Illinois
Environmental
Protection Agency

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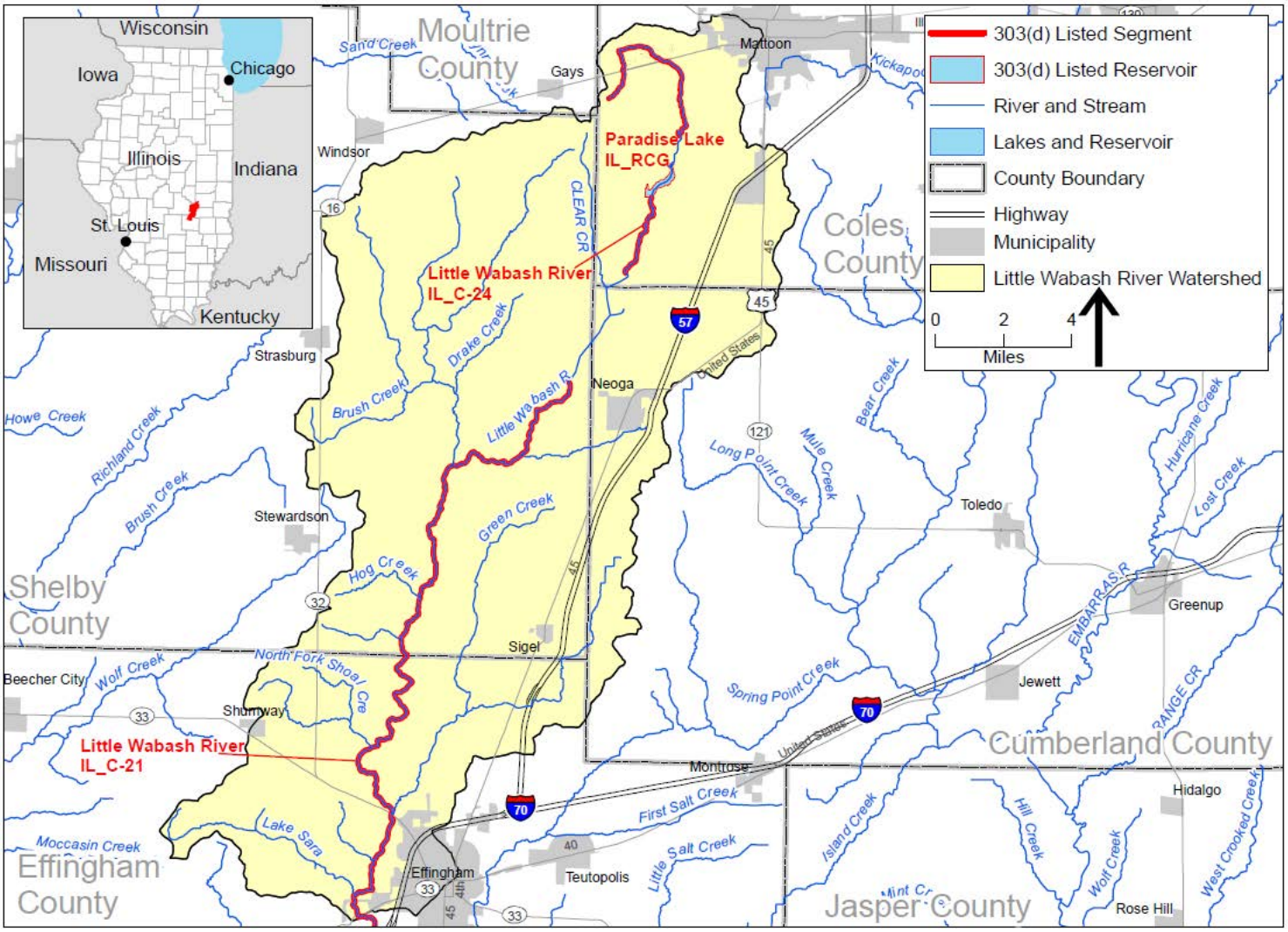
September 2024

IEPA/BOW/IL-2024-005

Little Wabash River-
Lake Paradise Watershed
Total Maximum Daily Load and
Watershed-based Implementation Plan



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TMDL Development for the Little Wabash River-Lake Paradise Watershed in Illinois. This file contains the following documents:

1) U.S. EPA Approval Letter and Decision Document for the Final TMDL Report
2) TMDL Report

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REGION 5
CHICAGO, IL 60604

September 17, 2024

Ms. Joey L. Logan-Pugh
Chief, Bureau of Water
Illinois Environmental Protection Agency
P.O. Box 19276520 Lafayette Road North
Springfield, IL 62794-9276

Dear Ms. Logan-Pugh:

The U.S. Environmental Protection Agency completed its review of the final Total Maximum Daily Loads (TMDL) for the Little Wabash River-Lake Paradise Watershed (LWRLPW), including supporting documentation. The LWRLPW TMDLs are located in Coles County in east central Illinois. The LWRLPW TMDLs address segments with impaired aquatic life uses due to excessive phosphorus and nitrogen impacting dissolved oxygen levels.

The LWRLPW TMDLs meet the requirements of Section 303(d) of the Clean Water Act and the EPA's implementing regulations set forth at 40 C.F.R. Part 130. Therefore, the EPA approves Illinois's one TMDL for phosphorus in Lake Paradise and two TMDLs (one each for phosphorus and nitrogen) for the Little Wabash River, for a total of three TMDLs. The EPA describes Illinois's compliance with the statutory and regulatory requirements in the enclosed decision document.

The EPA acknowledges Illinois's efforts in submitting these TMDLs and look forward to future TMDL submissions by the State of Illinois. If you have any questions, please contact Mr. David Werbach at 312-886-4242 or Werbach.david@epa.gov.

Sincerely,

9/17/2024

X

Tera L. Fong
Division Director, Water Division
Signed by: TERA FONG

cc: Abel Haile, IEPA

TMDL: Little Wabash River-Lake Paradise Watershed Phosphorus and Nitrogen TMDLs in Coles County, Illinois
Date: 09/17/2024

DECISION DOCUMENT FOR THE LITTLE WABASH RIVER-LAKE PARADISE WATERSHED TMDL IN EAST-CENTRAL ILLINOIS

Section 303(d) of the Clean Water Act (CWA) and the EPA's implementing regulations at 40 C.F.R. Part 130 describe the statutory and regulatory requirements for approvable Total Maximum Daily Loads (TMDLs). Additional information is generally necessary for the EPA to determine if a submitted TMDL fulfills the legal requirements for approval under Section 303(d) and the EPA regulations and should be included in the submittal package. Use of the verb "must" below denotes information that is required to be submitted because it relates to elements of the TMDL required by the CWA and by regulation. Use of the term "should" below denotes information that is generally necessary for the EPA to determine if a submitted TMDL is approvable. The guidelines provided under each heading in this decision document are an attempt to summarize and provide information regarding currently effective statutory and regulatory requirements relating to TMDLs but are not a substitute for statutory requirements or the EPA's regulations.

1. Identification of Water body, Pollutant of Concern, Pollutant Sources, and Priority Ranking

The TMDL submittal should identify the water body as it appears on the State's/Tribe's 303(d) list. The water body should be identified/georeferenced using the National Hydrography Dataset (NHD), and the TMDL should clearly identify the pollutant for which the TMDL is being established. In addition, the TMDL should identify the priority ranking of the water body and specify the link between the pollutant of concern and the water quality standard (see Section 2 below).

The TMDL submittal should include an identification of the point and nonpoint sources of the pollutant of concern, including location of the source(s) and the quantity of the loading, e.g., lbs/per day. The TMDL should provide the identification numbers of the NPDES permits within the water body. Where it is possible to separate natural background from nonpoint sources, the TMDL should include a description of the natural background. This information is necessary for the EPA's review of the load and wasteload allocations, which are required by regulation.

The TMDL submittal should also contain a description of any important assumptions made in developing the TMDL, such as:

(1) the spatial extent of the watershed in which the impaired water body is located;
(2) the assumed distribution of land use in the watershed (e.g., urban, forested, agriculture);
(3) population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources;
(4) present and future growth trends, if taken into consideration in preparing the TMDL (e.g., the TMDL could include the design capacity of a wastewater treatment facility); and

(5) an explanation and analytical basis for expressing the TMDL through *surrogate measures*, if applicable. *Surrogate measures* are parameters such as percent fines and turbidity for sediment impairments; chlorophyll *a* and phosphorus loadings for excess algae; length of riparian buffer; or number of acres of best management practices.

The EPA Review of the Little Wabash River-Lake Paradise TMDL:

Location Description/Spatial Extent:

The Little Wabash River-Lake Paradise Watershed (LWRLPW) is located in the Salt Fork-Vermilion River Basin in east central Illinois (Section 2.2 of the final TMDL document). The TMDL report addresses two segments, Lake Paradise (IL_RCG) impaired by phosphorus and the Little Wabash River (Segment IL_C-24) impaired for low dissolved oxygen (DO) due to excessive phosphorus and nitrogen (Table 1-1 of the final TMDL document; Table 1 of this Decision Document). The State noted that one other impairment existed in the Saline Branch watershed when the TMDL project was started; a segment of the Little Wabash River (IL_C-21) that is no longer listed as impaired on the Illinois 2020/2022 Integrated Report (Table 1-1 of the final TMDL document). The Illinois Environmental Protection Agency (IEPA) explained that a TMDL was originally developed for Lake Paradise in 2007 as part of the Little Wabash River Watershed TMDL (approved 09/20/2007). The 2007 TMDL calculated loads for total phosphorus as the pollutant to address a pH and phosphorus impairment. The 2007 TMDL specifically excluded the DO impairment. As part of this LWRLPW TMDL effort, IEPA has recalculated the loadings for phosphorus for Lake Paradise to attain the water quality standard for DO. The LWRLPW Lake Paradise TMDL of 2024, replaces the original 2007 TMDL for Lake Paradise.

The LWRLPW TMDL area is the approximately 13,700 acres in size (Tables 2-3 and 2-4 of the final TMDL document). Lake Paradise is a reservoir formed by a dam on the Little Wabash River to supply drinking water to the City of Mattoon (Section 5.2.1 of the final TMDL document). The surface area of the lake is approximately 176 acres with a maximum depth of 16 feet and an average depth of 8 feet. Segment C-24 is the portion of the Little Wabash River from Lake Paradise to Lake Mattoon, approximately 2.5 miles downstream.

Table 1: Impaired water in the Little Wabash River-Lake Paradise Watershed

HUC 10	Water ID	Water name	Surface area (acres)	Drainage area (acres)	Designated use	Pollutant
0512011401	IL_RCG	Lake Paradise (Coles)	176	12,000	Aquatic Life	Phosphorus*
0512011401	IL_C-24	Little Wabash River	--	13,700**	Aquatic Life	Phosphorus* Nitrogen*

* - addressing a dissolved oxygen impairment

**- includes the Lake Paradise watershed upstream

Land Use:

The main land use in the TMDL watershed is cropland (72%), with other land uses including forest (5%), hay/pasture (5%), and developed lands (12%) (Tables 2-3 and 2-4 and Figure 2-2 of the final TMDL document). A portion of the City of Mattoon is located within the watershed (Figure 7-1 of the final TMDL document).

Problem Identification:
The Little Wabash River (C-24) and Lake Paradise (RCG) were included on the draft 2024 Illinois 303(d) list due to low dissolved oxygen (DO) levels. Water quality monitoring within the lake (Figure 5-4 and Tables 5-2 of the final TMDL document) and the river (Figure 5-3 and Table 5-1 of the final TMDL document) indicated that these waters were not attaining the designated aquatic life use due to low DO measurements.

Low dissolved oxygen concentrations can negatively impact aquatic life use. The decrease in dissolved oxygen can stress benthic macroinvertebrates and fish. In some instances, degradations in aquatic habitats or water quality have reduced fish populations or altered fish communities from those communities supporting sport fish species to communities which support more tolerant rough fish species. Elevated levels of oxygen-consuming pollutants, such as phosphorus, nitrogen, sediment oxygen demand and carbonaceous biochemical oxygen demand, can reduce dissolved oxygen in the water column, and cause large shifts in dissolved oxygen and pH throughout the day. Excessive amounts of nutrients such as phosphorus and nitrogen can stimulate plant and algal growth, which can negatively impact DO levels in a water body as well. Shifting chemical conditions within the water column may stress aquatic biota (i.e., fish and macroinvertebrate species).

Priority Ranking:
The water bodies addressed by the TMDL were given a priority ranking for TMDL development due to the impairment impacts on aquatic life, aesthetic quality, the public value of the impaired water resource and the timing as part of the Illinois basin monitoring process.

Pollutant of Concern:
The pollutants of concern are phosphorus and nitrogen.

Source Identification (point and nonpoint sources):

Point Source Identification: IEPA determined that there are no point sources discharging phosphorus into the two impaired waters (Section 8.3 of the final TMDL document).

Nonpoint Source Identification:
Stormwater runoff from agricultural land use practices and feedlots: Runoff from agricultural lands and small feedlots may contain significant amounts of nutrients, organic material and organic-rich sediment which may lead to impairments in the TMDL watershed. Manure spread onto fields is often a source of phosphorus and nitrogen. Phosphorus, nitrogen, organic material and organic-rich sediment may be added via surface runoff from upland areas which are being used for Conservation Reserve Program (CRP) lands, grasslands, and agricultural lands used for growing hay or other crops. Stormwater runoff may contribute nutrients and organic-rich sediment to surface waters from livestock manure, fertilizers, vegetation and erodible soils.

Discharges from Subsurface Sewage Treatment Systems (SSTS) or unsewered communities: Failing septic systems are a potential source of nutrients within the Lake Paradise watershed. Septic systems generally do not discharge directly into a water body, but effluents from SSTS may leach into groundwater or pond at the surface where they can be washed into surface waters via stormwater

runoff events. Age, construction and use of SSTS can vary throughout a watershed and influence the organic material contribution from these systems. IEPA noted that a Phase 1/Diagnostic Study of Lake Paradise (IEPA, 2004) indicated that there are a number of homes along the shoreline of Lake Paradise that use septic systems, and it is likely that these may not be adequately treating the waste.

Internal loading: The release of phosphorus from lake sediments, via physical disturbance from benthic fish (i.e., rough fish (e.g., carp)), the release of phosphorus from wind mixing the water column, and the release of phosphorus from decaying vegetation and algae, may all contribute internal phosphorus loading to Lake Paradise. Phosphorus may build up in the bottom waters of lakes and may be resuspended or mixed into the water column when the thermocline decreases, and the lake water mixes.

Upstream impoundment: IEPA identified the release of oxygen-depleted water from Lake Paradise as a potential cause of low DO in the Little Wabash River (Section 8.2 of the final TMDL document). The State noted that nutrient-rich water passing through the lake from upstream sources can be contributing to the low DO levels, as well as low-DO water being discharged from the lake.

Population and Future Growth:
IEPA determined that future population increases are unlikely, and therefore did not set aside any allocation for future growth (Section 8.3.2.5 of the final TMDL document). The WLA and load allocations (LA) for the LWRLPW TMDL were calculated for all current and future sources. IEPA determined that no reserve capacity was needed for the LWRLPW TMDLs.

The EPA finds that this criterion has been adequately addressed.

2. Description of the Applicable Water Quality Standards and Numeric Water Quality Target

The TMDL submittal must include a description of the applicable State/Tribal water quality standard, including the designated use(s) of the water body, the applicable numeric or narrative water quality criterion, and the antidegradation policy (40 C.F.R. §130.7(c)(1)). The EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

The TMDL submittal must identify a numeric water quality target(s) – a quantitative value used to measure whether or not the applicable water quality standard is attained. Generally, the pollutant of concern and the numeric water quality target are, respectively, the chemical causing the impairment and the numeric criteria for that chemical (e.g., chromium) contained in the water quality standard. The TMDL expresses the relationship between any necessary reduction of the pollutant of concern and the attainment of the numeric water quality target. Occasionally, the pollutant of concern is different from the pollutant that is the subject of the numeric water quality target (e.g., when the pollutant of concern is phosphorus and the numeric water quality target is expressed as Dissolved Oxygen (DO) criteria). In such cases, the TMDL submittal should explain the linkage between the pollutant of concern and the chosen numeric water quality target.

The EPA Review of the LWRLPW TMDLs:

Designated Uses:

Section 4 of the final TMDL document explains that Lake Paradise and the Little Wabash River are not meeting the General Use designation. The Illinois Pollution Control Board (IPCB) defines General Use standards as those that:

> *"will protect the state's water for aquatic life, wildlife, agricultural use, secondary contact use and most industrial uses, and ensure the aesthetic quality of the state's aquatic environment."*

Under the General Use classification, waters are further designated as impaired for aquatic life use, aesthetic quality use and primary contact recreational use. Table 1 of this Decision Document shows the water body segments and the associated impaired use.

The applicable General Use water quality standards (WQS) for the LWRLPW TMDL are established in Illinois Administrative Rules Title 35, Environmental Protection; Subtitle C, Water Pollution; Chapter I, Pollution Control Board; Part 302, Water Quality Standards, Subpart B. Table 4 of this Decision Document lists the water quality standard and the TMDL target/modeling endpoint employed by IEPA in the calculation of loading capacity for the Lake Paradise TMDLs.

Numeric criteria:

Phosphorus TMDL target: the two water bodies are impaired for exceedances of the DO criteria. Table 2 of this Decision Document contains the water quality criteria for DO.

Table 2: Water Quality Criteria for DO for the Little Wabash River-Lake Paradise TMDL

Parameter	Units	Water Quality Standard
Dissolved Oxygen (DO)	mg/L	*March through July* greater than or equal to 5.0 minimum and greater than or equal to 6.0 as a 7-day daily mean averaged over 7 days *August through February* greater than or equal to 3.5 minimum, greater than or equal to 4.0 as a 7-day minimum averaged over 7 days, and greater than or equal to 5.5 as a 30-day daily mean
Phosphorus (total)	mg/L	0.05 for lakes

To attain these criteria, IEPA utilized the phosphorus numeric criteria for lakes of **0.05 mg/L** as noted in Section 4.3 of the final TMDL document. IEPA also explained that the 2007 TMDL for Lake Paradise also utilized this TMDL target, but that the 2007 TMDL was developed to address a pH impairment. This LWRLPW TMDL effort addresses the DO impairment, as discussed in Section 3 of this Decision Document, resulting in a lower loading capacity for phosphorus for Lake Paradise.

For the Little Wabash River (C-24), IEPA utilized a water quality model to determine the amount of phosphorus and nitrogen that will result in the attainment of the DO criteria. The focus of the modeling effort was the **5.0 mg/L** minimum from March through July, consistent with the available DO data for the water body (Section 3 of this Decision Document; Section 8.2 of the final TMDL document).

The EPA finds that this criterion has been adequately addressed.

3. Loading Capacity - Linking Water Quality and Pollutant Sources

A TMDL must identify the loading capacity of a water body for the applicable pollutant. The EPA regulations define loading capacity as the greatest amount of a pollutant that a water can receive without violating water quality standards (40 C.F.R. § 130.2(f)).

The pollutant loadings may be expressed as either mass-per-time, toxicity or other appropriate measure (40 C.F.R. § 130.2(i)). The TMDL submittal should describe the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources. In many instances, this method will be a water quality model.

The TMDL submittal should contain documentation supporting the TMDL analysis, including the basis for any assumptions; a discussion of strengths and weaknesses in the analytical process; and results from any water quality modeling. The EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

TMDLs must take into account *critical conditions* for steam flow, loading, and water quality parameters as part of the analysis of loading capacity (40 C.F.R. § 130.7(c)(1)). TMDLs should define applicable *critical conditions* and describe their approach to estimating both point and nonpoint source loadings under such *critical conditions*. In particular, the TMDL should discuss the approach used to compute and allocate nonpoint source loadings, e.g., meteorological conditions and land use distribution.

The EPA Review of the LWRLPW TMDL:

Lake Paradise TMDL: To develop the TMDL for Lake Paradise, IEPA used the Simplified Lake Assessment Model (SLAM) developed by CDM Smith (Section 7.1.2 of the final TMDL document). The SLAM model was originally developed as an enhanced version of the BATHTUB model. As noted in Section 7.1.2 of the TMDL,

> "SLAM calculates lake mass and flow balances on a daily time-step assuming one or more well-mixed lake zones. Each zone follows the conceptual model often referred to as a "continuously stirred tank reactor", whereby complete and immediate mixing is assumed for each zone in both the vertical and horizontal directions. This assumption makes the model particularly well suited for lakes that are generally well-mixed and can justifiably be divided into a limited number of small and/or shallow zones."

Loading of phosphorus from the surrounding watershed was calculated using estimated runoff values and export coefficients based upon land use. The lake was simulated as one well-mixed zone, with limited stratification in June-July (Section 7.3.1.1 of the final TMDL document). The target for the model was set at the 0.05 mg/L phosphorus criteria, and site-specific lake physical characteristics and hydraulic characteristics were applied to the model. IEPA noted that internal loading of phosphorus

was an issue in Lake Paradise, and therefore IEPA adjusted the sediment-phosphorus flux during the calibration process to better reflect the water quality data.

IEPA used the SLAM model to calculate the loading capacity for Lake Paradise. The loading capacity is the maximum phosphorus load which the lake can receive and still meet the lake nutrient WQS. IEPA subdivided the lake loading capacities among the WLA, LA, and MOS (10% of the loading capacity) components of the TMDL (Table 3 of this Decision Document). These calculations were based on the critical condition, the summer growing season, which is typically when the water quality in the lake is typically degraded and phosphorus loading inputs are the greatest.

Table 3 of this Decision Document communicates IEPA's estimate of the reduction required for the lake to meet the water quality target. This loading reduction (i.e., the percentage column) was estimated from existing and TMDL load calculations. IEPA expects that this reduction will result in the attainment of the water quality target and the lake water quality will return to a level where the designated use is no longer considered impaired.

EPA supports the data analysis and modeling approach utilized by IEPA in its calculation of wasteload allocations, load allocations and the margin of safety for the Lake Paradise phosphorus TMDL. Additionally, the EPA concurs with the loading capacity calculated by the IEPA. The EPA finds IEPA's approach for calculating the loading capacity for the lake phosphorus TMDL to be reasonable and consistent with EPA guidance.

Table 3: Total Maximum Daily Load Summary for Total Phosphorus in Lake Paradise

	LC (lb/day)	LA (lb/day)	WLA (lb/day)	MOS (lb/day, 10% of LC)	Current Load (lb/day)	Reduction Needed
Internal	1.3	1.3	0	NA	12.5	90%
External	1.2	1.1	0	0.12	13.6	92%
Total	**2.5**	**2.4**	**0**	**0.12**	**26.1**	**91%**

Little Wabash River (C-24) TMDL: To develop the TMDL for low DO for the Little Wabash River, IEPA used the QUAL2K model (Section 7.2 and Appendix E of the final TMDL document). QUAL2K is a steady state, one-dimensional model that can simulate DO concentrations on an hourly time step. Typically, daily data are simulated during critical conditions (e.g., low flow and warm temperatures) and iterated over multiple repeated days to achieve convergence. QUAL2K represents the modeled water bodies as a series of segments, each of which has approximately constant characteristics (e.g., slope, shading, bottom width). Each segment is further divided into a series of equally spaced model computational elements, which are assumed fully mixed. Factors that affect in-stream temperature and DO concentrations are represented in QUAL2K, including: solar inputs, stream shading, air temperature, oxidation of suspended and dissolved organic matter. The relative magnitude of these factors can be determined through model application, and scenarios can be developed to evaluate if management actions can improve in-stream conditions.

For the Little Wabash River, IEPA noted that water quality data is limited, and therefore focused the modeling effort on a single 1-mile segment downstream of Lake Paradise (Section 7.2 and Figure 7.1 of the final TMDL document). Previous water quality data indicated that the portion of the Little Wabash

River downstream of the lake was not meeting the DO WQS (Table 5.1 of the final TMDL document). The model also accounted for flow out of Lake Paradise, and assumed the outflow was meeting the lake TMDL target (Section 7.2.1.8 of the final TMDL document).

The results of the QUAL2K modeling show that several factors are contributing to the DO impairment. The model inputs for nitrogen and phosphorus were reduced until the DO criteria of 5.0 mg/L was attained. Table 4 of this Decision Document summarizes the TMDLs for phosphorus and nitrogen to attain the DO standard.

Table 4: Total Maximum Daily Load Summary for the Little Wabash River (C-24)

	LC (lb/day)	LA (lb/day)	WLA (lb/day)	MOS (lb/day, 10% of LC)	Current Load (lb/day)	Reduction Needed
Total Nitrogen	10	9	0	1	68	85%
Total Phosphorus	0.76	0.68	0	0.08	5.1	85%

The EPA finds that this criterion has been adequately addressed.

4. Load Allocations (LA)

The EPA regulations require that a TMDL include LAs, which identify the portion of the loading capacity attributed to existing and future nonpoint sources and to natural background. Load allocations may range from reasonably accurate estimates to gross allotments (40 C.F.R. § 130.2(g)). Where possible, load allocations should be described separately for natural background and nonpoint sources.

The EPA Review of the LWRLPW TMDLs:

IEPA identified several nonpoint sources which contribute nutrient loading to the two impaired water bodies. These nonpoint sources included: agricultural runoff contributions from the watershed, contributions from SSTS and internal loading (for the lake) (Section 8.3 of the final TMDL document). IEPA reviewed the impact of internal loading of phosphorus on the lake water quality and determined that there was significant impact from internal loading (Sections 8.2 and 9.3 of the final TMDL document). IEPA calculated load allocation values for internal loading and external loading (Table 3 of this Decision Document). For the Little Wabash River, IEPA did not determine load allocation values for each of these potential nonpoint source considerations but aggregated the nonpoint sources into one "watershed load" LA calculation for the TMDLs (Table 4 of this Decision Document).

The EPA finds that this criterion has been adequately addressed.

5. Wasteload Allocations (WLAs)

The EPA regulations require that a TMDL include WLAs, which identify the portion of the loading capacity allocated to individual existing and future point source(s) (40 C.F.R. § 130.2(h), 40 C.F.R. § 130.2(i)). In some cases, WLAs may cover more than one discharger, e.g., if the source is contained within a general permit.

The individual WLAs may take the form of uniform percentage reductions or individual mass-based limitations for dischargers where it can be shown that this solution meets WQSs.

The EPA Review of the LWRLPW TMDLs:

IEPA determined there are no point sources of phosphorus or nitrogen in the Lake Paradise or Little Wabash River TMDL watershed (Section 8.3 of the final TMDL document). Therefore, no WLA was calculated (WLA = 0). The EPA finds the IEPA's approach for calculating the WLAs for the LWRLPW phosphorus and nitrogen TMDLs to be reasonable and consistent with the EPA guidance.

The EPA finds that this criterion has been adequately addressed.

6. Margin of Safety (MOS)

The Clean Water Act, § 303(d)(1)(c), and 40 C.F.R. 130.7 (c)(1) require that a TMDL include a margin of safety (MOS) "which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality." The EPA's 1991 TMDL Guidance explains that the MOS may be implicit, i.e., incorporated into the TMDL through conservative assumptions in the analysis, or explicit, i.e., expressed in the TMDL as loadings set aside for the MOS. If the MOS is implicit, the conservative assumptions in the analysis that account for the MOS must be described. If the MOS is explicit, the loading set aside for the MOS must be identified. The MOS may include both explicit and implicit components.

The EPA Review of the LWRLPW TMDLs:

Lake Paradise TMDL: IEPA used an explicit 10% MOS (Table 3 of this Decision Document; Section 8.3.1.4 of the final TMDL document). IEPA utilized an explicit MOS of 10% to account for any uncertainties in the SLAM model and the limited site-specific data available for the water body. A simplified calibration based upon flow data as well as the limited water quality data indicated a generally good agreement between the observed values and the model results, and therefore IEPA determined that no additional MOS was needed (Section 7.3.1.6 of the final TMDL document).

Little Wabash River (C-24) TMDL: Similar to the Lake Paradise TMDL, IEPA used an explicit 10% MOS (Table 4 of this Decision Document; Section 8.3.2.4 of the final TMDL document). IEPA utilized an explicit MOS of 10% to account for any uncertainties in the QUAL2K model and the limited site-specific data available for the water body. A simplified calibration based upon flow data as well as the limited water quality data indicated a generally good agreement between the observed values and the model results, and therefore IEPA determined that no additional MOS was needed (Section 7.3.1.8 of the final TMDL document).

The EPA finds that this criterion has been adequately addressed.

7. Seasonal Variation

The statute and regulations require that a TMDL be established with consideration of seasonal variations. The TMDL must describe the method chosen for including seasonal variations. (CWA § 303(d)(1)(C), 40 C.F.R. § 130.7(c)(1)).

The EPA Review of the LWRLPW TMDLs:

Seasonal variation was considered for the LWRLPWTMDLs as described in Section 8.3 of the final TMDL document. IEPA accounted for seasonal variation via the modeling process. IEPA explained that the QUAL2K and SLAM models utilized the data from the late summer, when water temperatures are higher, flows are low, and DO levels are most stressed. By meeting the water quality targets during the late summer/fall months, it can reasonably be assumed that the loading capacity values will be protective of water quality during the remainder of the calendar year.

The EPA finds that this criterion has been adequately addressed.

8. Reasonable Assurance

When a TMDL is developed for waters impaired by point sources only, the issuance of a NPDES permit(s) provides the reasonable assurance that the wasteload allocations contained in the TMDL will be achieved. This is because 40 C.F.R. § 122.44(d)(1)(vii)(B) requires that effluent limits in permits be consistent with, "the assumptions and requirements of any available wasteload allocation" in an approved TMDL.

When a TMDL is developed for waters impaired by both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur, the EPA's 1991 TMDL Guidance states that the TMDL should provide reasonable assurances that nonpoint source control measures will achieve expected load reductions in order for the TMDL to be approvable. This information is necessary for the EPA to determine that the TMDL, including the load and wasteload allocations, has been established at a level necessary to implement water quality standards.

The EPA Review of the LWRLPW TMDLs:

The LWRLPW phosphorus and nitrogen TMDLs provide reasonable assurance that actions identified in the Implementation Plan and Reasonable Assurance section of the final TMDL (i.e., Section 9 of the final TMDL document) will be applied to attain the loading capacities and allocations calculated for the impaired reaches within the LWRLPW. The recommendations made by IEPA will be successful at improving water quality if the appropriate local groups work to implement these recommendations. Those mitigation suggestions, which fall outside of regulatory authority, will require commitment from state agencies and local stakeholders to carry out the suggested actions.

IEPA outlines its reasonable assurance efforts in Section 9 of the final TMDL document where it describes management measures and programs which will be employed to attain the loading capacities and allocations calculated for the impaired reaches within the LWRLPW. Section 9 includes components of a more formal Implementation Plan for the LWRLPW.

Reasonable assurance that the WLA set forth will be implemented is provided by regulatory actions. According to 40 C.F.R. 122.44(d)(1)(vii)(B), NPDES permit effluent limits must be consistent with assumptions and requirements of all WLAs in an approved TMDL. IEPA's NPDES permit program is one of the implementing programs for ensuring WLA are consistent with the TMDL. Current NPDES permits will remain in effect until the permits are reissued, provided that IEPA receives the NPDES permit renewal application prior to the expiration date of the existing NPDES permit.

IEPA explained that Sections 8 and 9 of the final TMDL document also incorporate many elements of a Section 319 watershed management plan, which can be used to apply for a Section 319 nonpoint source grant. Table 9-1 of the final TMDL document compares the Section 319 Nine Elements of a Watershed Management Plan to the subsections of Section 9 of the final LWRLPW TMDL document. This correlation helps to link the expectations of the TMDL with the actions considered under the Section 319 watershed plan.

IEPA identified locations where various best management practices (BMPs) will provide significant impacts on DO-demanding substances reductions. For example, Figure 9-1 of the final TMDL document identifies the priority locations for the installation of buffer/filter strips, which can serve to filter pollutants from entering the water bodies. Figure 9-2 of the final TMDL document identifies priority areas for wetland construction as well as existing wetlands in the TMDL watersheds. Cost estimates for the various BMPs are estimated in Tables 9-6 and 9-8 of the final TMDL document.

Table 9-10 of the final TMDL document provides an estimated implementation schedule of actions and activities in the watershed that can reduce pollutant loads into water bodies in the LWRLPW. These actions address immediate (1-2 years), mid-term (5-10 years) and long-term (continuous) timeframes.

The EPA finds that this criterion has been adequately addressed.

9. Monitoring Plan to Track TMDL Effectiveness

The EPA's 1991 document, *Guidance for Water Quality-Based Decisions: The TMDL Process* (EPA 440/4-91-001), recommends a monitoring plan to track the effectiveness of a TMDL, particularly when a TMDL involves both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur. Such a TMDL should provide assurances that nonpoint source controls will achieve expected load reductions and, such TMDL should include a monitoring plan that describes the additional data to be collected to determine if the load reductions provided for in the TMDL are occurring and leading to attainment of water quality standards.

The EPA Review of the LWRLPW TMDLs:

The final TMDL document contains discussion on future monitoring within the LWRLPW and milestones for implementation (Sections 9.6 and 9.7 of the final TMDL document). Continued water quality monitoring within the subbasin is supported by IEPA.

Progress of TMDL implementation will be measured through monitoring efforts focused on:

- Tracking implementation of BMPs in the watershed;
- Estimating the effectiveness of BMPs;
- Additional monitoring of point source discharges in the watershed;
- Continued monitoring of impaired stream segments and tributaries;
- Monitoring storm-based high flow events; and
- Low flow monitoring in impaired stream segments.

IEPA anticipates continuing to measure water quality in the TMDL watershed via its Intensive Basin Survey water quality monitoring which occurs every 5 years.

Water quality monitoring is a critical component of the adaptive management strategy employed as part of the implementation efforts utilized in the watershed. Water quality information will aid watershed managers in understanding how BMP pollutant removal efforts are impacting water quality. Water quality monitoring combined with an annual review of BMP efficiency will provide information on the success or failure of BMP systems designed to reduce pollutant loading into water bodies of the LWRLPW. Watershed managers will have the opportunity to reflect on the progress or lack of progress and will have the opportunity to change course if progress is unsatisfactory.

The EPA finds that this criterion has been adequately addressed.

10. Implementation

The EPA policy encourages Regions to work in partnership with States/Tribes to achieve nonpoint source load allocations established for 303(d)-listed waters impaired by nonpoint sources. Regions may assist States/Tribes in developing implementation plans that include reasonable assurances that nonpoint source LAs established in TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. In addition, the EPA's policy recognizes that other relevant watershed management processes may be used in the TMDL process. The EPA is not required to and does not approve TMDL implementation plans.

The EPA Review of the LWRLPW TMDLs:

The findings from the LWRLPW TMDLs will be used to inform the selection of implementation activities as part of the TMDL process. The TMDL outlined some implementation strategies in Section 9 of the final TMDL document. IEPA outlined the importance of prioritizing areas within the TMDL watershed, education and outreach efforts with local partners, and partnering with local stakeholders to improve water quality within the watershed. The reduction goals for the phosphorus and nitrogen TMDLs may be met via components of the following strategies:

- ***Nutrient management*** – These strategies involve reducing nutrient transport from fields and minimizing soil loss. Specific practices would include erosion control through conservation tillage, reduction of winter spreading of fertilizers, elimination of fertilizer spreading near open inlets and sensitive areas, installation of stream and lake shore buffer strips, streambank stabilization practices (gully stabilization and installation of fencing near streams), and nutrient management planning.

- ***Pasture management and fencing*** - Reducing livestock access to stream environments will lower the opportunity for direct transport of nutrients to surface waters. The installation of exclusion fencing near stream and river environments to prevent direct access for livestock, installing alternative water supplies, and installing stream crossings between pastures, would work to reduce the influxes of ammonia and nutrients and improve water quality within the watershed. Additionally, introducing rotational grazing to increase grass coverage in pastures, and maintaining appropriate numbers of livestock per acre for grazing, can also aid in the reduction of nutrient inputs.
- ***Private septic system inspection and maintenance program*** - Septic systems are believed to be a source of nutrients to waters in the LWRLPW. Failing systems are expected to be identified and addressed via upgrades to those septic systems not meeting local health ordinances. Septic system improvement priority should be given to those failing systems adjacent to surface waters (i.e., streams or lakes).

The EPA finds that this criterion has been adequately addressed. The EPA reviews but does not approve implementation plans.

11. Public Participation

The EPA's policy is that there should be full and meaningful public participation in the TMDL development process. The TMDL regulations require that each State/Tribe must subject calculations to establish TMDLs to public review consistent with its own continuing planning process (40 C.F.R. §130.7(c)(1)(ii)). In guidance, the EPA has explained that final TMDLs submitted to the EPA for review and approval should describe the State's/Tribe's public participation process, including a summary of significant comments and the State's/Tribe's responses to those comments.

Provision of inadequate public participation may be a basis for disapproving a TMDL. If the EPA determines that a State/Tribe has not provided adequate public participation, the EPA may defer its approval action until adequate public participation has been provided for, either by the State/Tribe or by the EPA.

The EPA Review of the Lake Paradise TMDLs:

The public participation section of the TMDL submittal is found in Section 3 and Appendix D of the final TMDL document. Throughout the development of the LWRLPW TMDLs the public was given various opportunities to participate. IEPA held a public meeting on June 30, 2021, to discuss the preliminary project. In 2024, IEPA posted the draft TMDL online at https://epa.illinois.gov/topics/water-quality/watershed-management/tmdls.html for a public comment period. The public comment period was started on January 17, 2024, and concluded on February 16, 2024. A public hearing was held on January 17, 2024. No comments were received on the Little Wabash River-Lake Paradise Watershed TMDL.

The EPA finds that this criterion has been adequately addressed.

12. Submittal Letter

A submittal letter should be included with the TMDL submittal and should specify whether the TMDL is being submitted for a *technical review* or *final review and approval*. Each final TMDL submitted to the EPA should be accompanied by a submittal letter that explicitly states that the submittal is a final TMDL submitted under Section 303(d) of the Clean Water Act for the EPA's review and approval. This clearly establishes the State's/Tribe's intent to submit, and the EPA's duty to review, the TMDL under the statute. The submittal letter, whether for technical review or final review and approval, should contain such identifying information as the name and location of the water body, and the pollutant(s) of concern.

The EPA Review of the Lake Paradise TMDLs:

The EPA received the final Little Wabash River-Lake Paradise Watershed TMDL document, submittal letter and accompanying documentation from IEPA on August 30, 2024. The transmittal letter explicitly stated that the final TMDL referenced in Table 1 of this Decision Document was being submitted to the EPA pursuant to Section 303(d) of the Clean Water Act for EPA review and approval.

The letter clearly stated that this was a final TMDL submittal under Section 303(d) of CWA. The letter also contained the name of the watershed as it appears on Illinois's 303(d) list, and the causes/pollutants of concern. This TMDL was submitted per the requirements under Section 303(d) of the Clean Water Act and 40 C.F.R. Part 130.

The EPA finds that this criterion has been adequately addressed.

13. Conclusion

After a full and complete review, the EPA finds that the Little Wabash River-Lake Paradise TMDL satisfies all elements for an approvable TMDL. This TMDL approval is for one (1) TMDL for Lake Paradise (phosphorus) and two (2) TMDLs for Little Wabash River segment C-24 (nitrogen and phosphorus) for a total of **three (3)** TMDLs, all addressing aquatic life use impairment (Table 1 of this Decision Document).

The EPA's approval of these TMDLs extends to the water bodies which are identified above with the exception of any portions of the water bodies that are within Indian Country, as defined in 18 U.S.C. Section 1151, and as further discussed in our Decision Document. The EPA is taking no action to approve or disapprove TMDLs for those waters at this time. The EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under the CWA Section 303(d) for those waters.

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Abbreviations

ACEP	Agricultural Conservation Easement Program
BMP	best management practice
CBOD	carbonaceous biochemical oxygen demand
CDL	cropland data layer
CRP	Conservation Reserve Program
CSP	Conservation Stewardship Program
CWA	Clean Water Act
DO	dissolved oxygen
EPA	U.S. Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
FSA	Farm Service Agency
GIGO	Green Infrastructure Grant Opportunities
GIS	geographic information system
GRP	Grasslands Reserve Program
HUC	hydrologic unit code
IDA	Illinois Department of Agriculture
Illinois EPA	Illinois Environmental Protection Agency
IPCB	Illinois Pollution Control Board
LA	load allocation
LC	loading capacity
mg/L	milligrams per liter
mL	milliliters
MOS	margin of safety
NA	not applicable
NASS	National Agricultural Statistics Service
NCDC	National Climatic Data Center

NLRS	Nutrient Loss Reduction Strategy
NMP	Nutrient Management Plan
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
PFC	Partners for Conservation
POR	period of record
RC	reserve capacity
RCPP	Regional Conservation Partnership Program
SLAM	Simplified Lake Analysis Model
SOD	sediment oxygen demand
SSURGO	Soil Survey Geographic
STORET	Storage and Retrieval
STP	sewage treatment plant
SWCD	Soil and Water Conservation District
TMDL	total maximum daily load
TP	total phosphorus
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
WASCOB	water and sediment control basin
WBP	watershed-based implementation plan
WLA	waste load allocation
WPCLP	Water Pollution Control Loan Program
WREP	Wetland Reserve Enhancement Partnership
°F	degrees Fahrenheit
µg/L	micrograms per liter

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Executive Summary

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

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

Table ES-1 Impaired Water Bodies in the Little Wabash River/Green Creek Watershed (2018 303(d) List)

Segment ID	Segment Name	Potential Cause of Impairment	Designated Use	Potential Source of Impairment (as identified in the 2018 303(d) list)
IL_C-21	Little Wabash River	Dissolved Oxygen (DO)	Aquatic Life	Dam or Impoundment
IL_C-24	Little Wabash River	DO[1]	Aquatic Life	Upstream Impoundment, Crop Production (Cropland or Dry Land), Agriculture
IL_RCG	Paradise (Coles)	DO[1]	Aquatic Life	Sources Unknown

Note:

[1] DO impairment may be associated with high concentrations of other water quality parameters. The TMDLs for DO impairment in the Little Wabash River segment IL_C-24 and Paradise Lake segment IL_RCG have been developed for total phosphorus (TP) and total nitrogen (TN).

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

Since the completion of Stage 1, the 2020/2022 Illinois Integrated Water Quality Report and 303(d) List[2] was approved by EPA on June 30, 2022. Segment IL_C-21 of the Little Wabash River was delisted for DO from the 2020/2022 303(d) list. Appendix C-4 of the Integrated Report[3] provides information for segments and causes that were removed from the 2018 303(d) list. The appendix notes that there were no standard violations in the new data for the 2020 assessment cycle. Because of the delisting of segment IL_C-21, TMDL development did not continue beyond Stage 1. The remaining impairments shown in **Table ES-1** have not changed during the most recent listing cycle and TMDL development is documented in this report.

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

[3] Illinois EPA. 2022b. *Illinois Integrated Water Quality Report and Section 303(d) List, 2020/2022*. Appendix C-4. https://epa.illinois.gov/content/dam/soi/en/web/epa/topics/water-quality/watershed-management/tmdls/documents/c4-delistings-final-5-26-22.pdf

Section 1

Goals and Objectives for the Little Wabash River/Green Creek Watershed

1.1 Total Maximum Daily Load Overview

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

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

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

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

Water quality standards consist of three elements:

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

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

1.2 Total Maximum Daily Load Goals and Objectives

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

Stage 1 – Watershed Characterization, Data Analysis, Methodology Selection

Stage 2 – Data Collection (optional)

Stage 3 – Model Calibration, TMDL Scenarios, Implementation Plan

Water bodies listed as impaired in the 2018 Integrated Water Quality Report and 303(d) List[4] were originally targeted for Stage 1 TMDL development in 2019. Illinois EPA uses the U.S. Geologic Survey (USGS) 10-digit hydrologic unit code (HUC) to group subbasins into TMDL watersheds. This report addresses Stages 1 and 3 of TMDL development for the Little Wabash River/Green Creek watershed (HUC 0512011401). Stage 2 was not performed as data collection was not necessary to support Stage 3 work. The data gathered and presented during Stage 1 (Sections 1 through 6 of this document) were used to calculate TMDLs and load reductions in the watershed.

Following this process, the TMDL goals and objectives for the Little Wabash River/Green Creek watershed included developing TMDLs for all impaired water bodies within the watershed, describing all of the necessary elements of the TMDL, developing a watershed-based implementation plan (WBP) to attain water quality goals, and gaining public acceptance of the process. The following impaired water body segments in the Little Wabash River/Green Creek watershed are addressed in this report:

- Little Wabash River (IL_C-21)
- Little Wabash River (IL_C-24)
- Paradise (Coles) (IL_RCG)

The impaired water body segments are shown on **Figure 1-1**.

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

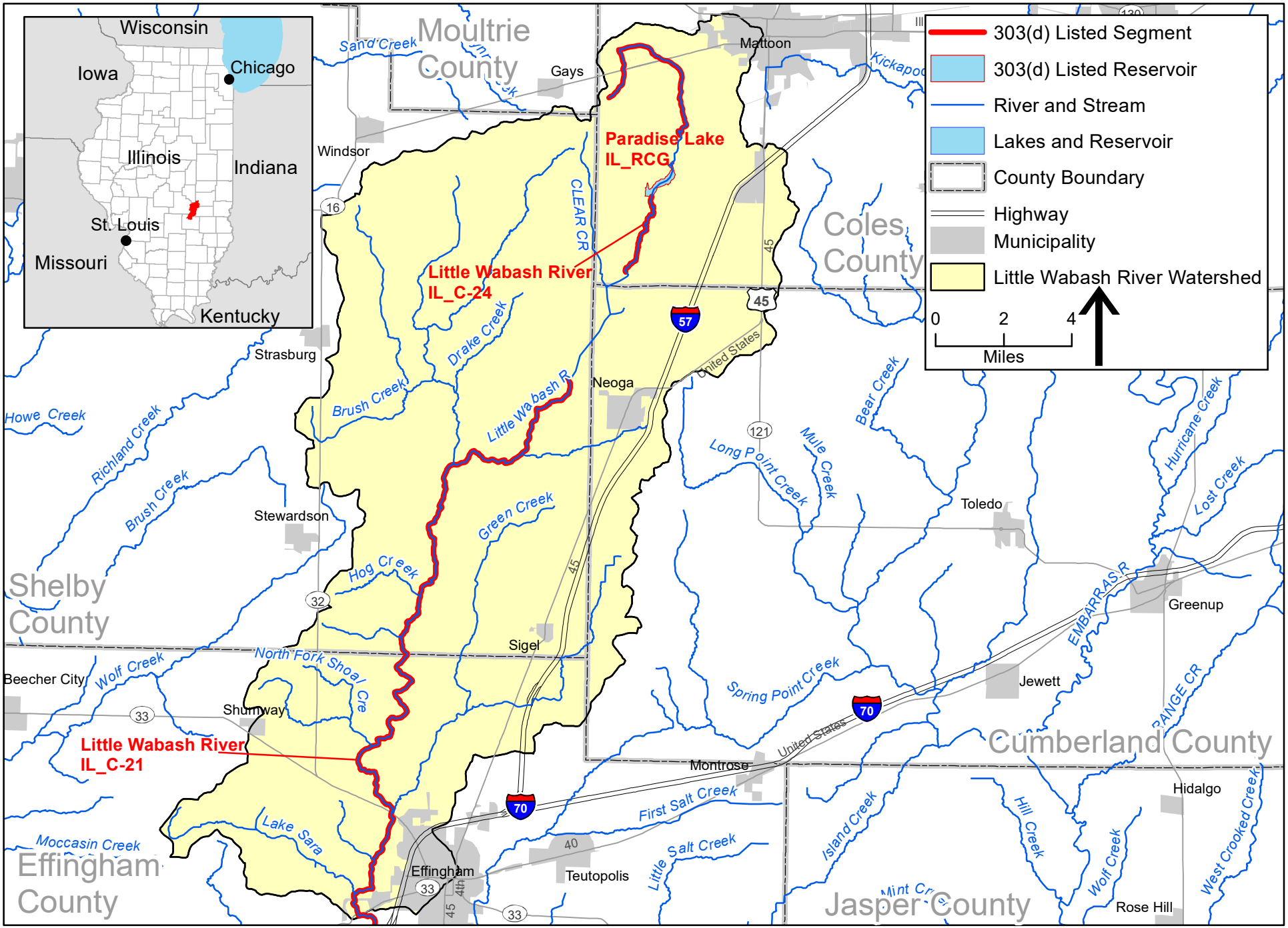

Figure 1-1: Little Wabash River/Green Creek Watershed
HUC 0512011401

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Table 1-1 lists the water body segments and potential causes and sources of impairment as listed in the final 2018 303(d) list.

Table 1-1 Impaired Water Bodies in the Little Wabash River/Green Creek Watershed (2018 303(d) List)

Segment ID	Segment Name	Potential Cause of Impairment	Designated Use	Potential Source of Impairment (as identified in the 2018 303(d) list)
IL_C-21	Little Wabash River	Dissolved Oxygen (DO)[1]	Aquatic Life	Dam or Impoundment
IL_C-24	Little Wabash River	DO[2]	Aquatic Life	Upstream Impoundment, Crop Production (Cropland or Dry Land), Agriculture
IL_RCG	Paradise (Coles)	DO[2]	Aquatic Life	Sources Unknown

Note:

[1] DO was included on the 2018 303(d) list when this TMDL report was initiated. The parameter has since been removed from the 2020/2022 303(d) list.

[2] DO impairment may be associated with high concentrations of other water quality parameters. The TMDLs for DO impairment in the Little Wabash River segment IL_C-24 and Paradise Lake segment IL_RCG have been developed for total phosphorus (TP) and total nitrogen (TN).

Since the completion of Stage 1, the 2020/2022 Illinois Integrated Water Quality Report and 303(d) List[5] was approved by EPA on June 30, 2022. Segment IL_C-21 of the Little Wabash River was delisted from the 2020/2022 303(d) list for impairment caused by DO. The remaining impairments shown in **Table 1-1** have not changed during the most recent listing cycle. Because of the delisting of segment IL_C-21, TMDL development did not continue beyond Stage 1 (Sections 1 through 6 of this report).

TMDLs for the remaining impaired segments specify the following elements:

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

These elements are combined into the following equation:

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

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

TMDLs also consider the seasonal variability of pollutant loads so that applicable water quality standards are met during all seasons of the year. Also, reasonable assurance that the TMDLs and percent reduction goals will be achieved is described in the WBP. The WBP for the Little Wabash River/Green Creek watershed describes how water quality standards and goals will be met and attained. The WBP includes recommendations for implementing best management practices (BMPs), developing cost estimates, evaluating institutional needs to implement BMPs and controls throughout the watershed, and developing a timeframe for completing implementation activities.

1.3 Report Overview

The remaining sections of this report contain:

- **Section 2 Little Wabash River/Green Creek Watershed Description** describes the watershed's location, topography, geology, land use, soils, population, and hydrology.
- **Section 3 Little Wabash River/Green Creek Watershed Public Participation** discusses public participation activities that will occur throughout TMDL development.
- **Section 4 Little Wabash River/Green Creek Watershed Water Quality Standards** defines the water quality standards for the impaired water bodies.
- **Section 5 Little Wabash River/Green Creek Watershed Data and Potential Pollutant Sources** presents the available water quality data needed to develop TMDLs, discusses the characteristics of the impaired stream segments in the watershed, and describes the point and nonpoint sources with the potential to contribute to the watershed load.
- **Section 6 Approach to Developing Total Maximum Daily Loads and Identifying Data Needs** makes recommendations for data needs and the models and analysis necessary for TMDL development.
- **Section 7 Methodology for Load Reduction Calculations for the Little Wabash River/Green Creek Watershed** details the development of TMDLs and load reduction targets for the impaired segments.
- **Section 8 Total Maximum Daily Load and Load Reduction Calculations for the Little Wabash River/Green Creek Watershed** provides results of the water quality modeling and analyses for the impaired segments within the watershed.
- **Section 9 Watershed-Based Implementation Plan for the Little Wabash River/Green Creek Watershed** includes implementation actions, point source monitoring, management measures, and BMPs to address water quality issues in the watershed.

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Section 2

Little Wabash River/Green Creek Watershed Description

2.1 Location

The Little Wabash River/Green Creek watershed (HUC 0512011401 shown on **Figure 1-1**) is in east-central Illinois, flows in a southerly direction, and drains approximately 153,734 acres (240 square miles). Approximately 73,860 acres are within Shelby County (49 percent of the watershed), 36,580 acres are within Effingham County (24 percent of the watershed), 24,340 acres are within Coles County (16 percent of the watershed), and 17,180 acres are within Cumberland County (11 percent of the watershed).

2.2 Topography

Topography is an important factor in watershed management because stream types, precipitation, and soil types can vary significantly with elevation. Elevation data are available from USGS[6] for each 1:24,000 topographic quadrangle in the United States. Elevation data for the Little Wabash River/Green Creek watershed were obtained by overlaying USGS grid data onto the geographic information system (GIS)-delineated watershed. **Figure 2-1** shows the elevations within the watershed, which range from approximately 778 feet above sea level in the northern portion of the watershed to 506 feet at the outlet of the Little Wabash River/Green Creek watershed at the southern extent of the watershed.

2.3 Land Use

Land use data for the Little Wabash River/Green Creek watershed were extracted from the U.S. Department of Agriculture's (USDA's) National Agriculture Statistics Service (NASS) 2018 Cropland Data Layer (CDL).[7] The CDL is a raster-based, georeferenced, crop-specific land cover data layer created to provide acreage estimates to the Agricultural Statistics Board for state's major commodities and to produce digital, crop-specific, categorized georeferenced output products. This information is made available to all agencies and to the public free of charge and represents the most accurate and up-to-date land cover datasets available at a national scale. The CDL dataset includes 27 separate land use classes applicable to the Little Wabash River/Green Creek watershed. The available resolution of the land cover dataset is 30 square meters.

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

[7] NASS CDL. https://www.nass.usda.gov/Research_and_Science/Cropland/Release/index.php

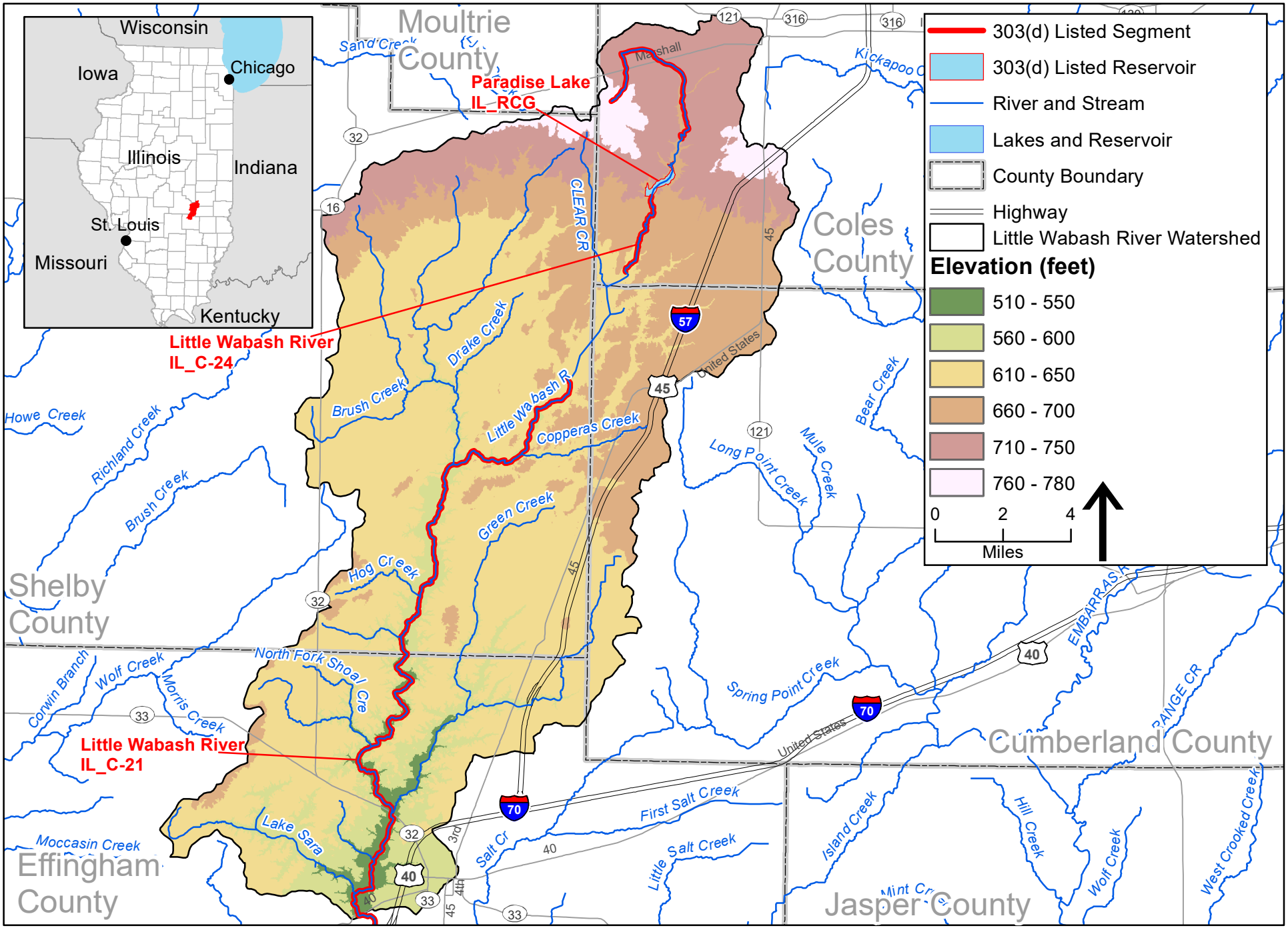

Figure 2-1: Little Wabash River/Green Creek Watershed Topography

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The land use of the Little Wabash River/Green Creek watershed was determined by overlaying the Illinois Statewide 2018 CDL onto the GIS-delineated watershed. **Table 2-1** contains the main categories of land uses within the Little Wabash River/Green Creek watershed, including the area of each land cover category and percentage of the watershed area. **Figure 2-2** illustrates the land uses in the watershed. **Appendix A** contains a table of all land uses in the watershed.

Table 2-1 Land Cover and Land Use in the Little Wabash River/Green Creek Watershed

Land Cover Category	Area (acres)	Percentage
Soybeans	51,962	33.8%
Corn	49,327	32.1%
Deciduous Forest	21,553	14.0%
Grass/Pasture	9,968	6.5%
Developed/Open Space	8,721	5.7%
Developed/Low Intensity	4,918	3.2%
Open Water	2,206	1.4%
Double Crop Winter Wheat/Soybeans	1,604	1.0%
Developed/Medium Intensity	1,170	0.8%
Winter Wheat	769	0.5%
Developed/High Intensity	418	0.3%
All Others	1,118	0.7%
Total	**153,734**	**100.0%**

The land cover data reveal that the largest percentage of watershed area is used for crop production (67 percent). Approximately 14 percent of watershed area is forest and 7 percent is pasture. Nearly 10 percent of watershed area is developed or urban in nature, while wetlands, marshes, and open water make up the remaining 2 percent.

2.3.1 Subbasin Land Use

The subbasin areas draining to the impaired segments were further delineated through GIS (**Figure 2-2**). Land cover data was then intersected with the subbasin boundaries to determine the land uses contributing runoff to the impaired waterbodies, as shown in **Table 2-2** through **Table 2-4**. The land use data shown includes all upgradient land areas, some of which are also within upstream impaired segment subbasins.

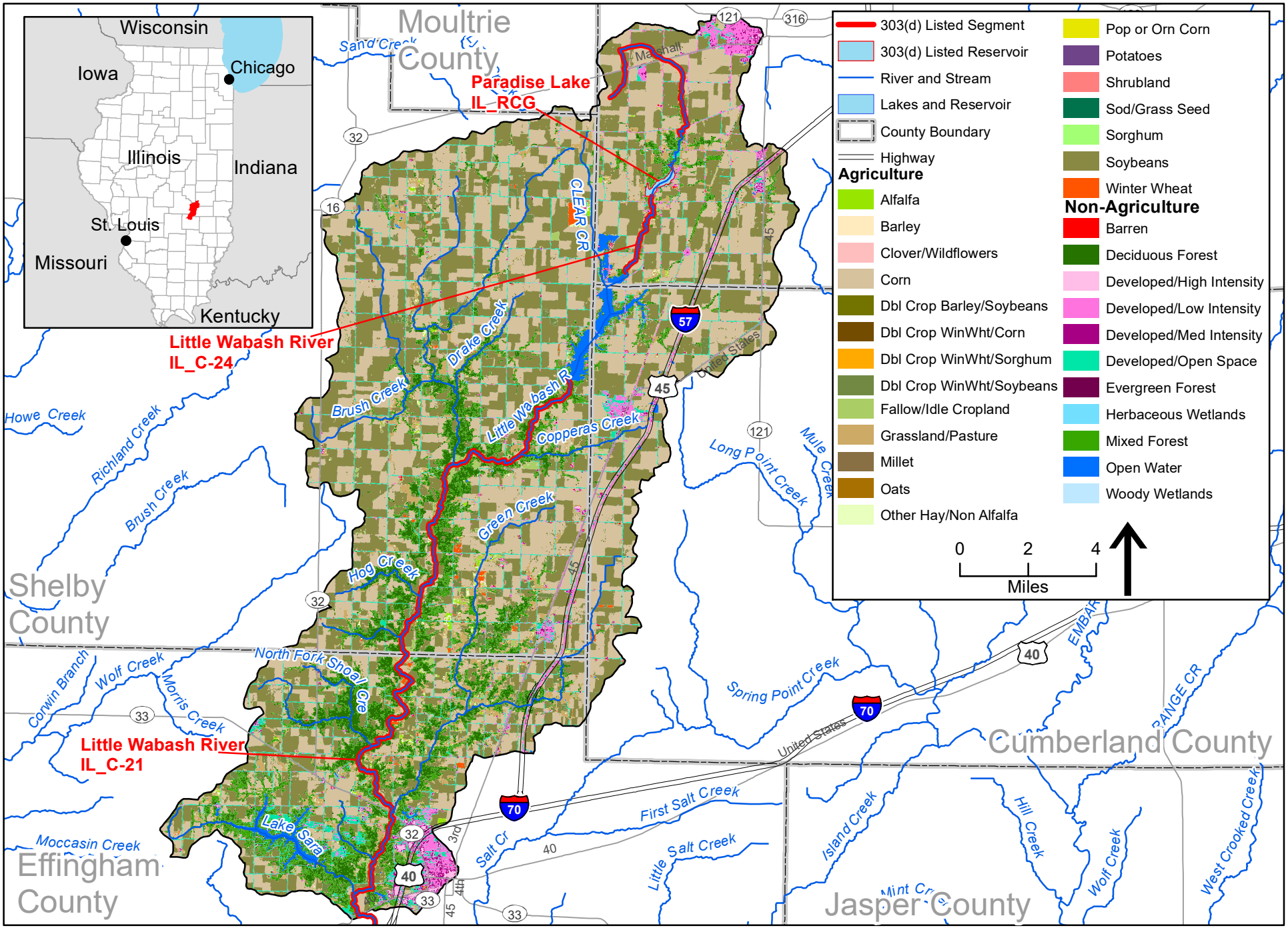

Figure 2-2: Little Wabash River/Green Creek Watershed Land Use

CDM Smith

Table 2-2 Land Cover and Land Use in the Little Wabash River Segment IL_C-21 Subbasin

Land Cover Category	Area (acres)	Percentage
Soybeans	51,920	33.8%
Corn	49,280	32.1%
Deciduous Forest	21,552	14.0%
Grass/Pasture	9,966	6.5%
Developed/Open Space	8,711	5.7%
Developed/Low Intensity	4,910	3.2%
Open Water	2,206	1.4%
Double Crop Winter Wheat/Soybeans	1,604	1.0%
Developed/Medium Intensity	1,168	0.8%
Winter Wheat	769	0.5%
Alfalfa	583	0.4%
Developed/High Intensity	417	0.3%
All Others	399	0.3%
Total	**153,485**	**100.0%**

Table 2-3 Land Cover and Land Use in the Little Wabash River Segment IL_C-24 Subbasin

Land Cover Category	Area (acres)	Percentage
Corn	5,043	36.8%
Soybeans	4,878	35.6%
Developed/Low Intensity	1,297	9.5%
Grass/Pasture	820	6.0%
Deciduous Forest	744	5.4%
Developed/Open Space	499	3.6%
Open Water	186	1.4%
Developed/Medium Intensity	181	1.3%
Developed/High Intensity	33	0.2%
All Others	23	0.2%
Total	**13,704**	**100.0%**

Table 2-4 Land Cover and Land Use in the Paradise (Coles) Segment IL_RCG Subbasin

Land Cover Category	Area (acres)	Percentage
Corn	4,470	36.7%
Soybeans	4,431	36.3%
Developed/Low Intensity	1,244	10.2%
Grass/Pasture	613	5.0%
Deciduous Forest	599	4.9%
Developed/Open Space	430	3.5%
Open Water	184	1.5%
Developed/Medium Intensity	177	1.4%
Developed/High Intensity	33	0.3%
All Others	15	<0.1%
Total	**12,196**	**100.0%**

2.4 Soils

Soils data are available through the Natural Resources Conservation Service's (NRCS's) Soil Survey Geographic (SSURGO) database.[8] For SSURGO data, field mapping methods using national standards are used to construct the soil maps. Mapping scales generally range from 1:12,000 to 1:63,360, making SSURGO the most detailed level of soil mapping done by NRCS.

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

2.4.1 Soil Characteristics

Appendix B contains a table of the SSURGO soil series for the Little Wabash River/Green Creek watershed. A total of 140 soil types exist in the watershed. The most common types—Cisne silt loam (0 to 2 percent slopes), Hoyleton silt loam (0 to 2 percent slopes), Bluford silt loam (0 to 2 percent slopes), and Drummer silty clay loam (0 to 2 percent slopes)—each cover only a small percentage of the overall watershed (10.4, 9.4, 8.5, and 7.7 percent, respectively). The other soil types each represent less than 6 percent of the total watershed area. The table in **Appendix B** also contains the area, dominant hydrologic soil group, and K-factor range. Each of these characteristics are described in more detail in the paragraphs that follow.

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

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

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

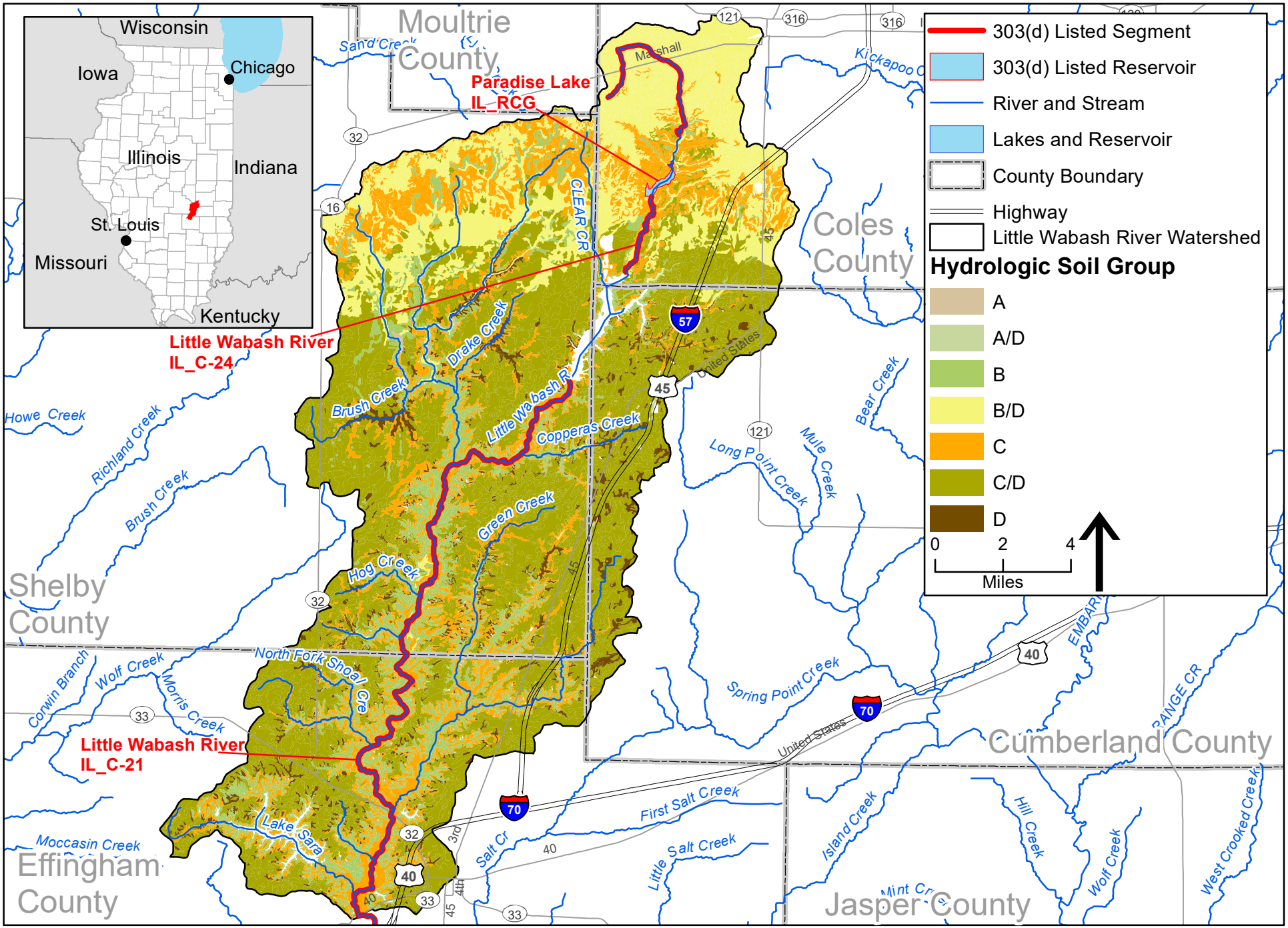

Figure 2-3: Little Wabash River/Green Creek Watershed Hydrologic Soil Groups

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While hydrologic soil groups A, B, C, D, A/D, B/D, and C/D are all found within the Little Wabash River/Green Creek watershed, group C/D is the most common type and represents 45 percent of the watershed. Group C/D soils are a dual hydrologic soil group because these soils can be adequately drained. The first letter applies to the drained condition and the second to the undrained condition. For the hydrologic soil group, "adequately drained" means that the seasonal high-water table is kept at 24 inches below the surface.[9]

A commonly used soil attribute is the K-factor, which is a measure of soil erodibility and quantifies the relative susceptibility of soil to sheet and rill erosion. Values of K range from 0.02 to 0.69, from least erodible to most erodible, respectively, and are influenced by elements including texture, organic matter content, structure, and saturated hydraulic conductivity.[10] K-factor values in the Little Wabash River/Green Creek watershed range from 0.24 to 0.55, as shown on **Figure 2-4**.

2.5 Population

The Census TIGER/Line data[11] from the U.S. Census Bureau were retrieved. Geographic shapefiles of census block groups[12] were downloaded for the entire state of Illinois. All census block groups having geographic center points (centroids) within the watershed were selected and tallied to provide an estimate of populations in all census blocks both completely and partially contained by the watershed boundary. Given that the optimal size of a census block group is 1,500 people, and 19 block group centroids are within the watershed, it is estimated that approximately 28,500 people reside in the Little Wabash River/Green Creek watershed. The major municipalities in the watershed are shown on **Figure 1-1**. The largest urban development in the watershed is the City of Effingham, Illinois, with a population of approximately 12,627, according to the 2018 census.[13]

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

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

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

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

[13] U.S. Census Bureau. QuickFacts. https://www.census.gov/quickfacts/fact/table/effinghamcityillinois,US/PST045222

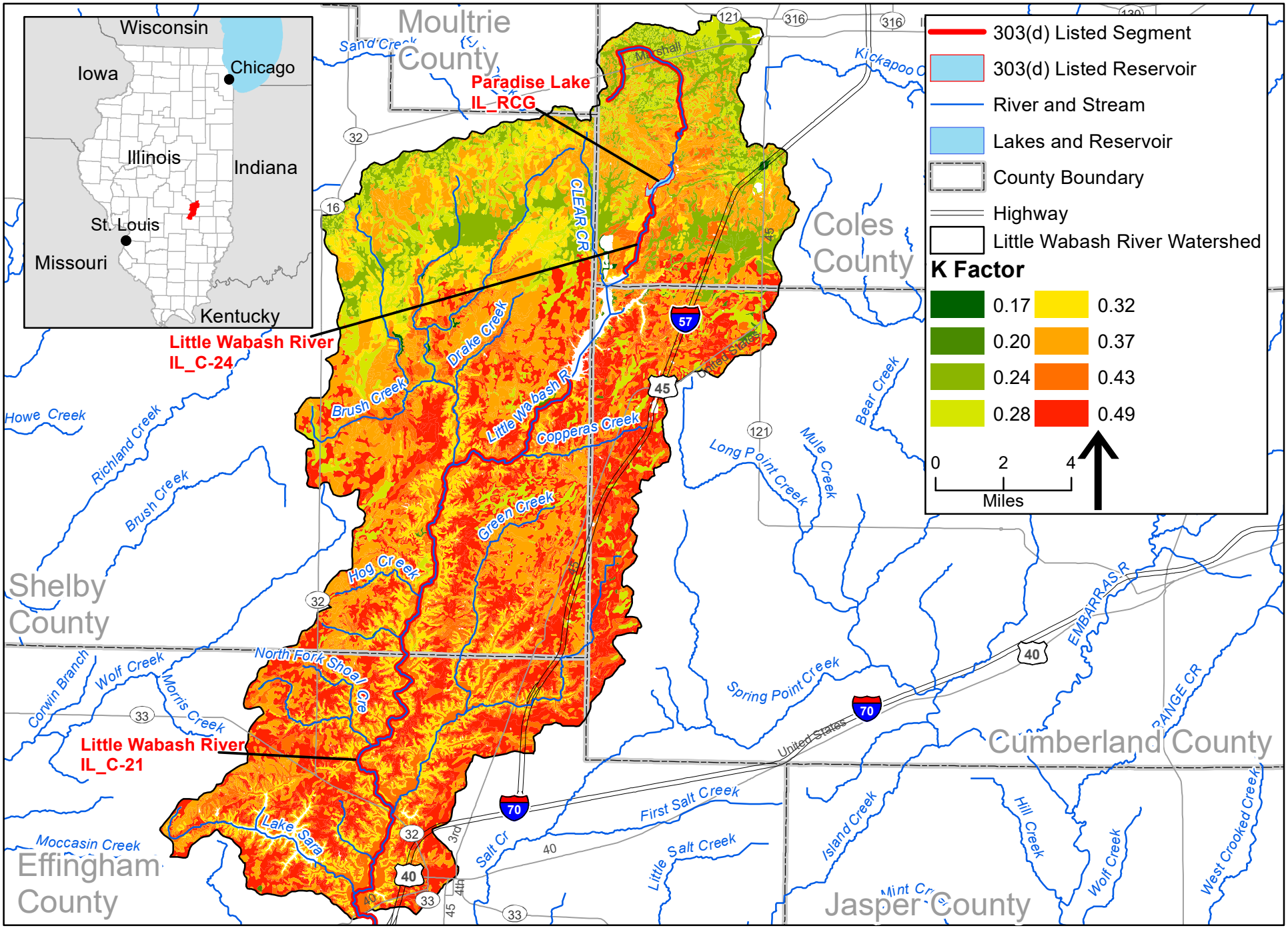

Figure 2-4: Little Wabash River/Green Creek Watershed Soil K-Factors

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2.6 Climate and Streamflow

2.6.1 Climate

Central Illinois has a temperate climate with hot summers and cold, moderately snowy winters. Monthly precipitation data from the Neoga, Illinois station (USC00116025) in Shelby County were extracted from the National Centers for Environmental Information database[14] for 2005 through 2019. The data station is near the center of the Little Wabash River/Green Creek watershed and is expected to be representative of climate throughout the watershed.

Table 2-5 contains the average monthly precipitation along with average high and low temperatures for the period of record (POR). The average annual precipitation is 43 inches. April is historically the wettest month, while January and February are the driest. July is historically the warmest month, with an average maximum temperature of 87 degrees Fahrenheit (°F), while January is typically the coldest month, with an average minimum temperature of 19°F.

Table 2-5 Average Monthly Climate Data in Neoga, Illinois

Month	Average Total Precipitation (inches)	Average Daily Maximum Temperature (°F)	Average Daily Minimum Temperature (°F)
January	2.1	37.0	19.1
February	2.6	40.4	20.7
March	2.8	53.3	32.1
April	5.7	65.8	41.8
May	4.0	76.3	54.3
June	5.5	85.6	63.0
July	4.6	87.1	64.6
August	2.9	86.5	62.2
September	2.9	81.5	54.5
October	3.3	68.9	43.4
November	3.3	54.1	32.6
December	3.4	41.4	25.2
Average	**43.1**[1]	**64.8**	**42.8**

Note:
[1] Average annual total.

2.6.2 Streamflow

Analysis of the Little Wabash River/Green Creek watershed requires an understanding of flow throughout the drainage area. There is one USGS gage at the downstream end of the watershed, shown on **Figure 2-5**. This gage has a POR for discharge measurements dating back to 1987 and provides representative streamflow information for the overall watershed. **Table 2-6** provides information about the station.

[14] National Centers for Environmental Information. Station USC00116025 precipitation data. https://www.ncei.noaa.gov/access/search/index

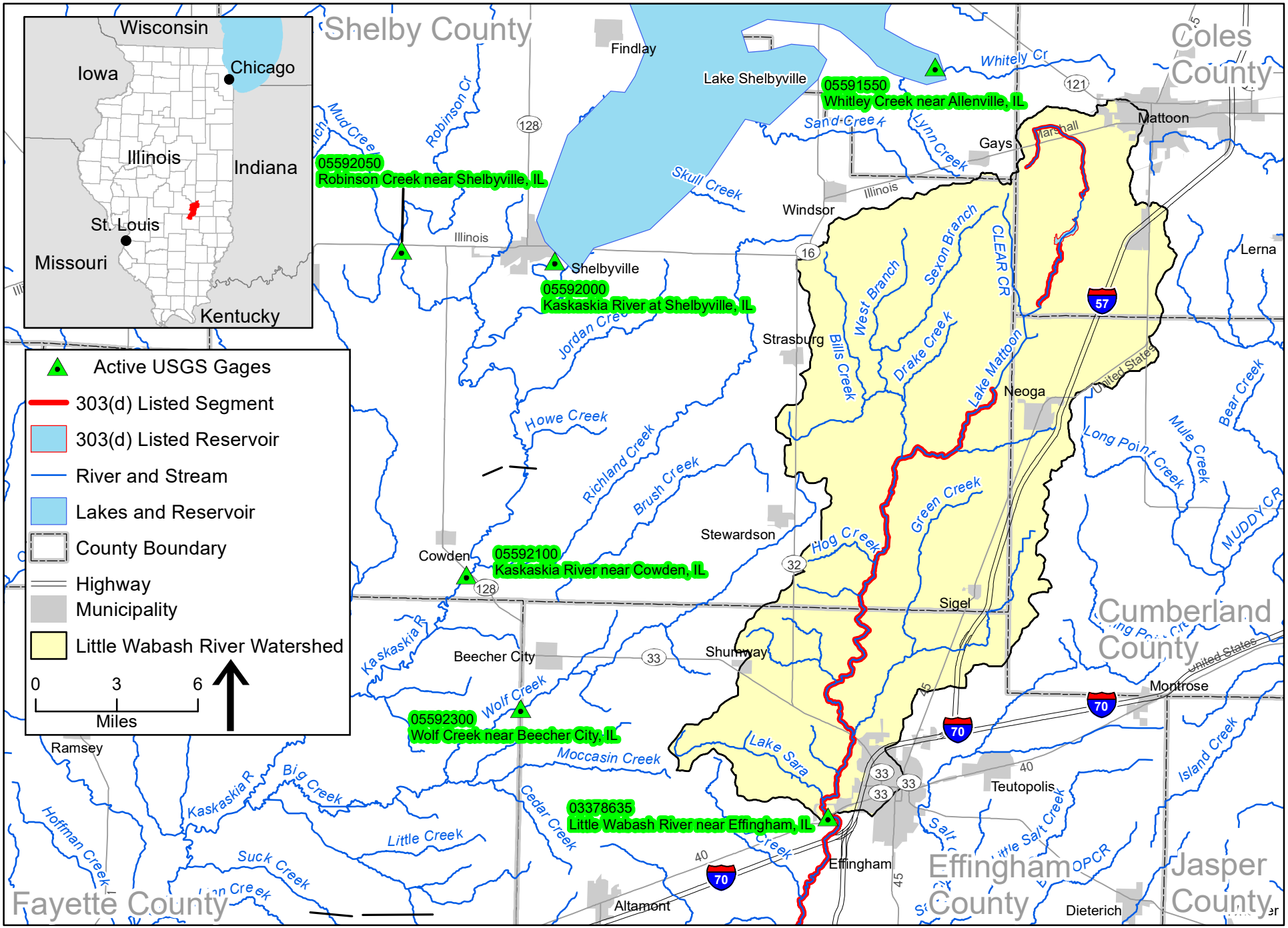

Figure 2-5: Little Wabash River/Green Creek Watershed
Active USGS Gages

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Table 2-6 Streamflow Gages in the Little Wabash River/Green Creek Watershed

Gage Number	Name	Available Data	POR	Minimum Monthly Mean Flow (cfs)	Maximum Monthly Mean Flow (cfs)
03378635	Little Wabash River near Effingham, IL	Discharge	1987–2020	52	421

Source: USGS. National Water Information System. Daily Streamflow Data for Illinois.
https://waterdata.usgs.gov/IL/nwis/current/?type=dailydischarge&group_key=basin_cd
cfs – cubic feet per second

There are also several USGS gages in adjacent watersheds with similar characteristics and varying drainage areas to those of the Little Wabash River/Green Creek watershed that have available discharge data (**Table 2-7**). USGS gage 05591550 (Whitley Creek near Allenville, Illinois) was selected to estimate flows into Paradise Lake (IL_RCG).

Table 2-7 Streamflow Gages in the Watersheds Adjacent to the Little Wabash River/Green Creek Watershed

Gage Number	Name	Drainage Area (square miles)	Approximate Distance from Watershed (miles)	POR	Minimum Monthly Mean Flow (cfs)	Maximum Monthly Mean Flow (cfs)
05592000	Kaskaskia River at Shelbyville, IL	1,054	10	1988-2020	285	1,610
05592050	Robinson Creek near Shelbyville, IL	93	20	1973-2020	45	963
05592100	Kaskaskia River at Cowden, IL	1,330	15	1986-2020	351	2,050
05591550	Whitley Creek near Allenville, IL	35	5	1985-2020	3.4	65

USGS gages have variable drainage areas relative to the size to the Little Wabash River/Green Creek watershed and impaired segment subbasins. The gage data was used to estimate flow values for TMDL development for the impaired water bodies by scaling the data using the drainage area ratio method represented by the following equation:

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

Where Q_{gaged} = Streamflow of the gaged basin

$Q_{ungaged}$ = Streamflow of the ungagged basin

$Area_{gaged}$ = Area of the gaged basin

$Area_{ungaged}$ = Area of the ungagged basin

The assumption behind the equation is that the flow per unit area is equivalent in watersheds with similar characteristics. Therefore, the flow per unit area in the gaged watershed multiplied by the area of the ungagged watershed estimates the flow for the ungagged watershed.

Data were downloaded through USGS for the chosen surrogate gage for the available POR and adjusted to account for point source influence in the watershed upstream of the gaging station. Average daily flows from all National Pollutant Discharge Elimination System (NPDES)-permitted facilities upstream of the surrogate USGS gages were subtracted from the gaged flow prior to flow-per-unit-area calculations. The resulting estimates account for flows associated with precipitation and overland runoff only. Average daily flows from any permitted NPDES discharges upstream of the impaired segments in the Little Wabash River/Green Creek watershed were then added back into the equation to more accurately reflect estimated daily streamflow conditions in a given segment.

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Section 3

Little Wabash River/Green Creek Watershed Public Participation

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

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

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Section 4

Little Wabash River/Green Creek Watershed Water Quality Standards

4.1 Illinois Water Quality Standards

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

Illinois EPA is also responsible for developing scientifically based water quality criteria and proposing them to IPCB for adoption into state rules and regulations. Illinois water quality standards are established in Title 35 of the Illinois Administrative Rules, Environmental Protection; Subtitle C, Water Pollution; Chapter I, Pollution Control Board; Part 302, Water Quality Standards.[15]

4.2 Designated Uses

The waters of Illinois are classified into four primary categories of narrative and numeric water quality standards for surface waters: General Use Standards, Public and Food Processing Water Supplies Standards, Secondary Contact and Indigenous Aquatic Life Standards, and Lake Michigan Basin Water Quality Standards.[16] The segments of the Little Wabash River/Green Creek watershed that are addressed in this report have been listed for impairment of the aquatic life designated use under the General Use Standard.

4.2.1 General Use

The General Use classification is defined by IPCB as standards that "are intended to protect aquatic life, wildlife, agricultural, primary contact, secondary contact, and most industrial uses." They are also intended to "ensure the aesthetic quality of the state's aquatic environment and to protect human health from disease or other harmful effects that could occur from ingesting aquatic organisms taken from surface waters of the state."[17]

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

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

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

4.3 Water Quality Criteria

According to the Illinois Integrated Report,[18] aquatic life use assessments in streams are typically based on the interpretation of biological information, physiochemical water data, and physical habitat. The primary biological measures used are the Fish Index of Biotic Integrity, the Macroinvertebrate Index of Biotic Integrity, and the Macroinvertebrate Biotic Index. Physical habitat information used in assessments includes quantitative and qualitative measures of stream bottom composition and qualitative descriptors of channel and riparian conditions. Physiochemical water data used include measures of conventional parameters (e.g., DO, pH, temperature), priority pollutants, nonpriority pollutants, and other pollutants.

Table 4-1 presents the numeric water quality standards for DO in the Little Wabash River/Green Creek watershed. Note that DO is not a traditional pollutant but rather an indicator of biological health within a water body. Modeling to support TMDL development considers other parameters that affect instream DO concentrations. The goal of the TMDLs is to reduce the loads of oxygen-demanding materials entering the impaired segment so that the DO standard is attained and the aquatic life designated use is supported.

Table 4-1 Summary of Numeric Water Quality Standards for Potential Causes of Impairment in the Little Wabash River/Green Creek Watershed[1]

Parameter	Units	General Use Water Quality Standard	Regulatory Reference[2]
DO[3]	mg/L	*March through July* greater than or equal to 5.0 minimum and greater than or equal to 6.0 7-day daily mean averaged over 7 days *August through February* greater than or equal to 3.5 minimum, greater than or equal to 4.0 7-day minimum averaged over 7 days, and greater than or equal to 5.5 30-day daily mean[2]	302.206(b)

Notes:

1 Illinois Pollution Control Board. Title 35, Environmental Protection. http://www.ilga.gov/commission/jcar/admincode/035/03500302sections.html

2 302.206(d) provides further information on detailed calculations for determining the acute and chronic standards for DO.

3 Above the thermocline in thermally stratified waters or entire water column in unstratified waters.

mg/L – milligrams per liter

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

Section 5

Little Wabash River/Green Creek Watershed Data and Potential Pollution Sources

To further characterize the Little Wabash River/Green Creek watershed, a wide range of pertinent data were collected and reviewed. Water quality data for streams and reservoirs, as well as information on potential point and nonpoint sources within the watershed, were compiled from a variety of data sources. This information is presented and discussed in further detail in this section.

5.1 Water Quality Data

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

Data from a total of 21 historical water quality stations within the Little Wabash River/Green Creek watershed were located and reviewed for this report. Ten of these stations are on the impaired stream and lake segments list and include data relevant to this report. These water quality data were primarily provided by Illinois EPA with supplemental data gathered from EPA's Storage and Retrieval (STORET) database. **Figure 5-1** shows the water quality data station locations within the overall watershed.

The impaired water bodies in the Little Wabash River/Green Creek watershed were presented in Section 1. The data summary provided in this section includes all available date ranges of collected data. The information presented in this section is a combination of EPA STORET database and Illinois EPA database data.

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

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

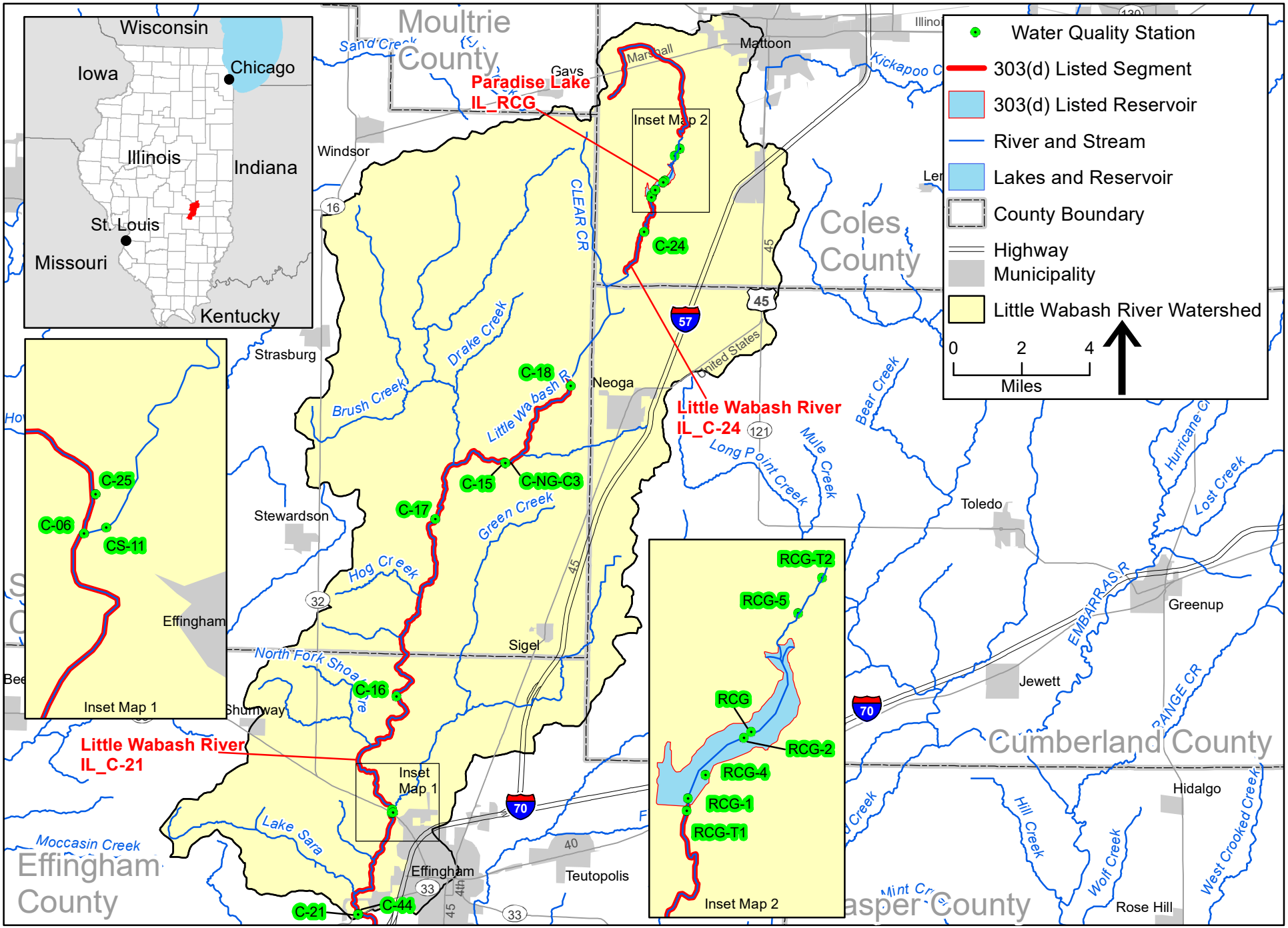

Figure 5-1: Little Wabash River/Green Creek Watershed Water Quality Stations

CDM Smith

5.1.1 Stream Water Quality Data

Two stream segments within the Little Wabash River/Green Creek watershed were reviewed for Stage 1 of TMDL development. There are three water quality stations on segment IL_C-21 of the Little Wabash River with data from 1999 through 2017, and one water quality station on segment IL_C-24 of the Little Wabash River with data from 2007 and 2012. The data summarized in this section include water quality data for the impaired constituent (DO) identified on the 2018 303(d) list. All historical water quality data for the impaired segments in the Little Wabash River/Green Creek watershed are available in **Appendix C**.

5.1.1.1 Dissolved Oxygen

Little Wabash River segments IL_C-21 and IL_C-24 were listed in 2018 for impairment of the aquatic life use by low DO concentrations. **Table 5-1** summarizes the historical DO data for these segments. The general use water quality standard for DO provides seasonal instantaneous minimum and minimum weekly (7-day) average concentrations for DO in streams. The instantaneous minimum standards of 5.0 mg/L for March through July and 3.5 mg/L for August through February have been used to identify exceedances of the standard in this section of the report. The data presented in **Table 5-1** reflect single measurements from each segment compared to the applicable seasonal standard at the time of the field measurement.

Table 5-1 Existing Dissolved Oxygen Data for Little Wabash River Segments IL_C-21 and IL_C-24

Segment	Illinois Water Quality Standard (mg/L)	POR and Number of Data Points	Mean	Maximum	Minimum	Number of Standard Violations	Sample Locations
IL_C-21	5.0*, 3.5†	1999-2017; 265	7.0	16.7	0.1	64	C-21, C-15, RCF-1
IL_C-24	5.0*, 3.5†	2007-2012; 6	5.7	7.5	3.7	2	C-24

Notes:

* Instantaneous minimum March–July.

† Instantaneous minimum August–February.

The summary of data presented in **Table 5-1** reflects single samples from locations on the 2018 impaired segment and upstream of the impaired segment compared to the standard during the designated months. Sixty-four standard violations were noted in the dataset for Little Wabash River segment IL_C-21, representing 24 percent of the DO measurements. Two standard violations were noted in the dataset for Little Wabash River segment IL_C-24, representing 33 percent of the DO measurements. **Figure 5-2** shows the DO measurements collected over time from impaired segment IL_C-21. **Figure 5-3** shows the DO measurements collected over time from impaired segment IL_C-24.

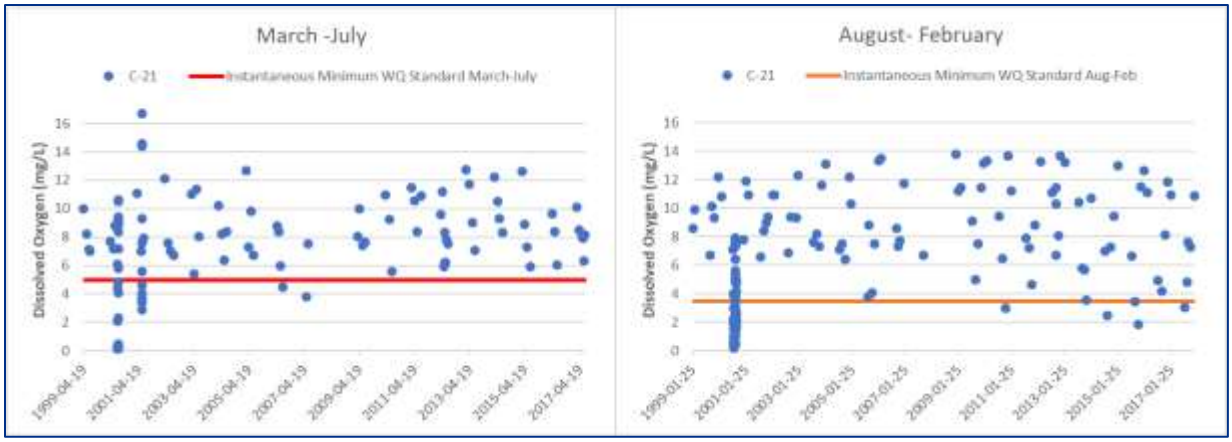

Figure 5-2 Little Wabash River Segment IL_C-21 Dissolved Oxygen and Seasonal Instantaneous Minimum Water Quality Standards

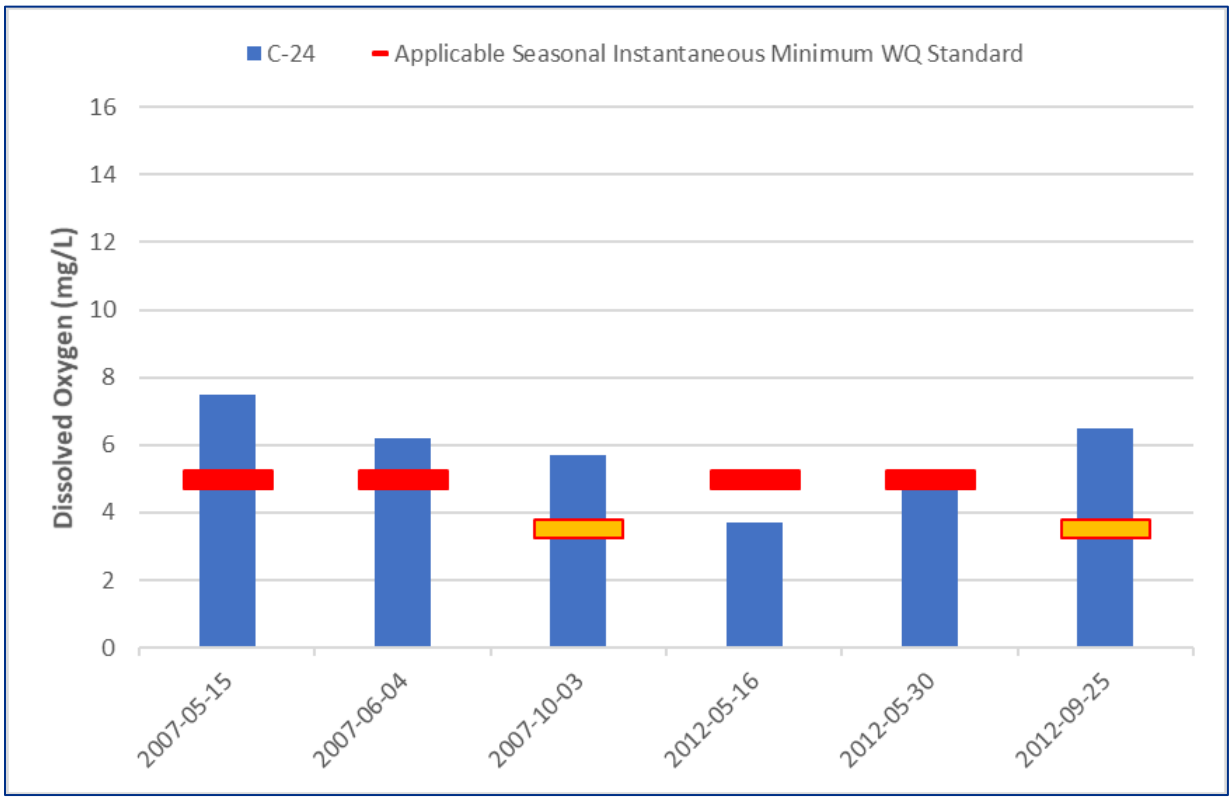

Figure 5-3 Little Wabash River Segment IL_C-24 Dissolved Oxygen and Seasonal Instantaneous Minimum Water Quality Standards

Segment IL_C-21 had low DO measurements during both seasons, while segment IL_C-24 had low DO measurements only while the 5.0 mg/L standard applied (both recordings occurred in May 2012). Segment IL_C-21 was delisted from the 2020/2022 303(d) list. Appendix C-4 of the Integrated Report[21] provides information for segments and causes that were removed from the

[21] Illinois EPA. 2022b.

2018 303(d) list. The appendix notes that there were no standard violations in the new data for the 2020 assessment cycle.

5.1.2 Lake Paradise Water Quality Data

Lake Paradise is listed for impairment caused by low DO concentrations (aquatic life designated use). Data are available from three separate water quality monitoring locations within Lake Paradise with a POR spanning 2000 and 2001. Historical water quality data for Lake Paradise are available in **Appendix C**.

5.1.2.1 Dissolved Oxygen in Lake Paradise

The water quality standard for DO in Lake Paradise is a seasonally variable standard based on a minimum instantaneous DO value of 5.0 mg/L from March through July and 3.5 mg/L from August through February. Compliance with the minimum DO standard is assessed using measurements recorded at depths above the thermocline of a thermally stratified water body or throughout the water column in an un-stratified water body. The thermocline is defined as the depth within the water column at which water temperatures decline sharply and indicates the boundary between the warmer upper layer of the lake (epilimnion) and the cooler lower layer of the lake (hypolimnion). The depth of the thermocline varies from location to location and at different times of the year.

