
RBO	RBO-1	Total Phosphorus	4/25/1995	11:40 AM	1.0	0.01	mg/L
RBO	RBO-1	Total Phosphorus	4/25/1995	12:00 AM	1.0	0.01	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Total Phosphorus	4/25/1995	10:00 AM	1.0	0.03	mg/L
RBO	RBO-1	Total Phosphorus	4/25/1995	10:00 AM	14.0	0.02	mg/L
RBO	RBO-1	Total Phosphorus	6/14/1995	11:00 AM	1.0	0.03	mg/L
RBO	RBO-1	Total Phosphorus	6/14/1995	11:00 AM	14.0	0.15	mg/L
RBO	RBO-1	Total Phosphorus	7/19/1995	8:30 AM	1.0	0.03	mg/L
RBO	RBO-1	Total Phosphorus	7/19/1995	8:30 AM	14.0	0.08	mg/L
RBO	RBO-1	Total Phosphorus	8/30/1995	8:40 AM	1.0	0.05	mg/L
RBO	RBO-1	Total Phosphorus	8/30/1995	8:40 AM	14.0	0.31	mg/L
RBO	RBO-1	Total Phosphorus	10/6/1995	8:45 AM	1.0	0.06	mg/L
RBO	RBO-1	Total Phosphorus	10/6/1995	9:45 AM	13.0	0.07	mg/L
RBO	RBO-1	Total Phosphorus	5/17/1996	2:45 PM	1.0	0.27	mg/L
RBO	RBO-1	Total Phosphorus	6/26/1996	9:36 AM	1.0	0.03	mg/L
RBO	RBO-1	Total Phosphorus	7/31/1996	1:35 PM	1.0	0.04	mg/L
RBO	RBO-1	Total Phosphorus	8/26/1996	12:55 PM	1.0	0.06	mg/L
RBO	RBO-1	Total Phosphorus	9/30/1996	2:30 PM	1.0	0.08	mg/L
RBO	RBO-1	Total Phosphorus	10/29/1996	1:00 PM	1.0	0.07	mg/L
RBO	RBO-1	Total Phosphorus	4/21/1997	4:15 PM	1.0	0.02	mg/L
RBO	RBO-1	Total Phosphorus	4/21/1997	4:15 PM	14.0	0.02	mg/L
RBO	RBO-1	Total Phosphorus	5/3/1997	2:13 PM	1.0	0.06	mg/L
RBO	RBO-1	Total Phosphorus	5/5/1997	8:30 AM	1.0	0.04	mg/L
RBO	RBO-1	Total Phosphorus	5/5/1997	8:30 AM	15.0	0.05	mg/L
RBO	RBO-1	Total Phosphorus	5/28/1997	8:40 AM	1.0	0.04	mg/L
RBO	RBO-1	Total Phosphorus	5/28/1997	8:40 AM	14.0	0.05	mg/L
RBO	RBO-1	Total Phosphorus	6/6/1997	2:35 PM	1.0	0.04	mg/L
RBO	RBO-1	Total Phosphorus	6/7/1997	7:25 AM	1.0	0.04	mg/L
RBO	RBO-1	Total Phosphorus	6/23/1997	10:15 AM	1.0	0.02	mg/L
RBO	RBO-1	Total Phosphorus	6/23/1997	10:15 AM	15.0	0.02	mg/L
RBO	RBO-1	Total Phosphorus	6/30/1997	8:55 AM	1.0	0.02	mg/L
RBO	RBO-1	Total Phosphorus	6/30/1997	8:55 AM	14.0	0.04	mg/L
RBO	RBO-1	Total Phosphorus	7/9/1997	8:00 AM	1.0	0.03	mg/L
RBO	RBO-1	Total Phosphorus	7/22/1997	7:20 AM	1.0	0.04	mg/L
RBO	RBO-1	Total Phosphorus	7/23/1997	10:15 AM	1.0	0.06	mg/L
RBO	RBO-1	Total Phosphorus	7/23/1997	10:15 AM	13.0	0.05	mg/L
RBO	RBO-1	Total Phosphorus	7/28/1997	8:40 AM	1.0	0.03	mg/L
RBO	RBO-1	Total Phosphorus	7/28/1997	8:40 AM	13.0	0.07	mg/L
RBO	RBO-1	Total Phosphorus	8/17/1997	8:30 AM	1.0	0.09	mg/L
RBO	RBO-1	Total Phosphorus	8/17/1997	4:00 PM	1.0	0.07	mg/L
RBO	RBO-1	Total Phosphorus	8/21/1997	10:02 AM	1.0	0.1	mg/L
RBO	RBO-1	Total Phosphorus	8/21/1997	10:02 AM	13.0	0.1	mg/L
RBO	RBO-1	Total Phosphorus	8/25/1997	11:15 AM	1.0	0.1	mg/L
RBO	RBO-1	Total Phosphorus	8/25/1997	9:50 AM	13.0	0.09	mg/L
RBO	RBO-1	Total Phosphorus	9/2/1997	3:30 PM	1.0	0.08	mg/L
RBO	RBO-1	Total Phosphorus	9/3/1997	7:45 AM	1.0	0.12	mg/L
RBO	RBO-1	Total Phosphorus	9/15/1997	8:15 AM	1.0	0.12	mg/L
RBO	RBO-1	Total Phosphorus	9/15/1997	8:15 AM	13.0	0.11	mg/L
RBO	RBO-1	Total Phosphorus	9/15/1997	9:50 AM	1.0	0.13	mg/L
RBO	RBO-1	Total Phosphorus	9/28/1997	10:30 AM	1.0	0.1	mg/L
RBO	RBO-1	Total Phosphorus	9/28/1997	10:30 AM	13.0	0.11	mg/L
RBO	RBO-1	Total Phosphorus	9/28/1997	2:00 PM	1.0	0.26	mg/L
RBO	RBO-1	Total Phosphorus	10/23/1997	10:15 AM	1.0	0.11	mg/L
RBO	RBO-1	Total Phosphorus	10/23/1997	10:15 AM	14.0	0.09	mg/L
RBO	RBO-1	Total Phosphorus	10/27/1997	10:00 AM	1.0	0.18	mg/L
RBO	RBO-1	Total Phosphorus	10/27/1997	8:20 AM	11.0	0.09	mg/L
RBO	RBO-1	Total Phosphorus	11/10/1997	10:30 AM	1.0	0.15	mg/L
RBO	RBO-1	Total Phosphorus	11/10/1997	8:20 AM	1.0	0.05	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-1	Total Phosphorus	11/10/1997	8:20 AM	13.0	0.08	mg/L
RBO	RBO-1	Total Phosphorus	12/23/1997	9:30 AM	1.0	0.05	mg/L
RBO	RBO-1	Total Phosphorus	12/23/1997	9:30 AM	13.0	0.06	mg/L
RBO	RBO-1	Total Phosphorus	12/23/1997	11:30 AM	1.0	0.09	mg/L
RBO	RBO-1	Total Phosphorus	1/8/1998	8:00 AM	1.0	0.05	mg/L
RBO	RBO-1	Total Phosphorus	1/26/1998	3:30 PM	1.0	0.05	mg/L
RBO	RBO-1	Total Phosphorus	1/26/1998	3:30 PM	15.0	0.05	mg/L
RBO	RBO-1	Total Phosphorus	4/15/1998	9:45 AM	1.0	0.06	mg/L
RBO	RBO-1	Total Phosphorus	4/15/1998	9:45 AM	15.0	0.06	mg/L
RBO	RBO-1	Total Phosphorus	5/30/1998	3:03 PM	1.0	0.09	mg/L
RBO	RBO-1	Total Phosphorus	6/3/1998	11:15 AM	1.0	0.1	mg/L
RBO	RBO-1	Total Phosphorus	6/3/1998	11:15 AM	13.0	0.08	mg/L
RBO	RBO-1	Total Phosphorus	7/27/1998	9:45 AM	1.0	0.03	mg/L
RBO	RBO-1	Total Phosphorus	7/27/1998	9:45 AM	14.0	0.05	mg/L
RBO	RBO-1	Total Phosphorus	8/13/1998	10:05 AM	1.0	0.03	mg/L
RBO	RBO-1	Total Phosphorus	8/13/1998	10:05 AM	13.0	0.03	mg/L
RBO	RBO-1	Total Phosphorus	10/22/1998	9:39 AM	1.0	0.06	mg/L
RBO	RBO-1	Total Phosphorus	10/22/1998	9:39 AM	13.0	0.06	mg/L
RBO	RBO-1	Total Phosphorus	4/25/2001	12:00 AM	1.0	0.07	mg/L
RBO	RBO-1	Total Phosphorus	4/25/2001	12:00 AM	14.0	0.07	mg/L
RBO	RBO-1	Total Phosphorus	6/7/2001	12:00 AM	1.0	0.07	mg/L
RBO	RBO-1	Total Phosphorus	6/7/2001	12:00 AM	14.0	0.05	mg/L
RBO	RBO-1	Total Phosphorus	7/11/2001	12:00 AM	14.0	0.06	mg/L
RBO	RBO-1	Total Phosphorus	7/11/2001	12:00 AM	1.0	0.09	mg/L
RBO	RBO-1	Total Phosphorus	8/20/2001	12:00 AM	1.0	0.19	mg/L
RBO	RBO-1	Total Phosphorus	8/20/2001	12:00 AM	14.0	0.14	mg/L
RBO	RBO-1	Total Phosphorus	10/30/2001	12:00 AM	1.0	0.09	mg/L
RBO	RBO-1	Total Phosphorus	10/30/2001	12:00 AM	13.0	0.07	mg/L
RBO	RBO-2	Chlorophyll-a	4/24/1989	11:15 AM	10.0	2.35	µg/L
RBO	RBO-2	Chlorophyll-a	6/5/1989	11:15 AM	6.0	43.13	µg/L
RBO	RBO-2	Chlorophyll-a	7/5/1989	11:30 AM	5.0	18.79	µg/L
RBO	RBO-2	Chlorophyll-a	8/7/1989	12:15 PM	4.0	26.7	µg/L
RBO	RBO-2	Chlorophyll-a	10/10/1989	11:00 AM	5.0	29.37	µg/L
RBO	RBO-2	Chlorophyll-a	4/25/1995	10:30 AM	5.0	24.48	µg/L
RBO	RBO-2	Chlorophyll-a	6/14/1995	11:30 AM	10.0	7.71	µg/L
RBO	RBO-2	Chlorophyll-a	7/19/1995	9:00 AM	5.0	28.48	µg/L
RBO	RBO-2	Chlorophyll-a	8/30/1995	9:10 AM	5.0	62.87	µg/L
RBO	RBO-2	Chlorophyll-a	10/6/1995	9:09 AM	4.0	34.12	µg/L
RBO	RBO-2	Chlorophyll-a	4/14/1997	9:50 AM	4.0	26.7	µg/L
RBO	RBO-2	Chlorophyll-a	4/21/1997	4:45 PM	5.0	16.29	µg/L
RBO	RBO-2	Chlorophyll-a	5/5/1997	9:00 AM	4.0	21.36	µg/L
RBO	RBO-2	Chlorophyll-a	5/28/1997	9:16 AM	4.0	33.38	µg/L
RBO	RBO-2	Chlorophyll-a	6/23/1997	10:45 AM	8.0	15.09	µg/L
RBO	RBO-2	Chlorophyll-a	6/30/1997	9:30 AM	5.0	14.69	µg/L
RBO	RBO-2	Chlorophyll-a	7/23/1997	10:45 AM	3.0	46.96	µg/L
RBO	RBO-2	Chlorophyll-a	7/28/1997	9:30 AM	4.0	136.17	µg/L
RBO	RBO-2	Chlorophyll-a	8/21/1997	10:31 AM	3.0	70.31	µg/L
RBO	RBO-2	Chlorophyll-a	8/25/1997	10:30 AM	3.0	240.3	µg/L
RBO	RBO-2	Chlorophyll-a	9/15/1997	9:00 AM	4.0	64.08	µg/L
RBO	RBO-2	Chlorophyll-a	9/28/1997	11:10 AM	3.0	82.77	µg/L
RBO	RBO-2	Chlorophyll-a	10/23/1997	10:45 AM	3.0	50.32	µg/L
RBO	RBO-2	Chlorophyll-a	10/27/1997	8:55 AM	3.0	53.4	µg/L
RBO	RBO-2	Chlorophyll-a	11/10/1997	9:15 AM	4.0	53.4	µg/L
RBO	RBO-2	Chlorophyll-a	12/23/1997	10:15 AM	6.0	24.92	µg/L
RBO	RBO-2	Chlorophyll-a	1/26/1998	2:44 PM	8.0	13.35	µg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-2	Chlorophyll-a	2/24/1998	9:50 AM	6.0	13.35	µg/L
RBO	RBO-2	Chlorophyll-a	3/30/1998	8:55 AM	1.0	0	µg/L
RBO	RBO-2	Chlorophyll-a	4/15/1998	10:15 AM	4.0	9.61	µg/L
RBO	RBO-2	Chlorophyll-a	6/3/1998	11:50 AM	4.0	57.4	µg/L
RBO	RBO-2	Chlorophyll-a	7/27/1998	10:15 AM	5.0	31.2	µg/L
RBO	RBO-2	Chlorophyll-a	10/22/1998	10:02 AM	3.0	61.4	µg/L
RBO	RBO-2	Chlorophyll-a	4/25/2001	12:00 AM	2.0	81.6	µg/L
RBO	RBO-2	Chlorophyll-a	6/7/2001	12:00 AM	4.0	47.7	µg/L
RBO	RBO-2	Chlorophyll-a	7/11/2001	12:00 AM	3.0	28.5	µg/L
RBO	RBO-2	Chlorophyll-a	8/20/2001	12:00 AM	3.0	93.2	µg/L
RBO	RBO-2	Chlorophyll-a	10/30/2001	12:00 AM	4.0	47.2	µg/L
RBO	RBO-2	Dissolved Oxygen	4/24/1989	11:15 AM	0.0	11.3	mg/L
RBO	RBO-2	Dissolved Oxygen	4/24/1989	11:15 AM	1.0	11.4	mg/L
RBO	RBO-2	Dissolved Oxygen	4/24/1989	11:15 AM	3.0	11.6	mg/L
RBO	RBO-2	Dissolved Oxygen	4/24/1989	11:15 AM	5.0	11.7	mg/L
RBO	RBO-2	Dissolved Oxygen	4/24/1989	11:15 AM	7.0	12	mg/L
RBO	RBO-2	Dissolved Oxygen	4/24/1989	11:15 AM	9.0	12.3	mg/L
RBO	RBO-2	Dissolved Oxygen	4/24/1989	11:15 AM	10.0	13.2	mg/L
RBO	RBO-2	Dissolved Oxygen	6/5/1989	11:15 AM	5.0	7	mg/L
RBO	RBO-2	Dissolved Oxygen	6/5/1989	11:15 AM	10.0	3.2	mg/L
RBO	RBO-2	Dissolved Oxygen	6/5/1989	11:15 AM	7.0	3	mg/L
RBO	RBO-2	Dissolved Oxygen	6/5/1989	11:15 AM	1.0	12.9	mg/L
RBO	RBO-2	Dissolved Oxygen	6/5/1989	11:15 AM	0.0	12.7	mg/L
RBO	RBO-2	Dissolved Oxygen	6/5/1989	11:15 AM	9.0	3.4	mg/L
RBO	RBO-2	Dissolved Oxygen	7/5/1989	11:30 AM	0.0	8	mg/L
RBO	RBO-2	Dissolved Oxygen	7/5/1989	11:30 AM	3.0	7.9	mg/L
RBO	RBO-2	Dissolved Oxygen	7/5/1989	11:30 AM	5.0	7.5	mg/L
RBO	RBO-2	Dissolved Oxygen	7/5/1989	11:30 AM	7.0	7	mg/L
RBO	RBO-2	Dissolved Oxygen	7/5/1989	11:30 AM	9.0	3.4	mg/L
RBO	RBO-2	Dissolved Oxygen	7/5/1989	11:30 AM	11.0	2.4	mg/L
RBO	RBO-2	Dissolved Oxygen	8/7/1989	12:15 PM	1.0	7.9	mg/L
RBO	RBO-2	Dissolved Oxygen	8/7/1989	12:15 PM	10.0	5	mg/L
RBO	RBO-2	Dissolved Oxygen	8/7/1989	12:15 PM	9.0	5.4	mg/L
RBO	RBO-2	Dissolved Oxygen	8/7/1989	12:15 PM	7.0	6.4	mg/L
RBO	RBO-2	Dissolved Oxygen	8/7/1989	12:15 PM	5.0	6.6	mg/L
RBO	RBO-2	Dissolved Oxygen	8/7/1989	12:15 PM	0.0	8.2	mg/L
RBO	RBO-2	Dissolved Oxygen	8/7/1989	12:15 PM	3.0	7.6	mg/L
RBO	RBO-2	Dissolved Oxygen	10/10/1989	11:00 AM	0.0	9.9	mg/L
RBO	RBO-2	Dissolved Oxygen	10/10/1989	11:00 AM	5.0	9.8	mg/L
RBO	RBO-2	Dissolved Oxygen	4/25/1995	10:30 AM	12.0	9.7	mg/L
RBO	RBO-2	Dissolved Oxygen	4/25/1995	10:30 AM	0.0	8.8	mg/L
RBO	RBO-2	Dissolved Oxygen	4/25/1995	10:30 AM	1.0	9	mg/L
RBO	RBO-2	Dissolved Oxygen	4/25/1995	10:30 AM	4.0	9.1	mg/L
RBO	RBO-2	Dissolved Oxygen	4/25/1995	10:30 AM	6.0	8.9	mg/L
RBO	RBO-2	Dissolved Oxygen	4/25/1995	10:30 AM	7.0	8.3	mg/L
RBO	RBO-2	Dissolved Oxygen	4/25/1995	10:30 AM	11.0	9.4	mg/L
RBO	RBO-2	Dissolved Oxygen	6/14/1995	11:30 AM	11.0	0.6	mg/L
RBO	RBO-2	Dissolved Oxygen	6/14/1995	11:30 AM	10.0	3	mg/L
RBO	RBO-2	Dissolved Oxygen	6/14/1995	11:30 AM	9.0	6.4	mg/L
RBO	RBO-2	Dissolved Oxygen	6/14/1995	11:30 AM	8.0	9.9	mg/L
RBO	RBO-2	Dissolved Oxygen	6/14/1995	11:30 AM	7.0	10.3	mg/L
RBO	RBO-2	Dissolved Oxygen	6/14/1995	11:30 AM	0.0	10.7	mg/L
RBO	RBO-2	Dissolved Oxygen	6/14/1995	11:30 AM	1.0	10.8	mg/L
RBO	RBO-2	Dissolved Oxygen	7/19/1995	9:00 AM	6.0	8.9	mg/L
RBO	RBO-2	Dissolved Oxygen	7/19/1995	9:00 AM	7.0	8.8	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-2	Dissolved Oxygen	7/19/1995	9:00 AM	11.0	0.4	mg/L
RBO	RBO-2	Dissolved Oxygen	7/19/1995	9:00 AM	10.0	0.8	mg/L
RBO	RBO-2	Dissolved Oxygen	7/19/1995	9:00 AM	8.0	8.7	mg/L
RBO	RBO-2	Dissolved Oxygen	7/19/1995	9:00 AM	0.0	9.3	mg/L
RBO	RBO-2	Dissolved Oxygen	7/19/1995	9:00 AM	4.0	9.2	mg/L
RBO	RBO-2	Dissolved Oxygen	7/19/1995	9:00 AM	9.0	3.6	mg/L
RBO	RBO-2	Dissolved Oxygen	7/19/1995	9:00 AM	3.0	9.5	mg/L
RBO	RBO-2	Dissolved Oxygen	7/19/1995	9:00 AM	2.0	9.4	mg/L
RBO	RBO-2	Dissolved Oxygen	7/19/1995	9:00 AM	5.0	9	mg/L
RBO	RBO-2	Dissolved Oxygen	8/30/1995	9:10 AM	7.0	2.4	mg/L
RBO	RBO-2	Dissolved Oxygen	8/30/1995	9:10 AM	8.0	1.9	mg/L
RBO	RBO-2	Dissolved Oxygen	8/30/1995	9:10 AM	6.0	4.7	mg/L
RBO	RBO-2	Dissolved Oxygen	8/30/1995	9:10 AM	5.0	6.8	mg/L
RBO	RBO-2	Dissolved Oxygen	8/30/1995	9:10 AM	3.0	9.8	mg/L
RBO	RBO-2	Dissolved Oxygen	8/30/1995	9:10 AM	2.0	9	mg/L
RBO	RBO-2	Dissolved Oxygen	8/30/1995	9:10 AM	1.0	10.2	mg/L
RBO	RBO-2	Dissolved Oxygen	8/30/1995	9:10 AM	0.0	9.2	mg/L
RBO	RBO-2	Dissolved Oxygen	8/30/1995	9:10 AM	9.0	0.8	mg/L
RBO	RBO-2	Dissolved Oxygen	8/30/1995	9:10 AM	4.0	8.8	mg/L
RBO	RBO-2	Dissolved Oxygen	10/6/1995	9:09 AM	4.0	6.3	mg/L
RBO	RBO-2	Dissolved Oxygen	10/6/1995	9:09 AM	11.0	2.6	mg/L
RBO	RBO-2	Dissolved Oxygen	10/6/1995	9:09 AM	10.0	4.4	mg/L
RBO	RBO-2	Dissolved Oxygen	10/6/1995	9:09 AM	8.0	6.1	mg/L
RBO	RBO-2	Dissolved Oxygen	10/6/1995	9:09 AM	2.0	6.5	mg/L
RBO	RBO-2	Dissolved Oxygen	10/6/1995	9:09 AM	0.0	6.4	mg/L
RBO	RBO-2	Dissolved Oxygen	10/6/1995	9:09 AM	9.0	4.7	mg/L
RBO	RBO-2	Dissolved Oxygen	4/14/1997	9:50 AM	0.0	11	mg/L
RBO	RBO-2	Dissolved Oxygen	4/14/1997	9:50 AM	5.0	11.2	mg/L
RBO	RBO-2	Dissolved Oxygen	4/14/1997	9:50 AM	7.0	10.6	mg/L
RBO	RBO-2	Dissolved Oxygen	4/21/1997	4:45 PM	9.0	11.3	mg/L
RBO	RBO-2	Dissolved Oxygen	4/21/1997	6:00 PM	0.0	18.2	mg/L
RBO	RBO-2	Dissolved Oxygen	4/21/1997	4:45 PM	10.0	10.2	mg/L
RBO	RBO-2	Dissolved Oxygen	4/21/1997	4:45 PM	5.0	12	mg/L
RBO	RBO-2	Dissolved Oxygen	4/21/1997	4:45 PM	0.0	12.2	mg/L
RBO	RBO-2	Dissolved Oxygen	4/21/1997	4:45 PM	7.0	11.9	mg/L
RBO	RBO-2	Dissolved Oxygen	4/21/1997	4:45 PM	1.0	12.1	mg/L
RBO	RBO-2	Dissolved Oxygen	5/28/1997	9:16 AM	0.0	9.7	mg/L
RBO	RBO-2	Dissolved Oxygen	5/28/1997	9:16 AM	1.0	9.2	mg/L
RBO	RBO-2	Dissolved Oxygen	5/28/1997	9:16 AM	3.0	9.1	mg/L
RBO	RBO-2	Dissolved Oxygen	5/28/1997	9:16 AM	9.0	8.5	mg/L
RBO	RBO-2	Dissolved Oxygen	6/11/1997	10:42 AM	5.0	10.1	mg/L
RBO	RBO-2	Dissolved Oxygen	6/11/1997	10:42 AM	7.0	8.2	mg/L
RBO	RBO-2	Dissolved Oxygen	6/11/1997	10:42 AM	3.0	11.1	mg/L
RBO	RBO-2	Dissolved Oxygen	6/11/1997	10:42 AM	1.0	10.8	mg/L
RBO	RBO-2	Dissolved Oxygen	6/11/1997	10:42 AM	0.0	11.2	mg/L
RBO	RBO-2	Dissolved Oxygen	6/11/1997	10:42 AM	9.0	5.9	mg/L
RBO	RBO-2	Dissolved Oxygen	6/23/1997	10:45 AM	0.0	9.9	mg/L
RBO	RBO-2	Dissolved Oxygen	6/23/1997	10:45 AM	1.0	9.7	mg/L
RBO	RBO-2	Dissolved Oxygen	6/23/1997	10:45 AM	3.0	9.5	mg/L
RBO	RBO-2	Dissolved Oxygen	6/23/1997	10:45 AM	5.0	9.1	mg/L
RBO	RBO-2	Dissolved Oxygen	6/23/1997	10:45 AM	7.0	7.7	mg/L
RBO	RBO-2	Dissolved Oxygen	6/23/1997	10:45 AM	9.0	4.7	mg/L
RBO	RBO-2	Dissolved Oxygen	6/23/1997	10:45 AM	10.0	2.4	mg/L
RBO	RBO-2	Dissolved Oxygen	6/23/1997	11:30 AM	1.0	12.2	mg/L
RBO	RBO-2	Dissolved Oxygen	6/30/1997	9:30 AM	0.0	8.2	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-2	Dissolved Oxygen	6/30/1997	9:30 AM	9.0	3.9	mg/L
RBO	RBO-2	Dissolved Oxygen	6/30/1997	9:30 AM	7.0	7.5	mg/L
RBO	RBO-2	Dissolved Oxygen	6/30/1997	9:30 AM	1.0	7.9	mg/L
RBO	RBO-2	Dissolved Oxygen	6/30/1997	9:30 AM	3.0	8.1	mg/L
RBO	RBO-2	Dissolved Oxygen	6/30/1997	9:30 AM	5.0	8	mg/L
RBO	RBO-2	Dissolved Oxygen	7/14/1997	8:55 AM	0.0	11.5	mg/L
RBO	RBO-2	Dissolved Oxygen	7/14/1997	8:55 AM	3.0	11.8	mg/L
RBO	RBO-2	Dissolved Oxygen	7/14/1997	8:55 AM	5.0	11.1	mg/L
RBO	RBO-2	Dissolved Oxygen	7/14/1997	8:55 AM	7.0	7.7	mg/L
RBO	RBO-2	Dissolved Oxygen	7/14/1997	8:55 AM	9.0	3.9	mg/L
RBO	RBO-2	Dissolved Oxygen	7/23/1997	10:45 AM	5.0	5.9	mg/L
RBO	RBO-2	Dissolved Oxygen	7/23/1997	12:15 PM	1.0	5.3	mg/L
RBO	RBO-2	Dissolved Oxygen	7/23/1997	10:45 AM	7.0	5.8	mg/L
RBO	RBO-2	Dissolved Oxygen	7/23/1997	10:45 AM	3.0	6.1	mg/L
RBO	RBO-2	Dissolved Oxygen	7/23/1997	10:45 AM	0.0	6.3	mg/L
RBO	RBO-2	Dissolved Oxygen	7/23/1997	10:45 AM	9.0	4.4	mg/L
RBO	RBO-2	Dissolved Oxygen	7/28/1997	9:30 AM	0.0	12	mg/L
RBO	RBO-2	Dissolved Oxygen	7/28/1997	9:30 AM	1.0	11.7	mg/L
RBO	RBO-2	Dissolved Oxygen	7/28/1997	9:30 AM	3.0	11.3	mg/L
RBO	RBO-2	Dissolved Oxygen	7/28/1997	9:30 AM	5.0	7.7	mg/L
RBO	RBO-2	Dissolved Oxygen	7/28/1997	9:30 AM	7.0	1.6	mg/L
RBO	RBO-2	Dissolved Oxygen	7/28/1997	9:30 AM	9.0	0.2	mg/L
RBO	RBO-2	Dissolved Oxygen	8/11/1997	9:00 AM	3.0	7.1	mg/L
RBO	RBO-2	Dissolved Oxygen	8/11/1997	9:00 AM	5.0	6.7	mg/L
RBO	RBO-2	Dissolved Oxygen	8/11/1997	9:00 AM	0.0	7.6	mg/L
RBO	RBO-2	Dissolved Oxygen	8/11/1997	9:00 AM	7.0	5.6	mg/L
RBO	RBO-2	Dissolved Oxygen	8/11/1997	9:00 AM	1.0	7.3	mg/L
RBO	RBO-2	Dissolved Oxygen	8/21/1997	10:31 AM	0.0	7.2	mg/L
RBO	RBO-2	Dissolved Oxygen	8/21/1997	10:31 AM	1.0	7	mg/L
RBO	RBO-2	Dissolved Oxygen	8/21/1997	10:31 AM	3.0	6.8	mg/L
RBO	RBO-2	Dissolved Oxygen	8/21/1997	10:31 AM	5.0	6.7	mg/L
RBO	RBO-2	Dissolved Oxygen	8/21/1997	10:31 AM	7.0	6.5	mg/L
RBO	RBO-2	Dissolved Oxygen	8/21/1997	1:44 PM	1.0	10.07	mg/L
RBO	RBO-2	Dissolved Oxygen	8/25/1997	10:30 AM	1.0	9.2	mg/L
RBO	RBO-2	Dissolved Oxygen	8/25/1997	10:30 AM	9.0	7.4	mg/L
RBO	RBO-2	Dissolved Oxygen	8/25/1997	10:30 AM	7.0	7.8	mg/L
RBO	RBO-2	Dissolved Oxygen	8/25/1997	10:30 AM	3.0	10.3	mg/L
RBO	RBO-2	Dissolved Oxygen	8/25/1997	10:30 AM	0.0	9.1	mg/L
RBO	RBO-2	Dissolved Oxygen	8/25/1997	10:30 AM	5.0	9.7	mg/L
RBO	RBO-2	Dissolved Oxygen	9/15/1997	9:00 AM	0.0	8.9	mg/L
RBO	RBO-2	Dissolved Oxygen	9/15/1997	9:00 AM	1.0	8.6	mg/L
RBO	RBO-2	Dissolved Oxygen	9/15/1997	9:00 AM	3.0	8.1	mg/L
RBO	RBO-2	Dissolved Oxygen	9/15/1997	9:00 AM	5.0	7.4	mg/L
RBO	RBO-2	Dissolved Oxygen	9/15/1997	9:00 AM	7.0	4.8	mg/L
RBO	RBO-2	Dissolved Oxygen	9/15/1997	9:00 AM	9.0	1.4	mg/L
RBO	RBO-2	Dissolved Oxygen	9/28/1997	11:10 AM	7.0	6.8	mg/L
RBO	RBO-2	Dissolved Oxygen	9/28/1997	11:10 AM	5.0	7.9	mg/L
RBO	RBO-2	Dissolved Oxygen	9/28/1997	11:10 AM	9.0	4.3	mg/L
RBO	RBO-2	Dissolved Oxygen	9/28/1997	11:10 AM	1.0	9.2	mg/L
RBO	RBO-2	Dissolved Oxygen	9/28/1997	11:10 AM	0.0	9.8	mg/L
RBO	RBO-2	Dissolved Oxygen	9/28/1997	11:10 AM	3.0	8.4	mg/L
RBO	RBO-2	Dissolved Oxygen	10/14/1997	1:35 PM	0.0	6.7	mg/L
RBO	RBO-2	Dissolved Oxygen	10/14/1997	1:35 PM	1.0	6.5	mg/L
RBO	RBO-2	Dissolved Oxygen	10/14/1997	1:35 PM	3.0	5.7	mg/L
RBO	RBO-2	Dissolved Oxygen	10/14/1997	1:35 PM	5.0	5.5	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-2	Dissolved Oxygen	10/14/1997	1:35 PM	7.0	5.6	mg/L
RBO	RBO-2	Dissolved Oxygen	10/23/1997	10:45 AM	0.0	10.1	mg/L
RBO	RBO-2	Dissolved Oxygen	10/23/1997	10:45 AM	1.0	10	mg/L
RBO	RBO-2	Dissolved Oxygen	10/23/1997	10:45 AM	3.0	9.9	mg/L
RBO	RBO-2	Dissolved Oxygen	10/23/1997	10:45 AM	8.0	9.8	mg/L
RBO	RBO-2	Dissolved Oxygen	10/27/1997	8:55 AM	0.0	9.6	mg/L
RBO	RBO-2	Dissolved Oxygen	10/27/1997	8:55 AM	1.0	9.5	mg/L
RBO	RBO-2	Dissolved Oxygen	10/27/1997	8:55 AM	5.0	9.4	mg/L
RBO	RBO-2	Dissolved Oxygen	11/10/1997	9:15 AM	0.0	11.5	mg/L
RBO	RBO-2	Dissolved Oxygen	11/10/1997	9:15 AM	1.0	11.4	mg/L
RBO	RBO-2	Dissolved Oxygen	11/10/1997	9:15 AM	5.0	11.3	mg/L
RBO	RBO-2	Dissolved Oxygen	11/10/1997	9:15 AM	9.0	10.5	mg/L
RBO	RBO-2	Dissolved Oxygen	12/23/1997	10:15 AM	0.0	12.5	mg/L
RBO	RBO-2	Dissolved Oxygen	12/23/1997	10:15 AM	1.0	12.2	mg/L
RBO	RBO-2	Dissolved Oxygen	12/23/1997	10:15 AM	9.0	11.9	mg/L
RBO	RBO-2	Dissolved Oxygen	1/26/1998	2:44 PM	0.0	12.4	mg/L
RBO	RBO-2	Dissolved Oxygen	1/26/1998	2:44 PM	1.0	11	mg/L
RBO	RBO-2	Dissolved Oxygen	1/26/1998	2:44 PM	3.0	11.2	mg/L
RBO	RBO-2	Dissolved Oxygen	1/26/1998	2:44 PM	7.0	11.5	mg/L
RBO	RBO-2	Dissolved Oxygen	2/24/1998	9:50 AM	0.0	11.7	mg/L
RBO	RBO-2	Dissolved Oxygen	2/24/1998	9:50 AM	9.0	11.8	mg/L
RBO	RBO-2	Dissolved Oxygen	3/30/1998	8:55 AM	0.0	7.9	mg/L
RBO	RBO-2	Dissolved Oxygen	3/30/1998	8:55 AM	3.0	7.8	mg/L
RBO	RBO-2	Dissolved Oxygen	3/30/1998	8:55 AM	7.0	7.7	mg/L
RBO	RBO-2	Dissolved Oxygen	3/30/1998	8:55 AM	9.0	7.6	mg/L
RBO	RBO-2	Dissolved Oxygen	4/15/1998	10:15 AM	0.0	9.7	mg/L
RBO	RBO-2	Dissolved Oxygen	4/15/1998	10:15 AM	3.0	9.5	mg/L
RBO	RBO-2	Dissolved Oxygen	4/15/1998	10:15 AM	7.0	9.4	mg/L
RBO	RBO-2	Dissolved Oxygen	4/15/1998	10:15 AM	9.0	9.2	mg/L
RBO	RBO-2	Dissolved Oxygen	4/15/1998	10:15 AM	10.0	8.3	mg/L
RBO	RBO-2	Dissolved Oxygen	6/3/1998	11:50 AM	3.0	10	mg/L
RBO	RBO-2	Dissolved Oxygen	6/3/1998	11:50 AM	8.0	6.3	mg/L
RBO	RBO-2	Dissolved Oxygen	6/3/1998	11:50 AM	5.0	9.5	mg/L
RBO	RBO-2	Dissolved Oxygen	6/3/1998	11:50 AM	1.0	10.5	mg/L
RBO	RBO-2	Dissolved Oxygen	6/3/1998	11:50 AM	0.0	10.7	mg/L
RBO	RBO-2	Dissolved Oxygen	6/3/1998	11:50 AM	7.0	7.7	mg/L
RBO	RBO-2	Dissolved Oxygen	7/27/1998	10:15 AM	0.0	9.1	mg/L
RBO	RBO-2	Dissolved Oxygen	7/27/1998	10:15 AM	1.0	9.2	mg/L
RBO	RBO-2	Dissolved Oxygen	7/27/1998	10:15 AM	3.0	9.4	mg/L
RBO	RBO-2	Dissolved Oxygen	7/27/1998	10:15 AM	5.0	9	mg/L
RBO	RBO-2	Dissolved Oxygen	7/27/1998	10:15 AM	7.0	7.1	mg/L
RBO	RBO-2	Dissolved Oxygen	7/27/1998	10:15 AM	9.0	3.3	mg/L
RBO	RBO-2	Dissolved Oxygen	7/27/1998	10:15 AM	10.0	0.9	mg/L
RBO	RBO-2	Dissolved Oxygen	8/13/1998	10:52 AM	3.0	8.9	mg/L
RBO	RBO-2	Dissolved Oxygen	8/13/1998	10:52 AM	8.0	7.5	mg/L
RBO	RBO-2	Dissolved Oxygen	8/13/1998	10:52 AM	5.0	8.5	mg/L
RBO	RBO-2	Dissolved Oxygen	8/13/1998	10:52 AM	0.0	9.5	mg/L
RBO	RBO-2	Dissolved Oxygen	8/13/1998	10:52 AM	7.0	8.1	mg/L
RBO	RBO-2	Dissolved Oxygen	8/13/1998	10:52 AM	1.0	9	mg/L
RBO	RBO-2	Dissolved Oxygen	10/22/1998	10:02 AM	0.0	8.8	mg/L
RBO	RBO-2	Dissolved Oxygen	10/22/1998	10:02 AM	1.0	8.4	mg/L
RBO	RBO-2	Dissolved Oxygen	10/22/1998	10:02 AM	3.0	7.9	mg/L
RBO	RBO-2	Dissolved Oxygen	10/22/1998	10:02 AM	5.0	7.8	mg/L
RBO	RBO-2	Dissolved Oxygen	10/22/1998	10:02 AM	7.0	7.6	mg/L
RBO	RBO-2	Dissolved Oxygen	10/22/1998	10:02 AM	8.0	7.4	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-2	Dissolved Phosphorus	4/24/1989	11:15 AM	1.0	0	mg/L
RBO	RBO-2	Dissolved Phosphorus	6/5/1989	11:15 AM	1.0	0.07	mg/L
RBO	RBO-2	Dissolved Phosphorus	7/5/1989	11:30 AM	1.0	0.02	mg/L
RBO	RBO-2	Dissolved Phosphorus	8/7/1989	12:15 PM	1.0	0	mg/L
RBO	RBO-2	Dissolved Phosphorus	10/10/1989	11:00 AM	1.0	0.04	mg/L
RBO	RBO-2	Dissolved Phosphorus	4/25/1995	10:30 AM	10.0	0	mg/L
RBO	RBO-2	Dissolved Phosphorus	4/25/1995	10:30 AM	1.0	0.01	mg/L
RBO	RBO-2	Dissolved Phosphorus	6/14/1995	11:30 AM	1.0	0	mg/L
RBO	RBO-2	Dissolved Phosphorus	7/19/1995	9:00 AM	1.0	0	mg/L
RBO	RBO-2	Dissolved Phosphorus	8/30/1995	9:10 AM	1.0	0.03	mg/L
RBO	RBO-2	Dissolved Phosphorus	10/6/1995	9:09 AM	1.0	0.01	mg/L
RBO	RBO-2	Dissolved Phosphorus	4/21/1997	4:45 PM	1.0	0.01	mg/L
RBO	RBO-2	Dissolved Phosphorus	4/21/1997	6:00 PM	0.0	0.01	mg/L
RBO	RBO-2	Dissolved Phosphorus	6/23/1997	10:45 AM	1.0	0.01	mg/L
RBO	RBO-2	Dissolved Phosphorus	6/23/1997	11:30 AM	1.0	0.01	mg/L
RBO	RBO-2	Dissolved Phosphorus	7/23/1997	12:15 PM	1.0	0.14	mg/L
RBO	RBO-2	Dissolved Phosphorus	7/23/1997	10:45 AM	1.0	0.01	mg/L
RBO	RBO-2	Dissolved Phosphorus	8/21/1997	1:44 PM	1.0	0.25	mg/L
RBO	RBO-2	Dissolved Phosphorus	8/21/1997	10:31 AM	1.0	0.01	mg/L
RBO	RBO-2	Dissolved Phosphorus	10/23/1997	10:45 AM	1.0	0.02	mg/L
RBO	RBO-2	Dissolved Phosphorus	4/15/1998	10:15 AM	1.0	0.13	mg/L
RBO	RBO-2	Dissolved Phosphorus	6/3/1998	11:50 AM	1.0	0.01	mg/L
RBO	RBO-2	Dissolved Phosphorus	7/27/1998	10:15 AM	1.0	0.01	mg/L
RBO	RBO-2	Dissolved Phosphorus	8/13/1998	10:52 AM	1.0	0.01	mg/L
RBO	RBO-2	Dissolved Phosphorus	10/22/1998	10:02 AM	1.0	0.02	mg/L
RBO	RBO-2	Dissolved Phosphorus	4/25/2001	12:00 AM	1.0	0.01	mg/L
RBO	RBO-2	Dissolved Phosphorus	6/7/2001	12:00 AM	1.0	0.02	mg/L
RBO	RBO-2	Dissolved Phosphorus	7/11/2001	12:00 AM	1.0	0.02	mg/L
RBO	RBO-2	Dissolved Phosphorus	8/20/2001	12:00 AM	1.0	0.02	mg/L
RBO	RBO-2	Dissolved Phosphorus	10/30/2001	12:00 AM	1.0	0.01	mg/L
RBO	RBO-2	Nitrate + Nitrite	4/24/1989	11:15 AM	1.0	12	mg/L
RBO	RBO-2	Nitrate + Nitrite	6/5/1989	11:15 AM	1.0	14	mg/L
RBO	RBO-2	Nitrate + Nitrite	7/5/1989	11:30 AM	1.0	11	mg/L
RBO	RBO-2	Nitrate + Nitrite	8/7/1989	12:15 PM	1.0	4.1	mg/L
RBO	RBO-2	Nitrate + Nitrite	10/10/1989	11:00 AM	1.0	0.97	mg/L
RBO	RBO-2	Nitrate + Nitrite	4/25/1995	10:30 AM	1.0	6.4	mg/L
RBO	RBO-2	Nitrate + Nitrite	4/25/1995	10:30 AM	10.0	7.9	mg/L
RBO	RBO-2	Nitrate + Nitrite	6/14/1995	11:30 AM	1.0	8.8	mg/L
RBO	RBO-2	Nitrate + Nitrite	7/19/1995	9:00 AM	1.0	3.1	mg/L
RBO	RBO-2	Nitrate + Nitrite	8/30/1995	9:10 AM	1.0	0.01	mg/L
RBO	RBO-2	Nitrate + Nitrite	10/6/1995	9:09 AM	1.0	0.05	mg/L
RBO	RBO-2	Nitrate + Nitrite	4/21/1997	4:45 PM	1.0	11.3	mg/L
RBO	RBO-2	Nitrate + Nitrite	4/21/1997	6:00 PM	0.0	8.5	mg/L
RBO	RBO-2	Nitrate + Nitrite	5/3/1997	2:23 PM	1.0	14	mg/L
RBO	RBO-2	Nitrate + Nitrite	5/5/1997	9:00 AM	1.0	7.4	mg/L
RBO	RBO-2	Nitrate + Nitrite	5/5/1997	9:45 AM	1.0	12.3	mg/L
RBO	RBO-2	Nitrate + Nitrite	5/28/1997	9:16 AM	1.0	7	mg/L
RBO	RBO-2	Nitrate + Nitrite	5/28/1997	11:15 AM	1.0	11.9	mg/L
RBO	RBO-2	Nitrate + Nitrite	6/6/1997	2:41 PM	1.0	13.1	mg/L
RBO	RBO-2	Nitrate + Nitrite	6/7/1997	7:40 AM	1.0	13.6	mg/L
RBO	RBO-2	Nitrate + Nitrite	6/23/1997	10:45 AM	1.0	9.7	mg/L
RBO	RBO-2	Nitrate + Nitrite	6/23/1997	11:30 AM	1.0	11.1	mg/L
RBO	RBO-2	Nitrate + Nitrite	6/30/1997	10:50 AM	1.0	9.8	mg/L
RBO	RBO-2	Nitrate + Nitrite	6/30/1997	9:30 AM	1.0	8.4	mg/L
RBO	RBO-2	Nitrate + Nitrite	7/9/1997	8:10 AM	1.0	5.2	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-2	Nitrate + Nitrite	7/22/1997	7:30 AM	1.0	4.5	mg/L
RBO	RBO-2	Nitrate + Nitrite	7/23/1997	10:45 AM	1.0	3.7	mg/L
RBO	RBO-2	Nitrate + Nitrite	7/23/1997	12:15 PM	1.0	0.06	mg/L
RBO	RBO-2	Nitrate + Nitrite	7/28/1997	9:30 AM	1.0	2.8	mg/L
RBO	RBO-2	Nitrate + Nitrite	7/28/1997	11:00 AM	1.0	0.14	mg/L
RBO	RBO-2	Nitrate + Nitrite	8/17/1997	8:40 AM	1.0	0.49	mg/L
RBO	RBO-2	Nitrate + Nitrite	8/17/1997	4:10 PM	1.0	1.3	mg/L
RBO	RBO-2	Nitrate + Nitrite	8/21/1997	10:31 AM	1.0	0.57	mg/L
RBO	RBO-2	Nitrate + Nitrite	8/21/1997	1:44 PM	1.0	0.01	mg/L
RBO	RBO-2	Nitrate + Nitrite	8/25/1997	1:30 PM	1.0	0.17	mg/L
RBO	RBO-2	Nitrate + Nitrite	8/25/1997	10:30 AM	1.0	0.38	mg/L
RBO	RBO-2	Nitrate + Nitrite	8/25/1997	11:30 AM	1.0	0.18	mg/L
RBO	RBO-2	Nitrate + Nitrite	9/2/1997	3:45 PM	1.0	0.13	mg/L
RBO	RBO-2	Nitrate + Nitrite	9/15/1997	9:00 AM	1.0	0.11	mg/L
RBO	RBO-2	Nitrate + Nitrite	9/28/1997	11:10 AM	1.0	0.01	mg/L
RBO	RBO-2	Nitrate + Nitrite	10/23/1997	10:45 AM	1.0	0.01	mg/L
RBO	RBO-2	Nitrate + Nitrite	10/27/1997	8:55 AM	1.0	0.01	mg/L
RBO	RBO-2	Nitrate + Nitrite	11/10/1997	9:15 AM	1.0	0.01	mg/L
RBO	RBO-2	Nitrate + Nitrite	12/23/1997	10:15 AM	1.0	0.01	mg/L
RBO	RBO-2	Nitrate + Nitrite	12/23/1997	11:40 AM	1.0	0.09	mg/L
RBO	RBO-2	Nitrate + Nitrite	1/8/1998	8:15 AM	1.0	9	mg/L
RBO	RBO-2	Nitrate + Nitrite	1/26/1998	2:44 PM	1.0	3.1	mg/L
RBO	RBO-2	Nitrate + Nitrite	2/24/1998	9:50 AM	1.0	4.7	mg/L
RBO	RBO-2	Nitrate + Nitrite	3/30/1998	8:55 AM	1.0	9.2	mg/L
RBO	RBO-2	Nitrate + Nitrite	4/15/1998	10:15 AM	1.0	6.42	mg/L
RBO	RBO-2	Nitrate + Nitrite	6/3/1998	11:50 AM	1.0	13.28	mg/L
RBO	RBO-2	Nitrate + Nitrite	7/27/1998	10:15 AM	1.0	6.13	mg/L
RBO	RBO-2	Nitrate + Nitrite	8/13/1998	10:52 AM	1.0	3	mg/L
RBO	RBO-2	Nitrate + Nitrite	10/22/1998	10:02 AM	1.0	0.01	mg/L
RBO	RBO-2	Nitrate + Nitrite	4/25/2001	12:00 AM	1.0	8	mg/L
RBO	RBO-2	Nitrate + Nitrite	6/7/2001	12:00 AM	1.0	3.4	mg/L
RBO	RBO-2	Nitrate + Nitrite	7/11/2001	12:00 AM	1.0	2	mg/L
RBO	RBO-2	Nitrate + Nitrite	8/20/2001	12:00 AM	1.0	0.01	mg/L
RBO	RBO-2	Nitrate + Nitrite	10/30/2001	12:00 AM	1.0	4.9	mg/L
RBO	RBO-2	Suspended Solids	4/24/1989	11:15 AM	1.0	1	mg/L
RBO	RBO-2	Suspended Solids	6/5/1989	11:15 AM	1.0	8	mg/L
RBO	RBO-2	Suspended Solids	7/5/1989	11:30 AM	1.0	6	mg/L
RBO	RBO-2	Suspended Solids	8/7/1989	12:15 PM	1.0	18	mg/L
RBO	RBO-2	Suspended Solids	10/10/1989	11:00 AM	1.0	11	mg/L
RBO	RBO-2	Suspended Solids	4/25/1995	10:30 AM	1.0	11	mg/L
RBO	RBO-2	Suspended Solids	4/25/1995	10:30 AM	10.0	10	mg/L
RBO	RBO-2	Suspended Solids	6/14/1995	11:30 AM	1.0	3	mg/L
RBO	RBO-2	Suspended Solids	7/19/1995	9:00 AM	1.0	8	mg/L
RBO	RBO-2	Suspended Solids	8/30/1995	9:10 AM	1.0	6	mg/L
RBO	RBO-2	Suspended Solids	10/6/1995	9:09 AM	1.0	16	mg/L
RBO	RBO-2	Suspended Solids	4/21/1997	4:45 PM	1.0	5	mg/L
RBO	RBO-2	Suspended Solids	4/21/1997	6:00 PM	0.0	13	mg/L
RBO	RBO-2	Suspended Solids	5/3/1997	2:23 PM	1.0	69	mg/L
RBO	RBO-2	Suspended Solids	5/5/1997	9:45 AM	1.0	10	mg/L
RBO	RBO-2	Suspended Solids	5/5/1997	9:00 AM	1.0	24	mg/L
RBO	RBO-2	Suspended Solids	5/28/1997	9:16 AM	1.0	25	mg/L
RBO	RBO-2	Suspended Solids	5/28/1997	11:15 AM	1.0	4	mg/L
RBO	RBO-2	Suspended Solids	6/6/1997	2:41 PM	1.0	20	mg/L
RBO	RBO-2	Suspended Solids	6/7/1997	7:40 AM	1.0	21	mg/L
RBO	RBO-2	Suspended Solids	6/23/1997	10:45 AM	1.0	3	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-2	Suspended Solids	6/23/1997	11:30 AM	1.0	18	mg/L
RBO	RBO-2	Suspended Solids	6/30/1997	9:30 AM	1.0	11	mg/L
RBO	RBO-2	Suspended Solids	6/30/1997	10:50 AM	1.0	7	mg/L
RBO	RBO-2	Suspended Solids	7/9/1997	8:10 AM	1.0	40	mg/L
RBO	RBO-2	Suspended Solids	7/22/1997	7:30 AM	1.0	18	mg/L
RBO	RBO-2	Suspended Solids	7/23/1997	10:45 AM	1.0	26	mg/L
RBO	RBO-2	Suspended Solids	7/23/1997	12:15 PM	1.0	10	mg/L
RBO	RBO-2	Suspended Solids	7/28/1997	9:30 AM	1.0	20	mg/L
RBO	RBO-2	Suspended Solids	7/28/1997	11:00 AM	1.0	13	mg/L
RBO	RBO-2	Suspended Solids	8/17/1997	8:40 AM	1.0	30	mg/L
RBO	RBO-2	Suspended Solids	8/17/1997	4:10 PM	1.0	20	mg/L
RBO	RBO-2	Suspended Solids	8/21/1997	10:31 AM	1.0	24	mg/L
RBO	RBO-2	Suspended Solids	8/21/1997	1:44 PM	1.0	6	mg/L
RBO	RBO-2	Suspended Solids	8/25/1997	10:30 AM	1.0	34	mg/L
RBO	RBO-2	Suspended Solids	8/25/1997	11:30 AM	1.0	6	mg/L
RBO	RBO-2	Suspended Solids	8/25/1997	1:30 PM	1.0	2	mg/L
RBO	RBO-2	Suspended Solids	9/2/1997	3:45 PM	1.0	170	mg/L
RBO	RBO-2	Suspended Solids	9/15/1997	10:05 AM	1.0	6	mg/L
RBO	RBO-2	Suspended Solids	9/15/1997	9:00 AM	1.0	12	mg/L
RBO	RBO-2	Suspended Solids	9/28/1997	11:10 AM	1.0	19	mg/L
RBO	RBO-2	Suspended Solids	9/28/1997	2:10 PM	1.0	27	mg/L
RBO	RBO-2	Suspended Solids	10/23/1997	10:45 AM	1.0	21	mg/L
RBO	RBO-2	Suspended Solids	10/27/1997	8:55 AM	1.0	34	mg/L
RBO	RBO-2	Suspended Solids	10/27/1997	10:10 AM	1.0	22	mg/L
RBO	RBO-2	Suspended Solids	11/10/1997	9:15 AM	1.0	14	mg/L
RBO	RBO-2	Suspended Solids	11/10/1997	10:40 AM	1.0	9	mg/L
RBO	RBO-2	Suspended Solids	12/23/1997	10:15 AM	1.0	12	mg/L
RBO	RBO-2	Suspended Solids	12/23/1997	11:40 AM	1.0	98	mg/L
RBO	RBO-2	Suspended Solids	1/8/1998	8:15 AM	1.0	278	mg/L
RBO	RBO-2	Suspended Solids	1/26/1998	2:44 PM	1.0	4	mg/L
RBO	RBO-2	Suspended Solids	2/24/1998	9:50 AM	1.0	8	mg/L
RBO	RBO-2	Suspended Solids	3/30/1998	8:55 AM	1.0	70	mg/L
RBO	RBO-2	Suspended Solids	4/15/1998	10:15 AM	1.0	26	mg/L
RBO	RBO-2	Suspended Solids	6/3/1998	11:50 AM	1.0	17	mg/L
RBO	RBO-2	Suspended Solids	7/27/1998	10:15 AM	1.0	10	mg/L
RBO	RBO-2	Suspended Solids	8/13/1998	10:52 AM	1.0	7	mg/L
RBO	RBO-2	Suspended Solids	10/22/1998	10:02 AM	1.0	9	mg/L
RBO	RBO-2	Suspended Solids	4/25/2001	12:00 AM	1.0	27	mg/L
RBO	RBO-2	Suspended Solids	6/7/2001	12:00 AM	1.0	16	mg/L
RBO	RBO-2	Suspended Solids	7/11/2001	12:00 AM	1.0	19	mg/L
RBO	RBO-2	Suspended Solids	8/20/2001	12:00 AM	1.0	25	mg/L
RBO	RBO-2	Suspended Solids	10/30/2001	12:00 AM	1.0	19	mg/L
RBO	RBO-2	Temperature	4/24/1989	11:15 AM	0.0	15.7	° C
RBO	RBO-2	Temperature	4/24/1989	11:15 AM	10.0	14.6	° C
RBO	RBO-2	Temperature	4/24/1989	11:15 AM	9.0	15	° C
RBO	RBO-2	Temperature	4/24/1989	11:15 AM	3.0	15.6	° C
RBO	RBO-2	Temperature	4/24/1989	11:15 AM	7.0	15.5	° C
RBO	RBO-2	Temperature	6/5/1989	11:15 AM	0.0	22.8	° C
RBO	RBO-2	Temperature	6/5/1989	11:15 AM	3.0	22.5	° C
RBO	RBO-2	Temperature	6/5/1989	11:15 AM	5.0	20	° C
RBO	RBO-2	Temperature	6/5/1989	11:15 AM	7.0	18.4	° C
RBO	RBO-2	Temperature	6/5/1989	11:15 AM	9.0	16.9	° C
RBO	RBO-2	Temperature	7/5/1989	11:30 AM	9.0	23.9	° C
RBO	RBO-2	Temperature	7/5/1989	11:30 AM	12.0	19.4	° C
RBO	RBO-2	Temperature	7/5/1989	11:30 AM	11.0	21.3	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-2	Temperature	7/5/1989	11:30 AM	5.0	25.5	° C
RBO	RBO-2	Temperature	7/5/1989	11:30 AM	3.0	26	° C
RBO	RBO-2	Temperature	7/5/1989	11:30 AM	0.0	27.5	° C
RBO	RBO-2	Temperature	7/5/1989	11:30 AM	7.0	24.7	° C
RBO	RBO-2	Temperature	8/7/1989	12:15 PM	9.0	25.7	° C
RBO	RBO-2	Temperature	8/7/1989	12:15 PM	0.0	26.6	° C
RBO	RBO-2	Temperature	8/7/1989	12:15 PM	3.0	26.5	° C
RBO	RBO-2	Temperature	8/7/1989	12:15 PM	5.0	26.2	° C
RBO	RBO-2	Temperature	8/7/1989	12:15 PM	7.0	25.9	° C
RBO	RBO-2	Temperature	10/10/1989	11:00 AM	7.0	13.9	° C
RBO	RBO-2	Temperature	10/10/1989	11:00 AM	0.0	14.1	° C
RBO	RBO-2	Temperature	10/10/1989	11:00 AM	5.0	14	° C
RBO	RBO-2	Temperature	4/25/1995	10:30 AM	8.0	11.6	° C
RBO	RBO-2	Temperature	4/25/1995	10:30 AM	3.0	12.7	° C
RBO	RBO-2	Temperature	4/25/1995	10:30 AM	12.0	10.2	° C
RBO	RBO-2	Temperature	4/25/1995	10:30 AM	11.0	10.6	° C
RBO	RBO-2	Temperature	4/25/1995	10:30 AM	10.0	11.3	° C
RBO	RBO-2	Temperature	4/25/1995	10:30 AM	9.0	11.4	° C
RBO	RBO-2	Temperature	4/25/1995	10:30 AM	7.0	11.9	° C
RBO	RBO-2	Temperature	4/25/1995	10:30 AM	6.0	12	° C
RBO	RBO-2	Temperature	4/25/1995	10:30 AM	4.0	12.4	° C
RBO	RBO-2	Temperature	4/25/1995	10:30 AM	1.0	12.8	° C
RBO	RBO-2	Temperature	4/25/1995	10:30 AM	0.0	13	° C
RBO	RBO-2	Temperature	4/25/1995	10:30 AM	5.0	12.2	° C
RBO	RBO-2	Temperature	6/14/1995	11:30 AM	8.0	18.9	° C
RBO	RBO-2	Temperature	6/14/1995	11:30 AM	3.0	22.7	° C
RBO	RBO-2	Temperature	6/14/1995	11:30 AM	11.0	14.5	° C
RBO	RBO-2	Temperature	6/14/1995	11:30 AM	10.0	15.4	° C
RBO	RBO-2	Temperature	6/14/1995	11:30 AM	9.0	16.7	° C
RBO	RBO-2	Temperature	6/14/1995	11:30 AM	12.0	14	° C
RBO	RBO-2	Temperature	6/14/1995	11:30 AM	6.0	20.9	° C
RBO	RBO-2	Temperature	6/14/1995	11:30 AM	4.0	21.9	° C
RBO	RBO-2	Temperature	6/14/1995	11:30 AM	1.0	22.8	° C
RBO	RBO-2	Temperature	6/14/1995	11:30 AM	0.0	23	° C
RBO	RBO-2	Temperature	6/14/1995	11:30 AM	5.0	21.4	° C
RBO	RBO-2	Temperature	6/14/1995	11:30 AM	7.0	20.1	° C
RBO	RBO-2	Temperature	7/19/1995	9:00 AM	4.0	27.7	° C
RBO	RBO-2	Temperature	7/19/1995	9:00 AM	10.0	25.5	° C
RBO	RBO-2	Temperature	7/19/1995	9:00 AM	5.0	27.6	° C
RBO	RBO-2	Temperature	7/19/1995	9:00 AM	11.0	23.1	° C
RBO	RBO-2	Temperature	7/19/1995	9:00 AM	0.0	27.8	° C
RBO	RBO-2	Temperature	7/19/1995	9:00 AM	9.0	26.8	° C
RBO	RBO-2	Temperature	8/30/1995	9:10 AM	7.0	27.8	° C
RBO	RBO-2	Temperature	8/30/1995	9:10 AM	9.0	26.6	° C
RBO	RBO-2	Temperature	8/30/1995	9:10 AM	10.0	25.3	° C
RBO	RBO-2	Temperature	8/30/1995	9:10 AM	8.0	27.5	° C
RBO	RBO-2	Temperature	8/30/1995	9:10 AM	6.0	28	° C
RBO	RBO-2	Temperature	8/30/1995	9:10 AM	5.0	28.3	° C
RBO	RBO-2	Temperature	8/30/1995	9:10 AM	4.0	28.4	° C
RBO	RBO-2	Temperature	8/30/1995	9:10 AM	0.0	28.5	° C
RBO	RBO-2	Temperature	8/30/1995	9:10 AM	1.0	28.6	° C
RBO	RBO-2	Temperature	10/6/1995	9:09 AM	0.0	18.4	° C
RBO	RBO-2	Temperature	4/14/1997	9:50 AM	5.0	9	° C
RBO	RBO-2	Temperature	4/14/1997	9:50 AM	7.0	8.9	° C
RBO	RBO-2	Temperature	4/14/1997	9:50 AM	1.0	9.5	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-2	Temperature	4/14/1997	9:50 AM	0.0	9.8	° C
RBO	RBO-2	Temperature	4/14/1997	9:50 AM	3.0	9.2	° C
RBO	RBO-2	Temperature	4/21/1997	4:45 PM	3.0	14.6	° C
RBO	RBO-2	Temperature	4/21/1997	4:45 PM	5.0	14.5	° C
RBO	RBO-2	Temperature	4/21/1997	4:45 PM	7.0	14.2	° C
RBO	RBO-2	Temperature	4/21/1997	4:45 PM	9.0	13	° C
RBO	RBO-2	Temperature	4/21/1997	4:45 PM	10.0	12.1	° C
RBO	RBO-2	Temperature	4/21/1997	6:00 PM	0.0	15.7	° C
RBO	RBO-2	Temperature	4/21/1997	4:45 PM	0.0	14.8	° C
RBO	RBO-2	Temperature	5/5/1997	9:00 AM	7.0	13.7	° C
RBO	RBO-2	Temperature	5/5/1997	9:00 AM	0.0	13.9	° C
RBO	RBO-2	Temperature	5/5/1997	9:00 AM	5.0	13.8	° C
RBO	RBO-2	Temperature	5/28/1997	9:16 AM	9.0	16.9	° C
RBO	RBO-2	Temperature	5/28/1997	9:16 AM	0.0	17.4	° C
RBO	RBO-2	Temperature	5/28/1997	9:16 AM	1.0	17.5	° C
RBO	RBO-2	Temperature	6/11/1997	10:42 AM	0.0	21.6	° C
RBO	RBO-2	Temperature	6/11/1997	10:42 AM	1.0	21.5	° C
RBO	RBO-2	Temperature	6/11/1997	10:42 AM	3.0	20.4	° C
RBO	RBO-2	Temperature	6/11/1997	10:42 AM	5.0	19.7	° C
RBO	RBO-2	Temperature	6/11/1997	10:42 AM	7.0	18.2	° C
RBO	RBO-2	Temperature	6/11/1997	10:42 AM	9.0	17	° C
RBO	RBO-2	Temperature	6/23/1997	10:45 AM	9.0	23.3	° C
RBO	RBO-2	Temperature	6/23/1997	10:45 AM	3.0	27.2	° C
RBO	RBO-2	Temperature	6/23/1997	11:30 AM	1.0	22.9	° C
RBO	RBO-2	Temperature	6/23/1997	10:45 AM	10.0	22	° C
RBO	RBO-2	Temperature	6/23/1997	10:45 AM	5.0	26.6	° C
RBO	RBO-2	Temperature	6/23/1997	10:45 AM	0.0	28.2	° C
RBO	RBO-2	Temperature	6/23/1997	10:45 AM	1.0	28	° C
RBO	RBO-2	Temperature	6/23/1997	10:45 AM	7.0	25.4	° C
RBO	RBO-2	Temperature	6/30/1997	9:30 AM	0.0	27.8	° C
RBO	RBO-2	Temperature	6/30/1997	9:30 AM	1.0	27.9	° C
RBO	RBO-2	Temperature	6/30/1997	9:30 AM	5.0	27.6	° C
RBO	RBO-2	Temperature	6/30/1997	9:30 AM	7.0	25.5	° C
RBO	RBO-2	Temperature	6/30/1997	9:30 AM	9.0	26.6	° C
RBO	RBO-2	Temperature	7/14/1997	8:55 AM	5.0	27.7	° C
RBO	RBO-2	Temperature	7/14/1997	8:55 AM	7.0	26.1	° C
RBO	RBO-2	Temperature	7/14/1997	8:55 AM	3.0	28.1	° C
RBO	RBO-2	Temperature	7/14/1997	8:55 AM	0.0	28.2	° C
RBO	RBO-2	Temperature	7/14/1997	8:55 AM	9.0	25.4	° C
RBO	RBO-2	Temperature	7/23/1997	10:45 AM	0.0	27.9	° C
RBO	RBO-2	Temperature	7/23/1997	10:45 AM	9.0	27.8	° C
RBO	RBO-2	Temperature	7/23/1997	12:15 PM	1.0	24.6	° C
RBO	RBO-2	Temperature	7/28/1997	9:30 AM	0.0	30.4	° C
RBO	RBO-2	Temperature	7/28/1997	9:30 AM	1.0	30.5	° C
RBO	RBO-2	Temperature	7/28/1997	9:30 AM	3.0	30.2	° C
RBO	RBO-2	Temperature	7/28/1997	9:30 AM	5.0	29.7	° C
RBO	RBO-2	Temperature	7/28/1997	9:30 AM	7.0	28.5	° C
RBO	RBO-2	Temperature	7/28/1997	9:30 AM	9.0	27.8	° C
RBO	RBO-2	Temperature	8/11/1997	9:00 AM	7.0	24.4	° C
RBO	RBO-2	Temperature	8/11/1997	9:00 AM	5.0	24.5	° C
RBO	RBO-2	Temperature	8/11/1997	9:00 AM	3.0	25.5	° C
RBO	RBO-2	Temperature	8/11/1997	9:00 AM	0.0	24.6	° C
RBO	RBO-2	Temperature	8/21/1997	10:31 AM	1.0	23.1	° C
RBO	RBO-2	Temperature	8/21/1997	10:31 AM	9.0	22.9	° C
RBO	RBO-2	Temperature	8/21/1997	1:44 PM	1.0	21.47	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-2	Temperature	8/21/1997	10:31 AM	0.0	23	° C
RBO	RBO-2	Temperature	8/25/1997	10:30 AM	0.0	23.3	° C
RBO	RBO-2	Temperature	8/25/1997	10:30 AM	3.0	22.9	° C
RBO	RBO-2	Temperature	8/25/1997	10:30 AM	5.0	22.7	° C
RBO	RBO-2	Temperature	8/25/1997	10:30 AM	7.0	22.5	° C
RBO	RBO-2	Temperature	8/25/1997	10:30 AM	9.0	22.4	° C
RBO	RBO-2	Temperature	9/15/1997	9:00 AM	1.0	22.8	° C
RBO	RBO-2	Temperature	9/15/1997	9:00 AM	9.0	20	° C
RBO	RBO-2	Temperature	9/15/1997	9:00 AM	5.0	22.6	° C
RBO	RBO-2	Temperature	9/15/1997	9:00 AM	0.0	22.7	° C
RBO	RBO-2	Temperature	9/15/1997	9:00 AM	7.0	22.3	° C
RBO	RBO-2	Temperature	9/28/1997	11:10 AM	0.0	21.1	° C
RBO	RBO-2	Temperature	9/28/1997	11:10 AM	1.0	20.8	° C
RBO	RBO-2	Temperature	9/28/1997	11:10 AM	3.0	20.5	° C
RBO	RBO-2	Temperature	9/28/1997	11:10 AM	7.0	20.4	° C
RBO	RBO-2	Temperature	9/28/1997	11:10 AM	9.0	20.1	° C
RBO	RBO-2	Temperature	10/14/1997	1:35 PM	0.0	18.2	° C
RBO	RBO-2	Temperature	10/14/1997	1:35 PM	3.0	17.8	° C
RBO	RBO-2	Temperature	10/14/1997	1:35 PM	5.0	17.7	° C
RBO	RBO-2	Temperature	10/14/1997	1:35 PM	7.0	17.4	° C
RBO	RBO-2	Temperature	10/23/1997	10:45 AM	7.0	11.9	° C
RBO	RBO-2	Temperature	10/23/1997	10:45 AM	1.0	12.2	° C
RBO	RBO-2	Temperature	10/23/1997	10:45 AM	0.0	12.3	° C
RBO	RBO-2	Temperature	10/23/1997	10:45 AM	8.0	11.8	° C
RBO	RBO-2	Temperature	10/27/1997	8:55 AM	0.0	9.8	° C
RBO	RBO-2	Temperature	11/10/1997	9:15 AM	0.0	7.7	° C
RBO	RBO-2	Temperature	11/10/1997	9:15 AM	7.0	7.6	° C
RBO	RBO-2	Temperature	12/23/1997	10:15 AM	0.0	3.5	° C
RBO	RBO-2	Temperature	1/26/1998	2:44 PM	0.0	3.4	° C
RBO	RBO-2	Temperature	1/26/1998	2:44 PM	1.0	3.3	° C
RBO	RBO-2	Temperature	1/26/1998	2:44 PM	3.0	3.5	° C
RBO	RBO-2	Temperature	2/24/1998	9:50 AM	0.0	6.5	° C
RBO	RBO-2	Temperature	2/24/1998	9:50 AM	3.0	6.4	° C
RBO	RBO-2	Temperature	2/24/1998	9:50 AM	9.0	6.3	° C
RBO	RBO-2	Temperature	3/30/1998	8:55 AM	0.0	15.7	° C
RBO	RBO-2	Temperature	3/30/1998	8:55 AM	5.0	15.6	° C
RBO	RBO-2	Temperature	3/30/1998	8:55 AM	7.0	15.5	° C
RBO	RBO-2	Temperature	4/15/1998	10:15 AM	0.0	14.6	° C
RBO	RBO-2	Temperature	4/15/1998	10:15 AM	7.0	14.5	° C
RBO	RBO-2	Temperature	4/15/1998	10:15 AM	9.0	14.3	° C
RBO	RBO-2	Temperature	4/15/1998	10:15 AM	10.0	13.5	° C
RBO	RBO-2	Temperature	6/3/1998	11:50 AM	0.0	22.3	° C
RBO	RBO-2	Temperature	6/3/1998	11:50 AM	3.0	22.2	° C
RBO	RBO-2	Temperature	6/3/1998	11:50 AM	5.0	22	° C
RBO	RBO-2	Temperature	6/3/1998	11:50 AM	7.0	21.4	° C
RBO	RBO-2	Temperature	6/3/1998	11:50 AM	8.0	20.7	° C
RBO	RBO-2	Temperature	7/27/1998	10:15 AM	0.0	26.9	° C
RBO	RBO-2	Temperature	7/27/1998	10:15 AM	10.0	25.9	° C
RBO	RBO-2	Temperature	7/27/1998	10:15 AM	9.0	26.2	° C
RBO	RBO-2	Temperature	7/27/1998	10:15 AM	3.0	26.7	° C
RBO	RBO-2	Temperature	7/27/1998	10:15 AM	5.0	26.5	° C
RBO	RBO-2	Temperature	7/27/1998	10:15 AM	7.0	26.4	° C
RBO	RBO-2	Temperature	8/13/1998	10:52 AM	0.0	27.2	° C
RBO	RBO-2	Temperature	8/13/1998	10:52 AM	5.0	27	° C
RBO	RBO-2	Temperature	8/13/1998	10:52 AM	7.0	26.8	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-2	Temperature	8/13/1998	10:52 AM	8.0	26.7	° C
RBO	RBO-2	Temperature	10/22/1998	10:02 AM	0.0	14.5	° C
RBO	RBO-2	Temperature	10/22/1998	10:02 AM	3.0	14.4	° C
RBO	RBO-2	Temperature	10/22/1998	10:02 AM	5.0	14.3	° C
RBO	RBO-2	Temperature	10/22/1998	10:02 AM	7.0	14.2	° C
RBO	RBO-2	TKN	4/24/1989	11:15 AM	1.0	0.5	mg/L
RBO	RBO-2	TKN	6/5/1989	11:15 AM	1.0	1.3	mg/L
RBO	RBO-2	TKN	7/5/1989	11:30 AM	1.0	0.6	mg/L
RBO	RBO-2	TKN	8/7/1989	12:15 PM	1.0	1	mg/L
RBO	RBO-2	TKN	10/10/1989	11:00 AM	1.0	1	mg/L
RBO	RBO-2	TKN	4/25/1995	10:30 AM	1.0	0.5	mg/L
RBO	RBO-2	TKN	4/25/1995	10:30 AM	10.0	0.34	mg/L
RBO	RBO-2	TKN	6/14/1995	11:30 AM	1.0	0.77	mg/L
RBO	RBO-2	TKN	7/19/1995	9:00 AM	1.0	0.4	mg/L
RBO	RBO-2	TKN	8/30/1995	9:10 AM	1.0	1.4	mg/L
RBO	RBO-2	TKN	10/6/1995	9:09 AM	1.0	0.9	mg/L
RBO	RBO-2	TKN	4/21/1997	4:45 PM	1.0	0.45	mg/L
RBO	RBO-2	TKN	4/21/1997	6:00 PM	0.0	0.65	mg/L
RBO	RBO-2	TKN	5/3/1997	2:23 PM	1.0	0.98	mg/L
RBO	RBO-2	TKN	5/5/1997	9:45 AM	1.0	0.28	mg/L
RBO	RBO-2	TKN	5/5/1997	9:00 AM	1.0	0.78	mg/L
RBO	RBO-2	TKN	5/28/1997	9:16 AM	1.0	0.83	mg/L
RBO	RBO-2	TKN	5/28/1997	11:15 AM	1.0	0.31	mg/L
RBO	RBO-2	TKN	6/6/1997	2:41 PM	1.0	0.38	mg/L
RBO	RBO-2	TKN	6/7/1997	7:40 AM	1.0	0.27	mg/L
RBO	RBO-2	TKN	6/23/1997	10:45 AM	1.0	0.46	mg/L
RBO	RBO-2	TKN	6/23/1997	11:30 AM	1.0	0.65	mg/L
RBO	RBO-2	TKN	6/30/1997	9:30 AM	1.0	0.5	mg/L
RBO	RBO-2	TKN	6/30/1997	10:50 AM	1.0	0.1	mg/L
RBO	RBO-2	TKN	7/9/1997	8:10 AM	1.0	0.63	mg/L
RBO	RBO-2	TKN	7/22/1997	7:30 AM	1.0	0.98	mg/L
RBO	RBO-2	TKN	7/23/1997	10:45 AM	1.0	0.92	mg/L
RBO	RBO-2	TKN	7/23/1997	12:15 PM	1.0	0.84	mg/L
RBO	RBO-2	TKN	7/28/1997	11:00 AM	1.0	0.64	mg/L
RBO	RBO-2	TKN	7/28/1997	9:30 AM	1.0	0.52	mg/L
RBO	RBO-2	TKN	8/17/1997	8:40 AM	1.0	1	mg/L
RBO	RBO-2	TKN	8/17/1997	4:10 PM	1.0	1.8	mg/L
RBO	RBO-2	TKN	8/21/1997	10:31 AM	1.0	1	mg/L
RBO	RBO-2	TKN	8/21/1997	1:44 PM	1.0	0.76	mg/L
RBO	RBO-2	TKN	8/25/1997	10:30 AM	1.0	1.5	mg/L
RBO	RBO-2	TKN	8/25/1997	11:30 AM	1.0	0.53	mg/L
RBO	RBO-2	TKN	8/25/1997	1:30 PM	1.0	0.92	mg/L
RBO	RBO-2	TKN	9/2/1997	3:45 PM	1.0	1.8	mg/L
RBO	RBO-2	TKN	9/15/1997	10:05 AM	1.0	0.52	mg/L
RBO	RBO-2	TKN	9/15/1997	9:00 AM	1.0	0.9	mg/L
RBO	RBO-2	TKN	9/28/1997	2:10 PM	1.0	1.4	mg/L
RBO	RBO-2	TKN	9/28/1997	11:10 AM	1.0	0.84	mg/L
RBO	RBO-2	TKN	10/23/1997	10:45 AM	1.0	1	mg/L
RBO	RBO-2	TKN	10/27/1997	8:55 AM	1.0	0.94	mg/L
RBO	RBO-2	TKN	10/27/1997	10:10 AM	1.0	1.5	mg/L
RBO	RBO-2	TKN	11/10/1997	9:15 AM	1.0	0.89	mg/L
RBO	RBO-2	TKN	11/10/1997	10:40 AM	1.0	1.41	mg/L
RBO	RBO-2	TKN	12/23/1997	10:15 AM	1.0	0.79	mg/L
RBO	RBO-2	TKN	12/23/1997	11:40 AM	1.0	1	mg/L
RBO	RBO-2	TKN	1/8/1998	8:15 AM	1.0	2.1	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-2	TKN	1/26/1998	2:44 PM	1.0	0.87	mg/L
RBO	RBO-2	TKN	2/24/1998	9:50 AM	1.0	0.77	mg/L
RBO	RBO-2	TKN	3/30/1998	8:55 AM	1.0	1.6	mg/L
RBO	RBO-2	TKN	4/15/1998	10:15 AM	1.0	1.7	mg/L
RBO	RBO-2	TKN	6/3/1998	11:50 AM	1.0	1.6	mg/L
RBO	RBO-2	TKN	7/27/1998	10:15 AM	1.0	0.66	mg/L
RBO	RBO-2	TKN	8/13/1998	10:52 AM	1.0	0.95	mg/L
RBO	RBO-2	TKN	10/22/1998	10:02 AM	1.0	1	mg/L
RBO	RBO-2	TKN	4/25/2001	12:00 AM	1.0	1.51	mg/L
RBO	RBO-2	TKN	6/7/2001	12:00 AM	1.0	1.12	mg/L
RBO	RBO-2	TKN	7/11/2001	12:00 AM	1.0	1.2	mg/L
RBO	RBO-2	TKN	8/20/2001	12:00 AM	1.0	2.17	mg/L
RBO	RBO-2	TKN	10/30/2001	12:00 AM	1.0	2.73	mg/L
RBO	RBO-2	Total Phosphorus	4/24/1989	11:15 AM	1.0	0.01	mg/L
RBO	RBO-2	Total Phosphorus	6/5/1989	11:15 AM	1.0	0.11	mg/L
RBO	RBO-2	Total Phosphorus	7/5/1989	11:30 AM	1.0	0.03	mg/L
RBO	RBO-2	Total Phosphorus	8/7/1989	12:15 PM	1.0	0.05	mg/L
RBO	RBO-2	Total Phosphorus	10/10/1989	11:00 AM	1.0	0.08	mg/L
RBO	RBO-2	Total Phosphorus	4/25/1995	10:30 AM	1.0	0.02	mg/L
RBO	RBO-2	Total Phosphorus	4/25/1995	10:30 AM	10.0	0.02	mg/L
RBO	RBO-2	Total Phosphorus	6/14/1995	11:30 AM	1.0	0.03	mg/L
RBO	RBO-2	Total Phosphorus	7/19/1995	9:00 AM	1.0	0.04	mg/L
RBO	RBO-2	Total Phosphorus	8/30/1995	9:10 AM	1.0	0.06	mg/L
RBO	RBO-2	Total Phosphorus	10/6/1995	9:09 AM	1.0	0.08	mg/L
RBO	RBO-2	Total Phosphorus	4/21/1997	4:45 PM	1.0	0.02	mg/L
RBO	RBO-2	Total Phosphorus	4/21/1997	6:00 PM	0.0	0.02	mg/L
RBO	RBO-2	Total Phosphorus	5/3/1997	2:23 PM	1.0	0.09	mg/L
RBO	RBO-2	Total Phosphorus	5/5/1997	9:00 AM	1.0	0.05	mg/L
RBO	RBO-2	Total Phosphorus	5/5/1997	9:45 AM	1.0	0.03	mg/L
RBO	RBO-2	Total Phosphorus	5/28/1997	11:15 AM	1.0	0.02	mg/L
RBO	RBO-2	Total Phosphorus	5/28/1997	9:16 AM	1.0	0.05	mg/L
RBO	RBO-2	Total Phosphorus	6/6/1997	2:41 PM	1.0	0.03	mg/L
RBO	RBO-2	Total Phosphorus	6/7/1997	7:40 AM	1.0	0.03	mg/L
RBO	RBO-2	Total Phosphorus	6/23/1997	10:45 AM	1.0	0.02	mg/L
RBO	RBO-2	Total Phosphorus	6/23/1997	11:30 AM	1.0	0.03	mg/L
RBO	RBO-2	Total Phosphorus	6/30/1997	9:30 AM	1.0	0.04	mg/L
RBO	RBO-2	Total Phosphorus	6/30/1997	10:50 AM	1.0	0.01	mg/L
RBO	RBO-2	Total Phosphorus	7/9/1997	8:10 AM	1.0	0.03	mg/L
RBO	RBO-2	Total Phosphorus	7/22/1997	7:30 AM	1.0	0.07	mg/L
RBO	RBO-2	Total Phosphorus	7/23/1997	12:15 PM	1.0	0.17	mg/L
RBO	RBO-2	Total Phosphorus	7/23/1997	10:45 AM	1.0	0.08	mg/L
RBO	RBO-2	Total Phosphorus	7/28/1997	11:00 AM	1.0	0.09	mg/L
RBO	RBO-2	Total Phosphorus	7/28/1997	9:30 AM	1.0	0.04	mg/L
RBO	RBO-2	Total Phosphorus	8/17/1997	8:40 AM	1.0	0.28	mg/L
RBO	RBO-2	Total Phosphorus	8/17/1997	4:10 PM	1.0	0.46	mg/L
RBO	RBO-2	Total Phosphorus	8/21/1997	10:31 AM	1.0	0.1	mg/L
RBO	RBO-2	Total Phosphorus	8/21/1997	1:44 PM	1.0	0.31	mg/L
RBO	RBO-2	Total Phosphorus	8/25/1997	11:30 AM	1.0	0.16	mg/L
RBO	RBO-2	Total Phosphorus	8/25/1997	1:30 PM	1.0	0.17	mg/L
RBO	RBO-2	Total Phosphorus	8/25/1997	10:30 AM	1.0	0.24	mg/L
RBO	RBO-2	Total Phosphorus	9/2/1997	3:45 PM	1.0	0.25	mg/L
RBO	RBO-2	Total Phosphorus	9/15/1997	9:00 AM	1.0	0.06	mg/L
RBO	RBO-2	Total Phosphorus	9/15/1997	10:05 AM	1.0	0.21	mg/L
RBO	RBO-2	Total Phosphorus	9/28/1997	11:10 AM	1.0	0.09	mg/L
RBO	RBO-2	Total Phosphorus	9/28/1997	2:10 PM	1.0	0.12	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-2	Total Phosphorus	10/23/1997	10:45 AM	1.0	0.08	mg/L
RBO	RBO-2	Total Phosphorus	10/27/1997	8:55 AM	1.0	0.07	mg/L
RBO	RBO-2	Total Phosphorus	10/27/1997	10:10 AM	1.0	0.08	mg/L
RBO	RBO-2	Total Phosphorus	11/10/1997	9:15 AM	1.0	0.07	mg/L
RBO	RBO-2	Total Phosphorus	11/10/1997	10:40 AM	1.0	0.08	mg/L
RBO	RBO-2	Total Phosphorus	12/23/1997	10:15 AM	1.0	0.06	mg/L
RBO	RBO-2	Total Phosphorus	12/23/1997	11:40 AM	1.0	0.22	mg/L
RBO	RBO-2	Total Phosphorus	1/8/1998	8:15 AM	1.0	0.33	mg/L
RBO	RBO-2	Total Phosphorus	1/26/1998	2:44 PM	1.0	0.04	mg/L
RBO	RBO-2	Total Phosphorus	2/24/1998	9:50 AM	1.0	0.04	mg/L
RBO	RBO-2	Total Phosphorus	3/30/1998	8:55 AM	1.0	0.35	mg/L
RBO	RBO-2	Total Phosphorus	4/15/1998	10:15 AM	1.0	0.17	mg/L
RBO	RBO-2	Total Phosphorus	6/3/1998	11:50 AM	1.0	0.07	mg/L
RBO	RBO-2	Total Phosphorus	7/27/1998	10:15 AM	1.0	0.02	mg/L
RBO	RBO-2	Total Phosphorus	8/13/1998	10:52 AM	1.0	0.1	mg/L
RBO	RBO-2	Total Phosphorus	10/22/1998	10:02 AM	1.0	0.06	mg/L
RBO	RBO-2	Total Phosphorus	4/25/2001	12:00 AM	1.0	0.07	mg/L
RBO	RBO-2	Total Phosphorus	6/7/2001	12:00 AM	1.0	0.08	mg/L
RBO	RBO-2	Total Phosphorus	7/11/2001	12:00 AM	1.0	0.07	mg/L
RBO	RBO-2	Total Phosphorus	8/20/2001	12:00 AM	1.0	0.14	mg/L
RBO	RBO-2	Total Phosphorus	10/30/2001	12:00 AM	1.0	0.09	mg/L
RBO	RBO-3	Chlorophyll-a	4/24/1989	11:45 AM	7.0	0	µg/L
RBO	RBO-3	Chlorophyll-a	6/5/1989	11:45 AM	3.0	54.56	µg/L
RBO	RBO-3	Chlorophyll-a	7/5/1989	12:00 PM	4.0	21.14	µg/L
RBO	RBO-3	Chlorophyll-a	8/7/1989	12:30 PM	4.0	43.56	µg/L
RBO	RBO-3	Chlorophyll-a	10/10/1989	11:30 AM	4.0	22.48	µg/L
RBO	RBO-3	Chlorophyll-a	4/25/1995	11:00 AM	4.0	5.34	µg/L
RBO	RBO-3	Chlorophyll-a	6/14/1995	12:00 PM	4.0	18.69	µg/L
RBO	RBO-3	Chlorophyll-a	7/19/1995	9:30 AM	4.0	14.83	µg/L
RBO	RBO-3	Chlorophyll-a	8/30/1995	9:20 AM	3.0	64.32	µg/L
RBO	RBO-3	Chlorophyll-a	10/6/1995	9:30 AM	4.0	21.11	µg/L
RBO	RBO-3	Chlorophyll-a	4/14/1997	10:10 AM	4.0	2.67	µg/L
RBO	RBO-3	Chlorophyll-a	4/21/1997	5:00 PM	2.0	16.14	µg/L
RBO	RBO-3	Chlorophyll-a	5/5/1997	9:16 AM	3.0	6.68	µg/L
RBO	RBO-3	Chlorophyll-a	5/28/1997	9:38 AM	2.0	21.36	µg/L
RBO	RBO-3	Chlorophyll-a	6/23/1997	11:00 AM	3.0	33.59	µg/L
RBO	RBO-3	Chlorophyll-a	6/30/1997	9:55 AM	3.0	12.46	µg/L
RBO	RBO-3	Chlorophyll-a	7/23/1997	11:15 AM	1.0	68.09	µg/L
RBO	RBO-3	Chlorophyll-a	7/28/1997	10:15 AM	2.0	82.77	µg/L
RBO	RBO-3	Chlorophyll-a	8/21/1997	10:55 AM	2.0	149.28	µg/L
RBO	RBO-3	Chlorophyll-a	8/25/1997	10:55 AM	2.0	133.5	µg/L
RBO	RBO-3	Chlorophyll-a	9/15/1997	9:20 AM	2.0	77.43	µg/L
RBO	RBO-3	Chlorophyll-a	9/28/1997	11:30 AM	2.0	58.74	µg/L
RBO	RBO-3	Chlorophyll-a	10/23/1997	11:00 AM	2.0	42.28	µg/L
RBO	RBO-3	Chlorophyll-a	10/27/1997	9:20 AM	3.0	42.72	µg/L
RBO	RBO-3	Chlorophyll-a	11/10/1997	9:40 AM	3.0	61.41	µg/L
RBO	RBO-3	Chlorophyll-a	12/23/1997	10:42 AM	3.0	24.03	µg/L
RBO	RBO-3	Chlorophyll-a	1/26/1998	1:55 PM	3.0	2.67	µg/L
RBO	RBO-3	Chlorophyll-a	2/24/1998	10:15 AM	3.0	5.34	µg/L
RBO	RBO-3	Chlorophyll-a	3/30/1998	9:15 AM	1.0	5.34	µg/L
RBO	RBO-3	Chlorophyll-a	4/15/1998	10:45 AM	2.0	5.34	µg/L
RBO	RBO-3	Chlorophyll-a	6/3/1998	12:20 PM	2.0	45.39	µg/L
RBO	RBO-3	Chlorophyll-a	7/27/1998	10:45 AM	2.0	26.7	µg/L
RBO	RBO-3	Chlorophyll-a	10/22/1998	10:22 AM	3.0	37.1	µg/L
RBO	RBO-3	Chlorophyll-a	4/25/2001	12:00 AM	2.0	106	µg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-3	Chlorophyll-a	6/7/2001	12:00 AM	3.0	15.8	µg/L
RBO	RBO-3	Chlorophyll-a	7/11/2001	12:00 AM	3.0	80.2	µg/L
RBO	RBO-3	Chlorophyll-a	8/20/2001	12:00 AM	1.0	80.1	µg/L
RBO	RBO-3	Chlorophyll-a	10/30/2001	12:00 AM	4.0	24.2	µg/L
RBO	RBO-3	Dissolved Oxygen	4/24/1989	11:45 AM	0.0	13.1	mg/L
RBO	RBO-3	Dissolved Oxygen	4/24/1989	11:45 AM	1.0	12.4	mg/L
RBO	RBO-3	Dissolved Oxygen	4/24/1989	11:45 AM	3.0	11.7	mg/L
RBO	RBO-3	Dissolved Oxygen	4/24/1989	11:45 AM	5.0	11	mg/L
RBO	RBO-3	Dissolved Oxygen	6/5/1989	11:45 AM	5.0	7.3	mg/L
RBO	RBO-3	Dissolved Oxygen	6/5/1989	11:45 AM	6.0	6.2	mg/L
RBO	RBO-3	Dissolved Oxygen	6/5/1989	11:45 AM	1.0	11.8	mg/L
RBO	RBO-3	Dissolved Oxygen	6/5/1989	11:45 AM	0.0	12.4	mg/L
RBO	RBO-3	Dissolved Oxygen	6/5/1989	11:45 AM	3.0	6.5	mg/L
RBO	RBO-3	Dissolved Oxygen	7/5/1989	12:00 PM	3.0	6.3	mg/L
RBO	RBO-3	Dissolved Oxygen	7/5/1989	12:00 PM	5.0	4.9	mg/L
RBO	RBO-3	Dissolved Oxygen	7/5/1989	12:00 PM	6.0	4	mg/L
RBO	RBO-3	Dissolved Oxygen	7/5/1989	12:00 PM	0.0	7	mg/L
RBO	RBO-3	Dissolved Oxygen	8/7/1989	12:30 PM	1.0	8.5	mg/L
RBO	RBO-3	Dissolved Oxygen	8/7/1989	12:30 PM	6.0	5.7	mg/L
RBO	RBO-3	Dissolved Oxygen	8/7/1989	12:30 PM	3.0	8.1	mg/L
RBO	RBO-3	Dissolved Oxygen	8/7/1989	12:30 PM	0.0	8.7	mg/L
RBO	RBO-3	Dissolved Oxygen	8/7/1989	12:30 PM	5.0	6.2	mg/L
RBO	RBO-3	Dissolved Oxygen	10/10/1989	11:30 AM	0.0	10.6	mg/L
RBO	RBO-3	Dissolved Oxygen	10/10/1989	11:30 AM	3.0	10.5	mg/L
RBO	RBO-3	Dissolved Oxygen	10/10/1989	11:30 AM	5.0	10.4	mg/L
RBO	RBO-3	Dissolved Oxygen	10/10/1989	11:30 AM	6.0	10.1	mg/L
RBO	RBO-3	Dissolved Oxygen	4/25/1995	11:00 AM	4.0	8.3	mg/L
RBO	RBO-3	Dissolved Oxygen	4/25/1995	11:00 AM	5.0	7.8	mg/L
RBO	RBO-3	Dissolved Oxygen	4/25/1995	11:00 AM	1.0	10.3	mg/L
RBO	RBO-3	Dissolved Oxygen	4/25/1995	11:00 AM	0.0	10.2	mg/L
RBO	RBO-3	Dissolved Oxygen	4/25/1995	11:00 AM	3.0	9.2	mg/L
RBO	RBO-3	Dissolved Oxygen	6/14/1995	12:00 PM	4.0	8.3	mg/L
RBO	RBO-3	Dissolved Oxygen	6/14/1995	12:00 PM	5.0	7.6	mg/L
RBO	RBO-3	Dissolved Oxygen	6/14/1995	12:00 PM	3.0	10.7	mg/L
RBO	RBO-3	Dissolved Oxygen	6/14/1995	12:00 PM	2.0	12.8	mg/L
RBO	RBO-3	Dissolved Oxygen	6/14/1995	12:00 PM	1.0	11.9	mg/L
RBO	RBO-3	Dissolved Oxygen	6/14/1995	12:00 PM	0.0	11.6	mg/L
RBO	RBO-3	Dissolved Oxygen	7/19/1995	9:30 AM	2.0	5.3	mg/L
RBO	RBO-3	Dissolved Oxygen	7/19/1995	9:30 AM	4.0	4.7	mg/L
RBO	RBO-3	Dissolved Oxygen	7/19/1995	9:30 AM	5.0	4.8	mg/L
RBO	RBO-3	Dissolved Oxygen	7/19/1995	9:30 AM	0.0	5.2	mg/L
RBO	RBO-3	Dissolved Oxygen	8/30/1995	9:20 AM	4.0	0.8	mg/L
RBO	RBO-3	Dissolved Oxygen	8/30/1995	9:20 AM	3.0	2.1	mg/L
RBO	RBO-3	Dissolved Oxygen	8/30/1995	9:20 AM	5.0	0.6	mg/L
RBO	RBO-3	Dissolved Oxygen	8/30/1995	9:20 AM	1.0	4.4	mg/L
RBO	RBO-3	Dissolved Oxygen	8/30/1995	9:20 AM	0.0	3.9	mg/L
RBO	RBO-3	Dissolved Oxygen	8/30/1995	9:20 AM	2.0	4	mg/L
RBO	RBO-3	Dissolved Oxygen	10/6/1995	9:30 AM	1.0	5.1	mg/L
RBO	RBO-3	Dissolved Oxygen	10/6/1995	9:30 AM	4.0	4.7	mg/L
RBO	RBO-3	Dissolved Oxygen	10/6/1995	9:30 AM	5.0	4	mg/L
RBO	RBO-3	Dissolved Oxygen	10/6/1995	9:30 AM	0.0	4.9	mg/L
RBO	RBO-3	Dissolved Oxygen	4/14/1997	10:10 AM	3.0	11.4	mg/L
RBO	RBO-3	Dissolved Oxygen	4/14/1997	10:10 AM	0.0	11.5	mg/L
RBO	RBO-3	Dissolved Oxygen	4/14/1997	10:10 AM	1.0	11.6	mg/L
RBO	RBO-3	Dissolved Oxygen	4/21/1997	5:15 PM	1.0	16.2	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-3	Dissolved Oxygen	4/21/1997	5:00 PM	0.0	10	mg/L
RBO	RBO-3	Dissolved Oxygen	4/21/1997	5:00 PM	3.0	9.9	mg/L
RBO	RBO-3	Dissolved Oxygen	5/5/1997	9:16 AM	0.0	10.1	mg/L
RBO	RBO-3	Dissolved Oxygen	5/5/1997	9:16 AM	3.0	10.2	mg/L
RBO	RBO-3	Dissolved Oxygen	5/28/1997	9:38 AM	3.0	8.4	mg/L
RBO	RBO-3	Dissolved Oxygen	5/28/1997	9:38 AM	0.0	9.3	mg/L
RBO	RBO-3	Dissolved Oxygen	5/28/1997	9:38 AM	1.0	8.7	mg/L
RBO	RBO-3	Dissolved Oxygen	6/11/1997	11:20 AM	5.0	8.6	mg/L
RBO	RBO-3	Dissolved Oxygen	6/11/1997	11:20 AM	3.0	7.4	mg/L
RBO	RBO-3	Dissolved Oxygen	6/11/1997	11:20 AM	1.0	10.2	mg/L
RBO	RBO-3	Dissolved Oxygen	6/11/1997	11:20 AM	0.0	10.6	mg/L
RBO	RBO-3	Dissolved Oxygen	6/23/1997	11:00 AM	0.0	10.1	mg/L
RBO	RBO-3	Dissolved Oxygen	6/23/1997	11:00 AM	3.0	8.7	mg/L
RBO	RBO-3	Dissolved Oxygen	6/23/1997	11:00 AM	4.0	8.1	mg/L
RBO	RBO-3	Dissolved Oxygen	6/23/1997	2:00 PM	1.0	13.6	mg/L
RBO	RBO-3	Dissolved Oxygen	6/30/1997	9:55 AM	1.0	8.5	mg/L
RBO	RBO-3	Dissolved Oxygen	6/30/1997	9:55 AM	3.0	8.2	mg/L
RBO	RBO-3	Dissolved Oxygen	6/30/1997	9:55 AM	0.0	8.8	mg/L
RBO	RBO-3	Dissolved Oxygen	7/14/1997	9:15 AM	1.0	9.1	mg/L
RBO	RBO-3	Dissolved Oxygen	7/14/1997	9:15 AM	3.0	8.9	mg/L
RBO	RBO-3	Dissolved Oxygen	7/14/1997	9:15 AM	0.0	9.2	mg/L
RBO	RBO-3	Dissolved Oxygen	7/23/1997	11:45 AM	1.0	2.9	mg/L
RBO	RBO-3	Dissolved Oxygen	7/23/1997	11:15 AM	0.0	7.8	mg/L
RBO	RBO-3	Dissolved Oxygen	7/23/1997	11:15 AM	1.0	7.7	mg/L
RBO	RBO-3	Dissolved Oxygen	7/23/1997	11:15 AM	2.0	7.2	mg/L
RBO	RBO-3	Dissolved Oxygen	7/28/1997	10:15 AM	3.0	7.5	mg/L
RBO	RBO-3	Dissolved Oxygen	7/28/1997	10:15 AM	0.0	8.2	mg/L
RBO	RBO-3	Dissolved Oxygen	7/28/1997	10:15 AM	1.0	7.9	mg/L
RBO	RBO-3	Dissolved Oxygen	8/11/1997	9:30 AM	0.0	8.2	mg/L
RBO	RBO-3	Dissolved Oxygen	8/11/1997	9:30 AM	1.0	8	mg/L
RBO	RBO-3	Dissolved Oxygen	8/11/1997	9:30 AM	3.0	6.2	mg/L
RBO	RBO-3	Dissolved Oxygen	8/21/1997	10:55 AM	0.0	9.5	mg/L
RBO	RBO-3	Dissolved Oxygen	8/21/1997	10:55 AM	1.0	9.4	mg/L
RBO	RBO-3	Dissolved Oxygen	8/21/1997	2:00 PM	1.0	10.13	mg/L
RBO	RBO-3	Dissolved Oxygen	8/25/1997	10:55 AM	0.0	9.5	mg/L
RBO	RBO-3	Dissolved Oxygen	8/25/1997	10:55 AM	1.0	10.1	mg/L
RBO	RBO-3	Dissolved Oxygen	8/25/1997	10:55 AM	3.0	7	mg/L
RBO	RBO-3	Dissolved Oxygen	9/15/1997	9:20 AM	0.0	7.4	mg/L
RBO	RBO-3	Dissolved Oxygen	9/15/1997	9:20 AM	1.0	6.5	mg/L
RBO	RBO-3	Dissolved Oxygen	9/15/1997	9:20 AM	3.0	6	mg/L
RBO	RBO-3	Dissolved Oxygen	9/28/1997	11:30 AM	0.0	9.4	mg/L
RBO	RBO-3	Dissolved Oxygen	9/28/1997	11:30 AM	3.0	8.8	mg/L
RBO	RBO-3	Dissolved Oxygen	9/28/1997	11:30 AM	1.0	9.1	mg/L
RBO	RBO-3	Dissolved Oxygen	10/14/1997	1:53 PM	0.0	9.8	mg/L
RBO	RBO-3	Dissolved Oxygen	10/14/1997	1:53 PM	1.0	9.9	mg/L
RBO	RBO-3	Dissolved Oxygen	10/23/1997	11:00 AM	0.0	11.7	mg/L
RBO	RBO-3	Dissolved Oxygen	10/23/1997	11:00 AM	1.0	11.4	mg/L
RBO	RBO-3	Dissolved Oxygen	10/23/1997	11:00 AM	3.0	11.2	mg/L
RBO	RBO-3	Dissolved Oxygen	10/27/1997	9:20 AM	0.0	11.1	mg/L
RBO	RBO-3	Dissolved Oxygen	10/27/1997	9:20 AM	3.0	11	mg/L
RBO	RBO-3	Dissolved Oxygen	11/10/1997	9:40 AM	1.0	11.9	mg/L
RBO	RBO-3	Dissolved Oxygen	11/10/1997	9:40 AM	3.0	11.7	mg/L
RBO	RBO-3	Dissolved Oxygen	11/10/1997	9:40 AM	0.0	12.2	mg/L
RBO	RBO-3	Dissolved Oxygen	12/23/1997	10:42 AM	0.0	12.7	mg/L
RBO	RBO-3	Dissolved Oxygen	12/23/1997	10:42 AM	1.0	12.5	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-3	Dissolved Oxygen	1/26/1998	1:55 PM	1.0	13.2	mg/L
RBO	RBO-3	Dissolved Oxygen	1/26/1998	1:55 PM	3.0	12.6	mg/L
RBO	RBO-3	Dissolved Oxygen	1/26/1998	1:55 PM	0.0	14.9	mg/L
RBO	RBO-3	Dissolved Oxygen	2/24/1998	10:15 AM	0.0	12.7	mg/L
RBO	RBO-3	Dissolved Oxygen	3/30/1998	9:15 AM	0.0	8.1	mg/L
RBO	RBO-3	Dissolved Oxygen	4/15/1998	10:45 AM	0.0	8.9	mg/L
RBO	RBO-3	Dissolved Oxygen	4/15/1998	10:45 AM	3.0	8.7	mg/L
RBO	RBO-3	Dissolved Oxygen	6/3/1998	12:20 PM	0.0	9.3	mg/L
RBO	RBO-3	Dissolved Oxygen	6/3/1998	12:20 PM	1.0	9.1	mg/L
RBO	RBO-3	Dissolved Oxygen	7/27/1998	10:45 AM	0.0	10.1	mg/L
RBO	RBO-3	Dissolved Oxygen	7/27/1998	10:45 AM	1.0	10.4	mg/L
RBO	RBO-3	Dissolved Oxygen	7/27/1998	10:45 AM	3.0	9.5	mg/L
RBO	RBO-3	Dissolved Oxygen	8/13/1998	11:27 AM	0.0	9	mg/L
RBO	RBO-3	Dissolved Oxygen	8/13/1998	11:27 AM	1.0	8.7	mg/L
RBO	RBO-3	Dissolved Oxygen	10/22/1998	10:22 AM	0.0	9.5	mg/L
RBO	RBO-3	Dissolved Phosphorus	4/24/1989	11:45 AM	1.0	0	mg/L
RBO	RBO-3	Dissolved Phosphorus	6/5/1989	11:45 AM	1.0	0.13	mg/L
RBO	RBO-3	Dissolved Phosphorus	7/5/1989	12:00 PM	1.0	0.01	mg/L
RBO	RBO-3	Dissolved Phosphorus	8/7/1989	12:30 PM	1.0	0.01	mg/L
RBO	RBO-3	Dissolved Phosphorus	10/10/1989	11:30 AM	1.0	0.04	mg/L
RBO	RBO-3	Dissolved Phosphorus	4/25/1995	11:00 AM	1.0	0	mg/L
RBO	RBO-3	Dissolved Phosphorus	6/14/1995	12:00 PM	1.0	0	mg/L
RBO	RBO-3	Dissolved Phosphorus	7/19/1995	9:30 AM	1.0	0.02	mg/L
RBO	RBO-3	Dissolved Phosphorus	8/30/1995	9:20 AM	1.0	0.01	mg/L
RBO	RBO-3	Dissolved Phosphorus	10/6/1995	9:30 AM	1.0	0.02	mg/L
RBO	RBO-3	Dissolved Phosphorus	4/21/1997	5:15 PM	1.0	0.01	mg/L
RBO	RBO-3	Dissolved Phosphorus	4/21/1997	5:00 PM	1.0	0.01	mg/L
RBO	RBO-3	Dissolved Phosphorus	6/23/1997	11:00 AM	1.0	0.01	mg/L
RBO	RBO-3	Dissolved Phosphorus	6/23/1997	2:00 PM	1.0	0.03	mg/L
RBO	RBO-3	Dissolved Phosphorus	7/23/1997	11:15 AM	1.0	0.01	mg/L
RBO	RBO-3	Dissolved Phosphorus	7/23/1997	11:45 AM	1.0	0.02	mg/L
RBO	RBO-3	Dissolved Phosphorus	8/21/1997	10:55 AM	1.0	0.02	mg/L
RBO	RBO-3	Dissolved Phosphorus	8/21/1997	2:00 PM	1.0	0.05	mg/L
RBO	RBO-3	Dissolved Phosphorus	10/23/1997	11:00 AM	1.0	0.02	mg/L
RBO	RBO-3	Dissolved Phosphorus	4/15/1998	10:45 AM	1.0	0.02	mg/L
RBO	RBO-3	Dissolved Phosphorus	6/3/1998	12:20 PM	1.0	0.01	mg/L
RBO	RBO-3	Dissolved Phosphorus	7/27/1998	10:45 AM	1.0	0.01	mg/L
RBO	RBO-3	Dissolved Phosphorus	8/13/1998	11:27 AM	1.0	0.02	mg/L
RBO	RBO-3	Dissolved Phosphorus	10/22/1998	10:22 AM	1.0	0.03	mg/L
RBO	RBO-3	Dissolved Phosphorus	4/25/2001	12:00 AM	1.0	0.02	mg/L
RBO	RBO-3	Dissolved Phosphorus	6/7/2001	12:00 AM	1.0	0.03	mg/L
RBO	RBO-3	Dissolved Phosphorus	7/11/2001	12:00 AM	1.0	0.05	mg/L
RBO	RBO-3	Dissolved Phosphorus	8/20/2001	12:00 AM	1.0	0.04	mg/L
RBO	RBO-3	Dissolved Phosphorus	10/30/2001	12:00 AM	1.0	0.01	mg/L
RBO	RBO-3	Nitrate + Nitrite	4/24/1989	11:45 AM	1.0	14	mg/L
RBO	RBO-3	Nitrate + Nitrite	6/5/1989	11:45 AM	1.0	16.75	mg/L
RBO	RBO-3	Nitrate + Nitrite	7/5/1989	12:00 PM	1.0	9.8	mg/L
RBO	RBO-3	Nitrate + Nitrite	8/7/1989	12:30 PM	1.0	2.7	mg/L
RBO	RBO-3	Nitrate + Nitrite	10/10/1989	11:30 AM	1.0	0.8	mg/L
RBO	RBO-3	Nitrate + Nitrite	5/8/1990	8:30 AM	1.0	12	mg/L
RBO	RBO-3	Nitrate + Nitrite	6/4/1990	11:00 AM	1.0	17	mg/L
RBO	RBO-3	Nitrate + Nitrite	7/2/1990	10:30 AM	1.0	12	mg/L
RBO	RBO-3	Nitrate + Nitrite	8/1/1990	10:45 AM	1.0	5.1	mg/L
RBO	RBO-3	Nitrate + Nitrite	9/10/1990	11:00 AM	1.0	1	mg/L
RBO	RBO-3	Nitrate + Nitrite	10/2/1990	2:40 PM	1.0	0.24	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-3	Nitrate + Nitrite	5/31/1993	11:45 AM	1.0	6.6	mg/L
RBO	RBO-3	Nitrate + Nitrite	7/27/1993	2:00 PM	1.0	7.4	mg/L
RBO	RBO-3	Nitrate + Nitrite	8/30/1993	11:40 AM	1.0	10	mg/L
RBO	RBO-3	Nitrate + Nitrite	9/28/1993	9:15 AM	1.0	6.8	mg/L
RBO	RBO-3	Nitrate + Nitrite	10/25/1993	11:45 AM	1.0	6.6	mg/L
RBO	RBO-3	Nitrate + Nitrite	4/25/1995	11:00 AM	1.0	8.5	mg/L
RBO	RBO-3	Nitrate + Nitrite	6/14/1995	12:00 PM	1.0	9.5	mg/L
RBO	RBO-3	Nitrate + Nitrite	7/19/1995	9:30 AM	1.0	0.77	mg/L
RBO	RBO-3	Nitrate + Nitrite	8/30/1995	9:20 AM	1.0	0.02	mg/L
RBO	RBO-3	Nitrate + Nitrite	10/6/1995	9:30 AM	1.0	0.06	mg/L
RBO	RBO-3	Nitrate + Nitrite	4/21/1997	5:15 PM	1.0	10.1	mg/L
RBO	RBO-3	Nitrate + Nitrite	4/21/1997	5:00 PM	1.0	9.1	mg/L
RBO	RBO-3	Nitrate + Nitrite	5/3/1997	2:30 PM	1.0	12.4	mg/L
RBO	RBO-3	Nitrate + Nitrite	5/5/1997	9:16 AM	1.0	11.7	mg/L
RBO	RBO-3	Nitrate + Nitrite	5/5/1997	9:55 AM	1.0	12.9	mg/L
RBO	RBO-3	Nitrate + Nitrite	5/28/1997	9:38 AM	1.0	8.8	mg/L
RBO	RBO-3	Nitrate + Nitrite	5/28/1997	11:30 AM	1.0	12.3	mg/L
RBO	RBO-3	Nitrate + Nitrite	6/6/1997	2:48 PM	1.0	12	mg/L
RBO	RBO-3	Nitrate + Nitrite	6/7/1997	7:50 AM	1.0	16.4	mg/L
RBO	RBO-3	Nitrate + Nitrite	6/23/1997	11:00 AM	1.0	9.8	mg/L
RBO	RBO-3	Nitrate + Nitrite	6/23/1997	2:00 PM	1.0	12.7	mg/L
RBO	RBO-3	Nitrate + Nitrite	6/30/1997	11:00 AM	1.0	11	mg/L
RBO	RBO-3	Nitrate + Nitrite	6/30/1997	9:55 AM	1.0	8.2	mg/L
RBO	RBO-3	Nitrate + Nitrite	7/9/1997	8:20 AM	1.0	6.5	mg/L
RBO	RBO-3	Nitrate + Nitrite	7/22/1997	7:40 AM	1.0	0.01	mg/L
RBO	RBO-3	Nitrate + Nitrite	7/23/1997	11:15 AM	1.0	2.2	mg/L
RBO	RBO-3	Nitrate + Nitrite	7/23/1997	11:45 AM	1.0	0.11	mg/L
RBO	RBO-3	Nitrate + Nitrite	7/28/1997	11:10 AM	1.0	0.01	mg/L
RBO	RBO-3	Nitrate + Nitrite	7/28/1997	10:15 AM	1.0	1.51	mg/L
RBO	RBO-3	Nitrate + Nitrite	8/17/1997	8:50 AM	1.0	0.05	mg/L
RBO	RBO-3	Nitrate + Nitrite	8/17/1997	4:20 PM	1.0	0.01	mg/L
RBO	RBO-3	Nitrate + Nitrite	8/21/1997	10:55 AM	1.0	0.11	mg/L
RBO	RBO-3	Nitrate + Nitrite	8/21/1997	2:00 PM	1.0	0.06	mg/L
RBO	RBO-3	Nitrate + Nitrite	8/25/1997	10:55 AM	1.0	0.08	mg/L
RBO	RBO-3	Nitrate + Nitrite	9/2/1997	3:55 PM	1.0	0.1	mg/L
RBO	RBO-3	Nitrate + Nitrite	9/3/1997	8:05 AM	1.0	0.04	mg/L
RBO	RBO-3	Nitrate + Nitrite	9/3/1997	7:55 AM	1.0	0.09	mg/L
RBO	RBO-3	Nitrate + Nitrite	9/15/1997	9:20 AM	1.0	0.11	mg/L
RBO	RBO-3	Nitrate + Nitrite	9/28/1997	11:30 AM	1.0	0.01	mg/L
RBO	RBO-3	Nitrate + Nitrite	10/23/1997	11:00 AM	1.0	0.01	mg/L
RBO	RBO-3	Nitrate + Nitrite	10/27/1997	9:20 AM	1.0	0.01	mg/L
RBO	RBO-3	Nitrate + Nitrite	11/10/1997	9:40 AM	1.0	0.01	mg/L
RBO	RBO-3	Nitrate + Nitrite	12/23/1997	10:42 AM	1.0	0.01	mg/L
RBO	RBO-3	Nitrate + Nitrite	1/8/1998	8:25 AM	1.0	8.3	mg/L
RBO	RBO-3	Nitrate + Nitrite	1/26/1998	1:55 PM	1.0	3.7	mg/L
RBO	RBO-3	Nitrate + Nitrite	2/24/1998	10:15 AM	1.0	10.3	mg/L
RBO	RBO-3	Nitrate + Nitrite	3/30/1998	9:15 AM	1.0	10.9	mg/L
RBO	RBO-3	Nitrate + Nitrite	4/15/1998	10:45 AM	1.0	13.25	mg/L
RBO	RBO-3	Nitrate + Nitrite	5/30/1998	3:30 PM	1.0	13.5	mg/L
RBO	RBO-3	Nitrate + Nitrite	6/3/1998	12:20 PM	1.0	15.03	mg/L
RBO	RBO-3	Nitrate + Nitrite	7/27/1998	10:45 AM	1.0	6.34	mg/L
RBO	RBO-3	Nitrate + Nitrite	8/13/1998	11:27 AM	1.0	2.78	mg/L
RBO	RBO-3	Nitrate + Nitrite	10/22/1998	10:22 AM	1.0	0.01	mg/L
RBO	RBO-3	Nitrate + Nitrite	4/25/2001	12:00 AM	1.0	8	mg/L
RBO	RBO-3	Nitrate + Nitrite	6/7/2001	12:00 AM	1.0	12	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-3	Nitrate + Nitrite	7/11/2001	12:00 AM	1.0	1.67	mg/L
RBO	RBO-3	Nitrate + Nitrite	8/20/2001	12:00 AM	1.0	0.01	mg/L
RBO	RBO-3	Nitrate + Nitrite	10/30/2001	12:00 AM	1.0	6.5	mg/L
RBO	RBO-3	Suspended Solids	4/24/1989	11:45 AM	1.0	6	mg/L
RBO	RBO-3	Suspended Solids	6/5/1989	11:45 AM	1.0	21	mg/L
RBO	RBO-3	Suspended Solids	7/5/1989	12:00 PM	1.0	11	mg/L
RBO	RBO-3	Suspended Solids	8/7/1989	12:30 PM	1.0	14	mg/L
RBO	RBO-3	Suspended Solids	10/10/1989	11:30 AM	1.0	14	mg/L
RBO	RBO-3	Suspended Solids	5/8/1990	8:30 AM	1.0	42	mg/L
RBO	RBO-3	Suspended Solids	6/4/1990	11:00 AM	1.0	10	mg/L
RBO	RBO-3	Suspended Solids	7/2/1990	10:30 AM	1.0	2	mg/L
RBO	RBO-3	Suspended Solids	8/1/1990	10:45 AM	1.0	9	mg/L
RBO	RBO-3	Suspended Solids	9/10/1990	11:00 AM	1.0	8	mg/L
RBO	RBO-3	Suspended Solids	10/2/1990	2:40 PM	1.0	13	mg/L
RBO	RBO-3	Suspended Solids	5/31/1993	11:45 AM	1.0	5	mg/L
RBO	RBO-3	Suspended Solids	7/27/1993	2:00 PM	1.0	1	mg/L
RBO	RBO-3	Suspended Solids	8/30/1993	11:40 AM	1.0	3	mg/L
RBO	RBO-3	Suspended Solids	9/28/1993	9:15 AM	1.0	1	mg/L
RBO	RBO-3	Suspended Solids	10/25/1993	11:45 AM	1.0	2	mg/L
RBO	RBO-3	Suspended Solids	4/25/1995	11:00 AM	1.0	16	mg/L
RBO	RBO-3	Suspended Solids	7/19/1995	9:30 AM	1.0	20	mg/L
RBO	RBO-3	Suspended Solids	8/30/1995	9:20 AM	1.0	24	mg/L
RBO	RBO-3	Suspended Solids	10/6/1995	9:30 AM	1.0	46	mg/L
RBO	RBO-3	Suspended Solids	4/21/1997	5:15 PM	1.0	23	mg/L
RBO	RBO-3	Suspended Solids	4/21/1997	5:00 PM	1.0	4	mg/L
RBO	RBO-3	Suspended Solids	5/3/1997	2:30 PM	1.0	28	mg/L
RBO	RBO-3	Suspended Solids	5/5/1997	9:16 AM	1.0	37	mg/L
RBO	RBO-3	Suspended Solids	5/5/1997	9:55 AM	1.0	3	mg/L
RBO	RBO-3	Suspended Solids	5/28/1997	9:38 AM	1.0	47	mg/L
RBO	RBO-3	Suspended Solids	5/28/1997	11:30 AM	1.0	1	mg/L
RBO	RBO-3	Suspended Solids	6/6/1997	2:48 PM	1.0	61	mg/L
RBO	RBO-3	Suspended Solids	6/7/1997	7:50 AM	1.0	67	mg/L
RBO	RBO-3	Suspended Solids	6/23/1997	2:00 PM	1.0	16	mg/L
RBO	RBO-3	Suspended Solids	6/23/1997	11:00 AM	1.0	15	mg/L
RBO	RBO-3	Suspended Solids	6/30/1997	9:55 AM	1.0	33	mg/L
RBO	RBO-3	Suspended Solids	6/30/1997	11:00 AM	1.0	61	mg/L
RBO	RBO-3	Suspended Solids	7/9/1997	8:20 AM	1.0	45	mg/L
RBO	RBO-3	Suspended Solids	7/22/1997	7:40 AM	1.0	7	mg/L
RBO	RBO-3	Suspended Solids	7/23/1997	11:45 AM	1.0	30	mg/L
RBO	RBO-3	Suspended Solids	7/23/1997	11:15 AM	1.0	19	mg/L
RBO	RBO-3	Suspended Solids	7/28/1997	11:10 AM	1.0	8	mg/L
RBO	RBO-3	Suspended Solids	7/28/1997	10:15 AM	1.0	35	mg/L
RBO	RBO-3	Suspended Solids	8/17/1997	8:50 AM	1.0	8	mg/L
RBO	RBO-3	Suspended Solids	8/17/1997	4:20 PM	1.0	7	mg/L
RBO	RBO-3	Suspended Solids	8/21/1997	10:55 AM	1.0	33	mg/L
RBO	RBO-3	Suspended Solids	8/21/1997	2:00 PM	1.0	9	mg/L
RBO	RBO-3	Suspended Solids	8/25/1997	10:55 AM	1.0	36	mg/L
RBO	RBO-3	Suspended Solids	9/2/1997	3:55 PM	1.0	17	mg/L
RBO	RBO-3	Suspended Solids	9/3/1997	7:55 AM	1.0	43	mg/L
RBO	RBO-3	Suspended Solids	9/3/1997	8:05 AM	1.0	10	mg/L
RBO	RBO-3	Suspended Solids	9/15/1997	9:20 AM	1.0	38	mg/L
RBO	RBO-3	Suspended Solids	9/28/1997	11:30 AM	1.0	35	mg/L
RBO	RBO-3	Suspended Solids	10/23/1997	11:00 AM	1.0	27	mg/L
RBO	RBO-3	Suspended Solids	10/27/1997	9:20 AM	1.0	29	mg/L
RBO	RBO-3	Suspended Solids	11/10/1997	9:40 AM	1.0	20	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-3	Suspended Solids	12/23/1997	10:42 AM	1.0	36	mg/L
RBO	RBO-3	Suspended Solids	1/8/1998	8:25 AM	1.0	270	mg/L
RBO	RBO-3	Suspended Solids	1/26/1998	1:55 PM	1.0	7	mg/L
RBO	RBO-3	Suspended Solids	2/24/1998	10:15 AM	1.0	23	mg/L
RBO	RBO-3	Suspended Solids	3/30/1998	9:15 AM	1.0	88	mg/L
RBO	RBO-3	Suspended Solids	4/15/1998	10:45 AM	1.0	68	mg/L
RBO	RBO-3	Suspended Solids	5/30/1998	3:30 PM	1.0	36	mg/L
RBO	RBO-3	Suspended Solids	6/3/1998	12:20 PM	1.0	31	mg/L
RBO	RBO-3	Suspended Solids	7/27/1998	10:45 AM	1.0	20	mg/L
RBO	RBO-3	Suspended Solids	8/13/1998	11:27 AM	1.0	25	mg/L
RBO	RBO-3	Suspended Solids	10/22/1998	10:22 AM	1.0	11	mg/L
RBO	RBO-3	Suspended Solids	4/25/2001	12:00 AM	1.0	47	mg/L
RBO	RBO-3	Suspended Solids	6/7/2001	12:00 AM	1.0	22	mg/L
RBO	RBO-3	Suspended Solids	7/11/2001	12:00 AM	1.0	31	mg/L
RBO	RBO-3	Suspended Solids	8/20/2001	12:00 AM	1.0	69	mg/L
RBO	RBO-3	Suspended Solids	10/30/2001	12:00 AM	1.0	21	mg/L
RBO	RBO-3	Temperature	4/24/1989	11:45 AM	1.0	16.9	° C
RBO	RBO-3	Temperature	4/24/1989	11:45 AM	6.0	13.3	° C
RBO	RBO-3	Temperature	4/24/1989	11:45 AM	0.0	17.2	° C
RBO	RBO-3	Temperature	4/24/1989	11:45 AM	5.0	14	° C
RBO	RBO-3	Temperature	4/24/1989	11:45 AM	3.0	14.8	° C
RBO	RBO-3	Temperature	6/5/1989	11:45 AM	6.0	15.5	° C
RBO	RBO-3	Temperature	6/5/1989	11:45 AM	0.0	21	° C
RBO	RBO-3	Temperature	6/5/1989	11:45 AM	1.0	20.3	° C
RBO	RBO-3	Temperature	6/5/1989	11:45 AM	3.0	17.2	° C
RBO	RBO-3	Temperature	6/5/1989	11:45 AM	5.0	15.8	° C
RBO	RBO-3	Temperature	7/5/1989	12:00 PM	6.0	23.6	° C
RBO	RBO-3	Temperature	7/5/1989	12:00 PM	5.0	23.8	° C
RBO	RBO-3	Temperature	7/5/1989	12:00 PM	0.0	27.5	° C
RBO	RBO-3	Temperature	7/5/1989	12:00 PM	3.0	24.5	° C
RBO	RBO-3	Temperature	8/7/1989	12:30 PM	0.0	25.2	° C
RBO	RBO-3	Temperature	8/7/1989	12:30 PM	3.0	25	° C
RBO	RBO-3	Temperature	8/7/1989	12:30 PM	5.0	24.6	° C
RBO	RBO-3	Temperature	8/7/1989	12:30 PM	6.0	24.4	° C
RBO	RBO-3	Temperature	10/10/1989	11:30 AM	0.0	12.8	° C
RBO	RBO-3	Temperature	10/10/1989	11:30 AM	5.0	12.7	° C
RBO	RBO-3	Temperature	10/10/1989	11:30 AM	6.0	12.4	° C
RBO	RBO-3	Temperature	4/25/1995	11:00 AM	6.0	10.5	° C
RBO	RBO-3	Temperature	4/25/1995	11:00 AM	0.0	12.4	° C
RBO	RBO-3	Temperature	4/25/1995	11:00 AM	1.0	12.5	° C
RBO	RBO-3	Temperature	4/25/1995	11:00 AM	3.0	11.3	° C
RBO	RBO-3	Temperature	4/25/1995	11:00 AM	4.0	10.8	° C
RBO	RBO-3	Temperature	4/25/1995	11:00 AM	5.0	10.6	° C
RBO	RBO-3	Temperature	6/14/1995	12:00 PM	5.0	19.4	° C
RBO	RBO-3	Temperature	6/14/1995	12:00 PM	4.0	19.9	° C
RBO	RBO-3	Temperature	6/14/1995	12:00 PM	3.0	20.8	° C
RBO	RBO-3	Temperature	6/14/1995	12:00 PM	2.0	21.5	° C
RBO	RBO-3	Temperature	6/14/1995	12:00 PM	0.0	23.2	° C
RBO	RBO-3	Temperature	6/14/1995	12:00 PM	1.0	23	° C
RBO	RBO-3	Temperature	7/19/1995	9:30 AM	1.0	26.9	° C
RBO	RBO-3	Temperature	7/19/1995	9:30 AM	4.0	26.3	° C
RBO	RBO-3	Temperature	7/19/1995	9:30 AM	5.0	25.8	° C
RBO	RBO-3	Temperature	7/19/1995	9:30 AM	0.0	27	° C
RBO	RBO-3	Temperature	7/19/1995	9:30 AM	3.0	26.5	° C
RBO	RBO-3	Temperature	7/19/1995	9:30 AM	2.0	26.7	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-3	Temperature	8/30/1995	9:20 AM	0.0	28.5	° C
RBO	RBO-3	Temperature	8/30/1995	9:20 AM	3.0	28	° C
RBO	RBO-3	Temperature	8/30/1995	9:20 AM	4.0	27.8	° C
RBO	RBO-3	Temperature	8/30/1995	9:20 AM	5.0	27.7	° C
RBO	RBO-3	Temperature	10/6/1995	9:30 AM	0.0	17.4	° C
RBO	RBO-3	Temperature	10/6/1995	9:30 AM	1.0	17.5	° C
RBO	RBO-3	Temperature	10/6/1995	9:30 AM	5.0	17.3	° C
RBO	RBO-3	Temperature	4/14/1997	10:10 AM	0.0	8.3	° C
RBO	RBO-3	Temperature	4/14/1997	10:10 AM	1.0	8.2	° C
RBO	RBO-3	Temperature	4/14/1997	10:10 AM	3.0	7.3	° C
RBO	RBO-3	Temperature	4/21/1997	5:15 PM	1.0	16.7	° C
RBO	RBO-3	Temperature	4/21/1997	5:00 PM	0.0	15.9	° C
RBO	RBO-3	Temperature	4/21/1997	5:00 PM	3.0	15.7	° C
RBO	RBO-3	Temperature	5/5/1997	9:16 AM	5.0	11.7	° C
RBO	RBO-3	Temperature	5/5/1997	9:16 AM	0.0	11.8	° C
RBO	RBO-3	Temperature	5/5/1997	9:16 AM	3.0	11.6	° C
RBO	RBO-3	Temperature	5/28/1997	9:38 AM	0.0	15.7	° C
RBO	RBO-3	Temperature	5/28/1997	9:38 AM	1.0	15.6	° C
RBO	RBO-3	Temperature	5/28/1997	9:38 AM	3.0	14.9	° C
RBO	RBO-3	Temperature	6/11/1997	11:20 AM	0.0	22.3	° C
RBO	RBO-3	Temperature	6/11/1997	11:20 AM	1.0	22.2	° C
RBO	RBO-3	Temperature	6/11/1997	11:20 AM	3.0	18.9	° C
RBO	RBO-3	Temperature	6/11/1997	11:20 AM	5.0	19.2	° C
RBO	RBO-3	Temperature	6/23/1997	11:00 AM	0.0	28.9	° C
RBO	RBO-3	Temperature	6/23/1997	11:00 AM	1.0	28.7	° C
RBO	RBO-3	Temperature	6/23/1997	11:00 AM	3.0	27.3	° C
RBO	RBO-3	Temperature	6/23/1997	11:00 AM	4.0	27.1	° C
RBO	RBO-3	Temperature	6/23/1997	2:00 PM	1.0	25.6	° C
RBO	RBO-3	Temperature	6/30/1997	9:55 AM	0.0	27.4	° C
RBO	RBO-3	Temperature	6/30/1997	9:55 AM	3.0	27.2	° C
RBO	RBO-3	Temperature	6/30/1997	9:55 AM	1.0	27.5	° C
RBO	RBO-3	Temperature	7/14/1997	9:15 AM	0.0	29.2	° C
RBO	RBO-3	Temperature	7/14/1997	9:15 AM	3.0	29.1	° C
RBO	RBO-3	Temperature	7/23/1997	11:15 AM	0.0	27	° C
RBO	RBO-3	Temperature	7/23/1997	11:45 AM	1.0	24	° C
RBO	RBO-3	Temperature	7/28/1997	10:15 AM	3.0	30.7	° C
RBO	RBO-3	Temperature	7/28/1997	10:15 AM	0.0	31	° C
RBO	RBO-3	Temperature	8/11/1997	9:30 AM	3.0	23.8	° C
RBO	RBO-3	Temperature	8/11/1997	9:30 AM	0.0	24.4	° C
RBO	RBO-3	Temperature	8/11/1997	9:30 AM	1.0	24.3	° C
RBO	RBO-3	Temperature	8/21/1997	10:55 AM	0.0	21.5	° C
RBO	RBO-3	Temperature	8/21/1997	10:55 AM	1.0	21.4	° C
RBO	RBO-3	Temperature	8/21/1997	2:00 PM	1.0	21.63	° C
RBO	RBO-3	Temperature	8/25/1997	10:55 AM	1.0	23.7	° C
RBO	RBO-3	Temperature	8/25/1997	10:55 AM	3.0	22	° C
RBO	RBO-3	Temperature	8/25/1997	10:55 AM	0.0	23.6	° C
RBO	RBO-3	Temperature	9/15/1997	9:20 AM	0.0	23.1	° C
RBO	RBO-3	Temperature	9/15/1997	9:20 AM	3.0	22.8	° C
RBO	RBO-3	Temperature	9/28/1997	11:30 AM	0.0	20.9	° C
RBO	RBO-3	Temperature	9/28/1997	11:30 AM	3.0	20.1	° C
RBO	RBO-3	Temperature	10/14/1997	1:53 PM	0.0	15.4	° C
RBO	RBO-3	Temperature	10/14/1997	1:53 PM	1.0	15.3	° C
RBO	RBO-3	Temperature	10/23/1997	11:00 AM	0.0	10.1	° C
RBO	RBO-3	Temperature	10/23/1997	11:00 AM	1.0	10	° C
RBO	RBO-3	Temperature	10/27/1997	9:20 AM	0.0	7.2	° C

