



PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM

Annual Data Summary Report

**Platte River Water Quality
2009 Monitoring Season**

Final

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I. INTRODUCTION

The Platte River Recovery Implementation Program (Program) was initiated on January 1, 2007 between Nebraska, Wyoming, Colorado, and the Department of the Interior to address endangered species issues in the central and lower Platte River Basin. The species considered in the Program, referred to as “target species”, are the whooping crane (*Grus americana*), piping plover (*Charadrius melodus*), interior least tern (*Sterna antillarum*), and pallid sturgeon (*Scaphirhynchus albus*).

Monitoring of central Platte River water quality near Program lands will be relevant to the productivity and diversity of native fish and other aquatic species supportive of the interior least tern, piping plover, and whooping crane. Ultimately, the baseline data will be used to assess Priority Hypotheses as described in Table 2 of the Adaptive Management Plan (AMP) (PRRIP 2006).

EA Engineering, Science, and Technology, Inc. (EA) was contracted by the Program to develop a Water Quality Monitoring Protocol (Protocol) and implement the Protocol in 2009. This report presents the results of the water quality monitoring for the 2009 monitoring season (mid-March through September). Data collected included: stage/discharge, water quality parameters (temperature, turbidity, dissolved oxygen, pH, and specific conductance), and representative water quality samples for metals (dissolved copper, dissolved lead, dissolved nickel, total selenium, total calcium, and total magnesium).

I.A. PURPOSE

The purpose of the Platte River water quality monitoring is to characterize the water quality in the central and lower Platte River during the thirteen-year First Increment (2007-2019), which will form the basis for assessing the influence of the Program and Program-covered activities on Platte River water quality.

The Protocol defined the data collection procedures to obtain scientifically credible data. The Protocol was developed for the collection of data to:

- Determine current baseline water quality conditions in the central and lower Platte River.
- Determine temporal variations in water quality.
- Determine variations in water quality in response to changes in discharge.
- Determine variations in water quality spatially along the central and lower Platte River.

Implementation of the Protocol included:

- Collection and evaluation of data.
- Summarization of results.
- Evaluation of variations due to temporal, spatial, and discharge differences.



- Development of recommendations for subsequent water quality monitoring and/or research.

II. METHODS AND PROCEDURES

Platte River water quality monitoring was designed to document water quality and detect water quality trends in the central and lower Platte River. The area of interest included the central Platte River (Lexington to Chapman, Nebraska) and the lower Platte River (Chapman to confluence with the Missouri River). Water quality was measured using *in-situ* continuous water quality sondes (sondes), discharge measurements from established gaging stations, and discrete water sample collection at monitoring locations.

II.A. Monitoring Locations

Monitoring locations on the Platte River were selected to determine the range and variation of water quality parameters within the lower and central Platte River. The specific focus was on the central Platte River as the habitat-improvement activities of the Program are related to this river reach. The monitoring locations were selected because there are existing stream gaging stations or water quality stations maintained by the U.S. Geological Survey (USGS) and Nebraska Department of Natural Resources (NDNR). The USGS maintains a sonde at Louisville for the Lower Platte River Corridor Alliance (LPRCA). The monitoring locations are listed in Table 1 and illustrated on Figure 1. Sondes were co-located with the existing stream gaging stations.

Table 1. Spatial Monitoring Matrix

Monitoring Location No.	Platte River Locations	Discharge	Water Quality	Analytical
1	Lexington	NDNR	EA	EA
2	Overton	USGS	EA	EA
3	Odessa	NDNR	EA	EA
4	Kearney	USGS	EA	EA
5	Shelton	NDNR	EA	EA
6	Grand Island	USGS	EA	EA
7	Duncan	USGS	EA	EA
8	Louisville	USGS	LPRCA/USGS*	EA

Notes:

NDNR – Nebraska Department of Natural Resources

USGS – United States Geological Survey

LPRCA – Lower Platte River Corridor Alliance

EA – EA Engineering, Science, and Technology, Inc.

* LPRCA/USGS collected temperature, turbidity, dissolved oxygen, and specific conductance. EA collected pH.



II.B. Parameters of Interest

Water quality data collected was categorized into three groups:

- **Discharge** – Discharge is the measurement of stream flow and is expressed as the amount of water that passes a fixed point over time and is typically represented as cubic feet per second (cfs). River stage and/or gage height was collected (ft).
- **Continuous Water Quality Monitoring** – Continuous water quality data collected included: temperature, turbidity (optical sensor), dissolved oxygen by optical and Luminescent Dissolved Oxygen (LDO) technology, pH, and specific conductance.
- **Discrete Water Quality Monitoring** – Representative, discrete water samples were collected and analyzed by TestAmerica of Cedar Falls, IA (a National Environmental Laboratory Accreditation Program (NELAP)-certified laboratory). Analyses included: dissolved copper, dissolved lead, dissolved nickel, total selenium, total calcium, and total magnesium.

II.B.1. Frequency and Duration

The index period for the collection of continuous water quality monitoring data was from March 26, 2009 through October 2, 2009. The frequency and duration of data collection is listed below:

- **Discharge**
 - Existing gaging stations on the Platte River are operated continuously by the USGS and NDNR. River stage was measured continuously at these stations and discharge was estimated using rating curves. A data point was collected every 15 minutes.
- **Continuous Water Quality Monitoring**
 - A sonde was operated and maintained by the USGS for the LPRCA at the Louisville gaging station on the Platte River. The sonde collected temperature, turbidity, dissolved oxygen, and specific conductance data and was operated from March 18, 2009 through September 30, 2009. A data point was collected every 15 minutes.
 - A sonde was installed at Louisville for pH (all other parameters were collected by the USGS) and EA provided operation and maintenance from May 2, 2009 through October 1, 2009. A data point was collected every 30 minutes.
 - A sonde was installed at Lexington, Overton, Odessa, Kearney, Shelton, Grand Island, and Duncan and EA provided operation and maintenance from March 26, 2009 through October 2, 2009. A data point was collected every 30 minutes.



- After installation, operation and maintenance of the sondes (including the downloading of data) was conducted approximately every two to three weeks from March through September (Table 2).

Table 2. Date and Location of Operation and Maintenance Events

Date	Sites	Date	Sites
March 26, 2009	Duncan, Grand Island, Shelton, Kearney, Odessa	July 20, 2009	Louisville, Duncan, Grand Island, Shelton
March 27, 2009	Overton, Lexington	July 21, 2009	Kearney, Odessa, Overton, Lexington
April 14, 2009	Duncan, Grand Island, Shelton, Kearney	August 4, 2009	Louisville, Duncan, Grand Island, Shelton
April 15, 2009	Odessa, Overton, Lexington	August 5, 2009	Kearney, Odessa, Overton, Lexington
April 30, 2009	Duncan, Grand Island	August 18, 2009	Louisville, Duncan, Grand Island, Shelton
May 2, 2009	Louisville	August 19, 2009	Kearney, Odessa, Overton, Lexington
May 5, 2009	Shelton, Kearney, Odessa, Lexington	August 26, 2009	Duncan, Grand Island, Shelton
May 6, 2009	Overton	August 27, 2009	Kearney, Odessa, Overton, Lexington
May 11, 2009	Overton	August 28, 2009	Louisville
May 22, 2009	Louisville	September 2, 2009	Grand Island, Shelton, Kearney, Odessa, Overton
May 27, 2009	Duncan, Grand Island, Shelton, Kearney	September 3, 2009	Duncan, Lexington
May 28, 2009	Odessa, Overton, Lexington	September 9, 2009	Louisville, Duncan, Grand Island, Shelton
May 29, 2009	Lexington	September 10, 2009	Kearney, Odessa, Overton, Lexington
June 10, 2009	Louisville, Duncan, Grand Island, Shelton	September 11, 2009	Louisville
June 11, 2009	Kearney, Odessa, Overton, Lexington	September 17, 2009	Louisville, Duncan, Grand Island, Shelton
June 23, 2009	Louisville, Duncan, Grand Island, Shelton	September 18, 2009	Kearney, Odessa, Overton, Lexington
June 24, 2009	Kearney, Odessa, Overton, Lexington	September 22, 2009	Louisville, Duncan, Grand Island, Shelton
July 1, 2009	Duncan, Odessa	September 23, 2009	Kearney, Odessa, Overton, Lexington
July 7, 2009	Louisville, Duncan, Grand Island, Shelton	October 1, 2009	Louisville, Duncan, Grand Island, Shelton
July 8, 2009	Kearney, Odessa, Overton, Lexington	October 2, 2009	Kearney, Odessa, Overton, Lexington



- **Discrete Water Quality Monitoring**

- The index period for the collection of discrete water quality data was from mid-March through September.
- Representative water samples for analytical analysis were collected at the eight monitoring locations listed in Table 3 in April, June, July, and September during maintenance of sondes.

Table 3. Date and Location of Discrete Water Quality Sampling Events

Date	Sites	Date	Sites
April 30, 2009	Duncan, Grand Island	June 24, 2009	Kearney, Odessa, Overton, Lexington
May 2, 2009	Louisville	July 20, 2009	Louisville, Duncan, Grand Island, Shelton
May 5, 2009	Shelton, Kearney, Odessa, Lexington	July 21, 2009	Kearney, Odessa, Overton, Lexington
May 6, 2009	Overton	September 17, 2009	Louisville, Duncan, Grand Island, Shelton
June 23, 2009	Louisville, Duncan, Grand Island, Shelton	September 18, 2009	Kearney, Odessa, Overton, Lexington

II.C. Discharge and River Stage

Platte River discharge and stage measurements were obtained from existing gaging stations maintained by the USGS and NDNR (Table 1). River stage was measured continuously at these gaging stations and discharge was estimated using rating curves. The rating curves are maintained by the owning agency (USGS or NDNR). Periodic measurements of depth and flow rate are used to adjust the rating curves, as needed.

II.D. Continuous Water Quality Monitoring

A sonde was co-located at gaging stations as described in Table 1. The data and units of measure collected are listed in Table 4.

Table 4. Continuous Water Quality Parameters

Water Quality Parameter	Unit	Range	Resolution	Accuracy
Temperature	Degrees Celsius	-5 to +50°C	0.01 °C	± 0.10 °C
Turbidity	Nephelometric Turbidity Units	0 to 1,000 NTU	0.1 NTU from 0-400 NTU 1 NTU for >400 NTU	± 5% or 1 NTU
Luminescent Dissolved Oxygen	mg/L	0 to 60 mg/L	± 0.1 mg/L @ ≤ 8 mg/L ± 0.2 mg/L @ > 8 mg/L ± 10% mg/L @ > 20 mg/L	± 0.3 mg/L
pH	Standard Units	0 to 14 units	0.01 units	± 0.2 units
Specific Conductance	mS/cm	0 to 400 mS/cm	0.001 mS/cm	± 0.5% of reading + 0.001 mS/cm



II.D.1. Continuous Water Quality Sonde Installation

Prior to installation, each sonde was calibrated following the manufacturer’s specification using calibration standards and documented on the field data sheets (Appendix D). The sondes were installed by suspending the sondes on the downstream side of the bridge at the selected monitoring location. The datalogger, battery source, and sonde were housed in a section of PVC pipe and tethered to the bridge railing via heavy duty chain. The sonde was locked to the end of the chain and inserted into the PVC pipe. The cap for the PVC pipe had a hole big enough for the chain to pass through. The PVC pipe was attached to the chain by drilling a hole at the top of the PVC and inserting a bolt through the PVC pipe, passing through the chain. The submerged section of the PVC pipe containing the sonde was slotted and/or perforated with circular holes and the bottom was open to prevent sediment accumulation. A second bolt was placed at the very bottom of the PVC to prevent the sonde from falling out the bottom. A float was attached in August 2009 to the bottom of the PVC pipe to keep the sonde suspended just below the water surface (~6-inches) and minimize the burial of the sonde in sediment during decreasing flows and channel meandering. The sonde was retrievable for maintenance and data transfer by pulling up the chain to the bridge deck. Ribbon or flagging was placed every five feet on the chain to enhance visibility. The heavy duty chain was attached to the railing by wrapping the chain around the railing and locking the chain to itself.



Typical sonde installation

The sonde at Kearney could not be tethered to a bridge railing at Kearney and a secondary method was used for deployment. The sonde was deployed by installing two 4 foot screw anchors into the bed of the river and attaching the PVC pipe described above to each anchor. Stainless steel cable was used to attach and lock the PVC pipe and sonde to the screw anchors. A third screw anchor was installed on the bank or in the river bed and attached to the sonde for added security. The sonde was retrievable for maintenance and data transfer by wading in the river.



Sonde installation at Kearney



II.D.2. Continuous Water Quality Sonde Operation and Maintenance

Each sonde was visited for maintenance, data transfer, and calibration approximately every two to four weeks depending on environmental conditions. During these visits, hand-held water quality meter measurements, sonde calibration records, and data transfer notes were recorded on the field data sheets.

Directions from the manufacturer for sonde calibration, maintenance, and data transfer were followed. Data was downloaded from the sonde to a field laptop on site before the data collected exceeded the memory capacity of the sonde. Files were named by Platte River Location as listed in Table 1, followed by numerical year, month, and day of data transfer (e.g., Odessa20090528). To ensure file integrity and provide backup, all files were saved to the laptop hard drive and a portable USB jump drive while in the field. Following the transfer process, files were opened and reviewed to ensure successful transfer of all data before resetting the sonde. While on site, data was reviewed for missing data, outlier data, and logging errors so corrections could be made immediately, if needed. A field data sheet was filled out for each monitoring location visit to document activities related to sonde maintenance, calibration, setup, and data transfer.



Water Quality Sonde and PVC pipe.

The process for maintenance, data transfer, and calibration of the sondes are listed below:

- **Measurement Using Hand-Held Meter** – Prior to retrieval of data from the sondes, the field crew collected and recorded duplicate water quality parameters using hand-held water quality meters. Also, a meter was used to collect and record the barometric pressure.
- **Continuous Water Quality Sonde QA/QC** – Duplicate and known (spiked) parameter readings were taken for QC purposes. Duplicate water quality readings were collected by submerging hand-held meter probes next to the sonde probes that were set to display real time readings and these values were recorded. Measurements of known (spiked) calibration standards were taken with the sonde during each maintenance visit to assess drift and/or accuracy of the sonde during the monitoring season. These QC measurements were recorded on the field data sheets.



Hand-Held Meters



- **Download Data From Continuous Sonde** – The field crew downloaded the data from the sonde to a laptop computer and a portable USB jump drive.
- **Review Continuous Water Quality Data** – After data transfer, data files were opened and reviewed for general data quality (i.e., proper logging interval, abnormal or missing data, data outliers, and missing parameters). If data recording issues were present, the deficiency was documented, the sonde adjusted/fixed, and the corrective action documented.
- **Re-deploy the Sonde** – As a final step, the field crew cleaned and calibrated the sonde following the manufacturer's specification using calibration standards and the calibration documented. The documentation included the drift of actual reading from the calibrated reading. Once calibrated, the datalogger was turned on and the sonde was re-deployed in the river.

II.D.3. Hand-Held Water Quality Instrument Operation

As part of Quality Assurance (QA) and Quality Control (QC), a second set of hand-held water quality instruments (capable of reading temperature, dissolved oxygen, pH, specific conductance, and turbidity) were calibrated and maintained to enable the collection of duplicate water quality parameters at the time of site visits. Manufacturer directions for operation, calibration, and maintenance was followed and documented on the field data sheets. These instruments were calibrated at the beginning of each field day prior to monitoring.

The hand-held meter that was used for calibrating specific conductance was designated for checking the accuracy of the water temperature probe. The hand-held meter was checked for accuracy to a mercury-in-glass calibration thermometer that is traceable to the National Institute of Standards and Technology (NIST) certification of its accuracy (Service ID Number 31010C; NIST 1988). A hand-held meter was also used to collect barometric pressure.

II.E. Discrete Water Quality Monitoring

II.E.1. Discrete Water Sample Collection

One composite water sample was collected at each monitoring location for laboratory analysis of dissolved copper, dissolved lead, dissolved nickel, total calcium, total magnesium, and total selenium. The following procedures were used to collect representative samples during the discrete sampling events:

- Five grab samples that represented the bulk of the river flow were collected and composited at each monitoring location. The collection points were distributed evenly among multiple river channels or, when one channel existed, samples were taken near each bank and at three equidistant points between the banks. When more than five channels existed, the samples were collected from the five channels with the highest



flows.

- Before a sample was collected at each site, site water was used to rinse out the container or Van Dorn bottle and compositing container at least three times.
- The samples were collected on the upstream side of the bridge.
- A sub-sample was collected at the first station at 1/3 of the water depth using a container. When water depth and/or the velocity was not safe for wading, the field crew lowered a Van Dorn water bottle from the bridge deck to obtain sub-samples. Subsequently, if low flow conditions existed, the samples were collected by carefully submerging a sampling container to avoid re-suspending sediments from the river bed. The sub-sample was poured into the compositing container. Four additional samples were taken at equally spaced representative stations and composited in the composite container.
- Once all predetermined stations were sampled and composited, the composite container was shaken/swirled to mix the composited sample. Two sample containers were required for each sample. The total metals sample was collected by pouring directly from the composite container into a pre-acidified/pre-labeled sample container. The dissolved metals sample container was filled from the composite container via a peristaltic or hand vacuum pump using a new in-line 0.45- μ m membrane filter capsule and tubing. Filtrate was discharged directly into the pre-acidified/pre-labeled sample container.
- The sample containers were placed in individual zip-seal bags and stored in a cooler with ice for shipment to the lab.

II.E.2. Analytical Method

The analytical method, required containers, volume, preservative, and holding times are listed in Table 5.



Table 5. Discrete Sampling Handling and Analytical Methods

Analyte	Field Preparation	Method	Container	Holding Time	Reporting Limit	Preservation
Dissolved Metals						
Copper	0.45 µm filtered water	*SW 6010B	1000- mL Plastic w/Teflon lined cap	6 months	0.02 mg/L	Cool, 4°C HNO ₃ to pH <2
Lead	0.45 µm filtered water	*SW 6010B	1000- mL Plastic w/Teflon lined cap	6 months	0.10 mg/L	Cool, 4°C HNO ₃ to pH <2
Nickel	0.45 µm filtered water	*SW 6010B	1000- mL Plastic w/Teflon lined cap	6 months	0.05 mg/L	Cool, 4°C HNO ₃ to pH <2
Total Metals						
Selenium	Unfiltered Water	*SW 6010B	1000- mL Plastic w/Teflon lined cap	6 months	0.15 mg/L	Cool, 4°C HNO ₃ to pH <2
Calcium	Unfiltered Water	*SW 6010B	1000- mL Plastic w/Teflon lined cap	6 months	1.0 mg/L	Cool, 4°C HNO ₃ to pH <2
Magnesium	Unfiltered Water	*SW 6010B	1000- mL Plastic w/Teflon lined cap	6 months	1.0 mg/L	Cool, 4°C HNO ₃ to pH <2

* SW – Solid Waste

II.E.3. Sample Labels

Every sample collected and submitted for analysis had a sample label uniquely identifying the sample and listing the parameters to be analyzed. Each label included the following information:

- Project Name – “PRRIP WQ Monitoring”
- Location Identification – e.g., Lex200904
 - Samples from the different monitoring locations were identified as follows:
 Lexington – Lex
 Overton – Ovr
 Odessa – Ods
 Kearney – Ker
 Shelton – Shl
 Grand Island – Gri
 Duncan – Dun
 Louisville – Lsv
 - Followed by the year and numerical abbreviation for the month sampled.
 e.g., 200904 – April 2009, 200905 – May 2009, etc.
- Date of sample collection
- Time of sample collection (military format)
- Analyses to be performed



- Preservative – For metals – HNO₃ and cool to 4 °C
- Samplers' initials

II.E.4. QC Sample Collection and Documentation

Metals

One duplicate water sample was collected at one randomly selected site during each discrete water quality sampling event. A sufficient volume of water was composited to fill a sample container for the environmental sample and concurrently for the duplicate sample. Duplicate samples were labeled as “Dup” followed by year and month sampled (e.g., Dup200904). An arbitrary sample time was placed on the container label and chain-of-custody. The actual location and sample time was recorded in the field book at the time of sampling.

One field blank was collected during each discrete water quality sampling event. Field blanks were labeled as “FB” followed by year and month sampled (e.g., FB200904). Field blanks were collected using the following procedures:

- The sampling container or Van Dorn bottle was rinsed three times with de-ionized water then rinsed one time with lab-grade water.
- The compositing container was rinsed three times with de-ionized water then rinsed one time with lab-grade water.
- Approximately 1.5 liters of lab-grade water was poured into the sampling container or Van Dorn bottle and then the pre-acidified/pre-labeled total metals sample container were filled. For dissolved metals, the field crew drew the lab-grade water from the compositing container through a new filter and tubing into the pre-acidified/pre-labeled sample container.
- The containers were sealed in zip-seal bags and stored in a cooler with ice.
- Field blank samples were processed in the same manner as the environmental samples.

II.E.5. Chain-of-Custody

Every suite of samples collected was tracked and documented via a chain-of-custody record. A chain-of-custody was completed as samples were collected and was submitted with the samples. Each chain-of-custody record included the following:

- Project name – “PRRIP WQ Monitoring”
- Sample identification code – e.g. Lex200904
- Sample date for all samples
- Sample times for all samples (military format)



- Sample type (e.g. composite or grab)
- Required analysis for containers
- Sampler signature for sample collection
- Signature, date, and time relinquished

II.E.6. Field Book

The following information was documented in the field book or on the field data sheets:

- Date of sampling
- Field crew member names
- Location and sampling beginning and ending time
- Samples collected/work performed in field
- The rationale for choosing each composite location during discrete water sampling
- Duplicates or blanks collected with the location and sampling time
- Weather and site conditions
- Any irregularities encountered and lessons learned during the field effort

II.E.7. Sample Control and Handling

Sample control and custody is critical to maintain sample integrity for analysis and to track sample from time of collection to time of analysis. The following procedures were followed to maintain sample integrity:

- The sample containers were appropriately labeled and filled with a representative composite or grab water samples.
- The containers were placed in a zip-seal bag in an upright position in a cooler containing ice. The field crew kept the cooler out of direct sunlight and secured in the vehicle to prevent loss of samples/cooler.
- After all samples were collected, the sample containers were cross-checked with the chain-of-custody to ensure required sample information matches.
- Aged ice and water was removed from the cooler and replaced with double-bagged fresh ice along with sample containers and a container labeled temperature blank.
- A completed chain-of-custody was placed in a zip-seal bag and taped to the inside of the cooler lid.
- The field crew placed signed and dated custody seals over the cooler opening prior to sealing with tape.



Once the cooler was sealed with tape, it was delivered to an overnight shipping company for delivery to the laboratory.

III. DATA SUMMARY

The monitoring season for the 2009 water quality monitoring program was initiated March 18, 2009 and completed on October 2, 2009. Water quality was monitored at eight locations (Figure 1) and sondes were co-located near existing USGS or NDNR stage/discharge monitoring locations (gages).

III.A. Data Collected from USGS

The USGS maintains the National Water Information System (NWIS) website that provides access to water data for locations throughout the United States. Data available has been acquired by USGS and can be downloaded as tables or graphs. EA accessed the website on a monthly basis from March through October to download stage/discharge data from gaging stations located on the Platte River for Louisville, Duncan, Grand Island, Kearney, and Overton and water quality data for Louisville. Data that was obtained from USGS is considered provisional data and is subject to revision.

The USGS installed a YSI 6920 sonde as part of the LPRCA Water Quality Monitoring Network and initiated data collection on March 18, 2009 and finished on September 30, 2009. There were several days during this time when data was not collected due to a malfunctioning sonde or a malfunctioning individual probe on the sonde. Temperature, dissolved oxygen, specific conductance, and turbidity data was collected at 15-minute intervals.

III.B. Data Collected from NDNR

NDNR collects and reports flow data for streams, canal and pump diversions, and storage in reservoirs in locations throughout Nebraska. The data is gathered through Field Offices and the program is coordinated through NDNR’s Planning and Assistance Division. EA utilized information from gaging stations located on the Platte River near Shelton, Lexington, and Odessa. Data was collected in 30 minute increments and was provided to EA as a daily mean for gage height and discharge. Data collected for Odessa from July 28 through August 11, 2009, Shelton from May 19 through May 26, 2009, and Lexington from August 25 through September 1, 2009 was estimated from the next upstream gaging station due to malfunctioning equipment.

III.C. Data Collected by EA

EA installed YSI 6920 sondes and initiated data collection on March 26-27, 2009 at Duncan, Grand Island, Shelton, Kearney, Odessa, Overton, and Lexington. The YSI 6920 sondes at were replaced with Hydrolab MS5 sondes starting on August 18, 2009 and collected data for the remainder of the monitoring season. Temperature, pH, dissolved oxygen, specific conductance, and turbidity data was collected at 30-minute intervals. pH was not included in the data



collected by the USGS and EA installed a Eureka Manta 2 sonde to collect pH data on May 2, 2009.

Composite water samples were collected at the eight locations (Figure 1) four times during the monitoring season. Water samples were analyzed for dissolved copper, dissolved lead, dissolved nickel and total selenium, total calcium, and total magnesium.

As part of the data summarization process it was necessary to determine if water quality data collected was representative of river conditions. The field data sheets were reviewed to identify variables which may have affected data quality. Several of the field sheets described conditions which may have affected the sondes ability to collect representative water quality data. Issues which affected water quality data and was evident in the water quality values logged included:

- Sondes were found partially buried in sediments. Water parameters affected were specific conductance, dissolved oxygen, and turbidity.
- The measurement cell on the specific conductance probes were filling with sediments, even in high velocity areas of the river. This increased the areas resistivity resulting in depressed specific conductance readings.
- Algal growth occluded the optical lenses on the turbidity and dissolved oxygen probes resulting in elevated turbidity and dissolved oxygen readings.
- Aquatic insects of the Trichopteran genus established cases on the probes affecting pH, specific conductance, dissolved oxygen, and turbidity.
- Parameter specific probes on the sondes would malfunction or fail resulting in no data being collected.

An Annual Update was prepared to document the lessons learned during the 2009 monitoring season and the Protocol was updated for the 2010 monitoring season.

IV. SUMMARY STATISTICS

Summary statistics were completed after the data had been reviewed to ensure that data summarized was representative of water quality in the central and lower Platte River. Summary statistics were calculated using standard function formulas found in Microsoft® Excel spread sheets. Summarization included a tabular presentation of weekly and monthly observations (number (N), mean, maximum, minimum, and standard deviation) for each parameter. Data was graphed to present observed temporal, spatial and flow variations. Summary statistics are presented in Appendix A. Raw data from the sonde and flow data are presented on a CD referenced in Appendix E and F, respectively.

V. VARIATIONS

Variations in the water quality data (weekly means) were evaluated after raw data had been reviewed to ensure that the data was representative of water quality in the central and lower Platte River. Data was assessed for temporal, spatial, and flow variations:



V.A. Temporal Variation

Temporal variation of water quality parameters was assessed using line graphs showing all monitoring locations (i.e., X-axis presents time, Y-axis presents parameter value) and are presented in Appendix B, Figures B-1 through B-6.

- **Temperature** – Water temperature exhibited the same seasonal temporal trend at the eight locations during the monitoring season. Water temperatures were at minimum levels when the monitoring program was initiated and peaked during the later summer months and trended downward with the onset of fall and cooler air temperatures.
- **Specific Conductance** – Specific conductance exhibited the same temporal trend at the eight locations during the monitoring season. The weekly mean of specific conductance remained stable during the monitoring season at seven of the eight monitoring location and consistently ranged between 0.800 and 1.000 mS/cm. Specific conductance at the Louisville monitoring location was lower and ranged between 0.450 and 0.800 mS/cm.
- **pH** – Weekly mean pH concentrations did not visually exhibit a temporal trend at the eight locations monitored during the monitoring season. The pH consistently ranged between 8 and 9 pH units during the monitoring season. Variations from this range were associated with increases in discharge.
- **Turbidity** – Turbidity exhibited the same temporal trend at the eight locations during the monitoring season.
- **Dissolved Oxygen** – Dissolved Oxygen exhibited the same temporal trend at the eight locations during the monitoring season. Weekly mean concentrations of dissolved oxygen in the water were the highest during the cold water periods and lowest during the summer months when water temperatures were higher. This follows the inverse relationship that as temperature increases the solubility of gas in water decreases.
- **Discharge** – Weekly mean discharge (cfs) exhibited the same temporal trend at seven of the eight locations during the monitoring season. Discharge peaked in mid April and mid June with the highest discharge in mid-June. Louisville exhibited the same temporal trend as the rest of the sites with one additional peak in mid-August.

V.B. Discharge Variation

Water quality variation relative to discharge was assessed using line graphs for each monitoring location and each water quality parameter. (i.e., X-axis presents time, left Y-axis presents parameter value, and right Y-axis presents discharge value) and are presented in Appendix B, Figures B-7 through B-46.



- **Temperature** – Weekly mean temperature did not visually demonstrate variation during the monitoring season.
- **Specific Conductance** – An inverse relationship for weekly mean specific conductance and discharge was evident at the Louisville monitoring location during the monitoring season. A relationship between discharge and specific conductance was not as visually evident at the other seven monitoring locations.
- **pH** – An inverse relationship for weekly mean pH and discharge was evident at the Louisville, Kearney and Overton locations during the monitoring season. The Duncan and Grand Island weekly mean pH decreased minimally or showed no relationship with flows.
- **Turbidity** – A direct relationship for weekly mean turbidity and discharge was evident at the Louisville, Duncan, Grand Island, Kearney, and Overton during the monitoring season.
- **Dissolved Oxygen** – An inverse relationship for weekly mean dissolved oxygen and discharge was evident at Louisville during the monitoring season. At the other monitoring locations the dissolved oxygen response to discharge changes varied widely and a pattern could not be discerned.

V.C. Spatial Variation

Spatial variation was assessed using boxplots of the water quality parameters values for all monitoring locations (i.e., X-axis presents monitoring location, Y-axis presents parameter value). Box plots present minimum, 25th percentile, median, 75th percentile, and maximum values of the parameter. Boxplot figures for each water quality parameter monitored are presented in Appendix B, Figures B-47 through B-52.

- **Temperature** – No spatial variation was evident in the boxplots by monitoring location presenting water temperature at the eight monitoring locations. Temperature ranges (minimum and maximum) observed at the eight locations were essentially the same for the monitoring season.
- **Specific Conductance** – Spatial variation was evident in the boxplots by monitoring location presenting specific conductance for the monitoring season. Specific conductance at the Louisville monitoring location is significantly different than that of the other seven monitoring locations Duncan, Grand Island, Shelton, Kearney, Odessa, Overton, and Lexington; which are all similar.
- **pH** – Spatial variation was evident in the boxplots by monitoring location presenting pH at the eight locations monitored. The mid-value (25th to 75th percentile range) pH was higher at the Louisville monitoring location than the Kearney, Odessa, Overton, and



Lexington monitoring locations. Data variability (minimum to maximum range) was greatest at the Lexington monitoring location and smallest at the Shelton monitoring location.

- **Turbidity** – Spatial variation was evident in the boxplots by monitoring location presenting turbidity for the monitoring season. Turbidity at the Louisville monitoring location was different than Duncan, Grand Island, Shelton, Kearney, Odessa, Overton, and Lexington monitoring locations, which were all similar.
- **Dissolved Oxygen** – No spatial variation was evident in the boxplots presenting dissolved oxygen at the eight locations monitored. Dissolved oxygen values at the 25th to 75th percentile range were similar.
- **Discharge** – Spatial variation was evident in the boxplots by monitoring location presenting discharge (cfs) for the monitoring season. Discharge at the Louisville monitoring location (downstream of other monitoring locations) is demonstrable higher than any of the other monitoring locations monitored. Discharge was similar during the monitoring season at the other locations.

VI. QUALITY CONTROL SUMMARY

The Quality Control Summary describes the results of the data quality evaluation performed on the water quality parameters collected during the 2009 monitoring season. Data collected included: temperature, specific conductance, pH, turbidity, dissolved oxygen, and discharge. Analytical data collected included: dissolved copper, dissolved lead, dissolved nickel, total selenium, total calcium, and total magnesium. The quality of the data collected and analyzed was assessed using the elements of precision, accuracy, representativeness, completeness, and comparability.

VI.A. Precision

The measurement of precision was accomplished by collecting duplicate water quality readings and duplicate samples. The premise being that two samples collected simultaneously from the same location should yield similar results. The variation between duplicate samples that is accepted is a function of the monitoring objectives and the inherent variation around each parameter. Precision will be measured during the Protocol in terms of Relative Percent Difference (RPD) which is calculated using the following formula:

$$RPD = (X_1 - X_2) / [(X_1 + X_2) / 2]$$

X_1 and X_2 = reported concentrations for each duplicate sample.

Data was considered acceptable if the RPD was less than or equal to 50% for each parameter. One duplicate water sample was collected for each discrete water sampling event. Duplicate water quality readings were collected using hand-held meters for temperature, specific conductance, pH, turbidity, and dissolved oxygen at each location during each sonde



maintenance event. A summary of duplicate readings that exceeded the 50% RPD threshold is presented in Table 6 and all duplicate sample collection results are presented in Appendix C.

Table 6. Relative Percent Difference (RPD) Exceedance for Duplicate Samples

Parameter	Location	Date	Hand Held	Sonde	RPD
Dissolved Oxygen	Lexington	August 27, 2009	7.69	Malfunction	N/A
pH	Kearney	August 19, 2009	8.34	Malfunction	N/A
pH	Overton	May 11, 2009	8.34	Malfunction	N/A
Specific Conductance	Odessa	June 11, 2009	1.072	Malfunction	N/A
Specific Conductance	Odessa	July 1, 2009	1.027	Malfunction	N/A
Turbidity	Duncan	April 14, 2009	4.80	1.30	115%
Turbidity	Duncan	June 23, 2009	146.00	Malfunction	N/A
Turbidity	Duncan	July 1, 2009	179.00	Malfunction	N/A
Turbidity	Duncan	July 20, 2009	28.60	200.30	150%
Turbidity	Duncan	September 3, 2009	16.00	6.30	87%
Turbidity	Duncan	October 1, 2009	13.70	8.00	53%
Turbidity	Grand Island	April 14, 2009	4.28	2.5	53%
Turbidity	Grand Island	April 30, 2009	6.31	13.4	72%
Turbidity	Grand Island	June 23, 2009	17.1	9.8	54%
Turbidity	Kearney	April 14, 2009	11.80	20.90	56%
Turbidity	Kearney	June 11, 2009	1.66	Malfunction	N/A
Turbidity	Kearney	July 21, 2009	18.10	36.30	67%
Turbidity	Kearney	August 27, 2009	6.96	2.60	91%
Turbidity	Kearney	September 2, 2009	10.04	Malfunction	N/A
Turbidity	Kearney	September 23, 2009	16.90	8.40	67%
Turbidity	Kearney	October 2, 2009	17.80	9.00	66%
Turbidity	Lexington	May 28, 2009	7.42	4.00	60%
Turbidity	Lexington	May 29, 2009	5.28	0.00	200%
Turbidity	Lexington	June 11, 2009	5.58	0.50	167%
Turbidity	Lexington	August 19, 2009	13.20	27.40	70%
Turbidity	Lexington	August 27, 2009	7.86	0.00	200%
Turbidity	Lexington	September 18, 2009	13.20	5.00	90%
Turbidity	Lexington	September 23, 2009	12.30	5.90	70%
Turbidity	Odessa	April 15, 2009	11.60	6.60	55%
Turbidity	Odessa	June 24, 2009	10.73	6.10	55%
Turbidity	Odessa	August 5, 2009	15.60	131.20	157%
Turbidity	Odessa	August 27, 2009	8.86	0.00	200%
Turbidity	Overton	June 24, 2009	5.21	2.80	61%
Turbidity	Overton	September 2, 2009	10.58	Malfunction	N/A
Turbidity	Overton	September 18, 2009	N/A	Malfunction	N/A
Turbidity	Shelton	April 14, 2009	3.88	0.10	190%

N/A = Not Applicable

The procedure for collecting duplicate water samples was to retrieve the sonde from the river and immediately place it in a five gallon bucket of Platte River water in the shade. The handheld



instruments used for the paired readings were than immersed in the same bucket with the sonde and permitted to equilibrate. During the equilibration period, the sonde was connected to the laptop and set to display live readings of the water quality parameters being measured. Once parameters were stabilized readings were recorded on the field data sheets.

- **Temperature** – All of the possible 120 duplicate readings were taken for temperature during the 2009 monitoring season. None of the paired readings exceeded the 50% RPD for duplicate temperature readings, minimum RPD was 0 % and maximum RPD was 11.26%.
- **Specific Conductance** – One hundred five of the possible 107 duplicate readings were taken for specific conductance during the 2009 monitoring season. None of the paired readings exceeded the 50% RPD with a minimum RPD of 0.10% and maximum RPD of 48.82%. Two duplicate readings were not completed because the specific conductance probe was malfunctioning at the time the sonde was removed from the river and a duplicate reading could not be taken.
- **pH** – One hundred eighteen of the possible 120 duplicate readings were taken for pH during the 2009 monitoring season. None of the paired readings exceeded the 50% RPD for duplicate pH readings with a minimum RPD of 0.11% and maximum RPD of 12.82%. Two duplicate readings were not completed because the pH probe was malfunctioning at the time the sonde was removed from the river and a duplicate reading could not be taken.
- **Turbidity** – One hundred one of the possible 107 duplicate readings were taken for turbidity during the 2009 monitoring season. Twenty five of the paired readings ranging from 52.51% to 200.00% exceeded the 50% RPD for duplicate turbidity readings. The minimum RPD for turbidity was 0.00%. Six duplicate readings were not completed because the turbidity probe was malfunctioning at the time the sonde was removed from the river and a duplicate reading could not be taken.
- **Dissolved Oxygen** – One hundred six of the possible 107 duplicate readings were taken for dissolved oxygen during the 2009 monitoring season. None of the paired readings exceeded the 50% RPD for duplicate dissolved oxygen readings, minimum RPD was 0.10% and maximum RPD was 46.17%. One duplicate reading was not completed because the dissolved oxygen probe was malfunctioning at the time the sonde was removed from the river and a duplicate reading could not be taken.
- **Analytical (Metals)** – Four water sampling events were performed during the 2009 monitoring season for the collection and analysis of water samples. Water samples were analyzed for dissolved copper, dissolved lead, dissolved nickel and total selenium, total calcium, and total magnesium. A duplicate water sample was collected during each sampling event for precision analysis. RPD for the metal analysis were all less than 50% ranging from a minimum of 0.73% to a maximum of 6.67%.



VI.B. Accuracy

The measure of accuracy was accomplished by using internal laboratory spikes for metal analyses performed by the laboratory and readings of calibration standards taken from the sondes. Accuracy was quantified as the percent recovery from analysis of a known concentration. This was accomplished using internal lab spikes and calculated on a per batch basis and sonde measurement of calibration standards. The data quality objective for accuracy for all measurements in the Protocol is:

$$\% \text{Recovery} = 85\% \text{ to } 115\%$$

Other checks for accuracy were accomplished through close adherence to instrument calibration procedures. A summary of duplicate readings that were outside the percent range are presented in Table 7 and all duplicate sample collection results are presented in Appendix C.

Table 7. Percent Recovery Exceedances for Spiked Sample Recoveries

Parameter	Location	Date	Spike	Sonde	% Recovery
Dissolved Oxygen	Overton	May 6, 2009	N/A	Malfunction	N/A
pH	Overton	May 6, 2009	7.00	Malfunction	N/A
pH	Overton	May 6, 2009	10.00	Malfunction	N/A
pH	Kearney	August 5, 2009	7.00	Malfunction	N/A
pH	Kearney	August 5, 2009	10.00	Malfunction	N/A
Specific Conductance	Odessa	June 24, 2009	1.413	Malfunction	N/A
Turbidity	Duncan	April 14, 2009	123	22.10	18 %
Turbidity	Duncan	June 23, 2009	123	Malfunction	N/A
Turbidity	Shelton	April 14, 2009	123	173.90	141 %
Turbidity	Kearney	April 14, 2009	123	163.00	133 %
Turbidity	Odessa	August 17, 2009	100	68.60	69%

N/A = Not applicable

Accuracy readings were collected after duplicate readings had been taken and the sonde and probes were cleaned. The sonde was placed in known (spiked) standards and the sonde parameter reading in the standard (spike) was recorded on the field data sheets to measure accuracy.

- **Specific Conductance** – One-hundred of the possible 101 accuracy readings were taken for specific conductance during the 2009 monitoring season. None of the 100 spiked specific conductance readings for accuracy exceeded the 85 to 115% recovery range. One accuracy reading for specific conductance was not obtained due to a malfunctioning sonde.
- **pH** – Two-hundred-twenty-two of the possible 226 accuracy readings were taken for pH during the 2009 monitoring season. None of the 222 spiked pH readings for accuracy



exceeded the 85 to 115% recovery range. Four accuracy readings for pH were not obtained due to a malfunctioning sonde.

- **Turbidity** – One-hundred of the possible 101 accuracy readings were taken for turbidity during the 2009 monitoring season. Four of the 100 spiked turbidity readings for accuracy exceeded the accuracy range of 85 to 115%. One accuracy reading for turbidity was not obtained due to a malfunctioning sonde.
- **Dissolved Oxygen** – One-hundred of the possible 101 accuracy readings were taken for dissolved oxygen during the 2009 monitoring season. None of the 100 spiked dissolved oxygen readings for accuracy exceeded the 85 to 115% recovery range. One accuracy reading for dissolved oxygen was not obtained due to a malfunctioning sonde.

VI.C. Representativeness

- **Continuous Water Quality Data**

Representativeness was addressed by adhering to the Protocol procedures (e.g., collecting a composite sample), manufacturer calibration procedures, and a sampling plan which describes appropriate location, time, and conditions for data collection. Any condition that may result in a “non-representative sample” was noted on the field data sheet and was evaluated during the data review process. A review of the field data sheets (Appendix D) revealed several “conditions” which resulted in “non-representative” data points being collected.

Temperature and pH were found to be consistent and stable during the monitoring program and minimally affected by environmental conditions of the river. Environmental conditions resulting in non-representative data being collected in the Platte River included: burial of the sonde in sediment, sediment accumulation in the specific conductance measurement cell, algal growth on optical aperture of the dissolved oxygen and turbidity probes, and insect colonization on all the probes particularly the dissolved oxygen and turbidity probes. The raw data in combination with the field data sheets were reviewed to determine what data is “non-representative” of the Platte River. Any data that was non-representative was not included in the summary data.

- **Discrete Water Quality Data**

Representativeness, accuracy, and completeness were assessed by the collection of the field/equipment blanks during each of the four discrete water sampling events. The analytical results for the blanks were used to assess cleaning of sampling equipment between locations and container and preservative contamination. Four field/equipment blanks were collected and submitted for analytical analysis. Positive detections of analytes are presented in Table 8 and complete analytical results are presented in Appendix C.



Table 8. Reported Metals in Field/Equipment Blank Samples

Blank ID	Date	Analyte	Results (mg/L)	MDL/RL (mg/L)
FB200905	May 6, 2009	Total Calcium	1.970	0.0195/1.00
FB200905	May 6, 2009	Total Magnesium	0.840 J	0.0104/1.00
FB200906	June 24, 2009	Total Calcium	1.950	0.0195/1.00
FB200906	June 24, 2009	Total Magnesium	0.757 J	0.0104/1.00
FB200909	September 18, 2009	Total Calcium	0.334 J	0.0195/1.00
FB200909	September 18, 2009	Total Magnesium	0.0901 J	0.0104/1.00

J – Indicates reported value is greater than MDL but less than the RL

MDL – Method Detection Limit

RL – Reporting Limit

To determine a positive detection of an analyte in the field blank the result needs to be compared to the results of the environmental samples collected during that event. Four discrete water quality sampling events were performed, which resulted in the collection of thirty-six environmental samples for analysis. The minimum reported total calcium in any environmental sample was 50.2 mg/L in a sample collected from Louisville on July 20, 2009 and the minimum reported total magnesium in any environmental sample was 13.0 mg/L in a sample collected from Louisville on September 17, 2009. The lowest reported concentration for total calcium in any environmental sample is approximately 25 times higher than the maximum reported concentration in a field blank and the lowest reported concentration for total magnesium in any environmental sample is approximately 15 times higher than the maximum reported concentration in a field blank. These high factors indicate that reported total calcium and magnesium in the blank samples do not indicate cross contamination of sample water between sites from the sampling equipment and that the sample containers and preservative were not contaminated with the target analytes.

VI.D. Comparability

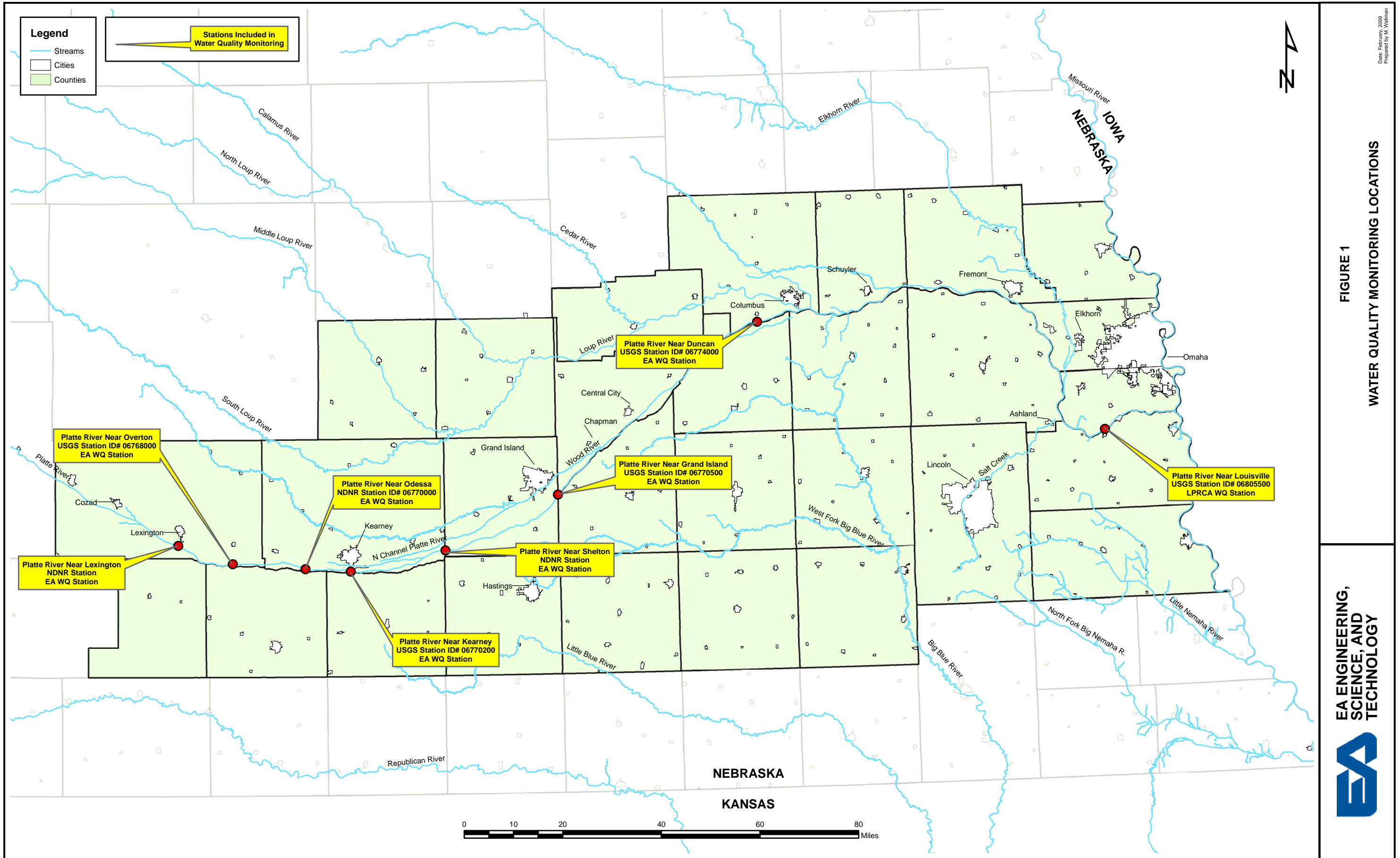
The comparability of the data can be affected by several factors including changes in sample locations, parameters, collection, or analytical techniques, etc. Quality assurance procedures were incorporated throughout the Protocol to help assure that comparable data was obtained. These quality assurance procedures included: written descriptions of all sample locations; assignment of sampling responsibilities to the same personnel or the appropriate training for new personnel; establishment of a set parameter list; and description of data collection, analysis, and assessment procedures. Adherence to these procedures was closely evaluated during the data quality review process.

VI.E. Completeness

Completeness refers to the amount of data necessary to meet the monitoring objectives. To help ensure that all of the designed monitoring data and water samples were collected, a sampling schedule was prepared and distributed. An inventory and a review process was implemented to maintain data collected, and routinely checked for potential errors, missing data, and missing



information on field data sheets. It was the responsibility of the sample collector to make sure field data sheets were completely and accurately filled out and to report missing data from the sondes.