Table 5-2 summarizes the historical DO data for Lake Paradise. **Figure 5-4** shows the DO measurements collected over time in each segment of Lake Paradise. The available measured DO data for Paradise Lake is from 2000-2001 and shows several exceedances of the instantaneous minimum DO standards for stations RCG-1 and RCG-2 during this period. Sample depth and correlated temperature readings that are necessary to determine if the sample was taken above or below the thermocline are largely unavailable for this dataset. However, the distribution of exceedances showing all samples exceeding on the same day at the same site does suggest the low DO conditions likely occur at a full range of depths during some sampling events.

Table 5-2 Existing Dissolved Oxygen Data for Lake Paradise

Station	Illinois Water Quality Standard (mg/L)	POR and Number of Data Points	Mean	Maximum	Minimum	Number of Exceedances
RCG-1	5.0[1], 3.5[2]	2000–2001; 54	5.5	12.7	0.4	20
RCG-2	5.0[1], 3.5[2]	2000–2001; 32	7.6	16.0	2.2	4
RCG-3	5.0[1], 3.5[2]	2000–2001; 10	8.9	15.5	4.5	0

Notes:

[1] Instantaneous minimum March–July.

[2] Instantaneous minimum August–February.

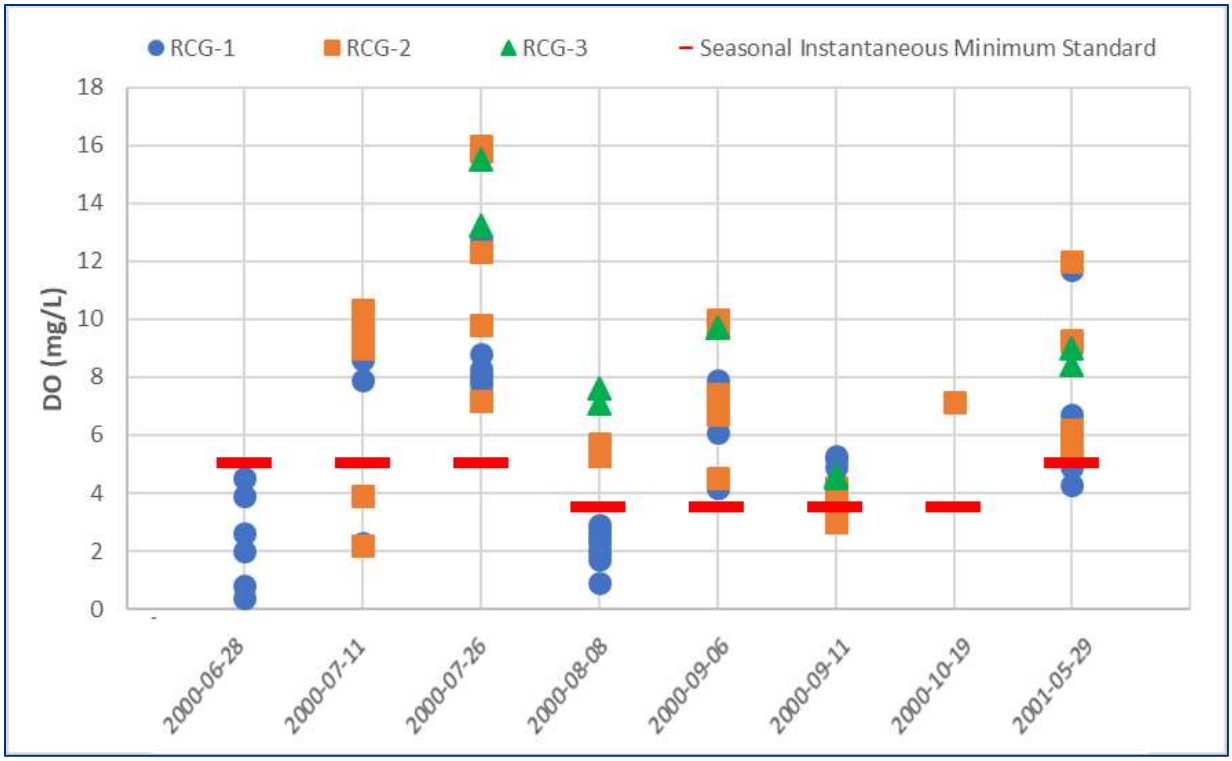

Figure 5-4 Paradise Lake Dissolved Oxygen and Seasonal Instantaneous Minimum Water Quality Standards

5.1.2.2 Total Phosphorus in Paradise Lake

Because low DO concentrations in Illinois lakes are often associated with nutrient enrichment, total phosphorus (TP) data were also reviewed for Lake Paradise. The lake is not listed on the 2020/2022 303(d) list for impairment caused by TP; however, the applicable water quality standard, for reference, is a maximum concentration of 0.05 mg/L. Compliance with the TP standard is assessed using samples collected at a 1-foot depth from the lake surface. Lake Paradise TP data are summarized in **Table 5-3** and shown on **Figure 5-5**. Based on the available dataset, TP concentrations collected at a 1-foot depth in Paradise Lake are consistently above the 0.05 mg/L water quality standard. These data are further used in TMDL development for the lake in Section 7. A TMDL for TP in Paradise Lake was also developed in 2007.[22]

[22] Illinois EPA. 2008. *Little Wabash River I Watershed TMDL Report*. little-wabash.pdf (illinois.gov)

Table 5-3 Total Phosphorus at 1-Foot Depth in Paradise Lake (IL_RCG)

Station ID[1]	POR and Number of Data Points	Mean (mg/L)	Minimum (mg/L)	Maximum (mg/L)	Number of Exceedances
RCG-1	2001–2018; 75	0.235	0.069	1.040	75
RCG-2	2001–2012; 41	0.229	0.076	0.541	41
RCG-3	2001–2012; 35	0.257	0.090	0.573	35
RCG-4	2008; 5	0.162	0.130	0.187	5
RCG-5	2011; 5	0.237	0.117	0.414	5
RCG-T1	2001; 3	0.144	0.077	0.200	3
RCG-T2	2001; 6	0.135	0.017	0.389	3

Note:

[1] Sampling locations are shown on **Figure 5-1**. Stations RCG-T1 and RCG-T2 are instream and stations RCG-1 through RCG-5 are in-reservoir.

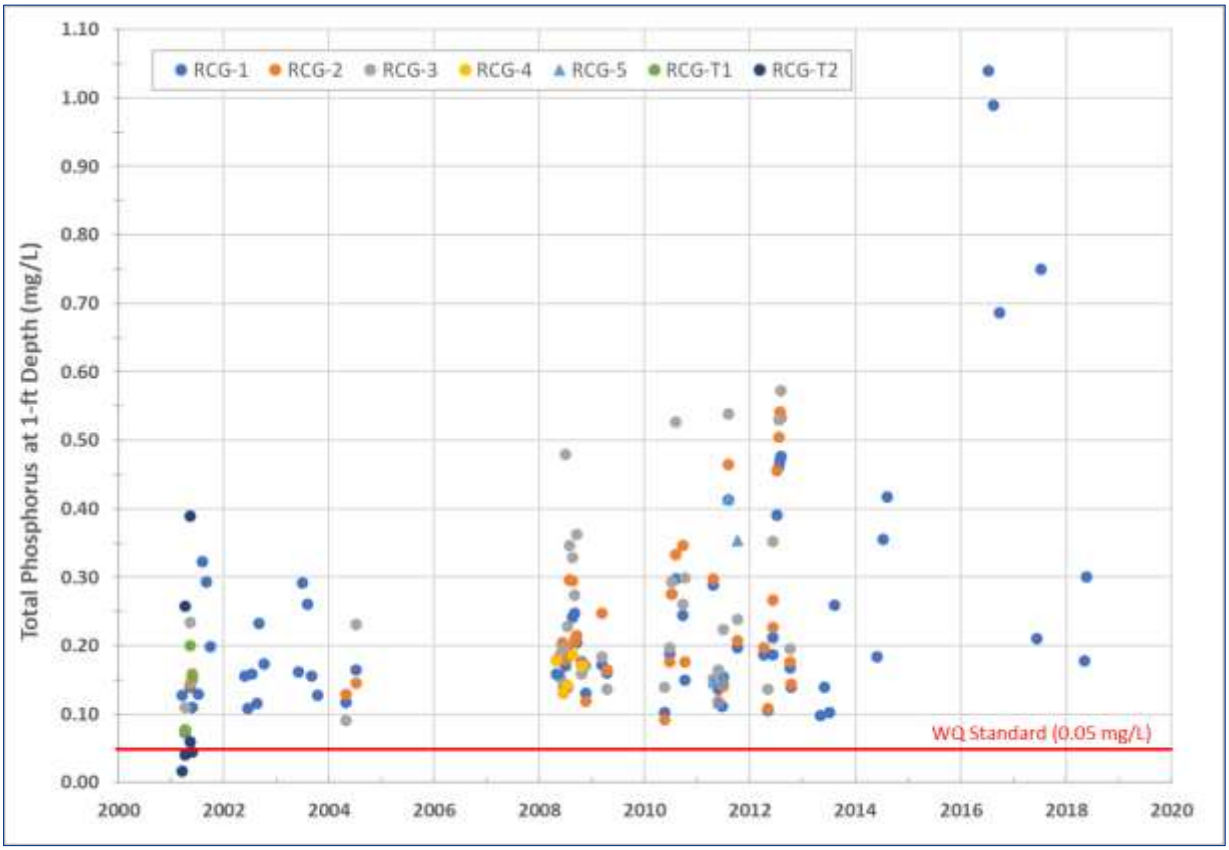

Figure 5-5 Total Phosphorus at 1-Foot Depth in Paradise Lake (IL_RCG)

5.2 Lake Characteristics

5.2.1 Lake Paradise

Lake Paradise is within Coles County, less than 3 miles southwest of the City of Mattoon, Illinois. Lake Paradise is owned by the City of Mattoon and is the primary source of the water supply for the city, along with Lake Mattoon.

Lake Paradise has a surface area of approximately 176 acres and a maximum depth of 16 feet. The watershed draining to Lake Paradise is approximately 12,181 acres. The overall subbasin largely consists of agricultural lands; however, the areas adjacent to the lake are primarily forested with some low- to medium-density developed land. In addition to historically serving as a public water source, the lake is used for boating and fishing, but is a "no wake" lake.

5.3 Point Sources

Table 5-4 contains permit information for the point sources within the Little Wabash River/Green Creek watershed that discharge to or upstream of impaired segments; **Figure 5-6** shows the locations of outfalls for these facilities. Sanitary treatment plants can potentially contribute oxygen-demanding materials through effluent to receiving waters. Permit limits and discharge monitoring reports are analyzed and further detailed in Stage 3 of TMDL development (Sections 7 through 9 of this report). There are no NPDES-permitted confined animal feeding operations (CAFOs) of municipal separate storm sewer systems (MS4s) discharging within the watershed.

Table 5-4 Permitted Facilities Discharging within the Little Wabash River/Green Creek Watershed

Facility ID	Facility Name	Design Average/ Maximum Flow (mgd)	Receiving Water
ILG640283	Effingham Water Treatment Plant	0.05 (average)	Money Creek
IL0030091	City of Neoga Sanitary Treatment Plant	0.370/0.732	Unnamed tributary of Copperas Creek
IL0041491	Shumway Collection and Treatment Facility	0.0266/0.11	Unnamed tributary of Shoal Creek
IL0055093	Buckeye Terminals, LLC – Effingham Terminal	0.36*	Sugar Fork
IL0055701	Stewardson – Strasburg High School – Sanitary Treatment Plant	0.05/0.125	Brush Creek
IL0056197; ILG640198†	Clearwater Service Corp Water Treatment Plant	0.023 (average)	Little Wabash River
IL0060208	IDOT – Green Creek Rest Area Sanitary Treatment Plant	0.0111/0.0278	East branch of Green Creek
IL0074527; ILG640205†	City of Mattoon Water Treatment Plant	0.1 (average)	Ditch draining to Lake Paradise
IL0077461	Koch Fertilizer, LLC – Trilla Terminal	0.003415 (average)	Unnamed ditch tributary to Buttermilk Creek
ILG580024	Sigel Sanitary Treatment Plant	0.06/1.15	Unnamed tributary of Henry Creek

Notes:

* Hydrostatic test water and stormwater.

† Facility was covered under an individual permit but coverage changed to General permit in 2007.

mgd – million gallons per day

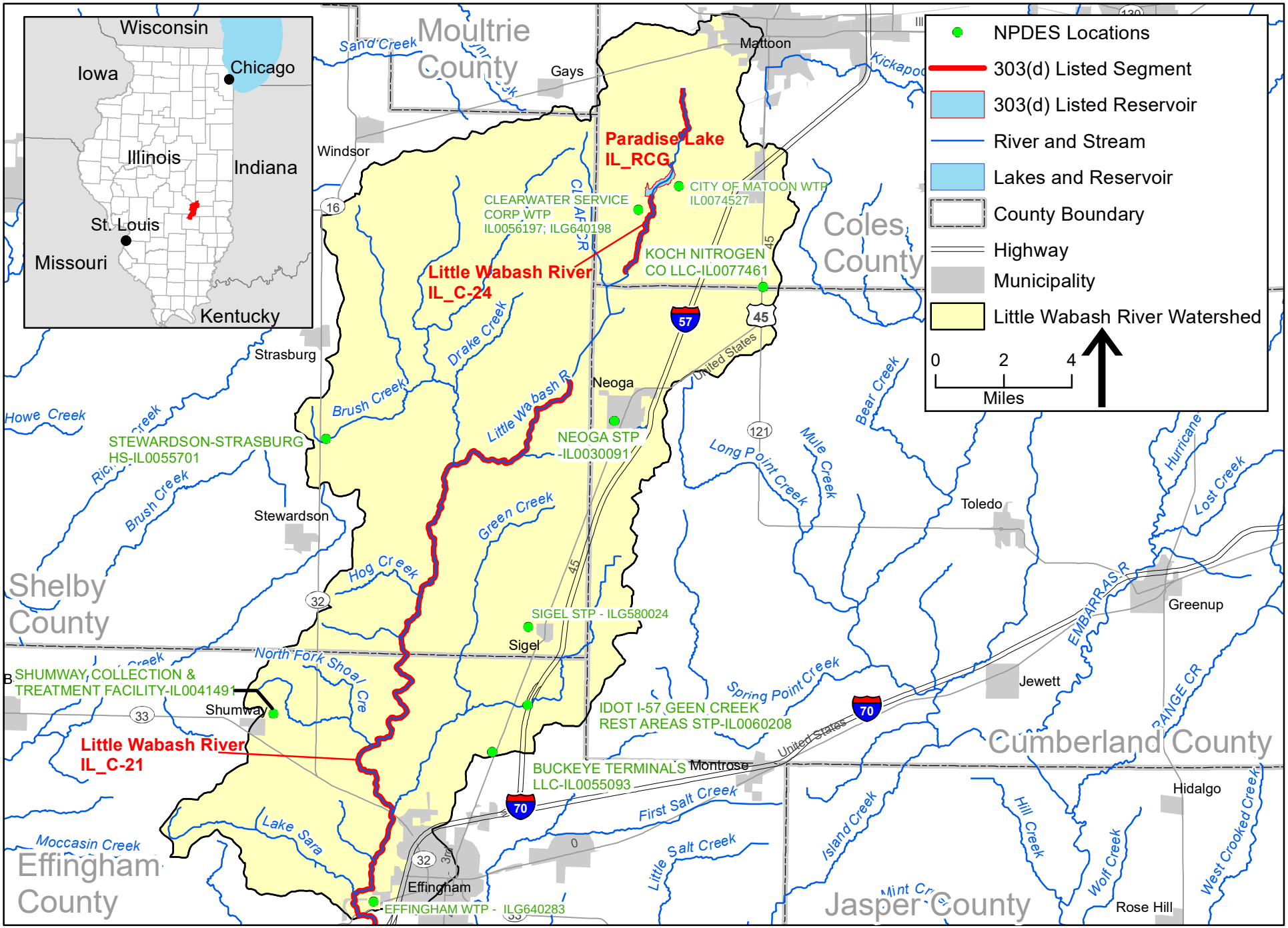

Figure 5-6: Little Wabash River/Green Creek Watershed
NPDES Permitted Discharge Locations

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5.4 Nonpoint Sources

There are many potential nonpoint sources of pollutant loading to the impaired segments in the Little Wabash River/Green Creek watershed. This section will discuss site-specific cropping practices, animal operations, and area septic systems as these nonpoint sources can affect DO levels in receiving waters through the introduction of oxygen-demanding materials. Illinois EPA also identified upstream impoundment as a cause of low DO for the impaired stream segment. Although upstream impoundment may not contribute oxygen-demanding materials, the impact on altered flow regime and water temperature can result in depleted instream oxygen levels. Data were collected through online resources and communication with the local NRCS, Soil and Water Conservation Districts (SWCDs), and county health departments. Available data and information have been included in the following sections.

5.4.1 Crop Information

Approximately 68 percent of the land within the Little Wabash River/Green Creek watershed is dedicated to agriculture. Of the agricultural lands, soybean and corn farming account for approximately 34 percent and 32 percent of the watershed, respectively. Tillage practices can be categorized as conventional till, reduced till, mulch till, and no till. The percentage of each tillage practice for corn, soybeans, and small grains by county are generated by the Illinois Department of Agriculture (IDA) from county transect surveys.[23] Data specific to the Little Wabash River/Green Creek watershed were not available; however, data for Shelby, Effingham, Coles, and Cumberland County practices were available and are shown, respectively, in **Table 5-5** through **Table 5-8**.

Table 5-5 Tillage Practices in Shelby County

Tillage System	Corn		Soybean		Small Grain	
	2015	2018	2015	2018	2015	2018
Conventional	83.5%	64.7%	7.7%	7.3%	100.0%	100.0%
Reduced Till	16.5%	34.8%	57.6%	48.7%	0.0%	0.0%
Mulch Till	0.0%	0.5%	21.6%	38.6%	0.0%	0.0%
No Till	0.0%	0.0%	13.1%	5.4%	0.0%	0.0%

Table 5-6 Tillage Practices in Effingham County

Tillage System	Corn		Soybean		Small Grain	
	2015	2018	2015	2018	2015	2018
Conventional	94.0%	94.6%	29.5%	29.4%	0.0%	33.3%
Reduced Till	2.8%	3.1%	27.5%	31.6%	0.0%	0.0%
Mulch Till	3.2%	1.3%	27.5%	20.6%	27.3%	26.7%
No Till	0.0%	0.9%	15.6%	18.4%	72.7%	40.0%

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

Table 5-7 Tillage Practices in Coles County

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

Table 5-8 Tillage Practices in Cumberland County

Tillage System	Corn		Soybean		Small Grain	
	2015	2018	2015	2018	2015	2018
Conventional	91.0%	89.1%	17.4%	28.8%	0.0%	28.6%
Reduced Till	4.0%	3.9%	38.3%	30.4%	75.0%	57.1%
Mulch Till	2.0%	1.2%	35.4%	24.8%	25.0%	0.0%
No Till	3.0%	5.8%	9.0%	16.0%	0.0%	14.3%

According to the County Transect Survey Summary Report,[24] fields planted conventionally leave less than 15 percent of the soil surfaced covered with crop residue after planting, while mulch till leaves at least 30 percent of the residue from the previous crop on the soil surface after being tilled and planted. Crop residue from reduced till practices falls between conventional and mulch (greater than 15 percent but less than 30 percent), and no till practices leave the soil virtually undisturbed from harvest through planting. Residue is important because it shields the ground from the eroding effects of rain and helps retain moisture for crops. Reducing agricultural erosion can reduce the amount of oxygen-demanding materials that enter area waterways. Data indicate a transition toward reduced and mulch tilling in Coles County over the past 5 years with the reductions in conventional till practices.

Information on field tiling practices was also sought, as field drains can influence the timing and amount of water delivered to area streams and reservoirs, and deliver dissolved nutrients from fields to receiving waters, which can have an effect on oxygen levels in streams and lakes. Local NRCS offices reported, however, that tile drainage is very rare within the watershed.[25]

5.4.2 Animal Operations

Information on commercial animal operations is available from the NASS. Knowing the number of animal units in a watershed is useful in TMDL development as grazing animals have the potential to increase erosion and contribute nutrients through manure. Increased nutrients in streams and lakes can lead to increased plant growth which consumes oxygen from the water column. Data specific to the Little Wabash River/Green Creek watershed were not available; however, the

[24] IDA. 2018. Illinois Soil Conservation Transect Survey Reports. https://agr.illinois.gov/content/dam/soi/en/web/agr/resources/landwater/documents/2018-transect-survey-summary-report.pdf

[25] Klingler, L. 2019, November 14. Cumberland County NRCS District Conservationist. Email correspondence.

Shelby, Effingham, Coles, and Cumberland County animal populations were reviewed and are presented, respectively, in **Table 5-9** through **Table 5-12**.[26,27]

Table 5-9 Animal Population in Shelby County

Livestock Type	2012	2017	Percent Change
Cattle and Calves	16,882	21,335	26.4%
Beef	4,350	5,741	32.0%
Dairy	1,670	889	-46.8%
Hogs and Pigs	74,412	127,723	71.6%
Poultry	36	49	36.1%
Sheep and Lambs	544	519	-4.6%
Horses and Ponies	417	341	-18.2%

Table 5-10 Animal Population in Effingham County

Livestock Type	2012	2017	Percent Change
Cattle and Calves	35,491	26,737	-24.7%
Beef	4,395	4,836	10.0%
Dairy	4,363	3,925	-10.0%
Hogs and Pigs	159,036	177,645	11.7%
Poultry	83	79	-4.8%
Sheep and Lambs	1,205	977	18.9%
Horses and Ponies	1,138	770	-32.3%

Table 5-11 Animal Population in Coles County

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

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

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

[27] NASS. 2014. 2012 Census of Agriculture, Illinois State and County Data. https://agcensus.library.cornell.edu/census_parts/2012-illinois/

Table 5-12 Animal Population in Cumberland County

Livestock Type	2012	2017	Percent Change
Cattle and Calves	13,268	9,344	-29.6%
Beef	1,533	1,462	-4.6%
Dairy	2,720	1,794	-34.0%
Hogs and Pigs	23,627	71,697	203.5%
Poultry	30	29	-3.3%
Sheep and Lambs	180	179	-0.6%
Horses and Ponies	286	222	-22.4%

Communications with local SWCD officials have provided more watershed-specific details. In Coles County, which encompasses the uppermost portion of the Little Wabash River/Green Creek watershed and Lake Paradise, SWCD officials stated that there are a few livestock operations. Additionally, there are often large flocks of waterfowl using the lake.[28]

Based on information available from NASS, as outlined in **Table 5-9** through **Table 5-12**, Shelby County, in which most of the watershed lies, also has a fair amount of livestock and is likely representative of the remainder of the watershed.

5.4.3 Septic Systems

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

Across the United States, septic systems have been found to be a significant source of phosphorous pollution and failing or leaking septic systems contribute to fecal coliform pollution, both of which can contribute to low DO. Animal waste, urban runoff, and permitted point sources can also contribute as discussed above.

Effingham County and Cumberland County Health Officials have stated that most homes outside of city limits are on private septic systems within both counties, which is most likely the case in Shelby County and Coles County, as well.[29,30]

Officials from the Coles County Health Department stated that a previously unpublished small-scale watershed plan that was developed for the Lake Paradise watershed identified improperly installed and improperly maintained septic systems as being a large issue in the watershed[7].

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

[29] Bishop, J. 2019, November 19. Cumberland County Health Department, Director of Environmental Health. Email correspondence.

[30] Deters, C. 2019, November 12. Effingham County Health Department, Environmental Health Coordinator. Email correspondence,

5.5 Watershed Studies and Other Watershed Information

2008 – TMDLs were developed for the Little Wabash River 8-digit hydrologic unit watershed, which includes the 10-digit hydrologic unit Little Wabash River/Green Creek watershed discussed in this report. TMDLs were developed for Little Wabash River (IL_C-21) and Lake Paradise (IL_RCG), both of which are also addressed in this report. Little Wabash River was listed for manganese and fecal coliform. Lake Paradise was listed for phosphorus and pH.[31] The current impairment being addressed in Lake Paradise is for DO, an impairment that is also related to nutrient loading issues previously addressed by the 2008 phosphorus TMDL. The relationship between these parameters is assessed in Stage 3 (Sections 7 through 9 of this report).

[31] Illinois EPA. 2008.

Section 6

Approach to Developing Total Maximum Daily Loads and Identifying Data Needs

The range of analyses used for developing TMDLs varies from simple to complex. Examples of a simple approach include mass-balance calculations, load duration curves, and simple watershed and receiving water models. Detailed approaches incorporate the use of complex watershed and receiving water models. Simplistic approaches typically require less data than detailed approaches. Establishing a link between pollutant loads and resulting water quality is one of the most important steps in developing a TMDL. This section recommends approaches for establishing these links for the constituent of concern in the Little Wabash River/Green Creek watershed.

6.1 Additional Data Needs for Total Maximum Daily Load Development

Table 6-1 contains summary information regarding data availability for the segments to be addressed in the report for the Little Wabash River/Green Creek watershed.

Table 6-1 Data Availability and Data Needs for Total Maximum Daily Load Development in the Little Wabash River/Green Creek Watershed

Impaired Waterbody	Impairment	Period of Record	Data Points for Impairment Assessment	Additional Data Recommendations	Additional Notes
Little Wabash River (IL_C-21)	DO	1999–2017	265	Continued future monitoring	Removed from 2020/2022 303(d) list
Little Wabash River (IL_C-24)	DO	2007–2012	6	Additional data collection recommended	
Lake Paradise (IL_RCG)	DO	2000–2001	96	Additional data collection recommended	

Little Wabash River (IL_C-21) has been removed from the 2020/2022 303(d) list and TMDL development did not continue beyond Stage 1 (Sections 1 through 6 of this report). The available dataset to assess impairment of DO in the Little Wabash River (IL_C-24) is limited and additional, more recent data collection is recommended as part of the implementation plan to assess current conditions and support more robust analysis during and following implementation of BMPs. Additional data suggestions for future monitoring would include a synoptic (snapshot in time) water quality survey of the reach. The surveys should include measurements of flow, hydraulics, DO, temperature, nutrients, carbonaceous biochemical oxygen demand (CBOD), and sediment oxygen demand (SOD). The collected data could be used to support further model development

and parameterization and would lend significant confidence to additional water quality improvement efforts for the impaired segment.

The available dataset for Lake Paradise includes a sufficient number of data points for TMDL development, but the available DO data is approximately 20 years old and may not accurately reflect the current conditions in this reservoir. Additional future data collection is recommended and would ideally include DO and temperature depth profiling as well as nutrients and chlorophyll sampling at each of the primary sampling stations in the reservoir. A TMDL was previously completed for this reservoir for TP and pH impairments that are often interrelated to DO conditions in a waterbody, and more recent data are available for TP (see discussion in Section 5). These data have been used to support the DO assessment (Section 7 and 8). Additional data collection for oxygen-demanding materials (BOD, CBOD, SOD) within the lake and in tributaries to the lake would also be useful when considering implementation of BMPs to determine if the cause of low DO in this lake is largely a product of excess biological productivity (eutrophication) or oxygen demanding material loads.

6.2 Approaches for Developing Total Maximum Daily Loads

6.2.1 Recommended Approach for Stream Dissolved Oxygen Total Maximum Daily Load

The recommended approach for TMDL development for DO impairments in streams is the development and parameterization of the QUAL2K model. QUAL2K[32] is an updated spreadsheet-based version of the well-known, EPA-supported QUAL2E model. The QUAL2K model simulates DO dynamics as a function of nitrogenous and CBOD, atmospheric reaeration, sediment oxygen demand (SOD), and phytoplankton photosynthesis and respiration. The model also simulates the fate and transport of nutrients and biological oxygen demand (BOD) and the presence and abundance of phytoplankton (as chlorophyll-a). Stream hydrodynamics and temperature are important controlling parameters in the model. The model is suited to steady-state simulations.

As discussed in Section 6.1, limited data exist to support model development for Little Wabash River segment IL_C-24. Specific data requirements for developing a QUAL2K model include a synoptic (snapshot in time) water quality survey of the reach to include measurements of flow, hydraulics, DO, temperature, nutrients, SOD, and CBOD. Model defaults and best professional estimates can be used in lieu of additional data; however, newly collected data would best support model development and parameterization, and provide significant confidence in the TMDL conclusions.

6.2.2 Recommended Approach for Dissolved Oxygen Total Maximum Daily Load in Impaired Lake

Lake Paradise is listed for impairment caused by low DO. Given that this reservoir was previously listed as impaired for phosphorus, the lake is likely highly eutrophic and DO impairment is being driven largely by nutrient loading leading to excess algae growth. As such, the DO impairment is best addressed by understanding nutrient and biological productivity dynamics in the reservoir. For this process, developing an updated BATHTUB or using CDM Smith's Simplified Lake Analysis Model (SLAM) model is recommended for TMDL development. SLAM was originally developed as

[32] QUAL2K homepage. http://www.qual2k.com/

an enhanced version of EPA's BATHTUB model[33] and calculates lake mass and flow balances on a daily time step. The model targets the key parameters important for eutrophic lakes, including phytoplankton (as chl-a), phosphorus (P), and nitrogen (N).

[33] Walker, W.W. 1996. *Simplified Procedures for Eutrophication Assessment and Prediction: User Manual*. https://wwwalker.net/bathtub/

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Section 7

Methodology for Load Reduction Calculations for the Little Wabash River/Green Creek Watershed

7.1 Methodology Overview

Table 7-1 contains information on the methodologies selected and used to develop load reduction goals for impaired segments within the Little Wabash River/Green Creek watershed.

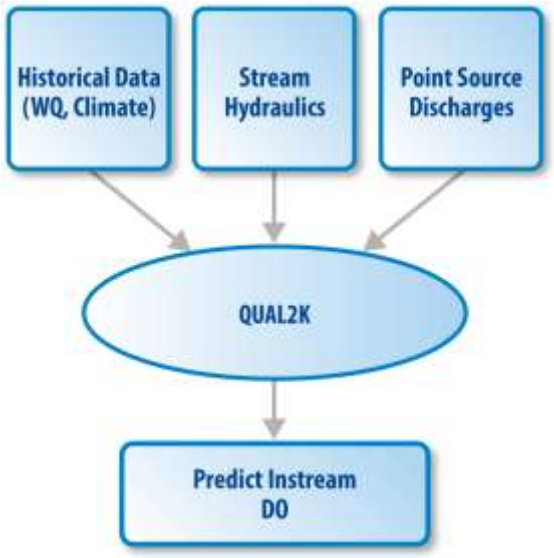
Table 7-1 Methodologies Used to Develop Calculated Reduction Goals in the Little Wabash River/Green Creek Watershed

Segment ID	Segment Name	Cause of Impairment	Methodology
IL_C-21	Little Wabash River	DO	Delisted in 2020/2022 Integrated Report – no TMDL
IL_C-24	Little Wabash River	DO	QUAL2K
IL_RCG	Lake Paradise	DO	Lake Water Quality Model

Since Stage 1 completion, the 2020/2022 Illinois Integrated Water Quality Report and 303(d) List was approved.[34] Little Wabash River (IL_C-21) is no longer on the 303(d) list for impairment caused by DO. No additional stages of TMDL development were completed for this segment based on the updated status.

7.1.1 QUAL2K Overview

The QUAL2K model was used to develop TMDLs for oxygen-demanding materials in the impaired stream segment. The model was ultimately used to calculate reductions in oxygen-demanding materials, algal respiration, and/or SOD needed for the impaired stream segment to meet DO standards. QUAL2K is a one-dimensional stream water quality model applicable to well-mixed streams. The model assumes steady-state hydraulics and allows for point source inputs, diffuse loading, and tributary flows. In general, QUAL2K incorporates historical water quality data, observed hydraulic information, and point source discharge data, along with model kinetic rates and constants, to predict the resulting instream DO concentrations.



[34] Illinois EPA. 2022a.

7.1.2 Simplified Lake Analysis Model Overview

Following the same reasoning as outlined in the previous subsections for the Little Wabash River, Lake Paradise DO impairment is likely caused by an over-enrichment of nutrients (eutrophication) in the lake, resulting in excessive lake algae respiration. A TMDL for TP was implemented in 2008, however, TP concentrations in Lake Paradise still frequently measure above the numeric standard of 0.05 mg/L. Therefore, it is recommended that the lake TMDL focus on the assumed primary driver of impairment: watershed phosphorus loadings. If phosphorus loads are reduced, DO in the lake will improve. This TMDL uses recent data for TP, which was not available in 2008.

SLAM was used to develop the TMDL for TP in Lake Paradise. SLAM was originally developed as an enhanced version of EPA's BATHTUB modeling platform,[35] but SLAM provides more explicit modeling of lake/sediment interactions than is available in BATHTUB. It has streamlined functionality and data requirements, making it easy to use, while still providing for a robust simulation of small lake nutrient and phytoplankton dynamics.

Historically, the BATHTUB model has been a popular option for simplified assessments of nutrient (TP, ammonia) and nutrient-related (chlorophyll a, pH, DO) impairments in lakes. However, the BATHTUB model may not be the most efficient approach to developing this type of TMDL as it does not provide explicit modeling of the major lake and sediment interactions that are important drivers of nutrient issues such as those in Lake Paradise. The BATHTUB model also relies on a dated platform that is less user friendly than other options and is primarily set up to model nutrient fate and transport on an annual basis. While annual time-step models have their place, they can often miss important seasonal dynamics that drive lake water quality.

As an alternative to BATHTUB, CDM Smith's SLAM software was used to develop the TMDL for the impairment in Lake Paradise. SLAM calculates lake mass and flow balances on a daily time step, assuming one or more well-mixed lake zones. Each zone follows the conceptual model often referred to as a "continuously stirred tank reactor," whereby complete and immediate mixing is assumed for each zone in both the vertical and horizontal directions. This assumption makes the model well suited for Lake Paradise, which is generally well mixed and can justifiably be divided into a limited number of small zones.

SLAM also includes a state-of-the-art dynamic sediment nutrient flux module. This module calculates internal nutrient loads from the sediments to the water column as a function of shallow sediment nutrient dynamics and diffusive exchanges between sediment pore water and the overlying water column. Internal nutrient loads are a key component of many eutrophic lakes, particularly small and/or shallow lakes with large catchment areas, as is the case with Lake Paradise.

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[35] Walker. 1996.

7.2 Methodology Development – Little Wabash River QUAL2K Model

QUAL2K is a river and stream water quality model that is intended to represent a modernized version of the QUAL2E model. The original QUAL2E model is well-known and EPA-supported. The modernized version has been updated to use Microsoft Excel as the user interface and has expanded the options for stream segmentation and a number of other model inputs. QUAL2K simulates DO dynamics as a function of nitrogenous and carbonaceous oxygen demand, atmospheric reaeration, SOD, and plant photosynthesis and respiration. The model also simulates the fate and transport of nutrients and BOD, and the growth and abundance of floating (phytoplankton) and attached (periphyton) algae (as chlorophyll-*a*). Stream hydrodynamics and temperature are important controlling parameters in the model. Headwater, point source, and nonpoint source loadings and flows are explicitly input by the user. The model simulates steady-state diurnal cycles. Model parameter default values are provided in the model based on past studies and are recommended in the absence of site-specific information. Along with its capability to aid in DO assessment, QUAL2K can also be used to model nutrients or pH fluctuations within a stream segment.

A QUAL2K model was developed for DO for Little Wabash Creek segment IL_C-24. The minimum DO concentration water quality standard for the observed impairment season (March through July) was used as the endpoint for the TMDL analysis.

A simplified modeling structure was employed because of the lack of available supporting data. A single, 1-mile reach representing the spatial extent of the observed impairment was simulated with the model. The reach extends from the Lake Paradise dam down to the C-24 monitoring site (approximate downstream extent of the C-24 reach). Upstream boundary conditions of the impaired segment were set based on Lake Paradise modeled outflow conditions. The Lake Paradise water quality model is described in Section 7.3. The targeted reach segment was simulated in QUAL2K to assess near-field impacts of carbonaceous SOD and nutrient-periphyton-dissolved oxygen dynamics. This approach was employed for both a baseline model of existing impairment and a TMDL simulation to quantify load reduction requirements. For the baseline model, a single synoptic water quality sampling event (at C-24) was used to guide model parameterization and provide general confirmation of the model's ability to simulate existing conditions in the creek. QUAL2K model files can be found in **Appendix E**.

7.2.1 Little Wabash River QUAL2K Model Inputs

Table 7-2 lists the categories of data required for the QUAL2K model along with the sources of data used to analyze the Little Wabash River reach of interest. Empirical data amassed during Stage 1 of TMDL development (Sections 1 through 6 of this report) were used to build the QUAL2K model along with physical data obtained from GIS. Instream DO measurements were taken on this segment a total of six times in 2007 and 2012. Coincident nutrient, phytoplankton, and temperature data were also collected during this period. This dataset was the primary source of data used to set up and calibrate the QUAL2K model.

Table 7-2 QUAL2K Data Inputs

Input Category	Data Source
Stream segmentation	GIS data, aerial photographs
Hydraulic characteristics	GIS data, Google Earth
Headwater conditions	Lake model output
Reach water quality	Illinois EPA monitoring data (2007, 2012)
Point source contributions	Illinois EPA, EPA's Permit Compliance System and Integrated Compliance Information System

7.2.1.1 Stream Segmentation – Little Wabash River QUAL2K Model

The QUAL2K model represents a river as a series of reaches. Each reach shares constant channel geometry and hydraulic characteristics. The impaired segment of the Little Wabash River (IL_C-24) was simulated as a single reach, focusing on the area of known impairment. **Figure 7-1** shows the location of the simulated stream segment used for the QUAL2K model.

7.2.1.2 Hydraulic Characteristics – Little Wabash River QUAL2K Model

Spot measurements of stream hydraulics are available for a Little Wabash River USGS flow gage located approximately 20 miles downstream of the study reach (near Effingham, IL). These measurements date back to the 1970's and include a range of flow values. These are the only relevant hydraulics data available. For this study, these measurements were used as an approximate guide for parameterizing the modeled hydraulics of the study reach. Channel slope and width were estimated using Google Earth arial photography. The model's Manning roughness coefficient was set based on published landuse-specific values. Modeled reach hydraulics were confirmed by comparing to observations reported for the downstream Effingham site for similar flow conditions.

7.2.1.3 Supporting Water Quality Data – Little Wabash River QUAL2K Model

A small number of DO, nutrient, and temperature measurements, corresponding to the observed impairment season (May 2012), were used to guide model biokinetic parameterization. Spot measurements were taken on May 15 and 30, 2012. On both days, the measured DO concentration was below the 5.0 mg/L instantaneous minimum standard for this time of year.

These observed water quality conditions were replicated, to the extent possible, in the baseline QUAL2K model as described in the subsections that follow.

7.2.1.4 Diffuse Flow – Little Wabash River QUAL2K Model

No diffuse pollutant loads were included in this model of the 1-kilometer impaired reach.

7.2.1.5 Headwater Conditions – Little Wabash River QUAL2K Model

Headwater flow for the modeled reach and simulation month was set using output from the Paradise Lake water quality model (described in Section 7.3) for the approximate baseline simulation timeframe (late May). As described below, lake hydrology was parameterized using an upstream reference flow gage. Headwater temperature, nutrient, DO, and CBOD concentrations were set based on lake monitoring data (RCG-1), roughly coinciding with the simulation period.

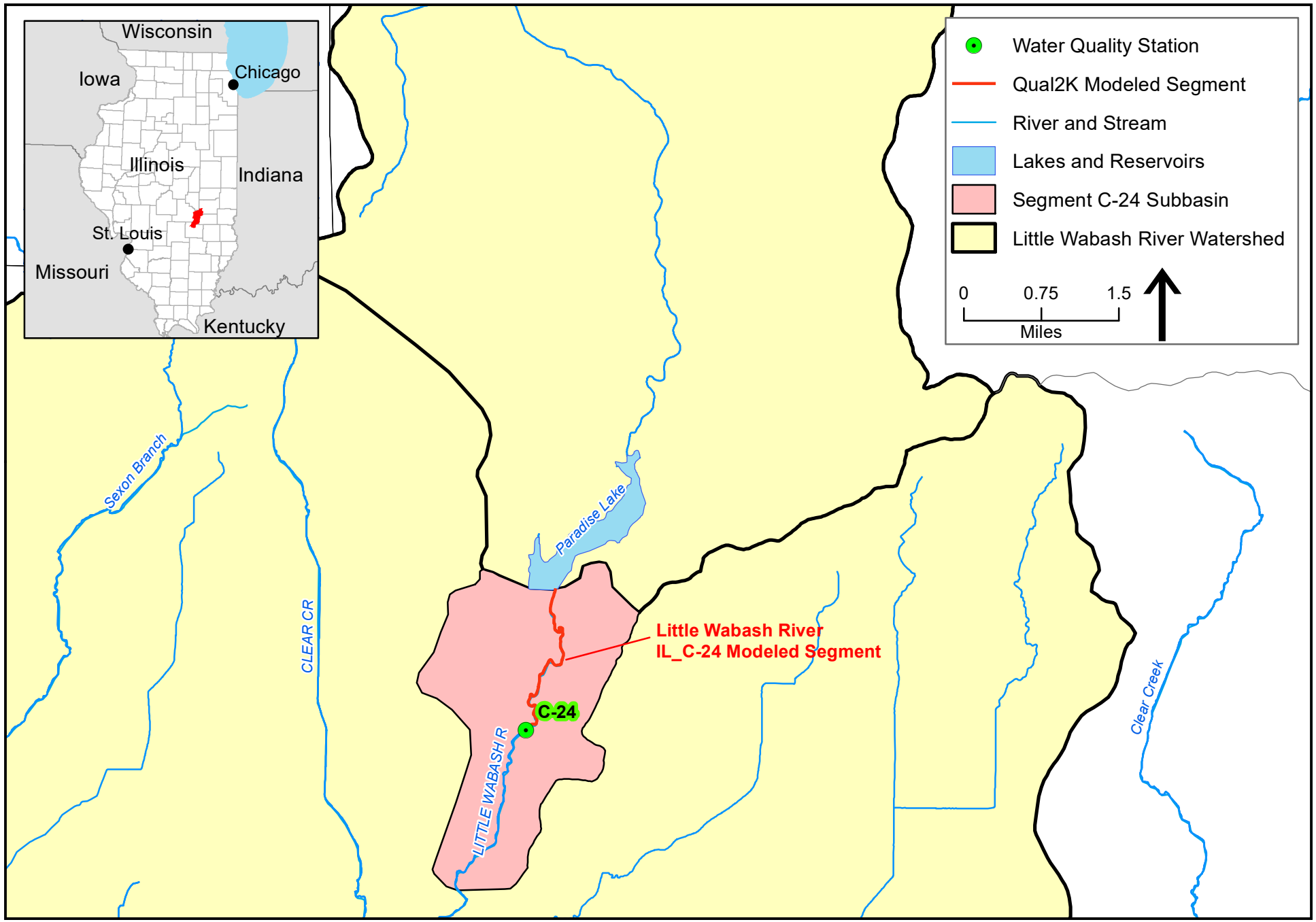

Figure 7-1: Little Wabash River/Green Creek Watershed QUAL2K Model Segmentation

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7.2.1.6 Climate – Little Wabash River QUAL2K Model

Climate inputs do not play a significant role in the modeled condition and therefore were maintained at model default values.

7.2.1.7 Point Sources – Little Wabash River QUAL2K Model

There are no known point source discharges within the study reach. Upstream point source discharges are implicitly represented in the model, as contributors to the specified headwater conditions.

7.2.1.8 Baseline Parameterization and Confirmatory Analysis – Little Wabash River QUAL2K Model

Little Wabash River (segment IL_C-24) drains a watershed dominated by agriculture (refer to **Table 2-1**). A small number of observed data points indicate DO impairment in reach IL_C-24, just downstream of Lake Paradise. The focus of the constructed baseline model was to simulate the observed DO sag in the reach below the lake.

As described above (Section 7.2.1.5), model headwater flow and water quality were set based on modeled lake outflow conditions. Downstream water quality data for a single site (C-24) in the study reach were available during the identified impairment state. Therefore, these data were used to guide model parameterization. The model CBOD oxidation rate constant, spatially variable SOD rates, denitrification rate constant, and periphyton growth parameters (maximum growth and respiration rates) were adjusted to achieve acceptable agreement between modeled and measured nutrient, CBOD, DO, and phytoplankton concentrations. Additionally, the benthic algae growth rate constant was adjusted to generate plausible levels of benthic algae in the model because of lack of site-specific data. Lastly, modeled water temperatures agree well with observed temperatures for the calibration day without the need for parameter adjustment.

Results of the baseline model parameterization and confirmation, with respect to modeled and measured water quality, are summarized in **Table 7-3**.

Table 7-3 QUAL2K Confirmatory Analysis Results: Reach IL_C-24 and Site C-24

Water Quality Variable	Measured	Modeled
reach average flow depth (ft)	0.5 (at Effingham gage, similar flow)	0.7
reach average velocity (ft/s)	0.6 (at Effingham gage, similar flow)	0.8
reach average temperature (°C)	19	19
total nitrogen (mg/L)	1.5	1.5
total phosphorus (mg/L)	0.1	0.1
$CBOD_{ult}$ (mg/L)	9.1	8.9
sediment oxygen demand ($g/m^2/d$)	NA	28
phytoplankton (as chl-a, ug/L)	6	7
periphyton biomass (mg/m)	NA	120

7.3 Methodology Development – Simplified Lake Analysis Model

SLAM relies on the following primary categories of inputs:

- Model segmentation: number of geographically distinct segments of a lake to be modeled, flow direction, and an estimate of longitudinal dispersion between segments
- Lake morphology and hydraulics: surface area, average and maximum depth, volume, inflows, mixing lengths, and thermal stratification
- Watershed inflows: dynamic or steady loads and flows to the lake from the draining watershed
- In-lake nutrients dynamics: initial water column concentrations, particulate P nutrient settling velocities, dissolved nutrient uptake rates, and settled nutrient burial fraction; seasonality factors may be included to account for expected variations in settling velocity and nutrient uptake
- Sediment layer dynamics: sediment characteristics and kinetic rates used for calculating nutrient fluxes

Input parameters specific to the Lake Paradise model are described below. Input and output files for the Lake Paradise SLAM can be found in **Appendix F**.

7.3.1 Lake Paradise Model Construction

A numerical model of Lake Paradise phosphorus dynamics was constructed, using SLAM, to quantify a TMDL for the lake. The constructed model simulates a recent 11-year period (2000 to 2010) with a daily time step. The model was roughly calibrated using site-specific data and subsequently applied to calculate the total load reduction required to achieve the lake's TMDL target. The TMDL target for TP in Lake Paradise is 0.05 mg/L, based on Illinois's published standards. Further details of the constructed model are provided below.

7.3.1.1 Model Segmentation

Lake Paradise was simulated with a single well-mixed zone. Although well-mixed laterally, water quality observations suggest short-term seasonal stratification in the lake. Therefore, seasonal stratification was prescribed in the model, occurring from June through July. An assumed hypolimnion depth of 20 percent of the total lake depth was prescribed for this period based on the limited measured at-depth water quality data available.

7.3.1.2 Lake Hydraulics

Lake hydraulics are defined in SLAM via either internal calculation or user prescription. Data needs for internal calculations of lake hydraulics are somewhat greater as the model performs dynamic water balance calculations of lake volumes at each time step based on user-defined or calculated inflows, outflows, and evaporative losses. Corresponding lake depths, surface areas, and releases are calculated as a function of user-defined bathymetry tables. For the prescribed hydraulics option, users specify monthly variable lake volumes, areas, and depths. Hydraulics are assumed static within a month and lake outflows are set equal to total lake inflows at each time step. Evaporative losses are not explicitly included in the calculations but rather should be implicitly reflected in the prescribed volumes.

Because of data availability and the limited fluctuation of water levels of Lake Paradise in a typical year, the prescribed hydraulics option was used for this analysis, with an assumption of steady lake hydraulics. Prescribed lake hydraulics are summarized in **Table 7-4**.

Table 7-4 Lake Paradise (IL_RCG) Model Hydraulics Data

Segment	Surface Area (acres)	Volume (acre-feet)	Average Depth (feet)
IL_RCG	176	1,173	8.5

7.3.1.3 Watershed Parameters

Watershed loadings to the lake were estimated using measured (albeit limited) data and a surrogate flow gage. Little Wabash River phosphorus data collected from a site just above the lake (RCG-2) during sampling events in spring 2001 were used to quantify lake inflow quality. Based on this small dataset, a steady inflow concentration of 0.12 mg/L was prescribed in the model. Lake inflows were estimated from a regional continuous flow gage (Whitley Creek near Allenville, 05591550) using the area-ratio method to translate these surrogate gage flows into ungaged flow estimates for inflow to the lake. The steady concentration was combined with the daily time series of estimated lake inflows, for the 11-year simulation period, to construct a daily time series of lake P loads for the model.

In addition to watershed inflow loads, direct depositions of P to the lake, both wet (precipitation) and dry (atmospheric), were explicitly included in the model. Literature-based model default values for both a steady dry deposition rate (pounds per acre per day) and rainwater concentration (mg/L) were used in combination with site-specific reported daily precipitation rates for the lake to generate daily direct deposition P loads in the model.

The inclusion of point source phosphorus loads into the SLAM model was not applicable as there are no NPDES permitted discharges with significant associated P loads in the Lake Paradise watershed.

7.3.1.4 Lake Nutrient Parameters

Lake nutrient parameters support the simulation of lake water column nutrient dynamics and include nutrient uptake kinetic and settling rates and lake water quality initial conditions. Uptake kinetics are defined by first order rate constants, applied to dissolved nutrients only. These rate constants represent the transformation of dissolved nutrient into organic particulate fraction via phytoplankton uptake.

Model default nutrient parameter values were adjusted slightly as part of the model calibration exercise described below. All rates were held within reasonable recommended ranges, as supported by literature.

7.3.1.5 Sediment Layer Parameters

SLAM allows for the calculation of dynamic sediment nutrient fluxes, quantifying the movement of phosphorus from the shallow sediments to the water column or vice versa. Key user-input parameters for this calculation include lake shallow sediment physical characteristics and first order adsorption and desorption/mineralization rate constants. These rate constants can vary seasonally according to user-prescribed levels of sediment anoxia. For the Lake Paradise model,

rate constants were adjusted slightly from model default values as part of the calibration exercise described below.

7.3.1.6 Lake Paradise Model Calibration

Historical water quality data for Lake Paradise were used to guide model parameterization and confirm the model's ability to simulate current lake water quality. The historical dataset includes the results of samples collected at varying depths throughout most of the 11-year simulation period.

The primary calibration parameters in this exercise were the water column dissolved P uptake rate constant, the seasonally varying particulate P settling velocity, and the sediment P desorption rate constant. Lake stratification conditions, noted above, were prescribed based on observed temperature vertical profiles in the lake during the sampling periods.

Results of the calibration exercise are shown on **Figure 7-2** through **Figure 7-4**. An adequate match between observed and predicted in-lake phosphorus values was achieved in both the epilimnion and the hypolimnion. The modeled partitioning between particulate and dissolved P in the water column also agrees well with measured data (not shown). Lastly, modeled sediment P flux rates (milligrams per square meter per day) fall well within the expected plausible ranges for eutrophic lakes. These results, considered in total, lend significant support to the predictive ability of the model.

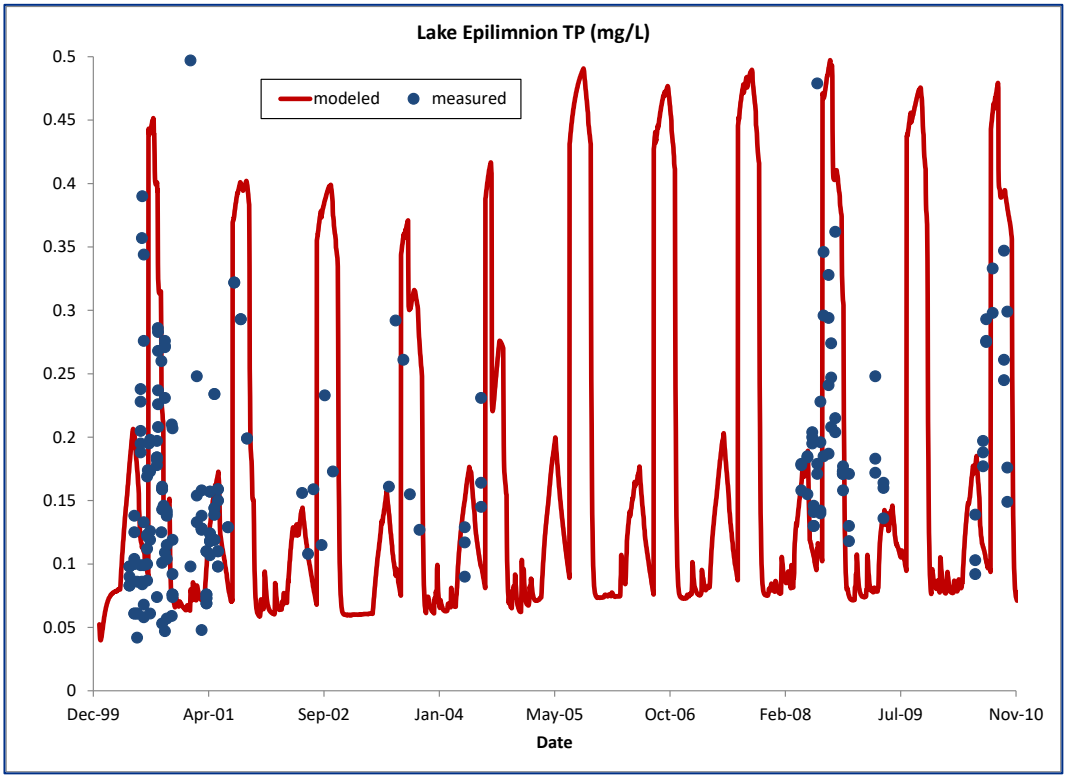

Figure 7-2 Observed and Predicted In-Lake Phosphorus Values in Lake Epilimnion for Lake Paradise

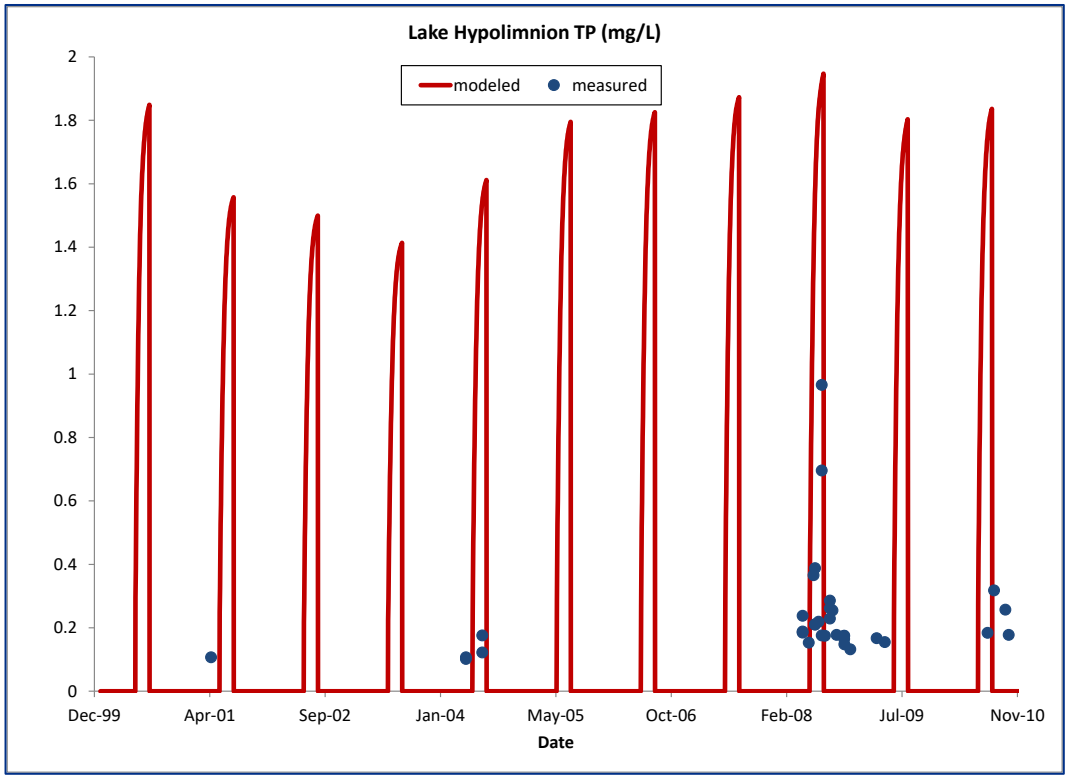

Figure 7-3 Observed and Predicted In-Lake Phosphorus Values in Lake Hypolimnion for Lake Paradise

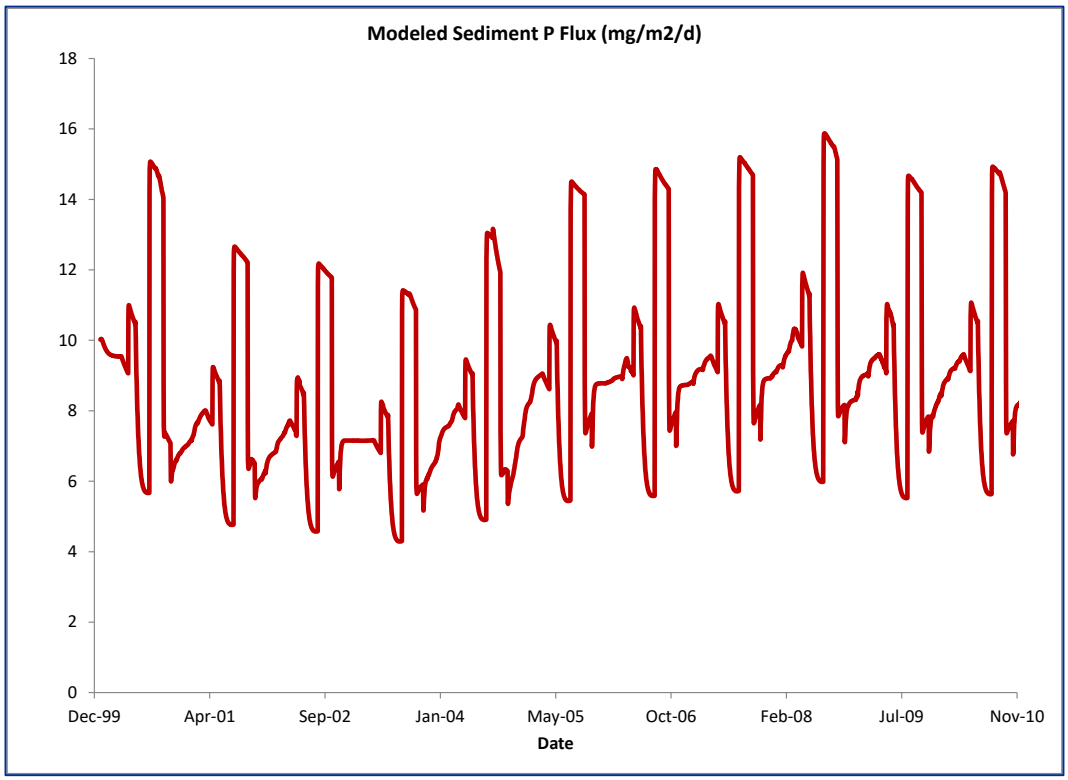

Figure 7-4 Observed Modeled Sediment P Flux Rates for Lake Paradise

Section 8

Total Maximum Daily Load and Load Reduction Calculations for the Little Wabash River/Green Creek Watershed

8.1 Total Maximum Daily Load and Load Reduction Endpoints

The TMDL endpoint and target value for impairments in the Little Wabash River/Green Creek watershed are summarized in **Table 8-1**. Notably, Little Wabash River segment IL_C-21 is no longer listed for impairment caused by low DO on the 2020/2022 303(d) list and therefore TMDL development was not continued beyond Stage 1 (Sections 1 through 6 of this report).

Table 8-1 Total Maximum Daily Load Endpoints for Impaired Constituents in the Little Wabash River/Green Creek Watershed

Segment Name/ID	Potential Cause of Impairment	Designated Uses	Assessment Type	TMDL/Modeling Endpoint or Target Value
Little Wabash River (IL_C-24)	DO	Aquatic Life	TMDL for TP and TN using QUAL2k	DO: 5.0 mg/L minimum (March–July) 3.5 mg/L minimum (August–February) TP: 0.05 mg/L (lake only) 25% reduction target (river segment)
Lake Paradise (IL_RCG)	DO	Aquatic Life	TMDL for TP using SLAM	

8.2 Pollutant Sources and Linkages

Potential pollutant sources for the impaired segments in the Little Wabash River/Green Creek watershed primarily include nonpoint sources of nutrients and upstream controls, as described in Section 5. The sources identified for each parameter of concern, based on data gathered and documented during Stage 1 and calculations completed in Stage 3, are presented in **Table 8-2**.

Table 8-2 Sources of Pollutants in the Little Wabash River/Green Creek Watershed

Segment ID	Segment Name	Cause of Impairment	Sources of Pollutants in the Little Wabash River/Green Creek Watershed
C-24	Little Wabash River	DO	Upstream impoundment, crop production (cropland or dry land), agriculture
RCG	Lake Paradise	DO	Crop production

Sources of nutrients in runoff include agricultural lands, plant and leaf litter, soil particles, pet waste, failing septic systems, and lawn and garden fertilizer. High nutrient concentrations in receiving streams can result in excessive algae growth, typically periphyton in smaller streams

and phytoplankton in larger rivers. Excessive algae growth is known to cause water column DO depletions as the algae respires.

The State of Illinois also identified "upstream impoundment" as a potential cause of low DO in stream segment IL_C-24. Upstream impoundments can reduce streamflows and instream DO concentrations as a result of oxygen-depleted water being discharged to the downstream segment. Stagnant conditions in a stream segment can exacerbate algae growth, which in turn consumes oxygen from the water column. The reservoir upstream may also be a source of elevated nutrient concentrations in the stream segment, especially under certain lake stratification conditions and the potential internal nutrient loading associated with highly eutrophic lakes and reservoirs. Potential management measures for instream improvements associated with streamflows are included in Section 9.

8.3 Total Maximum Daily Load Allocation

As explained in Section 1, the TMDLs for impaired segments in the Little Wabash River watershed will address the following equation:

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

where:

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

Each of these elements will be discussed in this section. Seasonal variation is also considered in the TMDL calculation.

8.3.1 Dissolved Oxygen in Little Wabash River

Little Wabash River, in the IL_C-24 reach just below Lake Paradise, is currently listed for impairment caused by low DO. As discussed in Section 7, a QUAL2K water quality model was developed for this impaired segment using the limited data available. The primary cause of DO impairment in the listed reach appears to be nutrient runoff from agriculture and consequent trophic imbalance (excessive plant and algae growth).

The QUAL2K model was developed to determine nutrient load reductions needed to meet water quality standards. The instantaneous minimum DO standard was used as the endpoint for the TMDL analysis. The seasonal standard associated with the observed impairment period (March through July) was used. The targeted contaminants of concern were total nitrogen and total phosphorus.

8.3.1.1 Loading Capacity

LC for a DO impairment is the maximum mass of contaminant, directly or indirectly causing DO depletions, that a given water body can receive and still maintain compliance with water quality standards. In this case, the contaminants of concern are nonpoint runoff nutrients (total nitrogen and total phosphorus). The allowable loads of nutrients that can be generated in the Little Wabash River watershed and still maintain water quality standards were analyzed using the calibrated model described in Section 7. Modeling analysis revealed that the DO standard could be achieved in segment IL_C-24 of the Little Wabash River with substantial reductions in watershed nutrient loads.

The analyses indicate that, given the best available data and constructed model, low DO levels in this stream are driven primarily by excessive algae (likely periphyton) growth (coupled with moderately high sediment oxygen demand, SOD). It is known that excessive algae growth in streams is a direct result of high nutrient levels, typical of agricultural watersheds.

To satisfy the requirements of the TMDL analysis, incremental reductions were made to the modeled nonpoint source nutrient loads until the relevant water quality standard was achieved. Total nitrogen and total phosphorus loads were reduced uniformly. With each modeled nutrient load reduction, reduced periphyton levels were calculated by the model. Reduced periphyton concentrations resulted in decreased diurnal swings in DO in the reach of interest, increasing the simulated DO minimum. **Table 8-3** summarizes the results.

Table 8-3 Loading Capacity for nutrients in Little Wabash River (IL_C-24)

Contributing Contaminant	Baseline Load	Loading Capacity
total nitrogen (lbs/day)	68	10 (-85%)
total phosphorus (lbs/day)	5.1	0.76 (-85%)

8.3.1.2 Seasonal Variation

Seasonality is addressed through the targeted calculation of TMDLs using model inputs that represent the time of year when DO is at the lowest instream concentrations. This is the critical condition that represents the worst-case scenario and is therefore the most conservative way to calculate these TMDLs.

8.3.1.3 Waste Load Allocation

There are no NPDES permitted dischargers in the study reach; nor were any explicitly included in the water quality modeling.

8.3.1.4 Margin of Safety

The MOS can be implicit (incorporated into the TMDL analysis through conservative assumptions), explicit (expressed in the TMDL as a portion of the loadings), or a combination of both. Various conservative inputs and assumptions were included in the modeling effort that provide some implicit MOS. In addition, an explicit MOS for the DO TMDL of 10 percent was included to account for the limited site-specific data available within the watershed.

8.3.1.5 Reserve Capacity

No RC was included in the TMDL. Significant future population growth is not anticipated in the area.

8.3.1.6 Load Allocation and Total Maximum Daily Load Summary

Table 8-4 shows a summary of the DO TMDL for the Little Wabash River. The allowable loads of oxygen-demanding material that can be generated in Beach Creek and still maintain water quality standards were analyzed using the calibrated models described in Section 7. Modeling analysis revealed that, for the modeled reach, the DO standard could be achieved with substantial reductions in nonpoint source nutrient loads.

Table 8-4 DO Total Maximum Daily Load for Little Wabash River (IL_C-24)

Contributing Contaminant	LC	WLA	LA	MOS (10% of LC)	RC
total nitrogen (lbs/day)	10	0	9	1	0
total phosphorus (lbs/day)	0.76	0	0.68	0.08	0

8.3.2 Total Phosphorus/Dissolved Oxygen Total Maximum Daily Load for Lake Paradise

8.3.2.1 Loading Capacity

The LC of Lake Paradise is the number of pounds of TP that can be allowed as input to the lake per day and still meet the water quality standard. The water quality standard for TP is 0.05 mg/L, to be met at all times. The allowable loads of TP that can be generated in the watershed and still maintain water quality standards were determined with the SLAM model that was developed, as discussed in Section 7. To calculate the LC, the current watershed TP loads into the lake, as quantified by the calibrated model of current conditions, were iteratively reduced until the water quality standard was met.

8.3.2.2 Seasonal Variation

A season is represented by changes in weather; for example, a season can be classified as warm or cold as well as wet or dry. Seasonal variation is accounted for in the TP TMDLs by developing the model and performing all calculations of load on an annual basis. Modeling on an annual basis takes into account the seasonal effects each lake will undergo during a given year. Since the pollutant source can be expected to contribute loadings in different quantities during different time periods (e.g. various agricultural processes occurring at different times of year, combined with seasonal changes in precipitation, result in different runoff characteristics at different times of year), the loadings for this TMDL are focused on average annual loadings converted to daily loads, rather than specifying different loadings by season. As modeled, Lake Paradise will experience critical conditions pertaining to phosphorus concentrations every year, primarily during fall destratification (i.e., turnover). Because a continuous daily simulation for an extended multiyear period was performed to calculate the Lake Paradise TMDL, the critical condition for the lake is accounted for within the analysis.

8.3.2.3 Waste Load Allocation

There are currently no NPDES permitted facilities in the Lake Paradise watershed with known significant P discharges; therefore, WLAs were not included in the TMDL calculation for this watershed.

8.3.2.4 Margin of Safety

The MOS can be implicit (incorporated into the TMDL analysis through conservative assumptions), explicit (expressed in the TMDL as a portion of the loadings), or a combination of both. The MOS for the Lake Paradise TMDL is explicit. An explicit MOS of 10 percent was included to account for the lack of site-specific data available within this watershed.

8.3.2.5 Reserve Capacity

A portion of a TMDL's LC may be set as an RC to allow for future population growth and development potentially leading to increased pollutant loads in the future. In the case of the TMDL for TP, an explicit RC was not included in the TMDL calculations because of the lack of projected population growth in the area.

8.3.2.6 Load Allocation and Total Maximum Daily Load Summary

The TP TMDL developed for Lake Paradise is provided in **Table 8-5**. A total reduction of approximately **92 percent** of existing watershed TP loads will result in compliance with the 0.05 mg/L TP water quality standard, throughout the year and with the requisite MOS, in Lake Paradise. As modeled, this reduction in watershed (external) loads will result in a similar, coupled reduction in lake internal loads of approximately 90 percent. Internal loads will naturally decrease as external loads are decreased and sediment P replenishment is reduced.

Table 8-5 Total Maximum Daily Load Summary for Total Phosphorus in Lake Paradise

	LC (lb/day)	LA (lb/day)	MOS (lb/day, 10% of LC)	Current Load (lb/day)	Reduction Needed
Internal	1.3	1.3	NA	12.5	90%[1]
External	1.2	1.1	0.12	13.6	92%

Note:

[1] Internal loads will be naturally reduced as a consequence of targeted external load reductions.

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Section 9

Watershed-Based Implementation Plan for the Little Wabash River/Green Creek Watershed

9.1 Implementation Overview

The goal of this watershed plan is to identify BMPs to be implemented in the Little Wabash River/Green Creek Watershed. The BMPs will provide reasonable assurance that impaired waters in the watershed will meet water quality criteria developed to ensure waterbodies are able to support designated uses.

EPA has identified nine minimum elements that a watershed plan for impaired waters is expected to include. The nine elements are defined in **Table 9-1**. Additional information is included about where each element can be found throughout this TMDL report.

Table 9-1 EPA's Nine Elements of a Watershed Plan for Impaired Waters

Element	Element Description	Report Section
1	Identify causes and sources of pollution that will need to be controlled to achieve pollutant load reduction requirements estimated within the watershed plan.	Sections 5 and 8
2	Estimate pollutant load reductions expected as a result of implementation of management measures described in element 3.	Sections 8 and 9
3	Describe the nonpoint source BMPs that will need to be implemented to achieve load reductions estimates and identify the critical areas where measures need to be implemented.	Section 9.3
4	Estimate the level of technical assistance, associated costs, potential funding sources and parties that will be relied upon to implement the prescribed measures.	Section 9.4
5	Include a public information/education component designed to change social behavior.	Section 9.6
6	Develop an implementation schedule for the plan.	Section 9.7
7	Develop a description of interim, measurable milestones.	Section 9.7
8	Identify indicators that can be used to determine whether pollutant loading reductions are being achieved over time.	Section 9.8
9	Develop a monitoring component to evaluate the effectiveness of the implementation efforts over time.	Section 9.8

9.2 Adaptive Management

Watershed planning is an iterative and adaptive process that requires continuous monitoring and evaluation of success criteria to help improve results as lessons are learned throughout implementation. This adaptive management approach for the implementation of management practices is designed to meet the TMDLs developed for the Little Wabash River/Green Creek watershed. Adaptive management conforms to the EPA guidelines outlined in **Table 9-1** as it is a systematic process for continually improving management policies and practices through

learning from the outcomes of operational programs. Some defining characteristics of an adaptive management approach include:

- Acknowledgement of uncertainty about what policy or practice is "best" for the particular management issue
- Thoughtful selection of the policies or practices to be applied (the assessment and design stages of the cycle)
- Careful implementation of a plan of action designed to reveal the critical knowledge that is currently lacking
- Monitoring of key response indicators
- Analysis of the management outcomes in consideration of the original objectives and incorporation of the results into future decisions

Implementation actions, management measures, available assistance programs, and continued monitoring are discussed throughout the remainder of Section 9 to support the development of an adaptive management program. Point source BMPs are generally required actions that are typically already being implemented, although some modifications may be appropriate. Nonpoint source BMPs are voluntary based on landowner preferences.

9.3 Best Management Practices

Implementation actions, point source controls, management measures, and/or BMPs are used to control the generation or distribution of pollutants within a watershed. BMPs are either structural, such as wetlands, sediment basins, fencing, or filter strips; or managerial, such as conservation tillage practices, nutrient management plans (NMP), or crop rotation. Both structural and managerial BMPs require effective management to be successful in reducing pollutant loading to water resources.[36]

It is typically most effective to install a combination of point source controls and BMPs or a BMP system. A BMP system is a combination of two or more individual BMPs that are used to control pollutants from a single critical source. If the watershed has more than one identified pollutant, but the transport mechanism is the same, then a BMP system that establishes controls for the transport mechanism can be employed.[37]

The following subsections describe BMPs for the reduction of nutrient loads within the DO-impaired segments of the Little Wabash River/Green Creek watershed.

9.3.1 Best Management Practices for Nutrient Reduction

Nutrients are critical to healthy ecosystems at low concentrations; however, over enrichment of phosphorus can result in aquatic ecosystem degradation when nitrogen is also available in sufficient quantities. Nutrient enrichment can result in rapid algal growth as available nutrients

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

[37] Osmond et al. 2015.

and carbon dioxide are consumed. This response can alter pH, decrease DO (which is critical to other aquatic biota), alter the diurnal DO pattern, and even create anoxic conditions. In addition, nutrient enrichment can reduce water clarity and light penetration and is aesthetically displeasing.

Inputs of nitrogen and phosphorus can originate from both point and nonpoint sources. Point sources of nitrogen originate from wastewater treatment while nonpoint sources include commercial fertilizer and animal waste and can also include atmospheric deposition. Most of the phosphorus discharged by point sources is soluble and originates from anthropogenic sources. For example, effluents from municipal sewage treatment plants are often a contributor of phosphorous loads to area waterways. Contributions from failed on-site wastewater treatment (septic) systems can also be a significant source (nonpoint), especially if they are concentrated in a small area. Phosphorus from nonpoint sources is generally insoluble or particulate. Most of this phosphorus is bound tightly to soil particles and enters streams from erosion, although some may come from sources such as tile drainage in the dissolved form. The impact from nonpoint sources is typically intermittent and is most often associated with stormwater runoff. Sedimentation can impact the physical attributes of the stream and act as a transport mechanism for nutrients.

Table 9-2 lists all the stream segments impaired for DO according to the 2020/2022 EPA 303(d) list of impaired waters.

Table 9-2 Little Wabash River/Green Creek Watershed Streams and Lake Impaired for Dissolved Oxygen on Illinois EPA's 303(d) List

Impaired Stream Segment	Segment ID	Data Count
Little Wabash River	IL_C-24	6
Lake Paradise	IL_RCG	96[1]

Note:
[1] Includes data from sampling locations RCG-1, RCG-2, and RCG-3.

Nutrient loads in the Little Wabash River/Green Creek watershed originate primarily from external sources. As presented in previous sections, possible external sources of nutrients include agricultural activity or upstream dams or impoundments. To achieve a reduction of nutrients for the Little Wabash River/Green Creek watershed and address the DO impairments in turn, management measures must primarily address loading through sediment and surface runoff controls.

9.3.1.1 Point Sources of Nutrients

There are currently no NPDES permitted facilities in the impaired sub watersheds with known significant nutrient discharges. The Illinois EPA Permits Section reviews discharge permits for renewal on a 5-year cycle. Any changes to facilities within the subbasins of concern will be evaluated during the permit renewal process and additional monitoring may be included in permits as warranted.

9.3.1.2 Nonpoint Sources of Nutrients

There are many potential nonpoint sources of nutrients within the Little Wabash River/Green Creek watershed. This section presents information on watershed cropping practices and other BMPs that help reduce nutrient loads and improve DO levels in area waterways. Data were

collected through communications with the local NRCS, Illinois SWCDs, and public health departments.

BMPs that treat these nonpoint sources include:

- Nutrient management
- Conservation tillage practices
- Filter strips and riparian buffers
- Farming/soil retention practices
- Wetlands
- Water and sediment control basins (WASCOBs)
- Phosphorus-based lawn fertilizer restrictions
- Shoreline protection
- In-lake management measures

Nutrient Management: Nutrient management programs will result in reduced nutrient loads to impaired segments within the Little Wabash River/Green Creek watershed and help improve DO levels. Crop management of nitrogen and phosphorus originating in the agricultural portions of the watershed can be accomplished through NMPs that focus on increasing the efficiency with which applied nutrients are used by crops, thereby reducing the amount of nutrients available to be transported to surface water and groundwater.

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

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

- Review of aerial photography and soil maps.

- Regular soil testing to determine areas where adequate or excessive fertilization has taken place, monitor where nutrient buildup in soils occurs, and aid in determining fertilization maintenance requirements. Appropriate soils sampling and analysis techniques are described in the Illinois Agronomy Handbook.[38]
- Review of current and/or planned crop rotation practices.
- Establishment of yield goals and associated nutrient application rates which can help minimize the potential for excessive buildup of phosphorus and reallocate phosphorus sources to fields or areas where the greatest agronomic benefits can be produced.
- Development of nutrient budgets with planned application rates, application methods, and timing and form of nutrient application.
- Identification of sensitive areas and restrictions on application when land is snow covered, frozen, or saturated.

Regional differences in phosphorus supplying power are shown on Figure 8-4 of the Illinois Agronomy Handbook.[39] The differences were broadly defined primarily based on variability in parent material, degree of weathering, native vegetation, and natural drainages. For example, soils developed under forest cover appear to have more available subsoil phosphorus than those developed under grass. Soil test values are used to determine when buildup and maintenance of soil phosphorus is needed to supplement soils with low phosphorus supplying power. Specific application amounts should be determined by periodic soil testing. Subsoil levels of phosphorus in the southern Illinois region may be rather high by soil test in some soils, but this is partially offset by conditions that restrict rooting.

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

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[38] University of Illinois Urbana-Champaign. 2021. *Illinois Agronomy Handbook.* http://extension.cropsciences.illinois.edu/handbook/

[39] Fernandez, F.G., and R.G. Hoeft. Under Revision. "Managing Soil pH and Crop Nutrients." Chapter 8 in: *Illinois Agronomy Handbook.* chapter08.pdf (illinois.edu)

Conservation Tillage Practices: Conservation tillage practices reduce nutrient and sediment loads into DO-impaired segments by reducing erosion of soils. **Table 9-3** shows the areas (acres) in the watershed that are under cultivation, along with the percent of the corresponding watershed area which is cultivated. Crop residuals or living vegetation cover on the soil surface protects against soil detachment from water and wind erosion.

Table 9-3 Cultivated Areas for the Little Wabash River/Green Creek Watershed Subbasins

Impaired Stream Segment	Segment ID	Land Cover Area (acres)	Cultivated Area (acres)	Percentage Cultivated
Little Wabash River	IL_C-24	13,704	10,741	78%
Lake Paradise	IL_RCG	12,196	9,514	78%

Conservation tillage practices are no till and reduced till. No till is the practice of limiting soil disturbance to manage the amount, orientation, and distribution of crop and plant residue on the soil surface year around.[40] Reduced till is managing the amount, orientation, and distribution of crop and other plant residue on the soil surface year round while limiting the soil-disturbing activities used to grow and harvest crops in systems where the field surface is tilled prior to planting.[41]

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

As discussed, the reduced till practice consists of managing plant residue on the soil surface while limiting soil-disturbing activities. The practice includes tillage methods commonly referred to as mulch tillage or conservation tillage, where the entire soil surface is disturbed by tillage operations such as chisel plowing, field cultivating, tandem disking, or vertical tillage. It also includes tillage/planting systems with few tillage operations (e.g., ridge till) but which do not meet the criteria for the no till practice as described herein and in Illinois NRCS CPS 329.[42]

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

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

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

[42] NRCS. 2016a.

makes it susceptible to movement by wind or water, and areas where the shredded residue accumulates may interfere with planting of the next crop.

If the no till BMP is selected for use by a landowner, a separate plan should be prepared for each area that will use this practice. Additional guidance and minimum plan elements are discussed in Illinois NRCS CPS 329.[43] If the reduced till BMP is selected for use by a landowner, a separate plan should be prepared for each area that will use this practice. Additional guidance and minimum plan elements are discussed in Illinois NRCS CPS 345.[44]

Conservation tillage practices can remove up to 45 percent of the phosphorus from runoff. The 2018 Illinois Department of Agriculture's Soil Transect Survey estimated that conventional till accounts for 95 percent of corn, 29 percent of soybeans, and 33 percent of small grain tillage practices in Effingham County. Shelby County was estimated to have 65 percent conventional till of corn, 7 percent of soybeans, and 100 percent of small grain. For Coles County, conventional till of corn was estimated at 76 percent, while soybeans and small grain tillage were estimated at 16 and 0 percent, respectively.

To achieve the suggested load reductions, tillage practices already in place should be continued, and practices should be assessed and improved upon for all agricultural areas in the Little Wabash River/Green Creek watershed subbasins.

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

The filter strip vegetation may consist of a single species or a mixture of grasses, legumes, and/or other forbs that are appropriately adapted to the soil and climate, and to the farm chemicals used in the adjacent land. Approved seed listings are provided in the Illinois NRCS CPS 393.[45] Applicable maintenance should be performed, as needed, to ensure the strips continue to function properly, including removal of state-listed noxious weeds, gully repair, removal of excess sediment, and reseeding. Overland flow entering the filter strip should be primarily sheet flow; areas of concentrated flow should be dispersed as part of the maintenance activities so as not to circumvent the filter strip. Harvesting of the filter strip vegetation, where appropriate, will help to encourage dense growth, maintain an upright growth habit, and remove contaminants and unwanted nutrients contained in the plant tissue. Prescribed burning may be used to manage and maintain the filter strip when an approved burn plan has been developed.

The installation of filter strips adjacent to the impaired stream segments, as well as any contributing tributaries, can result in considerable reduction of overland contributions of sediments, suspended solids, and nutrients to an impaired waterbody. Filter strips implemented along impaired streams and their tributaries slow and filter runoff and provide bank stabilization, thereby decreasing erosion and resedimentation; however, they should not be installed on

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[43] NRCS. 2016a.
[44] NRCS. 2016b.
[45] NRCS. 2017a. CPS. Filter Strip. Code 393. https://efotg.sc.egov.usda.gov/api/CPSFile/5609/393_IL_CPS_Filter_Strip_2017

unstable channel banks already eroding due to undercutting of the bank toe. When used in support of a riparian forest buffer, filter strips can also restore or maintain sheet flow.

Illinois NRCS CPS 393 describes filter strip requirements based on land slope; the requirements are designed to achieve a minimum flow through time of 15 to 30 minutes at a one-half inch depth. **Table 9-4** provides a summary of the guidance for filter strip width, or flow length, as a function of slope.[46]

Table 9-4 Filter Strip Flow Lengths Based on Land Slope

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

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

Not all land use types within the buffer areas are candidates for conversion to filter strips. Existing forests and undisturbed grasslands already function as filter strips, and conversion of developed residential or commercial lands is often not feasible. In general, agricultural lands are the land use type most conducive to conversion to buffer strips and will likely provide the greatest benefit to water quality once converted. Therefore, GIS software was used to extract the approximate acreage of agricultural lands surrounding potential tributaries and buffer areas of the impaired stream segments within the Little Wabash River/Green Creek watershed. The calculated overall buffer areas and acreage of agricultural land within the buffer distances for the impaired segments and its tributaries are provided in **Table 9-5**. These data represent an approximation of the maximum acreage of land potentially available for conversion to filter strips. A more detailed assessment of a given property is necessary to determine the exact size and extent of convertible lands likely to provide the greatest benefit to surface water quality following conversion to filter strips.

[46] NRCS. 2017a.

Table 9-5 Average Slopes, Filter Strip Flow Length, Total Buffer Area, and Area of Agricultural Land within Buffers Potentially Suitable for Conversion to Filter Strips within the Little Wabash River/Green Creek Watershed

Impaired Stream Segment	Segment ID	Average Stream Slope	Filter Strip Flow Length (feet)	Total Buffer Area (acres)	Agricultural Land in Buffer (acres)
Little Wabash River	IL_C-24	2%	144	341	192
Lake Paradise	IL_RCG	4%	216	137	26

A total of approximately 218 acres of agricultural land exists within the various buffer distances of the impaired segments where filter strips could potentially be installed. Landowners need to evaluate their land adjacent to impaired lakes and their tributaries to determine the practicality of installing or extending filter strips to achieve effective flow lengths, as described in the NRCS guidance provided in **Table 9-5**. **Figure 9-1** shows the buffered areas and agricultural lands suitable for conversion to filter strips within the watershed.

A separate plan is needed for each area that will use this practice. Additional guidance and minimum plan elements are discussed in Illinois NRCS CPS 393, including site preparation; seed, seeding rates, and mixtures; lime and fertilizer; seedbed preparation and seeding; and operation and maintenance.

Riparian Buffers: Similar to filter strips described above, riparian vegetation buffers enhance infiltration of runoff and subsequent trapping of nonpoint source pollutants such as nutrients. The vegetation also serves to reinforce streambank soils, which helps minimize erosion. The primary difference between filter strips and riparian buffers are the types of vegetation plantings used within the buffer area. Riparian buffers leverage woody vegetation such as trees and shrubs. **Table 9-5** lists the grassland, forest, and agricultural areas within the appropriate buffer zones for each impaired stream segment within the Little Wabash River/Green Creek watershed. There are 478 acres within 234 feet of impaired stream/lake segments. Approximately 218 of these acres are currently classified as agricultural. Landowners need to assess parcels adjacent to the stream channels and maintain or improve existing riparian areas or potentially convert cultivated lands.

Soil Retention: Soil retention practices help reduce nutrient loads into the impaired stream segments by reducing erosion of soils. As discussed, approximately 134,377 acres of the Little Wabash River/Green Creek watershed are under cultivation, which accounts for about 75 percent of the watershed area. Farming practices in the watershed should be assessed to determine methods being used, where they can be improved upon, and what additional practices are appropriate to reduce nutrient loads through soil retention.

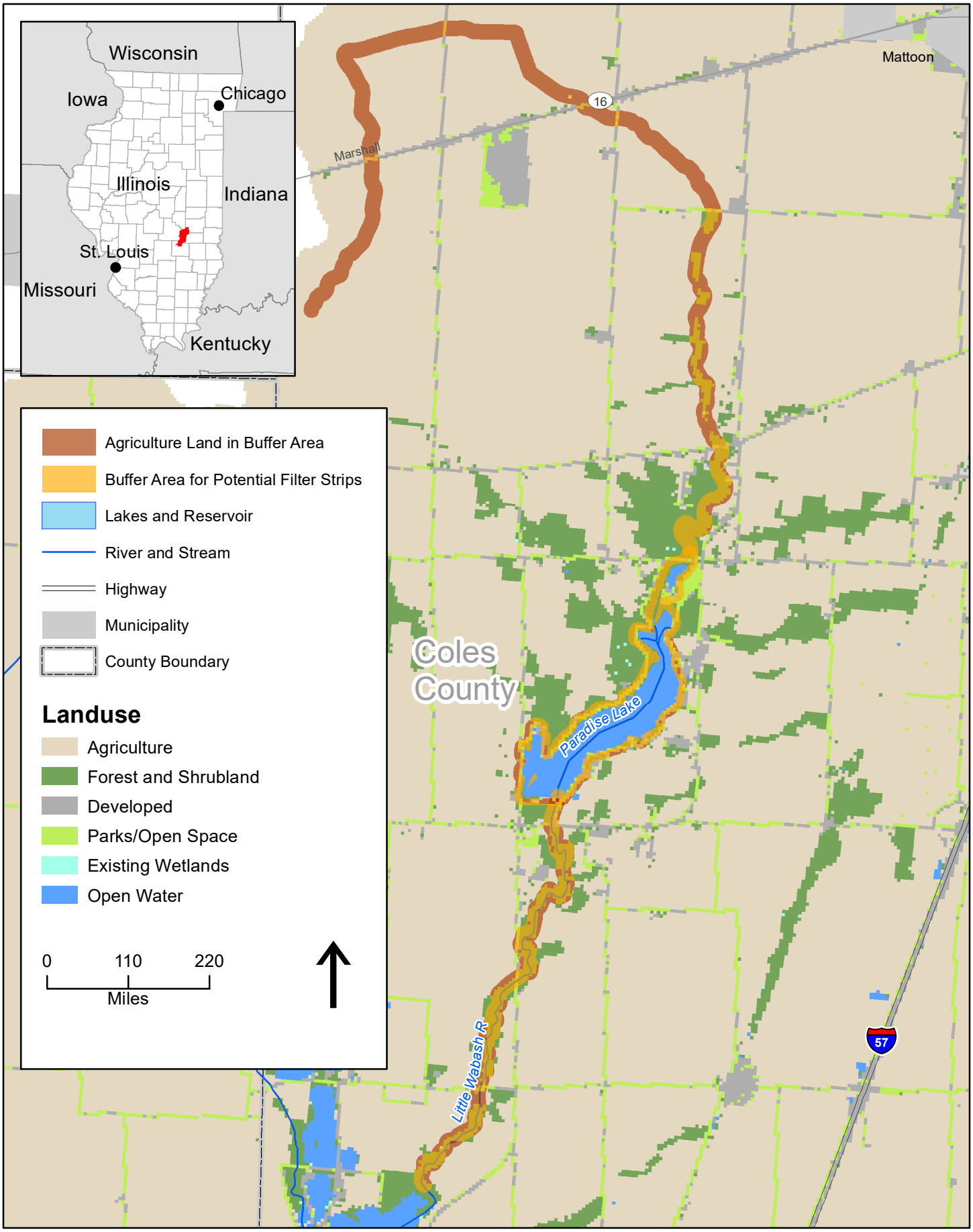

Figure 9-1: Little Wabash River/Green Creek Buffer Areas and Agricultural Lands Potentially Suitable for Conversion to Filter Strips

CDM Smith

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

- Field borders: A minimum 30-foot strip of permanent vegetation such as stiff-stemmed, upright grasses, grass/legumes, forbs, and/or shrubs established at the edge or around the perimeter of a cropland or grazing fields to reduce erosion from wind and water and protect soils and water quality.

- Contour farming: Aligning ridges, furrows, and roughness formed by tillage, planting, and other operations to alter the velocity and/or direction of water flow to or around hillslopes in areas where crops are grown on sloping lands.[47]

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

- Stripcropping: A practice of growing planned rotations of erosion-resistant and erosion-susceptible crops or fallow in a systematic arrangement of approximately equal strips (two or more) across a field. Stripcropping can reduce sheet, rill, and wind erosion, as well as the transport of sediment and other water- and wind-borne contaminants. Stripcropping can be applicable on steeper slopes but is less effective on slopes exceeding 12 percent.[48]

- Cover cropping: A cover crop consists of grasses, legumes, and forbs planted for seasonal vegetative cover that may either be established between successive production crops, or companion-planted or relay-planted into production crops. The cover crop should be established as soon as practical prior to or after harvest of the production crop and terminated as late as practical to maximize plant biomass production and nutrient uptake while allowing time to prepare the field for the next production crop.[49]

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

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

[49] NRCS. 2016c. CPS. Cover Crop. Code 340. https://efotg.sc.egov.usda.gov/api/CPSFile/14651/340_OK_CPS_Cover_Crop_2016

- Terracing: A soil conservation practice that may consist of an earthen embankment, channel, or combination of ridges and channels constructed across high-gradient slopes that can prevent runoff of precipitation from causing serious erosion. Terraces reduce both the volume and velocity of water moving across the soil surface, which reduces peak discharge rates by temporarily storing runoff and allowing associated sediment and other contaminants to settle out behind the terrace ridge rather than directly entering receiving waters.[50]

- Critical area planting: The establishment of permanent vegetation on sites that have or are expected to have high erosion rates, and/or on sites that have physical, chemical, or biological conditions that prevent the establishment of vegetation using normal practices.[51]

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

Wetlands: The use of wetlands as a structural control is applicable to nutrient reduction. To treat loads from agricultural runoff, such as nitrogen and phosphorus, wetlands could potentially be constructed at select locations where more focused runoff from fields occurs (e.g., downstream of a tile drainage system). Wetlands are effective BMPs for nutrients and sediment control because they:

- Prevent floods by temporarily storing water, allowing the water to evaporate or percolate into the ground

- Improve water quality through natural pollution control such as plant nutrient uptake

- Filter sediment

- Slow overland flow of water, thereby reducing soil erosion

A properly designed and functioning wetland can provide very efficient treatment of pollutants such as nutrients. Design of wetland systems is critical to the sustainable functionality of the system and should consider soils in the proposed location, hydraulic retention time, and space requirements. In general, soils classified as hydric are most suitable for wetland construction. Areas near waterways that are not currently classified as wetlands but have hydric soils present are typically strong candidates for potential wetland construction. Existing wetland areas may also be candidates for reconstruction or enhancement to improve their nutrient uptake capacity.

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

[51] NRCS. 2010. CPS. Critical Area Planting. Code 342. NRCS. 2022. Conservation Practice Standard. Critical Area Planting. Code 342. https://efotg.sc.egov.usda.gov/api/CPSFile/35815/342_IL_CPS_Critical_Area_Planting_2022

Figure 9-2 highlights the areas along stream segments within the Little Wabash River/Green Creek watershed that consist of hydric soils or wetlands that would be suitable for conversion or enhancement to help reduce nutrient loads into area waterways. These data layers are developed on a large scale, and on-site soil investigation and wetland delineation is typically necessary for verification of the suitability of a given area for wetland construction.

Constructed wetlands, which comprise the second or third stage of a nonpoint source treatment system, can be very effective at improving water quality. Studies have shown that artificial wetlands designed and constructed specifically to remove pollutants from surface water runoff have removal rates of greater than 90 percent for suspended solids, up to 90 percent for TP, 20 to 80 percent for orthophosphate, and 10 to 75 percent for nitrogen species.[52,53,54,55]

Although the removal rate for nutrients is low in long-term studies, the rate can be improved if sheet flow is maintained to the wetland, and vegetation and substrate are monitored to ensure the wetland is operating optimally. Sediment or vegetation removal may be necessary if the wetland removal efficiency is lessened over time.[56] Guidelines for wetland design suggest a wetland to watershed ratio of 0.6 percent for nutrient and sediment removal from agricultural runoff.

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

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

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

[53] Moore, J.A., and D. Smith. 2006. *Understanding Natural Wetlands*. Oregon State University Extension Service. EC1407, June.

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

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

[56] EPA. 2003.

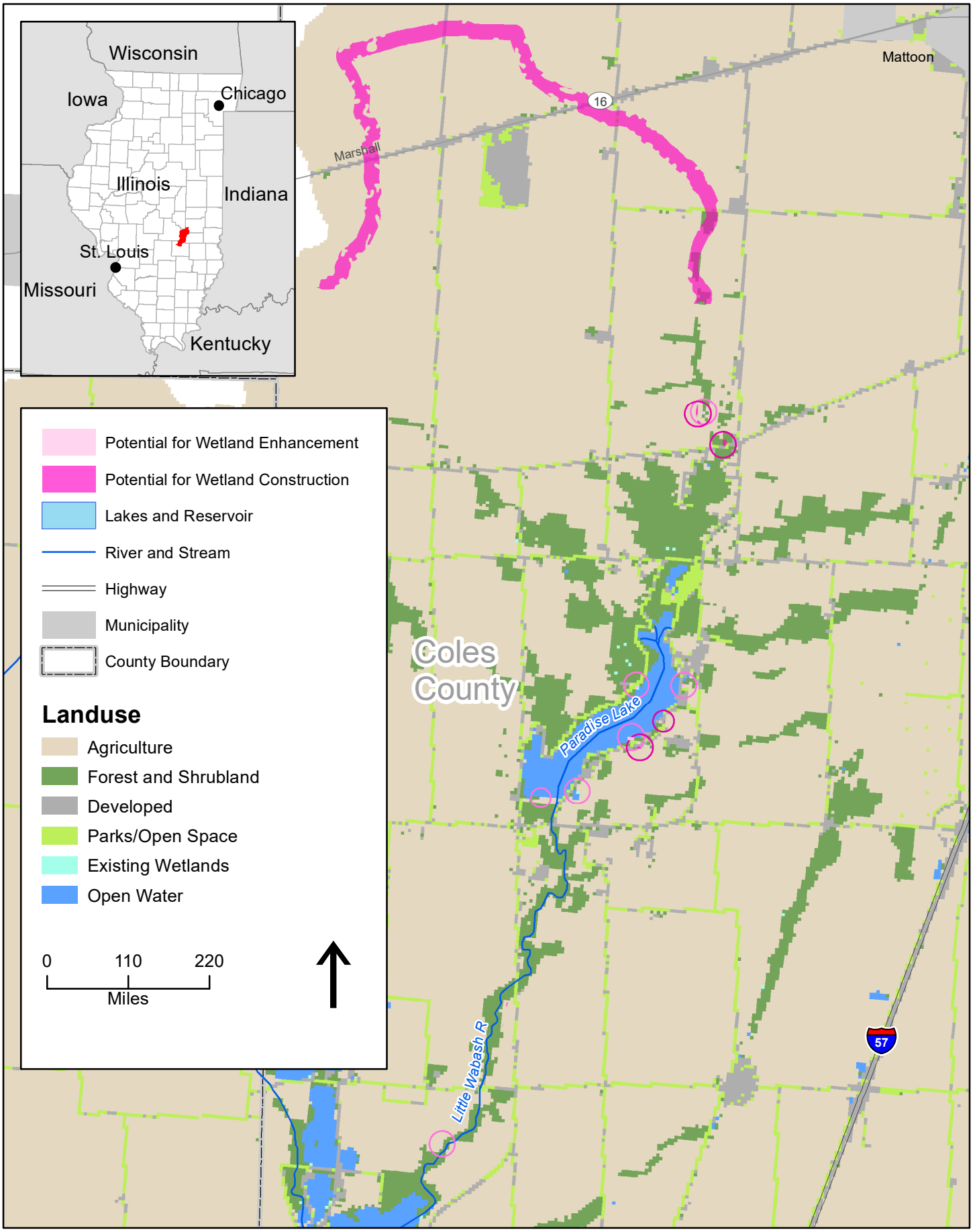

Figure 9-2: Little Wabash River/Green Creek Hydric Soils, Existing Wetlands, and Potential Wetland Construction

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When using a WASCOB, a separate plan should be prepared for each treatment unit that will use this practice. Local NRCS personnel can often provide information and advice for design and installation. Illinois NRCS CPS 638[57] also provides information on the design and maintenance requirements for WASCOBs, as well as information on cropping activity recommendations and requirements around the basin. Maintenance includes reseeding or planting the basins to maintain vegetation, where specified, and periodically checking them, especially after large storms, to determine the need for embankment repairs or mechanical removal of excess sediment. Inlets and outlets should be cleaned regularly. Damaged components should be replaced promptly.

Fertilizer Restrictions: Runoff from surrounding areas may include phosphorus-based fertilizers applied to residential lawns, golf courses, and other surfaces. If used too close to a receiving waterbody, phosphorus present in stormwater runoff will enter the waterbody. Illinois has a statute in place that governs the use of phosphorus-based fertilizers in urban areas, the Lawn Care Products Application and Notice Act (415 Illinois Compiled Statutes [ILCS] 65).[58] This act includes the following prohibitions for phosphorus-based fertilizers (see the act for the limited exceptions):

- They may not be applied to lawns unless it can be demonstrated by soil test that the lawn is lacking in phosphorus when compared against the standard established by the University of Illinois (see the act for exceptions).
- They may not be applied to impervious surfaces.
- They may not be applied within 3 feet of any waterbody if a spray, drop, or rotary spreader is used. If other equipment is used, the fertilizer may not be applied within 15 feet of a water body.
- They may not be applied when the ground is frozen or saturated.
- Appropriate lawn markers for the application event and notifications to potentially affected adjacent properties are required.

Shoreline Protection: Treatments used to stabilize and protect shorelines of lakes, reservoirs, or estuaries, are also discussed in Illinois NRCS CPS 580.[59] Factors that may be impacting Lake Paradise shoreline erosion may include steep slopes of the original ground at the shoreline, saturation of the soils, wind and boat induced waves, or erosive soil types.