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-3	Temperature	11/10/1997	9:40 AM	0.0	6.8	° C
RBO	RBO-3	Temperature	12/23/1997	10:42 AM	0.0	2.7	° C
RBO	RBO-3	Temperature	1/26/1998	1:55 PM	0.0	3.9	° C
RBO	RBO-3	Temperature	1/26/1998	1:55 PM	3.0	4.2	° C
RBO	RBO-3	Temperature	2/24/1998	10:15 AM	0.0	8.1	° C
RBO	RBO-3	Temperature	3/30/1998	9:15 AM	1.0	13	° C
RBO	RBO-3	Temperature	3/30/1998	9:15 AM	3.0	12	° C
RBO	RBO-3	Temperature	3/30/1998	9:15 AM	0.0	12.4	° C
RBO	RBO-3	Temperature	4/15/1998	10:45 AM	0.0	14.7	° C
RBO	RBO-3	Temperature	4/15/1998	10:45 AM	3.0	13.4	° C
RBO	RBO-3	Temperature	6/3/1998	12:20 PM	0.0	20.2	° C
RBO	RBO-3	Temperature	6/3/1998	12:20 PM	1.0	20.1	° C
RBO	RBO-3	Temperature	7/27/1998	10:45 AM	3.0	24.7	° C
RBO	RBO-3	Temperature	7/27/1998	10:45 AM	0.0	26.6	° C
RBO	RBO-3	Temperature	7/27/1998	10:45 AM	1.0	26.2	° C
RBO	RBO-3	Temperature	8/13/1998	11:27 AM	0.0	25.9	° C
RBO	RBO-3	Temperature	10/22/1998	10:22 AM	1.0	12.6	° C
RBO	RBO-3	Temperature	10/22/1998	10:22 AM	0.0	12.7	° C
RBO	RBO-3	TKN	4/24/1989	11:45 AM	1.0	0.9	mg/L
RBO	RBO-3	TKN	6/5/1989	11:45 AM	1.0	1.4	mg/L
RBO	RBO-3	TKN	7/5/1989	12:00 PM	1.0	1.4	mg/L
RBO	RBO-3	TKN	8/7/1989	12:30 PM	1.0	1.4	mg/L
RBO	RBO-3	TKN	10/10/1989	11:30 AM	1.0	0.8	mg/L
RBO	RBO-3	TKN	4/25/1995	11:00 AM	1.0	0.56	mg/L
RBO	RBO-3	TKN	6/14/1995	12:00 PM	1.0	0.69	mg/L
RBO	RBO-3	TKN	7/19/1995	9:30 AM	1.0	0.46	mg/L
RBO	RBO-3	TKN	8/30/1995	9:20 AM	1.0	1.2	mg/L
RBO	RBO-3	TKN	10/6/1995	9:30 AM	1.0	0.79	mg/L
RBO	RBO-3	TKN	4/21/1997	5:00 PM	1.0	0.71	mg/L
RBO	RBO-3	TKN	4/21/1997	5:15 PM	1.0	0.51	mg/L
RBO	RBO-3	TKN	5/3/1997	2:30 PM	1.0	0.69	mg/L
RBO	RBO-3	TKN	5/5/1997	9:16 AM	1.0	0.68	mg/L
RBO	RBO-3	TKN	5/5/1997	9:55 AM	1.0	0.24	mg/L
RBO	RBO-3	TKN	5/28/1997	9:38 AM	1.0	0.77	mg/L
RBO	RBO-3	TKN	5/28/1997	11:30 AM	1.0	0.26	mg/L
RBO	RBO-3	TKN	6/6/1997	2:48 PM	1.0	0.66	mg/L
RBO	RBO-3	TKN	6/7/1997	7:50 AM	1.0	0.5	mg/L
RBO	RBO-3	TKN	6/23/1997	11:00 AM	1.0	0.7	mg/L
RBO	RBO-3	TKN	6/23/1997	2:00 PM	1.0	0.48	mg/L
RBO	RBO-3	TKN	6/30/1997	9:55 AM	1.0	0.77	mg/L
RBO	RBO-3	TKN	6/30/1997	11:00 AM	1.0	0.55	mg/L
RBO	RBO-3	TKN	7/9/1997	8:20 AM	1.0	0.66	mg/L
RBO	RBO-3	TKN	7/22/1997	7:40 AM	1.0	0.55	mg/L
RBO	RBO-3	TKN	7/23/1997	11:15 AM	1.0	0.58	mg/L
RBO	RBO-3	TKN	7/23/1997	11:45 AM	1.0	0.73	mg/L
RBO	RBO-3	TKN	7/28/1997	10:15 AM	1.0	0.69	mg/L
RBO	RBO-3	TKN	7/28/1997	11:10 AM	1.0	0.28	mg/L
RBO	RBO-3	TKN	8/17/1997	8:50 AM	1.0	1.4	mg/L
RBO	RBO-3	TKN	8/17/1997	4:20 PM	1.0	0.97	mg/L
RBO	RBO-3	TKN	8/21/1997	2:00 PM	1.0	0.72	mg/L
RBO	RBO-3	TKN	8/21/1997	10:55 AM	1.0	1.4	mg/L
RBO	RBO-3	TKN	8/25/1997	10:55 AM	1.0	1.3	mg/L
RBO	RBO-3	TKN	9/2/1997	3:55 PM	1.0	0.96	mg/L
RBO	RBO-3	TKN	9/3/1997	7:55 AM	1.0	1.3	mg/L
RBO	RBO-3	TKN	9/3/1997	8:05 AM	1.0	0.79	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-3	TKN	9/15/1997	9:20 AM	1.0	1.1	mg/L
RBO	RBO-3	TKN	9/28/1997	11:30 AM	1.0	0.91	mg/L
RBO	RBO-3	TKN	10/23/1997	11:00 AM	1.0	1	mg/L
RBO	RBO-3	TKN	10/27/1997	9:20 AM	1.0	0.93	mg/L
RBO	RBO-3	TKN	11/10/1997	9:40 AM	1.0	0.94	mg/L
RBO	RBO-3	TKN	12/23/1997	10:42 AM	1.0	0.85	mg/L
RBO	RBO-3	TKN	1/8/1998	8:25 AM	1.0	1.3	mg/L
RBO	RBO-3	TKN	1/26/1998	1:55 PM	1.0	1.2	mg/L
RBO	RBO-3	TKN	2/24/1998	10:15 AM	1.0	0.74	mg/L
RBO	RBO-3	TKN	3/30/1998	9:15 AM	1.0	1.8	mg/L
RBO	RBO-3	TKN	4/15/1998	10:45 AM	1.0	0.49	mg/L
RBO	RBO-3	TKN	6/3/1998	12:20 PM	1.0	1.5	mg/L
RBO	RBO-3	TKN	7/27/1998	10:45 AM	1.0	0.74	mg/L
RBO	RBO-3	TKN	8/13/1998	11:27 AM	1.0	1.3	mg/L
RBO	RBO-3	TKN	10/22/1998	10:22 AM	1.0	0.95	mg/L
RBO	RBO-3	TKN	4/25/2001	12:00 AM	1.0	1.53	mg/L
RBO	RBO-3	TKN	6/7/2001	12:00 AM	1.0	0.85	mg/L
RBO	RBO-3	TKN	7/11/2001	12:00 AM	1.0	1.47	mg/L
RBO	RBO-3	TKN	8/20/2001	12:00 AM	1.0	2.33	mg/L
RBO	RBO-3	TKN	10/30/2001	12:00 AM	1.0	1.8	mg/L
RBO	RBO-3	Total Phosphorus	4/24/1989	11:45 AM	1.0	0.02	mg/L
RBO	RBO-3	Total Phosphorus	6/5/1989	11:45 AM	1.0	0.23	mg/L
RBO	RBO-3	Total Phosphorus	7/5/1989	12:00 PM	1.0	0.06	mg/L
RBO	RBO-3	Total Phosphorus	8/7/1989	12:30 PM	1.0	0.08	mg/L
RBO	RBO-3	Total Phosphorus	10/10/1989	11:30 AM	1.0	0.08	mg/L
RBO	RBO-3	Total Phosphorus	5/8/1990	8:30 AM	1.0	0.03	mg/L
RBO	RBO-3	Total Phosphorus	6/4/1990	11:00 AM	1.0	0.05	mg/L
RBO	RBO-3	Total Phosphorus	7/2/1990	10:30 AM	1.0	0.04	mg/L
RBO	RBO-3	Total Phosphorus	8/1/1990	10:45 AM	1.0	0.05	mg/L
RBO	RBO-3	Total Phosphorus	9/10/1990	11:00 AM	1.0	0.07	mg/L
RBO	RBO-3	Total Phosphorus	10/2/1990	2:40 PM	1.0	0.06	mg/L
RBO	RBO-3	Total Phosphorus	5/31/1993	11:45 AM	1.0	0.03	mg/L
RBO	RBO-3	Total Phosphorus	7/27/1993	2:00 PM	1.0	0.04	mg/L
RBO	RBO-3	Total Phosphorus	8/30/1993	11:40 AM	1.0	0.04	mg/L
RBO	RBO-3	Total Phosphorus	9/28/1993	9:15 AM	1.0	0.03	mg/L
RBO	RBO-3	Total Phosphorus	10/25/1993	11:45 AM	1.0	0.05	mg/L
RBO	RBO-3	Total Phosphorus	4/25/1995	11:00 AM	1.0	0.02	mg/L
RBO	RBO-3	Total Phosphorus	6/14/1995	12:00 PM	1.0	0.04	mg/L
RBO	RBO-3	Total Phosphorus	7/19/1995	9:30 AM	1.0	0.07	mg/L
RBO	RBO-3	Total Phosphorus	8/30/1995	9:20 AM	1.0	0.13	mg/L
RBO	RBO-3	Total Phosphorus	10/6/1995	9:30 AM	1.0	0.07	mg/L
RBO	RBO-3	Total Phosphorus	4/21/1997	5:00 PM	1.0	0.05	mg/L
RBO	RBO-3	Total Phosphorus	4/21/1997	5:15 PM	1.0	0.02	mg/L
RBO	RBO-3	Total Phosphorus	5/3/1997	2:30 PM	1.0	0.06	mg/L
RBO	RBO-3	Total Phosphorus	5/5/1997	9:16 AM	1.0	0.05	mg/L
RBO	RBO-3	Total Phosphorus	5/5/1997	9:55 AM	1.0	0.01	mg/L
RBO	RBO-3	Total Phosphorus	5/28/1997	9:38 AM	1.0	0.07	mg/L
RBO	RBO-3	Total Phosphorus	5/28/1997	11:30 AM	1.0	0.01	mg/L
RBO	RBO-3	Total Phosphorus	6/6/1997	2:48 PM	1.0	0.07	mg/L
RBO	RBO-3	Total Phosphorus	6/7/1997	7:50 AM	1.0	0.08	mg/L
RBO	RBO-3	Total Phosphorus	6/23/1997	11:00 AM	1.0	0.05	mg/L
RBO	RBO-3	Total Phosphorus	6/23/1997	2:00 PM	1.0	0.05	mg/L
RBO	RBO-3	Total Phosphorus	6/30/1997	9:55 AM	1.0	0.09	mg/L
RBO	RBO-3	Total Phosphorus	6/30/1997	11:00 AM	1.0	0.08	mg/L
RBO	RBO-3	Total Phosphorus	7/9/1997	8:20 AM	1.0	0.04	mg/L