Legend

- Streams
- Cities
- Counties

Stations Included in Water Quality Monitoring



FIGURE 1
WATER QUALITY MONITORING LOCATIONS

Date: February, 2009
 Prepared by: M. Wainman



APPENDIX A

Tables



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Table A-1. Temperature, Platte River, Louisville, NE

Date	Temperature, °C					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	8.3	3.9	14.0	8.3	672	2.8
3/30/2009	7.5	3.8	10.7	7.5	672	1.8
4/6/2009	7.8	2.1	11.8	8.3	666	2.5
4/13/2009	13.0	8.5	17.6	13.0	672	2.4
4/20/2009	16.7	11.4	22.8	16.6	511	3.0
4/27/2009	14.7	10.1	19.6	14.6	622	2.3
5/4/2009	18.8	15.8	22.8	18.6	662	1.6
5/11/2009	17.0	13.3	20.2	16.9	664	1.5
5/18/2009	21.7	14.6	27.4	21.8	668	2.9
5/25/2009	21.9	16.2	27.2	22.4	663	2.8
6/1/2009	22.3	18.9	26.6	21.9	669	1.8
6/8/2009	19.8	17.4	23.2	19.9	666	1.4
6/15/2009	25.2	21.3	27.7	25.7	666	1.5
6/22/2009	28.5	25.2	32.2	28.4	672	1.7
6/29/2009	26.0	21.6	29.7	26.2	664	2.0
7/6/2009	26.6	23.9	29.5	26.6	665	1.4
7/13/2009	25.7	21.4	29.8	25.8	666	2.0
7/20/2009	25.7	20.9	31.1	25.6	671	2.8
7/27/2009	24.6	21.2	28.5	24.6	665	1.9
8/3/2009	27.1	22.9	31.0	27.1	671	2.0
8/10/2009	26.5	23.0	30.6	26.3	662	1.9
8/17/2009	23.7	19.6	27.5	23.9	669	1.8
8/24/2009	23.3	19.7	26.7	23.3	670	1.7
8/31/2009	20.6	17.9	25.2	20.3	669	1.7
9/7/2009	23.5	20.7	26.9	23.3	669	1.5
9/14/2009	22.5	19.4	25.6	22.4	672	1.5
9/21/2009	18.6	15.6	21.4	18.5	668	1.4
9/28/2009	15.5	12.9	18.0	15.4	336	1.1

Table A-2. Specific Conductance, Platte River, Louisville, NE

Date	Specific Conductance, mS/cm					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	0.583	0.537	0.617	0.582	672	0.019
3/30/2009	0.604	0.569	0.664	0.598	672	0.021
4/6/2009	0.593	0.559	0.675	0.586	666	0.024
4/13/2009	0.557	0.513	0.600	0.558	672	0.018
4/20/2009	0.549	0.501	0.613	0.537	477	0.033
4/27/2009	0.581	0.501	0.682	0.586	588	0.042
5/4/2009	0.576	0.443	0.644	0.572	576	0.036
5/11/2009	0.552	0.514	0.600	0.549	664	0.018
5/18/2009	0.571	0.488	0.662	0.570	668	0.042
5/25/2009	0.625	0.499	0.952	0.607	663	0.087
6/1/2009	0.610	0.412	1.220	0.608	669	0.112
6/8/2009	0.498	0.359	0.741	0.512	666	0.072
6/15/2009	0.457	0.286	0.579	0.460	666	0.054
6/22/2009	0.598	0.357	0.752	0.628	672	0.091
6/29/2009	0.715	0.601	0.994	0.711	664	0.060
7/6/2009	0.656	0.516	0.747	0.659	665	0.051
7/13/2009	0.625	0.401	0.855	0.680	401	0.152
7/20/2009	0.660	0.513	0.791	0.664	626	0.063
7/27/2009	0.518	0.252	0.706	0.513	434	0.089
8/3/2009	0.513	0.261	1.240	0.448	621	0.187
8/10/2009	0.559	0.375	1.020	0.530	662	0.128
8/17/2009	0.475	0.358	0.882	0.458	669	0.080
8/24/2009	0.674	0.480	1.280	0.646	649	0.137
8/31/2009	0.678	0.415	1.290	0.667	649	0.124
9/7/2009	0.755	0.529	0.945	0.765	669	0.104
9/14/2009	0.629	0.261	0.854	0.643	661	0.126
9/21/2009	0.768	0.526	0.994	0.760	668	0.092
9/28/2009	0.733	0.519	0.880	0.755	336	0.085



Table A-3. pH, Platte River, Louisville, NE

Date	pH					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009						
3/30/2009						
4/6/2009						
4/13/2009						
4/20/2009						
4/27/2009	9.2	9.1	9.3	9.2	69	0.1
5/4/2009	9.2	8.9	9.5	9.2	336	0.1
5/11/2009	9.1	8.8	9.6	9.1	336	0.2
5/18/2009	9.3	8.4	9.7	9.3	334	0.3
5/25/2009	8.8	8.2	9.2	8.8	336	0.2
6/1/2009	8.8	7.7	9.2	8.9	336	0.4
6/8/2009	8.1	7.6	8.5	8.2	334	0.3
6/15/2009	8.2	7.6	8.7	8.1	336	0.2
6/22/2009	8.2	7.7	8.8	8.2	334	0.3
6/29/2009	8.7	8.5	8.9	8.7	336	0.1
7/6/2009	8.9	8.3	9.2	8.9	335	0.2
7/13/2009	8.8	8.5	9.1	8.7	336	0.2
7/20/2009	8.9	8.6	9.1	8.9	335	0.1
7/27/2009	8.9	8.6	9.2	8.9	336	0.2
8/3/2009	8.9	8.5	9.3	8.9	335	0.2
8/10/2009	8.6	8.2	9.0	8.5	336	0.2
8/17/2009	8.5	7.5	9.1	8.4	336	0.3
8/24/2009	8.8	7.9	9.3	8.8	335	0.3
8/31/2009	8.6	7.9	9.0	8.7	336	0.3
9/7/2009	8.8	8.5	9.2	8.8	195	0.2
9/14/2009	8.9	8.7	9.2	8.9	335	0.1
9/21/2009	9.0	8.8	9.2	9.0	335	0.1
9/28/2009	9.1	8.8	9.2	9.1	162	0.1

Table A-4. Turbidity, Platte River, Louisville, NE

Date	Turbidity, NTU					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	144	65	380	120	669	75
3/30/2009	77	56	110	76	671	9
4/6/2009	97	65	160	86	642	26
4/13/2009	89	57	150	84	660	25
4/20/2009	73	55	100	71	480	11
4/27/2009	53	38	83	52	564	7
5/4/2009	60	25	100	60	597	8
5/11/2009	52	14	90	52	566	9
5/18/2009	48	30	88	47	586	9
5/25/2009	85	30	210	61	472	48
6/1/2009	163	43	1,290	77	589	230
6/8/2009	521	180	1,290	450	609	283
6/15/2009	597	160	1,300	660	535	284
6/22/2009	327	33	1,290	190	508	286
6/29/2009	171	99	460	160	387	39
7/6/2009	100	75	210	100	566	14
7/13/2009	187	59	1310	92	589	173
7/20/2009	78	42	520	72	620	41
7/27/2009	64	46	220	62	631	15
8/3/2009	206	51	760	120	634	155
8/10/2009	137	66	680	100	628	101
8/17/2009	217	120	690	200	641	66
8/24/2009	202	66	830	150	659	145
8/31/2009	168	57	1,270	110	610	164
9/7/2009	92	50	200	86	663	29
9/14/2009	87	62	150	80	94	23
9/21/2009	79	50	110	81	528	14
9/28/2009	90	62	120	91	336	16



Table A-5. Dissolved Oxygen, Platte River, Louisville, NE

Dissolved Oxygen, mg/L						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	11.1	9.7	12.3	11.0	672	0.8
3/30/2009	11.4	10.6	12.4	11.4	672	0.4
4/6/2009	11.3	10.3	13.1	10.9	665	0.9
4/13/2009	10.1	9.2	10.7	10.1	672	0.4
4/20/2009	9.9	8.0	11.8	9.8	507	0.9
4/27/2009	11.0	8.9	13.4	10.9	621	1.2
5/4/2009	10.6	7.6	14.2	10.2	661	2.0
5/11/2009	11.2	8.2	15.8	10.8	663	2.3
5/18/2009	11.3	6.4	16.7	11.0	648	3.2
5/25/2009	9.7	6.5	13.8	9.5	662	2.1
6/1/2009	8.6	5.9	13.6	8.1	342	1.8
6/8/2009	8.3	6.8	9.4	8.3	604	0.5
6/15/2009	7.2	5.6	9.8	7.0	665	0.8
6/22/2009	6.3	4.7	9.0	6.3	662	0.7
6/29/2009	8.5	4.0	12.3	8.3	660	1.7
7/6/2009	9.2	6.2	14.3	8.8	654	2.2
7/13/2009	9.8	4.0	13.9	9.4	493	2.3
7/20/2009	10.0	6.2	17.4	8.9	625	3.0
7/27/2009	10.4	6.4	16.5	9.8	634	3.0
8/3/2009	9.3	5.3	16.8	8.2	670	3.0
8/10/2009	8.4	5.1	12.2	8.1	660	1.7
8/17/2009	8.1	6.0	10.8	8.0	669	1.1
8/24/2009	8.1	6.5	10.3	7.9	669	1.0
8/31/2009	8.8	7.2	11.8	8.3	668	1.1
9/7/2009	9.1	7.1	13.5	8.5	668	1.9
9/14/2009	9.1	7.3	13.2	8.6	672	1.7
9/21/2009	9.6	7.5	12.9	9.2	667	1.4
9/28/2009	10.0	8.3	12.7	9.5	336	1.2

Table A-6. Discharge, Platte River, Louisville, NE

Discharge, cfs						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	8,759	6,570	12,400	8,530	254	1,260
3/30/2009	7,909	6,060	9,950	7,840	235	798
4/6/2009	8,742	7,190	11,100	8,665	256	681
4/13/2009	9,431	8,210	10,900	9,460	247	716
4/20/2009	9,015	7,950	10,200	8,920	239	647
4/27/2009	8,225	6,950	9,580	8,210	238	604
5/4/2009	7,509	6,340	8,800	7,440	231	650
5/11/2009	6,721	5,890	7,590	6,710	250	466
5/18/2009	5,728	4,740	7,190	5,710	245	598
5/25/2009	5,442	4,700	6,380	5,370	248	471
6/1/2009	5,579	4,280	8,530	5,290	250	1,068
6/8/2009	9,430	6,380	18,400	8,420	270	2,855
6/15/2009	15,081	7,540	24,200	16,200	245	4,419
6/22/2009	12,848	8,160	25,800	11,800	264	3,821
6/29/2009	9,447	7,000	13,800	9,210	253	1,484
7/6/2009	7,645	6,110	10,000	7,590	221	887
7/13/2009	6,049	4,810	7,540	6,020	249	685
7/20/2009	5,630	4,350	7,090	5,620	239	704
7/27/2009	4,572	3,480	6,200	4,520	261	675
8/3/2009	4,318	3,210	5,750	4,350	249	639
8/10/2009	5,438	4,100	7,490	5,450	247	764
8/17/2009	7,641	5,000	13,100	7,090	270	1,869
8/24/2009	6,710	4,780	10,200	6,610	279	1,193
8/31/2009	5,963	4,450	8,690	5,690	252	1,096
9/7/2009	5,365	4,450	6,850	5,330	258	618
9/14/2009	5,276	4,240	6,570	5,200	260	608
9/21/2009	5,374	4,140	6,430	5,500	258	668
9/28/2009	5,389	4,210	6,470	5,500	195	623



Table A-7. Temperature, Platte River, Duncan, NE

Temperature, °C						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	5.3	-0.1	13.1	5.3	172	3.4
3/30/2009	7.2	0.0	15.2	6.8	336	3.6
4/6/2009	8.3	1.1	15.2	8.2	336	3.2
4/13/2009	13.7	7.9	19.4	13.7	332	2.9
4/20/2009	15.5	10.3	23.0	15.0	336	3.4
4/27/2009	14.7	9.5	20.9	14.6	333	2.8
5/4/2009	17.9	12.3	25.2	17.4	334	2.9
5/11/2009	16.5	10.9	23.1	15.7	336	2.9
5/18/2009	20.7	12.9	30.1	20.3	336	4.0
5/25/2009	20.8	11.8	29.8	20.8	335	4.7
6/1/2009	20.9	12.9	31.1	20.6	336	3.8
6/8/2009	19.4	15.9	27.3	18.8	333	2.5
6/15/2009	25.6	20.2	30.7	25.4	336	2.5
6/22/2009	28.5	23.9	32.8	28.5	334	1.9
6/29/2009	25.8	19.9	31.4	25.4	334	2.6
7/6/2009	27.4	23.0	32.9	27.2	334	2.7
7/13/2009	25.9	18.5	33.1	25.8	336	3.7
7/20/2009	26.0	20.1	35.9	25.2	333	4.1
7/27/2009	24.0	17.8	33.1	23.9	336	3.4
8/3/2009	26.9	20.4	34.8	26.2	333	4.0
8/10/2009	26.0	20.8	33.9	25.7	336	3.1
8/17/2009	23.4	17.8	32.5	22.5	334	3.7
8/24/2009	23.1	15.9	32.7	22.6	327	3.7
8/31/2009	20.5	14.5	28.9	19.6	335	3.4
9/7/2009	22.0	17.1	29.0	21.4	334	3.2
9/14/2009	21.3	16.5	26.6	21.1	335	2.8
9/21/2009	17.6	13.6	22.9	17.5	334	2.3
9/28/2009	14.6	10.4	19.3	15.1	168	2.3

Table A-8. Specific Conductance, Platte River, Duncan, NE

Specific Conductance, mS/cm						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	0.842	0.782	0.901	0.846	14	0.039
3/30/2009						
4/6/2009						
4/13/2009	0.815	0.755	0.884	0.808	137	0.032
4/20/2009	0.777	0.705	0.818	0.784	93	0.028
4/27/2009	0.772	0.726	0.825	0.774	151	0.033
5/4/2009	0.803	0.767	0.816	0.804	49	0.008
5/11/2009						
5/18/2009						
5/25/2009	0.910	0.872	0.957	0.913	156	0.024
6/1/2009	0.800	0.720	0.911	0.774	213	0.053
6/8/2009	0.818	0.763	0.864	0.820	131	0.031
6/15/2009	0.865	0.804	0.913	0.855	92	0.035
6/22/2009	0.854	0.805	0.887	0.859	111	0.020
6/29/2009	0.838	0.799	0.880	0.841	213	0.018
7/6/2009	0.862	0.811	0.923	0.864	300	0.025
7/13/2009	0.848	0.813	0.908	0.850	184	0.021
7/20/2009	0.838	0.741	0.933	0.833	175	0.045
7/27/2009						
8/3/2009	0.862	0.742	0.935	0.872	224	0.042
8/10/2009	0.861	0.848	0.880	0.862	44	0.007
8/17/2009	0.881	0.788	0.945	0.885	259	0.032
8/24/2009	0.884	0.704	0.942	0.889	296	0.044
8/31/2009	0.912	0.848	0.931	0.916	72	0.019
9/7/2009	0.926	0.828	0.964	0.920	214	0.032
9/14/2009	0.908	0.778	0.952	0.916	335	0.030
9/21/2009	0.953	0.914	0.981	0.956	72	0.016
9/28/2009	0.988	0.983	0.992	0.988	2	0.006



Table A-9. pH, Platte River, Duncan, NE

Date	pH					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	7.9	7.5	8.4	7.9	172	0.2
3/30/2009	7.9	7.3	8.4	7.9	336	0.2
4/6/2009	7.7	7.0	8.6	7.7	336	0.4
4/13/2009	8.0	7.3	8.6	7.9	332	0.3
4/20/2009	8.1	7.5	8.8	8.2	336	0.3
4/27/2009	8.4	7.8	8.7	8.4	333	0.2
5/4/2009	8.5	8.2	8.6	8.5	334	0.1
5/11/2009	8.5	8.3	8.7	8.5	336	0.1
5/18/2009	8.6	8.2	8.9	8.6	336	0.1
5/25/2009	8.5	7.6	8.9	8.5	335	0.3
6/1/2009	8.5	7.4	9.1	8.7	328	0.4
6/8/2009	8.4	7.9	8.7	8.4	236	0.1
6/15/2009	8.6	8.1	9.1	8.6	336	0.2
6/22/2009	8.6	8.3	9.1	8.6	334	0.2
6/29/2009	8.8	8.5	9.1	8.8	334	0.2
7/6/2009	8.7	8.4	9.0	8.7	334	0.2
7/13/2009	8.9	8.6	9.1	8.8	336	0.1
7/20/2009	8.7	8.0	9.3	8.8	333	0.3
7/27/2009	8.5	8.2	8.8	8.5	187	0.2
8/3/2009	8.8	8.1	9.1	8.9	333	0.2
8/10/2009	8.5	8.1	9.2	8.5	336	0.2
8/17/2009	8.5	7.2	9.1	8.7	334	0.5
8/24/2009	8.7	8.1	9.2	8.8	327	0.2
8/31/2009	8.7	8.2	9.0	8.7	335	0.2
9/7/2009	8.7	8.1	9.2	8.7	334	0.2
9/14/2009	8.6	8.0	9.3	8.6	335	0.3
9/21/2009	8.4	8.1	8.9	8.4	334	0.2
9/28/2009	8.2	8.0	8.5	8.2	168	0.1

Table A-10. Turbidity, Platte River, Duncan, NE

Date	Turbidity, NTU					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	2	1	5	2	24	1
3/30/2009						
4/6/2009						
4/13/2009	109	1	995	15	150	221
4/20/2009	327	4	1,008	147	325	358
4/27/2009	231	11	976	40	290	270
5/4/2009	66	12	960	22	107	157
5/11/2009	21	10	87	20	279	11
5/18/2009	23	10	88	19	162	14
5/25/2009	14	4	100	11	260	10
6/1/2009	15	8	127	13	206	11
6/8/2009	63	24	426	55	111	59
6/15/2009	68	25	189	68	276	28
6/22/2009	32	23	254	26	70	29
6/29/2009	48	0	93	46	198	9
7/6/2009	208	44	1,261	123	313	266
7/13/2009						
7/20/2009	46	23	96	42	302	16
7/27/2009	41	29	84	37	200	11
8/3/2009	43	27	93	37	295	14
8/10/2009	32	26	38	32	21	3
8/17/2009	62	32	89	61	93	15
8/24/2009	65	33	378	56	270	33
8/31/2009	32	15	72	27	193	12
9/7/2009	38	23	102	31	334	12
9/14/2009	99	49	191	97	334	40
9/21/2009	39	21	72	36	334	11
9/28/2009	19	15	28	20	168	2



Table A-11. Dissolved Oxygen, Platte River, Duncan, NE

Dissolved Oxygen, mg/L						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	12.1	8.2	13.6	12.1	155	1.0
3/30/2009	10.5	9.0	12.0	10.5	33	0.9
4/6/2009						
4/13/2009						
4/20/2009						
4/27/2009	9.4	7.3	10.7	9.3	145	0.8
5/4/2009	9.0	6.3	10.8	9.0	323	1.1
5/11/2009	9.7	8.0	11.0	9.6	336	0.9
5/18/2009	9.2	7.2	11.4	9.1	336	1.2
5/25/2009	9.2	6.7	11.2	9.5	276	1.4
6/1/2009	9.6	6.8	12.2	9.7	220	1.7
6/8/2009	9.3	6.1	11.1	9.3	204	1.1
6/15/2009	10.2	4.7	16.0	9.5	316	2.9
6/22/2009	8.9	5.2	13.3	8.4	254	2.4
6/29/2009	9.3	6.6	13.3	8.9	334	2.1
7/6/2009	8.1	6.3	11.5	7.8	334	1.4
7/13/2009	8.0	5.0	10.7	7.9	336	1.3
7/20/2009	8.5	4.4	12.4	8.0	333	1.9
7/27/2009	8.3	4.3	11.6	7.9	206	1.8
8/3/2009	7.9	4.1	11.4	7.6	330	1.7
8/10/2009	8.6	5.9	12.4	8.9	69	1.6
8/17/2009	8.4	5.8	10.8	8.0	169	1.4
8/24/2009	8.8	6.1	13.3	8.2	320	1.7
8/31/2009	9.3	7.1	12.4	8.8	331	1.4
9/7/2009	9.0	7.0	13.1	8.3	334	1.6
9/14/2009	9.2	6.8	14.1	8.5	335	1.9
9/21/2009	9.9	7.4	12.1	9.5	334	1.2
9/28/2009	10.1	9.1	11.3	10.1	168	0.6

Table A-12. Discharge, Platte River, Duncan, NE

Discharge, cfs						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	1172	849	1,980	1,050	672	331
3/30/2009	929	767	1,550	849	672	184
4/6/2009	1176	973	1,670	1,090	672	203
4/13/2009	1407	992	2,060	1,280	672	334
4/20/2009	2750	1,640	3,730	2,820	672	696
4/27/2009	2257	1,590	2,880	2,285	672	337
5/4/2009	1917	1,240	2,580	1,980	672	457
5/11/2009	1219	919	1,430	1,240	672	134
5/18/2009	576	381	919	535	672	136
5/25/2009	399	326	458	405	672	41
6/1/2009	558	336	1,280	393	672	302
6/8/2009	1304	1,120	1,640	1,240	647	143
6/15/2009	2536	1,120	4,510	2,300	672	1,000
6/22/2009	3775	3,010	4,550	3,690	672	427
6/29/2009	2417	2,060	3,040	2,300	672	306
7/6/2009	1410	901	2,090	1,350	672	284
7/13/2009	701	579	901	690	672	82
7/20/2009	699	593	992	676	672	89
7/27/2009	454	277	633	458	671	105
8/3/2009	384	296	516	370	672	43
8/10/2009	341	286	447	326	672	48
8/17/2009	439	370	481	447	672	29
8/24/2009	307	216	426	316	672	57
8/31/2009	198	185	232	192	672	10
9/7/2009	188	157	305	178	672	23
9/14/2009	564	241	736	593	672	116
9/21/2009	767	593	937	767	672	103
9/28/2009	808	736	955	799	479	31



Table A-13. Temperature, Platte River, Grand Island, NE

Temperature, °C						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	5.9	-0.1	14.9	5.7	167	4.1
3/30/2009	7.8	1.2	18.4	7.3	336	4.1
4/6/2009	8.7	0.1	20.2	8.8	336	4.3
4/13/2009	13.9	7.2	22.0	13.6	334	3.4
4/20/2009	16.1	9.7	24.6	16.0	336	4.2
4/27/2009	15.0	8.9	22.3	14.9	334	3.0
5/4/2009	18.1	12.6	25.0	17.9	331	3.2
5/11/2009	17.0	11.8	22.7	16.6	336	2.4
5/18/2009	20.0	13.7	27.3	19.4	336	2.9
5/25/2009	21.3	12.8	31.5	20.9	333	4.9
6/1/2009	19.9	14.3	29.6	19.4	336	3.5
6/8/2009	18.4	14.4	25.7	18.2	335	2.2
6/15/2009	24.8	19.7	29.7	24.8	336	2.7
6/22/2009	28.1	23.6	32.7	28.2	335	2.0
6/29/2009	25.9	21.1	30.7	25.5	336	2.4
7/6/2009	27.5	23.5	34.8	26.5	334	2.8
7/13/2009	26.1	20.4	33.9	25.9	336	3.0
7/20/2009	25.8	19.5	33.8	25.0	335	3.6
7/27/2009	23.7	17.5	30.8	23.5	336	3.2
8/3/2009	26.7	20.0	33.8	26.2	334	3.3
8/10/2009	26.1	21.0	32.9	25.4	336	3.0
8/17/2009	23.6	17.4	30.7	23.5	334	3.2
8/24/2009	23.2	15.5	31.4	23.0	331	3.4
8/31/2009	20.5	15.1	27.4	20.0	332	2.6
9/7/2009	22.1	17.6	29.2	21.4	334	2.7
9/14/2009	21.2	16.8	28.6	21.4	335	1.9
9/21/2009	17.2	13.1	22.4	17.1	333	2.1
9/28/2009	15.2	11.2	18.7	15.6	173	2.0

Table A-14. Specific Conductance, Platte River, Grand Island, NE

Specific Conductance, mS/cm						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	0.895	0.801	0.990	0.906	40	0.074
3/30/2009						
4/6/2009						
4/13/2009	0.903	0.803	0.971	0.950	134	0.066
4/20/2009						
4/27/2009	0.849	0.802	0.912	0.848	9	0.040
5/4/2009	0.919	0.829	0.950	0.920	200	0.018
5/11/2009	0.823	0.751	0.920	0.816	205	0.039
5/18/2009						
5/25/2009	0.949	0.816	1.012	0.969	202	0.048
6/1/2009	0.868	0.805	0.969	0.875	58	0.046
6/8/2009	0.915	0.829	0.956	0.921	15	0.039
6/15/2009	0.864	0.800	0.903	0.866	163	0.025
6/22/2009	0.933	0.800	0.988	0.949	315	0.047
6/29/2009	0.909	0.845	0.946	0.922	114	0.029
7/6/2009	0.960	0.803	1.034	0.958	185	0.032
7/13/2009	0.933	0.848	1.000	0.932	6	0.054
7/20/2009	0.937	0.813	1.030	0.929	300	0.053
7/27/2009	0.864	0.799	0.914	0.874	202	0.032
8/3/2009	0.848	0.788	0.931	0.847	183	0.038
8/10/2009						
8/17/2009	0.891	0.819	0.958	0.893	205	0.037
8/24/2009	0.912	0.734	0.976	0.934	212	0.051
8/31/2009	0.965	0.778	0.994	0.973	332	0.030
9/7/2009	0.936	0.802	0.988	0.954	334	0.043
9/14/2009	0.982	0.882	1.016	0.991	333	0.025
9/21/2009	0.951	0.862	0.997	0.953	333	0.029
9/28/2009	0.961	0.944	0.976	0.961	172	0.006



Table A-15. pH, Platte River, Grand Island, NE

pH						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	8.4	8.4	8.5	8.4	167	0.0
3/30/2009	8.4	8.2	8.7	8.4	336	0.1
4/6/2009	8.4	8.1	8.6	8.4	336	0.1
4/13/2009	8.5	8.3	8.7	8.5	334	0.1
4/20/2009	8.2	8.0	8.6	8.2	336	0.1
4/27/2009	8.3	8.0	8.6	8.3	334	0.1
5/4/2009	8.5	8.2	8.7	8.5	331	0.1
5/11/2009	8.5	8.4	8.7	8.5	336	0.1
5/18/2009	8.5	8.2	8.7	8.5	213	0.1
5/25/2009	8.5	8.1	8.7	8.5	333	0.1
6/1/2009	8.4	8.0	8.7	8.4	276	0.1
6/8/2009	8.4	8.1	8.7	8.4	110	0.1
6/15/2009	8.6	8.2	9.0	8.5	253	0.2
6/22/2009	8.5	8.2	8.9	8.6	335	0.2
6/29/2009	8.5	8.2	8.9	8.5	336	0.2
7/6/2009	8.5	7.8	8.9	8.5	252	0.3
7/13/2009	8.4	7.9	8.8	8.3	128	0.2
7/20/2009	8.5	8.1	8.9	8.6	303	0.2
7/27/2009	8.5	8.1	8.8	8.5	336	0.2
8/3/2009	8.6	8.2	9.0	8.6	309	0.2
8/10/2009	8.6	8.2	8.9	8.6	265	0.2
8/17/2009	8.7	8.1	9.1	8.8	334	0.2
8/24/2009	8.6	8.0	8.9	8.6	288	0.2
8/31/2009	8.6	8.3	8.8	8.6	246	0.1
9/7/2009	8.6	8.4	8.9	8.6	334	0.1
9/14/2009	8.7	8.5	8.8	8.7	334	0.1
9/21/2009	8.5	8.3	8.7	8.5	333	0.1
9/28/2009	8.5	8.4	8.8	8.5	173	0.0

Table A-16. Turbidity, Platte River, Grand Island, NE

Turbidity, NTU						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	5	3	11	5	166	1
3/30/2009	12	4	61	8	79	11
4/6/2009						
4/13/2009	40	4	244	39	258	32
4/20/2009	112	8	1,051	20	323	198
4/27/2009	55	6	400	12	326	79
5/4/2009	18	7	83	14	270	12
5/11/2009	22	11	85	19	240	9
5/18/2009	22	10	57	19	42	12
5/25/2009	20	9	138	16	225	15
6/1/2009	32	11	90	21	87	22
6/8/2009	39	34	49	38	19	4
6/15/2009	49	25	285	37	177	29
6/22/2009	26	17	149	25	329	11
6/29/2009	222	33	1,169	57	329	319
7/6/2009	65	32	86	65	254	10
7/13/2009	39	29	59	37	24	8
7/20/2009	74	48	237	66	288	23
7/27/2009	49	27	99	47	171	13
8/3/2009	53	34	147	50	206	15
8/10/2009	59	44	87	48	9	17
8/17/2009						
8/24/2009	84	47	198	69	154	33
8/31/2009	69	39	194	64	216	26
9/7/2009	118	64	305	83	333	67
9/14/2009	75	37	141	66	332	25
9/21/2009	44	23	68	43	332	9
9/28/2009	35	26	67	35	173	5



Table A-17. Dissolved Oxygen, Platte River, Grand Island, NE

Dissolved Oxygen, mg/L						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	12.2	10.4	13.7	12.2	167	0.9
3/30/2009	11.2	8.2	13.2	11.3	334	1.0
4/6/2009	11.1	8.9	13.6	11.2	336	1.0
4/13/2009	10.1	8.5	11.9	10.1	334	0.9
4/20/2009	9.2	7.0	11.0	9.3	335	1.1
4/27/2009	9.6	8.2	11.4	9.6	334	0.8
5/4/2009	9.0	7.7	10.4	8.9	331	0.8
5/11/2009	9.3	8.0	10.7	9.2	336	0.6
5/18/2009	8.3	5.7	9.9	8.4	175	0.9
5/25/2009	8.4	5.7	10.1	8.7	321	1.1
6/1/2009	8.2	5.5	10.0	8.1	260	1.0
6/8/2009	8.2	6.2	9.5	7.9	56	0.9
6/15/2009	8.5	4.8	12.9	7.8	220	1.9
6/22/2009	8.3	5.8	12.5	7.8	335	2.0
6/29/2009	9.1	5.6	14.0	8.8	249	2.4
7/6/2009	7.8	5.2	10.8	7.3	234	1.6
7/13/2009	7.4	5.3	10.3	6.9	54	1.3
7/20/2009	8.9	6.2	13.0	8.4	305	2.1
7/27/2009	8.5	6.1	12.0	8.1	279	1.6
8/3/2009	8.3	5.7	11.9	7.7	299	1.8
8/10/2009	8.1	5.4	11.7	7.8	212	1.6
8/17/2009	8.8	6.1	12.6	8.0	316	1.9
8/24/2009	8.9	5.7	12.4	8.4	274	1.7
8/31/2009	9.0	6.2	11.0	8.6	230	1.2
9/7/2009	9.0	7.2	11.9	8.1	334	1.5
9/14/2009	8.8	7.4	11.0	8.5	334	1.1
9/21/2009	9.5	7.7	11.7	9.4	333	0.8
9/28/2009	9.9	8.8	11.1	9.9	173	0.7

Table A-18. Discharge, Platte River, Grand Island, NE

Discharge, cfs						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	809	687	1,490	741	672	174
3/30/2009	854	596	1,450	687	672	256
4/6/2009	985	709	1,630	878	672	277
4/13/2009	1,357	752	2,350	1,450	672	475
4/20/2009	2,400	1,260	3,510	2,630	672	814
4/27/2009	1,998	1,540	2,320	2,040	672	247
5/4/2009	1,433	914	2,110	1,300	672	397
5/11/2009	892	606	1,210	950	572	175
5/18/2009	466	393	667	433	672	71
5/25/2009	510	425	567	521	672	36
6/1/2009	522	393	866	459	672	128
6/8/2009	601	476	926	567	672	109
6/15/2009	1,787	785	2,630	1,650	672	572
6/22/2009	2,599	2,090	3,100	2,530	672	250
6/29/2009	1,706	1,200	2,130	1,660	672	240
7/6/2009	992	606	1,240	1,060	672	187
7/13/2009	532	476	656	511	663	47
7/20/2009	616	476	808	606	672	92
7/27/2009	473	393	656	450	672	58
8/3/2009	493	425	567	494	672	29
8/10/2009	420	362	494	417	672	33
8/17/2009	544	433	636	539	672	60
8/24/2009	440	362	646	425	672	63
8/31/2009	361	325	442	354	672	23
9/7/2009	438	325	785	369	672	142
9/14/2009	828	709	1,000	808	672	68
9/21/2009	913	741	1,090	914	670	82
9/28/2009	913	831	1,000	914	480	47



Table A-19. Temperature, Platte River, Shelton, NE

Temperature, °C						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	5.2	-0.1	9.9	5.4	163	2.5
3/30/2009	6.9	2.1	14.2	6.7	336	2.7
4/6/2009	8.2	0.1	17.7	8.5	336	3.6
4/13/2009	12.9	7.3	18.6	12.8	335	2.5
4/20/2009	15.5	9.9	22.5	15.5	336	3.3
4/27/2009	14.4	9.8	19.5	14.2	336	2.1
5/4/2009	17.7	12.4	25.4	17.0	333	3.2
5/11/2009	17.1	12.2	22.9	16.8	336	2.7
5/18/2009	20.4	13.9	27.7	19.8	336	3.6
5/25/2009	20.6	12.8	29.6	19.8	334	4.5
6/1/2009	19.7	14.6	29.2	19.2	336	3.4
6/8/2009	18.9	14.1	25.4	18.6	335	2.7
6/15/2009	24.0	19.2	28.5	23.8	336	2.4
6/22/2009	27.3	23.4	31.0	27.2	334	1.8
6/29/2009	25.6	20.6	29.8	25.3	336	2.2
7/6/2009	27.1	22.2	34.1	27.0	335	2.7
7/13/2009	26.1	20.5	33.9	25.8	336	3.2
7/20/2009	25.4	19.6	33.0	24.6	334	3.4
7/27/2009	23.3	17.1	31.1	23.0	327	3.2
8/3/2009	26.2	20.6	33.1	25.7	280	3.1
8/10/2009	25.9	21.2	32.6	25.3	336	3.1
8/17/2009	23.5	17.6	30.4	23.4	335	3.1
8/24/2009	23.3	16.1	29.6	23.7	334	3.0
8/31/2009	20.4	15.6	26.4	20.1	335	2.3
9/7/2009	21.8	17.7	28.0	21.2	334	2.4
9/14/2009	20.9	17.2	24.8	20.7	334	1.9
9/21/2009	16.9	13.7	21.5	16.5	335	2.0
9/28/2009	15.7	12.0	19.8	15.4	175	2.1

Table A-20. Specific Conductance, Platte River, Shelton, NE

Specific Conductance, mS/cm						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	0.830	0.801	0.886	0.802	3	0.049
3/30/2009						
4/6/2009						
4/13/2009	0.882	0.773	0.977	0.897	36	0.070
4/20/2009						
4/27/2009	0.832	0.766	0.878	0.831	57	0.024
5/4/2009	0.936	0.895	0.963	0.941	265	0.016
5/11/2009	0.897	0.854	0.983	0.883	336	0.031
5/18/2009	0.956	0.754	1.023	0.966	336	0.049
5/25/2009	0.945	0.761	1.003	0.956	233	0.052
6/1/2009	0.936	0.786	0.990	0.946	336	0.042
6/8/2009	0.918	0.795	1.001	0.928	319	0.053
6/15/2009						
6/22/2009	0.915	0.801	1.013	0.915	311	0.055
6/29/2009	0.969	0.773	1.027	0.969	336	0.034
7/6/2009	0.990	0.899	1.047	1.000	334	0.036
7/13/2009	0.902	0.801	0.994	0.904	336	0.048
7/20/2009	0.945	0.754	1.053	0.939	334	0.064
7/27/2009	0.966	0.811	1.008	0.976	281	0.028
8/3/2009	0.922	0.796	0.974	0.930	280	0.031
8/10/2009	0.894	0.760	0.970	0.898	317	0.043
8/17/2009	0.899	0.782	0.983	0.887	161	0.042
8/24/2009	0.836	0.772	0.860	0.836	157	0.015
8/31/2009	0.959	0.851	1.084	1.006	334	0.068
9/7/2009	0.968	0.811	1.028	0.988	326	0.047
9/14/2009	1.003	0.945	1.024	1.007	334	0.013
9/21/2009	0.957	0.834	1.008	0.958	323	0.032
9/28/2009	0.971	0.946	0.978	0.973	175	0.005



Table A-21. pH, Platte River, Shelton, NE

pH						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	8.3	8.0	8.7	8.3	161	0.2
3/30/2009	8.6	8.0	8.7	8.6	336	0.2
4/6/2009	8.6	8.2	8.7	8.6	336	0.1
4/13/2009	8.4	8.2	8.6	8.4	333	0.1
4/20/2009	8.3	8.2	8.5	8.3	336	0.1
4/27/2009	8.3	7.9	8.5	8.4	336	0.1
5/4/2009	8.3	7.8	8.5	8.4	333	0.2
5/11/2009	8.4	8.3	8.5	8.4	336	0.0
5/18/2009	8.4	8.2	8.5	8.4	336	0.1
5/25/2009	8.3	8.1	8.4	8.3	334	0.1
6/1/2009	8.3	8.2	8.5	8.3	336	0.1
6/8/2009	8.4	8.1	8.6	8.4	335	0.1
6/15/2009	8.3	8.1	8.8	8.3	336	0.2
6/22/2009	8.4	8.0	8.8	8.3	334	0.2
6/29/2009	8.4	8.2	8.7	8.4	336	0.1
7/6/2009	8.5	8.2	8.8	8.5	334	0.1
7/13/2009	8.6	8.2	8.8	8.6	336	0.1
7/20/2009	8.5	8.4	8.7	8.5	334	0.1
7/27/2009	8.5	8.4	8.7	8.5	327	0.1
8/3/2009	8.7	8.3	8.8	8.7	280	0.1
8/10/2009	8.6	8.4	8.8	8.6	336	0.1
8/17/2009	8.5	8.2	8.7	8.5	335	0.1
8/24/2009	8.5	8.1	8.8	8.5	334	0.2
8/31/2009	8.5	8.1	8.7	8.5	335	0.1
9/7/2009	8.5	8.2	8.8	8.5	334	0.1
9/14/2009	8.5	8.3	8.6	8.5	334	0.1
9/21/2009	8.4	8.2	8.5	8.3	335	0.1
9/28/2009	8.4	8.3	8.4	8.4	175	0.0

Table A-22. Turbidity, Platte River, Shelton, NE

Turbidity, NTU						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	19	10	72	15	33	15
3/30/2009	50	28	77	51	26	13
4/6/2009	27	6	92	20	107	20
4/13/2009	40	2	468	33	204	47
4/20/2009	19	5	58	17	319	9
4/27/2009	23	9	59	21	243	8
5/4/2009	30	2	968	10	254	99
5/11/2009	80	11	661	21	318	104
5/18/2009	13	3	74	11	320	8
5/25/2009	37	12	655	25	289	77
6/1/2009	96	18	701	33	296	157
6/8/2009	51	24	123	42	305	22
6/15/2009	111	24	1,059	52	311	189
6/22/2009	20	12	70	18	333	7
6/29/2009	40	23	60	41	336	7
7/6/2009	59	37	145	57	327	17
7/13/2009	78	45	167	74	280	20
7/20/2009	79	62	130	74	328	14
7/27/2009	114	45	808	61	317	136
8/3/2009	61	40	91	63	275	9
8/10/2009	75	56	212	71	308	19
8/17/2009	129	43	187	132	234	27
8/24/2009	78	62	133	77	164	10
8/31/2009	87	70	108	86	214	7
9/7/2009	118	68	298	100	333	44
9/14/2009	64	28	149	57	334	27
9/21/2009	38	20	88	36	333	14
9/28/2009	38	16	271	30	164	36



Table A-23. Dissolved Oxygen, Platte River, Shelton, NE

Date	Dissolved Oxygen, mg/L					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	11.0	7.0	13.1	11.5	76	1.8
3/30/2009	11.0	8.4	12.5	11.0	267	0.7
4/6/2009	10.9	6.5	13.2	10.9	301	1.0
4/13/2009	9.5	8.2	11.2	9.5	322	0.7
4/20/2009	9.0	7.5	10.9	9.0	336	0.9
4/27/2009	9.1	6.7	10.7	9.1	294	0.8
5/4/2009	8.8	7.5	10.2	8.8	273	0.8
5/11/2009	8.9	8.1	10.2	8.9	336	0.5
5/18/2009	8.5	7.3	9.7	8.5	336	0.6
5/25/2009	8.3	6.8	9.7	8.5	325	0.7
6/1/2009	8.3	6.8	9.6	8.4	332	0.6
6/8/2009	8.5	7.5	9.7	8.6	335	0.5
6/15/2009	8.2	6.4	12.6	7.9	336	1.5
6/22/2009	8.1	5.7	12.9	7.4	334	2.2
6/29/2009	8.0	6.4	11.1	7.8	336	1.3
7/6/2009	8.1	6.2	12.5	7.7	334	1.7
7/13/2009	7.9	5.2	10.4	7.8	295	1.4
7/20/2009	8.1	6.0	11.5	7.8	334	1.3
7/27/2009	8.2	6.5	10.5	8.1	327	0.9
8/3/2009	8.1	6.5	10.2	7.9	280	1.1
8/10/2009	8.1	6.6	10.1	7.9	305	1.0
8/17/2009	8.2	6.8	10.3	7.9	314	0.9
8/24/2009	8.2	6.0	9.7	8.1	213	0.8
8/31/2009	8.8	6.3	10.1	8.5	234	0.8
9/7/2009	8.5	7.4	10.3	8.1	334	0.8
9/14/2009	8.4	7.7	9.6	8.2	334	0.5
9/21/2009	9.1	7.7	10.0	9.2	335	0.5
9/28/2009	9.5	8.6	10.5	9.5	175	0.5

Table A-24. Discharge, Platte River, Shelton, NE

Date	Discharge, cfs					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	587	520	702	555	7	65
3/30/2009	768	460	1,370	666	7	346
4/6/2009	970	571	1,720	734	7	437
4/13/2009	1,552	620	2,930	1,480	7	807
4/20/2009	2,486	1,100	3,860	2,270	7	1,077
4/27/2009	2,009	1,420	2,480	2,080	7	423
5/4/2009	1,122	693	1,910	952	7	448
5/11/2009	878	707	1,020	944	7	127
5/18/2009	526	459	694	496	7	82
5/25/2009	508	459	541	509	7	27
6/1/2009	433	406	450	435	7	14
6/8/2009	586	426	931	467	7	234
6/15/2009	2,061	1,410	2,700	1,810	7	490
6/22/2009	2,306	1,770	2,810	2,320	7	324
6/29/2009	1,454	1,190	1,620	1,510	7	145
7/6/2009	927	487	1,300	1,120	7	345
7/13/2009	510	456	671	485	7	74
7/20/2009	584	481	846	519	7	133
7/27/2009	451	380	612	422	7	77
8/3/2009	400	364	424	417	7	25
8/10/2009	387	328	418	394	7	30
8/17/2009	529	348	685	520	7	130
8/24/2009	292	266	328	293	7	21
8/31/2009	260	230	286	272	7	22
9/7/2009	489	277	916	297	7	286
9/14/2009	828	641	976	851	7	123
9/21/2009	997	870	1,150	1,000	7	88
9/28/2009	911	843	988	897	7	57



Table A-25. Temperature, Platte River, Kearney, NE

Temperature, °C						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	5.1	-0.2	12.7	4.9	159	3.3
3/30/2009	6.4	0.9	12.0	6.5	336	2.9
4/6/2009	7.6	-0.1	14.8	8.1	336	3.4
4/13/2009	11.9	7.1	15.6	11.9	334	2.0
4/20/2009	14.9	9.4	21.8	14.8	336	3.1
4/27/2009	13.7	9.7	18.2	13.4	336	1.8
5/4/2009	16.4	11.3	23.7	15.8	334	3.2
5/11/2009	15.9	10.3	22.6	15.9	336	3.0
5/18/2009	17.4	10.9	26.1	16.7	336	3.7
5/25/2009	18.0	11.6	27.2	16.6	332	4.2
6/1/2009	15.0	11.4	22.9	14.1	336	2.8
6/8/2009	16.4	11.4	24.4	15.7	335	3.5
6/15/2009	23.5	19.2	27.8	23.3	336	2.2
6/22/2009	26.9	23.0	30.5	27.0	335	1.8
6/29/2009	25.3	20.7	30.0	25.0	336	2.1
7/6/2009	26.7	22.3	33.3	26.4	335	2.7
7/13/2009	25.6	20.3	32.4	25.4	336	3.0
7/20/2009	24.9	17.5	32.2	24.4	335	3.6
7/27/2009	22.9	16.3	31.4	22.5	336	3.4
8/3/2009	25.8	20.3	32.1	25.4	334	3.1
8/10/2009	25.6	20.9	31.9	25.2	336	3.1
8/17/2009	24.3	18.4	29.2	23.8	162	2.8
8/24/2009	21.7	15.0	28.7	21.6	160	3.5
8/31/2009	19.7	14.9	25.9	19.4	333	2.6
9/7/2009	21.9	17.8	27.8	21.1	172	2.8
9/14/2009	20.0	16.3	22.9	20.3	113	2.1
9/21/2009	16.4	13.4	21.0	16.1	334	1.7
9/28/2009	14.2	8.1	18.7	14.3	218	2.6

Table A-26. Specific Conductance, Platte River, Kearney, NE

Specific Conductance, mS/cm						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	0.966	0.856	0.985	0.971	119	0.019
3/30/2009	0.751	0.703	0.860	0.731	72	0.040
4/6/2009						
4/13/2009	0.757	0.561	0.855	0.767	252	0.049
4/20/2009	0.770	0.722	0.796	0.773	9	0.027
4/27/2009						
5/4/2009	0.851	0.803	0.890	0.849	92	0.026
5/11/2009						
5/18/2009						
5/25/2009	0.821	0.729	0.907	0.794	96	0.066
6/1/2009	0.721	0.670	0.785	0.713	109	0.030
6/8/2009	0.815	0.725	0.955	0.809	159	0.046
6/15/2009	0.787	0.656	0.891	0.787	264	0.052
6/22/2009	0.846	0.735	0.955	0.856	271	0.052
6/29/2009	0.798	0.723	0.865	0.780	59	0.033
7/6/2009	1.024	0.979	1.079	1.017	213	0.027
7/13/2009	0.962	0.857	1.034	0.964	332	0.032
7/20/2009	0.892	0.794	1.038	0.864	244	0.070
7/27/2009	0.916	0.877	0.984	0.911	336	0.022
8/3/2009	0.936	0.857	0.997	0.942	334	0.033
8/10/2009	0.950	0.890	0.996	0.947	336	0.023
8/17/2009	0.924	0.860	0.951	0.938	142	0.026
8/24/2009	0.949	0.919	0.979	0.952	160	0.017
8/31/2009	0.933	0.905	0.963	0.931	333	0.014
9/7/2009	0.939	0.920	0.955	0.941	172	0.009
9/14/2009	0.974	0.950	0.992	0.980	113	0.012
9/21/2009	0.941	0.869	0.980	0.945	334	0.025
9/28/2009	0.951	0.931	0.970	0.952	218	0.010



Table A-27. pH, Platte River, Kearney, NE

Date	pH					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	8.4	7.7	8.5	8.5	159	0.2
3/30/2009	8.5	7.6	8.6	8.5	336	0.2
4/6/2009	8.5	8.4	8.6	8.5	336	0.0
4/13/2009	8.4	8.1	8.5	8.4	334	0.1
4/20/2009	8.2	7.9	8.5	8.2	336	0.1
4/27/2009	8.3	7.9	8.6	8.3	336	0.1
5/4/2009	8.4	8.3	8.6	8.3	334	0.1
5/11/2009	8.3	8.2	8.5	8.3	336	0.1
5/18/2009	8.2	7.3	8.7	8.2	332	0.2
5/25/2009	8.1	7.1	8.6	8.1	308	0.3
6/1/2009	7.9	7.5	8.5	7.7	336	0.3
6/8/2009	7.9	7.5	8.5	7.9	335	0.3
6/15/2009	7.9	7.4	8.3	7.9	336	0.2
6/22/2009	8.2	7.8	8.5	8.2	335	0.2
6/29/2009	8.2	7.9	8.4	8.2	336	0.1
7/6/2009	8.4	8.0	8.7	8.4	335	0.1
7/13/2009	8.5	8.1	8.8	8.5	336	0.2
7/20/2009	8.5	8.2	8.8	8.5	335	0.1
7/27/2009	8.2	7.8	8.6	8.3	336	0.2
8/3/2009	8.1	7.9	8.4	8.1	124	0.1
8/10/2009						
8/17/2009	8.6	8.6	8.7	8.6	40	0.1
8/24/2009	8.4	8.2	8.6	8.4	160	0.1
8/31/2009	8.5	8.2	8.8	8.5	333	0.1
9/7/2009	8.4	8.2	8.6	8.4	172	0.1
9/14/2009	8.3	8.2	8.5	8.3	113	0.1
9/21/2009	8.3	8.2	8.5	8.3	334	0.1
9/28/2009	8.4	8.3	8.5	8.4	218	0.1

Table A-28. Turbidity, Platte River, Kearney, NE

Date	Turbidity, NTU					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	4	3	8	4	120	1
3/30/2009	18	5	83	16	143	12
4/6/2009	16	4	114	15	303	11
4/13/2009	21	3	91	16	204	18
4/20/2009	202	19	1,030	174	237	166
4/27/2009	71	24	202	55	103	49
5/4/2009	19	6	90	11	290	18
5/11/2009	25	5	89	20	183	15
5/18/2009	71	20	144	71	212	27
5/25/2009	41	28	63	36	45	12
6/1/2009						
6/8/2009	66	14	148	60	75	30
6/15/2009	52	27	157	52	130	15
6/22/2009	114	7	1,143	64	207	167
6/29/2009	50	23	94	49	53	20
7/6/2009	16	2	89	8	248	18
7/13/2009	40	7	87	43	333	18
7/20/2009	40	18	77	39	312	14
7/27/2009	20	3	83	17	319	13
8/3/2009	20	2	92	19	332	14
8/10/2009	23	2	88	18	107	16
8/17/2009	53	45	62	53	40	4
8/24/2009						
8/31/2009	12	4	35	12	207	5
9/7/2009	20	7	71	18	172	9
9/14/2009	28	5	89	26	113	18
9/21/2009	21	3	58	17	334	14
9/28/2009	17	2	65	11	218	14



Table A-29. Dissolved Oxygen, Platte River, Kearney, NE

Dissolved Oxygen, mg/L						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	11.2	6.0	12.8	11.3	144	1.1
3/30/2009	10.4	7.1	12.2	10.3	324	0.8
4/6/2009	10.5	9.2	12.4	10.5	336	0.7
4/13/2009	9.6	8.2	11.2	9.6	334	0.8
4/20/2009	9.2	7.5	12.3	9.0	336	1.2
4/27/2009	9.2	6.0	12.6	8.9	317	1.3
5/4/2009	9.1	7.7	12.2	8.9	334	0.9
5/11/2009	9.1	7.9	10.6	9.0	336	0.7
5/18/2009	9.0	7.0	10.9	9.2	332	1.0
5/25/2009	9.4	2.3	16.8	9.4	332	3.3
6/1/2009	7.7	1.5	17.0	6.3	336	5.3
6/8/2009	6.7	1.1	16.3	7.4	331	3.9
6/15/2009	7.3	5.5	10.5	7.2	320	1.2
6/22/2009	7.1	5.2	10.0	6.8	334	1.4
6/29/2009	7.1	5.1	8.7	6.8	128	0.9
7/6/2009	7.5	6.0	10.8	7.1	264	1.3
7/13/2009	8.2	5.7	12.4	7.9	336	1.9
7/20/2009	7.6	5.1	10.7	7.4	334	1.2
7/27/2009	7.4	5.6	9.2	7.2	282	1.0
8/3/2009	7.8	5.9	10.0	7.6	210	1.4
8/10/2009	7.5	6.0	10.1	7.2	282	1.1
8/17/2009	7.7	6.8	9.0	7.5	40	0.8
8/24/2009	7.9	6.4	10.0	7.5	160	1.1
8/31/2009	8.6	6.6	11.5	7.8	333	1.6
9/7/2009	7.5	5.0	10.9	7.2	172	1.6
9/14/2009	8.1	7.2	9.1	8.0	113	0.6
9/21/2009	8.9	7.2	10.0	8.8	334	0.6
9/28/2009	9.5	8.2	10.9	9.5	218	0.7