Riprap is human-placed rock or other material used to armor shoreline and/or shoreline structures against scour and water, wave, or ice erosion. Conventional placement of riprap blankets on the existing shorelines from a few feet above water level to a few feet below water level can help in reducing erosion to portions of the Lake Paradise shoreline. Other jurisdictions

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

[58] 415 ILCS 65. Environmental Safety. Lawn Care Products Application and Notice Act. https://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1597&ChapterID=36

[59] NRCS. 2020. Streambank and Shoreline Protection. Code 580. https://www.nrcs.usda.gov/sites/default/files/2022-10/Streambank_Shoreline_Protection_580_CPS_10_2020.pdf

have installed a line of peaked stone riprap at a water depth of 1.5 feet (the edge of the riprap is about 5 to 10 feet from the edge of water) along lake shorelines. This method breaks the waves which would collide with the eroded bank. The riprap also accumulates soil which erodes from the bank which in turn allows vegetation to establish in the quiescent zones between the riprap and the eroded shoreline. Another benefit of this method is that boats and barges construct the riprap from the water and the steep eroded shorelines are not disturbed by construction equipment. It can take years for the area between the riprap and edge of water to accumulate soil and to become fully vegetated.

In-Lake Phosphorus Loading: Modeling described in Section 8 determined that internal loading of phosphorus is likely a significant contributor to overall watershed loads. A reduction of phosphorus from in-lake cycling through in-lake management strategies may be necessary for attainment of the TMDL load allocations. Internal phosphorus loading can occur when the water above the sediments becomes anoxic, causing the release of phosphorus from the sediment in a form available for plant uptake. The addition of bioavailable phosphorus in the water column stimulates more plant growth and die-off, which may perpetuate or create anoxic conditions that encourages subsequent release of phosphorus into the water. Internal phosphorus loading can also occur in shallow lakes through release from sediments by the physical mixing and reintroduction of sediments into the water column as a result of wave action, winds, boating activity, and other means.

For lakes experiencing high rates of phosphorus input from bottom sediments, several management measures are available to control internal loading. Three BMP options for the control of internal loading include installing an aerator, adding aluminum, and performing dredging.

- 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.

- Phosphorus inactivation by aluminum addition (specifically aluminum sulfate or alum) to lakes is 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 inhibits phosphate diffusion from the sediment to the water.[60]

[60] Cooke, G.D., Welch, E.B., Martin, A.B. et al. 1993. *Effectiveness of Al, Ca, and Fe salts for control of internal phosphorus loading in shallow and deep lakes*. Hydrobiologia 253, 323–335.

- Phosphorus release from the sediment is greatest from recently deposited layers. Dredging approximately one meter of recently deposited phosphorus-rich sediment can remove approximately 80 to 90 percent of the internally loaded phosphorus without the addition of potentially toxic compounds to the lake. Dredging may also contribute to reductions in internal phosphorus loading by increasing the depth of large portions of the waterbody, reducing the degree of reintroduction of sediments into the water column through physical mixing. However, dredging is typically more costly than other management options.

9.3.2 Discussion of Effects of Upstream Impoundment

Upstream impoundment is listed as a cause of low DO within Segment IL_C-24. Impoundment of a stream to create a pond or reservoir impacts naturally occurring streamflow below its outlet structure and often result in decreases to the lowest flow scenarios. Further reduced low flow periods in summer can lead to streams that heat rapidly in warm weather, while lower flows in fall and winter can result in rapidly decreasing instream temperatures. Flow directly affects the amount of oxygen dissolved in the water. Low flows also increase the potential for disconnection between river reaches and between river and floodplain habitats which directly impact a systems aquatic life. The management of water releases and flow regime below Lake Paradise is likely limited by the uncontrolled spillway and lack of outlet gates present at the dam.[61] A study of natural flows above the reservoir and feasible options for managing flows out of the reservoir may be useful for better understanding the impacts of the impoundment and assess how future releases and downstream flows could be managed to increase DO and better support the aquatic life use.

9.4 Costing Estimates and Funding Opportunities

The following sections provide an overview of costing estimates and funding opportunity considerations that are important when evaluating the feasibility of implementing phosphorus reducing BMPs within the Little Wabash River/Green Creek watershed.

9.4.1 Best Management Practice Cost Estimates

Cost estimates for a number of suggested BMPs are available through the SWCD as presented in **Table 9-6**. Cost information for additional BMPs not included in the table are discussed later in this section.

[61] USACE. 2023. National Inventory of Dams. https://nid.sec.usace.army.mil/#/dams/system/IL00710/structure

Table 9-6 Fiscal Year 2017 SWCD Best Management Practice Cost Data

Practice	Component	Units	Average Cost
329A	No Till	Acre	$33.33
329C	Strip Till	Acre	$33.33
340A	Cover Crops	Acre	$66.67
340B	Temporary Cover	Acre	$266.66
342	Critical Area Planting	Acre	$350
362	Diversions	Foot	$3.80
410	Metal Toewall (including aluminum)-(weir length × overall = square feet) (includes earthwork)	Square foot	$140
410	Modular Block Structure (includes earthwork)	Block	$85
410	Rock Lined Chute (includes earthwork)	Ton	$40
412	Grassed Waterway Earthwork	Acre	$2,900
512	Pasture + Hayland Planting (applies to land not in pasture or hayland within the past 5 years)	Acre	$300
590A	Nutrient Management Plan	Acre	$4
590B	Nutrient Management Plan Implementation	Acre	$12
600	Terrace, less than 3 feet (earthwork for narrow base or grass ridge)	Foot	$3.30
600	Terrace, greater than 3 feet (earthwork for narrow base or grass ridge)	Foot	$3.80
638	WASCOB, less than 3 feet (earthwork for narrow base)	Foot	$3.30
638	WASCOB, greater than 3 feet (earthwork for narrow base)	Foot	$3.80

Filter Strips and Riparian Buffers: Several types of filter strip practices are available, including areas for native herbaceous vegetation with or without fertility measures required, and areas of introduced species, also with or without fertility measures required. Filter strip implementation that includes seedbed preparation and native seed application ranges from $520 per acre to $639 per acre depending on the type used, with an average cost of approximately $594 per acre.

Riparian buffers consisting of bare-root shrubs cost approximately $1.10 to $1.65 each, while direct seeding of trees and/or shrubs costs approximately $741 per acre. The direct seeding scenario includes a planting rate of approximately 3,000 to 4,800 seeds per acre, as well as the foregone income for the land taken out of crop production. Land preparation, including removing undesirable vegetation and improving site conditions, is estimated at $38 per acre. For cases where an herbaceous cover is preferable, such as native grass or certain species of forbs and/or shrubs, costs average $642 per acre.

Wetlands: The price to establish a wetland is site-specific and depends on factors such as size and type of vegetation used. Examples of costs associated with constructed wetlands include excavation costs, vegetation removal, and revegetation costs. Costs for wetlands created on a flat-mineral uplands where surface runoff may be intercepted and ponded by excavation range from $3,186 (no embankment) to $3,680 (with embankment) per acre. Some areas may favor a wetlands setting that just needs to be enhanced or restored. In an area of natural depression fed by surface runoff, enhancement/restoration is approximately $2,557 per acre.

Enhancing or restoring a wetland on a floodplain site that has existing levees and/or ditches may consist of regrading or shaping the land, potentially including levee removal, for $1,167 per acre. Constructed wetlands to reduce the pollution potential of runoff and wastewater average $7,725 per acre where natural regeneration of wetland plants will be a major contributor to the working vegetation, and $10,286 per acre where wetland vegetation in the pool area is planted at a denser grid (3-foot by 3-foot or closer). As needed, embankments, water control and grade stabilization structures, and filter strips should be added.

9.4.2 Project Funding

Cost-share and incentive programs at the state and federal level are available to landowners, homeowners, and farmers in the watershed to help offset costs of implementing many of the BMPs recommended in this report. Some of these programs are discussed in the subsections that follow. When reviewing the programs, it should be noted that some of the programs are only meant to provide incentives to encourage operators or landowners to try the practice. These incentive programs are not intended to cover the entire cost associated with implementing a practice. Additionally, some practices have many variables to consider that will affect both the cost of the program and the incentive or cost-share amount to be received (e.g., NMPs).

9.4.2.1 State-Level Funding

State-level programs to encourage landowners to implement resource-conserving practices for water quality and erosion control purposes are discussed in the paragraphs that follow. Local county representatives may be contacted for more information about available state funding opportunities (**Table 9-7**).

Table 9-7 Local SWCD, NRCS, and Farm Service Agency Contact Information

Illinois NRCS Area	Address	Phone	Contact and Email
3	6021 Development Drive, Suite 3 Charleston, IL 61920	(217) 208-4023	Stewart Smith Assistant State Conservationist stewart.smith@usda.gov

Illinois Department of Agriculture (IDA) and Illinois EPA Nutrient Management Plan Project: IDA and Illinois EPA co-sponsor a cropland NMP project in watersheds that have developed or are developing TMDLs. This voluntary project supplies incentive payments to producers to have NMPs developed and implemented. Additionally, watersheds that have sediment or phosphorus identified as a cause for impairment (as is the case in this watershed) are eligible for cost-share assistance in implementing traditional erosion control practices through the NMP project.

Partners for Conservation (PFC): The PFC[62] provides cost sharing on a variety of practices such as no till systems, WASCOBs, pasture/hayland establishment, critical area planting, cover crops, temporary cover (if added to another practice to extend the construction season), filter strips, rain gardens, terrace systems, diversions, well decommissioning, NMPs, and grade stabilization structures. The PFC is funded through IDA and administered by local SWCDs. Life/maintenance

[62] IDNR. 2023a. https://dnr.illinois.gov/conservation/pfc.html

contracts can be 1 to 10 years, depending on the practice, and costs per acre vary significantly from project to project.

Soil and Water Conservation District (SWCD) Grants Program: SWCDs assist local landowners in improving their natural resource management practices by providing technical assistance and grants that support soil conservation, water quality protection, wetland management, flood control, soil erosion control at urban construction sites, streambank stabilization, recycling, soil interpretation, land use and site suitability, and conservation education.[63]

Conservation Fund Program: The Illinois Department of Natural Resources (IDNR) Conservation Fund Program helps land owners experiencing erosion on their property. Eligible BMPs covered under this program include no till or strip till, cover crops, temporary cover, critical area plantings, filter strips, diversion, grate stabilization structures, grassed waterways, pasture and hayland planting, terraces, and WASCOBs. Funding assistance of up to 50 percent of the cost of the project is available, with grant awards up to $750,000.[64]

Division of Forestry Resources Forestry Assistance Program: Resources are available through the Rural Forest Landowner Assistance Program and Urban and Community Forestry Program to help private landowners and cities, respectively, address forest stewardship practices.[65]

Green Infrastructure Grant Opportunities (GIGO): Illinois EPA provides funding through the GIGO program for water quality improvement projects that decrease stormwater runoff. Examples of eligible projects include grassed waterways, permeable pavement, and downspout disconnection. The GIGO offers up to $2,500,000 per funding cycle, with a minimum grant of $75,000. The program is a reimbursement program where Illinois EPA issues reimbursement for eligible costs expended after project implementation.[66]

Illinois Green Infrastructure Grant Program for Stormwater Management: The Illinois Green Infrastructure Grant Program for Stormwater Management provides funding to local government entities and organizations to implement green infrastructure practices that control stormwater runoff to protect water quality. Practices such as permeable pavements and other urban BMPs are eligible for funding.[67]

Water Pollution Control Loan Program (WPCLP): Illinois EPA supports local public or private entities implement wastewater and stormwater projects through the WPCLP State Revolving Fund loan program. Funding through this program is appropriated annually and combines federal capitalization funding with state matching funds, interest earnings, repayment money, and the sale of bonds to form a source of financing for infrastructure projects. Eligible projects include new or upgraded wastewater infrastructure construction, stormwater-related projects that benefit water quality, and a variety of other projects that improve the quality of Illinois's rivers,

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[63] IDNR. 2023b. https://dnr.illinois.gov/conservation/crep.html
[64] IDNR. 2020. https://dnr.illinois.gov/press-release.21619.html
[65] IDNR.2023c. https://dnr.illinois.gov/conservation/forestry/forestry-assistance-program.html
[66] Illinois EPA. 2023. https://epa.illinois.gov/topics/grants-loans/water-financial-assistance/gigo.html
[67] Illinois EPA. 2023.

streams, and lakes. More information is available at https://epa.illinois.gov/topics/grants-loans/state-revolving-fund.html.

9.4.2.2 Federal Funding

There are several voluntary conservation programs established by various federal agencies that encourage landowners to implement resource-conserving practices for water quality and erosion control purposes. These programs apply to crop fields as well as rural grasslands that are presently used for livestock grazing. Federal-level programs are discussed in the paragraphs that follow. EPA manages the CWA Section 319 grants. The Farm Service Agency (FSA) oversees the Conservation Reserve Program (CRP) and the Grasslands Reserve Program (GRP). Voluntary conservation programs established through the 2014 U.S. Farm Bill, and managed by NRCS, include the Agricultural Conservation Easement Program (ACEP), the Conservation Stewardship Program (CSP), and the Environmental Quality Incentives Program (EQIP).

CWA 319 Grants: Section 319 was added to the CWA to establish a national program to address nonpoint sources of water pollution. Through this program, each state is allocated Section 319 funds on an annual basis according to a national allocation formula based on the total annual appropriation for the section 319 grant program. The total award consists of two categories of funding: incremental funds and base funds. A state is eligible to receive EPA 319(b) grants upon EPA approval of the state's nonpoint source assessment report and nonpoint source management program. States may reallocate funds through subawards (e.g., contracts, subgrants) to both public and private entities, including local governments, tribal authorities, cities, counties, regional development centers, local school systems, colleges and universities, local nonprofit organizations, state agencies, federal agencies, watershed groups, for-profit groups, and individuals.

EPA designates incremental funds, a $178 million award in 2022, for the restoration of impaired water through the development and implementation of WBPs and TMDLs for impaired waters. Base funds (funds other than incremental funds) are used to provide staffing and support to manage and implement the state nonpoint source management program. Section 319 funding can be used to implement activities that improve water quality such as filter strips and streambank stabilization.[68,69]

Illinois EPA receives federal funds through Section 319(h) of the CWA to help implement the Illinois Nonpoint Source 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 nonpoint source pollution. The program emphasizes funding for implementing cost-effective corrective and preventative BMPs on a watershed scale; funding is also available for BMPs on a nonwatershed scale and the development of information/education nonpoint source pollution control programs.

The maximum federal funding available is 60 percent of the total cost, with the remaining 40 percent coming from local match. The program period is 2 years unless otherwise approved. This

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[68] EPA. 2003.

[69] EPA. Historic 319 Grant Funding Spreadsheet for Fiscal Year 2022. https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.epa.gov%2Fsystem%2Ffiles%2Fdocuments%2F2022-07%2F319_historic_funding_FY22.xlsx&wdOrigin=BROWSELINK

is a reimbursement program. Section 319(h) funds are awarded for the purpose of implementing approved nonpoint source management projects. The funding will be directed toward activities that result in the implementation of appropriate BMPs for the control of nonpoint source pollution or to enhance the public's awareness of nonpoint source pollution. Applications are accepted June 1 through August 1.

Refer to the Illinois EPA Section 319(h) Nonpoint Source Pollution Control Financial Assistance Program website for more information: https://epa.illinois.gov/topics/water-quality/watershed-management/nonpoint-sources/grants.html.

Conservation Reserve Program: The CRP is a voluntary program, administered through the FSA, which encourages landowners to agree to remove environmentally sensitive land from agricultural production and plant long-term, resource-conserving cover to improve water quality, prevent soil erosion, and reduce loss of wildlife habitat. The program was initially established in the Food and Security Act of 1985 and is the largest private-lands conservation program in the United States.

Participants can enroll in CRP in two ways and the duration of the contracts under CRP range from 10 to 15 years. The first enrollment method is through a competitive process known as the CRP General Sign-Up. These are announced on a periodic basis by the U.S. Secretary of Agriculture but do not occur on any fixed schedule. The second enrollment method is through CRP Continuous Sign-Up, which is offered on a continuous basis. Continuous sign-up provides management flexibility to farmers and ranchers to implement certain high-priority conservation practices on eligible land. All enrollment offers are processed through the local FSA office. Certain conditions must be met for land to be eligible for CRP enrollment. These conditions include the following:

- The farmer applying for enrollment must have owned or operated the land for at least 12 months prior to the previous CRP sign-up period (except in cases of a change in ownership because of the previous owner's death, foreclosure, or land purchase by the new owner without the sole intention of placing it in the CRP).
- Cropland that is planted or considered planted to an agricultural commodity for four of the six most recent crop years (including field margins) and must be physically and legally capable of being planted in a normal manner to an agricultural commodity.
- Certain marginal pastureland suitable for use as any of the following conservation practices: buffer for wildlife habitat, wetlands buffer or restoration, filter strips, riparian buffer, grass waterway, shelter belt, living snow fence, contour grass strip, salt tolerant vegetation, or shallow water area for wildlife.

In addition to the eligible land requirements, cropland must meet one of the following criteria:

- Have a weighted-average erosion index of 8 or higher
- Be expiring CRP acreage
- Be in a national or state CRP conservation priority area

The FSA bases rental rates on the relative productivity of soils within each county and the average dryland cash rent or cash-rent equivalent. The maximum rental rate for each offer is calculated in advance of enrollment. Producers may offer land at the maximum rate or at a lower rental rate to increase likelihood of offer acceptance. In addition, the FSA provides cost-share assistance for up to 50 percent of the participant's costs in establishing approved conservation practices. FSA offers several financial incentives opportunities for certain sign-up practices. In 2020, FSA increased the practice incentive payment from 5 to 20 percent of annual rental payment rate and added a 10 percent incentive payment for water quality practices on land enrolled in CRP's continuous sign-up.[70]

A signing incentive payment is a one-time incentive payment of 32.5 percent of the amount of the first annual rental payment.[71] Eligible practices include field windbreaks; grassed waterways; shelter belts; living snow fences; filter strips; riparian buffers; marginal pastureland wildlife and wetland buffers; bottom timber establishment; field borders; longleaf pine establishment; duck nesting habitat; State Acres for Wildlife Enhancement (SAFE) buffers, wetlands, trees, longleaf pine, and grass; pollinator habitat; and several wetlands practices. A performance incentive payment is a one-time incentive payment made to participants who enroll land in the CRP to be committed to all continuous sign-up practices except establishment of permanent vegetative cover on terraces, wetland restoration (including nonfloodplain), bottomland timber establishment, and duck nesting habitat establishment. Finally, in 2021, FSA enacted a Climate-Smart Practice Incentive for CRP General and Continuous Sign-Ups. This incentive encourages CRP practices that increase carbon sequestration and reduced greenhouse gas emissions through things like establishment of trees and permanent grasses, development of wildlife habitat, and wetland restoration. The Climate-Smart Practice Incentive is annual, and the amount is based on the benefits of each practice type.[72]

The maximum annual noncost share payment that an eligible "person" can receive under the CRP is $50,000 per fiscal year. This is a separate payment limitation applying only to CRP noncost share payment.

Refer to the FSA CRP website for more information: https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/.

Grassland Reserve Program: The purpose of the GRP, administered by the FSA, is to prevent grazing and pasture land from being converted into cropland, used for urban development, or developed for other nongrazing uses. Participants in the program voluntarily limit future development of the land while still being able to use the land for livestock grazing and activities related to forage and seed production. Some restrictions on activities may apply during the nesting season of certain bird species that are in decline or protected under federal or state law.

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[70] FSA. 2020. USDA Announces Increase to Certain Incentive Payments for Continuous Conservation Reserve Program. https://www.fsa.usda.gov/news-room/news-releases/2020/usda-announces-increase-to-certain-incentive-payments-for-continuous-conservation-reserve-program

[71] eCFR Part 1410 – Conservation Reserve Program. https://www.ecfr.gov/current/title-7/subtitle-B/chapter-XIV/subchapter-B/part-1410

[72] FSA. 2022. Conservation Reserve Program Monthly Summary – May 2022. https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/Conservation/PDF/Summary%20May%202022%20CRPMonthly.pdf

The GRP has several enrollment options, including a rental contract for 10, 15, or 20 years, or enrolling the land in a conservation easement for an indefinite period. Applications are accepted any time and are processed through the local FSA office. To be eligible for a rental agreement, the applicant must own or have control of the land for the length of the contract. To enroll in a conservation easement, the applicant must own and be willing to restrict use of the land either in perpetuity or under the maximum length of time under state law. Persons enrolled in GRP receive an annual rental payment for their enrolled acres. Further information about the program, including payment amounts, eligibility and maintenance criteria, and land requirements, may be obtained from the local FSA office.

Refer to the FSA CRP website for more information: https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/.

Agricultural Conservation Easement Program: ACEP provides financial and technical assistance to help conserve agricultural lands and wetlands and their related benefits. Under the Agricultural Land Easements component, NRCS helps American Indian tribes, state and local governments, and nongovernmental organizations protect working agricultural lands and limit nonagricultural uses of the land. Land protected by agricultural land easements provides additional public benefits, including environmental quality, historic preservation, wildlife habitat, and protection of open space. Under the Wetlands Reserve Easements component, NRCS helps to restore, protect, and enhance enrolled wetlands. Wetland Reserve Easements provide habitat for fish and wildlife (including threatened and endangered species), improve water quality by filtering sediments and chemicals, reduce flooding, recharge groundwater, protect biological diversity, and provide opportunities for educational, scientific, and limited recreational activities.

- Agricultural Land Easements: NRCS provides financial assistance to eligible partner's purchase Agricultural Land Easements that protect the agricultural use and conservation values of eligible land. In the case of working farms, the program helps farmers and ranchers keep their land in agriculture. The program also protects grazing uses and related conservation values by conserving grassland including rangeland, pastureland, and shrubland. Land eligible for agricultural easements includes cropland, rangeland, grassland, pastureland, and nonindustrial private forest land. NRCS will prioritize applications that protect agricultural uses and related conservation values of the land and those that maximize the protection of contiguous acres devoted to agricultural use.

  To enroll land through agricultural land easements, NRCS enters into cooperative agreements with eligible partners. Each easement is required to have an agricultural land easement plan that promotes the long-term viability of the land. Under the Agricultural Land component, NRCS may contribute up to 50 percent of the fair market value of the agricultural land easement. Where NRCS determines that grasslands of special environmental significance will be protected, NRCS may contribute up to 75 percent of the fair market value of the agricultural land easement.

  Refer to the NRCS ACEP website for more information: https://www.nrcs.usda.gov/programs-initiatives/acep-agricultural-conservation-easement-program.

- Wetland Reserve Easements: NRCS also provides technical and financial assistance to restore, protect, and enhance wetlands through the purchase of a wetland reserve easement. These agreements include the right for NRCS to develop and implement a wetland reserve restoration easement plan to restore, protect, and enhance the wetland's functions and values. Land eligible for wetland reserve easements includes farmed or converted wetland that can be successfully and cost-effectively restored. NRCS will prioritize applications based the easement's potential for protecting and enhancing habitat for migratory birds and other wildlife. For acreage owned by an Indian tribe, there is an additional enrollment option of a 30-year contract. Through the wetland reserve enrollment options, NRCS may enroll eligible land through one of the following:

  - Permanent Easements – These are conservation easements in perpetuity. NRCS pays 100percent of the easement value for the purchase of the easement. Additionally, NRCS pays between 75 to 100 percent of the restoration costs.

  - 30-year Easements – These expire after 30 years. Under 30-year easements, NRCS pays 50 to 75 percent of the easement value for the purchase of the easement. Additionally, NRCS pays between 50 to 75 percent of the restoration costs.

  - Term Easements – Term easements are easements made for the maximum duration allowed under applicable State laws. NRCS pays 50 to 75 percent of the easement value for the purchase of the term easement. Additionally, NRCS pays between 50 to 75 percent of the restoration costs.

  - 30-year Contracts – 30-year contracts are only available to enroll acreage owned by Indian tribes, and program payment rates are commensurate with 30-year easements.

  For wetland reserve easements, NRCS pays all costs associated with recording the easement in the local land records office, including recording fees, charges for abstracts, survey and appraisal fees, and title insurance.

Refer to the NRCS Wetland Reserve Easements website for more information: https://www.nrcs.usda.gov/programs-initiatives/wre-wetland-reserve-easements.

Wetland Reserve Enhancement Partnership: The Wetland Reserve Enhancement Partnership (WREP) is an enrollment option under the ACEP. WREP continues to be a voluntary program through which NRCS signs agreements with eligible partners to leverage resources to carry out high priority wetland protection, restoration, and enhancement and to improve wildlife habitat. Partner benefits through WREP agreements include:

- Wetland restoration and protection in critical areas
- Ability to cost share restoration or enhancement beyond NRCS requirements through leveraging
- Ability to participate in the management or monitoring of selected project locations
- Ability to use innovative restoration methods and practices

For 2022, NRCS announced $17 million available in financial and technical assistance to help eligible conservation partners leverage local resources to voluntarily protect, restore, and enhance critical wetlands on private and tribal agricultural land nationwide. The funding is provided through the WREP, a special enrollment option under the ACEP. Proposals for funding must be limited to $5 million and were due by August 15, 2021 with funding announcements released in October 2021. Landowners should check with their local NRCS state office to see about applying in future years. To enroll land eligible partners may submit proposals to the local NRCS office.

Refer to the NRCS WREP website for more information: https://www.nrcs.usda.gov/programs-initiatives/wrep-wetland-reserve-enhancement-partnership.

Conservation Stewardship Program: The CSP helps agricultural producers maintain and improve their existing conservation systems and adopt additional conservation activities to address priority resources concerns. Participants earn CSP payments for conservation performance—the higher the performance, the higher the payment.

Through CSP, participants take additional steps to improve resource conditions including soil quality, water quality and quantity, air quality, habitat quality, and energy. CSP provides two types of payments through 5-year contracts: annual payments for installing new conservation activities and maintaining existing practices; and supplemental payments for adopting a resource-conserving crop rotation. Producers may be able to renew a contract if they have successfully fulfilled the initial contract and agree to achieve additional conservation objectives. Payments are made soon as practical after October 1 of each fiscal year for contract activities installed and maintained in the previous year.

Eligible lands include private and Tribal agricultural lands, cropland, grassland, pastureland, rangeland and nonindustrial private forest land. CSP is available to all producers, regardless of operation size or type of crops produced, in all 50 states, the District of Columbia, and the Caribbean and Pacific Island areas. Applicants may include individuals, legal entities, joint operations, or Indian tribes that meet the stewardship threshold for at least two priority resource concerns when they apply. They must also agree to meet or exceed the stewardship threshold for at least one additional priority resource concern by the end of the contract. Producers must have effective control of the land for the term of the proposed contract, which include all eligible land in the agricultural operation. Some additional restrictions and program requirements may apply and interested applicants should contact the local NRCS office for more information.

Refer to the NRCS CSP website for more information: https://www.nrcs.usda.gov/programs-initiatives/csp-conservation-stewardship-program.

Environmental Quality Incentive Program: The EQIP is a voluntary program that provides financial and technical assistance to agricultural producers to plan and implement conservation practices that improve soil, water, plant, animal, sir, and related natural resources on agricultural land and nonindustrial private forestland. Through EQIP, NRCS develops contracts with agricultural producers to implement conservation practices to address environmental natural resource problems. Persons engaged in livestock or agricultural production and owners of nonindustrial private forestland are eligible for the program. Eligible land includes cropland,

rangeland, pastureland, private nonindustrial forestland, and other farm or ranch lands. Eligible applicants must, at a minimum, meet the following criteria (additional program requirements may apply):

- Be agricultural producer (person, legal entity, or joint operation who has an interest in the agricultural operation, or who is engaged in agricultural production or forestry management).
- Control or own eligible land.
- Comply with adjusted gross income for less than $900,000. Federally recognized Native American Indian tribes or Alaska Native corporations are exempt from the adjusted gross income payment limitations.
- Be in compliance with the highly erodible land and wetland conservation requirements.
- Develop an NRCS EQIP plan of operations that addresses at least one natural resource concern.

Persons interested in entering into a cost-share agreement with NRCS for EQIP assistance may file an application at any time; however, each state may establish deadlines for one or more application periods in which to consider eligible applications for funding. Applications submitted after the deadlines will be evaluated and considered for funding during later funding opportunities.

As part of the program, a conservation activity plan can be developed for producers to address a specific natural resource concern on their agricultural operation. Each plan is developed by a certified technical service provider who is selected by the EQIP participant. Technical assistance payments for technical service providers do not count against the financial assistance aggregate payment limitation or the contract financial assistance payment limitation. The plan becomes the basis of the EQIP contract between NRCS and the participant, and the contracts can be up to 10 years in duration. Financial assistance payments are made to eligible producers once conservation practices are completed according to NRCS requirements. Payment rates are set for each fiscal year and are attached to the EQIP contract when it is approved.

Historically underserved producers (limited resource farmers/ranchers, beginning farmers/ranchers, socially disadvantaged producers, Indian tribes, and veteran farmer or ranchers) who self-certify on Form NRCS-CPA-1200, the Conservation Program Application, are eligible for a higher practice payment rate to support implementation of contracted conservation practices and activities. Historically underserved producers may also be issued advance payments up to 50 percent of the established payment rate to go toward purchasing materials or contracting services to begin the installation of approved conservation practices. Self-certified, socially disadvantaged farmer/rancher, beginning farmer/rancher, and veteran farmer/rancher producers may elect to be evaluated in special EQIP funding pools. More information can be obtained from the local NRCS office.

EQIP provides payments up to 75 percent of the incurred costs and 100 percent estimated income foregone of certain conservation practices and activities. Conservation practices eligible

for EQIP funding that are recommended BMPs for this watershed TMDL include filter strips, conservation tillage, grade stabilization structures, grass waterways, riparian buffers, streambank/shoreline protection, terraces, and wetland restoration.

Refer to the NRCS EQIP website for more information: https://www.nrcs.usda.gov/programs-initiatives/eqip-environmental-quality-incentives.

Regional Conservation Partnership Program: The Regional Conservation Partnership Program (RCPP) is a stand-alone USDA program funded at $300 million annually. The RCPP website states that the program "promotes coordination of NRCS conservation activities with partners that offer value-added contributions to expand our collective ability to address on-farm, watershed, and regional natural resource concerns. Through RCPP, NRCS seeks to co-invest with partners to implement projects that demonstrate innovative solutions to conservation challenges and provide measurable improvements and outcomes tied to the resource concerns they seek to address." Information on eligibility, project types, funding, and how to apply can be found at https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/rcpp/.

9.4.3 Planning Level Cost Estimates for Implementation Measures

Cost estimates for different implementation measures are presented in **Table 9-8**. The "Program" and "Sponsor(s)" columns list the financial assistance program or sponsor(s), respectively, available for various BMPs, as discussed in Section 9.13. Illinois EPA 319 grants are applicable to all of the practices.

Table 9-8 Cost Estimates of Various Best Management Practice Measures

BMP	Units	Installation Cost	Program	Sponsor(s)
Filter strip (seeded)	Per acre	$520–$639 (average of $594)	CRP	NRCS, IDA
Riparian buffer – bare-root shrubs	Each	$1.10–$1.65	CRP	NRCS, IDA
Riparian buffer – forested	Per acre	$741	CRP	NRCS, IDA
Riparian buffer – herbaceous cover	Per acre	$642	CRP	NRCS, IDA
Riparian buffer – land preparation	Per acre	$38	CRP	NRCS, IDA
Nutrient management	Per acre	$16	EQIP	NRCS, IDA, I-EPA
WASCOB, less than 3 feet	Per foot	$3.30	CPP	IDA
WASCOB, greater than 3 feet	Per foot	$3.80	CPP	IDA
Terraces, less than 3 feet	Per foot	$3.30	CPP	IDA
Terraces, greater than 3 feet	Per foot	$3.80	CPP	IDA
Conservation tillage – no till/strip till	Per acre	$133.33	EQIP	NRCS, IDA
Contour farming	Per acre	$6.06	EQIP	NRCS
Cover crops	Per acre	$66.67	EQIP	NRCS
Wetland – enhancement/restoration	Per acre	$1,167–$3,680	ACEP	NRCS
Wetland – constructed	Per acre	$7,725–$10,286	ACEP	NRCS
Septic system maintenance	Per event	$250–$350	Private system owner	

9.5 Information and Education

Public outreach and education campaigns that support implementation plans for water load reductions should take a holistic approach that considers more than just water quality problems within a watershed. Stakeholder engagement and cooperation improves when outreach strategies also address broader stakeholder concerns such as water supply availability and aesthetics. Watershed plans that incorporate this holistic approach are more successful in changing social behaviors and implementing multibenefit BMPs that help with attaining water quality standards while also protecting other important resources such as drinking water sources, agricultural resources, forests and rangeland, and parks and open space.

Additionally, implementation plans are usually more successful if stakeholders are brought in early in planning and have the opportunity to share their concerns. Transparency throughout planning and implementation encourages continued support and a higher likelihood of participation in developing management options and supporting implementation of BMPs.

Small incremental improvements and individual adoption of BMPs can be achieved at a much lower cost compared to large-scale BMPs implemented watershedwide. Moving forward, outreach and education efforts should focus on activities that support the watershed plan goals, including:

- Continued regular meetings of local stakeholder groups with the intent of broadening audience attendance
- Holding field visit days with demonstrations of agricultural conservation practices
- Continued outreach and messaging to landowners to encourage implementation of edge of field BMPs, nutrient management, conservation tillage, cover crops, and livestock/pasture management
- Soil testing
- Reducing the use of lawn chemicals (pesticides and phosphorus fertilizers)
- Education/outreach for rural residences on proper septic system maintenance
- Periodic updates on watershed health/monitoring results

Additional recommended activities to support public outreach and education include:

- Websites and social media to publicize meetings, upcoming events and links to resources
- E-mail updates
- Brochures or fact sheets with information on household pollutant reduction, fertilizer use, and proper septic tank maintenance
- Educational signs, school visits, or participation in local events such as the CWA anniversary celebration to educate the public on water quality issues, the purpose of BMPs, and environmental stewardship

- Public service announcements
- Informational meetings on state and federal cost-share programs
- Watershed group development through the University of Illinois College of Agricultural and Consumer Economics Extension office

9.6 Milestones and Success Criteria

The primary objective of this plan is to improve water quality conditions in impaired stream segments and lakes within the Little Wabash River/Green Creek watershed. In support of this primary objective, ongoing involvement of stakeholders and community members to participate in BMPs described herein is also crucial to achieving water quality improvement within the watershed. **Table 9-9** provides a breakdown of the milestones and supporting success criteria to be used to assess the effectiveness of implementation plan actions.

Table 9-9 Plan Milestone Objectives and Success Criteria

Milestone Objective	Success Criteria
Water quality improvement	Reduce TP levels to meet calculated load reductions presented in Section 8
	Increase in no till or reduced till farming
	Increase in buffer areas around agricultural lands or impaired waterways (e.g., riparian buffers, filter strips, grassed waterways)
	Secure funding for identified near-term and mid-term BMP projects
	Delisting of impaired stream segments
Stakeholder involvement	Initiate regularly scheduled meetings of Little Wabash River/Green Creek Watershed stakeholder groups
	Increased traffic on social media platforms and websites
	Increased participation in grass-roots outreach activities, including information sharing at local schools
	Increased participation and funding from local municipalities toward watershed improvement and protection activities
	Secure funding for priority stakeholders to implement BMPs on their property

9.7 Plan Monitoring and Schedule

Successful plan implementation relies on establishing a plan schedule that tracks progression toward achieving established milestones and success criteria. The following subsections provide an overview of a monitoring plan and plan schedule for achieving established milestone objectives. Stakeholders should evaluate schedule/milestone progress on an annual basis and implement adaptive management to modify management measures, milestones, and schedule as necessary.

9.7.1 Monitoring Plan

The purpose of the monitoring plan for the Little Wabash River/Green Creek watershed is to assess the overall implementation of the management recommendations outlined throughout this section. This will be accomplished by conducting monitoring programs designed to:

- Track implementation of BMPs in the watershed
- Estimate the effectiveness of BMPs
- Further monitor point source discharges in the watershed
- Continue monitoring impaired stream segments and tributaries
- Monitor storm-based, high-flow events
- Monitor TP throughout the watershed via low-flow monitoring
- Monitor natural stream flows above Lake Paradise and managed stream flows below the Lake Paradise dam to better understand impacts to low flows in Segment IL_C-24

Tracking the implementation of management measures will be used to:

- Determine the extent to which management measures and practices have been implemented compared to the actions needed to meet the TMDL endpoints
- Establish a baseline from which decisions can be made regarding the need for additional incentives for implementation efforts
- Measure the extent of voluntary implementation efforts
- Support work-load and costing analysis for assistance or regulatory programs
- Determine the extent to which management measures are properly maintained and operated

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

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

9.7.2 Implementation Schedule

Table 9-10 identifies an implementation schedule for meeting plan milestones. Implementation of the management actions outlined in this section should occur in phases, often over the course of several years, with effectiveness assessments made as improvements are completed. The process of obtaining funding and developing and implementing projects designed to improve water quality can take months or years to complete, and once in place, improvements in water quality as a result of BMPs may not be detectable for several years. Continued monitoring and reevaluation of the implementation measures during this time will expedite adjusting to BMP implementation measures, which may result in earlier attainment of water quality targets.

Table 9-10 Implementation Schedule

Milestone Objective	Schedule Category	Description	Recommended Schedule
Water quality improvement	Assess existing BMPs	Assess existing BMPs within the watershed for effectiveness	Short term (1–5 years)
	Monitor	Monitor the results of pilot studies to measure success and adapt/adjust to wider-scale implementation	Short term (1–5 years)
	Monitor	Implement a monitoring plan	Continuous (1–20 years)
	Implement identified near-term projects	Work with the local SWCD to use TMDL priority to secure funding and implement "ready-to-go" projects	Short term (1–5 years)
	Implement larger projects	Implement larger projects that require multiple funding sources and stakeholders	Mid-term (5–10 years)
	Implement erosion control measures	Work with the local SWCD to identify areas throughout the watershed where no till or reduced till practices would be beneficial to reducing TP loads in DO-impaired watersheds	Mid-term (5–10 years)
	Nonpoint source controls	Work with the local SWCD to identify and fund projects throughout the watershed where buffers can be implemented around waterways or agricultural operations	Mid-term (5–10 years)
	Point source controls	Permit Section review/consider the need for monitoring for TP and other oxygen-demanding materials in permits	Mid-term (5–10 years)
Stakeholder involvement	Annual stakeholder meetings	Watershed stakeholder groups can hold annual meetings to gauge progress and discuss evolving needs and planned activities. Conduct periodic self-assessments for members to evaluate effectiveness of watershed groups and partnerships.	Continuous (1–10 years)
	Funding	Develop grant applications and work with landowners to secure funding for implementing BMPs discussed in this plan	Short term (1–5 years)
	Education and outreach	Publish information and news about the Little Wabash River/Green Creek watershed on a variety of local platforms	Short term (1–5 years)
	Education and outreach	Partner with Future Farmers of America to bring regular watershed programming to local high schools and to spread knowledge of watershed matters	Short term (1–5 years)
	Funding	Work with local municipalities to establish line items in their annual budgets allocated toward watershed improvement and protection projects	Short term (1–5 years)

Appendix A

Land Use Categories

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Appendix A
Land Use Categories

Land Cover Category	Acres	Percent
Soybeans	51,962	34%
Corn	49,327	32%
Deciduous Forest	21,553	14%
Grass/Pasture	9,968	6.5%
Developed/Open Space	8,721	5.7%
Developed/Low Intensity	4,918	3.2%
Open Water	2,206	1.4%
Dbl Crop WinWht/Soybeans	1,604	1.0%
Developed/Med Intensity	1,170	0.8%
Winter Wheat	769	0.5%
Alfalfa	583	0.4%
Developed/High Intensity	418	0.3%
Other Hay/Non Alfalfa	253	0.2%
Barren	65	<0.1%
Herbaceous Wetlands	51	<0.1%
Woody Wetlands	11	<0.1%
Sorghum	7.1	<0.1%
Shrubland	3.1	<0.1%
Grapes	3.1	<0.1%
Fallow/Idle Cropland	1.1	<0.1%
Sod/Grass Seed	1.0	<0.1%
Evergreen Forest	0.9	<0.1%
Clover/Wildflowers	0.7	<0.1%
Pumpkins	0.7	<0.1%
Dbl Crop WinWht/Corn	0.5	<0.1%
Oats	0.2	<0.1%
Mixed Forest	0.2	<0.1%

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Appendix B

Soil Characteristics

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Appendix B
Soil Characteristics

Mapunit Name	Hydrologic Group - Dominant Condition	K-Factor	Area	Percent
Cisne silt loam, 0 to 2 percent slopes	C/D	0.46	15,917	10.4%
Hoyleton silt loam, 0 to 2 percent slopes	C/D	0.41	14,488	9.4%
Bluford silt loam, 0 to 2 percent slopes	C/D	0.45	13,021	8.5%
Drummer silty clay loam, 0 to 2 percent slopes	B/D	0.33	11,805	7.7%
Ava silt loam, 2 to 5 percent slopes	C	0.48	9,293	6.0%
Hickory silt loam, 18 to 35 percent slopes	B	0.33	7,349	4.8%
Raub silt loam, non-densic substratum, 0 to 2 percent slopes	B/D	0.34	5,753	3.7%
Atlas silt loam, 5 to 10 percent slopes, eroded	D	0.41	3,609	2.3%
Toronto silt loam, Bloomington Ridged Plain, 0 to 2 percent slopes	B/D	0.4	3,158	2.1%
Millbrook silt loam	C/D	0.42	3,134	2.0%
Fishhook silt loam, 2 to 5 percent slopes, eroded	C	0.36	3,042	2.0%
Wynoose silt loam, 0 to 2 percent slopes	C/D	0.44	3,037	2.0%
Holton silt loam	C	0.41	2,753	1.8%
Virden silty clay loam, 0 to 2 percent slopes	C/D	0.36	2,677	1.7%
Dana silt loam, 2 to 5 percent slopes, eroded	C	0.38	2,626	1.7%
Xenia silt loam, Bloomington Ridged Plain, 2 to 5 percent slopes	C	0.4	2,353	1.5%
Water	<Null>	<Null>	2,230	1.5%
Hickory silt loam, 10 to 18 percent slopes, eroded	B	0.33	2,173	1.4%
Senachwine silt loam, 5 to 10 percent slopes, eroded	C	0.39	1,976	1.3%
Bluford silt loam, 2 to 5 percent slopes	C/D	0.45	1,955	1.3%
Newberry silt loam, 0 to 2 percent slopes	C/D	0.4	1,869	1.2%
Elburn silt loam, 0 to 2 percent slopes	B/D	0.34	1,821	1.2%
Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	B/D	0.39	1,806	1.2%
Cowden silt loam, 0 to 2 percent slopes	C/D	0.47	1,772	1.2%
Virden silt loam, 0 to 2 percent slopes	C/D	0.39	1,765	1.1%
Bluford-Darmstadt silt loams, 0 to 2 percent slopes	C/D	0.47	1,664	1.1%
Hickory silt loam, 35 to 60 percent slopes	B	0.33	1,552	1.0%
Darmstadt silt loam, 0 to 2 percent slopes	D	0.5	1,309	0.9%
Oconee-Darmstadt silt loams	D	0.48	1,304	0.8%
Wingate silt loam, 2 to 5 percent slopes	C	0.38	1,241	0.8%
Wirt silt loam, frequently flooded	B	0.4	1,137	0.7%
Wirt loam	B	0.4	1,067	0.7%

Mapunit Name	Hydrologic Group - Dominant Condition	K-Factor	Area	Percent
Parr silt loam, 5 to 10 percent slopes, eroded	B	0.4	1,011	0.7%
Oconee silt loam, 0 to 2 percent slopes	C/D	0.42	984	0.6%
Herrick silt loam, 0 to 2 percent slopes	C/D	0.41	924	0.6%
Parr silt loam, 2 to 5 percent slopes, eroded	C	0.41	919	0.6%
Cisne-Piasa complex	D	0.45	834	0.5%
Hoyleton silt loam, 2 to 5 percent slopes	C/D	0.41	819	0.5%
Ava silt loam, 5 to 10 percent slopes, eroded	C	0.55	760	0.5%
Ebbert silt loam, 0 to 2 percent slopes	C/D	0.46	728	0.5%
Starks silt loam, 0 to 2 percent slopes	C/D	0.37	726	0.5%
<Null>	<Null>	<Null>	713	0.5%
Proctor silt loam, 2 to 5 percent slopes	B	0.32	705	0.5%
Huntsville silt loam, 0 to 3 percent slopes, frequently flooded	B	0.43	593	0.4%
Holton silt loam, frequently flooded	C	0.38	578	0.4%
Camden silt loam, 2 to 5 percent slopes	B	0.47	531	0.3%
Lawson silt loam, cool mesic, 0 to 2 percent slopes, frequently flooded	B/D	0.42	526	0.3%
Fincastle silt loam, udic moisture class, 0 to 2 percent slopes	C/D	0.42	522	0.3%
Radford silt loam, frequently flooded	C	0.42	464	0.3%
Starks silt loam	C	0.44	462	0.3%
Bluford silt loam, 2 to 5 percent slopes, eroded	C/D	0.42	421	0.3%
Hickory silt loam, 10 to 18 percent slopes	B	0.33	414	0.3%
Millbrook silt loam, 0 to 2 percent slopes	C/D	0.32	400	0.3%
Harrison silt loam, 2 to 5 percent slopes, eroded	B	0.42	387	0.3%
Camden silt loam, 1 to 5 percent slopes	B	0.41	386	0.3%
Camden silt loam, 5 to 10 percent slopes, eroded	B	0.47	371	0.2%
Shiloh silty clay loam, 0 to 2 percent slopes	C/D	0.31	367	0.2%
Somonauk silt loam, 2 to 5 percent slopes, eroded	C	0.33	344	0.2%
Flanagan silt loam	C	0.34	328	0.2%
Atlas silt loam, 10 to 18 percent slopes, eroded	D	0.41	316	0.2%
Brenton silt loam, 0 to 2 percent slopes	B/D	0.35	297	0.2%
Wynoose-Huey complex	D	0.46	273	0.2%
Sunbury silt loam, 0 to 2 percent slopes	C/D	0.41	251	0.2%
Ursa-Atlas complex, 5 to 10 percent slopes, eroded	D	0.33	248	0.2%
Atlas silty clay loam, 5 to 10 percent slopes, severely eroded	D	0.4	239	0.2%
Thorp silt loam, 0 to 2 percent slopes	C/D	0.39	228	0.1%
Tamalco silt loam, 2 to 5 percent slopes, eroded	D	0.47	214	0.1%
Darmstadt silt loam, 2 to 5 percent slopes, eroded	D	0.48	190	0.1%
Peotone silty clay loam, 0 to 2 percent slopes	C/D	0.31	189	0.1%
Brooklyn silt loam, 0 to 2 percent slopes	C/D	0.38	188	0.1%
Parke silt loam, 1 to 5 percent slopes	B	0.38	177	0.1%

Mapunit Name	Hydrologic Group - Dominant Condition	K-Factor	Area	Percent
Martinsville loam, 5 to 10 percent slopes, eroded	B	0.32	173	0.1%
Fishhook silt loam, 2 to 5 percent slopes, eroded	C	0.35	166	0.1%
Thebes silt loam, 2 to 5 percent slopes	B	0.31	159	0.1%
Russell silt loam, Bloomington Ridged Plain, 5 to 10 percent slopes, eroded	B	0.36	159	0.1%
Shiloh silty clay loam	C/D	0.31	154	0.1%
Senachwine silt loam, 2 to 5 percent slopes, eroded	C	0.39	146	0.1%
Thebes silt loam, 2 to 5 percent slopes	B	0.36	139	0.1%
Starks silt loam 0 to 2 percent slopes	C	0.4	137	0.1%
Senachwine silt loam, 10 to 18 percent slopes, eroded	C	0.39	134	0.1%
Ava-Blair complex, 2 to 7 percent slopes, eroded	C	0.5	122	0.1%
Proctor silt loam, 0 to 2 percent slopes	B	0.32	117	0.1%
Camden silt loam, 0 to 2 percent slopes	B	0.46	115	0.1%
Camden silt loam, 5 to 10 percent slopes, eroded	B	0.41	110	0.1%
Huey silt loam, 0 to 2 percent slopes	D	0.47	99	0.1%
Sexton silt loam	C/D	0.39	92	0.1%
Parke silt loam, 5 to 10 percent slopes, eroded	B	0.46	91	0.1%
Lenzburg gravelly loam, 1 to 5 percent slopes	C	0.36	91	0.1%
Ursa-Atlas complex, 10 to 15 percent slopes, eroded	D	0.33	88	0.1%
Piasa silt loam, 0 to 2 percent slopes	D	0.46	87	0.1%
Alvin fine sandy loam, 5 to 10 percent slopes	A	0.43	83	0.1%
Coulterville silt loam, 2 to 5 percent slopes, eroded	D	0.53	79	0.1%
Princeton fine sandy loam, 5 to 10 percent slopes, eroded	B	0.27	79	0.1%
Drummer-Milford silty clay loams, 0 to 2 percent slopes	B/D	0.34	78	0.1%
Medway loam, 0 to 3 percent slopes, rarely flooded	C	0.25	74	0.0%
Grantfork silty clay loam, 2 to 5 percent slopes, eroded	C	0.39	66	0.0%
Aquents, loamy, nearly level	A/D	<Null>	64	0.0%
Dana silt loam, 2 to 5 percent slopes	C	0.36	61	0.0%
Urban land	<Null>	<Null>	60	0.0%
Radford silt loam, frequently flooded	C	0.44	60	0.0%
Dana silt loam, 0 to 2 percent slopes	C	0.38	58	0.0%
Ross silt loam, 0 to 2 percent slopes, frequently flooded	B	0.26	55	0.0%
Racoon silt loam, 0 to 2 percent slopes	C/D	0.49	55	0.0%
Senachwine silt loam, 18 to 35 percent slopes	C	0.38	54	0.0%
Comfrey silt loam overwash, frequently flooded	B/D	0.31	53	0.0%
Oconee silt loam, 2 to 5 percent slopes	C/D	0.42	51	0.0%
Birds silt loam, frequently flooded	C/D	0.49	50	0.0%
Parke silt loam, 5 to 10 percent slopes, eroded	B	0.38	44	0.0%
Senachwine clay loam, 5 to 10 percent slopes, severely eroded	C	0.37	41	0.0%

Mapunit Name	Hydrologic Group - Dominant Condition	K-Factor	Area	Percent
Atlas silt loam, 2 to 5 percent slopes, eroded	D	0.41	41	0.0%
Starks silt loam, 2 to 5 percent slopes	C	0.39	40	0.0%
Passport silt loam, 5 to 10 percent slopes, eroded	C/D	0.37	38	0.0%
Pike silt loam, 2 to 5 percent slopes	B	0.44	35	0.0%
Flanagan silt loam, 0 to 2 percent slopes	C/D	0.39	33	0.0%
Pits, gravel	<Null>	<Null>	33	0.0%
Birds silt loam, frequently flooded	C/D	0.48	28	0.0%
Shiloh silty clay loam	C/D	0.28	27	0.0%
Orion silt loam, frequently flooded	C	0.53	27	0.0%
Millbrook silt loam, 0 to 2 percent slopes	C/D	0.41	23	0.0%
Douglas silt loam, 5 to 10 percent slopes, eroded	B	0.44	23	0.0%
Princeton fine sandy loam, 2 to 5 percent slopes, eroded	B	0.24	21	0.0%
Lenzburg loam, 7 to 20 percent slopes	C	0.36	19	0.0%
Sabina silt loam, 0 to 2 percent slopes	C/D	0.39	15	0.0%
Camden silt loam, 2 to 5 percent slopes	B	0.41	13	0.0%
Orthents, loamy, 7 to 20 percent slopes	C	0.37	12	0.0%
Tamalco silt loam	D	0.4	9	0.0%
Russell silt loam, Bloomington Ridged Plain, 2 to 5 percent slopes	B	0.4	8	0.0%
Shoals silt loam, 0 to 2 percent slopes, frequently flooded	B/D	0.43	7	0.0%
Tice silty clay loam, frequently flooded	C	0.38	7	0.0%
Passport silty clay loam, 5 to 10 percent slopes, severely eroded	C/D	0.37	7	0.0%
Orthents, loamy, nonacid, gently sloping	C	0.36	7	0.0%
Hickory clay loam, 10 to 18 percent slopes, severely eroded	B	0.33	7	0.0%
Senachwine clay loam, 10 to 18 percent slopes, severely eroded	C	0.38	6	0.0%
Blair silt loam, 2 to 5 percent slopes, eroded	C	0.48	5	0.0%
Atlas silty clay loam, 2 to 5 percent slopes, severely eroded	D	0.42	5	0.0%
Martinsville silt loam, 5 to 10 percent slopes, eroded	B	0.27	4	0.0%
Orthents, loamy, nonacid, strongly sloping	C	0.37	4	0.0%
Hartsburg silty clay loam, 0 to 2 percent slopes	B/D	0.4	2	0.0%
Camden silt loam, sandy substratum, 2 to 5 percent slopes, rarely flooded	C	0.35	2	0.0%
Miscellaneous water	<Null>	<Null>	2	0.0%