WB_ID	StationID	Parameter	Date	Time	Sample Depth (ft)	Value	Units
RBO	RBO-3	Total Phosphorus	7/22/1997	7:40 AM	1.0	0.04	mg/L
RBO	RBO-3	Total Phosphorus	7/23/1997	11:15 AM	1.0	0.11	mg/L
RBO	RBO-3	Total Phosphorus	7/23/1997	11:45 AM	1.0	0.04	mg/L
RBO	RBO-3	Total Phosphorus	7/28/1997	10:15 AM	1.0	0.14	mg/L
RBO	RBO-3	Total Phosphorus	7/28/1997	11:10 AM	1.0	0.37	mg/L
RBO	RBO-3	Total Phosphorus	8/17/1997	4:20 PM	1.0	0.26	mg/L
RBO	RBO-3	Total Phosphorus	8/17/1997	8:50 AM	1.0	0.35	mg/L
RBO	RBO-3	Total Phosphorus	8/21/1997	10:55 AM	1.0	0.19	mg/L
RBO	RBO-3	Total Phosphorus	8/21/1997	2:00 PM	1.0	0.09	mg/L
RBO	RBO-3	Total Phosphorus	8/25/1997	10:55 AM	1.0	0.09	mg/L
RBO	RBO-3	Total Phosphorus	9/2/1997	3:55 PM	1.0	0.29	mg/L
RBO	RBO-3	Total Phosphorus	9/3/1997	7:55 AM	1.0	0.17	mg/L
RBO	RBO-3	Total Phosphorus	9/3/1997	8:05 AM	1.0	0.33	mg/L
RBO	RBO-3	Total Phosphorus	9/15/1997	9:20 AM	1.0	0.18	mg/L
RBO	RBO-3	Total Phosphorus	9/28/1997	11:30 AM	1.0	0.17	mg/L
RBO	RBO-3	Total Phosphorus	10/23/1997	11:00 AM	1.0	0.1	mg/L
RBO	RBO-3	Total Phosphorus	10/27/1997	9:20 AM	1.0	0.08	mg/L
RBO	RBO-3	Total Phosphorus	11/10/1997	9:40 AM	1.0	0.08	mg/L
RBO	RBO-3	Total Phosphorus	12/23/1997	10:42 AM	1.0	0.1	mg/L
RBO	RBO-3	Total Phosphorus	1/8/1998	8:25 AM	1.0	0.23	mg/L
RBO	RBO-3	Total Phosphorus	1/26/1998	1:55 PM	1.0	0.05	mg/L
RBO	RBO-3	Total Phosphorus	2/24/1998	10:15 AM	1.0	0.03	mg/L
RBO	RBO-3	Total Phosphorus	3/30/1998	9:15 AM	1.0	0.33	mg/L
RBO	RBO-3	Total Phosphorus	4/15/1998	10:45 AM	1.0	0.07	mg/L
RBO	RBO-3	Total Phosphorus	5/30/1998	3:30 PM	1.0	0.08	mg/L
RBO	RBO-3	Total Phosphorus	6/3/1998	12:20 PM	1.0	0.04	mg/L
RBO	RBO-3	Total Phosphorus	7/27/1998	10:45 AM	1.0	0.03	mg/L
RBO	RBO-3	Total Phosphorus	8/13/1998	11:27 AM	1.0	0.12	mg/L
RBO	RBO-3	Total Phosphorus	10/22/1998	10:22 AM	1.0	0.09	mg/L
RBO	RBO-3	Total Phosphorus	4/25/2001	12:00 AM	1.0	0.11	mg/L
RBO	RBO-3	Total Phosphorus	6/7/2001	12:00 AM	1.0	0.06	mg/L
RBO	RBO-3	Total Phosphorus	7/11/2001	12:00 AM	1.0	0.12	mg/L
RBO	RBO-3	Total Phosphorus	8/20/2001	12:00 AM	1.0	0.22	mg/L
RBO	RBO-3	Total Phosphorus	10/30/2001	12:00 AM	1.0	0.07	mg/L