Table A-30. Discharge, Platte River, Kearney, NE

Discharge, cfs						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	603	502	691	608	672	51
3/30/2009	692	362	1,470	635	672	286
4/6/2009	880	557	1,840	691	672	377
4/13/2009	1,656	615	3,060	1,650	672	750
4/20/2009	1,919	734	3,270	1,700	672	899
4/27/2009	1,618	908	2,130	1,700	672	402
5/4/2009	831	418	1,920	635	672	439
5/11/2009	464	257	1,070	397	672	196
5/18/2009	179	135	281	166	672	37
5/25/2009	162	124	257	160	672	29
6/1/2009	144	135	154	143	672	5
6/8/2009	402	143	1,200	157	672	340
6/15/2009	1,714	834	2,200	1,765	672	378
6/22/2009	1,895	1,240	2,260	1,960	672	251
6/29/2009	1,280	757	1,640	1,310	671	254
7/6/2009	684	348	1,230	727	672	293
7/13/2009	487	339	850	434	672	143
7/20/2009	552	445	908	508	672	119
7/27/2009	397	238	772	377	672	116
8/3/2009	246	195	285	245	672	27
8/10/2009	292	223	473	285	672	47
8/17/2009	443	230	656	451	672	137
8/24/2009	156	107	230	154	672	31
8/31/2009	158	105	179	163	672	20
9/7/2009	398	163	1,050	188	672	267
9/14/2009	702	408	1,190	656	672	199
9/21/2009	708	456	1,040	670	672	183
9/28/2009	637	402	951	589	480	171



Table A-31. Temperature, Platte River, Odessa, NE

Date	Temperature, °C					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	5.7	0.1	13.8	5.1	157	3.7
3/30/2009	6.6	1.0	13.0	6.5	336	2.9
4/6/2009	7.7	0.1	14.8	8.0	336	3.5
4/13/2009	11.7	7.2	15.6	11.6	333	2.1
4/20/2009	14.6	9.7	21.9	14.6	336	3.1
4/27/2009	13.5	8.8	18.6	13.2	336	2.1
5/4/2009	16.6	11.0	24.7	15.9	334	3.4
5/11/2009	16.4	10.6	23.3	16.1	336	3.1
5/18/2009	18.4	12.8	26.5	17.9	336	3.5
5/25/2009	19.3	13.6	28.4	18.1	334	4.2
6/1/2009	18.8	13.6	27.2	18.1	336	3.2
6/8/2009	18.7	13.4	24.9	18.5	332	2.7
6/15/2009	23.2	18.6	28.0	22.7	336	2.5
6/22/2009	26.3	22.3	30.7	26.1	334	2.1
6/29/2009	24.6	19.8	29.4	24.2	335	2.3
7/6/2009	25.3	21.3	32.6	24.6	334	2.7
7/13/2009	24.9	19.6	31.7	24.6	336	3.0
7/20/2009	24.0	16.2	31.7	23.3	334	3.6
7/27/2009	21.9	15.2	30.4	21.4	336	3.3
8/3/2009	24.7	19.2	31.0	24.2	334	3.1
8/10/2009	24.5	20.0	30.9	24.0	336	3.0
8/17/2009	22.7	17.0	28.7	22.3	335	3.0
8/24/2009	22.9	15.1	31.2	22.7	335	3.7
8/31/2009	19.7	15.2	26.0	19.3	335	2.5
9/7/2009	21.2	16.5	28.0	20.6	335	2.5
9/14/2009	20.4	17.0	24.3	20.2	334	2.0
9/21/2009	16.7	14.1	21.2	16.3	334	1.8
9/28/2009	14.6	8.9	19.7	14.7	215	2.7

Table A-32. Specific Conductance, Platte River, Odessa, NE

Date	Specific Conductance, mS/cm					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	0.920	0.882	0.968	0.916	157	0.023
3/30/2009	0.822	0.716	0.921	0.817	303	0.060
4/6/2009	0.816	0.724	0.945	0.825	282	0.040
4/13/2009	0.796	0.725	0.891	0.787	182	0.044
4/20/2009						
4/27/2009						
5/4/2009	0.945	0.862	1.012	0.953	257	0.023
5/11/2009	0.947	0.871	1.011	0.950	336	0.030
5/18/2009	0.926	0.839	1.010	0.928	249	0.042
5/25/2009	0.853	0.691	0.903	0.870	79	0.046
6/1/2009						
6/8/2009	0.790	0.635	1.086	0.752	62	0.074
6/15/2009	0.847	0.748	1.041	0.845	87	0.058
6/22/2009	0.970	0.939	1.084	0.950	18	0.039
6/29/2009	1.014	0.976	1.036	1.016	173	0.013
7/6/2009	1.043	0.991	1.104	1.037	216	0.032
7/13/2009	0.978	0.862	1.077	0.975	117	0.044
7/20/2009	1.017	0.951	1.079	1.004	267	0.028
7/27/2009	0.966	0.914	1.044	0.957	187	0.033
8/3/2009	0.972	0.924	1.001	0.978	249	0.020
8/10/2009	0.942	0.898	0.986	0.947	228	0.023
8/17/2009	0.986	0.937	1.013	0.992	216	0.019
8/24/2009	0.982	0.771	1.014	0.987	321	0.030
8/31/2009	0.908	0.846	1.031	0.898	226	0.040
9/7/2009	0.892	0.836	1.023	0.867	141	0.048
9/14/2009	0.955	0.848	1.013	0.967	233	0.041
9/21/2009	0.946	0.860	1.010	0.950	284	0.030
9/28/2009	0.917	0.805	0.983	0.937	174	0.046



Table A-33. pH, Platte River, Odessa, NE

Date	pH					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	8.4	8.2	8.6	8.4	157	0.1
3/30/2009	8.4	8.2	8.6	8.4	336	0.1
4/6/2009	8.4	8.2	8.6	8.4	336	0.1
4/13/2009	8.3	8.0	8.5	8.3	333	0.1
4/20/2009	8.2	7.8	8.5	8.2	336	0.2
4/27/2009	8.3	8.0	8.6	8.3	336	0.1
5/4/2009	8.3	8.2	8.5	8.3	334	0.1
5/11/2009	8.3	7.8	8.5	8.4	336	0.1
5/18/2009	7.8	7.5	8.1	7.8	336	0.1
5/25/2009	7.7	7.5	8.2	7.7	334	0.1
6/1/2009	7.6	7.4	8.0	7.6	336	0.1
6/8/2009	7.9	7.7	8.3	7.9	332	0.1
6/15/2009	8.0	7.8	8.5	8.0	336	0.2
6/22/2009	8.0	7.6	8.4	8.0	334	0.2
6/29/2009	8.1	7.6	8.6	8.3	335	0.3
7/6/2009	8.2	7.9	8.7	8.3	334	0.2
7/13/2009	8.5	8.1	8.8	8.5	336	0.2
7/20/2009	8.5	8.3	8.7	8.5	334	0.1
7/27/2009	8.4	8.2	8.7	8.4	336	0.1
8/3/2009	8.5	8.3	8.7	8.5	334	0.1
8/10/2009	8.4	8.1	8.6	8.4	336	0.1
8/17/2009	8.4	8.0	8.7	8.5	335	0.2
8/24/2009	8.5	8.3	8.7	8.5	334	0.1
8/31/2009	8.5	8.3	8.8	8.5	335	0.1
9/7/2009	8.4	8.1	8.6	8.4	335	0.1
9/14/2009	8.4	8.3	8.5	8.4	334	0.1
9/21/2009	8.4	8.3	8.5	8.4	334	0.1
9/28/2009	8.4	8.4	8.5	8.4	215	0.0

Table A-34. Turbidity, Platte River, Odessa, NE

Date	Turbidity, NTU					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	5	3	9	5	156	1
3/30/2009	9	3	27	7	336	5
4/6/2009	18	4	643	12	328	45
4/13/2009	12	4	25	13	333	4
4/20/2009	17	8	596	13	335	46
4/27/2009	18	9	29	18	336	4
5/4/2009	16	4	62	15	332	10
5/11/2009	15	1	86	7	293	13
5/18/2009						
5/25/2009	16	15	18	16	5	2
6/1/2009						
6/8/2009	60	6	186	25	81	63
6/15/2009	71	2	637	57	258	87
6/22/2009	39	9	490	19	185	75
6/29/2009	20	14	37	19	169	5
7/6/2009	27	9	81	25	201	13
7/13/2009	143	20	502	121	225	107
7/20/2009	54	17	267	38	285	41
7/27/2009	75	21	353	51	87	71
8/3/2009	28	18	36	28	211	4
8/10/2009	61	19	398	39	309	58
8/17/2009	44	2	383	30	316	43
8/24/2009	20	3	61	19	135	10
8/31/2009	38	15	98	35	255	16
9/7/2009	66	17	409	45	332	57
9/14/2009	52	8	541	40	267	58
9/21/2009	40	7	560	21	324	70
9/28/2009	21	6	59	16	212	13



Table A-35. Dissolved Oxygen, Platte River, Odessa, NE

Dissolved Oxygen, mg/L						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	11.9	10.2	13.3	11.9	157	0.8
3/30/2009	11.5	10.0	13.2	11.5	336	0.7
4/6/2009	11.4	9.9	13.3	11.5	336	0.8
4/13/2009	10.1	8.7	11.7	10.0	333	0.8
4/20/2009	9.0	7.1	11.1	8.9	329	1.0
4/27/2009	9.4	8.0	11.2	9.3	336	0.8
5/4/2009	8.7	7.5	10.9	8.7	334	0.7
5/11/2009	8.6	7.5	10.0	8.5	336	0.6
5/18/2009	9.4	3.2	16.6	8.6	223	2.8
5/25/2009	7.6	4.6	13.3	7.5	143	1.3
6/1/2009	7.8	5.5	8.9	7.9	102	0.8
6/8/2009	7.3	5.7	9.1	7.3	325	0.7
6/15/2009	6.7	4.8	9.5	6.6	290	1.0
6/22/2009	6.6	5.1	9.0	6.2	226	1.1
6/29/2009	7.8	5.5	9.5	7.7	205	0.8
7/6/2009	7.5	4.2	11.2	7.1	243	1.3
7/13/2009	8.6	6.3	12.9	8.3	288	1.7
7/20/2009	8.2	6.6	11.5	7.9	334	1.1
7/27/2009	8.0	6.2	9.4	7.8	275	0.8
8/3/2009	8.0	6.3	10.8	7.7	334	1.2
8/10/2009	7.9	6.4	10.1	7.6	336	1.0
8/17/2009	7.9	5.2	9.1	7.9	335	0.8
8/24/2009	8.1	6.7	9.6	8.1	335	0.7
8/31/2009	8.8	7.7	10.5	8.5	335	0.9
9/7/2009	8.3	7.1	10.1	8.1	335	0.7
9/14/2009	8.2	7.4	9.1	8.1	334	0.5
9/21/2009	9.0	7.6	9.8	9.0	334	0.4
9/28/2009	9.5	8.4	10.9	9.6	215	0.6

Table A-36. Discharge, Platte River, Odessa, NE

Discharge, cfs						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	480	412	668	450	7	93
3/30/2009	560	276	999	465	7	285
4/6/2009	713	402	1,260	488	7	385
4/13/2009	1,632	390	3,570	1,250	7	1,087
4/20/2009	1,804	610	3,880	1,390	7	1,258
4/27/2009	1,334	659	1,870	1,430	7	437
5/4/2009	648	334	1,350	479	7	371
5/11/2009	237	102	471	182	7	136
5/18/2009	78	61	96	81	7	15
5/25/2009	93	78	120	91	7	14
6/1/2009	63	51	80	60	7	10
6/8/2009	216	52	670	60	7	233
6/15/2009	1,551	771	2,190	1,590	7	587
6/22/2009	1,930	1,460	2,300	2,000	7	297
6/29/2009	1,132	805	1,360	1,200	7	218
7/6/2009	603	322	887	617	7	247
7/13/2009	372	299	599	309	7	114
7/20/2009	358	268	543	334	7	90
7/27/2009	348	240	629	305	7	141
8/3/2009	321	274	353	325	7	24
8/10/2009	317	265	408	295	7	52
8/17/2009	399	192	632	364	7	179
8/24/2009	164	131	180	171	7	16
8/31/2009	122	118	129	121	7	4
9/7/2009	370	108	755	277	7	281
9/14/2009	716	534	954	689	7	145
9/21/2009	802	732	860	781	7	49
9/28/2009	699	669	719	696	7	18



Table A-37. Temperature, Platte River, Overton, NE

Temperature, °C						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	6.1	1.0	12.0	5.7	243	3.0
3/30/2009	6.9	1.5	13.1	6.6	672	2.5
4/6/2009	7.8	0.5	14.3	8.1	672	3.1
4/13/2009	12.1	7.7	15.9	12.0	672	2.0
4/20/2009	15.5	9.8	21.3	15.7	672	3.0
4/27/2009	13.4	9.2	18.6	13.2	672	1.9
5/4/2009	15.6	10.0	23.7	15.0	452	3.2
5/11/2009	16.2	10.6	22.9	16.0	335	2.9
5/18/2009	19.7	14.1	26.1	19.3	336	3.3
5/25/2009	20.0	12.1	27.4	19.8	336	4.2
6/1/2009	17.9	13.7	26.7	16.8	336	3.0
6/8/2009	18.0	13.1	24.5	18.0	334	2.4
6/15/2009	24.0	17.6	28.0	23.9	336	2.5
6/22/2009	27.3	22.5	31.1	27.3	334	2.1
6/29/2009	25.2	20.0	30.1	24.8	336	2.3
7/6/2009	26.0	21.6	31.8	25.6	335	2.5
7/13/2009	25.8	21.2	31.0	25.9	336	2.4
7/20/2009	25.2	19.9	30.1	25.1	334	2.6
7/27/2009	22.8	18.3	30.0	22.5	336	2.8
8/3/2009	25.9	21.7	31.0	25.9	334	2.4
8/10/2009	25.5	22.0	30.2	25.3	336	2.1
8/17/2009	23.0	18.3	27.0	23.1	334	2.2
8/24/2009	23.1	17.4	29.6	23.1	333	2.6
8/31/2009	19.9	16.6	23.7	19.8	334	1.6
9/7/2009	20.9	15.8	26.5	20.7	334	2.3
9/14/2009	20.0	16.1	23.9	20.1	334	2.0
9/21/2009	16.3	13.0	20.7	16.0	334	1.9
9/28/2009	14.5	7.1	19.0	14.6	213	2.5

Table A-38. Specific Conductance, Platte River, Overton, NE

Specific Conductance, mS/cm						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	0.818	0.796	0.831	0.817	178	0.005
3/30/2009	0.810	0.765	0.838	0.811	324	0.013
4/6/2009	0.812	0.760	0.839	0.816	370	0.019
4/13/2009	0.790	0.776	0.813	0.787	65	0.008
4/20/2009	0.814	0.801	0.822	0.817	5	0.008
4/27/2009	0.844	0.802	0.895	0.839	332	0.022
5/4/2009	0.903	0.816	0.992	0.893	452	0.043
5/11/2009	0.976	0.880	1.012	0.993	335	0.038
5/18/2009	0.936	0.811	1.005	0.947	286	0.048
5/25/2009	0.925	0.818	1.007	0.978	178	0.073
6/1/2009	0.948	0.931	1.004	0.939	6	0.028
6/8/2009	0.951	0.905	1.008	0.947	218	0.033
6/15/2009	0.968	0.876	1.036	0.976	299	0.036
6/22/2009	0.987	0.879	1.061	1.003	325	0.052
6/29/2009	0.927	0.865	0.983	0.935	304	0.029
7/6/2009	1.029	0.914	1.096	1.053	335	0.049
7/13/2009	0.926	0.846	1.066	0.899	89	0.072
7/20/2009	1.016	0.886	1.087	1.006	213	0.049
7/27/2009	0.996	0.851	1.061	0.991	253	0.037
8/3/2009	1.001	0.915	1.069	1.002	285	0.034
8/10/2009	0.989	0.872	1.038	1.016	190	0.048
8/17/2009	0.983	0.886	1.054	0.995	202	0.038
8/24/2009	1.035	0.975	1.086	1.037	161	0.016
8/31/2009	0.991	0.974	1.008	0.991	203	0.009
9/7/2009	0.952	0.801	1.069	0.975	240	0.053
9/14/2009	0.944	0.884	1.041	0.936	333	0.026
9/21/2009	0.901	0.832	0.998	0.902	330	0.030
9/28/2009	0.915	0.871	1.003	0.906	212	0.020



Table A-39. pH, Platte River, Overton, NE

pH						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	8.4	7.0	8.5	8.4	249	0.2
3/30/2009	8.5	8.1	8.6	8.5	672	0.1
4/6/2009	8.6	8.5	8.6	8.6	672	0.0
4/13/2009	8.5	8.1	8.7	8.6	672	0.2
4/20/2009	8.2	7.9	8.5	8.2	672	0.1
4/27/2009	8.4	8.0	8.9	8.5	672	0.3
5/4/2009	8.7	8.5	8.9	8.6	240	0.1
5/11/2009	8.5	8.1	8.9	8.6	292	0.2
5/18/2009	8.6	8.3	8.8	8.6	336	0.1
5/25/2009	8.5	8.1	8.8	8.3	336	0.2
6/1/2009	8.3	8.1	8.4	8.3	174	0.1
6/8/2009	8.3	8.1	8.4	8.4	314	0.1
6/15/2009	8.3	8.0	8.7	8.3	336	0.1
6/22/2009	8.2	7.9	8.6	8.2	334	0.2
6/29/2009	8.3	8.0	8.7	8.2	336	0.2
7/6/2009	8.4	8.2	8.7	8.4	335	0.1
7/13/2009	8.4	7.9	8.7	8.4	336	0.2
7/20/2009	8.3	8.0	8.6	8.4	334	0.1
7/27/2009	8.3	7.9	8.5	8.4	336	0.1
8/3/2009	8.4	8.3	8.6	8.4	334	0.1
8/10/2009	8.3	8.0	8.5	8.3	336	0.1
8/17/2009	8.3	8.1	8.6	8.4	334	0.1
8/24/2009	8.3	7.9	8.6	8.4	333	0.2
8/31/2009	8.2	7.9	8.6	8.3	334	0.2
9/7/2009	8.2	7.9	8.6	8.2	334	0.1
9/14/2009	8.3	8.0	8.5	8.3	334	0.1
9/21/2009	8.2	8.1	8.4	8.2	334	0.1
9/28/2009	8.1	7.7	8.3	8.1	213	0.1

Table A-40. Turbidity, Platte River, Overton, NE

Turbidity, NTU						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	9	5	20	9	20	4
3/30/2009	13	4	69	12	369	7
4/6/2009	10	6	92	10	663	4
4/13/2009	22	7	79	14	533	16
4/20/2009	78	63	89	79	15	7
4/27/2009	20	6	200	19	336	16
5/4/2009	33	5	465	14	305	60
5/11/2009	10	3	29	8	297	5
5/18/2009	10	4	44	9	297	5
5/25/2009	19	9	50	18	277	6
6/1/2009	21	11	50	13	15	14
6/8/2009	20	8	84	19	217	9
6/15/2009	19	5	54	16	332	13
6/22/2009	7	3	22	7	331	2
6/29/2009	19	11	75	16	331	8
7/6/2009	43	10	664	25	283	68
7/13/2009	144	20	793	65	241	173
7/20/2009	29	15	96	25	224	12
7/27/2009	40	13	580	20	249	88
8/3/2009	24	13	44	23	287	6
8/10/2009	32	17	84	24	236	16
8/17/2009	27	17	78	24	175	9
8/24/2009	25	4	74	24	135	13
8/31/2009	22	14	34	21	203	4
9/7/2009	37	9	119	27	329	23
9/14/2009	28	16	83	26	334	7
9/21/2009	24	13	55	23	334	8
9/28/2009	21	14	42	21	213	5



Table A-41. Dissolved Oxygen, Platte River, Overton, NE

Date	Dissolved Oxygen, mg/L					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	13.2	8.1	14.7	13.4	251	1.0
3/30/2009	13.9	6.3	17.3	13.9	622	1.5
4/6/2009	14.9	12.5	17.9	15.0	672	1.2
4/13/2009	13.1	11.0	15.1	13.0	672	1.0
4/20/2009	11.2	6.1	13.5	11.2	661	1.4
4/27/2009	11.4	6.7	13.5	11.4	616	1.2
5/4/2009	9.4	7.5	11.3	9.4	452	0.9
5/11/2009	9.4	8.1	10.9	9.3	335	0.7
5/18/2009	9.1	6.3	10.6	9.1	333	0.8
5/25/2009	8.5	6.0	11.0	8.3	317	1.2
6/1/2009	7.9	6.0	9.3	7.8	148	0.8
6/8/2009	8.3	6.1	9.6	8.3	288	0.7
6/15/2009	8.4	5.7	13.5	7.9	336	2.0
6/22/2009	7.4	5.0	11.9	6.9	334	1.9
6/29/2009	7.6	6.1	11.5	7.3	336	1.3
7/6/2009	8.1	6.1	12.1	7.4	335	1.7
7/13/2009	8.0	6.1	12.1	7.7	326	1.6
7/20/2009	7.6	4.9	9.9	7.4	304	1.1
7/27/2009	7.6	6.3	8.7	7.5	270	0.7
8/3/2009	7.5	6.1	9.1	7.3	327	0.8
8/10/2009	7.4	6.0	8.7	7.2	252	0.7
8/17/2009	7.5	6.1	9.0	7.4	268	0.7
8/24/2009	7.5	5.6	9.0	7.4	255	0.8
8/31/2009	8.2	6.0	10.1	8.1	292	0.9
9/7/2009	8.4	7.3	9.8	8.3	334	0.7
9/14/2009	8.5	7.8	9.5	8.4	334	0.5
9/21/2009	9.0	7.9	9.8	9.0	334	0.5
9/28/2009	9.2	8.3	11.5	9.3	213	0.5

Table A-42. Discharge, Platte River, Overton, NE

Date	Discharge, cfs					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	350	311	396	347	332	19
3/30/2009	751	343	2,060	425	336	545
4/6/2009	805	400	2,120	475	336	545
4/13/2009	2,075	445	3,730	2080	336	1,060
4/20/2009	1,932	670	3,710	2060	336	920
4/27/2009	1,412	475	1,970	1685	336	481
5/4/2009	573	253	1,760	365	336	415
5/11/2009	458	200	1,460	259	336	381
5/18/2009	208	177	580	192	336	55
5/25/2009	228	182	291	238	336	22
6/1/2009	205	179	238	209	336	10
6/8/2009	636	200	1,640	232	336	541
6/15/2009	1,910	458	2,440	2140	336	486
6/22/2009	2,145	876	2,610	2340	336	420
6/29/2009	1,472	507	2,300	1520	336	553
7/6/2009	653	262	1,660	347	336	480
7/13/2009	586	332	1,070	480	336	235
7/20/2009	433	354	944	416	336	86
7/27/2009	404	250	1,010	362	336	184
8/3/2009	289	232	347	291	187	35
8/10/2009	385	298	744	351	305	111
8/17/2009	438	304	750	404	336	126
8/24/2009	286	265	311	284	336	11
8/31/2009	297	275	315	298	336	11
9/7/2009	629	141	2,070	320	336	561
9/14/2009	957	301	2,100	558	336	675
9/21/2009	963	311	2,130	556	336	670
9/28/2009	830	262	2,040	478	240	601



Table A-43. Temperature, Platte River, Lexington, NE

Date	Temperature, °C					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	6.6	1.4	11.8	6.7	125	2.4
3/30/2009	6.6	1.4	12.0	7.2	336	2.2
4/6/2009	8.1	1.3	14.6	8.6	336	2.8
4/13/2009	12.4	8.1	16.6	12.2	333	1.8
4/20/2009	12.2	9.4	15.1	12.3	240	1.6
4/27/2009						
5/4/2009	17.1	12.1	23.7	17.1	221	3.2
5/11/2009	15.9	9.9	21.7	15.7	336	3.0
5/18/2009	19.0	14.2	25.1	18.5	336	2.9
5/25/2009	19.5	12.4	27.5	19.2	332	4.1
6/1/2009	18.1	12.8	26.7	17.0	336	3.2
6/8/2009	17.9	13.0	24.7	17.7	334	2.5
6/15/2009	24.0	17.1	27.6	24.1	336	2.4
6/22/2009	27.0	22.2	31.0	26.9	335	2.1
6/29/2009	24.9	19.5	30.2	24.5	336	2.4
7/6/2009	25.0	20.8	31.7	24.5	334	2.8
7/13/2009	25.2	20.1	30.8	25.1	336	2.6
7/20/2009	24.7	19.4	30.2	24.6	335	2.8
7/27/2009	22.3	17.2	30.1	22.1	336	2.7
8/3/2009	25.4	19.3	30.5	25.2	282	2.6
8/10/2009	24.9	21.3	30.0	24.6	336	2.3
8/17/2009	22.4	17.0	26.7	22.5	335	2.5
8/24/2009	22.0	15.1	29.5	21.9	335	3.1
8/31/2009	19.4	16.1	23.9	19.3	334	1.9
9/7/2009	20.2	15.3	26.3	19.9	334	2.4
9/14/2009	19.4	16.0	24.0	19.2	334	2.0
9/21/2009	15.6	12.0	20.2	14.2	116	2.4
9/28/2009						

Table A-44. Specific Conductance, Platte River, Lexington, NE

Date	Specific Conductance, mS/cm					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	0.842	0.787	0.882	0.842	29	0.021
3/30/2009						
4/6/2009						
4/13/2009	0.821	0.774	0.863	0.811	128	0.024
4/20/2009						
4/27/2009						
5/4/2009	1.005	0.901	1.052	1.010	220	0.036
5/11/2009	0.873	0.806	1.063	0.846	336	0.077
5/18/2009	0.823	0.803	0.853	0.821	233	0.012
5/25/2009	0.931	0.881	0.987	0.927	171	0.025
6/1/2009	0.844	0.750	0.907	0.852	283	0.030
6/8/2009	0.943	0.786	0.997	0.958	158	0.042
6/15/2009	0.907	0.813	0.965	0.908	284	0.032
6/22/2009	0.994	0.846	1.067	1.002	232	0.051
6/29/2009	0.965	0.911	1.004	0.959	336	0.023
7/6/2009	1.004	0.829	1.102	1.012	334	0.072
7/13/2009	0.939	0.804	1.054	0.942	320	0.046
7/20/2009	0.995	0.437	1.099	0.978	334	0.061
7/27/2009	0.925	0.878	0.952	0.928	59	0.014
8/3/2009	0.967	0.824	1.024	0.986	220	0.052
8/10/2009	0.938	0.794	0.993	0.956	141	0.046
8/17/2009	0.983	0.822	1.004	0.998	41	0.046
8/24/2009	1.041	0.959	1.070	1.046	174	0.019
8/31/2009	0.975	0.863	1.018	0.986	203	0.035
9/7/2009	0.947	0.849	1.030	0.959	231	0.037
9/14/2009	0.911	0.852	0.935	0.921	105	0.022
9/21/2009	0.870	0.854	0.884	0.870	19	0.009
9/28/2009						



Table A-45. pH, Platte River, Lexington, NE

Date	pH					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009						
3/30/2009						
4/6/2009	7.5	6.8	8.4	7.6	231	0.4
4/13/2009	8.2	7.4	9.2	8.2	333	0.4
4/20/2009	7.9	7.4	8.4	7.8	336	0.3
4/27/2009	7.9	7.5	8.2	8.0	336	0.2
5/4/2009	7.6	7.4	7.8	7.6	84	0.1
5/11/2009						
5/18/2009						
5/25/2009	8.2	8.2	8.3	8.3	115	0.0
6/1/2009	8.3	8.2	8.4	8.3	336	0.1
6/8/2009	8.2	8.0	8.4	8.2	334	0.1
6/15/2009	8.2	7.9	8.7	8.2	336	0.2
6/22/2009	8.1	7.9	8.6	8.1	335	0.2
6/29/2009	8.2	7.9	8.5	8.1	336	0.2
7/6/2009	8.2	8.0	8.6	8.2	334	0.1
7/13/2009	8.2	8.0	8.6	8.2	336	0.1
7/20/2009	8.2	8.1	8.4	8.2	335	0.1
7/27/2009	8.2	7.9	8.5	8.2	336	0.1
8/3/2009	8.3	8.1	8.5	8.2	282	0.1
8/10/2009	8.2	7.8	8.4	8.2	336	0.1
8/17/2009	8.2	7.9	8.4	8.3	335	0.1
8/24/2009	8.2	7.9	8.4	8.2	335	0.1
8/31/2009	8.1	7.7	8.4	8.2	334	0.1
9/7/2009	8.1	7.8	8.4	8.1	334	0.1
9/14/2009	8.1	7.8	8.4	8.1	334	0.2
9/21/2009	8.0	7.7	8.3	8.0	116	0.2
9/28/2009						

Table A-46. Turbidity, Platte River, Lexington, NE

Date	Turbidity, NTU					
	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	5	4	8	5	32	1
3/30/2009	6	3	17	6	137	2
4/6/2009	6	4	10	6	219	1
4/13/2009	11	5	38	10	317	7
4/20/2009						
4/27/2009						
5/4/2009	9	1	64	6	215	11
5/11/2009	8	3	56	6	52	8
5/18/2009						
5/25/2009	15	3	77	11	101	13
6/1/2009	13	6	47	10	59	8
6/8/2009	13	6	33	11	136	6
6/15/2009	11	3	77	7	253	11
6/22/2009	6	3	58	5	334	4
6/29/2009	13	8	43	13	335	4
7/6/2009	19	6	55	18	284	8
7/13/2009	36	8	100	27	247	22
7/20/2009	28	12	92	22	292	14
7/27/2009	26	11	128	18	63	20
8/3/2009	23	9	115	18	266	14
8/10/2009	50	18	117	44	265	23
8/17/2009	40	13	111	42	154	13
8/24/2009	10	3	30	10	170	5
8/31/2009	24	7	74	22	221	11
9/7/2009	66	9	834	31	325	95
9/14/2009	36	12	197	31	313	18
9/21/2009	21	10	67	19	109	9
9/28/2009						



Table A-47. Dissolved Oxygen, Platte River, Lexington, NE

Dissolved Oxygen, mg/L						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	11.6	9.4	12.9	11.5	70	0.8
3/30/2009	11.4	6.9	12.6	11.5	188	0.9
4/6/2009	10.7	8.7	12.7	10.8	270	0.8
4/13/2009	9.3	8.3	11.0	9.2	326	0.7
4/20/2009						
4/27/2009						
5/4/2009	8.6	7.4	9.5	8.7	221	0.6
5/11/2009	8.0	6.4	9.7	7.9	221	0.8
5/18/2009						
5/25/2009	7.5	6.6	8.9	7.5	171	0.6
6/1/2009	7.9	6.2	9.1	7.8	336	0.6
6/8/2009	8.1	6.4	9.2	8.1	331	0.6
6/15/2009	8.3	5.7	13.8	7.5	302	2.3
6/22/2009	7.4	4.9	13.3	6.8	333	2.2
6/29/2009	7.5	6.1	10.4	7.3	336	1.1
7/6/2009	7.7	6.3	10.5	7.1	334	1.1
7/13/2009	7.6	6.0	10.8	7.4	336	1.1
7/20/2009	7.5	6.4	9.4	7.4	335	0.8
7/27/2009	7.4	6.2	8.7	7.3	115	0.7
8/3/2009	7.5	6.2	9.4	7.3	281	0.9
8/10/2009	6.9	5.1	8.5	6.8	336	0.8
8/17/2009	7.5	5.9	8.7	7.5	335	0.7
8/24/2009	7.7	3.0	9.6	7.7	285	1.0
8/31/2009	8.3	5.7	10.2	8.2	320	1.1
9/7/2009	8.5	7.4	10.0	8.3	334	0.7
9/14/2009	8.5	7.8	9.5	8.5	334	0.4
9/21/2009	9.1	8.0	9.9	9.3	115	0.5
9/28/2009						

Table A-48. Discharge, Platte River, Lexington, NE

Discharge, cfs						
Date	Weekly					
	Mean	Min	Max	Median	N	STD
3/23/2009	245	234	264	244	7	11
3/30/2009	270	249	322	262	7	25
4/6/2009	317	308	328	314	7	8
4/13/2009	873	323	1,830	446	7	668
4/20/2009	677	418	1,260	573	7	306
4/27/2009	232	174	332	229	7	56
5/4/2009	201	160	259	189	7	33
5/11/2009	119	96	147	119	7	19
5/18/2009	87	76	100	87	7	8
5/25/2009	143	106	170	139	7	26
6/1/2009	103	91	115	108	7	10
6/8/2009	145	113	187	125	7	32
6/15/2009	771	199	1,110	937	7	339
6/22/2009	912	541	1,230	929	7	286
6/29/2009	442	285	601	421	7	141
7/6/2009	170	103	266	176	7	55
7/13/2009	287	230	326	304	7	35
7/20/2009	278	232	358	255	7	52
7/27/2009	209	195	224	208	7	11
8/3/2009	241	191	306	252	7	40
8/10/2009	373	239	749	322	7	175
8/17/2009	344	201	561	332	7	128
8/24/2009	126	81	191	108	7	42
8/31/2009	185	135	207	188	7	23
9/7/2009	232	185	320	191	7	59
9/14/2009	216	196	275	200	7	30
9/21/2009	242	195	284	255	7	35
9/28/2009	224	210	239	225	7	12



Table A-49. Temperature, Platte River, Louisville, NE

Temperature, °C						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	8.8	3.9	14.0	8.8	1,120	2.6
April 2009	11.4	2.1	22.8	11.2	2,663	4.3
May 2009	19.5	13.3	27.4	19.0	2,945	3.2
June 2009	24.2	17.4	32.2	24.5	2,857	3.6
July 2009	25.7	20.9	31.1	25.8	2,955	2.2
August 2009	25.0	18.9	31.0	24.9	2,960	2.6
September 2009	20.7	12.9	26.9	21.0	2,870	2.9

Table A-50. Specific Conductance, Platte River, Louisville, NE

Specific Conductance, mS/cm						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	0.585	0.537	0.624	0.585	1,124	0.018
April 2009	0.578	0.501	0.682	0.578	2,629	0.034
May 2009	0.580	0.443	0.952	0.567	2,825	0.059
June 2009	0.552	0.286	1.220	0.541	2,857	0.112
July 2009	0.640	0.252	0.994	0.660	2,606	0.105
August 2009	0.559	0.261	1.280	0.527	2,697	0.156
September 2009	0.711	0.261	1.290	0.726	2,839	0.124

Table A-51. pH, Platte River, Louisville, NE

pH						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009						
April 2009						
May 2009	9.1	8.2	9.7	9.1	1,411	0.3
June 2009	8.3	7.6	9.2	8.3	1,436	0.4
July 2009	8.8	8.3	9.2	8.8	1,486	0.2
August 2009	8.7	7.5	9.3	8.8	1,486	0.3
September 2009	8.9	7.9	9.2	8.9	1,297	0.2



Table A-52. Turbidity, Platte River, Louisville, NE

Turbidity, NTU						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	118	64	380	86	1,109	67
April 2009	81	38	160	76	2,548	24
May 2009	60	14	210	55	2,499	25
June 2009	388	33	1,300	250	2,383	315
July 2009	116	42	1,310	87	2,459	101
August 2009	180	49	830	130	2,843	125
September 2009	110	50	1,270	87	2,094	98

Table A-53. Dissolved Oxygen, Platte River, Louisville, NE

Dissolved Oxygen, mg/L						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	11.0	9.7	12.3	10.9	1,121	0.7
April 2009	10.8	8.0	13.1	10.7	2,657	1.0
May 2009	10.7	6.4	16.7	10.3	2,922	2.4
June 2009	7.5	4.0	13.6	7.1	2,453	1.4
July 2009	9.6	4.0	17.4	8.9	2,699	2.5
August 2009	8.7	5.1	16.8	8.1	2,951	2.1
September 2009	9.2	7.1	13.5	8.9	2,867	1.6

Table A-54. Discharge, Platte River, Louisville, NE

Discharge, cfs						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	8,266	6,240	12,400	8,000	428	1,222
April 2009	8,770	6,060	11,100	8,750	1,048	865
May 2009	6,509	4,700	9,580	6,380	1,078	1,101
June 2009	10,722	4,280	25,800	9,460	1,106	4,678
July 2009	6,525	3,550	11,000	6,265	1,068	1,594
August 2009	5,935	3,210	13,100	5,620	1,159	1,744
September 2009	5,493	4,140	8,690	5,450	1,109	800



Table A-55. Temperature, Platte River, Duncan, NE

Temperature, °C						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	6.2	-0.1	15.2	5.7	268	3.5
April 2009	11.7	0.0	23.0	12.0	1,433	4.6
May 2009	18.7	10.9	30.1	18.1	1,485	4.1
June 2009	23.9	12.9	32.8	24.5	1,435	4.5
July 2009	25.8	17.8	35.9	25.4	1,481	3.5
August 2009	24.7	14.5	34.8	24.4	1,474	4.1
September 2009	19.8	10.4	29.0	19.4	1,434	3.7

Table A-56. Specific Conductance, Platte River, Duncan, NE

Specific Conductance, mS/cm						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	0.842	0.782	0.901	0.846	14	0.039
April 2009	0.789	0.705	0.884	0.790	321	0.039
May 2009	0.863	0.729	0.957	0.882	265	0.061
June 2009	0.826	0.720	0.913	0.831	547	0.048
July 2009	0.848	0.741	0.933	0.849	872	0.030
August 2009	0.877	0.704	0.945	0.881	846	0.040
September 2009	0.918	0.778	0.981	0.920	670	0.033

Table A-57. pH, Platte River, Duncan, NE

pH						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	7.9	7.3	8.4	7.9	268	0.3
April 2009	8.0	7.0	8.8	7.9	1,433	0.4
May 2009	8.5	7.6	8.9	8.5	1,485	0.2
June 2009	8.6	7.4	9.1	8.6	1,330	0.3
July 2009	8.8	8.0	9.3	8.8	1,332	0.2
August 2009	8.6	7.2	9.2	8.7	1,474	0.3
September 2009	8.5	8.0	9.3	8.5	1,434	0.3



Table A-58. Turbidity, Platte River, Duncan, NE

Turbidity, NTU						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	2	1	5	2	24	1
April 2009	270	1	1,008	30	664	325
May 2009	34	4	960	18	909	81
June 2009	47	8	426	34	663	40
July 2009	102	0	1261	49	917	174
August 2009	51	26	378	45	798	25
September 2009	51	15	191	38	1,316	36

Table A-59. Dissolved Oxygen, Platte River, Duncan, NE

Dissolved Oxygen, mg/L						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	11.9	8.2	13.6	12.0	182	1.1
April 2009	9.7	8.7	12.0	9.8	33	0.7
May 2009	9.3	6.3	11.4	9.3	1,389	1.1
June 2009	9.6	4.7	16.0	9.3	1,090	2.3
July 2009	8.4	4.3	12.7	8.0	1,351	1.7
August 2009	8.4	4.1	13.3	8.1	1,032	1.7
September 2009	9.4	6.8	14.1	9.4	1,430	1.5

Table A-60. Discharge, Platte River, Duncan, NE

Discharge, cfs						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	1,092	767	1,980	973	1,152	288
April 2009	1,707	799	3,730	1,460	2,880	810
May 2009	1,144	326	2,580	1,110	2,976	713
June 2009	2,103	336	4,550	1,620	2,855	1,323
July 2009	1,079	358	2,670	751	2,975	624
August 2009	360	200	516	370	2,976	71
September 2009	475	157	955	529	2,879	273



Table A-61. Temperature, Platte River, Grand Island, NE

Temperature, °C						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	6.5	-0.1	18.4	5.9	263	4.2
April 2009	12.2	0.1	24.6	12.3	1,436	5.1
May 2009	18.8	11.8	31.5	18.4	1,480	3.8
June 2009	23.1	14.3	32.7	23.5	1,438	4.7
July 2009	25.8	17.5	34.8	25.5	1,485	3.3
August 2009	24.7	15.1	33.8	24.3	1,479	3.7
September 2009	19.7	11.2	29.2	19.8	1,430	3.3

Table A-62. Specific Conductance, Platte River, Grand Island, NE

Specific Conductance, mS/cm						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	0.895	0.801	0.990	0.906	40	0.074
April 2009	0.900	0.802	0.971	0.946	143	0.066
May 2009	0.897	0.751	1.012	0.913	607	0.065
June 2009	0.906	0.800	0.988	0.923	647	0.050
July 2009	0.926	0.800	1.034	0.921	675	0.054
August 2009	0.887	0.734	0.979	0.888	684	0.053
September 2009	0.959	0.778	1.016	0.963	1,428	0.035

Table A-63. pH, Platte River, Grand Island, NE

pH						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	8.4	8.4	8.6	8.4	263	0.1
April 2009	8.4	8.0	8.7	8.4	1,436	0.1
May 2009	8.5	8.1	8.7	8.5	1,357	0.1
June 2009	8.5	8.0	9.0	8.5	1,070	0.2
July 2009	8.5	7.8	8.9	8.5	1,163	0.2
August 2009	8.6	8.0	9.1	8.6	1,321	0.2
September 2009	8.6	8.3	8.9	8.6	1,362	0.1



Table A-64. Turbidity, Platte River, Grand Island, NE

Turbidity, NTU						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	8	3	61	6	245	7
April 2009	82	4	1,051	31	766	141
May 2009	19	7	138	15	918	12
June 2009	36	11	285	29	707	21
July 2009	122	27	1,169	63	937	204
August 2009	65	34	198	56	403	28
September 2009	73	23	305	62	1,357	47

Table A-65. Dissolved Oxygen, Platte River, Grand Island, NE

Dissolved Oxygen, mg/L						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	11.9	10.1	13.7	12.0	263	0.9
April 2009	10.2	7.0	13.6	10.2	1,433	1.2
May 2009	8.9	5.7	10.7	8.9	1,307	0.9
June 2009	8.4	4.8	13.6	8.1	967	1.8
July 2009	8.5	5.2	14.0	7.9	945	1.9
August 2009	8.6	5.4	12.6	8.1	1,194	1.8
September 2009	9.2	7.2	11.9	9.3	1,362	1.2

Table A-66. Discharge, Platte River, Grand Island, NE

Discharge, cfs						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	865	596	1,690	741	1,152	270
April 2009	1,507	636	3,510	1,360	2,880	752
May 2009	962	393	2,320	656	2,876	601
June 2009	1,420	393	3,100	1,050	2,880	907
July 2009	812	393	1,860	616	2,967	406
August 2009	475	362	646	476	2,976	70
September 2009	671	325	1,090	774	2,878	256



Table A-67. Temperature, Platte River, Shelton, NE

Temperature, °C						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	5.8	-0.1	14.2	5.9	259	2.6
April 2009	11.6	0.1	22.5	11.8	1,439	4.5
May 2009	18.5	12.2	29.6	17.9	1,483	3.9
June 2009	22.8	14.1	31.0	23.2	1,437	4.3
July 2009	25.5	17.1	34.1	25.2	1,483	3.2
August 2009	24.5	15.6	33.1	24.2	1,422	3.5
September 2009	19.6	12.0	28.0	19.7	1,434	3.1

Table A-68. Specific Conductance, Platte River, Shelton, NE

Specific Conductance, mS/cm						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	0.830	0.801	0.886	0.802	3	0.049
April 2009	0.871	0.773	0.977	0.852	43	0.069
May 2009	0.928	0.754	1.023	0.939	1,220	0.049
June 2009	0.927	0.786	1.013	0.940	1,062	0.050
July 2009	0.954	0.754	1.053	0.963	1,436	0.056
August 2009	0.897	0.760	1.008	0.898	1,051	0.047
September 2009	0.976	0.811	1.084	0.990	1,414	0.042

Table A-69. pH, Platte River, Shelton, NE

pH						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	8.4	8.0	8.7	8.4	257	0.2
April 2009	8.5	8.1	8.7	8.4	1,437	0.1
May 2009	8.3	7.8	8.5	8.4	1,483	0.1
June 2009	8.4	8.0	8.8	8.3	1,437	0.2
July 2009	8.5	8.2	8.8	8.5	1,482	0.1
August 2009	8.6	8.1	8.8	8.6	1,422	0.2
September 2009	8.4	8.2	8.8	8.4	1,434	0.1

**Table A-70. Turbidity, Platte River, Shelton, NE**

Turbidity, NTU						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	19	10	72	15	33	15
April 2009	27	2	468	22	836	27
May 2009	40	2	968	16	1,244	82
June 2009	66	12	1,059	35	1,341	123
July 2009	77	33	808	65	1,403	70
August 2009	83	40	212	71	1,070	31
September 2009	72	16	298	70	1,352	43

Table A-71. Dissolved Oxygen, Platte River, Shelton, NE

Dissolved Oxygen, mg/L						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	11.0	7.0	13.1	11.4	124	1.6
April 2009	9.9	6.5	13.2	9.9	1,369	1.2
May 2009	8.6	6.7	10.7	8.6	1,373	0.7
June 2009	8.3	5.7	12.9	8.3	1,433	1.4
July 2009	8.0	5.2	12.5	7.8	1,441	1.3
August 2009	8.2	6.0	10.3	8.0	1,221	1.0
September 2009	8.8	7.4	10.5	8.9	1,361	0.8

Table A-72. Discharge, Platte River, Shelton, NE

Discharge, cfs						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	863	460	1,610	792	31	301
April 2009	1,560	466	3,860	1,395	30	913
May 2009	902	459	2,480	707	31	556
June 2009	1,363	406	2,810	1,480	30	879
July 2009	749	380	1,540	519	31	385
August 2009	406	237	685	394	31	114
September 2009	686	230	1,150	861	30	320



Table A-73. Temperature, Platte River, Kearney, NE

Temperature, °C						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	5.5	-0.2	12.7	5.4	255	3.2
April 2009	10.9	-0.1	21.8	11.3	1,438	4.3
May 2009	16.6	10.3	27.2	15.8	1,482	3.6
June 2009	20.8	11.4	30.5	21.9	1,438	5.6
July 2009	25.1	16.3	33.3	24.8	1,486	3.2
August 2009	24.5	14.9	32.1	24.2	1,136	3.6
September 2009	18.4	11.2	27.8	18.1	1,048	3.3

Table A-74. Specific Conductance, Platte River, Kearney, NE

Specific Conductance, mS/cm						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	0.966	0.856	0.985	0.971	119	0.019
April 2009	0.756	0.561	0.860	0.762	333	0.047
May 2009	0.836	0.729	0.907	0.845	188	0.052
June 2009	0.803	0.656	0.955	0.801	862	0.061
July 2009	0.948	0.794	1.079	0.954	1,029	0.064
August 2009	0.939	0.857	0.997	0.941	1,116	0.028
September 2009	0.944	0.869	0.992	0.946	1,048	0.021

Table A-75. pH, Platte River, Kearney, NE

pH						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	8.4	7.7	8.6	8.5	255	0.2
April 2009	8.4	7.6	8.6	8.4	1,438	0.2
May 2009	8.3	7.1	8.7	8.3	1,454	0.2
June 2009	8.0	7.4	8.5	8.0	1,438	0.3
July 2009	8.4	7.9	8.8	8.4	1,486	0.2
August 2009	8.3	7.8	8.7	8.3	468	0.2
September 2009	8.4	8.2	8.8	8.4	1,048	0.1

**Table A-76. Turbidity, Platte River, Kearney, NE**

Turbidity, NTU						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	4	3	8	4	120	1
April 2009	67	3	1,030	21	891	119
May 2009	41	5	202	31	829	35
June 2009	82	7	1,143	55	465	116
July 2009	32	2	89	31	1,116	19
August 2009	21	2	92	17	575	16
September 2009	19	2	89	15	970	13

Table A-77. Dissolved Oxygen, Platte River, Kearney, NE

Dissolved Oxygen, mg/L						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	10.8	6.0	12.8	10.9	232	1.1
April 2009	9.8	6.0	12.4	9.9	1,415	1.1
May 2009	9.2	2.3	16.8	9.0	1,478	1.8
June 2009	7.2	1.1	17.0	7.1	1,417	3.3
July 2009	7.7	5.1	12.4	7.3	1,206	1.4
August 2009	7.7	5.9	11.3	7.3	782	1.3
September 2009	8.6	5.0	11.5	8.7	1,048	1.3

Table A-78. Discharge, Platte River, Kearney, NE

Discharge, cfs						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	715	367	1,790	608	1,152	325
April 2009	1,366	362	3,270	1160	2,880	766
May 2009	547	124	2,130	318	2,976	552
June 2009	1,067	135	2,260	1240	2,880	804
July 2009	654	339	1,560	502	2,975	323
August 2009	279	105	656	261	2,976	126
September 2009	519	143	1,190	526	2,880	288

**Table A-79. Temperature, Platte River, Odessa, NE**

Temperature, °C						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	5.9	0.1	13.8	5.7	253	3.4
April 2009	10.8	0.1	21.9	11.0	1,437	4.2
May 2009	17.3	10.6	28.4	16.6	1,484	3.8
June 2009	22.0	13.4	30.7	22.3	1,434	4.1
July 2009	24.1	15.2	32.6	23.8	1,483	3.2
August 2009	23.5	15.1	31.2	23.2	1,484	3.5
September 2009	19.1	12.3	28.0	19.0	1,434	3.0

Table A-80. Specific Conductance, Platte River, Odessa, NE

Specific Conductance, mS/cm						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	0.909	0.863	0.968	0.905	253	0.025
April 2009	0.803	0.716	0.945	0.811	671	0.043
May 2009	0.933	0.691	1.012	0.942	921	0.042
June 2009	0.839	0.635	1.086	0.827	167	0.082
July 2009	1.014	0.862	1.104	1.015	864	0.037
August 2009	0.968	0.771	1.014	0.974	1,129	0.031
September 2009	0.929	0.805	1.031	0.941	969	0.046