Appendix C

Water Quality Data

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StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			12/11/2017	Total suspended solids		19	mg/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Volatile suspended solids		5	mg/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Potassium	Dissolved	6640	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Sodium	Dissolved	20100	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Strontium	Dissolved	145	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Phosphorus	Dissolved	0.059	mg/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Temperature, water		3.4	deg C	
C-21	LITTLE WABASH RIVER			12/11/2017	Specific conductance		657.6	umho/cm	
C-21	LITTLE WABASH RIVER			12/11/2017	pH		7.8	None	
C-21	LITTLE WABASH RIVER			12/11/2017	Dissolved oxygen saturation		81.6	%	
C-21	LITTLE WABASH RIVER			12/11/2017	Dissolved oxygen (DO)		10.86	mg/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Iron	Total	1060	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Aluminum	Total	210	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Barium	Total	75	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Boron	Total	36.6	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Calcium	Total	76800	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Turbidity		19.3	NTU	
C-21	LITTLE WABASH RIVER			12/11/2017	Iron	Dissolved	88.7	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Chloride	Total	29.7	mg/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Sulfate	Total	60.1	mg/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Phosphorus	Total	0.181	mg/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Organic carbon	Total	5.36	mg/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Barium	Dissolved	62.2	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Boron	Dissolved	32	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Temperature, air		8	deg C	
C-21	LITTLE WABASH RIVER			12/11/2017	Calcium	Dissolved	69900	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Manganese	Dissolved	401	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Strontium	Total	155	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Magnesium	Total	29200	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Manganese	Total	465	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Potassium	Total	7560	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Sodium	Total	22300	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Magnesium	Dissolved	25500	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Lead	Total	5.08	ug/l	
C-21	LITTLE WABASH RIVER			12/11/2017	Temperature, sample		0	deg C	
C-21	LITTLE WABASH RIVER			12/11/2017	Hardness, Ca, Mg		312000	ug/l	C
C-21	LITTLE WABASH RIVER			10/23/2017	Boron	Dissolved	42.4	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Strontium	Total	93.2	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Barium	Dissolved	50.9	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Phosphorus	Dissolved	0.394	mg/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Calcium	Dissolved	35900	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Zinc	Total	14.6	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Volatile suspended solids		19	mg/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Magnesium	Dissolved	12600	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Kjeldahl nitrogen	Total	1.4	mg/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Sulfate	Total	34.6	mg/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Chloride	Total	18.5	mg/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Organic carbon	Total	10.2	mg/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Arsenic	Total	2.52	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Calcium	Total	41800	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Potassium	Total	10600	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Magnesium	Total	14400	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Iron	Total	2700	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Hardness, Ca, Mg		164000	ug/l	C
C-21	LITTLE WABASH RIVER			10/23/2017	Aluminum	Total	1690	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Sodium	Total	11200	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Boron	Total	66.5	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Iron	Dissolved	97.3	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Temperature, water		14.2	deg C	
C-21	LITTLE WABASH RIVER			10/23/2017	Inorganic nitrogen (nitrate and nitrite)	Total	0.61	mg/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Cyanide, available		2.32	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Temperature, sample		0	deg C	
C-21	LITTLE WABASH RIVER			10/23/2017	Nickel	Total	5.22	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Barium	Total	78.1	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Manganese	Dissolved	97.9	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Dissolved oxygen saturation		70.8	%	
C-21	LITTLE WABASH RIVER			10/23/2017	pH		7.68	None	
C-21	LITTLE WABASH RIVER			10/23/2017	Temperature, air		14	deg C	
C-21	LITTLE WABASH RIVER			10/23/2017	Dissolved oxygen (DO)		7.25	mg/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Turbidity		131	NTU	
C-21	LITTLE WABASH RIVER			10/23/2017	Phosphorus	Total	0.625	mg/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Total suspended solids		111	mg/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Specific conductance		370.2	umho/cm	
C-21	LITTLE WABASH RIVER			10/23/2017	Strontium	Dissolved	84.7	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Manganese	Total	285	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Sodium	Dissolved	11100	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Potassium	Dissolved	9880	ug/l	
C-21	LITTLE WABASH RIVER			10/23/2017	Arsenic	Dissolved	2.18	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Organic carbon	Total	5.03	mg/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Phosphorus	Total	0.206	mg/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Kjeldahl nitrogen	Total	0.84	mg/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Aluminum	Total	216	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Barium	Total	98.4	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Boron	Total	33	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			9/18/2017	Potassium	Dissolved	4020	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Sulfate	Total	19.5	mg/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Sodium	Dissolved	18400	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Barium	Dissolved	79.6	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Boron	Dissolved	37.8	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Calcium	Dissolved	58200	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Total suspended solids		30	mg/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Chloride	Total	24.2	mg/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Strontium	Dissolved	136	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Manganese	Dissolved	84.7	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Volatile suspended solids		14	mg/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Dissolved oxygen saturation		88.9	%	
C-21	LITTLE WABASH RIVER			9/18/2017	Strontium	Total	139	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Sodium	Total	17400	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Magnesium	Total	22500	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Dissolved oxygen (DO)		7.61	mg/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Manganese	Total	374	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	pH		8.25	None	
C-21	LITTLE WABASH RIVER			9/18/2017	Specific conductance		521	umho/cm	
C-21	LITTLE WABASH RIVER			9/18/2017	Temperature, air		32	deg C	
C-21	LITTLE WABASH RIVER			9/18/2017	Temperature, water		23	deg C	
C-21	LITTLE WABASH RIVER			9/18/2017	Turbidity		27.6	NTU	
C-21	LITTLE WABASH RIVER			9/18/2017	Potassium	Total	3770	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Arsenic	Dissolved	3.16	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Magnesium	Dissolved	21800	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Temperature, sample		4	deg C	
C-21	LITTLE WABASH RIVER			9/18/2017	Calcium	Total	58900	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Arsenic	Total	3.61	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Hardness, Ca, Mg		240000	ug/l	C
C-21	LITTLE WABASH RIVER			9/18/2017	Iron	Total	510	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Lead	Total	6.56	ug/l	
C-21	LITTLE WABASH RIVER			9/18/2017	Phosphorus	Dissolved	0.076	mg/l	
C-21	LITTLE WABASH RIVER			9/12/2017	Total suspended solids		26	mg/l	
C-21	LITTLE WABASH RIVER			9/12/2017	Kjeldahl nitrogen	Total	0.71	mg/l	
C-21	LITTLE WABASH RIVER			9/12/2017	Phosphorus	Total	0.15	mg/l	
C-21	LITTLE WABASH RIVER			9/12/2017	Volatile suspended solids		7	mg/l	
C-21	LITTLE WABASH RIVER			9/12/2017	Temperature, sample		0	deg C	
C-21	LITTLE WABASH RIVER			8/30/2017	Sulfate	Total	20.6	mg/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Volatile suspended solids		9	mg/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Kjeldahl nitrogen	Total	0.58	mg/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Alkalinity, total		225	mg/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Organic carbon	Total	4.66	mg/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Fluoride	Total	0.22	mg/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Phosphorus	Total	0.169	mg/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Magnesium	Total	21000	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Total suspended solids		28	mg/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Arsenic	Dissolved	3.97	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Iron	Total	574	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Chloride	Total	23.1	mg/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Barium	Total	94.8	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Turbidity		24.3	NTU	
C-21	LITTLE WABASH RIVER			8/30/2017	Temperature, water		23.4	deg C	
C-21	LITTLE WABASH RIVER			8/30/2017	Temperature, air		24	deg C	
C-21	LITTLE WABASH RIVER			8/30/2017	Specific conductance		503	umho/cm	
C-21	LITTLE WABASH RIVER			8/30/2017	pH		7.8	None	
C-21	LITTLE WABASH RIVER			8/30/2017	Dissolved oxygen saturation		53	%	
C-21	LITTLE WABASH RIVER			8/30/2017	Aluminum	Total	285	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Hardness, Ca, Mg		237000	ug/l	C
C-21	LITTLE WABASH RIVER	1	ft	8/30/2017	Chlorophyll b	Total	0.99	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Boron	Total	43.2	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Calcium	Total	60200	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Temperature, sample		4	deg C	
C-21	LITTLE WABASH RIVER			8/30/2017	Magnesium	Dissolved	21000	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Dissolved oxygen (DO)		4.8	mg/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Phosphorus	Dissolved	0.086	mg/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Barium	Dissolved	72	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Boron	Dissolved	36.3	ug/l	
C-21	LITTLE WABASH RIVER	1	ft	8/30/2017	Chlorophyll a, uncorrected for pheophytin	Total	24.9	ug/l	
C-21	LITTLE WABASH RIVER	1	ft	8/30/2017	Chlorophyll a, corrected for pheophytin	Total	22.2	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Strontium	Dissolved	132	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Manganese	Dissolved	50	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Calcium	Dissolved	56400	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Potassium	Dissolved	3840	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Arsenic	Total	4.08	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Potassium	Total	4130	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Sodium	Total	17000	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Strontium	Total	138	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Manganese	Total	294	ug/l	
C-21	LITTLE WABASH RIVER			8/30/2017	Sodium	Dissolved	16700	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Kjeldahl nitrogen	Total	0.57	mg/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Volatile suspended solids		9	mg/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Total suspended solids		39	mg/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Aluminum	Total	409	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			8/7/2017	Organic carbon	Total	4.15	mg/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Phosphorus	Total	0.264	mg/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Sulfate	Total	22.6	mg/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Barium	Total	87.8	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Boron	Total	34	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Potassium	Dissolved	4500	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Chloride	Total	15.2	mg/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Temperature, sample		1	deg C	
C-21	LITTLE WABASH RIVER			8/7/2017	Strontium	Total	127	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Calcium	Total	55200	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Iron	Total	775	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Manganese	Dissolved	431	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Strontium	Dissolved	126	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Calcium	Dissolved	54800	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Boron	Dissolved	33.1	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Magnesium	Dissolved	19800	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Barium	Dissolved	80	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Arsenic	Total	3.51	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Sodium	Total	12900	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Phosphorus	Dissolved	0.098	mg/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Potassium	Total	4490	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Manganese	Total	531	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Magnesium	Total	19600	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Lead	Total	5.79	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Hardness, Ca, Mg		219000	ug/l	C
C-21	LITTLE WABASH RIVER			8/7/2017	Arsenic	Dissolved	3.07	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Temperature, water		23.3	deg C	
C-21	LITTLE WABASH RIVER			8/7/2017	Dissolved oxygen (DO)		3.04	mg/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Dissolved oxygen saturation		35.7	%	
C-21	LITTLE WABASH RIVER			8/7/2017	pH		7.68	None	
C-21	LITTLE WABASH RIVER			8/7/2017	Temperature, air		24	deg C	
C-21	LITTLE WABASH RIVER			8/7/2017	Turbidity		32.9	NTU	
C-21	LITTLE WABASH RIVER			8/7/2017	Sodium	Dissolved	13100	ug/l	
C-21	LITTLE WABASH RIVER			8/7/2017	Specific conductance		474.7	umho/cm	
RCG-4	PARADISE	1	ft	7/25/2017	Temperature, sample		14	deg C	
C-21	LITTLE WABASH RIVER			6/26/2017	Barium	Total	53.3	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Temperature, water		22.2	deg C	
C-21	LITTLE WABASH RIVER			6/26/2017	Volatile suspended solids		13	mg/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Dissolved oxygen (DO)		8.14	mg/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Dissolved oxygen saturation		93.5	%	
C-21	LITTLE WABASH RIVER			6/26/2017	pH		8.33	None	
C-21	LITTLE WABASH RIVER			6/26/2017	Specific conductance		316.8	umho/cm	
C-21	LITTLE WABASH RIVER			6/26/2017	Temperature, air		26	deg C	
C-21	LITTLE WABASH RIVER			6/26/2017	Arsenic	Dissolved	2.19	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Potassium	Dissolved	2970	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Total suspended solids		41	mg/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Organic carbon	Total	4.17	mg/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Sodium	Dissolved	7260	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Chloride	Total	14.8	mg/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Inorganic nitrogen (nitrate and nitrite)	Total	0.467	mg/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Phosphorus	Total	0.136	mg/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Kjeldahl nitrogen	Total	1.42	mg/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Aluminum	Total	355	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Sulfate	Total	12.4	mg/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Arsenic	Total	2.54	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Calcium	Total	35300	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Manganese	Dissolved	12.3	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Magnesium	Dissolved	14000	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Magnesium	Total	13900	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Calcium	Dissolved	34000	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Boron	Dissolved	21.5	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Barium	Dissolved	43.5	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Phosphorus	Dissolved	0.079	mg/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Temperature, sample		0	deg C	
C-21	LITTLE WABASH RIVER			6/26/2017	Turbidity		33	NTU	
C-21	LITTLE WABASH RIVER			6/26/2017	Hardness, Ca, Mg		146000	ug/l	C
C-21	LITTLE WABASH RIVER			6/26/2017	Iron	Total	569	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Strontium	Total	81.3	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Sodium	Total	7360	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Manganese	Total	187	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Boron	Total	24.8	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Strontium	Dissolved	80.3	ug/l	
C-21	LITTLE WABASH RIVER			6/26/2017	Potassium	Total	3500	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Strontium	Total	166	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Phosphorus	Dissolved	0.021	mg/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Barium	Dissolved	93.5	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Sodium	Total	13200	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Boron	Dissolved	28.7	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Temperature, air		26	deg C	
C-21	LITTLE WABASH RIVER			6/14/2017	Organic carbon	Total	2.7	mg/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Temperature, sample		4	deg C	
C-21	LITTLE WABASH RIVER	1	ft	6/14/2017	Chlorophyll c	Total	4.22	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Temperature, water		26.4	deg C	
C-21	LITTLE WABASH RIVER			6/14/2017	Specific conductance		626	umho/cm	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			6/14/2017	pH		7.9	None	
C-21	LITTLE WABASH RIVER			6/14/2017	Dissolved oxygen saturation		77	%	
C-21	LITTLE WABASH RIVER			6/14/2017	Dissolved oxygen (DO)		6.3	mg/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Potassium	Total	3160	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Turbidity		12.3	NTU	
C-21	LITTLE WABASH RIVER			6/14/2017	Calcium	Dissolved	74400	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Total suspended solids		16	mg/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Hardness, Ca, Mg		300000	ug/l	C
C-21	LITTLE WABASH RIVER			6/14/2017	Volatile suspended solids		5	mg/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Manganese	Total	181	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Magnesium	Total	29000	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Iron	Total	279	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Chloride	Total	20.8	mg/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Barium	Total	102	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Boron	Total	31.9	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Calcium	Total	72300	ug/l	
C-21	LITTLE WABASH RIVER	1	ft	6/14/2017	Chlorophyll a, uncorrected for pheophytin	Total	43.1	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Alkalinity, total		273	mg/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Sulfate	Total	32.9	mg/l	
C-21	LITTLE WABASH RIVER	1	ft	6/14/2017	Chlorophyll a, corrected for pheophytin	Total	40	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Potassium	Dissolved	3150	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Manganese	Dissolved	80	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Strontium	Dissolved	163	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Sodium	Dissolved	13400	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Phosphorus	Total	0.094	mg/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Inorganic nitrogen (nitrate and nitrite)	Total	1.4	mg/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Kjeldahl nitrogen	Total	0.7	mg/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Aluminum	Total	162	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Magnesium	Dissolved	29200	ug/l	
C-21	LITTLE WABASH RIVER			6/14/2017	Fluoride	Total	0.18	mg/l	
C-21	LITTLE WABASH RIVER			6/6/2017	Phosphorus	Total	0.091	mg/l	
C-21	LITTLE WABASH RIVER			6/6/2017	Volatile suspended solids		4	mg/l	
C-21	LITTLE WABASH RIVER			6/6/2017	Inorganic nitrogen (nitrate and nitrite)	Total	2.93	mg/l	
C-21	LITTLE WABASH RIVER			6/6/2017	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			6/6/2017	Total suspended solids		17	mg/l	
C-21	LITTLE WABASH RIVER			6/6/2017	Kjeldahl nitrogen	Total	0.57	mg/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Inorganic nitrogen (nitrate and nitrite)	Total	3.36	mg/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Manganese	Dissolved	89.4	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Potassium	Dissolved	3090	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Sodium	Dissolved	11400	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Strontium	Dissolved	137	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Sodium	Total	11700	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Calcium	Dissolved	63100	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Boron	Dissolved	30.8	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Barium	Dissolved	78.5	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Zinc	Total	6.99	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Calcium	Total	61200	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Magnesium	Dissolved	24100	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Phosphorus	Dissolved	0.071	mg/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Strontium	Total	133	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			5/29/2017	Total suspended solids		16	mg/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Organic carbon	Total	2.95	mg/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Potassium	Total	3250	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Manganese	Total	120	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Magnesium	Total	24100	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Iron	Total	443	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Hardness, Ca, Mg		252000	ug/l	C
C-21	LITTLE WABASH RIVER			5/29/2017	Boron	Total	25.8	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Barium	Total	84.9	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Aluminum	Total	247	ug/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Phosphorus	Total	0.11	mg/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Sulfate	Total	28.2	mg/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Chloride	Total	18.2	mg/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Temperature, water		21.6	deg C	
C-21	LITTLE WABASH RIVER			5/29/2017	Temperature, air		29	deg C	
C-21	LITTLE WABASH RIVER			5/29/2017	Specific conductance		539	umho/cm	
C-21	LITTLE WABASH RIVER			5/29/2017	pH		7.86	None	
C-21	LITTLE WABASH RIVER			5/29/2017	Dissolved oxygen saturation		90.3	%	
C-21	LITTLE WABASH RIVER			5/29/2017	Dissolved oxygen (DO)		7.94	mg/l	
C-21	LITTLE WABASH RIVER			5/29/2017	Turbidity		13.7	NTU	
C-21	LITTLE WABASH RIVER			5/22/2017	Zinc	Total	9.47	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Hardness, Ca, Mg		155000	ug/l	C
C-21	LITTLE WABASH RIVER			5/22/2017	Aluminum	Total	692	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Iron	Total	1060	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Boron	Total	23.3	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Magnesium	Total	14100	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Barium	Total	75.4	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Organic carbon	Total	4.12	mg/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Ammonia-nitrogen	Total	0.1	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			5/22/2017	Inorganic nitrogen (nitrate and nitrite)	Total	3.24	mg/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Alkalinity, total		115	mg/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Volatile suspended solids		16	mg/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Total suspended solids		106	mg/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Temperature, sample		4.1	deg C	
C-21	LITTLE WABASH RIVER	1	ft	5/22/2017	Chlorophyll a, corrected for pheophytin	Total	6.21	ug/l	
C-21	LITTLE WABASH RIVER	1	ft	5/22/2017	Chlorophyll a, uncorrected for pheophytin	Total	7.21	ug/l	
C-21	LITTLE WABASH RIVER	1	ft	5/22/2017	Chlorophyll c	Total	1.44	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Manganese	Total	160	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Strontium	Total	91.3	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Calcium	Dissolved	38800	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Sodium	Total	7020	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Potassium	Total	3450	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Phosphorus	Total	0.269	mg/l	
C-21	LITTLE WABASH RIVER	1	ft	5/22/2017	Chlorophyll b	Total	0.95	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Chloride	Total	13.2	mg/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Kjeldahl nitrogen	Total	0.84	mg/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Phosphorus	Dissolved	0.12	mg/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Barium	Dissolved	53.5	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Boron	Dissolved	22.3	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Dissolved oxygen (DO)		8	mg/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Dissolved oxygen saturation		85	%	
C-21	LITTLE WABASH RIVER			5/22/2017	pH		7.8	None	
C-21	LITTLE WABASH RIVER			5/22/2017	Specific conductance		304	umho/cm	
C-21	LITTLE WABASH RIVER			5/22/2017	Temperature, air		21	deg C	
C-21	LITTLE WABASH RIVER			5/22/2017	Temperature, water		19.1	deg C	
C-21	LITTLE WABASH RIVER			5/22/2017	Turbidity		85	NTU	
C-21	LITTLE WABASH RIVER			5/22/2017	Sodium	Dissolved	6880	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Fluoride	Total	0.24	mg/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Calcium	Total	38800	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Magnesium	Dissolved	13800	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Strontium	Dissolved	87	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Sulfate	Total	15.6	mg/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Potassium	Dissolved	3490	ug/l	
C-21	LITTLE WABASH RIVER			5/22/2017	Manganese	Dissolved	18.9	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Sulfate	Total	33.8	mg/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Magnesium	Dissolved	24300	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Boron	Dissolved	25.9	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Barium	Dissolved	68	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Phosphorus	Dissolved	0.05	mg/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Manganese	Dissolved	47.5	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Potassium	Dissolved	3530	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Sodium	Dissolved	15400	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Strontium	Dissolved	133	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Calcium	Dissolved	60100	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Hardness, Ca, Mg		255000	ug/l	C
C-21	LITTLE WABASH RIVER			4/10/2017	Copper	Total	12.3	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Iron	Total	500	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Manganese	Total	108	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Boron	Total	28.9	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Potassium	Total	3610	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Sodium	Total	16100	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Strontium	Total	149	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Barium	Total	76.3	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Zinc	Total	7.12	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Aluminum	Total	270	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Magnesium	Total	24600	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Inorganic nitrogen (nitrate and nitrite)	Total	3.23	mg/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Total suspended solids		24	mg/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Volatile suspended solids		6	mg/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Chloride	Total	28.9	mg/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Calcium	Total	61300	ug/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Phosphorus	Total	0.128	mg/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Kjeldahl nitrogen	Total	1.16	mg/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Organic carbon	Total	4.37	mg/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			4/10/2017	pH		7.97	None	
C-21	LITTLE WABASH RIVER			4/10/2017	Turbidity		18	NTU	
C-21	LITTLE WABASH RIVER			4/10/2017	Temperature, water		15.03	deg C	
C-21	LITTLE WABASH RIVER			4/10/2017	Specific conductance		545	umho/cm	
C-21	LITTLE WABASH RIVER			4/10/2017	Dissolved oxygen saturation		84.6	%	
C-21	LITTLE WABASH RIVER			4/10/2017	Dissolved oxygen (DO)		8.51	mg/l	
C-21	LITTLE WABASH RIVER			4/10/2017	Temperature, air		20	deg C	
C-21	LITTLE WABASH RIVER			3/6/2017	Strontium	Dissolved	145	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Organic carbon	Total	4.15	mg/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Iron	Dissolved	292	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Boron	Total	32	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Barium	Total	76.6	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Aluminum	Total	156	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Phosphorus	Total	0.088	mg/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Kjeldahl nitrogen	Total	0.71	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			3/6/2017	Dissolved oxygen (DO)		10.09	mg/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Volatile suspended solids		4	mg/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Manganese	Dissolved	243	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Total suspended solids		14	mg/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			3/6/2017	Turbidity		11.2	NTU	
C-21	LITTLE WABASH RIVER			3/6/2017	Temperature, water		9.68	deg C	
C-21	LITTLE WABASH RIVER			3/6/2017	Temperature, air		13	deg C	
C-21	LITTLE WABASH RIVER			3/6/2017	Specific conductance		619	umho/cm	
C-21	LITTLE WABASH RIVER			3/6/2017	pH		7.98	None	
C-21	LITTLE WABASH RIVER			3/6/2017	Dissolved oxygen saturation		88.9	%	
C-21	LITTLE WABASH RIVER			3/6/2017	Inorganic nitrogen (nitrate and nitrite)	Total	0.866	mg/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Sulfate	Total	43.9	mg/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Boron	Dissolved	23.6	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Strontium	Total	161	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Chloride	Total	35.8	mg/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Manganese	Total	262	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Phosphorus	Dissolved	0.02	mg/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Calcium	Total	68900	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Sodium	Total	21200	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Calcium	Dissolved	64800	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Potassium	Dissolved	3700	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Sodium	Dissolved	21100	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Barium	Dissolved	74.8	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Potassium	Total	3610	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Hardness, Ca, Mg		287000	ug/l	C
C-21	LITTLE WABASH RIVER			3/6/2017	Iron	Total	579	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Magnesium	Total	27800	ug/l	
C-21	LITTLE WABASH RIVER			3/6/2017	Magnesium	Dissolved	27900	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Calcium	Dissolved	50600	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Magnesium	Total	20400	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Iron	Total	878	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Hardness, Ca, Mg		212000	ug/l	C
C-21	LITTLE WABASH RIVER			1/23/2017	Potassium	Total	4180	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Phosphorus	Dissolved	0.11	mg/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Sodium	Total	12200	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Potassium	Dissolved	4460	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Manganese	Dissolved	38.1	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Magnesium	Dissolved	20600	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Iron	Dissolved	52.1	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Boron	Total	27.4	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Ammonia-nitrogen	Total	0.13	mg/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Sulfate	Total	23.1	mg/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			1/23/2017	Barium	Total	70	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Aluminum	Total	554	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Organic carbon	Total	4.6	mg/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Phosphorus	Total	0.192	mg/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Calcium	Total	51200	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Inorganic nitrogen (nitrate and nitrite)	Total	2.92	mg/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Volatile suspended solids		8	mg/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Total suspended solids		46	mg/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Kjeldahl nitrogen	Total	1.27	mg/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Manganese	Total	101	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Zinc	Total	9.9	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Strontium	Total	113	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Boron	Dissolved	20.9	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Chloride	Total	27	mg/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Turbidity		38.8	NTU	
C-21	LITTLE WABASH RIVER			1/23/2017	Dissolved oxygen (DO)		10.92	mg/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Dissolved oxygen saturation		89.1	%	
C-21	LITTLE WABASH RIVER			1/23/2017	pH		8.06	None	
C-21	LITTLE WABASH RIVER			1/23/2017	Specific conductance		461	umho/cm	
C-21	LITTLE WABASH RIVER			1/23/2017	Strontium	Dissolved	112	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Temperature, water		6.56	deg C	
C-21	LITTLE WABASH RIVER			1/23/2017	Aluminum	Dissolved	56.2	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Temperature, air		6	deg C	
C-21	LITTLE WABASH RIVER			1/23/2017	Barium	Dissolved	64.9	ug/l	
C-21	LITTLE WABASH RIVER			1/23/2017	Sodium	Dissolved	12600	ug/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Barium	Total	72.9	ug/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Organic carbon	Total	3.93	mg/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Total suspended solids		4	mg/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Sulfate	Total	42.8	mg/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Chloride	Total	38.6	mg/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Phosphorus	Total	0.101	mg/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Inorganic nitrogen (nitrate and nitrite)	Total	1.88	mg/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Calcium	Total	75400	ug/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Strontium	Dissolved	154	ug/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Manganese	Dissolved	242	ug/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Iron	Dissolved	54	ug/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Calcium	Dissolved	71300	ug/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Sodium	Dissolved	23100	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			12/12/2016	Magnesium	Dissolved	27500	ug/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Phosphorus	Dissolved	0.047	mg/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Potassium	Dissolved	3760	ug/l	
C-21	LITTLE WABASH RIVER			12/12/2016	pH		7.98	None	
C-21	LITTLE WABASH RIVER			12/12/2016	Strontium	Total	160	ug/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Dissolved oxygen saturation		86.2	%	
C-21	LITTLE WABASH RIVER			12/12/2016	Specific conductance		678	umho/cm	
C-21	LITTLE WABASH RIVER			12/12/2016	Temperature, air		1	deg C	
C-21	LITTLE WABASH RIVER			12/12/2016	Temperature, water		2.24	deg C	
C-21	LITTLE WABASH RIVER			12/12/2016	Turbidity		9.55	NTU	
C-21	LITTLE WABASH RIVER			12/12/2016	Dissolved oxygen (DO)		11.82	mg/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Hardness, Ca, Mg		303000	ug/l	C
C-21	LITTLE WABASH RIVER			12/12/2016	Sodium	Total	24200	ug/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			12/12/2016	Barium	Dissolved	76.6	ug/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Potassium	Total	3960	ug/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Manganese	Total	259	ug/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Magnesium	Total	27800	ug/l	
C-21	LITTLE WABASH RIVER			12/12/2016	Iron	Total	509	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Phosphorus	Total	0.225	mg/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Iron	Total	622	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Organic carbon	Total	5.09	mg/l	S
C-21	LITTLE WABASH RIVER			11/7/2016	Total suspended solids		10	mg/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			11/7/2016	Chloride	Total	27.1	mg/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Boron	Total	42.4	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Barium	Total	85.1	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Aluminum	Total	113	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Inorganic nitrogen (nitrate and nitrite)	Total	0.119	mg/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Phosphorus	Dissolved	0.138	mg/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Sulfate	Total	39.2	mg/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Boron	Dissolved	49	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Magnesium	Dissolved	29700	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Manganese	Dissolved	249	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Iron	Dissolved	56.1	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Barium	Dissolved	78.1	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Calcium	Dissolved	75600	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Sodium	Total	18600	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Calcium	Total	77900	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Potassium	Total	8040	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Manganese	Total	286	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Hardness, Ca, Mg		311000	ug/l	C
C-21	LITTLE WABASH RIVER			11/7/2016	Strontium	Total	166	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Strontium	Dissolved	153	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Sodium	Dissolved	16700	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Potassium	Dissolved	7820	ug/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Turbidity		11.1	NTU	
C-21	LITTLE WABASH RIVER			11/7/2016	Dissolved oxygen (DO)		8.14	mg/l	
C-21	LITTLE WABASH RIVER			11/7/2016	Dissolved oxygen saturation		77.1	%	
C-21	LITTLE WABASH RIVER			11/7/2016	pH		7.85	None	
C-21	LITTLE WABASH RIVER			11/7/2016	Specific conductance		643	umho/cm	
C-21	LITTLE WABASH RIVER			11/7/2016	Temperature, air		20	deg C	
C-21	LITTLE WABASH RIVER			11/7/2016	Temperature, water		12.82	deg C	
C-21	LITTLE WABASH RIVER			11/7/2016	Magnesium	Total	28300	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Organic carbon	Total	8.06	mg/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Sulfate	Total	28	mg/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Chloride	Total	17.6	mg/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Strontium	Total	109	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Sodium	Total	14900	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Potassium	Total	9410	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Magnesium	Total	17100	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Manganese	Total	310	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Calcium	Total	46800	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Iron	Total	690	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Hardness, Ca, Mg		187000	ug/l	C
C-21	LITTLE WABASH RIVER			9/19/2016	Potassium	Dissolved	8420	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Barium	Total	77.2	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Arsenic	Dissolved	2.57	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Barium	Dissolved	66.9	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Aluminum	Total	334	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Magnesium	Dissolved	16800	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Iron	Dissolved	125	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Boron	Dissolved	37.9	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Temperature, water		21.6	deg C	
C-21	LITTLE WABASH RIVER			9/19/2016	Phosphorus	Total	0.398	mg/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Kjeldahl nitrogen	Total	0.79	mg/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Inorganic nitrogen (nitrate and nitrite)	Total	0.679	mg/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Volatile suspended solids		6	mg/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Total suspended solids		36	mg/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Arsenic	Total	2.78	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Calcium	Dissolved	46000	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Sodium	Dissolved	13800	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Strontium	Dissolved	102	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			9/19/2016	Manganese	Dissolved	224	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Boron	Total	39.1	ug/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Phosphorus	Dissolved	0.308	mg/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Turbidity		37.2	NTU	
C-21	LITTLE WABASH RIVER			9/19/2016	pH		7.6	None	
C-21	LITTLE WABASH RIVER			9/19/2016	Dissolved oxygen saturation		47.5	%	
C-21	LITTLE WABASH RIVER			9/19/2016	Dissolved oxygen (DO)		4.18	mg/l	
C-21	LITTLE WABASH RIVER			9/19/2016	Specific conductance		433.4	umho/cm	
C-21	LITTLE WABASH RIVER			9/19/2016	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			9/19/2016	Temperature, air		29	deg C	
C-21	LITTLE WABASH RIVER			8/1/2016	Organic carbon	Total	5.36	mg/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Calcium	Total	53000	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			8/1/2016	Kjeldahl nitrogen	Total	0.5	mg/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Inorganic nitrogen (nitrate and nitrite)	Total	0.373	mg/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Volatile suspended solids		6	mg/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Phosphorus	Total	0.222	mg/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Boron	Total	40.2	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Calcium	Dissolved	52000	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Boron	Dissolved	37.2	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Total suspended solids		31	mg/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Sodium	Total	12500	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Strontium	Total	119	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Barium	Dissolved	75.2	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Arsenic	Total	3.26	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Iron	Total	674	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Magnesium	Dissolved	17500	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Magnesium	Total	16200	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Manganese	Total	478	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Hardness, Ca, Mg		199000	ug/l	C
C-21	LITTLE WABASH RIVER			8/1/2016	Aluminum	Total	256	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Manganese	Dissolved	399	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Potassium	Dissolved	5700	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Sodium	Dissolved	12200	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Strontium	Dissolved	112	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Potassium	Total	5580	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Dissolved oxygen saturation		60.8	%	
C-21	LITTLE WABASH RIVER			8/1/2016	pH		7.4	None	
C-21	LITTLE WABASH RIVER			8/1/2016	Specific conductance		451	umho/cm	
C-21	LITTLE WABASH RIVER			8/1/2016	Temperature, water		26.2	deg C	
C-21	LITTLE WABASH RIVER			8/1/2016	Dissolved oxygen (DO)		4.91	mg/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Turbidity		28.4	NTU	
C-21	LITTLE WABASH RIVER			8/1/2016	Barium	Total	82.2	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Arsenic	Dissolved	2.89	ug/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Chloride	Total	15.5	mg/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Sulfate	Total	22.6	mg/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Ammonia-nitrogen	Total	0.16	mg/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Phosphorus	Dissolved	0.127	mg/l	
C-21	LITTLE WABASH RIVER			8/1/2016	Temperature, air		24	deg C	
C-21	LITTLE WABASH RIVER			6/20/2016	Calcium	Total	69300	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Boron	Total	43.3	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Magnesium	Total	27100	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Sodium	Dissolved	13600	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Organic carbon	Total	3.74	mg/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Temperature, sample		5	deg C	
C-21	LITTLE WABASH RIVER			6/20/2016	Manganese	Dissolved	282	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Arsenic	Dissolved	2.25	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Strontium	Dissolved	152	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Iron	Total	470	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Sodium	Total	14400	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Hardness, Ca, Mg		285000	ug/l	C
C-21	LITTLE WABASH RIVER			6/20/2016	Potassium	Total	3610	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Manganese	Total	380	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Magnesium	Dissolved	26700	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Strontium	Total	163	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Turbidity		24.1	NTU	
C-21	LITTLE WABASH RIVER			6/20/2016	Arsenic	Total	2.32	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Temperature, water		26.8	deg C	
C-21	LITTLE WABASH RIVER			6/20/2016	Dissolved oxygen saturation		75.5	%	
C-21	LITTLE WABASH RIVER			6/20/2016	Specific conductance		592	umho/cm	
C-21	LITTLE WABASH RIVER			6/20/2016	Temperature, air		31	deg C	
C-21	LITTLE WABASH RIVER			6/20/2016	Dissolved oxygen (DO)		6.03	mg/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Volatile suspended solids		7	mg/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Phosphorus	Total	0.178	mg/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Inorganic nitrogen (nitrate and nitrite)	Total	1.18	mg/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Total suspended solids		29	mg/l	
C-21	LITTLE WABASH RIVER			6/20/2016	pH		7.9	None	
C-21	LITTLE WABASH RIVER			6/20/2016	Calcium	Dissolved	70000	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Sulfate	Total	31	mg/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Boron	Dissolved	20.7	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Barium	Dissolved	85.9	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Phosphorus	Dissolved	0.099	mg/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Potassium	Dissolved	3640	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			6/20/2016	Kjeldahl nitrogen	Total	0.82	mg/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Aluminum	Total	271	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Barium	Total	95.7	ug/l	
C-21	LITTLE WABASH RIVER			6/20/2016	Chloride	Total	24.2	mg/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Calcium	Dissolved	59600	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Barium	Dissolved	67	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Phosphorus	Dissolved	0.034	mg/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Inorganic nitrogen (nitrate and nitrite)	Total	2.42	mg/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Zinc	Total	21	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Volatile suspended solids		4	mg/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Aluminum	Total	254	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Calcium	Total	64200	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Strontium	Total	142	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Barium	Total	77.7	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Sulfate	Total	33.9	mg/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Chloride	Total	23.1	mg/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Phosphorus	Total	0.082	mg/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Organic carbon	Total	3.72	mg/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Total suspended solids		20	mg/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Dissolved oxygen saturation		82.7	%	
C-21	LITTLE WABASH RIVER			5/16/2016	Manganese	Dissolved	130	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Potassium	Dissolved	2770	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			5/16/2016	Hardness, Ca, Mg		266000	ug/l	C
C-21	LITTLE WABASH RIVER			5/16/2016	Specific conductance		537.9	umho/cm	
C-21	LITTLE WABASH RIVER			5/16/2016	Dissolved oxygen (DO)		8.41	mg/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Temperature, water		14.5	deg C	
C-21	LITTLE WABASH RIVER			5/16/2016	Turbidity		14.2	NTU	
C-21	LITTLE WABASH RIVER			5/16/2016	pH		8.1	None	
C-21	LITTLE WABASH RIVER			5/16/2016	Magnesium	Dissolved	24200	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Sodium	Total	14900	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Potassium	Total	2930	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Temperature, air		17	deg C	
C-21	LITTLE WABASH RIVER			5/16/2016	Manganese	Total	171	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Magnesium	Total	25700	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Iron	Total	567	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Strontium	Dissolved	132	ug/l	
C-21	LITTLE WABASH RIVER			5/16/2016	Sodium	Dissolved	14400	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Inorganic nitrogen (nitrate and nitrite)	Total	0.786	mg/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Vanadium	Total	11	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Phosphorus	Dissolved	0.157	mg/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Magnesium	Total	18400	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Phosphorus	Total	0.946	mg/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Kjeldahl nitrogen	Total	0.86	mg/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Total suspended solids		1020	mg/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Strontium	Total	93.1	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Aluminum	Dissolved	170	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Chloride	Total	12.3	mg/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Volatile suspended solids		106	mg/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Iron	Total	16200	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			4/11/2016	Arsenic	Total	3.87	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Nickel	Total	18.1	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Cobalt	Total	7.78	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Chromium	Total	19.3	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Calcium	Total	48100	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Hardness, Ca, Mg		196000	ug/l	C
C-21	LITTLE WABASH RIVER			4/11/2016	Sodium	Total	9150	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Lead	Total	25.2	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Boron	Total	28.3	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Manganese	Total	910	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Potassium	Total	5730	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Copper	Total	16.6	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Dissolved oxygen saturation		86.5	%	
C-21	LITTLE WABASH RIVER			4/11/2016	Magnesium	Dissolved	8350	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Manganese	Dissolved	27.7	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Potassium	Dissolved	3700	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Strontium	Dissolved	53.7	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Specific conductance		235	umho/cm	
C-21	LITTLE WABASH RIVER			4/11/2016	Temperature, air		12	deg C	
C-21	LITTLE WABASH RIVER			4/11/2016	Turbidity		670	NTU	
C-21	LITTLE WABASH RIVER			4/11/2016	Dissolved oxygen (DO)		9.63	mg/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Temperature, water		10.6	deg C	
C-21	LITTLE WABASH RIVER			4/11/2016	pH		8	None	
C-21	LITTLE WABASH RIVER			4/11/2016	Sodium	Dissolved	7800	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Aluminum	Total	12000	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Organic carbon	Total	8.68	mg/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Barium	Total	204	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Iron	Dissolved	159	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Barium	Dissolved	32	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Boron	Dissolved	20.3	ug/l	
C-21	LITTLE WABASH RIVER			4/11/2016	Calcium	Dissolved	23500	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Phosphorus	Dissolved	0.132	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			2/29/2016	Potassium	Total	3790	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Manganese	Total	80.7	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Lead	Total	6.8	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Hardness, Ca, Mg		167000	ug/l	C
C-21	LITTLE WABASH RIVER			2/29/2016	Calcium	Total	41100	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			2/29/2016	Sodium	Total	10200	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Chloride	Total	18	mg/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Barium	Total	66.6	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Organic carbon	Total	4.12	mg/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Inorganic nitrogen (nitrate and nitrite)	Total	3.57	mg/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Kjeldahl nitrogen	Total	0.65	mg/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Total suspended solids		41	mg/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Strontium	Total	93.4	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Aluminum	Total	1460	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Iron	Total	1630	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Sulfate	Total	28.4	mg/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Zinc	Total	17.4	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Volatile suspended solids		8	mg/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Specific conductance		372	umho/cm	
C-21	LITTLE WABASH RIVER			2/29/2016	Calcium	Dissolved	39200	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Boron	Dissolved	19.3	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Barium	Dissolved	51.1	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Temperature, water		6.6	deg C	
C-21	LITTLE WABASH RIVER			2/29/2016	Aluminum	Dissolved	115	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	pH		8.2	None	
C-21	LITTLE WABASH RIVER			2/29/2016	Dissolved oxygen saturation		90.6	%	
C-21	LITTLE WABASH RIVER			2/29/2016	Dissolved oxygen (DO)		11.09	mg/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Turbidity		63	NTU	
C-21	LITTLE WABASH RIVER			2/29/2016	Boron	Total	17	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Manganese	Dissolved	24.3	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Phosphorus	Total	0.226	mg/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Magnesium	Total	15700	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Temperature, air		9	deg C	
C-21	LITTLE WABASH RIVER			2/29/2016	Strontium	Dissolved	89.1	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Sodium	Dissolved	9640	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Potassium	Dissolved	3480	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Magnesium	Dissolved	14600	ug/l	
C-21	LITTLE WABASH RIVER			2/29/2016	Iron	Dissolved	104	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Boron	Dissolved	19.2	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Calcium	Dissolved	63100	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Magnesium	Dissolved	27800	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Strontium	Dissolved	133	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Sodium	Dissolved	15200	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Phosphorus	Total	0.093	mg/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Potassium	Dissolved	2760	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Manganese	Dissolved	248	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Aluminum	Total	143	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Volatile suspended solids		4	mg/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Organic carbon	Total	2.62	mg/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Chloride	Total	25.1	mg/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Total suspended solids		4	mg/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Barium	Total	70.5	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Boron	Total	20.2	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Sulfate	Total	43.8	mg/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Dissolved oxygen saturation		87.3	%	
C-21	LITTLE WABASH RIVER			1/25/2016	Phosphorus	Dissolved	0.063	mg/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Calcium	Total	63400	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Temperature, sample		1	deg C	
C-21	LITTLE WABASH RIVER			1/25/2016	Inorganic nitrogen (nitrate and nitrite)	Total	3.17	mg/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Turbidity		9.96	NTU	
C-21	LITTLE WABASH RIVER			1/25/2016	Specific conductance		582	umho/cm	
C-21	LITTLE WABASH RIVER			1/25/2016	Temperature, water		0.2	deg C	
C-21	LITTLE WABASH RIVER			1/25/2016	Temperature, air		6	deg C	
C-21	LITTLE WABASH RIVER			1/25/2016	pH		8.2	None	
C-21	LITTLE WABASH RIVER			1/25/2016	Dissolved oxygen (DO)		12.66	mg/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Hardness, Ca, Mg		262000	ug/l	C
C-21	LITTLE WABASH RIVER			1/25/2016	Iron	Total	277	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Magnesium	Total	25300	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Manganese	Total	244	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Potassium	Total	2620	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Barium	Dissolved	70.8	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Sodium	Total	15900	ug/l	
C-21	LITTLE WABASH RIVER			1/25/2016	Strontium	Total	133	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Iron	Total	430	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Hardness, Ca, Mg		260000	ug/l	C
C-21	LITTLE WABASH RIVER			12/7/2015	Calcium	Total	61800	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Boron	Total	31.1	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Sulfate	Total	36.5	mg/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Volatile suspended solids		8	mg/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Total suspended solids		8	mg/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Magnesium	Total	25700	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Zinc	Total	9.01	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			12/7/2015	Kjeldahl nitrogen	Total	0.73	mg/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Strontium	Total	139	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Sodium	Total	15500	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Potassium	Total	4040	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Inorganic nitrogen (nitrate and nitrite)	Total	2.4	mg/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Manganese	Total	190	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Arsenic	Total	2.04	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Dissolved oxygen (DO)		11.48	mg/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Organic carbon	Total	4.29	mg/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Phosphorus	Total	0.138	mg/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Barium	Total	72.1	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Aluminum	Total	111	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Chloride	Total	27.7	mg/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Turbidity		9	NTU	
C-21	LITTLE WABASH RIVER			12/7/2015	Temperature, water		5.2	deg C	
C-21	LITTLE WABASH RIVER			12/7/2015	pH		8	None	
C-21	LITTLE WABASH RIVER			12/7/2015	Dissolved oxygen saturation		90.6	%	
C-21	LITTLE WABASH RIVER			12/7/2015	Specific conductance		538	umho/cm	
C-21	LITTLE WABASH RIVER			12/7/2015	Temperature, air		7	deg C	
C-21	LITTLE WABASH RIVER			12/7/2015	Manganese	Dissolved	170	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			12/7/2015	Magnesium	Dissolved	23500	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Sodium	Dissolved	14700	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Phosphorus	Dissolved	0.082	mg/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Strontium	Dissolved	131	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Calcium	Dissolved	59000	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Boron	Dissolved	33	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Barium	Dissolved	64.9	ug/l	
C-21	LITTLE WABASH RIVER			12/7/2015	Potassium	Dissolved	3500	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Potassium	Dissolved	5500	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Strontium	Dissolved	141	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Arsenic	Total	3.49	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Aluminum	Total	79.7	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Phosphorus	Dissolved	0.152	mg/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Iron	Dissolved	242	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Total suspended solids		5	mg/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Organic carbon	Total	8.16	mg/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Sulfate	Total	37.9	mg/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Manganese	Dissolved	990	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Temperature, sample		4	deg C	
C-21	LITTLE WABASH RIVER			11/2/2015	Calcium	Dissolved	65300	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Sodium	Dissolved	17800	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Boron	Dissolved	32	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Barium	Dissolved	65.8	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Magnesium	Dissolved	26100	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Specific conductance		584	umho/cm	
C-21	LITTLE WABASH RIVER			11/2/2015	Calcium	Total	67900	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Boron	Total	30.8	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Hardness, Ca, Mg		285000	ug/l	C
C-21	LITTLE WABASH RIVER			11/2/2015	Dissolved oxygen saturation		17.4	%	
C-21	LITTLE WABASH RIVER			11/2/2015	Turbidity		8.3	NTU	
C-21	LITTLE WABASH RIVER			11/2/2015	pH		7.7	None	
C-21	LITTLE WABASH RIVER			11/2/2015	Temperature, air		16	deg C	
C-21	LITTLE WABASH RIVER			11/2/2015	Dissolved oxygen (DO)		1.87	mg/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Temperature, water		12.2	deg C	
C-21	LITTLE WABASH RIVER			11/2/2015	Manganese	Total	1020	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Lead	Total	6.97	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Barium	Total	69.7	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Volatile suspended solids		4	mg/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Iron	Total	582	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Phosphorus	Total	0.218	mg/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Strontium	Total	148	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Sodium	Total	17600	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Potassium	Total	5910	ug/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Chloride	Total	20.9	mg/l	
C-21	LITTLE WABASH RIVER			11/2/2015	Magnesium	Total	28100	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Strontium	Total	110	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Sodium	Total	13300	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Potassium	Total	3070	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Magnesium	Total	18100	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Iron	Total	823	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Hardness, Ca, Mg		194000	ug/l	C
C-21	LITTLE WABASH RIVER			9/14/2015	Zinc	Total	19.5	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Volatile suspended solids		7	mg/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Phosphorus	Total	0.118	mg/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Boron	Total	33.1	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Inorganic nitrogen (nitrate and nitrite)	Total	0.175	mg/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Chloride	Total	15.8	mg/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Total suspended solids		28	mg/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			9/14/2015	Barium	Dissolved	58.2	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Phosphorus	Dissolved	0.061	mg/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Sulfate	Total	29.8	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			9/14/2015	Temperature, water		18.2	deg C	
C-21	LITTLE WABASH RIVER			9/14/2015	Manganese	Dissolved	98.6	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Potassium	Dissolved	3060	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Sodium	Dissolved	14200	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Dissolved oxygen saturation		36.7	%	
C-21	LITTLE WABASH RIVER			9/14/2015	pH		7.7	None	
C-21	LITTLE WABASH RIVER			9/14/2015	Temperature, air		16	deg C	
C-21	LITTLE WABASH RIVER			9/14/2015	Specific conductance		420.3	umho/cm	
C-21	LITTLE WABASH RIVER			9/14/2015	Dissolved oxygen (DO)		3.46	mg/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Calcium	Total	47800	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Boron	Dissolved	36.2	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Turbidity		27.7	NTU	
C-21	LITTLE WABASH RIVER			9/14/2015	Barium	Total	68	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Aluminum	Total	508	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Organic carbon	Total	3.74	mg/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Manganese	Total	233	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Strontium	Dissolved	105	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Magnesium	Dissolved	18800	ug/l	
C-21	LITTLE WABASH RIVER			9/14/2015	Calcium	Dissolved	50600	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Aluminum	Total	368	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Organic carbon	Total	4.18	mg/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Chloride	Total	19.6	mg/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Sulfate	Total	33.4	mg/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Inorganic nitrogen (nitrate and nitrite)	Total	0.373	mg/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Volatile suspended solids		8	mg/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Total suspended solids		23	mg/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Barium	Total	87.6	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Iron	Total	636	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Hardness, Ca, Mg		265000	ug/l	C
C-21	LITTLE WABASH RIVER			8/10/2015	Sodium	Dissolved	15200	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Potassium	Total	4070	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Manganese	Total	379	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Strontium	Total	146	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Calcium	Total	63400	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Boron	Total	42.5	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Magnesium	Total	26000	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Dissolved oxygen (DO)		6.62	mg/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Phosphorus	Dissolved	0.049	mg/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Arsenic	Total	2.25	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Zinc	Total	20.5	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			8/10/2015	Temperature, water		25.2	deg C	
C-21	LITTLE WABASH RIVER			8/10/2015	Dissolved oxygen saturation		80.6	%	
C-21	LITTLE WABASH RIVER			8/10/2015	pH		8	None	
C-21	LITTLE WABASH RIVER			8/10/2015	Temperature, air		27	deg C	
C-21	LITTLE WABASH RIVER			8/10/2015	Strontium	Dissolved	129	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Specific conductance		544	umho/cm	
C-21	LITTLE WABASH RIVER			8/10/2015	Potassium	Dissolved	3790	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Turbidity		20.4	NTU	
C-21	LITTLE WABASH RIVER			8/10/2015	Barium	Dissolved	74.8	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Manganese	Dissolved	233	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Magnesium	Dissolved	24000	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Phosphorus	Total	0.109	mg/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Calcium	Dissolved	59800	ug/l	
C-21	LITTLE WABASH RIVER			8/10/2015	Boron	Dissolved	35.9	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Barium	Total	327	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Strontium	Dissolved	61.1	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Total suspended solids		1370	mg/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Copper	Total	27.8	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Chromium	Total	24.5	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Lead	Total	30	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Beryllium	Total	1.39	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Iron	Dissolved	81.9	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Aluminum	Dissolved	68.8	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Volatile suspended solids		143	mg/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Boron	Total	33	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Potassium	Dissolved	4250	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Magnesium	Dissolved	10500	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Sodium	Dissolved	6210	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Calcium	Dissolved	27200	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Boron	Dissolved	20.8	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Dissolved oxygen (DO)		5.91	mg/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Nickel	Total	31.1	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Manganese	Total	1860	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Magnesium	Total	25000	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Zinc	Total	129	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Cobalt	Total	15.8	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Potassium	Total	6310	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			6/29/2015	Temperature, water		20.1	deg C	
C-21	LITTLE WABASH RIVER			6/29/2015	Turbidity		946	NTU	
C-21	LITTLE WABASH RIVER			6/29/2015	Temperature, air		20	deg C	
C-21	LITTLE WABASH RIVER			6/29/2015	pH		7.6	None	
C-21	LITTLE WABASH RIVER			6/29/2015	Dissolved oxygen saturation		65.2	%	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			6/29/2015	Specific conductance		276.3	umho/cm	
C-21	LITTLE WABASH RIVER			6/29/2015	Calcium	Total	59400	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Phosphorus	Dissolved	0.136	mg/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Barium	Dissolved	41.7	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Phosphorus	Total	1.49	mg/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Strontium	Total	108	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Kjeldahl nitrogen	Total	2.48	mg/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Inorganic nitrogen (nitrate and nitrite)	Total	1.46	mg/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Organic carbon	Total	7.53	mg/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Arsenic	Total	4.73	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Hardness, Ca, Mg		251000	ug/l	C
C-21	LITTLE WABASH RIVER			6/29/2015	Vanadium	Total	26.9	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Iron	Total	25400	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Chloride	Total	10.6	mg/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Aluminum	Total	16200	ug/l	
C-21	LITTLE WABASH RIVER			6/29/2015	Sodium	Total	6700	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Sodium	Total	14800	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Barium	Dissolved	74.7	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Strontium	Dissolved	135	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Manganese	Total	151	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Sodium	Dissolved	14500	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Potassium	Dissolved	3510	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Magnesium	Dissolved	25300	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Manganese	Dissolved	103	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Boron	Dissolved	30.3	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Total suspended solids		27	mg/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			5/18/2015	Phosphorus	Dissolved	0.064	mg/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Calcium	Dissolved	57200	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Zinc	Total	5.01	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Chloride	Total	28.1	mg/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Barium	Total	88.6	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Aluminum	Total	349	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Dissolved oxygen (DO)		7.27	mg/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Boron	Total	37.2	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Dissolved oxygen saturation		84.2	%	
C-21	LITTLE WABASH RIVER			5/18/2015	Inorganic nitrogen (nitrate and nitrite)	Total	2.63	mg/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Temperature, water		22.6	deg C	
C-21	LITTLE WABASH RIVER			5/18/2015	pH		8.1	None	
C-21	LITTLE WABASH RIVER			5/18/2015	Temperature, air		28	deg C	
C-21	LITTLE WABASH RIVER			5/18/2015	Specific conductance		543	umho/cm	
C-21	LITTLE WABASH RIVER			5/18/2015	Turbidity		20	NTU	
C-21	LITTLE WABASH RIVER			5/18/2015	Phosphorus	Total	0.142	mg/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Kjeldahl nitrogen	Total	0.55	mg/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Potassium	Total	3720	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Strontium	Total	143	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Magnesium	Total	27000	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Lead	Total	8.26	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Iron	Total	526	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Hardness, Ca, Mg		265000	ug/l	C
C-21	LITTLE WABASH RIVER			5/18/2015	Volatile suspended solids		7	mg/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Calcium	Total	61700	ug/l	
C-21	LITTLE WABASH RIVER			5/18/2015	Organic carbon	Total	3.88	mg/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Calcium	Dissolved	53400	ug/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Hardness, Ca, Mg		230000	ug/l	C
C-21	LITTLE WABASH RIVER			4/13/2015	Magnesium	Total	22300	ug/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Manganese	Total	150	ug/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Strontium	Total	127	ug/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Sodium	Total	13500	ug/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Potassium	Dissolved	3740	ug/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Iron	Total	837	ug/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Sodium	Dissolved	13500	ug/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Magnesium	Dissolved	22600	ug/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Manganese	Dissolved	83.1	ug/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Strontium	Dissolved	118	ug/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Potassium	Total	4180	ug/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Specific conductance		518	umho/cm	
C-21	LITTLE WABASH RIVER			4/13/2015	Phosphorus	Total	0.152	mg/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Kjeldahl nitrogen	Total	0.6	mg/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Volatile suspended solids		10	mg/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Dissolved oxygen (DO)		8.87	mg/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Organic carbon	Total	4.55	mg/l	
C-21	LITTLE WABASH RIVER			4/13/2015	pH		7.8	None	
C-21	LITTLE WABASH RIVER			4/13/2015	Total suspended solids		35	mg/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Dissolved oxygen saturation		84	%	
C-21	LITTLE WABASH RIVER			4/13/2015	Temperature, water		12.9	deg C	
C-21	LITTLE WABASH RIVER			4/13/2015	Temperature, air		18	deg C	
C-21	LITTLE WABASH RIVER			4/13/2015	Turbidity		26.1	NTU	
C-21	LITTLE WABASH RIVER			4/13/2015	Inorganic nitrogen (nitrate and nitrite)	Total	1.87	mg/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Barium	Dissolved	68.7	ug/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			4/13/2015	Aluminum	Total	487	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			4/13/2015	Phosphorus	Dissolved	0.079	mg/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Chloride	Total	23.7	mg/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Barium	Total	79.3	ug/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Calcium	Total	55200	ug/l	
C-21	LITTLE WABASH RIVER			4/13/2015	Boron	Total	24.2	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Magnesium	Dissolved	11700	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Manganese	Dissolved	92.5	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Potassium	Dissolved	6110	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Sodium	Dissolved	14000	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Strontium	Dissolved	67.9	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Calcium	Dissolved	28100	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Chloride	Total	27	mg/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Iron	Dissolved	116	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Phosphorus	Total	0.71	mg/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Inorganic nitrogen (nitrate and nitrite)	Total	1.14	mg/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Total suspended solids		219	mg/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Arsenic	Total	2.01	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Phosphorus	Dissolved	0.401	mg/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Aluminum	Dissolved	84.8	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Barium	Dissolved	38.3	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Boron	Dissolved	16.3	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Organic carbon	Total	9.12	mg/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Specific conductance		339	umho/cm	
C-21	LITTLE WABASH RIVER			3/10/2015	Potassium	Total	6450	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Sodium	Total	13500	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Strontium	Total	73.4	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Calcium	Total	32100	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Dissolved oxygen saturation		86.6	%	
C-21	LITTLE WABASH RIVER			3/10/2015	Temperature, air		5	deg C	
C-21	LITTLE WABASH RIVER			3/10/2015	pH		7.8	None	
C-21	LITTLE WABASH RIVER			3/10/2015	Dissolved oxygen (DO)		12.6	mg/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Temperature, water		0.1	deg C	
C-21	LITTLE WABASH RIVER			3/10/2015	Turbidity		150	NTU	
C-21	LITTLE WABASH RIVER			3/10/2015	Volatile suspended solids		24	mg/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Zinc	Total	19.3	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			3/10/2015	Boron	Total	21.9	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Ammonia-nitrogen	Total	0.32	mg/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Kjeldahl nitrogen	Total	2.38	mg/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Aluminum	Total	2220	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Manganese	Total	308	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Copper	Total	6.55	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Hardness, Ca, Mg		134000	ug/l	C
C-21	LITTLE WABASH RIVER			3/10/2015	Iron	Total	3460	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Lead	Total	5.83	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Magnesium	Total	13100	ug/l	
C-21	LITTLE WABASH RIVER			3/10/2015	Barium	Total	78.7	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Barium	Total	67.4	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Barium	Dissolved	57.8	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Ammonia-nitrogen	Total	0.19	mg/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Aluminum	Total	503	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Chloride	Total	29.8	mg/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Aluminum	Dissolved	113	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Potassium	Total	5470	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Iron	Dissolved	153	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Hardness, Ca, Mg		234000	ug/l	C
C-21	LITTLE WABASH RIVER			1/26/2015	Calcium	Dissolved	53900	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Calcium	Total	55600	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Inorganic nitrogen (nitrate and nitrite)	Total	1.5	mg/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Phosphorus	Dissolved	0.145	mg/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Phosphorus	Total	0.253	mg/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Temperature, water		0.6	deg C	
C-21	LITTLE WABASH RIVER			1/26/2015	Temperature, air		1	deg C	
C-21	LITTLE WABASH RIVER			1/26/2015	Specific conductance		539	umho/cm	
C-21	LITTLE WABASH RIVER			1/26/2015	Dissolved oxygen (DO)		13	mg/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Dissolved oxygen saturation		90.7	%	
C-21	LITTLE WABASH RIVER			1/26/2015	pH		7.9	None	
C-21	LITTLE WABASH RIVER			1/26/2015	Turbidity		25.3	NTU	
C-21	LITTLE WABASH RIVER			1/26/2015	Magnesium	Dissolved	21700	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Magnesium	Total	23000	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Manganese	Dissolved	104	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Manganese	Total	124	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Sodium	Dissolved	18300	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Total suspended solids		17	mg/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Temperature, sample		1	deg C	
C-21	LITTLE WABASH RIVER			1/26/2015	Strontium	Total	124	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Sodium	Total	18300	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Organic carbon	Total	6.39	mg/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Kjeldahl nitrogen	Total	1.14	mg/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Potassium	Dissolved	5340	ug/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Volatile suspended solids		5	mg/l	
C-21	LITTLE WABASH RIVER			1/26/2015	Strontium	Dissolved	123	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Aluminum	Total	146	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			28-Jan-13	Ammonia-nitrogen	Total	0.14	mg/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Barium	Dissolved	76.2	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Barium	Total	79.3	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Boron	Dissolved	26.8	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Boron	Total	28.4	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Calcium	Dissolved	73500	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Calcium	Total	73800	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Chloride	Total	37.1	mg/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Hardness, Ca, Mg		312000	ug/l	C
C-21	LITTLE WABASH RIVER			28-Jan-13	Inorganic nitrogen (nitrate and nitrite)	Total	3.42	mg/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Iron	Total	542	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Kjeldahl nitrogen	Total	0.739	mg/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Lead	Dissolved	7.53	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Lead	Total	9.45	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Magnesium	Dissolved	30800	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Magnesium	Total	30900	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Manganese	Dissolved	244	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Manganese	Total	255	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Organic carbon	Total	3.45	mg/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Phosphorus	Dissolved	0.023	mg/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Phosphorus	Total	0.086	mg/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Potassium	Dissolved	3080	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Potassium	Total	3130	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Sodium	Dissolved	22700	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Sodium	Total	22800	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Strontium	Dissolved	152	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Strontium	Total	153	ug/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Sulfate	Total	24.3	mg/l	
C-21	LITTLE WABASH RIVER			28-Jan-13	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			28-Jan-13	Total suspended solids		6	mg/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Aluminum	Total	822	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Ammonia-nitrogen	Total	0.36	mg/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Barium	Dissolved	71.1	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Barium	Total	84.6	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Calcium	Dissolved	58000	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Calcium	Total	61400	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Chloride	Total	23.8	mg/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Hardness, Ca, Mg		250000	ug/l	C
C-21	LITTLE WABASH RIVER			04-Mar-13	Inorganic nitrogen (nitrate and nitrite)	Total	4.63	mg/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Iron	Total	1220	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Kjeldahl nitrogen	Total	0.865	mg/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Magnesium	Dissolved	22500	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Magnesium	Total	23600	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Manganese	Dissolved	87.2	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Manganese	Total	128	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Organic carbon	Total	4.06	mg/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Phosphorus	Dissolved	0.087	mg/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Phosphorus	Total	0.154	mg/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Potassium	Dissolved	3400	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Potassium	Total	3670	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Sodium	Dissolved	12800	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Sodium	Total	13200	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Strontium	Dissolved	128	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Strontium	Total	135	ug/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Sulfate	Total	13.7	mg/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			04-Mar-13	Total suspended solids		27	mg/l	
C-21	LITTLE WABASH RIVER			04-Mar-13	Volatile suspended solids		6	mg/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Aluminum	Total	398	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Barium	Dissolved	77.7	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Barium	Total	82.4	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Boron	Dissolved	26.3	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Boron	Total	36.5	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Calcium	Dissolved	61100	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Calcium	Total	65900	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Chloride	Total	27.7	mg/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Cyanide	Total	0.007	mg/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Hardness, Ca, Mg		286000	ug/l	C
C-21	LITTLE WABASH RIVER			08-Apr-13	Inorganic nitrogen (nitrate and nitrite)	Total	3.07	mg/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Iron	Dissolved	58.2	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Iron	Total	650	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Kjeldahl nitrogen	Total	0.883	mg/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Magnesium	Dissolved	26800	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Magnesium	Total	29600	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Manganese	Dissolved	124	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Manganese	Total	171	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Organic carbon	Total	4.24	mg/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Phosphorus	Dissolved	0.011	mg/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Phosphorus	Total	0.086	mg/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Potassium	Dissolved	2760	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Potassium	Total	3120	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Sodium	Dissolved	17400	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			08-Apr-13	Sodium	Total	19000	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Strontium	Dissolved	146	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Strontium	Total	152	ug/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Sulfate	Total	36.2	mg/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			08-Apr-13	Total suspended solids		23	mg/l	
C-21	LITTLE WABASH RIVER			08-Apr-13	Volatile suspended solids		9	mg/l	
C-21	LITTLE WABASH RIVER			20-May-13	Aluminum	Total	320	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Barium	Dissolved	82	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Barium	Total	84.9	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Boron	Dissolved	30	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Boron	Total	32.9	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Calcium	Dissolved	63400	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Calcium	Total	65400	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Chloride	Total	17.6	mg/l	
C-21	LITTLE WABASH RIVER			20-May-13	Hardness, Ca, Mg		268000	ug/l	C
C-21	LITTLE WABASH RIVER			20-May-13	Inorganic nitrogen (nitrate and nitrite)	Total	3.4	mg/l	
C-21	LITTLE WABASH RIVER			20-May-13	Iron	Total	587	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Magnesium	Dissolved	23700	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Magnesium	Total	25400	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Manganese	Dissolved	85.3	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Manganese	Total	129	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Organic carbon	Total	3.26	mg/l	
C-21	LITTLE WABASH RIVER			20-May-13	Phosphorus	Dissolved	0.109	mg/l	
C-21	LITTLE WABASH RIVER			20-May-13	Phosphorus	Total	0.121	mg/l	
C-21	LITTLE WABASH RIVER			20-May-13	Potassium	Dissolved	2950	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Potassium	Total	3010	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Sodium	Dissolved	11600	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Sodium	Total	12600	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Strontium	Dissolved	136	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Strontium	Total	136	ug/l	
C-21	LITTLE WABASH RIVER			20-May-13	Temperature, sample		5	deg C	
C-21	LITTLE WABASH RIVER			20-May-13	Total suspended solids		16	mg/l	
C-21	LITTLE WABASH RIVER			20-May-13	Volatile suspended solids		7	mg/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Aluminum	Total	4270	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Arsenic	Total	2.54	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Barium	Dissolved	57.8	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Barium	Total	113	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Boron	Dissolved	21.3	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Boron	Total	32.6	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Calcium	Dissolved	36900	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Calcium	Total	39500	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Chloride	Total	15.5	mg/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Chromium	Total	5.85	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Copper	Total	7.1	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Cyanide	Total	0.007	mg/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Hardness, Ca, Mg		164000	ug/l	C
C-21	LITTLE WABASH RIVER			24-Jun-13	Inorganic nitrogen (nitrate and nitrite)	Total	2.85	mg/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Iron	Total	5770	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Magnesium	Dissolved	14500	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Magnesium	Total	15800	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Manganese	Dissolved	5.53	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Manganese	Total	294	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Nickel	Total	5.82	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Organic carbon	Total	5.34	mg/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Phosphorus	Dissolved	0.116	mg/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Phosphorus	Total	0.391	mg/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Potassium	Dissolved	4170	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Potassium	Total	5120	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Sodium	Dissolved	7890	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Sodium	Total	8430	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Strontium	Dissolved	85.9	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Strontium	Total	95.3	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Sulfate	Total	15.2	mg/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Temperature, sample		5	deg C	
C-21	LITTLE WABASH RIVER			24-Jun-13	Total suspended solids		239	mg/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Vanadium	Total	5.99	ug/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Volatile suspended solids		30	mg/l	
C-21	LITTLE WABASH RIVER			24-Jun-13	Zinc	Total	15.7	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Aluminum	Total	939	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Arsenic	Total	2.04	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Barium	Dissolved	73.7	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Barium	Total	85.9	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Boron	Dissolved	31	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Boron	Total	38.1	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Calcium	Dissolved	59200	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Calcium	Total	61900	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Chloride	Total	17.8	mg/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Hardness, Ca, Mg		254000	ug/l	C
C-21	LITTLE WABASH RIVER			05-Aug-13	Inorganic nitrogen (nitrate and nitrite)	Total	0.361	mg/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Iron	Total	1390	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Magnesium	Dissolved	23700	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			05-Aug-13	Magnesium	Total	24200	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Manganese	Dissolved	190	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Manganese	Total	290	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Organic carbon	Total	3.86	mg/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Phosphorus	Dissolved	0.059	mg/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Phosphorus	Total	0.159	mg/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Potassium	Dissolved	3980	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Potassium	Total	4250	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Sodium	Dissolved	12300	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Sodium	Total	12600	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Strontium	Dissolved	129	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Strontium	Total	135	ug/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			05-Aug-13	Total suspended solids		44	mg/l	
C-21	LITTLE WABASH RIVER			05-Aug-13	Volatile suspended solids		14	mg/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Temperature, sample		5	deg C	
C-21	LITTLE WABASH RIVER			27-Jan-14	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			21-Apr-14	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			19-May-14	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			23-Jun-14	Temperature, sample		4	deg C	
C-21	LITTLE WABASH RIVER			18-Nov-13	Aluminum	Total	857	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Arsenic	Total	2.67	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Barium	Dissolved	66.9	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Barium	Total	80.9	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Boron	Dissolved	35.4	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Boron	Total	30.5	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Calcium	Dissolved	63300	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Calcium	Total	69000	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Chloride	Total	30	mg/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Hardness, Ca, Mg		280000	ug/l	C
C-21	LITTLE WABASH RIVER			18-Nov-13	Iron	Dissolved	169	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Kjeldahl nitrogen	Total	0.55	mg/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Magnesium	Dissolved	23900	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Magnesium	Total	26100	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Manganese	Dissolved	598	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Manganese	Total	688	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Organic carbon	Total	6.81	mg/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Phosphorus	Dissolved	0.055	mg/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Phosphorus	Total	0.221	mg/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Potassium	Dissolved	5220	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Potassium	Total	5730	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Sodium	Dissolved	22000	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Sodium	Total	23600	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Strontium	Dissolved	140	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Strontium	Total	148	ug/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Sulfate	Total	38.8	mg/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			18-Nov-13	Total suspended solids		34	mg/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Volatile suspended solids		8	mg/l	
C-21	LITTLE WABASH RIVER			18-Nov-13	Zinc	Total	10.1	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Aluminum	Total	466	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Ammonia-nitrogen	Total	0.27	mg/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Barium	Dissolved	104	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Barium	Total	121	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Boron	Dissolved	49.3	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Boron	Total	56.3	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Calcium	Dissolved	109000	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Calcium	Total	115000	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Chloride	Total	82.7	mg/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Chromium	Total	6.45	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Hardness, Ca, Mg		465000	ug/l	C
C-21	LITTLE WABASH RIVER			27-Jan-14	Inorganic nitrogen (nitrate and nitrite)	Total	1.41	mg/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Lead	Total	18.5	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Magnesium	Dissolved	41500	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Magnesium	Total	43300	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Manganese	Dissolved	886	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Manganese	Total	967	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Organic carbon	Total	5.22	mg/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Phosphorus	Dissolved	0.025	mg/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Phosphorus	Total	0.153	mg/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Potassium	Dissolved	6610	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Potassium	Total	7240	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Sodium	Dissolved	49100	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Sodium	Total	52100	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Strontium	Dissolved	210	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Strontium	Total	227	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Sulfate	Total	71.2	mg/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Total suspended solids		25	mg/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Volatile suspended solids		8	mg/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Zinc	Dissolved	5	ug/l	
C-21	LITTLE WABASH RIVER			27-Jan-14	Zinc	Total	26.7	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Aluminum	Total	368	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Ammonia-nitrogen	Total	0.23	mg/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Barium	Dissolved	56.5	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			17-Mar-14	Barium	Total	64.8	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Boron	Dissolved	25.6	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Boron	Total	25.9	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Calcium	Dissolved	49500	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Calcium	Total	52100	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Chloride	Total	25	mg/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Hardness, Ca, Mg		215000	ug/l	C
C-21	LITTLE WABASH RIVER			17-Mar-14	Inorganic nitrogen (nitrate and nitrite)	Total	1.44	mg/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Iron	Total	746	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Kjeldahl nitrogen	Total	0.69	mg/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Magnesium	Dissolved	19900	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Magnesium	Total	20700	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Manganese	Dissolved	114	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Manganese	Total	154	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Organic carbon	Total	4.68	mg/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Phosphorus	Dissolved	0.066	mg/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Phosphorus	Total	0.128	mg/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Potassium	Dissolved	3690	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Potassium	Total	3840	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Sodium	Dissolved	14600	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Sodium	Total	15300	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Strontium	Dissolved	103	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Strontium	Total	108	ug/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Sulfate	Total	21.2	mg/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Total suspended solids		15	mg/l	
C-21	LITTLE WABASH RIVER			17-Mar-14	Volatile suspended solids		5	mg/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Aluminum	Total	260	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Barium	Dissolved	68.4	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Barium	Total	74.9	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Boron	Dissolved	32.9	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Boron	Total	33.8	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Calcium	Dissolved	57200	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Calcium	Total	59400	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Chloride	Total	23.7	mg/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Hardness, Ca, Mg		253000	ug/l	C
C-21	LITTLE WABASH RIVER			21-Apr-14	Inorganic nitrogen (nitrate and nitrite)	Total	0.299	mg/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Iron	Dissolved	115	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Kjeldahl nitrogen	Total	0.64	mg/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Magnesium	Dissolved	24100	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Magnesium	Total	25300	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Manganese	Dissolved	168	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Manganese	Total	238	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Organic carbon	Total	4.04	mg/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Phosphorus	Dissolved	0.011	mg/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Phosphorus	Total	0.091	mg/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Potassium	Dissolved	3600	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Potassium	Total	3620	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Sodium	Dissolved	16600	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Sodium	Total	16800	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Strontium	Dissolved	125	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Strontium	Total	135	ug/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Sulfate	Total	32.7	mg/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Total suspended solids		20	mg/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Volatile suspended solids		9	mg/l	
C-21	LITTLE WABASH RIVER			21-Apr-14	Zinc	Total	8.08	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Aluminum	Total	550	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Ammonia-nitrogen	Total	0.14	mg/l	
C-21	LITTLE WABASH RIVER			19-May-14	Barium	Dissolved	60	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Barium	Total	70.4	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Boron	Dissolved	27.2	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Boron	Total	25.6	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Calcium	Dissolved	46200	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Calcium	Total	48300	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Chloride	Total	21.7	mg/l	
C-21	LITTLE WABASH RIVER			19-May-14	Hardness, Ca, Mg		203000	ug/l	C
C-21	LITTLE WABASH RIVER			19-May-14	Inorganic nitrogen (nitrate and nitrite)	Total	3.1	mg/l	
C-21	LITTLE WABASH RIVER			19-May-14	Iron	Total	890	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Kjeldahl nitrogen	Total	0.6	mg/l	
C-21	LITTLE WABASH RIVER			19-May-14	Magnesium	Dissolved	18500	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Magnesium	Total	20000	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Manganese	Dissolved	40.7	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Manganese	Total	98.1	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Organic carbon	Total	4.23	mg/l	
C-21	LITTLE WABASH RIVER			19-May-14	Phosphorus	Dissolved	0.074	mg/l	
C-21	LITTLE WABASH RIVER			19-May-14	Phosphorus	Total	0.145	mg/l	
C-21	LITTLE WABASH RIVER			19-May-14	Potassium	Dissolved	3390	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Potassium	Total	3720	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Sodium	Dissolved	11900	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Sodium	Total	12400	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Strontium	Dissolved	104	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Strontium	Total	108	ug/l	
C-21	LITTLE WABASH RIVER			19-May-14	Total suspended solids		32	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			19-May-14	Volatile suspended solids		9	mg/l	
C-21	LITTLE WABASH RIVER			19-May-14	Zinc	Total	6.43	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Aluminum	Total	513	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Arsenic	Dissolved	2.06	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Arsenic	Total	2.15	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Barium	Dissolved	79.3	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Barium	Total	92.4	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Boron	Dissolved	31	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Boron	Total	28.4	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Calcium	Dissolved	59300	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Calcium	Total	61900	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Chloride	Total	23.8	mg/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Hardness, Ca, Mg		256000	ug/l	C
C-21	LITTLE WABASH RIVER			23-Jun-14	Inorganic nitrogen (nitrate and nitrite)	Total	1.71	mg/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Iron	Total	767	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Kjeldahl nitrogen	Total	1	mg/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Lead	Total	9.03	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Magnesium	Dissolved	23100	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Magnesium	Total	24600	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Manganese	Dissolved	111	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Manganese	Total	201	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Organic carbon	Total	3.5	mg/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Phosphorus	Dissolved	0.012	mg/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Phosphorus	Total	0.154	mg/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Potassium	Dissolved	3070	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Potassium	Total	3310	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Sodium	Dissolved	12200	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Sodium	Total	12900	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Strontium	Dissolved	132	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Strontium	Total	143	ug/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Total suspended solids		35	mg/l	
C-21	LITTLE WABASH RIVER			23-Jun-14	Volatile suspended solids		11	mg/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Aluminum	Total	453	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Ammonia-nitrogen	Total	0.11	mg/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Arsenic	Dissolved	3.11	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Arsenic	Total	2.76	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Barium	Dissolved	85.8	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Barium	Total	98.8	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Boron	Dissolved	26.9	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Boron	Total	24.9	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Calcium	Dissolved	70000	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Calcium	Total	71500	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Chloride	Total	17.8	mg/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Cyanide	Total	0.02	mg/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Hardness, Ca, Mg		287000	ug/l	C
C-21	LITTLE WABASH RIVER			04-Aug-14	Iron	Total	705	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Kjeldahl nitrogen	Total	0.69	mg/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Magnesium	Dissolved	25200	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Magnesium	Total	26300	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Manganese	Dissolved	172	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Manganese	Total	428	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Organic carbon	Total	4.39	mg/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Phosphorus	Dissolved	0.054	mg/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Phosphorus	Total	0.151	mg/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Potassium	Dissolved	3840	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Potassium	Total	3770	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Sodium	Dissolved	13500	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Sodium	Total	13400	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Strontium	Dissolved	152	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Strontium	Total	154	ug/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Temperature, sample		5	deg C	
C-21	LITTLE WABASH RIVER			04-Aug-14	Total suspended solids		28	mg/l	
C-21	LITTLE WABASH RIVER			04-Aug-14	Volatile suspended solids		10	mg/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Aluminum	Total	371	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Arsenic	Dissolved	3.32	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Arsenic	Total	3.53	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Barium	Dissolved	59.8	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Barium	Total	69.3	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Boron	Dissolved	43.8	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Boron	Total	42	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Calcium	Dissolved	42000	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Calcium	Total	41000	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Chloride	Total	25.1	mg/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Copper	Dissolved	5.02	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Hardness, Ca, Mg		159000	ug/l	C
C-21	LITTLE WABASH RIVER			08-Sep-14	Inorganic nitrogen (nitrate and nitrite)	Total	0.202	mg/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Iron	Total	692	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Lead	Total	7.32	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Magnesium	Dissolved	13900	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Magnesium	Total	13800	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Manganese	Dissolved	414	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Manganese	Total	554	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Organic carbon	Total	5.92	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			08-Sep-14	Phosphorus	Dissolved	0.137	mg/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Phosphorus	Total	0.222	mg/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Potassium	Dissolved	4970	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Potassium	Total	5340	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Sodium	Dissolved	18500	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Sodium	Total	18900	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Strontium	Dissolved	101	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Strontium	Total	102	ug/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Sulfate	Total	26.5	mg/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Temperature, sample		4	deg C	
C-21	LITTLE WABASH RIVER			08-Sep-14	Total suspended solids		23	mg/l	
C-21	LITTLE WABASH RIVER			08-Sep-14	Volatile suspended solids		7	mg/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Aluminum	Total	720	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Barium	Dissolved	93.4	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Barium	Total	104	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Boron	Dissolved	34.6	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Boron	Total	34.5	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Calcium	Dissolved	70200	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Calcium	Total	74500	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Chloride	Total	20.3	mg/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Hardness, Ca, Mg		308000	ug/l	C
C-21	LITTLE WABASH RIVER			23-Sep-13	Iron	Total	1040	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Kjeldahl nitrogen	Total	0.6	mg/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Magnesium	Dissolved	30100	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Magnesium	Total	29700	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Manganese	Dissolved	357	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Manganese	Total	470	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Organic carbon	Total	4.37	mg/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Phosphorus	Dissolved	0.107	mg/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Phosphorus	Total	0.21	mg/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Potassium	Dissolved	3630	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Potassium	Total	3700	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Sodium	Dissolved	16200	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Sodium	Total	17600	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Strontium	Dissolved	158	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Strontium	Total	169	ug/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Temperature, sample		4	deg C	
C-21	LITTLE WABASH RIVER			23-Sep-13	Total suspended solids		30	mg/l	
C-21	LITTLE WABASH RIVER			23-Sep-13	Volatile suspended solids		7	mg/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Aluminum	Total	523	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Barium	Dissolved	90.6	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Barium	Total	94.3	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Boron	Dissolved	28.1	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Boron	Total	33.1	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Calcium	Dissolved	68200	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Calcium	Total	69400	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Chloride	Total	19.2	mg/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Hardness, Ca, Mg		283000	ug/l	C
C-21	LITTLE WABASH RIVER			21-Oct-13	Iron	Total	860	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Magnesium	Dissolved	25700	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Magnesium	Total	26600	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Manganese	Dissolved	497	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Manganese	Total	555	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Organic carbon	Total	4.06	mg/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Phosphorus	Dissolved	0.063	mg/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Phosphorus	Total	0.127	mg/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Potassium	Dissolved	4000	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Potassium	Total	4150	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Sodium	Dissolved	16400	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Sodium	Total	16600	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Strontium	Dissolved	155	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Strontium	Total	151	ug/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			21-Oct-13	Total suspended solids		25	mg/l	
C-21	LITTLE WABASH RIVER			21-Oct-13	Volatile suspended solids		8	mg/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Aluminum	Dissolved	332	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Aluminum	Total	480	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Arsenic	Total	2.18	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Barium	Dissolved	69.8	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Barium	Total	85.8	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Boron	Dissolved	37.7	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Boron	Total	39.1	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Calcium	Dissolved	63700	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Calcium	Total	69300	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Chloride	Total	23.5	mg/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Hardness, Ca, Mg		279000	ug/l	C
C-21	LITTLE WABASH RIVER			20-Oct-14	Inorganic nitrogen (nitrate and nitrite)	Total	1.45	mg/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Iron	Dissolved	70.9	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Iron	Total	1080	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Kjeldahl nitrogen	Total	0.66	mg/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Magnesium	Dissolved	23900	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Magnesium	Total	25800	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Manganese	Dissolved	249	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Manganese	Total	315	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			20-Oct-14	Organic carbon	Total	5.37	mg/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Phosphorus	Dissolved	0.182	mg/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Phosphorus	Total	0.289	mg/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Potassium	Dissolved	6180	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Potassium	Total	6520	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Sodium	Dissolved	12400	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Sodium	Total	13400	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Strontium	Dissolved	134	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Strontium	Total	149	ug/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Sulfate	Total	46.1	mg/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			20-Oct-14	Total suspended solids		26	mg/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Volatile suspended solids		5	mg/l	
C-21	LITTLE WABASH RIVER			20-Oct-14	Zinc	Total	5.58	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Aluminum	Total	271	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Barium	Dissolved	63.5	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Barium	Total	73.5	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Boron	Dissolved	24.9	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Boron	Total	29.6	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Calcium	Dissolved	59000	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Calcium	Total	63600	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Hardness, Ca, Mg		269000	ug/l	C
C-21	LITTLE WABASH RIVER			01-Dec-14	Inorganic nitrogen (nitrate and nitrite)	Total	1.32	mg/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Iron	Dissolved	76.4	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Iron	Total	671	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Magnesium	Dissolved	23000	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Magnesium	Total	26600	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Manganese	Dissolved	168	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Manganese	Total	194	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Organic carbon	Total	4.75	mg/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Phosphorus	Dissolved	0.142	mg/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Phosphorus	Total	0.204	mg/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Potassium	Dissolved	5370	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Potassium	Total	5750	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Sodium	Dissolved	17400	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Sodium	Total	19400	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Strontium	Dissolved	126	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Strontium	Total	140	ug/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Sulfate	Total	20.9	mg/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			01-Dec-14	Total suspended solids		20	mg/l	
C-21	LITTLE WABASH RIVER			01-Dec-14	Volatile suspended solids		5	mg/l	
RCG-1	PARADISE	1	ft	16-May-13	Temperature, sample		5	deg C	
RCF-1	MATTOON	1	ft	16-May-13	Temperature, sample		5	deg C	
RCG-1	PARADISE	1	ft	10-Jun-13	Temperature, sample		2	deg C	
RCF-1	MATTOON	1	ft	10-Jun-13	Temperature, sample		2	deg C	
RCF-1	MATTOON	1	ft	15-Jul-13	Temperature, sample		2	deg C	
RCG-1	PARADISE	1	ft	15-Jul-13	Temperature, sample		2	deg C	
RCF-1	MATTOON	1	ft	19-Aug-13	Temperature, sample		2	deg C	
RCG-1	PARADISE	1	ft	19-Aug-13	Temperature, sample		2	deg C	
C-21				27-Jan-14	Specific conductance		407	umho/cm	
C-21				27-Jan-14	Dissolved oxygen saturation		73.1	%	
C-21				27-Jan-14	Turbidity		20.4	NTU	
C-21				27-Jan-14	pH		8.2	None	
C-21				27-Jan-14	Temperature, water		-0.02	deg C	
C-21				27-Jan-14	Dissolved oxygen (DO)		10.69	mg/l	
C-21				17-Mar-14	Turbidity		15.8	NTU	
C-21				17-Mar-14	Dissolved oxygen (DO)		12.24	mg/l	
C-21				17-Mar-14	Temperature, water		3.9	deg C	
C-21				17-Mar-14	pH		8	None	
C-21				17-Mar-14	Dissolved oxygen saturation		93.2	%	
C-21				17-Mar-14	Specific conductance		467	umho/cm	
C-21				21-Apr-14	Specific conductance		510.4	umho/cm	
C-21				21-Apr-14	Dissolved oxygen saturation		107.8	%	
C-21				21-Apr-14	Turbidity		11.7	NTU	
C-21				21-Apr-14	pH		8.1	None	
C-21				21-Apr-14	Temperature, water		16.5	deg C	
C-21				21-Apr-14	Dissolved oxygen (DO)		10.51	mg/l	
C-21				19-May-14	Dissolved oxygen saturation		94.7	%	
C-21				19-May-14	Dissolved oxygen (DO)		9.28	mg/l	
C-21				19-May-14	Temperature, water		16.3	deg C	
C-21				19-May-14	Turbidity		24.6	NTU	
C-21				19-May-14	Specific conductance		440	umho/cm	
C-21				19-May-14	pH		8	None	
C-21				23-Jun-14	Specific conductance		539	umho/cm	
C-21				23-Jun-14	Dissolved oxygen saturation		103.5	%	
C-21				23-Jun-14	Turbidity		26.5	NTU	
C-21				23-Jun-14	pH		8.3	None	
C-21				23-Jun-14	Temperature, water		26.4	deg C	
C-21				23-Jun-14	Dissolved oxygen (DO)		8.33	mg/l	
C-21				04-Aug-14	Turbidity		22.9	NTU	
C-21				04-Aug-14	Dissolved oxygen (DO)		6.97	mg/l	
C-21				04-Aug-14	Temperature, water		24.9	deg C	
C-21				04-Aug-14	pH		8	None	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21				04-Aug-14	Dissolved oxygen saturation		84.4	%	
C-21				04-Aug-14	Specific conductance		595	umho/cm	
C-21				08-Sep-14	Specific conductance		410.6	umho/cm	
C-21				08-Sep-14	Dissolved oxygen saturation		29.1	%	
C-21				08-Sep-14	Turbidity		20	NTU	
C-21				08-Sep-14	pH		7.6	None	
C-21				08-Sep-14	Temperature, water		23.5	deg C	
C-21				08-Sep-14	Dissolved oxygen (DO)		2.47	mg/l	
C-21				20-Oct-14	Turbidity		24.4	NTU	
C-21				20-Oct-14	Dissolved oxygen (DO)		7.28	mg/l	
C-21				20-Oct-14	Temperature, water		13.3	deg C	
C-21				20-Oct-14	Dissolved oxygen saturation		69.8	%	
C-21				20-Oct-14	Specific conductance		602	umho/cm	
C-21				20-Oct-14	pH		7.8	None	
C-21				01-Dec-14	Specific conductance		598	umho/cm	
C-21				01-Dec-14	Dissolved oxygen saturation		77.7	%	
C-21				01-Dec-14	Turbidity		13.9	NTU	
C-21				01-Dec-14	pH		7.7	None	
C-21				01-Dec-14	Temperature, water		6.9	deg C	
C-21				01-Dec-14	Dissolved oxygen (DO)		9.45	mg/l	
C-21				28-Jan-13	Dissolved oxygen (DO)		13.21	mg/l	
C-21				28-Jan-13	Dissolved oxygen saturation		91.3	%	
C-21				28-Jan-13	pH		7.89	none	
C-21				28-Jan-13	Specific conductance		675	umho/cm	
C-21				28-Jan-13	Temperature, water		0.31	deg C	
C-21				28-Jan-13	Turbidity		9.2	NTU	
C-21				04-Mar-13	Dissolved oxygen (DO)		12.74	mg/l	
C-21				04-Mar-13	Dissolved oxygen saturation		95.7	%	
C-21				04-Mar-13	pH		7.9	none	
C-21				04-Mar-13	Specific conductance		519	umho/cm	
C-21				04-Mar-13	Temperature, water		3.37	deg C	
C-21				04-Mar-13	Turbidity		26.4	NTU	
C-21				08-Apr-13	Dissolved oxygen (DO)		11.68	mg/l	
C-21				08-Apr-13	Dissolved oxygen saturation		119.7	%	
C-21				08-Apr-13	pH		8.13	none	
C-21				08-Apr-13	Specific conductance		583	umho/cm	
C-21				08-Apr-13	Temperature, water		16.47	deg C	
C-21				08-Apr-13	Turbidity		13.1	NTU	
C-21				20-May-13	Dissolved oxygen (DO)		9.03	mg/l	
C-21				20-May-13	Dissolved oxygen saturation		105.6	%	
C-21				20-May-13	pH		7.81	none	
C-21				20-May-13	Specific conductance		543	umho/cm	
C-21				20-May-13	Temperature, water		23.11	deg C	
C-21				20-May-13	Turbidity		12.3	NTU	
C-21				24-Jun-13	Dissolved oxygen (DO)		7.07	mg/l	
C-21				24-Jun-13	Dissolved oxygen saturation		83.2	%	
C-21				24-Jun-13	pH		7.31	none	
C-21				24-Jun-13	Specific conductance		345	umho/cm	
C-21				24-Jun-13	Temperature, water		23.48	deg C	
C-21				24-Jun-13	Turbidity		210	NTU	
C-21				05-Aug-13	Dissolved oxygen (DO)		10.42	mg/l	
C-21				05-Aug-13	Dissolved oxygen saturation		122.1	%	
C-21				05-Aug-13	pH		8.07	none	
C-21				05-Aug-13	Specific conductance		523	umho/cm	
C-21				05-Aug-13	Temperature, water		23.16	deg C	
C-21				05-Aug-13	Turbidity		34.9	NTU	
C-21				23-Sep-13	Dissolved oxygen (DO)		5.77	mg/l	
C-21				23-Sep-13	Dissolved oxygen saturation		64.2	%	
C-21				23-Sep-13	pH		7.84	none	
C-21				23-Sep-13	Specific conductance		622	umho/cm	
C-21				23-Sep-13	Temperature, water		20.5	deg C	
C-21				23-Sep-13	Turbidity		26.7	NTU	
C-21				21-Oct-13	Dissolved oxygen (DO)		5.7	mg/l	
C-21				21-Oct-13	Dissolved oxygen saturation		54.4	%	
C-21				21-Oct-13	pH		7.78	none	
C-21				21-Oct-13	Specific conductance		566	umho/cm	
C-21				21-Oct-13	Temperature, water		13.19	deg C	
C-21				21-Oct-13	Turbidity		21.8	NTU	
C-21				18-Nov-13	Dissolved oxygen (DO)		3.56	mg/l	
C-21				18-Nov-13	Dissolved oxygen saturation		33	%	
C-21				18-Nov-13	pH		7.52	none	
C-21				18-Nov-13	Specific conductance		602	umho/cm	
C-21				18-Nov-13	Temperature, water		11.93	deg C	
C-21				18-Nov-13	Turbidity		37.8	NTU	
C-21	LITTLE WABASH RIVER			27-Feb-12	Aluminum	Total	92.2	ug/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Barium	Dissolved	62.5	ug/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Barium	Total	65.1	ug/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Calcium	Dissolved	60900	ug/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Calcium	Total	57800	ug/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Chloride	Total	24.4	mg/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Hardness, Ca, Mg		239000	ug/l	C
C-21	LITTLE WABASH RIVER			27-Feb-12	Inorganic nitrogen (nitrate and nitrite)	Total	2.41	mg/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Iron	Total	356	ug/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Magnesium	Dissolved	24300	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			27-Feb-12	Magnesium	Total	23100	ug/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Manganese	Dissolved	174	ug/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Manganese	Total	169	ug/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Organic carbon	Total	3.06	mg/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Phosphorus	Dissolved	0.029	mg/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Phosphorus	Total	0.063	mg/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Potassium	Dissolved	2390	ug/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Potassium	Total	2400	ug/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Sodium	Dissolved	14900	ug/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Sodium	Total	14900	ug/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Strontium	Dissolved	122	ug/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Strontium	Total	119	ug/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Sulfate	Total	14.4	mg/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			27-Feb-12	Total suspended solids		5	mg/l	
C-21	LITTLE WABASH RIVER			27-Feb-12	Volatile suspended solids		4	mg/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Aluminum	Total	426	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Ammonia-nitrogen	Total	0.15	mg/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Barium	Dissolved	71.2	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Barium	Total	79.3	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Calcium	Dissolved	64000	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Calcium	Total	64200	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Chloride	Total	25.9	mg/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Hardness, Ca, Mg		272000	ug/l	C
C-21	LITTLE WABASH RIVER			26-Mar-12	Inorganic nitrogen (nitrate and nitrite)	Total	1.05	mg/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Iron	Total	743	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Kjeldahl nitrogen	Total	0.731	mg/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Magnesium	Dissolved	27200	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Magnesium	Total	27100	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Manganese	Dissolved	199	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Manganese	Total	245	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Organic carbon	Total	4.26	mg/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Phosphorus	Dissolved	0.048	mg/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Phosphorus	Total	0.114	mg/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Potassium	Dissolved	3510	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Potassium	Total	3890	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Sodium	Dissolved	19200	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Sodium	Total	19400	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Strontium	Dissolved	139	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Strontium	Total	142	ug/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Sulfate	Total	31.6	mg/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			26-Mar-12	Total suspended solids		16	mg/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Volatile suspended solids		8	mg/l	
C-21	LITTLE WABASH RIVER			26-Mar-12	Zinc	Total	10.5	ug/l	
RCG-1	PARADISE	1	ft	18-Apr-12	Alkalinity, total		120	mg/l	
RCG-1	PARADISE	1	ft	18-Apr-12	Ammonia-nitrogen	Total	0.34	mg/l	
RCG-1	PARADISE	1	ft	18-Apr-12	Inorganic nitrogen (nitrate and nitrite)	Total	6.76	mg/l	
RCG-1	PARADISE	1	ft	18-Apr-12	Kjeldahl nitrogen	Total	0.788	mg/l	
RCG-1	PARADISE	1	ft	18-Apr-12	Phosphorus	Dissolved	0.095	mg/l	
RCG-1	PARADISE	1	ft	18-Apr-12	Phosphorus	Total	0.186	mg/l	
RCG-1	PARADISE			18-Apr-12	Temperature, sample		2	deg C	
RCG-1	PARADISE	1	ft	18-Apr-12	Total suspended solids		29	mg/l	
RCG-1	PARADISE	1	ft	18-Apr-12	Volatile suspended solids		9	mg/l	
RCG-1	PARADISE	13	ft	18-Apr-12	Alkalinity, total		135	mg/l	
RCG-1	PARADISE	13	ft	18-Apr-12	Ammonia-nitrogen	Total	0.39	mg/l	
RCG-1	PARADISE	13	ft	18-Apr-12	Inorganic nitrogen (nitrate and nitrite)	Total	6.73	mg/l	
RCG-1	PARADISE	13	ft	18-Apr-12	Kjeldahl nitrogen	Total	0.643	mg/l	
RCG-1	PARADISE	13	ft	18-Apr-12	Phosphorus	Dissolved	0.092	mg/l	
RCG-1	PARADISE	13	ft	18-Apr-12	Phosphorus	Total	0.187	mg/l	
RCG-1	PARADISE			18-Apr-12	Temperature, sample		2	deg C	
RCG-1	PARADISE	13	ft	18-Apr-12	Total suspended solids		30	mg/l	
RCG-1	PARADISE	13	ft	18-Apr-12	Volatile suspended solids		8	mg/l	
RCG-2	PARADISE	1	ft	18-Apr-12	Alkalinity, total		140	mg/l	
RCG-2	PARADISE	1	ft	18-Apr-12	Ammonia-nitrogen	Total	0.26	mg/l	
RCG-2	PARADISE	1	ft	18-Apr-12	Inorganic nitrogen (nitrate and nitrite)	Total	7.75	mg/l	
RCG-2	PARADISE	1	ft	18-Apr-12	Kjeldahl nitrogen	Total	0.777	mg/l	
RCG-2	PARADISE	1	ft	18-Apr-12	Phosphorus	Dissolved	0.101	mg/l	
RCG-2	PARADISE	1	ft	18-Apr-12	Phosphorus	Total	0.197	mg/l	
RCG-2	PARADISE			18-Apr-12	Temperature, sample		2	deg C	
RCG-2	PARADISE	1	ft	18-Apr-12	Total suspended solids		27	mg/l	
RCG-2	PARADISE	1	ft	18-Apr-12	Volatile suspended solids		9	mg/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Alkalinity, total		130	mg/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Aluminum	Total	1680	ug/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Ammonia-nitrogen	Total	0.29	mg/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Atrazine	Total	4.3	ug/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Barium	Total	47	ug/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Calcium	Total	37400	ug/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Hardness, Ca, Mg		168000	ug/l	C
RCG-4	PARADISE	14	ft	18-Apr-12	Inorganic nitrogen (nitrate and nitrite)	Total	7.49	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
RCG-4	PARADISE	14	ft	18-Apr-12	Iron	Total	1730	ug/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Kjeldahl nitrogen	Total	0.734	mg/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Magnesium	Total	18200	ug/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Manganese	Total	61.5	ug/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Phosphorus	Dissolved	0.107	mg/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Phosphorus	Total	0.204	mg/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Potassium	Total	2640	ug/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Sodium	Total	7870	ug/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Strontium	Total	74.7	ug/l	
RCG-4	PARADISE			18-Apr-12	Temperature, sample		2	deg C	
RCG-4	PARADISE	14	ft	18-Apr-12	Total suspended solids		39	mg/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Volatile suspended solids		14	mg/l	
RCG-4	PARADISE	14	ft	18-Apr-12	Zinc	Total	11.1	ug/l	
RCG-1	PARADISE	2	ft	18-Apr-12	Chlorophyll a, corrected for pheophytin	Total	27.6	ug/l	
RCG-1	PARADISE	2	ft	18-Apr-12	Chlorophyll a, uncorrected for pheophytin	Total	33	ug/l	
RCG-1	PARADISE	2	ft	18-Apr-12	Chlorophyll b	Total	0.79	ug/l	
RCG-1	PARADISE	2	ft	18-Apr-12	Chlorophyll c	Total	4.1	ug/l	
RCG-2	PARADISE	2	ft	18-Apr-12	Chlorophyll a, corrected for pheophytin	Total	28.5	ug/l	
RCG-2	PARADISE	2	ft	18-Apr-12	Chlorophyll a, uncorrected for pheophytin	Total	31.5	ug/l	
RCG-2	PARADISE	2	ft	18-Apr-12	Chlorophyll c	Total	4.01	ug/l	
RCG-4	PARADISE	2	ft	18-Apr-12	Chlorophyll a, corrected for pheophytin	Total	36.5	ug/l	
RCG-4	PARADISE	2	ft	18-Apr-12	Chlorophyll a, uncorrected for pheophytin	Total	40.7	ug/l	
RCG-4	PARADISE	2	ft	18-Apr-12	Chlorophyll c	Total	4.42	ug/l	
RCF-1	MATTOON	1	ft	24-Apr-12	Alkalinity, total		130	mg/l	
RCF-1	MATTOON	1	ft	24-Apr-12	Ammonia-nitrogen	Total	0.1	mg/l	
RCF-1	MATTOON	1	ft	24-Apr-12	Inorganic nitrogen (nitrate and nitrite)	Total	0.635	mg/l	
RCF-1	MATTOON	1	ft	24-Apr-12	Kjeldahl nitrogen	Total	1.7	mg/l	
RCF-1	MATTOON	1	ft	24-Apr-12	Phosphorus	Dissolved	0.017	mg/l	
RCF-1	MATTOON	1	ft	24-Apr-12	Phosphorus	Total	0.138	mg/l	
RCF-1	MATTOON			24-Apr-12	Temperature, sample		1	deg C	
RCF-1	MATTOON	1	ft	24-Apr-12	Total suspended solids		15	mg/l	
RCF-1	MATTOON	1	ft	24-Apr-12	Volatile suspended solids		10	mg/l	
RCF-1	MATTOON	23	ft	24-Apr-12	Alkalinity, total		120	mg/l	
RCF-1	MATTOON	23	ft	24-Apr-12	Ammonia-nitrogen	Total	0.14	mg/l	
RCF-1	MATTOON	23	ft	24-Apr-12	Inorganic nitrogen (nitrate and nitrite)	Total	0.654	mg/l	
RCF-1	MATTOON	23	ft	24-Apr-12	Kjeldahl nitrogen	Total	1.31	mg/l	
RCF-1	MATTOON	23	ft	24-Apr-12	Phosphorus	Dissolved	0.012	mg/l	
RCF-1	MATTOON	23	ft	24-Apr-12	Phosphorus	Total	0.115	mg/l	
RCF-1	MATTOON			24-Apr-12	Temperature, sample		1	deg C	
RCF-1	MATTOON	23	ft	24-Apr-12	Total suspended solids		18	mg/l	
RCF-1	MATTOON	23	ft	24-Apr-12	Volatile suspended solids		14	mg/l	
RCF-1	MATTOON	3	ft	24-Apr-12	Chlorophyll a, corrected for pheophytin	Total	104	ug/l	
RCF-1	MATTOON	3	ft	24-Apr-12	Chlorophyll a, uncorrected for pheophytin	Total	106	ug/l	
RCF-1	MATTOON	3	ft	24-Apr-12	Chlorophyll c	Total	12.6	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Aluminum	Total	284	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Barium	Dissolved	61.5	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Barium	Total	69.5	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Boron	Dissolved	25.8	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Boron	Total	26.1	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Calcium	Dissolved	52700	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Calcium	Total	53700	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Chloride	Total	25.3	mg/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Copper	Dissolved	5.25	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Hardness, Ca, Mg		227000	ug/l	C
C-21	LITTLE WABASH RIVER			23-Apr-12	Inorganic nitrogen (nitrate and nitrite)	Total	3.15	mg/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Iron	Total	646	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Kjeldahl nitrogen	Total	0.725	mg/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Magnesium	Dissolved	22000	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Magnesium	Total	22600	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Manganese	Dissolved	66.5	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Manganese	Total	116	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Organic carbon	Total	3.18	mg/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Phosphorus	Dissolved	0.036	mg/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Phosphorus	Total	0.107	mg/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Potassium	Dissolved	2420	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Potassium	Total	2560	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Sodium	Dissolved	12800	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Sodium	Total	13200	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Strontium	Dissolved	128	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Strontium	Total	132	ug/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Sulfate	Total	11	mg/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Temperature, sample		1	deg C	
C-21	LITTLE WABASH RIVER			23-Apr-12	Total suspended solids		20	mg/l	
C-21	LITTLE WABASH RIVER			23-Apr-12	Volatile suspended solids		8	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
RCG-1	PARADISE	1	ft	14-May-12	Alkalinity, total		150	mg/l	
RCG-1	PARADISE	1	ft	14-May-12	Inorganic nitrogen (nitrate and nitrite)	Total	6.16	mg/l	
RCG-1	PARADISE	1	ft	14-May-12	Kjeldahl nitrogen	Total	1.3	mg/l	
RCG-1	PARADISE	1	ft	14-May-12	Phosphorus	Total	0.106	mg/l	
RCG-1	PARADISE			14-May-12	Temperature, sample		2	deg C	
RCG-1	PARADISE	1	ft	14-May-12	Total suspended solids		57	mg/l	
RCG-1	PARADISE	1	ft	14-May-12	Volatile suspended solids		18	mg/l	
RCG-2	PARADISE	1	ft	14-May-12	Alkalinity, total		145	mg/l	
RCG-2	PARADISE	1	ft	14-May-12	Inorganic nitrogen (nitrate and nitrite)	Total	6.1	mg/l	
RCG-2	PARADISE	1	ft	14-May-12	Kjeldahl nitrogen	Total	1.53	mg/l	
RCG-2	PARADISE	1	ft	14-May-12	Phosphorus	Total	0.109	mg/l	
RCG-2	PARADISE			14-May-12	Temperature, sample		2	deg C	
RCG-2	PARADISE	1	ft	14-May-12	Total suspended solids		30	mg/l	
RCG-2	PARADISE	1	ft	14-May-12	Volatile suspended solids		13	mg/l	
RCG-3	PARADISE	1	ft	14-May-12	Alkalinity, total		145	mg/l	
RCG-3	PARADISE	1	ft	14-May-12	Inorganic nitrogen (nitrate and nitrite)	Total	6.56	mg/l	
RCG-3	PARADISE	1	ft	14-May-12	Kjeldahl nitrogen	Total	1.53	mg/l	
RCG-3	PARADISE	1	ft	14-May-12	Phosphorus	Total	0.137	mg/l	
RCG-3	PARADISE			14-May-12	Temperature, sample		2	deg C	
RCG-3	PARADISE	1	ft	14-May-12	Total suspended solids		71	mg/l	
RCG-3	PARADISE	1	ft	14-May-12	Volatile suspended solids		19	mg/l	
RCG-1	PARADISE	2	ft	14-May-12	Chlorophyll a, corrected for pheophytin	Total	68.2	ug/l	
RCG-1	PARADISE	2	ft	14-May-12	Chlorophyll a, uncorrected for pheophytin	Total	71.9	ug/l	
RCG-1	PARADISE	2	ft	14-May-12	Chlorophyll c	Total	10.1	ug/l	
RCG-2	PARADISE	2	ft	14-May-12	Chlorophyll a, corrected for pheophytin	Total	69.4	ug/l	
RCG-2	PARADISE	2	ft	14-May-12	Chlorophyll a, uncorrected for pheophytin	Total	73.5	ug/l	
RCG-2	PARADISE	2	ft	14-May-12	Chlorophyll c	Total	10.2	ug/l	
RCG-3	PARADISE	1	ft	14-May-12	Chlorophyll a, corrected for pheophytin	Total	73.7	ug/l	
RCG-3	PARADISE	1	ft	14-May-12	Chlorophyll a, uncorrected for pheophytin	Total	77.7	ug/l	
RCG-3	PARADISE	1	ft	14-May-12	Chlorophyll c	Total	11.9	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Alkalinity, total		155	mg/l	
C-15	LITTLE WABASH RIVER			16-May-12	Ammonia-nitrogen	Total	0.19	mg/l	
C-15	LITTLE WABASH RIVER			16-May-12	Barium	Dissolved	55.1	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Barium	Total	57.4	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Calcium	Dissolved	39300	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Calcium	Total	40300	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Chloride	Total	29.6	mg/l	
C-15	LITTLE WABASH RIVER			16-May-12	Fluoride	Total	0.28	mg/l	
C-15	LITTLE WABASH RIVER			16-May-12	Hardness, Ca, Mg		180000	ug/l	C
C-15	LITTLE WABASH RIVER			16-May-12	Inorganic nitrogen (nitrate and nitrite)	Total	0.716	mg/l	
C-15	LITTLE WABASH RIVER			16-May-12	Iron	Total	132	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Magnesium	Dissolved	18800	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Magnesium	Total	19200	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Manganese	Dissolved	124	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Manganese	Total	159	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Organic carbon	Total	5.11	mg/l	
C-15	LITTLE WABASH RIVER			16-May-12	Phosphorus	Dissolved	0.082	mg/l	
C-15	LITTLE WABASH RIVER			16-May-12	Phosphorus	Total	0.118	mg/l	
C-15	LITTLE WABASH RIVER			16-May-12	Potassium	Dissolved	4010	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Potassium	Total	4070	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Sodium	Dissolved	15800	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Sodium	Total	15900	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Strontium	Dissolved	111	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Strontium	Total	112	ug/l	
C-15	LITTLE WABASH RIVER			16-May-12	Sulfate	Total	13.7	mg/l	
C-15	LITTLE WABASH RIVER			16-May-12	Temperature, sample		5	deg C	
C-24	LITTLE WABASH RIVER			16-May-12	Alkalinity, total		195	mg/l	
C-24	LITTLE WABASH RIVER			16-May-12	Aluminum	Total	98.4	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Ammonia-nitrogen	Total	0.61	mg/l	
C-24	LITTLE WABASH RIVER			16-May-12	Barium	Dissolved	65	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Barium	Total	64.9	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Calcium	Dissolved	48500	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Calcium	Total	48200	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Chloride	Total	51	mg/l	
C-24	LITTLE WABASH RIVER			16-May-12	Fluoride	Total	0.25	mg/l	
C-24	LITTLE WABASH RIVER			16-May-12	Hardness, Ca, Mg		217000	ug/l	C
C-24	LITTLE WABASH RIVER			16-May-12	Inorganic nitrogen (nitrate and nitrite)	Total	4.35	mg/l	
C-24	LITTLE WABASH RIVER			16-May-12	Iron	Total	221	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Magnesium	Dissolved	23600	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Magnesium	Total	23500	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Manganese	Dissolved	35.2	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Manganese	Total	41.2	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Organic carbon	Total	3.91	mg/l	
C-24	LITTLE WABASH RIVER			16-May-12	Phosphorus	Dissolved	0.055	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-24	LITTLE WABASH RIVER			16-May-12	Phosphorus	Total	0.091	mg/l	
C-24	LITTLE WABASH RIVER			16-May-12	Potassium	Dissolved	2720	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Potassium	Total	2710	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Sodium	Dissolved	27500	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Sodium	Total	27100	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Strontium	Dissolved	184	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Strontium	Total	180	ug/l	
C-24	LITTLE WABASH RIVER			16-May-12	Temperature, sample		5	deg C	
C-24	LITTLE WABASH RIVER			16-May-12	Total suspended solids		7	mg/l	
C-24	LITTLE WABASH RIVER			16-May-12	Volatile suspended solids		5	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Alkalinity, total		230	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Aluminum	Total	173	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Barium	Dissolved	66.5	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Barium	Total	70.5	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Calcium	Dissolved	65900	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Calcium	Total	67100	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Chloride	Total	21.9	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Fluoride	Total	0.23	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Hardness, Ca, Mg		287000	ug/l	C
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Inorganic nitrogen (nitrate and nitrite)	Total	8.61	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Iron	Total	238	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Magnesium	Dissolved	28100	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Magnesium	Total	29100	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Manganese	Dissolved	17.6	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Manganese	Total	27.9	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Organic carbon	Total	2.01	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Phosphorus	Dissolved	0.05	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Phosphorus	Total	0.054	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Potassium	Dissolved	1510	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Potassium	Total	1710	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Sodium	Dissolved	7390	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Sodium	Total	7600	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Strontium	Dissolved	144	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Strontium	Total	150	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Temperature, sample		5	deg C	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Total suspended solids		9	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			16-May-12	Volatile suspended solids		4	mg/l	
C-21	LITTLE WABASH RIVER			21-May-12	Aluminum	Total	427	ug/l	
C-21	LITTLE WABASH RIVER			21-May-12	Ammonia-nitrogen	Total	0.13	mg/l	
C-21	LITTLE WABASH RIVER			21-May-12	Barium	Dissolved	73.2	ug/l	
C-21	LITTLE WABASH RIVER			21-May-12	Barium	Total	83.7	ug/l	
C-21	LITTLE WABASH RIVER			21-May-12	Calcium	Dissolved	58500	ug/l	
C-21	LITTLE WABASH RIVER			21-May-12	Calcium	Total	62800	ug/l	
C-21	LITTLE WABASH RIVER			21-May-12	Chloride	Total	25.8	mg/l	
C-21	LITTLE WABASH RIVER			21-May-12	Hardness, Ca, Mg		270000	ug/l	C
C-21	LITTLE WABASH RIVER			21-May-12	Inorganic nitrogen (nitrate and nitrite)	Total	1.57	mg/l	
C-21	LITTLE WABASH RIVER			21-May-12	Iron	Total	768	ug/l	
C-21	LITTLE WABASH RIVER			21-May-12	Magnesium	Dissolved	25600	ug/l	
C-21	LITTLE WABASH RIVER			21-May-12	Magnesium	Total	27500	ug/l	
C-21	LITTLE WABASH RIVER			21-May-12	Manganese	Dissolved	267	ug/l	
C-21	LITTLE WABASH RIVER			21-May-12	Manganese	Total	303	ug/l	
C-21	LITTLE WABASH RIVER			21-May-12	Organic carbon	Total	2.95	mg/l	
C-21	LITTLE WABASH RIVER			21-May-12	Phosphorus	Dissolved	0.042	mg/l	
C-21	LITTLE WABASH RIVER			21-May-12	Phosphorus	Total	0.11	mg/l	
C-21	LITTLE WABASH RIVER			21-May-12	Potassium	Dissolved	2570	ug/l	
C-21	LITTLE WABASH RIVER			21-May-12	Potassium	Total	2810	ug/l	
C-21	LITTLE WABASH RIVER			21-May-12	Sodium	Dissolved	12600	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			21-May-12	Sodium	Total	13100	ug/l	
C-21	LITTLE WABASH RIVER			21-May-12	Strontium	Dissolved	131	ug/l	
C-21	LITTLE WABASH RIVER			21-May-12	Strontium	Total	140	ug/l	
C-21	LITTLE WABASH RIVER			21-May-12	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			21-May-12	Total suspended solids		24	mg/l	
C-21	LITTLE WABASH RIVER			21-May-12	Volatile suspended solids		7	mg/l	
C-21	LITTLE WABASH RIVER			21-May-12	Zinc	Total	5.17	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Alkalinity, total		250	mg/l	
C-21	LITTLE WABASH RIVER			23-May-12	Aluminum	Total	843	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Ammonia-nitrogen	Total	0.27	mg/l	
C-21	LITTLE WABASH RIVER			23-May-12	Barium	Dissolved	78.7	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Barium	Total	89.2	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Calcium	Dissolved	64300	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Calcium	Total	65700	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Chloride	Total	23.4	mg/l	
C-21	LITTLE WABASH RIVER			23-May-12	Fluoride	Total	0.24	mg/l	
C-21	LITTLE WABASH RIVER			23-May-12	Hardness, Ca, Mg		280000	ug/l	C
C-21	LITTLE WABASH RIVER			23-May-12	Inorganic nitrogen (nitrate and nitrite)	Total	2.83	mg/l	
C-21	LITTLE WABASH RIVER			23-May-12	Iron	Total	1170	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Kjeldahl nitrogen	Total	0.502	mg/l	
C-21	LITTLE WABASH RIVER			23-May-12	Lead	Dissolved	5.19	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Magnesium	Dissolved	27700	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Magnesium	Total	28200	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Manganese	Dissolved	245	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Manganese	Total	309	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Organic carbon	Total	2.99	mg/l	
C-21	LITTLE WABASH RIVER			23-May-12	Phosphorus	Dissolved	0.054	mg/l	
C-21	LITTLE WABASH RIVER			23-May-12	Phosphorus	Total	0.114	mg/l	
C-21	LITTLE WABASH RIVER			23-May-12	Potassium	Dissolved	3040	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Potassium	Total	3450	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Sodium	Dissolved	12900	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Sodium	Total	13400	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Strontium	Dissolved	143	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Strontium	Total	148	ug/l	
C-21	LITTLE WABASH RIVER			23-May-12	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			23-May-12	Total suspended solids		35	mg/l	
C-21	LITTLE WABASH RIVER			23-May-12	Volatile suspended solids		8	mg/l	
C-24	LITTLE WABASH RIVER			30-May-12	Alkalinity, total		265	mg/l	
C-24	LITTLE WABASH RIVER			30-May-12	Arsenic	Dissolved	3.2	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Arsenic	Total	3.29	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Barium	Dissolved	59.3	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Barium	Total	70	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Calcium	Dissolved	67700	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Calcium	Total	70900	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Chloride	Total	45	mg/l	
C-24	LITTLE WABASH RIVER			30-May-12	Fluoride	Total	0.19	mg/l	
C-24	LITTLE WABASH RIVER			30-May-12	Hardness, Ca, Mg		304000	ug/l	C
C-24	LITTLE WABASH RIVER			30-May-12	Inorganic nitrogen (nitrate and nitrite)	Total	1.04	mg/l	
C-24	LITTLE WABASH RIVER			30-May-12	Iron	Total	178	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Lead	Dissolved	11.2	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Lead	Total	12.4	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Magnesium	Dissolved	29800	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Magnesium	Total	30900	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Manganese	Dissolved	335	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Manganese	Total	367	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Organic carbon	Total	3	mg/l	
C-24	LITTLE WABASH RIVER			30-May-12	Phosphorus	Dissolved	0.076	mg/l	
C-24	LITTLE WABASH RIVER			30-May-12	Phosphorus	Total	0.114	mg/l	
C-24	LITTLE WABASH RIVER			30-May-12	Sodium	Dissolved	20600	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Sodium	Total	23800	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Strontium	Dissolved	144	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Strontium	Total	159	ug/l	
C-24	LITTLE WABASH RIVER			30-May-12	Sulfate	Total	50.1	mg/l	
C-24	LITTLE WABASH RIVER			30-May-12	Temperature, sample		3	deg C	
C-24	LITTLE WABASH RIVER			30-May-12	Total suspended solids		7	mg/l	
C-24	LITTLE WABASH RIVER			30-May-12	Volatile suspended solids		7	mg/l	
C-24	LITTLE WABASH RIVER	1	ft	30-May-12	Chlorophyll a, corrected for pheophytin	Total	3.2	ug/l	
C-24	LITTLE WABASH RIVER	1	ft	30-May-12	Chlorophyll a, uncorrected for pheophytin	Total	3.54	ug/l	
C-24	LITTLE WABASH RIVER	1	ft	30-May-12	Chlorophyll c	Total	0.59	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Alkalinity, total		255	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Aluminum	Total	234	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Barium	Dissolved	64.9	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Barium	Total	70.3	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Calcium	Dissolved	67800	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Calcium	Total	69900	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Chloride	Total	22	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Fluoride	Total	0.22	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Hardness, Ca, Mg		299000	ug/l	C
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Inorganic nitrogen (nitrate and nitrite)	Total	5.67	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Iron	Total	310	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Lead	Dissolved	8.43	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Lead	Total	10.8	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Magnesium	Dissolved	28900	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Magnesium	Total	30200	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Manganese	Dissolved	14.2	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Manganese	Total	25.7	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Organic carbon	Total	2.55	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Phosphorus	Dissolved	0.056	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Phosphorus	Total	0.071	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Potassium	Dissolved	1010	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Potassium	Total	1030	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Sodium	Dissolved	7950	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Sodium	Total	8180	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Strontium	Dissolved	150	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Strontium	Total	154	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Sulfate	Total	19.8	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Temperature, sample		1	deg C	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Total suspended solids		7	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			04-Jun-12	Volatile suspended solids		4	mg/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Alkalinity, total		195	mg/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Ammonia-nitrogen	Total	0.13	mg/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Arsenic	Dissolved	2.73	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Arsenic	Total	2.33	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Barium	Dissolved	64.6	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Barium	Total	67.7	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Calcium	Dissolved	49400	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Calcium	Total	50500	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Chloride	Total	37	mg/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Fluoride	Total	0.28	mg/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Hardness, Ca, Mg		219000	ug/l	C
C-15	LITTLE WABASH RIVER			04-Jun-12	Inorganic nitrogen (nitrate and nitrite)	Total	1.29	mg/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Iron	Total	117	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Kjeldahl nitrogen	Total	0.787	mg/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Lead	Dissolved	8.42	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Lead	Total	11.1	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Magnesium	Dissolved	22200	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Magnesium	Total	22600	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Manganese	Dissolved	96.7	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Manganese	Total	138	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Organic carbon	Total	5.46	mg/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Phosphorus	Dissolved	0.115	mg/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Phosphorus	Total	0.154	mg/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Potassium	Dissolved	4420	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Potassium	Total	4660	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Sodium	Dissolved	26100	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Sodium	Total	26400	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Strontium	Dissolved	136	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Strontium	Total	138	ug/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Sulfate	Total	26.1	mg/l	
C-15	LITTLE WABASH RIVER			04-Jun-12	Temperature, sample		1	deg C	
C-15	LITTLE WABASH RIVER	1	ft	04-Jun-12	Chlorophyll a, corrected for pheophytin	Total	13.6	ug/l	
C-15	LITTLE WABASH RIVER	1	ft	04-Jun-12	Chlorophyll a, uncorrected for pheophytin	Total	13.6	ug/l	
C-15	LITTLE WABASH RIVER	1	ft	04-Jun-12	Chlorophyll c	Total	1.22	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
CT-02	WEST BRANCH LITTLE WABASH RIVER	1	ft	04-Jun-12	Chlorophyll a, corrected for pheophytin	Total	2.14	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER	1	ft	04-Jun-12	Chlorophyll a, uncorrected for pheophytin	Total	1.95	ug/l	
C-24	LITTLE WABASH RIVER			05-Jun-12	Ammonia-nitrogen	Total	0.3	mg/l	
C-24	LITTLE WABASH RIVER			05-Jun-12	Inorganic nitrogen (nitrate and nitrite)	Total	2.1	mg/l	
C-24	LITTLE WABASH RIVER			05-Jun-12	Kjeldahl nitrogen	Total	0.567	mg/l	
C-24	LITTLE WABASH RIVER			05-Jun-12	Phosphorus	Total	0.114	mg/l	
C-24	LITTLE WABASH RIVER			05-Jun-12	Temperature, sample		1	deg C	
C-24	LITTLE WABASH RIVER			05-Jun-12	Total suspended solids		12	mg/l	
C-24	LITTLE WABASH RIVER			05-Jun-12	Volatile suspended solids		11	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			05-Jun-12	Inorganic nitrogen (nitrate and nitrite)	Total	4.31	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			05-Jun-12	Phosphorus	Total	0.071	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			05-Jun-12	Temperature, sample		1	deg C	
C-15	LITTLE WABASH RIVER			05-Jun-12	Ammonia-nitrogen	Total	0.16	mg/l	
C-15	LITTLE WABASH RIVER			05-Jun-12	Inorganic nitrogen (nitrate and nitrite)	Total	0.26	mg/l	
C-15	LITTLE WABASH RIVER			05-Jun-12	Phosphorus	Total	0.137	mg/l	
C-15	LITTLE WABASH RIVER			05-Jun-12	Temperature, sample		1	deg C	
RCF-1	MATTOON	1	ft	13-Jun-12	Alkalinity, total		125	mg/l	
RCF-1	MATTOON	1	ft	13-Jun-12	Kjeldahl nitrogen	Total	0.824	mg/l	
RCF-1	MATTOON	1	ft	13-Jun-12	Phosphorus	Dissolved	0.029	mg/l	
RCF-1	MATTOON	1	ft	13-Jun-12	Phosphorus	Total	0.123	mg/l	
RCF-1	MATTOON			13-Jun-12	Temperature, sample		5	deg C	
RCF-1	MATTOON	1	ft	13-Jun-12	Total suspended solids		14	mg/l	
RCF-1	MATTOON	1	ft	13-Jun-12	Volatile suspended solids		10	mg/l	
RCF-1	MATTOON	19	ft	13-Jun-12	Alkalinity, total		130	mg/l	
RCF-1	MATTOON	19	ft	13-Jun-12	Kjeldahl nitrogen	Total	0.913	mg/l	
RCF-1	MATTOON	19	ft	13-Jun-12	Phosphorus	Dissolved	0.093	mg/l	
RCF-1	MATTOON	19	ft	13-Jun-12	Phosphorus	Total	0.192	mg/l	
RCF-1	MATTOON			13-Jun-12	Temperature, sample		5	deg C	
RCF-1	MATTOON	19	ft	13-Jun-12	Total suspended solids		17	mg/l	
RCF-1	MATTOON	19	ft	13-Jun-12	Volatile suspended solids		9	mg/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Alkalinity, total		270	mg/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Aluminum	Total	596	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Arsenic	Total	2.44	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Barium	Dissolved	81.5	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Barium	Total	91.8	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Calcium	Dissolved	71200	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Calcium	Total	73100	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Chloride	Total	21.5	mg/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Fluoride	Total	0.25	mg/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Hardness, Ca, Mg		314000	ug/l	C
C-21	LITTLE WABASH RIVER			14-Jun-12	Inorganic nitrogen (nitrate and nitrite)	Total	0.55	mg/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Iron	Total	776	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Kjeldahl nitrogen	Total	0.66	mg/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Magnesium	Dissolved	30700	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Magnesium	Total	32000	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Manganese	Dissolved	331	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Manganese	Total	470	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Organic carbon	Total	3.26	mg/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Phosphorus	Dissolved	0.059	mg/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Phosphorus	Total	0.123	mg/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Potassium	Dissolved	2600	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Potassium	Total	2790	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Sodium	Dissolved	12900	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Sodium	Total	13200	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Strontium	Dissolved	154	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Strontium	Total	159	ug/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Sulfate	Total	20.6	mg/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Temperature, sample		5	deg C	
C-21	LITTLE WABASH RIVER			14-Jun-12	Total suspended solids		19	mg/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Volatile suspended solids		8	mg/l	
C-21	LITTLE WABASH RIVER			14-Jun-12	Zinc	Total	5.83	ug/l	
RCG-1	PARADISE	1	ft	18-Jun-12	Alkalinity, total		135	mg/l	
RCG-1	PARADISE	1	ft	18-Jun-12	Ammonia-nitrogen	Total	0.16	mg/l	
RCG-1	PARADISE	1	ft	18-Jun-12	Inorganic nitrogen (nitrate and nitrite)	Total	0.414	mg/l	
RCG-1	PARADISE	1	ft	18-Jun-12	Kjeldahl nitrogen	Total	1.5	mg/l	
RCG-1	PARADISE	1	ft	18-Jun-12	Phosphorus	Total	0.212	mg/l	
RCG-1	PARADISE			18-Jun-12	Temperature, sample		1	deg C	
RCG-1	PARADISE	1	ft	18-Jun-12	Total suspended solids		26	mg/l	
RCG-1	PARADISE	1	ft	18-Jun-12	Volatile suspended solids		12	mg/l	
RCG-2	PARADISE	1	ft	18-Jun-12	Alkalinity, total		125	mg/l	
RCG-2	PARADISE	1	ft	18-Jun-12	Inorganic nitrogen (nitrate and nitrite)	Total	0.231	mg/l	
RCG-2	PARADISE	1	ft	18-Jun-12	Kjeldahl nitrogen	Total	1.56	mg/l	
RCG-2	PARADISE	1	ft	18-Jun-12	Phosphorus	Total	0.226	mg/l	
RCG-2	PARADISE			18-Jun-12	Temperature, sample		1	deg C	
RCG-2	PARADISE	1	ft	18-Jun-12	Total suspended solids		34	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
RCG-2	PARADISE	1	ft	18-Jun-12	Volatile suspended solids		15	mg/l	
RCG-3	PARADISE	1	ft	18-Jun-12	Alkalinity, total		150	mg/l	
RCG-3	PARADISE	1	ft	18-Jun-12	Kjeldahl nitrogen	Total	2.15	mg/l	
RCG-3	PARADISE	1	ft	18-Jun-12	Phosphorus	Total	0.352	mg/l	
RCG-3	PARADISE			18-Jun-12	Temperature, sample		1	deg C	
RCG-3	PARADISE	1	ft	18-Jun-12	Total suspended solids		138	mg/l	
RCG-3	PARADISE	1	ft	18-Jun-12	Volatile suspended solids		27	mg/l	
RCG-1	PARADISE	13	ft	19-Jun-12	Alkalinity, total		140	mg/l	
RCG-1	PARADISE	13	ft	19-Jun-12	Ammonia-nitrogen	Total	0.24	mg/l	
RCG-1	PARADISE	13	ft	19-Jun-12	Inorganic nitrogen (nitrate and nitrite)	Total	0.468	mg/l	
RCG-1	PARADISE	13	ft	19-Jun-12	Phosphorus	Dissolved	0.079	mg/l	
RCG-1	PARADISE	13	ft	19-Jun-12	Phosphorus	Total	0.223	mg/l	
RCG-1	PARADISE			19-Jun-12	Temperature, sample		2	deg C	
RCG-1	PARADISE	13	ft	19-Jun-12	Total suspended solids		39	mg/l	
RCG-1	PARADISE	13	ft	19-Jun-12	Volatile suspended solids		11	mg/l	
RCG-1	PARADISE	1	ft	19-Jun-12	Alkalinity, total		140	mg/l	
RCG-1	PARADISE	1	ft	19-Jun-12	Ammonia-nitrogen	Total	0.17	mg/l	
RCG-1	PARADISE	1	ft	19-Jun-12	Inorganic nitrogen (nitrate and nitrite)	Total	0.466	mg/l	
RCG-1	PARADISE	1	ft	19-Jun-12	Phosphorus	Dissolved	0.072	mg/l	
RCG-1	PARADISE	1	ft	19-Jun-12	Phosphorus	Total	0.187	mg/l	
RCG-1	PARADISE			19-Jun-12	Temperature, sample		2	deg C	
RCG-1	PARADISE	1	ft	19-Jun-12	Total suspended solids		26	mg/l	
RCG-1	PARADISE	1	ft	19-Jun-12	Volatile suspended solids		10	mg/l	
RCG-2	PARADISE	1	ft	19-Jun-12	Alkalinity, total		135	mg/l	
RCG-2	PARADISE	1	ft	19-Jun-12	Inorganic nitrogen (nitrate and nitrite)	Total	0.223	mg/l	
RCG-2	PARADISE	1	ft	19-Jun-12	Phosphorus	Dissolved	0.09	mg/l	
RCG-2	PARADISE	1	ft	19-Jun-12	Phosphorus	Total	0.267	mg/l	
RCG-2	PARADISE			19-Jun-12	Temperature, sample		2	deg C	
RCG-2	PARADISE	1	ft	19-Jun-12	Total suspended solids		59	mg/l	
RCG-2	PARADISE	1	ft	19-Jun-12	Volatile suspended solids		17	mg/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Alkalinity, total		135	mg/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Aluminum	Total	938	ug/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Ammonia-nitrogen	Total	0.13	mg/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Arsenic	Total	3.29	ug/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Atrazine	Total	1.6	ug/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Barium	Total	46.9	ug/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Calcium	Total	30000	ug/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Chloride	Total	25.5	mg/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Fluoride	Total	0.24	mg/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Hardness, Ca, Mg		158000	ug/l	C
RCG-4	PARADISE	17	ft	19-Jun-12	Inorganic nitrogen (nitrate and nitrite)	Total	0.445	mg/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Iron	Total	889	ug/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Magnesium	Total	20200	ug/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Manganese	Total	98.5	ug/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Phosphorus	Dissolved	0.07	mg/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Phosphorus	Total	0.197	mg/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Potassium	Total	2270	ug/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Sodium	Total	8870	ug/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Strontium	Total	77.1	ug/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Sulfate	Total	13.5	mg/l	
RCG-4	PARADISE			19-Jun-12	Temperature, sample		2	deg C	
RCG-4	PARADISE	17	ft	19-Jun-12	Total dissolved solids		208	mg/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Total suspended solids		35	mg/l	
RCG-4	PARADISE	17	ft	19-Jun-12	Volatile suspended solids		11	mg/l	
C-21	LITTLE WABASH RIVER			02-Jul-12	Kjeldahl nitrogen	Total	0.846	mg/l	
C-21	LITTLE WABASH RIVER			02-Jul-12	Phosphorus	Total	0.233	mg/l	
C-21	LITTLE WABASH RIVER			02-Jul-12	Temperature, sample		1	deg C	
C-21	LITTLE WABASH RIVER			02-Jul-12	Total suspended solids		7	mg/l	
C-21	LITTLE WABASH RIVER			02-Jul-12	Volatile suspended solids		5	mg/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Aluminum	Dissolved	271	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Aluminum	Total	292	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Arsenic	Dissolved	7.74	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Arsenic	Total	8.28	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Barium	Dissolved	79.6	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Barium	Total	92.7	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Calcium	Dissolved	72100	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Calcium	Total	72600	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Chloride	Total	23.7	mg/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Hardness, Ca, Mg		312000	ug/l	C
C-21	LITTLE WABASH RIVER			09-Jul-12	Iron	Total	344	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Kjeldahl nitrogen	Total	0.651	mg/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Magnesium	Dissolved	30900	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Magnesium	Total	31600	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Manganese	Dissolved	348	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Manganese	Total	592	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Organic carbon	Total	5.01	mg/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Phosphorus	Dissolved	0.211	mg/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Phosphorus	Total	0.267	mg/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Potassium	Dissolved	2770	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Potassium	Total	3100	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Strontium	Dissolved	169	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			09-Jul-12	Strontium	Total	177	ug/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			09-Jul-12	Total suspended solids		16	mg/l	
C-21	LITTLE WABASH RIVER			09-Jul-12	Volatile suspended solids		8	mg/l	
RCG-1	PARADISE	1	ft	16-Jul-12	Alkalinity, total		165	mg/l	
RCG-1	PARADISE	1	ft	16-Jul-12	Kjeldahl nitrogen	Total	1.15	mg/l	
RCG-1	PARADISE	1	ft	16-Jul-12	Phosphorus	Dissolved	0.261	mg/l	
RCG-1	PARADISE	1	ft	16-Jul-12	Phosphorus	Total	0.391	mg/l	
RCG-1	PARADISE			16-Jul-12	Temperature, sample		2	deg C	
RCG-1	PARADISE	1	ft	16-Jul-12	Total suspended solids		8	mg/l	
RCG-1	PARADISE	14	ft	16-Jul-12	Alkalinity, total		155	mg/l	
RCG-1	PARADISE	14	ft	16-Jul-12	Ammonia-nitrogen	Total	0.14	mg/l	
RCG-1	PARADISE	14	ft	16-Jul-12	Kjeldahl nitrogen	Total	1.05	mg/l	
RCG-1	PARADISE	14	ft	16-Jul-12	Phosphorus	Dissolved	0.285	mg/l	
RCG-1	PARADISE	14	ft	16-Jul-12	Phosphorus	Total	0.415	mg/l	
RCG-1	PARADISE			16-Jul-12	Temperature, sample		2	deg C	
RCG-1	PARADISE	14	ft	16-Jul-12	Total suspended solids		17	mg/l	
RCG-1	PARADISE	14	ft	16-Jul-12	Volatile suspended solids		7	mg/l	
RCG-2	PARADISE	1	ft	16-Jul-12	Alkalinity, total		150	mg/l	
RCG-2	PARADISE	1	ft	16-Jul-12	Kjeldahl nitrogen	Total	1.14	mg/l	
RCG-2	PARADISE	1	ft	16-Jul-12	Phosphorus	Dissolved	0.281	mg/l	
RCG-2	PARADISE	1	ft	16-Jul-12	Phosphorus	Total	0.455	mg/l	
RCG-2	PARADISE			16-Jul-12	Temperature, sample		2	deg C	
RCG-2	PARADISE	1	ft	16-Jul-12	Total suspended solids		9	mg/l	
RCG-2	PARADISE	1	ft	16-Jul-12	Volatile suspended solids		6	mg/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Alkalinity, total		155	mg/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Aluminum	Total	612	ug/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Arsenic	Total	10.5	ug/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Atrazine	Total	0.83	ug/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Barium	Total	56.3	ug/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Calcium	Total	35900	ug/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Chloride	Total	28.8	mg/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Fluoride	Total	0.23	mg/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Hardness, Ca, Mg		178000	ug/l	C
RCG-4	PARADISE	20	ft	16-Jul-12	Iron	Total	679	ug/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Kjeldahl nitrogen	Total	1.15	mg/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Magnesium	Total	21400	ug/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Manganese	Total	146	ug/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Phosphorus	Dissolved	0.255	mg/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Phosphorus	Total	0.447	mg/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Potassium	Total	2690	ug/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Sodium	Total	10400	ug/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Strontium	Total	84.6	ug/l	
RCG-4	PARADISE			16-Jul-12	Temperature, sample		2	deg C	
RCG-4	PARADISE	20	ft	16-Jul-12	Total dissolved solids		196	mg/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Total suspended solids		21	mg/l	
RCG-4	PARADISE	20	ft	16-Jul-12	Volatile suspended solids		8	mg/l	
RCG-1	PARADISE	1	ft	30-Jul-12	Alkalinity, total		150	mg/l	
RCG-1	PARADISE	1	ft	30-Jul-12	Kjeldahl nitrogen	Total	2.29	mg/l	
RCG-1	PARADISE	1	ft	30-Jul-12	Phosphorus	Total	0.461	mg/l	
RCG-1	PARADISE			30-Jul-12	Temperature, sample		3	deg C	
RCG-1	PARADISE	1	ft	30-Jul-12	Total suspended solids		26	mg/l	
RCG-1	PARADISE	1	ft	30-Jul-12	Volatile suspended solids		14	mg/l	
RCG-2	PARADISE	1	ft	30-Jul-12	Alkalinity, total		160	mg/l	
RCG-2	PARADISE	1	ft	30-Jul-12	Kjeldahl nitrogen	Total	1.89	mg/l	
RCG-2	PARADISE	1	ft	30-Jul-12	Phosphorus	Total	0.505	mg/l	
RCG-2	PARADISE			30-Jul-12	Temperature, sample		3	deg C	
RCG-2	PARADISE	1	ft	30-Jul-12	Total suspended solids		34	mg/l	
RCG-2	PARADISE	1	ft	30-Jul-12	Volatile suspended solids		17	mg/l	
RCG-3	PARADISE	1	ft	30-Jul-12	Alkalinity, total		155	mg/l	
RCG-3	PARADISE	1	ft	30-Jul-12	Kjeldahl nitrogen	Total	2.02	mg/l	
RCG-3	PARADISE	1	ft	30-Jul-12	Phosphorus	Total	0.53	mg/l	
RCG-3	PARADISE			30-Jul-12	Temperature, sample		3	deg C	
RCG-3	PARADISE	1	ft	30-Jul-12	Total suspended solids		58	mg/l	
RCG-3	PARADISE	1	ft	30-Jul-12	Volatile suspended solids		21	mg/l	
RCF-1	MATTOON	1	ft	30-Jul-12	Alkalinity, total		120	mg/l	
RCF-1	MATTOON	1	ft	30-Jul-12	Kjeldahl nitrogen	Total	1.32	mg/l	
RCF-1	MATTOON	1	ft	30-Jul-12	Phosphorus	Total	0.145	mg/l	
RCF-1	MATTOON			30-Jul-12	Temperature, sample		2	deg C	
RCF-1	MATTOON	1	ft	30-Jul-12	Total suspended solids		10	mg/l	
RCF-1	MATTOON	1	ft	30-Jul-12	Volatile suspended solids		9	mg/l	
RCF-1	MATTOON	22	ft	30-Jul-12	Alkalinity, total		155	mg/l	
RCF-1	MATTOON	22	ft	30-Jul-12	Ammonia-nitrogen	Total	3.14	mg/l	
RCF-1	MATTOON	22	ft	30-Jul-12	Kjeldahl nitrogen	Total	4.32	mg/l	
RCF-1	MATTOON	22	ft	30-Jul-12	Phosphorus	Dissolved	0.629	mg/l	
RCF-1	MATTOON	22	ft	30-Jul-12	Phosphorus	Total	0.895	mg/l	
RCF-1	MATTOON			30-Jul-12	Temperature, sample		2	deg C	
RCF-1	MATTOON	22	ft	30-Jul-12	Total suspended solids		19	mg/l	
RCF-1	MATTOON	22	ft	30-Jul-12	Volatile suspended solids		12	mg/l	
RCG-1	PARADISE	1	ft	07-Aug-12	Alkalinity, total		160	mg/l	
RCG-1	PARADISE	1	ft	07-Aug-12	Kjeldahl nitrogen	Total	1.57	mg/l	
RCG-1	PARADISE	1	ft	07-Aug-12	Phosphorus	Dissolved	0.292	mg/l	
RCG-1	PARADISE	1	ft	07-Aug-12	Phosphorus	Total	0.47	mg/l	
RCG-1	PARADISE			07-Aug-12	Temperature, sample		4	deg C	
RCG-1	PARADISE	1	ft	07-Aug-12	Total suspended solids		27	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
RCG-1	PARADISE	1	ft	07-Aug-12	Volatile suspended solids		14	mg/l	
RCG-1	PARADISE	14	ft	07-Aug-12	Alkalinity, total		160	mg/l	
RCG-1	PARADISE	14	ft	07-Aug-12	Kjeldahl nitrogen	Total	1.58	mg/l	
RCG-1	PARADISE	14	ft	07-Aug-12	Phosphorus	Dissolved	0.306	mg/l	
RCG-1	PARADISE	14	ft	07-Aug-12	Phosphorus	Total	0.481	mg/l	
RCG-1	PARADISE			07-Aug-12	Temperature, sample		4	deg C	
RCG-1	PARADISE	14	ft	07-Aug-12	Total suspended solids		31	mg/l	
RCG-1	PARADISE	14	ft	07-Aug-12	Volatile suspended solids		15	mg/l	
RCG-2	PARADISE	1	ft	07-Aug-12	Alkalinity, total		165	mg/l	
RCG-2	PARADISE	1	ft	07-Aug-12	Kjeldahl nitrogen	Total	1.74	mg/l	
RCG-2	PARADISE	1	ft	07-Aug-12	Phosphorus	Dissolved	0.33	mg/l	
RCG-2	PARADISE	1	ft	07-Aug-12	Phosphorus	Total	0.541	mg/l	
RCG-2	PARADISE			07-Aug-12	Temperature, sample		4	deg C	
RCG-2	PARADISE	1	ft	07-Aug-12	Total suspended solids		31	mg/l	
RCG-2	PARADISE	1	ft	07-Aug-12	Volatile suspended solids		22	mg/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Alkalinity, total		155	mg/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Aluminum	Total	656	ug/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Arsenic	Total	13.4	ug/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Atrazine	Total	0.81	ug/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Barium	Total	77.6	ug/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Calcium	Total	36400	ug/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Chloride	Total	30.5	mg/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Fluoride	Total	0.31	mg/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Hardness, Ca, Mg		177000	ug/l	C
RCG-4	PARADISE	15	ft	07-Aug-12	Iron	Total	788	ug/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Kjeldahl nitrogen	Total	1.62	mg/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Magnesium	Total	20900	ug/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Manganese	Total	174	ug/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Phosphorus	Dissolved	0.296	mg/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Phosphorus	Total	0.498	mg/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Potassium	Total	2780	ug/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Sodium	Total	11200	ug/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Strontium	Total	87	ug/l	
RCG-4	PARADISE			07-Aug-12	Temperature, sample		4	deg C	
RCG-4	PARADISE	15	ft	07-Aug-12	Total dissolved solids		288	mg/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Total suspended solids		35	mg/l	
RCG-4	PARADISE	15	ft	07-Aug-12	Volatile suspended solids		16	mg/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Aluminum	Dissolved	59.4	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Aluminum	Total	495	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Arsenic	Dissolved	3.81	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Arsenic	Total	3.87	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Barium	Dissolved	46.9	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Barium	Total	61.8	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Boron	Dissolved	26	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Boron	Total	25.8	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Calcium	Dissolved	32300	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Calcium	Total	33600	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Chloride	Total	13.5	mg/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Copper	Dissolved	5.4	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Copper	Total	5.64	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Hardness, Ca, Mg		133000	ug/l	C
C-21	LITTLE WABASH RIVER			06-Aug-12	Inorganic nitrogen (nitrate and nitrite)	Total	0.367	mg/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Iron	Dissolved	212	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Iron	Total	942	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Kjeldahl nitrogen	Total	1.78	mg/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Magnesium	Dissolved	11100	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Magnesium	Total	11900	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Manganese	Dissolved	87.4	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Manganese	Total	279	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Organic carbon	Total	11.5	mg/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Phosphorus	Dissolved	0.243	mg/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Phosphorus	Total	0.425	mg/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Potassium	Dissolved	8680	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Potassium	Total	9220	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Sodium	Dissolved	7940	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Sodium	Total	8060	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Strontium	Dissolved	77.3	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Strontium	Total	81.2	ug/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Sulfate	Total	13.8	mg/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Temperature, sample		4	deg C	
C-21	LITTLE WABASH RIVER			06-Aug-12	Total suspended solids		39	mg/l	
C-21	LITTLE WABASH RIVER			06-Aug-12	Volatile suspended solids		15	mg/l	
C-15	LITTLE WABASH RIVER			06-Aug-12	Kjeldahl nitrogen	Total	0.576	mg/l	
C-15	LITTLE WABASH RIVER			06-Aug-12	Phosphorus	Total	0.228	mg/l	
C-15	LITTLE WABASH RIVER			06-Aug-12	Temperature, sample		4	deg C	
C-15	LITTLE WABASH RIVER			06-Aug-12	Total suspended solids		7	mg/l	
C-15	LITTLE WABASH RIVER			06-Aug-12	Volatile suspended solids		6	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			06-Aug-12	Kjeldahl nitrogen	Total	1.98	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			06-Aug-12	Phosphorus	Total	0.361	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			06-Aug-12	Temperature, sample		4	deg C	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
CT-02	WEST BRANCH LITTLE WABASH RIVER			06-Aug-12	Total suspended solids		67	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			06-Aug-12	Volatile suspended solids		25	mg/l	
C-24	LITTLE WABASH RIVER			06-Aug-12	Kjeldahl nitrogen	Total	2.05	mg/l	
C-24	LITTLE WABASH RIVER			06-Aug-12	Phosphorus	Total	0.185	mg/l	
C-24	LITTLE WABASH RIVER			06-Aug-12	Temperature, sample		4	deg C	
C-24	LITTLE WABASH RIVER			06-Aug-12	Total suspended solids		9	mg/l	
C-24	LITTLE WABASH RIVER			06-Aug-12	Volatile suspended solids		5	mg/l	
RCG-1	PARADISE	1	ft	13-Aug-12	Alkalinity, total		160	mg/l	
RCG-1	PARADISE	1	ft	13-Aug-12	Kjeldahl nitrogen	Total	1.46	mg/l	
RCG-1	PARADISE	1	ft	13-Aug-12	Phosphorus	Total	0.476	mg/l	
RCG-1	PARADISE			13-Aug-12	Temperature, sample		2	deg C	
RCG-1	PARADISE	1	ft	13-Aug-12	Total suspended solids		23	mg/l	
RCG-1	PARADISE	1	ft	13-Aug-12	Volatile suspended solids		16	mg/l	
RCG-2	PARADISE	1	ft	13-Aug-12	Alkalinity, total		155	mg/l	
RCG-2	PARADISE	1	ft	13-Aug-12	Kjeldahl nitrogen	Total	1.69	mg/l	
RCG-2	PARADISE	1	ft	13-Aug-12	Phosphorus	Total	0.533	mg/l	
RCG-2	PARADISE			13-Aug-12	Temperature, sample		2	deg C	
RCG-2	PARADISE	1	ft	13-Aug-12	Total suspended solids		18	mg/l	
RCG-2	PARADISE	1	ft	13-Aug-12	Volatile suspended solids		16	mg/l	
RCG-3	PARADISE	1	ft	13-Aug-12	Alkalinity, total		160	mg/l	
RCG-3	PARADISE	1	ft	13-Aug-12	Kjeldahl nitrogen	Total	2.02	mg/l	
RCG-3	PARADISE	1	ft	13-Aug-12	Phosphorus	Total	0.573	mg/l	
RCG-3	PARADISE			13-Aug-12	Temperature, sample		2	deg C	
RCG-3	PARADISE	1	ft	13-Aug-12	Total suspended solids		89	mg/l	
RCG-3	PARADISE	1	ft	13-Aug-12	Volatile suspended solids		25	mg/l	
RCF-1	MATTOON	22	ft	14-Aug-12	Alkalinity, total		120	mg/l	
RCF-1	MATTOON	22	ft	14-Aug-12	Ammonia-nitrogen	Total	0.3	mg/l	
RCF-1	MATTOON	22	ft	14-Aug-12	Kjeldahl nitrogen	Total	1.58	mg/l	
RCF-1	MATTOON	22	ft	14-Aug-12	Phosphorus	Dissolved	0.041	mg/l	
RCF-1	MATTOON	22	ft	14-Aug-12	Phosphorus	Total	0.167	mg/l	
RCF-1	MATTOON			14-Aug-12	Temperature, sample		2	deg C	
RCF-1	MATTOON	22	ft	14-Aug-12	Total suspended solids		18	mg/l	
RCF-1	MATTOON	22	ft	14-Aug-12	Volatile suspended solids		9	mg/l	
RCF-1	MATTOON	1	ft	14-Aug-12	Alkalinity, total		120	mg/l	
RCF-1	MATTOON	1	ft	14-Aug-12	Ammonia-nitrogen	Total	0.34	mg/l	
RCF-1	MATTOON	1	ft	14-Aug-12	Kjeldahl nitrogen	Total	1.61	mg/l	
RCF-1	MATTOON	1	ft	14-Aug-12	Phosphorus	Dissolved	0.041	mg/l	
RCF-1	MATTOON	1	ft	14-Aug-12	Phosphorus	Total	0.161	mg/l	
RCF-1	MATTOON			14-Aug-12	Temperature, sample		2	deg C	
RCF-1	MATTOON	1	ft	14-Aug-12	Total suspended solids		17	mg/l	
RCF-1	MATTOON	1	ft	14-Aug-12	Volatile suspended solids		9	mg/l	
C-21	LITTLE WABASH RIVER			04-Sep-12	Ammonia-nitrogen	Total	0.18	mg/l	
C-21	LITTLE WABASH RIVER			04-Sep-12	Inorganic nitrogen (nitrate and nitrite)	Total	1.31	mg/l	
C-21	LITTLE WABASH RIVER			04-Sep-12	Phosphorus	Total	0.457	mg/l	
C-21	LITTLE WABASH RIVER			04-Sep-12	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			04-Sep-12	Total suspended solids		27	mg/l	
C-21	LITTLE WABASH RIVER			04-Sep-12	Volatile suspended solids		7	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Alkalinity, total		165	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Aluminum	Total	631	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Barium	Dissolved	73.6	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Barium	Total	80.4	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Boron	Dissolved	28.9	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Boron	Total	31.5	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Calcium	Dissolved	45800	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Calcium	Total	47100	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Chloride	Total	13.4	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Fluoride	Total	0.19	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Hardness, Ca, Mg		184000	ug/l	C
C-21	LITTLE WABASH RIVER			24-Sep-12	Iron	Total	866	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Kjeldahl nitrogen	Total	0.864	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Lead	Total	6.67	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Magnesium	Dissolved	15500	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Magnesium	Total	16100	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Manganese	Dissolved	411	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Manganese	Total	532	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Organic carbon	Total	6.02	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Phosphorus	Dissolved	0.042	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Phosphorus	Total	0.122	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Potassium	Dissolved	6490	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Potassium	Total	6690	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Sodium	Dissolved	10600	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Sodium	Total	10800	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Strontium	Dissolved	108	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Strontium	Total	110	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Sulfate	Total	10.3	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Temperature, sample		1	deg C	
C-21	LITTLE WABASH RIVER			24-Sep-12	Total suspended solids		22	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Volatile suspended solids		10	mg/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Alkalinity, total		150	mg/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Aluminum	Total	412	ug/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Barium	Dissolved	60.5	ug/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Barium	Total	65.4	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-15	LITTLE WABASH RIVER			25-Sep-12	Calcium	Dissolved	39500	ug/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Calcium	Total	40200	ug/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Chloride	Total	19.7	mg/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Fluoride	Total	0.26	mg/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Hardness, Ca, Mg		161000	ug/l	C
C-15	LITTLE WABASH RIVER			25-Sep-12	Inorganic nitrogen (nitrate and nitrite)	Total	0.116	mg/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Iron	Total	548	ug/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Kjeldahl nitrogen	Total	0.77	mg/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Magnesium	Dissolved	14400	ug/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Magnesium	Total	14800	ug/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Manganese	Dissolved	115	ug/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Manganese	Total	189	ug/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Organic carbon	Total	9.09	mg/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Phosphorus	Dissolved	0.118	mg/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Phosphorus	Total	0.149	mg/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Potassium	Dissolved	6180	ug/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Potassium	Total	6100	ug/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Sodium	Dissolved	16600	ug/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Sodium	Total	16600	ug/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Strontium	Dissolved	111	ug/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Strontium	Total	113	ug/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Temperature, sample		2	deg C	
C-15	LITTLE WABASH RIVER			25-Sep-12	Total suspended solids		17	mg/l	
C-15	LITTLE WABASH RIVER			25-Sep-12	Volatile suspended solids		6	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Alkalinity, total		170	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Aluminum	Total	891	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Barium	Dissolved	65.2	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Barium	Total	74.2	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Calcium	Dissolved	49400	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Calcium	Total	48600	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Chloride	Total	13.8	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Fluoride	Total	0.19	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Hardness, Ca, Mg		198000	ug/l	C
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Inorganic nitrogen (nitrate and nitrite)	Total	0.154	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Iron	Total	1060	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Kjeldahl nitrogen	Total	1.01	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Magnesium	Dissolved	18800	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Magnesium	Total	18600	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Manganese	Dissolved	57.2	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Manganese	Total	142	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Organic carbon	Total	9.3	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Phosphorus	Dissolved	0.141	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Phosphorus	Total	0.207	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Potassium	Dissolved	7500	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Potassium	Total	7660	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Sodium	Dissolved	5630	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Sodium	Total	5630	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Strontium	Dissolved	111	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Strontium	Total	111	ug/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Temperature, sample		2	deg C	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Total suspended solids		28	mg/l	
CT-02	WEST BRANCH LITTLE WABASH RIVER			25-Sep-12	Volatile suspended solids		9	mg/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Alkalinity, total		320	mg/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Ammonia-nitrogen	Total	0.14	mg/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Barium	Dissolved	115	ug/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Barium	Total	122	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-24	LITTLE WABASH RIVER			25-Sep-12	Boron	Total	164	ug/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Calcium	Dissolved	79200	ug/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Calcium	Total	81700	ug/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Chloride	Total	148	mg/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Fluoride	Total	0.24	mg/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Hardness, Ca, Mg		368000	ug/l	C
C-24	LITTLE WABASH RIVER			25-Sep-12	Inorganic nitrogen (nitrate and nitrite)	Total	1.62	mg/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Iron	Total	160	ug/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Kjeldahl nitrogen	Total	0.724	mg/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Magnesium	Dissolved	38400	ug/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Magnesium	Total	39900	ug/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Manganese	Dissolved	44.6	ug/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Manganese	Total	54	ug/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Organic carbon	Total	5.77	mg/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Phosphorus	Dissolved	0.065	mg/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Phosphorus	Total	0.091	mg/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Potassium	Dissolved	3300	ug/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Potassium	Total	3330	ug/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Sodium	Dissolved	89700	ug/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Sodium	Total	91800	ug/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Strontium	Dissolved	475	ug/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Strontium	Total	496	ug/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Temperature, sample		2	deg C	
C-24	LITTLE WABASH RIVER			25-Sep-12	Total suspended solids		4	mg/l	
C-24	LITTLE WABASH RIVER			25-Sep-12	Volatile suspended solids		4	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Aluminum	Total	727	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Arsenic	Dissolved	2.24	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Arsenic	Total	2.46	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Barium	Dissolved	72.9	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Barium	Total	81.9	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Calcium	Dissolved	46600	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Calcium	Total	47500	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Chloride	Total	13.8	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Hardness, Ca, Mg		186000	ug/l	C
C-21	LITTLE WABASH RIVER			24-Sep-12	Iron	Total	990	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Kjeldahl nitrogen	Total	1.04	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Magnesium	Dissolved	16000	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Magnesium	Total	16400	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Manganese	Dissolved	407	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Manganese	Total	500	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Organic carbon	Total	6.11	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Phosphorus	Dissolved	0.031	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Phosphorus	Total	0.13	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Potassium	Dissolved	6340	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Potassium	Total	6570	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Sodium	Dissolved	10700	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Sodium	Total	10700	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Strontium	Dissolved	108	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Strontium	Total	111	ug/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			24-Sep-12	Total suspended solids		34	mg/l	
C-21	LITTLE WABASH RIVER			24-Sep-12	Volatile suspended solids		12	mg/l	
RCG-1	PARADISE	1	ft	15-Oct-12	Alkalinity, total		150	mg/l	
RCG-1	PARADISE	1	ft	15-Oct-12	Kjeldahl nitrogen	Total	1.09	mg/l	
RCG-1	PARADISE	1	ft	15-Oct-12	Phosphorus	Total	0.168	mg/l	
RCG-1	PARADISE			15-Oct-12	Temperature, sample		1	deg C	
RCG-1	PARADISE	1	ft	15-Oct-12	Total suspended solids		26	mg/l	
RCG-1	PARADISE	1	ft	15-Oct-12	Volatile suspended solids		12	mg/l	
RCG-2	PARADISE	1	ft	15-Oct-12	Alkalinity, total		145	mg/l	
RCG-2	PARADISE	1	ft	15-Oct-12	Kjeldahl nitrogen	Total	1.11	mg/l	
RCG-2	PARADISE	1	ft	15-Oct-12	Phosphorus	Total	0.176	mg/l	
RCG-2	PARADISE			15-Oct-12	Temperature, sample		1	deg C	
RCG-2	PARADISE	1	ft	15-Oct-12	Total suspended solids		34	mg/l	
RCG-2	PARADISE	1	ft	15-Oct-12	Volatile suspended solids		14	mg/l	
RCG-3	PARADISE	1	ft	15-Oct-12	Alkalinity, total		150	mg/l	
RCG-3	PARADISE	1	ft	15-Oct-12	Kjeldahl nitrogen	Total	1.17	mg/l	
RCG-3	PARADISE	1	ft	15-Oct-12	Phosphorus	Total	0.195	mg/l	
RCG-3	PARADISE			15-Oct-12	Temperature, sample		1	deg C	
RCG-3	PARADISE	1	ft	15-Oct-12	Total suspended solids		49	mg/l	
RCG-3	PARADISE	1	ft	15-Oct-12	Volatile suspended solids		15	mg/l	
RCF-1	MATTOON	20	ft	15-Oct-12	Alkalinity, total		125	mg/l	
RCF-1	MATTOON	20	ft	15-Oct-12	Ammonia-nitrogen	Total	0.42	mg/l	
RCF-1	MATTOON	20	ft	15-Oct-12	Kjeldahl nitrogen	Total	1.47	mg/l	
RCF-1	MATTOON	20	ft	15-Oct-12	Phosphorus	Dissolved	0.014	mg/l	
RCF-1	MATTOON	20	ft	15-Oct-12	Phosphorus	Total	0.108	mg/l	
RCF-1	MATTOON			15-Oct-12	Temperature, sample		0	deg C	
RCF-1	MATTOON	20	ft	15-Oct-12	Total suspended solids		24	mg/l	
RCF-1	MATTOON	20	ft	15-Oct-12	Volatile suspended solids		11	mg/l	
RCF-1	MATTOON	1	ft	15-Oct-12	Alkalinity, total		120	mg/l	
RCF-1	MATTOON	1	ft	15-Oct-12	Ammonia-nitrogen	Total	0.42	mg/l	
RCF-1	MATTOON	1	ft	15-Oct-12	Kjeldahl nitrogen	Total	1.42	mg/l	
RCF-1	MATTOON	1	ft	15-Oct-12	Phosphorus	Dissolved	0.014	mg/l	
RCF-1	MATTOON	1	ft	15-Oct-12	Phosphorus	Total	0.102	mg/l	
RCF-1	MATTOON			15-Oct-12	Temperature, sample		0	deg C	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
RCF-1	MATTOON	1	ft	15-Oct-12	Total suspended solids		12	mg/l	
RCF-1	MATTOON	1	ft	15-Oct-12	Volatile suspended solids		10	mg/l	
RCG-1	PARADISE	13	ft	22-Oct-12	Alkalinity, total		145	mg/l	
RCG-1	PARADISE	13	ft	22-Oct-12	Kjeldahl nitrogen	Total	0.855	mg/l	
RCG-1	PARADISE	13	ft	22-Oct-12	Phosphorus	Total	0.139	mg/l	
RCG-1	PARADISE			22-Oct-12	Temperature, sample		1	deg C	
RCG-1	PARADISE	13	ft	22-Oct-12	Total suspended solids		20	mg/l	
RCG-1	PARADISE	13	ft	22-Oct-12	Volatile suspended solids		7	mg/l	
RCG-1	PARADISE	1	ft	22-Oct-12	Alkalinity, total		145	mg/l	
RCG-1	PARADISE	1	ft	22-Oct-12	Kjeldahl nitrogen	Total	0.927	mg/l	
RCG-1	PARADISE	1	ft	22-Oct-12	Phosphorus	Total	0.139	mg/l	
RCG-1	PARADISE			22-Oct-12	Temperature, sample		1	deg C	
RCG-1	PARADISE	1	ft	22-Oct-12	Total suspended solids		19	mg/l	
RCG-1	PARADISE	1	ft	22-Oct-12	Volatile suspended solids		8	mg/l	
RCG-2	PARADISE	1	ft	22-Oct-12	Alkalinity, total		150	mg/l	
RCG-2	PARADISE	1	ft	22-Oct-12	Kjeldahl nitrogen	Total	0.894	mg/l	
RCG-2	PARADISE	1	ft	22-Oct-12	Phosphorus	Total	0.144	mg/l	
RCG-2	PARADISE			22-Oct-12	Temperature, sample		1	deg C	
RCG-2	PARADISE	1	ft	22-Oct-12	Total suspended solids		20	mg/l	
RCG-2	PARADISE	1	ft	22-Oct-12	Volatile suspended solids		10	mg/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Alkalinity, total		150	mg/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Aluminum	Total	680	ug/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Arsenic	Total	3.07	ug/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Atrazine	Total	0.43	ug/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Barium	Total	52.7	ug/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Calcium	Total	35600	ug/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Chloride	Total	27.9	mg/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Fluoride	Total	0.25	mg/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Hardness, Ca, Mg		172000	ug/l	C
RCG-4	PARADISE	18	ft	22-Oct-12	Iron	Total	821	ug/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Kjeldahl nitrogen	Total	0.867	mg/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Magnesium	Total	20200	ug/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Manganese	Total	166	ug/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Phosphorus	Dissolved	0.047	mg/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Phosphorus	Total	0.152	mg/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Potassium	Total	2800	ug/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Sodium	Total	11300	ug/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Strontium	Total	87.6	ug/l	
RCG-4	PARADISE			22-Oct-12	Temperature, sample		1	deg C	
RCG-4	PARADISE	18	ft	22-Oct-12	Total dissolved solids		204	mg/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Total suspended solids		28	mg/l	
RCG-4	PARADISE	18	ft	22-Oct-12	Volatile suspended solids		8	mg/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Aluminum	Total	471	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Barium	Dissolved	65.3	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Barium	Total	71	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Boron	Dissolved	44.2	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Boron	Total	48.3	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Calcium	Dissolved	67500	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Calcium	Total	68200	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Chloride	Total	26.7	mg/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Hardness, Ca, Mg		281000	ug/l	C
C-21	LITTLE WABASH RIVER			29-Oct-12	Iron	Dissolved	148	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Iron	Total	848	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Kjeldahl nitrogen	Total	0.584	mg/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Magnesium	Dissolved	26600	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Magnesium	Total	26900	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Manganese	Dissolved	151	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Manganese	Total	173	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Organic carbon	Total	8.84	mg/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Phosphorus	Dissolved	0.208	mg/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Phosphorus	Total	0.274	mg/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Potassium	Dissolved	8430	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Potassium	Total	8560	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Sodium	Dissolved	20600	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Sodium	Total	20800	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Strontium	Dissolved	145	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Strontium	Total	148	ug/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Sulfate	Total	30.4	mg/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			29-Oct-12	Total suspended solids		14	mg/l	
C-21	LITTLE WABASH RIVER			29-Oct-12	Volatile suspended solids		5	mg/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Aluminum	Total	184	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Barium	Dissolved	62.2	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Barium	Total	68.5	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Boron	Dissolved	32.8	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Boron	Total	34.2	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Calcium	Dissolved	68600	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Calcium	Total	70800	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Chloride	Total	27.4	mg/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Hardness, Ca, Mg		306000	ug/l	C
C-21	LITTLE WABASH RIVER			26-Nov-12	Iron	Total	695	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Kjeldahl nitrogen	Total	0.561	mg/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Magnesium	Dissolved	30300	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Magnesium	Total	31400	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Manganese	Dissolved	140	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			26-Nov-12	Manganese	Total	160	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Organic carbon	Total	4.75	mg/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Phosphorus	Dissolved	0.025	mg/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Phosphorus	Total	0.071	mg/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Potassium	Dissolved	4130	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Potassium	Total	4350	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Sodium	Dissolved	18400	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Sodium	Total	19000	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Strontium	Dissolved	151	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Strontium	Total	156	ug/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Sulfate	Total	36.2	mg/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			26-Nov-12	Total suspended solids		10	mg/l	
C-21	LITTLE WABASH RIVER			26-Nov-12	Volatile suspended solids		4	mg/l	
C-21				24-Jan-11	Dissolved oxygen (DO)		11.21	mg/l	
C-21				24-Jan-11	Dissolved oxygen saturation		76.5	%	
C-21				24-Jan-11	pH		7.8	none	
C-21				24-Jan-11	Specific conductance		637	umho/cm	
C-21				24-Jan-11	Temperature, air		5	deg C	
C-21				24-Jan-11	Temperature, water		-0.14	deg C	
C-21				24-Jan-11	Turbidity		6.46	NTU	
C-21				07-Mar-11	Dissolved oxygen (DO)		11.47	mg/l	
C-21				07-Mar-11	Dissolved oxygen saturation		90.9	%	
C-21				07-Mar-11	pH		7.85	none	
C-21				07-Mar-11	Specific conductance		399	umho/cm	
C-21				07-Mar-11	Temperature, air		8	deg C	
C-21				07-Mar-11	Temperature, water		5.39	deg C	
C-21				07-Mar-11	Turbidity		82.6	NTU	
C-21				18-Apr-11	Dissolved oxygen (DO)		10.58	mg/l	
C-21				18-Apr-11	Dissolved oxygen saturation		104.4	%	
C-21				18-Apr-11	pH		7.97	none	
C-21				18-Apr-11	Specific conductance		479	umho/cm	
C-21				18-Apr-11	Temperature, air		22	deg C	
C-21				18-Apr-11	Temperature, water		14.73	deg C	
C-21				18-Apr-11	Turbidity		26.3	NTU	
C-21				23-May-11	Dissolved oxygen (DO)		8.41	mg/l	
C-21				23-May-11	Dissolved oxygen saturation		95.9	%	
C-21				23-May-11	pH		7.77	none	
C-21				23-May-11	Specific conductance		586	umho/cm	
C-21				23-May-11	Temperature, air		22	deg C	
C-21				23-May-11	Temperature, water		21.78	deg C	
C-21				23-May-11	Turbidity		18.72	NTU	
C-21				11-Jul-11	Dissolved oxygen (DO)		10.9	mg/l	
C-21				11-Jul-11	Dissolved oxygen saturation		144	%	
C-21				11-Jul-11	pH		8.03	none	
C-21				11-Jul-11	Specific conductance		527	umho/cm	
C-21				11-Jul-11	Temperature, air		39	deg C	
C-21				11-Jul-11	Temperature, water		29.87	deg C	
C-21				11-Jul-11	Turbidity		7.9	NTU	
C-21				08-Aug-11	Dissolved oxygen (DO)		7.91	mg/l	
C-21				08-Aug-11	Dissolved oxygen saturation		100.8	%	
C-21				08-Aug-11	pH		7.88	none	
C-21				08-Aug-11	Specific conductance		555	umho/cm	
C-21				08-Aug-11	Temperature, air		28	deg C	
C-21				08-Aug-11	Temperature, water		27.79	deg C	
C-21				08-Aug-11	Turbidity		13.6	NTU	
C-21				26-Sep-11	Dissolved oxygen (DO)		7.21	mg/l	
C-21				26-Sep-11	Dissolved oxygen saturation		75.5	%	
C-21				26-Sep-11	pH		8.17	none	
C-21				26-Sep-11	Specific conductance		537	umho/cm	
C-21				26-Sep-11	Temperature, air		20	deg C	
C-21				26-Sep-11	Temperature, water		17.51	deg C	
C-21				26-Sep-11	Turbidity		16.3	NTU	
C-21				31-Oct-11	Dissolved oxygen (DO)		4.65	mg/l	
C-21				31-Oct-11	Dissolved oxygen saturation		43.2	%	
C-21				31-Oct-11	pH		7.85	none	
C-21				31-Oct-11	Specific conductance		590	umho/cm	
C-21				31-Oct-11	Temperature, air		12	deg C	
C-21				31-Oct-11	Temperature, water		11.97	deg C	
C-21				31-Oct-11	Turbidity		12.3	NTU	
C-21				15-Dec-11	Dissolved oxygen (DO)		8.84	mg/l	
C-21				15-Dec-11	Dissolved oxygen saturation		79.6	%	
C-21				15-Dec-11	pH		7.84	none	
C-21				15-Dec-11	Specific conductance		189	umho/cm	
C-21				15-Dec-11	Temperature, air		8	deg C	
C-21				15-Dec-11	Temperature, water		10.66	deg C	
C-21				15-Dec-11	Turbidity		552	NTU	
C-21	LITTLE WABASH RIVER			24-Jan-11	Aluminum	Total	68.6	ug/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Ammonia-nitrogen	Total	0.1	mg/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Barium	Dissolved	65.5	ug/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Barium	Total	69.9	ug/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Calcium	Dissolved	63900	ug/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Calcium	Total	64200	ug/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Chloride	Total	38.5	mg/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Copper	Dissolved	5.43	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			24-Jan-11	Copper	Total	5.68	ug/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Hardness, Ca, Mg		278000	ug/l	C
C-21	LITTLE WABASH RIVER			24-Jan-11	Inorganic nitrogen (nitrate and nitrite)	Total	1.66	mg/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Iron	Total	399	ug/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Magnesium	Dissolved	28300	ug/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Magnesium	Total	28500	ug/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Manganese	Dissolved	204	ug/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Manganese	Total	211	ug/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Organic carbon	Total	4.15	mg/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Phosphorus	Dissolved	0.032	mg/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Phosphorus	Total	0.093	mg/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Potassium	Dissolved	3410	ug/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Potassium	Total	3380	ug/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Strontium	Dissolved	138	ug/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Strontium	Total	139	ug/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Sulfate	Total	30.6	mg/l	
C-21	LITTLE WABASH RIVER			24-Jan-11	Temperature, sample		1	deg C	
C-21	LITTLE WABASH RIVER			07-Mar-11	Aluminum	Dissolved	66.5	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Aluminum	Total	2210	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Barium	Dissolved	57.7	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Barium	Total	80.4	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Boron	Dissolved	17.8	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Boron	Total	18.9	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Calcium	Dissolved	42200	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Calcium	Total	41300	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Chloride	Total	19.2	mg/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Copper	Total	5.53	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Hardness, Ca, Mg		170000	ug/l	C
C-21	LITTLE WABASH RIVER			07-Mar-11	Inorganic nitrogen (nitrate and nitrite)	Total	2.64	mg/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Iron	Total	3210	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Kjeldahl nitrogen	Total	0.82	mg/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Magnesium	Dissolved	16300	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Magnesium	Total	16200	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Manganese	Dissolved	35.4	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Manganese	Total	149	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Organic carbon	Total	4.68	mg/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Phosphorus	Dissolved	0.107	mg/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Phosphorus	Total	0.249	mg/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Potassium	Dissolved	3660	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Potassium	Total	3790	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Sodium	Dissolved	9370	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Sodium	Total	8950	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Strontium	Dissolved	94.5	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Strontium	Total	92.5	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Sulfate	Total	20.1	mg/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			07-Mar-11	Total suspended solids		96	mg/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Vanadium	Total	5.62	ug/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Volatile suspended solids		12	mg/l	
C-21	LITTLE WABASH RIVER			07-Mar-11	Zinc	Total	12.9	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Aluminum	Total	765	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Barium	Dissolved	57.1	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Barium	Total	68.2	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Calcium	Dissolved	52100	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Calcium	Total	53500	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Chloride	Total	24.3	mg/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Hardness, Ca, Mg		219000	ug/l	C
C-21	LITTLE WABASH RIVER			18-Apr-11	Inorganic nitrogen (nitrate and nitrite)	Total	1.89	mg/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Iron	Total	1100	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Magnesium	Dissolved	19900	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Magnesium	Total	20700	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Manganese	Dissolved	73.3	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Manganese	Total	140	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Organic carbon	Total	4.77	mg/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Phosphorus	Dissolved	0.048	mg/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Phosphorus	Total	0.15	mg/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Potassium	Dissolved	3280	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Potassium	Total	3400	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Sodium	Dissolved	14600	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Sodium	Total	14700	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Strontium	Dissolved	119	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Strontium	Total	122	ug/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Sulfate	Total	13.4	mg/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Temperature, sample		1	deg C	
C-21	LITTLE WABASH RIVER			18-Apr-11	Total suspended solids		41	mg/l	
C-21	LITTLE WABASH RIVER			18-Apr-11	Volatile suspended solids		11	mg/l	
RCG-1	PARADISE	1	ft	02-May-11	Alkalinity, total		100	mg/l	
RCG-1	PARADISE	1	ft	02-May-11	Chloride	Total	12.8	mg/l	
RCG-1	PARADISE	1	ft	02-May-11	Inorganic nitrogen (nitrate and nitrite)	Total	4.3	mg/l	
RCG-1	PARADISE	1	ft	02-May-11	Phosphorus	Total	0.288	mg/l	
RCG-1	PARADISE			02-May-11	Temperature, sample		1	deg C	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
RCG-1	PARADISE	1	ft	02-May-11	Total suspended solids		30	mg/l	
RCG-1	PARADISE	1	ft	02-May-11	Volatile suspended solids		9	mg/l	
RCG-1	PARADISE	15	ft	02-May-11	Alkalinity, total		82	mg/l	
RCG-1	PARADISE	15	ft	02-May-11	Ammonia-nitrogen	Total	0.15	mg/l	
RCG-1	PARADISE	15	ft	02-May-11	Chloride	Total	10.8	mg/l	
RCG-1	PARADISE	15	ft	02-May-11	Inorganic nitrogen (nitrate and nitrite)	Total	2.95	mg/l	
RCG-1	PARADISE	15	ft	02-May-11	Kjeldahl nitrogen	Total	1.04	mg/l	
RCG-1	PARADISE	15	ft	02-May-11	Phosphorus	Total	0.354	mg/l	
RCG-1	PARADISE			02-May-11	Temperature, sample		1	deg C	
RCG-1	PARADISE	15	ft	02-May-11	Total suspended solids		57	mg/l	
RCG-1	PARADISE	15	ft	02-May-11	Volatile suspended solids		13	mg/l	
RCG-2	PARADISE	1	ft	02-May-11	Alkalinity, total		105	mg/l	
RCG-2	PARADISE	1	ft	02-May-11	Chloride	Total	12.8	mg/l	
RCG-2	PARADISE	1	ft	02-May-11	Inorganic nitrogen (nitrate and nitrite)	Total	4.37	mg/l	
RCG-2	PARADISE	1	ft	02-May-11	Kjeldahl nitrogen	Total	0.605	mg/l	
RCG-2	PARADISE	1	ft	02-May-11	Phosphorus	Total	0.297	mg/l	
RCG-2	PARADISE			02-May-11	Temperature, sample		1	deg C	
RCG-2	PARADISE	1	ft	02-May-11	Total suspended solids		35	mg/l	
RCG-2	PARADISE	1	ft	02-May-11	Volatile suspended solids		9	mg/l	
RCG-3	PARADISE	1	ft	02-May-11	Alkalinity, total		175	mg/l	
RCG-3	PARADISE	1	ft	02-May-11	Chloride	Total	21.6	mg/l	
RCG-3	PARADISE	1	ft	02-May-11	Inorganic nitrogen (nitrate and nitrite)	Total	7.97	mg/l	
RCG-3	PARADISE	1	ft	02-May-11	Phosphorus	Total	0.151	mg/l	
RCG-3	PARADISE			02-May-11	Temperature, sample		1	deg C	
RCG-3	PARADISE	1	ft	02-May-11	Total suspended solids		36	mg/l	
RCG-3	PARADISE	1	ft	02-May-11	Volatile suspended solids		9	mg/l	
RCG-5	PARADISE	1	ft	02-May-11	Alkalinity, total		175	mg/l	
RCG-5	PARADISE	1	ft	02-May-11	Chloride	Total	23.2	mg/l	
RCG-5	PARADISE	1	ft	02-May-11	Inorganic nitrogen (nitrate and nitrite)	Total	8.57	mg/l	
RCG-5	PARADISE	1	ft	02-May-11	Phosphorus	Total	0.147	mg/l	
RCG-5	PARADISE			02-May-11	Temperature, sample		1	deg C	
RCG-5	PARADISE	1	ft	02-May-11	Total suspended solids		36	mg/l	
RCG-5	PARADISE	1	ft	02-May-11	Volatile suspended solids		9	mg/l	
C-21	LITTLE WABASH RIVER			23-May-11	Aluminum	Total	346	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Barium	Dissolved	82.1	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Barium	Total	85.8	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Boron	Dissolved	24	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Boron	Total	22.3	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Calcium	Dissolved	66500	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Calcium	Total	66200	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Chloride	Total	21.8	mg/l	
C-21	LITTLE WABASH RIVER			23-May-11	Copper	Dissolved	6.18	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Copper	Total	5.13	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Hardness, Ca, Mg		277000	ug/l	C
C-21	LITTLE WABASH RIVER			23-May-11	Inorganic nitrogen (nitrate and nitrite)	Total	1.64	mg/l	
C-21	LITTLE WABASH RIVER			23-May-11	Iron	Total	635	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Magnesium	Dissolved	27200	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Magnesium	Total	27100	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Manganese	Dissolved	84.1	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Manganese	Total	137	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Organic carbon	Total	2.85	mg/l	
C-21	LITTLE WABASH RIVER			23-May-11	Phosphorus	Dissolved	0.031	mg/l	
C-21	LITTLE WABASH RIVER			23-May-11	Phosphorus	Total	0.096	mg/l	
C-21	LITTLE WABASH RIVER			23-May-11	Potassium	Dissolved	2510	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Potassium	Total	2550	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Strontium	Dissolved	142	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Strontium	Total	140	ug/l	
C-21	LITTLE WABASH RIVER			23-May-11	Sulfate	Total	22.7	mg/l	
C-21	LITTLE WABASH RIVER			23-May-11	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			23-May-11	Total suspended solids		20	mg/l	
C-21	LITTLE WABASH RIVER			23-May-11	Volatile suspended solids		8	mg/l	
RCG-5	PARADISE	1	ft	06-Jun-11	Alkalinity, total		215	mg/l	
RCG-5	PARADISE	1	ft	06-Jun-11	Chloride	Total	26.2	mg/l	
RCG-5	PARADISE	1	ft	06-Jun-11	Inorganic nitrogen (nitrate and nitrite)	Total	9.84	mg/l	
RCG-5	PARADISE	1	ft	06-Jun-11	Phosphorus	Total	0.117	mg/l	
RCG-5	PARADISE			06-Jun-11	Temperature, sample		5	deg C	
RCG-5	PARADISE	1	ft	06-Jun-11	Total suspended solids		64	mg/l	
RCG-5	PARADISE	1	ft	06-Jun-11	Volatile suspended solids		14	mg/l	
RCG-1	PARADISE	16	ft	06-Jun-11	Alkalinity, total		135	mg/l	
RCG-1	PARADISE	16	ft	06-Jun-11	Ammonia-nitrogen	Total	0.38	mg/l	
RCG-1	PARADISE	16	ft	06-Jun-11	Chloride	Total	17.6	mg/l	
RCG-1	PARADISE	16	ft	06-Jun-11	Inorganic nitrogen (nitrate and nitrite)	Total	4.02	mg/l	
RCG-1	PARADISE	16	ft	06-Jun-11	Phosphorus	Total	0.139	mg/l	
RCG-1	PARADISE			06-Jun-11	Temperature, sample		5	deg C	
RCG-1	PARADISE	16	ft	06-Jun-11	Total suspended solids		38	mg/l	
RCG-1	PARADISE	16	ft	06-Jun-11	Volatile suspended solids		15	mg/l	
RCG-2	PARADISE	1	ft	06-Jun-11	Alkalinity, total		130	mg/l	
RCG-2	PARADISE	1	ft	06-Jun-11	Chloride	Total	18.4	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
RCG-2	PARADISE	1	ft	06-Jun-11	Inorganic nitrogen (nitrate and nitrite)	Total	4.09	mg/l	
RCG-2	PARADISE	1	ft	06-Jun-11	Phosphorus	Total	0.118	mg/l	
RCG-2	PARADISE			06-Jun-11	Temperature, sample		5	deg C	
RCG-2	PARADISE	1	ft	06-Jun-11	Total suspended solids		24	mg/l	
RCG-2	PARADISE	1	ft	06-Jun-11	Volatile suspended solids		14	mg/l	
RCG-2	PARADISE	2	ft	06-Jun-11	Chlorophyll a, corrected for pheophytin	Total	49.4	ug/l	
RCG-2	PARADISE	2	ft	06-Jun-11	Chlorophyll a, uncorrected for pheophytin	Total	53.6	ug/l	
RCG-2	PARADISE	2	ft	06-Jun-11	Chlorophyll c	Total	6.79	ug/l	
RCG-1	PARADISE	1	ft	06-Jun-11	Alkalinity, total		130	mg/l	
RCG-1	PARADISE	1	ft	06-Jun-11	Chloride	Total	18.3	mg/l	
RCG-1	PARADISE	1	ft	06-Jun-11	Inorganic nitrogen (nitrate and nitrite)	Total	4.2	mg/l	
RCG-1	PARADISE	1	ft	06-Jun-11	Phosphorus	Total	0.136	mg/l	
RCG-1	PARADISE			06-Jun-11	Temperature, sample		5	deg C	
RCG-1	PARADISE	1	ft	06-Jun-11	Total suspended solids		21	mg/l	
RCG-1	PARADISE	1	ft	06-Jun-11	Volatile suspended solids		11	mg/l	
RCG-1	PARADISE	2	ft	06-Jun-11	Chlorophyll a, corrected for pheophytin	Total	78.8	ug/l	
RCG-1	PARADISE	2	ft	06-Jun-11	Chlorophyll a, uncorrected for pheophytin	Total	86.8	ug/l	
RCG-1	PARADISE	2	ft	06-Jun-11	Chlorophyll c	Total	11	ug/l	
RCG-3	PARADISE	1	ft	06-Jun-11	Alkalinity, total		165	mg/l	
RCG-3	PARADISE	1	ft	06-Jun-11	Chloride	Total	22.5	mg/l	
RCG-3	PARADISE	1	ft	06-Jun-11	Inorganic nitrogen (nitrate and nitrite)	Total	6.22	mg/l	
RCG-3	PARADISE	1	ft	06-Jun-11	Phosphorus	Total	0.165	mg/l	
RCG-3	PARADISE			06-Jun-11	Temperature, sample		5	deg C	
RCG-3	PARADISE	1	ft	06-Jun-11	Total suspended solids		49	mg/l	
RCG-3	PARADISE	1	ft	06-Jun-11	Volatile suspended solids		14	mg/l	
RCG-3	PARADISE	1	ft	06-Jun-11	Chlorophyll a, corrected for pheophytin	Total	92.1	ug/l	
RCG-3	PARADISE	1	ft	06-Jun-11	Chlorophyll a, uncorrected for pheophytin	Total	95.3	ug/l	
RCG-3	PARADISE	1	ft	06-Jun-11	Chlorophyll c	Total	13.1	ug/l	
RCG-1	PARADISE	1	ft	01-Jul-11	Alkalinity, total		170	mg/l	
RCG-1	PARADISE	1	ft	01-Jul-11	Chloride	Total	19.4	mg/l	
RCG-1	PARADISE			01-Jul-11	Temperature, sample		5	deg C	
RCG-1	PARADISE	1	ft	01-Jul-11	Total suspended solids		18	mg/l	
RCG-1	PARADISE	1	ft	01-Jul-11	Volatile suspended solids		13	mg/l	
RCG-1	PARADISE	13	ft	01-Jul-11	Alkalinity, total		150	mg/l	
RCG-1	PARADISE	13	ft	01-Jul-11	Chloride	Total	19.8	mg/l	
RCG-1	PARADISE			01-Jul-11	Temperature, sample		5	deg C	
RCG-1	PARADISE	13	ft	01-Jul-11	Total suspended solids		25	mg/l	
RCG-1	PARADISE	13	ft	01-Jul-11	Volatile suspended solids		11	mg/l	
RCF-1	MATTOON	1	ft	01-Jul-11	Alkalinity, total		130	mg/l	
RCF-1	MATTOON	1	ft	01-Jul-11	Chloride	Total	16.8	mg/l	
RCF-1	MATTOON			01-Jul-11	Temperature, sample		5	deg C	
RCF-1	MATTOON	1	ft	01-Jul-11	Total suspended solids		14	mg/l	
RCF-1	MATTOON	1	ft	01-Jul-11	Volatile suspended solids		11	mg/l	
RCF-1	MATTOON	24	ft	01-Jul-11	Alkalinity, total		115	mg/l	
RCF-1	MATTOON	24	ft	01-Jul-11	Chloride	Total	14.6	mg/l	
RCF-1	MATTOON			01-Jul-11	Temperature, sample		5	deg C	
RCF-1	MATTOON	24	ft	01-Jul-11	Total suspended solids		11	mg/l	
RCF-1	MATTOON	24	ft	01-Jul-11	Volatile suspended solids		7	mg/l	
RCG-1	PARADISE	1	ft	01-Jul-11	Inorganic nitrogen (nitrate and nitrite)	Total	2.45	mg/l	
RCG-1	PARADISE	1	ft	01-Jul-11	Kjeldahl nitrogen	Total	1.4	mg/l	
RCG-1	PARADISE	1	ft	01-Jul-11	Phosphorus	Total	0.111	mg/l	
RCG-1	PARADISE			01-Jul-11	Temperature, sample		4	deg C	
RCG-1	PARADISE	13	ft	01-Jul-11	Inorganic nitrogen (nitrate and nitrite)	Total	2.78	mg/l	
RCG-1	PARADISE	13	ft	01-Jul-11	Kjeldahl nitrogen	Total	1.06	mg/l	
RCG-1	PARADISE	13	ft	01-Jul-11	Phosphorus	Total	0.116	mg/l	
RCG-1	PARADISE			01-Jul-11	Temperature, sample		4	deg C	
RCF-1	MATTOON	1	ft	01-Jul-11	Kjeldahl nitrogen	Total	1.11	mg/l	
RCF-1	MATTOON	1	ft	01-Jul-11	Phosphorus	Total	0.096	mg/l	
RCF-1	MATTOON			01-Jul-11	Temperature, sample		4	deg C	
RCF-1	MATTOON	24	ft	01-Jul-11	Ammonia-nitrogen	Total	0.31	mg/l	
RCF-1	MATTOON	24	ft	01-Jul-11	Inorganic nitrogen (nitrate and nitrite)	Total	0.427	mg/l	
RCF-1	MATTOON	24	ft	01-Jul-11	Kjeldahl nitrogen	Total	0.932	mg/l	
RCF-1	MATTOON	24	ft	01-Jul-11	Phosphorus	Total	0.176	mg/l	
RCF-1	MATTOON			01-Jul-11	Temperature, sample		4	deg C	
RCG-1	PARADISE	1	ft	11-Jul-11	Alkalinity, total		135	mg/l	
RCG-1	PARADISE	1	ft	11-Jul-11	Chloride	Total	18.8	mg/l	
RCG-1	PARADISE	1	ft	11-Jul-11	Inorganic nitrogen (nitrate and nitrite)	Total	1.62	mg/l	
RCG-1	PARADISE	1	ft	11-Jul-11	Kjeldahl nitrogen	Total	1.28	mg/l	
RCG-1	PARADISE	1	ft	11-Jul-11	Phosphorus	Total	0.154	mg/l	
RCG-1	PARADISE			11-Jul-11	Temperature, sample		2	deg C	
RCG-1	PARADISE	1	ft	11-Jul-11	Total suspended solids		14	mg/l	
RCG-1	PARADISE	1	ft	11-Jul-11	Volatile suspended solids		11	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
RCG-1	PARADISE	16	ft	11-Jul-11	Alkalinity, total		130	mg/l	
RCG-1	PARADISE	16	ft	11-Jul-11	Ammonia-nitrogen	Total	0.23	mg/l	
RCG-1	PARADISE	16	ft	11-Jul-11	Chloride	Total	19.3	mg/l	
RCG-1	PARADISE	16	ft	11-Jul-11	Inorganic nitrogen (nitrate and nitrite)	Total	1.54	mg/l	
RCG-1	PARADISE	16	ft	11-Jul-11	Kjeldahl nitrogen	Total	1.24	mg/l	
RCG-1	PARADISE	16	ft	11-Jul-11	Phosphorus	Total	0.203	mg/l	
RCG-1	PARADISE			11-Jul-11	Temperature, sample		2	deg C	
RCG-1	PARADISE	16	ft	11-Jul-11	Total suspended solids		39	mg/l	
RCG-1	PARADISE	16	ft	11-Jul-11	Volatile suspended solids		14	mg/l	
RCG-2	PARADISE	1	ft	11-Jul-11	Alkalinity, total		125	mg/l	
RCG-2	PARADISE	1	ft	11-Jul-11	Chloride	Total	19.2	mg/l	
RCG-2	PARADISE	1	ft	11-Jul-11	Inorganic nitrogen (nitrate and nitrite)	Total	1.43	mg/l	
RCG-2	PARADISE	1	ft	11-Jul-11	Kjeldahl nitrogen	Total	1.31	mg/l	
RCG-2	PARADISE	1	ft	11-Jul-11	Phosphorus	Total	0.141	mg/l	
RCG-2	PARADISE			11-Jul-11	Temperature, sample		2	deg C	
RCG-2	PARADISE	1	ft	11-Jul-11	Total suspended solids		17	mg/l	
RCG-2	PARADISE	1	ft	11-Jul-11	Volatile suspended solids		14	mg/l	
RCG-3	PARADISE	1	ft	11-Jul-11	Alkalinity, total		140	mg/l	
RCG-3	PARADISE	1	ft	11-Jul-11	Chloride	Total	21.8	mg/l	
RCG-3	PARADISE	1	ft	11-Jul-11	Inorganic nitrogen (nitrate and nitrite)	Total	1.76	mg/l	
RCG-3	PARADISE	1	ft	11-Jul-11	Kjeldahl nitrogen	Total	1.58	mg/l	
RCG-3	PARADISE	1	ft	11-Jul-11	Phosphorus	Total	0.223	mg/l	
RCG-3	PARADISE			11-Jul-11	Temperature, sample		2	deg C	
RCG-3	PARADISE	1	ft	11-Jul-11	Total suspended solids		56	mg/l	
RCG-3	PARADISE	1	ft	11-Jul-11	Volatile suspended solids		17	mg/l	
RCG-5	PARADISE	1	ft	11-Jul-11	Alkalinity, total		195	mg/l	
RCG-5	PARADISE	1	ft	11-Jul-11	Chloride	Total	26.1	mg/l	
RCG-5	PARADISE	1	ft	11-Jul-11	Inorganic nitrogen (nitrate and nitrite)	Total	5.55	mg/l	
RCG-5	PARADISE	1	ft	11-Jul-11	Kjeldahl nitrogen	Total	1.16	mg/l	
RCG-5	PARADISE	1	ft	11-Jul-11	Phosphorus	Total	0.151	mg/l	
RCG-5	PARADISE			11-Jul-11	Temperature, sample		2	deg C	
RCG-5	PARADISE	1	ft	11-Jul-11	Total suspended solids		47	mg/l	
RCG-5	PARADISE	1	ft	11-Jul-11	Volatile suspended solids		14	mg/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Arsenic	Total	2.52	ug/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Barium	Dissolved	86.1	ug/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Barium	Total	93.8	ug/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Boron	Dissolved	19.3	ug/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Boron	Total	23.1	ug/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Calcium	Dissolved	65600	ug/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Calcium	Total	65100	ug/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Chloride	Total	17.9	mg/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Hardness, Ca, Mg		265000	ug/l	C
C-21	LITTLE WABASH RIVER			11-Jul-11	Inorganic nitrogen (nitrate and nitrite)	Total	2.16	mg/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Kjeldahl nitrogen	Total	0.536	mg/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Magnesium	Dissolved	24600	ug/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Magnesium	Total	24900	ug/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Organic carbon	Total	3.14	mg/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Phosphorus	Dissolved	0.062	mg/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Phosphorus	Total	0.104	mg/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Potassium	Dissolved	2950	ug/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Potassium	Total	3100	ug/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Sodium	Dissolved	11100	ug/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Sodium	Total	11200	ug/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Strontium	Dissolved	151	ug/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Strontium	Total	149	ug/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Sulfate	Total	23.9	mg/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			11-Jul-11	Total suspended solids		22	mg/l	
C-21	LITTLE WABASH RIVER			11-Jul-11	Volatile suspended solids		8	mg/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Aluminum	Total	379	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Arsenic	Dissolved	2.11	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Arsenic	Total	2.63	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Barium	Dissolved	84.3	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Barium	Total	95.4	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Boron	Dissolved	37.6	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Boron	Total	41.1	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Calcium	Dissolved	58900	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Calcium	Total	60800	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Chloride	Total	16.6	mg/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Hardness, Ca, Mg		234000	ug/l	C
C-21	LITTLE WABASH RIVER			08-Aug-11	Iron	Total	611	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Magnesium	Dissolved	19200	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Magnesium	Total	20000	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Manganese	Dissolved	345	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Manganese	Total	476	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Organic carbon	Total	4.1	mg/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Phosphorus	Dissolved	0.114	mg/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Phosphorus	Total	0.172	mg/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Potassium	Dissolved	4970	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Potassium	Total	5260	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			08-Aug-11	Strontium	Dissolved	131	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Strontium	Total	137	ug/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Sulfate	Total	16.1	mg/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			08-Aug-11	Total suspended solids		13	mg/l	
C-21	LITTLE WABASH RIVER			08-Aug-11	Volatile suspended solids		5	mg/l	
RCG-1	PARADISE	1	ft	15-Aug-11	Alkalinity, total		130	mg/l	
RCG-1	PARADISE	1	ft	15-Aug-11	Chloride	Total	19.9	mg/l	
RCG-1	PARADISE	1	ft	15-Aug-11	Kjeldahl nitrogen	Total	1.64	mg/l	
RCG-1	PARADISE	1	ft	15-Aug-11	Phosphorus	Total	0.413	mg/l	
RCG-1	PARADISE			15-Aug-11	Temperature, sample		2	deg C	
RCG-1	PARADISE	1	ft	15-Aug-11	Total suspended solids		26	mg/l	
RCG-1	PARADISE	1	ft	15-Aug-11	Volatile suspended solids		16	mg/l	
RCG-1	PARADISE	15	ft	15-Aug-11	Alkalinity, total		135	mg/l	
RCG-1	PARADISE	15	ft	15-Aug-11	Chloride	Total	19.9	mg/l	
RCG-1	PARADISE	15	ft	15-Aug-11	Kjeldahl nitrogen	Total	1.81	mg/l	
RCG-1	PARADISE	15	ft	15-Aug-11	Phosphorus	Total	0.444	mg/l	
RCG-1	PARADISE			15-Aug-11	Temperature, sample		2	deg C	
RCG-1	PARADISE	15	ft	15-Aug-11	Total suspended solids		55	mg/l	
RCG-1	PARADISE	15	ft	15-Aug-11	Volatile suspended solids		18	mg/l	
RCG-2	PARADISE	1	ft	15-Aug-11	Alkalinity, total		135	mg/l	
RCG-2	PARADISE	1	ft	15-Aug-11	Chloride	Total	20.2	mg/l	
RCG-2	PARADISE	1	ft	15-Aug-11	Kjeldahl nitrogen	Total	1.72	mg/l	
RCG-2	PARADISE	1	ft	15-Aug-11	Phosphorus	Total	0.464	mg/l	
RCG-2	PARADISE			15-Aug-11	Temperature, sample		2	deg C	
RCG-2	PARADISE	1	ft	15-Aug-11	Total suspended solids		32	mg/l	
RCG-2	PARADISE	1	ft	15-Aug-11	Volatile suspended solids		15	mg/l	
RCG-3	PARADISE	1	ft	15-Aug-11	Alkalinity, total		135	mg/l	
RCG-3	PARADISE	1	ft	15-Aug-11	Chloride	Total	20.4	mg/l	
RCG-3	PARADISE	1	ft	15-Aug-11	Inorganic nitrogen (nitrate and nitrite)	Total	0.123	mg/l	
RCG-3	PARADISE	1	ft	15-Aug-11	Kjeldahl nitrogen	Total	1.8	mg/l	
RCG-3	PARADISE	1	ft	15-Aug-11	Phosphorus	Total	0.538	mg/l	
RCG-3	PARADISE			15-Aug-11	Temperature, sample		2	deg C	
RCG-3	PARADISE	1	ft	15-Aug-11	Total suspended solids		117	mg/l	
RCG-3	PARADISE	1	ft	15-Aug-11	Volatile suspended solids		24	mg/l	
RCG-5	PARADISE	1	ft	15-Aug-11	Alkalinity, total		185	mg/l	
RCG-5	PARADISE	1	ft	15-Aug-11	Chloride	Total	25.4	mg/l	
RCG-5	PARADISE	1	ft	15-Aug-11	Inorganic nitrogen (nitrate and nitrite)	Total	0.106	mg/l	
RCG-5	PARADISE	1	ft	15-Aug-11	Kjeldahl nitrogen	Total	1.44	mg/l	
RCG-5	PARADISE	1	ft	15-Aug-11	Phosphorus	Total	0.414	mg/l	
RCG-5	PARADISE			15-Aug-11	Temperature, sample		2	deg C	
RCG-5	PARADISE	1	ft	15-Aug-11	Total suspended solids		46	mg/l	
RCG-5	PARADISE	1	ft	15-Aug-11	Volatile suspended solids		15	mg/l	
RCG-1	PARADISE	2	ft	15-Aug-11	Chlorophyll a, corrected for pheophytin	Total	48.1	ug/l	
RCG-1	PARADISE	2	ft	15-Aug-11	Chlorophyll a, uncorrected for pheophytin	Total	52.9	ug/l	
RCG-1	PARADISE	2	ft	15-Aug-11	Chlorophyll b	Total	7.82	ug/l	
RCG-1	PARADISE	2	ft	15-Aug-11	Chlorophyll c	Total	10.7	ug/l	
RCG-2	PARADISE	2	ft	15-Aug-11	Chlorophyll a, corrected for pheophytin	Total	159	ug/l	
RCG-2	PARADISE	2	ft	15-Aug-11	Chlorophyll a, uncorrected for pheophytin	Total	172	ug/l	
RCG-2	PARADISE	2	ft	15-Aug-11	Chlorophyll c	Total	16.4	ug/l	
RCG-3	PARADISE	1	ft	15-Aug-11	Chlorophyll a, corrected for pheophytin	Total	130	ug/l	
RCG-3	PARADISE	1	ft	15-Aug-11	Chlorophyll a, uncorrected for pheophytin	Total	145	ug/l	
RCG-3	PARADISE	1	ft	15-Aug-11	Chlorophyll b	Total	1.09	ug/l	
RCG-3	PARADISE	1	ft	15-Aug-11	Chlorophyll c	Total	17.5	ug/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Arsenic	Total	2.04	ug/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Barium	Total	83.5	ug/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Calcium	Dissolved	62700	ug/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Calcium	Total	66900	ug/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Chloride	Total	21.5	mg/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Hardness, Ca, Mg		266000	ug/l	C
C-21	LITTLE WABASH RIVER			26-Sep-11	Magnesium	Dissolved	23000	ug/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Magnesium	Total	24100	ug/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Manganese	Dissolved	160	ug/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Manganese	Total	259	ug/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Organic carbon	Total	4.29	mg/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Phosphorus	Dissolved	0.077	mg/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Phosphorus	Total	0.124	mg/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Potassium	Dissolved	4360	ug/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Potassium	Total	4880	ug/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Sodium	Dissolved	16600	ug/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Sodium	Total	17700	ug/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Strontium	Dissolved	134	ug/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Strontium	Total	146	ug/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Sulfate	Total	36.3	mg/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			26-Sep-11	Total suspended solids		20	mg/l	
C-21	LITTLE WABASH RIVER			26-Sep-11	Volatile suspended solids		8	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
RCG-1	PARADISE	1	ft	17-Oct-11	Alkalinity, total		140	mg/l	
RCG-1	PARADISE	1	ft	17-Oct-11	Chloride	Total	20.3	mg/l	
RCG-1	PARADISE	1	ft	17-Oct-11	Kjeldahl nitrogen	Total	1.43	mg/l	
RCG-1	PARADISE	1	ft	17-Oct-11	Phosphorus	Total	0.197	mg/l	
RCG-1	PARADISE			17-Oct-11	Temperature, sample		1	deg C	
RCG-1	PARADISE	1	ft	17-Oct-11	Total suspended solids		39	mg/l	
RCG-1	PARADISE	1	ft	17-Oct-11	Volatile suspended solids		18	mg/l	
RCG-1	PARADISE	16	ft	17-Oct-11	Alkalinity, total		140	mg/l	
RCG-1	PARADISE	16	ft	17-Oct-11	Chloride	Total	20	mg/l	
RCG-1	PARADISE	16	ft	17-Oct-11	Inorganic nitrogen (nitrate and nitrite)	Total	0.106	mg/l	
RCG-1	PARADISE	16	ft	17-Oct-11	Kjeldahl nitrogen	Total	1.54	mg/l	
RCG-1	PARADISE	16	ft	17-Oct-11	Phosphorus	Total	0.231	mg/l	
RCG-1	PARADISE			17-Oct-11	Temperature, sample		1	deg C	
RCG-1	PARADISE	16	ft	17-Oct-11	Total suspended solids		68	mg/l	
RCG-1	PARADISE	16	ft	17-Oct-11	Volatile suspended solids		19	mg/l	
RCG-2	PARADISE	1	ft	17-Oct-11	Alkalinity, total		150	mg/l	
RCG-2	PARADISE	1	ft	17-Oct-11	Chloride	Total	20.3	mg/l	
RCG-2	PARADISE	1	ft	17-Oct-11	Phosphorus	Total	0.208	mg/l	
RCG-2	PARADISE			17-Oct-11	Temperature, sample		1	deg C	
RCG-2	PARADISE	1	ft	17-Oct-11	Total suspended solids		37	mg/l	
RCG-2	PARADISE	1	ft	17-Oct-11	Volatile suspended solids		15	mg/l	
RCG-3	PARADISE	1	ft	17-Oct-11	Alkalinity, total		160	mg/l	
RCG-3	PARADISE	1	ft	17-Oct-11	Chloride	Total	21	mg/l	
RCG-3	PARADISE	1	ft	17-Oct-11	Phosphorus	Total	0.238	mg/l	
RCG-3	PARADISE			17-Oct-11	Temperature, sample		1	deg C	
RCG-3	PARADISE	1	ft	17-Oct-11	Total suspended solids		75	mg/l	
RCG-3	PARADISE	1	ft	17-Oct-11	Volatile suspended solids		20	mg/l	
RCG-5	PARADISE	1	ft	17-Oct-11	Alkalinity, total		170	mg/l	
RCG-5	PARADISE	1	ft	17-Oct-11	Chloride	Total	23.5	mg/l	
RCG-5	PARADISE	1	ft	17-Oct-11	Phosphorus	Total	0.354	mg/l	
RCG-5	PARADISE			17-Oct-11	Temperature, sample		1	deg C	
RCG-5	PARADISE	1	ft	17-Oct-11	Total suspended solids		60	mg/l	
RCG-5	PARADISE	1	ft	17-Oct-11	Volatile suspended solids		18	mg/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Aluminum	Total	329	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Arsenic	Dissolved	2.17	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Arsenic	Total	3.06	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Barium	Dissolved	67.1	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Barium	Total	76.5	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Boron	Dissolved	22.6	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Boron	Total	21.6	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Calcium	Dissolved	64400	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Calcium	Total	67200	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Chloride	Total	29.1	mg/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Hardness, Ca, Mg		274000	ug/l	C
C-21	LITTLE WABASH RIVER			31-Oct-11	Iron	Dissolved	65.4	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Iron	Total	706	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Kjeldahl nitrogen	Total	0.596	mg/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Magnesium	Dissolved	25100	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Magnesium	Total	25900	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Manganese	Dissolved	349	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Manganese	Total	386	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Organic carbon	Total	6.23	mg/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Phosphorus	Dissolved	0.117	mg/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Phosphorus	Total	0.196	mg/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Potassium	Dissolved	6620	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Potassium	Total	6790	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Sodium	Dissolved	24900	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Sodium	Total	26000	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Strontium	Dissolved	132	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Strontium	Total	139	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Sulfate	Total	25.1	mg/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Temperature, sample		2	deg C	
C-21	LITTLE WABASH RIVER			31-Oct-11	Total suspended solids		11	mg/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Volatile suspended solids		7	mg/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Zinc	Dissolved	8.6	ug/l	
C-21	LITTLE WABASH RIVER			31-Oct-11	Zinc	Total	10.5	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Aluminum	Total	20300	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Ammonia-nitrogen	Total	0.12	mg/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Arsenic	Total	4.76	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Barium	Dissolved	32.2	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Barium	Total	199	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Boron	Dissolved	22	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Boron	Total	31.8	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Calcium	Dissolved	18300	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Calcium	Total	27300	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Chloride	Total	9	mg/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Chromium	Total	21.5	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Cobalt	Total	7.82	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Copper	Total	21.3	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Hardness, Ca, Mg		113000	ug/l	C
C-21	LITTLE WABASH RIVER			15-Dec-11	Inorganic nitrogen (nitrate and nitrite)	Total	1.09	mg/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Iron	Dissolved	64	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Iron	Total	21500	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			15-Dec-11	Kjeldahl nitrogen	Total	2.9	mg/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Lead	Total	12.6	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Magnesium	Dissolved	6030	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Magnesium	Total	10900	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Manganese	Dissolved	21.1	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Manganese	Total	627	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Nickel	Total	14.6	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Organic carbon	Total	9.15	mg/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Phosphorus	Dissolved	0.481	mg/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Phosphorus	Total	1.32	mg/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Strontium	Dissolved	41.8	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Strontium	Total	63	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Sulfate	Total	15.4	mg/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Temperature, sample		3	deg C	
C-21	LITTLE WABASH RIVER			15-Dec-11	Total suspended solids		790	mg/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Vanadium	Total	36.2	ug/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Volatile suspended solids		92	mg/l	
C-21	LITTLE WABASH RIVER			15-Dec-11	Zinc	Total	77.8	ug/l	
C-21				23-May-11	Fecal coliform		480	cfu/100ml	C
C-21				11-Jul-11	Fecal coliform		220	cfu/100ml	C
C-21				08-Aug-11	Fecal coliform		210	cfu/100ml	C
C-21				26-Sep-11	Fecal coliform		160	cfu/100ml	C
C-21				27-Feb-12	Dissolved oxygen (DO)		13.26	mg/l	
C-21				27-Feb-12	Dissolved oxygen saturation		107.9	%	
C-21				27-Feb-12	pH		7.88	none	
C-21				27-Feb-12	Specific conductance		572	umho/cm	
C-21				27-Feb-12	Temperature, air		7	deg C	
C-21				27-Feb-12	Temperature, water		6.45	deg C	
C-21				27-Feb-12	Turbidity		7.2	NTU	
C-21				26-Mar-12	Dissolved oxygen (DO)		9.56	mg/l	
C-21				26-Mar-12	Dissolved oxygen saturation		99	%	
C-21				26-Mar-12	pH		7.81	none	
C-21				26-Mar-12	Specific conductance		564	umho/cm	
C-21				26-Mar-12	Temperature, air		19	deg C	
C-21				26-Mar-12	Temperature, water		16.95	deg C	
C-21				26-Mar-12	Turbidity		12.8	NTU	
C-21				23-Apr-12	Dissolved oxygen (DO)		11.19	mg/l	
C-21				23-Apr-12	Dissolved oxygen saturation		104.4	%	
C-21				23-Apr-12	pH		8.3	none	
C-21				23-Apr-12	Specific conductance		513	umho/cm	
C-21				23-Apr-12	Temperature, air		16	deg C	
C-21				23-Apr-12	Temperature, water		12.16	deg C	
C-21				23-Apr-12	Turbidity		14.3	NTU	
C-21				21-May-12	Dissolved oxygen (DO)		6.2	mg/l	
C-21				21-May-12	Dissolved oxygen saturation		72.4	%	
C-21				21-May-12	Fecal coliform		460	cfu/100ml	C
C-21				21-May-12	pH		7.81	none	
C-21				21-May-12	Specific conductance		597	umho/cm	
C-21				21-May-12	Temperature, air		26	deg C	
C-21				21-May-12	Temperature, water		22.98	deg C	
C-21				21-May-12	Turbidity		19	NTU	
C-21				09-Jul-12	Dissolved oxygen (DO)		7.5	mg/l	
C-21				09-Jul-12	Dissolved oxygen saturation		101.2	%	
C-21				09-Jul-12	pH		8.07	none	
C-21				09-Jul-12	Specific conductance		642	umho/cm	
C-21				09-Jul-12	Temperature, air		35	deg C	
C-21				09-Jul-12	Temperature, water		31.02	deg C	
C-21				09-Jul-12	Turbidity		12	NTU	
C-21				06-Aug-12	Dissolved oxygen (DO)		11.07	mg/l	
C-21				06-Aug-12	Dissolved oxygen saturation		145	%	
C-21				06-Aug-12	pH		8.73	none	
C-21				06-Aug-12	Specific conductance		323	umho/cm	
C-21				06-Aug-12	Temperature, air		35	deg C	
C-21				06-Aug-12	Temperature, water		29.35	deg C	
C-21				06-Aug-12	Turbidity		48.8	NTU	
C-21				24-Sep-12	Dissolved oxygen (DO)		11.42	mg/l	
C-21				24-Sep-12	Dissolved oxygen saturation		117.9	%	
C-21				24-Sep-12	pH		8.31	none	
C-21				24-Sep-12	Specific conductance		409	umho/cm	
C-21				24-Sep-12	Temperature, air		21	deg C	
C-21				24-Sep-12	Temperature, water		16.81	deg C	
C-21				24-Sep-12	Turbidity		24.2	NTU	
C-21				29-Oct-12	Dissolved oxygen (DO)		8.05	mg/l	
C-21				29-Oct-12	Dissolved oxygen saturation		70.8	%	
C-21				29-Oct-12	pH		7.71	none	
C-21				29-Oct-12	Specific conductance		593	umho/cm	
C-21				29-Oct-12	Temperature, air		12	deg C	
C-21				29-Oct-12	Temperature, water		9.61	deg C	
C-21				29-Oct-12	Turbidity		13.4	NTU	
C-21				26-Nov-12	Dissolved oxygen (DO)		13.68	mg/l	
C-21				26-Nov-12	Dissolved oxygen saturation		107.3	%	
C-21				26-Nov-12	pH		8.15	none	
C-21				26-Nov-12	Specific conductance		648	umho/cm	
C-21				26-Nov-12	Temperature, air		6	deg C	
C-21				26-Nov-12	Temperature, water		4.99	deg C	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21				26-Nov-12	Turbidity		9.2	NTU	
C-15				16-May-12	Dissolved oxygen (DO)		5.9	mg/l	
C-15				04-Jun-12	Dissolved oxygen (DO)		6.2	mg/l	
C-15				25-Sep-12	Dissolved oxygen (DO)		6.7	mg/l	
C-21				23-May-12	Dissolved oxygen (DO)		8.3	mg/l	
C-21				14-Jun-12	Dissolved oxygen (DO)		7.8	mg/l	
C-21				24-Sep-12	Dissolved oxygen (DO)		10.3	mg/l	
C-24				16-May-12	Dissolved oxygen (DO)		3.7	mg/l	
C-24				30-May-12	Dissolved oxygen (DO)		4.8	mg/l	
C-24				25-Sep-12	Dissolved oxygen (DO)		6.5	mg/l	
CT-02				16-May-12	Dissolved oxygen (DO)		8.5	mg/l	
CT-02				04-Jun-12	Dissolved oxygen (DO)		8.5	mg/l	
CT-02				25-Sep-12	Dissolved oxygen (DO)		7.7	mg/l	
C-15				16-May-12	Dissolved oxygen saturation		64	%	
C-15				04-Jun-12	Dissolved oxygen saturation		69	%	
C-15				25-Sep-12	Dissolved oxygen saturation		63	%	
C-21				23-May-12	Dissolved oxygen saturation		93	%	
C-21				14-Jun-12	Dissolved oxygen saturation		92	%	
C-21				24-Sep-12	Dissolved oxygen saturation		106	%	
C-24				16-May-12	Dissolved oxygen saturation		48	%	
C-24				30-May-12	Dissolved oxygen saturation		54	%	
C-24				25-Sep-12	Dissolved oxygen saturation		63	%	
CT-02				16-May-12	Dissolved oxygen saturation		89	%	
CT-02				04-Jun-12	Dissolved oxygen saturation		92	%	
CT-02				25-Sep-12	Dissolved oxygen saturation		74	%	
C-15				16-May-12	pH		7.6	none	
C-15				04-Jun-12	pH		7.9	none	
C-15				25-Sep-12	pH		8.1	none	
C-21				23-May-12	pH		8	none	
C-21				14-Jun-12	pH		8	none	
C-21				24-Sep-12	pH		8.2	none	
C-24				16-May-12	pH		7.4	none	
C-24				30-May-12	pH		7.6	none	
C-24				25-Sep-12	pH		8	none	
CT-02				16-May-12	pH		8.1	none	
CT-02				04-Jun-12	pH		8.2	none	
CT-02				25-Sep-12	pH		8.1	none	
C-15				16-May-12	Specific conductance		426	umho/cm	
C-15				04-Jun-12	Specific conductance		527	umho/cm	
C-15				25-Sep-12	Specific conductance		378	umho/cm	
C-21				23-May-12	Specific conductance		571	umho/cm	
C-21				14-Jun-12	Specific conductance		581	umho/cm	
C-21				24-Sep-12	Specific conductance		387	umho/cm	
C-24				16-May-12	Specific conductance		577	umho/cm	
C-24				30-May-12	Specific conductance		688	umho/cm	
C-24				25-Sep-12	Specific conductance		1065	umho/cm	
CT-02				16-May-12	Specific conductance		577	umho/cm	
CT-02				04-Jun-12	Specific conductance		571	umho/cm	
CT-02				25-Sep-12	Specific conductance		399	umho/cm	
C-15				16-May-12	Temperature, air		18	deg C	
C-15				04-Jun-12	Temperature, air		23	deg C	
C-15				25-Sep-12	Temperature, air		15	deg C	
C-21				23-May-12	Temperature, air		19	deg C	
C-21				14-Jun-12	Temperature, air		21	deg C	
C-21				24-Sep-12	Temperature, air		22	deg C	
C-24				16-May-12	Temperature, air		17	deg C	
C-24				30-May-12	Temperature, air		25	deg C	
C-24				25-Sep-12	Temperature, air		17	deg C	
CT-02				16-May-12	Temperature, air		18	deg C	
CT-02				04-Jun-12	Temperature, air		22	deg C	
CT-02				25-Sep-12	Temperature, air		17	deg C	
C-15				16-May-12	Temperature, water		18.7	deg C	
C-15				04-Jun-12	Temperature, water		20.2	deg C	
C-15				25-Sep-12	Temperature, water		12.4	deg C	
C-21				23-May-12	Temperature, water		20.2	deg C	
C-21				14-Jun-12	Temperature, water		22.6	deg C	
C-21				24-Sep-12	Temperature, water		16.7	deg C	
C-24				16-May-12	Temperature, water		18.1	deg C	
C-24				30-May-12	Temperature, water		19.4	deg C	
C-24				25-Sep-12	Temperature, water		13.5	deg C	
CT-02				16-May-12	Temperature, water		16.7	deg C	
CT-02				04-Jun-12	Temperature, water		18	deg C	
CT-02				25-Sep-12	Temperature, water		13	deg C	
C-15				16-May-12	Turbidity		3.1	NTU	
C-15				04-Jun-12	Turbidity		5	NTU	
C-15				25-Sep-12	Turbidity		19	NTU	
C-21				23-May-12	Turbidity		24	NTU	
C-21				14-Jun-12	Turbidity		18	NTU	
C-21				24-Sep-12	Turbidity		23	NTU	
C-24				16-May-12	Turbidity		4.5	NTU	
C-24				30-May-12	Turbidity		4.5	NTU	
C-24				25-Sep-12	Turbidity		2.6	NTU	
CT-02				16-May-12	Turbidity		7	NTU	
CT-02				04-Jun-12	Turbidity		7.7	NTU	
CT-02				25-Sep-12	Turbidity		28	NTU	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			04-Jan-10	Aluminum	Total	344	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Barium	Dissolved	84.7	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Barium	Total	89.9	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Boron	Dissolved	12.9	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Boron	Total	16.6	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Calcium	Dissolved	72000	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Calcium	Total	73800	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Carbon, organic	Total	3.44	mg/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Chloride	Total	27.3	mg/l	
C-21				04-Jan-10	Dissolved oxygen (DO)		13.13	mg/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Hardness, Ca + Mg	Total	308000	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Iron	Total	646	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Magnesium	Dissolved	30100	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Magnesium	Total	30200	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Manganese	Dissolved	254	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Manganese	Total	263	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Nitrogen, Kjeldahl	Total	0.543	mg/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	2.66	mg/l	
C-21				04-Jan-10	pH		7.99		
C-21	LITTLE WABASH RIVER			04-Jan-10	Phosphorus as P	Dissolved	0.032	mg/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Phosphorus as P	Total	0.098	mg/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Potassium	Dissolved	4270	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Potassium	Total	4330	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Sodium	Dissolved	15500	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Sodium	Total	15000	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Solids, suspended, volatile		6	mg/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Solids, Total Suspended (TSS)		12	mg/l	
C-21				04-Jan-10	Specific conductance		628	umho/cm	
C-21	LITTLE WABASH RIVER			04-Jan-10	Strontium	Dissolved	153	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Strontium	Total	153	ug/l	
C-21	LITTLE WABASH RIVER			04-Jan-10	Sulfate	Total	37.4	mg/l	
C-21				04-Jan-10	Temperature, air		-10	deg C	
C-21	LITTLE WABASH RIVER			04-Jan-10	Temperature, sample		1	deg C	
C-21				04-Jan-10	Temperature, water		0.22	deg C	
C-21				04-Jan-10	Turbidity		13.45	NTU	
C-21	LITTLE WABASH RIVER			15-Feb-10	Aluminum	Total	167	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Arsenic	Total	2.56	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Barium	Dissolved	63.8	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Barium	Total	66.5	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Boron	Dissolved	24.1	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Boron	Total	23.8	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Calcium	Dissolved	69400	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Calcium	Total	67100	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Carbon, organic	Total	3.13	mg/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Chloride	Total	27.8	mg/l	
C-21				15-Feb-10	Dissolved oxygen (DO)		13.33	mg/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Hardness, Ca + Mg	Total	283000	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Iron	Total	444	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Magnesium	Dissolved	29400	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Magnesium	Total	28100	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Manganese	Dissolved	187	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Manganese	Total	195	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Nitrogen, Kjeldahl	Total	0.527	mg/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	2.17	mg/l	
C-21				15-Feb-10	pH		8.07		
C-21	LITTLE WABASH RIVER			15-Feb-10	Phosphorus as P	Dissolved	0.037	mg/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Phosphorus as P	Total	0.08	mg/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Potassium	Dissolved	3600	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Potassium	Total	3360	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Sodium	Dissolved	20300	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Sodium	Total	18700	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Solids, suspended, volatile		5	mg/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Solids, Total Suspended (TSS)		9	mg/l	
C-21				15-Feb-10	Specific conductance		585	umho/cm	
C-21	LITTLE WABASH RIVER			15-Feb-10	Strontium	Dissolved	131	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Strontium	Total	129	ug/l	
C-21	LITTLE WABASH RIVER			15-Feb-10	Sulfate	Total	45	mg/l	
C-21				15-Feb-10	Temperature, air		-5	deg C	
C-21	LITTLE WABASH RIVER			15-Feb-10	Temperature, sample		4	deg C	
C-21				15-Feb-10	Temperature, water		0.68	deg C	
C-21				15-Feb-10	Turbidity		8.53	NTU	
C-21	LITTLE WABASH RIVER			29-Mar-10	Aluminum	Dissolved	117	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Aluminum	Total	1140	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Arsenic	Total	2.88	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Barium	Dissolved	56.4	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Barium	Total	68.7	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Calcium	Dissolved	49000	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Calcium	Total	49400	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Carbon, organic	Total	6.13	mg/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Chloride	Total	25.1	mg/l	
C-21				29-Mar-10	Dissolved oxygen (DO)		10.96	mg/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Hardness, Ca + Mg	Total	206000	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Magnesium	Dissolved	19900	ug/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21	LITTLE WABASH RIVER			29-Mar-10	Magnesium	Total	20000	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Manganese	Dissolved	32.6	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Manganese	Total	95.4	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Nitrogen, Kjeldahl	Total	0.855	mg/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	1.87	mg/l	
C-21				29-Mar-10	pH		8.06		
C-21	LITTLE WABASH RIVER			29-Mar-10	Phosphorus as P	Dissolved	0.08	mg/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Phosphorus as P	Total	0.145	mg/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Potassium	Dissolved	4370	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Potassium	Total	4530	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Sodium	Dissolved	13800	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Sodium	Total	13700	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Solids, suspended, volatile		7	mg/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Solids, Total Suspended (TSS)		43	mg/l	
C-21				29-Mar-10	Specific conductance		451	umho/cm	
C-21	LITTLE WABASH RIVER			29-Mar-10	Strontium	Dissolved	111	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Strontium	Total	111	ug/l	
C-21	LITTLE WABASH RIVER			29-Mar-10	Sulfate	Total	10.3	mg/l	
C-21				29-Mar-10	Temperature, air		13	deg C	
C-21	LITTLE WABASH RIVER			29-Mar-10	Temperature, sample		4	deg C	
C-21				29-Mar-10	Temperature, water		9.6	deg C	
C-21				29-Mar-10	Turbidity		39.4	NTU	
C-21	LITTLE WABASH RIVER			24-May-10	Aluminum	Dissolved	163	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Aluminum	Total	501	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Barium	Dissolved	74.8	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Barium	Total	83.6	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Boron	Dissolved	26.9	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Boron	Total	27.7	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Carbon, organic	Total	3.9	mg/l	
C-21	LITTLE WABASH RIVER			24-May-10	Chloride	Total	25.8	mg/l	
C-21	LITTLE WABASH RIVER			24-May-10	Cyanide	Total	0.005	mg/l	
C-21				24-May-10	Dissolved oxygen (DO)		9.22	mg/l	
C-21	LITTLE WABASH RIVER			24-May-10	Hardness, Ca + Mg	Total	264000	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Iron	Total	837	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Lead	Dissolved	7.69	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Lead	Total	6.37	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Magnesium	Dissolved	24900	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Magnesium	Total	25400	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Manganese	Dissolved	127	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Manganese	Total	188	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Nitrogen, Kjeldahl	Total	0.695	mg/l	
C-21	LITTLE WABASH RIVER			24-May-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	1.29	mg/l	
C-21				24-May-10	pH		7.84		
C-21	LITTLE WABASH RIVER			24-May-10	Phosphorus as P	Dissolved	0.061	mg/l	
C-21	LITTLE WABASH RIVER			24-May-10	Phosphorus as P	Total	0.213	mg/l	
C-21	LITTLE WABASH RIVER			24-May-10	Potassium	Dissolved	3770	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Potassium	Total	3990	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Sodium	Dissolved	14800	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Sodium	Total	15200	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Solids, suspended, volatile		9	mg/l	
C-21	LITTLE WABASH RIVER			24-May-10	Solids, Total Suspended (TSS)		23	mg/l	
C-21				24-May-10	Specific conductance		550	umho/cm	
C-21	LITTLE WABASH RIVER			24-May-10	Strontium	Dissolved	135	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Strontium	Total	138	ug/l	
C-21	LITTLE WABASH RIVER			24-May-10	Sulfate	Total	34	mg/l	
C-21				24-May-10	Temperature, air		32	deg C	
C-21	LITTLE WABASH RIVER			24-May-10	Temperature, sample		3	deg C	
C-21				24-May-10	Temperature, water		23.91	deg C	
C-21				24-May-10	Turbidity		21.4	NTU	
C-21	LITTLE WABASH RIVER			28-Jun-10	Aluminum	Total	8230	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Arsenic	Dissolved	3.24	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Arsenic	Total	4.97	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Barium	Dissolved	34.8	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Barium	Total	128	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Calcium	Dissolved	20800	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Calcium	Total	26700	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Carbon, organic	Total	7.59	mg/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Chloride	Total	9.47	mg/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Cobalt	Total	5.57	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Copper	Total	8.57	ug/l	
C-21				28-Jun-10	Dissolved oxygen (DO)		5.59	mg/l	
C-21				28-Jun-10	Dissolved oxygen saturation		67.4	%	
C-21	LITTLE WABASH RIVER			28-Jun-10	Hardness, Ca + Mg	Total	113000	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Iron	Dissolved	78.1	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Iron	Total	11300	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Magnesium	Dissolved	7570	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Magnesium	Total	11300	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Manganese	Dissolved	6.61	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Manganese	Total	440	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Nickel	Total	11.3	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Nitrogen, Kjeldahl	Total	1.8	mg/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	0.82	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21				28-Jun-10	pH		7.99		
C-21	LITTLE WABASH RIVER			28-Jun-10	Phosphorus as P	Dissolved	0.198	mg/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Phosphorus as P	Total	0.561	mg/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Potassium	Dissolved	3690	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Potassium	Total	4990	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Sodium	Dissolved	4190	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Sodium	Total	4530	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Solids, suspended, volatile		25	mg/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Solids, Total Suspended (TSS)		208	mg/l	
C-21				28-Jun-10	Specific conductance		207	umho/cm	
C-21	LITTLE WABASH RIVER			28-Jun-10	Strontium	Dissolved	47.2	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Strontium	Total	57.9	ug/l	
C-21	LITTLE WABASH RIVER			28-Jun-10	Sulfate	Total	12.4	mg/l	
C-21				28-Jun-10	Temperature, air		30	deg C	
C-21	LITTLE WABASH RIVER			28-Jun-10	Temperature, sample		4	deg C	
C-21				28-Jun-10	Temperature, water		24.77	deg C	
C-21				28-Jun-10	Turbidity		321	NTU	
C-21	LITTLE WABASH RIVER			28-Jun-10	Zinc	Total	39.4	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Arsenic	Dissolved	2.22	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Barium	Dissolved	87.1	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Barium	Total	89.4	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Boron	Dissolved	36.7	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Boron	Total	37.2	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Calcium	Dissolved	66700	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Calcium	Total	66000	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Carbon, organic	Total	3.77	mg/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Chloride	Total	18.9	mg/l	
C-21				02-Aug-10	Dissolved oxygen (DO)		9.45	mg/l	
C-21				02-Aug-10	Dissolved oxygen saturation		116.9	%	
C-21	LITTLE WABASH RIVER			02-Aug-10	Hardness, Ca + Mg	Total	270000	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Iron	Total	523	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Magnesium	Dissolved	26200	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Magnesium	Total	25600	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Manganese	Dissolved	231	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Manganese	Total	287	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	0.209	mg/l	
C-21				02-Aug-10	pH		8.32		
C-21	LITTLE WABASH RIVER			02-Aug-10	Phosphorus as P	Dissolved	0.053	mg/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Phosphorus as P	Total	0.113	mg/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Potassium	Dissolved	4140	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Potassium	Total	4010	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Sodium	Dissolved	13600	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Sodium	Total	13400	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Solids, suspended, volatile		7	mg/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Solids, Total Suspended (TSS)		18	mg/l	
C-21				02-Aug-10	Specific conductance		565	umho/cm	
C-21	LITTLE WABASH RIVER			02-Aug-10	Strontium	Dissolved	146	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Strontium	Total	143	ug/l	
C-21	LITTLE WABASH RIVER			02-Aug-10	Sulfate	Total	30.3	mg/l	
C-21				02-Aug-10	Temperature, air		34	deg C	
C-21	LITTLE WABASH RIVER			02-Aug-10	Temperature, sample		2	deg C	
C-21				02-Aug-10	Temperature, water		26.11	deg C	
C-21				02-Aug-10	Turbidity		18.15	NTU	
C-21	LITTLE WABASH RIVER			20-Sep-10	Barium	Dissolved	75.1	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Barium	Total	81	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Boron	Dissolved	37.5	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Boron	Total	35.7	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Calcium	Dissolved	56300	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Calcium	Total	57700	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Carbon, organic	Total	3.76	mg/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Chloride	Total	18.6	mg/l	
C-21				20-Sep-10	Dissolved oxygen (DO)		6.46	mg/l	
C-21				20-Sep-10	Dissolved oxygen saturation		73.5	%	
C-21	LITTLE WABASH RIVER			20-Sep-10	Hardness, Ca + Mg	Total	241000	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Iron	Total	677	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Magnesium	Dissolved	23000	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Magnesium	Total	23500	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Manganese	Dissolved	179	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Manganese	Total	227	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	0.532	mg/l	
C-21				20-Sep-10	pH		7.81		
C-21	LITTLE WABASH RIVER			20-Sep-10	Phosphorus as P	Dissolved	0.091	mg/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Phosphorus as P	Total	0.204	mg/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Potassium	Dissolved	4110	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Potassium	Total	4200	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Sodium	Dissolved	10600	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Sodium	Total	10300	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Solids, suspended, volatile		5	mg/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Solids, Total Suspended (TSS)		13	mg/l	
C-21				20-Sep-10	Specific conductance		520	umho/cm	
C-21	LITTLE WABASH RIVER			20-Sep-10	Strontium	Dissolved	124	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Strontium	Total	125	ug/l	
C-21	LITTLE WABASH RIVER			20-Sep-10	Sulfate	Total	15.5	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
C-21				20-Sep-10	Temperature, air		36	deg C	
C-21	LITTLE WABASH RIVER			20-Sep-10	Temperature, sample		2	deg C	
C-21				20-Sep-10	Temperature, water		21.63	deg C	
C-21				20-Sep-10	Turbidity		19.3	NTU	
C-21	LITTLE WABASH RIVER			01-Nov-10	Barium	Dissolved	69	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Barium	Total	76.1	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Boron	Dissolved	34	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Boron	Total	36.7	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Calcium	Dissolved	76400	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Calcium	Total	77300	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Carbon, organic	Total	5.44	mg/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Cyanide	Total	0.02	mg/l	
C-21				01-Nov-10	Dissolved oxygen (DO)		2.98	mg/l	
C-21				01-Nov-10	Dissolved oxygen saturation		26.9	%	
C-21	LITTLE WABASH RIVER			01-Nov-10	Hardness, Ca + Mg	Total	324000	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Iron	Dissolved	97	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Iron	Total	679	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Magnesium	Dissolved	31400	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Magnesium	Total	31800	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Manganese	Dissolved	735	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Manganese	Total	767	ug/l	
C-21				01-Nov-10	pH		7.73		
C-21	LITTLE WABASH RIVER			01-Nov-10	Phosphorus as P	Dissolved	0.105	mg/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Phosphorus as P	Total	0.205	mg/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Potassium	Dissolved	4390	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Potassium	Total	4600	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Sodium	Dissolved	19100	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Sodium	Total	19400	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Solids, Total Suspended (TSS)		15	mg/l	
C-21				01-Nov-10	Specific conductance		639	umho/cm	
C-21	LITTLE WABASH RIVER			01-Nov-10	Strontium	Dissolved	156	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Strontium	Total	159	ug/l	
C-21				01-Nov-10	Temperature, air		16	deg C	
C-21	LITTLE WABASH RIVER			01-Nov-10	Temperature, sample		1	deg C	
C-21				01-Nov-10	Temperature, water		10.74	deg C	
C-21				01-Nov-10	Turbidity		12.57	NTU	
C-21	LITTLE WABASH RIVER			01-Nov-10	Vanadium	Dissolved	6.18	ug/l	
C-21	LITTLE WABASH RIVER			01-Nov-10	Vanadium	Total	6.21	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Aluminum	Total	80.8	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Barium	Dissolved	54.8	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Barium	Total	59.2	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Boron	Dissolved	30.6	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Boron	Total	28.2	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Calcium	Dissolved	48200	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Calcium	Total	48900	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Carbon, organic	Total	4.31	mg/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Chloride	Total	24.9	mg/l	
C-21				06-Dec-10	Dissolved oxygen (DO)		13.69	mg/l	
C-21				06-Dec-10	Dissolved oxygen saturation		94.7	%	
C-21	LITTLE WABASH RIVER			06-Dec-10	Hardness, Ca + Mg	Total	207000	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Iron	Total	330	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Magnesium	Dissolved	21000	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Magnesium	Total	20500	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Manganese	Dissolved	96.4	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Manganese	Total	113	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Nitrogen, ammonia as N	Total	0.159	mg/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Nitrogen, Kjeldahl	Total	0.589	mg/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	2.03	mg/l	
C-21				06-Dec-10	pH		8.19		
C-21	LITTLE WABASH RIVER			06-Dec-10	Phosphorus as P	Dissolved	0.074	mg/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Phosphorus as P	Total	0.12	mg/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Potassium	Dissolved	3200	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Potassium	Total	3040	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Sodium	Dissolved	10700	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Sodium	Total	9820	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Solids, Total Suspended (TSS)		4	mg/l	
C-21				06-Dec-10	Specific conductance		482	umho/cm	
C-21	LITTLE WABASH RIVER			06-Dec-10	Strontium	Dissolved	112	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Strontium	Total	109	ug/l	
C-21	LITTLE WABASH RIVER			06-Dec-10	Sulfate	Total	18.5	mg/l	
C-21				06-Dec-10	Temperature, air		-3	deg C	
C-21	LITTLE WABASH RIVER			06-Dec-10	Temperature, sample		1	deg C	
C-21				06-Dec-10	Temperature, water		0.32	deg C	
C-21				06-Dec-10	Turbidity		9.81	NTU	
RCG-1	PARADISE	1	ft	25-May-10	Alkalinity, total		160	mg/l	
RCG-1	PARADISE	1	ft	25-May-10	Chloride	Total	27.1	mg/l	
RCG-1	PARADISE	1	ft	25-May-10	Nitrogen, Kjeldahl	Total	1.12	mg/l	
RCG-1	PARADISE	1	ft	25-May-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	2.34	mg/l	
RCG-1	PARADISE	1	ft	25-May-10	Phosphorus as P	Total	0.103	mg/l	
RCG-1	PARADISE	1	ft	25-May-10	Solids, suspended, volatile		10	mg/l	
RCG-1	PARADISE	1	ft	25-May-10	Solids, Total Suspended (TSS)		10	mg/l	
RCG-1	PARADISE	1	ft	25-May-10	Temperature, sample		3	deg C	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
RCG-1	PARADISE	3	ft	25-May-10	Chlorophyll a, corrected for pheophytin	Total	59.6	ug/l	
RCG-1	PARADISE	3	ft	25-May-10	Chlorophyll a, uncorrected for pheophytin	Total	64.5	ug/l	
RCG-1	PARADISE	3	ft	25-May-10	Chlorophyll-c	Total	8.36	ug/l	
RCG-1	PARADISE	1	ft	28-Jun-10	Nitrogen, Kjeldahl	Total	0.856	mg/l	
RCG-1	PARADISE	1	ft	28-Jun-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	1.75	mg/l	
RCG-1	PARADISE	1	ft	28-Jun-10	Phosphorus as P	Total	0.188	mg/l	
RCG-1	PARADISE	1	ft	28-Jun-10	Temperature, sample		6	deg C	
RCG-1	PARADISE	2	ft	28-Jun-10	Chlorophyll a, corrected for pheophytin	Total	15.4	ug/l	
RCG-1	PARADISE	2	ft	28-Jun-10	Chlorophyll a, uncorrected for pheophytin	Total	16.2	ug/l	
RCG-1	PARADISE	2	ft	28-Jun-10	Chlorophyll-c	Total	1.75	ug/l	
RCG-1	PARADISE	1	ft	12-Jul-10	Alkalinity, total		130	mg/l	
RCG-1	PARADISE	1	ft	12-Jul-10	Chloride	Total	13.7	mg/l	
RCG-1	PARADISE	1	ft	12-Jul-10	Nitrogen, Kjeldahl	Total	1.86	mg/l	
RCG-1	PARADISE	1	ft	12-Jul-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	0.57	mg/l	
RCG-1	PARADISE	1	ft	12-Jul-10	Phosphorus as P	Total	0.275	mg/l	
RCG-1	PARADISE	1	ft	12-Jul-10	Solids, suspended, volatile		16	mg/l	
RCG-1	PARADISE	1	ft	12-Jul-10	Solids, Total Suspended (TSS)		24	mg/l	
RCG-1	PARADISE	1	ft	12-Jul-10	Temperature, sample		2	deg C	
RCG-1	PARADISE	2	ft	12-Jul-10	Chlorophyll a, corrected for pheophytin	Total	118	ug/l	
RCG-1	PARADISE	2	ft	12-Jul-10	Chlorophyll a, uncorrected for pheophytin	Total	131	ug/l	
RCG-1	PARADISE	2	ft	12-Jul-10	Chlorophyll-b	Total	2.26	ug/l	
RCG-1	PARADISE	2	ft	12-Jul-10	Chlorophyll-c	Total	16.3	ug/l	
RCG-1	PARADISE	15	ft	12-Jul-10	Alkalinity, total		140	mg/l	
RCG-1	PARADISE	15	ft	12-Jul-10	Chloride	Total	13.6	mg/l	
RCG-1	PARADISE	15	ft	12-Jul-10	Nitrogen, ammonia as N	Total	0.255	mg/l	
RCG-1	PARADISE	15	ft	12-Jul-10	Nitrogen, Kjeldahl	Total	1.17	mg/l	
RCG-1	PARADISE	15	ft	12-Jul-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	0.563	mg/l	
RCG-1	PARADISE	15	ft	12-Jul-10	Phosphorus as P	Total	0.184	mg/l	
RCG-1	PARADISE	15	ft	12-Jul-10	Solids, suspended, volatile		12	mg/l	
RCG-1	PARADISE	15	ft	12-Jul-10	Solids, Total Suspended (TSS)		34	mg/l	
RCG-1	PARADISE	15	ft	12-Jul-10	Temperature, sample		2	deg C	
RCG-1	PARADISE	1	ft	09-Aug-10	Alkalinity, total		155	mg/l	
RCG-1	PARADISE	1	ft	09-Aug-10	Chloride	Total	16	mg/l	
RCG-1	PARADISE	1	ft	09-Aug-10	Phosphorus as P	Total	0.298	mg/l	
RCG-1	PARADISE	1	ft	09-Aug-10	Solids, suspended, volatile		14	mg/l	
RCG-1	PARADISE	1	ft	09-Aug-10	Solids, Total Suspended (TSS)		20	mg/l	
RCG-1	PARADISE	1	ft	09-Aug-10	Temperature, sample		2	deg C	
RCG-1	PARADISE	2	ft	09-Aug-10	Chlorophyll a, corrected for pheophytin	Total	124	ug/l	
RCG-1	PARADISE	2	ft	09-Aug-10	Chlorophyll a, uncorrected for pheophytin	Total	134	ug/l	
RCG-1	PARADISE	2	ft	09-Aug-10	Chlorophyll-c	Total	15	ug/l	
RCG-1	PARADISE	15	ft	09-Aug-10	Alkalinity, total		155	mg/l	
RCG-1	PARADISE	15	ft	09-Aug-10	Chloride	Total	15.9	mg/l	
RCG-1	PARADISE	15	ft	09-Aug-10	Phosphorus as P	Total	0.318	mg/l	
RCG-1	PARADISE	15	ft	09-Aug-10	Solids, suspended, volatile		10	mg/l	
RCG-1	PARADISE	15	ft	09-Aug-10	Solids, Total Suspended (TSS)		24	mg/l	
RCG-1	PARADISE	15	ft	09-Aug-10	Temperature, sample		2	deg C	
RCG-1	PARADISE	1	ft	27-Sep-10	Alkalinity, total		150	mg/l	
RCG-1	PARADISE	1	ft	27-Sep-10	Chloride	Total	14.7	mg/l	
RCG-1	PARADISE	1	ft	27-Sep-10	Phosphorus as P	Total	0.245	mg/l	
RCG-1	PARADISE	1	ft	27-Sep-10	Solids, suspended, volatile		13	mg/l	
RCG-1	PARADISE	1	ft	27-Sep-10	Solids, Total Suspended (TSS)		29	mg/l	
RCG-1	PARADISE	1	ft	27-Sep-10	Temperature, sample		4	deg C	
RCG-1	PARADISE	2	ft	27-Sep-10	Chlorophyll a, corrected for pheophytin	Total	89.7	ug/l	
RCG-1	PARADISE	2	ft	27-Sep-10	Chlorophyll a, uncorrected for pheophytin	Total	113	ug/l	
RCG-1	PARADISE	2	ft	27-Sep-10	Chlorophyll-c	Total	10.2	ug/l	
RCG-1	PARADISE	14.5	ft	27-Sep-10	Alkalinity, total		150	mg/l	
RCG-1	PARADISE	14.5	ft	27-Sep-10	Chloride	Total	14.6	mg/l	
RCG-1	PARADISE	14.5	ft	27-Sep-10	Nitrogen, Kjeldahl	Total	1.04	mg/l	
RCG-1	PARADISE	14.5	ft	27-Sep-10	Phosphorus as P	Total	0.257	mg/l	
RCG-1	PARADISE	14.5	ft	27-Sep-10	Solids, suspended, volatile		17	mg/l	
RCG-1	PARADISE	14.5	ft	27-Sep-10	Solids, Total Suspended (TSS)		43	mg/l	
RCG-1	PARADISE	14.5	ft	27-Sep-10	Temperature, sample		4	deg C	
RCG-1	PARADISE	1	ft	11-Oct-10	Alkalinity, total		160	mg/l	
RCG-1	PARADISE	1	ft	11-Oct-10	Chloride	Total	15.2	mg/l	
RCG-1	PARADISE	1	ft	11-Oct-10	Nitrogen, Kjeldahl	Total	1.11	mg/l	
RCG-1	PARADISE	1	ft	11-Oct-10	Phosphorus as P	Total	0.149	mg/l	
RCG-1	PARADISE	1	ft	11-Oct-10	Solids, suspended, volatile		10	mg/l	
RCG-1	PARADISE	1	ft	11-Oct-10	Solids, Total Suspended (TSS)		16	mg/l	
RCG-1	PARADISE	1	ft	11-Oct-10	Temperature, sample		2	deg C	
RCG-1	PARADISE	15	ft	11-Oct-10	Alkalinity, total		155	mg/l	
RCG-1	PARADISE	15	ft	11-Oct-10	Chloride	Total	15.1	mg/l	
RCG-1	PARADISE	15	ft	11-Oct-10	Nitrogen, Kjeldahl	Total	1.09	mg/l	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
RCG-1	PARADISE	15	ft	11-Oct-10	Phosphorus as P	Total	0.178	mg/l	
RCG-1	PARADISE	15	ft	11-Oct-10	Solids, suspended, volatile		11	mg/l	
RCG-1	PARADISE	15	ft	11-Oct-10	Solids, Total Suspended (TSS)		26	mg/l	
RCG-1	PARADISE	15	ft	11-Oct-10	Temperature, sample		2	deg C	
RCG-2	PARADISE	1	ft	25-May-10	Alkalinity, total		155	mg/l	
RCG-2	PARADISE	1	ft	25-May-10	Chloride	Total	26	mg/l	
RCG-2	PARADISE	1	ft	25-May-10	Nitrogen, Kjeldahl	Total	1.11	mg/l	
RCG-2	PARADISE	1	ft	25-May-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	2.64	mg/l	
RCG-2	PARADISE	1	ft	25-May-10	Phosphorus as P	Total	0.092	mg/l	
RCG-2	PARADISE	1	ft	25-May-10	Temperature, sample		3	deg C	
RCG-2	PARADISE	3	ft	25-May-10	Chlorophyll a, corrected for pheophytin	Total	60.1	ug/l	
RCG-2	PARADISE	3	ft	25-May-10	Chlorophyll a, uncorrected for pheophytin	Total	63.1	ug/l	
RCG-2	PARADISE	3	ft	25-May-10	Chlorophyll-b	Total	1.37	ug/l	
RCG-2	PARADISE	3	ft	25-May-10	Chlorophyll-c	Total	7.62	ug/l	
RCG-2	PARADISE	1	ft	28-Jun-10	Nitrogen, Kjeldahl	Total	0.898	mg/l	
RCG-2	PARADISE	1	ft	28-Jun-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	1.87	mg/l	
RCG-2	PARADISE	1	ft	28-Jun-10	Phosphorus as P	Total	0.177	mg/l	
RCG-2	PARADISE	1	ft	28-Jun-10	Temperature, sample		6	deg C	
RCG-2	PARADISE	2	ft	28-Jun-10	Chlorophyll a, corrected for pheophytin	Total	37.4	ug/l	
RCG-2	PARADISE	2	ft	28-Jun-10	Chlorophyll a, uncorrected for pheophytin	Total	39.4	ug/l	
RCG-2	PARADISE	2	ft	28-Jun-10	Chlorophyll-b	Total	1.75	ug/l	
RCG-2	PARADISE	2	ft	28-Jun-10	Chlorophyll-c	Total	3.27	ug/l	
RCG-2	PARADISE	1	ft	12-Jul-10	Alkalinity, total		140	mg/l	
RCG-2	PARADISE	1	ft	12-Jul-10	Chloride	Total	14.7	mg/l	
RCG-2	PARADISE	1	ft	12-Jul-10	Nitrogen, ammonia as N	Total	0.174	mg/l	
RCG-2	PARADISE	1	ft	12-Jul-10	Nitrogen, Kjeldahl	Total	1.84	mg/l	
RCG-2	PARADISE	1	ft	12-Jul-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	0.415	mg/l	
RCG-2	PARADISE	1	ft	12-Jul-10	Phosphorus as P	Total	0.276	mg/l	
RCG-2	PARADISE	1	ft	12-Jul-10	Solids, suspended, volatile		15	mg/l	
RCG-2	PARADISE	1	ft	12-Jul-10	Solids, Total Suspended (TSS)		29	mg/l	
RCG-2	PARADISE	1	ft	12-Jul-10	Temperature, sample		2	deg C	
RCG-2	PARADISE	2	ft	12-Jul-10	Chlorophyll a, corrected for pheophytin	Total	127	ug/l	
RCG-2	PARADISE	2	ft	12-Jul-10	Chlorophyll a, uncorrected for pheophytin	Total	167	ug/l	
RCG-2	PARADISE	2	ft	12-Jul-10	Chlorophyll-b	Total	9.57	ug/l	
RCG-2	PARADISE	2	ft	12-Jul-10	Chlorophyll-c	Total	24.2	ug/l	
RCG-2	PARADISE	1	ft	09-Aug-10	Alkalinity, total		150	mg/l	
RCG-2	PARADISE	1	ft	09-Aug-10	Chloride	Total	16.3	mg/l	
RCG-2	PARADISE	1	ft	09-Aug-10	Nitrogen, Kjeldahl	Total	1.12	mg/l	
RCG-2	PARADISE	1	ft	09-Aug-10	Phosphorus as P	Total	0.333	mg/l	
RCG-2	PARADISE	1	ft	09-Aug-10	Solids, suspended, volatile		13	mg/l	
RCG-2	PARADISE	1	ft	09-Aug-10	Solids, Total Suspended (TSS)		24	mg/l	
RCG-2	PARADISE	1	ft	09-Aug-10	Temperature, sample		2	deg C	
RCG-2	PARADISE	2	ft	09-Aug-10	Chlorophyll a, corrected for pheophytin	Total	110	ug/l	
RCG-2	PARADISE	2	ft	09-Aug-10	Chlorophyll a, uncorrected for pheophytin	Total	116	ug/l	
RCG-2	PARADISE	2	ft	09-Aug-10	Chlorophyll-c	Total	11.8	ug/l	
RCG-2	PARADISE	1	ft	27-Sep-10	Alkalinity, total		155	mg/l	
RCG-2	PARADISE	1	ft	27-Sep-10	Chloride	Total	15.5	mg/l	
RCG-2	PARADISE	1	ft	27-Sep-10	Chlorophyll a, corrected for pheophytin	Total	113	ug/l	
RCG-2	PARADISE	1	ft	27-Sep-10	Chlorophyll a, uncorrected for pheophytin	Total	131	ug/l	
RCG-2	PARADISE	1	ft	27-Sep-10	Chlorophyll-c	Total	13.2	ug/l	
RCG-2	PARADISE	1	ft	27-Sep-10	Nitrogen, Kjeldahl	Total	1.22	mg/l	
RCG-2	PARADISE	1	ft	27-Sep-10	Phosphorus as P	Total	0.347	mg/l	
RCG-2	PARADISE	1	ft	27-Sep-10	Solids, suspended, volatile		25	mg/l	
RCG-2	PARADISE	1	ft	27-Sep-10	Solids, Total Suspended (TSS)		141	mg/l	
RCG-2	PARADISE	1	ft	27-Sep-10	Temperature, sample		4	deg C	
RCG-2	PARADISE	1	ft	11-Oct-10	Alkalinity, total		155	mg/l	
RCG-2	PARADISE	1	ft	11-Oct-10	Chloride	Total	15.4	mg/l	
RCG-2	PARADISE	1	ft	11-Oct-10	Nitrogen, Kjeldahl	Total	1.17	mg/l	
RCG-2	PARADISE	1	ft	11-Oct-10	Phosphorus as P	Total	0.176	mg/l	
RCG-2	PARADISE	1	ft	11-Oct-10	Solids, suspended, volatile		9	mg/l	
RCG-2	PARADISE	1	ft	11-Oct-10	Solids, Total Suspended (TSS)		23	mg/l	
RCG-2	PARADISE	1	ft	11-Oct-10	Temperature, sample		2	deg C	
RCG-3	PARADISE	1	ft	25-May-10	Alkalinity, total		220	mg/l	
RCG-3	PARADISE	1	ft	25-May-10	Chloride	Total	28.8	mg/l	
RCG-3	PARADISE	1	ft	25-May-10	Nitrogen, Kjeldahl	Total	0.832	mg/l	
RCG-3	PARADISE	1	ft	25-May-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	4.9	mg/l	
RCG-3	PARADISE	1	ft	25-May-10	Phosphorus as P	Total	0.139	mg/l	
RCG-3	PARADISE	1	ft	25-May-10	Solids, suspended, volatile		11	mg/l	
RCG-3	PARADISE	1	ft	25-May-10	Solids, Total Suspended (TSS)		34	mg/l	
RCG-3	PARADISE	1	ft	25-May-10	Temperature, sample		3	deg C	