Appendix C: NPDES Facilities in the Salt Fork Vermilion River Watershed

	IL0004545	IL0022128	IL0023086	IL0023205	IL0024082	IL0024619	IL0027278	IL0031500
Parameter	**Illinois Central Railroad-Cham**	**Rantoul (STP)**	**St. Joseph SD (STP)**	**Paxton (STP)**	**Homer (WTP)**	**Country Club Manor Condos**	**Country Manor MHP-Urbana**	**Urbana-Champaign SD NE (STP)**
3,4 Benzofluoran- Thene	x							
Acenaphthene	x							
Acenaphthylene	x							
Ammonia (Total)		x	x	x		x	x	x
Anthracene	x							
Antimony (Total)								x
Arsenic (Total)		x						x
Barium (Total)		x						x
Benzene	x							
Benzene, Ethylbenzenetoluene, Xylene Combn								
Benzo (A) Anthracene	x							
Benzo (A) Pyrene	x							
Benzo (Ghi) Perylene	x							
Benzo (K) Fluoranthene	x							
Beryllium (Total)								x
Bod, 5-Day (20 Deg. C)	x	x	x	x		x	x	x
Cadmium (Total)		x						x
Chromium (Total)		x						x
Chrysene	x							
Copper (Total)		x						x
Cyanide (Total)		x						x
Cyanide, Weak Acid, Dissociable		x						x
Dibenzo (A,H) Anthracene	x							
DO								x
Ethyl Benzene	x							
Ethylbenzene								
Fecal Coliform		x	x	x		x	x	x
Flow (Conduit)	x	x	x	x	x	x	x	x
Flow (Total)				x				x

	IL0004545	IL0022128	IL0023086	IL0023205	IL0024082	IL0024619	IL0027278	IL0031500
Parameter	**Illinois Central Railroad-Cham**	**Rantoul (STP)**	**St. Joseph SD (STP)**	**Paxton (STP)**	**Homer (WTP)**	**Country Club Manor Condos**	**Country Manor MHP-Urbana**	**Urbana-Champaign SD NE (STP)**
Fluoranthene	x							
Fluorene	x							
Fluoride (Total)		x						x
Hexavalent Chromium		x						x
Indeno (1,2,3-Cd) Pyrene	x							
Iron (Dissolved)		x						
Iron (Total)		x			x			x
Lead (Total)		x						x
Manganese (Total)		x						x
Mercury (Total)		x						x
Naphthalene	x							
Nickel (Total)		x						x
Noel Statre 7Day Chr Ceriodaphnia								x
Noel Statre 7Day Chr Pimephales								x
Oil & Grease		x						
Oil And Grease	x							
pH	x	x	x	x	x	x	x	x
Phenanthrene	x							
Pyrene	x							
Recoverable Phenolics (Total)		x						x
Residual Chlorine (Total)		x	x	x	x	x	x	x
Selenium (Total)		x						x
Silver (Total)		x						x
Soxhlet Extr. Oil And Grease (Total)	x	x						x
Thallium (Total)								x
Toluene	x							
Trivalent Chromium		x						
TSS	x	x	x	x	x	x	x	x
Unionized Ammonia								x

	IL0004545	IL0022128	IL0023086	IL0023205	IL0024082	IL0024619	IL0027278	IL0031500
Parameter	Illinois Central Railroad-Cham	Rantoul (STP)	St. Joseph SD (STP)	Paxton (STP)	Homer (WTP)	Country Club Manor Condos	Country Manor MHP-Urbana	Urbana-Champaign SD NE (STP)
Water Temperature (Deg. F)								x
Xylene	x							
Zinc (Total)		x						x

	IL0034088	IL0052485	IL0055751	IL0063002	IL0063711	IL0072052	IL0073822	IL0075060
Parameter	Fairmount (WTP)	Royal (W)TP	Oakwood Township High School	Material Serv Corp Fairmont Q	Ludlow (WTP)	Safety-Kleen Corporation	Prairie View Estates MHP (WTP)	J.R. & Sons, Inc.-St. Joseph
3,4 Benzofluoran- Thene								
Acenaphthene								
Acenaphthylene								
Ammonia (Total)			x					
Anthracene								
Antimony (Total)								
Arsenic (Total)								
Barium (Total)								
Benzene							x	
Benzene, Ethylbenzenetoluene, Xylene Combn							x	
Benzo (A) Anthracene								
Benzo (A) Pyrene								
Benzo (Ghi) Perylene								
Benzo (K) Fluoranthene								
Beryllium (Total)								
Bod, 5-Day (20 Deg. C)			x					x
Cadmium (Total)								
Chromium (Total)								
Chrysene								
Copper (Total)								

Parameter	IL0034088 Fairmount (WTP)	IL0052485 Royal (W)TP	IL0055751 Oakwood Township High School	IL0063002 Material Serv Corp Fairmont Q	IL0063711 Ludlow (WTP)	IL0072052 Safety-Kleen Corporation	IL0073822 Prairie View Estates MHP (WTP)	IL0075060 J.R. & Sons, Inc.-St. Joseph
Cyanide (Total)								
Cyanide, Weak Acid, Dissociable								
Dibenzo (A,H) Anthracene								
DO								
Ethyl Benzene								
Ethylbenzene							x	
Fecal Coliform								
Flow (Conduit)	x	x	x	x	x	x	x	x
Flow (Total)								
Fluoranthene								
Fluorene								
Fluoride (Total)								
Hexavalent Chromium								
Indeno (1,2,3-Cd) Pyrene								
Iron (Dissolved)	x							
Iron (Total)	x	x			x	x		
Lead (Total)								
Manganese (Total)								
Mercury (Total)								
Naphthalene								
Nickel (Total)								
Noel Statre 7Day Chr Ceriodaphnia								
Noel Statre 7Day Chr Pimephales								
Oil & Grease								
Oil And Grease							x	
pH	x	x	x	x	x	x	x	x
Phenanthrene								
Pyrene								
Recoverable Phenolics (Total)								

	IL0034088	IL0052485	IL0055751	IL0063002	IL0063711	IL0072052	IL0073822	IL0075060
Parameter	**Fairmount (WTP)**	**Royal (W)TP**	**Oakwood Township High School**	**Material Serv Corp Fairmont Q**	**Ludlow (WTP)**	**Safety-Kleen Corporation**	**Prairie View Estates MHP (WTP)**	**J.R. & Sons, Inc.-St. Joseph**
Residual Chlorine (Total)	x	x	x		x			x
Selenium (Total)								
Silver (Total)								
Soxhlet Extr. Oil And Grease (Total)								
Thallium (Total)								
Toluene							x	
Trivalent Chromium								
TSS	x	x	x	x	x	x		x
Unionized Ammonia								
Water Temperature (Deg. F)								
Xylene							x	
Zinc (Total)								

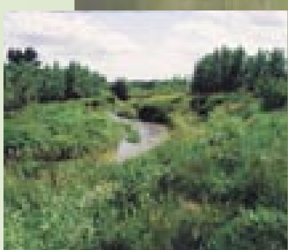
	ILG580060	ILG580132	ILG580214	ILG580216	ILG640009
Parameter formatted	**Fithian (STP)**	**Ogden (STP)**	**Gifford (STP)**	**Oakwood (STP)**	**Thomasboro (WTP)**
3,4 Benzofluoran- Thene					
Acenaphthene					
Acenaphthylene					
Ammonia (Total)					
Anthracene					
Antimony (Total)					
Arsenic (Total)					
Barium (Total)					
Benzene					
Benzene, Ethylbenzenetoluene, Xylene Combn					
Benzo (A) Anthracene					
Benzo (A) Pyrene					
Benzo (Ghi) Perylene					

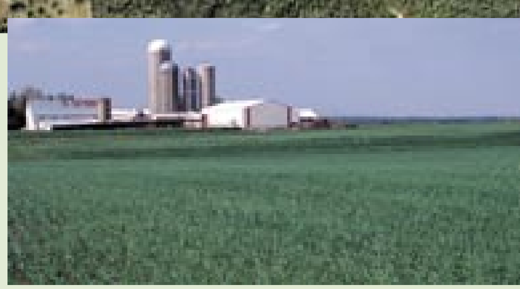
	ILG580060	ILG580132	ILG580214	ILG580216	ILG640009
Parameter formatted	Fithian (STP)	Ogden (STP)	Gifford (STP)	Oakwood (STP)	Thomasboro (WTP)
Benzo (K) Fluoranthene					
Beryllium (Total)					
Bod, 5-Day (20 Deg. C)	x	x	x		
Cadmium (Total)					
Chromium (Total)					
Chrysene					
Copper (Total)					
Cyanide (Total)					
Cyanide, Weak Acid, Dissociable					
Dibenzo (A,H) Anthracene					
DO					
Ethyl Benzene					
Ethylbenzene					
Fecal Coliform					
Flow (Conduit)	x	x	x	x	
Flow (Total)					
Fluoranthene					
Fluorene					
Fluoride (Total)					
Hexavalent Chromium					
Indeno (1,2,3-Cd) Pyrene					
Iron (Dissolved)					
Iron (Total)				x	
Lead (Total)					
Manganese (Total)					
Mercury (Total)					
Naphthalene					
Nickel (Total)					
Noel Statre 7Day Chr Ceriodaphnia					
Noel Statre 7Day Chr Pimephales					
Oil & Grease					
Oil And Grease					

	ILG580060	ILG580132	ILG580214	ILG580216	ILG640009
Parameter formatted	Fithian (STP)	Ogden (STP)	Gifford (STP)	Oakwood (STP)	Thomasboro (WTP)
pH	x	x	x	x	
Phenanthrene					
Pyrene					
Recoverable Phenolics (Total)					
Residual Chlorine (Total)	x	x	x	x	
Selenium (Total)					
Silver (Total)					
Soxhlet Extr. Oil And Grease (Total)					
Thallium (Total)					
Toluene					
Trivalent Chromium					
TSS	x	x	x	x	
Unionized Ammonia					
Water Temperature (Deg. F)					
Xylene					
Zinc (Total)					

TMDL Development for Homer Lake in the Salt Fork Vermilion River Watershed, Illinois

Stage Three Report: TMDL Development





FINAL REPORT   October 2006

TMDL Development for Homer Lake in the Salt Fork Vermilion River Watershed, Illinois

Stage Three Report: TMDL Development

FINAL REPORT

October 2006

Submitted to:
Illinois Environmental Protection Agency
1021 N. Grand Avenue East
Springfield, IL 62702

Submitted by:
Tetra Tech, Inc.
Water Resources TMDL Center

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KEY FINDINGS

As part of the Section 303(d) listing process, the Illinois Environmental Protection Agency has identified ten waterbodies in the Salt Fork Vermilion River watershed as impaired:

- Spoon Branch (segment BPJD02)
- Boneyard Creek (segment BPJCA)
- Saline Branch (segment BPJC08)
- Saline Branch (segment BPJC06)
- Salt Fork Vermilion River (segment BPJ09)
- Salt Fork Vermilion River (segment BPJ12)
- Homer Lake (segment RBO)
- Salt Fork Vermilion River (segment BPJ10)
- Salt Fork Vermilion River (segment BPJ08)
- Salt Fork Vermilion River (segment BPJ03)

Many of the 303(d) listings are for parameters without numeric water quality standards and therefore TMDLs are not being developed at this time. Many of the 303(d) listings are also associated with a fish kill that occurred in the watershed in July 2002. Because this was a known, one-time event, TMDLs are not recommended for these listings unless ambient data also suggest impaired conditions. Insufficient data are available to determine the impairment status for three segment/cause combinations and additional sampling data are being collected in those segments. Sufficient data are available to proceed with TMDL development for five waterbodies and the purpose of this report is to present the TMDL analysis for Homer Lake.

Illinois water quality standards require that total phosphorus concentrations within lakes not exceed 0.05 mg/L. Historic sampling within Homer Lake indicates that this standard is often exceeded with the long-term average TP concentration averaging approximately 0.09 mg/L.

Continuous flow and TP data are not available for the tributaries to Homer Lake. However, inlake total phosphorus data have been collected several times per year since 1989. Loads to the lake were therefore estimated using the BATHTUB model and lake bathymetry data to simulate observed average concentrations. The BATHTUB model was then used to determine the load reductions necessary to meet the 0.05 mg/L water quality standard. The BATHTUB analysis indicated that a 70 percent reduction in loads is necessary to meet the 0.05 mg/L standard. The specific sources of TP were not a focus of this report. An Implementation Plan will be prepared that fully addresses all potential sources and discusses alternatives for achieving the desired load reductions.

1.0 INTRODUCTION

The Salt Fork Vermilion River watershed (Figure 1-1) is located in east-central Illinois and drains approximately 500 square miles. Approximately 362 square miles (73 percent) are in eastern Champaign County and 138 square miles are in western Vermilion County.

Homer Lake is located in the southern portion of the Salt Fork Vermilion River watershed. It was constructed in 1969, has a surface area of approximately 81 acres, and is located in the Homer Lake Forest Preserve in Champaign County. The shore length for Homer Lake is approximately 5.3 miles, the average depth is 8 feet, and the maximum depth is 24 feet. Homer Lake's storage capacity is approximately 221 million gallons with a retention time of approximately 36.5 days (INHS, 1992). As part of the Section 303(d) listing process, the Illinois Environmental Protection Agency (IEPA) identified ten waterbodies in the Salt Fork Vermilion River watershed as impaired (Table 1-1). This report addresses the Homer Lake total phosphorus impairment.

Table 1-1. Section 303(d) List Information for the Salt Fork Vermilion River Watershed (ILBPJ03).

Segment (Area)	Name	Designated Uses and Support Status	Causes of Impairment	Potential Sources of Impairment
BPJD02 (13.8 miles)	Spoon Branch	Aquatic Life Support (Partial)	Dissolved Oxygen, Habitat Assessment	Agriculture, Hydromodification
BPJCA (3.2 miles)	Boneyard Creek	Aquatic Life Support (Not Supporting)	Habitat Assessment, DDT, Hexachlor, PCB	Urban Runoff/Storm Sewers, Hydromodification, Contaminated Sediments
BPJC08 (15.5 miles)	Saline Branch	Aquatic Life Support (Partial)	Total Nitrogen, Dissolved Oxygen, Habitat Assessment	Agriculture, Hydromodification
BPJC06 (10.3 miles)	Saline Branch	Aquatic Life Support (Partial)	Boron, Total Ammonia, Habitat Assessment, Fish Kills, TSS, DDT, Dieldrin, Methoxychlor, Total Phosphorus	Municipal Point Sources, Agriculture, Hydromodification, Channelization, Contaminated Sediments, Source Unknown
BPJ09 (13.7 miles)	Salt Fork Vermilion River	Aquatic Life Support (Partial), Fish Consumption (Partial)	Total Ammonia, Total Nitrogen, pH, Fish Kills, TSS, Total Phosphorus	Municipal Point Sources, Agriculture
BPJ12 (3.07 miles)	Salt Fork Vermilion River	Aquatic Life Support (Partial), Fish Consumption (Not Assessed)	Total Ammonia, Total Nitrogen, pH, Fish Kills, TSS, Total Phosphorus	Municipal Point Sources, Agriculture
RBO (80.80 acres)	Homer Lake	Overall Use (Partial), Aquatic Life Support (Full), Fish Consumption (Full), Primary Contact (Partial), Secondary Contact (Partial), Drinking Water Supply (Not Assessed)	TSS, Excessive Algal Growth, Total Phosphorus	Agriculture– crop related sources, Construction– land development, Habitat modification, Forest/grassland/ parkland
BPJ10 (13.6 miles)	Salt Fork Vermilion River	Aquatic Life Support (Partial), Drinking Water Supply (Partial)	Total Ammonia, Total Nitrogen, Nitrate, pH, Fish Kills, TSS, Total Phosphorus	Municipal Point Sources, Agriculture, Source Unknown
BPJ08 (3.17 miles)	Salt Fork Vermilion River	Aquatic Life Support (Partial), Drinking Water Supply (Partial)	Iron, Total Ammonia, Total Nitrogen, Nitrate, pH, Fish Kills, TSS, Total Phosphorus	Municipal Point Sources, Agriculture, Source Unknown
BPJ03 (9.97 miles)	Salt Fork Vermilion River	Aquatic Life Support (Partial), Fish Consumption (Not Assessed), Drinking Water Supply (Partial)	Iron, Total Nitrogen, Nitrate, Fish Kills, TSS, Total Phosphorus	Municipal Point Sources, Agriculture, Source Unknown

Source: Illinois EPA, 2004.

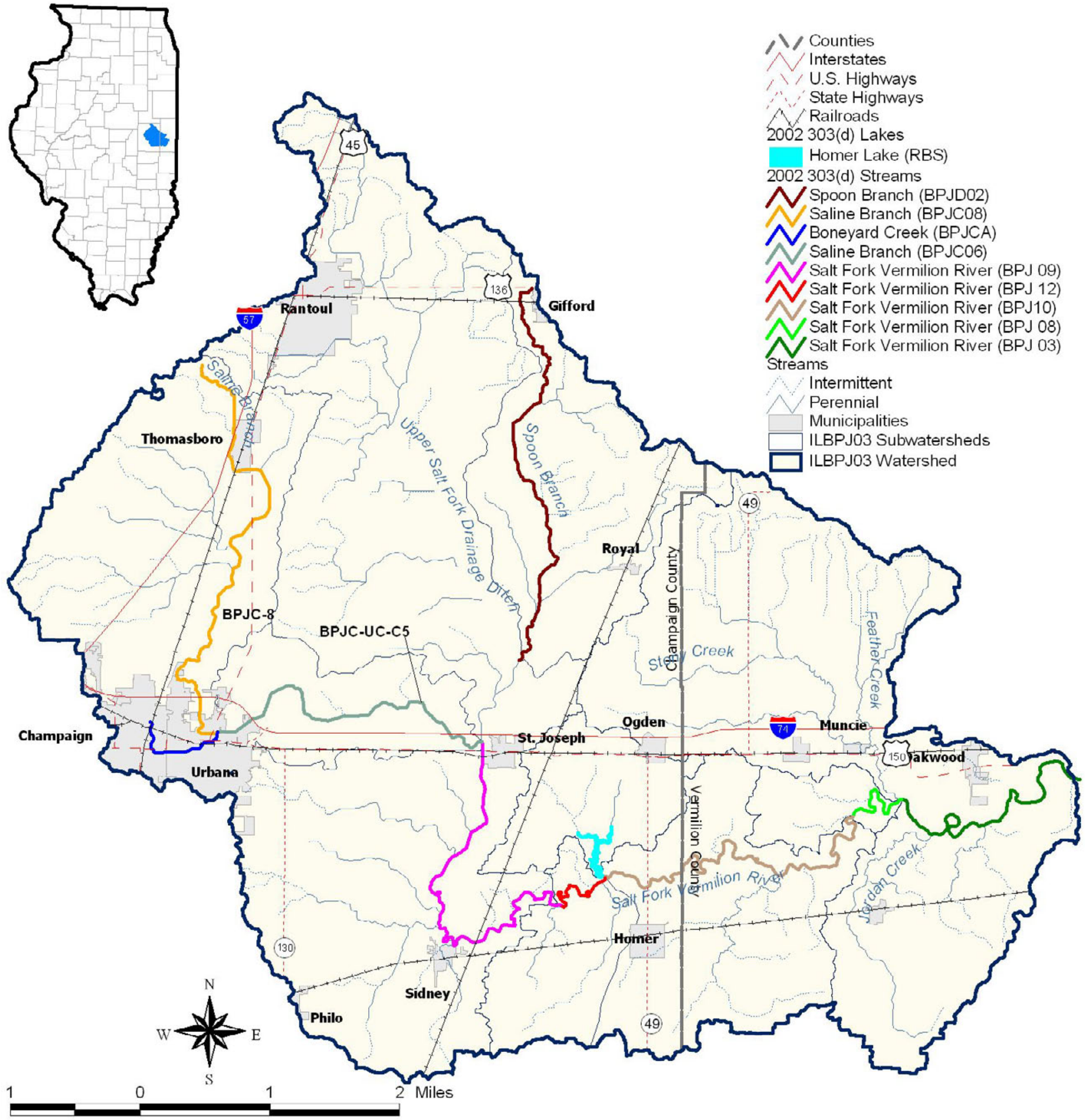

Figure 1-1. Location of Salt Fork Vermilion River watershed.

The Clean Water Act and USEPA regulations require that states develop TMDLs for waters on the Section 303(d) lists. IEPA is currently developing TMDLs for pollutants that have numeric water quality standards. Of the pollutants impairing Homer Lake, total phosphorus is the only parameter with a numeric water quality standard. IEPA believes that addressing the phosphorus impairment for Homer Lake should lead to an overall improvement in water quality due to the interrelated nature of the other listed pollutants. For example, phosphorus binds to sediment and therefore some of the management measures taken to reduce phosphorus loads (e.g., buffer strips, reducing streambank erosion) should also target reductions in loads of suspended solids. In addition, phosphorus is needed to sustain the production of organic plant material such as algae. Because the concentration of phosphorus in a waterbody almost always limits algal growth (i.e., there simply isn't enough phosphorus present to further organic matter production) reducing the amount of phosphorus tends to also cause a decrease in algal production (assuming all other variables remain the same).

A TMDL is defined as "the sum of the individual wasteload allocations for point sources and load allocations for nonpoint sources and natural background" such that the capacity of the waterbody to assimilate pollutant loadings is not exceeded. A TMDL is also required to be developed with seasonal variations and must include a margin of safety that addresses the uncertainty in the analysis. The overall goals and objectives in developing the Homer Lake TMDL include:

- Assess the water quality of Homer Lake and identify key issues associated with the impairments and potential pollutant sources.
- Use the best available science and available data to determine the maximum load the lake can receive and fully support all of its designated uses.
- Determine current loads of TP to the lake.
- If current loads exceed the maximum allowable load, determine the load reduction that is needed.
- Identify feasible and cost-effective actions that can be taken to reduce loads.
- Inform and involve the public throughout the project to ensure that key concerns are addressed and the best available information is used.
- Submit a final TMDL report to USEPA for review and approval.

The project is being initiated in three stages. Stage One was completed in the Spring of 2006 and involved the characterization of the watershed, an assessment of the available water quality data, and an identification of potential technical approaches (IEPA, 2006; see Appendix A). Stage Two (in progress for various impaired stream segments of the Salt Fork Vermilion River) involves additional data collection. Stage Three involves model development and calibration, TMDL scenarios, and implementation planning. This report documents the modeling and TMDL components of Stage Three for Homer Lake. A future report will present the Stage Three findings for the impaired streams within the Salt Fork Vermilion River watershed.

2.0 DESCRIPTION OF WATERBODIES AND WATERSHED CHARACTERISTICS

The purpose of this section of the report is to provide a brief background of Homer Lake and its corresponding watershed. More detailed information is available in the Stage One Report (IEPA, 2006).

Homer Lake, built in 1969, has a surface area of 81 acres and an average depth of approximately eight feet. The lake primarily provides recreation opportunities such as fishing and small boating.

Land use/land cover upstream of Homer Lake is largely agricultural (46 percent corn and 41 percent soybeans based on recent satellite imagery; see Figure 2-1). Additional land use/land cover includes rural grasslands, forest, urban areas, and wetlands. Land use immediately adjacent to the lake is primarily forested. Additional detailed information on the soils, topography, land use/land cover, climate and population of the Homer Lake watershed are available in the Stage One Report (IEPA, 2006).

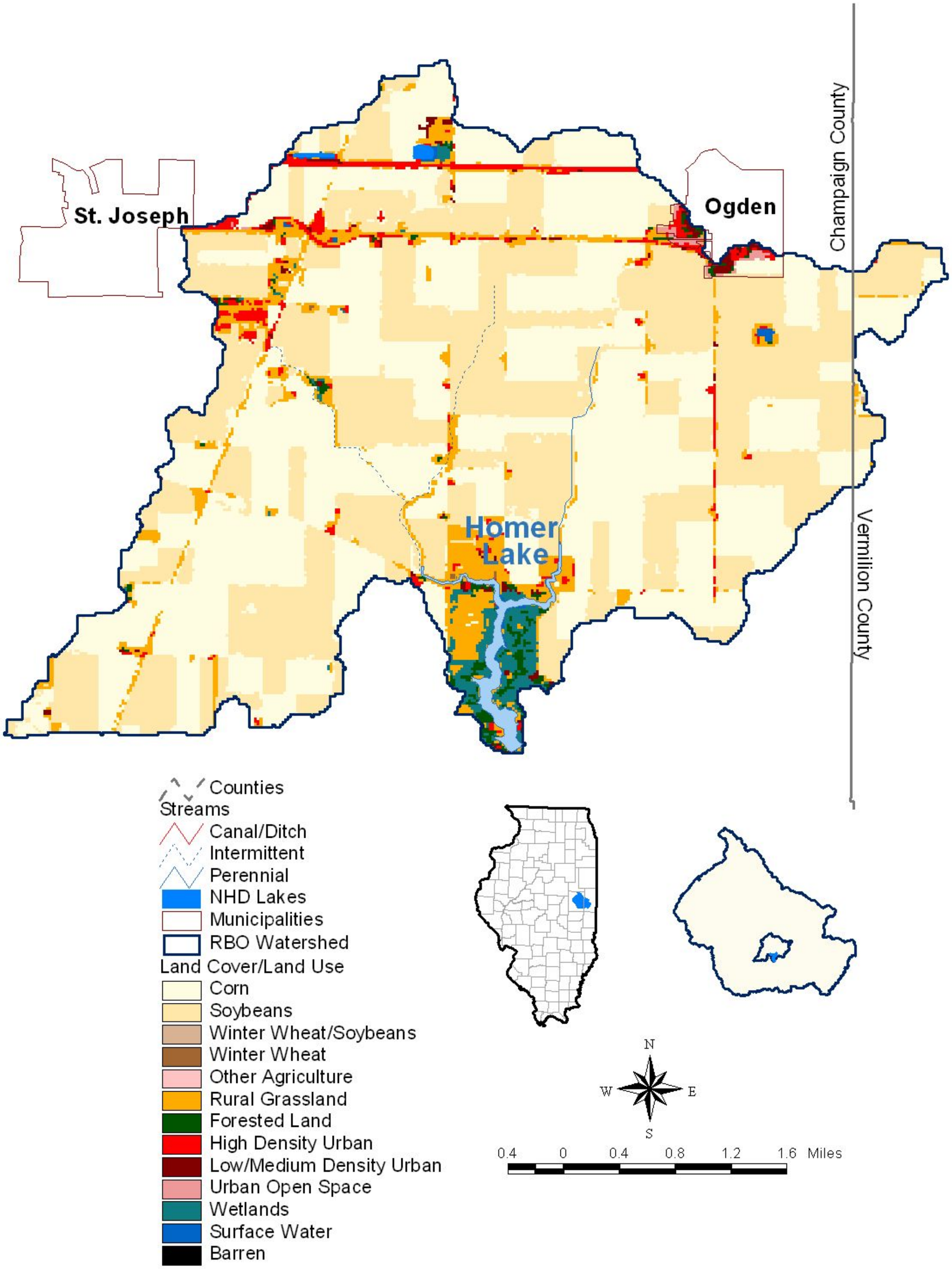

Figure 2-1. Land use/land cover in the Homer Lake watershed.

3.0 WATER QUALITY STANDARDS AND ASSESSMENT OF WATER QUALITY DATA

This section presents the applicable water quality standards and a summary of the historic water quality data for Homer Lake. A more detailed discussion of the available water quality data is available in the Stage One Report (IEPA, 2006).

3.1 Applicable Water Quality Standards

To assess the designated use support for Illinois waterbodies the IEPA uses rules and regulations adopted by the Illinois Pollution Control Board (IPCB). The following are the use support designations provided by the IPCB for Homer Lake:

General Use Standards - These standards protect for aquatic life, wildlife, agricultural, primary contact (where physical configuration of the waterbody permits it, any recreational or other water use in which there is prolonged and intimate contact with the water involving considerable risk of ingesting water in quantities sufficient to pose a significant health hazard, such as swimming and water skiing), secondary contact (any recreational or other water use in which contact with the water is either incidental or accidental and in which the probability of ingesting appreciable quantities of water is minimal, such as fishing, commercial and recreational boating, and any limited contact incident to shoreline activity), and most industrial uses. These standards are also designed to ensure the aesthetic quality of the state's aquatic environment.

Numeric water quality standards have been adopted to correspond to these designated uses. The water quality standards require that total phosphorus concentrations in lakes remain at or below 0.05 mg/L (Source: Illinois Administrative Code. Title 35. Subtitle C. Part 302.205).

3.2 Water Quality Assessment

Water quality data collected in Homer Lake at Illinois EPA monitoring stations RBO-1, RBO-2, RBO-3 are available from 1989 to 2001 (Figure 3-1). Table 3-1 presents the period of record and a statistical summary for all available TP and dissolved phosphorus data. Additionally, Figure 3-2 presents the TP data over the period-of-record. A review of the data reveals that approximately 62 percent of TP samples violated the water quality standard, including 75 percent of recent samples (Figure 3-2). TP concentrations at the surface (one foot depth) are typically similar to TP concentrations at deeper samples. All of the phosphorus data are available in Appendix A.

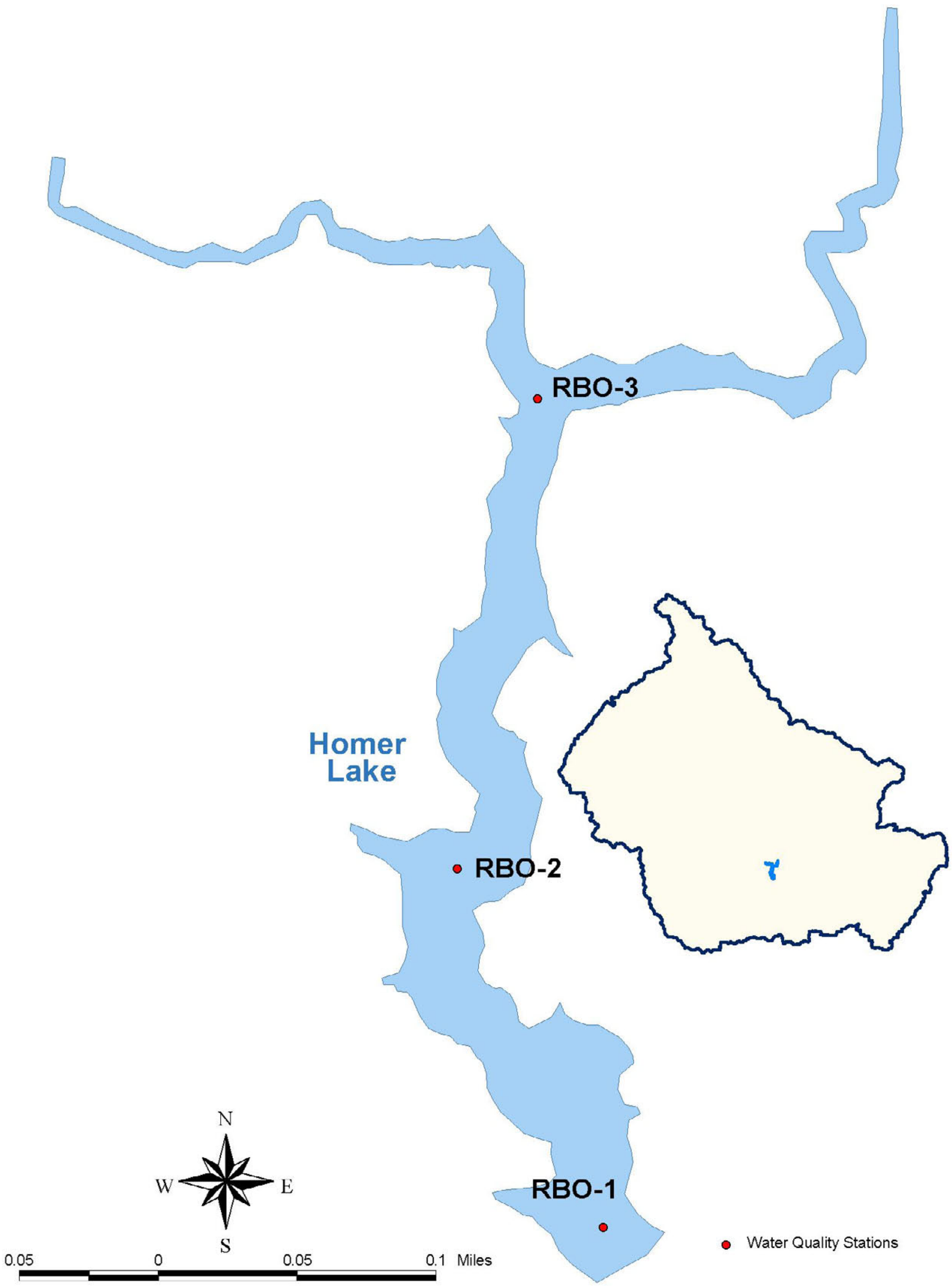

Figure 3-1. Water quality sampling stations in Homer Lake.

Table 3-1. Summary of total and dissolved phosphorus data for Homer Lake.

Parameter	Samples (Count)	Start	End	Minimum (mg/L)	Average (mg/L)	Maximum (mg/L)	CV*
Total Phosphorus	233	4/24/1989	10/30/2001	0.01	0.09	0.46	0.91
Dissolved Phosphorus	106	4/24/1989	10/30/2001	0.00	0.03	0.25	1.49

*CV = standard deviation/average

Table 3-2. Violations of the total phosphorus standard in Homer Lake.

Parameter	Samples (Count)	Violations (Count)	Percent Violating	Samples (Count), 1998 to Present	Violations (Count), 1998 to present	Percent Violating, 1998 to Present
Total Phosphorus (All Depths)	233	144	61.80	52	39	75.00
Total Phosphorus (1-foot Depth)	196	118	60.20	41	32	78.05

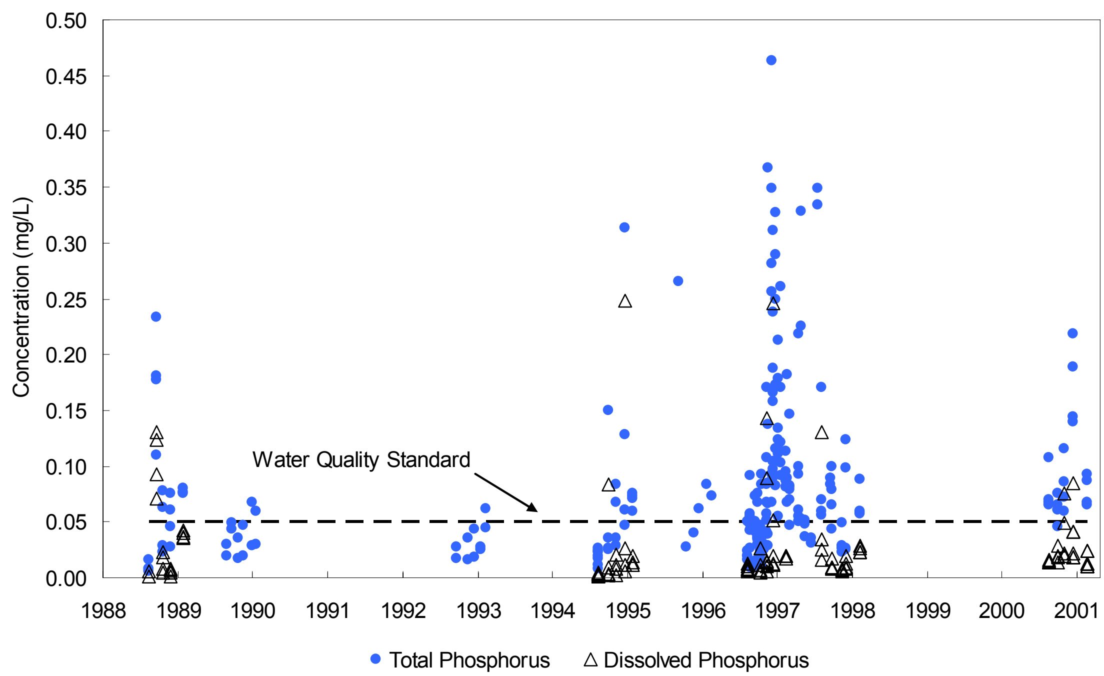

Figure 3-2. Total phosphorus and dissolved phosphorus sampling observations in the Homer Lake.

Monthly median and mean TP concentrations for the period of record are presented in Figure 3-3. The figure shows that the water quality standard of 0.05 mg/L has been exceeded in all months except February. Additionally, median and mean monthly TP concentrations display seasonal variability. Median and mean monthly TP concentrations are relatively constant during late spring (April) through mid-summer (July). TP concentrations are highest in July, August, and September though the median concentration only shows an increase in August and September. All samples collected in January, February, and March were collected in 1998. The November and December samples were all collected in

1997. Note that only two samples were taken in the months of February and March so the mean and median are represented as a single point.

The percentage of phosphorus that is in the dissolved form is shown in Figure 3-4 and indicates that values are highest in June and July. Limited dissolved phosphorus data are available and thus the percentage could not be calculated for several months.

Total phosphorus data are summarized by monitoring station in Figure 3-5 and suggest that values are somewhat higher at RBO-2 and RBO-3 compared to RBO-1. This might be due to greater dilution occurring at RBO-1 because of the deeper depths.

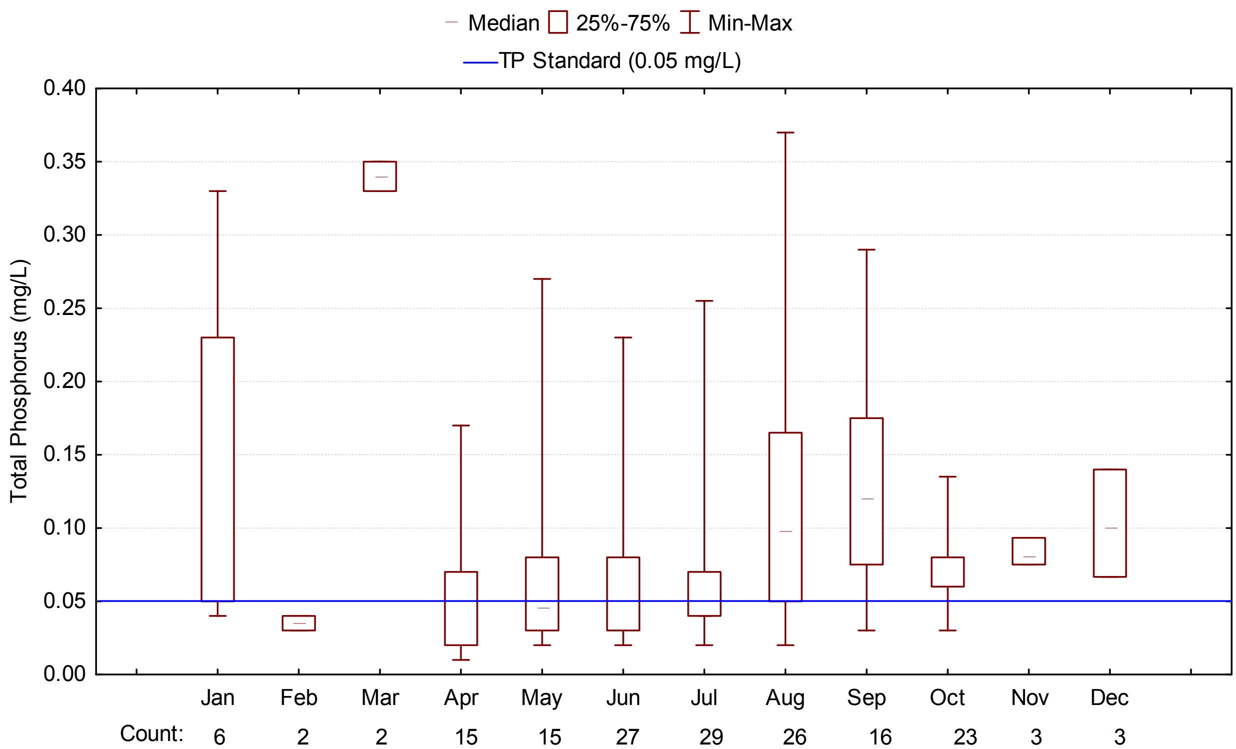

Figure 3-3. Monthly statistics for total phosphorus in Homer Lake, 1989–2001.

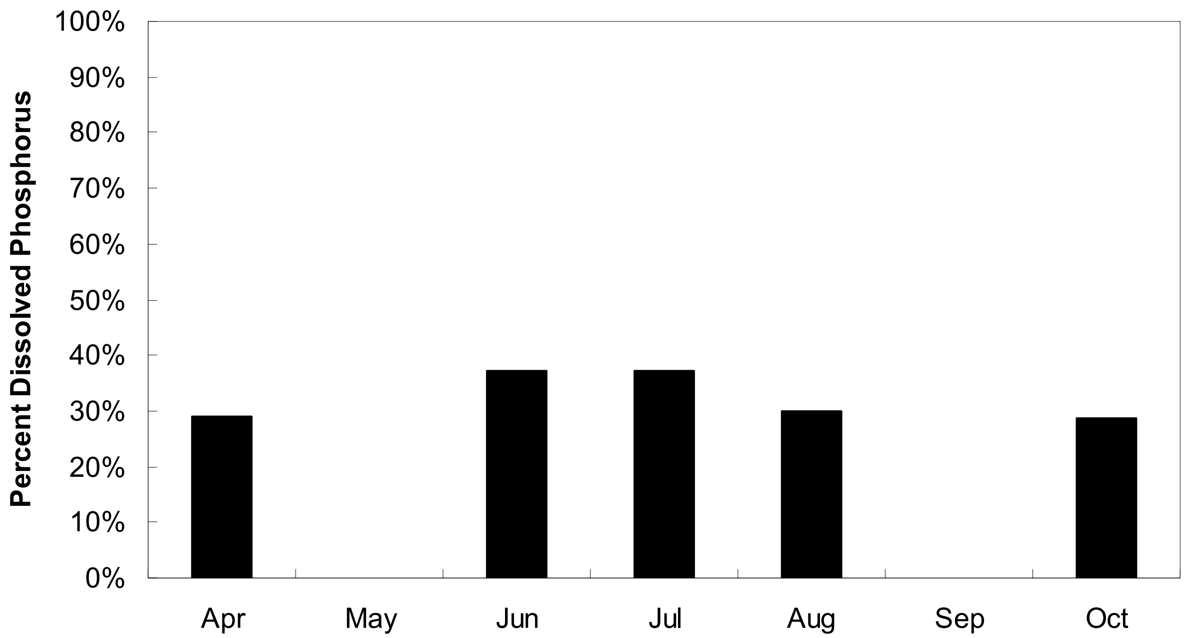

Figure 3-4. Monthly dissolved phosphorus for Homer Lake, 1989 to 2001.

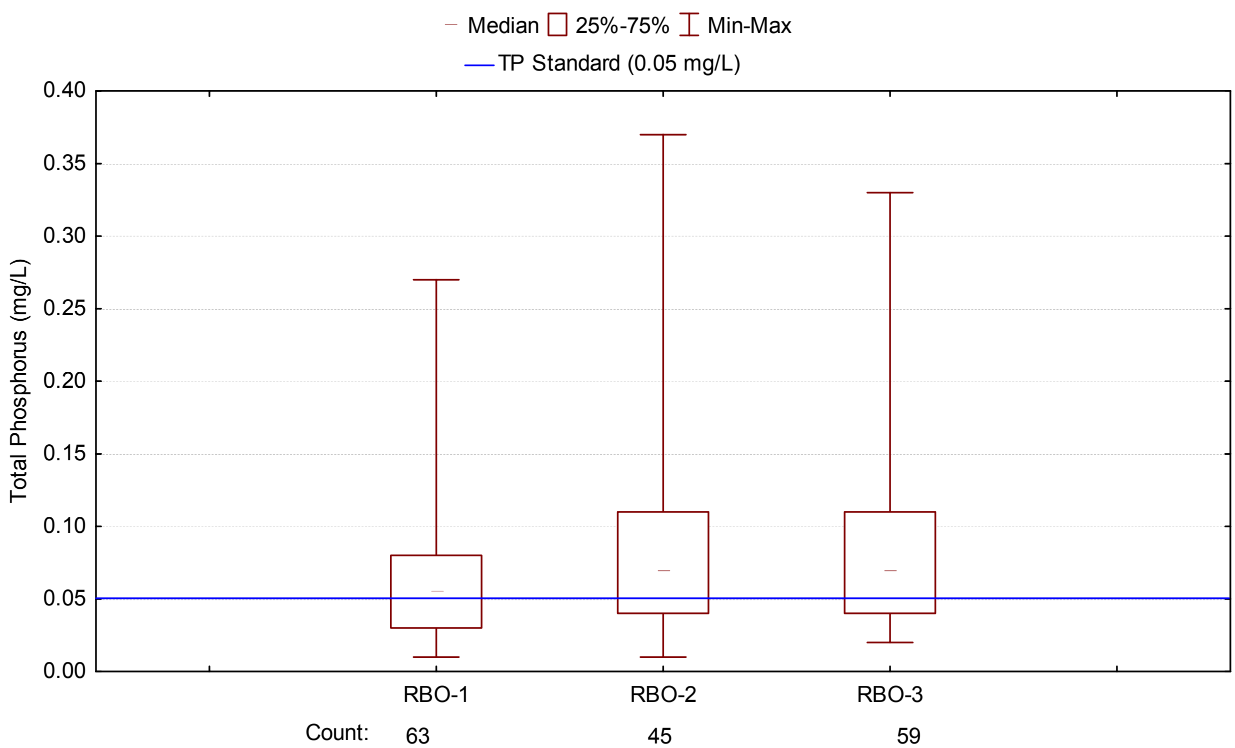

Figure 3-5. Total phosphorus summary by station for Homer Lake, 1989–2001.

