CONCENTRATIONS OF SELECTED TRACE ELEMENTS AND OTHER CONSTITUENTS IN THE RIO GRANDE AND IN FISH TISSUE IN THE VICINITY OF ALBUQUERQUE, NEW MEXICO, 1994 TO 1996

By Ralph Wilcox

U.S. GEOLOGICAL SURVEY

Open-File Report 97–667

Prepared in cooperation with the
CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT
NEW MEXICO ENVIRONMENT DEPARTMENT
PUEBLO OF ISLETA
and the
U.S. ENVIRONMENTAL PROTECTION AGENCY

Albuquerque, New Mexico
1997

U.S. DEPARTMENT OF THE INTERIOR
BRUCE BABBITT, Secretary

U.S. GEOLOGICAL SURVEY
Gordon P. Eaton, Director

For additional information write to:

District Chief
U.S. Geological Survey
Water Resources Division
4501 Indian School Road NE, Suite 200
Albuquerque, NM 87110-3929

Copies of this report can be purchased from:

U.S. Geological Survey
Branch of Information Services
Box 25286
Denver, CO 80225-0286

CONTENTS

FIGURE

TABLES

Multiply	By	To obtain
cubic foot per second	0.02832	cubic meter per second
foot	0.3048	meter
inch	25.4	millimeter
mile	1.609	kilometer
ton	0.9072	metric ton

Temperature in degrees Celsius (°C) can be converted to degrees Fahrenheit (°F) as follows:

$$°F = 1.8\ (°C) + 32$$

Chemical concentrations in water (in weight-per-volume units) are reported in milligrams per liter (mg/L) and micrograms per liter (µg/L), which are roughly equivalent to parts per million (ppm) and parts per billion (ppb), respectively, when concentrations are less than about 7,000 milligrams per liter.

Chemical concentrations (in weight-per-weight units) are reported in micrograms per gram (µg/g) and micrograms per kilogram (µg/kg), which are equivalent to parts per million and parts per billion, respectively.

Other water-quality units and acronyms that are used in appendixes A and B are ng/g (nannograms per liter), L (liter), ml (milliliter), MDL (method detection limit), MRL (minimum reporting level), and MS/MSD (matrix spike/matrix spike duplicate). The MDL is the minimum concentration of an analyte that can be identified, measured, and reported with 99-percent confidence that the concentration is greater than zero. The MRL is the lowest measured concentration of an analyte that may be reliably reported using a given analytical method. The MS is an environmental sample spiked with known concentrations of analytes in the laboratory. The MSD is a duplicate environmental sample spiked in the same manner as an MS, although the spiked concentrations may be different.

CONCENTRATIONS OF SELECTED TRACE ELEMENTS AND OTHER CONSTITUENTS IN THE RIO GRANDE AND IN FISH TISSUE IN THE VICINITY OF ALBUQUERQUE, NEW MEXICO, 1994 to 1996

By Ralph Wilcox

Abstract

The State of New Mexico and the Pueblo of Isleta have established surface-water standards for trace elements to control discharges of these contaminants. Before these standards can be meaningfully applied, however, ambient concentrations and loads of trace elements, principally arsenic, need to be determined in the Rio Grande and inflow sources. Arsenic concentrations also need to be determined in the edible portion of fish tissue because the Pueblo of Isleta standard for arsenic is based on fish consumption.

Eighteen surface-water sampling sites on a reach of the Rio Grande from the Pueblo of San Felipe to Los Lunas, New Mexico, were sampled quarterly from October 1994 to August 1996. The sites include eight Rio Grande sites, one Jemez River site, five riverside drain sites, and four wastewater-treatment plant outfalls. Trace-element protocol was used to collect and process the samples. Field and laboratory quality-control samples were analyzed, and the results are included in this report. Fish-tissue samples were collected from four of the Rio Grande sites and the Albuquerque Riverside Drain, the Atrisco Riverside Drain, and three lakes at a recreational fishing area on the Isleta Indian Reservation.

Arsenic in the Rio Grande is nearly all in the dissolved phase. There was little temporal change in arsenic concentration at the Rio Grande sites. The mean dissolved-arsenic concentration in the Rio Grande increased downstream from 1.8 micrograms per liter at the Pueblo of San Felipe to 3.6 micrograms per liter at Los Lunas. Mean dissolved-arsenic concentrations in the riverside drains were slightly higher (2.8 to 4.5 micrograms per liter) than in the Rio Grande and were higher still in the wastewater-treatment plant outfalls (7.9 to 16.2 micrograms per liter) and the Jemez River (18.2 micrograms per liter). The mean total-arsenic concentration in fish-tissue samples from the Rio Grande and Albuquerque Riverside Drain was 14.53 micrograms per kilogram.