StationCode	WaterbodyName	Sample Depth	Sample Depth Units	CollectionDate	Analyte	SampleFraction	Result	ResultUnits	Qualifier
RCG-3	PARADISE	2	ft	25-May-10	Chlorophyll a, corrected for pheophytin	Total	50.7	ug/l	
RCG-3	PARADISE	2	ft	25-May-10	Chlorophyll a, uncorrected for pheophytin	Total	53.4	ug/l	
RCG-3	PARADISE	2	ft	25-May-10	Chlorophyll-b	Total	2.31	ug/l	
RCG-3	PARADISE	2	ft	25-May-10	Chlorophyll-c	Total	5.65	ug/l	
RCG-3	PARADISE	1	ft	28-Jun-10	Nitrogen, Kjeldahl	Total	1.09	mg/l	
RCG-3	PARADISE	1	ft	28-Jun-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	2.08	mg/l	
RCG-3	PARADISE	1	ft	28-Jun-10	Phosphorus as P	Total	0.197	mg/l	
RCG-3	PARADISE	1	ft	28-Jun-10	Temperature, sample		6	deg C	
RCG-3	PARADISE	2	ft	28-Jun-10	Chlorophyll a, corrected for pheophytin	Total	72.1	ug/l	
RCG-3	PARADISE	2	ft	28-Jun-10	Chlorophyll a, uncorrected for pheophytin	Total	76.9	ug/l	
RCG-3	PARADISE	2	ft	28-Jun-10	Chlorophyll-b	Total	3	ug/l	
RCG-3	PARADISE	2	ft	28-Jun-10	Chlorophyll-c	Total	7.32	ug/l	
RCG-3	PARADISE	1	ft	12-Jul-10	Alkalinity, total		160	mg/l	
RCG-3	PARADISE	1	ft	12-Jul-10	Chloride	Total	19.5	mg/l	
RCG-3	PARADISE	1	ft	12-Jul-10	Chlorophyll a, corrected for pheophytin	Total	208	ug/l	
RCG-3	PARADISE	1	ft	12-Jul-10	Chlorophyll a, uncorrected for pheophytin	Total	224	ug/l	
RCG-3	PARADISE	1	ft	12-Jul-10	Chlorophyll-b	Total	17.1	ug/l	
RCG-3	PARADISE	1	ft	12-Jul-10	Chlorophyll-c	Total	35	ug/l	
RCG-3	PARADISE	1	ft	12-Jul-10	Nitrogen, Kjeldahl	Total	1.76	mg/l	
RCG-3	PARADISE	1	ft	12-Jul-10	Nitrogen, Nitrite (NO2) + Nitrate (NO3) as N	Total	0.676	mg/l	
RCG-3	PARADISE	1	ft	12-Jul-10	Phosphorus as P	Total	0.293	mg/l	
RCG-3	PARADISE	1	ft	12-Jul-10	Solids, suspended, volatile		25	mg/l	
RCG-3	PARADISE	1	ft	12-Jul-10	Solids, Total Suspended (TSS)		101	mg/l	
RCG-3	PARADISE	1	ft	12-Jul-10	Temperature, sample		2	deg C	
RCG-3	PARADISE	1	ft	09-Aug-10	Alkalinity, total		175	mg/l	
RCG-3	PARADISE	1	ft	09-Aug-10	Chloride	Total	18.8	mg/l	
RCG-3	PARADISE	1	ft	09-Aug-10	Chlorophyll a, corrected for pheophytin	Total	42.7	ug/l	
RCG-3	PARADISE	1	ft	09-Aug-10	Chlorophyll a, uncorrected for pheophytin	Total	45.5	ug/l	
RCG-3	PARADISE	1	ft	09-Aug-10	Chlorophyll-b	Total	1.12	ug/l	
RCG-3	PARADISE	1	ft	09-Aug-10	Chlorophyll-c	Total	6.27	ug/l	
RCG-3	PARADISE	1	ft	09-Aug-10	Nitrogen, Kjeldahl	Total	1.6	mg/l	
RCG-3	PARADISE	1	ft	09-Aug-10	Phosphorus as P	Total	0.527	mg/l	
RCG-3	PARADISE	1	ft	09-Aug-10	Solids, suspended, volatile		27	mg/l	
RCG-3	PARADISE	1	ft	09-Aug-10	Solids, Total Suspended (TSS)		136	mg/l	
RCG-3	PARADISE	1	ft	09-Aug-10	Temperature, sample		2	deg C	
RCG-3	PARADISE	1	ft	27-Sep-10	Alkalinity, total		145	mg/l	
RCG-3	PARADISE	1	ft	27-Sep-10	Chloride	Total	14.9	mg/l	
RCG-3	PARADISE	1	ft	27-Sep-10	Chlorophyll a, corrected for pheophytin	Total	102	ug/l	
RCG-3	PARADISE	1	ft	27-Sep-10	Chlorophyll a, uncorrected for pheophytin	Total	115	ug/l	
RCG-3	PARADISE	1	ft	27-Sep-10	Chlorophyll-c	Total	14	ug/l	
RCG-3	PARADISE	1	ft	27-Sep-10	Nitrogen, Kjeldahl	Total	1.11	mg/l	
RCG-3	PARADISE	1	ft	27-Sep-10	Phosphorus as P	Total	0.261	mg/l	
RCG-3	PARADISE	1	ft	27-Sep-10	Solids, suspended, volatile		16	mg/l	
RCG-3	PARADISE	1	ft	27-Sep-10	Solids, Total Suspended (TSS)		37	mg/l	
RCG-3	PARADISE	1	ft	27-Sep-10	Temperature, sample		4	deg C	
RCG-3	PARADISE	1	ft	11-Oct-10	Alkalinity, total		185	mg/l	
RCG-3	PARADISE	1	ft	11-Oct-10	Chloride	Total	20	mg/l	
RCG-3	PARADISE	1	ft	11-Oct-10	Nitrogen, Kjeldahl	Total	1.51	mg/l	
RCG-3	PARADISE	1	ft	11-Oct-10	Phosphorus as P	Total	0.299	mg/l	
RCG-3	PARADISE	1	ft	11-Oct-10	Solids, suspended, volatile		23	mg/l	
RCG-3	PARADISE	1	ft	11-Oct-10	Solids, Total Suspended (TSS)		111	mg/l	
RCG-3	PARADISE	1	ft	11-Oct-10	Temperature, sample		2	deg C	

Appendix D

Public Comments and Responsiveness Summary

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Appendix - D

Responsiveness Summary

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

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

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

What is a TMDL?