Eutrophication in freshwater systems is typically controlled by either nitrogen or phosphorus. The limiting nutrient is defined as the nutrient that limits plant growth when it is not available in sufficient quantities. Controlling this nutrient can often slow the rate of eutrophication and improve conditions in the waterbody. An initial identification of the limiting nutrient can be made by comparing the levels of nutrients in the waterbody with the plant stoichiometry. The ratio of nitrogen to phosphorus in biomass is approximately 7.2:1. Therefore, a nitrogen:phosphorus ration in water that is less than 7.2 suggests that nitrogen is limiting. In contrast, a ratio greater than 7.2 suggests that phosphorus is the limiting nutrient (Chapra, 1997).

The variability of the TN:TP ratios in Homer Lake is presented in Figure 3-6. Although there is a great deal of variability, TN:TP ratios are usually greater than 10, suggesting that phosphorus is the limiting nutrient in Homer Lake.

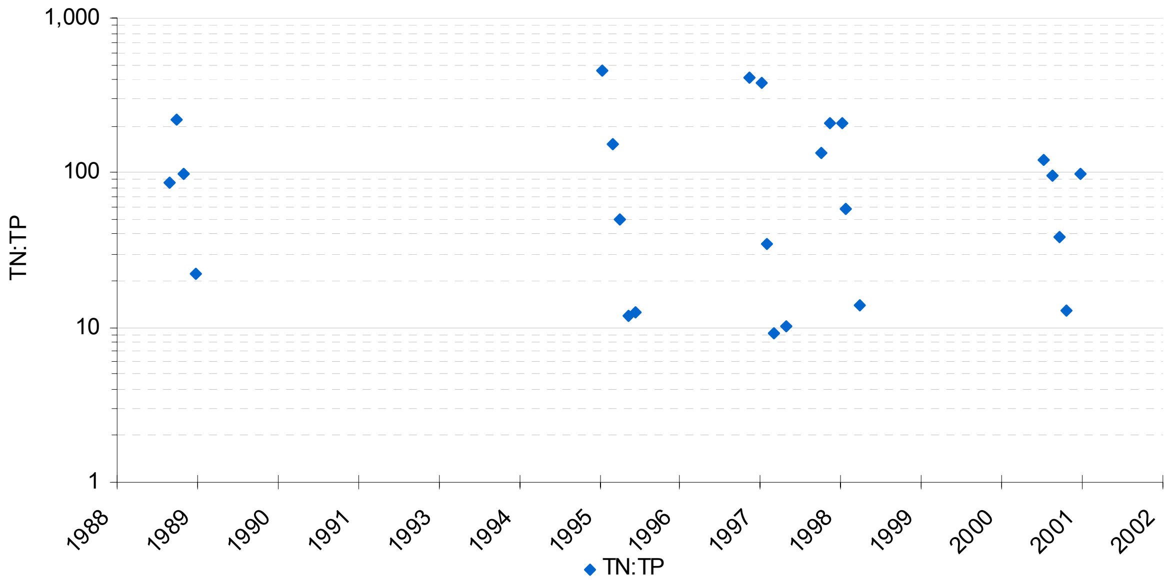

Figure 3-6. TN:TP ratios over the period of record in Homer Lake.

The dominant pigment in algal cells is chlorophyll-*a*, which is easy to measure and is a valuable surrogate measure for algal biomass. Chlorophyll-*a* is desirable as an indicator because algae are either the direct (e.g., nuisance algal blooms) or indirect (e.g., high/low dissolved oxygen, pH, and high turbidity) cause of most problems related to excessive nutrient enrichment.

Figure 3-7 displays chlorophyll-*a* concentrations in Homer Lake. The highest concentrations were observed during 1997 and 1998, which were also the most intensive sampling years. Monthly median and mean chlorophyll-*a* concentrations are presented in Figure 3-8, which shows that chlorophyll-*a* peak in August. Figure 3-9 also shows that there is a positive relationship between TP and chlorophyll-*a*, supporting the finding that phosphorus is the limiting nutrient.

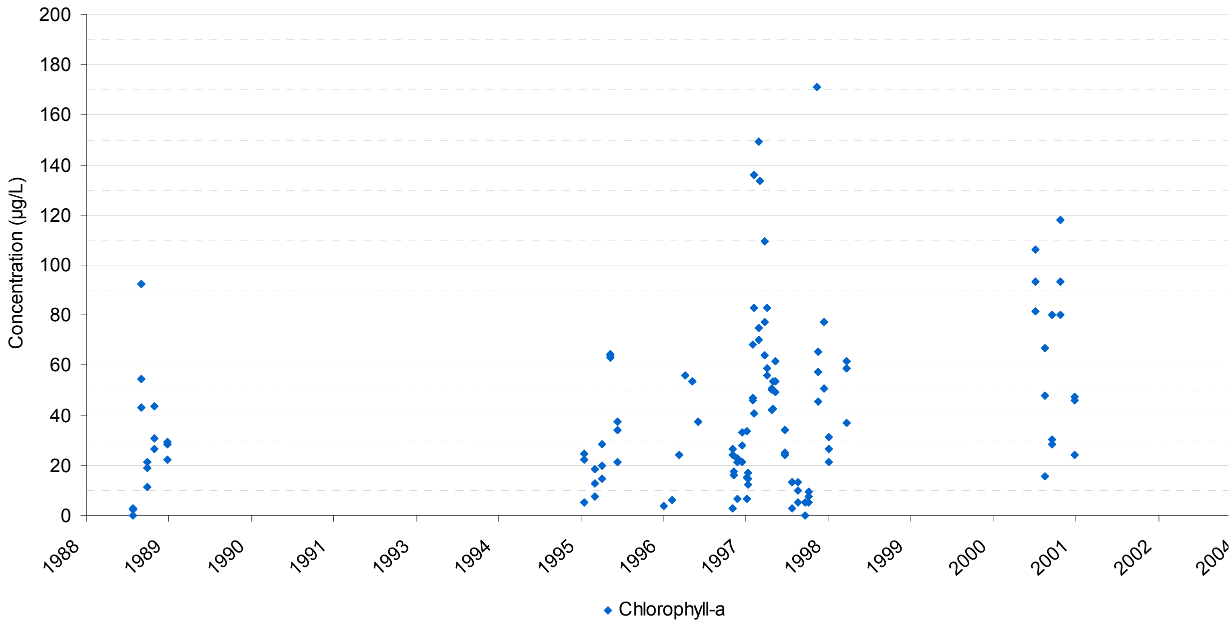

Figure 3-7. Chlorophyll-*a* sampling observations in Homer Lake.

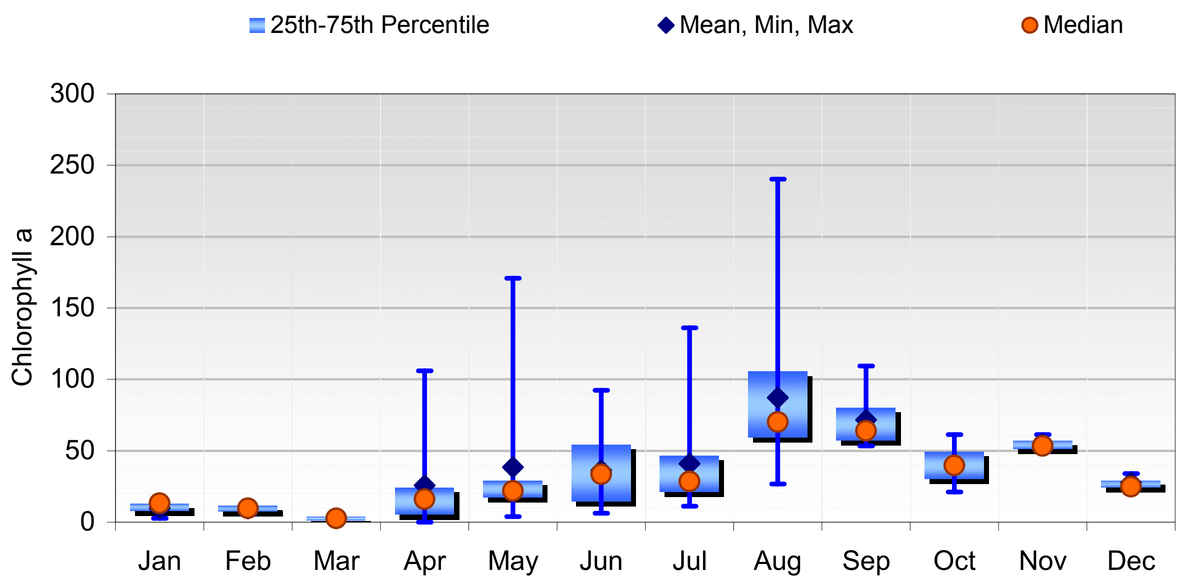

Figure 3-8. Monthly mean and median chlorophyll-*a* concentrations in Homer Lake, 1989–2001.

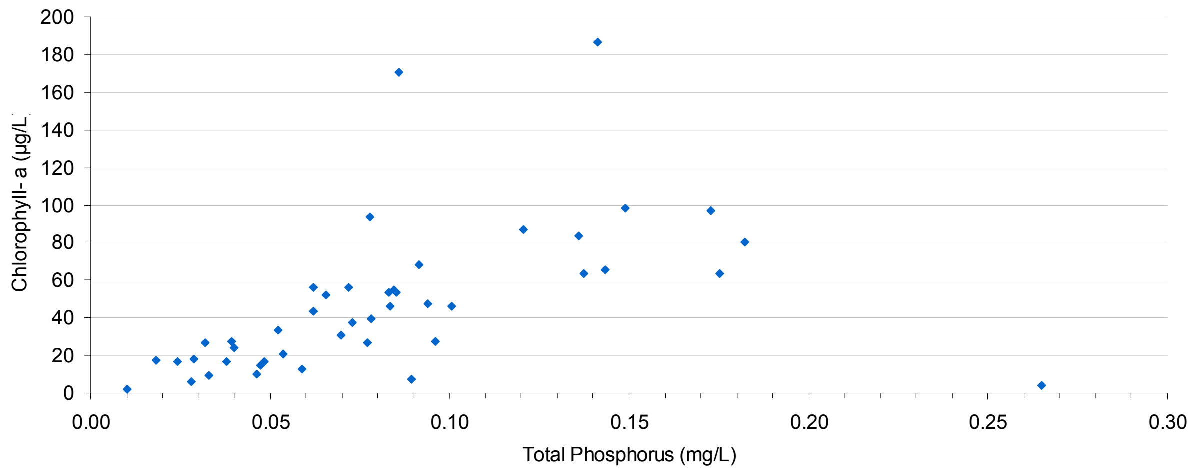

Figure 3-9. Relationship between chlorophyll-a concentration and TP concentration in Homer Lake, 1989–2001.

4.0 SOURCE ASSESSMENT

This section of the report briefly identifies potential sources of TP. An Implementation Plan will be prepared that will address these sources in more detail.

4.1 Point Sources

There are no National Pollution Discharge Elimination System (NPDES) facilities upstream in the Homer Lake watershed.

4.2 Nonpoint Sources

The most significant potential nonpoint sources of TP to Homer Lake include sheet and rill erosion (because phosphorus can be bound to the eroded sediment), fertilizers applied to both crops and lawns, and illicitly connected onsite wastewater systems which might discharge human waste directly into the tributaries draining to Homer Lake. Other sources, such as storm water runoff from urban areas, streambank erosion, and atmospheric deposition, are not considered as significant. Internal recycling of phosphorus is also a potential source. One of the purposes of the Implementation Plan will be to assess the most cost-effective means of addressing all of the significant nonpoint sources of TP.

5.0 TECHNICAL ANALYSIS

Establishing the link between pollutant loads and resulting water quality is one of the most important steps in developing a TMDL. This link can be established through a variety of techniques ranging from simple mass balance analyses to sophisticated computer modeling. The objective of this section of the report is to describe the approach that was used to link the estimates of TP loading with the resulting concentrations in Homer Lake.

5.1 Modeling Approach and Model Selection

BATHTUB was selected for modeling water quality in Homer Lake. BATHTUB performs steady-state water and phosphorus balance calculations in a spatially segmented hydraulic network, which accounts for pollutant transport and sedimentation. In addition, the BATHUB model automatically incorporates internal phosphorus loadings into its calculations. Eutrophication-related water quality conditions (e.g., phosphorus, nitrogen, chlorophyll *a*, and transparency) are predicted using empirical relationships previously developed and tested for reservoir applications (Walker, 1987). BATHTUB was determined to be appropriate because it addresses the parameter of concern (phosphorus) and has been used previously for reservoir TMDLs in Illinois and elsewhere. USEPA also recommends the use of BATHTUB for phosphorus TMDLs (USEPA, 1999).

5.2 Model Setup

The BATHTUB model requires the following data to configure and calibrate: tributary flows and concentrations, reservoir bathymetry, in-lake water quality concentrations, and global parameters such as evaporation rates and annual average precipitation. Lake bathymetry data were available from IEPA's sampling data and maps of the lake and are summarized in Table 5-1.

Table 5-1. Bathymetry Data for Homer Lake

Parameter	Homer Lake
Surface Area (acres)	80.8
Maximum Depth (feet)	24.0
Mean Depth (feet)	7.9

In a typical BATHTUB model application, tributary flows and corresponding phosphorus concentrations are input to the model, and simulated inlake concentrations are compared to a limited set of water quality samples. For Homer Lake, the observed inlake data were adequate for calibration, but tributary flows and concentrations were not available, nor could an appropriate surrogate watershed be identified. A "reverse" BATHTUB model was therefore setup using the observed inlake concentrations with area weighted flow to estimate the load required to simulate the observed average phosphorus concentration.

Flow rates to Homer Lake were estimated by area weighting flows observed at USGS gage 03337000 on Boneyard Creek. Although Boneyard Creek is in a primarily urban watershed and Homer Lake in a primarily agricultural watershed, the Boneyard Creek gage was the only currently operating gage in the vicinity from which to base flows. The relative magnitude of flows is likely different, but the timing of precipitation response should be similar. The Homer Lake drainage area is 14.5 square miles and the drainage area to the Boneyard Creek gage is 4.46 square miles. Daily average flow rates at the gage were scaled up by 3.25 (or 14.5/4.46) to estimate daily flows to the lake. These daily flows were summed to estimate the monthly flow volume to the lake (Figure 5-2).

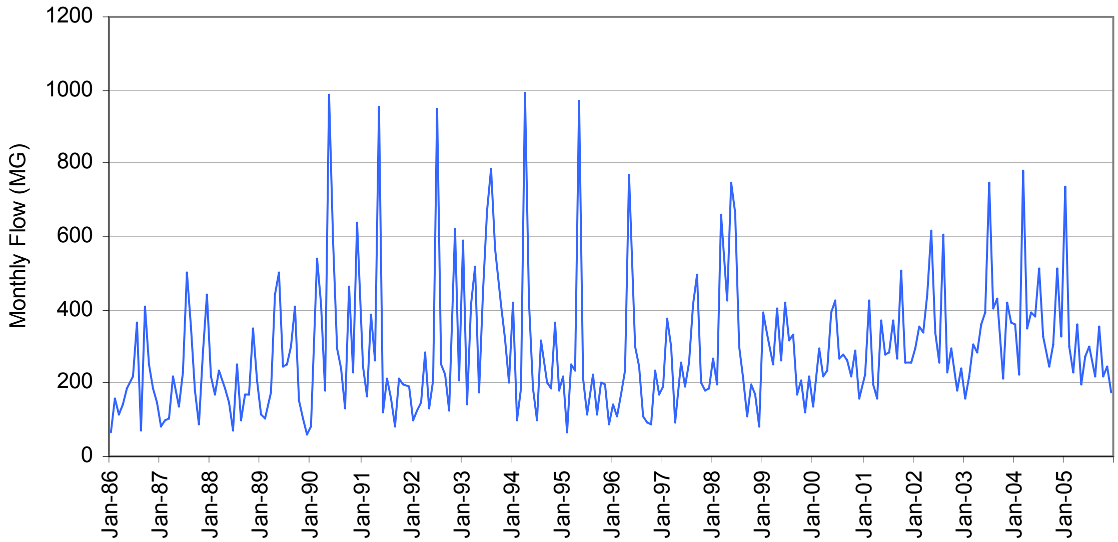

Figure 5-1. Monthly Flow Volume to Homer Lake

The BATHTUB model was set up for two simulation periods: annual and summer season. In general it is best to choose the simulation period that best represents the residence time of the lake. INHS (1992) and Lin and Bogner (2000) estimated the average residence time of Homer Lake to be approximately 0.1 year. The annual BATHTUB simulation resulted in an average residence time of 0.06 year; the summer season model predicted an average residence time of 0.11 year. The summer season model was therefore considered slightly more reliable. In addition, the summer model was also the most conservative with respect to required phosphorus reductions to meet the water quality standard. Figure 5-2 compares the summer flow volumes to Homer Lake over the period of record.

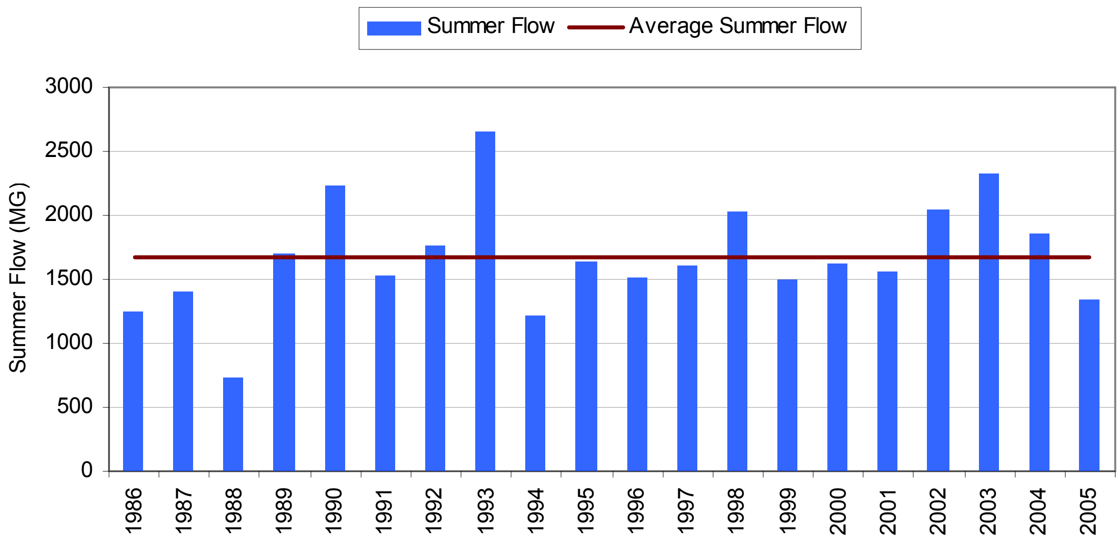

Figure 5-2. Summer Flow Volume to Homer Lake (May through September).

Figure 5-3 shows the average observed summer total phosphorus concentration plotted against summer flow volume. Concentrations are highest in Homer Lake during low-flow summers, indicating a continual source of phosphorus loading that is diluted and flushed during runoff events. Sources of phosphorus in the Homer Lake watershed will be identified in the implementation plan.

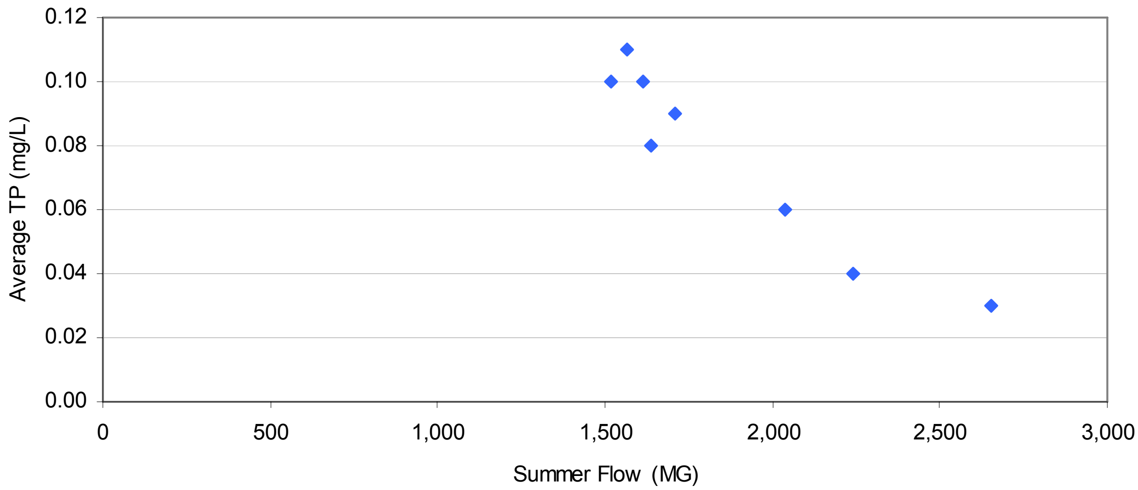

Figure 5-3. Average Observed Total Phosphorus Concentration in Homer Lake Compared to Summer Flow Volume in million gallons (May through September).

The total phosphorus loads required to simulate the observed concentrations with the BATHTUB model are listed in Table 5-2.

Table 5-2. Watershed Loading To Homer Lake.

Year	Average Stream Flow (cubic feet per second)	Total Phosphorus (lbs/summer)
1989	17	3,020
1990	23	992
1993	27	838
1995	17	2,535
1996	15	2,932
1997	16	3,439
1998	21	1,852
2001	16	3,616

The BATHTUB model requires input of the fraction of inorganic nutrient load. Inorganic fractions for Homer Lake were assumed 0.3 for phosphorus based on the long-term median of observed data.

The BATHTUB model (Walker, 1987) was set up to simulate nutrient responses in Homer Lake for the years 1989 through 2001 to correspond with available water quality data. Several of the nutrient response routines available within BATHTUB were tested. These included the Canfield and Bachman, Vollenweider, Simple First Order, and Second Order Decay routines. Second order nutrient response models were used to simulate both nitrogen and phosphorus and nutrient calibration factors were set to 1. No adjustment of the calibration factors was needed with this simulation because the loads were back calculated for each year to match observed average concentrations.

Internal phosphorus loading is accounted for in BATHTUB by application of a net phosphorus sedimentation rate (settling minus resuspension). The Nürnberg method (1984) was chosen to approximate the internal load. This method uses mean depth, flushing rate, average inflow, and average outflow concentrations to estimate internal load. For Homer Lake, the internal load is estimated as 9.1 lb/yr, a negligible fraction of the total load (0.4 percent). However, this rate is high compared to other nearby lakes assessed with the same method and Lin and Bogner (2000) suggest internal phosphorus loading might be a more important factor in lake water quality. This issue will therefore be further explored as part of the Implementation Plan.

6.0 TMDL

This section of the report presents the various components of the TMDL, as required by the Clean Water Act.

6.1 Loading Capacity

The BATHTUB model was used to identify the load reductions necessary to achieve a target concentration of 0.05 mg/L total phosphorus. A 70 percent load reduction is needed to meet the target during all modeled years. Table 6-1 shows the predicted summer average total phosphorus concentrations if a 70 percent reduction is achieved. Note that the annual simulation required a 61 percent reduction in phosphorus loading. The TMDL is based on the summer season model because it is believed to better approximate the hydrology of the lake and is more conservation with respect to protecting water quality.

Table 6-1. Average Total Phosphorus Concentration in Homer Lake with 70 Percent Reduction in Loading.

Year	Homer Lake TP (mg/L)
1989	0.04
1990	0.01
1993	0.01
1995	0.04
1996	0.04
1997	0.05
1998	0.03
2001	0.05
Average	0.03

6.2 Allocations

The allocation of loads for the Homer Lake TMDL is summarized in Table 6-2. The existing loads are the average summer loads to Homer Lake for the period 1989 to 2001. The loading capacity represents the 70 percent reduction from existing loads determined to be necessary from the modeling analysis. Five percent of the loading capacity is reserved for a margin of safety (as required by the Clean Water Act; see Section 6.4).

Table 6-2. TMDL Summary for Homer Lake.

Category	Phosphorus (lbs/summer)	Phosphorus (lbs/day)
Existing Load	2400	15.8
Loading Capacity	720	4.7
Wasteload Allocation	0	0.0
Margin of Safety	40	0.3
Load Allocation	680	4.5

6.3 Seasonality

Section 303(d)(1)(C) of the Clean Water Act and USEPA's regulations at 40 CFR 130.7(c)(1) require that a TMDL be established that addresses seasonal variations normally found in natural systems. For Homer Lake, the median total phosphorus concentration increases during August and September with recovery occurring throughout the winter months. The TMDL is best expressed in terms of the summer average load. If the increase in concentration seen during August and September is controlled, the target will likely be met during the remaining months.

6.4 Margin of Safety

Section 303(d) of the Clean Water Act and USEPA's regulations at 40 CFR 130.7 require that "TMDLs shall be established at levels necessary to attain and maintain the applicable narrative and numerical water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality." The margin of safety can either be implicitly incorporated into conservative assumptions used to develop the TMDL or added as a separate explicit component of the TMDL (USEPA, 1991). A 5 percent explicit margin of safety has been incorporated into the Homer Lake TMDL by reserving a portion of the loading capacity. A relatively low margin of safety was selected because the BATHTUB modeling was set up in such a way so that the observed loads exactly matched the simulated loads (i.e., there is no error in the predicted water quality conditions; see Section 5.2). An additional implicit margin of safety is associated with the loading reduction resulting in lake water quality being significantly better than the water quality standard in all but the most critical years.

7.0 IMPLEMENTATION

A project Implementation Plan will be prepared that will more fully address likely TP sources and potential implementation activities that can achieve the desired reductions in phosphorus loading. The implementation plan will include a range of alternatives along with their expected costs and benefits. IEPA will work with local agencies and stakeholder groups to identify best management practices that will result in meeting water quality goals. It is expected that the Champaign County Soil and Water Conservation District (CCSWCD) will take the lead with implementing the recommended management actions. The CCSWCD has already received a Section 319 grant which has resulted in the following implementation measures (Bruce Stikkers, Progress Report 3 to IEPA, September 2005):

- 135 acres of strip till
- 3,852 acres of Variable Rate Technology (targeted application of fertilizers)
- 122 acres of deep phosphorus placement
- 34 acres of filter strips

A separate public meeting will be held to specifically discuss issues related to implementation once the Implementation Plan is completed.

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APPENDIX C – RESPONSIVENESS SUMMARY

Responsiveness Summary

This responsiveness summary responds to substantive questions and comments received during the public comment period from July 31, 2006 through August 22, 2006 postmarked, including those from the August 8, 2006 public meeting discussed below.

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. The Homer Lake Stage 3 TMDL report details the necessary reduction in pollutant loads to the impaired water bodies to ensure compliance with applicable water quality standards. The Illinois EPA implements the TMDL program in accordance with Section 303(d) of the federal Clean Water Act and regulations thereunder.

Background

The watershed targeted for TMDL development is Homer Lake, which is in Champaign County. The watershed encompasses an area of approximately 14.5 square miles. Land use in the watershed is predominately agriculture. Homer Lake has a surface area of 81 acres and is on the *Illinois Integrated Water Quality Report and Section 303(d) List-2006* as being impaired for total phosphorus, total suspended solids, and excessive algal growth. The Clean Water Act and USEPA regulations require that states develop TMDLs for waters on the Section 303(d) List. Illinois EPA is currently developing TMDLs for pollutants that have numeric water quality standards. Therefore, a TMDL was developed for total phosphorus for Homer Lake. The Illinois EPA contracted with Tetra-Tech, Inc., to prepare a TMDL report for the Homer Lake watershed.

Public Meetings

Public meetings were held in the village of Royal on December 13, 2005, and August 8, 2006. The Illinois EPA provided public notice for both meetings by placing display ads in the Champaign New-Gazette. This notice gave the date, time, location, and purpose of the meeting. The notice also provided references to obtain additional information about this specific site, the TMDL program and other related issues. Approximately 1,539 individuals and organizations were also sent the public notice by first class mail. The draft TMDL Report was available for review on the Agency's web page at http://www.epa.state.il.us/public-notices . Hardcopies were available upon request.

The Stage 3 public meeting started at 6:00 p.m. on Tuesday, August 8, 2006. It was attended by approximately 12 people and concluded at 7:15 p.m., with the meeting record remaining open until midnight, August 22, 2006.

Questions and Comments

1. Explain how the BATHTUB model works.

   Response: An explanation of the BATHTUB model is given in section 5.0 of the draft report.

2. Have the tributaries leading into the lake been sampled?

   Response: The east and west tributaries were sampled during the Clean Lakes Study conducted in 1997 and 1998. More recent samples could be collected as a component of the TMDL implementation plan.

3. How will sources of phosphorus from the watershed be determined?

   Response: Potential sources of phosphorus are presented in section 4.0 of the draft TMDL report. Sources will further be addressed in the TMDL implementation plan. Continued monitoring of the lake and its tributaries may also help determine sources.

4. There has been a lot of development in the watershed within the last five years since the last dataset was taken in 2001.

   Response: Thank you for your comment. Homer Lake is scheduled to be sampled again in 2007, which may reflect the impact the recent development has had on water quality.

5. It has been observed by a property owner along the west tributary to the lake that there are suds coming out of a nearby tile line that empties into the tributary. The effluent from that tile should be sampled to determine its contents.

   Response: Thank you for brining this matter to our attention. IEPA field office staff have been contacted to investigate.

6. In 2005, a local drainage district physically removed trees and brush from the western tributary, as well as sprayed herbicide on the banks.

   Response: Thank you for your comment.

7. What determines the size of area for a TMDL watershed?

   Response: A TMDL watershed is based on all of the area that drains into a particular segment for which a TMDL is being developed. This is primarily dictated by topography and drainage patterns.

8. The landuse map based on 2000 satellite data does not reflect the expansion of St. Joseph that has occurred in recent years.

   Response: The report specifies the years for which the land use map represents. Any urban development that has occurred since the satellite mapping is not represented. Since a watershed model was not utilized during TMDL development, the affects of additional urban runoff could not be taken into account. However, urban stormwater can be addressed in the implementation plan.

9. There is concern that septic systems in the watershed may be tied to field tiles. It was mentioned that an area farmer in the watershed observed feces and toilet paper in a tile line he was repairing.

   Response: Septic systems tied to field tiles are a concern, and can be a source of total phosphorus to the lake. Septic systems will be addressed in the implementation plan.

10. Has any phosphorus data been collected in Homer Lake since 2001? When will the lake be sampled again?

    Response: See response to #4.

11. If Homer Lake is sampled again, when will those data be published?

    Response: Homer Lake is scheduled to be sampled again in the summer of 2007. The raw water quality data could potentially be available upon request by the end of 2007. The data will be assessed by IEPA and its use support will be available in the Integrated Water Quality Report And Section 303(d) List-2010 in the year 2010.

12. Why are the phosphorus samples collected from the Volunteer Lake Monitoring Program not included in the report?

    Response: Data taken through the Volunteer Lake Monitoring Program (VLMP) are typically not used in TMDL development due to quality assurance concerns. Nutrient data are not available from every lake through the VLMP, and if it is, it is usually only representative of the site nearest the dam.

13. How much phosphorus does an average household produce in wastewater each year?

    Response: Based on an assumed 8 mg/l total phosphorus concentration for medium strength domestic sewage (<u>Metcalf and Eddy, Inc. Wastewater Treatment Engineering Treatment, Disposal, and Reuse, Third Edition</u>,

McGraw Hill, Inc., New York, 1991, page 109) and an average water usage of 350 gallons per day (35 Ill Administrative Code 370, Appendix A), the average household can expect to produce 85 pounds of total phosphorus per year (assuming that no phosphorus is removed through the treatment process.

14. The Salt Fork River Forest Preserve name was officially changed a couple of years ago to the "Homer Lake Forest Preserve"

    Response: Thank you for your comment. The report has been corrected.

15. How does the 70% reduction recommendation compare to other recommendations in the state or country? Is there a place that I can get a list of phosphorus reduction recommendations for other areas?

    Response: The total phosphorus reduction for Homer Lake is comparable to reductions needed for other lakes in Illinois to meet water quality standards. The Agency does not keep a separate list of TMDL reductions. However, the reductions in pollutant loads can be found in individual TMDL reports, available on the Agency's website.

16. Will there be a meeting/public comment report period for the implementation plan?

    Response: Yes. A public notice will be sent out announcing the meeting beforehand.

17. Will a final copy of the Stage 3 report be available to the public? Will that be available on-line?

    Response: Yes. Hard copies of the report will be available upon request, and electronic copies will be available on the Agency's website.

18. The report does not mention septic systems in the watershed as a potential source of phosphorus to the lake. We have also been informed that a sod farm operates in the watershed, adjacent to one of the creeks draining into Homer Lake. Both of these sources should be assessed as part of the Stage 3 analysis for this TMDL.

    Response: Septic systems were mentioned in the Salt Fork Vermilion Watershed Stage 1 Report, which includes the Homer Lake watershed. Septics systems will be added to the Stage 3 report. The report states that a majority of the watershed is agricultural, including grasslands/pasture. A sod farm would fall into this category.

19. This Stage 3 report does not provide any source assessment for the watershed. We feel that this is an essential part of TMDL development that should not be

postponed until the Implementation Plan. We request that IEPA postpone the completion of Stage 3 until the source assessment for the watershed can be completed.

Response: Section 4.0 of the Stage 3 Report gives a brief summary of source assessment. A more detailed discussion of potential sources of total phosphorus appears in the Salt Fork Vermilion River Watershed TMDL Stage 1 Report. Since there are no point sources in the watershed, nonpoint sources are the dominant source of total phosphorus to Homer Lake. Since a watershed model was not utilized in the development of this TMDL, the phosphorus loads from each nonpoint source could not be quantified. The implementation plan will recommend voluntary practices that may be adopted by stakeholders to reduce total phosphorus loads to the lake.

Homer Lake TMDL Implementation Plan

Final Report

August 2007

Homer Lake TMDL Implementation Plan

FINAL REPORT

August 2007

Submitted to:
Illinois Environmental Protection Agency
1021 N. Grand Avenue East
Springfield, IL 62702

Submitted by:
Tetra Tech

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KEY FINDINGS

As part of the Section 303(d) listing process, the Illinois Environmental Protection Agency (IEPA) has identified Homer Lake in the Salt Fork Vermilion River watershed as impaired for total phosphorus. Illinois water quality standards require that total phosphorus concentrations in lakes not exceed 0.05 mg/L. Historic sampling within Homer Lake indicates that this standard is often exceeded with the long-term concentration averaging approximately 0.09 mg/L.

Continuous flow and total phosphorus data for the tributaries of Homer Lake are not available for estimating loading rates. However, inlake total phosphorus data have been collected several times per year for selected years since 1989. A calibrated US Army Corps of Engineers BATHTUB model (Walker, 1987) was used to estimate the load required each year to simulate average observed concentrations. The BATHTUB model was then used to determine the load reductions necessary to meet the 0.05 mg/L water quality standard. The analysis indicated that a 70 percent reduction in phosphorus loads is required. Potentially, the major sources of the phosphorus load to Homer Lake are agriculture and failing septic systems. Based on the findings of this implementation plan, cost-effective agricultural best management practices, such as conservation tillage, grassed waterways, nutrient management planning, and controlled drainage will likely reduce loads to the required levels.

The level of failure of onsite wastewater treatment systems (typically called septic systems) is not known for this watershed. Septic systems are a potentially significant source of phosphorus loading if a large percentage of those systems are not functioning properly. Periodic maintenance and inspections are necessary to ensure that untreated wastewater is not causing impairment to water quality or hazards to public health.

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1.0 INTRODUCTION

The Clean Water Act and USEPA regulations require that states develop Total Maximum Daily Loads (TMDLs) for waters identified as impaired on the Section 303(d) lists. Homer Lake, located in the southern portion of the Salt Fork Vermilion River watershed, is listed on Illinois' 2006 303(d) list as described in Table 1-1.

Table 1-1. 2006 303(d) List Information for Homer Lake.

Segment (Area)	Name	Designated Uses and Support Status	Causes of Impairment	Potential Sources of Impairment
RBO (80.80 acres)	Homer Lake	Overall Use (Partial), Aquatic Life Support (Full), Fish Consumption (Full), Primary Contact (Partial), Secondary Contact (Partial), Drinking Water Supply (Not Assessed)	Total Suspended Solids, Excessive Algal Growth, Total Phosphorus	Agriculture – crop related sources; Construction – land development; Habitat modification; Forest/grassland/ parkland

IEPA is currently developing TMDLs for pollutants that have numeric water quality standards. Of the pollutants impairing Homer Lake, total phosphorus is the only parameter with a numeric water quality standard. IEPA believes that addressing the phosphorus impairment for Homer Lake should lead to an overall improvement in water quality due to the interrelated nature of the other listed pollutants. For example, reducing loads of phosphorus should result in less algal growth and some of the management measures taken to reduce phosphorus loads (e.g., reducing agricultural erosion) should also reduce loads of suspended solids.

This project is being initiated in three stages. Stage One was completed in the Spring of 2006 and involved the characterization of the watershed, an assessment of the available water quality data, and identification of potential technical approaches. Stage Two involves additional data collection for waters where a TMDL could not yet be developed (i.e., the Salt Fork Vermilion River). Stage Three involves model development and calibration, TMDL scenarios, and implementation planning.

The TMDL for Homer Lake was based on application of the U.S. Army Corps of Engineers BATHTUB model. The total phosphorus loads required to simulate the observed concentrations with the BATHTUB model are listed in Table 1-2.

Table 1-2. Watershed Loading To Homer Lake.

Year	Average Stream Flow (cubic feet per second)	Total Phosphorus (lb/summer)
1989	17	3,020
1990	23	992
1993	27	838
1995	17	2,535
1996	15	2,932
1997	16	3,439
1998	21	1,852
2001	16	3,616

The BATHTUB model was used to identify the load reductions necessary to achieve a target concentration of 0.05 mg/L total phosphorus. A 70 percent load reduction is needed to meet the target during all modeled years. Table 1-3 shows the predicted summer average total phosphorus concentrations if a 70 percent reduction is achieved. Note that the annual simulation required a 61 percent reduction in phosphorus loading. The summer season model better approximates the hydrology of the lake and is more conservative with respect to protecting water quality.

Table 1-3. Average Total Phosphorus Concentration in Homer Lake with 70 Percent Reduction in Loading.

Year	Homer Lake TP (mg/L)
1989	0.04
1990	0.01
1993	0.01
1995	0.04
1996	0.04
1997	0.05
1998	0.03
2001	0.05
Average	0.03

The allocation of loads for the Homer Lake TMDL is summarized in Table 1-4. The existing loads are the average summer loads to Homer Lake for the period 1989 to 2001. The loading capacity represents the 70 percent reduction from existing loads determined to be necessary from the modeling analysis. Five percent of the loading capacity is reserved for a margin of safety (as required by the Clean Water Act).

Table 1-4. TMDL Summary for Homer Lake.

Category	Phosphorus (lb/summer)	Phosphorus (lb/day)
Existing Load	2400	15.8
Loading Capacity	720	4.7
Wasteload Allocation	0	0.0
Margin of Safety	40	0.3
Load Allocation	680	4.5

The TMDL report for Homer Lake, which has been approved by USEPA, suggests a 70 percent reduction in phosphorus loading to meet the water quality standard in the lake. This report presents an Implementation Plan that identifies feasible and cost-effective management measures capable of reducing phosphorus loads to the required levels. The intent of the Implementation Plan is to provide information to local stakeholders regarding the selection of cost-effective best management practices (BMPs).

2.0 DESCRIPTION OF WATERBODY AND WATERSHED CHARACTERISTICS

The purpose of this section of the report is to provide a brief background of Homer Lake and its corresponding watershed. More detailed information on the soils, topography, land use/land cover, climate and population of the Homer Lake watershed are available in the Stage One Watershed Characterization Report.

Homer Lake, built in 1969, has a surface area of 81 acres and an average depth of approximately eight feet. The lake primarily provides recreation opportunities such as fishing and small boating. The drainage area of the lake is approximately 17.7 sq. mi. and is located in the Homer Lake Forest Preserve of Champaign County.

Soils in the Homer Lake watershed are primarily IL012 (Drummer-Plano-Elburn) and IL010 (Flanagan-Drummer-Catlin). Soil erodibility factors for these soils reported in the STATSGO database range from 0.286 to 0.295, indicating moderate soil erodibility. Soils identified by STATSGO as highly erodible generally have slopes greater than 5 percent and represent only 0.81 percent of the total watershed area. With the exception of the area around the lake in the Forest Preserve, most of the highly erodible soils are currently farmed (Figure 2-1).

The average depth to water table reported in the STATSGO database for soils in the Homer Lake watershed ranges from 2.4 to 2.9 feet. Tile drainage systems are usually placed 3 to 4 feet below the soil surface to lower the depth. The use of tile drains is common in the Homer Lake watershed (Lin and Bogner, 2000; CCSWCD, 2003).

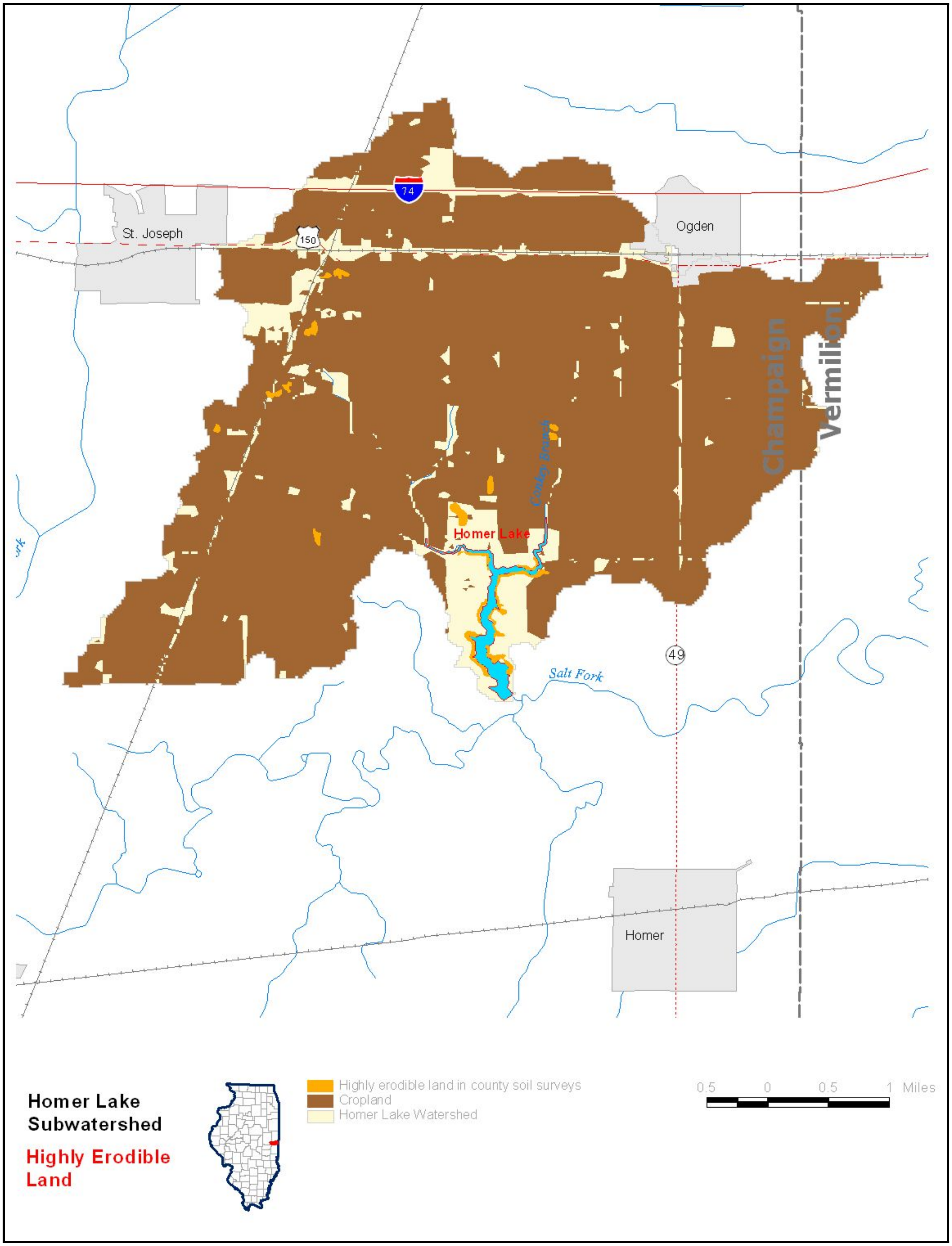

Figure 2-1. Highly Erodible Soils in the Homer Lake Watershed.

Land use/land cover upstream of Homer Lake is largely agricultural (46 percent corn and 41 percent soybeans) based on satellite imagery collected around 2000 (INHS, 2003) (Figure 2-2). Additional land use/land cover includes rural grasslands, forest, urban areas, and wetlands. The majority of land around the perimeter of the lake is wetlands and forest.

In 1997 and 1998, data were collected for a diagnostic study of Homer Lake conducted by the Illinois Clean Lakes Program (Lin and Bogner, 2000). Some of the data and findings from this study are included in the source loading section of this plan.