Table A-81. pH, Platte River, Odessa, NE

pH						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	8.4	8.2	8.6	8.4	253	0.1
April 2009	8.3	7.8	8.6	8.3	1,437	0.1
May 2009	8.1	7.5	8.5	8.2	1,484	0.3
June 2009	7.9	7.4	8.5	7.9	1,434	0.2
July 2009	8.4	7.6	8.8	8.4	1,483	0.2
August 2009	8.5	8.0	8.7	8.5	1,483	0.1
September 2009	8.4	8.1	8.8	8.4	1,434	0.1

**Table A-82. Turbidity, Platte River, Odessa, NE**

Turbidity, NTU						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	5	3	14	5	252	2
April 2009	15	4	643	13	1,428	31
May 2009	16	1	86	15	774	11
June 2009	58	2	637	34	524	81
July 2009	65	9	502	33	958	76
August 2009	43	2	398	31	990	43
September 2009	46	7	560	35	1,312	54

Table A-83. Dissolved Oxygen, Platte River, Odessa, NE

Dissolved Oxygen, mg/L						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	11.7	10.2	13.3	11.8	253	0.8
April 2009	10.3	7.1	13.3	10.3	1,430	1.3
May 2009	8.8	3.2	16.6	8.6	1,180	1.5
June 2009	7.0	4.8	9.5	7.0	943	1.0
July 2009	8.0	4.2	12.9	7.7	1,249	1.3
August 2009	8.0	5.2	10.8	8.0	1,484	1.0
September 2009	8.7	7.1	10.4	8.7	1,434	0.7

Table A-84. Discharge, Platte River, Odessa, NE

Discharge, cfs						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	738	276	1,490	668	31	302
April 2009	1,232	390	3,880	1,010	30	937
May 2009	391	61	1,870	120	31	491
June 2009	965	51	2,300	874	30	866
July 2009	530	240	1,240	379	31	302
August 2009	295	121	632	295	31	122
September 2009	534	108	954	676	30	301

**Table A-85. Temperature, Platte River, Overton, NE**

Temperature, °C						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	6.5	1.0	12.0	6.3	435	2.4
April 2009	11.2	0.5	21.3	11.5	2,880	4.3
May 2009	17.0	10.0	27.4	16.3	1,747	3.9
June 2009	22.1	13.1	31.1	22.8	1,436	4.7
July 2009	25.0	18.3	31.8	24.8	1,485	2.7
August 2009	24.2	17.4	31.0	24.1	1,481	2.8
September 2009	18.8	11.4	26.5	19.0	1,432	2.9

Table A-86. Specific Conductance, Platte River, Overton, NE

Specific Conductance, mS/cm						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	0.817	0.796	0.831	0.817	215	0.005
April 2009	0.810	0.760	0.842	0.812	771	0.017
May 2009	0.917	0.811	1.012	0.912	1,539	0.061
June 2009	0.965	0.865	1.061	0.966	924	0.047
July 2009	0.989	0.846	1.096	0.980	1,022	0.061
August 2009	1.003	0.872	1.086	1.007	934	0.040
September 2009	0.939	0.801	1.069	0.935	1,250	0.044

Table A-87. pH, Platte River, Overton, NE

pH						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	8.4	7.0	8.5	8.4	441	0.2
April 2009	8.4	7.9	8.8	8.5	2,880	0.2
May 2009	8.6	8.1	8.9	8.6	1,492	0.2
June 2009	8.3	7.9	8.7	8.3	1,254	0.1
July 2009	8.3	7.9	8.7	8.3	1,485	0.1
August 2009	8.3	7.9	8.6	8.4	1,481	0.1
September 2009	8.2	7.9	8.6	8.3	1,432	0.1



Table A-88. Turbidity, Platte River, Overton, NE

Turbidity, NTU						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	9	5	20	9	20	4
April 2009	16	4	200	11	1,630	14
May 2009	18	3	465	14	1,462	29
June 2009	15	3	84	12	991	11
July 2009	58	10	793	25	1,136	106
August 2009	26	4	84	23	929	12
September 2009	28	9	119	23	1,344	14

Table A-89. Dissolved Oxygen, Platte River, Overton, NE

Dissolved Oxygen, mg/L						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	13.0	6.3	14.7	13.1	393	1.3
April 2009	13.1	6.1	17.9	13.1	2,813	1.9
May 2009	9.5	6.0	13.5	9.4	1,725	1.3
June 2009	7.9	5.0	13.5	7.9	1,202	1.6
July 2009	7.9	4.9	12.1	7.5	1,379	1.4
August 2009	7.5	5.6	9.1	7.4	1,226	0.8
September 2009	8.6	6.3	10.1	8.7	1,410	0.7

Table A-90. Discharge, Platte River, Overton, NE

Discharge, cfs						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	514	311	2,080	362	572	441
April 2009	1,448	365	3,730	1370	1,440	957
May 2009	477	177	1,930	244	1,488	476
June 2009	1,266	179	2,610	1405	1,440	914
July 2009	663	262	2,240	441	1,488	450
August 2009	348	232	750	308	1,308	107
September 2009	736	141	2,130	381	1,440	621



Table A-91. Temperature, Platte River, Lexington, NE

Temperature, °C						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	6.4	1.4	11.8	6.5	221	2.2
April 2009	9.9	1.3	16.6	10.3	1,149	3.3
May 2009	17.9	9.9	27.5	17.8	1,225	3.7
June 2009	22.0	12.8	31.0	22.9	1,437	4.7
July 2009	24.4	17.2	31.7	24.1	1,485	2.9
August 2009	23.4	15.1	30.5	23.3	1,432	3.1
September 2009	19.3	12.0	26.3	19.2	1,070	2.5

Table A-92. Specific Conductance, Platte River, Lexington, NE

Specific Conductance, mS/cm						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	0.842	0.787	0.882	0.842	29	0.021
April 2009	0.821	0.774	0.863	0.811	128	0.024
May 2009	0.901	0.803	1.063	0.859	960	0.083
June 2009	0.919	0.750	1.067	0.928	1,053	0.066
July 2009	0.976	0.437	1.102	0.973	1,287	0.061
August 2009	0.980	0.794	1.070	0.989	606	0.060
September 2009	0.950	0.849	1.030	0.962	528	0.042

Table A-93. pH, Platte River, Lexington, NE

pH						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009						
April 2009	7.9	6.8	9.2	8.0	1,092	0.4
May 2009	7.9	7.4	8.3	7.8	343	0.3
June 2009	8.2	7.9	8.7	8.2	1,437	0.2
July 2009	8.2	8.0	8.6	8.2	1,485	0.1
August 2009	8.2	7.8	8.5	8.2	1,432	0.1
September 2009	8.1	7.7	8.4	8.1	1,070	0.2



Table A-94. Turbidity, Platte River, Lexington, NE

Turbidity, NTU						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	6	4	12	6	117	2
April 2009	9	3	38	7	588	6
May 2009	11	1	77	7	368	12
June 2009	9	3	77	8	877	8
July 2009	25	6	128	19	1,108	16
August 2009	31	3	117	24	920	22
September 2009	43	9	834	26	921	60

Table A-95. Dissolved Oxygen, Platte River, Lexington, NE

Dissolved Oxygen, mg/L						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	11.5	9.4	12.9	11.5	166	0.7
April 2009	10.1	6.9	12.7	10.1	688	1.1
May 2009	8.1	6.4	9.7	8.0	613	0.8
June 2009	7.9	4.9	13.8	7.7	1,398	1.6
July 2009	7.6	6.0	10.8	7.3	1,341	1.0
August 2009	7.4	3.0	9.8	7.4	1,300	0.9
September 2009	8.5	5.7	10.2	8.4	1,059	0.8

Table A-96. Discharge, Platte River, Lexington, NE

Discharge, cfs						
Date	Monthly					
	Mean	Min	Max	Median	N	STD
March 2009	271	234	297	273	31	20
April 2009	517	229	1,830	327	30	421
May 2009	142	76	259	136	31	48
June 2009	490	91	1,230	309	30	411
July 2009	261	103	554	255	31	89
August 2009	263	81	749	240	31	140
September 2009	223	182	320	202	30	39



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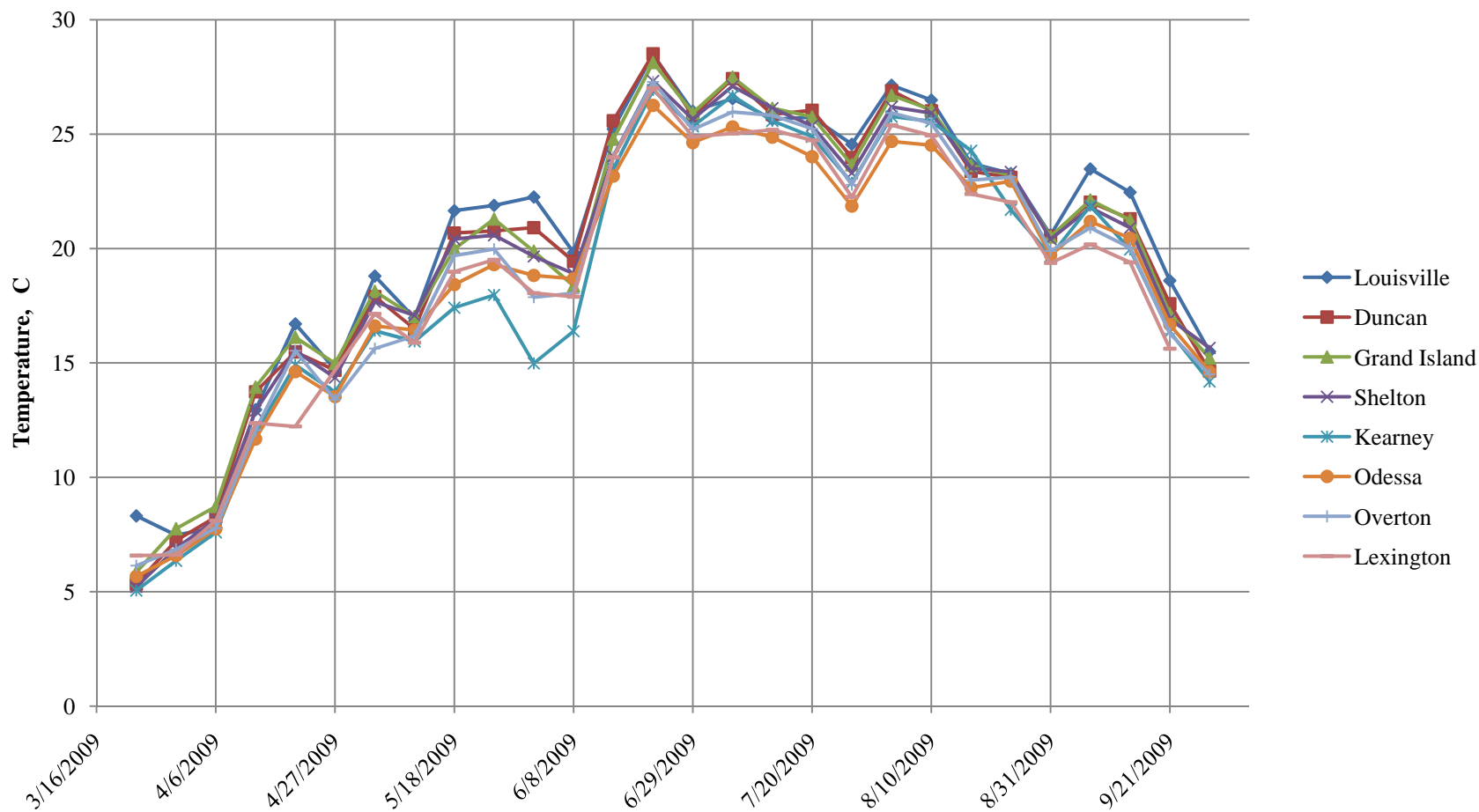




Figure B-2. Temporal Variation, Specific Conductance, Weekly Mean, Platte River, NE

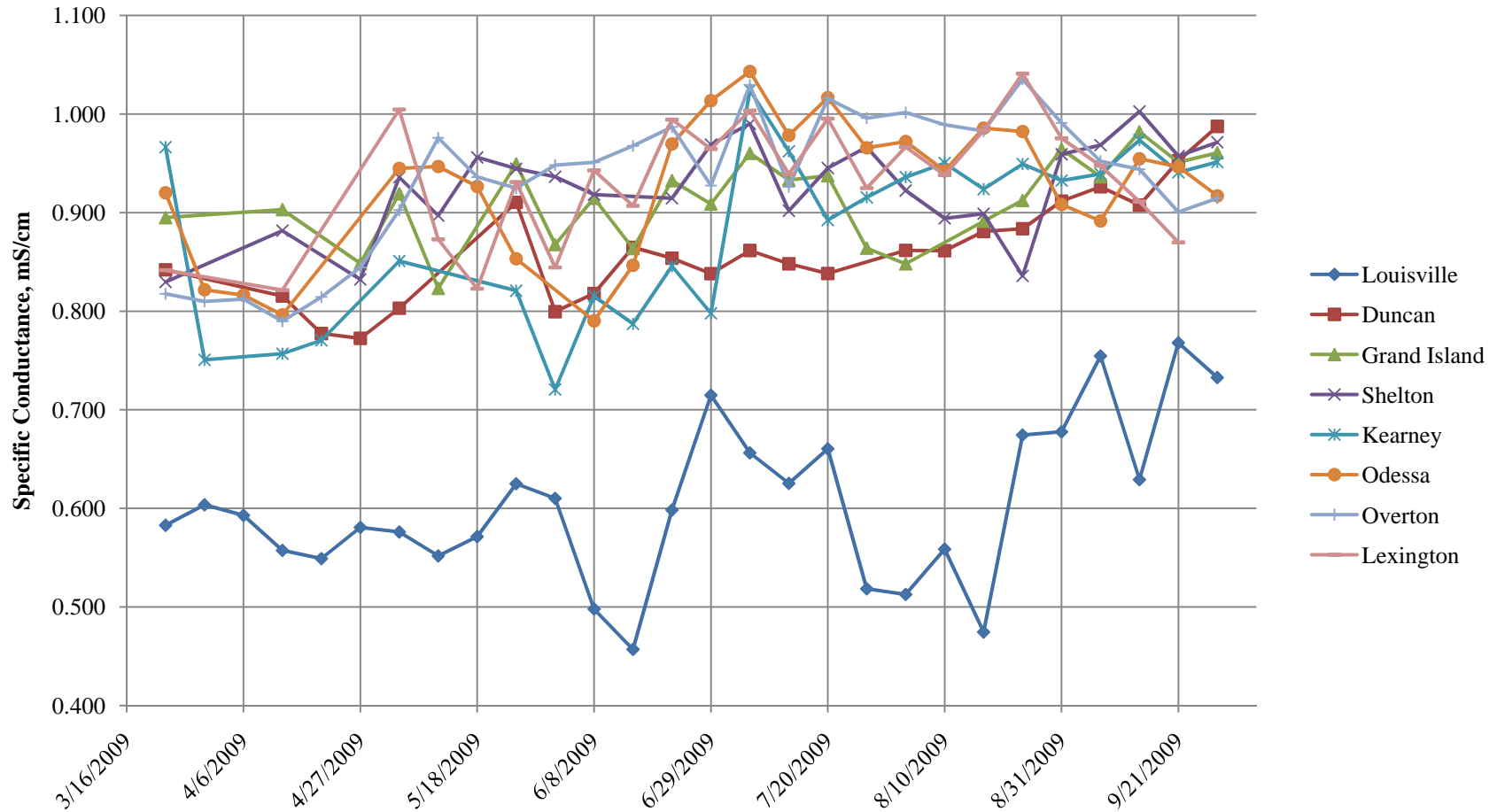




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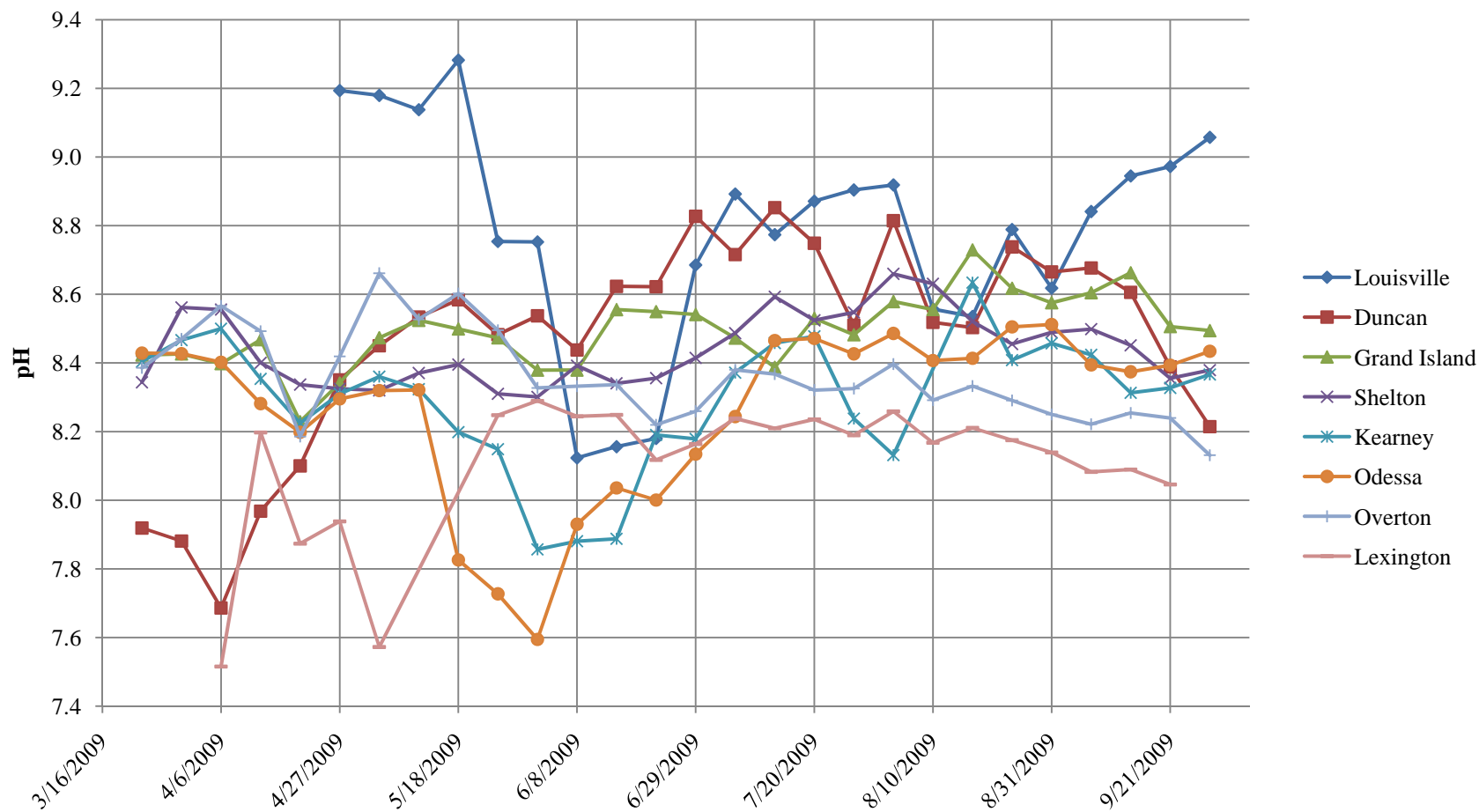




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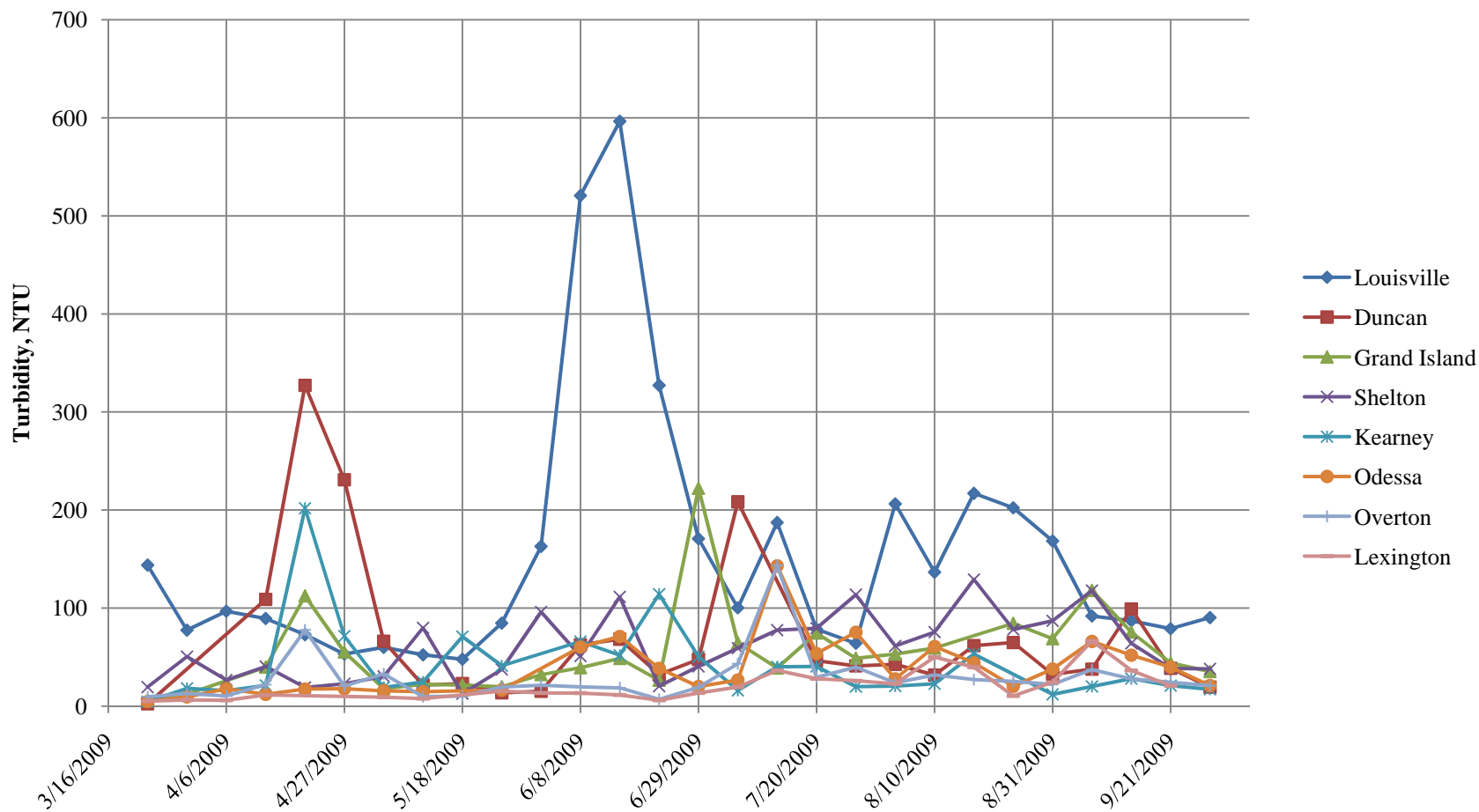




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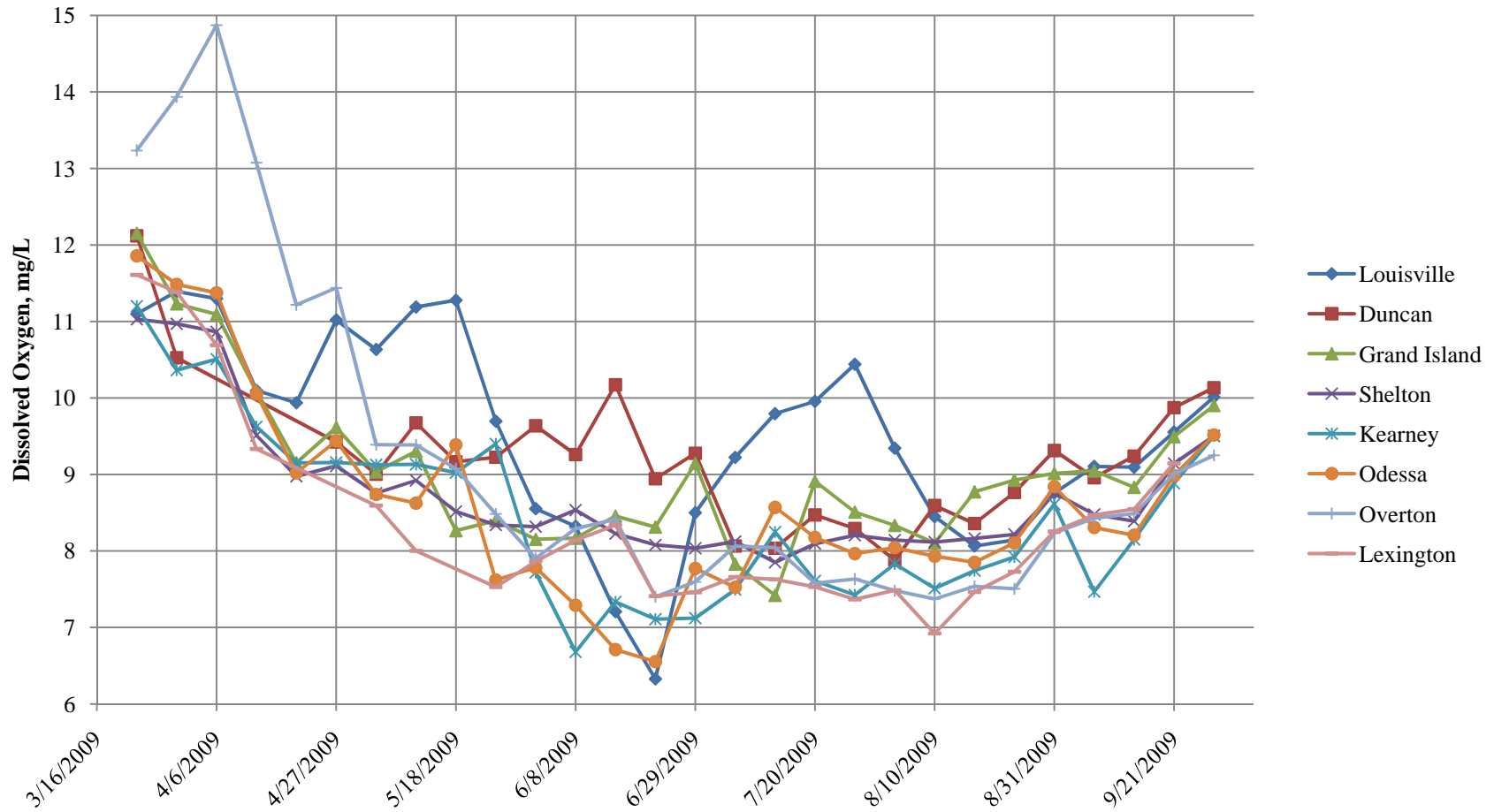




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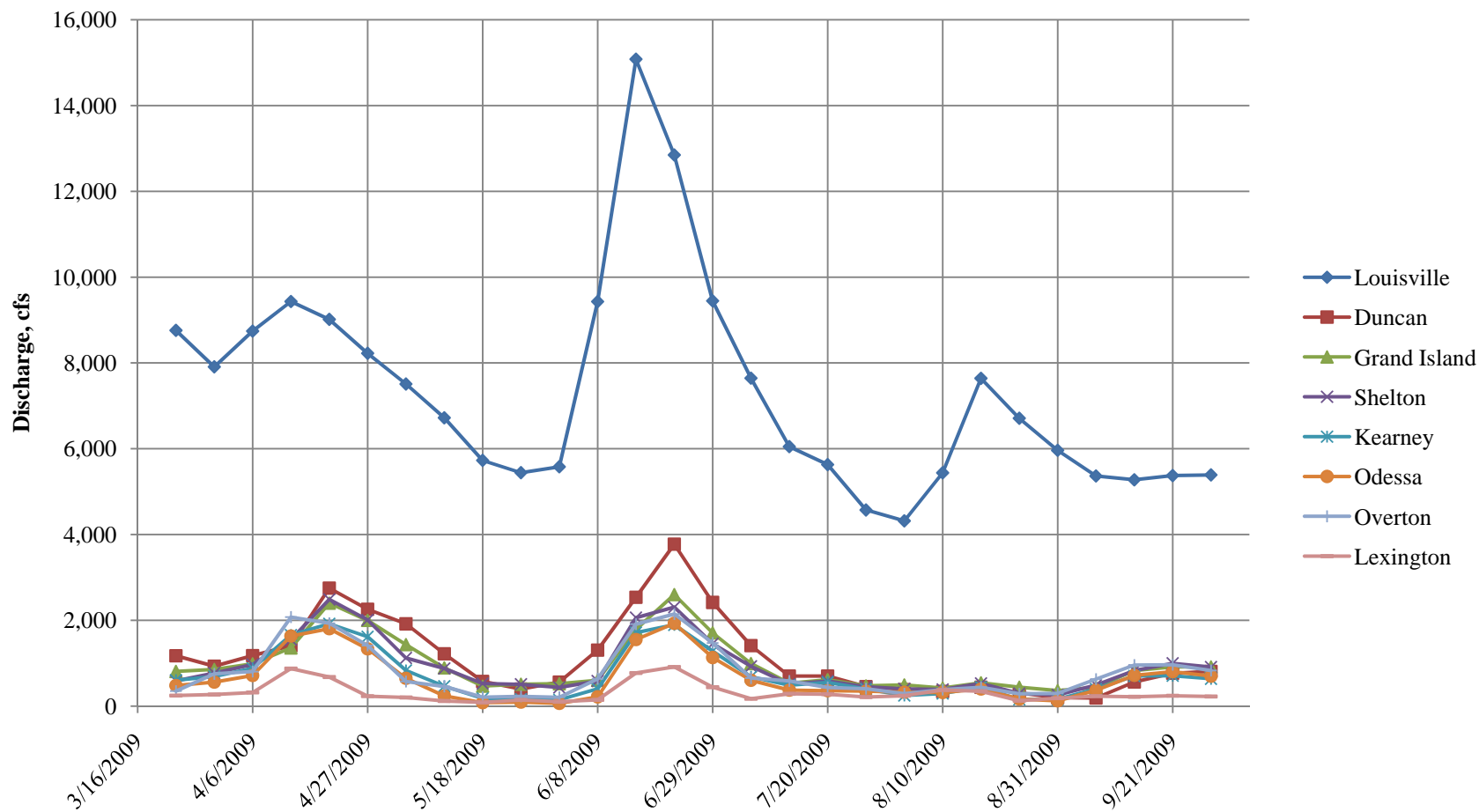




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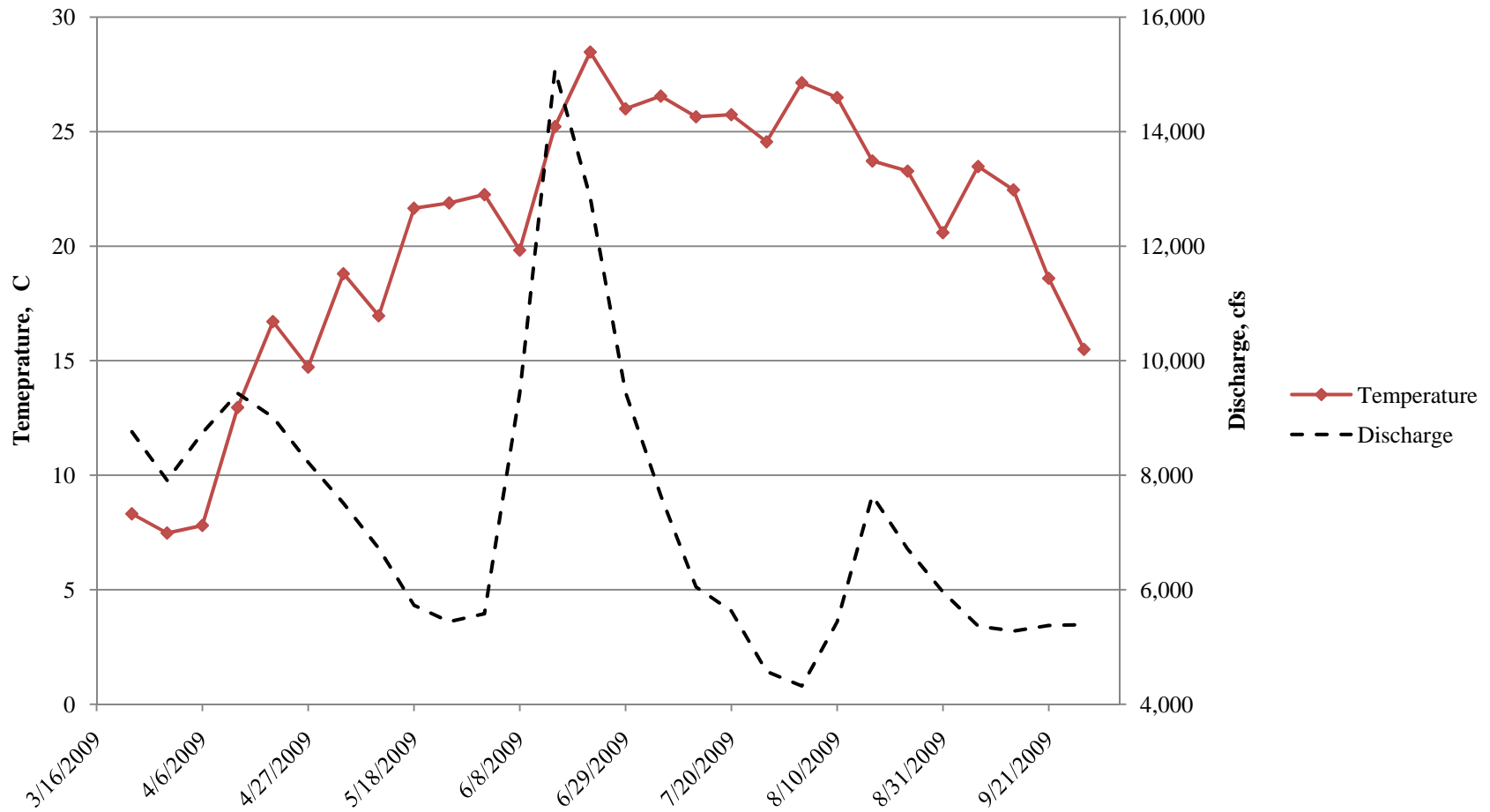




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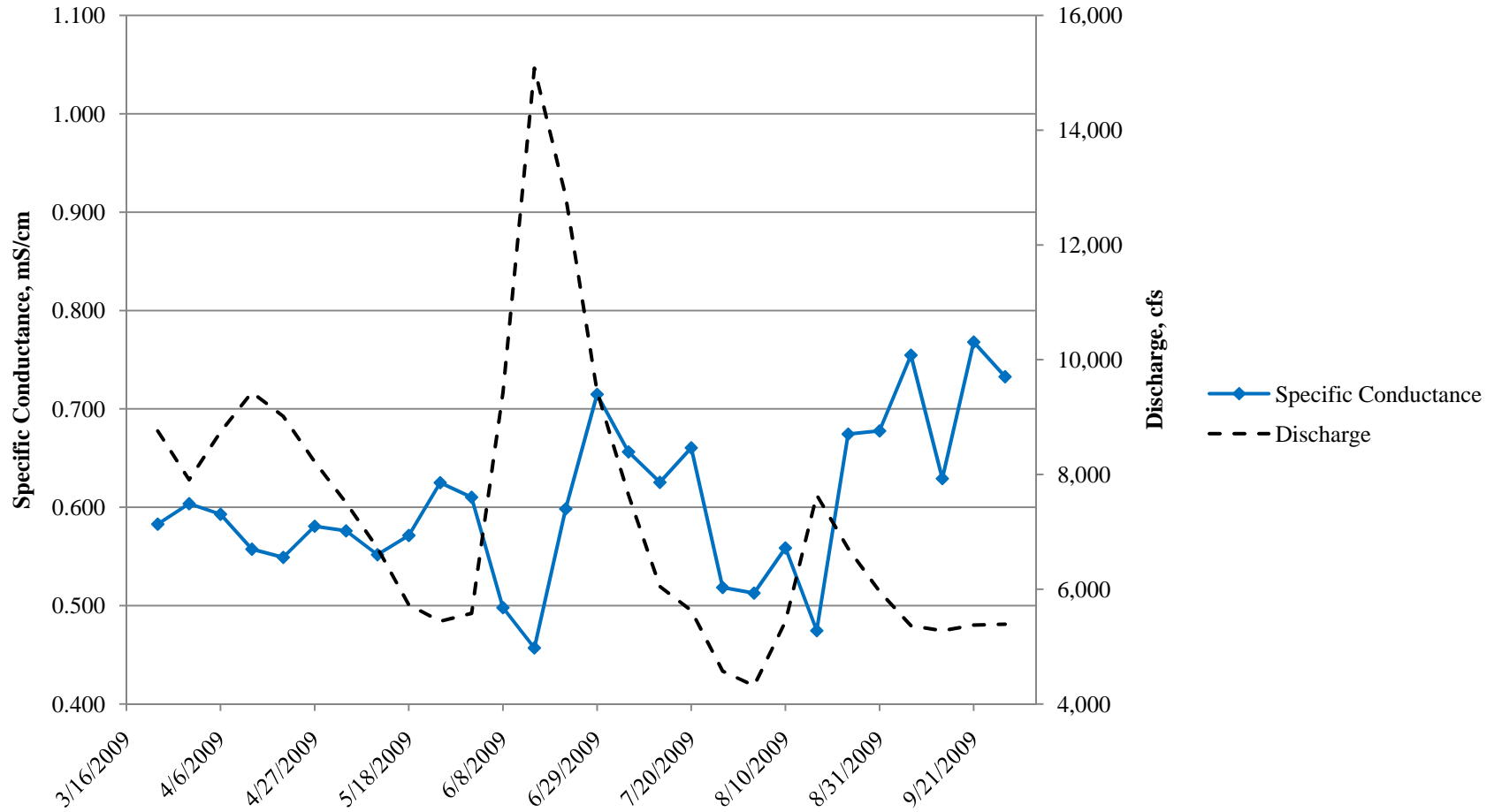




Figure B-9. pH and Discharge, Weekly Mean, Platte River, Louisville, NE

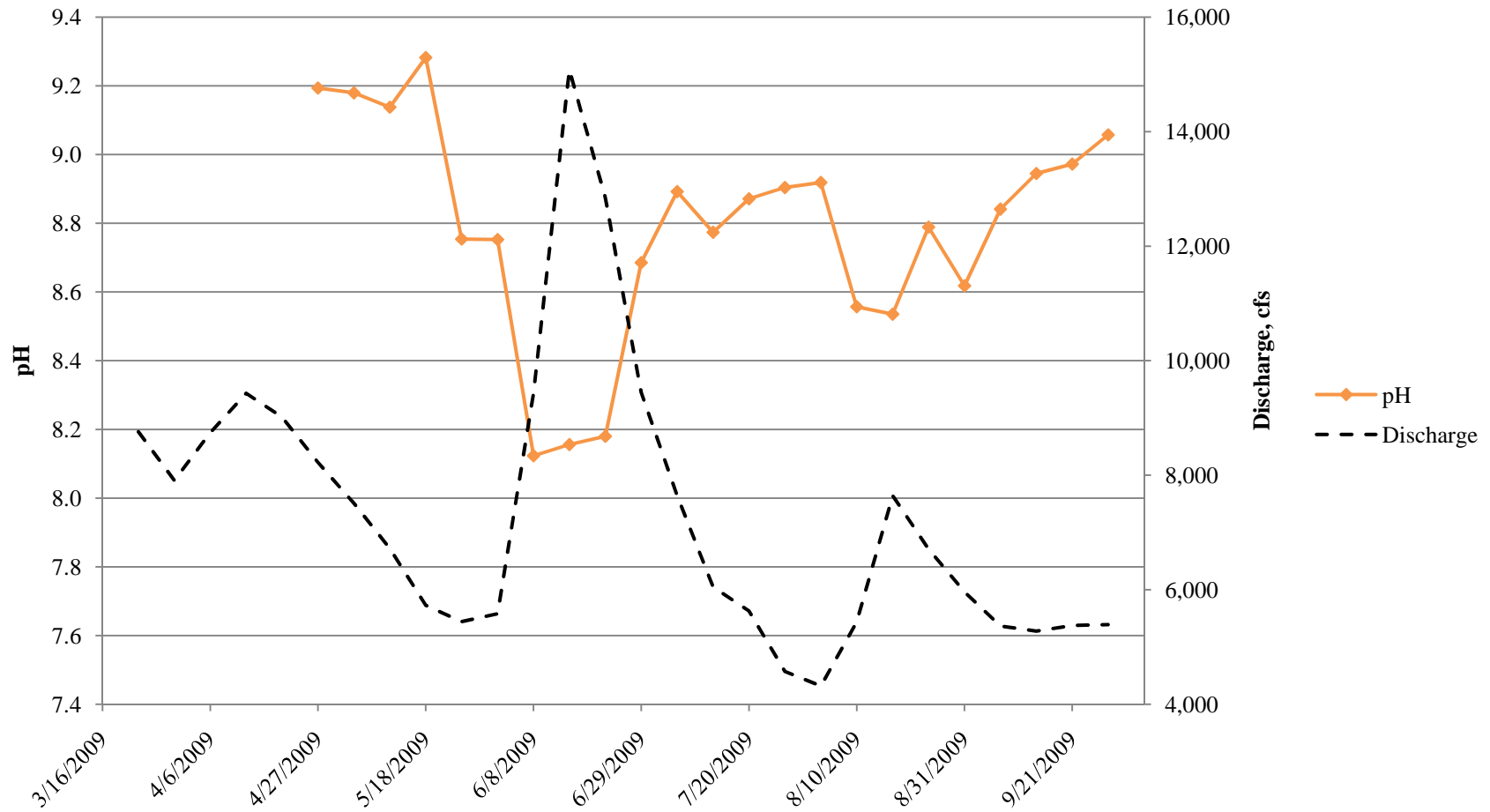




Figure B-10. Turbidity and Discharge, Weekly Mean, Platte River, Louisville, NE

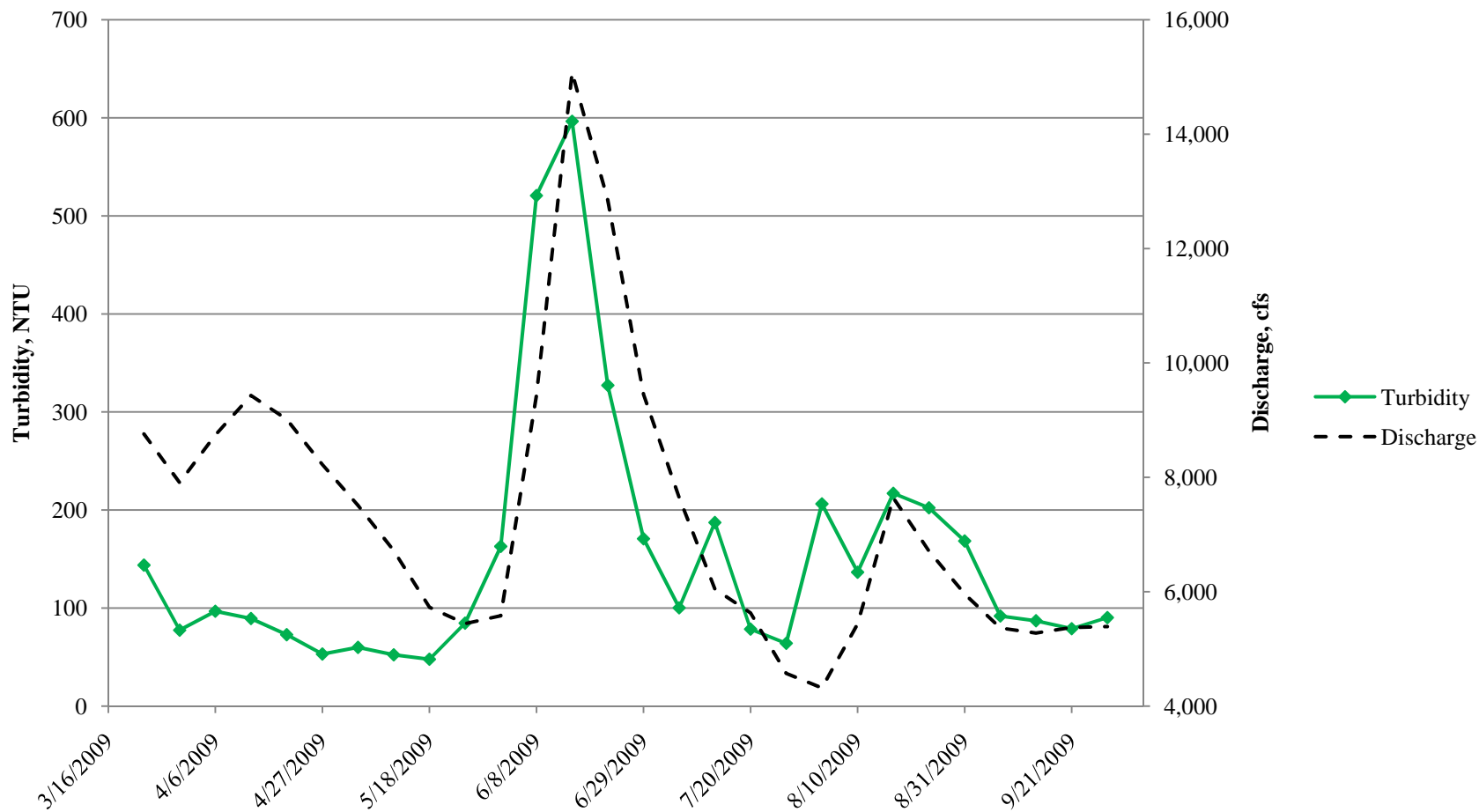




Figure B-11. Dissolved Oxygen and Discharge, Weekly Mean, Platte River, Louisville, NE

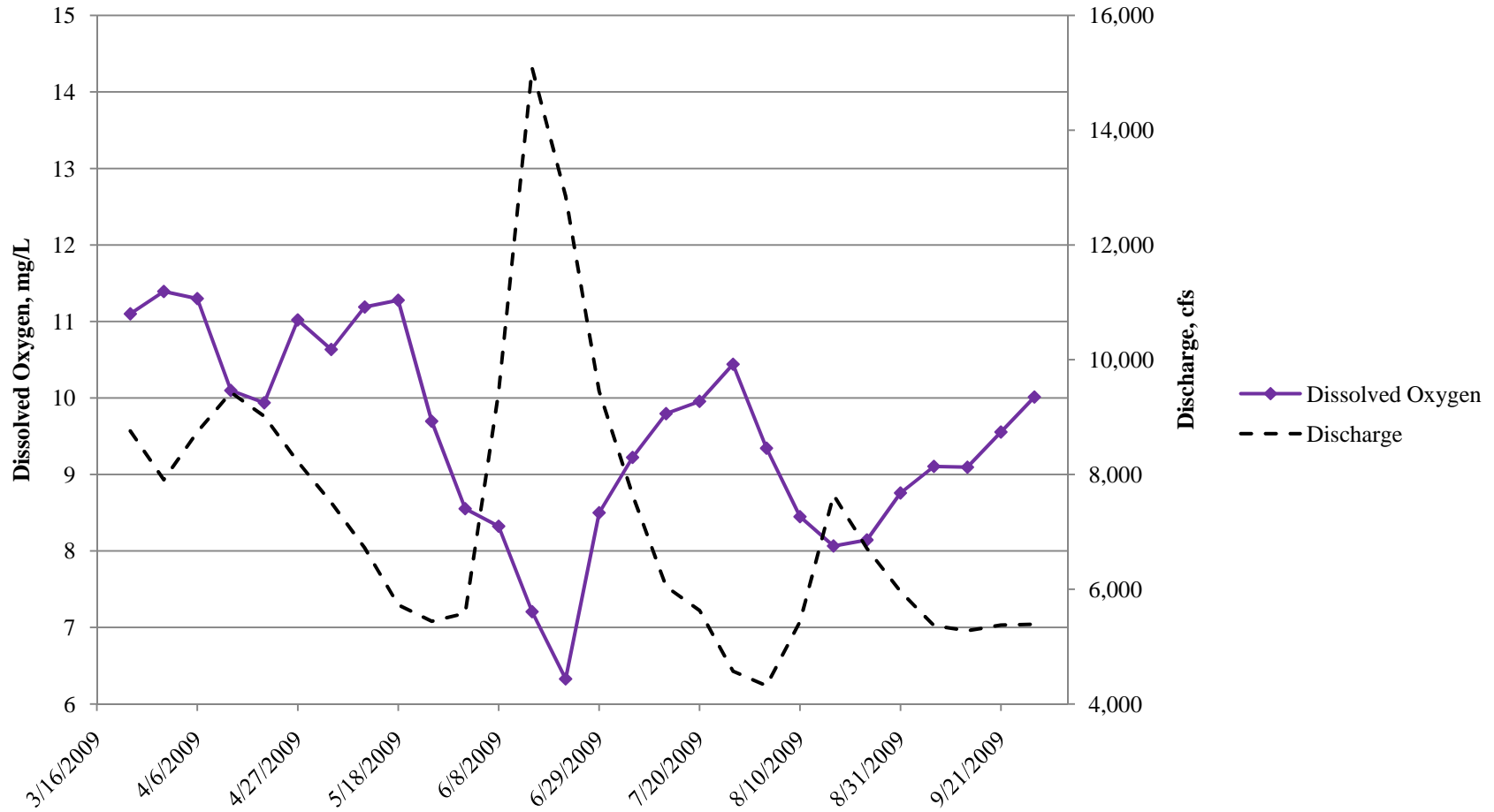




Figure B-12. Temperature and Discharge, Weekly Mean, Platte River, Duncan, NE

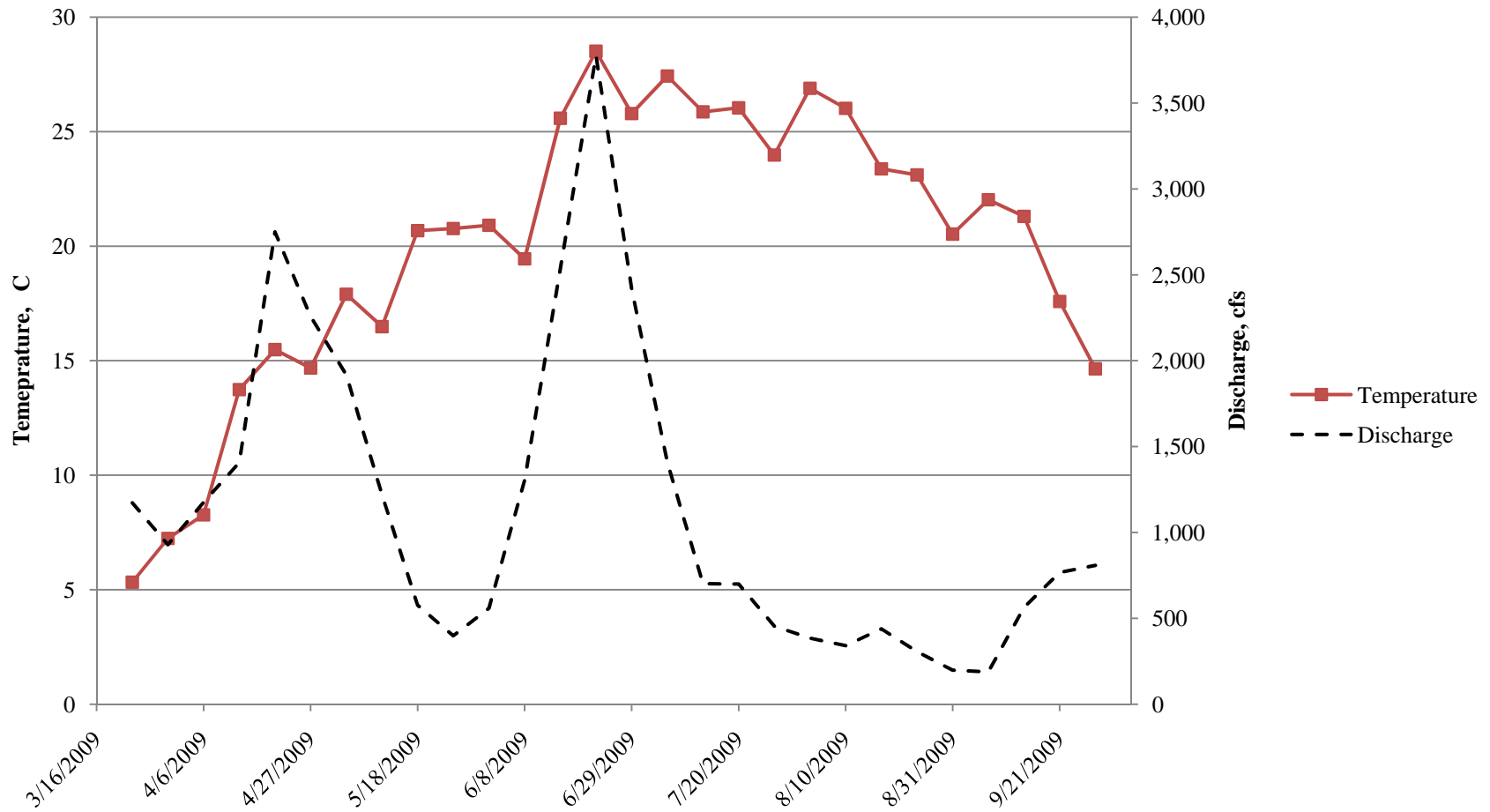




Figure B-13. Specific Conductance and Discharge, Weekly Mean, Platte River, Duncan, NE