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

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

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

Background

The 2018 Cycle TMDLs/ WPPs are as follows:

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

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

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

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

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

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

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

- Downstream end:
  - Confluence of Kickapoo Creek.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Public Meetings

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

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

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

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

Questions and Comments Received During Public Notice

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Response – This information has been added to Section 5.5.

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

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

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

Response – This information has been added to Section 9.6.

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

Response – This information has been added to Section 9.6.

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

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

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

Response – This information has been added to Section 9.5.

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

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

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

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

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

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

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

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

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

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

2010: Scott Park Drainage Improvements implemented

2010: Second Street Detention Basin constructed

2012: Dredging of Healey Street Basin

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

2018 – 2020: Bristol Park Basin constructed

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

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

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

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

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

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

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

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

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

City of Champaign Continuous Boneyard Creek Management Projects

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

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

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

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

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

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

- Channel repairs from human, animal, or natural damages

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Appendix E

QUAL2K Model Files

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QUAL2K FORTRAN

Stream Water Quality Model

Steve Chapra, Hua Tao and Greg Pelletier

Version 2.12b1

System ID:		
River name	Little Wabash River	
Saved file name	Q2K Little Wabash Baseline	
Directory where file saved	PA 2022\Little Wabash River & Lake Paradise	
Month	5	
Day	29	
Year	2001	
Local time hours to UTC	-6	
Daylight savings time	Yes	
Calculation:		
Calculation step	0.1	hours
Final time	30	day
Solution method (integration)	Euler	
Solution method (pH)	Brent	
Time zone	Central Standard Time	
Program determined calc step	0.093750	hours
Time of last calculation	0.02	minutes
Time of sunrise	5:29 AM	
Time of solar noon	12:51 PM	
Time of sunset	8:12 PM	
Photoperiod	14.71	hours

Avg Temp (C) = 18.94

Avg Velocity (m/s) = 0.2496

Avg DO (mg/L) = 5.90

Avg reaeration (1/d) = 42

Min DO (mg/L) = **4.38**

Depth (m) = 0.20

Bottom Algae (g/m2) = 123.15

TN (mg/L) = 1.5

TP (mg/L) = 0.12

Max DO (mg/L) 7.90

TP Multiplier:

TP Loads (kg/d):
Baseline = 2.3
TMDL =

TN Multiplier:

TN Loads (kg/d):
Baseline = 30.8
TMDL =

QUAL2K

Stream Water Quality Model

Little Wabash River (5/29/2001)

Headwater Data:

Number of Headwaters	1

Headwater 0 (Mainstem)

Headwater label	Reach No	Flow	Elevation	Weir				Rating Curves				Manning Formula						Prescribed
		Rate		Weir	Height	Width	adam	bdam	Velocity		Depth		Channel	Manning	Bot Width	Side	Side	Dispersion
		(m^3/s)	(m)	Type	(m)	(m)			Coefficient	Exponent	Coefficient	Exponent	Slope	n	m	Slope	Slope	m2/s
Mainstem headwater	1	0.20286	222.740				1.2500	0.9000					0.0015	0.0500	4.00	0.50	0.50	0.00

Water Quality Constituents	Units	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM
Temperature	C	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30	18.30
Conductivity	umhos	866.90	867.70	869.40	869.80	871.00	871.80	872.00	872.00	872.10	872.50	873.10	871.80	871.80	869.90	866.50	864.90	862.00	858.10	858.10	856.70	857.90	860.60	860.70	864.30
Inorganic Solids	mgD/L	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00
Dissolved Oxygen	mg/L	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
CBODslow	mgO2/L	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
CBODfast	mgO2/L	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60	4.60
Organic Nitrogen	ugN/L	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00	600.00
NH4-Nitrogen	ugN/L	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00
NO3-Nitrogen	ugN/L	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00	1100.00
Organic Phosphorus	ugP/L	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Inorganic Phosphorus (SRP)	ugP/L	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00
Phytoplankton	ugA/L	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00	106.00
Internal Nitrogen (INP)	ugN/L	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Internal Phosphorus (IPP)	ugP/L	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Detritus (POM)	mgD/L	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03
Pathogen	cfu/100 mL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkalinity	mgCaCO3/L	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00
Constituent i		400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00
Constituent ii																									
Constituent iii																									
pH	s.u.	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20

QUAL2K

Stream Water Quality Model

Little Wabash River (5/29/2001)

Reach Data:

Reach for diel plot	1					
Element for diel plot	1	Reach	Headwater	Reach		
Reach	Downstream	Number	Reach	length	Downstream	
Label	end of reach label			(km)	Latitude	Longitude
Mainstem headwater	Reach 1	1	Yes	1.60	39.42	88.43

Location		Element	Elevation		Downstream					
Upstream	Downstream	Number	Upstream	Downstream	Latitude			Longitude		
(km)	(km)	>=1	(m)	(m)	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
1.600	0.000	10	222.740	222.740	39.00	25	1	88.00	26	0.601414

Hydraulic Model (Weir Overrides Manning Formula; Manning Formula Override Rating Curves)												
Weir					Rating Curves				Manning Formula				
Weir	Height	Width	adam	bdam	Velocity		Depth		Channel	Manning	Bot Width	Side	Side
Type	(m)	(m)			Coefficient	Exponent	Coefficient	Exponent	Slope	n	m	Slope	Slope
			1.2500	0.9000					0.0015	0.0500	4.00	0.5000	0.5000

Prescribed	Bottom	Bottom	Prescribed	Prescribed	Prescribed	Prescribed	Prescribed
Dispersion	Algae	SOD	SOD	CH4 flux	NH4 flux	Inorg P flux	Evap
m2/s	Coverage	Coverage	gO2/m2/d	gO2/m2/d	mgN/m2/d	mgP/m2/d	mm/d
	90.00%	100.00%	28.00				

QUAL2K

Stream Water Quality Model

Little Wabash River (5/29/2001)

Water Column Rates

Parameter	*Value*	*Units*	*Symbol*
Stoichiometry:			
Carbon	40	gC	gC
Nitrogen	7.2	gN	gN
Phosphorus	1	gP	gP
Dry weight	100	gD	gD
Chlorophyll	1	gA	gA
Inorganic suspended solids:			
Settling velocity	0.1	m/d	v_i
Oxygen:			
Reaeration model	Internal		
User reaeration coefficient α	3.93		α
User reaeration coefficient β	0.5		β
User reaeration coefficient γ	1.5		γ
Temp correction	1.024		θ_a
Reaeration wind effect	None		
O2 for carbon oxidation	2.69	gO_2/gC	r_{oc}
O2 for NH4 nitrification	4.57	gO_2/gN	r_{on}
Oxygen inhib model CBOD oxidation	Exponential		
Oxygen inhib parameter CBOD oxidation	0.60	L/mgO2	K_{socf}
Oxygen inhib model nitrification	Exponential		
Oxygen inhib parameter nitrification	0.60	L/mgO2	K_{sona}
Oxygen enhance model denitrification	Exponential		
Oxygen enhance parameter denitrification	0.60	L/mgO2	K_{sodn}
Oxygen inhib model phyto resp	Exponential		
Oxygen inhib parameter phyto resp	0.60	L/mgO2	K_{sop}
Oxygen enhance model bot alg resp	Exponential		
Oxygen enhance parameter bot alg resp	0.60	L/mgO2	K_{sob}
Slow CBOD:			
Hydrolysis rate	0	/d	k_{hc}
Temp correction	1.07		θ_{hc}
Oxidation rate	0	/d	k_{dcs}
Temp correction	1.047		θ_{dcs}
Fast CBOD:			
Oxidation rate	2	/d	k_{dc}
Temp correction	1.047		θ_{dc}
Organic N:			
Hydrolysis	0.015	/d	k_{hn}
Temp correction	1.07		θ_{hn}

Settling velocity	0.0005	m/d	v_{on}
Ammonium:			
Nitrification	0.08	/d	k_{na}
Temp correction	1.07		θ_{na}
Nitrate:			
Denitrification	0.1	/d	k_{dn}
Temp correction	1.07		θ_{dn}
Sed denitrification transfer coeff	0.8	m/d	v_{di}
Temp correction	1.07		θ_{di}
Organic P:			
Hydrolysis	0.03	/d	k_{hp}
Temp correction	1.07		θ_{hp}
Settling velocity	0.001	m/d	v_{op}
Inorganic P:			
Settling velocity	0.8	m/d	v_{ip}
Inorganic P sorption coefficient	1000	L/mgD	K_{dpi}
Sed P oxygen attenuation half sat constant	1	mgO_2/L	k_{spi}
Phytoplankton:			
Max Growth rate	0	/d	k_{gp}
Temp correction	1.07		θ_{gp}
Respiration rate	0.15	/d	k_{rp}
Temp correction	1.07		θ_{rp}
Excretion rate	0.3	/d	k_{ep}
Temp correction	1.07		θ_{dp}
Death rate	45	/d	k_{dp}
Temp correction	1.07		θ_{dp}
External Nitrogen half sat constant	100	ugN/L	k_{sPp}
External Phosphorus half sat constant	10	ugP/L	k_{sNp}
Inorganic carbon half sat constant	1.30E-05	moles/L	k_{sCp}
Light model	Half saturation		
Light constant	250	langleys/d	K_{Lp}
Ammonia preference	25	ugN/L	k_{hnxp}
Subsistence quota for nitrogen	0	mgN/mgA	q_{0Np}
Subsistence quota for phosphorus	0	mgP/mgA	q_{0Pp}
Maximum uptake rate for nitrogen	0	mgN/mgA/d	ρ_{mNp}
Maximum uptake rate for phosphorus	0	mgP/mgA/d	ρ_{mPp}
Internal nitrogen half sat constant	0	mgN/mgA	K_{qNp}
Internal phosphorus half sat constant	0	mgP/mgA	K_{qPp}
Settling velocity	0	m/d	v_a
Bottom Algae:			
Growth model	Zero-order		
Max Growth rate	600	$mgA/m^2/d$ or /d	C_{gb}
Temp correction	1.07		θ_{gb}

First-order model carrying capacity	1000	mgA/m^2	$a_{b,max}$
Respiration rate	1	/d	k_{rb}
Temp correction	1.07		θ_{rb}
Excretion rate	0.12	/d	k_{eb}
Temp correction	1.07		θ_{db}
Death rate	0.1	/d	k_{db}
Temp correction	1.07		θ_{db}
External nitrogen half sat constant	300	ugN/L	k_{sPb}
External phosphorus half sat constant	100	ugP/L	k_{sNb}
Inorganic carbon half sat constant	1.30E-05	moles/L	k_{sCb}
Light model	Half saturation		
Light constant	100	langleys/d	K_{Lb}
Ammonia preference	25	ugN/L	k_{hnxb}
Subsistence quota for nitrogen	0.72	mgN/mgA	q_{0N}
Subsistence quota for phosphorus	0.1	mgP/mgA	q_{0P}
Maximum uptake rate for nitrogen	72	mgN/mgA/d	ρ_{mN}
Maximum uptake rate for phosphorus	5	mgP/mgA/d	ρ_{mP}
Internal nitrogen half sat constant	0.9	mgN/mgA	K_{qN}
Internal phosphorus half sat constant	0.13	mgP/mgA	K_{qP}
Detritus (POM):			
Dissolution rate	0.23	/d	k_{dt}
Temp correction	1.07		θ_{dt}
Fraction of dissolution to fast CBOD	1.00		F_f
Settling velocity	0.008	m/d	v_{dt}
Pathogens:			
Decay rate	0.8	/d	k_{dx}
Temp correction	1.07		θ_{dx}
Settling velocity	1	m/d	v_x
Light efficiency factor	1.00		α_{path}
pH:			
Partial pressure of carbon dioxide	347	ppm	p_{CO2}
Constituent i			
First-order reaction rate	0	/d	
Temp correction	1		θ_{dx}
Settling velocity	0	m/d	v_{dt}
Constituent ii			
First-order reaction rate	0	/d	
Temp correction	1		θ_{dx}
Settling velocity	0	m/d	v_{dt}
Constituent iii			
First-order reaction rate	0	/d	
Temp correction	1		θ_{dx}
Settling velocity	0	m/d	v_{dt}

Appendix F

SLAM Model Files

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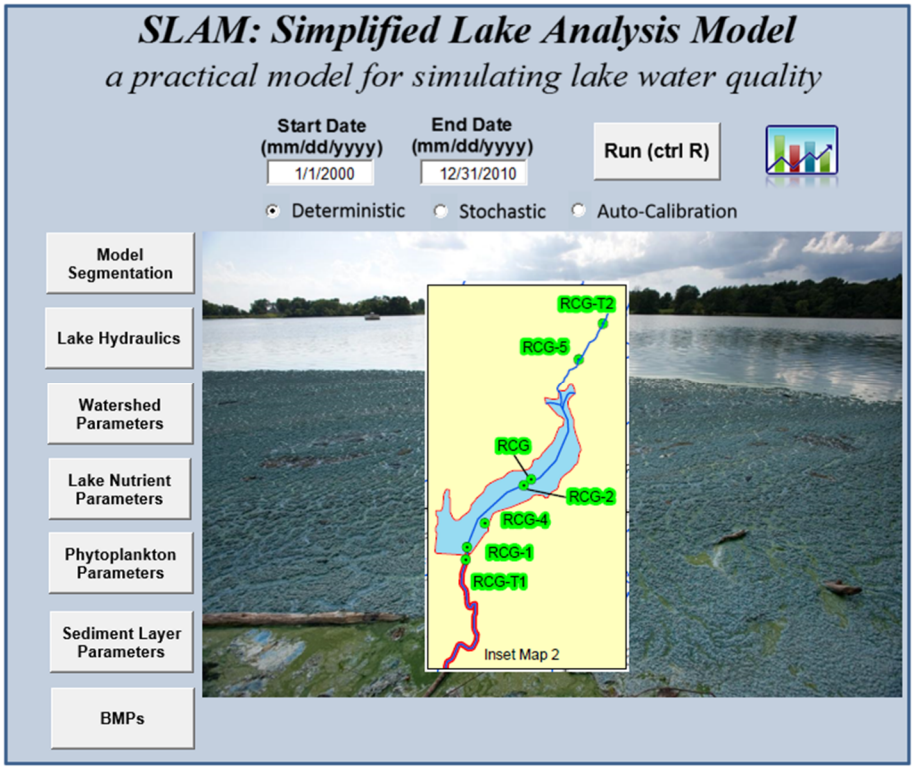
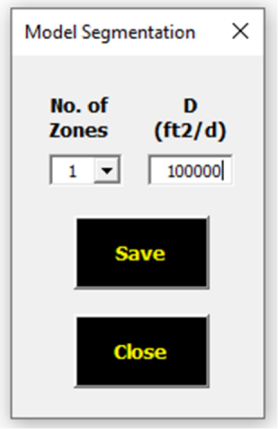
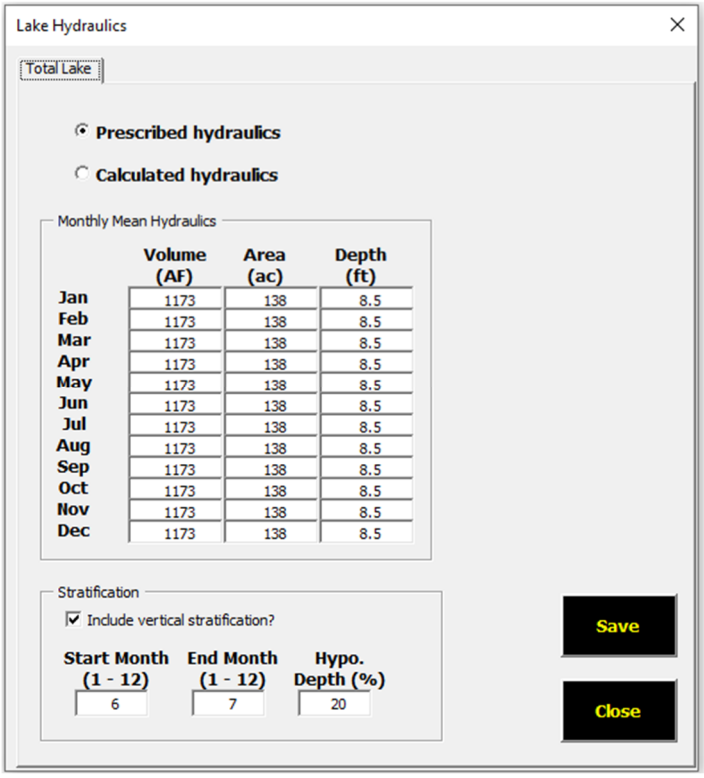
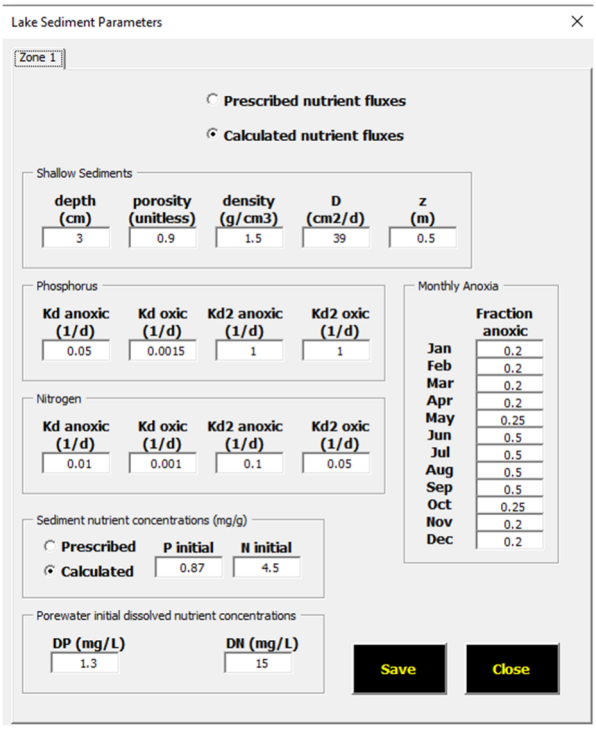
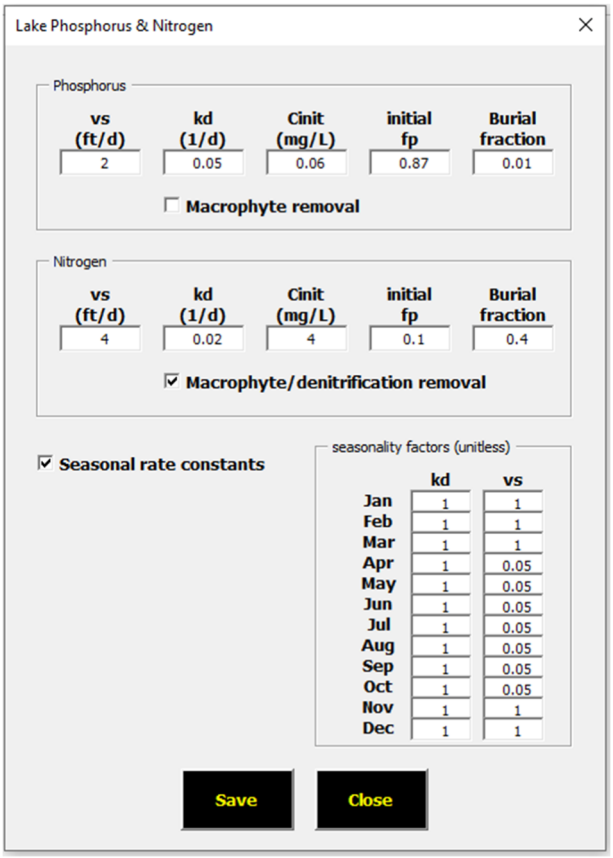
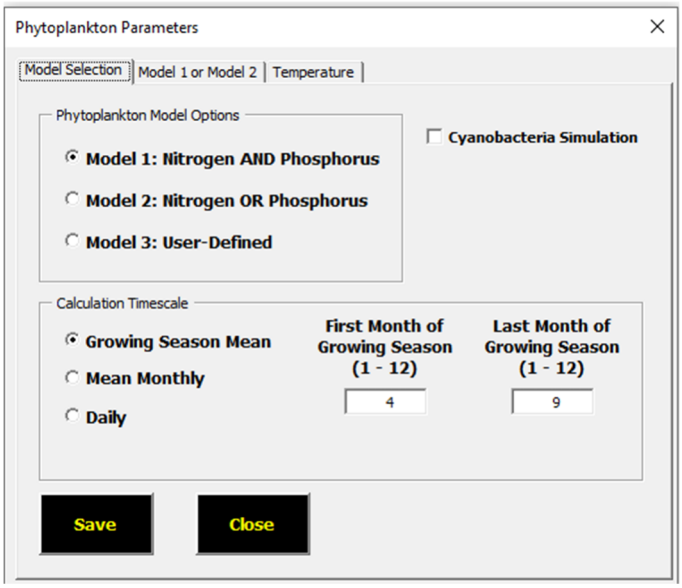

SLAM: Simplified Lake Analysis Model
a practical model for simulating lake water quality
Start Date (mm/dd/yyyy)
1/1/2000
End Date (mm/dd/yyyy)
12/31/2010
Run (ctrl R)
Deterministic
Stochastic
Auto-Calibration
Model Segmentation
Lake Hydraulics
Watershed Parameters
Lake Nutrient Parameters
Phytoplankton Parameters
Sediment Layer Parameters
BMPs
RCG-T2
RCG-5
RCG
RCG-2
RCG-4
RCG-1
RCG-T1
Inset Map 2

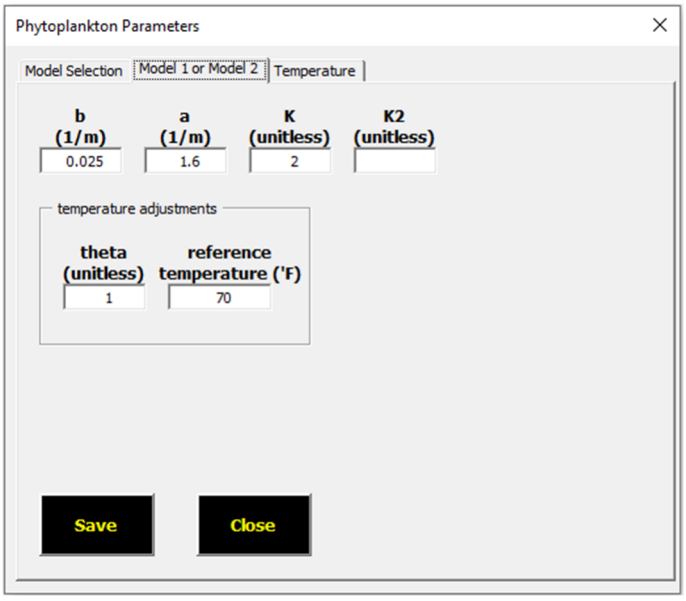

Model Segmentation
No. of Zones
D (ft2/d)
1
100000
Save
Close

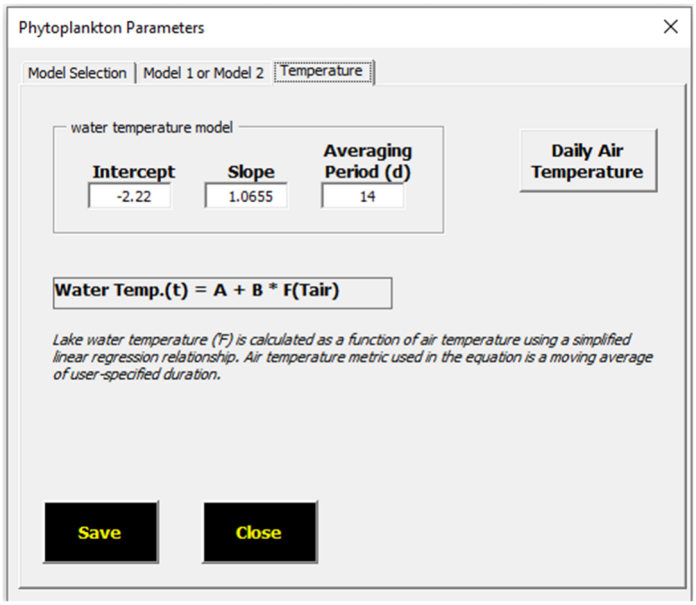

Lake Hydraulics
Total Lake
Prescribed hydraulics
Calculated hydraulics
Monthly Mean Hydraulics
Volume (AF)
Area (ac)
Depth (ft)
Jan 1173 138 8.5
Feb 1173 138 8.5
Mar 1173 138 8.5
Apr 1173 138 8.5
May 1173 138 8.5
Jun 1173 138 8.5
Jul 1173 138 8.5
Aug 1173 138 8.5
Sep 1173 138 8.5
Oct 1173 138 8.5
Nov 1173 138 8.5
Dec 1173 138 8.5
Stratification
Include vertical stratification?
Start Month (1 - 12)
End Month (1 - 12)
Hypo. Depth (%)
6
7
20
Save
Close

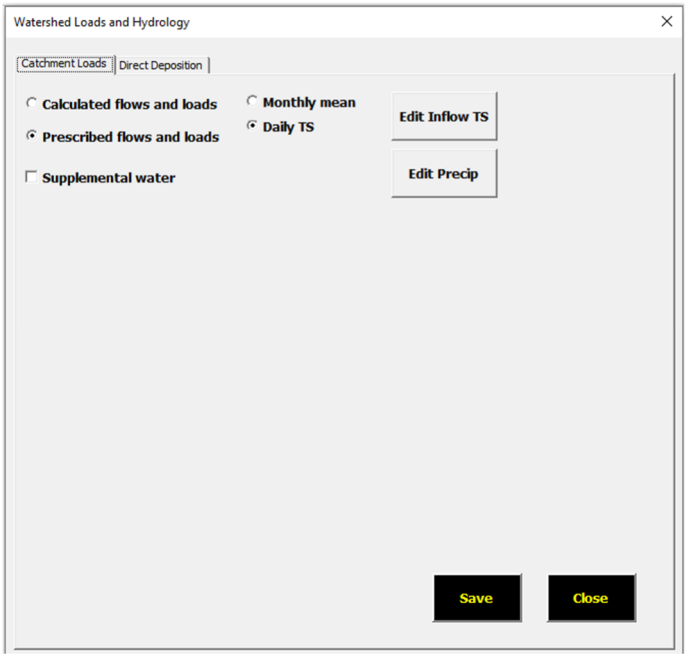

Lake Sediment Parameters
Zone 1
Prescribed nutrient fluxes
Calculated nutrient fluxes
Shallow Sediments
depth (cm) 3
porosity (unitless) 0.9
density (g/cm3) 1.5
D (cm2/d) 39
z (m) 0.5
Phosphorus
Kd anoxic (1/d) 0.05
Kd oxic (1/d) 0.0015
Kd2 anoxic (1/d) 1
Kd2 oxic (1/d) 1
Nitrogen
Kd anoxic (1/d) 0.01
Kd oxic (1/d) 0.001
Kd2 anoxic (1/d) 0.1
Kd2 oxic (1/d) 0.05
Monthly Anoxia
Fraction anoxic
Jan 0.2
Feb 0.2
Mar 0.2
Apr 0.2
May 0.25
Jun 0.5
Jul 0.5
Aug 0.5
Sep 0.5
Oct 0.25
Nov 0.2
Dec 0.2
Sediment nutrient concentrations (mg/g)
Prescribed
Calculated
P initial 0.87
N initial 4.5
Porewater initial dissolved nutrient concentrations
DP (mg/L) 1.3
DN (mg/L) 15
Save
Close


Lake Phosphorus & Nitrogen
Phosphorus
vs (ft/d) 2
kd (1/d) 0.05
Cinit (mg/L) 0.06
initial fp 0.87
Burial fraction 0.01
Macrophyte removal
Nitrogen
vs (ft/d) 4
kd (1/d) 0.02
Cinit (mg/L) 4
initial fp 0.1
Burial fraction 0.4
Macrophyte/denitrification removal
Seasonal rate constants
seasonality factors (unitless)
kd vs
Jan 1 1
Feb 1 1
Mar 1 1
Apr 1 0.05
May 1 0.05
Jun 1 0.05
Jul 1 0.05
Aug 1 0.05
Sep 1 0.05
Oct 1 0.05
Nov 1 1
Dec 1 1
Save
Close


Phytoplankton Parameters
Model Selection
Model 1 or Model 2
Temperature
Phytoplankton Model Options
Model 1: Nitrogen AND Phosphorus
Model 2: Nitrogen OR Phosphorus
Model 3: User-Defined
Cyanobacteria Simulation
Calculation Timescale
Growing Season Mean
Mean Monthly
Daily
First Month of Growing Season (1 - 12)
4
Last Month of Growing Season (1 - 12)
9
Save
Close


Phytoplankton Parameters
Model Selection
Model 1 or Model 2
Temperature
b (1/m)
0.025
a (1/m)
1.6
K (unitless)
2
K2 (unitless)
temperature adjustments
theta (unitless)
1
reference temperature ('F)
70
Save
Close


Phytoplankton Parameters
Model Selection
Model 1 or Model 2
Temperature
water temperature model
Intercept
-2.22
Slope
1.0655
Averaging Period (d)
14
Daily Air Temperature
Water Temp.(t) = A + B * F(Tair)
Lake water temperature (F) is calculated as a function of air temperature using a simplified linear regression relationship. Air temperature metric used in the equation is a moving average of user-specified duration.
Save
Close


Watershed Loads and Hydrology
Catchment Loads
Direct Deposition
Calculated flows and loads
Prescribed flows and loads
Monthly mean
Daily TS
Edit Inflow TS
Supplemental water
Edit Precip
Save
Close

Date (MM/DD/YYY)	Flow (cfs)	P Load (lbs/d)	N Load (lbs/d)	fp P Load	fp N Load
1/1/2000	0.02	0.011	1.101	0.64	0.25
1/2/2000	0.02	0.014	1.468	0.64	0.25
1/3/2000	0.19	0.124	12.848	0.64	0.25
1/4/2000	1.10	0.710	73.415	0.64	0.25
1/5/2000	0.55	0.355	36.707	0.64	0.25
1/6/2000	1.05	0.675	69.744	0.64	0.25
1/7/2000	0.72	0.462	47.719	0.64	0.25
1/8/2000	0.48	0.309	31.935	0.64	0.25
1/9/2000	0.42	0.270	27.898	0.64	0.25
1/10/2000	0.32	0.210	21.657	0.64	0.25
1/11/2000	0.21	0.139	14.316	0.64	0.25
1/12/2000	0.15	0.096	9.911	0.64	0.25
1/13/2000	0.12	0.075	7.709	0.64	0.25
1/14/2000	0.09	0.057	5.873	0.64	0.25
1/15/2000	0.09	0.060	6.240	0.64	0.25
1/16/2000	0.09	0.060	6.240	0.64	0.25
1/17/2000	0.08	0.050	5.139	0.64	0.25
1/18/2000	0.07	0.046	4.772	0.64	0.25
1/19/2000	0.06	0.036	3.671	0.64	0.25
1/20/2000	0.03	0.018	1.835	0.64	0.25
1/21/2000	0.01	0.004	0.367	0.64	0.25
1/22/2000	0.00	0.000	0.000	0.64	0.25
1/23/2000	0.00	0.000	0.000	0.64	0.25
1/24/2000	0.00	0.000	0.000	0.64	0.25
1/25/2000	0.00	0.000	0.000	0.64	0.25
1/26/2000	0.00	0.000	0.000	0.64	0.25
1/27/2000	0.00	0.000	0.000	0.64	0.25
1/28/2000	0.00	0.000	0.000	0.64	0.25
1/29/2000	0.00	0.000	0.000	0.64	0.25
1/30/2000	0.00	0.000	0.000	0.64	0.25
1/31/2000	0.00	0.000	0.000	0.64	0.25
2/1/2000	0.00	0.000	0.000	0.64	0.25
2/2/2000	0.00	0.000	0.000	0.64	0.25
2/3/2000	0.00	0.000	0.000	0.64	0.25
2/4/2000	0.00	0.000	0.000	0.64	0.25
2/5/2000	0.00	0.000	0.000	0.64	0.25
2/6/2000	0.00	0.000	0.000	0.64	0.25
2/7/2000	0.00	0.000	0.000	0.64	0.25
2/8/2000	0.01	0.007	0.734	0.64	0.25
2/9/2000	0.11	0.071	7.341	0.64	0.25
2/10/2000	0.28	0.178	18.354	0.64	0.25
2/11/2000	0.66	0.426	44.049	0.64	0.25
2/12/2000	0.88	0.568	58.732	0.64	0.25
2/13/2000	0.88	0.568	58.732	0.64	0.25
2/14/2000	0.83	0.533	55.061	0.64	0.25
2/15/2000	0.61	0.391	40.378	0.64	0.25
2/16/2000	0.48	0.309	31.935	0.64	0.25
2/17/2000	0.21	0.135	13.949	0.64	0.25
2/18/2000	3.69	2.380	245.939	0.64	0.25
2/19/2000	4.57	2.948	304.671	0.64	0.25
2/20/2000	2.81	1.812	187.207	0.64	0.25
2/21/2000	1.27	0.817	84.427	0.64	0.25
2/22/2000	0.94	0.604	62.402	0.64	0.25
2/23/2000	0.66	0.426	44.049	0.64	0.25
2/24/2000	0.61	0.391	40.378	0.64	0.25
2/25/2000	0.49	0.316	32.669	0.64	0.25
2/26/2000	0.83	0.533	55.061	0.64	0.25
2/27/2000	4.35	2.806	289.988	0.64	0.25
2/28/2000	3.96	2.558	264.293	0.64	0.25
2/29/2000	2.48	1.599	165.183	0.64	0.25
3/1/2000	1.87	1.208	124.805	0.64	0.25
3/2/2000	1.43	0.924	95.439	0.64	0.25
3/3/2000	1.10	0.710	73.415	0.64	0.25
3/4/2000	0.88	0.568	58.732	0.64	0.25
3/5/2000	0.66	0.426	44.049	0.64	0.25
3/6/2000	0.51	0.327	33.771	0.64	0.25
3/7/2000	0.44	0.284	29.366	0.64	0.25

3/8/2000	0.39	0.252	26.062	0.64	0.25
3/9/2000	0.36	0.234	24.227	0.64	0.25
3/10/2000	0.35	0.224	23.126	0.64	0.25
3/11/2000	0.47	0.305	31.568	0.64	0.25
3/12/2000	0.55	0.355	36.707	0.64	0.25
3/13/2000	0.88	0.568	58.732	0.64	0.25
3/14/2000	2.75	1.776	183.537	0.64	0.25
3/15/2000	2.86	1.847	190.878	0.64	0.25
3/16/2000	1.87	1.208	124.805	0.64	0.25
3/17/2000	1.16	0.746	77.085	0.64	0.25
3/18/2000	0.72	0.462	47.719	0.64	0.25
3/19/2000	1.21	0.782	80.756	0.64	0.25
3/20/2000	7.70	4.973	513.902	0.64	0.25
3/21/2000	8.80	5.684	587.317	0.64	0.25
3/22/2000	5.50	3.552	367.073	0.64	0.25
3/23/2000	4.18	2.700	278.975	0.64	0.25
3/24/2000	3.74	2.416	249.610	0.64	0.25
3/25/2000	3.36	2.167	223.915	0.64	0.25
3/26/2000	2.70	1.741	179.866	0.64	0.25
3/27/2000	3.41	2.202	227.585	0.64	0.25
3/28/2000	3.14	2.025	209.232	0.64	0.25
3/29/2000	2.26	1.456	150.500	0.64	0.25
3/30/2000	1.60	1.030	106.451	0.64	0.25
3/31/2000	1.38	0.888	91.768	0.64	0.25
4/1/2000	1.27	0.817	84.427	0.64	0.25
4/2/2000	1.38	0.888	91.768	0.64	0.25
4/3/2000	1.43	0.924	95.439	0.64	0.25
4/4/2000	1.16	0.746	77.085	0.64	0.25
4/5/2000	0.94	0.604	62.402	0.64	0.25
4/6/2000	0.88	0.568	58.732	0.64	0.25
4/7/2000	1.27	0.817	84.427	0.64	0.25
4/8/2000	1.16	0.746	77.085	0.64	0.25
4/9/2000	0.83	0.533	55.061	0.64	0.25
4/10/2000	0.66	0.426	44.049	0.64	0.25
4/11/2000	0.72	0.462	47.719	0.64	0.25
4/12/2000	0.52	0.337	34.872	0.64	0.25
4/13/2000	0.42	0.274	28.265	0.64	0.25
4/14/2000	0.41	0.263	27.163	0.64	0.25
4/15/2000	0.53	0.345	35.606	0.64	0.25
4/16/2000	0.88	0.568	58.732	0.64	0.25
4/17/2000	7.70	4.973	513.902	0.64	0.25
4/18/2000	4.62	2.984	308.341	0.64	0.25
4/19/2000	3.30	2.131	220.244	0.64	0.25
4/20/2000	4.07	2.629	271.634	0.64	0.25
4/21/2000	4.79	3.091	319.354	0.64	0.25
4/22/2000	3.47	2.238	231.256	0.64	0.25
4/23/2000	3.03	1.954	201.890	0.64	0.25
4/24/2000	4.02	2.593	267.963	0.64	0.25
4/25/2000	4.51	2.913	301.000	0.64	0.25
4/26/2000	4.02	2.593	267.963	0.64	0.25
4/27/2000	3.69	2.380	245.939	0.64	0.25
4/28/2000	3.52	2.273	234.927	0.64	0.25
4/29/2000	3.08	1.989	205.561	0.64	0.25
4/30/2000	2.53	1.634	168.854	0.64	0.25
5/1/2000	2.48	1.599	165.183	0.64	0.25
5/2/2000	2.81	1.812	187.207	0.64	0.25
5/3/2000	2.20	1.421	146.829	0.64	0.25
5/4/2000	2.26	1.456	150.500	0.64	0.25
5/5/2000	2.04	1.314	135.817	0.64	0.25
5/6/2000	1.87	1.208	124.805	0.64	0.25
5/7/2000	2.53	1.634	168.854	0.64	0.25
5/8/2000	3.52	2.273	234.927	0.64	0.25
5/9/2000	2.97	1.918	198.219	0.64	0.25
5/10/2000	2.26	1.456	150.500	0.64	0.25
5/11/2000	1.98	1.279	132.146	0.64	0.25
5/12/2000	2.70	1.741	179.866	0.64	0.25
5/13/2000	3.52	2.273	234.927	0.64	0.25
5/14/2000	2.75	1.776	183.537	0.64	0.25
5/15/2000	2.31	1.492	154.171	0.64	0.25

5/16/2000	1.98	1.279	132.146	0.64	0.25
5/17/2000	2.09	1.350	139.488	0.64	0.25
5/18/2000	2.31	1.492	154.171	0.64	0.25
5/19/2000	1.93	1.243	128.476	0.64	0.25
5/20/2000	1.65	1.066	110.122	0.64	0.25
5/21/2000	1.49	0.959	99.110	0.64	0.25
5/22/2000	3.25	2.096	216.573	0.64	0.25
5/23/2000	2.70	1.741	179.866	0.64	0.25
5/24/2000	2.04	1.314	135.817	0.64	0.25
5/25/2000	1.32	0.853	88.098	0.64	0.25
5/26/2000	1.05	0.675	69.744	0.64	0.25
5/27/2000	25.30	16.341	1688.536	0.64	0.25
5/28/2000	24.75	15.985	1651.829	0.64	0.25
5/29/2000	13.75	8.881	917.683	0.64	0.25
5/30/2000	9.35	6.039	624.024	0.64	0.25
5/31/2000	6.60	4.263	440.488	0.64	0.25
6/1/2000	5.01	3.233	334.036	0.64	0.25
6/2/2000	4.07	2.629	271.634	0.64	0.25
6/3/2000	3.25	2.096	216.573	0.64	0.25
6/4/2000	3.08	1.989	205.561	0.64	0.25
6/5/2000	3.41	2.202	227.585	0.64	0.25
6/6/2000	2.75	1.776	183.537	0.64	0.25
6/7/2000	2.20	1.421	146.829	0.64	0.25
6/8/2000	1.98	1.279	132.146	0.64	0.25
6/9/2000	1.65	1.066	110.122	0.64	0.25
6/10/2000	1.43	0.924	95.439	0.64	0.25
6/11/2000	1.43	0.924	95.439	0.64	0.25
6/12/2000	1.49	0.959	99.110	0.64	0.25
6/13/2000	1.32	0.853	88.098	0.64	0.25
6/14/2000	3.69	2.380	245.939	0.64	0.25
6/15/2000	2.97	1.918	198.219	0.64	0.25
6/16/2000	8.25	5.328	550.610	0.64	0.25
6/17/2000	12.10	7.815	807.561	0.64	0.25
6/18/2000	8.80	5.684	587.317	0.64	0.25
6/19/2000	6.60	4.263	440.488	0.64	0.25
6/20/2000	8.25	5.328	550.610	0.64	0.25
6/21/2000	126.52	81.703	8442.679	0.64	0.25
6/22/2000	45.66	29.484	3046.706	0.64	0.25
6/23/2000	25.85	16.696	1725.243	0.64	0.25
6/24/2000	104.52	67.494	6974.387	0.64	0.25
6/25/2000	288.79	186.497	19271.333	0.64	0.25
6/26/2000	140.82	90.939	9397.069	0.64	0.25
6/27/2000	75.36	48.667	5028.900	0.64	0.25
6/28/2000	44.56	28.774	2973.291	0.64	0.25
6/29/2000	29.70	19.183	1982.194	0.64	0.25
6/30/2000	21.45	13.854	1431.585	0.64	0.25
7/1/2000	17.05	11.012	1137.926	0.64	0.25
7/2/2000	13.75	8.881	917.683	0.64	0.25
7/3/2000	18.15	11.723	1211.341	0.64	0.25
7/4/2000	12.65	8.170	844.268	0.64	0.25
7/5/2000	198.58	128.239	13251.336	0.64	0.25
7/6/2000	110.57	71.402	7378.168	0.64	0.25
7/7/2000	49.51	31.971	3303.657	0.64	0.25
7/8/2000	28.60	18.472	1908.780	0.64	0.25
7/9/2000	20.35	13.144	1358.170	0.64	0.25
7/10/2000	15.95	10.302	1064.512	0.64	0.25
7/11/2000	40.16	25.932	2679.633	0.64	0.25
7/12/2000	27.50	17.762	1835.365	0.64	0.25
7/13/2000	19.25	12.433	1284.756	0.64	0.25
7/14/2000	14.85	9.591	991.097	0.64	0.25
7/15/2000	12.10	7.815	807.561	0.64	0.25
7/16/2000	9.90	6.394	660.731	0.64	0.25
7/17/2000	8.25	5.328	550.610	0.64	0.25
7/18/2000	7.70	4.973	513.902	0.64	0.25
7/19/2000	7.15	4.618	477.195	0.64	0.25
7/20/2000	6.60	4.263	440.488	0.64	0.25
7/21/2000	6.05	3.908	403.780	0.64	0.25
7/22/2000	5.01	3.233	334.036	0.64	0.25
7/23/2000	4.35	2.806	289.988	0.64	0.25

7/24/2000	3.80	2.451	253.280	0.64	0.25
7/25/2000	3.47	2.238	231.256	0.64	0.25
7/26/2000	3.03	1.954	201.890	0.64	0.25
7/27/2000	2.70	1.741	179.866	0.64	0.25
7/28/2000	2.48	1.599	165.183	0.64	0.25
7/29/2000	3.03	1.954	201.890	0.64	0.25
7/30/2000	2.92	1.883	194.549	0.64	0.25
7/31/2000	2.53	1.634	168.854	0.64	0.25
8/1/2000	2.20	1.421	146.829	0.64	0.25
8/2/2000	3.19	2.060	212.902	0.64	0.25
8/3/2000	6.60	4.263	440.488	0.64	0.25
8/4/2000	3.74	2.416	249.610	0.64	0.25
8/5/2000	3.08	1.989	205.561	0.64	0.25
8/6/2000	3.25	2.096	216.573	0.64	0.25
8/7/2000	3.03	1.954	201.890	0.64	0.25
8/8/2000	3.03	1.954	201.890	0.64	0.25
8/9/2000	2.97	1.918	198.219	0.64	0.25
8/10/2000	2.26	1.456	150.500	0.64	0.25
8/11/2000	1.54	0.995	102.780	0.64	0.25
8/12/2000	1.21	0.782	80.756	0.64	0.25
8/13/2000	1.05	0.675	69.744	0.64	0.25
8/14/2000	0.94	0.604	62.402	0.64	0.25
8/15/2000	0.83	0.533	55.061	0.64	0.25
8/16/2000	0.72	0.462	47.719	0.64	0.25
8/17/2000	0.72	0.462	47.719	0.64	0.25
8/18/2000	1.93	1.243	128.476	0.64	0.25
8/19/2000	1.60	1.030	106.451	0.64	0.25
8/20/2000	1.43	0.924	95.439	0.64	0.25
8/21/2000	0.99	0.639	66.073	0.64	0.25
8/22/2000	0.77	0.497	51.390	0.64	0.25
8/23/2000	7.15	4.618	477.195	0.64	0.25
8/24/2000	5.50	3.552	367.073	0.64	0.25
8/25/2000	3.63	2.345	242.268	0.64	0.25
8/26/2000	2.53	1.634	168.854	0.64	0.25
8/27/2000	33.55	21.669	2239.145	0.64	0.25
8/28/2000	29.15	18.827	1945.487	0.64	0.25
8/29/2000	14.85	9.591	991.097	0.64	0.25
8/30/2000	9.35	6.039	624.024	0.64	0.25
8/31/2000	7.15	4.618	477.195	0.64	0.25
9/1/2000	5.23	3.375	348.719	0.64	0.25
9/2/2000	4.18	2.700	278.975	0.64	0.25
9/3/2000	3.41	2.202	227.585	0.64	0.25
9/4/2000	2.81	1.812	187.207	0.64	0.25
9/5/2000	2.31	1.492	154.171	0.64	0.25
9/6/2000	1.93	1.243	128.476	0.64	0.25
9/7/2000	1.71	1.101	113.793	0.64	0.25
9/8/2000	1.65	1.066	110.122	0.64	0.25
9/9/2000	1.60	1.030	106.451	0.64	0.25
9/10/2000	64.91	41.917	4331.462	0.64	0.25
9/11/2000	85.26	55.061	5689.632	0.64	0.25
9/12/2000	39.61	25.577	2642.926	0.64	0.25
9/13/2000	22.55	14.565	1504.999	0.64	0.25
9/14/2000	16.50	10.657	1101.219	0.64	0.25
9/15/2000	12.10	7.815	807.561	0.64	0.25
9/16/2000	9.90	6.394	660.731	0.64	0.25
9/17/2000	8.80	5.684	587.317	0.64	0.25
9/18/2000	7.70	4.973	513.902	0.64	0.25
9/19/2000	7.15	4.618	477.195	0.64	0.25
9/20/2000	6.60	4.263	440.488	0.64	0.25
9/21/2000	6.05	3.908	403.780	0.64	0.25
9/22/2000	5.50	3.552	367.073	0.64	0.25
9/23/2000	5.50	3.552	367.073	0.64	0.25
9/24/2000	6.05	3.908	403.780	0.64	0.25
9/25/2000	113.87	73.533	7598.411	0.64	0.25
9/26/2000	174.93	112.964	11672.922	0.64	0.25
9/27/2000	80.31	51.864	5359.266	0.64	0.25
9/28/2000	51.16	33.037	3413.779	0.64	0.25
9/29/2000	35.21	22.735	2349.267	0.64	0.25
9/30/2000	27.50	17.762	1835.365	0.64	0.25

10/1/2000	22.55	14.565	1504.999	0.64	0.25
10/2/2000	19.25	12.433	1284.756	0.64	0.25
10/3/2000	16.50	10.657	1101.219	0.64	0.25
10/4/2000	20.35	13.144	1358.170	0.64	0.25
10/5/2000	660.10	426.278	44048.762	0.64	0.25
10/6/2000	249.74	161.275	16665.115	0.64	0.25
10/7/2000	100.11	64.652	6680.729	0.64	0.25
10/8/2000	62.16	40.141	4147.925	0.64	0.25
10/9/2000	42.91	27.708	2863.170	0.64	0.25
10/10/2000	33.00	21.314	2202.438	0.64	0.25
10/11/2000	25.30	16.341	1688.536	0.64	0.25
10/12/2000	20.90	13.499	1394.877	0.64	0.25
10/13/2000	18.70	12.078	1248.048	0.64	0.25
10/14/2000	17.60	11.367	1174.634	0.64	0.25
10/15/2000	17.05	11.012	1137.926	0.64	0.25
10/16/2000	14.85	9.591	991.097	0.64	0.25
10/17/2000	14.30	9.236	954.390	0.64	0.25
10/18/2000	13.20	8.526	880.975	0.64	0.25
10/19/2000	12.65	8.170	844.268	0.64	0.25
10/20/2000	12.10	7.815	807.561	0.64	0.25
10/21/2000	11.55	7.460	770.853	0.64	0.25
10/22/2000	10.45	6.749	697.439	0.64	0.25
10/23/2000	9.90	6.394	660.731	0.64	0.25
10/24/2000	9.90	6.394	660.731	0.64	0.25
10/25/2000	9.90	6.394	660.731	0.64	0.25
10/26/2000	10.45	6.749	697.439	0.64	0.25
10/27/2000	9.90	6.394	660.731	0.64	0.25
10/28/2000	9.35	6.039	624.024	0.64	0.25
10/29/2000	8.80	5.684	587.317	0.64	0.25
10/30/2000	8.80	5.684	587.317	0.64	0.25
10/31/2000	8.25	5.328	550.610	0.64	0.25
11/1/2000	8.25	5.328	550.610	0.64	0.25
11/2/2000	8.25	5.328	550.610	0.64	0.25
11/3/2000	7.15	4.618	477.195	0.64	0.25
11/4/2000	7.15	4.618	477.195	0.64	0.25
11/5/2000	7.15	4.618	477.195	0.64	0.25
11/6/2000	8.80	5.684	587.317	0.64	0.25
11/7/2000	20.35	13.144	1358.170	0.64	0.25
11/8/2000	13.75	8.881	917.683	0.64	0.25
11/9/2000	52.26	33.747	3487.194	0.64	0.25
11/10/2000	87.46	56.482	5836.461	0.64	0.25
11/11/2000	47.31	30.550	3156.828	0.64	0.25
11/12/2000	34.11	22.024	2275.853	0.64	0.25
11/13/2000	57.76	37.299	3854.267	0.64	0.25
11/14/2000	44.56	28.774	2973.291	0.64	0.25
11/15/2000	31.90	20.603	2129.023	0.64	0.25
11/16/2000	27.50	17.762	1835.365	0.64	0.25
11/17/2000	21.45	13.854	1431.585	0.64	0.25
11/18/2000	18.70	12.078	1248.048	0.64	0.25
11/19/2000	17.60	11.367	1174.634	0.64	0.25
11/20/2000	15.40	9.946	1027.804	0.64	0.25
11/21/2000	13.20	8.526	880.975	0.64	0.25
11/22/2000	13.20	8.526	880.975	0.64	0.25
11/23/2000	12.65	8.170	844.268	0.64	0.25
11/24/2000	12.10	7.815	807.561	0.64	0.25
11/25/2000	30.80	19.893	2055.609	0.64	0.25
11/26/2000	87.46	56.482	5836.461	0.64	0.25
11/27/2000	49.51	31.971	3303.657	0.64	0.25
11/28/2000	33.00	21.314	2202.438	0.64	0.25
11/29/2000	26.40	17.051	1761.950	0.64	0.25
11/30/2000	20.90	13.499	1394.877	0.64	0.25
12/1/2000	19.25	12.433	1284.756	0.64	0.25
12/2/2000	16.50	10.657	1101.219	0.64	0.25
12/3/2000	15.40	9.946	1027.804	0.64	0.25
12/4/2000	15.40	9.946	1027.804	0.64	0.25
12/5/2000	14.30	9.236	954.390	0.64	0.25
12/6/2000	13.20	8.526	880.975	0.64	0.25
12/7/2000	13.75	8.881	917.683	0.64	0.25
12/8/2000	12.10	7.815	807.561	0.64	0.25

12/9/2000	10.45	6.749	697.439	0.64	0.25
12/10/2000	11.00	7.105	734.146	0.64	0.25
12/11/2000	22.00	14.209	1468.292	0.64	0.25
12/12/2000	44.56	28.774	2973.291	0.64	0.25
12/13/2000	26.95	17.406	1798.658	0.64	0.25
12/14/2000	19.25	12.433	1284.756	0.64	0.25
12/15/2000	15.95	10.302	1064.512	0.64	0.25
12/16/2000	14.85	9.591	991.097	0.64	0.25
12/17/2000	13.75	8.881	917.683	0.64	0.25
12/18/2000	16.50	10.657	1101.219	0.64	0.25
12/19/2000	15.40	9.946	1027.804	0.64	0.25
12/20/2000	13.20	8.526	880.975	0.64	0.25
12/21/2000	12.10	7.815	807.561	0.64	0.25
12/22/2000	11.00	7.105	734.146	0.64	0.25
12/23/2000	9.90	6.394	660.731	0.64	0.25
12/24/2000	9.35	6.039	624.024	0.64	0.25
12/25/2000	8.80	5.684	587.317	0.64	0.25
12/26/2000	9.35	6.039	624.024	0.64	0.25
12/27/2000	9.35	6.039	624.024	0.64	0.25
12/28/2000	8.25	5.328	550.610	0.64	0.25
12/29/2000	7.70	4.973	513.902	0.64	0.25
12/30/2000	7.15	4.618	477.195	0.64	0.25
12/31/2000	6.60	4.263	440.488	0.64	0.25
1/1/2001	6.05	3.908	403.780	0.64	0.25
1/2/2001	5.50	3.552	367.073	0.64	0.25
1/3/2001	6.05	3.908	403.780	0.64	0.25
1/4/2001	6.60	4.263	440.488	0.64	0.25
1/5/2001	6.60	4.263	440.488	0.64	0.25
1/6/2001	6.05	3.908	403.780	0.64	0.25
1/7/2001	6.05	3.908	403.780	0.64	0.25
1/8/2001	5.50	3.552	367.073	0.64	0.25
1/9/2001	5.50	3.552	367.073	0.64	0.25
1/10/2001	6.05	3.908	403.780	0.64	0.25
1/11/2001	6.05	3.908	403.780	0.64	0.25
1/12/2001	6.05	3.908	403.780	0.64	0.25
1/13/2001	6.60	4.263	440.488	0.64	0.25
1/14/2001	12.10	7.815	807.561	0.64	0.25
1/15/2001	44.01	28.419	2936.584	0.64	0.25
1/16/2001	25.30	16.341	1688.536	0.64	0.25
1/17/2001	15.40	9.946	1027.804	0.64	0.25
1/18/2001	13.20	8.526	880.975	0.64	0.25
1/19/2001	11.00	7.105	734.146	0.64	0.25
1/20/2001	9.35	6.039	624.024	0.64	0.25
1/21/2001	9.90	6.394	660.731	0.64	0.25
1/22/2001	9.35	6.039	624.024	0.64	0.25
1/23/2001	8.80	5.684	587.317	0.64	0.25
1/24/2001	8.25	5.328	550.610	0.64	0.25
1/25/2001	8.25	5.328	550.610	0.64	0.25
1/26/2001	9.35	6.039	624.024	0.64	0.25
1/27/2001	8.25	5.328	550.610	0.64	0.25
1/28/2001	7.70	4.973	513.902	0.64	0.25
1/29/2001	60.51	39.076	4037.803	0.64	0.25
1/30/2001	180.98	116.871	12076.702	0.64	0.25
1/31/2001	79.21	51.153	5285.851	0.64	0.25
2/1/2001	44.01	28.419	2936.584	0.64	0.25
2/2/2001	31.35	20.248	2092.316	0.64	0.25
2/3/2001	23.65	15.275	1578.414	0.64	0.25
2/4/2001	19.25	12.433	1284.756	0.64	0.25
2/5/2001	17.05	11.012	1137.926	0.64	0.25
2/6/2001	15.95	10.302	1064.512	0.64	0.25
2/7/2001	15.95	10.302	1064.512	0.64	0.25
2/8/2001	26.95	17.406	1798.658	0.64	0.25
2/9/2001	186.48	120.424	12443.775	0.64	0.25
2/10/2001	143.57	92.716	9580.606	0.64	0.25
2/11/2001	67.11	43.338	4478.291	0.64	0.25
2/12/2001	43.46	28.063	2899.877	0.64	0.25
2/13/2001	34.11	22.024	2275.853	0.64	0.25
2/14/2001	52.81	34.102	3523.901	0.64	0.25
2/15/2001	59.41	38.365	3964.389	0.64	0.25

2/16/2001	44.56	28.774	2973.291	0.64	0.25
2/17/2001	30.80	19.893	2055.609	0.64	0.25
2/18/2001	24.20	15.630	1615.121	0.64	0.25
2/19/2001	22.55	14.565	1504.999	0.64	0.25
2/20/2001	19.25	12.433	1284.756	0.64	0.25
2/21/2001	15.95	10.302	1064.512	0.64	0.25
2/22/2001	16.50	10.657	1101.219	0.64	0.25
2/23/2001	14.30	9.236	954.390	0.64	0.25
2/24/2001	19.80	12.788	1321.463	0.64	0.25
2/25/2001	155.12	100.175	10351.459	0.64	0.25
2/26/2001	69.31	44.759	4625.120	0.64	0.25
2/27/2001	45.66	29.484	3046.706	0.64	0.25
2/28/2001	33.55	21.669	2239.145	0.64	0.25
3/1/2001	28.05	18.117	1872.072	0.64	0.25
3/2/2001	24.75	15.985	1651.829	0.64	0.25
3/3/2001	21.45	13.854	1431.585	0.64	0.25
3/4/2001	19.25	12.433	1284.756	0.64	0.25
3/5/2001	16.50	10.657	1101.219	0.64	0.25
3/6/2001	15.40	9.946	1027.804	0.64	0.25
3/7/2001	14.85	9.591	991.097	0.64	0.25
3/8/2001	14.30	9.236	954.390	0.64	0.25
3/9/2001	13.20	8.526	880.975	0.64	0.25
3/10/2001	12.65	8.170	844.268	0.64	0.25
3/11/2001	12.65	8.170	844.268	0.64	0.25
3/12/2001	12.65	8.170	844.268	0.64	0.25
3/13/2001	12.65	8.170	844.268	0.64	0.25
3/14/2001	11.00	7.105	734.146	0.64	0.25
3/15/2001	11.55	7.460	770.853	0.64	0.25
3/16/2001	14.30	9.236	954.390	0.64	0.25
3/17/2001	15.40	9.946	1027.804	0.64	0.25
3/18/2001	13.75	8.881	917.683	0.64	0.25
3/19/2001	13.20	8.526	880.975	0.64	0.25
3/20/2001	13.20	8.526	880.975	0.64	0.25
3/21/2001	12.65	8.170	844.268	0.64	0.25
3/22/2001	12.10	7.815	807.561	0.64	0.25
3/23/2001	11.55	7.460	770.853	0.64	0.25
3/24/2001	11.00	7.105	734.146	0.64	0.25
3/25/2001	10.45	6.749	697.439	0.64	0.25
3/26/2001	10.45	6.749	697.439	0.64	0.25
3/27/2001	9.90	6.394	660.731	0.64	0.25
3/28/2001	10.45	6.749	697.439	0.64	0.25
3/29/2001	10.45	6.749	697.439	0.64	0.25
3/30/2001	10.45	6.749	697.439	0.64	0.25
3/31/2001	9.90	6.394	660.731	0.64	0.25
4/1/2001	9.90	6.394	660.731	0.64	0.25
4/2/2001	9.35	6.039	624.024	0.64	0.25
4/3/2001	9.35	6.039	624.024	0.64	0.25
4/4/2001	8.80	5.684	587.317	0.64	0.25
4/5/2001	8.80	5.684	587.317	0.64	0.25
4/6/2001	9.35	6.039	624.024	0.64	0.25
4/7/2001	9.35	6.039	624.024	0.64	0.25
4/8/2001	8.80	5.684	587.317	0.64	0.25
4/9/2001	8.80	5.684	587.317	0.64	0.25
4/10/2001	8.80	5.684	587.317	0.64	0.25
4/11/2001	59.96	38.720	4001.096	0.64	0.25
4/12/2001	35.21	22.735	2349.267	0.64	0.25
4/13/2001	20.35	13.144	1358.170	0.64	0.25
4/14/2001	17.05	11.012	1137.926	0.64	0.25
4/15/2001	16.50	10.657	1101.219	0.64	0.25
4/16/2001	13.20	8.526	880.975	0.64	0.25
4/17/2001	11.55	7.460	770.853	0.64	0.25
4/18/2001	10.45	6.749	697.439	0.64	0.25
4/19/2001	11.00	7.105	734.146	0.64	0.25
4/20/2001	11.00	7.105	734.146	0.64	0.25
4/21/2001	9.90	6.394	660.731	0.64	0.25
4/22/2001	9.35	6.039	624.024	0.64	0.25
4/23/2001	9.35	6.039	624.024	0.64	0.25
4/24/2001	8.80	5.684	587.317	0.64	0.25
4/25/2001	8.25	5.328	550.610	0.64	0.25

4/26/2001	8.25	5.328	550.610	0.64	0.25
4/27/2001	8.25	5.328	550.610	0.64	0.25
4/28/2001	7.70	4.973	513.902	0.64	0.25
4/29/2001	7.15	4.618	477.195	0.64	0.25
4/30/2001	7.15	4.618	477.195	0.64	0.25
5/1/2001	17.60	11.367	1174.634	0.64	0.25
5/2/2001	17.60	11.367	1174.634	0.64	0.25
5/3/2001	11.55	7.460	770.853	0.64	0.25
5/4/2001	9.90	6.394	660.731	0.64	0.25
5/5/2001	9.35	6.039	624.024	0.64	0.25
5/6/2001	8.80	5.684	587.317	0.64	0.25
5/7/2001	8.25	5.328	550.610	0.64	0.25
5/8/2001	7.70	4.973	513.902	0.64	0.25
5/9/2001	7.15	4.618	477.195	0.64	0.25
5/10/2001	7.15	4.618	477.195	0.64	0.25
5/11/2001	7.15	4.618	477.195	0.64	0.25
5/12/2001	6.60	4.263	440.488	0.64	0.25
5/13/2001	6.05	3.908	403.780	0.64	0.25
5/14/2001	6.60	4.263	440.488	0.64	0.25
5/15/2001	6.60	4.263	440.488	0.64	0.25
5/16/2001	6.60	4.263	440.488	0.64	0.25
5/17/2001	6.05	3.908	403.780	0.64	0.25
5/18/2001	40.16	25.932	2679.633	0.64	0.25
5/19/2001	26.40	17.051	1761.950	0.64	0.25
5/20/2001	16.50	10.657	1101.219	0.64	0.25
5/21/2001	13.75	8.881	917.683	0.64	0.25
5/22/2001	10.45	6.749	697.439	0.64	0.25
5/23/2001	9.90	6.394	660.731	0.64	0.25
5/24/2001	9.90	6.394	660.731	0.64	0.25
5/25/2001	8.80	5.684	587.317	0.64	0.25
5/26/2001	9.90	6.394	660.731	0.64	0.25
5/27/2001	9.35	6.039	624.024	0.64	0.25
5/28/2001	8.25	5.328	550.610	0.64	0.25
5/29/2001	7.15	4.618	477.195	0.64	0.25
5/30/2001	7.15	4.618	477.195	0.64	0.25
5/31/2001	9.90	6.394	660.731	0.64	0.25
6/1/2001	21.45	13.854	1431.585	0.64	0.25
6/2/2001	15.40	9.946	1027.804	0.64	0.25
6/3/2001	11.55	7.460	770.853	0.64	0.25
6/4/2001	67.66	43.694	4514.998	0.64	0.25
6/5/2001	78.11	50.443	5212.437	0.64	0.25
6/6/2001	395.51	255.412	26392.550	0.64	0.25
6/7/2001	138.07	89.163	9213.533	0.64	0.25
6/8/2001	70.96	45.825	4735.242	0.64	0.25
6/9/2001	44.56	28.774	2973.291	0.64	0.25
6/10/2001	31.90	20.603	2129.023	0.64	0.25
6/11/2001	24.75	15.985	1651.829	0.64	0.25
6/12/2001	19.80	12.788	1321.463	0.64	0.25
6/13/2001	15.95	10.302	1064.512	0.64	0.25
6/14/2001	13.20	8.526	880.975	0.64	0.25
6/15/2001	12.65	8.170	844.268	0.64	0.25
6/16/2001	10.45	6.749	697.439	0.64	0.25
6/17/2001	9.35	6.039	624.024	0.64	0.25
6/18/2001	8.80	5.684	587.317	0.64	0.25
6/19/2001	7.70	4.973	513.902	0.64	0.25
6/20/2001	7.70	4.973	513.902	0.64	0.25
6/21/2001	9.90	6.394	660.731	0.64	0.25
6/22/2001	8.80	5.684	587.317	0.64	0.25
6/23/2001	7.15	4.618	477.195	0.64	0.25
6/24/2001	6.05	3.908	403.780	0.64	0.25
6/25/2001	5.50	3.552	367.073	0.64	0.25
6/26/2001	5.06	3.268	337.707	0.64	0.25
6/27/2001	4.73	3.055	315.683	0.64	0.25
6/28/2001	4.73	3.055	315.683	0.64	0.25
6/29/2001	4.07	2.629	271.634	0.64	0.25
6/30/2001	3.69	2.380	245.939	0.64	0.25
7/1/2001	3.25	2.096	216.573	0.64	0.25
7/2/2001	2.75	1.776	183.537	0.64	0.25
7/3/2001	2.53	1.634	168.854	0.64	0.25

7/4/2001	2.48	1.599	165.183	0.64	0.25
7/5/2001	2.37	1.527	157.841	0.64	0.25
7/6/2001	1.60	1.030	106.451	0.64	0.25
7/7/2001	1.32	0.853	88.098	0.64	0.25
7/8/2001	1.21	0.782	80.756	0.64	0.25
7/9/2001	1.43	0.924	95.439	0.64	0.25
7/10/2001	1.60	1.030	106.451	0.64	0.25
7/11/2001	0.88	0.568	58.732	0.64	0.25
7/12/2001	0.61	0.391	40.378	0.64	0.25
7/13/2001	0.51	0.327	33.771	0.64	0.25
7/14/2001	0.44	0.284	29.366	0.64	0.25
7/15/2001	0.36	0.231	23.860	0.64	0.25
7/16/2001	0.31	0.199	20.556	0.64	0.25
7/17/2001	0.29	0.185	19.088	0.64	0.25
7/18/2001	3.41	2.202	227.585	0.64	0.25
7/19/2001	0.99	0.639	66.073	0.64	0.25
7/20/2001	0.61	0.391	40.378	0.64	0.25
7/21/2001	0.40	0.256	26.429	0.64	0.25
7/22/2001	0.30	0.195	20.189	0.64	0.25
7/23/2001	0.43	0.281	28.999	0.64	0.25
7/24/2001	0.51	0.327	33.771	0.64	0.25
7/25/2001	1.27	0.817	84.427	0.64	0.25
7/26/2001	17.60	11.367	1174.634	0.64	0.25
7/27/2001	6.05	3.908	403.780	0.64	0.25
7/28/2001	2.15	1.385	143.158	0.64	0.25
7/29/2001	17.05	11.012	1137.926	0.64	0.25
7/30/2001	15.40	9.946	1027.804	0.64	0.25
7/31/2001	5.12	3.304	341.378	0.64	0.25
8/1/2001	2.31	1.492	154.171	0.64	0.25
8/2/2001	2.26	1.456	150.500	0.64	0.25
8/3/2001	3.30	2.131	220.244	0.64	0.25
8/4/2001	2.86	1.847	190.878	0.64	0.25
8/5/2001	1.32	0.853	88.098	0.64	0.25
8/6/2001	0.83	0.533	55.061	0.64	0.25
8/7/2001	0.55	0.355	36.707	0.64	0.25
8/8/2001	0.47	0.302	31.201	0.64	0.25
8/9/2001	0.38	0.245	25.328	0.64	0.25
8/10/2001	0.30	0.195	20.189	0.64	0.25
8/11/2001	0.25	0.163	16.885	0.64	0.25
8/12/2001	0.19	0.121	12.480	0.64	0.25
8/13/2001	0.16	0.103	10.645	0.64	0.25
8/14/2001	0.13	0.082	8.443	0.64	0.25
8/15/2001	0.12	0.075	7.709	0.64	0.25
8/16/2001	0.13	0.085	8.810	0.64	0.25
8/17/2001	0.13	0.085	8.810	0.64	0.25
8/18/2001	0.15	0.096	9.911	0.64	0.25
8/19/2001	0.18	0.117	12.113	0.64	0.25
8/20/2001	0.17	0.107	11.012	0.64	0.25
8/21/2001	0.17	0.107	11.012	0.64	0.25
8/22/2001	0.13	0.082	8.443	0.64	0.25
8/23/2001	0.19	0.121	12.480	0.64	0.25
8/24/2001	0.26	0.167	17.252	0.64	0.25
8/25/2001	0.88	0.568	58.732	0.64	0.25
8/26/2001	0.66	0.426	44.049	0.64	0.25
8/27/2001	0.35	0.227	23.493	0.64	0.25
8/28/2001	0.23	0.149	15.417	0.64	0.25
8/29/2001	0.13	0.082	8.443	0.64	0.25
8/30/2001	0.11	0.071	7.341	0.64	0.25
8/31/2001	0.20	0.131	13.582	0.64	0.25
9/1/2001	0.22	0.142	14.683	0.64	0.25
9/2/2001	0.41	0.263	27.163	0.64	0.25
9/3/2001	0.30	0.195	20.189	0.64	0.25
9/4/2001	0.14	0.092	9.544	0.64	0.25
9/5/2001	0.08	0.053	5.506	0.64	0.25
9/6/2001	0.06	0.039	4.038	0.64	0.25
9/7/2001	0.05	0.032	3.304	0.64	0.25
9/8/2001	0.08	0.053	5.506	0.64	0.25
9/9/2001	0.48	0.309	31.935	0.64	0.25
9/10/2001	0.45	0.288	29.733	0.64	0.25

9/11/2001	0.48	0.313	32.302	0.64	0.25
9/12/2001	0.31	0.199	20.556	0.64	0.25
9/13/2001	0.21	0.135	13.949	0.64	0.25
9/14/2001	0.12	0.075	7.709	0.64	0.25
9/15/2001	0.09	0.060	6.240	0.64	0.25
9/16/2001	0.07	0.046	4.772	0.64	0.25
9/17/2001	0.07	0.043	4.405	0.64	0.25
9/18/2001	0.18	0.117	12.113	0.64	0.25
9/19/2001	0.34	0.220	22.759	0.64	0.25
9/20/2001	0.32	0.210	21.657	0.64	0.25
9/21/2001	0.30	0.195	20.189	0.64	0.25
9/22/2001	0.29	0.185	19.088	0.64	0.25
9/23/2001	0.20	0.131	13.582	0.64	0.25
9/24/2001	0.13	0.085	8.810	0.64	0.25
9/25/2001	0.11	0.071	7.341	0.64	0.25
9/26/2001	0.10	0.067	6.974	0.64	0.25
9/27/2001	0.08	0.050	5.139	0.64	0.25
9/28/2001	0.07	0.046	4.772	0.64	0.25
9/29/2001	0.08	0.050	5.139	0.64	0.25
9/30/2001	0.08	0.053	5.506	0.64	0.25
10/1/2001	0.08	0.050	5.139	0.64	0.25
10/2/2001	0.09	0.057	5.873	0.64	0.25
10/3/2001	0.07	0.043	4.405	0.64	0.25
10/4/2001	0.04	0.028	2.937	0.64	0.25
10/5/2001	0.45	0.288	29.733	0.64	0.25
10/6/2001	0.56	0.359	37.074	0.64	0.25
10/7/2001	1.40	0.902	93.237	0.64	0.25
10/8/2001	1.13	0.728	75.250	0.64	0.25
10/9/2001	0.64	0.416	42.948	0.64	0.25
10/10/2001	0.69	0.448	46.251	0.64	0.25
10/11/2001	1.63	1.051	108.654	0.64	0.25
10/12/2001	48.85	31.545	3259.608	0.64	0.25
10/13/2001	69.86	45.114	4661.827	0.64	0.25
10/14/2001	267.34	172.643	17839.749	0.64	0.25
10/15/2001	107.82	69.625	7194.631	0.64	0.25
10/16/2001	129.82	83.835	8662.923	0.64	0.25
10/17/2001	83.06	53.640	5542.803	0.64	0.25
10/18/2001	55.56	35.878	3707.437	0.64	0.25
10/19/2001	40.87	26.394	2727.353	0.64	0.25
10/20/2001	30.42	19.644	2029.914	0.64	0.25
10/21/2001	23.93	15.453	1596.768	0.64	0.25
10/22/2001	19.53	12.611	1303.109	0.64	0.25
10/23/2001	49.89	32.220	3329.352	0.64	0.25
10/24/2001	124.87	80.638	8332.557	0.64	0.25
10/25/2001	151.82	98.044	10131.215	0.64	0.25
10/26/2001	71.51	46.180	4771.949	0.64	0.25
10/27/2001	44.45	28.703	2965.950	0.64	0.25
10/28/2001	32.07	20.710	2140.036	0.64	0.25
10/29/2001	24.97	16.128	1666.511	0.64	0.25
10/30/2001	20.41	13.179	1361.841	0.64	0.25
10/31/2001	18.54	11.971	1237.036	0.64	0.25
11/1/2001	17.55	11.332	1170.963	0.64	0.25
11/2/2001	15.35	9.911	1024.134	0.64	0.25
11/3/2001	12.98	8.383	866.292	0.64	0.25
11/4/2001	12.32	7.957	822.244	0.64	0.25
11/5/2001	11.77	7.602	785.536	0.64	0.25
11/6/2001	11.33	7.318	756.170	0.64	0.25
11/7/2001	10.78	6.963	719.463	0.64	0.25
11/8/2001	10.34	6.678	690.097	0.64	0.25
11/9/2001	9.46	6.110	631.366	0.64	0.25
11/10/2001	9.79	6.323	653.390	0.64	0.25
11/11/2001	9.08	5.861	605.670	0.64	0.25
11/12/2001	8.31	5.364	554.280	0.64	0.25
11/13/2001	8.25	5.328	550.610	0.64	0.25
11/14/2001	8.25	5.328	550.610	0.64	0.25
11/15/2001	8.25	5.328	550.610	0.64	0.25
11/16/2001	7.76	5.009	517.573	0.64	0.25
11/17/2001	7.54	4.867	502.890	0.64	0.25
11/18/2001	7.48	4.831	499.219	0.64	0.25

11/19/2001	7.92	5.115	528.585	0.64	0.25
11/20/2001	7.37	4.760	491.878	0.64	0.25
11/21/2001	7.48	4.831	499.219	0.64	0.25
11/22/2001	7.48	4.831	499.219	0.64	0.25
11/23/2001	7.15	4.618	477.195	0.64	0.25
11/24/2001	8.47	5.471	565.292	0.64	0.25
11/25/2001	11.00	7.105	734.146	0.64	0.25
11/26/2001	8.42	5.435	561.622	0.64	0.25
11/27/2001	8.14	5.257	543.268	0.64	0.25
11/28/2001	16.94	10.941	1130.585	0.64	0.25
11/29/2001	44.39	28.667	2962.279	0.64	0.25
11/30/2001	95.71	61.810	6387.070	0.64	0.25
12/1/2001	61.61	39.786	4111.218	0.64	0.25
12/2/2001	40.05	25.861	2672.292	0.64	0.25
12/3/2001	30.47	19.680	2033.585	0.64	0.25
12/4/2001	24.04	15.524	1604.109	0.64	0.25
12/5/2001	19.91	12.859	1328.804	0.64	0.25
12/6/2001	17.77	11.474	1185.646	0.64	0.25
12/7/2001	16.01	10.337	1068.182	0.64	0.25
12/8/2001	14.36	9.272	958.061	0.64	0.25
12/9/2001	12.10	7.815	807.561	0.64	0.25
12/10/2001	11.50	7.424	767.183	0.64	0.25
12/11/2001	10.73	6.927	715.792	0.64	0.25
12/12/2001	11.28	7.282	752.500	0.64	0.25
12/13/2001	27.50	17.762	1835.365	0.64	0.25
12/14/2001	58.86	38.010	3927.681	0.64	0.25
12/15/2001	69.31	44.759	4625.120	0.64	0.25
12/16/2001	84.16	54.350	5616.217	0.64	0.25
12/17/2001	327.85	211.718	21877.552	0.64	0.25
12/18/2001	191.43	123.621	12774.141	0.64	0.25
12/19/2001	100.11	64.652	6680.729	0.64	0.25
12/20/2001	61.61	39.786	4111.218	0.64	0.25
12/21/2001	42.19	27.246	2815.450	0.64	0.25
12/22/2001	34.22	22.095	2283.194	0.64	0.25
12/23/2001	29.43	19.005	1963.841	0.64	0.25
12/24/2001	23.54	15.204	1571.073	0.64	0.25
12/25/2001	15.95	10.302	1064.512	0.64	0.25
12/26/2001	13.20	8.526	880.975	0.64	0.25
12/27/2001	11.55	7.460	770.853	0.64	0.25
12/28/2001	9.90	6.394	660.731	0.64	0.25
12/29/2001	11.00	7.105	734.146	0.64	0.25
12/30/2001	9.90	6.394	660.731	0.64	0.25
12/31/2001	9.35	6.039	624.024	0.64	0.25
1/1/2002	9.35	6.039	624.024	0.64	0.25
1/2/2002	8.25	5.328	550.610	0.64	0.25
1/3/2002	7.70	4.973	513.902	0.64	0.25
1/4/2002	7.15	4.618	477.195	0.64	0.25
1/5/2002	6.60	4.263	440.488	0.64	0.25
1/6/2002	6.05	3.908	403.780	0.64	0.25
1/7/2002	5.50	3.552	367.073	0.64	0.25
1/8/2002	6.60	4.263	440.488	0.64	0.25
1/9/2002	5.50	3.552	367.073	0.64	0.25
1/10/2002	5.23	3.375	348.719	0.64	0.25
1/11/2002	5.61	3.623	374.414	0.64	0.25
1/12/2002	5.78	3.730	385.427	0.64	0.25
1/13/2002	5.78	3.730	385.427	0.64	0.25
1/14/2002	5.89	3.801	392.768	0.64	0.25
1/15/2002	5.13	3.311	342.112	0.64	0.25
1/16/2002	4.92	3.176	328.163	0.64	0.25
1/17/2002	5.02	3.243	335.138	0.64	0.25
1/18/2002	5.40	3.485	360.099	0.64	0.25
1/19/2002	5.10	3.293	340.277	0.64	0.25
1/20/2002	4.93	3.183	328.897	0.64	0.25
1/21/2002	4.96	3.204	331.100	0.64	0.25
1/22/2002	4.60	2.973	307.240	0.64	0.25
1/23/2002	4.74	3.059	316.050	0.64	0.25
1/24/2002	4.86	3.140	324.493	0.64	0.25
1/25/2002	4.46	2.881	297.696	0.64	0.25
1/26/2002	4.40	2.842	293.658	0.64	0.25

1/27/2002	4.40	2.842	293.658	0.64	0.25
1/28/2002	4.40	2.842	293.658	0.64	0.25
1/29/2002	4.60	2.973	307.240	0.64	0.25
1/30/2002	14.52	9.378	969.073	0.64	0.25
1/31/2002	165.02	106.570	11012.190	0.64	0.25
2/1/2002	246.44	159.144	16444.871	0.64	0.25
2/2/2002	102.32	66.073	6827.558	0.64	0.25
2/3/2002	66.01	42.628	4404.876	0.64	0.25
2/4/2002	43.40	28.028	2896.206	0.64	0.25
2/5/2002	28.22	18.223	1883.085	0.64	0.25
2/6/2002	22.61	14.600	1508.670	0.64	0.25
2/7/2002	19.25	12.433	1284.756	0.64	0.25
2/8/2002	16.12	10.408	1075.524	0.64	0.25
2/9/2002	14.74	9.520	983.756	0.64	0.25
2/10/2002	13.86	8.952	925.024	0.64	0.25
2/11/2002	12.27	7.922	818.573	0.64	0.25
2/12/2002	12.10	7.815	807.561	0.64	0.25
2/13/2002	10.73	6.927	715.792	0.64	0.25
2/14/2002	9.46	6.110	631.366	0.64	0.25
2/15/2002	9.35	6.039	624.024	0.64	0.25
2/16/2002	8.86	5.719	590.988	0.64	0.25
2/17/2002	8.31	5.364	554.280	0.64	0.25
2/18/2002	7.70	4.973	513.902	0.64	0.25
2/19/2002	8.69	5.613	579.975	0.64	0.25
2/20/2002	29.59	19.111	1974.853	0.64	0.25
2/21/2002	25.47	16.447	1699.548	0.64	0.25
2/22/2002	16.61	10.728	1108.561	0.64	0.25
2/23/2002	13.70	8.845	914.012	0.64	0.25
2/24/2002	12.32	7.957	822.244	0.64	0.25
2/25/2002	11.22	7.247	748.829	0.64	0.25
2/26/2002	9.35	6.039	624.024	0.64	0.25
2/27/2002	8.80	5.684	587.317	0.64	0.25
2/28/2002	8.25	5.328	550.610	0.64	0.25
3/1/2002	7.70	4.973	513.902	0.64	0.25
3/2/2002	32.23	20.817	2151.048	0.64	0.25
3/3/2002	72.61	46.891	4845.364	0.64	0.25
3/4/2002	33.77	21.811	2253.828	0.64	0.25
3/5/2002	22.22	14.351	1482.975	0.64	0.25
3/6/2002	22.66	14.636	1512.341	0.64	0.25
3/7/2002	20.52	13.250	1369.182	0.64	0.25
3/8/2002	16.39	10.586	1093.878	0.64	0.25
3/9/2002	107.27	69.270	7157.924	0.64	0.25
3/10/2002	82.51	53.285	5506.095	0.64	0.25
3/11/2002	46.21	29.839	3083.413	0.64	0.25
3/12/2002	33.83	21.847	2257.499	0.64	0.25
3/13/2002	26.84	17.335	1791.316	0.64	0.25
3/14/2002	21.67	13.996	1446.268	0.64	0.25
3/15/2002	18.98	12.256	1266.402	0.64	0.25
3/16/2002	31.35	20.248	2092.316	0.64	0.25
3/17/2002	26.51	17.122	1769.292	0.64	0.25
3/18/2002	20.41	13.179	1361.841	0.64	0.25
3/19/2002	17.60	11.367	1174.634	0.64	0.25
3/20/2002	19.03	12.291	1270.073	0.64	0.25
3/21/2002	17.71	11.438	1181.975	0.64	0.25
3/22/2002	14.85	9.591	991.097	0.64	0.25
3/23/2002	14.52	9.378	969.073	0.64	0.25
3/24/2002	13.48	8.703	899.329	0.64	0.25
3/25/2002	97.91	63.231	6533.900	0.64	0.25
3/26/2002	76.46	49.377	5102.315	0.64	0.25
3/27/2002	55.01	35.523	3670.730	0.64	0.25
3/28/2002	132.57	85.611	8846.460	0.64	0.25
3/29/2002	140.27	90.584	9360.362	0.64	0.25
3/30/2002	92.96	60.034	6203.534	0.64	0.25
3/31/2002	55.56	35.878	3707.437	0.64	0.25
4/1/2002	37.57	24.262	2507.109	0.64	0.25
4/2/2002	29.10	18.792	1941.816	0.64	0.25
4/3/2002	20.85	13.463	1391.207	0.64	0.25
4/4/2002	17.44	11.261	1163.621	0.64	0.25
4/5/2002	15.46	9.982	1031.475	0.64	0.25

4/6/2002	14.14	9.129	943.378	0.64	0.25
4/7/2002	13.53	8.739	903.000	0.64	0.25
4/8/2002	23.65	15.275	1578.414	0.64	0.25
4/9/2002	38.95	25.150	2598.877	0.64	0.25
4/10/2002	26.84	17.335	1791.316	0.64	0.25
4/11/2002	21.51	13.890	1435.255	0.64	0.25
4/12/2002	18.54	11.971	1237.036	0.64	0.25
4/13/2002	19.58	12.646	1306.780	0.64	0.25
4/14/2002	18.04	11.652	1203.999	0.64	0.25
4/15/2002	15.73	10.160	1049.829	0.64	0.25
4/16/2002	13.31	8.597	888.317	0.64	0.25
4/17/2002	12.16	7.851	811.231	0.64	0.25
4/18/2002	11.39	7.353	759.841	0.64	0.25
4/19/2002	11.11	7.176	741.487	0.64	0.25
4/20/2002	11.28	7.282	752.500	0.64	0.25
4/21/2002	207.38	133.922	13838.653	0.64	0.25
4/22/2002	157.87	101.952	10534.996	0.64	0.25
4/23/2002	80.31	51.864	5359.266	0.64	0.25
4/24/2002	114.97	74.243	7671.826	0.64	0.25
4/25/2002	172.73	111.543	11526.093	0.64	0.25
4/26/2002	63.81	41.207	4258.047	0.64	0.25
4/27/2002	175.48	113.319	11709.629	0.64	0.25
4/28/2002	550.08	355.232	36707.302	0.64	0.25
4/29/2002	143.57	92.716	9580.606	0.64	0.25
4/30/2002	84.71	54.706	5652.924	0.64	0.25
5/1/2002	99.56	64.297	6644.022	0.64	0.25
5/2/2002	108.37	69.981	7231.338	0.64	0.25
5/3/2002	56.11	36.234	3744.145	0.64	0.25
5/4/2002	39.28	25.364	2620.901	0.64	0.25
5/5/2002	30.31	19.573	2022.572	0.64	0.25
5/6/2002	415.86	268.555	27750.720	0.64	0.25
5/7/2002	770.11	497.325	51390.222	0.64	0.25
5/8/2002	242.59	156.657	16187.920	0.64	0.25
5/9/2002	223.33	144.224	14903.164	0.64	0.25
5/10/2002	96.26	62.166	6423.778	0.64	0.25
5/11/2002	75.91	49.022	5065.608	0.64	0.25
5/12/2002	715.11	461.802	47719.492	0.64	0.25
5/13/2002	367.45	237.295	24520.477	0.64	0.25
5/14/2002	140.82	90.939	9397.069	0.64	0.25
5/15/2002	77.01	49.732	5139.022	0.64	0.25
5/16/2002	52.92	34.173	3531.242	0.64	0.25
5/17/2002	39.44	25.470	2631.914	0.64	0.25
5/18/2002	31.74	20.497	2118.011	0.64	0.25
5/19/2002	26.13	16.874	1743.597	0.64	0.25
5/20/2002	21.34	13.783	1424.243	0.64	0.25
5/21/2002	18.65	12.042	1244.378	0.64	0.25
5/22/2002	17.11	11.048	1141.597	0.64	0.25
5/23/2002	15.84	10.231	1057.170	0.64	0.25
5/24/2002	14.30	9.236	954.390	0.64	0.25
5/25/2002	13.09	8.455	873.634	0.64	0.25
5/26/2002	11.06	7.140	737.817	0.64	0.25
5/27/2002	16.01	10.337	1068.182	0.64	0.25
5/28/2002	61.61	39.786	4111.218	0.64	0.25
5/29/2002	30.14	19.467	2011.560	0.64	0.25
5/30/2002	19.91	12.859	1328.804	0.64	0.25
5/31/2002	29.15	18.827	1945.487	0.64	0.25
6/1/2002	24.15	15.595	1611.451	0.64	0.25
6/2/2002	14.63	9.449	976.414	0.64	0.25
6/3/2002	12.21	7.886	814.902	0.64	0.25
6/4/2002	10.78	6.963	719.463	0.64	0.25
6/5/2002	10.23	6.607	682.756	0.64	0.25
6/6/2002	9.19	5.932	613.012	0.64	0.25
6/7/2002	8.53	5.506	568.963	0.64	0.25
6/8/2002	7.98	5.151	532.256	0.64	0.25
6/9/2002	7.48	4.831	499.219	0.64	0.25
6/10/2002	7.26	4.689	484.536	0.64	0.25
6/11/2002	16.78	10.835	1119.573	0.64	0.25
6/12/2002	74.26	47.956	4955.486	0.64	0.25
6/13/2002	51.98	33.569	3468.840	0.64	0.25

6/14/2002	32.67	21.101	2180.414	0.64	0.25
6/15/2002	20.79	13.428	1387.536	0.64	0.25
6/16/2002	15.29	9.875	1020.463	0.64	0.25
6/17/2002	12.32	7.957	822.244	0.64	0.25
6/18/2002	10.51	6.785	701.109	0.64	0.25
6/19/2002	9.13	5.897	609.341	0.64	0.25
6/20/2002	8.09	5.222	539.597	0.64	0.25
6/21/2002	7.48	4.831	499.219	0.64	0.25
6/22/2002	7.37	4.760	491.878	0.64	0.25
6/23/2002	6.93	4.476	462.512	0.64	0.25
6/24/2002	6.44	4.156	429.475	0.64	0.25
6/25/2002	7.76	5.009	517.573	0.64	0.25
6/26/2002	6.71	4.334	447.829	0.64	0.25
6/27/2002	5.89	3.801	392.768	0.64	0.25
6/28/2002	5.11	3.300	341.011	0.64	0.25
6/29/2002	4.43	2.863	295.861	0.64	0.25
6/30/2002	4.11	2.654	274.204	0.64	0.25
7/1/2002	3.59	2.320	239.699	0.64	0.25
7/2/2002	3.20	2.067	213.636	0.64	0.25
7/3/2002	2.85	1.844	190.511	0.64	0.25
7/4/2002	2.45	1.581	163.347	0.64	0.25
7/5/2002	2.04	1.318	136.184	0.64	0.25
7/6/2002	1.48	0.956	98.743	0.64	0.25
7/7/2002	1.14	0.739	76.351	0.64	0.25
7/8/2002	0.91	0.586	60.567	0.64	0.25
7/9/2002	0.74	0.476	49.188	0.64	0.25
7/10/2002	0.62	0.398	41.112	0.64	0.25
7/11/2002	0.51	0.327	33.771	0.64	0.25
7/12/2002	0.46	0.295	30.467	0.64	0.25
7/13/2002	0.35	0.227	23.493	0.64	0.25
7/14/2002	0.27	0.174	17.987	0.64	0.25
7/15/2002	0.21	0.139	14.316	0.64	0.25
7/16/2002	0.18	0.117	12.113	0.64	0.25
7/17/2002	0.20	0.131	13.582	0.64	0.25
7/18/2002	0.25	0.160	16.518	0.64	0.25
7/19/2002	0.17	0.107	11.012	0.64	0.25
7/20/2002	0.15	0.099	10.278	0.64	0.25
7/21/2002	0.15	0.099	10.278	0.64	0.25
7/22/2002	1.94	1.250	129.210	0.64	0.25
7/23/2002	3.47	2.242	231.623	0.64	0.25
7/24/2002	1.37	0.885	91.401	0.64	0.25
7/25/2002	0.34	0.217	22.391	0.64	0.25
7/26/2002	0.21	0.139	14.316	0.64	0.25
7/27/2002	0.30	0.192	19.822	0.64	0.25
7/28/2002	0.24	0.156	16.151	0.64	0.25
7/29/2002	0.17	0.107	11.012	0.64	0.25
7/30/2002	0.14	0.089	9.177	0.64	0.25
7/31/2002	0.12	0.075	7.709	0.64	0.25
8/1/2002	0.10	0.064	6.607	0.64	0.25
8/2/2002	0.11	0.071	7.341	0.64	0.25
8/3/2002	0.10	0.064	6.607	0.64	0.25
8/4/2002	0.09	0.057	5.873	0.64	0.25
8/5/2002	0.09	0.057	5.873	0.64	0.25
8/6/2002	0.08	0.053	5.506	0.64	0.25
8/7/2002	0.07	0.046	4.772	0.64	0.25
8/8/2002	0.04	0.025	2.570	0.64	0.25
8/9/2002	0.01	0.007	0.734	0.64	0.25
8/10/2002	0.00	0.000	0.000	0.64	0.25
8/11/2002	0.00	0.000	0.000	0.64	0.25
8/12/2002	0.00	0.000	0.000	0.64	0.25
8/13/2002	0.00	0.000	0.000	0.64	0.25
8/14/2002	0.00	0.000	0.000	0.64	0.25
8/15/2002	0.00	0.000	0.000	0.64	0.25
8/16/2002	0.00	0.000	0.000	0.64	0.25
8/17/2002	0.00	0.000	0.000	0.64	0.25
8/18/2002	0.00	0.000	0.000	0.64	0.25
8/19/2002	0.00	0.000	0.000	0.64	0.25
8/20/2002	0.00	0.000	0.000	0.64	0.25
8/21/2002	0.00	0.000	0.000	0.64	0.25