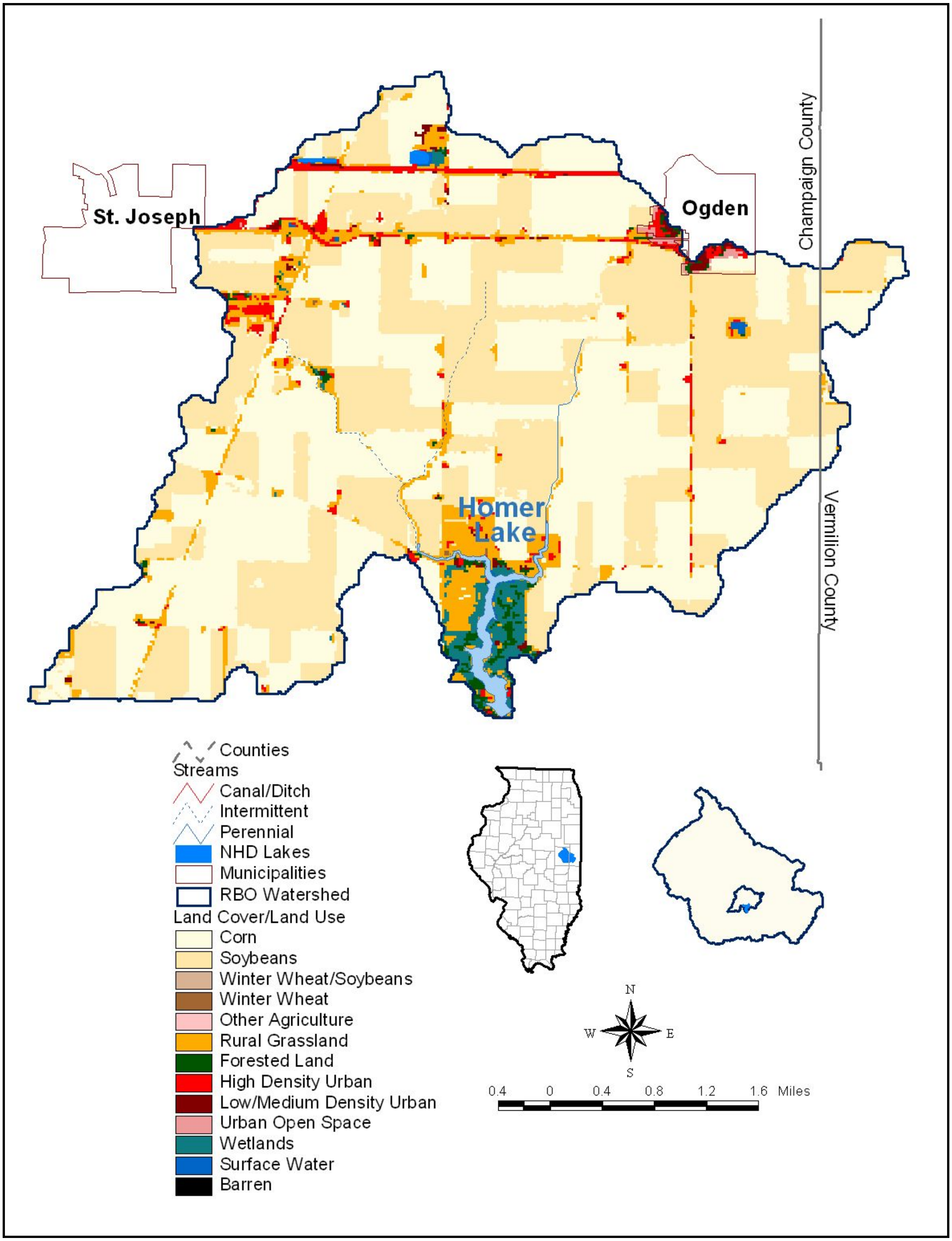

Figure 2-2. Land Use/Land Cover in the Homer Lake Watershed (Year 2000 GAP Data).

3.0 WATER QUALITY STANDARDS AND ASSESSMENT OF WATER QUALITY DATA

This section presents the applicable water quality standards and a summary of the historic water quality data for Homer Lake. A more detailed discussion of the available water quality data is located in the Stage One Watershed Characterization Report.

3.1 Applicable Water Quality Standards

To assess the designated use support for Illinois waterbodies, the IEPA uses rules and regulations adopted by the Illinois Pollution Control Board (IPCB). The following are the use support designations provided by the IPCB for Homer Lake:

General Use Standards - These standards protect for aquatic life, wildlife, agricultural use, primary contact recreation (where physical configuration of the waterbody permits it), secondary contact recreation, and most industrial uses. Primary contact recreation includes any recreational or other water use in which there is prolonged and intimate contact with the water involving considerable risk of ingesting water in quantities sufficient to pose a significant health hazard, such as swimming and water skiing. Secondary contact recreation includes any recreational or other water use in which contact with the water is either incidental or accidental and in which the probability of ingesting appreciable quantities of water is minimal, such as fishing, commercial and recreational boating, and any limited contact incident to shoreline activity. These standards are also designed to ensure the aesthetic quality of the state's aquatic environment.

Numeric water quality standards have been adopted to correspond to these designated uses. The water quality standards require that total phosphorus concentrations remain at or below 0.05 mg/L.

3.2 Water Quality Assessment

As discussed in the Watershed Characterization Report, water quality data collected in Homer Lake show that approximately 62 percent of total phosphorus samples exceeded the water quality standard, including 75 percent of recent samples. Total phosphorus concentrations at the surface (one foot depth) are typically similar to total phosphorus concentrations for deeper samples. Although there is a great deal of variability, total nitrogen to total phosphorus ratios are usually greater than 10, suggesting that phosphorus is the limiting nutrient for algal growth in Homer Lake (Chapra, 1997).

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4.0 POLLUTION SOURCES AND MANAGEMENT ACTIVITIES

As discussed in Section 2.0, the majority of land in the Homer Lake watershed (87 percent) is used for agricultural production. Other land uses include grasslands, forest, urban areas, and wetlands. This section describes typical pollutant loading rates from each source category in the watershed along with appropriate best management practices (BMPs) to achieve a reduction in phosphorus loading. The TMDL allocation for Homer Lake indicates that a reduction in phosphorus load of 70 percent is required to meet the Illinois water quality standard.

4.1 WWTP/NPDES Permittees

There are no permitted direct discharges of phosphorus in the Homer Lake watershed. However, the City of Ogden treats approximately 0.183 MGD of wastewater which is then piped through the Homer Lake watershed to the Salt Fork Vermilion River. The treatment process includes two non-aerated facultative lagoons and a rock filter (Lin and Bogner, 2000). The lagoons, pipeline, and sewer system should be inspected periodically to ensure that failures are not contributing pollutants to the lake.

This implementation plan focuses on the known sources of phosphorus in the watershed, mainly agricultural runoff and tile drainage. Examination of water quality data collected in Homer Lake over the past decade, however, shows a pattern typical of a large, continuous source of phosphorus reaching the lake and then being diluted by wet weather events. Table 4-1 shows the minimum, average, and maximum summer total phosphorus concentrations measured in Homer Lake along with the cumulative summer flow volume (million gallons) from May through September estimated from area-weighted flows measured at USGS Gage 03337000 on Boneyard Creek. The highest observed phosphorus concentrations are observed during the driest summers. The maximum phosphorus concentration observed during the wettest summer (1993) was less than the target concentration of 0.05 mg/L, though an observation in October was above the standard at 0.07 mg/L. Figure 4-1 shows these concentrations plotted against the cumulative summer flow volume.

Table 4-1. Total Phosphorus Observations in Homer Lake (May through September).

Year	Flow (MG)*	Minimum (mg/L)	Average (mg/L)	Maximum (mg/L)
1989	1,708	0.03	0.09	0.23
1990	2,241	0.02	0.04	0.07
1993	2,655	0.02	0.03	0.04
1995	1,636	0.03	0.08	0.18
1996	1,516	0.03	0.10	0.27
1997	1,611	0.02	0.10	0.37
1998	2,038	0.02	0.06	0.12
2001	1,568	0.06	0.11	0.22

*MG = million gallons

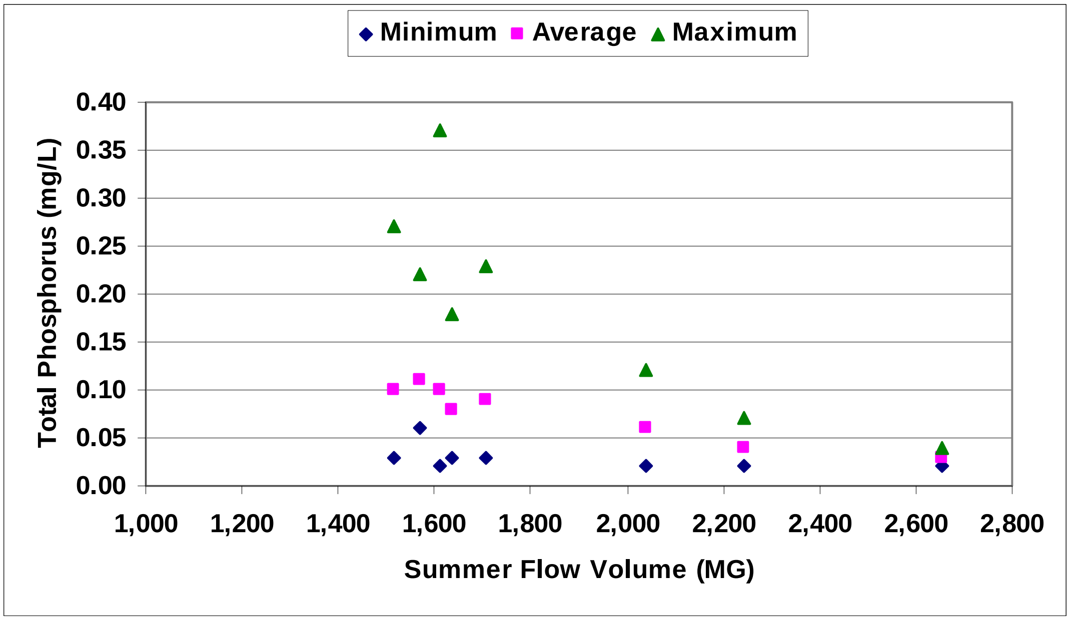


Figure 4-1. Range of Summer Phosphorus Concentrations Observed in Homer Lake versus Cumulative Summer Flow Volume.

In watersheds dominated by nonpoint sources of pollution, rain and snow melt events deliver the majority of loading to streams and lakes. Tile drained watersheds exhibit the same patterns with large rain events flushing dissolved and sediment-bound phosphorus through the system (Gentry et al., 2007). Thus, in the Homer Lake watershed where 87 percent of the land is farmed, the wettest summers would be expected to have the highest phosphorus concentrations. The pattern shown in Figure 4-1 usually indicates that a large, continuous source of phosphorus may be causing the elevated concentrations during the dryer summers and that this source is diluted during high precipitation years. It is suggested that the Ogden lagoons, pipeline, and sewer lines be inspected for leaks or other failures that may be releasing wastewater in the watershed. Another potential continuous source is septic systems which are discussed in Section 4.3.

4.2 Agricultural Land Uses

Because the majority of land in the Homer Lake watershed (87 percent) is used for agricultural production, and no permitted discharges of phosphorus exist in the watershed, agriculture is likely the primary source of phosphorus loading to Homer Lake. This section of the implementation plan describes the mechanisms of phosphorus loading from farmland and management practices that have been employed in other watersheds to reduce loading. This report does not contain an exhaustive list of agricultural BMPs. Only cost-effective practices with demonstrated phosphorus removal capabilities are included. Currently, no confined animal operations are known to exist in the watershed, so that source is not considered in this plan.

4.2.1 Source Description and Approximate Loading

Accumulation of phosphorus on farmland occurs from decomposition of residual crop material, fertilization with chemical and manure fertilizers, atmospheric deposition, wildlife excreta, irrigation water, and application of waste products from municipal and industrial wastewater treatment facilities. Phosphorus is transported from agricultural land in both dissolved and particulate form. Losses occur through soil erosion, infiltration to groundwater and subsurface flow systems, and surface runoff. Crop harvesting also results in a phosphorus loss which should be accounted for when performing a field scale phosphorus balance. The USDA (2003) reports that crops utilize 30 percent of the phosphorus applied, and that, on average, 30 lb/ac/yr of phosphorus is lost via adsorption to soil particles or transport in runoff.

Adsorption refers to the processes that bind phosphorus to soil particles.

4.2.1.1 Fertilizer Inputs

The majority of nutrient loading from farmland occurs from fertilization with commercial and manure fertilizers (USEPA, 2003). In heavily fertilized areas, soil phosphorus content has increased significantly over natural levels. Parties responsible for reducing loads due to excessive fertilization include farmers and local agricultural service agencies that provide fertilization guidelines.

Soil phosphorus tests are used to measure the phosphorus available for crop growth. Test results reported in parts per million (ppm) can be converted to lb/ac by multiplying by 2 (USDA, 2003). Based on a survey of state soil testing laboratories in 1997, 64 percent of soils in Illinois had high soil phosphorus test concentrations (> 50 ppm). By 2000, the percentage of soils testing high decreased to 58 percent (USDA, 2003). Guidelines in the Illinois Agronomy Handbook (IAH) recommend maintaining soil test phosphorus content in east-central Illinois at 22.5 ppm (45 lb/ac). Soils that test at or above 32.5 ppm (65 lb/ac) should not be fertilized until subsequent crop uptake decreases the test to 22.5 ppm (45 lb/ac) (IAH, 2002). Soil phosphorus tests should be conducted once every three or four years to monitor accumulation or depletion of phosphorus (USDA, 2003).

The majority of nutrient loading from farmland occurs from fertilization with commercial and manure fertilizers.

Results of soil phosphorus tests from agricultural fields in Champaign County, which contains the majority of the drainage area to Homer Lake, typically range from 30 to 35 ppm (60 to 70 lb/ac) (Stikkers, 2007). Similar measurements are reported for Vermilion County, which contains a small portion of the drainage area, with typical measurements of 16 to 85 ppm (32 to 170 lb/ac) (Franke, 2006). Figure 4-2 shows the range of values typically observed in the Homer Lake watershed along with the target maintenance level and level at which no additional phosphorus should be applied according to the IAH. The variability in measurements across the watershed illustrates the need for soil testing prior to fertilizer application.

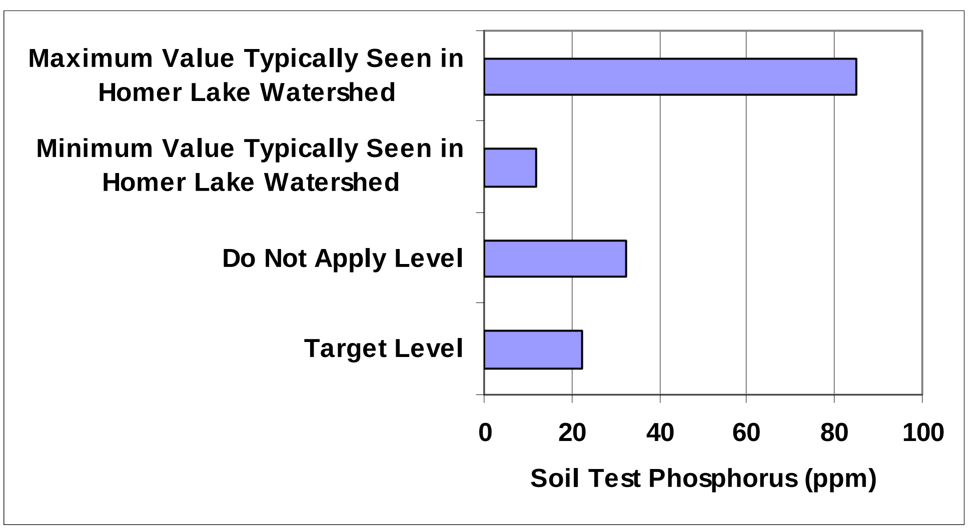


Figure 4-2. Soil Test Phosphorus Levels Measured in the Homer Lake Watershed.

4.2.1.2 Tile Drain Systems

Tile drainage systems are used to lower the water table below the root zone to maximize crop yields on fields that otherwise would not be suitable for crop production. The systems allow for greater rates of infiltration by draining the soil profile more quickly. Runoff is reduced since more water is infiltrated to the groundwater zone, and as a result, rates of erosion and particulate pollutant transport are reduced. However, the concentrations of dissolved pollutants in the tile water tend to be higher relative to typical surface runoff. Because nitrate is a public health hazard at concentrations greater than 10 mg/L, most of the work concerning water quality impacts and appropriate BMPs for tile drain systems has focused on this parameter. Concerns with eutrophication and the role of phosphorus have prompted more recent studies for controlling this nutrient as well.

Tile drainage systems are used extensively in Illinois to lower the water table and increase the area of land available for agricultural production. Flows discharged from tile drainage systems located under high phosphorus content soils have significantly higher phosphorus concentrations than those under low to medium content soils. The majority of phosphorus transported through tile systems is in the dissolved form. However, particulate phosphorus is also transported as water passes through the soil profile and dislodges particles. Concentrations of both dissolved and particulate phosphorus increase significantly in tile systems following large rain events (Gentry et al., 2007).

The USDA (2003) reports that dissolved phosphorus concentrations in tile drainage increased dramatically above a soil test phosphorus breakpoint. One study showed a linear increase in tile drain phosphorus concentrations when the soil test concentration exceeded 60 ppm by the Olsen test or 100 ppm by the Bray-1 test (USDA, 2003; HWRCI, 2005). The maximum concentration occurred on soils testing at 110 ppm (Olsen test) with a tile drain dissolved phosphorus concentration of 2.75 mg/L. Researchers in Iowa found the breakpoint for increased tile drain phosphorus concentrations to be 80 ppm (Mallarino, 2004). Given that soils in Champaign and Vermilion counties typically test at 25 to 85 ppm, it is not likely that the tile drain dissolved phosphorus concentrations are excessively high, though the potential for moderately elevated concentrations does exist.

Two studies applicable to the Homer Lake watershed present conflicting evidence regarding the significance of tile drainage to the overall phosphorus load. The Clean Lakes study of Homer Lake (Lin and Bogner, 2000) concluded that loads from tiles were an insignificant fraction of the total phosphorus load to the lake, though no direct measurements of tile drain water were reported. Research conducted in other watersheds in east-central Illinois estimated that tile drains contribute 45 to 90 percent of the annual total phosphorus load from agricultural fields, depending on climate conditions (Gentry et al., 2007). It is recommended that sampling of tile drains be performed in the Homer Lake watershed when the tile lines are running to determine the total and dissolved phosphorus concentrations.

Tile drains may contribute 45 to 90 percent of the total phosphorus load from agricultural fields in east-central Illinois.

4.2.1.3 Phosphorus Loading Rates

Phosphorus loading rates from agricultural lands vary widely based on climate, topography, soil characteristics, and farm management practices. IEPA (2004) estimated an average loading rate from row crop agriculture in the Altamont Reservoir watershed in Effingham County to be 1.7 lb/ac/yr based on GWLF modeling results. Loading rates from row crop agriculture to the Charleston Side Channel Reservoir are estimated to range from 2.1 to 3.5 lb/ac/yr based on SWAT modeling of the Upper Embarras River Watershed (IEPA, 2003). Neither of these models is capable of directly simulating tile drainage systems, though model parameters may be altered during calibration to approximate conditions.

Gentry et al. (2007) studied three heavily tiled watersheds in east-central Illinois with extensive row crop production. The average annual total phosphorus transport to streams from agricultural fields was estimated to be 0.41 to 0.67 lb/ac/yr based on instream measurements, with loads in high precipitation years ranging from 0.9 to 1.9 lb/ac/yr. Loads were estimated based on measurements taken near the mouth of each monitored stream; no discussion of instream phosphorus kinetics (plant uptake, soil adsorption, etc.) was included. Loads from one tile system were measured directly over a 2-year period. The tile system transported 0.1 to 1.2 lb/ac/yr of total phosphorus. Both dissolved reactive phosphorus and particulate bound phosphorus are transported through tile systems (Gentry et al., 2007).

To summarize Section 4.2.1:

- Agricultural lands are a primary source of phosphorus loading in the Homer Lake watershed.
- A large fraction of the phosphorus load is directly or indirectly related to the application of fertilizer.
- Tile drain systems in the Homer Lake watershed may transport a significant fraction of the total phosphorus load.
- Based on data collected in other heavily tiled, east-central Illinois watersheds, the phosphorus loading rate during a normal to dry year is approximately 0.5 lb/ac/yr, and during extremely wet years is approximately 1.5 lb/ac/yr. The BATHTUB modeling indicates that current average loading rates are approximately 0.6 lb/ac/yr (daily load times 365 days per year) and that an average load of 0.2 lb/ac/yr would be required to meet the water quality standard in the lake.

4.2.2 Appropriate BMPs

Phosphorus is typically exported from agricultural fields by overland flow or subsurface pathways. The contribution to each pathway depends on field topography, soil compaction, surface roughness, and use of artificial subsurface drainage systems. While tile drain systems are used extensively throughout east-central Illinois, the exact location and extent of these systems in the Homer Lake watershed is not known.

Several structural and non-structural BMPs have been developed and studied for use in agricultural areas. The following sections describe these BMPs in terms of removal mechanisms, effectiveness, and cost. Though the BMPs are presented individually, they typically must be used in combinations to mitigate hydrologic and water quality impacts. Some BMPs will be effective on all farms, regardless of drainage patterns. Others are only applicable to artificially drained fields. It will be up to the individual operator to determine the BMPs best suited for his or her operation.

4.2.2.1 Nutrient Management Plans

The primary BMP for reducing phosphorus loading from excessive fertilization is the development of a nutrient management plan. The plan should address fertilizer application rates, methods, and timing. Initial soil phosphorus concentrations are determined by onsite soil testing, which is available from local vendors. Losses through plant uptake are subtracted, and gains from organic sources such as manure application or industrial/municipal wastewater are added. The resulting phosphorus content is then compared to local guidelines to determine if fertilizer should be added to support crop growth and maintain current phosphorus levels. In some cases, the soil phosphorus content is too high, and no fertilizer should be added until stores are reduced by crop uptake to target levels.

> *The NRCS provides additional information on nutrient management planning at:*
> *http://efotg.nrcs.usda.gov/references/public/IL/590.pdf*
>
> *The Illinois Agronomy Handbook may be found online at:*
> http://iah.aces.uiuc.edu/

The Illinois Agronomy Handbook (IAH) lists guidelines for fertilizer application rates based on the inherent properties of the soil (typical regional soil phosphorus concentrations, root penetration, pH, etc.), the starting soil test phosphorus concentration for the field, and the crop type and expected yield (IAH, 2002). The Homer Lake watershed is located in the medium zone for inherent availability (IAH, 2002), and typical Bray P-1 soil test concentrations range from 25 to 85 ppm (Stikkers, 2007). If the starting soil test phosphorus concentration is less than 22.5 ppm, the IAH suggests building up the phosphorus levels over a four year period to achieve a soil test phosphorus concentration of 22.5 ppm (45 lb/ac). If the starting point is at or above 22.5 ppm (45 lb/ac), as with the majority of soils in the Homer Lake watershed, then the IAH suggests maintenance-only application rates based on crop type and expected yields. At starting concentrations greater than 32.5 ppm (65 lb/ac), the IAH recommends that no phosphorus be applied until subsequent crop uptake reduces the starting value to 22.5 ppm (45 lb/ac). Table 4-2 and Table 4-3 summarize the buildup, maintenance, and total application rates for various starting soil test concentrations for sample corn and soybean yields, respectively. For a complete listing of buildup and maintenance rates for the three availability zones and varying yields of corn, soybeans, oats, wheat, and grasses, see Chapter 11 of the IAH.

Starting Soil Test Phosphorus	***Fertilization Guidelines***
Less than 22.5 ppm:	*Buildup plus maintenance*
Between 22.5 and 32.5 ppm:	*Maintenance only*
Greater than 32.5 ppm:	*None*

Table 4-2. Suggested Buildup and Maintenance Application Rates of P_2O_5 for Corn Production in the Medium Inherent Phosphorus Availability Zone (IAH, 2002).

Starting Soil Test P ppm (lb/ac)	Buildup P_2O_5 (lb/ac)[1]	Maintenance P_2O_5 (lb/ac)[2]	Total P_2O_5 (lb/ac)
10 (20)	56	71	127
15 (30)	34	71	105
20 (40)	11	71	82
22.5 (45)	0	71	71
25 (50)	0	71	71
30 (60)	0	71	71
32.2 (65) or higher	0	0	0

[1] Rates based on buildup for four years to achieve target soil test phosphorus of 22.5 ppm (45 lb/ac).
[2] Maintenance rates assume a corn yield of 165 bushels per acre. The IAH lists maintenance rates discretely for yields of 90 to 200 bushels per acre.

Table 4-3. Suggested Buildup and Maintenance Application Rates of P_2O_5 for Soybean Production in the Medium Inherent Phosphorus Availability Zone (IAH, 2002).

Starting Soil Test P ppm (lb/ac)	Buildup P_2O_5 (lb/ac)[1]	Maintenance P_2O_5 (lb/ac)[2]	Total P_2O_5 (lb/ac)
10 (20)	56	51	107
15 (30)	34	51	85
20 (40)	11	51	62
22.5 (45)	0	51	51
25 (50)	0	51	51
30 (60)	0	51	51
32.2 (65) or higher	0	0	0

[1] Rates based on buildup for four years to achieve target soil test phosphorus of 22.5 ppm (45 lb/ac).
[2] Maintenance rates assume a soybean yield of 60 bushels per acre. The IAH lists maintenance rates discretely for yields of 30 to 100 bushels per acre.

Nutrient management plans also address methods of application. Fertilizer may be applied directly to the surface, placed in bands below and to the side of seeds, or incorporated in the top several inches of the soil profile through drilled holes, injection, or tillage. It is estimated that, in this watershed, 90 percent of phosphorus fertilizer is surface applied in the dissolved form (Pitts, 2007). Surface applications that are not followed by incorporation may result in accumulation of phosphorus at the soil surface and increased dissolved phosphorus concentrations in surface runoff (Mallarino, 2004). Incorporation of fertilizer to a minimum depth of two inches prior to planting has shown a decrease in dissolved phosphorus runoff concentrations of 60 to 70 percent and reductions in total phosphorus runoff concentrations of 20 percent (HWRCI, 2005). Subsurface application, such as deep placement, has similar impacts on dissolved phosphorus in runoff with reductions in total phosphorus of 20 to 50 percent (HWRCI, 2005).

Methods of phosphorus application have shown no impact on crop yield (Mallarino, 2004). The Champaign County Soil and Water Conservation District (CCSWCD) reports that deep placement of phosphorus in bands next to the seed zone requires only one-third to one-half the amount of phosphorus fertilizer to achieve the same yields and that on average, fertilizer application rates were decreased by 13 lb/ac (Stikkers, 2007). Thus, deep placement will not only reduce the amount of phosphorus available for transport, but will also result in lower fertilizer costs. Figure 4-3 shows the deep placement attachment used by the CCSWCD.

Phosphorus application rates may be reduced by one-third to one-half with deep placement.

(Photo Courtesy of CCSWCD)

Figure 4-3. Deep Placement Phosphorus Attachment Unit for Strip-till Toolbar.

For corn-soybean rotations, it is recommended that phosphorus fertilizer be applied once every two years, following harvest of the corn crop if application consists of broadcast followed by incorporation (UME, 1996). Band placement should occur prior to or during corn planting, depending on the type of field equipment available. In this watershed, most fertilizer is applied after bean harvest and before corn planting (Sample, 2007). Fertilizer should be applied when the chance of a large precipitation event is low. Researchers in Iowa found that runoff concentrations of phosphorus were 60 percent lower when the following precipitation event occurred 10 days after fertilizer application, as opposed to 24 hours after application. Application to frozen ground or snow cover should be strongly discouraged. Researchers studying loads from agricultural fields in east-central Illinois found that fertilizer application to frozen ground or snow followed by a rain event could transport 40 percent of the total annual phosphorus load (Gentry et al., 2007).

Check the weather forecast before applying fertilizer. Apply fertilizer only when the chance of heavy rain is low.

Recent technological developments in field equipment allow for fertilizer to be applied at varying rates across a field. Crop yield and net profits are optimized with this variable rate technology (IAH, 2002). Precision farming typically divides fields into 1- to 3-acre plots that are specifically managed for seed, chemical, and water requirements. Operating costs are reduced and crop yields typically increase, though upfront equipment costs may be high.

The effectiveness of nutrient management plans (application rates, methods, and timing) in reducing phosphorus loading from agricultural land will be site specific. Average reductions of total phosphorus load in Pennsylvania are reported at 35 percent (USEPA, 2003). Total phosphorus load reductions with subsurface application at agronomic rates are reported at 20 to 50 percent (HWRCI, 2005).

4.2.2.2 Tillage Practices

Conservation tillage practices and residue management are commonly used to control erosion and surface transport of pollutants from fields used for crop production. The IAH (2002) defines conservation tillage as any tillage practice that results in at least 30 percent coverage of the soil surface by crop residuals after planting. Tillage practices leaving 20 to 30 percent residual cover after planting reduce erosion by approximately 50 percent compared to bare soil. Practices that result in 70 percent residual cover reduce erosion by approximately 90 percent (IAH, 2002). The residuals not only provide erosion control, but also provide a nutrient source to growing plants, and continued use of conservation tillage results in a more productive soil with higher organic and nutrient content. Increasing the organic content of soil has the added benefit of reducing the amount of carbon in the atmosphere by storing it in the soil. Researchers estimate that croplands and pasturelands could be managed to trap 5 to 17 percent of the greenhouse gases produced in the United States (Lewandrowski et al., 2004).

Several practices are commonly used to maintain the suggested 30 percent cover:

- No-till systems disturb only a small row of soil during planting, and typically use a drill or knife to plant seeds below the soil surface.
- Strip till operations leave the areas between rows undisturbed, but remove residual cover above the seed to allow for proper moisture and temperature conditions for seed germination.
- Ridge till systems leave the soil undisturbed between harvest and planting: cultivation during the growing season is used to form ridges around growing plants. During or prior to the next planting, the top half to two inches of soil, residuals, and weed seeds are removed, leaving a relatively moist seed bed.
- Mulch till systems are any practice that results in at least 30 percent residual surface cover, excluding no-till and ridge till systems.

The NRCS provides additional information on these conservation tillage practices:

no-till and strip till:	http://efotg.nrcs.usda.gov/references/public/IL/329a.pdf
ridge till:	http://efotg.nrcs.usda.gov/references/public/IL/329b.pdf
mulch till:	http://efotg.nrcs.usda.gov/references/public/IL/329c.pdf

Tillage system practices are not available specifically for the Homer Lake watershed; however, county-wide tillage system surveys have been undertaken by the Illinois Department of Agriculture (2002; 2006). It is assumed that the general tillage practice trends evidenced throughout Champaign and Vermilion counties are applicable to the Homer Lake watershed and the results of these surveys are presented in Table 4-4. Mulch till and no-till are considered conservation tillage practices. From year 2002 to 2006, the percent of corn fields managed with conservation tillage remained at 6 percent in Champaign County but decreased from 3 to 0 percent in Vermilion County. The percent of soybean fields operating with conservation tillage increased significantly in Champaign County from 45 to 64 percent and in Vermilion County from 45 to 55 percent.

Table 4-4. Percentage of Agricultural Fields Surveyed with Indicated Tillage System in Champaign and Vermilion Counties, Illinois, in 2002 and 2006.

Champaign County 2002 Transect Survey				
Crop Field Type	Tillage Practice			
	Conventional	Reduced-till	Mulch-till	No-till
Corn	74	20	4	2
Soybean	14	41	23	22
Small Grain	0	0	100	0
Champaign County 2006 Transect Survey				
Crop Field Type	Tillage Practice			
	Conventional	Reduced-till	Mulch-till	No-till
Corn	73	21	3	3
Soybean	5	31	32	32
Small Grain	0	0	0	100
Vermilion County 2002 Transect Survey				
Crop Field Type	Tillage Practice			
	Conventional	Reduced-till	Mulch-till	No-till
Corn	91	6	1	2
Soybean	31	24	9	36
Small Grain	50	0	0	50
Vermilion County 2006 Transect Survey				
Crop Field Type	Tillage Practice			
	Conventional	Reduced-till	Mulch-till	No-till
Corn	98	2	0	0
Soybean	30	15	6	49
Small Grain	100	0	0	0

Source: Illinois Department of Agriculture, 2002; 2006.

Corn residues are more durable and capable of sustaining the required 30 percent cover required for conservation tillage. Soybeans generate less residue, the residue degrades more quickly, and supplemental measures or special care may be necessary to meet the 30 percent cover requirement (UME, 1996). Figure 4-4 shows a comparison of ground cover under conventional and conservation tillage practices.

Figure 4-4. Comparison of conventional (left) and conservation (right) tillage practices.

No-till systems typically concentrate phosphorus in the upper two inches of the soil profile due to surface application of fertilizer and decomposition of plant material (IAH, 2002; UME, 1996). This pool of phosphorus readily mixes with precipitation and can lead to increased concentrations of dissolved phosphorus in surface runoff. Chisel plowing may be required once every several years to reduce stratification of phosphorus in the soil profile.

Czapar et al. (2006) summarize past and present tillage practices and their impacts on erosion control and nutrient delivery. Historically, the mold board plow was used to prepare the field for planting. This practice disturbed 100 percent of the soil surface and resulted in basically no residual material. Today, conventional tillage typically employs the chisel plow, which is not as disruptive to the soil surface and tends to leave a small amount of residue on the field (0 to 15 percent). Mulch till systems were classified as leaving 30 percent residue; percent cover was not quantified for the no-till systems. The researchers used WEPP modeling to simulate changes in sediment and nutrient loading for these tillage practices. Relative to mold board plowing, chisel plowing reduced phosphorus loads leaving the field by 38 percent, strip tilling reduced loads by 80 percent, and no-till reduced loads by 85 percent. If chisel plowing is now considered conventional, then the strip till and no-till practices are capable of reducing phosphorus loads by 68 percent and 76 percent, respectively (Czapar et al., 2006).

4.2.2.3 Cover Crop

Grasses and legumes may be used as winter cover crops to reduce soil erosion and improve soil quality (IAH, 2002). These crops also contribute nitrogen to the following crop. Grasses tend to have low seed costs and establish relatively quickly, but can impede cash crop development by drying out the soil surface or releasing chemicals during decomposition that may inhibit the growth of a following cash crop. Legumes take longer to establish, but are capable of fixing nitrogen from the atmosphere, thus reducing nitrogen fertilization required for the next cash crop. Legumes, however, are more susceptible to harsh winter environments and may not have adequate survival to offer sufficient erosion protection. Planting the cash crop in wet soil that is covered by heavy surface residue from the cover crop may impede emergence by prolonging wet, cool soil conditions. Cover crops should be killed off two or three weeks prior to planting the cash crop either by application of herbicide or mowing and incorporation, depending on the tillage practices used.

Cover crops alone may reduce soil and runoff losses by 50 percent, and when used with no-till systems may reduce soil loss by more than 90 percent (IAH, 2002). On naturally drained fields where surface runoff is the primary transport mechanism of phosphorus, reduction in phosphorus loading would be substantial as well. In Oklahoma, use of cover crops resulted in 70 to 85 percent reductions in total phosphorus loading (HRWCI, 2005) (cropping rotation was not described). Cover crops have the added benefit of reducing the need for pesticides and fertilizers (OSUE, 1999), and are also used in conservation tillage systems following low residue crops such as soybeans (USDA, 1999). Use of cover crops is illustrated in Figure 4-5.

(Photo Courtesy of CCSWCD)

Figure 4-5. Use of Cover Crops.

The NRCS provides additional information on cover crops at:
http://efotg.nrcs.usda.gov/references/public/IL/340.pdf

4.2.2.4 Vegetative Controls

Other phosphorus control measures for agricultural land use include vegetated filter strips, grassed waterways, and riparian buffers. The USDA (2003) does not advocate using these practices solely to control phosphorus loading, but rather as supplemental management measures following operational strategies. USEPA (2003) lists the percent effectiveness of vegetative controls on phosphorus removal at 75 percent.

Vegetated Filter Strips

Filter strips are used in agricultural and urban areas to intercept and treat runoff before it leaves the site. If topography allows, filter strips may also be used to treat effluent from tile drain outlets. Filter strips will require maintenance, including grading and seeding, to ensure distributed flow across the filter and protection from erosion. Periodic removal of vegetation will encourage plant growth and uptake and remove nutrients stored in the plant material. Filter strips are most effective on sites with mild slopes of generally less than 5 percent, and to prevent concentrated flow, the upstream edge of a filter strip should follow one elevation contour (NCDENR, 2005). A grass filter strip is shown in Figure 4-6.

(Photo Courtesy of CCSWCD)

Figure 4-6. Grass Filter Strip Protecting Stream from Adjacent Agriculture.

The NRCS provides additional information on filter strips at:
http://efotg.nrcs.usda.gov/references/public/IL/393.pdf

Filter strips also serve to reduce the quantity and velocity of runoff. Filter strip sizing is dependent on site specific features such as climate and topography, but at a minimum, the area of a filter strip should be no less than 2 percent of the drainage area for agricultural land (OSUE, 1994). The minimum filter strip width suggested by NRCS (2002) is 30 ft. The strips are assumed to function properly with annual maintenance for 30 years before requiring replacement of soil and vegetation. Filter strips have been found to effectively remove pollutants from agricultural runoff. Reductions in phosphorus loading of 65 percent are reported (USEPA, 2003; Kalita, 2000).

Grassed Waterways

Grassed waterways are stormwater conveyances lined with grass that prevent erosion of the transport channel. In addition, the grassed channel reduces runoff velocities, allows for some infiltration, and filters out some particulate pollutants. Phosphorus reductions for grassed waterways are reported at

30 percent (Winer, 2000). A grassed waterway providing surface drainage for a corn field is shown in Figure 4-7.

(Photo Courtesy of CCSWCD)

Figure 4-7. Grassed Waterway.

The NRCS provides additional information on grassed waterways at:
http://efotg.nrcs.usda.gov/references/public/IL/412.pdf

Creation of Riparian Buffers

Riparian corridors, including both the stream channel and adjacent land areas, are important components of watershed ecology. The streamside forest slowly releases nutrients as twigs and leaves decompose. These nutrients are valuable to the fungi, bacteria, and invertebrates that form the basis of a stream's food chain. Tree canopies of riparian forests also cool the water in streams which can affect the composition of the fish species in the stream, as well as the rate of biological reactions. Channelization or widening of streams moves the canopy farther apart, decreasing the amount of shaded water surface and increasing water temperature.

Preserving natural vegetation along stream corridors can effectively reduce water quality degradation associated with development. The root structure of the vegetation in a buffer enhances infiltration of runoff and subsequent trapping of nonpoint source pollutants. However, the buffers are only effective in this manner when the runoff enters the buffer as a slow moving, shallow "sheet"; concentrated flow in a ditch or gully will quickly pass through the buffer offering minimal opportunity for retention and uptake of pollutants.

Even more important than the filtering capacity of the buffers is the protection they provide to streambanks. The rooting systems of the vegetation serve as reinforcements in streambank soils, which helps to hold streambank material in place and minimize erosion. Due to the increase in stormwater runoff volume and peak rates of runoff associated with agriculture and development, stream channels are subject to greater erosional forces during stormflow events. Thus, preserving natural vegetation along stream channels minimizes the potential for water quality and habitat degradation due to streambank erosion and enhances the pollutant removal of sheet flow runoff from developed areas that passes through the buffer.

Converting land adjacent to streams for the creation of riparian buffers will provide stream bank stabilization, stream shading, and nutrient uptake and trapping from adjacent treated areas. A GIS analysis of land use within 25 feet of the streams in this watershed indicates that 82 percent of the land is currently farmed; 15 percent is rural grassland and the remaining areas are either forest or wetland.

Riparian buffers should consist of native species and may include grasses, grass-like plants, forbs, shrubs, and trees. Minimum buffer widths of 25 feet are required for water quality benefits. Higher removal rates are provided with greater buffer widths. NCSU (2002) reports phosphorus removal rates of approximately 25 to 30 percent for 30 ft wide buffers and 70 to 80 percent for 60 to 90 ft wide buffers. Riparian corridors typically treat a maximum of 300 ft of adjacent land before runoff forms small channels that short circuit treatment. In addition to the treated area, the land converted from agricultural land to buffer will generate 90 percent less phosphorus based on data presented in Haith et al. (1992). Buffer widths based on slope measurements and recommended plant species should conform to NRCS Field Office Technical Guidelines. A riparian buffer protecting the stream corridor from adjacent agricultural areas is shown in Figure 4-8.

(Photo Courtesy of CCSWCD)

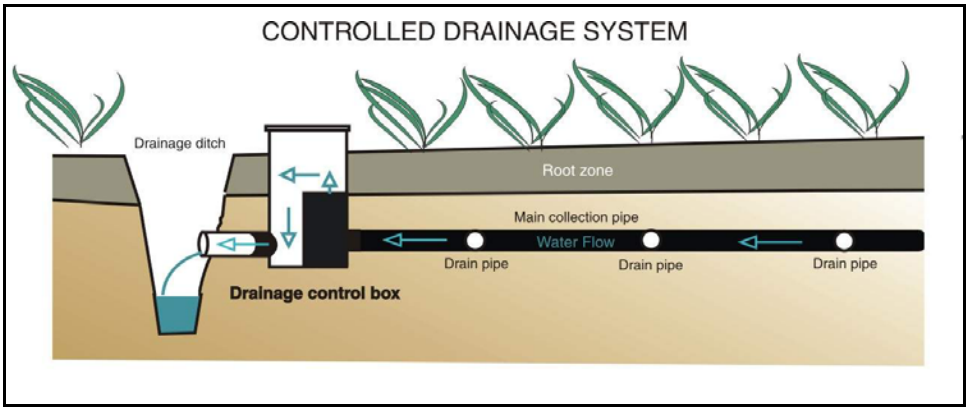
Figure 4-8. Riparian Buffer Between Stream Channel and Agricultural Areas.

The NRCS provides additional information on riparian buffers at:
http://efotg.nrcs.usda.gov/references/public/IL/390.pdf *and*
http://efotg.nrcs.usda.gov/references/public/IL/391.pdf

4.2.2.5 Drainage Control Structures for Tile Drain Outlets

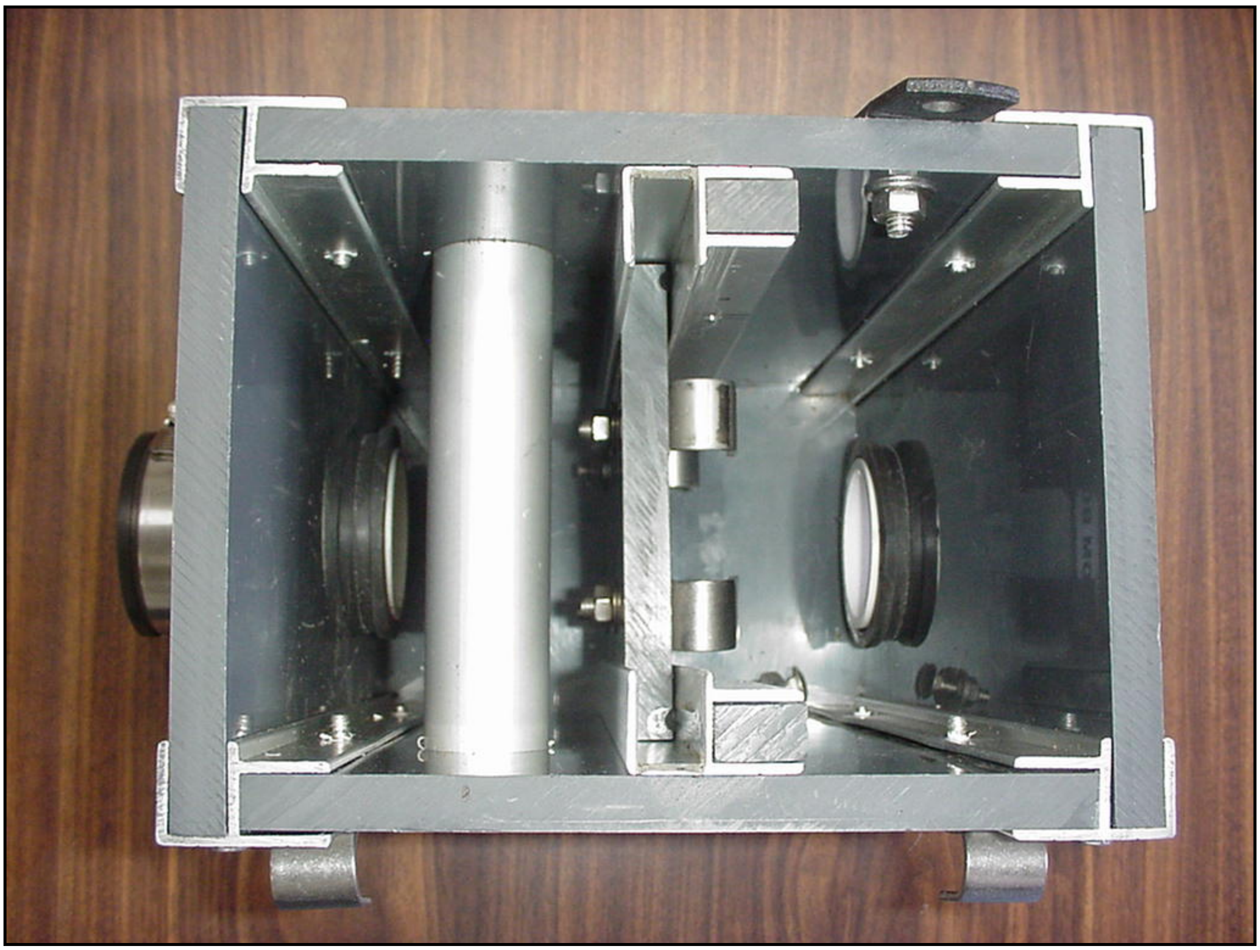
A conventional tile drain system collects infiltrated water below the root zone and transports the water quickly to a down-gradient surface outlet. Placement of a water-level control structure at the outlet (Figure 4-9 and Figure 4-10) allows for storage of the collected water to a predefined elevation. The stored water becomes a source of moisture for plants during dry conditions and undergoes biological, chemical, and physical processes that result in lower nutrient concentrations in the final effluent. Use of control structures on conventional tile drain systems in the coastal plains has resulted in reductions of total phosphorus loading of 35 percent (Gilliam et al., 1997). Researchers at the University of Illinois also report reductions in phosphorus loading with tile drainage control structures. Concentrations of phosphate were reduced by 82 percent, although total phosphorus reductions were not quantified in this study (Cooke, 2005). Going from a surface draining system to a tile drain system with outlet control reduces phosphorus loading by 65 percent (Gilliam et al., 1997).

Storage of tiled drained water for later use via subsurface irrigation has shown decreases in dissolved phosphorus loading of approximately 50 percent (Tan et al., 2003). However, accumulated salts in reuse water may eventually exceed plant tolerance and result in reduced crop yields. Mixing stored drain water with fresh water or alternating irrigation with natural precipitation events will reduce the negative impacts of reuse. Salinity thresholds for each crop should be considered and compared to irrigation water concentrations.



(Illustration Courtesy of the Agricultural Research Service Information Division)

Figure 4-9. Controlled Drainage Structure for a Tile Drain System.



(Photo Courtesy of CCSWCD)

Figure 4-10. Interior View of a Drainage Control Structure with Adjustable Baffle Height.

The NRCS provides additional information on drainage management at: http://efotg.nrcs.usda.gov/references/public/IL/554.pdf.

The main points discussed in Section 4.2.2 are summarized in the following list. In addition, Table 4-5 gives a brief description of each BMP as well as the reported reductions in phosphorus loading.

Section 4.2.2.1:

- Phosphorus fertilizer should be applied at rates suggested in the Illinois Agronomy Handbook depending on crop type, expected yield, and Bray P-1 soil test phosphorus level.
- Deep placement of phosphorus adjacent to the seed bed may reduce fertilizer application rates by one-third to one-half. Total phosphorus loading may be reduced by 20 to 50 percent.
- Fertilizer should be applied when the chance of precipitation is low (predicted by local weather forecasting). Fertilizer should never be applied to frozen ground or snow.

Section 4.2.2.2:

- Conservation tillage practices reduce erosion and add nutrients and organic material to the soil profile.
- No-till systems tend to concentrate phosphorus in the upper two inches of the soil and may result in increased concentrations of dissolved phosphorus in runoff.
- Strip till practices may reduce phosphorus loading from agricultural fields by 68 percent and no-till may reduce loads by 76 percent.

Section 4.2.2.3:

- Cover crops reduce erosion during winter months and contribute nitrogen to the following cash crop.
- Reductions in phosphorus loading range from 70 to 85 percent.

Section 4.2.2.4:

- Filter strips intercept and treat agricultural water before it leaves the field. Reductions in phosphorus are approximately 65 percent.
- Grassed waterways are vegetated channels designed to convey stormwater. Phosphorus load reductions are approximately 30 percent.
- Riparian buffers effectively remove phosphorus from a small area of adjacent land, and are essential for maintaining streambank stability, appropriate water temperatures, and adequate habitat. Phosphorus reductions from the area converted from agriculture to buffer are approximately 90 percent; the buffer should remove approximately 80 percent of the phosphorus from the adjacent 300 ft of agricultural area.

Section 4.2.2.5:

- Use of drain-control structures on tile drain outlets reserves water for crop use during dry periods.
- Reductions in dissolved phosphorus of 82 percent and total phosphorus of 35 percent have been documented.