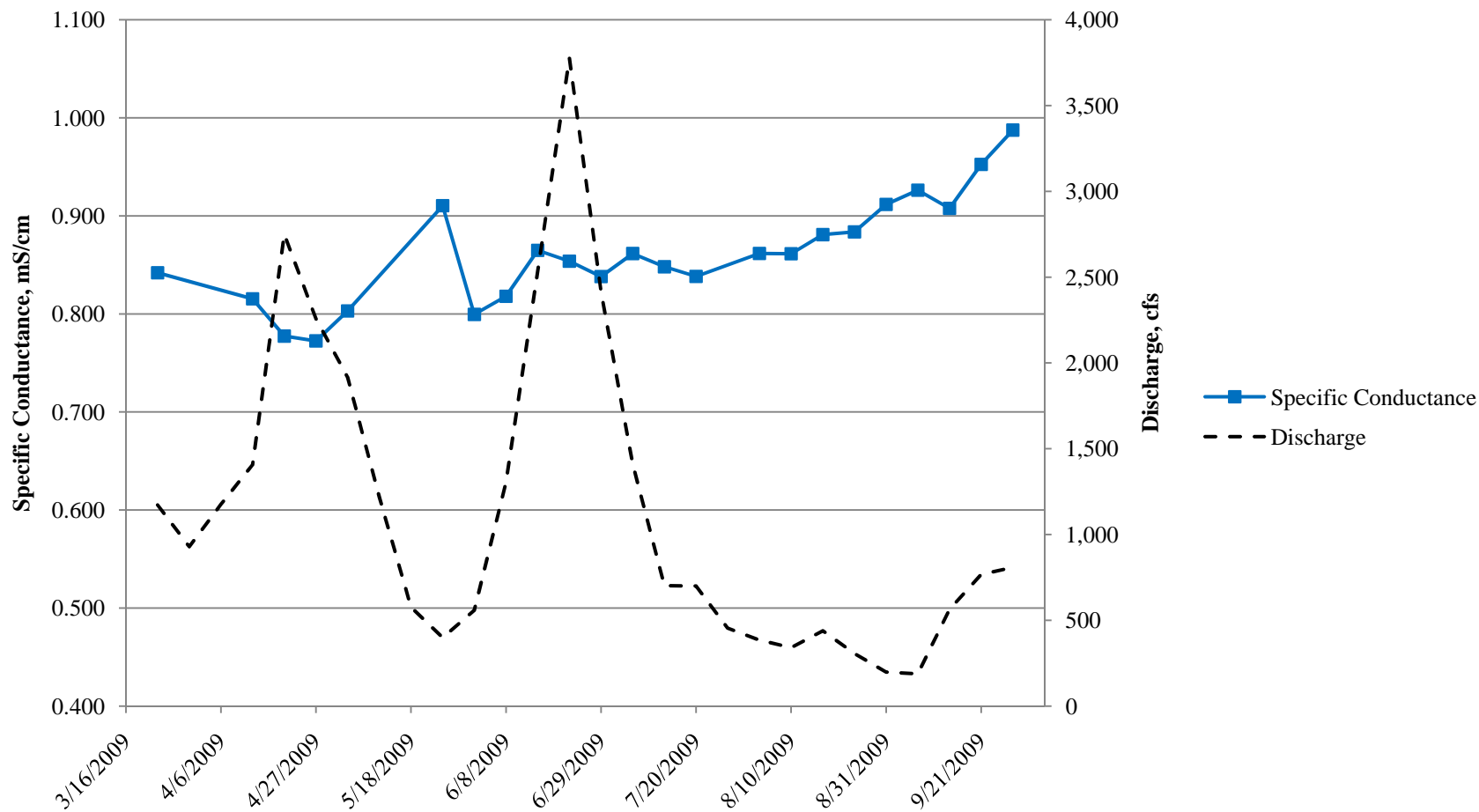




Figure B-14. pH and Discharge, Weekly Mean, Platte River, Duncan, NE

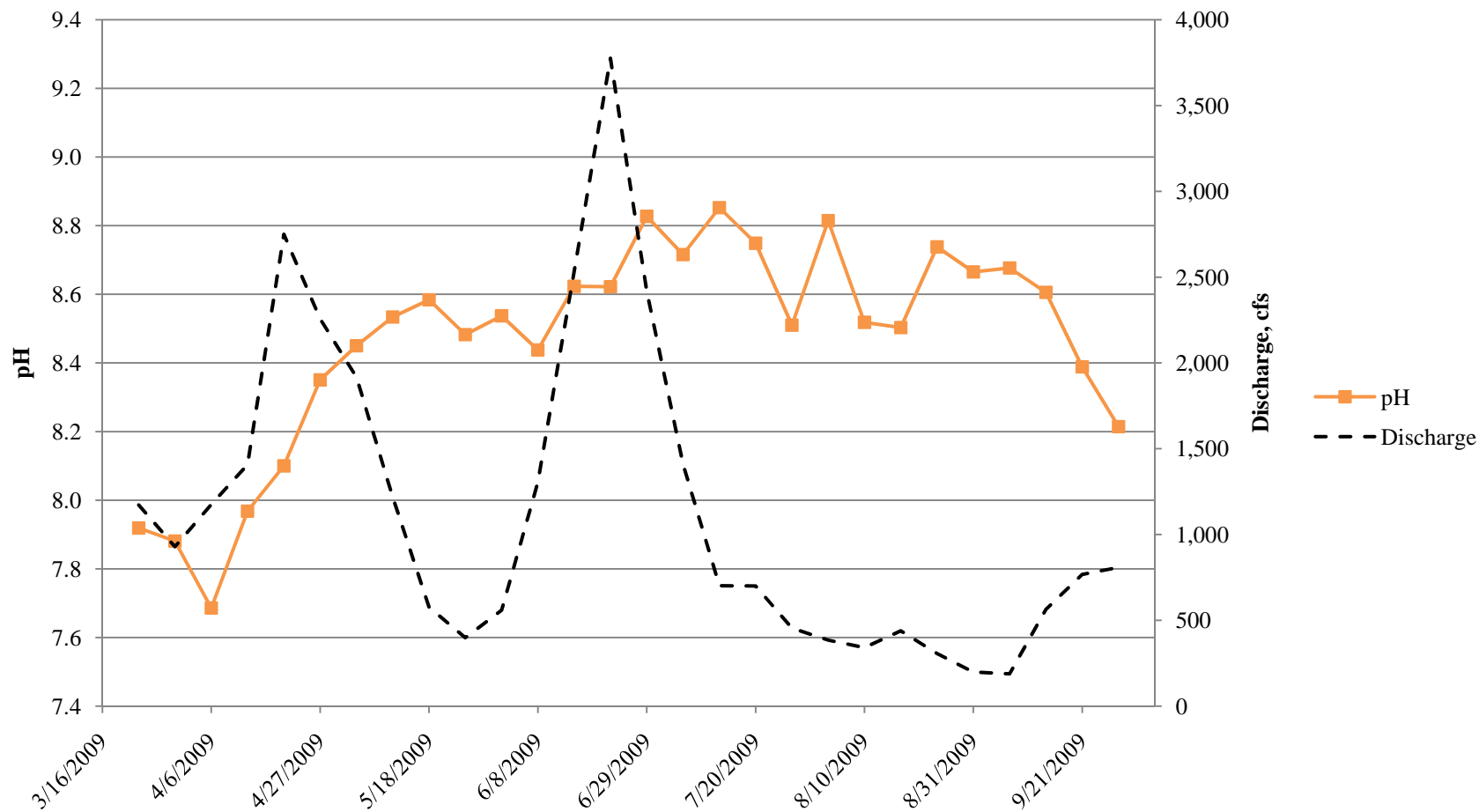




Figure B-15. Turbidity and Discharge, Weekly Mean, Platte River, Duncan, NE

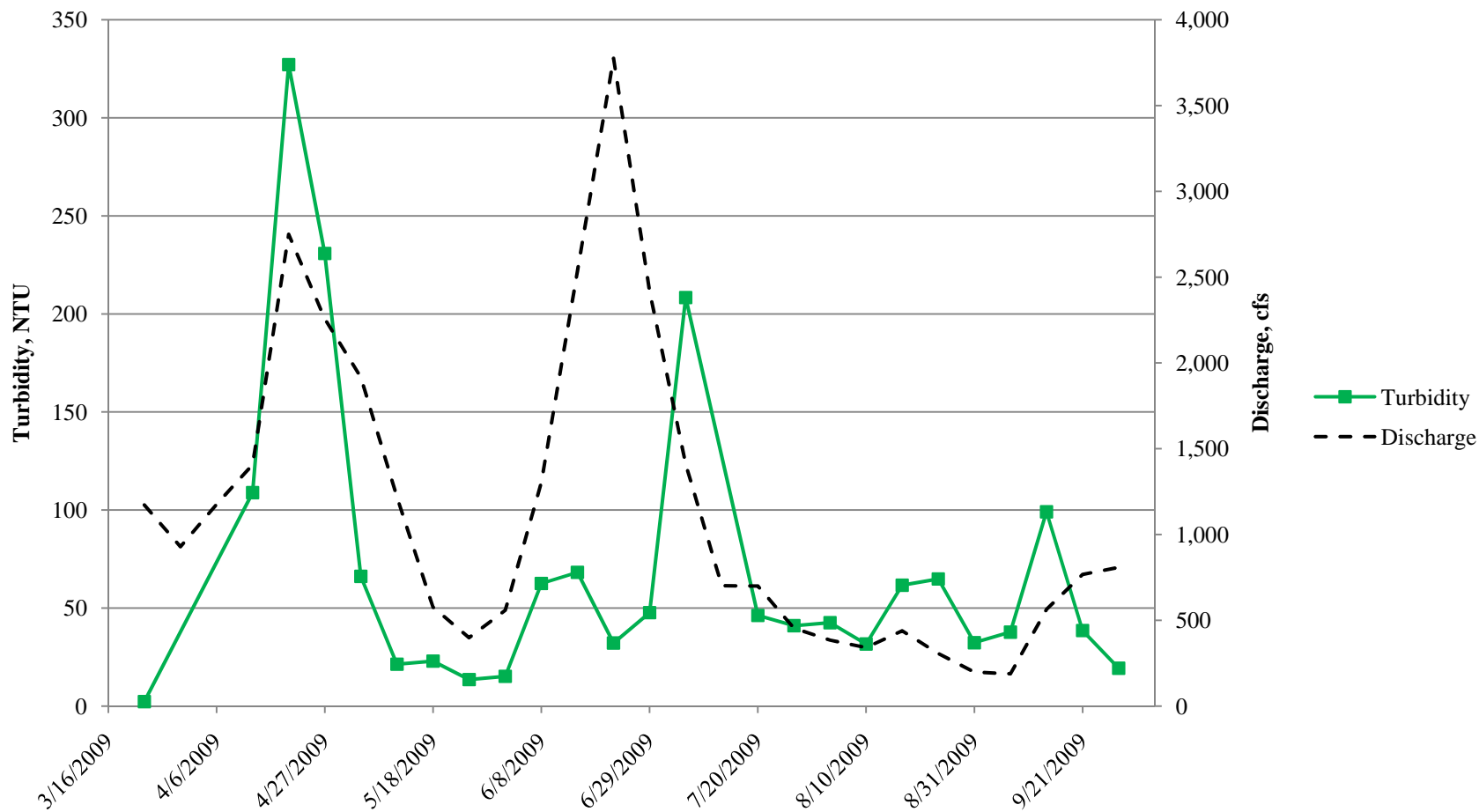




Figure B-16. Dissolved Oxygen and Discharge, Weekly Mean, Platte River, Duncan, NE

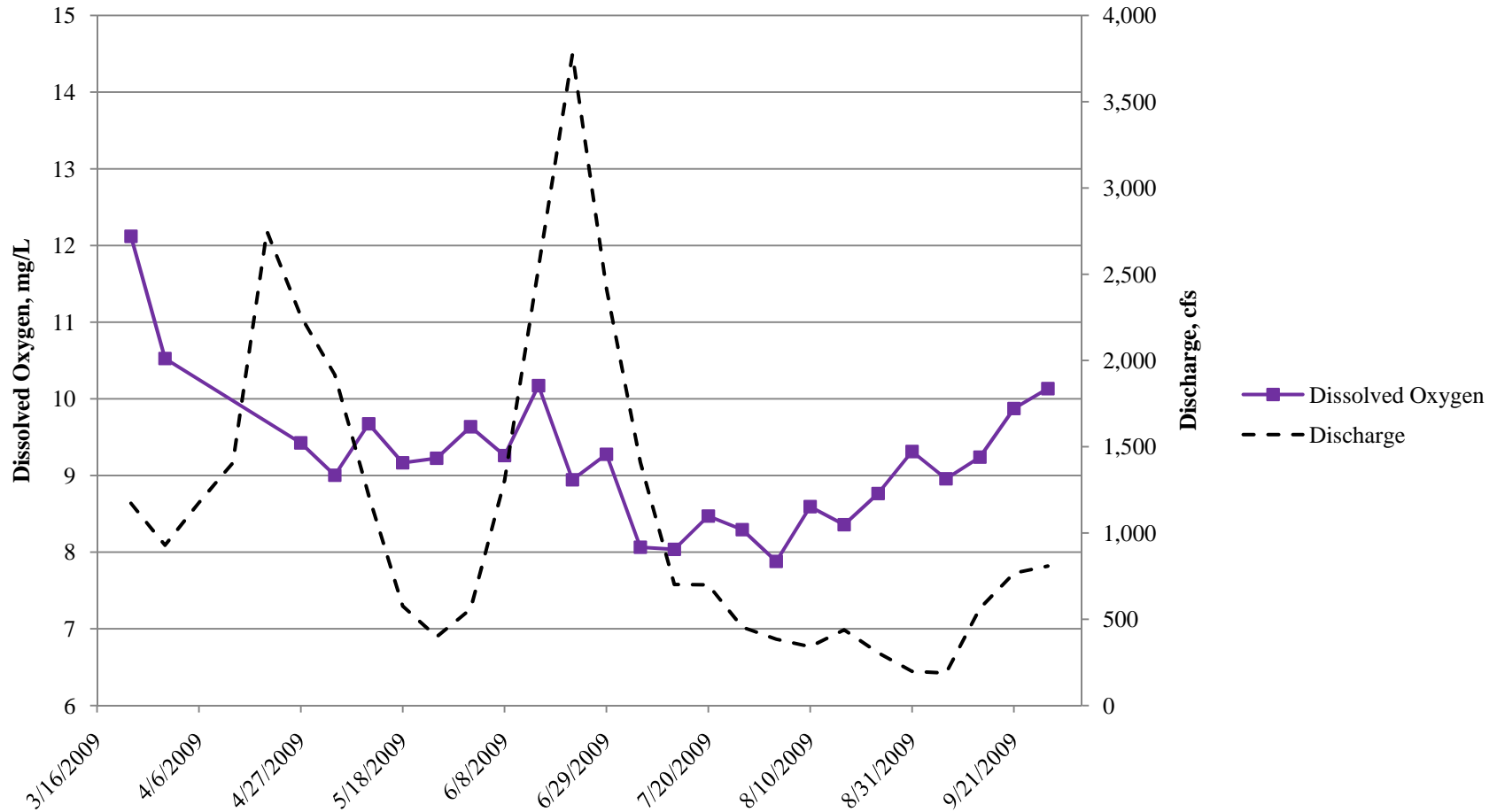




Figure B-17. Temperature and Discharge, Weekly Mean, Platte River, Grand Island, NE

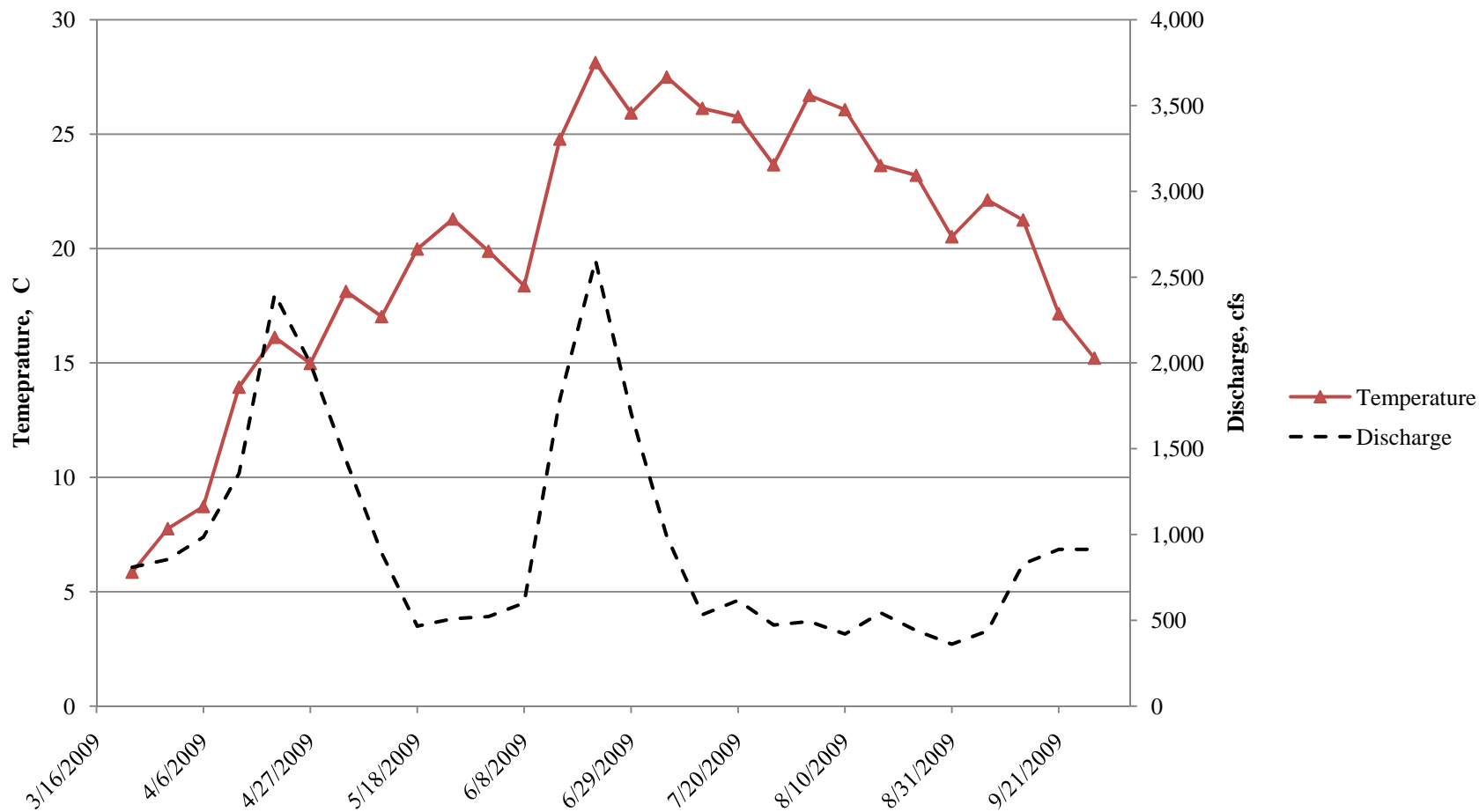




Figure B-18. Specific Conductance and Discharge, Weekly Mean, Platte River, Grand Island, NE

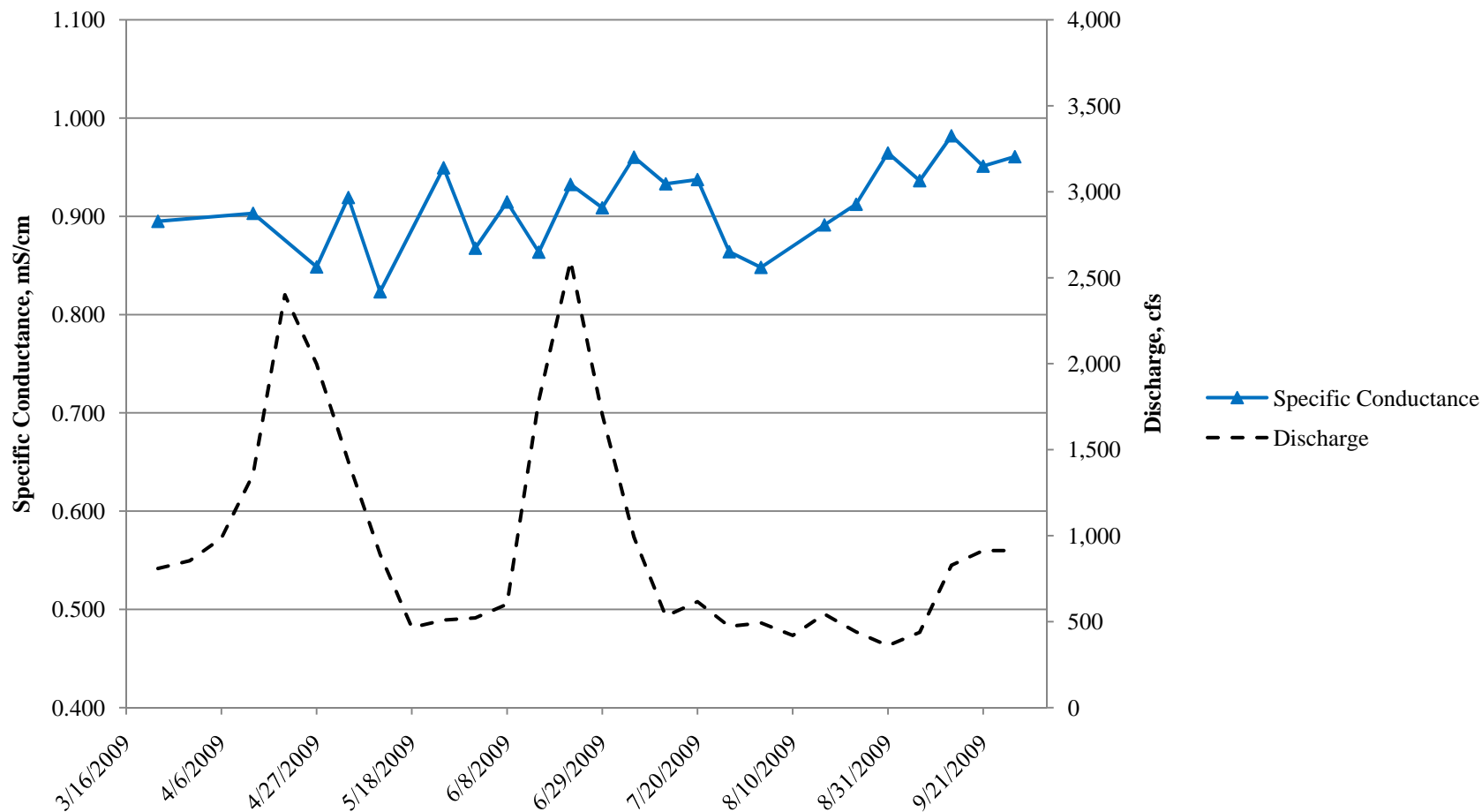




Figure B-19. pH and Discharge, Weekly Mean, Platte River, Grand Island, NE

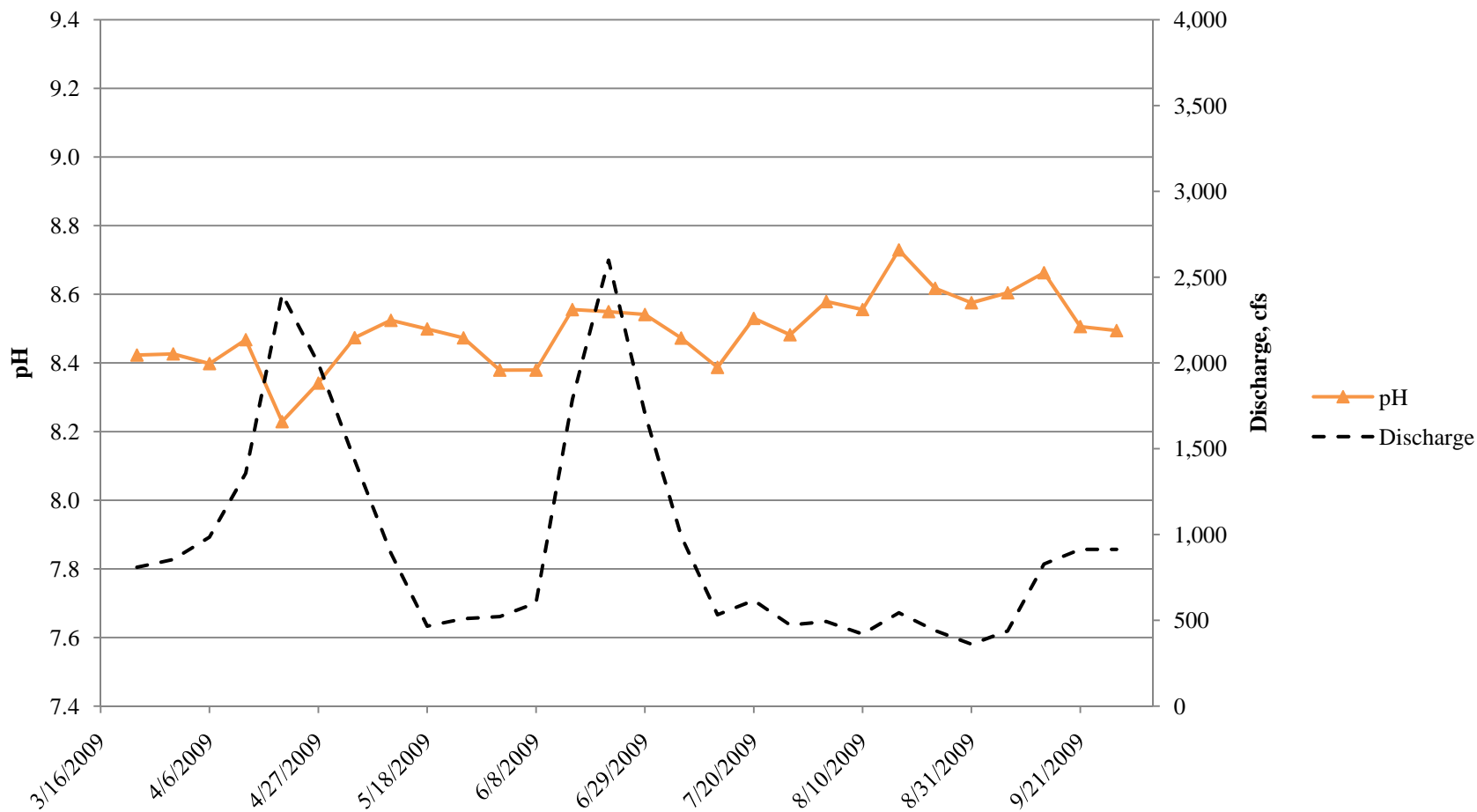




Figure B-20. Turbidity and Discharge, Weekly Mean, Platte River, Grand Island, NE

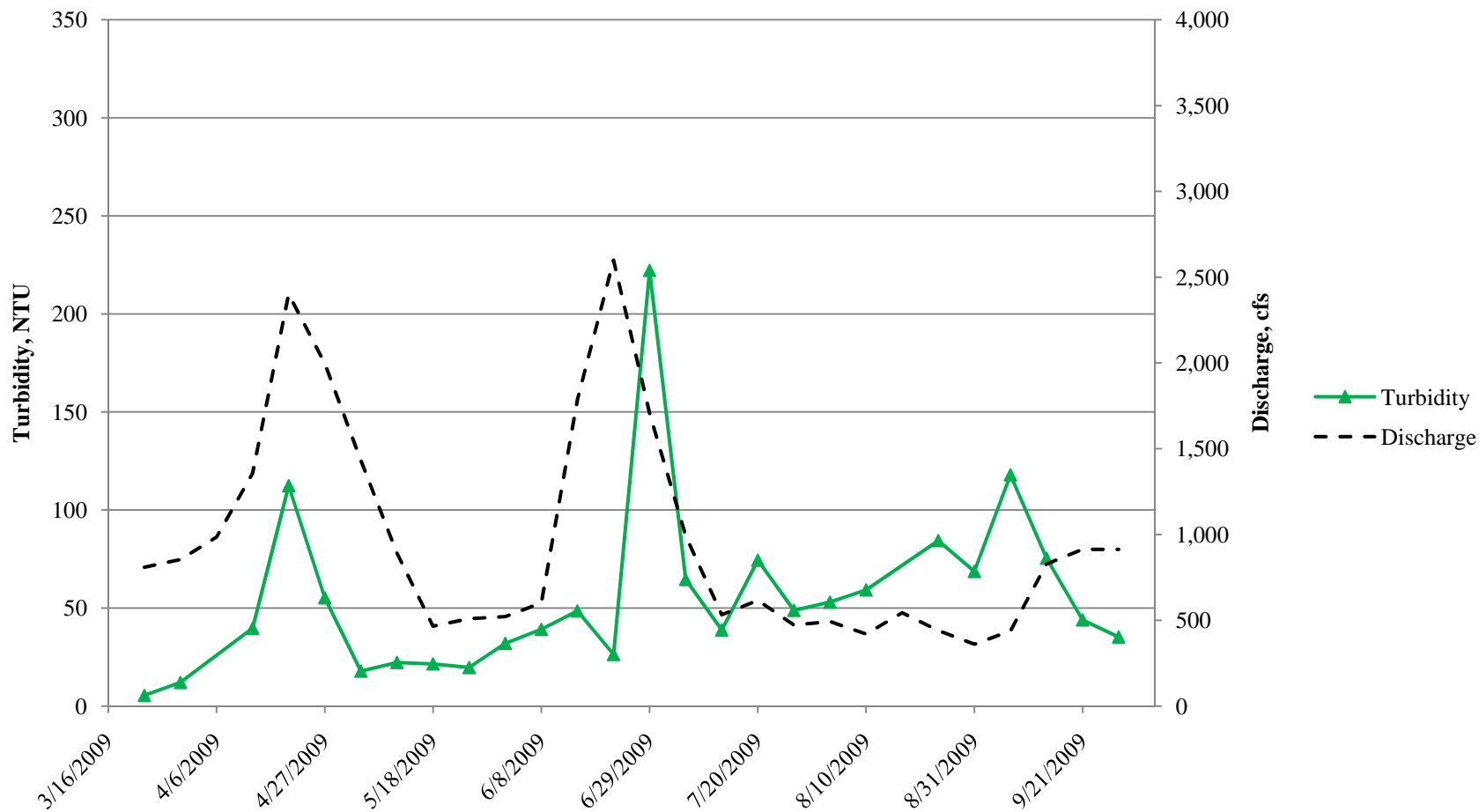




Figure B-21. Dissolved Oxygen and Discharge, Weekly Mean, Platte River, Grand Island, NE

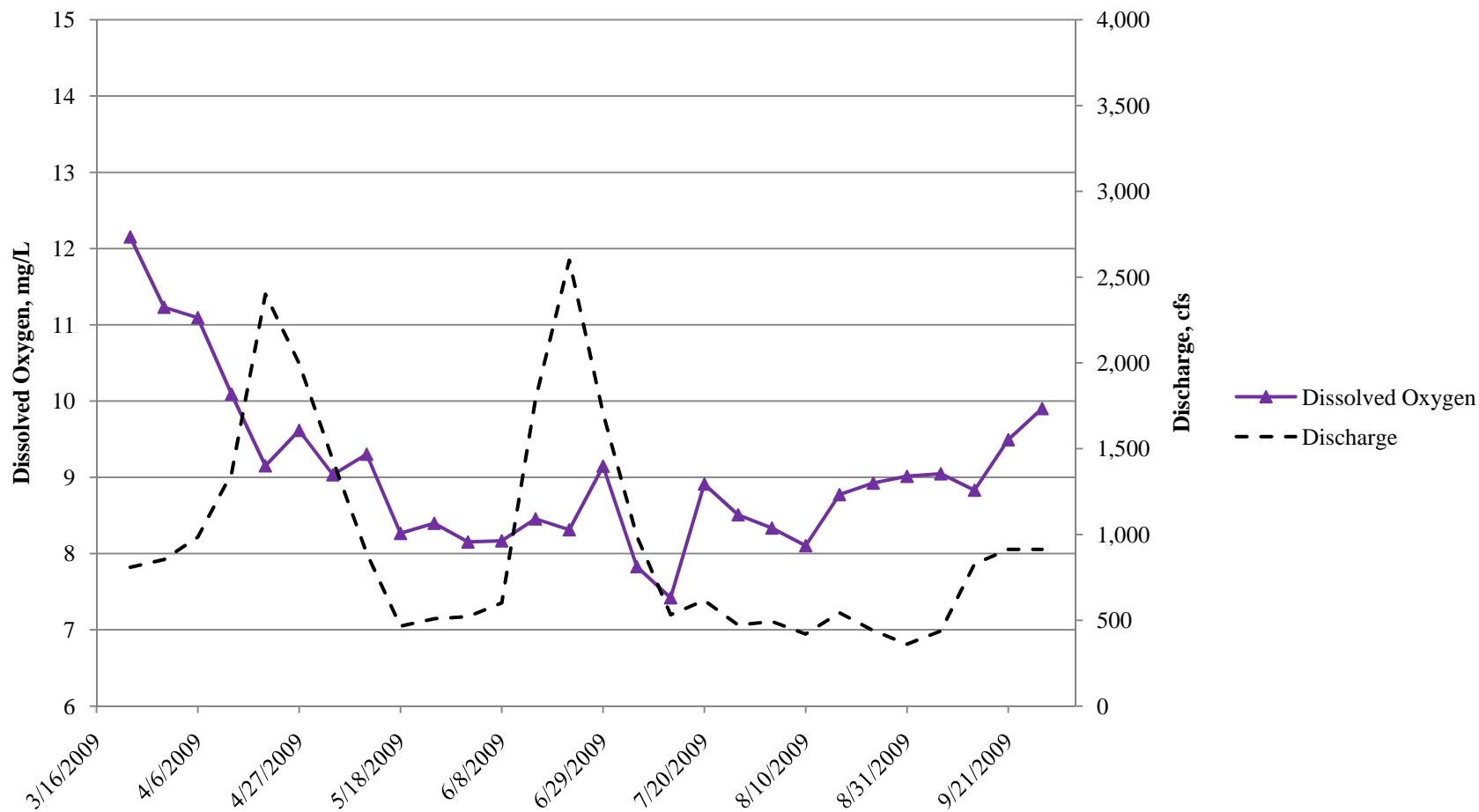




Figure B-22. Temperature and Discharge, Weekly Mean, Platte River, Shelton, NE

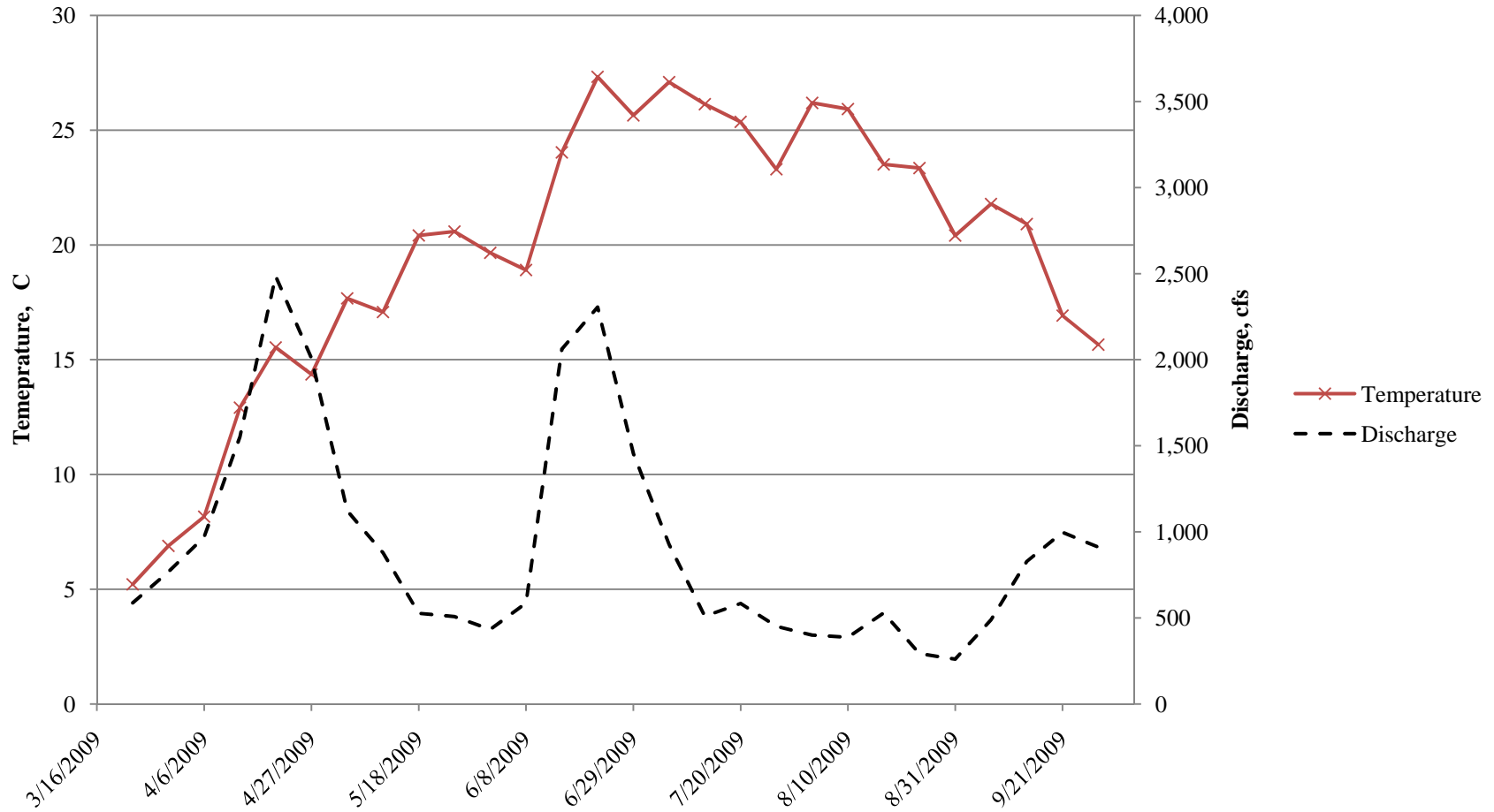




Figure B-23. Specific Conductance and Discharge, Weekly Mean, Platte River, Shelton, NE

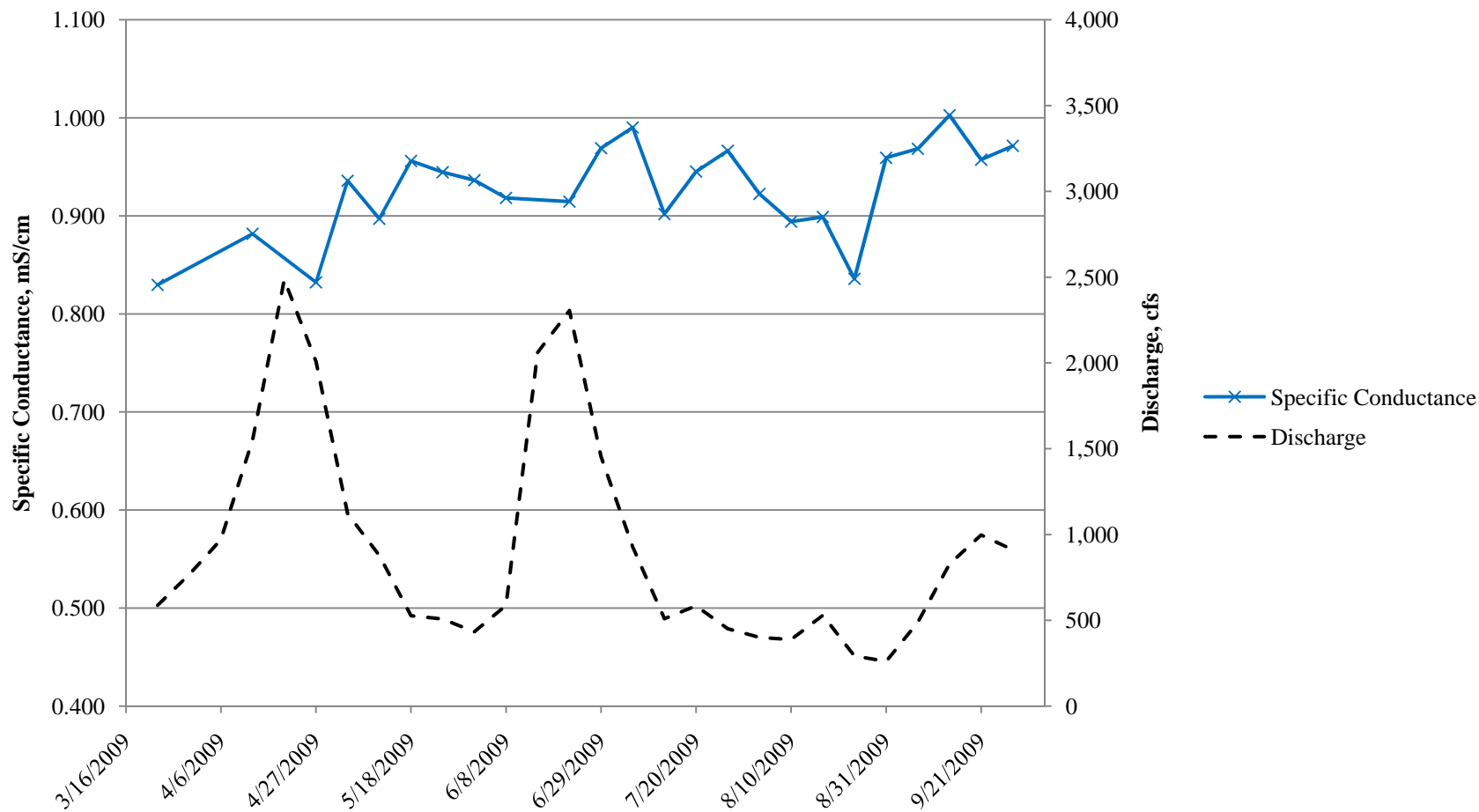




Figure B-24. pH and Discharge, Weekly Mean, Platte River, Shelton, NE

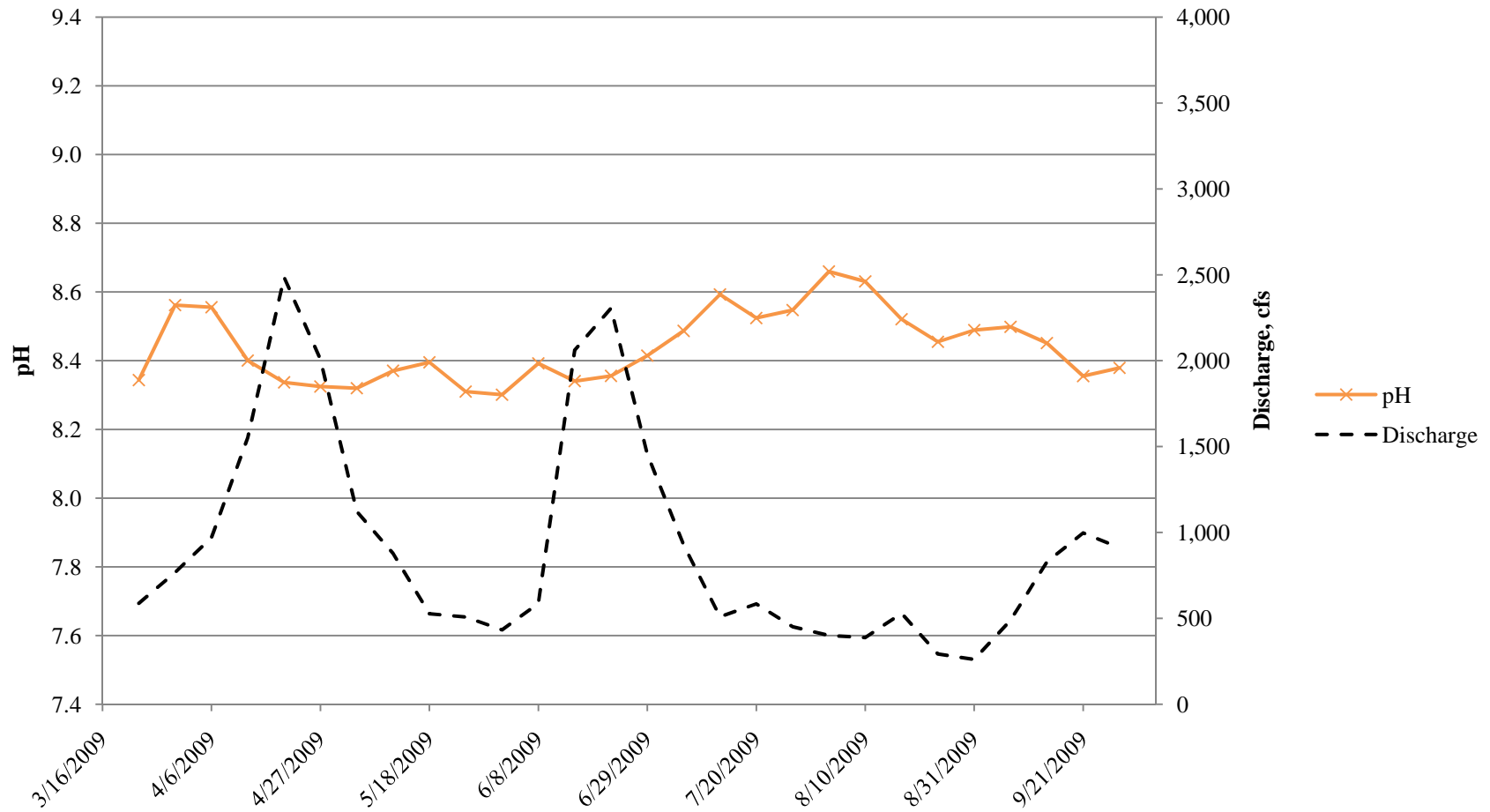




Figure B-25. Turbidity and Discharge, Weekly Mean, Platte River, Shelton, NE

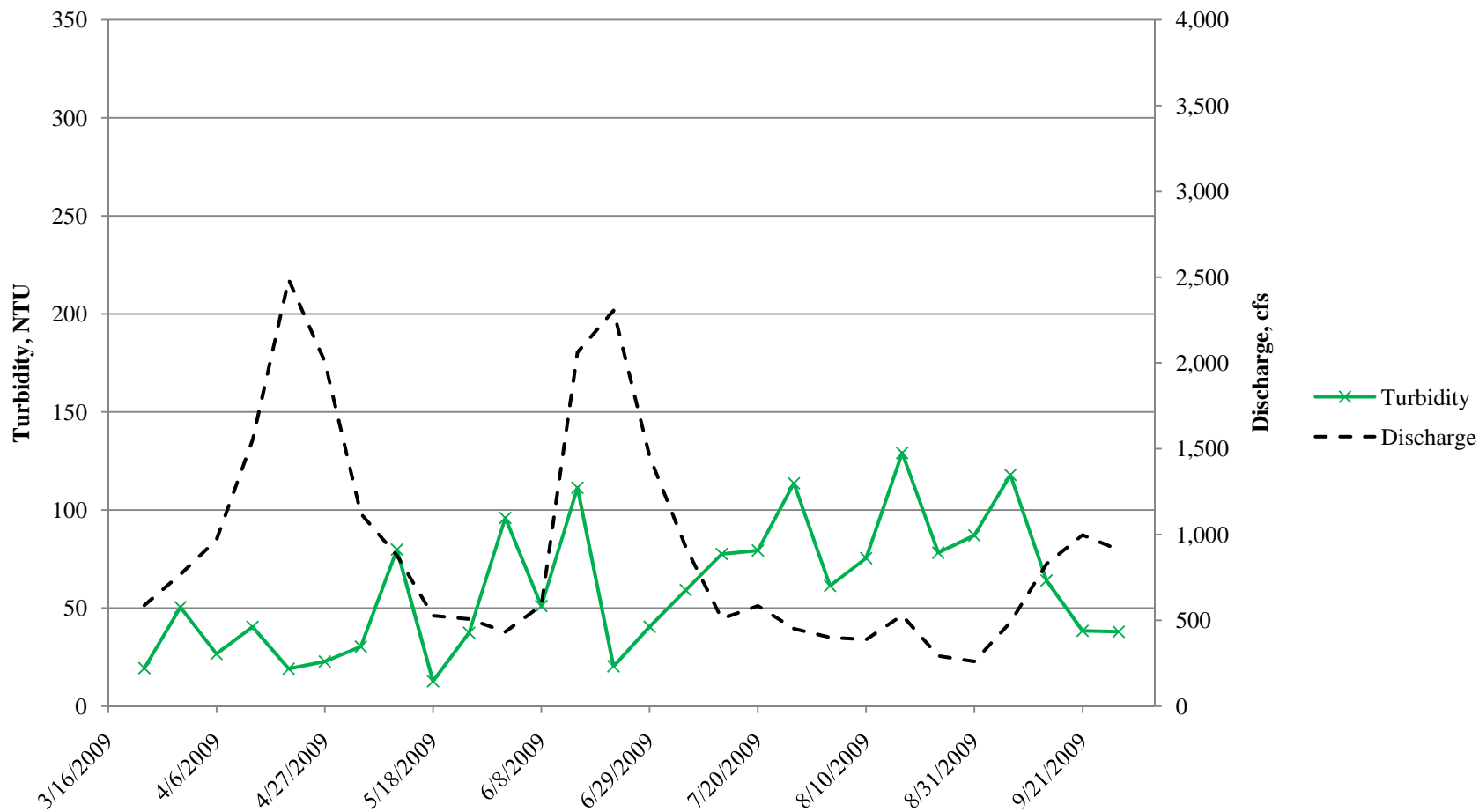




Figure B-26. Dissolved Oxygen and Discharge, Weekly Mean, Platte River, Shelton, NE