8/22/2002	0.00	0.000	0.000	0.64	0.25
8/23/2002	0.00	0.000	0.000	0.64	0.25
8/24/2002	0.04	0.025	2.570	0.64	0.25
8/25/2002	0.01	0.004	0.367	0.64	0.25
8/26/2002	0.00	0.000	0.000	0.64	0.25
8/27/2002	0.00	0.000	0.000	0.64	0.25
8/28/2002	0.00	0.000	0.000	0.64	0.25
8/29/2002	0.00	0.000	0.000	0.64	0.25
8/30/2002	0.00	0.000	0.000	0.64	0.25
8/31/2002	0.00	0.000	0.000	0.64	0.25
9/1/2002	0.00	0.000	0.000	0.64	0.25
9/2/2002	0.00	0.000	0.000	0.64	0.25
9/3/2002	0.00	0.000	0.000	0.64	0.25
9/4/2002	0.00	0.000	0.000	0.64	0.25
9/5/2002	0.00	0.000	0.000	0.64	0.25
9/6/2002	0.00	0.000	0.000	0.64	0.25
9/7/2002	0.00	0.000	0.000	0.64	0.25
9/8/2002	0.00	0.000	0.000	0.64	0.25
9/9/2002	0.00	0.000	0.000	0.64	0.25
9/10/2002	0.00	0.000	0.000	0.64	0.25
9/11/2002	0.00	0.000	0.000	0.64	0.25
9/12/2002	0.00	0.000	0.000	0.64	0.25
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9/14/2002	0.00	0.000	0.000	0.64	0.25
9/15/2002	0.00	0.000	0.000	0.64	0.25
9/16/2002	0.00	0.000	0.000	0.64	0.25
9/17/2002	0.00	0.000	0.000	0.64	0.25
9/18/2002	0.00	0.000	0.000	0.64	0.25
9/19/2002	0.00	0.000	0.000	0.64	0.25
9/20/2002	0.00	0.000	0.000	0.64	0.25
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9/22/2002	0.00	0.000	0.000	0.64	0.25
9/23/2002	0.00	0.000	0.000	0.64	0.25
9/24/2002	0.00	0.000	0.000	0.64	0.25
9/25/2002	0.00	0.000	0.000	0.64	0.25
9/26/2002	0.00	0.000	0.000	0.64	0.25
9/27/2002	0.00	0.000	0.000	0.64	0.25
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9/29/2002	0.00	0.000	0.000	0.64	0.25
9/30/2002	0.00	0.000	0.000	0.64	0.25
10/1/2002	0.00	0.000	0.000	0.64	0.25
10/2/2002	0.00	0.000	0.000	0.64	0.25
10/3/2002	0.00	0.000	0.000	0.64	0.25
10/4/2002	0.00	0.000	0.000	0.64	0.25
10/5/2002	0.00	0.000	0.000	0.64	0.25
10/6/2002	0.00	0.000	0.000	0.64	0.25
10/7/2002	0.00	0.000	0.000	0.64	0.25
10/8/2002	0.00	0.000	0.000	0.64	0.25
10/9/2002	0.00	0.000	0.000	0.64	0.25
10/10/2002	0.00	0.000	0.000	0.64	0.25
10/11/2002	0.00	0.000	0.000	0.64	0.25
10/12/2002	0.00	0.000	0.000	0.64	0.25
10/13/2002	0.00	0.000	0.000	0.64	0.25
10/14/2002	0.00	0.000	0.000	0.64	0.25
10/15/2002	0.00	0.000	0.000	0.64	0.25
10/16/2002	0.00	0.000	0.000	0.64	0.25
10/17/2002	0.00	0.000	0.000	0.64	0.25
10/18/2002	0.00	0.000	0.000	0.64	0.25
10/19/2002	0.00	0.000	0.000	0.64	0.25
10/20/2002	0.00	0.000	0.000	0.64	0.25
10/21/2002	0.00	0.000	0.000	0.64	0.25
10/22/2002	0.00	0.000	0.000	0.64	0.25
10/23/2002	0.00	0.000	0.000	0.64	0.25
10/24/2002	0.00	0.000	0.000	0.64	0.25
10/25/2002	0.00	0.000	0.000	0.64	0.25
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10/27/2002	0.00	0.000	0.000	0.64	0.25
10/28/2002	0.00	0.000	0.000	0.64	0.25
10/29/2002	0.00	0.000	0.000	0.64	0.25

10/30/2002	0.00	0.000	0.000	0.64	0.25
10/31/2002	0.00	0.000	0.000	0.64	0.25
11/1/2002	0.00	0.000	0.000	0.64	0.25
11/2/2002	0.00	0.000	0.000	0.64	0.25
11/3/2002	0.00	0.000	0.000	0.64	0.25
11/4/2002	0.00	0.000	0.000	0.64	0.25
11/5/2002	0.00	0.000	0.000	0.64	0.25
11/6/2002	0.00	0.000	0.000	0.64	0.25
11/7/2002	0.00	0.000	0.000	0.64	0.25
11/8/2002	0.00	0.000	0.000	0.64	0.25
11/9/2002	0.00	0.000	0.000	0.64	0.25
11/10/2002	0.00	0.000	0.000	0.64	0.25
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11/14/2002	0.00	0.000	0.000	0.64	0.25
11/15/2002	0.00	0.000	0.000	0.64	0.25
11/16/2002	0.00	0.000	0.000	0.64	0.25
11/17/2002	0.00	0.000	0.000	0.64	0.25
11/18/2002	0.00	0.000	0.000	0.64	0.25
11/19/2002	0.00	0.000	0.000	0.64	0.25
11/20/2002	0.00	0.000	0.000	0.64	0.25
11/21/2002	0.00	0.000	0.000	0.64	0.25
11/22/2002	0.00	0.000	0.000	0.64	0.25
11/23/2002	0.00	0.000	0.000	0.64	0.25
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11/29/2002	0.00	0.000	0.000	0.64	0.25
11/30/2002	0.00	0.000	0.000	0.64	0.25
12/1/2002	0.00	0.000	0.000	0.64	0.25
12/2/2002	0.00	0.000	0.000	0.64	0.25
12/3/2002	0.00	0.000	0.000	0.64	0.25
12/4/2002	0.00	0.000	0.000	0.64	0.25
12/5/2002	0.00	0.000	0.000	0.64	0.25
12/6/2002	0.00	0.000	0.000	0.64	0.25
12/7/2002	0.00	0.000	0.000	0.64	0.25
12/8/2002	0.00	0.000	0.000	0.64	0.25
12/9/2002	0.00	0.000	0.000	0.64	0.25
12/10/2002	0.00	0.000	0.000	0.64	0.25
12/11/2002	0.00	0.000	0.000	0.64	0.25
12/12/2002	0.00	0.000	0.000	0.64	0.25
12/13/2002	0.00	0.000	0.000	0.64	0.25
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12/15/2002	0.00	0.000	0.000	0.64	0.25
12/16/2002	0.00	0.000	0.000	0.64	0.25
12/17/2002	0.00	0.000	0.000	0.64	0.25
12/18/2002	0.00	0.000	0.000	0.64	0.25
12/19/2002	0.03	0.018	1.835	0.64	0.25
12/20/2002	0.08	0.053	5.506	0.64	0.25
12/21/2002	0.21	0.139	14.316	0.64	0.25
12/22/2002	0.30	0.192	19.822	0.64	0.25
12/23/2002	0.21	0.135	13.949	0.64	0.25
12/24/2002	0.14	0.092	9.544	0.64	0.25
12/25/2002	0.13	0.082	8.443	0.64	0.25
12/26/2002	0.15	0.096	9.911	0.64	0.25
12/27/2002	0.10	0.067	6.974	0.64	0.25
12/28/2002	0.10	0.067	6.974	0.64	0.25
12/29/2002	0.12	0.075	7.709	0.64	0.25
12/30/2002	0.21	0.139	14.316	0.64	0.25
12/31/2002	3.16	2.039	210.700	0.64	0.25
1/1/2003	2.57	1.662	171.790	0.64	0.25
1/2/2003	1.24	0.803	82.959	0.64	0.25
1/3/2003	0.61	0.391	40.378	0.64	0.25
1/4/2003	0.37	0.238	24.594	0.64	0.25
1/5/2003	0.35	0.224	23.126	0.64	0.25
1/6/2003	0.31	0.199	20.556	0.64	0.25

1/7/2003	0.28	0.181	18.721	0.64	0.25
1/8/2003	0.29	0.188	19.455	0.64	0.25
1/9/2003	0.29	0.185	19.088	0.64	0.25
1/10/2003	0.24	0.153	15.784	0.64	0.25
1/11/2003	0.17	0.110	11.379	0.64	0.25
1/12/2003	0.14	0.092	9.544	0.64	0.25
1/13/2003	0.12	0.078	8.076	0.64	0.25
1/14/2003	0.10	0.064	6.607	0.64	0.25
1/15/2003	0.08	0.053	5.506	0.64	0.25
1/16/2003	0.07	0.043	4.405	0.64	0.25
1/17/2003	0.06	0.036	3.671	0.64	0.25
1/18/2003	0.04	0.028	2.937	0.64	0.25
1/19/2003	0.04	0.025	2.570	0.64	0.25
1/20/2003	0.03	0.021	2.202	0.64	0.25
1/21/2003	0.03	0.018	1.835	0.64	0.25
1/22/2003	0.02	0.014	1.468	0.64	0.25
1/23/2003	0.03	0.018	1.835	0.64	0.25
1/24/2003	0.03	0.021	2.202	0.64	0.25
1/25/2003	0.04	0.025	2.570	0.64	0.25
1/26/2003	0.04	0.028	2.937	0.64	0.25
1/27/2003	0.05	0.032	3.304	0.64	0.25
1/28/2003	0.06	0.036	3.671	0.64	0.25
1/29/2003	0.07	0.043	4.405	0.64	0.25
1/30/2003	0.08	0.050	5.139	0.64	0.25
1/31/2003	0.09	0.057	5.873	0.64	0.25
2/1/2003	0.10	0.064	6.607	0.64	0.25
2/2/2003	0.12	0.075	7.709	0.64	0.25
2/3/2003	0.16	0.103	10.645	0.64	0.25
2/4/2003	0.22	0.142	14.683	0.64	0.25
2/5/2003	0.35	0.227	23.493	0.64	0.25
2/6/2003	0.32	0.210	21.657	0.64	0.25
2/7/2003	0.28	0.178	18.354	0.64	0.25
2/8/2003	0.20	0.131	13.582	0.64	0.25
2/9/2003	0.21	0.135	13.949	0.64	0.25
2/10/2003	0.20	0.128	13.215	0.64	0.25
2/11/2003	0.13	0.085	8.810	0.64	0.25
2/12/2003	0.10	0.067	6.974	0.64	0.25
2/13/2003	0.10	0.064	6.607	0.64	0.25
2/14/2003	0.12	0.075	7.709	0.64	0.25
2/15/2003	0.28	0.178	18.354	0.64	0.25
2/16/2003	0.72	0.462	47.719	0.64	0.25
2/17/2003	0.52	0.337	34.872	0.64	0.25
2/18/2003	0.44	0.284	29.366	0.64	0.25
2/19/2003	0.72	0.462	47.719	0.64	0.25
2/20/2003	1.32	0.853	88.098	0.64	0.25
2/21/2003	1.16	0.746	77.085	0.64	0.25
2/22/2003	0.94	0.604	62.402	0.64	0.25
2/23/2003	0.77	0.497	51.390	0.64	0.25
2/24/2003	0.66	0.426	44.049	0.64	0.25
2/25/2003	0.55	0.355	36.707	0.64	0.25
2/26/2003	0.50	0.320	33.037	0.64	0.25
2/27/2003	0.44	0.284	29.366	0.64	0.25
2/28/2003	0.40	0.256	26.429	0.64	0.25
3/1/2003	0.36	0.234	24.227	0.64	0.25
3/2/2003	0.39	0.249	25.695	0.64	0.25
3/3/2003	0.33	0.213	22.024	0.64	0.25
3/4/2003	0.34	0.220	22.759	0.64	0.25
3/5/2003	0.36	0.231	23.860	0.64	0.25
3/6/2003	0.40	0.256	26.429	0.64	0.25
3/7/2003	0.42	0.270	27.898	0.64	0.25
3/8/2003	0.44	0.284	29.366	0.64	0.25
3/9/2003	0.37	0.242	24.961	0.64	0.25
3/10/2003	0.34	0.217	22.391	0.64	0.25
3/11/2003	0.34	0.220	22.759	0.64	0.25
3/12/2003	0.38	0.245	25.328	0.64	0.25
3/13/2003	1.82	1.172	121.134	0.64	0.25
3/14/2003	2.78	1.797	185.739	0.64	0.25
3/15/2003	1.82	1.176	121.501	0.64	0.25
3/16/2003	1.33	0.856	88.465	0.64	0.25

3/17/2003	1.07	0.689	71.212	0.64	0.25
3/18/2003	0.93	0.600	62.035	0.64	0.25
3/19/2003	1.09	0.707	73.048	0.64	0.25
3/20/2003	1.58	1.020	105.350	0.64	0.25
3/21/2003	2.08	1.346	139.121	0.64	0.25
3/22/2003	1.94	1.250	129.210	0.64	0.25
3/23/2003	1.56	1.005	103.882	0.64	0.25
3/24/2003	1.21	0.782	80.756	0.64	0.25
3/25/2003	1.00	0.643	66.440	0.64	0.25
3/26/2003	0.81	0.526	54.327	0.64	0.25
3/27/2003	0.68	0.437	45.150	0.64	0.25
3/28/2003	0.75	0.487	50.289	0.64	0.25
3/29/2003	0.81	0.522	53.960	0.64	0.25
3/30/2003	0.66	0.426	44.049	0.64	0.25
3/31/2003	0.61	0.391	40.378	0.64	0.25
4/1/2003	0.58	0.373	38.543	0.64	0.25
4/2/2003	0.53	0.345	35.606	0.64	0.25
4/3/2003	0.50	0.323	33.404	0.64	0.25
4/4/2003	0.60	0.387	40.011	0.64	0.25
4/5/2003	0.69	0.448	46.251	0.64	0.25
4/6/2003	0.50	0.323	33.404	0.64	0.25
4/7/2003	0.66	0.426	44.049	0.64	0.25
4/8/2003	0.61	0.391	40.378	0.64	0.25
4/9/2003	0.52	0.334	34.505	0.64	0.25
4/10/2003	0.44	0.284	29.366	0.64	0.25
4/11/2003	0.43	0.281	28.999	0.64	0.25
4/12/2003	0.41	0.266	27.530	0.64	0.25
4/13/2003	0.37	0.242	24.961	0.64	0.25
4/14/2003	0.34	0.217	22.391	0.64	0.25
4/15/2003	0.35	0.227	23.493	0.64	0.25
4/16/2003	0.35	0.224	23.126	0.64	0.25
4/17/2003	0.42	0.270	27.898	0.64	0.25
4/18/2003	0.37	0.238	24.594	0.64	0.25
4/19/2003	0.36	0.231	23.860	0.64	0.25
4/20/2003	0.51	0.327	33.771	0.64	0.25
4/21/2003	0.55	0.355	36.707	0.64	0.25
4/22/2003	0.39	0.252	26.062	0.64	0.25
4/23/2003	0.34	0.217	22.391	0.64	0.25
4/24/2003	0.32	0.206	21.290	0.64	0.25
4/25/2003	0.63	0.409	42.213	0.64	0.25
4/26/2003	0.62	0.398	41.112	0.64	0.25
4/27/2003	0.46	0.298	30.834	0.64	0.25
4/28/2003	0.45	0.288	29.733	0.64	0.25
4/29/2003	0.40	0.256	26.429	0.64	0.25
4/30/2003	0.34	0.220	22.759	0.64	0.25
5/1/2003	0.29	0.188	19.455	0.64	0.25
5/2/2003	0.29	0.188	19.455	0.64	0.25
5/3/2003	0.28	0.178	18.354	0.64	0.25
5/4/2003	0.35	0.227	23.493	0.64	0.25
5/5/2003	7.70	4.973	513.902	0.64	0.25
5/6/2003	4.26	2.753	284.482	0.64	0.25
5/7/2003	3.16	2.043	211.067	0.64	0.25
5/8/2003	2.32	1.496	154.538	0.64	0.25
5/9/2003	10.07	6.501	671.744	0.64	0.25
5/10/2003	146.87	94.847	9800.850	0.64	0.25
5/11/2003	96.81	62.521	6460.485	0.64	0.25
5/12/2003	39.33	25.399	2624.572	0.64	0.25
5/13/2003	22.11	14.280	1475.634	0.64	0.25
5/14/2003	15.90	10.266	1060.841	0.64	0.25
5/15/2003	12.87	8.312	858.951	0.64	0.25
5/16/2003	10.56	6.820	704.780	0.64	0.25
5/17/2003	9.24	5.968	616.683	0.64	0.25
5/18/2003	8.14	5.257	543.268	0.64	0.25
5/19/2003	7.65	4.938	510.231	0.64	0.25
5/20/2003	16.83	10.870	1123.243	0.64	0.25
5/21/2003	10.95	7.069	730.475	0.64	0.25
5/22/2003	8.75	5.648	583.646	0.64	0.25
5/23/2003	7.54	4.867	502.890	0.64	0.25
5/24/2003	6.82	4.405	455.171	0.64	0.25

5/25/2003	6.38	4.121	425.805	0.64	0.25
5/26/2003	5.61	3.623	374.414	0.64	0.25
5/27/2003	4.96	3.204	331.100	0.64	0.25
5/28/2003	4.76	3.076	317.885	0.64	0.25
5/29/2003	4.77	3.080	318.252	0.64	0.25
5/30/2003	4.36	2.813	290.722	0.64	0.25
5/31/2003	4.09	2.639	272.735	0.64	0.25
6/1/2003	3.22	2.082	215.105	0.64	0.25
6/2/2003	2.90	1.872	193.447	0.64	0.25
6/3/2003	4.10	2.650	273.836	0.64	0.25
6/4/2003	3.67	2.369	244.838	0.64	0.25
6/5/2003	2.88	1.861	192.346	0.64	0.25
6/6/2003	2.59	1.670	172.524	0.64	0.25
6/7/2003	2.89	1.865	192.713	0.64	0.25
6/8/2003	2.38	1.538	158.943	0.64	0.25
6/9/2003	1.87	1.208	124.805	0.64	0.25
6/10/2003	1.96	1.265	130.678	0.64	0.25
6/11/2003	2.41	1.559	161.145	0.64	0.25
6/12/2003	2.72	1.758	181.701	0.64	0.25
6/13/2003	2.46	1.591	164.449	0.64	0.25
6/14/2003	2.22	1.435	148.297	0.64	0.25
6/15/2003	2.24	1.449	149.766	0.64	0.25
6/16/2003	1.64	1.062	109.755	0.64	0.25
6/17/2003	1.16	0.750	77.452	0.64	0.25
6/18/2003	0.99	0.639	66.073	0.64	0.25
6/19/2003	1.99	1.282	132.513	0.64	0.25
6/20/2003	1.80	1.165	120.400	0.64	0.25
6/21/2003	1.54	0.995	102.780	0.64	0.25
6/22/2003	1.08	0.700	72.313	0.64	0.25
6/23/2003	0.78	0.501	51.757	0.64	0.25
6/24/2003	0.60	0.387	40.011	0.64	0.25
6/25/2003	0.50	0.323	33.404	0.64	0.25
6/26/2003	0.56	0.362	37.441	0.64	0.25
6/27/2003	0.54	0.348	35.973	0.64	0.25
6/28/2003	0.48	0.309	31.935	0.64	0.25
6/29/2003	0.42	0.274	28.265	0.64	0.25
6/30/2003	0.39	0.249	25.695	0.64	0.25
7/1/2003	0.36	0.231	23.860	0.64	0.25
7/2/2003	0.33	0.213	22.024	0.64	0.25
7/3/2003	0.32	0.206	21.290	0.64	0.25
7/4/2003	0.34	0.217	22.391	0.64	0.25
7/5/2003	0.31	0.199	20.556	0.64	0.25
7/6/2003	0.28	0.181	18.721	0.64	0.25
7/7/2003	0.24	0.156	16.151	0.64	0.25
7/8/2003	0.15	0.099	10.278	0.64	0.25
7/9/2003	2.74	1.773	183.169	0.64	0.25
7/10/2003	113.87	73.533	7598.411	0.64	0.25
7/11/2003	34.11	22.024	2275.853	0.64	0.25
7/12/2003	14.74	9.520	983.756	0.64	0.25
7/13/2003	8.25	5.328	550.610	0.64	0.25
7/14/2003	5.21	3.368	347.985	0.64	0.25
7/15/2003	3.22	2.078	214.738	0.64	0.25
7/16/2003	1.91	1.233	127.374	0.64	0.25
7/17/2003	0.97	0.629	64.972	0.64	0.25
7/18/2003	0.67	0.430	44.416	0.64	0.25
7/19/2003	0.61	0.394	40.745	0.64	0.25
7/20/2003	0.47	0.302	31.201	0.64	0.25
7/21/2003	2.81	1.812	187.207	0.64	0.25
7/22/2003	3.44	2.224	229.788	0.64	0.25
7/23/2003	2.82	1.819	187.941	0.64	0.25
7/24/2003	1.25	0.810	83.693	0.64	0.25
7/25/2003	0.52	0.337	34.872	0.64	0.25
7/26/2003	0.31	0.202	20.923	0.64	0.25
7/27/2003	0.24	0.153	15.784	0.64	0.25
7/28/2003	0.21	0.139	14.316	0.64	0.25
7/29/2003	0.20	0.131	13.582	0.64	0.25
7/30/2003	0.17	0.107	11.012	0.64	0.25
7/31/2003	0.15	0.099	10.278	0.64	0.25
8/1/2003	0.14	0.092	9.544	0.64	0.25

8/2/2003	0.15	0.099	10.278	0.64	0.25
8/3/2003	0.15	0.096	9.911	0.64	0.25
8/4/2003	0.14	0.089	9.177	0.64	0.25
8/5/2003	0.13	0.085	8.810	0.64	0.25
8/6/2003	0.13	0.085	8.810	0.64	0.25
8/7/2003	0.14	0.089	9.177	0.64	0.25
8/8/2003	0.14	0.089	9.177	0.64	0.25
8/9/2003	0.12	0.078	8.076	0.64	0.25
8/10/2003	0.09	0.060	6.240	0.64	0.25
8/11/2003	0.07	0.046	4.772	0.64	0.25
8/12/2003	0.06	0.036	3.671	0.64	0.25
8/13/2003	0.05	0.032	3.304	0.64	0.25
8/14/2003	0.03	0.018	1.835	0.64	0.25
8/15/2003	0.01	0.004	0.367	0.64	0.25
8/16/2003	0.00	0.000	0.000	0.64	0.25
8/17/2003	0.00	0.000	0.000	0.64	0.25
8/18/2003	0.00	0.000	0.000	0.64	0.25
8/19/2003	0.00	0.000	0.000	0.64	0.25
8/20/2003	0.00	0.000	0.000	0.64	0.25
8/21/2003	0.00	0.000	0.000	0.64	0.25
8/22/2003	0.00	0.000	0.000	0.64	0.25
8/23/2003	0.00	0.000	0.000	0.64	0.25
8/24/2003	0.00	0.000	0.000	0.64	0.25
8/25/2003	0.00	0.000	0.000	0.64	0.25
8/26/2003	0.00	0.000	0.000	0.64	0.25
8/27/2003	0.00	0.000	0.000	0.64	0.25
8/28/2003	0.00	0.000	0.000	0.64	0.25
8/29/2003	0.00	0.000	0.000	0.64	0.25
8/30/2003	0.00	0.000	0.000	0.64	0.25
8/31/2003	0.43	0.277	28.632	0.64	0.25
9/1/2003	96.26	62.166	6423.778	0.64	0.25
9/2/2003	53.36	34.457	3560.608	0.64	0.25
9/3/2003	20.35	13.144	1358.170	0.64	0.25
9/4/2003	10.73	6.927	715.792	0.64	0.25
9/5/2003	7.59	4.902	506.561	0.64	0.25
9/6/2003	4.47	2.884	298.063	0.64	0.25
9/7/2003	2.59	1.670	172.524	0.64	0.25
9/8/2003	1.53	0.988	102.046	0.64	0.25
9/9/2003	0.95	0.615	63.504	0.64	0.25
9/10/2003	0.70	0.455	46.985	0.64	0.25
9/11/2003	0.48	0.313	32.302	0.64	0.25
9/12/2003	0.38	0.245	25.328	0.64	0.25
9/13/2003	0.35	0.224	23.126	0.64	0.25
9/14/2003	0.33	0.213	22.024	0.64	0.25
9/15/2003	0.32	0.206	21.290	0.64	0.25
9/16/2003	0.32	0.206	21.290	0.64	0.25
9/17/2003	0.31	0.202	20.923	0.64	0.25
9/18/2003	0.29	0.188	19.455	0.64	0.25
9/19/2003	0.29	0.188	19.455	0.64	0.25
9/20/2003	0.29	0.188	19.455	0.64	0.25
9/21/2003	0.29	0.188	19.455	0.64	0.25
9/22/2003	0.29	0.188	19.455	0.64	0.25
9/23/2003	0.31	0.199	20.556	0.64	0.25
9/24/2003	0.32	0.206	21.290	0.64	0.25
9/25/2003	0.31	0.202	20.923	0.64	0.25
9/26/2003	0.31	0.202	20.923	0.64	0.25
9/27/2003	1.57	1.016	104.983	0.64	0.25
9/28/2003	4.58	2.956	305.405	0.64	0.25
9/29/2003	4.35	2.806	289.988	0.64	0.25
9/30/2003	2.98	1.922	198.587	0.64	0.25
10/1/2003	1.83	1.183	122.235	0.64	0.25
10/2/2003	1.17	0.753	77.819	0.64	0.25
10/3/2003	0.91	0.590	60.934	0.64	0.25
10/4/2003	0.78	0.504	52.124	0.64	0.25
10/5/2003	0.74	0.476	49.188	0.64	0.25
10/6/2003	0.69	0.444	45.884	0.64	0.25
10/7/2003	0.62	0.398	41.112	0.64	0.25
10/8/2003	0.55	0.355	36.707	0.64	0.25
10/9/2003	0.55	0.355	36.707	0.64	0.25

10/10/2003	0.62	0.401	41.479	0.64	0.25
10/11/2003	0.85	0.547	56.529	0.64	0.25
10/12/2003	1.17	0.757	78.187	0.64	0.25
10/13/2003	1.62	1.044	107.919	0.64	0.25
10/14/2003	10.95	7.069	730.475	0.64	0.25
10/15/2003	21.40	13.819	1427.914	0.64	0.25
10/16/2003	13.64	8.810	910.341	0.64	0.25
10/17/2003	9.79	6.323	653.390	0.64	0.25
10/18/2003	8.75	5.648	583.646	0.64	0.25
10/19/2003	8.42	5.435	561.622	0.64	0.25
10/20/2003	7.76	5.009	517.573	0.64	0.25
10/21/2003	7.70	4.973	513.902	0.64	0.25
10/22/2003	8.25	5.328	550.610	0.64	0.25
10/23/2003	8.25	5.328	550.610	0.64	0.25
10/24/2003	7.15	4.618	477.195	0.64	0.25
10/25/2003	7.15	4.618	477.195	0.64	0.25
10/26/2003	7.70	4.973	513.902	0.64	0.25
10/27/2003	7.15	4.618	477.195	0.64	0.25
10/28/2003	6.60	4.263	440.488	0.64	0.25
10/29/2003	7.70	4.973	513.902	0.64	0.25
10/30/2003	8.80	5.684	587.317	0.64	0.25
10/31/2003	8.25	5.328	550.610	0.64	0.25
11/1/2003	8.25	5.328	550.610	0.64	0.25
11/2/2003	8.25	5.328	550.610	0.64	0.25
11/3/2003	8.80	5.684	587.317	0.64	0.25
11/4/2003	9.90	6.394	660.731	0.64	0.25
11/5/2003	12.10	7.815	807.561	0.64	0.25
11/6/2003	13.64	8.810	910.341	0.64	0.25
11/7/2003	12.32	7.957	822.244	0.64	0.25
11/8/2003	11.99	7.744	800.219	0.64	0.25
11/9/2003	11.33	7.318	756.170	0.64	0.25
11/10/2003	10.73	6.927	715.792	0.64	0.25
11/11/2003	11.28	7.282	752.500	0.64	0.25
11/12/2003	12.16	7.851	811.231	0.64	0.25
11/13/2003	11.33	7.318	756.170	0.64	0.25
11/14/2003	11.61	7.495	774.524	0.64	0.25
11/15/2003	11.33	7.318	756.170	0.64	0.25
11/16/2003	11.88	7.673	792.878	0.64	0.25
11/17/2003	12.38	7.993	825.914	0.64	0.25
11/18/2003	91.31	58.969	6093.412	0.64	0.25
11/19/2003	96.81	62.521	6460.485	0.64	0.25
11/20/2003	49.73	32.113	3318.340	0.64	0.25
11/21/2003	32.89	21.243	2195.097	0.64	0.25
11/22/2003	24.75	15.985	1651.829	0.64	0.25
11/23/2003	32.23	20.817	2151.048	0.64	0.25
11/24/2003	91.86	59.324	6130.119	0.64	0.25
11/25/2003	48.90	31.580	3263.279	0.64	0.25
11/26/2003	34.27	22.131	2286.865	0.64	0.25
11/27/2003	26.57	17.158	1772.963	0.64	0.25
11/28/2003	21.45	13.854	1431.585	0.64	0.25
11/29/2003	18.54	11.971	1237.036	0.64	0.25
11/30/2003	17.60	11.367	1174.634	0.64	0.25
12/1/2003	14.03	9.058	936.036	0.64	0.25
12/2/2003	12.49	8.064	833.256	0.64	0.25
12/3/2003	12.82	8.277	855.280	0.64	0.25
12/4/2003	12.98	8.383	866.292	0.64	0.25
12/5/2003	13.04	8.419	869.963	0.64	0.25
12/6/2003	11.44	7.389	763.512	0.64	0.25
12/7/2003	11.28	7.282	752.500	0.64	0.25
12/8/2003	11.55	7.460	770.853	0.64	0.25
12/9/2003	11.33	7.318	756.170	0.64	0.25
12/10/2003	13.86	8.952	925.024	0.64	0.25
12/11/2003	12.60	8.135	840.597	0.64	0.25
12/12/2003	11.00	7.105	734.146	0.64	0.25
12/13/2003	10.89	7.034	726.805	0.64	0.25
12/14/2003	11.66	7.531	778.195	0.64	0.25
12/15/2003	11.00	7.105	734.146	0.64	0.25
12/16/2003	11.11	7.176	741.487	0.64	0.25
12/17/2003	9.63	6.217	642.378	0.64	0.25

12/18/2003	9.90	6.394	660.731	0.64	0.25
12/19/2003	9.08	5.861	605.670	0.64	0.25
12/20/2003	8.42	5.435	561.622	0.64	0.25
12/21/2003	8.36	5.400	557.951	0.64	0.25
12/22/2003	8.86	5.719	590.988	0.64	0.25
12/23/2003	118.82	76.730	7928.777	0.64	0.25
12/24/2003	86.36	55.771	5763.046	0.64	0.25
12/25/2003	47.20	30.479	3149.486	0.64	0.25
12/26/2003	33.00	21.314	2202.438	0.64	0.25
12/27/2003	27.56	17.797	1839.036	0.64	0.25
12/28/2003	25.41	16.412	1695.877	0.64	0.25
12/29/2003	140.27	90.584	9360.362	0.64	0.25
12/30/2003	81.96	52.930	5469.388	0.64	0.25
12/31/2003	48.35	31.225	3226.572	0.64	0.25
1/1/2004	36.53	23.587	2437.365	0.64	0.25
1/2/2004	31.68	20.461	2114.341	0.64	0.25
1/3/2004	35.32	22.806	2356.609	0.64	0.25
1/4/2004	491.22	317.222	32779.620	0.64	0.25
1/5/2004	358.65	231.611	23933.161	0.64	0.25
1/6/2004	95.71	61.810	6387.070	0.64	0.25
1/7/2004	51.98	33.569	3468.840	0.64	0.25
1/8/2004	36.53	23.587	2437.365	0.64	0.25
1/9/2004	27.23	17.584	1817.011	0.64	0.25
1/10/2004	20.63	13.321	1376.524	0.64	0.25
1/11/2004	19.97	12.895	1332.475	0.64	0.25
1/12/2004	20.19	13.037	1347.158	0.64	0.25
1/13/2004	16.94	10.941	1130.585	0.64	0.25
1/14/2004	17.05	11.012	1137.926	0.64	0.25
1/15/2004	15.18	9.804	1013.122	0.64	0.25
1/16/2004	13.20	8.526	880.975	0.64	0.25
1/17/2004	31.68	20.461	2114.341	0.64	0.25
1/18/2004	92.96	60.034	6203.534	0.64	0.25
1/19/2004	45.93	29.662	3065.060	0.64	0.25
1/20/2004	29.81	19.254	1989.536	0.64	0.25
1/21/2004	23.65	15.275	1578.414	0.64	0.25
1/22/2004	18.32	11.829	1222.353	0.64	0.25
1/23/2004	24.15	15.595	1611.451	0.64	0.25
1/24/2004	14.80	9.556	987.426	0.64	0.25
1/25/2004	14.52	9.378	969.073	0.64	0.25
1/26/2004	23.54	15.204	1571.073	0.64	0.25
1/27/2004	11.83	7.637	789.207	0.64	0.25
1/28/2004	10.67	6.891	712.122	0.64	0.25
1/29/2004	10.45	6.749	697.439	0.64	0.25
1/30/2004	9.90	6.394	660.731	0.64	0.25
1/31/2004	9.90	6.394	660.731	0.64	0.25
2/1/2004	9.35	6.039	624.024	0.64	0.25
2/2/2004	9.90	6.394	660.731	0.64	0.25
2/3/2004	8.80	5.684	587.317	0.64	0.25
2/4/2004	7.70	4.973	513.902	0.64	0.25
2/5/2004	7.15	4.618	477.195	0.64	0.25
2/6/2004	7.15	4.618	477.195	0.64	0.25
2/7/2004	6.60	4.263	440.488	0.64	0.25
2/8/2004	6.60	4.263	440.488	0.64	0.25
2/9/2004	6.05	3.908	403.780	0.64	0.25
2/10/2004	6.05	3.908	403.780	0.64	0.25
2/11/2004	5.50	3.552	367.073	0.64	0.25
2/12/2004	5.50	3.552	367.073	0.64	0.25
2/13/2004	5.50	3.552	367.073	0.64	0.25
2/14/2004	5.50	3.552	367.073	0.64	0.25
2/15/2004	5.50	3.552	367.073	0.64	0.25
2/16/2004	5.50	3.552	367.073	0.64	0.25
2/17/2004	6.60	4.263	440.488	0.64	0.25
2/18/2004	13.75	8.881	917.683	0.64	0.25
2/19/2004	35.26	22.770	2352.938	0.64	0.25
2/20/2004	42.41	27.388	2830.133	0.64	0.25
2/21/2004	27.34	17.655	1824.353	0.64	0.25
2/22/2004	17.77	11.474	1185.646	0.64	0.25
2/23/2004	19.20	12.398	1281.085	0.64	0.25
2/24/2004	23.38	15.097	1560.060	0.64	0.25

2/25/2004	19.03	12.291	1270.073	0.64	0.25
2/26/2004	15.95	10.302	1064.512	0.64	0.25
2/27/2004	13.15	8.490	877.305	0.64	0.25
2/28/2004	11.72	7.566	781.866	0.64	0.25
2/29/2004	11.66	7.531	778.195	0.64	0.25
3/1/2004	13.04	8.419	869.963	0.64	0.25
3/2/2004	11.50	7.424	767.183	0.64	0.25
3/3/2004	9.57	6.181	638.707	0.64	0.25
3/4/2004	70.96	45.825	4735.242	0.64	0.25
3/5/2004	188.68	121.845	12590.604	0.64	0.25
3/6/2004	86.36	55.771	5763.046	0.64	0.25
3/7/2004	51.16	33.037	3413.779	0.64	0.25
3/8/2004	35.10	22.664	2341.926	0.64	0.25
3/9/2004	28.16	18.188	1879.414	0.64	0.25
3/10/2004	22.61	14.600	1508.670	0.64	0.25
3/11/2004	20.63	13.321	1376.524	0.64	0.25
3/12/2004	17.44	11.261	1163.621	0.64	0.25
3/13/2004	15.79	10.195	1053.500	0.64	0.25
3/14/2004	15.62	10.089	1042.487	0.64	0.25
3/15/2004	14.08	9.094	939.707	0.64	0.25
3/16/2004	14.96	9.662	998.439	0.64	0.25
3/17/2004	13.75	8.881	917.683	0.64	0.25
3/18/2004	12.54	8.099	836.926	0.64	0.25
3/19/2004	10.89	7.034	726.805	0.64	0.25
3/20/2004	12.32	7.957	822.244	0.64	0.25
3/21/2004	10.62	6.856	708.451	0.64	0.25
3/22/2004	10.12	6.536	675.414	0.64	0.25
3/23/2004	10.40	6.714	693.768	0.64	0.25
3/24/2004	10.56	6.820	704.780	0.64	0.25
3/25/2004	10.40	6.714	693.768	0.64	0.25
3/26/2004	68.21	44.049	4551.705	0.64	0.25
3/27/2004	87.46	56.482	5836.461	0.64	0.25
3/28/2004	48.96	31.616	3266.950	0.64	0.25
3/29/2004	59.41	38.365	3964.389	0.64	0.25
3/30/2004	121.02	78.151	8075.606	0.64	0.25
3/31/2004	85.26	55.061	5689.632	0.64	0.25
4/1/2004	51.76	33.427	3454.157	0.64	0.25
4/2/2004	36.80	23.765	2455.718	0.64	0.25
4/3/2004	29.15	18.827	1945.487	0.64	0.25
4/4/2004	22.72	14.671	1516.012	0.64	0.25
4/5/2004	19.31	12.469	1288.426	0.64	0.25
4/6/2004	17.99	11.616	1200.329	0.64	0.25
4/7/2004	17.00	10.977	1134.256	0.64	0.25
4/8/2004	15.46	9.982	1031.475	0.64	0.25
4/9/2004	12.98	8.383	866.292	0.64	0.25
4/10/2004	12.10	7.815	807.561	0.64	0.25
4/11/2004	11.39	7.353	759.841	0.64	0.25
4/12/2004	10.95	7.069	730.475	0.64	0.25
4/13/2004	10.73	6.927	715.792	0.64	0.25
4/14/2004	9.68	6.252	646.049	0.64	0.25
4/15/2004	9.19	5.932	613.012	0.64	0.25
4/16/2004	9.30	6.003	620.353	0.64	0.25
4/17/2004	8.86	5.719	590.988	0.64	0.25
4/18/2004	8.31	5.364	554.280	0.64	0.25
4/19/2004	8.25	5.328	550.610	0.64	0.25
4/20/2004	8.86	5.719	590.988	0.64	0.25
4/21/2004	9.35	6.039	624.024	0.64	0.25
4/22/2004	7.70	4.973	513.902	0.64	0.25
4/23/2004	7.04	4.547	469.853	0.64	0.25
4/24/2004	6.82	4.405	455.171	0.64	0.25
4/25/2004	8.31	5.364	554.280	0.64	0.25
4/26/2004	6.77	4.369	451.500	0.64	0.25
4/27/2004	6.22	4.014	414.793	0.64	0.25
4/28/2004	6.00	3.872	400.110	0.64	0.25
4/29/2004	5.72	3.694	381.756	0.64	0.25
4/30/2004	5.72	3.694	381.756	0.64	0.25
5/1/2004	16.50	10.657	1101.219	0.64	0.25
5/2/2004	25.85	16.696	1725.243	0.64	0.25
5/3/2004	16.28	10.515	1086.536	0.64	0.25

5/4/2004	13.31	8.597	888.317	0.64	0.25
5/5/2004	11.66	7.531	778.195	0.64	0.25
5/6/2004	9.90	6.394	660.731	0.64	0.25
5/7/2004	8.91	5.755	594.658	0.64	0.25
5/8/2004	8.47	5.471	565.292	0.64	0.25
5/9/2004	8.31	5.364	554.280	0.64	0.25
5/10/2004	7.87	5.080	524.914	0.64	0.25
5/11/2004	7.43	4.796	495.549	0.64	0.25
5/12/2004	7.21	4.654	480.866	0.64	0.25
5/13/2004	7.48	4.831	499.219	0.64	0.25
5/14/2004	9.13	5.897	609.341	0.64	0.25
5/15/2004	12.49	8.064	833.256	0.64	0.25
5/16/2004	10.34	6.678	690.097	0.64	0.25
5/17/2004	9.30	6.003	620.353	0.64	0.25
5/18/2004	8.80	5.684	587.317	0.64	0.25
5/19/2004	8.64	5.577	576.305	0.64	0.25
5/20/2004	8.14	5.257	543.268	0.64	0.25
5/21/2004	7.21	4.654	480.866	0.64	0.25
5/22/2004	6.93	4.476	462.512	0.64	0.25
5/23/2004	7.54	4.867	502.890	0.64	0.25
5/24/2004	25.30	16.341	1688.536	0.64	0.25
5/25/2004	38.07	24.582	2540.145	0.64	0.25
5/26/2004	26.40	17.051	1761.950	0.64	0.25
5/27/2004	23.05	14.884	1538.036	0.64	0.25
5/28/2004	23.98	15.488	1600.438	0.64	0.25
5/29/2004	17.60	11.367	1174.634	0.64	0.25
5/30/2004	25.69	16.589	1714.231	0.64	0.25
5/31/2004	20.52	13.250	1369.182	0.64	0.25
6/1/2004	15.24	9.840	1016.792	0.64	0.25
6/2/2004	11.99	7.744	800.219	0.64	0.25
6/3/2004	9.74	6.288	649.719	0.64	0.25
6/4/2004	8.86	5.719	590.988	0.64	0.25
6/5/2004	8.47	5.471	565.292	0.64	0.25
6/6/2004	8.03	5.186	535.927	0.64	0.25
6/7/2004	7.21	4.654	480.866	0.64	0.25
6/8/2004	6.44	4.156	429.475	0.64	0.25
6/9/2004	6.00	3.872	400.110	0.64	0.25
6/10/2004	6.22	4.014	414.793	0.64	0.25
6/11/2004	6.38	4.121	425.805	0.64	0.25
6/12/2004	5.72	3.694	381.756	0.64	0.25
6/13/2004	4.95	3.194	329.999	0.64	0.25
6/14/2004	4.42	2.856	295.127	0.64	0.25
6/15/2004	4.16	2.686	277.507	0.64	0.25
6/16/2004	77.01	49.732	5139.022	0.64	0.25
6/17/2004	58.31	37.655	3890.974	0.64	0.25
6/18/2004	38.01	24.547	2536.475	0.64	0.25
6/19/2004	22.77	14.707	1519.682	0.64	0.25
6/20/2004	15.73	10.160	1049.829	0.64	0.25
6/21/2004	13.26	8.561	884.646	0.64	0.25
6/22/2004	10.89	7.034	726.805	0.64	0.25
6/23/2004	8.64	5.577	576.305	0.64	0.25
6/24/2004	7.48	4.831	499.219	0.64	0.25
6/25/2004	6.27	4.050	418.463	0.64	0.25
6/26/2004	5.50	3.552	367.073	0.64	0.25
6/27/2004	4.73	3.055	315.683	0.64	0.25
6/28/2004	4.22	2.728	281.912	0.64	0.25
6/29/2004	3.65	2.355	243.369	0.64	0.25
6/30/2004	3.14	2.025	209.232	0.64	0.25
7/1/2004	2.73	1.762	182.068	0.64	0.25
7/2/2004	2.38	1.535	158.576	0.64	0.25
7/3/2004	2.23	1.442	149.032	0.64	0.25
7/4/2004	2.56	1.655	171.056	0.64	0.25
7/5/2004	5.39	3.481	359.732	0.64	0.25
7/6/2004	3.85	2.487	256.951	0.64	0.25
7/7/2004	4.40	2.842	293.658	0.64	0.25
7/8/2004	3.30	2.131	220.244	0.64	0.25
7/9/2004	2.75	1.776	183.537	0.64	0.25
7/10/2004	4.95	3.197	330.366	0.64	0.25
7/11/2004	8.25	5.328	550.610	0.64	0.25

7/12/2004	16.50	10.657	1101.219	0.64	0.25
7/13/2004	11.00	7.105	734.146	0.64	0.25
7/14/2004	22.88	14.778	1527.024	0.64	0.25
7/15/2004	13.75	8.881	917.683	0.64	0.25
7/16/2004	8.25	5.328	550.610	0.64	0.25
7/17/2004	4.95	3.197	330.366	0.64	0.25
7/18/2004	2.75	1.776	183.537	0.64	0.25
7/19/2004	1.93	1.243	128.476	0.64	0.25
7/20/2004	1.49	0.959	99.110	0.64	0.25
7/21/2004	1.27	0.817	84.427	0.64	0.25
7/22/2004	1.36	0.881	91.034	0.64	0.25
7/23/2004	1.12	0.721	74.516	0.64	0.25
7/24/2004	0.89	0.572	59.099	0.64	0.25
7/25/2004	1.13	0.728	75.250	0.64	0.25
7/26/2004	1.08	0.696	71.946	0.64	0.25
7/27/2004	0.89	0.575	59.466	0.64	0.25
7/28/2004	0.74	0.476	49.188	0.64	0.25
7/29/2004	0.67	0.430	44.416	0.64	0.25
7/30/2004	1.19	0.767	79.288	0.64	0.25
7/31/2004	1.18	0.764	78.921	0.64	0.25
8/1/2004	0.85	0.551	56.896	0.64	0.25
8/2/2004	0.70	0.451	46.618	0.64	0.25
8/3/2004	0.66	0.426	44.049	0.64	0.25
8/4/2004	0.56	0.362	37.441	0.64	0.25
8/5/2004	0.46	0.298	30.834	0.64	0.25
8/6/2004	0.41	0.266	27.530	0.64	0.25
8/7/2004	0.37	0.238	24.594	0.64	0.25
8/8/2004	0.35	0.227	23.493	0.64	0.25
8/9/2004	0.36	0.231	23.860	0.64	0.25
8/10/2004	0.36	0.231	23.860	0.64	0.25
8/11/2004	0.29	0.188	19.455	0.64	0.25
8/12/2004	0.25	0.163	16.885	0.64	0.25
8/13/2004	0.19	0.124	12.848	0.64	0.25
8/14/2004	0.15	0.096	9.911	0.64	0.25
8/15/2004	0.13	0.082	8.443	0.64	0.25
8/16/2004	0.09	0.060	6.240	0.64	0.25
8/17/2004	0.07	0.046	4.772	0.64	0.25
8/18/2004	0.52	0.337	34.872	0.64	0.25
8/19/2004	0.27	0.174	17.987	0.64	0.25
8/20/2004	0.84	0.544	56.162	0.64	0.25
8/21/2004	0.55	0.355	36.707	0.64	0.25
8/22/2004	0.39	0.252	26.062	0.64	0.25
8/23/2004	0.30	0.195	20.189	0.64	0.25
8/24/2004	0.40	0.256	26.429	0.64	0.25
8/25/2004	2.27	1.467	151.601	0.64	0.25
8/26/2004	16.06	10.373	1071.853	0.64	0.25
8/27/2004	5.17	3.336	344.682	0.64	0.25
8/28/2004	156.77	101.241	10461.581	0.64	0.25
8/29/2004	407.61	263.227	27200.111	0.64	0.25
8/30/2004	51.93	33.534	3465.169	0.64	0.25
8/31/2004	28.16	18.188	1879.414	0.64	0.25
9/1/2004	17.00	10.977	1134.256	0.64	0.25
9/2/2004	11.28	7.282	752.500	0.64	0.25
9/3/2004	8.42	5.435	561.622	0.64	0.25
9/4/2004	6.38	4.121	425.805	0.64	0.25
9/5/2004	5.20	3.360	347.251	0.64	0.25
9/6/2004	4.49	2.899	299.532	0.64	0.25
9/7/2004	3.80	2.455	253.647	0.64	0.25
9/8/2004	3.14	2.025	209.232	0.64	0.25
9/9/2004	2.63	1.702	175.828	0.64	0.25
9/10/2004	2.28	1.471	151.968	0.64	0.25
9/11/2004	1.97	1.275	131.779	0.64	0.25
9/12/2004	1.75	1.130	116.729	0.64	0.25
9/13/2004	1.55	1.002	103.515	0.64	0.25
9/14/2004	1.47	0.948	98.008	0.64	0.25
9/15/2004	1.50	0.970	100.211	0.64	0.25
9/16/2004	1.52	0.980	101.312	0.64	0.25
9/17/2004	1.30	0.842	86.996	0.64	0.25
9/18/2004	1.29	0.835	86.262	0.64	0.25

9/19/2004	1.07	0.693	71.579	0.64	0.25
9/20/2004	0.90	0.579	59.833	0.64	0.25
9/21/2004	0.79	0.512	52.859	0.64	0.25
9/22/2004	0.73	0.469	48.454	0.64	0.25
9/23/2004	0.67	0.433	44.783	0.64	0.25
9/24/2004	0.58	0.373	38.543	0.64	0.25
9/25/2004	0.63	0.409	42.213	0.64	0.25
9/26/2004	0.53	0.341	35.239	0.64	0.25
9/27/2004	0.48	0.309	31.935	0.64	0.25
9/28/2004	0.52	0.337	34.872	0.64	0.25
9/29/2004	0.50	0.320	33.037	0.64	0.25
9/30/2004	0.50	0.320	33.037	0.64	0.25
10/1/2004	0.50	0.320	33.037	0.64	0.25
10/2/2004	0.46	0.298	30.834	0.64	0.25
10/3/2004	0.45	0.291	30.100	0.64	0.25
10/4/2004	0.42	0.274	28.265	0.64	0.25
10/5/2004	0.36	0.234	24.227	0.64	0.25
10/6/2004	0.35	0.224	23.126	0.64	0.25
10/7/2004	0.35	0.227	23.493	0.64	0.25
10/8/2004	0.38	0.245	25.328	0.64	0.25
10/9/2004	0.48	0.313	32.302	0.64	0.25
10/10/2004	0.47	0.305	31.568	0.64	0.25
10/11/2004	0.42	0.270	27.898	0.64	0.25
10/12/2004	0.98	0.632	65.339	0.64	0.25
10/13/2004	1.27	0.817	84.427	0.64	0.25
10/14/2004	0.91	0.586	60.567	0.64	0.25
10/15/2004	1.13	0.732	75.617	0.64	0.25
10/16/2004	0.82	0.529	54.694	0.64	0.25
10/17/2004	0.66	0.426	44.049	0.64	0.25
10/18/2004	132.57	85.611	8846.460	0.64	0.25
10/19/2004	283.84	183.300	18940.968	0.64	0.25
10/20/2004	100.66	65.007	6717.436	0.64	0.25
10/21/2004	66.01	42.628	4404.876	0.64	0.25
10/22/2004	47.91	30.941	3197.206	0.64	0.25
10/23/2004	42.08	27.175	2808.109	0.64	0.25
10/24/2004	39.06	25.221	2606.218	0.64	0.25
10/25/2004	30.75	19.857	2051.938	0.64	0.25
10/26/2004	28.05	18.117	1872.072	0.64	0.25
10/27/2004	46.59	30.088	3109.108	0.64	0.25
10/28/2004	42.96	27.744	2866.840	0.64	0.25
10/29/2004	50.11	32.362	3344.035	0.64	0.25
10/30/2004	40.87	26.394	2727.353	0.64	0.25
10/31/2004	31.19	20.142	2081.304	0.64	0.25
11/1/2004	41.81	26.998	2789.755	0.64	0.25
11/2/2004	144.67	93.426	9654.020	0.64	0.25
11/3/2004	91.86	59.324	6130.119	0.64	0.25
11/4/2004	74.81	48.312	4992.193	0.64	0.25
11/5/2004	60.51	39.076	4037.803	0.64	0.25
11/6/2004	48.13	31.083	3211.889	0.64	0.25
11/7/2004	38.84	25.079	2591.535	0.64	0.25
11/8/2004	30.86	19.929	2059.280	0.64	0.25
11/9/2004	27.01	17.442	1802.329	0.64	0.25
11/10/2004	24.92	16.092	1662.841	0.64	0.25
11/11/2004	60.51	39.076	4037.803	0.64	0.25
11/12/2004	112.22	72.467	7488.290	0.64	0.25
11/13/2004	64.36	41.562	4294.754	0.64	0.25
11/14/2004	45.44	29.342	3032.023	0.64	0.25
11/15/2004	36.86	23.801	2459.389	0.64	0.25
11/16/2004	32.40	20.923	2162.060	0.64	0.25
11/17/2004	29.21	18.863	1949.158	0.64	0.25
11/18/2004	26.90	17.371	1794.987	0.64	0.25
11/19/2004	41.86	27.033	2793.426	0.64	0.25
11/20/2004	43.13	27.850	2877.852	0.64	0.25
11/21/2004	34.33	22.166	2290.536	0.64	0.25
11/22/2004	30.25	19.538	2018.902	0.64	0.25
11/23/2004	28.60	18.472	1908.780	0.64	0.25
11/24/2004	103.42	66.784	6900.973	0.64	0.25
11/25/2004	178.23	115.095	11893.166	0.64	0.25
11/26/2004	98.46	63.587	6570.607	0.64	0.25

11/27/2004	73.71	47.601	4918.778	0.64	0.25
11/28/2004	80.86	52.219	5395.973	0.64	0.25
11/29/2004	64.36	41.562	4294.754	0.64	0.25
11/30/2004	89.11	57.548	5946.583	0.64	0.25
12/1/2004	170.53	110.122	11379.264	0.64	0.25
12/2/2004	101.21	65.363	6754.144	0.64	0.25
12/3/2004	70.41	45.470	4698.535	0.64	0.25
12/4/2004	54.73	35.346	3652.377	0.64	0.25
12/5/2004	44.61	28.809	2976.962	0.64	0.25
12/6/2004	39.72	25.648	2650.267	0.64	0.25
12/7/2004	402.66	260.030	26869.745	0.64	0.25
12/8/2004	179.88	116.161	12003.288	0.64	0.25
12/9/2004	101.77	65.718	6790.851	0.64	0.25
12/10/2004	73.16	47.246	4882.071	0.64	0.25
12/11/2004	57.76	37.299	3854.267	0.64	0.25
12/12/2004	47.97	30.976	3200.877	0.64	0.25
12/13/2004	39.66	25.612	2646.596	0.64	0.25
12/14/2004	32.51	20.994	2169.402	0.64	0.25
12/15/2004	29.04	18.756	1938.146	0.64	0.25
12/16/2004	27.17	17.548	1813.341	0.64	0.25
12/17/2004	24.59	15.879	1640.816	0.64	0.25
12/18/2004	22.88	14.778	1527.024	0.64	0.25
12/19/2004	21.07	13.605	1405.890	0.64	0.25
12/20/2004	25.14	16.234	1677.524	0.64	0.25
12/21/2004	19.53	12.611	1303.109	0.64	0.25
12/22/2004	16.45	10.621	1097.548	0.64	0.25
12/23/2004	14.85	9.591	991.097	0.64	0.25
12/24/2004	13.75	8.881	917.683	0.64	0.25
12/25/2004	13.20	8.526	880.975	0.64	0.25
12/26/2004	12.65	8.170	844.268	0.64	0.25
12/27/2004	11.88	7.673	792.878	0.64	0.25
12/28/2004	11.55	7.460	770.853	0.64	0.25
12/29/2004	11.00	7.105	734.146	0.64	0.25
12/30/2004	10.45	6.749	697.439	0.64	0.25
12/31/2004	10.45	6.749	697.439	0.64	0.25
1/1/2005	10.89	7.034	726.805	0.64	0.25
1/2/2005	12.05	7.780	803.890	0.64	0.25
1/3/2005	116.62	75.309	7781.948	0.64	0.25
1/4/2005	172.73	111.543	11526.093	0.64	0.25
1/5/2005	676.60	436.935	45149.981	0.64	0.25
1/6/2005	397.16	256.477	26502.672	0.64	0.25
1/7/2005	126.52	81.703	8442.679	0.64	0.25
1/8/2005	77.56	50.088	5175.730	0.64	0.25
1/9/2005	66.56	42.983	4441.583	0.64	0.25
1/10/2005	76.46	49.377	5102.315	0.64	0.25
1/11/2005	80.86	52.219	5395.973	0.64	0.25
1/12/2005	96.26	62.166	6423.778	0.64	0.25
1/13/2005	418.61	270.332	27934.257	0.64	0.25
1/14/2005	200.23	129.304	13361.458	0.64	0.25
1/15/2005	81.41	52.574	5432.681	0.64	0.25
1/16/2005	52.75	34.067	3520.230	0.64	0.25
1/17/2005	39.33	25.399	2624.572	0.64	0.25
1/18/2005	36.69	23.694	2448.377	0.64	0.25
1/19/2005	30.58	19.751	2040.926	0.64	0.25
1/20/2005	26.24	16.945	1750.938	0.64	0.25
1/21/2005	24.64	15.914	1644.487	0.64	0.25
1/22/2005	23.49	15.168	1567.402	0.64	0.25
1/23/2005	23.65	15.275	1578.414	0.64	0.25
1/24/2005	19.80	12.788	1321.463	0.64	0.25
1/25/2005	18.15	11.723	1211.341	0.64	0.25
1/26/2005	18.15	11.723	1211.341	0.64	0.25
1/27/2005	18.32	11.829	1222.353	0.64	0.25
1/28/2005	18.43	11.900	1229.695	0.64	0.25
1/29/2005	17.71	11.438	1181.975	0.64	0.25
1/30/2005	15.84	10.231	1057.170	0.64	0.25
1/31/2005	14.41	9.307	961.731	0.64	0.25
2/1/2005	13.53	8.739	903.000	0.64	0.25
2/2/2005	13.15	8.490	877.305	0.64	0.25
2/3/2005	12.98	8.383	866.292	0.64	0.25

2/4/2005	13.20	8.526	880.975	0.64	0.25
2/5/2005	21.51	13.890	1435.255	0.64	0.25
2/6/2005	44.01	28.419	2936.584	0.64	0.25
2/7/2005	80.86	52.219	5395.973	0.64	0.25
2/8/2005	156.22	100.886	10424.874	0.64	0.25
2/9/2005	89.66	57.903	5983.290	0.64	0.25
2/10/2005	64.91	41.917	4331.462	0.64	0.25
2/11/2005	48.02	31.012	3204.547	0.64	0.25
2/12/2005	47.47	30.657	3167.840	0.64	0.25
2/13/2005	114.97	74.243	7671.826	0.64	0.25
2/14/2005	219.48	141.738	14646.213	0.64	0.25
2/15/2005	93.51	60.389	6240.241	0.64	0.25
2/16/2005	139.72	90.229	9323.655	0.64	0.25
2/17/2005	74.81	48.312	4992.193	0.64	0.25
2/18/2005	49.62	32.042	3310.999	0.64	0.25
2/19/2005	38.95	25.150	2598.877	0.64	0.25
2/20/2005	38.95	25.150	2598.877	0.64	0.25
2/21/2005	41.48	26.784	2767.731	0.64	0.25
2/22/2005	34.71	22.415	2316.231	0.64	0.25
2/23/2005	30.86	19.929	2059.280	0.64	0.25
2/24/2005	29.26	18.898	1952.828	0.64	0.25
2/25/2005	26.90	17.371	1794.987	0.64	0.25
2/26/2005	24.37	15.737	1626.133	0.64	0.25
2/27/2005	23.49	15.168	1567.402	0.64	0.25
2/28/2005	23.76	15.346	1585.755	0.64	0.25
3/1/2005	20.63	13.321	1376.524	0.64	0.25
3/2/2005	18.37	11.865	1226.024	0.64	0.25
3/3/2005	17.66	11.403	1178.304	0.64	0.25
3/4/2005	18.37	11.865	1226.024	0.64	0.25
3/5/2005	16.72	10.799	1115.902	0.64	0.25
3/6/2005	15.90	10.266	1060.841	0.64	0.25
3/7/2005	17.77	11.474	1185.646	0.64	0.25
3/8/2005	15.07	9.733	1005.780	0.64	0.25
3/9/2005	13.86	8.952	925.024	0.64	0.25
3/10/2005	14.58	9.414	972.743	0.64	0.25
3/11/2005	14.69	9.485	980.085	0.64	0.25
3/12/2005	14.36	9.272	958.061	0.64	0.25
3/13/2005	12.27	7.922	818.573	0.64	0.25
3/14/2005	11.50	7.424	767.183	0.64	0.25
3/15/2005	11.00	7.105	734.146	0.64	0.25
3/16/2005	11.11	7.176	741.487	0.64	0.25
3/17/2005	11.66	7.531	778.195	0.64	0.25
3/18/2005	11.50	7.424	767.183	0.64	0.25
3/19/2005	11.33	7.318	756.170	0.64	0.25
3/20/2005	10.29	6.643	686.427	0.64	0.25
3/21/2005	10.23	6.607	682.756	0.64	0.25
3/22/2005	11.77	7.602	785.536	0.64	0.25
3/23/2005	14.58	9.414	972.743	0.64	0.25
3/24/2005	11.83	7.637	789.207	0.64	0.25
3/25/2005	15.24	9.840	1016.792	0.64	0.25
3/26/2005	19.36	12.504	1292.097	0.64	0.25
3/27/2005	16.94	10.941	1130.585	0.64	0.25
3/28/2005	16.17	10.444	1079.195	0.64	0.25
3/29/2005	13.59	8.774	906.670	0.64	0.25
3/30/2005	13.48	8.703	899.329	0.64	0.25
3/31/2005	12.60	8.135	840.597	0.64	0.25
4/1/2005	11.06	7.140	737.817	0.64	0.25
4/2/2005	11.66	7.531	778.195	0.64	0.25
4/3/2005	10.95	7.069	730.475	0.64	0.25
4/4/2005	10.73	6.927	715.792	0.64	0.25
4/5/2005	10.67	6.891	712.122	0.64	0.25
4/6/2005	10.56	6.820	704.780	0.64	0.25
4/7/2005	10.78	6.963	719.463	0.64	0.25
4/8/2005	10.23	6.607	682.756	0.64	0.25
4/9/2005	9.96	6.430	664.402	0.64	0.25
4/10/2005	10.01	6.465	668.073	0.64	0.25
4/11/2005	10.01	6.465	668.073	0.64	0.25
4/12/2005	23.54	15.204	1571.073	0.64	0.25
4/13/2005	76.46	49.377	5102.315	0.64	0.25

4/14/2005	39.50	25.506	2635.584	0.64	0.25
4/15/2005	25.52	16.483	1703.219	0.64	0.25
4/16/2005	19.58	12.646	1306.780	0.64	0.25
4/17/2005	16.72	10.799	1115.902	0.64	0.25
4/18/2005	14.74	9.520	983.756	0.64	0.25
4/19/2005	13.15	8.490	877.305	0.64	0.25
4/20/2005	11.99	7.744	800.219	0.64	0.25
4/21/2005	10.73	6.927	715.792	0.64	0.25
4/22/2005	11.55	7.460	770.853	0.64	0.25
4/23/2005	9.74	6.288	649.719	0.64	0.25
4/24/2005	9.13	5.897	609.341	0.64	0.25
4/25/2005	8.91	5.755	594.658	0.64	0.25
4/26/2005	9.19	5.932	613.012	0.64	0.25
4/27/2005	7.70	4.973	513.902	0.64	0.25
4/28/2005	6.93	4.476	462.512	0.64	0.25
4/29/2005	7.10	4.582	473.524	0.64	0.25
4/30/2005	6.93	4.476	462.512	0.64	0.25
5/1/2005	6.33	4.085	422.134	0.64	0.25
5/2/2005	5.89	3.801	392.768	0.64	0.25
5/3/2005	5.78	3.730	385.427	0.64	0.25
5/4/2005	5.49	3.545	366.339	0.64	0.25
5/5/2005	5.36	3.460	357.529	0.64	0.25
5/6/2005	5.50	3.552	367.073	0.64	0.25
5/7/2005	5.61	3.623	374.414	0.64	0.25
5/8/2005	5.39	3.478	359.364	0.64	0.25
5/9/2005	5.36	3.464	357.896	0.64	0.25
5/10/2005	5.34	3.449	356.428	0.64	0.25
5/11/2005	4.87	3.147	325.227	0.64	0.25
5/12/2005	5.29	3.417	353.124	0.64	0.25
5/13/2005	5.31	3.428	354.225	0.64	0.25
5/14/2005	5.83	3.765	389.097	0.64	0.25
5/15/2005	5.67	3.659	378.085	0.64	0.25
5/16/2005	4.93	3.186	329.264	0.64	0.25
5/17/2005	4.62	2.980	307.974	0.64	0.25
5/18/2005	4.57	2.952	305.038	0.64	0.25
5/19/2005	9.46	6.110	631.366	0.64	0.25
5/20/2005	12.32	7.957	822.244	0.64	0.25
5/21/2005	7.70	4.973	513.902	0.64	0.25
5/22/2005	6.71	4.334	447.829	0.64	0.25
5/23/2005	6.11	3.943	407.451	0.64	0.25
5/24/2005	5.21	3.364	347.618	0.64	0.25
5/25/2005	4.74	3.059	316.050	0.64	0.25
5/26/2005	4.63	2.991	309.075	0.64	0.25
5/27/2005	4.58	2.959	305.772	0.64	0.25
5/28/2005	4.36	2.817	291.089	0.64	0.25
5/29/2005	4.10	2.646	273.469	0.64	0.25
5/30/2005	4.01	2.590	267.596	0.64	0.25
5/31/2005	3.98	2.572	265.761	0.64	0.25
6/1/2005	3.74	2.416	249.610	0.64	0.25
6/2/2005	3.64	2.348	242.635	0.64	0.25
6/3/2005	3.97	2.561	264.660	0.64	0.25
6/4/2005	3.93	2.536	262.090	0.64	0.25
6/5/2005	3.50	2.259	233.458	0.64	0.25
6/6/2005	2.93	1.893	195.650	0.64	0.25
6/7/2005	2.69	1.737	179.499	0.64	0.25
6/8/2005	2.60	1.680	173.626	0.64	0.25
6/9/2005	2.74	1.769	182.802	0.64	0.25
6/10/2005	2.79	1.801	186.106	0.64	0.25
6/11/2005	3.61	2.334	241.167	0.64	0.25
6/12/2005	6.16	3.979	411.122	0.64	0.25
6/13/2005	4.17	2.693	278.241	0.64	0.25
6/14/2005	4.15	2.682	277.140	0.64	0.25
6/15/2005	3.77	2.437	251.812	0.64	0.25
6/16/2005	2.97	1.918	198.219	0.64	0.25
6/17/2005	2.35	1.517	156.740	0.64	0.25
6/18/2005	1.95	1.258	129.944	0.64	0.25
6/19/2005	1.63	1.055	109.021	0.64	0.25
6/20/2005	1.33	0.860	88.832	0.64	0.25
6/21/2005	1.03	0.668	69.010	0.64	0.25

6/22/2005	1.00	0.643	66.440	0.64	0.25
6/23/2005	0.65	0.419	43.315	0.64	0.25
6/24/2005	0.52	0.337	34.872	0.64	0.25
6/25/2005	0.46	0.298	30.834	0.64	0.25
6/26/2005	0.36	0.231	23.860	0.64	0.25
6/27/2005	0.28	0.181	18.721	0.64	0.25
6/28/2005	0.21	0.135	13.949	0.64	0.25
6/29/2005	0.17	0.110	11.379	0.64	0.25
6/30/2005	0.12	0.078	8.076	0.64	0.25
7/1/2005	0.09	0.057	5.873	0.64	0.25
7/2/2005	0.14	0.089	9.177	0.64	0.25
7/3/2005	0.06	0.036	3.671	0.64	0.25
7/4/2005	0.04	0.028	2.937	0.64	0.25
7/5/2005	0.04	0.025	2.570	0.64	0.25
7/6/2005	0.03	0.021	2.202	0.64	0.25
7/7/2005	0.02	0.014	1.468	0.64	0.25
7/8/2005	0.01	0.004	0.367	0.64	0.25
7/9/2005	0.00	0.000	0.000	0.64	0.25
7/10/2005	0.00	0.000	0.000	0.64	0.25
7/11/2005	0.00	0.000	0.000	0.64	0.25
7/12/2005	0.01	0.004	0.367	0.64	0.25
7/13/2005	0.00	0.000	0.000	0.64	0.25
7/14/2005	0.00	0.000	0.000	0.64	0.25
7/15/2005	0.01	0.004	0.367	0.64	0.25
7/16/2005	0.07	0.046	4.772	0.64	0.25
7/17/2005	0.03	0.021	2.202	0.64	0.25
7/18/2005	0.02	0.014	1.468	0.64	0.25
7/19/2005	0.01	0.004	0.367	0.64	0.25
7/20/2005	0.00	0.000	0.000	0.64	0.25
7/21/2005	0.00	0.000	0.000	0.64	0.25
7/22/2005	0.00	0.000	0.000	0.64	0.25
7/23/2005	0.00	0.000	0.000	0.64	0.25
7/24/2005	0.00	0.000	0.000	0.64	0.25
7/25/2005	0.00	0.000	0.000	0.64	0.25
7/26/2005	0.00	0.000	0.000	0.64	0.25
7/27/2005	0.00	0.000	0.000	0.64	0.25
7/28/2005	0.00	0.000	0.000	0.64	0.25
7/29/2005	0.00	0.000	0.000	0.64	0.25
7/30/2005	0.00	0.000	0.000	0.64	0.25
7/31/2005	0.00	0.000	0.000	0.64	0.25
8/1/2005	0.00	0.000	0.000	0.64	0.25
8/2/2005	0.00	0.000	0.000	0.64	0.25
8/3/2005	0.00	0.000	0.000	0.64	0.25
8/4/2005	0.00	0.000	0.000	0.64	0.25
8/5/2005	0.00	0.000	0.000	0.64	0.25
8/6/2005	0.00	0.000	0.000	0.64	0.25
8/7/2005	0.00	0.000	0.000	0.64	0.25
8/8/2005	0.00	0.000	0.000	0.64	0.25
8/9/2005	0.00	0.000	0.000	0.64	0.25
8/10/2005	0.00	0.000	0.000	0.64	0.25
8/11/2005	0.00	0.000	0.000	0.64	0.25
8/12/2005	0.00	0.000	0.000	0.64	0.25
8/13/2005	0.00	0.000	0.000	0.64	0.25
8/14/2005	0.00	0.000	0.000	0.64	0.25
8/15/2005	0.00	0.000	0.000	0.64	0.25
8/16/2005	0.00	0.000	0.000	0.64	0.25
8/17/2005	0.00	0.000	0.000	0.64	0.25
8/18/2005	0.00	0.000	0.000	0.64	0.25
8/19/2005	0.00	0.000	0.000	0.64	0.25
8/20/2005	0.00	0.000	0.000	0.64	0.25
8/21/2005	0.00	0.000	0.000	0.64	0.25
8/22/2005	0.00	0.000	0.000	0.64	0.25
8/23/2005	0.00	0.000	0.000	0.64	0.25
8/24/2005	0.00	0.000	0.000	0.64	0.25
8/25/2005	0.00	0.000	0.000	0.64	0.25
8/26/2005	0.00	0.000	0.000	0.64	0.25
8/27/2005	0.00	0.000	0.000	0.64	0.25
8/28/2005	0.00	0.000	0.000	0.64	0.25
8/29/2005	0.00	0.000	0.000	0.64	0.25

8/30/2005	0.00	0.000	0.000	0.64	0.25
8/31/2005	0.00	0.000	0.000	0.64	0.25
9/1/2005	0.00	0.000	0.000	0.64	0.25
9/2/2005	0.00	0.000	0.000	0.64	0.25
9/3/2005	0.00	0.000	0.000	0.64	0.25
9/4/2005	0.00	0.000	0.000	0.64	0.25
9/5/2005	0.00	0.000	0.000	0.64	0.25
9/6/2005	0.00	0.000	0.000	0.64	0.25
9/7/2005	0.00	0.000	0.000	0.64	0.25
9/8/2005	0.00	0.000	0.000	0.64	0.25
9/9/2005	0.00	0.000	0.000	0.64	0.25
9/10/2005	0.00	0.000	0.000	0.64	0.25
9/11/2005	0.00	0.000	0.000	0.64	0.25
9/12/2005	0.00	0.000	0.000	0.64	0.25
9/13/2005	0.00	0.000	0.000	0.64	0.25
9/14/2005	0.00	0.000	0.000	0.64	0.25
9/15/2005	0.00	0.000	0.000	0.64	0.25
9/16/2005	0.00	0.000	0.000	0.64	0.25
9/17/2005	0.00	0.000	0.000	0.64	0.25
9/18/2005	0.00	0.000	0.000	0.64	0.25
9/19/2005	0.00	0.000	0.000	0.64	0.25
9/20/2005	0.00	0.000	0.000	0.64	0.25
9/21/2005	0.00	0.000	0.000	0.64	0.25
9/22/2005	0.00	0.000	0.000	0.64	0.25
9/23/2005	0.00	0.000	0.000	0.64	0.25
9/24/2005	0.00	0.000	0.000	0.64	0.25
9/25/2005	0.00	0.000	0.000	0.64	0.25
9/26/2005	0.00	0.000	0.000	0.64	0.25
9/27/2005	0.00	0.000	0.000	0.64	0.25
9/28/2005	0.00	0.000	0.000	0.64	0.25
9/29/2005	0.00	0.000	0.000	0.64	0.25
9/30/2005	0.00	0.000	0.000	0.64	0.25
10/1/2005	0.00	0.000	0.000	0.64	0.25
10/2/2005	0.00	0.000	0.000	0.64	0.25
10/3/2005	0.00	0.000	0.000	0.64	0.25
10/4/2005	0.00	0.000	0.000	0.64	0.25
10/5/2005	0.00	0.000	0.000	0.64	0.25
10/6/2005	0.00	0.000	0.000	0.64	0.25
10/7/2005	0.00	0.000	0.000	0.64	0.25
10/8/2005	0.00	0.000	0.000	0.64	0.25
10/9/2005	0.00	0.000	0.000	0.64	0.25
10/10/2005	0.00	0.000	0.000	0.64	0.25
10/11/2005	0.00	0.000	0.000	0.64	0.25
10/12/2005	0.00	0.000	0.000	0.64	0.25
10/13/2005	0.00	0.000	0.000	0.64	0.25
10/14/2005	0.00	0.000	0.000	0.64	0.25
10/15/2005	0.00	0.000	0.000	0.64	0.25
10/16/2005	0.00	0.000	0.000	0.64	0.25
10/17/2005	0.00	0.000	0.000	0.64	0.25
10/18/2005	0.00	0.000	0.000	0.64	0.25
10/19/2005	0.00	0.000	0.000	0.64	0.25
10/20/2005	0.00	0.000	0.000	0.64	0.25
10/21/2005	0.00	0.000	0.000	0.64	0.25
10/22/2005	0.00	0.000	0.000	0.64	0.25
10/23/2005	0.00	0.000	0.000	0.64	0.25
10/24/2005	0.00	0.000	0.000	0.64	0.25
10/25/2005	0.00	0.000	0.000	0.64	0.25
10/26/2005	0.00	0.000	0.000	0.64	0.25
10/27/2005	0.04	0.025	2.570	0.64	0.25
10/28/2005	0.13	0.082	8.443	0.64	0.25
10/29/2005	0.04	0.028	2.937	0.64	0.25
10/30/2005	0.01	0.004	0.367	0.64	0.25
10/31/2005	0.01	0.007	0.734	0.64	0.25
11/1/2005	0.08	0.050	5.139	0.64	0.25
11/2/2005	1.42	0.920	95.072	0.64	0.25
11/3/2005	0.68	0.437	45.150	0.64	0.25
11/4/2005	0.50	0.320	33.037	0.64	0.25
11/5/2005	1.50	0.970	100.211	0.64	0.25
11/6/2005	0.80	0.515	53.226	0.64	0.25

11/7/2005	0.51	0.330	34.138	0.64	0.25
11/8/2005	0.48	0.313	32.302	0.64	0.25
11/9/2005	0.41	0.263	27.163	0.64	0.25
11/10/2005	0.36	0.231	23.860	0.64	0.25
11/11/2005	0.26	0.167	17.252	0.64	0.25
11/12/2005	0.19	0.121	12.480	0.64	0.25
11/13/2005	0.14	0.092	9.544	0.64	0.25
11/14/2005	0.13	0.082	8.443	0.64	0.25
11/15/2005	0.29	0.185	19.088	0.64	0.25
11/16/2005	1.77	1.140	117.830	0.64	0.25
11/17/2005	2.16	1.393	143.893	0.64	0.25
11/18/2005	1.30	0.842	86.996	0.64	0.25
11/19/2005	1.81	1.169	120.767	0.64	0.25
11/20/2005	1.39	0.895	92.502	0.64	0.25
11/21/2005	1.10	0.710	73.415	0.64	0.25
11/22/2005	0.94	0.607	62.769	0.64	0.25
11/23/2005	0.79	0.512	52.859	0.64	0.25
11/24/2005	0.68	0.440	45.517	0.64	0.25
11/25/2005	0.52	0.334	34.505	0.64	0.25
11/26/2005	0.45	0.291	30.100	0.64	0.25
11/27/2005	0.55	0.355	36.707	0.64	0.25
11/28/2005	1.42	0.920	95.072	0.64	0.25
11/29/2005	4.25	2.742	283.380	0.64	0.25
11/30/2005	2.86	1.847	190.878	0.64	0.25
12/1/2005	2.50	1.613	166.651	0.64	0.25
12/2/2005	1.54	0.995	102.780	0.64	0.25
12/3/2005	1.10	0.710	73.415	0.64	0.25
12/4/2005	0.83	0.533	55.061	0.64	0.25
12/5/2005	0.72	0.462	47.719	0.64	0.25
12/6/2005	0.61	0.391	40.378	0.64	0.25
12/7/2005	0.55	0.355	36.707	0.64	0.25
12/8/2005	0.53	0.345	35.606	0.64	0.25
12/9/2005	0.55	0.355	36.707	0.64	0.25
12/10/2005	0.61	0.391	40.378	0.64	0.25
12/11/2005	0.66	0.426	44.049	0.64	0.25
12/12/2005	0.61	0.391	40.378	0.64	0.25
12/13/2005	0.55	0.355	36.707	0.64	0.25
12/14/2005	0.55	0.355	36.707	0.64	0.25
12/15/2005	0.52	0.337	34.872	0.64	0.25
12/16/2005	0.48	0.309	31.935	0.64	0.25
12/17/2005	0.46	0.298	30.834	0.64	0.25
12/18/2005	0.45	0.291	30.100	0.64	0.25
12/19/2005	0.44	0.284	29.366	0.64	0.25
12/20/2005	0.45	0.291	30.100	0.64	0.25
12/21/2005	0.49	0.316	32.669	0.64	0.25
12/22/2005	0.51	0.330	34.138	0.64	0.25
12/23/2005	0.55	0.355	36.707	0.64	0.25
12/24/2005	0.66	0.426	44.049	0.64	0.25
12/25/2005	0.77	0.497	51.390	0.64	0.25
12/26/2005	1.10	0.710	73.415	0.64	0.25
12/27/2005	1.79	1.155	119.299	0.64	0.25
12/28/2005	2.57	1.662	171.790	0.64	0.25
12/29/2005	14.03	9.058	936.036	0.64	0.25
12/30/2005	9.13	5.897	609.341	0.64	0.25
12/31/2005	9.74	6.288	649.719	0.64	0.25
1/1/2006	8.42	5.435	561.622	0.64	0.25
1/2/2006	7.15	4.618	477.195	0.64	0.25
1/3/2006	6.05	3.908	403.780	0.64	0.25
1/4/2006	5.31	3.428	354.225	0.64	0.25
1/5/2006	4.35	2.810	290.355	0.64	0.25
1/6/2006	3.47	2.242	231.623	0.64	0.25
1/7/2006	3.13	2.021	208.865	0.64	0.25
1/8/2006	3.17	2.050	211.801	0.64	0.25
1/9/2006	3.00	1.936	200.055	0.64	0.25
1/10/2006	1.61	1.041	107.552	0.64	0.25
1/11/2006	2.30	1.485	153.437	0.64	0.25
1/12/2006	2.62	1.694	175.094	0.64	0.25
1/13/2006	3.07	1.986	205.194	0.64	0.25
1/14/2006	3.98	2.572	265.761	0.64	0.25

1/15/2006	4.18	2.696	278.608	0.64	0.25
1/16/2006	5.36	3.460	357.529	0.64	0.25
1/17/2006	10.18	6.572	679.085	0.64	0.25
1/18/2006	17.16	11.083	1145.268	0.64	0.25
1/19/2006	11.11	7.176	741.487	0.64	0.25
1/20/2006	8.20	5.293	546.939	0.64	0.25
1/21/2006	7.32	4.725	488.207	0.64	0.25
1/22/2006	6.00	3.872	400.110	0.64	0.25
1/23/2006	6.38	4.121	425.805	0.64	0.25
1/24/2006	6.22	4.014	414.793	0.64	0.25
1/25/2006	5.02	3.240	334.771	0.64	0.25
1/26/2006	3.78	2.440	252.179	0.64	0.25
1/27/2006	3.59	2.316	239.332	0.64	0.25
1/28/2006	4.09	2.643	273.102	0.64	0.25
1/29/2006	28.44	18.365	1897.767	0.64	0.25
1/30/2006	32.78	21.172	2187.755	0.64	0.25
1/31/2006	19.80	12.788	1321.463	0.64	0.25
2/1/2006	15.73	10.160	1049.829	0.64	0.25
2/2/2006	12.60	8.135	840.597	0.64	0.25
2/3/2006	10.73	6.927	715.792	0.64	0.25
2/4/2006	7.65	4.938	510.231	0.64	0.25
2/5/2006	6.93	4.476	462.512	0.64	0.25
2/6/2006	6.33	4.085	422.134	0.64	0.25
2/7/2006	5.15	3.329	343.947	0.64	0.25
2/8/2006	4.47	2.888	298.430	0.64	0.25
2/9/2006	4.28	2.764	285.583	0.64	0.25
2/10/2006	4.18	2.700	278.975	0.64	0.25
2/11/2006	3.98	2.568	265.394	0.64	0.25
2/12/2006	3.42	2.210	228.319	0.64	0.25
2/13/2006	3.56	2.298	237.496	0.64	0.25
2/14/2006	4.44	2.867	296.228	0.64	0.25
2/15/2006	2.83	1.829	189.043	0.64	0.25
2/16/2006	3.25	2.096	216.573	0.64	0.25
2/17/2006	5.50	3.552	367.073	0.64	0.25
2/18/2006	4.40	2.842	293.658	0.64	0.25
2/19/2006	3.85	2.487	256.951	0.64	0.25
2/20/2006	4.95	3.197	330.366	0.64	0.25
2/21/2006	4.68	3.019	312.012	0.64	0.25
2/22/2006	4.29	2.771	286.317	0.64	0.25
2/23/2006	3.63	2.345	242.268	0.64	0.25
2/24/2006	3.30	2.131	220.244	0.64	0.25
2/25/2006	3.19	2.060	212.902	0.64	0.25
2/26/2006	2.96	1.915	197.852	0.64	0.25
2/27/2006	3.71	2.394	247.407	0.64	0.25
2/28/2006	4.46	2.881	297.696	0.64	0.25
3/1/2006	4.25	2.746	283.747	0.64	0.25
3/2/2006	3.99	2.575	266.128	0.64	0.25
3/3/2006	2.56	1.652	170.689	0.64	0.25
3/4/2006	2.00	1.293	133.615	0.64	0.25
3/5/2006	2.30	1.485	153.437	0.64	0.25
3/6/2006	3.05	1.972	203.726	0.64	0.25
3/7/2006	2.40	1.552	160.411	0.64	0.25
3/8/2006	10.56	6.820	704.780	0.64	0.25
3/9/2006	52.81	34.102	3523.901	0.64	0.25
3/10/2006	183.18	118.292	12223.531	0.64	0.25
3/11/2006	128.17	82.769	8552.801	0.64	0.25
3/12/2006	545.68	352.390	36413.643	0.64	0.25
3/13/2006	206.83	133.567	13801.945	0.64	0.25
3/14/2006	110.02	71.046	7341.460	0.64	0.25
3/15/2006	77.56	50.088	5175.730	0.64	0.25
3/16/2006	62.71	40.496	4184.632	0.64	0.25
3/17/2006	51.32	33.143	3424.791	0.64	0.25
3/18/2006	44.56	28.774	2973.291	0.64	0.25
3/19/2006	40.21	25.967	2683.304	0.64	0.25
3/20/2006	36.91	23.836	2463.060	0.64	0.25
3/21/2006	36.53	23.587	2437.365	0.64	0.25
3/22/2006	37.46	24.191	2499.767	0.64	0.25
3/23/2006	41.15	26.571	2745.706	0.64	0.25
3/24/2006	62.16	40.141	4147.925	0.64	0.25

3/25/2006	67.11	43.338	4478.291	0.64	0.25
3/26/2006	60.51	39.076	4037.803	0.64	0.25
3/27/2006	51.60	33.321	3443.145	0.64	0.25
3/28/2006	56.11	36.234	3744.145	0.64	0.25
3/29/2006	46.76	30.195	3120.121	0.64	0.25
3/30/2006	44.12	28.490	2943.926	0.64	0.25
3/31/2006	56.66	36.589	3780.852	0.64	0.25
4/1/2006	47.86	30.905	3193.535	0.64	0.25
4/2/2006	56.11	36.234	3744.145	0.64	0.25
4/3/2006	83.61	53.995	5579.510	0.64	0.25
4/4/2006	56.66	36.589	3780.852	0.64	0.25
4/5/2006	48.30	31.189	3222.901	0.64	0.25
4/6/2006	731.61	472.458	48820.711	0.64	0.25
4/7/2006	456.57	294.843	30467.060	0.64	0.25
4/8/2006	124.87	80.638	8332.557	0.64	0.25
4/9/2006	75.36	48.667	5028.900	0.64	0.25
4/10/2006	53.30	34.422	3556.938	0.64	0.25
4/11/2006	40.82	26.358	2723.682	0.64	0.25
4/12/2006	32.51	20.994	2169.402	0.64	0.25
4/13/2006	26.62	17.193	1776.633	0.64	0.25
4/14/2006	25.52	16.483	1703.219	0.64	0.25
4/15/2006	22.22	14.351	1482.975	0.64	0.25
4/16/2006	20.68	13.357	1380.195	0.64	0.25
4/17/2006	18.26	11.794	1218.682	0.64	0.25
4/18/2006	16.28	10.515	1086.536	0.64	0.25
4/19/2006	172.73	111.543	11526.093	0.64	0.25
4/20/2006	63.26	40.852	4221.340	0.64	0.25
4/21/2006	39.44	25.470	2631.914	0.64	0.25
4/22/2006	29.54	19.076	1971.182	0.64	0.25
4/23/2006	23.82	15.382	1589.426	0.64	0.25
4/24/2006	20.57	13.286	1372.853	0.64	0.25
4/25/2006	19.09	12.327	1273.743	0.64	0.25
4/26/2006	16.83	10.870	1123.243	0.64	0.25
4/27/2006	15.29	9.875	1020.463	0.64	0.25
4/28/2006	13.97	9.023	932.365	0.64	0.25
4/29/2006	14.03	9.058	936.036	0.64	0.25
4/30/2006	14.91	9.627	994.768	0.64	0.25
5/1/2006	13.92	8.987	928.695	0.64	0.25
5/2/2006	33.83	21.847	2257.499	0.64	0.25
5/3/2006	25.03	16.163	1670.182	0.64	0.25
5/4/2006	19.91	12.859	1328.804	0.64	0.25
5/5/2006	17.33	11.190	1156.280	0.64	0.25
5/6/2006	15.57	10.053	1038.817	0.64	0.25
5/7/2006	14.19	9.165	947.048	0.64	0.25
5/8/2006	13.20	8.526	880.975	0.64	0.25
5/9/2006	12.93	8.348	862.622	0.64	0.25
5/10/2006	13.59	8.774	906.670	0.64	0.25
5/11/2006	57.21	36.944	3817.559	0.64	0.25
5/12/2006	40.27	26.003	2686.974	0.64	0.25
5/13/2006	27.67	17.868	1846.377	0.64	0.25
5/14/2006	22.00	14.209	1468.292	0.64	0.25
5/15/2006	22.39	14.458	1493.987	0.64	0.25
5/16/2006	35.21	22.735	2349.267	0.64	0.25
5/17/2006	31.19	20.142	2081.304	0.64	0.25
5/18/2006	28.60	18.472	1908.780	0.64	0.25
5/19/2006	23.76	15.346	1585.755	0.64	0.25
5/20/2006	19.80	12.788	1321.463	0.64	0.25
5/21/2006	17.77	11.474	1185.646	0.64	0.25
5/22/2006	15.35	9.911	1024.134	0.64	0.25
5/23/2006	14.30	9.236	954.390	0.64	0.25
5/24/2006	15.51	10.018	1035.146	0.64	0.25
5/25/2006	26.18	16.909	1747.268	0.64	0.25
5/26/2006	19.64	12.682	1310.451	0.64	0.25
5/27/2006	15.29	9.875	1020.463	0.64	0.25
5/28/2006	13.09	8.455	873.634	0.64	0.25
5/29/2006	11.88	7.673	792.878	0.64	0.25
5/30/2006	11.11	7.176	741.487	0.64	0.25
5/31/2006	10.73	6.927	715.792	0.64	0.25
6/1/2006	11.22	7.247	748.829	0.64	0.25

6/2/2006	15.29	9.875	1020.463	0.64	0.25
6/3/2006	13.75	8.881	917.683	0.64	0.25
6/4/2006	10.78	6.963	719.463	0.64	0.25
6/5/2006	8.97	5.790	598.329	0.64	0.25
6/6/2006	8.42	5.435	561.622	0.64	0.25
6/7/2006	8.64	5.577	576.305	0.64	0.25
6/8/2006	8.53	5.506	568.963	0.64	0.25
6/9/2006	8.20	5.293	546.939	0.64	0.25
6/10/2006	7.76	5.009	517.573	0.64	0.25
6/11/2006	7.59	4.902	506.561	0.64	0.25
6/12/2006	7.32	4.725	488.207	0.64	0.25
6/13/2006	6.88	4.440	458.841	0.64	0.25
6/14/2006	6.49	4.192	433.146	0.64	0.25
6/15/2006	6.16	3.979	411.122	0.64	0.25
6/16/2006	5.78	3.730	385.427	0.64	0.25
6/17/2006	5.45	3.520	363.769	0.64	0.25
6/18/2006	5.18	3.346	345.783	0.64	0.25
6/19/2006	8.64	5.577	576.305	0.64	0.25
6/20/2006	8.80	5.684	587.317	0.64	0.25
6/21/2006	6.38	4.121	425.805	0.64	0.25
6/22/2006	5.83	3.765	389.097	0.64	0.25
6/23/2006	6.22	4.014	414.793	0.64	0.25
6/24/2006	7.15	4.618	477.195	0.64	0.25
6/25/2006	5.43	3.510	362.668	0.64	0.25
6/26/2006	9.68	6.252	646.049	0.64	0.25
6/27/2006	9.35	6.039	624.024	0.64	0.25
6/28/2006	5.78	3.730	385.427	0.64	0.25
6/29/2006	4.44	2.867	296.228	0.64	0.25
6/30/2006	3.59	2.320	239.699	0.64	0.25
7/1/2006	2.97	1.918	198.219	0.64	0.25
7/2/2006	2.52	1.627	168.119	0.64	0.25
7/3/2006	2.10	1.353	139.855	0.64	0.25
7/4/2006	1.71	1.105	114.160	0.64	0.25
7/5/2006	1.38	0.888	91.768	0.64	0.25
7/6/2006	1.07	0.693	71.579	0.64	0.25
7/7/2006	0.92	0.597	61.668	0.64	0.25
7/8/2006	0.73	0.469	48.454	0.64	0.25
7/9/2006	0.62	0.401	41.479	0.64	0.25
7/10/2006	0.50	0.320	33.037	0.64	0.25
7/11/2006	0.67	0.430	44.416	0.64	0.25
7/12/2006	1.31	0.845	87.363	0.64	0.25
7/13/2006	4.98	3.218	332.568	0.64	0.25
7/14/2006	5.34	3.446	356.061	0.64	0.25
7/15/2006	3.18	2.057	212.535	0.64	0.25
7/16/2006	1.96	1.268	131.045	0.64	0.25
7/17/2006	1.28	0.828	85.528	0.64	0.25
7/18/2006	0.85	0.547	56.529	0.64	0.25
7/19/2006	0.57	0.366	37.809	0.64	0.25
7/20/2006	0.44	0.284	29.366	0.64	0.25
7/21/2006	0.98	0.632	65.339	0.64	0.25
7/22/2006	0.70	0.455	46.985	0.64	0.25
7/23/2006	0.48	0.309	31.935	0.64	0.25
7/24/2006	0.29	0.188	19.455	0.64	0.25
7/25/2006	0.16	0.103	10.645	0.64	0.25
7/26/2006	0.09	0.057	5.873	0.64	0.25
7/27/2006	0.07	0.043	4.405	0.64	0.25
7/28/2006	0.05	0.032	3.304	0.64	0.25
7/29/2006	0.04	0.025	2.570	0.64	0.25
7/30/2006	0.03	0.018	1.835	0.64	0.25
7/31/2006	0.02	0.011	1.101	0.64	0.25
8/1/2006	0.00	0.000	0.000	0.64	0.25
8/2/2006	0.00	0.000	0.000	0.64	0.25
8/3/2006	0.00	0.000	0.000	0.64	0.25
8/4/2006	0.00	0.000	0.000	0.64	0.25
8/5/2006	0.00	0.000	0.000	0.64	0.25
8/6/2006	0.00	0.000	0.000	0.64	0.25
8/7/2006	0.00	0.000	0.000	0.64	0.25
8/8/2006	0.00	0.000	0.000	0.64	0.25
8/9/2006	0.00	0.000	0.000	0.64	0.25

8/10/2006	0.00	0.000	0.000	0.64	0.25
8/11/2006	0.01	0.004	0.367	0.64	0.25
8/12/2006	0.04	0.028	2.937	0.64	0.25
8/13/2006	0.04	0.025	2.570	0.64	0.25
8/14/2006	0.02	0.014	1.468	0.64	0.25
8/15/2006	0.01	0.004	0.367	0.64	0.25
8/16/2006	0.00	0.000	0.000	0.64	0.25
8/17/2006	0.00	0.000	0.000	0.64	0.25
8/18/2006	0.00	0.000	0.000	0.64	0.25
8/19/2006	0.00	0.000	0.000	0.64	0.25
8/20/2006	0.00	0.000	0.000	0.64	0.25
8/21/2006	0.00	0.000	0.000	0.64	0.25
8/22/2006	0.00	0.000	0.000	0.64	0.25
8/23/2006	0.00	0.000	0.000	0.64	0.25
8/24/2006	0.00	0.000	0.000	0.64	0.25
8/25/2006	0.00	0.000	0.000	0.64	0.25
8/26/2006	0.00	0.000	0.000	0.64	0.25
8/27/2006	0.01	0.004	0.367	0.64	0.25
8/28/2006	0.00	0.000	0.000	0.64	0.25
8/29/2006	0.00	0.000	0.000	0.64	0.25
8/30/2006	0.00	0.000	0.000	0.64	0.25
8/31/2006	0.00	0.000	0.000	0.64	0.25
9/1/2006	0.00	0.000	0.000	0.64	0.25
9/2/2006	0.00	0.000	0.000	0.64	0.25
9/3/2006	0.00	0.000	0.000	0.64	0.25
9/4/2006	0.00	0.000	0.000	0.64	0.25
9/5/2006	0.00	0.000	0.000	0.64	0.25
9/6/2006	0.00	0.000	0.000	0.64	0.25
9/7/2006	0.00	0.000	0.000	0.64	0.25
9/8/2006	0.00	0.000	0.000	0.64	0.25
9/9/2006	0.00	0.000	0.000	0.64	0.25
9/10/2006	0.00	0.000	0.000	0.64	0.25
9/11/2006	0.00	0.000	0.000	0.64	0.25
9/12/2006	0.00	0.000	0.000	0.64	0.25
9/13/2006	0.00	0.000	0.000	0.64	0.25
9/14/2006	0.00	0.000	0.000	0.64	0.25
9/15/2006	0.00	0.000	0.000	0.64	0.25
9/16/2006	0.00	0.000	0.000	0.64	0.25
9/17/2006	0.00	0.000	0.000	0.64	0.25
9/18/2006	0.00	0.000	0.000	0.64	0.25
9/19/2006	0.00	0.000	0.000	0.64	0.25
9/20/2006	0.00	0.000	0.000	0.64	0.25
9/21/2006	0.00	0.000	0.000	0.64	0.25
9/22/2006	0.00	0.000	0.000	0.64	0.25
9/23/2006	0.00	0.000	0.000	0.64	0.25
9/24/2006	0.00	0.000	0.000	0.64	0.25
9/25/2006	0.00	0.000	0.000	0.64	0.25
9/26/2006	0.00	0.000	0.000	0.64	0.25
9/27/2006	0.00	0.000	0.000	0.64	0.25
9/28/2006	0.00	0.000	0.000	0.64	0.25
9/29/2006	0.00	0.000	0.000	0.64	0.25
9/30/2006	0.00	0.000	0.000	0.64	0.25
10/1/2006	0.00	0.000	0.000	0.64	0.25
10/2/2006	0.00	0.000	0.000	0.64	0.25
10/3/2006	0.00	0.000	0.000	0.64	0.25
10/4/2006	0.00	0.000	0.000	0.64	0.25
10/5/2006	0.00	0.000	0.000	0.64	0.25
10/6/2006	0.00	0.000	0.000	0.64	0.25
10/7/2006	0.00	0.000	0.000	0.64	0.25
10/8/2006	0.00	0.000	0.000	0.64	0.25
10/9/2006	0.00	0.000	0.000	0.64	0.25
10/10/2006	0.00	0.000	0.000	0.64	0.25
10/11/2006	0.00	0.000	0.000	0.64	0.25
10/12/2006	0.00	0.000	0.000	0.64	0.25
10/13/2006	0.00	0.000	0.000	0.64	0.25
10/14/2006	0.00	0.000	0.000	0.64	0.25
10/15/2006	0.00	0.000	0.000	0.64	0.25
10/16/2006	0.00	0.000	0.000	0.64	0.25
10/17/2006	0.00	0.000	0.000	0.64	0.25