Table 4-5. Phosphorus Removal BMPs for Agricultural Land Uses.

BMP	Description and Removal Mechanism	Estimated Phosphorus Reduction
Nutrient Management Plan	Site specific guidance on appropriate fertilization rates, methods of application, and timing. Appropriate application rates for optimized crop yield reduce loading from excessive nutrient application.	Depends on current application rates and methods compared to site specific guidance. Total phosphorus reductions of **20 to 50 percent** are reported (USEPA, 2003; HRWCI, 2005).
Conservation Tillage	Tillage practices that maintain a minimum of 30 percent ground cover with crop residuals. Reduces erosion rates and phosphorus losses. Increases soil quality by providing organic material and nutrient supplementation.	Strip till and no-till can reduce total phosphorus loads by **68 and 76 percent**, respectively (Czapar, 2006).
Cover Crop	Use of ground cover plants on fallow fields. Reduces erosion, provides organic materials and nutrients to soil matrix, reduces nutrient losses, suppresses weeds, and controls insects.	Total phosphorus reductions of **70 to 85 percent** are reported (HRWCI, 2005).
Filter Strips	Placement of vegetated strips in the path of field drainage to treat sediment and nutrients.	Total phosphorus reductions of **65 percent** are reported (USEPA, 2003; Kalita, 2000).
Grassed Waterway	A stormwater conveyance planted with grass to reduce erosion of the transport channel. Provides filtering of particulate pollutants and reduces runoff volume and velocity.	Total phosphorus reductions of **30 percent** are reported (Winer, 2000).
Restoration of Riparian Buffers	Conversion of land adjacent to stream channels to vegetated buffer zones. Removes phosphorus by sedimentation and plant uptake. Provides stream bank stability, stream shading, and aesthetic enhancement.	Riparian buffers may achieve an **80 percent** reduction in total phosphorus from treated areas, assuming a 90 ft buffer width (NCSU, 2002). Lands converted from agricultural use are estimated to have a **90 percent** reduction in total phosphorus loading (Haith et al, 1992).
Controlled Drainage, Retrofit	Use of outlet control structure to store tile drain water for crop use during dry periods.	Reductions in total phosphorus loading of **35 percent** are reported (Gilliam et al., 1997).
Controlled Drainage, New Tile System	Converting from a surface drained system to a tile drained system with outlet control structures.	Reductions in total phosphorus loading of **65 percent** are reported (Gilliam et al., 1997).

4.2.3 Estimated Cost of Implementation

The net costs associated with the agricultural BMPs described in Section 4.2.2 depend on the cost of construction (for structural BMPs), maintenance costs (seeding, grading, etc.), and operating costs (electricity, fuel, labor, etc). In addition, some practices require that land be taken out of farm production and converted to treatment areas, which results in a loss of income from the cash crop. On the other hand, taking land out of production does save money on future seed, fertilizer, labor, etc., and this must be accounted for as well. This section describes how the various costs apply to each BMP, and presents an estimate of the annualized cost spread out over the service life of the BMP. Incentive plans, carbon trading, and cost share programs are discussed separately in Section 7.0.

The costs presented in this section are discussed in year 2004 dollars because this is the latest year for which gross income estimates for corn and soybean production are available. Market prices can fluctuate significantly from year to year based on supply and demand factors, so applying straight rates of inflation to convert crop incomes from one year to the next is not appropriate. The cost to construct, maintain, and operate the BMPs is assumed to follow a yearly inflation rate of 3 percent since these components are not as dependent on such factors as weather and consumer demand. Therefore, all prices for BMP costs have been converted to year 2004 dollars to develop a net cost for each BMP. Inflated prices are rounded to the nearest quarter of a dollar since most of the reported costs were reported in whole dollars per acre, not dollars and cents.

Gross 2004 income estimates for corn and soybean in Illinois are $510/ac and $473/ac, respectively (IASS, 2004). Accounting for operating and ownership costs results in net incomes from corn and soybean farms of $140/ac and $217/ac (USDA-ERS, 2005). The average net annual income of $178/ac was therefore used to estimate the annual loss from BMPs that take a portion of land out of farm production. The average value is considered appropriate since most farms operate on a 2-year crop rotation.

4.2.3.1 Nutrient Management Plans

A good nutrient management plan should address the rates, methods, and timing of fertilizer application. To determine the appropriate fertilizer rates, consultants in Illinois typically charge $6 to $18 per acre, which includes soil testing, manure analysis, scaled maps, and site specific recommendations for fertilizer management (USEPA, 2003). The Champaign County Soil and Water Conservation District (CCSWCD, 2003) estimates savings of approximately $10/ac during each plan cycle (4 years) by applying fertilizer at recommended rates. Actual savings (or costs) depend on the reduction (or increase) in fertilizer application rates required by the nutrient management plan as well as other farm management recommendations.

Placing the fertilizer below and to the side of the seed bed (referred to as banding) reduces the required application by one third to one half to achieve the same crop yields. In Champaign County, phosphorus application rates were reduced by approximately 13 lb/ac with this method. The equipment needed for deep placement costs up to $113,000 (Stikkers, 2007). Alternatively the equipment can be rented or the entire process hired out. The Heartland Regional Water Coordination Initiative lists the cost for deep placement of phosphorus fertilizer at $3.50/ac per application (HRWCI, 2005).

Table 4-6 summarizes the assumptions used to develop the annualized cost for this BMP.

Table 4-6. Costs Calculations for Nutrient Management Plans.

Item	Costs and Frequency	Annualized Costs (Savings)
Soil Testing and Determination of Rates	Costs $6/ac to $18/ac Every four years	$1.50/ac/yr to $4.50/ac/yr
Savings on Fertilizer	Saves $10/ac Every four years	($2.50/ac/yr)
Deep Placement of Phosphorus	Costs $3.50/ac Every two years	$1.75/ac/yr
Average Annual Costs		**$0.75/ac/yr to $3.75/ac/yr**

4.2.3.2 Tillage Practices

Conservation tillage practices generally require fewer trips to the field, saving on labor, fuel, and equipment repair costs, though increased weed production may result in higher pesticide costs relative to conventional till (USDA, 1999). In general, conservation tillage results in increased profits relative to conventional tillage (Olson and Senjem, 2002; Buman et al., 2004; Czapar, 2006). The HRWCI (2005) lists the cost for conservation tillage at $0/ac.

Hydrologic inputs are often the limiting factor for crop yields and farm profits. Conservation practices reduce evaporative losses by covering the soil surface. USDA (1999) reports a 30 percent reduction in evaporative losses when 30 percent ground cover is maintained. Harman et al. (2003) and the Southwest Farm Press (2001) report substantial yield increases during dry years on farms managed with conservation or no-till systems compared to conventional till systems.

Depending on the type of equipment currently used, replacing conventional till equipment with no-till equipment can either result in a net savings or slight cost to the producer. Al-Kaisi et al. (2000) estimate that converting conventional equipment to no-till equipment costs approximately $1.25 to $2.25/ac/yr, but that for new equipment, purchasing no-till equipment is less expensive than conventional equipment. Other researchers report a net gain when conventional equipment is sold to purchase no-till equipment (Harman et al., 2003).

Table 4-7 summarizes the available information for determining average annual cost for this BMP.

Table 4-7. Costs Calculations for Conservation Tillage.

Item	Costs and Frequency	Annualized Costs (Savings)
Conversion of Conventional Equipment to Conservation Equipment	Costs presented in literature were already averaged out to yearly per acre costs: $1.25/ac/yr to $2.25/ac/yr	$1.25/ac/yr to $2.25/ac/yr
Operating Costs of Conservation Tillage Relative to Conventional Costs	$0/ac/yr	$0/ac/yr
Average Annual Costs		**$1.25/ac/yr to $2.25/ac/yr**

4.2.3.3 Cover Crop

The National Sustainable Agriculture Information Service recommends planting ryegrass after corn harvest and hairy vetch after soybeans (Sullivan, 2003). Both seeds can be planted at a depth of ¼ to ½ inch at a rate of 20 lb/ac or broadcast at a rate of 25 to 30 lb/ac (Ebelhar and Plumer, 2007; OSUE, 1990).

Researchers at Purdue University estimate the seed cost of ryegrass and hairy vetch at $12 and $30/ac, respectively. Savings in nitrogen fertilizer (assuming nitrogen fertilizer cost of $0.30/lb (Sample, 2007)) are $3.75/ac for ryegrass and $28.50/ac for hairy vetch. Yield increases in the following crop, particularly during droughts, are reported at 10 percent and are expected to offset the cost of this practice (Mannering et al., 1998). Herbicide application is estimated to cost $14.25/ac.

Accounting for the seed cost, herbicide cost, and fertilizer offset results in an average net cost of approximately $19.25/ac assuming that cover crop planting recommendations for a typical 2 year corn/soybean rotation are followed (Mannering et al., 1998). These costs do not account for yield increases which may offset the costs completely. Table 4-8 summarizes the costs and savings associated with ryegrass and hairy vetch.

Table 4-8. Costs Calculations for Cover Crops.

Item	Ryegrass	Hairy Vetch
Seed Costs	$12/ac	$30/ac
Nitrogen Fertilizer Savings	($3.75/ac)	($28.50/ac)
Herbicide Costs	$14.25/ac	$14.25/ac
Annual Costs	$22.50/ac	$15.75/ac
Average Annual Cost Assuming Ryegrass Follows Corn and Hairy Vetch Follows Soybeans: $19.25/ac		

4.2.3.4 Vegetative Controls

The BMPs discussed above are farm management strategies that are applied over large areas; costs are estimated for each acre of agricultural land operating with the BMP. The vegetated controls are structural BMPs that collect runoff from agricultural fields and treat it in small zone using infiltration, sedimentation, and plant uptake to remove phosphorus. To compare costs with the farm management BMPs, the cost analyses for these structural BMPs are listed as the cost to treat one acre of agricultural drainage.

Filter Strips

Filter strips can either be seeded with grass or sodded for immediate function. The seeded filter strips cost approximately $0.30 per sq ft to construct, and sodded filter strips cost approximately $0.70 per sq ft to construct. Assuming that the required filter strip area is 2 percent of the area drained (Section 4.2.2.4) means that 870 square feet of filter strip are required for each acre of agricultural land treated. The construction cost to treat one acre of land is therefore $261/ac for a seeded filter strip and $609/ac for a sodded strip. At an assumed system life of 20 years (Weiss et al., 2007), the annualized construction costs are $13/ac/yr for seeded and $30.50/ac/yr for sodded strips. Annual maintenance of filter strips is estimated at $0.01 per sq ft (USEPA, 2002b) for an additional cost of $8.70/ac/yr of agricultural land treated. In addition, the area converted from agricultural production to filter strip will result in a net annual income loss of $3.50. Table 4-9 summarizes the costs assumptions used to estimate the annualized cost to treat one acre of agricultural drainage using either a seeded or sodded filter strip.

Table 4-9. Costs Calculations for Seeded and Sodded Filter Strips.

Item	Costs of Seeded Filter Strip Required to Treat One Acre of Agricultural Land	Costs of Sodded Filter Strip Required to Treat One Acre of Agricultural Land
Costs per Square Foot		
Construction Costs	$0.30	$0.70
Annual Maintenance Costs	$0.01	$0.01
Costs to Treat One Acre of Agricultural Land (assuming 870 sq ft of filter strip)		
Construction Costs	$261	$609
System Life (years)	20	20
Annualized Construction Costs	$13	$30.50
Annual Maintenance Costs	$8.70	$8.70
Annual Income Loss	$3.50	$3.50
Average Annual Costs	**$25/ac treated**	**$43/ac treated**

Grassed Waterways

Grassed waterways costs approximately $0.50 per sq ft to construct (USEPA, 2002b). These stormwater conveyances are best constructed where existing bare ditches transport stormwater, so no income loss from land conversion is expected with this practice. It is assumed that the average area required for a grassed waterway is approximately 0.1 to 0.3 percent of the drainage area, or between 44 and 131 sq ft per acre. The range is based on examples in the Illinois Drainage Guide, information from the NRCS Engineering Field Handbook, and a range of waterway lengths (100 to 300 feet). Waterways are assumed to remove phosphorus effectively for 20 years before soil, vegetation, and drainage material need to be replaced (Weiss et al., 2007). The construction costs spread out over the life of the waterway is thus $2.25/yr for each acre of agriculture draining to a grassed waterway. Annual maintenance of grassed waterways is estimated at $0.02 per sq ft (Rouge River, 2001) for an additional cost of $1.75/ac/yr of agricultural land treated. Table 4-10 summarizes the annual costs assumptions for grassed waterways.

Table 4-10. Costs Calculations for Grassed Waterways.

Item	Costs Required to Treat One Acre of Agricultural Land
Costs per Square Foot	
Construction Costs	$0.50
Annual Maintenance Costs	$0.02
Costs to Treat One Acre of Agricultural Land (assuming 44 to 131 sq ft of filter strip)	
Construction Costs	$22 to $65.50
System Life (years)	20
Annualized Construction Costs	$1 to $3.25
Annual Maintenance Costs	$1 to $2.75
Annual Income Loss	$0
Average Annual Costs	**$2 to 6/ac treated**

Riparian Buffers

Restoration of riparian areas costs approximately $100/ac to construct and $475/ac to maintain over the life of the buffer (Wossink and Osmond, 2001; NCEEP, 2004). Maintenance of a riparian buffer should be minimal, but may include items such as period inspection of the buffer, minor grading to prevent short circuiting, and replanting/reseeding dead vegetation following premature death or heavy storms. Assuming a buffer width of 90 ft on either side of the stream channel and an adjacent treated width of 300 ft of agricultural land, one acre of buffer will treat approximately 3.3 acres of adjacent agricultural land. The cost per treated area is thus $30/ac to construct and $142.50/ac to maintain over the life of the buffer. Assuming a system life of 30 years results in an annualized cost of $59.25/yr for each acre of agriculture land treated (Table 4-11).

Table 4-11. Costs Calculations for Riparian Buffers.

Item	Costs Required to Treat One Acre of Agricultural Land
Costs per Acre of Riparian Buffer	
Construction Costs	$100
Maintenance Costs Over System Life	$475
Costs to Treat One Acre of Agricultural Land (assuming 0.3 ac of buffer)	
Construction Costs	$30
Maintenance Costs Over System Life	$142.50
System Life (Years)	30
Annualized Construction Costs	$1
Annualized Maintenance Costs	$4.75
Annual Income Loss	$53.50
Average Annual Costs	**$59.25/ac treated**

4.2.3.5 Drainage Control Structures for Tile Drain Outlets

The Champaign County Soil and Water Conservation District currently offers tile mapping services for approximately $2.25/ac using color infrared photography to assist farmers in identifying the exact location of their tile drain lines. Cooke (2005) estimates that the cost of retrofitting tile drain systems with outlet control structures ranges from $20 to $40 per acre. Construction of new tile drain systems with outlet control is approximately $75/ac. The yield increases associated with installation of tile drain systems are expected to offset the cost of installation (Cooke, 2005). It is assumed that outlet control structures have a system life of 30 years. Cost assumptions for retrofitting and installation of new tile drain systems with outlet control devices are summarized in Table 4-12.

Table 4-12. Costs Calculations for Outlet Control Devices on Tile Drain Systems.

Item	Costs to Retrofit Existing Systems	Costs to Install a New System
Mapping Costs per Acre	$2.25	$0
Construction Costs	$20 to $40/ac	$75/ac
System Life (years)	30	30
Average Annual Costs	**$0.75 to $1.50/ac treated**	**$2.50/ac treated**

Estimated net costs per acre of land managed or treated are summarized in Table 4-13 for each of the agricultural BMPs discussed in this plan. Costs were adjusted to reflect year 2004 prices for the Champaign, Illinois area and represent total annualized costs to maintain and construct. The total costs were derived without accounting for the difference in value between costs incurred in the first year of the project versus costs incurred over the lifetime of the project (this process is typically termed "discounting"). If discounting had been used, the comparison would change between projects with relatively high upfront costs and projects with relatively high annual costs. When selecting the BMPs, farmers should consider how the timing of costs affects their operation as well as the total relative differences.

Table 4-13. Estimated 2004 Costs of Agricultural BMPs for Champaign, Illinois.

BMP	Annualize Cost per Acre Treated per Year
Nutrient Management Plan	$0.75/ac to $3.75/ac
Conservation Tillage	$1.25/ac to $2.25/ac
Cover Crops	$19.25/ac
Filter Strips, Seeded	$25/ac
Filter Strips, Sodded	$43/ac
Grassed Waterways	$2/ac to $6/ac
Restoration of Riparian Buffers	$59.25/ac
Controlled Drainage, Retrofit	$0.75/ac to $1.50/ac
Controlled Drainage, New	$2.50/ac

4.2.4 BMP Effectiveness and Estimated Load Reductions

Several BMPs are available for use in the Homer Lake watershed to reduce phosphorus loading from agricultural areas. Selecting a BMP will depend on estimated removal efficiencies, construction and maintenance costs, and individual preferences. Table 4-14 summarizes the annualized costs (construction, maintenance, and operation) for each BMP to treat one acre of agricultural runoff. The removal efficiencies reported in the literature are included as well.

Table 4-14. Cost and Removal Efficiencies for Agricultural BMPs.

BMP	Total Phosphorus Percent Reduction	Annualize Cost per Acre Treated per Year
Nutrient Management Plan	20 to 50	$0.75/ac to $3.75/ac
Conservation Tillage	68 to 76	$1.25/ac to $2.25/ac
Cover Crops	70 to 85	$19.25/ac
Filter Strips, Seeded	65	$25/ac
Filter Strips, Sodded	65	$43/ac
Grassed Waterways	30	$2/ac to $6/ac
Restoration of Riparian Buffers	90, 80[1]	$59.25/ac
Controlled Drainage, Retrofit	35	$0.75 to $1.50/ac
Controlled Drainage, New	65	$2.50/ac

[1]Land converted to a buffer from agricultural production will have a 90 percent lower phosphorus loading rate (Haith et al., 1992). Loads from adjacent treated areas will have an 80 percent reduction in phosphorus loading (NCSU, 2002).

4.3 Onsite Wastewater Treatment Systems

Onsite wastewater treatment systems are not believed to be a significant source of phosphorus loading to Homer Lake. The watershed is sparsely populated and onsite system densities are relatively low. However, if the failure rates of systems in this watershed are high, then phosphorus loading from this source may be relatively high. At this time, no database of onsite wastewater treatment systems is available for the Homer Lake watershed. The Homer Lake Clean Lakes study does not list onsite wastewater treatment as a source of water quality impairment, but does indicate that residential development pressure is relatively high (Lin and Bogner, 2000). Recent development north of the lake is serviced by onsite wastewater systems.

4.3.1 Source Description and Approximate Loading

Phosphorus loading rates from properly functioning onsite wastewater systems are typically insignificant. However, if systems are placed on unsuitable soils, not maintained properly, or are connected to subsurface drainage systems, loading rates to receiving waterbodies may be relatively high. It is suggested that each system in the watershed be inspected to accurately quantify the loading from this source. Systems older than 20 years and those located close to the lake should be prioritized for inspection.

To approximate the phosphorus loading rate from onsite wastewater systems, a rough calculation based on the population density of the county, the area of the watershed, and net loading rates reported in the Generalized Watershed Loading Function (GWLF) User's manual were assumed. Year 2000 US Census data for Champaign County indicate that the population density is approximately 114 people per square mile if the population and area of the City of Champaign are not included. The Homer Lake watershed is approximately 17.7 sq mi., so the estimated number of people in the watershed is 2,020 people. Based on an average household size of 2.33 people per household, there are approximately 867 households in the watershed. Though a small area of the watershed is located in Ogden and may actually be served by the public sewer system, it is conservatively assumed that all people in the watershed use onsite systems.

Though a watershed model was not developed for the Homer Lake watershed, the GWLF user's manual (Haith et al., 1992) reports septic tank effluent loading rates and subsequent removal rates based on the use of phosphate detergents. Though phosphates have been banned from laundry detergents, dish detergents often contain between 4 and 8 percent phosphate by weight. The GWLF model assumes a septic tank effluent phosphorus loading rate for households using phosphate detergent of 2.5 g/capita/day. The model assumes a plant uptake rate of 0.4 g/capita/day of phosphorus during the growing season and 0.0 g/capita/day during the dormant season. Assuming a 6-month growing season (May through October), the average annual plant uptake rate is 0.2 g/capita/day.

In a properly functioning septic system, wastewater effluent leaves the septic tank and percolates through the system drainfield. Phosphorus is removed from the wastewater by adsorption to soil particles. Plant uptake by vegetation growing over the drainfield is assumed negligible since all of the phosphorus is removed in the soil treatment zone. Failing systems that either short circuit the soil adsorption field or cause effluent to pool at the ground surface are assumed to retain phosphorus through plant uptake only (average annual uptake rate of 0.2 g/capita/day). Direct discharge systems intentionally bypass the drainfield by connecting the septic tank effluent directly to a waterbody or other transport line (such as an agricultural tile drain) so that no soil zone treatment or plant uptake occurs.

The USEPA Onsite Wastewater Treatment Systems Manual (2002a) estimates that septic systems fail (do not perform as designed) at an average rate of 7 percent across the nation. Based on comments made by local residents during the August 8, 2006 TMDL public meeting, failure rates in the Homer Lake watershed are likely higher. Phosphorus loading rates under four scenarios were calculated to show the range of loading from this source. System failures were distributed evenly over the three failure types: short circuiting, ponding, and directly discharging. Table 4-15 shows the phosphorus load if 7, 15, 30, and 60 percent of systems in the watershed are failing.

Table 4-15. Failure Rate Scenarios and Resulting Phosphorus Loads to Homer Lake.

Failure Rate (%)	Average Annual Phosphorus Load (lb/yr)
7	270
15	580
30	1,150
60	2,310

[1] Failures are assumed distributed evenly over short-circuiting, ponded, and directly discharging systems.
[2] This is the average annual failure rate across the nation and is likely not representative of failure rates in the Homer Lake watershed.

4.3.2 Appropriate BMPs

The most effective BMP for managing loads from septic systems is regular maintenance. Unfortunately, most people do not think about their wastewater systems until a major malfunction occurs (e.g., sewage backs up into the house or onto the lawn). When not maintained properly, septic systems can cause the release of pathogens and excess nutrients into surface water. Good housekeeping measures relating to septic systems are listed below (Goo, 2004; CWP, 2004):

- Inspect system annually and pump system every 3 to 5 years, depending on the tank size and number of residents per household.
- Refrain from trampling the ground or using heavy equipment above a septic system (to prevent collapse of pipes).
- Prevent septic system overflow by conserving water, not diverting storm drains or basement pumps into septic systems, and not disposing of trash through drains or toilets.

Education is a crucial component of reducing pollution from septic systems. Many owners are not familiar with USEPA recommendations concerning maintenance schedules. Education can occur through public meetings, mass mailings, and radio and television advertisements.

The USEPA recommends that septic tanks be pumped every 3 to 5 years depending on the tank size and number of residents in the household. Annual inspections, in addition to regular maintenance, ensure that systems are functioning properly. An inspection program would help identify those systems that are currently connected to tile drain systems. All tanks discharging to tile drainage systems should be disconnected immediately.

Some communities choose to formally regulate septic systems by creating a database of all the systems in the area. This database usually contains information on the size, age, and type of system. All inspections and maintenance records are maintained in the database through cooperation with licensed maintenance and repair companies. These databases allow the communities to detect problem areas and ensure proper maintenance.

At this time, there is not a formal inspection and maintenance program in Champaign County. The County Health Department does issue permits for new onsite systems and major repairs, but has little authority over regulating the older systems.

4.3.3 Estimated Cost of Implementation

Septic tanks are designed to accumulate sludge in the bottom portion of the tank while allowing water to pass into the drain field. If the tank is not pumped out regularly, the sludge can accumulate and eventually become deep enough to enter the drain field. Pumping the tank every three to five years prolongs the life of the system by protecting the drain field from solid material that may cause clogs and system back-ups.

The cost to pump a septic tank ranges from $250 to $350 depending on how many gallons are pumped out and the disposal fee for the area. If a system is pumped once every three to five years, this expense averages out to less than $100 per year. Septic tanks that are not maintained will likely require replacement which may cost between $2,000 and $10,000.

The cost of developing and maintaining a watershed-wide database of the onsite wastewater treatment systems in the Homer Lake watershed depends on the number of systems that need to be inspected. Based on Census data collected in 2000, there are approximately 870 households in the watershed. After the initial inspection of each system and creation of the database, only systems with no subsequent maintenance records would need to be inspected. A recent inspection program in South Carolina found that inspections cost approximately $160 per system (Hajjar, 2000).

Education of home and business owners that use onsite wastewater treatment systems should occur periodically. Public meetings; mass mailings; and radio, newspaper, and TV announcements can all be used to remind and inform owners of their responsibility to maintain their systems (Table 4-16).

The costs associated with education and inspection programs will vary depending on the level of effort required to communicate the importance of proper maintenance and the number of systems in the area.

Table 4-16. Costs Associated with Maintaining and Replacing an Onsite Wastewater Treatment System.

Action	Cost per System	Frequency	Annual Cost per System
Pumping	$250 to $350	Once every 3 to 5 years	$70 to $85
Inspection	$160	Initially all systems should be inspected, followed by 5 year inspections for systems not on record as being maintained	Up to $32, assuming all systems have to be inspected once every five years, which is not likely
Replacement	$2,000 to $10,000	With proper maintenance, system life should be 30 years	$67 to $333
Education	$1	Public reminders should occur once per year	$1

4.3.4 Effectiveness and Estimated Load Reductions

It is difficult to estimate the phosphorus loading rate from septic systems in the Homer Lake watershed because local estimates of the failure rates are not available. Based on information reported at stakeholder meetings in the watershed, some farmers reported finding raw sewage and toilet paper in the tile drain lines when they worked on them (Stikkers, 2007). In addition, the Champaign County Health Department (Bird, 2006) has identified several systems in other parts of the county that were directly connected to a subsurface drainage system.

Depending on the level of failure, septic systems in the Homer Lake watershed could contribute between580 lb-P/yr and 2,310 lb-P/yr. The total annual cost for an initial inspection and periodic maintenance (pumping every three to five years) is approximately $100 to $120 per system per year. Other costs associated with addressing this source could not be made due to the uncertainties with failure rates.

4.4 Lake Bottom Sediments

Internal cycling of phosphorus from bottom sediments in Homer Lake is not assumed a significant source of phosphorus loading. The phosphorus content of Homer Lake sediments ranks low to normal according to the Illinois classification system (Lin and Bogner, 2000).

4.4.1 Source Description and Approximate Loading

Phosphorus release from sediments occurs during lake stratification when the soil water interface becomes anoxic (depleted of oxygen). Relative to watershed loading, internal cycling is not considered a significant source of phosphorus to the water column. During development of the Homer Lake phosphorus TMDL, the Nürnberg method (1984) was chosen to approximate the internal phosphorus load. This method uses mean depth, flushing rate, average inflow, and average outflow concentrations to estimate internal load. For Homer Lake, the internal load is estimated as 22 lb/yr. The Clean Lake study estimated the internal load to be 40 lb/yr. Both estimates are minimal contributions to the total load (0.4 to 1.5 percent).

4.4.2 Appropriate BMPs

For lakes experiencing high rates of phosphorus inputs from bottom sediments, several management measures are available to control internal loading. Though loading from this source is considered insignificant to Homer Lake, this section presents three options that precipitate and bind phosphorus to the sediment. This discussion allows for a comparison of removal costs for the agricultural BMPs. The BMP costs for the next highest source of phosphorus loading (septic systems) could not be quantified for comparison with agricultural BMPs due to the uncertainties with failure rates and cost of implementing an inspection program. Thus, the discussion of three inlake phosphorus BMPs is presented to put the loading rates and cost for phosphorus removal from agricultural sources in perspective.

Hypolimnetic (bottom water) aeration involves an aerator air-release that can be positioned at a selected depth or at multiple depths to increase oxygen transfer efficiencies in the water column and reduce internal loading by establishing aerobic conditions at the sediment-water interface. Hypolimnetic aeration effectiveness in reducing phosphorus concentration depends in part on the presence of sufficient iron to bind phosphorus in the oxygenated waters. A mean hypolimnetic iron:phosphorus ratio greater than 3.0 is optimal to promote iron phosphate precipitation (Stauffer, 1981). The iron:phosphorus ratio in the sediments should be greater than 15 to bind phosphorus (Welch, 1992).

Phosphorus inactivation by aluminum addition (specifically aluminum sulfate or alum) to lakes has been the most widely-used technique to control internal phosphorus loading. Alum forms a polymer that binds phosphorus and organic matter. The aluminum hydroxide-phosphate complex (commonly called alum floc) is insoluble and settles to the bottom, carrying suspended and colloidal particles with it. Once on the sediment surface, alum floc retards phosphate diffusion from the sediment to the water (Cooke et al., 1993).

Artificial circulation is the induced mixing of the lake, usually through the input of compressed air, which forms bubbles that act as airlift pumps. The increased circulation raises the temperature of the whole lake (Cooke et al., 1993) and chemically oxidizes substances throughout the water column (Pastorak et al., 1981 and 1982), reducing the release of phosphorus from the sediments to the overlying water, and enlarging the suitable habitat for aerobic animals.

4.4.3 Estimated Cost of Implementation

In general, inlake phosphorus controls are expensive. For comparison with the agricultural cost estimates, the inlake controls have been converted to year 2004 dollars assuming an average annual inflation rate of 3 percent.

The number and size of hypolimnetic aerators used in a waterbody depend on lake morphology, bathymetry, and hypolimnetic oxygen demand. Total cost for successful systems has ranged from $170,000 to $1.7 million (Tetra Tech, 2002). USEPA (1993) reports initial costs ranging from $340,000 to $830,000 plus annual operating costs of $60,000. System life is assumed to be 20 years.

Alum treatments are effective on average for approximately 8 years per application and can reduce internal loading by 80 percent. Treatment cost ranges from $290/ac to $720/ac (WIDNR, 2003). The surface area of Homer Lake is 80.8 ac, so total application costs for the lake would likely range from $23,400 to $58,200.

Dierberg and Williams (1989) cite mean initial and annual costs for 13 artificial circulation projects in Florida of $440/ac and $190/ac/yr, respectively. For Homer Lake, which has a surface area of 80.8 ac, the construction cost would be $35,500 and the annual maintenance costs $15,300. The system life is assumed 20 years.

Table 4-17 summarizes the cost analyses for the three inlake management measures. The final column lists the annualized cost per lake surface area (80.8 ac) treated.

Table 4-17. Cost Comparison of Inlake Phosphorus Controls.

Control	Construction or Application Cost	Annual Maintenance Cost	Annualized Costs $/ac/yr
Hypolimnetic Aeration	$170,000 to $830,000	$60,000	$850 to $1,260
Alum Treatment	$23,400 to $58,200	$0	$36 to $90
Artificial Circulation	$35,500	$15,300	$210

4.4.4 Effectiveness and Estimated Load Reductions

Little information was available concerning the effectiveness of these management measures on reducing internal phosphorus loading. It is assumed that each method may reduce internal loading by 80 percent, or 32 lb/yr.

Of the three inlake treatment options discussed in this plan, alum treatment is the most cost-effective assuming they all result in an 80 percent reduction of internal loading. However, this management option will not be included in the implementation plan because only a small fraction of the total phosphorus load to Homer Lake (0.4 to 1.5 percent) is generated from bottom sediments.

4.5 Precipitation and Atmospheric Deposition

Phosphorus loading from atmospheric deposition is not considered a significant fraction of the loading to Homer Lake. Wind erosion is usually the primary loading mechanism for phosphorus, but is not a concern in east-central Illinois (Franke, 2006). USGS reports atmospheric deposition rates of phosphorus from agricultural areas near Lake Michigan at 0.18 lb/ac/yr (Robertson, 1996). With a lake surface area of 81 ac, the phosphorus load due to atmospheric deposition to Homer Lake is estimated to be 15 lb-P/yr. This is small fraction of the load estimated from watershed sources.

4.6 Shoreline Erosion

The shoreline length around Homer Lake is approximately 5.3 miles. The Homer Lake Clean Lakes diagnostic study indicates that shoreline erosion is not currently a source of pollution to the lake. During the Homer Lake Clean Lakes study, the shoreline was assessed for erosion problems. Of the 5.3 miles of shoreline, 4,200 ft were identified as eroding in the past, but are currently stabilized with rip rap. A 120 ft long section near the boat ramp had an 8 to 10 ft high eroding bank that was classified as stable. Based on the findings reported in the Clean Lakes study, it is assumed that shoreline erosion does not contribute phosphorus to Homer Lake.

Shoreline erosion is not currently contributing phosphorus to Homer Lake. Therefore, no BMPs are suggested at this time.

4.7 Stream Channel Erosion

Stream channel erosion is a potential source of sediment and nutrient loading to Homer Lake, though the extent is not known. Based on land use imagery, little to no riparian buffer exists between the streams and adjacent farmland. Inspection of the streambanks is needed to quantify the loading from this source.

4.7.1 Source Description and Approximate Loading

Without field inspections of the streambanks in the Homer Lake watershed, it is not possible to quantify the amount of phosphorus loading from this source. The most cost-effective way to assess streambank erosion is to visually inspect representative reaches of each channel and rank the channel stability using a bank erosion index. Banks ranked moderately to severely eroding should be targeted for stabilization efforts. A more time and resource intensive method is to determine the rate of erosion by inserting bank pins and measuring the rate of recession. Once soil loss estimates are obtained, phosphorus loading can be calculated from soil phosphorus contents.

4.7.2 Appropriate BMPs

Streambanks in the Homer Lake watershed should be inspected for signs of erosion. Banks showing moderate to high erosion rates (indicated by poorly vegetated reaches, exposed tree roots, steep banks, etc.) can be stabilized by engineering controls, vegetative stabilization, and restoration of riparian areas. Peak flows and velocities from runoff areas can be mitigated by infiltration in grassed waterways and passage of runoff through filter strips.

4.7.3 Estimated Cost of Implementation

Because the extent of streambank erosion in the watershed is not known, specialized BMPs, such as engineering controls, are not suggested. Rather, the agricultural BMPs discussed in Section 4.2 that also address streambank stability are recommended (Table 4-18).

Table 4-18. Agricultural Phosphorus BMPs with Secondary Benefits for Streambank Stability.

BMP	Description	Annualized Cost Estimates
Filter Strips	Placement of vegetated strips in the path of field drainage to remove sediment and nutrients and reduce runoff velocities.	Seeded filter strips cost $25/ac treated Sodded strips cost $43/ac treated
Grassed Waterways	A runoff conveyance that removes phosphorus by sedimentation and plant uptake. Reduces peak flow velocities and subsequent erosion.	$2/ac to $6/ac
Restoration of Riparian Buffers	Conversion of land adjacent to stream channels to vegetated buffer zones. Removes phosphorus by sedimentation and plant uptake. Provides stream bank stability, stream shading, and aesthetic enhancement.	$59.25/ac treated

4.7.4 Effectiveness and Estimated Load Reductions

Because the phosphorus loading from streambank erosion has not been quantified, it is not possible to estimate the additional phosphorus removed by these BMPs (over that assumed for agricultural load reductions). The benefits of filter strips, grassed waterways, and riparian buffers are therefore underestimated in this report.

5.0 PRIORITIZATION OF IMPLEMENTATION

The phosphorus TMDL for Homer Lake requires a 70 percent reduction in annual loading. Section 4.0 provides loading estimates by source category and describes management options in terms of cost and load reduction capability. This section condenses the information presented in Section 4.0 so that the management strategies can be prioritized to cost effectively reduce phosphorus loading.

5.1 Current Phosphorus Loading to Homer Lake

Phosphorus loads to Homer Lake vary yearly due to the frequency and intensity of rainfall events and the timing of fertilizer application. Phosphorus loads from the 9,890 ac of heavily tiled row crop agriculture likely range from 4,945 lb/yr to 14,835 lb/yr based on data presented by Gentry et al. (2007). In addition to agricultural sources of phosphorus, onsite wastewater treatment systems also contribute phosphorus loading. It is difficult to quantify the loading from septic systems, but the load likely falls somewhere between 580 lb/yr and 2,310 lb/yr, depending on the failure rate of systems in the watershed. The other sources of phosphorus loading are fairly minor with estimated loads of 40 lb/yr for internal generation and 15 lb/yr for atmospheric deposition.

Managing phosphorus loads to the lake will primarily involve the use of agricultural BMPs and maintenance of septic systems. Significant work has already begun in the watershed as a result of an IEPA 319 grant and the Conservation 2000 Clean Lakes Program. Watershed management measures currently in place in the Homer Lake watershed include the following (Lin and Bogner, 2000; CCSWCD, 2005 and 2007; Illinois Department of Agriculture, 2002 and 2006):

- 5 ac of grassed waterways
- two ponds
- 4,000 ft of field border strips
- 3,000 ac of conservation cropping
- 34 ac of filter strips
- 120 ac using deep phosphorus placement
- 4,950 ac using nutrient management planning to calculate appropriate fertilizer application rates.

It is difficult to estimate the load reductions achieved by these BMPs because little information on the design practices and contributing drainage area is available, and implementation of these BMPs has occurred at different times over the past several years. However, the Champaign County Soil and Water Conservation District is currently estimating load reductions from nutrient management planning and deep placement of phosphorus. In addition, Homer Lake is scheduled for water quality monitoring in 2007 by IEPA. If phosphorus concentrations are reduced relative to data collected over the past decade, then the cumulative effectiveness of these practices in achieving load reductions can be assessed.

5.2 Use of Phosphorus BMPs to Meet Water Quality Goals

Assuming that the year 2007 phosphorus concentrations are still above the water quality standard of 0.05 mg/L, additional load reductions will be necessary to the bring lake into compliance. Table 5-1 summarizes the potential loading from each source (without considering BMPs) along with reported reductions and the total cost to implement the measures over all applicable areas. The information in the table is not to suggest that each BMP will be implemented watershed wide, nor does it account for BMPs already in place. The purpose is to compare the potential load reduction from each BMP as well as the cost associated with achieving that reduction. As stated in Section 4.4, inlake loading is an insignificant fraction of the total phosphorus load to the lake. The BMPs for managing inlake loading are only included in the table to put the load reduction capabilities and costs of the other practices into perspective.

Note that the source area, and therefore the loading rate, for riparian buffers is much less than for the other agricultural controls because riparian buffers are only applicable along stream channels and only treat the adjacent 300 ft of land on either side of the buffer, not the entire watershed. In addition to the treated area adjacent to the buffer, the land converted to a buffer also recognizes a reduction in phosphorus loading. To achieve a reduction of 80 percent, we are assuming a buffer width on both sides of the stream channel of 90 ft. The estimated stream length in the watershed where riparian buffers could be constructed is 5.5 miles. Thus, the area that could be converted to a buffer is approximately 120 acres and the area treated by this amount of buffer is 400 acres. Given phosphorus loading rates from tiled agricultural land ranging from 0.5 lb/ac/yr to 1.5 lb/ac/yr, the loading from the source area (520 ac) is approximately 260 to 780 lb/yr. The other agricultural BMPs are applicable to all 9,890 ac of farmland in the watershed and are not restricted by the presence of a stream channel.

Table 5-1. Comparison of Phosphorus BMPs for Agricultural Production, Onsite Wastewater Treatment Systems, and Inlake Generation

BMP	Reported Phosphorus Removal Rate (%)	Estimated Loading from Source (lb/yr)	Potential Reduction in Phosphorus Loading (lb/yr)	Annualized Costs for Full Management
Agricultural BMPs for 9,890 Acres of Farmland in the Watershed				
Nutrient Management Plan with Deep Phosphorus Placement	20 to 50	4,945 to 14,835	990 to 7,420	$7,420 to $37,090
Conservation Tillage	68 to 76	4,945 to 14,835	3,360 to 11,270	$12,360 to $22,250
Cover Crops	70 to 85	4,945 to 14,835	3,460 to 12,610	$190,380
Seeded Filter Strips	65	4,945 to 14,835	3,210 to 9,640	$247,250
Sodded Filter Strips	65	4,945 to 14,835	3,210 to 9,640	$425,270
Grassed Waterways	30	4,945 to 14,835	1,480 to 4,450	$19,780 to 59,340
Restoration of Riparian Buffers	80 for treated area and 90 for converted area	260 to 780	210 to 640	$585,980
Retrofit Controlled Drainage	35	4,945 to 14,835	1,730 to 5,190	$7,420 to $14,840
Onsite Wastewater Treatment BMPs Assuming 867 Systems in the Watershed				
Pumping/ Maintenance	100 percent reduction if all systems are maintained properly and functioning as designed with replacement likely occurring once every 30 years	580 to 2310	580 to 2310	$60,700 to $73,700 to pump each system once every three to five years
Inspection				Up to $27,750 if each system has to be inspected once every five years.
Replacement				$58,090 to $288,700 assuming each system is replaced once every 30 years
Education				$870
Inlake Phosphorus Controls (Lake Surface Area of 80.8 ac)				
Hypolimnetic Aeration	80	22 to 40	17 to 32	$68,680 to $101,810
Alum Treatment	80	22 to 40	17 to 32	$2,910 to $7,270
Artificial Circulation	80	22 to 40	17 to 32	$16,970

[1]Installation of new tile drain is not included in this table because the majority of fields are already tiled.

Extending agricultural BMPs to additional areas in the watershed will likely result in significant reductions in phosphorus loading above those already achieved with current management measures. Nutrient management plans with deep phosphorus placement, conservation tillage, grassed waterways, and retrofitting tile drain systems with outlet control devices are all relatively inexpensive BMPs with potential phosphorus reductions ranging from 990 to 11,270 lb/yr. These load reductions are comparable to the more expensive BMPs at less than one-fourth of the cost.

Achieving a zero percent failure rate of septic systems in the Homer Lake watershed would likely reduce loads by 580 to 2,310 lb/yr, assuming that the current failure rate is somewhere between 15 and 60 percent. In terms of phosphorus load reduction, this management measure would be relatively expensive compared to the agricultural BMPs.

Given the relatively low contribution of atmospheric deposition and internal generation to the total phosphorus balance, control of these sources is not cost-effective. Therefore, for the Homer Lake watershed, load reductions should be achieved by agricultural BMPs and repair of failing septic systems.

5.2.1 Implementation Strategy for Agricultural BMPs

The Champaign County Soil and Water Conservation District is currently estimating the pollutant load reductions achieved through use of nutrient management planning and deep phosphorus placement. In addition, comparing changes in phosphorus concentrations observed in Homer Lake over the past decade will indicate the effectiveness of the BMPs on improving water quality in the lake. IEPA samples Homer Lake approximately every three years and is scheduled for another round of monitoring in 2007 (Sample, 2007).

If phosphorus concentrations in 2007 remain above the water quality standard of 0.05 mg/L, encouraging application of additional BMPs will be necessary. Focusing on the low cost – high reduction options first will likely result in greater participation in the community. Nutrient management planning to determine appropriate fertilizer application rates is currently being used on half of the fields in the watershed. Extending this practice to the remaining fields, and using deep placement technology could reduce phosphorus loading to Homer Lake by 20 to 50 percent.

Conservation tillage practices, particularly on corn fields should also be encouraged. The majority of soybean fields (64 percent) in Champaign County use some form of conservation tillage, but only 6 percent of corn fields meet the 30 percent residual cover suggested to reduce erosion and phosphorus loading. Extending conservation tillage to the remaining 36 percent of soybean fields and 94 percent of corn fields may reduce phosphorus loading from over 6,400 acres by 68 to 76 percent, assuming that half of the fields are planted in soybean or corn during any given year.

Approximately 5 acres of grassed waterway has been planted in the watershed. This technology is applicable watershed-wide and is capable of reducing phosphorus loads by approximately 30 percent.

Another relatively low cost option is retrofitting the tile drain systems in the watershed with outlet control devices that store water for crop use during dry periods and have been shown to reduce phosphorus loading by 35 percent.

Nutrient management planning, conservation tillage practices, grassed waterways, and controlled drainage structures are all relatively low cost BMPs, with approximate net costs ranging from $1 to $6/ac/yr. Water quality sampling during the year 2007 will illustrate how effective these practices have been to date. Once these practices have been adopted on as many fields as possible through voluntary participation of growers in the watershed, sampling in 2010 will determine whether or not the higher cost BMPs may be necessary. Use of cover crops, filter strips, and restoration of riparian buffers would be supplemental strategies for the lower cost, source reduction practices; expected costs of these practices range from $19 to $60 per acre treated.

6.0 MEASURING AND DOCUMENTING PROGRESS

Farmers in the Homer Lake watershed are currently using some of the BMPs discussed in this implementation plan on several acres of farmland. Nutrient management plans for determining the appropriate rates of fertilizer application are implemented on approximately 4,950 acres. Based on countywide transect data, approximately 3,460 acres are meeting the 30 percent residual cover requirements of conservation tillage. Other BMPs are used less frequently.

Water quality in Homer Lake is currently measured at three locations at least once per month from April through October during sampling years. Periodic intensive surveys have also included winter month sampling as well as more frequent summer month sampling. Parameters include suspended solids, dissolved oxygen, temperature, chlorophyll *a*, dissolved and total phosphorus, nitrate plus nitrite, and total Kjeldahl nitrogen. Measurements should continue at this frequency for at least two monitoring cycles to document progress and direct future management strategies.

The Volunteer Lake Monitoring Program (VLMP) is currently operating under the Tier 1 sampling program for Homer Lake. Expansion of this program to Tier 2 is a possibility for this lake. If needed, the program may even be expanded to Tier 3. The three levels of monitoring are summarized below:

- Tier 1 – In this tier, volunteers perform Secchi disk transparency monitoring and field observations only. Monitoring is conducted twice per month from May through October typically at three in-lake sites.
- Tier 2 – In addition to the tasks of Tier 1, Tier 2 volunteers collect water samples for nutrient and suspended solid analysis at the representative lake site: Site 1. Water quality samples are taken only once per month in May-August and October in conjunction with one Secchi transparency monitoring trip.
- Tier 3 – This is the most intensive tier. In addition to the tasks of Tier 1, Tier 3 volunteers collect water samples at up to three sites on their lake (depending on lake size and shape). Their samples are analyzed for nutrients and suspended solids. They also collect and filter their own chlorophyll samples. This component may also include DO/Temp. profiles as equipment is available. As in Tier 2, water quality samples are taken only once per month in May-August and October in conjunction with one Secchi transparency monitoring trip.

Data collected in either Tier 1 or Tier 2 is considered educational. It is used to make general water quality assessments. Data collected in Tier 3 is used in the Integrated Report and is subject to the impaired waters listing. It would also be useful to determine why concentrations in the lake are higher during dry summers compared to wet summers. The following tests and measurements would be helpful in this effort.

- Measuring dissolved and total phosphorus concentrations in tile drain effluent.
- Leak testing and inspecting the centralized wastewater system including the sewer pipes, lagoon liner, and effluent pipeline.
- Inspection of onsite wastewater treatment systems in the watershed to determine rates of failure and approximate contribution to the lake.

Continuing to monitor total phosphorus and other water quality parameters in Homer Lake will determine how effective these management practices are. If the concentrations are still observed above the water quality standard, encouragement of the use of BMPs across the watershed through education and incentives will be a priority. It may also be necessary to begin funding efforts for structural BMPs such as filter strips and riparian buffer restoration.

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7.0 REASONABLE ASSURANCE

USEPA requires that a TMDL provide reasonable assurance that the required load reductions will be achieved and water quality will be restored. For this watershed, use of agricultural BMPs and repair of failing septic systems are the primary management strategies to reach these goals. Participation of farmers and landowners is essential to improving water quality, but resistance to change and upfront cost may deter participation. Educational efforts and cost share programs will likely increase participation to levels needed to protect water quality.