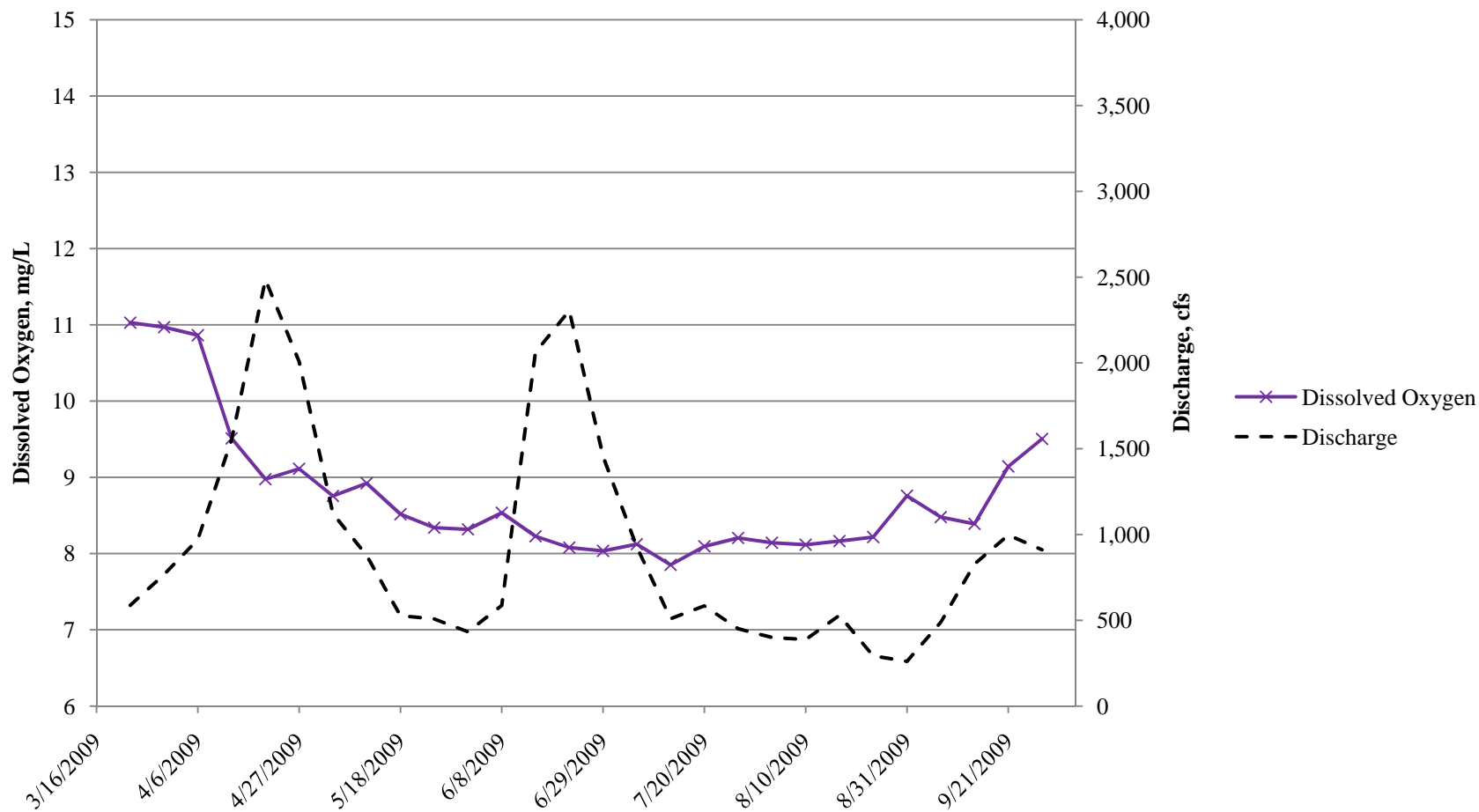




Figure B-27. Temperature and Discharge, Weekly Mean, Platte River, Kearney, NE

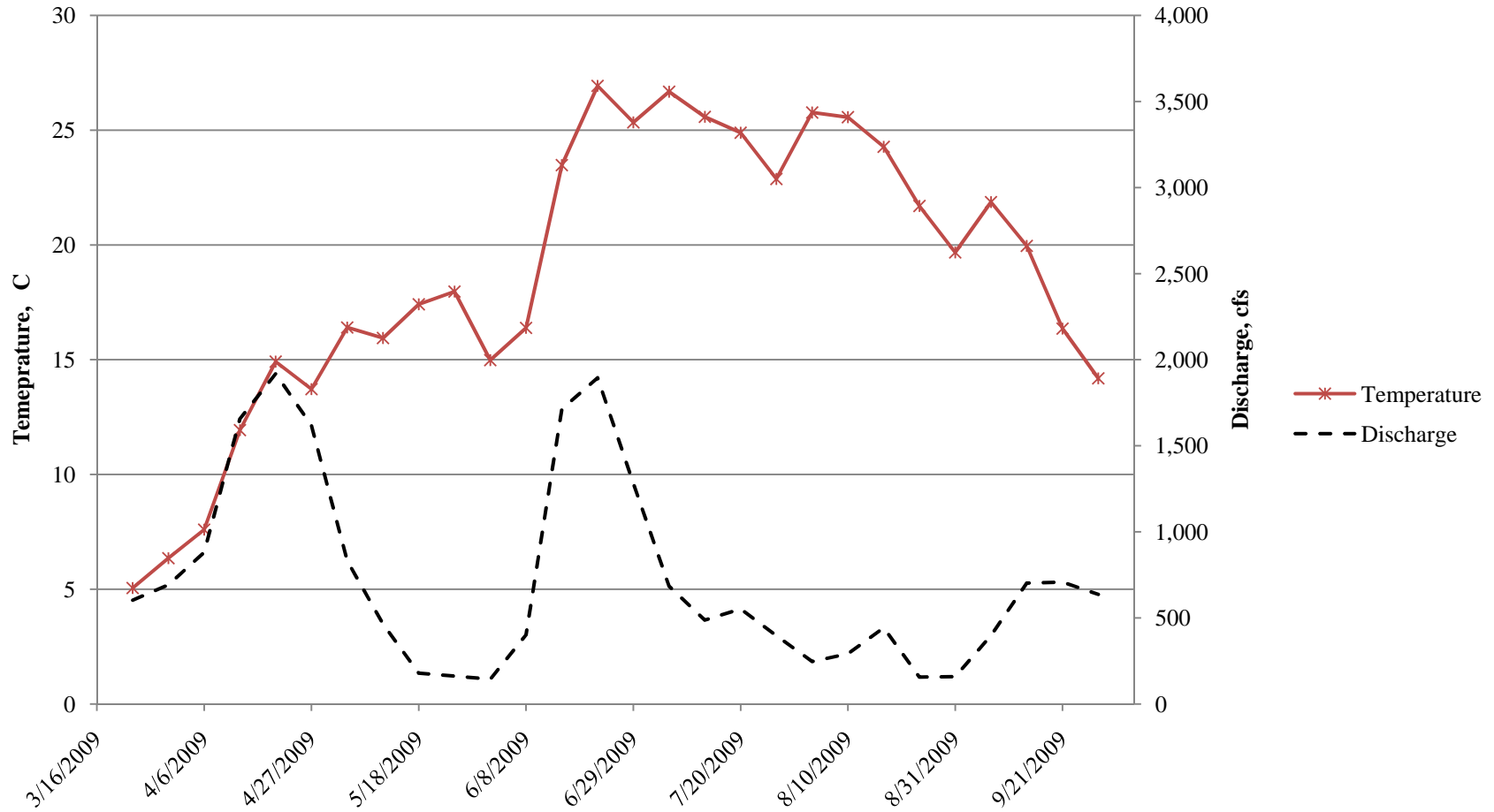




Figure B-28. Specific Conductance and Discharge, Weekly Mean, Platte River, Kearney, NE

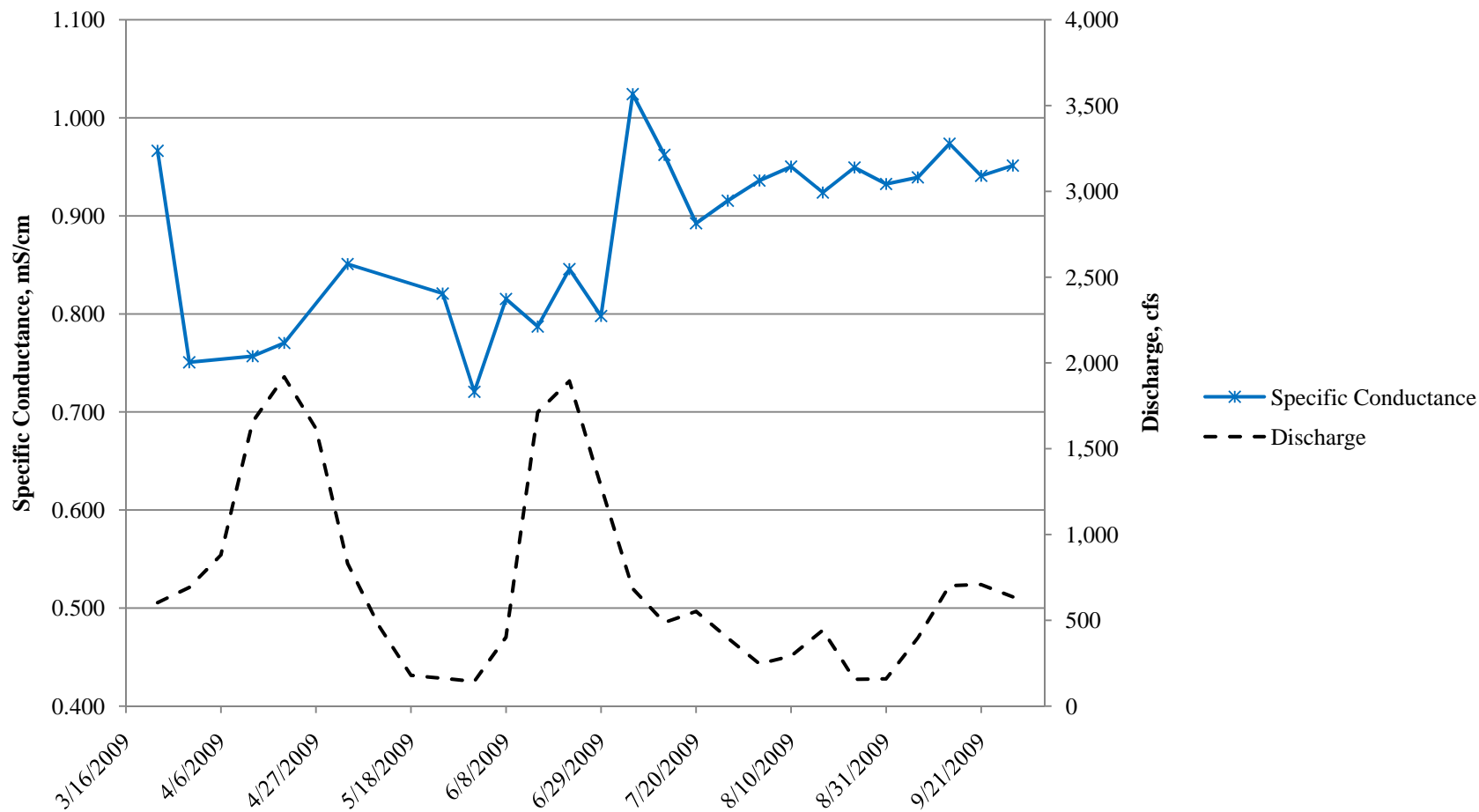




Figure B-29. pH and Discharge, Weekly Mean, Platte River, Kearney, NE

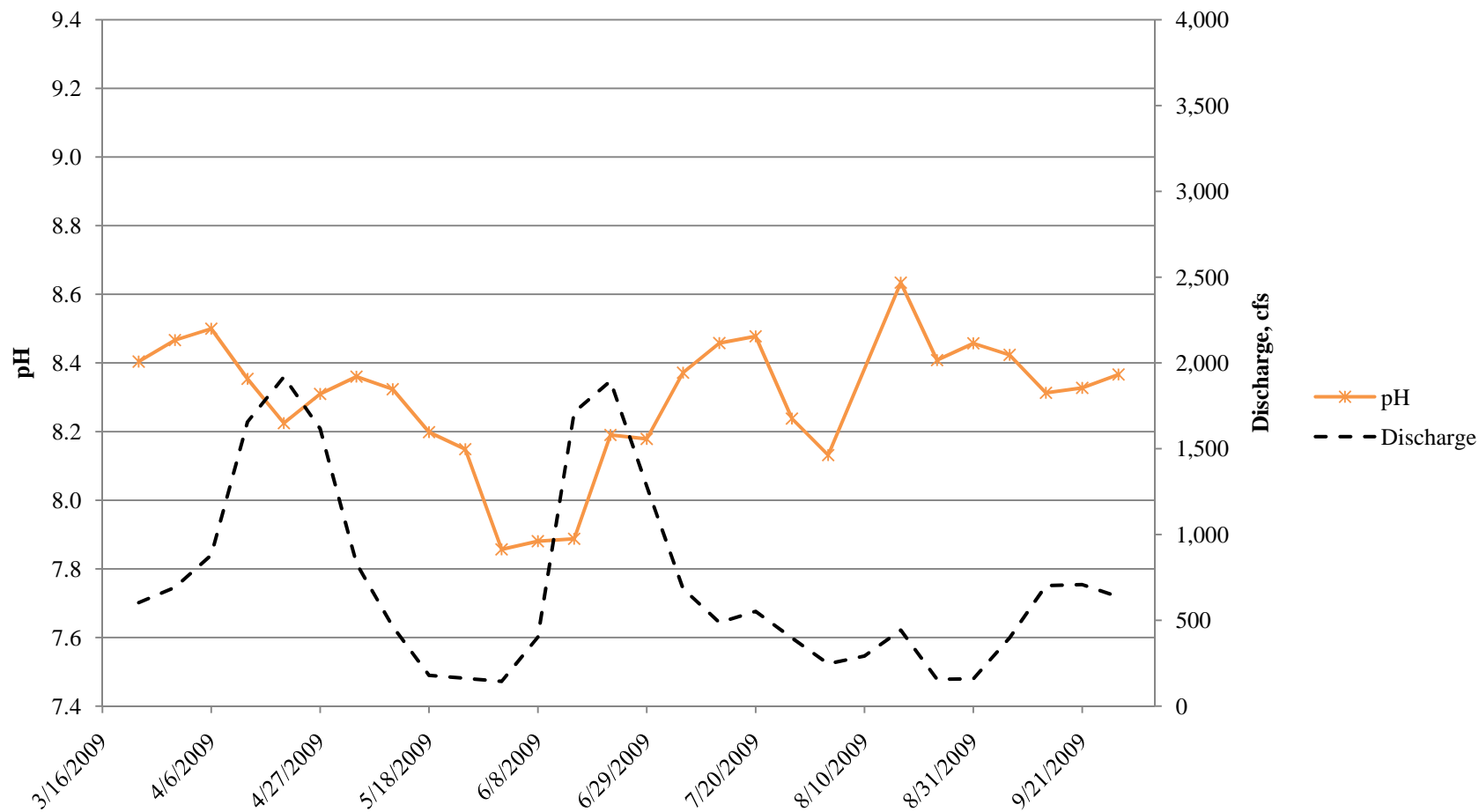




Figure B-30. Turbidity and Discharge, Weekly Mean, Platte River, Kearney, NE

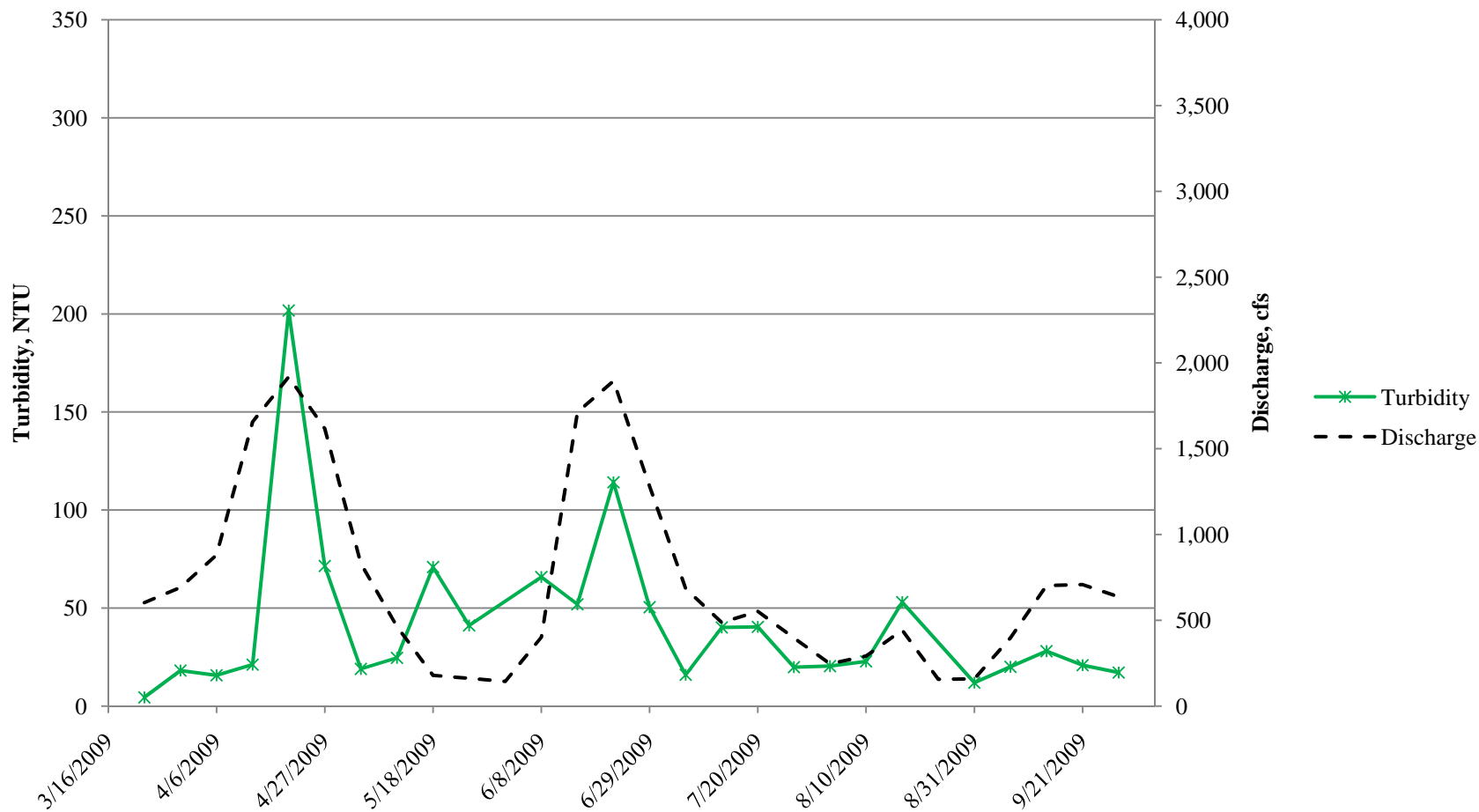




Figure B-31. Dissolved Oxygen and Discharge, Weekly Mean, Platte River, Kearney, NE

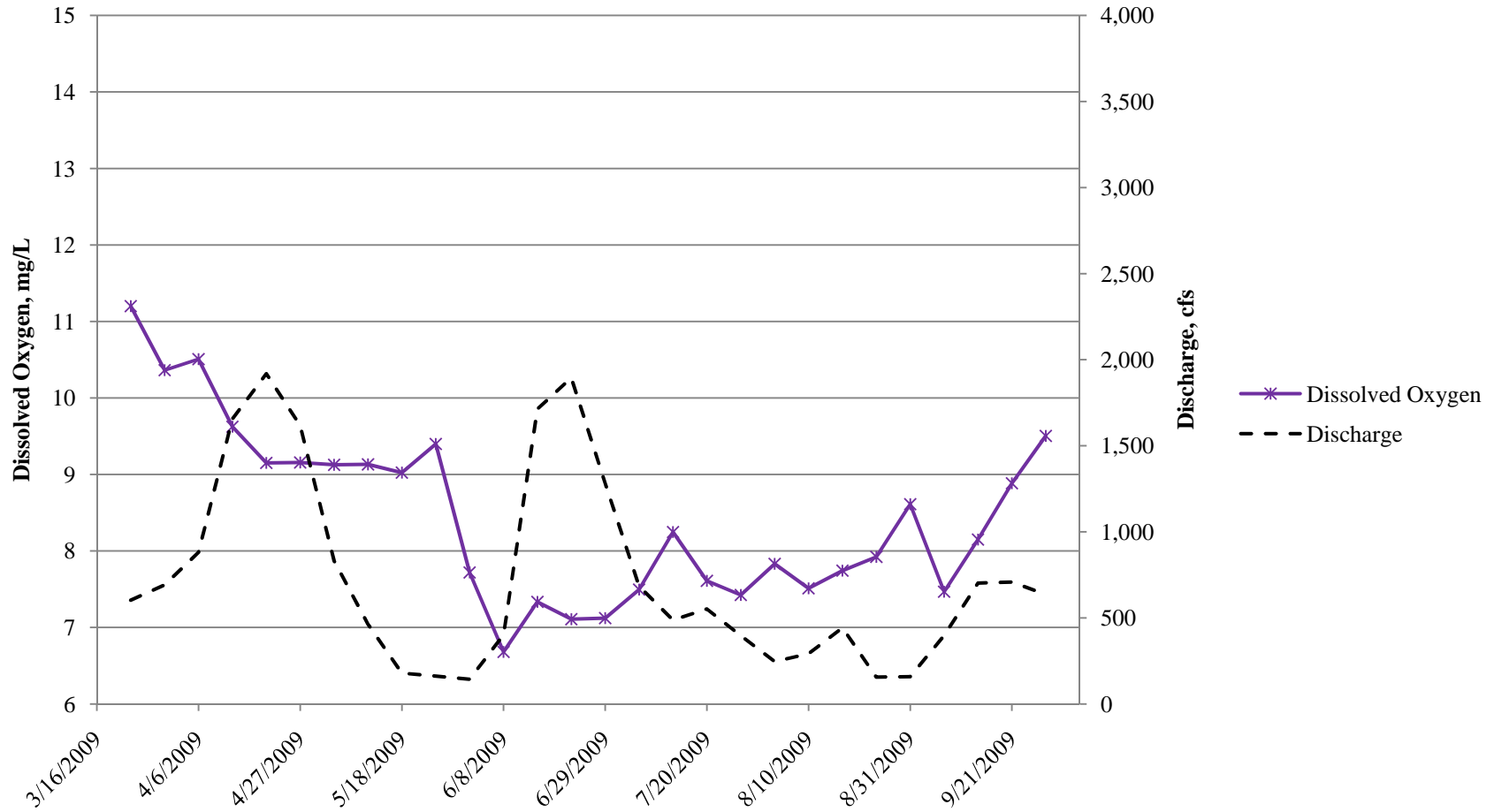




Figure B-32. Temperature and Discharge, Weekly Mean, Platte River, Odessa, NE

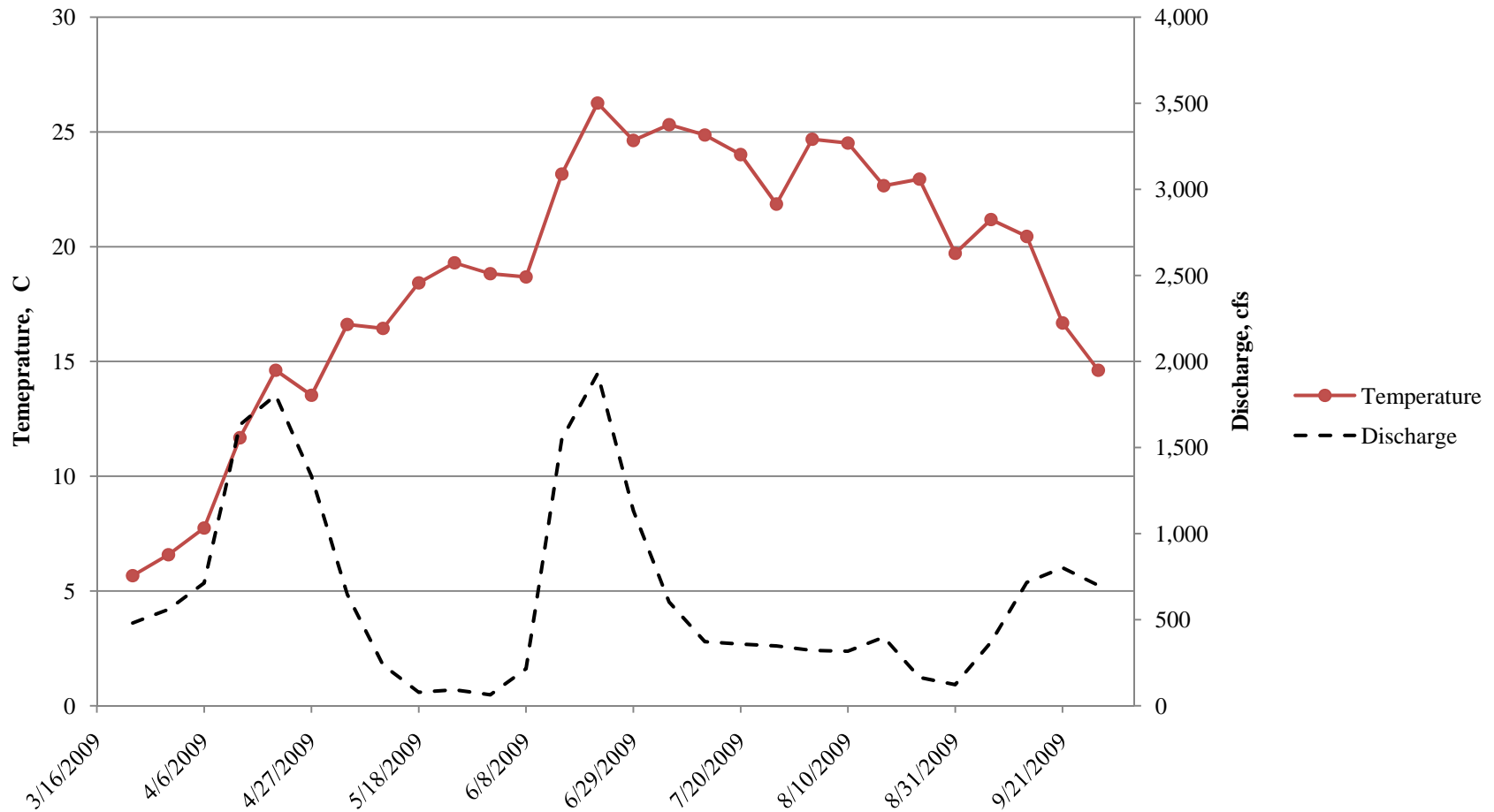




Figure B-33. Specific Conductance and Discharge, Weekly Mean, Platte River, Odessa, NE

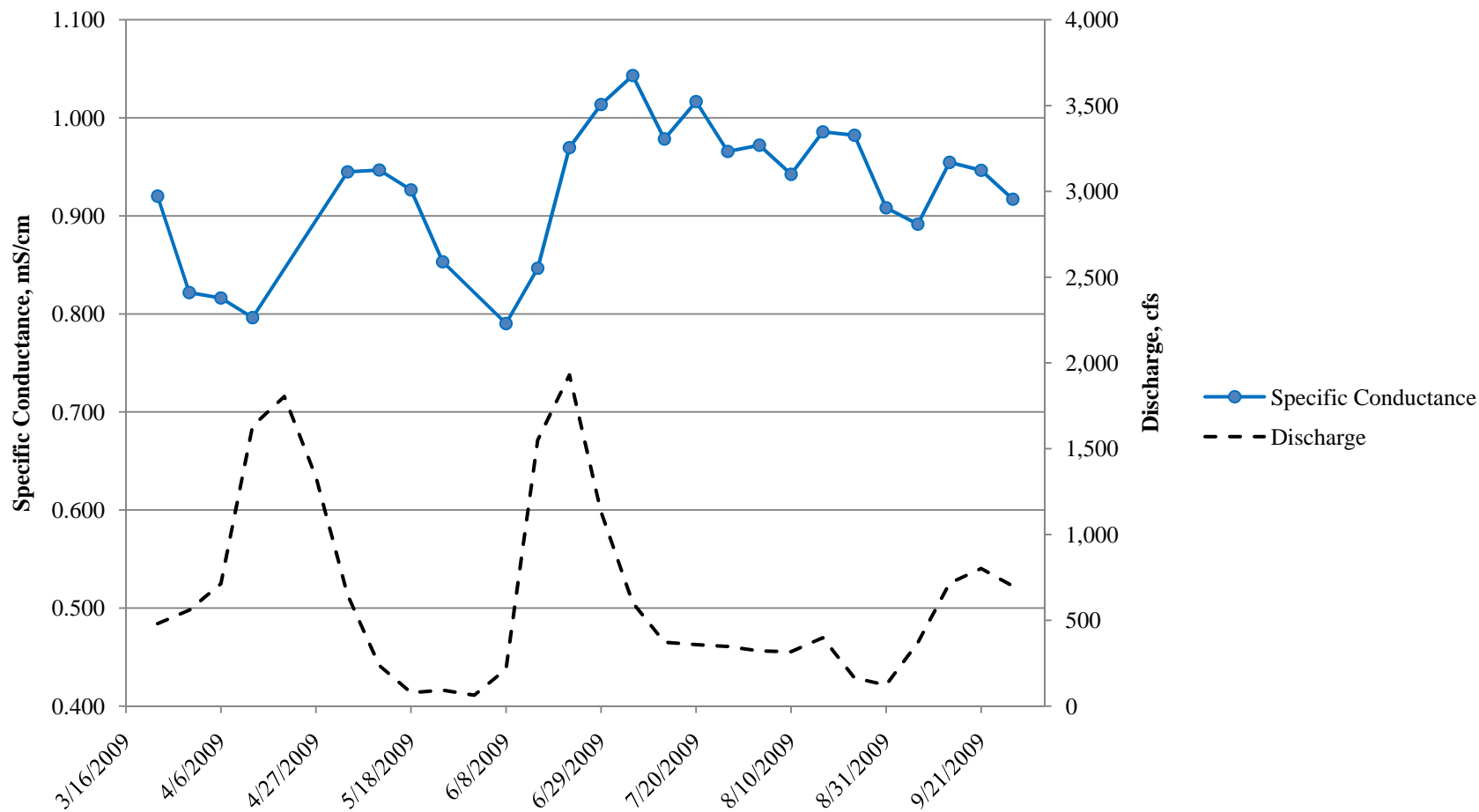




Figure B-34. pH and Discharge, Weekly Mean, Platte River, Odessa, NE

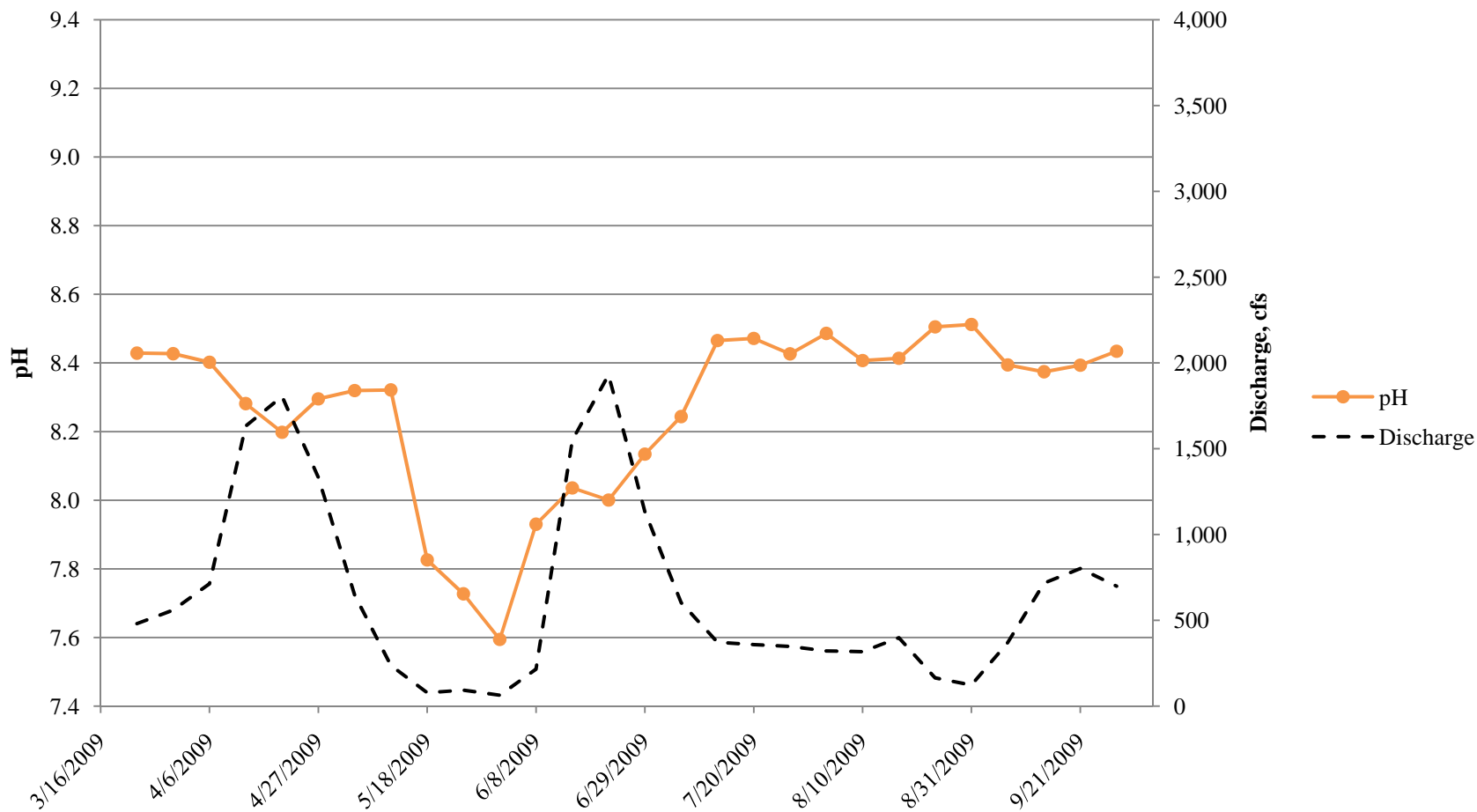




Figure B-35. Turbidity and Discharge, Weekly Mean, Platte River, Odessa, NE

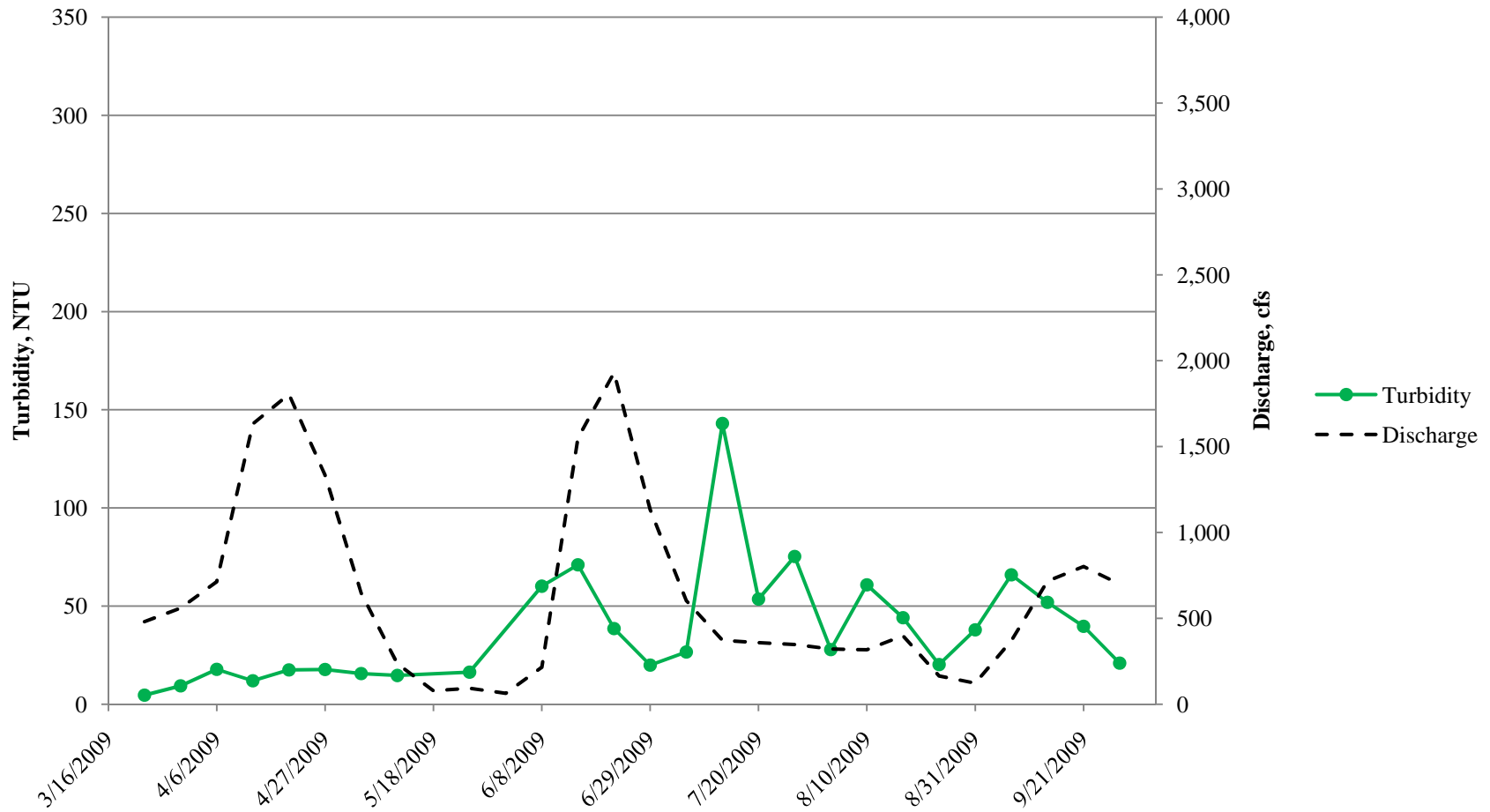




Figure B-36. Dissolved Oxygen and Discharge, Weekly Mean, Platte River, Odessa, NE

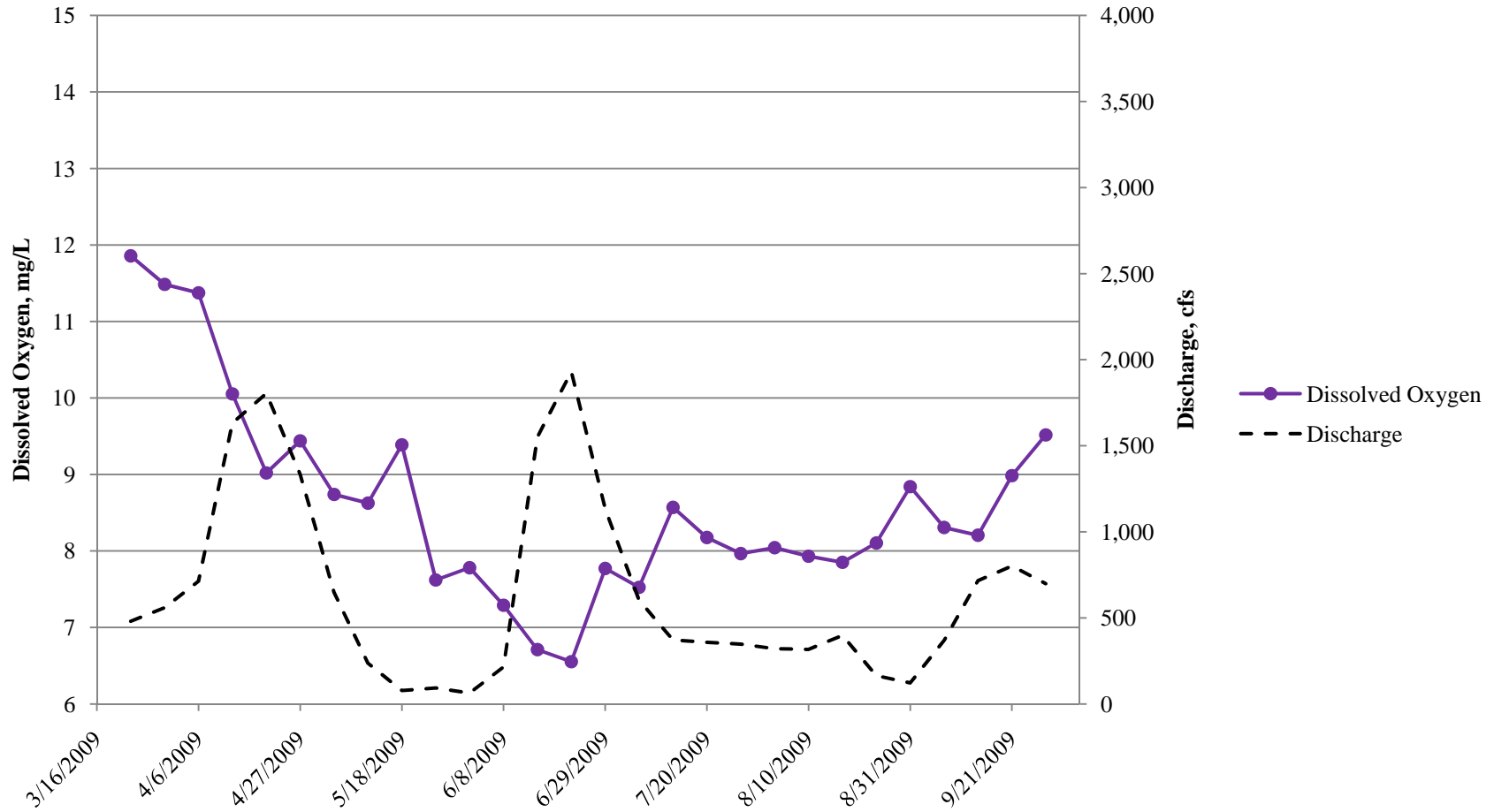




Figure B-37. Temperature and Discharge, Weekly Mean, Platte River, Overton, NE

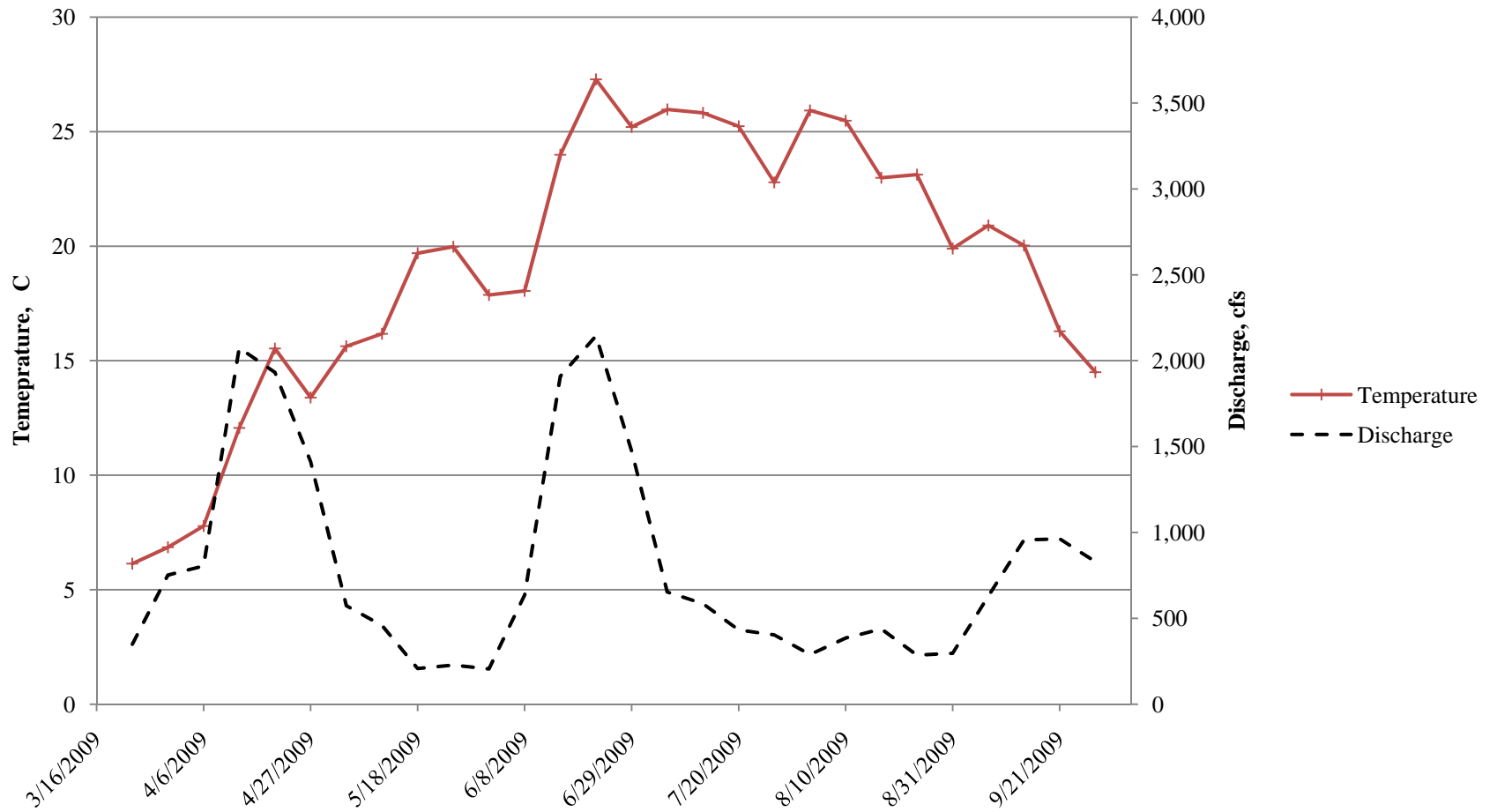




Figure B-38. Specific Conductance and Discharge, Weekly Mean, Platte River, Overton, NE