10/18/2006	0.00	0.000	0.000	0.64	0.25
10/19/2006	0.00	0.000	0.000	0.64	0.25
10/20/2006	0.00	0.000	0.000	0.64	0.25
10/21/2006	0.00	0.000	0.000	0.64	0.25
10/22/2006	0.00	0.000	0.000	0.64	0.25
10/23/2006	0.00	0.000	0.000	0.64	0.25
10/24/2006	0.00	0.000	0.000	0.64	0.25
10/25/2006	0.00	0.000	0.000	0.64	0.25
10/26/2006	0.00	0.000	0.000	0.64	0.25
10/27/2006	0.00	0.000	0.000	0.64	0.25
10/28/2006	0.00	0.000	0.000	0.64	0.25
10/29/2006	0.00	0.000	0.000	0.64	0.25
10/30/2006	0.00	0.000	0.000	0.64	0.25
10/31/2006	0.00	0.000	0.000	0.64	0.25
11/1/2006	0.00	0.000	0.000	0.64	0.25
11/2/2006	0.00	0.000	0.000	0.64	0.25
11/3/2006	0.00	0.000	0.000	0.64	0.25
11/4/2006	0.00	0.000	0.000	0.64	0.25
11/5/2006	0.00	0.000	0.000	0.64	0.25
11/6/2006	0.00	0.000	0.000	0.64	0.25
11/7/2006	0.00	0.000	0.000	0.64	0.25
11/8/2006	0.00	0.000	0.000	0.64	0.25
11/9/2006	0.00	0.000	0.000	0.64	0.25
11/10/2006	0.00	0.000	0.000	0.64	0.25
11/11/2006	0.00	0.000	0.000	0.64	0.25
11/12/2006	0.00	0.000	0.000	0.64	0.25
11/13/2006	0.00	0.000	0.000	0.64	0.25
11/14/2006	0.00	0.000	0.000	0.64	0.25
11/15/2006	0.01	0.004	0.367	0.64	0.25
11/16/2006	0.41	0.266	27.530	0.64	0.25
11/17/2006	0.98	0.632	65.339	0.64	0.25
11/18/2006	0.50	0.323	33.404	0.64	0.25
11/19/2006	1.35	0.874	90.300	0.64	0.25
11/20/2006	0.54	0.352	36.340	0.64	0.25
11/21/2006	0.35	0.227	23.493	0.64	0.25
11/22/2006	0.27	0.174	17.987	0.64	0.25
11/23/2006	0.21	0.135	13.949	0.64	0.25
11/24/2006	0.17	0.107	11.012	0.64	0.25
11/25/2006	0.15	0.096	9.911	0.64	0.25
11/26/2006	0.19	0.121	12.480	0.64	0.25
11/27/2006	0.18	0.117	12.113	0.64	0.25
11/28/2006	0.17	0.107	11.012	0.64	0.25
11/29/2006	0.15	0.099	10.278	0.64	0.25
11/30/2006	0.72	0.462	47.719	0.64	0.25
12/1/2006	6.55	4.227	436.817	0.64	0.25
12/2/2006	7.43	4.796	495.549	0.64	0.25
12/3/2006	4.45	2.874	296.962	0.64	0.25
12/4/2006	2.70	1.741	179.866	0.64	0.25
12/5/2006	1.69	1.094	113.058	0.64	0.25
12/6/2006	1.35	0.874	90.300	0.64	0.25
12/7/2006	1.17	0.757	78.187	0.64	0.25
12/8/2006	0.62	0.401	41.479	0.64	0.25
12/9/2006	0.43	0.281	28.999	0.64	0.25
12/10/2006	0.43	0.281	28.999	0.64	0.25
12/11/2006	0.50	0.323	33.404	0.64	0.25
12/12/2006	0.72	0.462	47.719	0.64	0.25
12/13/2006	1.77	1.140	117.830	0.64	0.25
12/14/2006	4.11	2.657	274.571	0.64	0.25
12/15/2006	4.00	2.583	266.862	0.64	0.25
12/16/2006	3.22	2.078	214.738	0.64	0.25
12/17/2006	2.47	1.595	164.816	0.64	0.25
12/18/2006	1.88	1.211	125.172	0.64	0.25
12/19/2006	1.52	0.980	101.312	0.64	0.25
12/20/2006	1.28	0.824	85.161	0.64	0.25
12/21/2006	2.87	1.854	191.612	0.64	0.25
12/22/2006	22.66	14.636	1512.341	0.64	0.25
12/23/2006	23.16	14.955	1545.377	0.64	0.25
12/24/2006	13.09	8.455	873.634	0.64	0.25
12/25/2006	9.63	6.217	642.378	0.64	0.25

12/26/2006	8.20	5.293	546.939	0.64	0.25
12/27/2006	7.26	4.689	484.536	0.64	0.25
12/28/2006	6.49	4.192	433.146	0.64	0.25
12/29/2006	5.56	3.588	370.744	0.64	0.25
12/30/2006	4.67	3.016	311.645	0.64	0.25
12/31/2006	12.93	8.348	862.622	0.64	0.25
1/1/2007	21.07	13.605	1405.890	0.64	0.25
1/2/2007	11.94	7.709	796.548	0.64	0.25
1/3/2007	8.53	5.506	568.963	0.64	0.25
1/4/2007	7.98	5.151	532.256	0.64	0.25
1/5/2007	20.96	13.534	1398.548	0.64	0.25
1/6/2007	15.57	10.053	1038.817	0.64	0.25
1/7/2007	11.33	7.318	756.170	0.64	0.25
1/8/2007	11.83	7.637	789.207	0.64	0.25
1/9/2007	10.51	6.785	701.109	0.64	0.25
1/10/2007	7.76	5.009	517.573	0.64	0.25
1/11/2007	7.54	4.867	502.890	0.64	0.25
1/12/2007	7.15	4.618	477.195	0.64	0.25
1/13/2007	114.97	74.243	7671.826	0.64	0.25
1/14/2007	101.21	65.363	6754.144	0.64	0.25
1/15/2007	426.86	275.660	28484.866	0.64	0.25
1/16/2007	121.02	78.151	8075.606	0.64	0.25
1/17/2007	56.11	36.234	3744.145	0.64	0.25
1/18/2007	36.80	23.765	2455.718	0.64	0.25
1/19/2007	25.36	16.376	1692.207	0.64	0.25
1/20/2007	19.91	12.859	1328.804	0.64	0.25
1/21/2007	17.55	11.332	1170.963	0.64	0.25
1/22/2007	14.74	9.520	983.756	0.64	0.25
1/23/2007	12.43	8.028	829.585	0.64	0.25
1/24/2007	11.50	7.424	767.183	0.64	0.25
1/25/2007	10.40	6.714	693.768	0.64	0.25
1/26/2007	10.29	6.643	686.427	0.64	0.25
1/27/2007	19.64	12.682	1310.451	0.64	0.25
1/28/2007	16.67	10.764	1112.231	0.64	0.25
1/29/2007	12.10	7.815	807.561	0.64	0.25
1/30/2007	9.35	6.039	624.024	0.64	0.25
1/31/2007	8.25	5.328	550.610	0.64	0.25
2/1/2007	7.70	4.973	513.902	0.64	0.25
2/2/2007	7.15	4.618	477.195	0.64	0.25
2/3/2007	6.60	4.263	440.488	0.64	0.25
2/4/2007	6.05	3.908	403.780	0.64	0.25
2/5/2007	5.50	3.552	367.073	0.64	0.25
2/6/2007	5.17	3.339	345.049	0.64	0.25
2/7/2007	4.79	3.091	319.354	0.64	0.25
2/8/2007	4.46	2.877	297.329	0.64	0.25
2/9/2007	4.24	2.735	282.646	0.64	0.25
2/10/2007	4.02	2.593	267.963	0.64	0.25
2/11/2007	3.85	2.487	256.951	0.64	0.25
2/12/2007	3.69	2.380	245.939	0.64	0.25
2/13/2007	3.41	2.202	227.585	0.64	0.25
2/14/2007	3.08	1.989	205.561	0.64	0.25
2/15/2007	3.19	2.060	212.902	0.64	0.25
2/16/2007	3.41	2.202	227.585	0.64	0.25
2/17/2007	3.69	2.380	245.939	0.64	0.25
2/18/2007	4.18	2.700	278.975	0.64	0.25
2/19/2007	4.73	3.055	315.683	0.64	0.25
2/20/2007	5.50	3.552	367.073	0.64	0.25
2/21/2007	6.60	4.263	440.488	0.64	0.25
2/22/2007	13.75	8.881	917.683	0.64	0.25
2/23/2007	27.50	17.762	1835.365	0.64	0.25
2/24/2007	69.31	44.759	4625.120	0.64	0.25
2/25/2007	325.65	210.297	21730.723	0.64	0.25
2/26/2007	79.76	51.509	5322.559	0.64	0.25
2/27/2007	42.19	27.246	2815.450	0.64	0.25
2/28/2007	31.08	20.071	2073.963	0.64	0.25
3/1/2007	37.19	24.014	2481.414	0.64	0.25
3/2/2007	48.24	31.154	3219.230	0.64	0.25
3/3/2007	32.29	20.852	2154.719	0.64	0.25
3/4/2007	22.28	14.387	1486.646	0.64	0.25

3/5/2007	18.37	11.865	1226.024	0.64	0.25
3/6/2007	15.35	9.911	1024.134	0.64	0.25
3/7/2007	14.58	9.414	972.743	0.64	0.25
3/8/2007	12.60	8.135	840.597	0.64	0.25
3/9/2007	12.05	7.780	803.890	0.64	0.25
3/10/2007	11.17	7.211	745.158	0.64	0.25
3/11/2007	9.24	5.968	616.683	0.64	0.25
3/12/2007	9.52	6.146	635.036	0.64	0.25
3/13/2007	9.52	6.146	635.036	0.64	0.25
3/14/2007	9.57	6.181	638.707	0.64	0.25
3/15/2007	35.92	23.197	2396.987	0.64	0.25
3/16/2007	31.68	20.461	2114.341	0.64	0.25
3/17/2007	22.94	14.813	1530.694	0.64	0.25
3/18/2007	18.37	11.865	1226.024	0.64	0.25
3/19/2007	19.09	12.327	1273.743	0.64	0.25
3/20/2007	16.61	10.728	1108.561	0.64	0.25
3/21/2007	16.06	10.373	1071.853	0.64	0.25
3/22/2007	15.79	10.195	1053.500	0.64	0.25
3/23/2007	19.91	12.859	1328.804	0.64	0.25
3/24/2007	27.50	17.762	1835.365	0.64	0.25
3/25/2007	23.60	15.239	1574.743	0.64	0.25
3/26/2007	20.79	13.428	1387.536	0.64	0.25
3/27/2007	17.66	11.403	1178.304	0.64	0.25
3/28/2007	15.73	10.160	1049.829	0.64	0.25
3/29/2007	13.97	9.023	932.365	0.64	0.25
3/30/2007	12.98	8.383	866.292	0.64	0.25
3/31/2007	14.36	9.272	958.061	0.64	0.25
4/1/2007	14.14	9.129	943.378	0.64	0.25
4/2/2007	11.66	7.531	778.195	0.64	0.25
4/3/2007	21.34	13.783	1424.243	0.64	0.25
4/4/2007	33.94	21.918	2264.841	0.64	0.25
4/5/2007	23.82	15.382	1589.426	0.64	0.25
4/6/2007	19.80	12.788	1321.463	0.64	0.25
4/7/2007	16.34	10.550	1090.207	0.64	0.25
4/8/2007	13.75	8.881	917.683	0.64	0.25
4/9/2007	12.21	7.886	814.902	0.64	0.25
4/10/2007	11.44	7.389	763.512	0.64	0.25
4/11/2007	15.13	9.769	1009.451	0.64	0.25
4/12/2007	12.38	7.993	825.914	0.64	0.25
4/13/2007	10.18	6.572	679.085	0.64	0.25
4/14/2007	18.70	12.078	1248.048	0.64	0.25
4/15/2007	44.78	28.916	2987.974	0.64	0.25
4/16/2007	31.08	20.071	2073.963	0.64	0.25
4/17/2007	25.03	16.163	1670.182	0.64	0.25
4/18/2007	21.45	13.854	1431.585	0.64	0.25
4/19/2007	17.27	11.154	1152.609	0.64	0.25
4/20/2007	13.97	9.023	932.365	0.64	0.25
4/21/2007	12.98	8.383	866.292	0.64	0.25
4/22/2007	12.71	8.206	847.939	0.64	0.25
4/23/2007	11.99	7.744	800.219	0.64	0.25
4/24/2007	10.51	6.785	701.109	0.64	0.25
4/25/2007	12.21	7.886	814.902	0.64	0.25
4/26/2007	11.88	7.673	792.878	0.64	0.25
4/27/2007	10.78	6.963	719.463	0.64	0.25
4/28/2007	9.13	5.897	609.341	0.64	0.25
4/29/2007	8.53	5.506	568.963	0.64	0.25
4/30/2007	8.36	5.400	557.951	0.64	0.25
5/1/2007	8.31	5.364	554.280	0.64	0.25
5/2/2007	8.47	5.471	565.292	0.64	0.25
5/3/2007	8.31	5.364	554.280	0.64	0.25
5/4/2007	8.69	5.613	579.975	0.64	0.25
5/5/2007	10.12	6.536	675.414	0.64	0.25
5/6/2007	8.91	5.755	594.658	0.64	0.25
5/7/2007	8.25	5.328	550.610	0.64	0.25
5/8/2007	8.25	5.328	550.610	0.64	0.25
5/9/2007	8.14	5.257	543.268	0.64	0.25
5/10/2007	7.76	5.009	517.573	0.64	0.25
5/11/2007	7.54	4.867	502.890	0.64	0.25
5/12/2007	6.77	4.369	451.500	0.64	0.25

5/13/2007	6.49	4.192	433.146	0.64	0.25
5/14/2007	6.27	4.050	418.463	0.64	0.25
5/15/2007	6.33	4.085	422.134	0.64	0.25
5/16/2007	6.66	4.298	444.158	0.64	0.25
5/17/2007	6.55	4.227	436.817	0.64	0.25
5/18/2007	6.05	3.908	403.780	0.64	0.25
5/19/2007	5.78	3.730	385.427	0.64	0.25
5/20/2007	5.61	3.623	374.414	0.64	0.25
5/21/2007	5.39	3.481	359.732	0.64	0.25
5/22/2007	5.31	3.428	354.225	0.64	0.25
5/23/2007	5.26	3.396	350.922	0.64	0.25
5/24/2007	5.14	3.318	342.846	0.64	0.25
5/25/2007	5.01	3.233	334.036	0.64	0.25
5/26/2007	4.89	3.158	326.328	0.64	0.25
5/27/2007	9.35	6.039	624.024	0.64	0.25
5/28/2007	7.70	4.973	513.902	0.64	0.25
5/29/2007	6.05	3.908	403.780	0.64	0.25
5/30/2007	5.39	3.481	359.732	0.64	0.25
5/31/2007	5.01	3.233	334.036	0.64	0.25
6/1/2007	4.79	3.091	319.354	0.64	0.25
6/2/2007	4.68	3.019	312.012	0.64	0.25
6/3/2007	4.57	2.948	304.671	0.64	0.25
6/4/2007	4.35	2.806	289.988	0.64	0.25
6/5/2007	3.85	2.487	256.951	0.64	0.25
6/6/2007	3.03	1.954	201.890	0.64	0.25
6/7/2007	2.75	1.776	183.537	0.64	0.25
6/8/2007	2.59	1.670	172.524	0.64	0.25
6/9/2007	2.04	1.314	135.817	0.64	0.25
6/10/2007	1.60	1.030	106.451	0.64	0.25
6/11/2007	1.49	0.959	99.110	0.64	0.25
6/12/2007	1.27	0.817	84.427	0.64	0.25
6/13/2007	1.16	0.746	77.085	0.64	0.25
6/14/2007	1.10	0.710	73.415	0.64	0.25
6/15/2007	1.05	0.675	69.744	0.64	0.25
6/16/2007	0.83	0.533	55.061	0.64	0.25
6/17/2007	0.55	0.355	36.707	0.64	0.25
6/18/2007	0.47	0.305	31.568	0.64	0.25
6/19/2007	0.53	0.345	35.606	0.64	0.25
6/20/2007	0.46	0.295	30.467	0.64	0.25
6/21/2007	0.40	0.256	26.429	0.64	0.25
6/22/2007	0.66	0.426	44.049	0.64	0.25
6/23/2007	2.16	1.396	144.260	0.64	0.25
6/24/2007	6.05	3.908	403.780	0.64	0.25
6/25/2007	3.52	2.270	234.560	0.64	0.25
6/26/2007	2.29	1.481	153.069	0.64	0.25
6/27/2007	1.43	0.924	95.439	0.64	0.25
6/28/2007	1.30	0.838	86.629	0.64	0.25
6/29/2007	2.76	1.780	183.904	0.64	0.25
6/30/2007	2.39	1.542	159.310	0.64	0.25
7/1/2007	1.72	1.108	114.527	0.64	0.25
7/2/2007	1.07	0.693	71.579	0.64	0.25
7/3/2007	0.71	0.458	47.352	0.64	0.25
7/4/2007	0.52	0.334	34.505	0.64	0.25
7/5/2007	0.53	0.341	35.239	0.64	0.25
7/6/2007	0.47	0.305	31.568	0.64	0.25
7/7/2007	0.38	0.245	25.328	0.64	0.25
7/8/2007	0.31	0.202	20.923	0.64	0.25
7/9/2007	0.32	0.210	21.657	0.64	0.25
7/10/2007	0.94	0.607	62.769	0.64	0.25
7/11/2007	0.43	0.277	28.632	0.64	0.25
7/12/2007	0.30	0.192	19.822	0.64	0.25
7/13/2007	0.29	0.185	19.088	0.64	0.25
7/14/2007	0.30	0.192	19.822	0.64	0.25
7/15/2007	0.24	0.156	16.151	0.64	0.25
7/16/2007	0.21	0.139	14.316	0.64	0.25
7/17/2007	83.06	53.640	5542.803	0.64	0.25
7/18/2007	20.96	13.534	1398.548	0.64	0.25
7/19/2007	7.65	4.938	510.231	0.64	0.25
7/20/2007	4.93	3.183	328.897	0.64	0.25

7/21/2007	3.41	2.199	227.218	0.64	0.25
7/22/2007	2.38	1.535	158.576	0.64	0.25
7/23/2007	1.61	1.041	107.552	0.64	0.25
7/24/2007	1.14	0.735	75.984	0.64	0.25
7/25/2007	0.81	0.526	54.327	0.64	0.25
7/26/2007	0.63	0.409	42.213	0.64	0.25
7/27/2007	0.48	0.313	32.302	0.64	0.25
7/28/2007	0.41	0.266	27.530	0.64	0.25
7/29/2007	0.34	0.217	22.391	0.64	0.25
7/30/2007	0.25	0.163	16.885	0.64	0.25
7/31/2007	0.17	0.110	11.379	0.64	0.25
8/1/2007	0.12	0.078	8.076	0.64	0.25
8/2/2007	0.09	0.057	5.873	0.64	0.25
8/3/2007	0.06	0.039	4.038	0.64	0.25
8/4/2007	0.04	0.025	2.570	0.64	0.25
8/5/2007	0.09	0.060	6.240	0.64	0.25
8/6/2007	0.10	0.064	6.607	0.64	0.25
8/7/2007	0.08	0.053	5.506	0.64	0.25
8/8/2007	0.04	0.028	2.937	0.64	0.25
8/9/2007	0.01	0.004	0.367	0.64	0.25
8/10/2007	0.00	0.000	0.000	0.64	0.25
8/11/2007	0.00	0.000	0.000	0.64	0.25
8/12/2007	0.00	0.000	0.000	0.64	0.25
8/13/2007	0.00	0.000	0.000	0.64	0.25
8/14/2007	0.00	0.000	0.000	0.64	0.25
8/15/2007	0.00	0.000	0.000	0.64	0.25
8/16/2007	0.00	0.000	0.000	0.64	0.25
8/17/2007	0.00	0.000	0.000	0.64	0.25
8/18/2007	0.00	0.000	0.000	0.64	0.25
8/19/2007	0.00	0.000	0.000	0.64	0.25
8/20/2007	0.00	0.000	0.000	0.64	0.25
8/21/2007	0.00	0.000	0.000	0.64	0.25
8/22/2007	0.00	0.000	0.000	0.64	0.25
8/23/2007	0.00	0.000	0.000	0.64	0.25
8/24/2007	0.00	0.000	0.000	0.64	0.25
8/25/2007	0.00	0.000	0.000	0.64	0.25
8/26/2007	0.00	0.000	0.000	0.64	0.25
8/27/2007	0.00	0.000	0.000	0.64	0.25
8/28/2007	0.00	0.000	0.000	0.64	0.25
8/29/2007	0.00	0.000	0.000	0.64	0.25
8/30/2007	0.00	0.000	0.000	0.64	0.25
8/31/2007	0.00	0.000	0.000	0.64	0.25
9/1/2007	0.00	0.000	0.000	0.64	0.25
9/2/2007	0.00	0.000	0.000	0.64	0.25
9/3/2007	0.00	0.000	0.000	0.64	0.25
9/4/2007	0.00	0.000	0.000	0.64	0.25
9/5/2007	0.00	0.000	0.000	0.64	0.25
9/6/2007	0.00	0.000	0.000	0.64	0.25
9/7/2007	0.00	0.000	0.000	0.64	0.25
9/8/2007	0.00	0.000	0.000	0.64	0.25
9/9/2007	0.00	0.000	0.000	0.64	0.25
9/10/2007	0.00	0.000	0.000	0.64	0.25
9/11/2007	0.00	0.000	0.000	0.64	0.25
9/12/2007	0.00	0.000	0.000	0.64	0.25
9/13/2007	0.00	0.000	0.000	0.64	0.25
9/14/2007	0.00	0.000	0.000	0.64	0.25
9/15/2007	0.00	0.000	0.000	0.64	0.25
9/16/2007	0.00	0.000	0.000	0.64	0.25
9/17/2007	0.00	0.000	0.000	0.64	0.25
9/18/2007	0.00	0.000	0.000	0.64	0.25
9/19/2007	0.00	0.000	0.000	0.64	0.25
9/20/2007	0.00	0.000	0.000	0.64	0.25
9/21/2007	0.00	0.000	0.000	0.64	0.25
9/22/2007	0.00	0.000	0.000	0.64	0.25
9/23/2007	0.00	0.000	0.000	0.64	0.25
9/24/2007	0.00	0.000	0.000	0.64	0.25
9/25/2007	0.00	0.000	0.000	0.64	0.25
9/26/2007	0.00	0.000	0.000	0.64	0.25
9/27/2007	0.00	0.000	0.000	0.64	0.25

9/28/2007	0.00	0.000	0.000	0.64	0.25
9/29/2007	0.00	0.000	0.000	0.64	0.25
9/30/2007	0.00	0.000	0.000	0.64	0.25
10/1/2007	0.00	0.000	0.000	0.64	0.25
10/2/2007	0.00	0.000	0.000	0.64	0.25
10/3/2007	0.00	0.000	0.000	0.64	0.25
10/4/2007	0.00	0.000	0.000	0.64	0.25
10/5/2007	0.00	0.000	0.000	0.64	0.25
10/6/2007	0.00	0.000	0.000	0.64	0.25
10/7/2007	0.00	0.000	0.000	0.64	0.25
10/8/2007	0.00	0.000	0.000	0.64	0.25
10/9/2007	0.00	0.000	0.000	0.64	0.25
10/10/2007	0.00	0.000	0.000	0.64	0.25
10/11/2007	0.00	0.000	0.000	0.64	0.25
10/12/2007	0.00	0.000	0.000	0.64	0.25
10/13/2007	0.00	0.000	0.000	0.64	0.25
10/14/2007	0.00	0.000	0.000	0.64	0.25
10/15/2007	0.00	0.000	0.000	0.64	0.25
10/16/2007	0.00	0.000	0.000	0.64	0.25
10/17/2007	0.00	0.000	0.000	0.64	0.25
10/18/2007	0.00	0.000	0.000	0.64	0.25
10/19/2007	0.00	0.000	0.000	0.64	0.25
10/20/2007	0.00	0.000	0.000	0.64	0.25
10/21/2007	0.00	0.000	0.000	0.64	0.25
10/22/2007	0.00	0.000	0.000	0.64	0.25
10/23/2007	1.60	1.030	106.451	0.64	0.25
10/24/2007	1.74	1.123	115.995	0.64	0.25
10/25/2007	1.24	0.803	82.959	0.64	0.25
10/26/2007	1.22	0.785	81.123	0.64	0.25
10/27/2007	0.85	0.547	56.529	0.64	0.25
10/28/2007	0.54	0.352	36.340	0.64	0.25
10/29/2007	0.42	0.270	27.898	0.64	0.25
10/30/2007	0.34	0.220	22.759	0.64	0.25
10/31/2007	0.30	0.192	19.822	0.64	0.25
11/1/2007	0.27	0.174	17.987	0.64	0.25
11/2/2007	0.25	0.163	16.885	0.64	0.25
11/3/2007	0.21	0.135	13.949	0.64	0.25
11/4/2007	0.19	0.121	12.480	0.64	0.25
11/5/2007	0.17	0.110	11.379	0.64	0.25
11/6/2007	0.16	0.103	10.645	0.64	0.25
11/7/2007	0.15	0.096	9.911	0.64	0.25
11/8/2007	0.13	0.085	8.810	0.64	0.25
11/9/2007	0.13	0.082	8.443	0.64	0.25
11/10/2007	0.13	0.082	8.443	0.64	0.25
11/11/2007	0.17	0.110	11.379	0.64	0.25
11/12/2007	0.22	0.142	14.683	0.64	0.25
11/13/2007	0.36	0.234	24.227	0.64	0.25
11/14/2007	0.30	0.195	20.189	0.64	0.25
11/15/2007	0.26	0.167	17.252	0.64	0.25
11/16/2007	0.25	0.160	16.518	0.64	0.25
11/17/2007	0.20	0.128	13.215	0.64	0.25
11/18/2007	0.21	0.139	14.316	0.64	0.25
11/19/2007	0.20	0.131	13.582	0.64	0.25
11/20/2007	0.19	0.121	12.480	0.64	0.25
11/21/2007	0.32	0.210	21.657	0.64	0.25
11/22/2007	2.33	1.506	155.639	0.64	0.25
11/23/2007	1.34	0.863	89.199	0.64	0.25
11/24/2007	1.76	1.137	117.463	0.64	0.25
11/25/2007	1.27	0.821	84.794	0.64	0.25
11/26/2007	2.34	1.510	156.006	0.64	0.25
11/27/2007	5.42	3.503	361.934	0.64	0.25
11/28/2007	5.20	3.360	347.251	0.64	0.25
11/29/2007	3.70	2.387	246.673	0.64	0.25
11/30/2007	2.44	1.574	162.613	0.64	0.25
12/1/2007	1.65	1.066	110.122	0.64	0.25
12/2/2007	1.73	1.119	115.628	0.64	0.25
12/3/2007	3.65	2.359	243.736	0.64	0.25
12/4/2007	4.85	3.130	323.391	0.64	0.25
12/5/2007	4.29	2.771	286.317	0.64	0.25

12/6/2007	2.96	1.915	197.852	0.64	0.25
12/7/2007	2.40	1.549	160.044	0.64	0.25
12/8/2007	2.16	1.393	143.893	0.64	0.25
12/9/2007	4.40	2.842	293.658	0.64	0.25
12/10/2007	16.56	10.692	1104.890	0.64	0.25
12/11/2007	19.25	12.433	1284.756	0.64	0.25
12/12/2007	36.97	23.872	2466.731	0.64	0.25
12/13/2007	28.44	18.365	1897.767	0.64	0.25
12/14/2007	16.67	10.764	1112.231	0.64	0.25
12/15/2007	12.87	8.312	858.951	0.64	0.25
12/16/2007	11.33	7.318	756.170	0.64	0.25
12/17/2007	9.90	6.394	660.731	0.64	0.25
12/18/2007	7.43	4.796	495.549	0.64	0.25
12/19/2007	6.77	4.369	451.500	0.64	0.25
12/20/2007	6.77	4.369	451.500	0.64	0.25
12/21/2007	37.24	24.049	2485.084	0.64	0.25
12/22/2007	59.41	38.365	3964.389	0.64	0.25
12/23/2007	58.31	37.655	3890.974	0.64	0.25
12/24/2007	32.67	21.101	2180.414	0.64	0.25
12/25/2007	20.30	13.108	1354.499	0.64	0.25
12/26/2007	16.23	10.479	1082.865	0.64	0.25
12/27/2007	14.30	9.236	954.390	0.64	0.25
12/28/2007	13.97	9.023	932.365	0.64	0.25
12/29/2007	13.42	8.668	895.658	0.64	0.25
12/30/2007	12.49	8.064	833.256	0.64	0.25
12/31/2007	11.66	7.531	778.195	0.64	0.25
1/1/2008	8.97	5.790	598.329	0.64	0.25
1/2/2008	8.25	5.328	550.610	0.64	0.25
1/3/2008	7.15	4.618	477.195	0.64	0.25
1/4/2008	7.70	4.973	513.902	0.64	0.25
1/5/2008	7.98	5.151	532.256	0.64	0.25
1/6/2008	7.15	4.618	477.195	0.64	0.25
1/7/2008	6.44	4.156	429.475	0.64	0.25
1/8/2008	56.66	36.589	3780.852	0.64	0.25
1/9/2008	97.91	63.231	6533.900	0.64	0.25
1/10/2008	54.57	35.239	3641.364	0.64	0.25
1/11/2008	41.20	26.607	2749.377	0.64	0.25
1/12/2008	29.59	19.111	1974.853	0.64	0.25
1/13/2008	22.88	14.778	1527.024	0.64	0.25
1/14/2008	18.32	11.829	1222.353	0.64	0.25
1/15/2008	14.91	9.627	994.768	0.64	0.25
1/16/2008	12.98	8.383	866.292	0.64	0.25
1/17/2008	12.21	7.886	814.902	0.64	0.25
1/18/2008	10.45	6.749	697.439	0.64	0.25
1/19/2008	9.35	6.039	624.024	0.64	0.25
1/20/2008	7.15	4.618	477.195	0.64	0.25
1/21/2008	6.05	3.908	403.780	0.64	0.25
1/22/2008	5.06	3.268	337.707	0.64	0.25
1/23/2008	4.40	2.842	293.658	0.64	0.25
1/24/2008	3.96	2.558	264.293	0.64	0.25
1/25/2008	3.91	2.522	260.622	0.64	0.25
1/26/2008	3.91	2.522	260.622	0.64	0.25
1/27/2008	4.02	2.593	267.963	0.64	0.25
1/28/2008	4.40	2.842	293.658	0.64	0.25
1/29/2008	4.90	3.162	326.695	0.64	0.25
1/30/2008	6.05	3.908	403.780	0.64	0.25
1/31/2008	5.50	3.552	367.073	0.64	0.25
2/1/2008	4.95	3.197	330.366	0.64	0.25
2/2/2008	4.68	3.019	312.012	0.64	0.25
2/3/2008	4.95	3.197	330.366	0.64	0.25
2/4/2008	114.42	73.888	7635.119	0.64	0.25
2/5/2008	228.28	147.421	15233.530	0.64	0.25
2/6/2008	493.42	318.643	32926.450	0.64	0.25
2/7/2008	131.47	84.900	8773.045	0.64	0.25
2/8/2008	86.91	56.127	5799.754	0.64	0.25
2/9/2008	79.21	51.153	5285.851	0.64	0.25
2/10/2008	53.96	34.848	3600.986	0.64	0.25
2/11/2008	38.51	24.866	2569.511	0.64	0.25
2/12/2008	25.85	16.696	1725.243	0.64	0.25

2/13/2008	19.25	12.433	1284.756	0.64	0.25
2/14/2008	16.50	10.657	1101.219	0.64	0.25
2/15/2008	14.30	9.236	954.390	0.64	0.25
2/16/2008	13.20	8.526	880.975	0.64	0.25
2/17/2008	75.36	48.667	5028.900	0.64	0.25
2/18/2008	65.46	42.273	4368.169	0.64	0.25
2/19/2008	39.06	25.221	2606.218	0.64	0.25
2/20/2008	28.55	18.437	1905.109	0.64	0.25
2/21/2008	23.10	14.920	1541.707	0.64	0.25
2/22/2008	17.05	11.012	1137.926	0.64	0.25
2/23/2008	15.40	9.946	1027.804	0.64	0.25
2/24/2008	13.75	8.881	917.683	0.64	0.25
2/25/2008	16.17	10.444	1079.195	0.64	0.25
2/26/2008	24.70	15.950	1648.158	0.64	0.25
2/27/2008	26.13	16.874	1743.597	0.64	0.25
2/28/2008	19.53	12.611	1303.109	0.64	0.25
2/29/2008	41.20	26.607	2749.377	0.64	0.25
3/1/2008	48.85	31.545	3259.608	0.64	0.25
3/2/2008	46.76	30.195	3120.121	0.64	0.25
3/3/2008	114.42	73.888	7635.119	0.64	0.25
3/4/2008	119.37	77.085	7965.484	0.64	0.25
3/5/2008	70.41	45.470	4698.535	0.64	0.25
3/6/2008	89.66	57.903	5983.290	0.64	0.25
3/7/2008	70.41	45.470	4698.535	0.64	0.25
3/8/2008	46.21	29.839	3083.413	0.64	0.25
3/9/2008	32.62	21.065	2176.743	0.64	0.25
3/10/2008	29.37	18.969	1960.170	0.64	0.25
3/11/2008	28.93	18.685	1930.804	0.64	0.25
3/12/2008	28.66	18.508	1912.450	0.64	0.25
3/13/2008	25.41	16.412	1695.877	0.64	0.25
3/14/2008	23.38	15.097	1560.060	0.64	0.25
3/15/2008	21.23	13.712	1416.902	0.64	0.25
3/16/2008	17.82	11.510	1189.317	0.64	0.25
3/17/2008	17.22	11.119	1148.939	0.64	0.25
3/18/2008	51.93	33.534	3465.169	0.64	0.25
3/19/2008	434.56	280.633	28998.768	0.64	0.25
3/20/2008	150.17	96.978	10021.093	0.64	0.25
3/21/2008	93.51	60.389	6240.241	0.64	0.25
3/22/2008	62.71	40.496	4184.632	0.64	0.25
3/23/2008	45.93	29.662	3065.060	0.64	0.25
3/24/2008	36.09	23.303	2407.999	0.64	0.25
3/25/2008	31.68	20.461	2114.341	0.64	0.25
3/26/2008	26.68	17.229	1780.304	0.64	0.25
3/27/2008	50.06	32.326	3340.364	0.64	0.25
3/28/2008	158.42	102.307	10571.703	0.64	0.25
3/29/2008	73.71	47.601	4918.778	0.64	0.25
3/30/2008	58.31	37.655	3890.974	0.64	0.25
3/31/2008	136.97	88.453	9140.118	0.64	0.25
4/1/2008	380.66	245.821	25401.453	0.64	0.25
4/2/2008	120.47	77.796	8038.899	0.64	0.25
4/3/2008	78.66	50.798	5249.144	0.64	0.25
4/4/2008	58.31	37.655	3890.974	0.64	0.25
4/5/2008	44.50	28.738	2969.621	0.64	0.25
4/6/2008	36.86	23.801	2459.389	0.64	0.25
4/7/2008	30.75	19.857	2051.938	0.64	0.25
4/8/2008	26.62	17.193	1776.633	0.64	0.25
4/9/2008	24.04	15.524	1604.109	0.64	0.25
4/10/2008	97.91	63.231	6533.900	0.64	0.25
4/11/2008	206.28	133.212	13765.238	0.64	0.25
4/12/2008	81.96	52.930	5469.388	0.64	0.25
4/13/2008	52.42	33.854	3498.206	0.64	0.25
4/14/2008	40.98	26.465	2734.694	0.64	0.25
4/15/2008	34.11	22.024	2275.853	0.64	0.25
4/16/2008	29.92	19.325	1996.877	0.64	0.25
4/17/2008	25.30	16.341	1688.536	0.64	0.25
4/18/2008	22.94	14.813	1530.694	0.64	0.25
4/19/2008	22.11	14.280	1475.634	0.64	0.25
4/20/2008	18.98	12.256	1266.402	0.64	0.25
4/21/2008	17.55	11.332	1170.963	0.64	0.25

4/22/2008	16.78	10.835	1119.573	0.64	0.25
4/23/2008	15.51	10.018	1035.146	0.64	0.25
4/24/2008	14.96	9.662	998.439	0.64	0.25
4/25/2008	14.96	9.662	998.439	0.64	0.25
4/26/2008	14.08	9.094	939.707	0.64	0.25
4/27/2008	12.54	8.099	836.926	0.64	0.25
4/28/2008	12.82	8.277	855.280	0.64	0.25
4/29/2008	11.83	7.637	789.207	0.64	0.25
4/30/2008	11.61	7.495	774.524	0.64	0.25
5/1/2008	11.83	7.637	789.207	0.64	0.25
5/2/2008	11.99	7.744	800.219	0.64	0.25
5/3/2008	11.11	7.176	741.487	0.64	0.25
5/4/2008	8.97	5.790	598.329	0.64	0.25
5/5/2008	8.36	5.400	557.951	0.64	0.25
5/6/2008	8.42	5.435	561.622	0.64	0.25
5/7/2008	9.13	5.897	609.341	0.64	0.25
5/8/2008	15.90	10.266	1060.841	0.64	0.25
5/9/2008	23.60	15.239	1574.743	0.64	0.25
5/10/2008	15.79	10.195	1053.500	0.64	0.25
5/11/2008	56.66	36.589	3780.852	0.64	0.25
5/12/2008	67.11	43.338	4478.291	0.64	0.25
5/13/2008	40.87	26.394	2727.353	0.64	0.25
5/14/2008	31.79	20.532	2121.682	0.64	0.25
5/15/2008	25.52	16.483	1703.219	0.64	0.25
5/16/2008	22.39	14.458	1493.987	0.64	0.25
5/17/2008	20.57	13.286	1372.853	0.64	0.25
5/18/2008	18.54	11.971	1237.036	0.64	0.25
5/19/2008	16.28	10.515	1086.536	0.64	0.25
5/20/2008	15.24	9.840	1016.792	0.64	0.25
5/21/2008	13.37	8.632	891.987	0.64	0.25
5/22/2008	12.10	7.815	807.561	0.64	0.25
5/23/2008	11.28	7.282	752.500	0.64	0.25
5/24/2008	10.62	6.856	708.451	0.64	0.25
5/25/2008	10.51	6.785	701.109	0.64	0.25
5/26/2008	11.66	7.531	778.195	0.64	0.25
5/27/2008	10.45	6.749	697.439	0.64	0.25
5/28/2008	8.80	5.684	587.317	0.64	0.25
5/29/2008	8.42	5.435	561.622	0.64	0.25
5/30/2008	14.36	9.272	958.061	0.64	0.25
5/31/2008	158.42	102.307	10571.703	0.64	0.25
6/1/2008	65.46	42.273	4368.169	0.64	0.25
6/2/2008	69.31	44.759	4625.120	0.64	0.25
6/3/2008	110.57	71.402	7378.168	0.64	0.25
6/4/2008	188.68	121.845	12590.604	0.64	0.25
6/5/2008	103.42	66.784	6900.973	0.64	0.25
6/6/2008	72.06	46.535	4808.657	0.64	0.25
6/7/2008	1006.65	650.074	67174.362	0.64	0.25
6/8/2008	407.61	263.227	27200.111	0.64	0.25
6/9/2008	118.82	76.730	7928.777	0.64	0.25
6/10/2008	85.26	55.061	5689.632	0.64	0.25
6/11/2008	57.21	36.944	3817.559	0.64	0.25
6/12/2008	42.36	27.353	2826.462	0.64	0.25
6/13/2008	34.16	22.060	2279.523	0.64	0.25
6/14/2008	29.98	19.360	2000.548	0.64	0.25
6/15/2008	25.58	16.518	1706.890	0.64	0.25
6/16/2008	22.28	14.387	1486.646	0.64	0.25
6/17/2008	19.31	12.469	1288.426	0.64	0.25
6/18/2008	18.10	11.687	1207.670	0.64	0.25
6/19/2008	16.06	10.373	1071.853	0.64	0.25
6/20/2008	14.30	9.236	954.390	0.64	0.25
6/21/2008	13.31	8.597	888.317	0.64	0.25
6/22/2008	12.87	8.312	858.951	0.64	0.25
6/23/2008	11.61	7.495	774.524	0.64	0.25
6/24/2008	10.01	6.465	668.073	0.64	0.25
6/25/2008	9.68	6.252	646.049	0.64	0.25
6/26/2008	9.35	6.039	624.024	0.64	0.25
6/27/2008	9.24	5.968	616.683	0.64	0.25
6/28/2008	9.85	6.359	657.061	0.64	0.25
6/29/2008	8.53	5.506	568.963	0.64	0.25

6/30/2008	7.10	4.582	473.524	0.64	0.25
7/1/2008	6.27	4.050	418.463	0.64	0.25
7/2/2008	5.94	3.837	396.439	0.64	0.25
7/3/2008	7.37	4.760	491.878	0.64	0.25
7/4/2008	11.83	7.637	789.207	0.64	0.25
7/5/2008	8.14	5.257	543.268	0.64	0.25
7/6/2008	6.33	4.085	422.134	0.64	0.25
7/7/2008	242.59	156.657	16187.920	0.64	0.25
7/8/2008	166.12	107.280	11085.605	0.64	0.25
7/9/2008	304.75	196.799	20335.845	0.64	0.25
7/10/2008	96.26	62.166	6423.778	0.64	0.25
7/11/2008	50.77	32.788	3388.084	0.64	0.25
7/12/2008	458.77	296.263	30613.890	0.64	0.25
7/13/2008	337.75	218.112	22538.283	0.64	0.25
7/14/2008	94.61	61.100	6313.656	0.64	0.25
7/15/2008	54.24	35.026	3619.340	0.64	0.25
7/16/2008	34.93	22.557	2330.914	0.64	0.25
7/17/2008	24.92	16.092	1662.841	0.64	0.25
7/18/2008	18.87	12.184	1259.060	0.64	0.25
7/19/2008	14.63	9.449	976.414	0.64	0.25
7/20/2008	11.94	7.709	796.548	0.64	0.25
7/21/2008	9.90	6.394	660.731	0.64	0.25
7/22/2008	10.40	6.714	693.768	0.64	0.25
7/23/2008	8.97	5.790	598.329	0.64	0.25
7/24/2008	7.15	4.618	477.195	0.64	0.25
7/25/2008	6.71	4.334	447.829	0.64	0.25
7/26/2008	6.11	3.943	407.451	0.64	0.25
7/27/2008	5.30	3.421	353.491	0.64	0.25
7/28/2008	8.31	5.364	554.280	0.64	0.25
7/29/2008	9.24	5.968	616.683	0.64	0.25
7/30/2008	12.87	8.312	858.951	0.64	0.25
7/31/2008	8.42	5.435	561.622	0.64	0.25
8/1/2008	6.00	3.872	400.110	0.64	0.25
8/2/2008	5.28	3.410	352.390	0.64	0.25
8/3/2008	3.96	2.558	264.293	0.64	0.25
8/4/2008	3.50	2.263	233.826	0.64	0.25
8/5/2008	4.12	2.661	274.938	0.64	0.25
8/6/2008	5.72	3.694	381.756	0.64	0.25
8/7/2008	3.83	2.472	255.483	0.64	0.25
8/8/2008	2.63	1.702	175.828	0.64	0.25
8/9/2008	2.11	1.364	140.956	0.64	0.25
8/10/2008	1.78	1.151	118.932	0.64	0.25
8/11/2008	1.42	0.920	95.072	0.64	0.25
8/12/2008	1.27	0.817	84.427	0.64	0.25
8/13/2008	1.10	0.710	73.415	0.64	0.25
8/14/2008	0.91	0.590	60.934	0.64	0.25
8/15/2008	0.76	0.494	51.023	0.64	0.25
8/16/2008	0.58	0.377	38.910	0.64	0.25
8/17/2008	0.48	0.309	31.935	0.64	0.25
8/18/2008	0.40	0.259	26.796	0.64	0.25
8/19/2008	0.33	0.213	22.024	0.64	0.25
8/20/2008	0.29	0.185	19.088	0.64	0.25
8/21/2008	0.28	0.181	18.721	0.64	0.25
8/22/2008	0.42	0.270	27.898	0.64	0.25
8/23/2008	0.45	0.291	30.100	0.64	0.25
8/24/2008	0.35	0.227	23.493	0.64	0.25
8/25/2008	0.27	0.174	17.987	0.64	0.25
8/26/2008	0.19	0.121	12.480	0.64	0.25
8/27/2008	0.16	0.103	10.645	0.64	0.25
8/28/2008	0.16	0.103	10.645	0.64	0.25
8/29/2008	0.18	0.114	11.746	0.64	0.25
8/30/2008	0.18	0.117	12.113	0.64	0.25
8/31/2008	0.17	0.110	11.379	0.64	0.25
9/1/2008	0.13	0.085	8.810	0.64	0.25
9/2/2008	0.09	0.060	6.240	0.64	0.25
9/3/2008	0.08	0.053	5.506	0.64	0.25
9/4/2008	0.45	0.288	29.733	0.64	0.25
9/5/2008	1.32	0.853	88.098	0.64	0.25
9/6/2008	1.25	0.810	83.693	0.64	0.25

9/7/2008	0.73	0.469	48.454	0.64	0.25
9/8/2008	0.37	0.238	24.594	0.64	0.25
9/9/2008	0.40	0.256	26.429	0.64	0.25
9/10/2008	0.24	0.156	16.151	0.64	0.25
9/11/2008	0.19	0.124	12.848	0.64	0.25
9/12/2008	7.15	4.618	477.195	0.64	0.25
9/13/2008	5.17	3.339	345.049	0.64	0.25
9/14/2008	70.41	45.470	4698.535	0.64	0.25
9/15/2008	46.15	29.804	3079.743	0.64	0.25
9/16/2008	19.25	12.433	1284.756	0.64	0.25
9/17/2008	10.78	6.963	719.463	0.64	0.25
9/18/2008	7.26	4.689	484.536	0.64	0.25
9/19/2008	5.47	3.531	364.871	0.64	0.25
9/20/2008	4.39	2.835	292.924	0.64	0.25
9/21/2008	3.73	2.408	248.876	0.64	0.25
9/22/2008	3.33	2.153	222.446	0.64	0.25
9/23/2008	2.58	1.666	172.157	0.64	0.25
9/24/2008	1.97	1.275	131.779	0.64	0.25
9/25/2008	1.50	0.970	100.211	0.64	0.25
9/26/2008	1.22	0.785	81.123	0.64	0.25
9/27/2008	1.12	0.725	74.883	0.64	0.25
9/28/2008	1.07	0.693	71.579	0.64	0.25
9/29/2008	0.89	0.572	59.099	0.64	0.25
9/30/2008	0.87	0.565	58.365	0.64	0.25
10/1/2008	0.88	0.568	58.732	0.64	0.25
10/2/2008	0.80	0.515	53.226	0.64	0.25
10/3/2008	0.74	0.480	49.555	0.64	0.25
10/4/2008	0.67	0.430	44.416	0.64	0.25
10/5/2008	0.53	0.341	35.239	0.64	0.25
10/6/2008	0.45	0.288	29.733	0.64	0.25
10/7/2008	0.93	0.600	62.035	0.64	0.25
10/8/2008	3.36	2.170	224.282	0.64	0.25
10/9/2008	2.94	1.900	196.384	0.64	0.25
10/10/2008	1.68	1.083	111.957	0.64	0.25
10/11/2008	1.08	0.696	71.946	0.64	0.25
10/12/2008	0.84	0.544	56.162	0.64	0.25
10/13/2008	0.79	0.508	52.491	0.64	0.25
10/14/2008	0.86	0.554	57.263	0.64	0.25
10/15/2008	1.13	0.732	75.617	0.64	0.25
10/16/2008	3.67	2.373	245.205	0.64	0.25
10/17/2008	2.86	1.847	190.878	0.64	0.25
10/18/2008	2.18	1.407	145.361	0.64	0.25
10/19/2008	1.60	1.034	106.818	0.64	0.25
10/20/2008	1.34	0.867	89.566	0.64	0.25
10/21/2008	1.26	0.813	84.060	0.64	0.25
10/22/2008	1.07	0.693	71.579	0.64	0.25
10/23/2008	2.01	1.300	134.349	0.64	0.25
10/24/2008	59.41	38.365	3964.389	0.64	0.25
10/25/2008	41.37	26.713	2760.389	0.64	0.25
10/26/2008	23.71	15.310	1582.085	0.64	0.25
10/27/2008	14.74	9.520	983.756	0.64	0.25
10/28/2008	10.51	6.785	701.109	0.64	0.25
10/29/2008	9.02	5.826	602.000	0.64	0.25
10/30/2008	7.32	4.725	488.207	0.64	0.25
10/31/2008	5.83	3.765	389.097	0.64	0.25
11/1/2008	5.21	3.364	347.618	0.64	0.25
11/2/2008	5.30	3.424	353.858	0.64	0.25
11/3/2008	4.40	2.838	293.291	0.64	0.25
11/4/2008	4.12	2.661	274.938	0.64	0.25
11/5/2008	4.32	2.789	288.152	0.64	0.25
11/6/2008	4.76	3.073	317.518	0.64	0.25
11/7/2008	5.05	3.261	336.973	0.64	0.25
11/8/2008	4.49	2.902	299.899	0.64	0.25
11/9/2008	3.68	2.377	245.572	0.64	0.25
11/10/2008	2.65	1.709	176.562	0.64	0.25
11/11/2008	2.35	1.520	157.107	0.64	0.25
11/12/2008	3.19	2.060	212.902	0.64	0.25
11/13/2008	3.79	2.448	252.913	0.64	0.25
11/14/2008	5.78	3.730	385.427	0.64	0.25

11/15/2008	45.22	29.200	3017.340	0.64	0.25
11/16/2008	41.04	26.500	2738.365	0.64	0.25
11/17/2008	22.83	14.742	1523.353	0.64	0.25
11/18/2008	14.41	9.307	961.731	0.64	0.25
11/19/2008	12.43	8.028	829.585	0.64	0.25
11/20/2008	10.51	6.785	701.109	0.64	0.25
11/21/2008	7.48	4.831	499.219	0.64	0.25
11/22/2008	6.55	4.227	436.817	0.64	0.25
11/23/2008	6.60	4.263	440.488	0.64	0.25
11/24/2008	7.32	4.725	488.207	0.64	0.25
11/25/2008	6.00	3.872	400.110	0.64	0.25
11/26/2008	4.63	2.988	308.708	0.64	0.25
11/27/2008	4.71	3.041	314.215	0.64	0.25
11/28/2008	4.04	2.611	269.799	0.64	0.25
11/29/2008	3.87	2.501	258.419	0.64	0.25
11/30/2008	5.72	3.694	381.756	0.64	0.25
12/1/2008	5.83	3.765	389.097	0.64	0.25
12/2/2008	3.20	2.067	213.636	0.64	0.25
12/3/2008	2.90	1.876	193.815	0.64	0.25
12/4/2008	3.17	2.046	211.434	0.64	0.25
12/5/2008	3.35	2.163	223.547	0.64	0.25
12/6/2008	3.59	2.320	239.699	0.64	0.25
12/7/2008	3.43	2.217	229.054	0.64	0.25
12/8/2008	3.12	2.014	208.130	0.64	0.25
12/9/2008	5.89	3.801	392.768	0.64	0.25
12/10/2008	8.64	5.577	576.305	0.64	0.25
12/11/2008	7.04	4.547	469.853	0.64	0.25
12/12/2008	6.11	3.943	407.451	0.64	0.25
12/13/2008	4.85	3.130	323.391	0.64	0.25
12/14/2008	5.41	3.495	361.200	0.64	0.25
12/15/2008	5.83	3.765	389.097	0.64	0.25
12/16/2008	7.21	4.654	480.866	0.64	0.25
12/17/2008	6.88	4.440	458.841	0.64	0.25
12/18/2008	5.45	3.517	363.402	0.64	0.25
12/19/2008	96.81	62.521	6460.485	0.64	0.25
12/20/2008	90.76	58.613	6056.705	0.64	0.25
12/21/2008	48.90	31.580	3263.279	0.64	0.25
12/22/2008	60.51	39.076	4037.803	0.64	0.25
12/23/2008	99.01	63.942	6607.314	0.64	0.25
12/24/2008	229.93	148.487	15343.652	0.64	0.25
12/25/2008	90.76	58.613	6056.705	0.64	0.25
12/26/2008	53.52	34.564	3571.620	0.64	0.25
12/27/2008	443.37	286.317	29586.085	0.64	0.25
12/28/2008	566.58	365.889	37808.521	0.64	0.25
12/29/2008	150.72	97.334	10057.801	0.64	0.25
12/30/2008	105.07	67.849	7011.095	0.64	0.25
12/31/2008	74.26	47.956	4955.486	0.64	0.25
1/1/2009	55.56	35.878	3707.437	0.64	0.25
1/2/2009	44.45	28.703	2965.950	0.64	0.25
1/3/2009	37.13	23.978	2477.743	0.64	0.25
1/4/2009	37.63	24.298	2510.779	0.64	0.25
1/5/2009	33.83	21.847	2257.499	0.64	0.25
1/6/2009	31.52	20.355	2103.328	0.64	0.25
1/7/2009	26.46	17.087	1765.621	0.64	0.25
1/8/2009	18.81	12.149	1255.390	0.64	0.25
1/9/2009	15.90	10.266	1060.841	0.64	0.25
1/10/2009	16.23	10.479	1082.865	0.64	0.25
1/11/2009	13.20	8.526	880.975	0.64	0.25
1/12/2009	12.32	7.957	822.244	0.64	0.25
1/13/2009	11.00	7.105	734.146	0.64	0.25
1/14/2009	10.45	6.749	697.439	0.64	0.25
1/15/2009	9.90	6.394	660.731	0.64	0.25
1/16/2009	8.80	5.684	587.317	0.64	0.25
1/17/2009	8.25	5.328	550.610	0.64	0.25
1/18/2009	7.70	4.973	513.902	0.64	0.25
1/19/2009	7.15	4.618	477.195	0.64	0.25
1/20/2009	6.60	4.263	440.488	0.64	0.25
1/21/2009	6.60	4.263	440.488	0.64	0.25
1/22/2009	7.15	4.618	477.195	0.64	0.25

1/23/2009	6.60	4.263	440.488	0.64	0.25
1/24/2009	6.05	3.908	403.780	0.64	0.25
1/25/2009	5.39	3.481	359.732	0.64	0.25
1/26/2009	4.73	3.055	315.683	0.64	0.25
1/27/2009	4.40	2.842	293.658	0.64	0.25
1/28/2009	4.13	2.664	275.305	0.64	0.25
1/29/2009	3.96	2.558	264.293	0.64	0.25
1/30/2009	3.85	2.487	256.951	0.64	0.25
1/31/2009	3.74	2.416	249.610	0.64	0.25
2/1/2009	4.18	2.700	278.975	0.64	0.25
2/2/2009	4.13	2.664	275.305	0.64	0.25
2/3/2009	4.07	2.629	271.634	0.64	0.25
2/4/2009	4.02	2.593	267.963	0.64	0.25
2/5/2009	3.96	2.558	264.293	0.64	0.25
2/6/2009	8.36	5.400	557.951	0.64	0.25
2/7/2009	70.41	45.470	4698.535	0.64	0.25
2/8/2009	44.12	28.490	2943.926	0.64	0.25
2/9/2009	26.90	17.371	1794.987	0.64	0.25
2/10/2009	36.80	23.765	2455.718	0.64	0.25
2/11/2009	654.60	422.726	43681.689	0.64	0.25
2/12/2009	290.99	187.918	19418.163	0.64	0.25
2/13/2009	121.02	78.151	8075.606	0.64	0.25
2/14/2009	82.51	53.285	5506.095	0.64	0.25
2/15/2009	57.21	36.944	3817.559	0.64	0.25
2/16/2009	43.46	28.063	2899.877	0.64	0.25
2/17/2009	37.52	24.227	2503.438	0.64	0.25
2/18/2009	34.66	22.380	2312.560	0.64	0.25
2/19/2009	24.09	15.559	1607.780	0.64	0.25
2/20/2009	19.69	12.717	1314.121	0.64	0.25
2/21/2009	18.48	11.936	1233.365	0.64	0.25
2/22/2009	13.92	8.987	928.695	0.64	0.25
2/23/2009	14.69	9.485	980.085	0.64	0.25
2/24/2009	11.33	7.318	756.170	0.64	0.25
2/25/2009	11.55	7.460	770.853	0.64	0.25
2/26/2009	11.44	7.389	763.512	0.64	0.25
2/27/2009	23.93	15.453	1596.768	0.64	0.25
2/28/2009	21.67	13.996	1446.268	0.64	0.25
3/1/2009	16.34	10.550	1090.207	0.64	0.25
3/2/2009	15.57	10.053	1038.817	0.64	0.25
3/3/2009	17.38	11.225	1159.951	0.64	0.25
3/4/2009	11.17	7.211	745.158	0.64	0.25
3/5/2009	11.39	7.353	759.841	0.64	0.25
3/6/2009	10.51	6.785	701.109	0.64	0.25
3/7/2009	9.08	5.861	605.670	0.64	0.25
3/8/2009	9.90	6.394	660.731	0.64	0.25
3/9/2009	8.42	5.435	561.622	0.64	0.25
3/10/2009	10.34	6.678	690.097	0.64	0.25
3/11/2009	48.19	31.118	3215.560	0.64	0.25
3/12/2009	30.64	19.786	2044.597	0.64	0.25
3/13/2009	22.94	14.813	1530.694	0.64	0.25
3/14/2009	19.31	12.469	1288.426	0.64	0.25
3/15/2009	16.17	10.444	1079.195	0.64	0.25
3/16/2009	13.26	8.561	884.646	0.64	0.25
3/17/2009	11.50	7.424	767.183	0.64	0.25
3/18/2009	11.06	7.140	737.817	0.64	0.25
3/19/2009	9.46	6.110	631.366	0.64	0.25
3/20/2009	8.25	5.328	550.610	0.64	0.25
3/21/2009	8.09	5.222	539.597	0.64	0.25
3/22/2009	7.65	4.938	510.231	0.64	0.25
3/23/2009	7.87	5.080	524.914	0.64	0.25
3/24/2009	8.09	5.222	539.597	0.64	0.25
3/25/2009	11.55	7.460	770.853	0.64	0.25
3/26/2009	9.24	5.968	616.683	0.64	0.25
3/27/2009	7.70	4.973	513.902	0.64	0.25
3/28/2009	8.97	5.790	598.329	0.64	0.25
3/29/2009	36.09	23.303	2407.999	0.64	0.25
3/30/2009	24.64	15.914	1644.487	0.64	0.25
3/31/2009	22.28	14.387	1486.646	0.64	0.25
4/1/2009	33.00	21.314	2202.438	0.64	0.25

4/2/2009	39.17	25.293	2613.560	0.64	0.25
4/3/2009	151.27	97.689	10094.508	0.64	0.25
4/4/2009	69.86	45.114	4661.827	0.64	0.25
4/5/2009	78.11	50.443	5212.437	0.64	0.25
4/6/2009	160.62	103.728	10718.532	0.64	0.25
4/7/2009	86.36	55.771	5763.046	0.64	0.25
4/8/2009	57.76	37.299	3854.267	0.64	0.25
4/9/2009	42.91	27.708	2863.170	0.64	0.25
4/10/2009	112.22	72.467	7488.290	0.64	0.25
4/11/2009	74.26	47.956	4955.486	0.64	0.25
4/12/2009	50.33	32.504	3358.718	0.64	0.25
4/13/2009	74.26	47.956	4955.486	0.64	0.25
4/14/2009	70.41	45.470	4698.535	0.64	0.25
4/15/2009	50.88	32.859	3395.425	0.64	0.25
4/16/2009	40.10	25.896	2675.962	0.64	0.25
4/17/2009	33.33	21.527	2224.462	0.64	0.25
4/18/2009	29.15	18.827	1945.487	0.64	0.25
4/19/2009	63.81	41.207	4258.047	0.64	0.25
4/20/2009	163.92	105.859	10938.776	0.64	0.25
4/21/2009	71.51	46.180	4771.949	0.64	0.25
4/22/2009	48.08	31.047	3208.218	0.64	0.25
4/23/2009	36.75	23.729	2452.048	0.64	0.25
4/24/2009	29.92	19.325	1996.877	0.64	0.25
4/25/2009	23.76	15.346	1585.755	0.64	0.25
4/26/2009	20.13	13.001	1343.487	0.64	0.25
4/27/2009	20.52	13.250	1369.182	0.64	0.25
4/28/2009	84.71	54.706	5652.924	0.64	0.25
4/29/2009	84.16	54.350	5616.217	0.64	0.25
4/30/2009	310.25	200.351	20702.918	0.64	0.25
5/1/2009	175.48	113.319	11709.629	0.64	0.25
5/2/2009	116.07	74.954	7745.241	0.64	0.25
5/3/2009	77.56	50.088	5175.730	0.64	0.25
5/4/2009	56.66	36.589	3780.852	0.64	0.25
5/5/2009	45.38	29.307	3028.352	0.64	0.25
5/6/2009	38.67	24.973	2580.523	0.64	0.25
5/7/2009	33.44	21.598	2231.804	0.64	0.25
5/8/2009	306.40	197.864	20445.967	0.64	0.25
5/9/2009	117.17	75.664	7818.655	0.64	0.25
5/10/2009	68.76	44.404	4588.413	0.64	0.25
5/11/2009	50.06	32.326	3340.364	0.64	0.25
5/12/2009	39.39	25.435	2628.243	0.64	0.25
5/13/2009	321.80	207.811	21473.771	0.64	0.25
5/14/2009	479.67	309.762	32008.767	0.64	0.25
5/15/2009	165.57	106.925	11048.898	0.64	0.25
5/16/2009	289.34	186.852	19308.041	0.64	0.25
5/17/2009	101.77	65.718	6790.851	0.64	0.25
5/18/2009	67.66	43.694	4514.998	0.64	0.25
5/19/2009	50.44	32.575	3366.060	0.64	0.25
5/20/2009	41.09	26.536	2742.035	0.64	0.25
5/21/2009	34.55	22.309	2305.219	0.64	0.25
5/22/2009	28.05	18.117	1872.072	0.64	0.25
5/23/2009	24.09	15.559	1607.780	0.64	0.25
5/24/2009	22.00	14.209	1468.292	0.64	0.25
5/25/2009	57.76	37.299	3854.267	0.64	0.25
5/26/2009	71.51	46.180	4771.949	0.64	0.25
5/27/2009	56.66	36.589	3780.852	0.64	0.25
5/28/2009	42.47	27.424	2833.804	0.64	0.25
5/29/2009	38.78	25.044	2587.865	0.64	0.25
5/30/2009	31.90	20.603	2129.023	0.64	0.25
5/31/2009	25.91	16.731	1728.914	0.64	0.25
6/1/2009	22.33	14.422	1490.316	0.64	0.25
6/2/2009	19.53	12.611	1303.109	0.64	0.25
6/3/2009	19.20	12.398	1281.085	0.64	0.25
6/4/2009	18.65	12.042	1244.378	0.64	0.25
6/5/2009	16.34	10.550	1090.207	0.64	0.25
6/6/2009	14.52	9.378	969.073	0.64	0.25
6/7/2009	13.48	8.703	899.329	0.64	0.25
6/8/2009	13.09	8.455	873.634	0.64	0.25
6/9/2009	11.66	7.531	778.195	0.64	0.25

6/10/2009	113.87	73.533	7598.411	0.64	0.25
6/11/2009	106.72	68.915	7121.217	0.64	0.25
6/12/2009	79.76	51.509	5322.559	0.64	0.25
6/13/2009	48.24	31.154	3219.230	0.64	0.25
6/14/2009	35.21	22.735	2349.267	0.64	0.25
6/15/2009	27.23	17.584	1817.011	0.64	0.25
6/16/2009	36.69	23.694	2448.377	0.64	0.25
6/17/2009	29.87	19.289	1993.206	0.64	0.25
6/18/2009	228.83	147.776	15270.237	0.64	0.25
6/19/2009	121.57	78.506	8112.314	0.64	0.25
6/20/2009	255.24	164.828	17032.188	0.64	0.25
6/21/2009	83.61	53.995	5579.510	0.64	0.25
6/22/2009	53.47	34.529	3567.950	0.64	0.25
6/23/2009	38.73	25.008	2584.194	0.64	0.25
6/24/2009	29.10	18.792	1941.816	0.64	0.25
6/25/2009	22.99	14.849	1534.365	0.64	0.25
6/26/2009	20.08	12.966	1339.817	0.64	0.25
6/27/2009	17.55	11.332	1170.963	0.64	0.25
6/28/2009	16.01	10.337	1068.182	0.64	0.25
6/29/2009	13.53	8.739	903.000	0.64	0.25
6/30/2009	12.27	7.922	818.573	0.64	0.25
7/1/2009	10.95	7.069	730.475	0.64	0.25
7/2/2009	9.41	6.074	627.695	0.64	0.25
7/3/2009	8.03	5.186	535.927	0.64	0.25
7/4/2009	11.83	7.637	789.207	0.64	0.25
7/5/2009	46.10	29.768	3076.072	0.64	0.25
7/6/2009	27.28	17.620	1820.682	0.64	0.25
7/7/2009	17.44	11.261	1163.621	0.64	0.25
7/8/2009	96.26	62.166	6423.778	0.64	0.25
7/9/2009	221.13	142.803	14756.335	0.64	0.25
7/10/2009	50.77	32.788	3388.084	0.64	0.25
7/11/2009	49.45	31.935	3299.986	0.64	0.25
7/12/2009	40.65	26.252	2712.670	0.64	0.25
7/13/2009	26.35	17.016	1758.280	0.64	0.25
7/14/2009	18.98	12.256	1266.402	0.64	0.25
7/15/2009	20.96	13.534	1398.548	0.64	0.25
7/16/2009	20.24	13.073	1350.829	0.64	0.25
7/17/2009	15.79	10.195	1053.500	0.64	0.25
7/18/2009	11.22	7.247	748.829	0.64	0.25
7/19/2009	9.35	6.039	624.024	0.64	0.25
7/20/2009	8.47	5.471	565.292	0.64	0.25
7/21/2009	7.65	4.938	510.231	0.64	0.25
7/22/2009	6.82	4.405	455.171	0.64	0.25
7/23/2009	6.00	3.872	400.110	0.64	0.25
7/24/2009	5.27	3.403	351.656	0.64	0.25
7/25/2009	7.37	4.760	491.878	0.64	0.25
7/26/2009	6.22	4.014	414.793	0.64	0.25
7/27/2009	4.51	2.913	301.000	0.64	0.25
7/28/2009	3.92	2.529	261.356	0.64	0.25
7/29/2009	3.04	1.964	202.991	0.64	0.25
7/30/2009	2.73	1.766	182.435	0.64	0.25
7/31/2009	2.64	1.705	176.195	0.64	0.25
8/1/2009	2.35	1.517	156.740	0.64	0.25
8/2/2009	2.26	1.456	150.500	0.64	0.25
8/3/2009	2.11	1.361	140.589	0.64	0.25
8/4/2009	1.90	1.229	127.007	0.64	0.25
8/5/2009	1.83	1.183	122.235	0.64	0.25
8/6/2009	1.71	1.101	113.793	0.64	0.25
8/7/2009	1.41	0.913	94.338	0.64	0.25
8/8/2009	1.22	0.785	81.123	0.64	0.25
8/9/2009	1.05	0.675	69.744	0.64	0.25
8/10/2009	0.88	0.568	58.732	0.64	0.25
8/11/2009	0.72	0.462	47.719	0.64	0.25
8/12/2009	0.58	0.377	38.910	0.64	0.25
8/13/2009	0.50	0.320	33.037	0.64	0.25
8/14/2009	0.41	0.266	27.530	0.64	0.25
8/15/2009	0.36	0.231	23.860	0.64	0.25
8/16/2009	0.28	0.181	18.721	0.64	0.25
8/17/2009	0.25	0.160	16.518	0.64	0.25

8/18/2009	0.22	0.142	14.683	0.64	0.25
8/19/2009	0.20	0.128	13.215	0.64	0.25
8/20/2009	2.53	1.634	168.854	0.64	0.25
8/21/2009	1.80	1.162	120.033	0.64	0.25
8/22/2009	1.51	0.977	100.945	0.64	0.25
8/23/2009	1.24	0.799	82.591	0.64	0.25
8/24/2009	1.01	0.650	67.174	0.64	0.25
8/25/2009	0.83	0.533	55.061	0.64	0.25
8/26/2009	0.63	0.405	41.846	0.64	0.25
8/27/2009	0.50	0.323	33.404	0.64	0.25
8/28/2009	0.42	0.274	28.265	0.64	0.25
8/29/2009	0.42	0.270	27.898	0.64	0.25
8/30/2009	0.39	0.252	26.062	0.64	0.25
8/31/2009	0.36	0.231	23.860	0.64	0.25
9/1/2009	0.31	0.199	20.556	0.64	0.25
9/2/2009	0.27	0.174	17.987	0.64	0.25
9/3/2009	0.23	0.146	15.050	0.64	0.25
9/4/2009	0.18	0.117	12.113	0.64	0.25
9/5/2009	0.15	0.099	10.278	0.64	0.25
9/6/2009	0.13	0.085	8.810	0.64	0.25
9/7/2009	0.12	0.078	8.076	0.64	0.25
9/8/2009	0.12	0.078	8.076	0.64	0.25
9/9/2009	0.09	0.060	6.240	0.64	0.25
9/10/2009	0.09	0.057	5.873	0.64	0.25
9/11/2009	0.08	0.050	5.139	0.64	0.25
9/12/2009	0.07	0.043	4.405	0.64	0.25
9/13/2009	0.06	0.036	3.671	0.64	0.25
9/14/2009	0.04	0.028	2.937	0.64	0.25
9/15/2009	0.04	0.025	2.570	0.64	0.25
9/16/2009	0.03	0.018	1.835	0.64	0.25
9/17/2009	0.02	0.014	1.468	0.64	0.25
9/18/2009	0.02	0.011	1.101	0.64	0.25
9/19/2009	0.01	0.007	0.734	0.64	0.25
9/20/2009	0.01	0.004	0.367	0.64	0.25
9/21/2009	0.00	0.000	0.000	0.64	0.25
9/22/2009	0.00	0.000	0.000	0.64	0.25
9/23/2009	0.00	0.000	0.000	0.64	0.25
9/24/2009	0.00	0.000	0.000	0.64	0.25
9/25/2009	0.01	0.004	0.367	0.64	0.25
9/26/2009	0.01	0.004	0.367	0.64	0.25
9/27/2009	0.01	0.004	0.367	0.64	0.25
9/28/2009	0.00	0.000	0.000	0.64	0.25
9/29/2009	0.00	0.000	0.000	0.64	0.25
9/30/2009	0.00	0.000	0.000	0.64	0.25
10/1/2009	0.00	0.000	0.000	0.64	0.25
10/2/2009	0.01	0.004	0.367	0.64	0.25
10/3/2009	0.00	0.000	0.000	0.64	0.25
10/4/2009	0.00	0.000	0.000	0.64	0.25
10/5/2009	0.00	0.000	0.000	0.64	0.25
10/6/2009	0.01	0.004	0.367	0.64	0.25
10/7/2009	0.01	0.007	0.734	0.64	0.25
10/8/2009	0.03	0.021	2.202	0.64	0.25
10/9/2009	0.72	0.462	47.719	0.64	0.25
10/10/2009	2.13	1.378	142.424	0.64	0.25
10/11/2009	1.52	0.980	101.312	0.64	0.25
10/12/2009	1.34	0.867	89.566	0.64	0.25
10/13/2009	1.11	0.714	73.782	0.64	0.25
10/14/2009	3.32	2.146	221.712	0.64	0.25
10/15/2009	5.24	3.385	349.821	0.64	0.25
10/16/2009	3.31	2.138	220.978	0.64	0.25
10/17/2009	2.22	1.435	148.297	0.64	0.25
10/18/2009	1.72	1.108	114.527	0.64	0.25
10/19/2009	1.32	0.853	88.098	0.64	0.25
10/20/2009	1.05	0.675	69.744	0.64	0.25
10/21/2009	0.86	0.558	57.630	0.64	0.25
10/22/2009	0.76	0.494	51.023	0.64	0.25
10/23/2009	25.96	16.767	1732.585	0.64	0.25
10/24/2009	16.17	10.444	1079.195	0.64	0.25
10/25/2009	8.25	5.328	550.610	0.64	0.25

10/26/2009	4.10	2.646	273.469	0.64	0.25
10/27/2009	2.63	1.698	175.461	0.64	0.25
10/28/2009	4.12	2.661	274.938	0.64	0.25
10/29/2009	3.81	2.458	254.015	0.64	0.25
10/30/2009	65.46	42.273	4368.169	0.64	0.25
10/31/2009	72.06	46.535	4808.657	0.64	0.25
11/1/2009	33.06	21.349	2206.109	0.64	0.25
11/2/2009	19.97	12.895	1332.475	0.64	0.25
11/3/2009	12.76	8.241	851.609	0.64	0.25
11/4/2009	10.29	6.643	686.427	0.64	0.25
11/5/2009	7.32	4.725	488.207	0.64	0.25
11/6/2009	6.11	3.943	407.451	0.64	0.25
11/7/2009	6.05	3.908	403.780	0.64	0.25
11/8/2009	4.38	2.831	292.557	0.64	0.25
11/9/2009	3.29	2.124	219.510	0.64	0.25
11/10/2009	2.78	1.794	185.372	0.64	0.25
11/11/2009	2.38	1.535	158.576	0.64	0.25
11/12/2009	2.41	1.559	161.145	0.64	0.25
11/13/2009	2.62	1.691	174.727	0.64	0.25
11/14/2009	2.52	1.631	168.487	0.64	0.25
11/15/2009	1.80	1.162	120.033	0.64	0.25
11/16/2009	26.24	16.945	1750.938	0.64	0.25
11/17/2009	254.14	164.117	16958.773	0.64	0.25
11/18/2009	195.28	126.107	13031.092	0.64	0.25
11/19/2009	111.67	72.112	7451.582	0.64	0.25
11/20/2009	80.31	51.864	5359.266	0.64	0.25
11/21/2009	58.31	37.655	3890.974	0.64	0.25
11/22/2009	43.40	28.028	2896.206	0.64	0.25
11/23/2009	33.61	21.705	2242.816	0.64	0.25
11/24/2009	30.53	19.715	2037.255	0.64	0.25
11/25/2009	55.01	35.523	3670.730	0.64	0.25
11/26/2009	40.16	25.932	2679.633	0.64	0.25
11/27/2009	30.47	19.680	2033.585	0.64	0.25
11/28/2009	25.58	16.518	1706.890	0.64	0.25
11/29/2009	21.23	13.712	1416.902	0.64	0.25
11/30/2009	16.50	10.657	1101.219	0.64	0.25
12/1/2009	14.63	9.449	976.414	0.64	0.25
12/2/2009	21.34	13.783	1424.243	0.64	0.25
12/3/2009	61.06	39.431	4074.510	0.64	0.25
12/4/2009	37.79	24.404	2521.792	0.64	0.25
12/5/2009	27.01	17.442	1802.329	0.64	0.25
12/6/2009	20.63	13.321	1376.524	0.64	0.25
12/7/2009	17.55	11.332	1170.963	0.64	0.25
12/8/2009	27.34	17.655	1824.353	0.64	0.25
12/9/2009	123.22	79.572	8222.436	0.64	0.25
12/10/2009	55.56	35.878	3707.437	0.64	0.25
12/11/2009	31.68	20.461	2114.341	0.64	0.25
12/12/2009	23.98	15.488	1600.438	0.64	0.25
12/13/2009	72.61	46.891	4845.364	0.64	0.25
12/14/2009	72.06	46.535	4808.657	0.64	0.25
12/15/2009	52.75	34.067	3520.230	0.64	0.25
12/16/2009	33.89	21.882	2261.170	0.64	0.25
12/17/2009	27.34	17.655	1824.353	0.64	0.25
12/18/2009	24.04	15.524	1604.109	0.64	0.25
12/19/2009	20.02	12.930	1336.146	0.64	0.25
12/20/2009	15.35	9.911	1024.134	0.64	0.25
12/21/2009	13.48	8.703	899.329	0.64	0.25
12/22/2009	12.98	8.383	866.292	0.64	0.25
12/23/2009	44.72	28.880	2984.304	0.64	0.25
12/24/2009	278.34	179.747	18573.895	0.64	0.25
12/25/2009	504.97	326.103	33697.303	0.64	0.25
12/26/2009	161.72	104.438	10791.947	0.64	0.25
12/27/2009	80.86	52.219	5395.973	0.64	0.25
12/28/2009	54.79	35.381	3656.047	0.64	0.25
12/29/2009	39.22	25.328	2617.231	0.64	0.25
12/30/2009	33.61	21.705	2242.816	0.64	0.25
12/31/2009	29.76	19.218	1985.865	0.64	0.25
1/1/2010	24.04	15.524	1604.109	0.64	0.25
1/2/2010	19.53	12.611	1303.109	0.64	0.25

1/3/2010	15.79	10.195	1053.500	0.64	0.25
1/4/2010	13.04	8.419	869.963	0.64	0.25
1/5/2010	12.10	7.815	807.561	0.64	0.25
1/6/2010	11.44	7.389	763.512	0.64	0.25
1/7/2010	11.17	7.211	745.158	0.64	0.25
1/8/2010	10.29	6.643	686.427	0.64	0.25
1/9/2010	10.29	6.643	686.427	0.64	0.25
1/10/2010	10.29	6.643	686.427	0.64	0.25
1/11/2010	10.29	6.643	686.427	0.64	0.25
1/12/2010	10.29	6.643	686.427	0.64	0.25
1/13/2010	10.29	6.643	686.427	0.64	0.25
1/14/2010	10.29	6.643	686.427	0.64	0.25
1/15/2010	11.17	7.211	745.158	0.64	0.25
1/16/2010	11.17	7.211	745.158	0.64	0.25
1/17/2010	14.91	9.627	994.768	0.64	0.25
1/18/2010	16.72	10.799	1115.902	0.64	0.25
1/19/2010	20.41	13.179	1361.841	0.64	0.25
1/20/2010	30.53	19.715	2037.255	0.64	0.25
1/21/2010	93.51	60.389	6240.241	0.64	0.25
1/22/2010	117.17	75.664	7818.655	0.64	0.25
1/23/2010	66.56	42.983	4441.583	0.64	0.25
1/24/2010	160.62	103.728	10718.532	0.64	0.25
1/25/2010	89.11	57.548	5946.583	0.64	0.25
1/26/2010	52.53	33.925	3505.547	0.64	0.25
1/27/2010	35.87	23.161	2393.316	0.64	0.25
1/28/2010	27.45	17.726	1831.694	0.64	0.25
1/29/2010	22.99	14.849	1534.365	0.64	0.25
1/30/2010	18.59	12.007	1240.707	0.64	0.25
1/31/2010	14.69	9.485	980.085	0.64	0.25
2/1/2010	12.71	8.206	847.939	0.64	0.25
2/2/2010	11.28	7.282	752.500	0.64	0.25
2/3/2010	10.29	6.643	686.427	0.64	0.25
2/4/2010	9.79	6.323	653.390	0.64	0.25
2/5/2010	9.30	6.003	620.353	0.64	0.25
2/6/2010	8.31	5.364	554.280	0.64	0.25
2/7/2010	7.81	5.044	521.244	0.64	0.25
2/8/2010	7.37	4.760	491.878	0.64	0.25
2/9/2010	7.37	4.760	491.878	0.64	0.25
2/10/2010	7.37	4.760	491.878	0.64	0.25
2/11/2010	7.37	4.760	491.878	0.64	0.25
2/12/2010	7.37	4.760	491.878	0.64	0.25
2/13/2010	7.37	4.760	491.878	0.64	0.25
2/14/2010	7.37	4.760	491.878	0.64	0.25
2/15/2010	7.37	4.760	491.878	0.64	0.25
2/16/2010	7.37	4.760	491.878	0.64	0.25
2/17/2010	7.81	5.044	521.244	0.64	0.25
2/18/2010	8.80	5.684	587.317	0.64	0.25
2/19/2010	10.23	6.607	682.756	0.64	0.25
2/20/2010	11.06	7.140	737.817	0.64	0.25
2/21/2010	46.10	29.768	3076.072	0.64	0.25
2/22/2010	105.07	67.849	7011.095	0.64	0.25
2/23/2010	61.06	39.431	4074.510	0.64	0.25
2/24/2010	39.22	25.328	2617.231	0.64	0.25
2/25/2010	27.45	17.726	1831.694	0.64	0.25
2/26/2010	22.28	14.387	1486.646	0.64	0.25
2/27/2010	19.64	12.682	1310.451	0.64	0.25
2/28/2010	16.39	10.586	1093.878	0.64	0.25
3/1/2010	16.39	10.586	1093.878	0.64	0.25
3/2/2010	15.46	9.982	1031.475	0.64	0.25
3/3/2010	13.86	8.952	925.024	0.64	0.25
3/4/2010	12.43	8.028	829.585	0.64	0.25
3/5/2010	12.10	7.815	807.561	0.64	0.25
3/6/2010	12.10	7.815	807.561	0.64	0.25
3/7/2010	13.42	8.668	895.658	0.64	0.25
3/8/2010	15.40	9.946	1027.804	0.64	0.25
3/9/2010	18.59	12.007	1240.707	0.64	0.25
3/10/2010	20.74	13.392	1383.865	0.64	0.25
3/11/2010	60.51	39.076	4037.803	0.64	0.25
3/12/2010	57.21	36.944	3817.559	0.64	0.25

3/13/2010	84.16	54.350	5616.217	0.64	0.25
3/14/2010	61.61	39.786	4111.218	0.64	0.25
3/15/2010	41.37	26.713	2760.389	0.64	0.25
3/16/2010	31.85	20.568	2125.353	0.64	0.25
3/17/2010	26.18	16.909	1747.268	0.64	0.25
3/18/2010	22.00	14.209	1468.292	0.64	0.25
3/19/2010	19.03	12.291	1270.073	0.64	0.25
3/20/2010	16.72	10.799	1115.902	0.64	0.25
3/21/2010	14.85	9.591	991.097	0.64	0.25
3/22/2010	14.58	9.414	972.743	0.64	0.25
3/23/2010	13.09	8.455	873.634	0.64	0.25
3/24/2010	11.77	7.602	785.536	0.64	0.25
3/25/2010	12.98	8.383	866.292	0.64	0.25
3/26/2010	25.19	16.270	1681.194	0.64	0.25
3/27/2010	20.35	13.144	1358.170	0.64	0.25
3/28/2010	49.29	31.829	3288.974	0.64	0.25
3/29/2010	51.27	33.108	3421.121	0.64	0.25
3/30/2010	32.84	21.207	2191.426	0.64	0.25
3/31/2010	25.69	16.589	1714.231	0.64	0.25
4/1/2010	20.24	13.073	1350.829	0.64	0.25
4/2/2010	17.22	11.119	1148.939	0.64	0.25
4/3/2010	19.86	12.824	1325.134	0.64	0.25
4/4/2010	21.73	14.032	1449.938	0.64	0.25
4/5/2010	25.25	16.305	1684.865	0.64	0.25
4/6/2010	26.46	17.087	1765.621	0.64	0.25
4/7/2010	21.67	13.996	1446.268	0.64	0.25
4/8/2010	22.61	14.600	1508.670	0.64	0.25
4/9/2010	18.48	11.936	1233.365	0.64	0.25
4/10/2010	15.18	9.804	1013.122	0.64	0.25
4/11/2010	13.59	8.774	906.670	0.64	0.25
4/12/2010	12.43	8.028	829.585	0.64	0.25
4/13/2010	11.77	7.602	785.536	0.64	0.25
4/14/2010	10.84	6.998	723.134	0.64	0.25
4/15/2010	10.40	6.714	693.768	0.64	0.25
4/16/2010	10.40	6.714	693.768	0.64	0.25
4/17/2010	9.85	6.359	657.061	0.64	0.25
4/18/2010	9.19	5.932	613.012	0.64	0.25
4/19/2010	8.75	5.648	583.646	0.64	0.25
4/20/2010	8.69	5.613	579.975	0.64	0.25
4/21/2010	8.58	5.542	572.634	0.64	0.25
4/22/2010	8.47	5.471	565.292	0.64	0.25
4/23/2010	8.86	5.719	590.988	0.64	0.25
4/24/2010	9.13	5.897	609.341	0.64	0.25
4/25/2010	27.39	17.691	1828.024	0.64	0.25
4/26/2010	73.71	47.601	4918.778	0.64	0.25
4/27/2010	41.04	26.500	2738.365	0.64	0.25
4/28/2010	26.73	17.264	1783.975	0.64	0.25
4/29/2010	20.79	13.428	1387.536	0.64	0.25
4/30/2010	17.99	11.616	1200.329	0.64	0.25
5/1/2010	15.62	10.089	1042.487	0.64	0.25
5/2/2010	18.48	11.936	1233.365	0.64	0.25
5/3/2010	18.10	11.687	1207.670	0.64	0.25
5/4/2010	15.51	10.018	1035.146	0.64	0.25
5/5/2010	13.53	8.739	903.000	0.64	0.25
5/6/2010	11.55	7.460	770.853	0.64	0.25
5/7/2010	10.89	7.034	726.805	0.64	0.25
5/8/2010	9.74	6.288	649.719	0.64	0.25
5/9/2010	8.53	5.506	568.963	0.64	0.25
5/10/2010	8.25	5.328	550.610	0.64	0.25
5/11/2010	9.63	6.217	642.378	0.64	0.25
5/12/2010	9.19	5.932	613.012	0.64	0.25
5/13/2010	8.97	5.790	598.329	0.64	0.25
5/14/2010	8.03	5.186	535.927	0.64	0.25
5/15/2010	7.32	4.725	488.207	0.64	0.25
5/16/2010	8.14	5.257	543.268	0.64	0.25
5/17/2010	38.95	25.150	2598.877	0.64	0.25
5/18/2010	55.56	35.878	3707.437	0.64	0.25
5/19/2010	35.59	22.984	2374.962	0.64	0.25
5/20/2010	24.70	15.950	1648.158	0.64	0.25

5/21/2010	20.52	13.250	1369.182	0.64	0.25
5/22/2010	16.89	10.906	1126.914	0.64	0.25
5/23/2010	14.08	9.094	939.707	0.64	0.25
5/24/2010	12.16	7.851	811.231	0.64	0.25
5/25/2010	11.44	7.389	763.512	0.64	0.25
5/26/2010	11.33	7.318	756.170	0.64	0.25
5/27/2010	11.88	7.673	792.878	0.64	0.25
5/28/2010	10.07	6.501	671.744	0.64	0.25
5/29/2010	9.41	6.074	627.695	0.64	0.25
5/30/2010	8.75	5.648	583.646	0.64	0.25
5/31/2010	8.58	5.542	572.634	0.64	0.25
6/1/2010	8.58	5.542	572.634	0.64	0.25
6/2/2010	10.18	6.572	679.085	0.64	0.25
6/3/2010	9.90	6.394	660.731	0.64	0.25
6/4/2010	8.75	5.648	583.646	0.64	0.25
6/5/2010	8.03	5.186	535.927	0.64	0.25
6/6/2010	7.32	4.725	488.207	0.64	0.25
6/7/2010	6.27	4.050	418.463	0.64	0.25
6/8/2010	6.11	3.943	407.451	0.64	0.25
6/9/2010	6.93	4.476	462.512	0.64	0.25
6/10/2010	6.05	3.908	403.780	0.64	0.25
6/11/2010	6.55	4.227	436.817	0.64	0.25
6/12/2010	10.73	6.927	715.792	0.64	0.25
6/13/2010	25.69	16.589	1714.231	0.64	0.25
6/14/2010	86.36	55.771	5763.046	0.64	0.25
6/15/2010	115.52	74.599	7708.533	0.64	0.25
6/16/2010	75.91	49.022	5065.608	0.64	0.25
6/17/2010	42.08	27.175	2808.109	0.64	0.25
6/18/2010	28.60	18.472	1908.780	0.64	0.25
6/19/2010	95.71	61.810	6387.070	0.64	0.25
6/20/2010	55.56	35.878	3707.437	0.64	0.25
6/21/2010	33.44	21.598	2231.804	0.64	0.25
6/22/2010	45.60	29.449	3043.035	0.64	0.25
6/23/2010	51.38	33.179	3428.462	0.64	0.25
6/24/2010	281.09	181.524	18757.431	0.64	0.25
6/25/2010	70.96	45.825	4735.242	0.64	0.25
6/26/2010	42.52	27.459	2837.474	0.64	0.25
6/27/2010	31.63	20.426	2110.670	0.64	0.25
6/28/2010	73.71	47.601	4918.778	0.64	0.25
6/29/2010	45.11	29.129	3009.999	0.64	0.25
6/30/2010	29.98	19.360	2000.548	0.64	0.25
7/1/2010	21.89	14.138	1460.951	0.64	0.25
7/2/2010	17.66	11.403	1178.304	0.64	0.25
7/3/2010	15.02	9.698	1002.109	0.64	0.25
7/4/2010	13.20	8.526	880.975	0.64	0.25
7/5/2010	11.61	7.495	774.524	0.64	0.25
7/6/2010	10.18	6.572	679.085	0.64	0.25
7/7/2010	8.91	5.755	594.658	0.64	0.25
7/8/2010	7.81	5.044	521.244	0.64	0.25
7/9/2010	7.15	4.618	477.195	0.64	0.25
7/10/2010	6.33	4.085	422.134	0.64	0.25
7/11/2010	5.56	3.588	370.744	0.64	0.25
7/12/2010	4.88	3.154	325.961	0.64	0.25
7/13/2010	9.85	6.359	657.061	0.64	0.25
7/14/2010	20.57	13.286	1372.853	0.64	0.25
7/15/2010	12.10	7.815	807.561	0.64	0.25
7/16/2010	9.08	5.861	605.670	0.64	0.25
7/17/2010	7.21	4.654	480.866	0.64	0.25
7/18/2010	5.67	3.659	378.085	0.64	0.25
7/19/2010	5.20	3.360	347.251	0.64	0.25
7/20/2010	96.81	62.521	6460.485	0.64	0.25
7/21/2010	65.46	42.273	4368.169	0.64	0.25
7/22/2010	30.14	19.467	2011.560	0.64	0.25
7/23/2010	16.39	10.586	1093.878	0.64	0.25
7/24/2010	9.96	6.430	664.402	0.64	0.25
7/25/2010	9.02	5.826	602.000	0.64	0.25
7/26/2010	7.43	4.796	495.549	0.64	0.25
7/27/2010	5.89	3.801	392.768	0.64	0.25
7/28/2010	4.77	3.083	318.619	0.64	0.25

7/29/2010	3.77	2.437	251.812	0.64	0.25
7/30/2010	2.97	1.918	198.219	0.64	0.25
7/31/2010	2.51	1.620	167.385	0.64	0.25
8/1/2010	2.09	1.350	139.488	0.64	0.25
8/2/2010	1.73	1.119	115.628	0.64	0.25
8/3/2010	1.40	0.906	93.604	0.64	0.25
8/4/2010	1.09	0.707	73.048	0.64	0.25
8/5/2010	0.82	0.529	54.694	0.64	0.25
8/6/2010	0.71	0.458	47.352	0.64	0.25
8/7/2010	0.59	0.380	39.277	0.64	0.25
8/8/2010	0.50	0.323	33.404	0.64	0.25
8/9/2010	0.41	0.266	27.530	0.64	0.25
8/10/2010	0.33	0.213	22.024	0.64	0.25
8/11/2010	0.27	0.174	17.987	0.64	0.25
8/12/2010	0.19	0.124	12.848	0.64	0.25
8/13/2010	0.19	0.121	12.480	0.64	0.25
8/14/2010	0.18	0.114	11.746	0.64	0.25
8/15/2010	0.17	0.110	11.379	0.64	0.25
8/16/2010	0.17	0.107	11.012	0.64	0.25
8/17/2010	0.16	0.103	10.645	0.64	0.25
8/18/2010	0.14	0.092	9.544	0.64	0.25
8/19/2010	0.14	0.089	9.177	0.64	0.25
8/20/2010	0.12	0.078	8.076	0.64	0.25
8/21/2010	0.10	0.067	6.974	0.64	0.25
8/22/2010	0.10	0.064	6.607	0.64	0.25
8/23/2010	0.09	0.057	5.873	0.64	0.25
8/24/2010	0.08	0.050	5.139	0.64	0.25
8/25/2010	0.06	0.039	4.038	0.64	0.25
8/26/2010	0.04	0.028	2.937	0.64	0.25
8/27/2010	0.03	0.021	2.202	0.64	0.25
8/28/2010	0.03	0.018	1.835	0.64	0.25
8/29/2010	0.02	0.011	1.101	0.64	0.25
8/30/2010	0.01	0.004	0.367	0.64	0.25
8/31/2010	0.00	0.000	0.000	0.64	0.25
9/1/2010	0.00	0.000	0.000	0.64	0.25
9/2/2010	4.06	2.622	270.900	0.64	0.25
9/3/2010	101.21	65.363	6754.144	0.64	0.25
9/4/2010	22.94	14.813	1530.694	0.64	0.25
9/5/2010	11.00	7.105	734.146	0.64	0.25
9/6/2010	7.37	4.760	491.878	0.64	0.25
9/7/2010	5.50	3.549	366.706	0.64	0.25
9/8/2010	4.79	3.091	319.354	0.64	0.25
9/9/2010	4.54	2.934	303.202	0.64	0.25
9/10/2010	4.13	2.668	275.672	0.64	0.25
9/11/2010	4.22	2.728	281.912	0.64	0.25
9/12/2010	4.73	3.051	315.316	0.64	0.25
9/13/2010	4.59	2.966	306.506	0.64	0.25
9/14/2010	4.13	2.664	275.305	0.64	0.25
9/15/2010	3.65	2.355	243.369	0.64	0.25
9/16/2010	3.31	2.138	220.978	0.64	0.25
9/17/2010	3.02	1.950	201.523	0.64	0.25
9/18/2010	2.71	1.748	180.600	0.64	0.25
9/19/2010	2.60	1.680	173.626	0.64	0.25
9/20/2010	2.50	1.616	167.018	0.64	0.25
9/21/2010	2.42	1.563	161.512	0.64	0.25
9/22/2010	2.39	1.545	159.677	0.64	0.25
9/23/2010	2.30	1.488	153.804	0.64	0.25
9/24/2010	2.27	1.467	151.601	0.64	0.25
9/25/2010	2.19	1.414	146.095	0.64	0.25
9/26/2010	2.08	1.346	139.121	0.64	0.25
9/27/2010	1.98	1.279	132.146	0.64	0.25
9/28/2010	1.97	1.272	131.412	0.64	0.25
9/29/2010	1.86	1.201	124.071	0.64	0.25
9/30/2010	1.64	1.059	109.388	0.64	0.25
10/1/2010	1.39	0.899	92.869	0.64	0.25
10/2/2010	1.17	0.753	77.819	0.64	0.25
10/3/2010	0.95	0.615	63.504	0.64	0.25
10/4/2010	0.78	0.504	52.124	0.64	0.25
10/5/2010	0.68	0.437	45.150	0.64	0.25

10/6/2010	0.63	0.409	42.213	0.64	0.25
10/7/2010	0.61	0.394	40.745	0.64	0.25
10/8/2010	0.58	0.377	38.910	0.64	0.25
10/9/2010	0.57	0.369	38.176	0.64	0.25
10/10/2010	0.53	0.341	35.239	0.64	0.25
10/11/2010	0.50	0.320	33.037	0.64	0.25
10/12/2010	0.47	0.302	31.201	0.64	0.25
10/13/2010	0.45	0.291	30.100	0.64	0.25
10/14/2010	0.42	0.270	27.898	0.64	0.25
10/15/2010	0.39	0.252	26.062	0.64	0.25
10/16/2010	0.35	0.227	23.493	0.64	0.25
10/17/2010	0.34	0.217	22.391	0.64	0.25
10/18/2010	0.32	0.206	21.290	0.64	0.25
10/19/2010	0.30	0.192	19.822	0.64	0.25
10/20/2010	0.34	0.220	22.759	0.64	0.25
10/21/2010	0.32	0.210	21.657	0.64	0.25
10/22/2010	0.30	0.195	20.189	0.64	0.25
10/23/2010	0.29	0.188	19.455	0.64	0.25
10/24/2010	0.29	0.188	19.455	0.64	0.25
10/25/2010	0.29	0.188	19.455	0.64	0.25
10/26/2010	0.45	0.291	30.100	0.64	0.25
10/27/2010	1.01	0.654	67.541	0.64	0.25
10/28/2010	1.77	1.144	118.198	0.64	0.25
10/29/2010	2.33	1.503	155.272	0.64	0.25
10/30/2010	2.79	1.801	186.106	0.64	0.25
10/31/2010	3.21	2.071	214.004	0.64	0.25
11/1/2010	2.48	1.599	165.183	0.64	0.25
11/2/2010	2.25	1.453	150.133	0.64	0.25
11/3/2010	2.17	1.400	144.627	0.64	0.25
11/4/2010	1.99	1.286	132.880	0.64	0.25
11/5/2010	1.90	1.226	126.640	0.64	0.25
11/6/2010	1.80	1.162	120.033	0.64	0.25
11/7/2010	1.76	1.137	117.463	0.64	0.25
11/8/2010	1.74	1.126	116.362	0.64	0.25
11/9/2010	1.66	1.073	110.856	0.64	0.25
11/10/2010	1.66	1.073	110.856	0.64	0.25
11/11/2010	1.64	1.059	109.388	0.64	0.25
11/12/2010	1.57	1.012	104.616	0.64	0.25
11/13/2010	1.57	1.012	104.616	0.64	0.25
11/14/2010	1.51	0.977	100.945	0.64	0.25
11/15/2010	1.53	0.988	102.046	0.64	0.25
11/16/2010	1.67	1.080	111.590	0.64	0.25
11/17/2010	1.76	1.137	117.463	0.64	0.25
11/18/2010	1.91	1.236	127.741	0.64	0.25
11/19/2010	2.05	1.325	136.918	0.64	0.25
11/20/2010	2.20	1.421	146.829	0.64	0.25
11/21/2010	2.27	1.464	151.234	0.64	0.25
11/22/2010	2.41	1.559	161.145	0.64	0.25
11/23/2010	4.37	2.824	291.823	0.64	0.25
11/24/2010	5.83	3.765	389.097	0.64	0.25
11/25/2010	50.39	32.539	3362.389	0.64	0.25
11/26/2010	51.82	33.463	3457.828	0.64	0.25
11/27/2010	27.23	17.584	1817.011	0.64	0.25
11/28/2010	19.25	12.433	1284.756	0.64	0.25
11/29/2010	16.28	10.515	1086.536	0.64	0.25
11/30/2010	35.37	22.841	2360.279	0.64	0.25
12/1/2010	25.63	16.554	1710.560	0.64	0.25
12/2/2010	18.26	11.794	1218.682	0.64	0.25
12/3/2010	14.96	9.662	998.439	0.64	0.25
12/4/2010	12.16	7.851	811.231	0.64	0.25
12/5/2010	10.45	6.749	697.439	0.64	0.25
12/6/2010	8.97	5.790	598.329	0.64	0.25
12/7/2010	8.20	5.293	546.939	0.64	0.25
12/8/2010	7.81	5.044	521.244	0.64	0.25
12/9/2010	7.26	4.689	484.536	0.64	0.25
12/10/2010	7.54	4.867	502.890	0.64	0.25
12/11/2010	17.05	11.012	1137.926	0.64	0.25
12/12/2010	48.68	31.438	3248.596	0.64	0.25
12/13/2010	26.90	17.371	1794.987	0.64	0.25

12/14/2010	19.25	12.433	1284.756	0.64	0.25
12/15/2010	13.75	8.881	917.683	0.64	0.25
12/16/2010	10.73	6.927	715.792	0.64	0.25
12/17/2010	9.08	5.861	605.670	0.64	0.25
12/18/2010	7.98	5.151	532.256	0.64	0.25
12/19/2010	7.43	4.796	495.549	0.64	0.25
12/20/2010	6.55	4.227	436.817	0.64	0.25
12/21/2010	6.60	4.263	440.488	0.64	0.25
12/22/2010	6.05	3.908	403.780	0.64	0.25
12/23/2010	6.05	3.908	403.780	0.64	0.25
12/24/2010	5.89	3.801	392.768	0.64	0.25
12/25/2010	5.67	3.659	378.085	0.64	0.25
12/26/2010	5.67	3.659	378.085	0.64	0.25
12/27/2010	5.50	3.552	367.073	0.64	0.25
12/28/2010	6.11	3.943	407.451	0.64	0.25
12/29/2010	6.60	4.263	440.488	0.64	0.25
12/30/2010	13.75	8.881	917.683	0.64	0.25
12/31/2010	29.32	18.934	1956.499	0.64	0.25

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