7.1 Environmental Quality Incentives Program (EQIP)

Several cost share programs are available to farmers who voluntarily implement resource conservation practices in the Homer Lake watershed. The most comprehensive is the NRCS Environmental Quality Incentives Program (EQIP) which offers cost sharing and incentives to farmers statewide who utilize approved conservation practices to reduce pollutant loading from agricultural lands.

- The program will pay $10 for one year for each acre of farmland that is managed under a nutrient management plan (up to 400 acres per farmer).
- Use of vegetated filter strips will earn the farmer $100/ac/yr for three years (up to 50 acres per farmer).
- The program will also pay 60 percent of the cost to construct grassed waterways, riparian buffers, and windbreaks.
- Use of residue management will earn the farmer $15/ac for three years (up to 400 acres per farmer).
- Installation of drainage control structures on tile outlets will earn the farmer $5/ac/yr for three years for the effected drainage area as well as 60 percent of the cost of each structure.

In order to participate in the EQIP cost share program, all BMPs must be constructed according to the specifications listed for each conservation practice.

The specifications and program information can be found online at
http://www.il.nrcs.usda.gov/programs/eqip/cspractices.html.

7.2 Conservation 2000

In 1995 the Illinois General Assembly passed the Conservation 2000 bill providing $100 million in funding over a 6-year period for the promotion of conservation efforts. In 1999, legislation was passed to extend the program through 2009. Conservation 2000 currently funds several programs applicable to the Homer Lake watershed through the Illinois Department of Agriculture.

General information concerning the Conservation 2000 Program can be found online at
http://www.agr.state.il.us/Environment/conserv/

7.2.1 Supplemental Funding to Local Soil and Water Conservation Districts

The Conservation 2000 program also provides additional funding to local Soil and Water Conservation Districts (SWCDs) to offset operating expenses.

7.2.2 Conservation Practices Program (CPP)

The Conservation Practices Cost Share Program provides monetary incentives for conservation practices implemented on land eroding at one and half times or more the tolerable soil loss rate. Payments of up to 60 percent of initial costs are paid through the local SWCDs. Of the phosphorus BMPs discussed in this plan, the program will cost share cover crops, filter strips, grassed waterways, and no-till systems. Other sediment control options such as contour farming and installation of stormwater ponds are also covered. Practices funded through this program must be maintained for at least 10 years.

More information concerning the Conservation Practices Program can be found online at:
http://www.agr.state.il.us/Environment/conserv/

7.2.3 Streambank Stabilization Restoration Program

Conservation 2000 also funds a streambank stabilization and restoration program aimed at restoring highly eroding streambanks. Research efforts are also funding to assess the effectiveness of vegetative and bioengineering techniques.

More information about this program is available online at:
http://dnr.state.il.us/orep/c2000/grants/proginfo.asp?id=20

7.2.4 Sustainable Agriculture Grant Program (SARE)

The Sustainable Agricultural Grant Program funds research, education, and outreach efforts for sustainable agricultural practices. Private landowners, organizations, educational, and governmental institutions are all eligible for participation in this program.

More information concerning the Sustainable Agricultural Grant Program can be found online at:
http://www.sare.org/grants/

7.3 Conservation Reserve Program (CRP)

The Farm Service Agency of the USDA supports the Conservation Reserve Program (CRP) which rents land converted from crop production to grass or forestland for the purposes of reducing erosion and protecting sensitive waters. This program is available to farmers who establish vegetated filter strips or grassed waterways. The program typically provides 50 percent of the upfront cost to establish vegetative cover and $185/ac/yr for up to 15 years.

More information about this program is available online at:
http://www.nrcs.usda.gov/programs/crp/

7.4 Nonpoint Source Management Program (NSMP)

Illinois EPA receives federal funds through Section 319(h) of the Clean Water Act to help implement Illinois' Nonpoint Source (NPS) Pollution Management Program. The purpose of the Program is to work cooperatively with local units of government and other organizations toward the mutual goal of protecting the quality of water in Illinois by controlling NPS pollution. The program emphasizes funding for implementing cost-effective corrective and preventative best management practices (BMPs) on a watershed scale; funding is also available for BMPs on a non-watershed scale and the development of information/education NPS pollution control programs.

The Maximum Federal funding available is 60 percent, with the remaining 40 percent coming from local match. The program period is two years unless otherwise approved. This is a reimbursement program.

Section 319(h) funds are awarded for the purpose of implementing approved NPS management projects. The funding will be directed toward activities that result in the implementation of appropriate BMPs for the control of NPS pollution or to enhance the public's awareness of NPS pollution. Applications are accepted June 1 through August 1.

The Champaign County Soil and Water Conservation District recently completed a 319 project in the Homer Lake Watershed. A copy of the report is located in Appendix A.

More information about this program is available online at:
http://www.epa.state.il.us/water/financial-assistance/non-point.html

7.5 Agricultural Loan Program

The Agricultural Loan Program offered through the Illinois State Treasury office provides low-interest loans to assist farmers who implement soil and water conservation practices. These loans will provide assistance for the construction, equipment, and maintenance costs that are not covered by cost share programs.

More information about this program is available online at:
http://www.state.il.us/TREAS/ProgramsServices.aspx

7.6 Illinois Conservation and Climate Initiative (ICCI)

The Illinois Conservation and Climate Initiative (ICCI) is a joint project of the State of Illinois and the Delta Pollution Prevention and Energy Efficiency (P2/E2) Center that allows farmers and landowners to earn carbon credits when they use conservation practices. These credits are then sold to companies or agencies that are committed to reducing their greenhouse gas emissions. Conservation tillage earns 0.5 metric tons (1.1 US ton) of carbon per acre per yr (mt/ac/yr), grass plantings (applicable to filter strips and grassed waterways) earn 0.75 mt/ac/yr, and trees planted at a density of at least 250 stems per acre earn somewhere between 3.5 to 5.4 mt/ac/yr, depending on the species planted and age of the stand.

Carbon credits are currently selling at around $3.70 per mt. Current exchange rates are available online at http://chicagoclimatex.com. Administrative fees of $0.14/mt plus 8 percent are subtracted from the sale price.

Program enrollment occurs through the P2/E2 Center which can be found online at http://p2e2center.org/. The requirements of the program are verified by a third party before credits can be earned.

More information about carbon trading can be found online at:
http://illinoisclimate.org/

Table 7-1 and Table 7-2 summarize the cost share programs available for phosphorus reduction BMPs in the Homer Lake watershed.

Table 7-1. Summary of Assistance Programs Available for Farmers in the Homer Lake Watershed.

Assistance Program	Program Description	Contact Information
NRCS EQIP	Offers cost sharing and rental incentives to farmers statewide who utilize approved conservation practices to reduce pollutant loading from agricultural lands. Applies to nutrient management plans, filter strips, grassed waterways, riparian buffers, and conservation tillage.	USDA Local Service Centers Natural Resources Conservation Service (NRCS) U.S. Department of Agriculture 2118 W. Park Court Champaign, IL 61821 Phone: (217) 353-6600
Conservation 2000 CPP	Provides up to 60 percent cost share for several agricultural phosphorus BMPs: cover crops, filter strips, grassed waterways.	Champaign County SWCD 2110 W. Park Court Champaign, IL 61821 Phone: (217) 352-3536, Ext. 3 Fax: (217) 352-4781
Conservation 2000 Streambank Stabilization Restoration Program	Provides 75 percent cost share for establishment of riparian corridors along severely eroding stream banks. Also provides technical assistance and educational information for interested parties.	Champaign County SWCD 2110 W. Park Court Champaign, IL 61821 Phone: (217) 352-3536, Ext. 3 Fax: (217) 352-4781
SARE	Funds educational programs for farmers concerning sustainable agricultural practices.	Champaign County SWCD 2110 W. Park Court Champaign, IL 61821 Phone: (217) 352-3536, Ext. 3 Fax: (217) 352-4781
FSA CRP	Offsets income losses due to land conversion by rental agreements. Targets highly erodible land or land near sensitive waters. Provides up to 50 percent of the upfront cost to establish vegetative cover and $185/ac/yr for up to 15 years for converted land.	Farm Service Agency (FSA) Local Office 2110 W. Park Court Champaign, IL 61821 Phone: (217) 352-3536, Ext. 2 Fax: (217) 352-4781
NSMP	Provides grant funding for educational programs and implementation of nonpoint source pollution controls.	Illinois Environmental Protection Agency Bureau of Water Watershed Management Section, Nonpoint Source Unit P.O. Box 19276 Springfield, IL 62794-9276 Phone: (217) 782-3362
Agricultural Loan Program	Provides low-interest loans for the construction and implementation of agricultural BMPs. Loans apply to equipment purchase as well.	Office of State Treasurer Agricultural Loan Program 300 West Jefferson Springfield, Illinois 62702 Phone: (217) 782-2072 Fax: (217) 522-1217
CCSWCD	Provides incentives for individual components of nutrient management planning, use of strip tillage, and restoration of riparian buffers. Offers cost sharing to residential landowners for trees, shrubs, and native plants.	Champaign County Soil & Water Conservation District 2110 West Park Court, Suite C Champaign, IL 61821 Phone: (217) 352-3536, Ext. 3 Fax: (217) 352-4781
ICCI	Allows farmers to earn carbon trading credits for use of conservation tillage, grass, and tree plantings.	Champaign County Soil & Water Conservation District 2110 West Park Court, Suite C Champaign, IL 61821 Phone: (217) 352-3536, Ext. 3 Fax: (217) 352-4781

Table 7-2. Assistance Programs Available for Agricultural Phosphorus BMPs.

BMP	Cost Share Programs and Incentives
Education and Outreach	Conservation 2000 Streambank Stabilization Restoration Program SARE NSMP CCSWCD
Nutrient Management Plan	EQIP: $10/ac for one year, 400 ac. max. CCSWCD: up to $30/ac for one year
Conservation Tillage	EQIP: $15/ac for three years, 400 ac. max. ICCI: earns 0.5 mt/ac/yr of carbon trading credit
Cover Crops	CPP: cost share of 60 percent
Filter Strips	EQIP: $100/ac for three years, 50 ac. max. CPP: 60 percent of construction costs CRP: 50 percent of the upfront cost to establish vegetative cover and $185/ac/yr for up to 15 years ICCI: earns 0.75 mt/ac/yr of carbon trading credit for each acre planted
Grassed Waterways	EQIP: 60 percent of construction of costs CPP: 60 percent of construction costs CRP: 50 percent of the upfront cost to establish vegetative cover and $185/ac/yr for up to 15 years ICCI: earns 0.75 mt/ac/yr of carbon trading credit for each acre planted
Land Retirement of Highly Erodible Land or Land Near Sensitive Waters	CRP: 50 percent of the costs of establishing vegetative cover and cash incentive of $185/ac/yr for 15 years ICCI: earn between 0.75 and 5.4 mt/ac/yr of carbon trading credit depending on species planted
Restoration of Riparian Buffers	EQIP: 60 percent of construction of costs CRP: 50 percent of the costs of establishing vegetative cover and cash incentive of $185/ac/yr for 15 years CPP: up to 75 percent of construction costs CCSWCD: $250 contract incentive ICCI: earn between 0.75 and 5.4 mt/ac/yr of carbon trading credit depending on species planted

Note: Cumulative cost shares from multiple programs will not exceed 100 percent of the cost of construction.

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8.0 IMPLEMENTATION TIME LINE

This implementation plan for Homer Lake defines a phased approach for achieving the phosphorus standard in the lake (Figure 8-1). Ideally, implementing phosphorus control measures in the Homer Lake watershed will be based on voluntary participation which will depend on 1) the effectiveness of the educational programs for farmers and owners of onsite wastewater systems, and 2) the level of participation in the programs. This section outlines a schedule for implementing the control measures and determining whether or not they are sufficient to meet the water quality standard.

In 2003, the Champaign County Soil and Water Conservation District (CCSWCD) began a BMP educational outreach program for farmers and homeowners in the watershed through IEPA's 319 program. As of 2005, the CCSWCD has successfully enrolled owners of half of the total farmland in the watershed in nutrient management planning. Phase I of this implementation plan should build on the efforts of the CCSWCD and continue to focus on education of farm owners concerning the benefits of agricultural BMPs on crop yield, soil quality, and water quality as well as cost share programs available in the watershed. In addition, all owners of onsite wastewater treatment systems should be informed of their responsibilities to maintain and repair their systems. It is expected that initial education through public meetings, mass mailings, TV and radio announcements, and newspaper articles could be achieved in less than 6 months. As described in Section 7.0, assistance with educational programs is available through the following agencies: the Illinois Department of Agriculture Conservation 2000 Streambank Stabilization Restoration Program, the Illinois Department of Agriculture Sustainable Agriculture Grant Program (SARE), the Illinois Environmental Protection Agency Nonpoint Source Management Program (NSMP), and the Champaign County Soil and Water Conservation District (CCSWCD).

Phase II of the implementation schedule will involve voluntary participation of farmers in BMPs such as nutrient management planning, conservation tillage, grassed waterways, and tile drain outlet control. The local Natural Resources Conservation Service office will be able to provide technical assistance and cost share information for these BMPs. In addition, initial inspections of all onsite wastewater treatment systems and necessary repairs may begin. Continued monitoring of water quality in Homer Lake could occur at the three Illinois EPA monitoring stations. This phase of the plan will likely take one to three years.

If phosphorus concentrations measured during Phase II monitoring remain above the water quality standard, Phase III of the implementation plan will be necessary. The load reduction achieved during Phase II should be estimated by 1) summarizing the areas where BMPs are in use, 2) calculating the reductions in loading from BMPs as outlined in this report, and 3) determining the impacts on total phosphorus concentrations measured before and after Phase II implementation. If BMPs are resulting in decreased phosphorus concentrations, and additional areas could be incorporating these practices, further efforts to include more stakeholders in the voluntary program will be needed. If the Phase II BMPs are not having the desired impacts on phosphorus concentrations, or additional areas of incorporation are not available, supplemental agricultural BMPs will be needed: cover crops, filter strips, restoration of riparian areas, etc. Strategic placement of these more expensive BMPs near stream channels and the lake shore will provide maximized benefits. If required, this phase may last five to ten years.

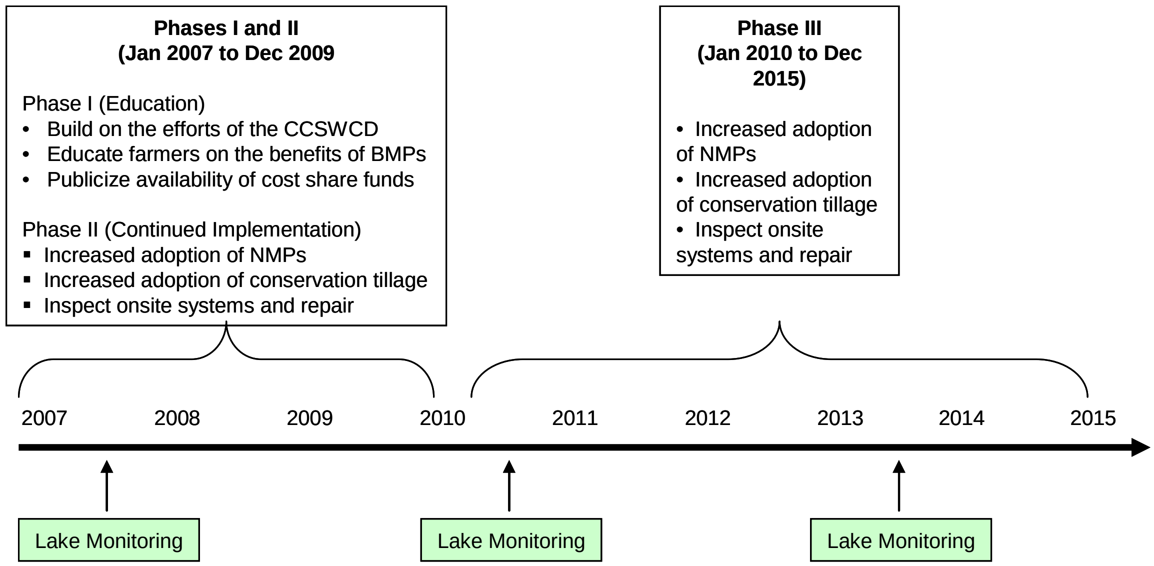

Figure 8-1. Timeline for the Homer Lake Phosphorus TMDL Implementation Plan.

9.0 CONCLUSIONS

Total phosphorus concentrations collected in Homer Lake frequently exceed the Illinois water quality standard of 0.05 mg/L, with a long-term average of 0.09 mg/L. IEPA has included Homer Lake on the Illinois 303(d) list of impaired waters, and the phosphorus TMDL was approved in September 2006. The total phosphorus TMDL for Homer Lake indicates that a reduction in loading of 70 percent is required to maintain the total phosphorus standard. This implementation plan has identified the major sources of phosphorus loading to the lake and suggests a phased approach to achieve the water quality standard.

The major sources of phosphorus to Homer Lake are agriculture and failing septic systems. There are approximately 9,890 ac of row crop agriculture in the Homer Lake watershed, and phosphorus losses are estimated to range from 4,945 to 14,835 lb-P/yr depending on climate conditions (Gentry et al., 2007). Four cost-effective agricultural BMPs have been identified to reduce phosphorus loading to the lake: nutrient management planning with deep phosphorus placement, conservation tillage, grassed waterways, and use of outlet control structures on tile drain systems. These BMPs can each be implemented at a cost ranging from $1 to $6/ac/yr (not considering cost share programs) and may be sufficient to meet the water quality standard in the lake if they are used widely across the watershed.

Phase I of this implementation plan will provide education and incentives to farmers in the watershed to encourage the use of these BMPs. Phase II will occur during and following Phase I and will involve voluntary participation of farmers in the watershed. Water quality monitoring (likely occurring in 2010) will determine whether or not the voluntary BMPs are capable of reaching the water quality goals in the watershed.

Whether or not Phase III will be required depends on the results of future water quality sampling. If the water quality standard is not being met after implementation of the voluntary BMPs on as many acres as possible, then the more expensive BMPs (ranging from $19 to $60 per acre treated, not accounting for cost share programs) will need to be considered. These include cover crops, filter strips, and restoration of riparian buffers. Due to the expense of these BMPs, it will be necessary to strategize their placement to maximize the benefits to water quality.

In addition to the agricultural sources, septic systems likely contribute 580 to 2,310 lb-P/yr to Homer Lake. Though controlling phosphorus loads from agricultural areas will likely achieve the required phosphorus reduction, failing wastewater treatment systems are a public health hazard and potential source of other pollutants. Ensuring proper onsite treatment will require a comprehensive inspection, maintenance, and education program. Reduction in phosphorus loading to Homer Lake will be a secondary benefit of the program.

As agricultural BMPs are implemented and failing septic systems are corrected, water quality in Homer Lake should improve accordingly. Measuring the effectiveness of these BMPs will require continued sampling of water quality in Homer Lake over the next several years. Measurements should continue for a minimum of two monitoring cycles to document progress and direct future management strategies.

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APPENDIX A. HOMER LAKE WATERSHED 319 FINAL REPORT

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HOMER LAKE: MAKING IT CLEAR, ONE HOUSEHOLD, ONE FIELD AT A TIME

FINAL REPORT

May 1, 2007

Financial Assistance Agreement Number 3190411

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Project Overview:

Homer Lake is a 100-acre lake that has a 14.5-sq. mile (9,280 acres) watershed in southeastern Champaign County, Illinois as shown in Figure 1 (p. 13). Due to the region's glacial legacy, watershed topography is generally flat, with Drummer-Flanagan soils predominating. Subsurface tile drains make the area suitable for row-crop agriculture. Field tiles connect to two main drainage ditches that flow into the northern end of Homer Lake. Groundwater flowing into or out of the lake is considered to be insignificant according to the previously completed Homer Lake Phase I Diagnostic Feasibility Study (Illinois Clean Lakes Program).

Approximately 85% of the watershed is used for corn and soybean production; the Salt Fork River Forest Preserve comprises 8%, roads 3%, and urban/residential areas make up about 4%. The 800-acre Salt Fork River Forest Preserve surrounds Homer Lake and is owned by the Champaign County Forest Preserve District (CCFPD). Residential areas have developed in recent years just north of the lake. Two major highways, I-74 and US-150, traverse the northern portion of the watershed.

Ogden, with a population of 743 (US Census, 2000), is on the northeastern edge of the watershed. The municipal sewage plant located one half mile south of Ogden discharges to the Salt Fork River, but downstream from Homer Lake. The plant is believed to have an insignificant impact on Homer Lake.

CCFPD staff members have noticed a decline in water clarity in Homer Lake over the past 10 years. Secchi depth readings of 4 feet were noted in the 1990s, while in recent years measurements have generally been less than 2 feet. Nutrient levels are considered to be high in the lake, the Homer Lake Phase I Diagnostic Feasibility Study indicates that total phosphorus concentrations exceeded the 0.05 mg/L level roughly 60% of the time over a 5 year period in the late 1990s that was part of the voluntary lake monitoring program and that many nitrate/nitrite samples exceeded the 10.0 mg/L guideline, particularly in the spring.

The Champaign County Soil and Water Conservation District (CCSWCD) and the CCFPD wanted to see improved conservation efforts north of the lake in order to slow or stop its degradation before it became serious. The remedial costs of a lack of action could eventually be extremely high. The goal was to work with those living in the watershed to see if they would take an active roll in protecting the lake. The CCSWCD applied for and received this Section 319 grant to help protect Homer Lake.

Project Objectives:

The first project objectives were centered on reducing soil erosion that resulted in sediment filling in the north end of Homer Lake. This sediment comes into the lake from the two drainage ditches that drain in from the north. The main sources of the sediment load into these two drainage ditches is erosion off agricultural fields in the watershed and home construction just north of the lake.

The vast majority of sediment has historically come from the agricultural fields in the watershed. Our goal was to reduce erosion on these fields by encouraging farmers to try strip-till planting of corn. Strip-till significantly reduces soil erosion by leaving crop residue from the previous crop on the soil surface to protect it from the erosive force of raindrops directly hitting the soil surface. We also encouraged the planting of filter strips along the drainage ditches to filter water as it moves off adjacent farm fields into drainage ditches.

In addition to agriculture, home construction north of the lake is delivering sediment to the lake. The ditch coming into the lake was dredged to make an additional small lake north of Homer Lake. This new lake permitted the development of additional lakeside lots that can cause soil erosion and allow sediment to move directly off the lots into the newly formed lake and then into Homer Lake. This is a relatively new phenomenon in the watershed that will continue to add sediment until either the area is completely developed and seeded down or the developers implement recommended best management practices (BMP).

The second project objective was to reduce crop nutrients from moving off the fields and into the lake. The first method used to accomplish this was to work with farmers to get them to use University of Illinois nutrient recommendations so crops would use the nutrients applied to the fields and excess nutrients would not move off the fields into the drainage ditches and into the lake.

A second method of reducing nutrients was to encourage the deep placement of phosphorus on farm fields rather than the more traditional surface applications. Surface applications are subject to moving off fields with rainfall, especially if the rainfall is shortly after the fertilizer application or when the fertilizer is applied to frozen soil. This method of application requires expensive application equipment; so we cost-shared with two applicators to purchase a total of two sets of this equipment so it could be used in the watershed.

Best Management Practices (BMP) that were used to address the problem:

Agricultural sources of nutrients and sediment can be reduced with nutrient management programs, Variable Rate application Technology (VRT), deep placement of phosphorus with a customized toolbar, strip tillage, and vegetative buffers.

a) Nutrient Management

An incentive payment of $7/acre was offered to producers in the watershed to develop and follow a nutrient management plan based on University of Illinois' fertilizer application guidelines. Area producers have historically over-applied as much as 40 lbs/acre of nitrogen fertilizer to their corn fields. Nitrogen is normally applied at rates ranging from 180 lbs to 220 lbs per acre in traditional corn/soybean rotations. There is also evidence that phosphorus is often applied despite adequate levels already available in the soil. While over-application is often viewed as “cheap” insurance for maximizing yields, University of Illinois researchers have shown that over-application does not pay in the long run and have developed application guidelines for optimizing economic return. Applying the recommended rate means that less nutrients are available for leaching to tile drains or runoff from fields and subsequent delivery to Homer Lake by way of drainage ditches. Our goal was to 1) show farmers that nutrient management plan implementation is both environmentally responsible and in their best economic interest and 2) nutrient loads to Homer Lake from agriculture are minimized during and after the incentive program ends.

b) Variable Rate application Technology (VRT)

Applying the University of Illinois guidelines to a particular field is good. Applying only what is needed within different parts of that field is even better. The VRT technology requires intensive soil sampling (a sample for each 2.5-3.3 acres) and spreading equipment that can vary the fertilizer application rates based on computer programs that determine the precise rate needed in different areas of the field. The equipment can even completely stop phosphorus (P) applications where the soil tests show an adequate level of P is already present. A $10/acre incentive was paid to producers who used VRT to apply fertilizer to their fields. Producers in Champaign County have access to this global positioning system technology to vary fertilizer application rates according to varying soils and conditions within a particular field. In terms of bottom line economics, VRT is considered to be no more expensive than conventional application methods. Since overall fertilizer use is more efficient, the nutrient load to Homer Lake is reduced. This grant helped pay for the marginal cost to the farmer for 2.5 acre grid soil sampling and additional cost of VRT application over normal broadcast single rate spreading. Our goal was to show producers these technologies will pay for themselves so they will make them part of their normal production practices.

c) Deep Placement of Phosphorus

While nitrogen is predominantly lost through leaching, phosphorus is generally lost through surface runoff and erosion. An incentive of $15/acre was paid to producers willing to place their phosphorus several inches below the ground surface using a special toolbar so that less P enters Homer Lake. The practice does not require any additional field operations, so the only added cost is the modified toolbar.

At the start of this project, there was no equipment available in the watershed to farmers for deep placement of phosphorus. This grant provided cost-share to two local Agri-businesses for the purchase of equipment to be used by farmers in the watershed. The equipment purchased can do both deep-apply phosphorus and strip-till anhydrous ammonia application. The cost-share allowed the agri-businesses to modify a conventional toolbar with attachments for strip-till and the deep placement of phosphorus. This equipment was used to implement these BMPs throughout the county and will be available to local producers well beyond the duration of the project period.

d) Vegetative Buffers

Vegetative filters help stop sediment at the field edge before it can enter the drainage system to Homer Lake. Planting areas along drainage ditches with grass or trees provides a filter for removing sediment and associated pollutants. If trees are planted, there is also uptake of leached nitrogen. Ditch spoil banks are typically less productive than the remainder of the field and are less safe for operating field equipment. The resulting wildlife habitat can provide additional recreational or economic benefits. A $250/acre incentive payment was made available to encourage landowners to enroll in the federal Conservation Reserve Program (CRP) for filter strips. Payments were made to those producers who successfully received a CRP contract from USDA.

e) Strip-Till

Strip-tillage reduces the amount of sediment available for transport by disturbing narrow strips of soil for seed placement as opposed to conventionally tilling every inch of a field. Producers were offered $10/acre to try this practice. Strip-tillage reduces the number of required field operations saving the producer $5-$10/acre and offers the benefit of conserved soil moisture during dry years.

The goal of the agricultural BMPs was to introduce a comprehensive set of management practices that would reduce nutrient and sediment loads in Homer Lake. Some BMPs were paired, such as VRT which combines a nutrient management plan with precision spreading of fertilizer only where it is needed. Deep placement of phosphorus was combined with strip-till because equipment has been developed to do both at the same time. The long term goal is to have all of the BMPs applied to fields in the watershed. This grant allowed us to demonstrate this and show farmers the practices were financially practical as well as environmentally responsible.

f) Residential BMPS

Homeowners were encouraged to implement BMPs such as buffer strips next to the small lake north of Homer Lake and reduced rates of fertilizer for lawns that come up to the lake. Participants were also provided with information concerning sewage/septic system maintenance. CCFPD worked with landowners on this phase of the project. No cost-share funds were expended on the residential BMP component of the project.

Project Implementation:

The project began July 6, 2004 and ended December 31, 2006. The project period allowed two full years for fertilizer application and strip-till applications to be completed.

Numerous partnerships between various entities work in the watershed to help address water quality issues. A summary of those activities is listed below:

Table 1. Partnership Efforts in or near the Homer Lake Watershed

Agency/Organization	***Planned/Implemented Activities***
CCFPD (Champaign County Forest Preserve District)	• Management of the Salt Fork River Forest Preserve and Homer Lake • Work with homeowners north of the lake in subdivision. • Educational workshops and BMP projects
CCSWCD (Champaign County Soil and Water Conservation District)	• Coordination of activities of the Salt Fork River Watershed Implementation Committee. • BMP promotion.
IDA (Illinois Department of Agriculture)	• CPP: state incentive program for selected practices throughout the county. Emphasis on Homer Lake and Salt Fork areas.
IEPA (Illinois Environmental Protection Agency)	• Clean Lakes Program Phase I study of Homer Lake – 2000- IDNR and ISWS will continue with Phase I monitoring • Ambient Lake Monitoring Program • "Lake Notes" • Homer Lake : Making it clear … Section 319 project
IDNR (Illinois Department of Natural Resources)	• Gary Lutterbie: ongoing biologic surveys of the Salt Fork River • Mike Garthaus: oversees ongoing Cooperative Fisheries Management Agreement for Homer Lake. • EcoWatch/RiverWatch site at the Homer Lake spillway
USGS (United States Geological Survey)	• Maintain Salt Fork River monitoring gauges and programs
USDA (United States Department of Agriculture)	• Technical assistance and incentive programs for implementation of BMPs.

Prairie Rivers Network, Salt Fork River Partners, Izaak Walton League	• Annual Salt Fork River Cleanup: these organizations, in cooperation with CCFPD and a variety of local businesses, sponsor clean-up of the Salt Fork River Preserve and nearby areas. Citizens throughout the county join in to remove litter, tires, and discarded appliances. IEPA also has provided SCALE funds for this cleanup.

The Champaign County Forest Preserve District (CCFPD) and Champaign County Soil and Water Conservation District (CCSWCD) worked cooperatively to inform agricultural and urban landowners within the watershed how they can cost-effectively reduce nonpoint source pollution inputs to Homer Lake. The project consisted of three main components designed to improve water quality in the lake:

a. Educational Workshops
b. On-Farm BMP Education and Planning
c. Incentive Payments for Implementing BMPs

a) Educational Workshops:

Four educational workshops were to be offered at the Salt Fork River Forest Preserve Outdoor Recreation Center. Two workshops were to be offered for residential landowners and two for agricultural landowners. Homeowners were invited to these meetings based on tax parcel information we received from the county. This information was cross referenced with our GIS information on the watershed to determine who lived in the watershed. These homeowners were sent a letter informing them of our meetings. We had 23 homeowners attend the first meeting.

Agricultural workshops were held 8/04/2004 and 7/13/2005 which were attended by 25 and 30 participants respectively. The discussion at the first meeting included a discussion of the watershed and how individuals could take action to improve the water quality in Homer Lake.

Objectives of the workshops included:

- Inform area residents and producers of current Homer Lake water quality status and progress being made towards solving water quality problems.
- Encourage implementation of appropriate BMPs around the home and on the farm.

These objectives were presented by CCFPD personnel. The audience was interested in the presentation, but was reluctant to plant filter strips along the lake area north of Homer Lake. The concept of a nice lush green lawn going to the water's edge was very appealing to them.

Staff resources did not allow much time for the remaining homeowner workshop. The project however was promoted during other meetings. A September 2007 meeting is being planned by the CCFPD that will emphasize septic tank maintenance and lawn care BMPs that will minimize the nutrient load into Homer Lake.

b) On-Farm BMP Education and Planning:

Past experience has shown that individual contacts are essential for encouraging implementation of agricultural BMPs. The objectives of this component were to:

- Make the 44 producers in the watershed aware of available BMP cost-share opportunities.
- Maximize participation in BMP implementation by assisting interested producers in:
    - selecting BMPs appropriate to their operation
    - taking advantage of available cost-share and technical assistance
    - computing their bottom-line benefits
    - completing required paperwork
    - planning each step of the implementation process

Approximately 40 producers in the watershed were contacted by mail and also by phone to inform them of BMPs for which incentive payments or other cost-share programs were available. This activity complemented the workshops held at the beginning of the project for the agricultural landowners. Interested producers received individualized assistance from CCSWCD staff for customizing conservation practices for their operation.

c) Incentive Payments for Implementing BMPs

Ac.	VRT	Applied N	Applied P	Applied K	Past applied N	Past applied P	Past applied K
198.9	Yes	171	125	120		145	285
74.5	Yes	155	220	260	186	92	120
162.1	Yes	155	68	365	185	120	150
235	Yes	130	170	255	200	102	180
70	Yes	167	82	191	171	92	120
78.4	Yes	162	70	117	171	92	120
156.7	Yes	180	115	150	171	92	120
161.8	Yes	163	118	0	170	90	120
79	Yes	196	61.5	143.3	175	115	120
140	Yes	167	0	108	180	90	120
50	Yes	189	0	122	180	92	120
113.1	Yes	180	80	145	200	92	180
84.3	Yes	180	41	203	200	96	180
31.1	Yes	180	0	93	200	92	180
57.7	Yes	180	85	128	200	92	180
39.6	Yes	180	70	42	200	92	180
140	Yes	167	0	108	180	90	120

50	Yes	189	0	122	180	90	120
76	Yes	180	18	77	200	92	120
29	Yes	180	50	123	200	92	180
35	Yes	180	96	120	200	92	180
79	Yes	196	0	0	175	115	120
77	Yes	190	107	146	200	92	180
25	Yes	160	85	170	200	92	180
107	Yes	200	26	80	200	92	180
117	Yes	190	83	146	200	92	180
86	Yes	160	67	106	200	92	180
37	Yes	160	127	37	200	92	180
27	Yes	160	87	98	200	92	180
92	Yes	200	111	143	200	92	180
235	Yes	155	123	48	170	101	60
69	Yes	68	100	96	176	92	120
60	Yes	160	81	158	200	92	180
37	Yes	155	0	156	186	92	120
162	Yes	163	118	0	170	90	120
113	Yes	240	0	114	200	90	120
124	Yes	60	0	0	60	100	80

Nutrient Management/VRT:

Nutrient management plans were developed on 4,168 acres by 14 farmers in the watershed, of those acres 3,246 acres of VRT were applied. Some farmers completed the nutrient management plan, but elected to spread their fertilizer using non-VRT equipment that spreads one rate of fertilizer on the whole field.

The results from the nutrient management plans showed farmers reducing nitrogen use by 12# per acre, phosphorus by 23# per acre and 19# per acre of Potassium. These results are from fields where we had complete information and some fields were not included because of ownership changes or other issues.

Filter Strips:

A total of 30 acres of filter strips were added along the ditches leading into Homer Lake. Several people expressed interest in adding filter strips toward the end of the grant. We will follow up on those leads. The map at the end of this report on page 14 shows our targeted areas.

Strip-Till:

A total of 440 acres of strip till was applied by 3 farmers.

The interest in strip-till and deep placement of phosphorus was very limited in the beginning but was substantial at the end of the project. This interest resulted in enough demand for 2 strip-till toolbars to be purchased for use after the project ended. The CCSWCD is planning a June 2007 meeting with local vendors to promote strip-till in the county.

Deep Placement of Phosphorus:
Several farmers were set up to deep place phosphorus and with the new equipment many acres will be applied in future years. The interest in this concept did not materialize until the end of the project. Through the publicity 4 farmers near the watershed used equipment to deep place phosphorus.

Summary of shortcoming and successes:

The project emphasis was placed on agricultural activities because 85% of the watershed is in agricultural production. Public meetings were well attended and farmers and land owners were willing to take a look at their operations and make changes to improve water quality. Some concerns were expressed about residential contributions to the situation and possible contributions by the village of Ogden. Some farmers reported seeing signs of sewage in drain tiles when they were repairing them. It is possible some homes may have connections to drainage tiles. This is a consideration, but not addressed directly by our project.

Many farmers and land owners agreed to develop and follow nutrient management plans and some agreed to try VRT or deep placement of phosphorus as management strategies to reduce possible phosphorus loads being delivered to Homer Lake. VRT and deep placement of phosphorus are not normally combined as practices because fertilizer rates are usually reduced from 1/3 to 1/2 when using the deep placement method. The most encouraging evidence of our progress was after 2 years of working with people several have looked closely at the BMPs described and plan to adopt them in the future. This fact has encouraged us to continue the educational efforts after this grant is completed in order to increase the adoption of these practices.

We are excited about the interest that developed late in the project surrounding the deep placement of phosphorus BMP. We now have two rigs capable of doing this in place and several farmers have newly committed to use this BMP. Through working on this project we have found farmers are able to significantly reduce their phosphorus applications by placing the fertilizer in the zone where roots can take it up more efficiently. This reduction can be from 1/3 to 1/2 the rates normally applied. It is obvious that reducing rates this much and placing phosphorus under the soil surface will significantly reduce the phosphorus loss that is associated with soil erosion. This has the long term best chance for success because it lowers the farmers' input costs making the BMP use sustainable. One farmer was able to do 700 acres with this equipment late last fall (2006). He has also done fields for some of his neighbors. This is too late to be included in this project, but does show the momentum that this project has started.

The residential meeting was well received, but the lesson we learned is many people want a clean lake, but do not want to implement the BMPs necessary to accomplish that goal. We have to do a lot of rethinking on a strategy to get them more involved. Many people like to think all the problems are caused by someone else rather than many people making small contributions to the situation till it adds up to a significant problem. A major focus will be continuing our efforts with septic system maintenance. Anecdotal information gleaned during this project along with situations in other parts of the county has convinced us that most people do not concern themselves with system maintenance as long as the system is working. This is especially true with multi-flow systems.

We have learned from a number of sources that our concern for septic systems is well founded. Although we did not do an inventory of watershed septic systems, we learned from incidents in other areas of the county that many systems are not maintained and most people are not concerned until something happens that stops the system from taking their sewage. Very few people have qualified personnel inspect their systems. There is also doubt that contractors installing systems have adequately trained personnel.

We made a mailing to all homeowners in the watershed that included the USEPA publication "A Homeowner's Guide to Septic Systems" along with a letter encouraging inspections and maintenance.

Some key personnel left and long periods with short staff made it difficult to complete all portions of the grant as adequately as we would have liked. Both the CCSWCD and the CCFPD are continuing to work on plans to complete some of the activities that were not completed such at the second homeowner meeting. We are also taking the momentum that built toward the end of the project and adding activities such as out strip-till demonstration planned for this summers. This will increase the implementation of the BMPs selected for cleaning up Homer Lake.

Monitoring any changes in the lake conditions will be important to determine the success or failure of our efforts. The CCFPD is in the process of working with the Voluntary Lake Monitoring Program to revive the collection of data on the Homer Lake.

	Original Budget Amount	Revised Budget Amount	Actually Spent
Direct Labor	$25,200	$23,500	$6,503.89
Indirect Costs-Overhead	$17,543	$13,546.00	$10,836.72
Direct Costs:			
Meetings	$5,200	$5,200	$560.21
Toolbars/equipment	$181,340	$95,000	$148,936.78
Subcontracts:			
Residential BMPs		$6,000	$-0-
Rural BMPs	$138,250	$100,000	$76,408.40
Total Funds	$367,533	$243,246.00	$243,246.00

This project was originally a 60/40 (federal/local) split. Problems securing the local match required were encountered due to misunderstandings on our part on what would be accepted as match. The budget was adjusted and the new split became 75/25.

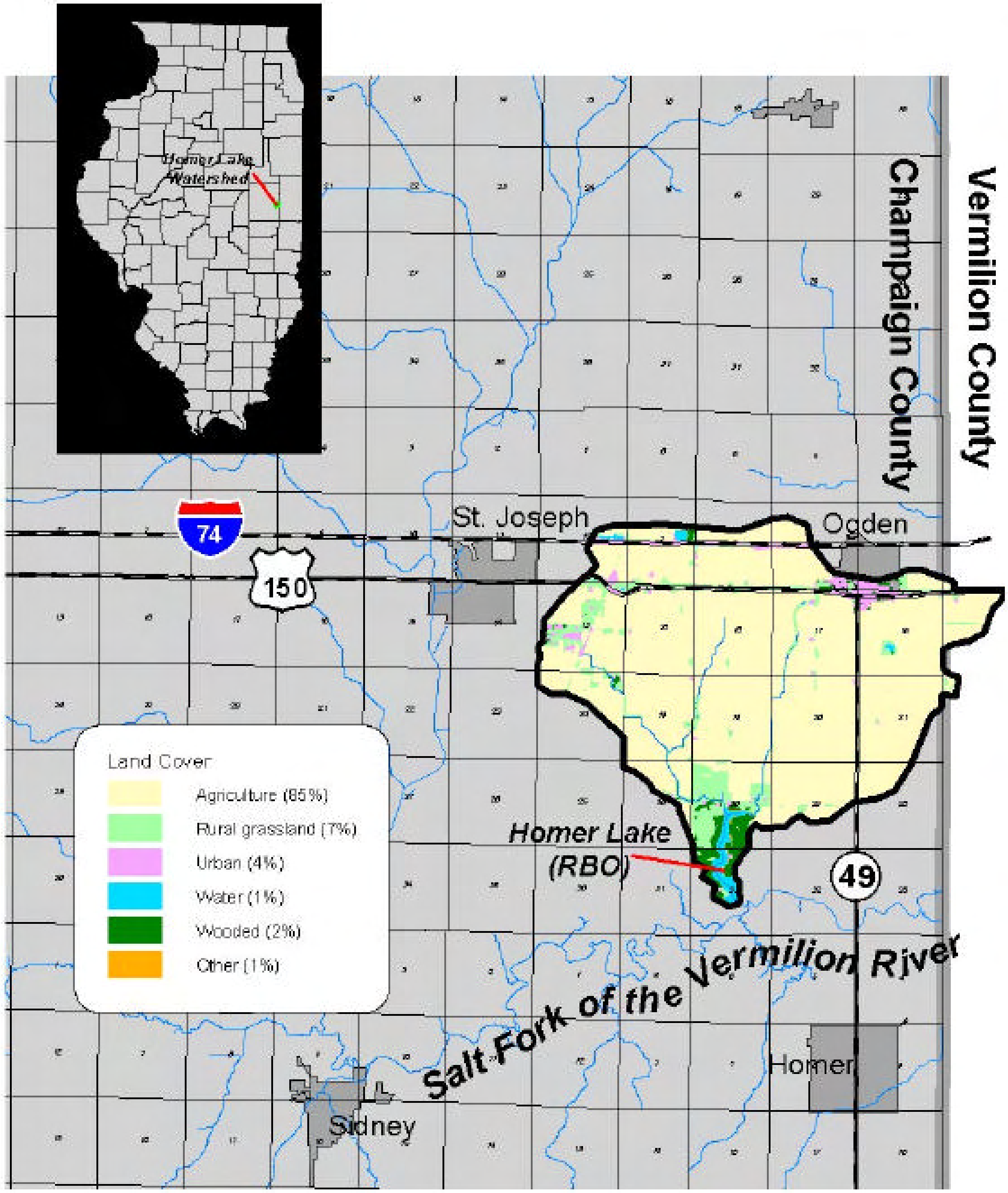
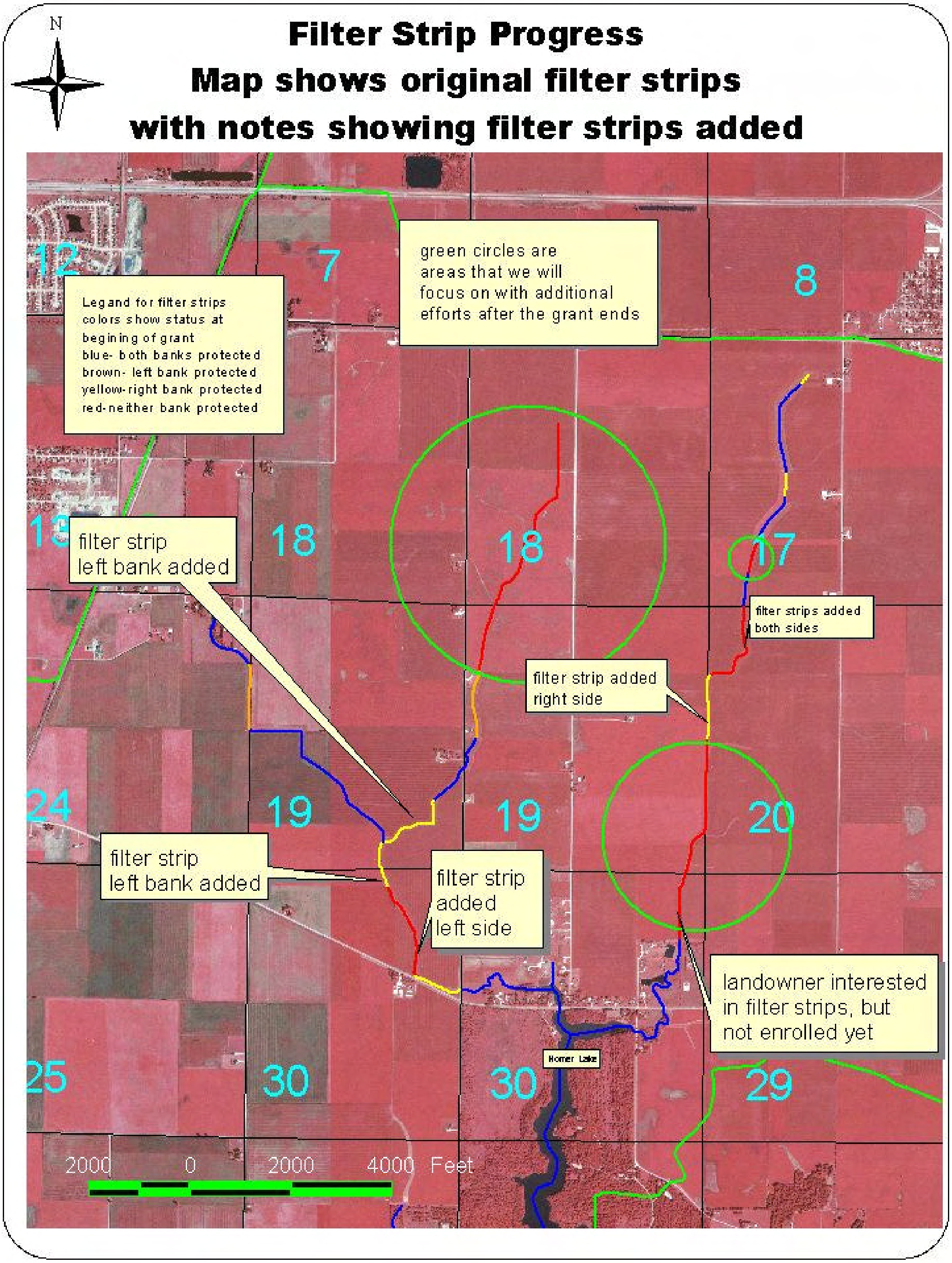


Figure 1.
Homer Lake Watershed

Map Layer Sources:
IDOA/ISGS, 2003; IDNR, 1996; USDA-NRCS, 2000; CCSWCD, 2003


N
Filter Strip Progress
Map shows original filter strips
with notes showing filter strips added
12
7
8
green circles are
areas that we will
focus on with additional
efforts after the grant ends
Legand for filter strips
colors show status at
begining of grant
blue- both banks protected
brown- left bank protected
yellow-right bank protected
red-neither bank protected
filter strip
left bank added
18
18
17
filter strips added
both sides
filter strip added
right side
24
19
19
20
filter strip
left bank added
filter strip
added
left side
landowner interested
in filter strips, but
not enrolled yet
Homer Lake
25
30
30
29
2000 0 2000 4000 Feet

Homer Lake

Built up area north of lake

Champaign County SWCD
3/7/2007

Deep placement phosphorus attachment unit for strip-till toolbar

Strip-till 16 row unit, 12 row unit was similar, but smaller