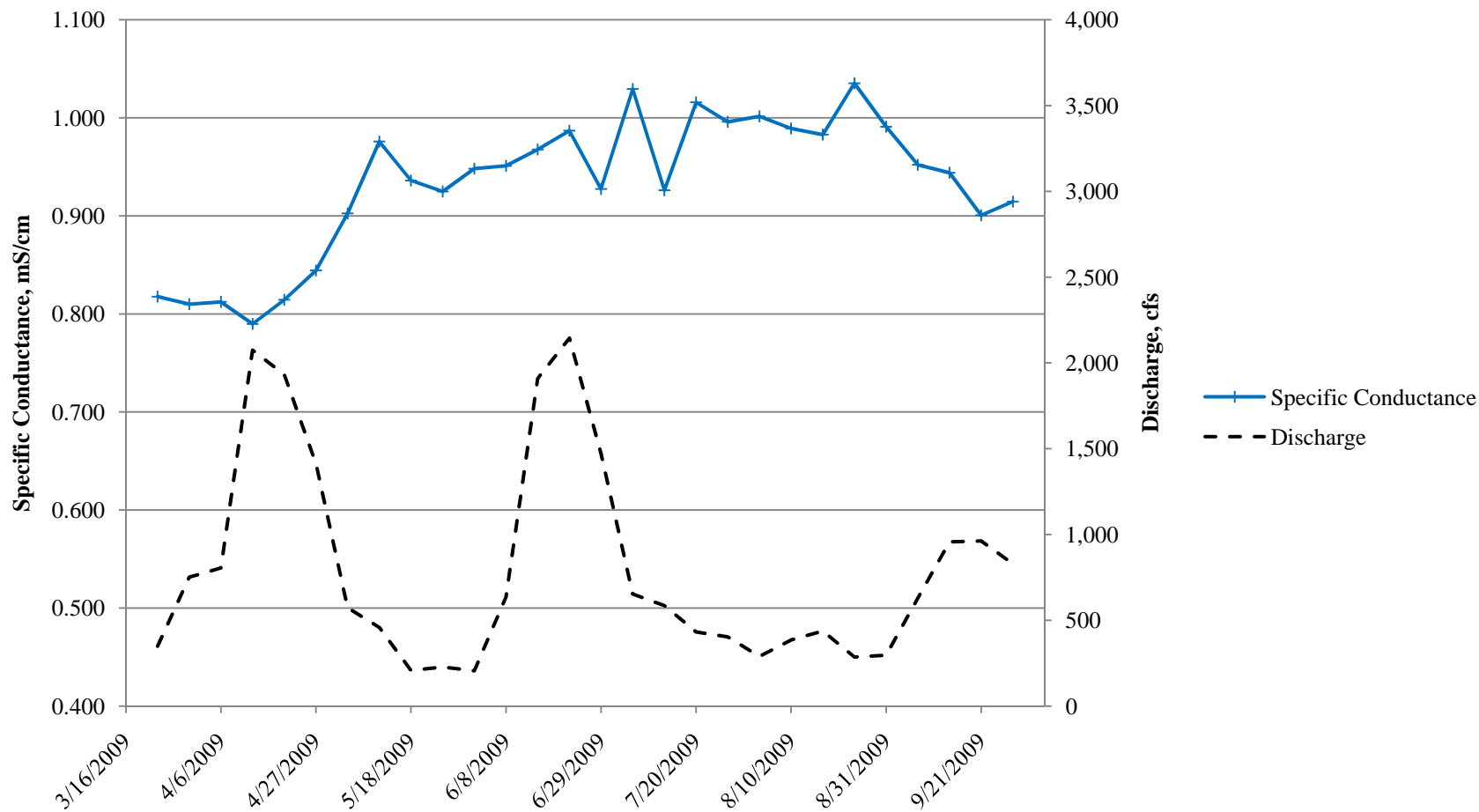




Figure B-39. pH and Discharge, Weekly Mean, Platte River, Overton, NE

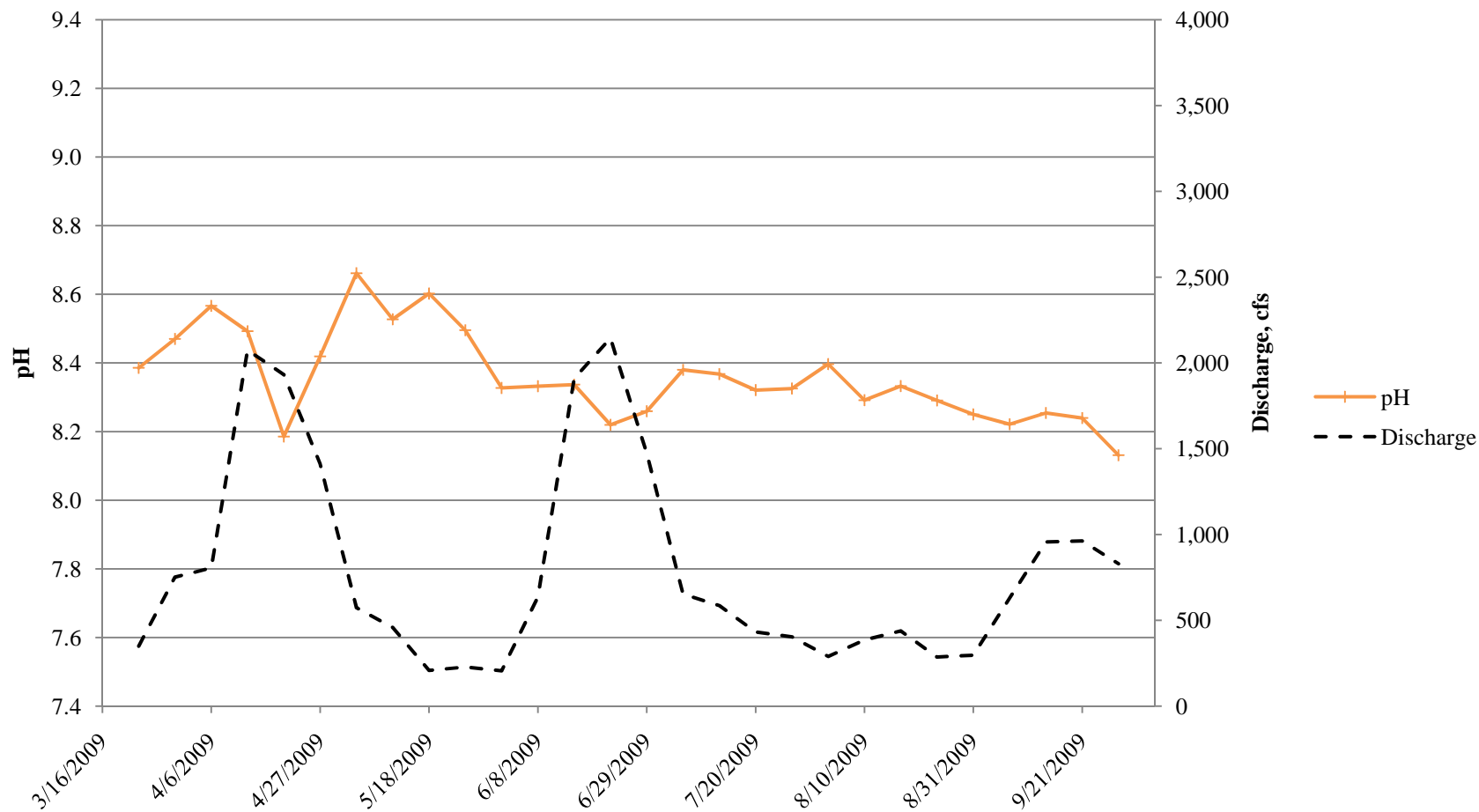




Figure B-40. Turbidity and Discharge, Weekly Mean, Platte River, Overton, NE

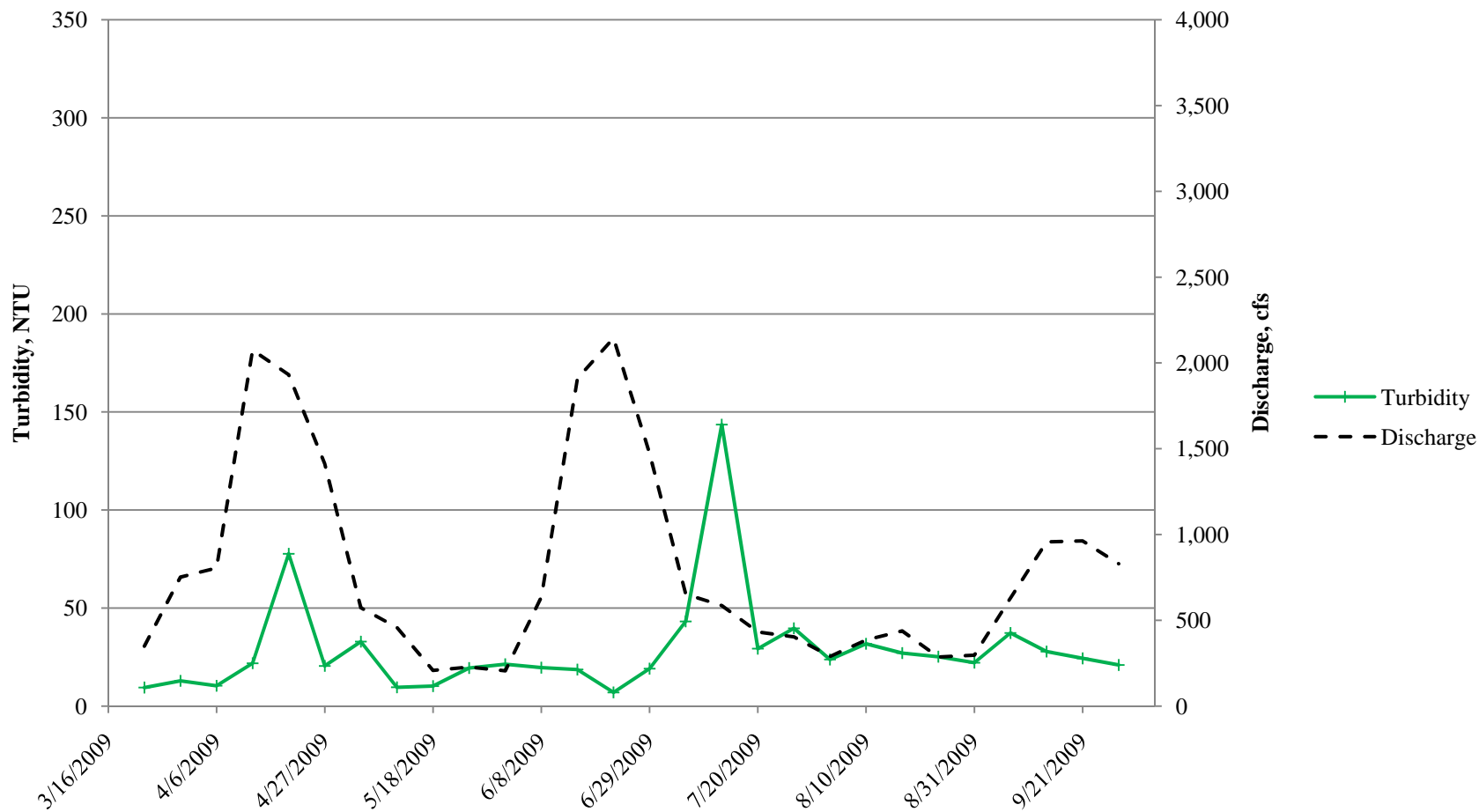




Figure B-41. Dissolved Oxygen and Discharge, Weekly Mean, Platte River, Overton, NE

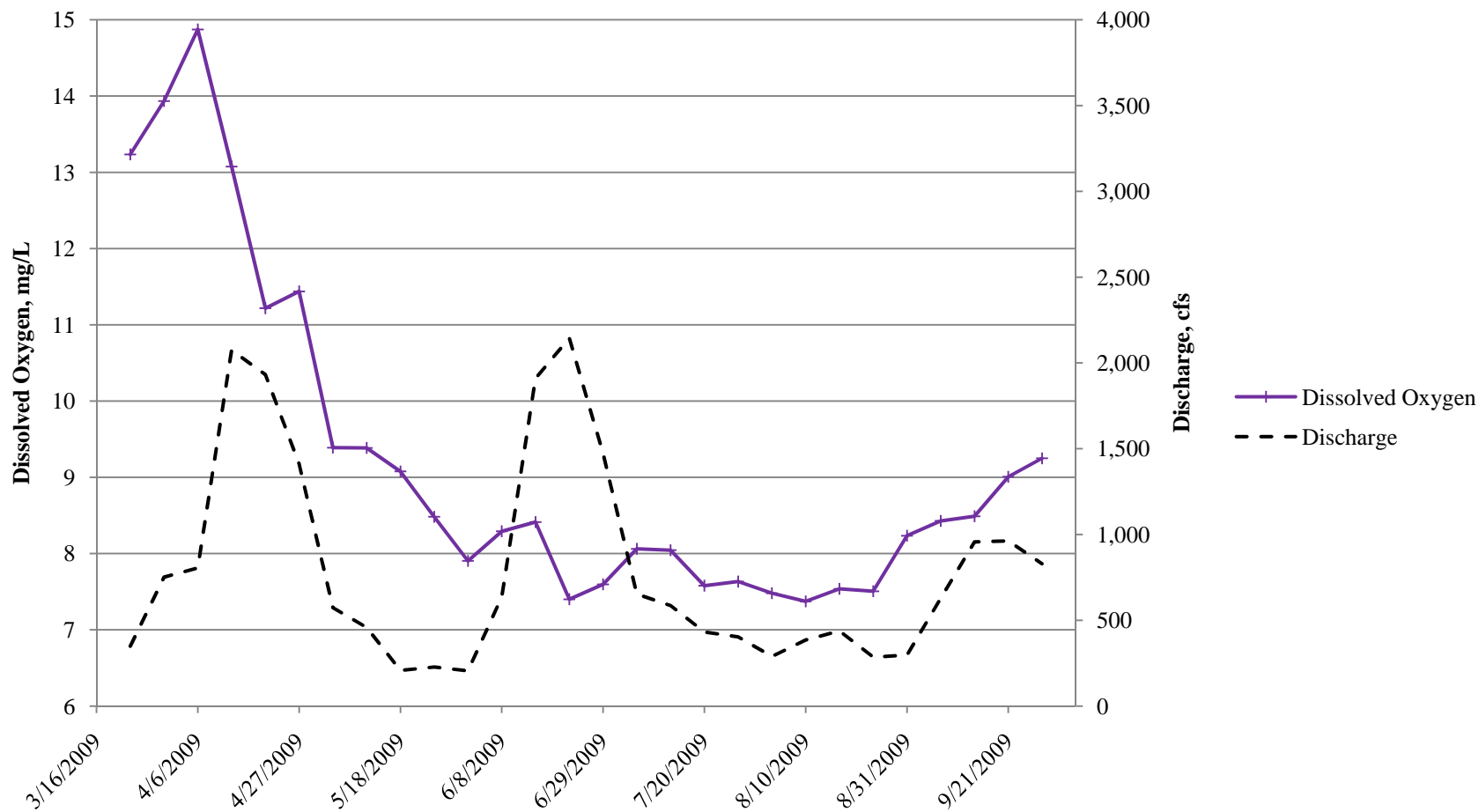




Figure B-42. Temperature and Discharge, Weekly Mean, Platte River, Lexington, NE





Figure B-43. Specific Conductance and Discharge, Weekly Mean, Platte River, Lexington, NE

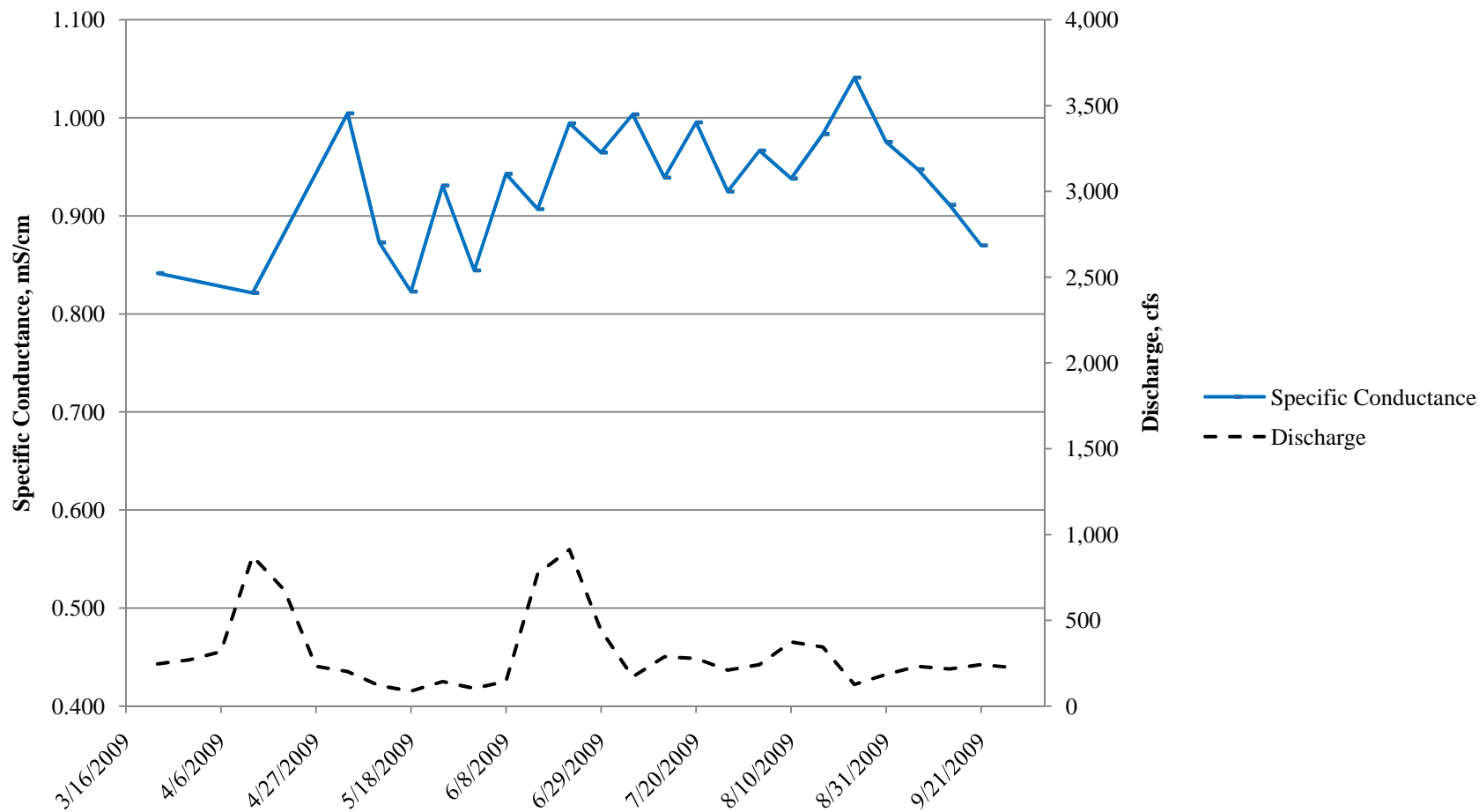




Figure B-44. pH and Discharge, Weekly Mean, Platte River, Lexington, NE

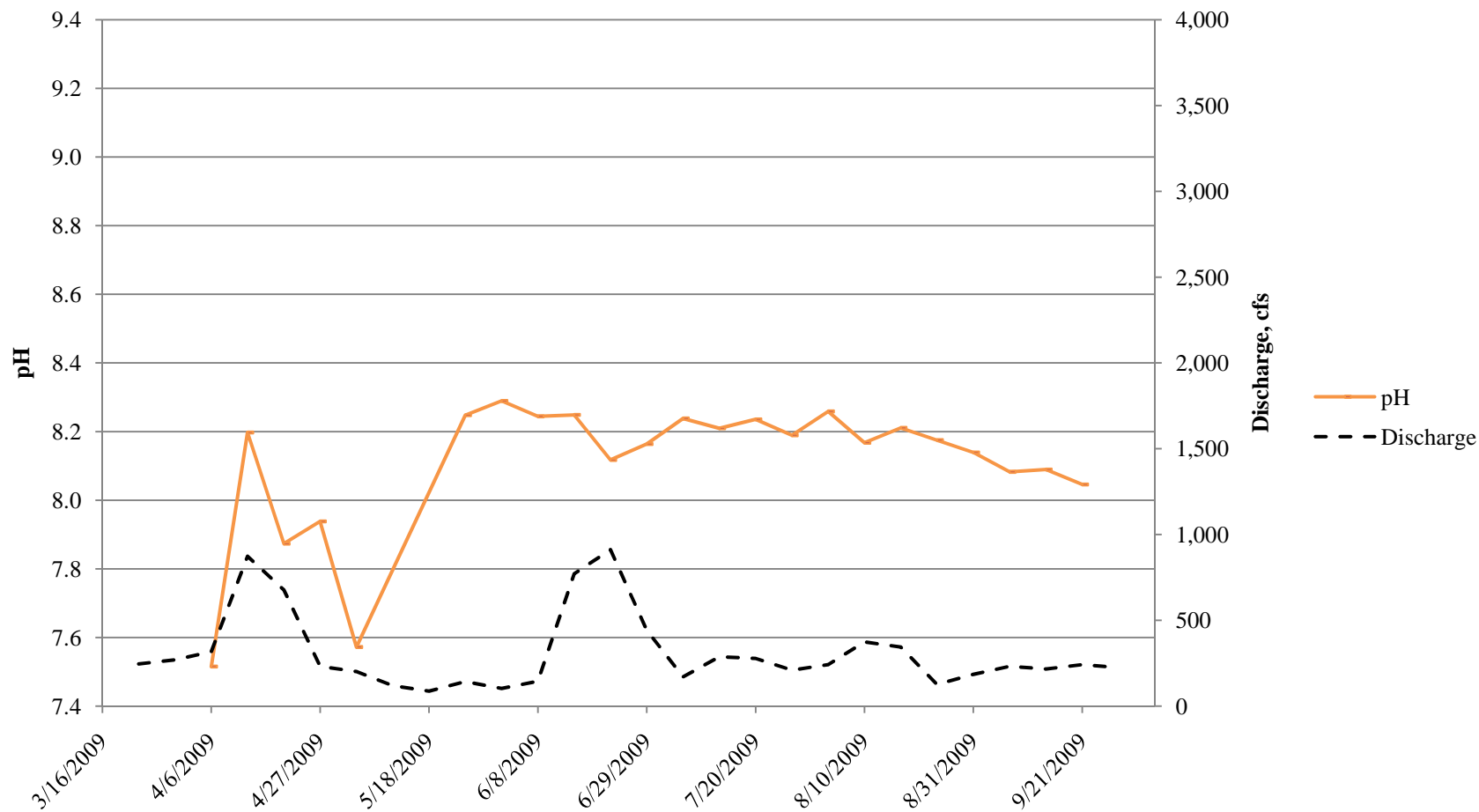




Figure B-45. Turbidity and Discharge, Weekly Mean, Platte River, Lexington, NE

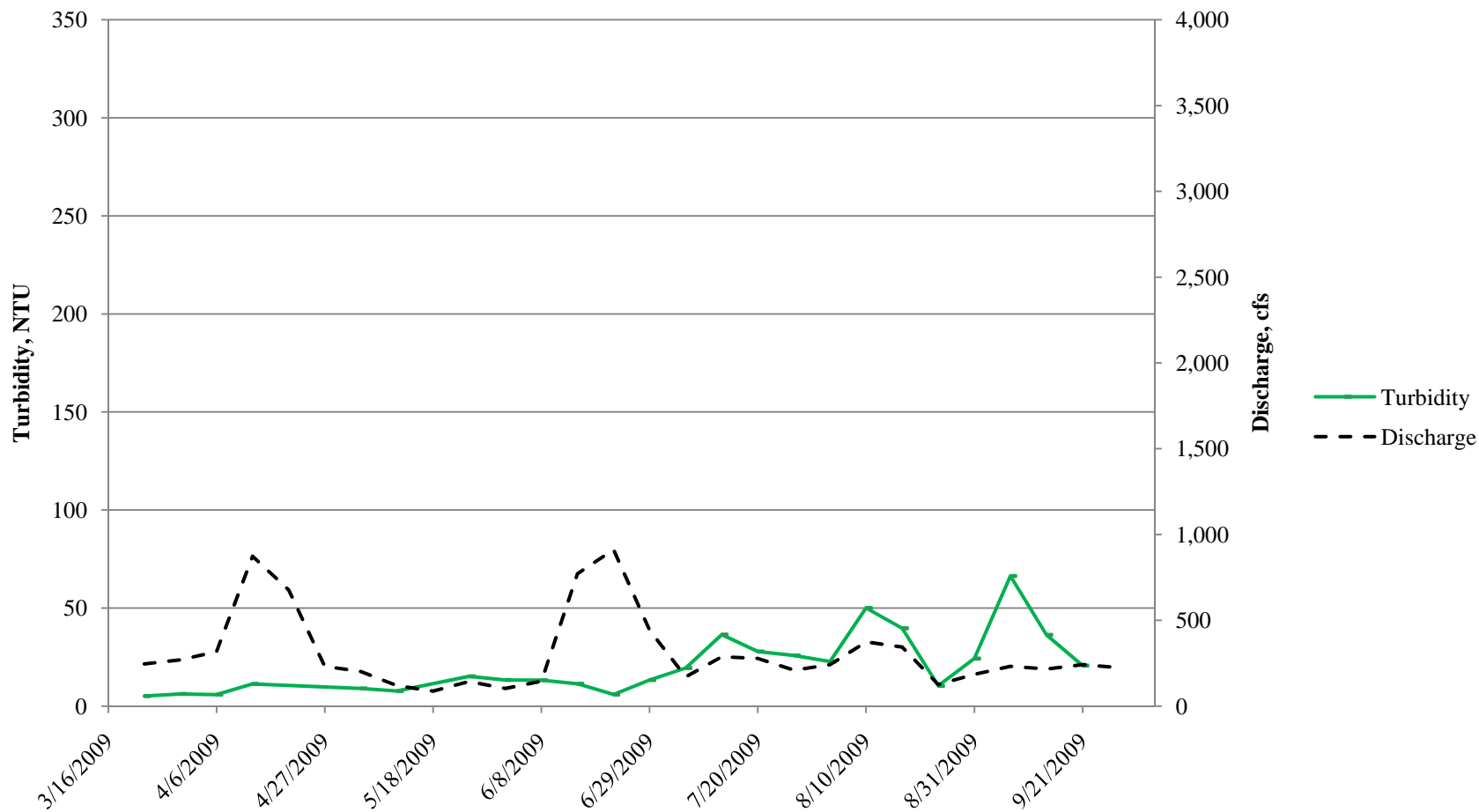




Figure B-46. Dissolved Oxygen and Discharge, Weekly Mean, Platte River, Lexington, NE

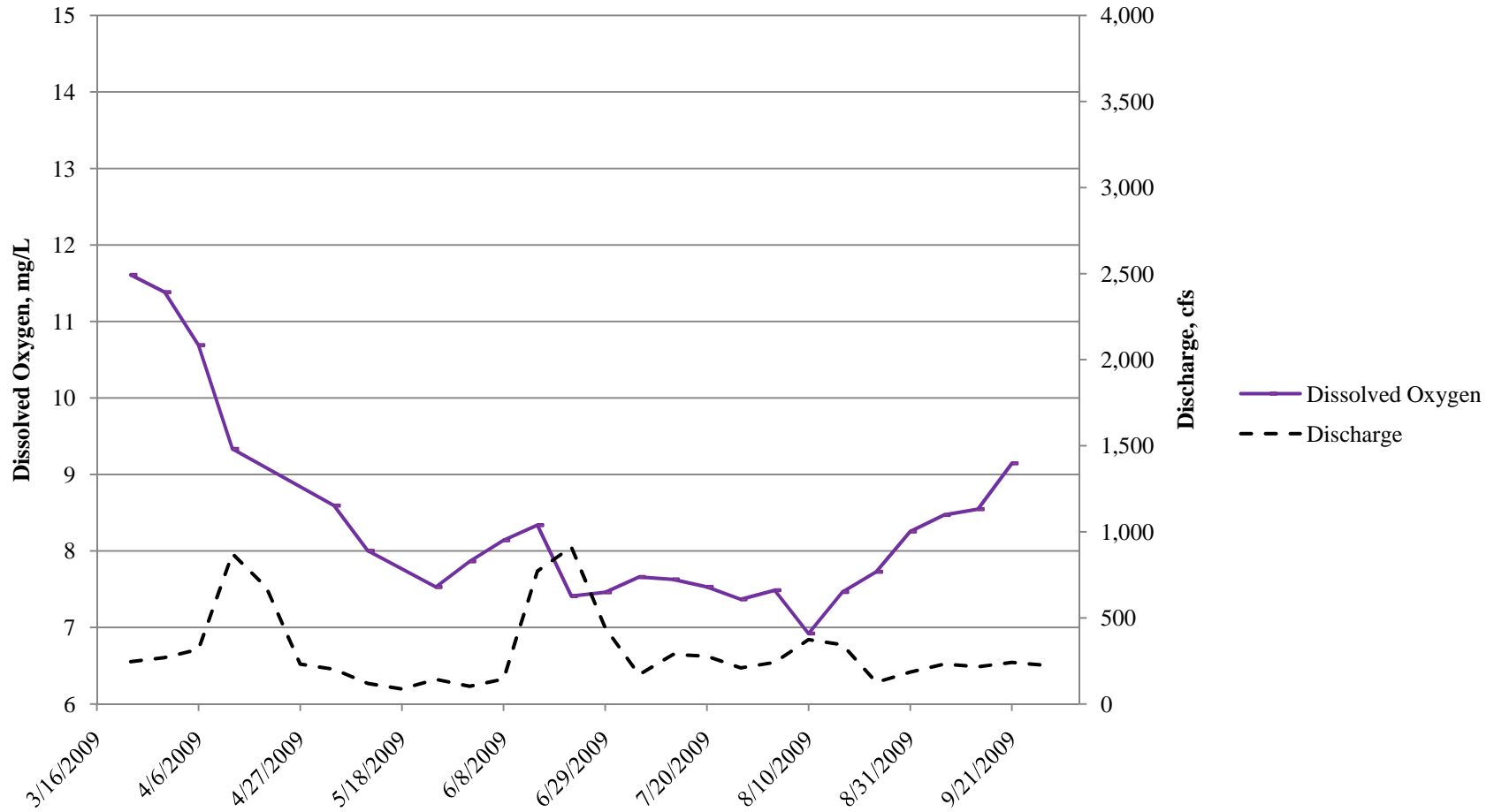




Figure B-47. Spatial Variation, Temperature, Interquartile Ranges, Platte River, NE

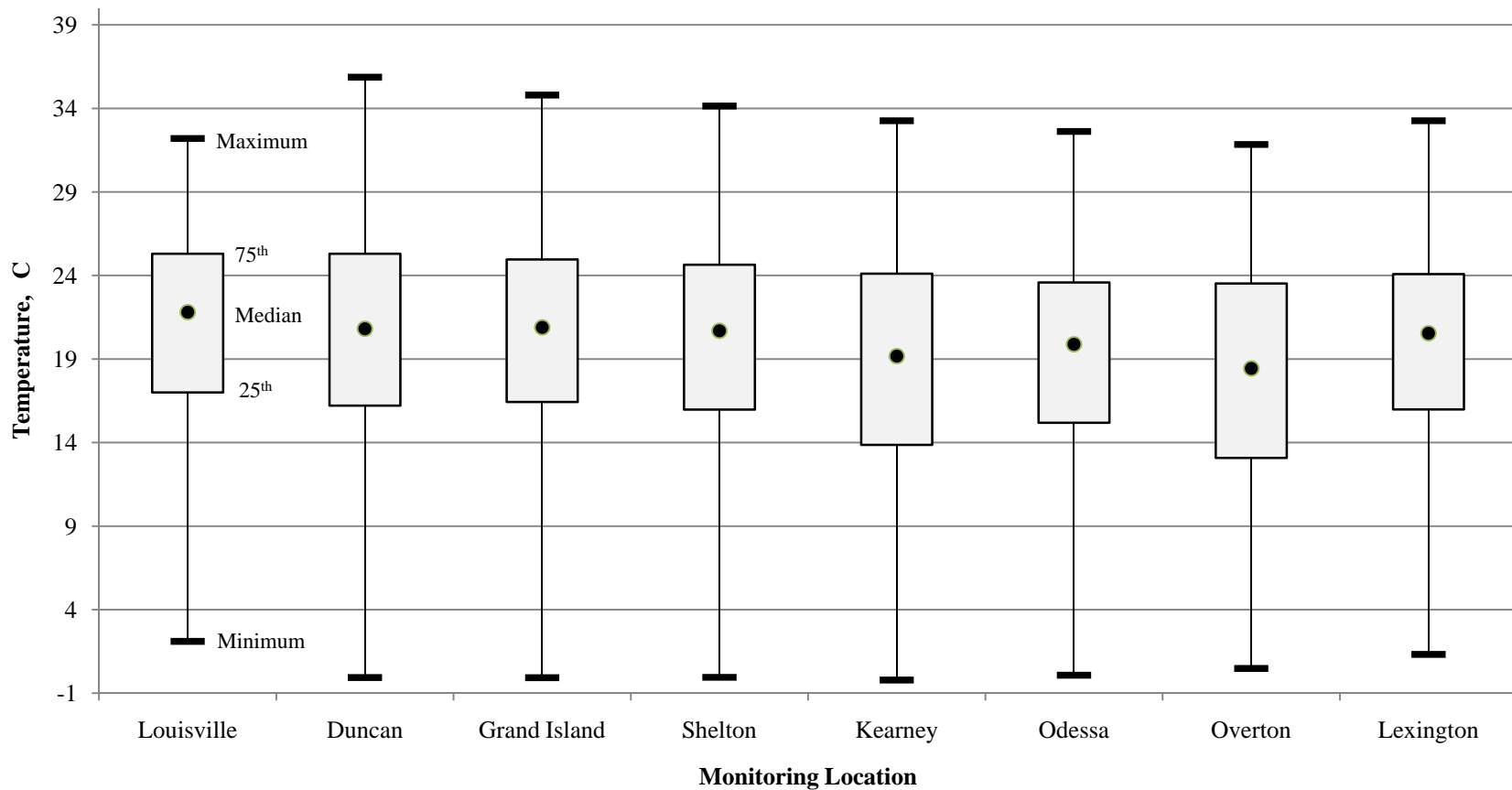




Figure B-48. Spatial Variation, Specific Conductance, Interquartile Ranges, Platte River, NE

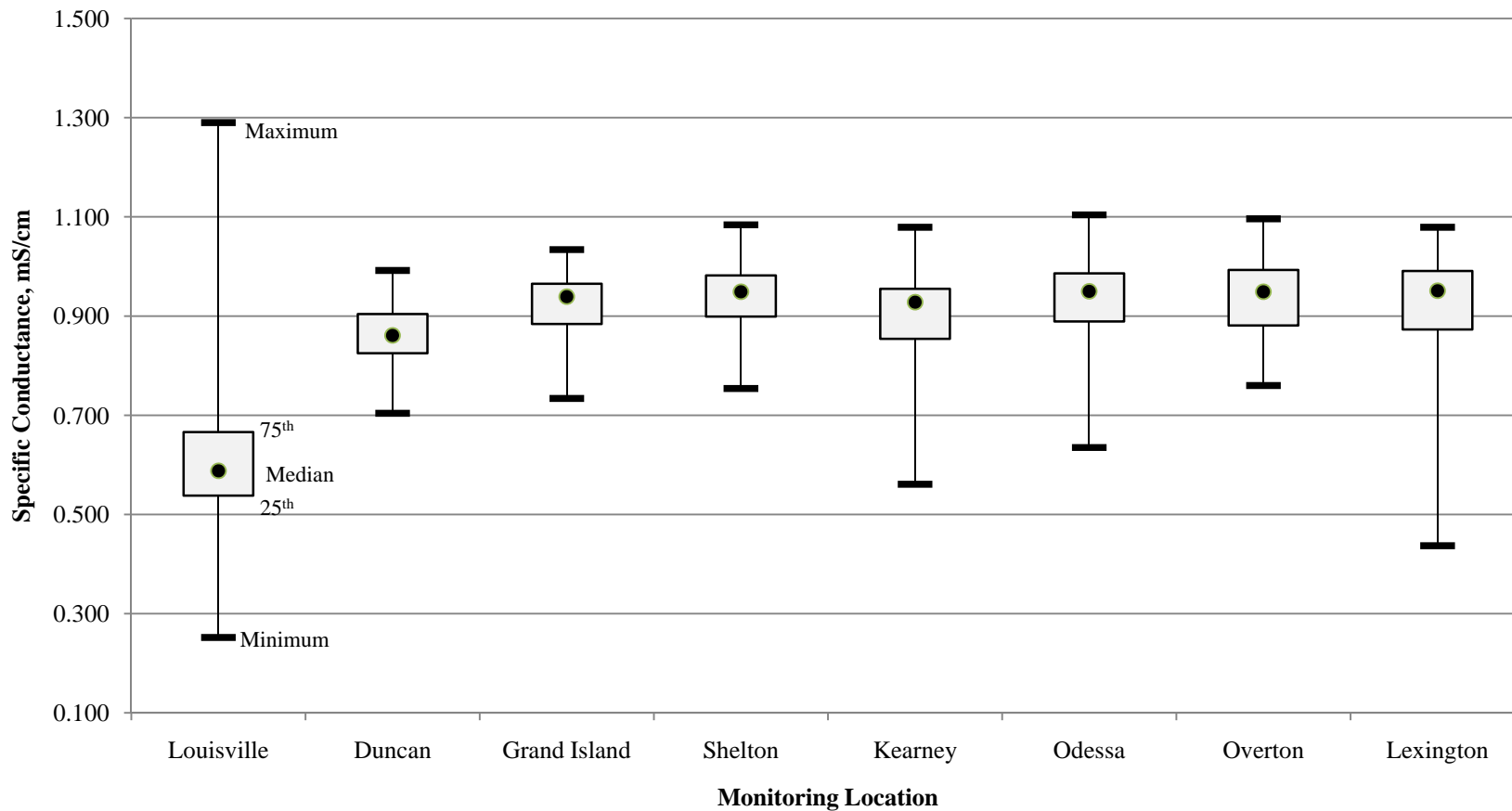




Figure B-49. Spatial Variation, pH, Interquartile Ranges, Platte River, NE

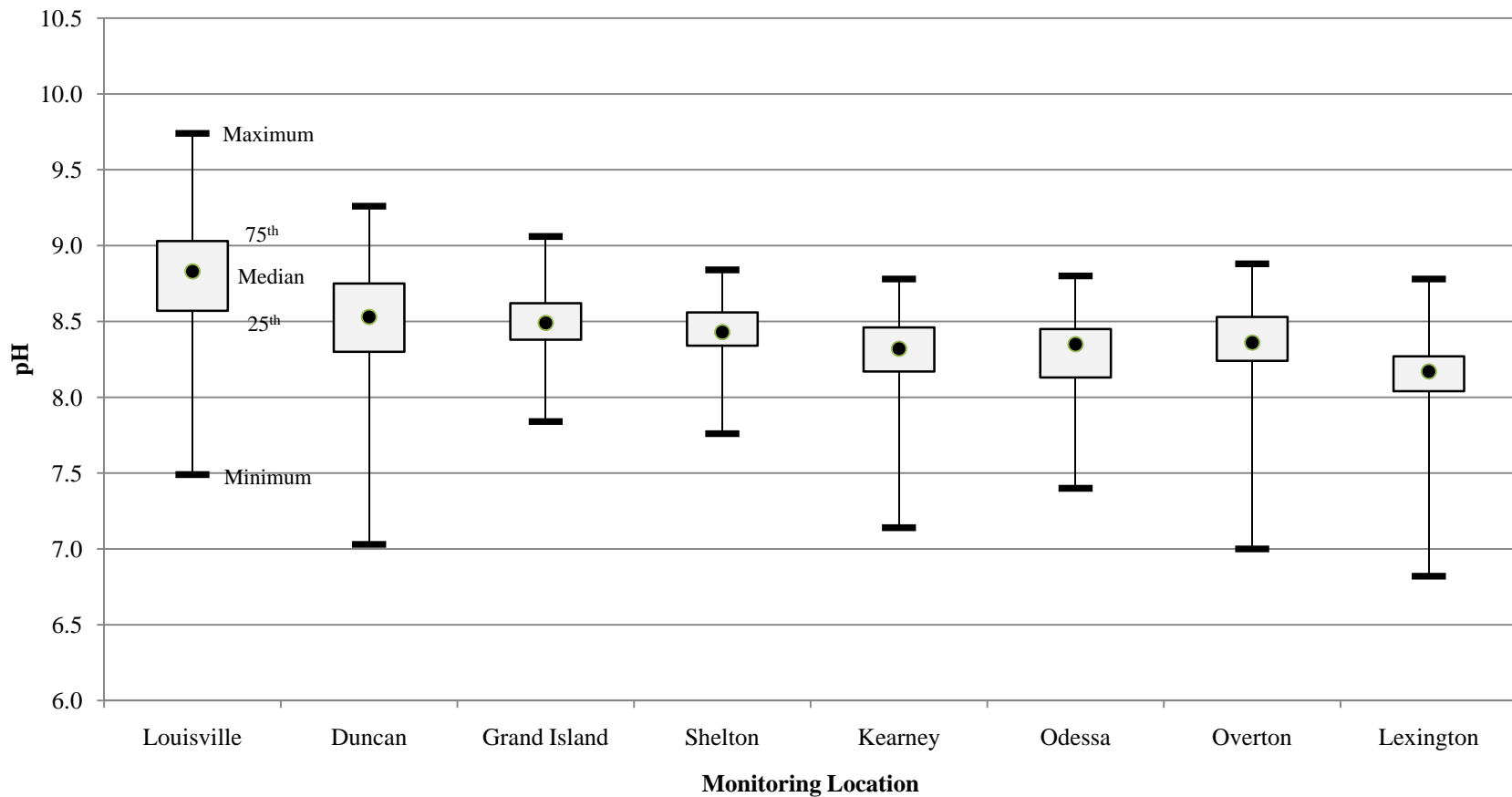




Figure B-50. Spatial Variation, Turbidity, Interquartile Ranges, Platte River, NE

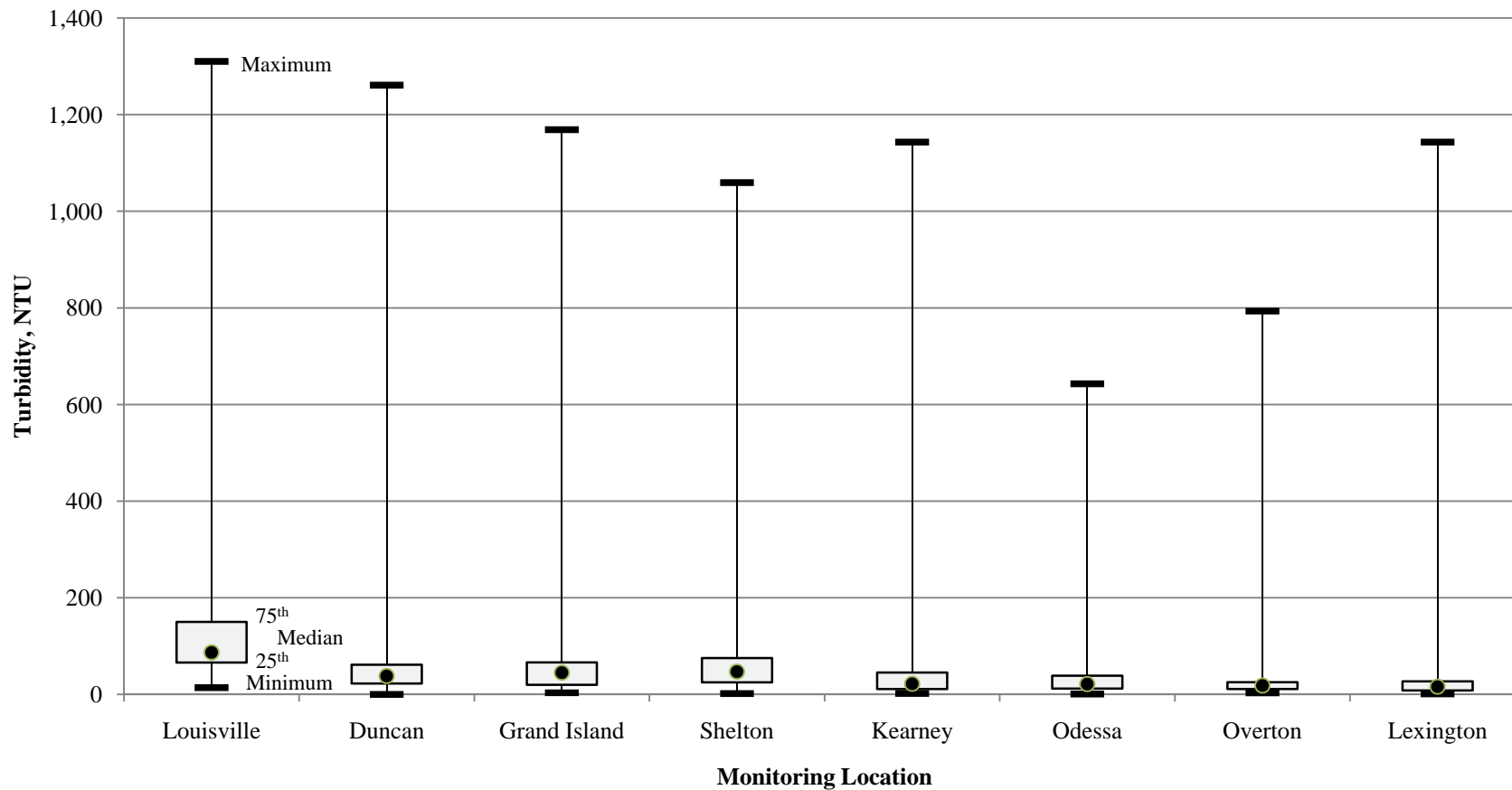




Figure B-51. Spatial Variation, Dissolved Oxygen, Interquartile Ranges, Platte River, NE

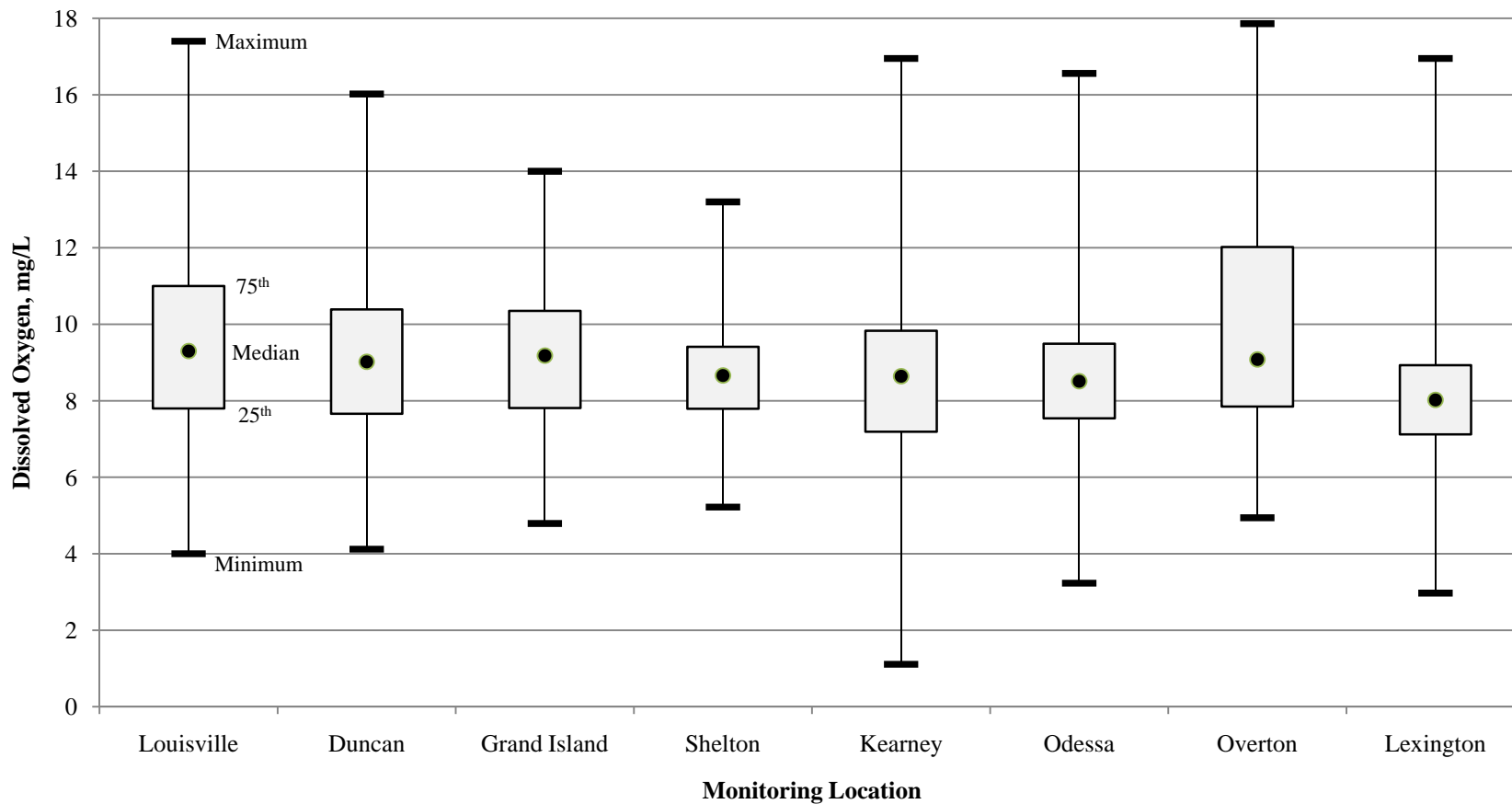
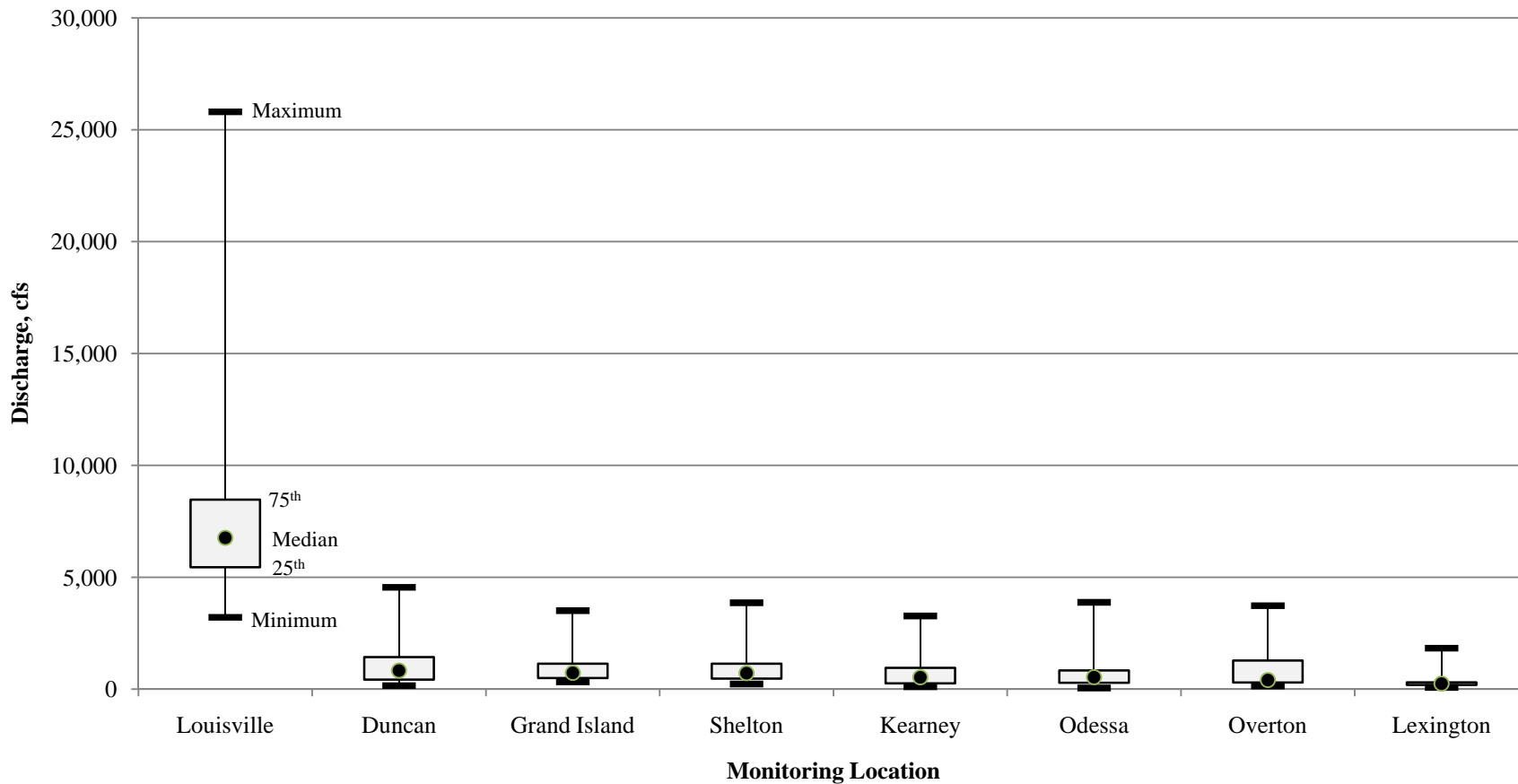




Figure B-52. Spatial Variation, Discharge, Interquartile Ranges, Platte River, NE





APPENDIX C

QA/QC Data



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Table C-1. Duplicate Water Quality RPDs, Platte River, Louisville, NE

Date	Temperature (°C)			pH (pH units)			Dissolved Oxygen (mg/L)			Specific Conductance (µmhos)			Turbidity (NTU)		
	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD
05/22/09	24.17	23.97	0.83%	8.89	9.35	5.04%									
06/10/09	18.10	18.21	0.61%	7.91	8.13	2.74%									
06/23/09	27.70	27.99	1.04%	8.00	8.03	0.37%									
07/07/09	24.50	25.06	2.26%	8.36	8.42	0.72%									
07/20/09	21.90	22.11	0.95%	8.48	8.69	2.45%									
08/04/09	25.50	25.83	1.29%	8.56	8.34	2.60%									
08/18/09	22.60	22.94	1.49%	8.08	8.12	0.49%									
08/28/09	20.40	20.79	1.89%	8.32	8.39	0.84%									
09/09/09	22.10	22.37	1.21%	8.54	8.67	1.51%									
09/11/09	24.50	24.43	0.29%	8.73	8.95	2.49%									
09/17/09	19.90	20.16	1.30%	8.57	8.77	2.31%									
09/22/09	15.60	15.78	1.15%	8.61	8.68	0.81%									
10/01/09	16.10	15.67	2.71%	8.33	8.54	2.49%									

Data collected by USGS



Table C-2. Duplicate Water Quality RPDs, Platte River, Duncan, NE

Date	Temperature (°C)			pH (pH units)			Dissolved Oxygen (mg/L)			Specific Conductance (µmhos)			Turbidity (NTU)		
	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD
04/14/09	9.80	9.64	1.65%	8.35	8.23	1.45%	10.40	11.10	6.51%	0.713	0.733	2.77%	4.80	1.30	114.75%
05/27/09	14.00	13.87	0.93%	8.49	8.50	0.12%	9.83	10.75	8.94%	0.776	0.756	2.61%	5.33	6.20	15.09%
06/10/09	18.80	18.82	0.11%	7.53	7.72	2.49%	6.28	6.52	3.75%	0.272	0.264	3.02%	1165.00	728.00	46.17%
06/23/09	28.40	28.36	0.14%	7.39	7.52	1.74%	4.85	6.04	21.85%	0.296	0.297	0.34%	146.00	N/A	N/A
07/01/09	25.10	25.10	0.00%	7.88	8.11	2.88%	6.67	7.46	11.18%	0.478	0.471	1.48%	179.00	N/A	N/A
07/07/09	25.70	25.57	0.51%	8.34	8.52	2.14%	9.04	9.37	3.59%	0.759	0.710	6.67%	48.00	75.20	44.16%
07/20/09	25.80	25.87	0.27%	8.88	8.75	1.47%	10.51	8.96	15.92%	0.799	0.734	8.48%	28.60	200.30	150.02%
08/04/09	30.00	30.16	0.53%	9.14	8.80	3.79%	11.08	7.32	40.87%	0.711	0.432	48.82%	24.20	30.70	23.68%
08/18/09	26.50	26.51	0.04%	9.12	9.23	1.20%	10.80	11.95	10.11%	0.606	0.591	2.51%	27.10	31.80	15.96%
08/26/09	20.60	20.64	0.19%	8.41	8.19	2.65%	7.85	7.87	0.25%	0.859	0.850	1.05%	29.50	43.40	38.13%
09/03/09	19.50	19.33	0.88%	8.63	8.45	2.11%	10.19	10.68	4.70%	0.923	0.912	1.20%	16.00	6.30	87.00%
09/09/09	20.60	20.47	0.63%	8.57	8.44	1.53%	9.25	9.99	7.69%	0.969	0.954	1.56%	11.30	6.90	48.35%
09/17/09	21.30	21.38	0.37%	8.52	8.53	0.12%	10.33	11.21	8.17%	0.991	0.920	7.43%	33.40	22.10	40.72%
09/22/09	15.50	15.40	0.65%	8.54	8.56	0.23%	10.53	11.03	4.64%	1.004	0.982	2.22%	19.50	12.60	42.99%
10/01/09	14.70	14.78	0.54%	8.30	8.34	0.48%	9.73	10.47	7.33%	1.015	0.997	1.79%	13.70	8.00	52.53%

N/A = Not Applicable



Table C-3. Duplicate Water Quality RPDs, Platte River, Grand Island, NE

Date	Temperature (°C)			pH (pH units)			Dissolved Oxygen (mg/L)			Specific Conductance (µmhos)			Turbidity (NTU)		
	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD
04/14/09	16.10	15.95	0.94%	8.58	8.56	0.23%	9.95	10.94	9.48%	0.951	0.977	2.70%	4.28	2.50	52.51%
04/30/09	15.80	16.38	3.60%	8.55	8.50	0.59%	10.60	10.48	1.14%	0.902	0.923	2.30%	6.31	13.40	71.94%
05/27/09	15.50	15.47	0.19%	8.59	8.57	0.23%	9.08	10.56	15.07%	0.911	0.929	1.96%	4.92	4.30	13.45%
06/10/09	24.60	24.68	0.32%	8.43	8.51	0.94%	8.60	8.79	2.19%	1.004	0.998	0.60%	7.99	8.80	9.65%
06/23/09	33.70	33.71	0.03%	8.56	8.75	2.20%	11.23	13.22	16.28%	0.897	0.906	1.00%	17.10	9.80	54.28%
07/07/09	30.50	30.59	0.29%	8.65	8.88	2.62%	9.66	9.95	2.96%	0.978	0.979	0.10%	35.10	51.50	37.88%
07/20/09	24.40	24.25	0.62%	8.88	8.95	0.79%	9.40	9.49	0.95%	1.018	0.996	2.18%	46.30	56.90	20.54%
08/04/09	33.60	34.51	2.67%	8.93	8.94	0.11%	9.53	10.17	6.50%	1.069	0.931	13.80%	24.80	22.20	11.06%
08/18/09	31.20	31.67	1.50%	9.05	9.27	2.40%	11.24	13.05	14.90%	0.966	0.902	6.85%	40.10	50.60	23.15%
08/26/09	22.60	22.76	0.71%	8.71	8.89	2.05%	10.24	10.25	0.10%	0.763	0.759	0.53%	35.50	52.70	39.00%
09/02/09	16.93	16.90	0.18%	8.47	8.41	0.71%	9.48	8.34	12.79%	0.983	1.011	2.81%	36.30	36.40	0.28%
09/09/09	22.80	22.90	0.44%	8.69	8.74	0.57%	11.03	11.70	5.90%	0.990	0.974	1.63%	34.50	41.10	17.46%
09/17/09	28.50	28.56	0.21%	8.90	9.06	1.78%	12.60	14.10	11.24%	1.046	1.031	1.44%	20.80	21.70	4.24%
09/22/09	15.70	15.69	0.06%	8.65	8.84	2.17%	10.62	11.24	5.67%	1.024	0.984	3.98%	7.39	6.30	15.92%
10/01/09	17.10	17.18	0.47%	8.65	8.82	1.95%	11.12	12.43	11.13%	1.051	0.997	5.27%	7.22	6.80	5.99%



Table C-4. Duplicate Water Quality RPDs, Platte River, Shelton, NE

Date	Temperature (°C)			pH (pH units)			Dissolved Oxygen (mg/L)			Specific Conductance (µmhos)			Turbidity (NTU)		
	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD
04/14/09	17.50	17.43	0.40%	8.50	8.62	1.40%	9.06	10.47	14.44%	0.958	0.983	2.58%	3.88	0.10	189.95%
05/05/09	12.70	12.70	0.00%	8.34	8.31	0.36%	9.85	9.20	6.82%	0.903	0.914	1.21%	11.50	8.20	33.50%
05/27/09	18.60	18.60	0.00%	8.42	8.39	0.36%	8.72	9.39	7.40%	0.917	0.914	0.33%	9.07	8.90	1.89%
06/10/09	23.40	23.33	0.30%	8.45	8.43	0.24%	8.81	8.88	0.79%	0.984	0.978	0.61%	21.90	18.60	16.30%
06/23/09	30.60	30.55	0.16%	8.20	8.28	0.97%	7.94	8.73	9.48%	0.998	0.977	2.13%	14.80	9.90	39.68%
07/07/09	29.30	29.22	0.27%	8.64	8.76	1.38%	10.79	11.40	5.50%	1.022	0.984	3.79%	46.90	57.30	19.96%
07/20/09	25.40	25.68	1.10%	8.59	8.74	1.73%	8.67	8.63	0.46%	1.076	0.965	10.88%	67.50	64.50	4.55%
08/04/09	31.40	31.54	0.44%	8.65	8.58	0.81%	7.75	8.48	9.00%	1.020	0.960	6.06%	35.70	38.00	6.24%
08/18/09	28.20	28.51	1.09%	8.50	8.72	2.56%	7.33	8.65	16.52%	0.894	0.849	5.16%	58.00	64.70	10.92%
08/26/09	23.70	23.66	0.17%	8.54	8.63	1.05%	7.58	7.90	4.13%	0.884	0.876	0.91%	58.90	65.20	10.15%
09/02/09	19.80	19.82	0.10%	8.38	8.60	2.59%	9.47	9.29	1.92%	1.038	0.864	18.30%	44.60	54.40	19.80%
09/09/09	24.00	24.06	0.25%	8.57	8.54	0.35%	8.66	10.40	18.26%	0.995	0.987	0.81%	49.70	45.30	9.26%
09/17/09	24.40	24.34	0.25%	8.40	8.53	1.54%	7.89	9.90	22.60%	1.002	1.025	2.27%	19.20	14.00	31.33%
09/22/09	15.60	15.69	0.58%	8.32	8.45	1.55%	8.71	10.90	22.34%	1.010	0.969	4.14%	12.90	10.40	21.46%
10/01/09	14.80	14.86	0.40%	8.29	8.44	1.79%	9.05	9.87	8.67%	1.016	0.976	4.02%	10.38	7.00	38.90%



Table C-5. Duplicate Water Quality RPDs, Platte River, Kearney, NE

Date	Temperature (°C)			pH (pH units)			Dissolved Oxygen (mg/L)			Specific Conductance (µmhos)			Turbidity (NTU)		
	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD
04/14/09	15.90	15.76	0.88%	8.49	8.57	0.94%	10.30	9.99	3.06%	0.833	0.857	2.84%	11.80	20.90	55.66%
05/05/09	14.50	14.39	0.76%	8.46	8.31	1.79%	11.20	10.42	7.22%	0.868	0.905	4.17%	14.60	20.10	31.70%
05/27/09	19.40	19.22	0.93%	8.29	8.41	1.44%	8.89	11.15	22.55%	0.862	0.868	0.69%	3.42	3.00	13.08%
06/11/09	15.20	14.81	2.60%	8.52	8.67	1.75%	16.78	16.56	1.32%	0.766	0.884	14.30%	1.66	N/A	N/A
06/24/09	26.80	26.71	0.34%	8.02	8.09	0.87%	6.83	7.55	10.01%	0.964	0.994	3.06%	9.68	10.30	6.21%
07/08/09	27.90	27.81	0.32%	8.38	8.55	2.01%	9.31	9.00	3.39%	1.069	1.048	1.98%	23.90	30.50	24.26%
07/21/09	27.30	27.29	0.04%	8.44	8.64	2.34%	7.57	8.04	6.02%	1.037	1.031	0.58%	18.10	36.30	66.91%
08/05/09	27.40	27.30	0.37%	8.39	8.58	2.24%	8.58	8.77	2.19%	0.945	0.955	1.05%	12.90	16.30	23.29%
08/19/09	24.80	24.87	0.28%	8.34	N/A	N/A	8.32	8.25	0.84%	0.934	0.960	2.75%	26.30	26.30	0.00%
08/27/09	26.20	26.14	0.23%	8.31	8.55	2.85%	7.67	8.42	9.32%	0.977	0.972	0.51%	6.96	2.60	91.21%
09/02/09	20.80	20.78	0.10%	8.54	8.68	1.63%	10.24	10.65	3.93%	0.970	0.951	1.98%	10.04	N/A	N/A
09/10/09	24.20	24.15	0.21%	8.59	8.53	0.70%	10.39	10.05	3.33%	0.988	0.966	2.25%	40.30	25.00	46.86%
09/18/09	21.40	21.33	0.33%	8.32	8.20	1.45%	8.80	9.48	7.44%	1.022	0.996	2.58%	24.10	19.00	23.67%
09/23/09	16.10	16.13	0.19%	8.26	8.35	1.08%	9.09	9.38	3.14%	0.977	0.935	4.39%	16.90	8.40	67.19%
10/02/09	10.90	12.20	11.26%	8.25	8.48	2.75%	9.88	10.62	7.22%	1.004	0.948	5.74%	17.80	9.00	65.67%

N/A = Not Applicable



Table C-6. Duplicate Water Quality RPDs, Platte River, Odessa, NE

Date	Temperature (°C)			pH (pH units)			Dissolved Oxygen (mg/L)			Specific Conductance (µmhos)			Turbidity (NTU)		
	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD
04/15/09	10.30	9.73	5.69%	8.38	8.40	0.24%	11.99	11.03	8.34%	0.799	0.839	4.88%	11.60	6.60	54.95%
05/05/09	18.20	17.84	2.00%	8.33	8.36	0.36%	9.85	9.38	4.89%	0.979	1.005	2.62%	8.61	7.80	9.87%
05/28/09	20.70	20.17	2.59%	8.01	8.07	0.75%	9.65	8.73	10.01%	1.091	1.123	2.89%	7.49	5.10	37.97%
06/11/09	15.40	15.36	0.26%	8.02	8.15	1.61%	9.33	5.83	46.17%	1.072	N/A	N/A	6.22	4.80	25.77%
06/24/09	24.70	24.52	0.73%	7.84	7.92	1.02%	6.50	6.90	5.97%	0.953	1.141	17.96%	10.73	6.10	55.02%
07/01/09	28.50	28.37	0.46%	8.29	8.44	1.79%	7.07	7.64	7.75%	1.027	N/A	N/A	13.70	12.60	8.37%
07/08/09	24.80	23.44	5.64%	8.04	8.09	0.62%	7.90	7.86	0.51%	1.075	1.061	1.31%	17.50	11.40	42.21%
07/21/09	23.90	22.60	5.59%	8.20	8.17	0.37%	7.27	8.01	9.69%	1.064	1.081	1.59%	16.40	14.00	15.79%
08/05/09	22.50	21.12	6.33%	8.37	8.34	0.36%	8.83	8.70	1.48%	0.949	0.905	4.75%	15.60	131.20	157.49%
08/19/09	22.70	21.38	5.99%	8.26	8.28	0.24%	8.03	6.98	13.99%	0.942	0.846	10.74%	31.10	27.90	10.85%
08/27/09	21.90	22.00	0.46%	8.30	8.52	2.62%	8.30	8.83	6.19%	0.997	0.983	1.41%	8.86	0.00	200.00%
09/02/09	21.40	21.30	0.47%	8.53	8.72	2.20%	9.77	10.24	4.70%	0.998	0.985	1.31%	19.50	13.30	37.80%
09/10/09	21.40	21.33	0.33%	8.22	8.20	0.24%	8.54	8.76	2.54%	1.043	1.024	1.84%	30.90	30.10	2.62%
09/18/09	20.20	20.26	0.30%	8.20	8.37	2.05%	8.55	8.93	4.35%	1.030	1.002	2.76%	17.40	12.00	36.73%
09/23/09	16.00	16.04	0.25%	8.24	8.46	2.63%	8.96	8.50	5.27%	0.987	0.953	3.51%	13.20	15.40	15.38%
10/02/09	10.50	11.07	5.29%	8.31	8.42	1.32%	9.83	10.62	7.73%	1.011	0.960	5.18%	12.40	11.80	4.96%

N/A = Not Applicable



Table C-7. Duplicate Water Quality RPDs, Platte River, Overton, NE

Date	Temperature (°C)			pH (pH units)			Dissolved Oxygen (mg/L)			Specific Conductance (µmhos)			Turbidity (NTU)		
	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD
05/06/09	17.10	16.85	1.47%	8.36	8.62	3.06%	8.79	9.03	2.69%	0.891	0.859	3.66%	10.46	8.60	19.52%
05/11/09	18.40	17.73	3.71%	8.34	N/A	N/A	8.60	9.12	5.87%	0.945	0.963	1.89%	9.92	10.60	6.63%
05/28/09	16.20	16.05	0.93%	8.17	8.74	6.74%	10.47	11.15	6.29%	0.935	0.919	1.73%	5.44	4.70	14.60%
06/11/09	15.20	14.94	1.73%	7.98	8.35	4.53%	8.49	8.41	0.95%	0.948	0.972	2.50%	5.89	5.20	12.44%
06/24/09	26.00	25.91	0.35%	7.87	8.02	1.89%	6.05	6.23	2.93%	1.037	0.911	12.94%	5.21	2.80	60.17%
07/08/09	23.80	23.49	1.31%	8.06	8.30	2.93%	7.50	7.30	2.70%	1.034	1.032	0.19%	9.25	7.70	18.29%
07/21/09	22.40	22.34	0.27%	8.29	8.33	0.48%	7.49	7.75	3.41%	1.074	0.980	9.15%	12.40	9.70	24.43%
08/05/09	22.10	21.98	0.54%	8.20	8.34	1.69%	7.66	7.69	0.39%	0.958	0.954	0.42%	15.80	13.10	18.69%
08/19/09	21.60	21.37	1.07%	8.06	8.27	2.57%	7.36	7.25	1.51%	0.992	0.996	0.40%	14.60	14.70	0.68%
08/27/09	19.40	19.48	0.41%	8.17	8.44	3.25%	8.05	8.32	3.30%	0.950	1.035	8.56%	8.31	8.50	2.26%
09/02/09	21.60	21.58	0.09%	8.42	8.55	1.53%	9.19	9.81	6.53%	1.020	0.858	17.25%	10.58	N/A	N/A
09/10/09	20.50	20.71	1.02%	8.29	8.10	2.32%	8.52	8.76	2.78%	0.981	0.960	2.16%	9.79	6.50	40.39%
09/18/09	17.50	17.47	0.17%	8.20	8.33	1.57%	8.44	9.40	10.76%	0.953	0.925	2.98%	N/A	0.00	N/A
09/23/09	13.40	13.43	0.22%	8.23	8.26	0.36%	9.13	10.80	16.76%	0.913	0.879	3.79%	6.41	4.50	35.01%
10/02/09	8.50	8.99	5.60%	8.24	8.68	5.20%	10.01	10.48	4.59%	0.952	0.908	4.73%	5.88	5.00	16.18%

N/A = Not Applicable



Table C-8. Duplicate Water Quality RPDs, Platte River, Lexington, NE

Date	Temperature (°C)			pH (pH units)			Dissolved Oxygen (mg/L)			Specific Conductance (µmhos)			Turbidity (NTU)		
	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD	Hand Held	Sonde	RPD
04/15/09	11.90	10.66	10.99%	8.33	8.21	1.45%	10.10	9.27	8.57%	0.833	0.854	2.49%	6.96	5.50	23.43%
05/05/09	13.20	13.09	0.84%	8.03	9.13	12.82%	7.95	8.34	4.79%	0.870	0.895	2.83%	33.70	46.00	30.87%
05/28/09	13.30	13.32	0.15%	7.92	8.94	12.10%	8.96	8.60	4.10%	0.942	1.000	5.97%	7.42	4.00	59.89%
05/29/09	23.70	23.57	0.55%	8.10	7.64	5.84%	8.39	8.19	2.41%	0.959	0.986	2.78%	5.28	0.00	200.00%
06/11/09	14.10	14.31	1.48%	7.83	8.30	5.83%	8.22	8.08	1.72%	0.933	0.954	2.23%	5.58	0.50	167.11%
06/24/09	25.40	25.41	0.04%	7.70	7.92	2.82%	5.50	5.65	2.69%	1.034	0.918	11.89%	3.93	3.20	20.48%
07/08/09	21.40	21.32	0.37%	7.86	8.10	3.01%	7.23	6.43	11.71%	1.046	1.063	1.61%	7.05	7.10	0.71%
07/21/09	21.40	21.48	0.37%	8.10	8.19	1.10%	7.16	7.29	1.80%	1.071	0.967	10.21%	11.60	12.30	5.86%
08/05/09	21.20	21.21	0.05%	8.02	8.20	2.22%	7.18	7.22	0.56%	0.989	0.877	12.00%	10.88	11.80	8.11%
08/19/09	20.90	20.84	0.29%	7.97	8.18	2.60%	6.99	6.92	1.01%	1.005	0.619	47.54%	13.20	27.40	69.95%
08/27/09	17.10	17.30	1.16%	8.03	8.13	1.24%	7.69	N/A	N/A	1.055	1.048	0.67%	7.86	0.00	200.00%
09/03/09	18.10	18.14	0.22%	8.03	8.15	1.48%	7.66	8.13	5.95%	1.009	0.999	1.00%	18.30	11.80	43.19%
09/10/09	18.80	18.91	0.58%	8.11	7.88	2.88%	7.82	8.15	4.13%	0.960	0.946	1.47%	9.21	9.30	0.97%
09/18/09	16.70	16.75	0.30%	8.08	8.10	0.25%	8.11	8.35	2.92%	0.952	0.936	1.69%	13.20	5.00	90.11%
09/23/09	12.40	12.59	1.52%	8.09	8.16	0.86%	8.92	9.50	6.30%	0.889	0.862	3.08%	12.30	5.90	70.33%
10/02/09	7.90	7.95	0.63%	8.12	8.14	0.25%	9.90	10.31	4.06%	0.941	0.905	3.90%	6.86	4.20	48.10%

N/A = Not Applicable



Table C-9. Duplicate Metals Analysis RPDs, April/May, Platte River, NE

Date	Analyte	Units	Dup	Sample	RPD
			DUP200905	ODS200905	
05/05/09	Dissolved Metals				
	Copper	mg/L	ND	ND	N/A
	Lead	mg/L	ND	ND	N/A
	Nickel	mg/L	ND	ND	N/A
05/05/09	Total Metals				
	Calcium	mg/L	76.30	74.00	3.06%
	Magnesium	mg/L	24.4	23.9	2.07%
	Selenium	mg/L	ND	ND	N/A

N/A = Not Applicable
 ND = Non-Detect

Table C-10. Duplicate Metals Analysis RPDs, June, Platte River, NE

Date	Analyte	Units	Dup	Sample	RPD
			DUP200906	LSV200906	
06/23/09	Dissolved Metals				
	Copper	mg/L	ND	ND	N/A
	Lead	mg/L	ND	ND	N/A
	Nickel	mg/L	ND	ND	N/A
06/23/09	Total Metals				
	Calcium	mg/L	58	62	6.67%
	Magnesium	mg/L	18	18.8	4.35%
	Selenium	mg/L	ND	ND	N/A

N/A = Not Applicable
 ND = Non-Detect

Table C-11. Duplicate Metals Analysis RPDs, July, Platte River, NE

Date	Analyte	Units	Dup	Sample	RPD
			DUP200907	OVR200907	
07/21/09	Dissolved Metals				
	Copper	mg/L	ND	ND	N/A
	Lead	mg/L	ND	ND	N/A
	Nickel	mg/L	ND	ND	N/A
07/21/09	Total Metals				
	Calcium	mg/L	85.5	87.7	2.54%
	Magnesium	mg/L	27.3	27.5	0.73%
	Selenium	mg/L	ND	ND	N/A

N/A = Not Applicable
 ND = Non-Detect

Table C-12. Duplicate Metals Analysis RPDs, September, Platte River, NE

Date	Analyte	Units	Dup	Sample	RPD
			DUP200909	SHL200909	
09/17/09	Dissolved Metals				
	Copper	mg/L	ND	ND	N/A
	Lead	mg/L	ND	ND	N/A
	Nickel	mg/L	ND	ND	N/A
09/17/09	Total Metals				
	Calcium	mg/L	76.3	78.6	2.97%
	Magnesium	mg/L	26.60	27.40	2.96%
	Selenium	mg/L	ND	ND	N/A

N/A = Not Applicable
 ND = Non-Detect



Table C-13. Accuracy Tables, Platte River, Louisville, NE

Date	pH, Standard 7		pH, Standard 10		Dissolved Oxygen (mg/L)			Specific Conductance (1,413 µmhos)		Turbidity (123 NTU)	
	Sonde	% R	Sonde	% R	Sonde	Cal Point	% R	Sonde	% R	Sonde	% R
05/22/09	7.01	100.14%	9.85	98.50%	Data Collected by USGS						
06/10/09	7.03	100.43%	10.06	100.60%							
06/23/09	7.03	100.43%	9.97	99.70%							
07/07/09	6.76	96.57%	9.86	98.60%							
07/20/09	7.23	103.29%	10.13	101.30%							
08/04/09	6.84	97.71%	9.85	98.50%							
08/18/09	7.05	100.71%	10.03	100.30%							
08/28/09	7.05	100.71%	10.07	100.70%							
09/09/09	6.92	98.86%	9.93	99.30%							
09/11/09	6.88	98.29%	9.90	99.00%							
09/17/09	7.11	101.57%	10.09	100.90%							
09/22/09	7.03	100.43%	10.02	100.20%							



Table C-14. Accuracy Tables, Platte River, Duncan, NE

Date	pH, Standard 7		pH, Standard 10		Dissolved Oxygen (mg/L)			Specific Conductance (1,413 µmhos)		Turbidity (123 NTU)	
	Sonde	% R	Sonde	% R	Sonde	Cal Point	% R	Sonde	% R	Sonde	% R
04/14/09	7.14	102.00%	10.10	101.00%	9.15	9.27	98.71%	1.386	98.09%	22.10	17.97%
04/30/09	7.13	101.86%	10.08	100.80%	9.20	8.81	104.43%	1.407	99.58%	140.50	114.23%
05/27/09	7.09	101.29%	10.01	100.10%	9.11	8.89	102.47%	1.435	101.56%	123.20	100.16%
06/10/09	7.01	100.14%	9.93	99.30%	7.58	8.25	91.88%	1.424	100.78%	123.20	100.16%
06/23/09	7.38	105.43%	9.89	98.90%	8.53	7.58	112.53%	1.373	97.17%	N/A	N/A
07/01/09	7.50	107.14%	9.91	99.10%	7.83	7.88	99.37%	1.453	102.83%	134.80	109.59%
07/07/09	6.98	99.71%	10.00	100.00%	7.87	7.79	101.03%	1.406	99.50%	125.00	101.63%
07/20/09	7.02	100.29%	10.00	100.00%	8.24	8.10	101.73%	1.409	99.72%	115.90	94.23%
08/04/09	7.03	100.43%	9.98	99.80%	7.60	7.92	95.96%	1.448	102.48%	131.80	107.15%
08/17/09	7.16	102.29%	9.88	98.80%	8.16	8.14	100.25%	1.460	103.33%	88.30*	88.30%
08/26/09	6.93	99.00%	10.07	100.70%	8.50	8.91	95.40%	1.413	100.00%	101.20*	101.20%
09/03/09	6.97	99.57%	10.00	100.00%	99.80	100.20	99.60%	1.468	103.89%	94.50*	94.50%
09/09/09	6.96	99.43%	10.00	100.00%	8.79	8.70	101.03%	1.411	99.86%	102.30*	102.30%
09/17/09	6.96	99.43%	9.90	99.00%	8.58	8.51	100.82%	1.417	100.28%	99.10*	99.10%
09/22/09	7.05	100.71%	10.03	100.30%	9.26	9.71	95.37%	1.406	99.50%	103.90*	103.90%

N/A = Not Applicable

* = Turbidity was calibrated to a 100 NTU standard.



Table C-15. Accuracy Tables, Platte River, Grand Island, NE

Date	pH, Standard 7		pH, Standard 10		Dissolved Oxygen (mg/L)			Specific Conductance (1,413 µmhos)		Turbidity (123 NTU)	
	Sonde	% R	Sonde	% R	Sonde	Cal Point	% R	Sonde	% R	Sonde	% R
04/14/09	7.05	100.71%	10.03	100.30%	8.97	8.60	104.30%	1.424	100.78%	126.40	102.76%
04/30/09	7.06	100.86%	9.96	99.60%	8.62	9.06	95.14%	1.424	100.78%	117.90	95.85%
05/27/09	7.07	101.00%	10.01	100.10%	9.29	8.95	103.80%	1.418	100.35%	126.50	102.85%
06/10/09	7.01	100.14%	9.94	99.40%	8.13	8.05	100.99%	1.425	100.85%	120.50	97.97%
06/23/09	7.34	104.86%	9.89	98.90%	7.52	7.34	102.45%	1.418	100.35%	120.50	97.97%
07/07/09	7.04	100.57%	10.01	100.10%	7.51	7.55	99.47%	1.442	102.05%	129.80	105.53%
07/20/09	7.04	100.57%	10.02	100.20%	7.84	7.84	100.00%	1.397	98.87%	117.70	95.69%
08/04/09	6.99	99.86%	10.00	100.00%	7.88	7.68	102.60%	1.420	100.50%	128.40	104.39%
08/17/09	7.05	100.71%	9.92	99.20%	7.87	8.13	96.80%	1.438	101.77%	88.90*	88.90%
08/26/09	7.02	100.29%	10.01	100.10%	8.24	8.47	97.28%	1.424	100.78%	106.10*	106.10%
09/02/09	7.03	100.43%	9.99	99.90%	99.60	100.00	99.60%	1.413	100.00%	96.80*	96.80%
09/09/09	6.95	99.29%	9.97	99.70%	8.28	8.31	99.64%	1.411	99.86%	98.50*	98.50%
09/17/09	6.93	99.00%	10.02	100.20%	8.13	8.22	98.91%	1.444	102.19%	104.00*	104.00%
09/22/09	7.06	100.86%	10.04	100.40%	9.88	10.05	98.31%	1.430	101.20%	101.10*	101.10%

* = Turbidity was calibrated to a 100 NTU standard.



Table C-16. Accuracy Tables, Platte River, Shelton, NE

Date	pH, Standard 7		pH, Standard 10		Dissolved Oxygen (mg/L)			Specific Conductance (1,413 µmhos)		Turbidity (123 NTU)	
	Sonde	% R	Sonde	% R	Sonde	Cal Point	% R	Sonde	% R	Sonde	% R
04/14/09	7.22	103.14%	9.93	99.30%	9.23	8.45	109.23%	1.416	100.21%	173.90	141.38%
05/05/09	7.00	100.00%	10.03	100.30%	8.92	8.66	103.00%	1.430	101.20%	124.40	101.14%
05/27/09	7.04	100.57%	9.97	99.70%	9.02	8.84	102.04%	1.413	100.00%	129.70	105.45%
06/10/09	6.89	98.43%	9.99	99.90%	8.07	8.02	100.62%	1.435	101.56%	124.90	101.54%
06/23/09	7.01	100.14%	9.97	99.70%	7.23	7.14	101.26%	1.423	100.71%	116.50	94.72%
07/07/09	7.00	100.00%	10.00	100.00%	7.51	7.39	101.62%	1.438	101.77%	136.70	111.14%
07/20/09	7.03	100.43%	10.02	100.20%	7.72	7.80	98.97%	1.397	98.87%	113.60	92.36%
08/04/09	6.83	97.57%	9.96	99.60%	7.39	7.60	97.24%	1.437	101.70%	125.70	102.20%
08/17/09	7.18	102.57%	9.83	98.30%	7.77	8.10	95.93%	1.471	104.10%	100.80*	100.80%
08/26/09	7.01	100.14%	10.02	100.20%	8.46	8.38	100.95%	1.470	104.03%	104.50*	104.50%
09/02/09	7.03	100.43%	10.02	100.20%	100.10	99.80	100.30%	1.503	106.37%	101.60*	101.60%
09/09/09	6.91	98.71%	9.99	99.90%	8.32	8.26	100.73%	1.412	99.93%	94.00*	94.00%
09/17/09	7.04	100.57%	9.98	99.80%	8.09	8.03	100.75%	1.429	101.13%	104.70*	104.70%
09/22/09	7.02	100.29%	10.09	100.90%	9.57	10.08	94.94%	1.422	100.64%	99.80*	99.80%

* = Turbidity was calibrated to a 100 NTU standard.



Table C-17. Accuracy Tables, Platte River, Kearney, NE

Date	pH, Standard 7		pH, Standard 10		Dissolved Oxygen (mg/L)			Specific Conductance (1,413 µmhos)		Turbidity (123 NTU)	
	Sonde	% R	Sonde	% R	Sonde	Cal Point	% R	Sonde	% R	Sonde	% R
04/14/09	7.13	101.86%	9.99	99.90%	9.05	8.78	103.08%	1.393	98.58%	163.00	132.52%
05/05/09	6.98	99.71%	9.97	99.70%	9.10	8.62	105.57%	1.436	101.63%	116.30	94.55%
05/27/09	7.07	101.00%	10.11	101.10%	8.65	8.52	101.53%	1.441	101.98%	136.60	111.06%
06/11/09	7.19	102.71%	9.95	99.50%	8.97	8.91	100.67%	1.379	97.59%	123.30	100.24%
06/24/09	6.95	99.29%	9.93	99.30%	7.17	7.40	96.89%	1.471	104.10%	119.80	97.40%
07/08/09	7.00	100.00%	9.98	99.80%	7.25	7.45	97.32%	1.374	97.24%	129.20	105.04%
07/21/09	7.00	100.00%	10.06	100.60%	7.98	7.94	100.50%	1.429	101.13%	117.00	95.12%
08/05/09	N/A	N/A	N/A	N/A	7.75	7.72	100.39%	1.400	99.08%	133.20	108.29%
08/17/09	6.93	99.00%	9.98	99.80%	7.63	7.99	95.49%	1.480	104.74%	100.20*	100.20%
08/27/09	7.10	101.43%	9.95	99.50%	8.00	8.14	98.28%	1.419	100.42%	103.40*	103.40%
09/02/09	7.01	100.14%	10.04	100.40%	101.10	100.10	101.00%	1.480	104.74%	93.10*	93.10%
09/10/09	7.00	100.00%	9.97	99.70%	7.72	7.96	96.98%	1.418	100.35%	102.50*	102.50%
09/18/09	6.96	99.43%	10.04	100.40%	8.44	8.11	104.07%	1.432	101.34%	104.10*	104.10%
09/23/09	7.01	100.14%	10.06	100.60%	8.97	9.58	93.63%	1.401	99.15%	97.10*	97.10%

N/A = Not Applicable

* = Turbidity was calibrated to a 100 NTU standard.



Table C-18. Accuracy Tables, Platte River, Odessa, NE

Date	pH, Standard 7		pH, Standard 10		Dissolved Oxygen (mg/L)			Specific Conductance (1,413 µmhos)		Turbidity (123 NTU)	
	Sonde	% R	Sonde	% R	Sonde	Cal Point	% R	Sonde	% R	Sonde	% R
04/15/09	7.08	101.14%	9.99	99.90%	9.90	9.35	105.88%	1.459	103.26%	125.40	101.95%
05/05/09	7.02	100.29%	9.97	99.70%	8.35	8.28	100.85%	1.411	99.86%	116.60	94.80%
05/28/09	7.46	106.57%	9.91	99.10%	8.17	8.12	100.62%	1.420	100.50%	121.80	99.02%
06/11/09	7.47	106.71%	9.95	99.50%	8.46	8.74	96.80%	1.427	100.99%	125.10	101.71%
06/24/09	7.40	105.71%	9.91	99.10%	7.57	7.63	99.21%	N/A	N/A	109.20	88.78%
07/01/09	7.91	113.00%	9.87	98.70%	8.23	8.17	100.73%	1.380	97.66%	130.00	105.69%
07/08/09	6.99	99.86%	9.99	99.90%	7.74	7.70	100.52%	1.382	97.81%	121.70	98.94%
07/21/09	6.91	98.71%	10.02	100.20%	8.45	8.33	101.44%	1.432	101.34%	119.80	97.40%
08/05/09	6.99	99.86%	10.01	100.10%	8.16	8.10	100.74%	1.412	99.93%	127.00	103.25%
08/17/09	7.01	100.14%	9.93	99.30%	8.12	7.98	101.75%	1.467	103.82%	68.60*	68.60%
08/27/09	7.00	100.00%	10.04	100.40%	8.55	8.80	97.16%	1.416	100.21%	103.20*	103.20%
09/02/09	7.05	100.71%	10.03	100.30%	101.10	99.40	101.71%	1.471	104.10%	96.90*	96.90%
09/10/09	7.00	100.00%	9.91	99.10%	7.89	8.02	98.38%	1.423	100.71%	98.40*	98.40%
09/18/09	6.93	99.00%	9.99	99.90%	8.43	8.43	100.00%	1.416	100.21%	103.40*	103.40%
09/23/09	7.07	101.00%	10.08	100.80%	9.22	9.48	97.26%	1.415	100.14%	99.50*	99.50%

N/A = Not Applicable

* = Turbidity was calibrated to a 100 NTU standard.



Table C-19. Accuracy Tables, Platte River, Overton, NE

Date	pH, Standard 7		pH, Standard 10		Dissolved Oxygen (mg/L)			Specific Conductance (1,413 µmhos)		Turbidity (123 NTU)	
	Sonde	% R	Sonde	% R	Sonde	Cal Point	% R	Sonde	% R	Sonde	% R
05/06/09	N/A	N/A	N/A	N/A	N/A	7.19	N/A	1.335	94.48%	117.40	95.45%
05/11/09	6.47	92.43%	9.58	95.80%	9.59	8.97	106.91%	1.430	101.20%	128.50	104.47%
05/28/09	7.32	104.57%	9.97	99.70%	8.94	8.91	100.34%	1.394	98.66%	123.60	100.49%
06/11/09	7.33	104.71%	9.99	99.90%	8.74	8.55	102.22%	1.435	101.56%	121.10	98.46%
06/24/09	7.01	100.14%	9.88	98.80%	7.70	7.75	99.35%	1.425	100.85%	114.10	92.76%
07/08/09	6.99	99.86%	10.03	100.30%	7.60	7.57	100.40%	1.398	98.94%	129.60	105.37%
07/21/09	7.01	100.14%	10.02	100.20%	8.26	8.20	100.73%	1.413	100.00%	118.40	96.26%
08/05/09	7.00	100.00%	10.01	100.10%	7.93	7.93	100.00%	1.415	100.14%	133.80	108.78%
08/17/09	7.04	100.57%	9.97	99.70%	8.34	8.01	104.12%	1.464	103.61%	97.30*	97.30%
08/27/09	7.09	101.29%	9.99	99.90%	8.76	9.18	95.42%	1.423	100.71%	107.80*	107.80%
09/02/09	6.98	99.71%	9.98	99.80%	101.20	99.90	101.30%	1.519	107.50%	97.40*	97.40%
09/10/09	6.93	99.00%	10.01	100.10%	8.52	8.50	100.24%	1.430	101.20%	91.20*	91.20%
09/18/09	6.96	99.43%	10.03	100.30%	8.82	8.94	98.66%	1.415	100.14%	104.30*	104.30%
09/23/09	7.01	100.14%	10.05	100.50%	10.21	10.00	102.10%	1.404	99.36%	102.00*	102.00%

N/A = Not Applicable

* = Turbidity was calibrated to a 100 NTU standard.



Table C-20. Accuracy Tables, Platte River, Lexington, NE

Date	pH, Standard 7		pH, Standard 10		Dissolved Oxygen (mg/L)			Specific Conductance (1,413 µmhos)		Turbidity (123 NTU)	
	Sonde	% R	Sonde	% R	Sonde	Cal Point	% R	Sonde	% R	Sonde	% R
04/15/09	7.31	104.43%	9.70	97.00%	10.36	10.16	101.97%	1.405	99.43%	124.10	100.89%
05/05/09	7.06	100.86%	11.02	110.20%	8.83	9.05	97.57%	1.377	97.45%	117.20	95.28%
05/28/09	7.65	109.29%	9.85	98.50%	9.23	8.98	102.78%	1.460	103.33%	106.10	86.26%
05/29/09	7.05	100.71%	9.93	99.30%	7.87	7.72	101.94%	1.424	100.78%	133.90	108.86%
06/11/09	7.18	102.57%	9.99	99.90%	8.22	8.29	99.16%	1.419	100.42%	105.20	85.53%
06/24/09	7.04	100.57%	9.93	99.30%	7.80	7.74	100.78%	1.409	99.72%	113.60	92.36%
07/08/09	7.01	100.14%	10.00	100.00%	7.50	7.48	100.27%	1.446	102.34%	123.70	100.57%
07/21/09	6.93	99.00%	10.05	100.50%	8.08	8.07	100.12%	1.373	97.17%	120.30	97.80%
08/05/09	7.03	100.43%	9.99	99.90%	7.83	7.79	100.51%	1.410	99.79%	133.00	108.13%
08/17/09	7.04	100.57%	10.00	100.00%	7.64	8.03	95.14%	1.396	98.80%	99.40*	99.40%
08/27/09	7.09	101.29%	10.01	100.10%	8.97	9.52	94.22%	1.412	99.93%	103.60*	103.60%
09/03/09	7.00	100.00%	9.98	99.80%	100.60	100.20	100.40%	1.465	103.68%	95.00*	95.00%
09/10/09	6.94	99.14%	9.99	99.90%	8.94	8.87	100.79%	1.414	100.07%	100.10*	100.10%
09/18/09	6.90	98.57%	10.04	100.40%	9.03	9.29	97.20%	1.424	100.78%	104.80*	104.80%
09/23/09	7.07	101.00%	10.02	100.20%	10.28	10.38	99.04%	1.409	99.72%	98.30*	98.30%

* = Turbidity was calibrated to a 100 NTU standard.



Table C-21. Reported Concentrations, Total and Dissolved Metals, April/May, Platte River, NE

Sample ID: Date Sampled:		MDL/RL	LSV200905 5/2/2009	DUN200904 4/30/2009	GRI200904 4/30/2009	SHL200905 5/5/2009	KER200905 5/5/2009
Dissolved Metals	Units						
Copper	mg/L	0.00151/0.0200	<0.00151	<0.00151	<0.00151	<0.00151	<0.00151
Lead	mg/L	0.0109/0.100	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109
Nickel	mg/L	0.00258/0.0500	<0.00258	<0.00258	<0.00258	<0.00258	<0.00258
Total Metals	Units						
Calcium	mg/L	0.0195/1.00	67.7	72.7	73.3	73.2	71.9
Magnesium	mg/L	0.0104/1.00	17.2	20.6	22.1	23.2	23
Selenium	mg/L	0.0396/0.150	<0.0396	<0.0396	<0.0396	<0.0396	<0.0396

Sample ID: Date Sampled:		MDL/RL	ODS200905 5/5/2009	OVR200905 5/6/2009	LEX200905 5/5/2009	DUP200905 5/5/2009	FB200905 5/6/2009
Dissolved Metals	Units						
Copper	mg/L	0.00151/0.0200	0.00166 J	<0.00151	<0.00151	<0.00151	<0.00151
Lead	mg/L	0.0109/0.100	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109
Nickel	mg/L	0.00258/0.0500	<0.00258	<0.00258	<0.00258	<0.00258	<0.00258
Total Metals	Units						
Calcium	mg/L	0.0195/1.00	74	78.8	79	76.3	1.97
Magnesium	mg/L	0.0104/1.00	23.9	23.9	24.2	24.4	0.84 J
Selenium	mg/L	0.0396/0.150	<0.0396	<0.0396	<0.0396	<0.0396	<0.0396

J – Indicates reported value is greater than MDL but less than the RL
 MDL – Method Detection Limit
 RL – Reporting Limit



Table C-22. Reported Concentrations, Total and Dissolved Metals, June, Platte River, NE

Sample ID: Date Sampled:		MDL/RL	LSV200906 6/23/2009	DUN200906 6/23/2009	GRI200906 6/23/2009	SHL200906 6/23/2009	KER200906 6/24/2009
Dissolved Metals	Units						
Copper	mg/L	0.00151/0.0200	<0.00151	<0.00151	0.0034 J	<0.00151	<0.00151
Lead	mg/L	0.0109/0.100	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109
Nickel	mg/L	0.00258/0.0500	<0.00258	0.00359 J	0.00633 J	<0.00258	<0.00258
Total Metals	Units						
Calcium	mg/L	0.0195/1.00	62	59.1	73.6	73.6	76.7
Magnesium	mg/L	0.0104/1.00	18.8	18.5	23.9	24.8	25.7
Selenium	mg/L	0.0396/0.150	<0.0396	<0.0396	<0.0396	<0.0396	<0.0396

Sample ID: Date Sampled:		MDL/RL	ODS200906 6/24/2009	OVR200906 6/24/2009	LEX200906 6/24/2009	DUP200906 6/23/2009	FB200906 6/24/2009
Dissolved Metals	Units						
Copper	mg/L	0.00151/0.0200	<0.00151	<0.00151	<0.00151	<0.00151	<0.00151
Lead	mg/L	0.0109/0.100	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109
Nickel	mg/L	0.00258/0.0500	0.00264 J	<0.00258	0.00318 J	0.00359 J	<0.00258
Total Metals	Units						
Calcium	mg/L	0.0195/1.00	75.1	81.5	81.8	59.1	1.95
Magnesium	mg/L	0.0104/1.00	25.6	27	27.2	18.5	0.757 J
Selenium	mg/L	0.0396/0.150	<0.0396	<0.0396	<0.0396	<0.0396	<0.0396

J – Indicates reported value is greater than MDL but less than the RL
 MDL – Method Detection Limit
 RL – Reporting Limit



Table C-23. Reported Concentrations, Total and Dissolved Metals, July, Platte River, NE

Sample ID: Date Sampled:		MDL/RL	LSV200907 7/20/2009	DUN200907 7/20/2009	GRI200907 7/20/2009	SHL200907 7/20/2009	KER200907 7/21/2009
Dissolved Metals	Units						
Copper	mg/L	0.00151/0.0200	<0.00151	<0.00151	<0.00151	<0.00151	<0.00151
Lead	mg/L	0.0109/0.100	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109
Nickel	mg/L	0.00258/0.0500	0.00553 J	0.00562 J	0.00461 J	<0.00258	0.00381 J
Total Metals	Units						
Calcium	mg/L	0.0195/1.00	50.2	69.1	70.9	81.7	86.6
Magnesium	mg/L	0.0104/1.00	16.7	23.7	27	29	28.1
Selenium	mg/L	0.0396/0.150	<0.0396	<0.0396	<0.0396	<0.0396	<0.0396

Sample ID: Date Sampled:		MDL/RL	ODS200907 7/21/2009	OVR200907 7/21/2009	LEX200907 7/21/2009	DUP200907 7/21/2009	FB200907 7/21/2009
Dissolved Metals	Units						
Copper	mg/L	0.00151/0.0200	<0.00151	<0.00151	<0.00151	<0.00151	<0.00151
Lead	mg/L	0.0109/0.100	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109
Nickel	mg/L	0.00258/0.0500	0.00314 J	0.00367 J	0.00342 J	<0.00258	<0.00258
Total Metals	Units						
Calcium	mg/L	0.0195/1.00	86.5	87.7	86.8	85.5	<0.0195
Magnesium	mg/L	0.0104/1.00	28.1	27.5	28.4	27.3	<0.0104
Selenium	mg/L	0.0396/0.150	<0.0396	<0.0396	<0.0396	<0.0396	<0.0396

J – Indicates reported value is greater than MDL but less than the RL
 MDL – Method Detection Limit
 RL – Reporting Limit



Table C-24. Reported Concentrations, Total and Dissolved Metals, September, Platte River, NE

Sample ID: Date Sampled:		MDL/RL	LSV200909 9/17/2009	DUN200909 9/17/2009	GRI200909 9/17/2009	SHL200909 9/17/2009	KER200909 9/18/2009
Dissolved Metals	Units						
Copper	mg/L	0.00151/0.0200	<0.00151	<0.00151	<0.00151	<0.00151	0.00282 J
Lead	mg/L	0.0109/0.100	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109
Nickel	mg/L	0.00258/0.0500	0.00276 J	0.00359 J	0.00365 J	0.00302 J	0.00596 J
Total Metals	Units						
Calcium	mg/L	0.0195/1.00	51.5	71.1	79.1	78.6	72.5
Magnesium	mg/L	0.0104/1.00	13	26.2	27.7	27.4	27.2
Selenium	mg/L	0.0396/0.150	<0.0396	<0.0396	<0.0396	<0.0396	<0.0396

Sample ID: Date Sampled:		MDL/RL	ODS200909 9/18/2009	OVR200909 9/18/2009	LEX200909 9/18/2009	DUP200909 9/17/2009	FB200909 9/18/2009
Dissolved Metals	Units						
Copper	mg/L	0.00151/0.0200	<0.00151	<0.00151	<0.00151	<0.00151	<0.00151
Lead	mg/L	0.0109/0.100	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109
Nickel	mg/L	0.00258/0.0500	0.00374 J	<0.00258	0.00373 J	0.0036 J	<0.00258
Total Metals	Units						
Calcium	mg/L	0.0195/1.00	72.4	80.7	89.3	76.3	0.334 J
Magnesium	mg/L	0.0104/1.00	27.9	27.8	26.9	26.6	0.0901 J
Selenium	mg/L	0.0396/0.150	<0.0396	<0.0396	<0.0396	<0.0396	<0.0396

J – Indicates reported value is greater than MDL but less than the RL
 MDL – Method Detection Limit
 RL – Reporting Limit



APPENDIX D

Field Data Sheets (Available by Request)

APPENDIX E

Raw Water Quality Data (Available by Request)

APPENDIX F

Flow Data (Available by Request)