INTRODUCTION

The Rio Grande flows southward through San Felipe Indian Reservation, the town of Bernalillo, Sandia Indian Reservation, the city of Albuquerque, Isleta Indian Reservation, and the village of Los Lunas over a 57-mile reach in central New Mexico (fig. 1). In this reach the river receives inflow from the Jemez River, riverside irrigation drainage canals, stormwater drains, wastewater-treatment plants (WWTP's), and arroyos. Each inflow point is a potential source of trace-element contaminants to the river. Water-quality standards have been established by the New Mexico Environment Department (New Mexico Water Quality Control Commission, 1995) and the Pueblo of Isleta (Pueblo of Isleta, 1992) to control discharges of trace elements and other contaminants into the river. Some trace elements, such as arsenic, aluminum, silver, and cyanide, are of concern today. Before water-quality standards for these contaminants can be meaningfully applied, however, ambient water-quality conditions for both natural and anthropogenic sources need to be quantified. Trace-element contributions from the inflow sources and the resulting changes to the Rio Grande need to be determined. For example, the Jemez River contains naturally high concentrations of arsenic because it drains the hydrothermally active Jemez Volcanic Field. WWTP discharges also contain high arsenic concentrations because municipal water supplies use ground water that has been leaching arsenic from aquifer material for long periods of time. Previous work in this reach of the Rio Grande consists of trace-element data collected by Kelly and Taylor

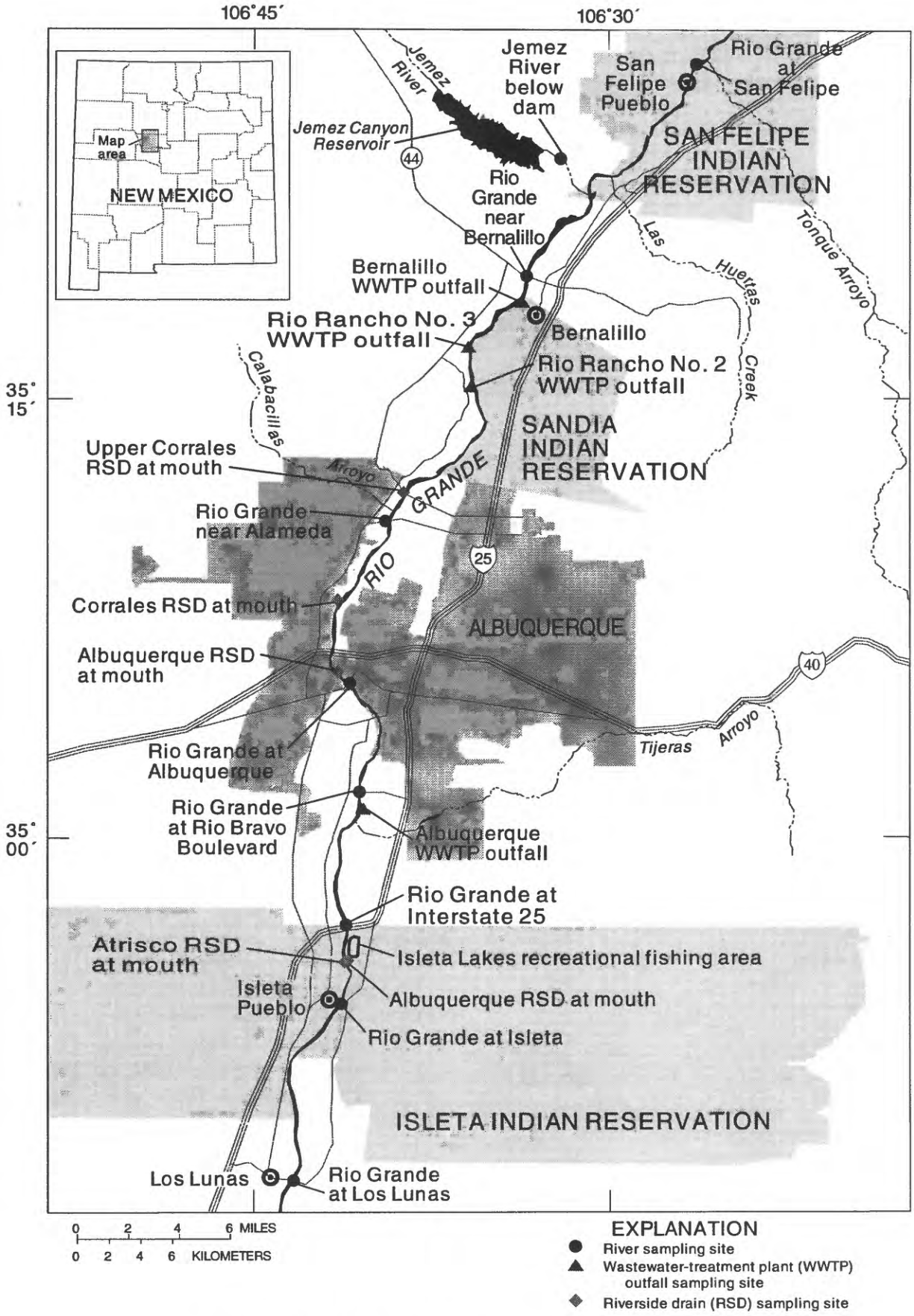


Figure 1.--Surface-water sampling sites.

(1996) from six sites on the Rio Grande and from the Albuquerque WWTP outfall in May 1994 and again in October 1994.

The Pueblo of Isleta water-quality standard for total arsenic is 0.0175 microgram per liter (µg/L) and is based on human-health criteria, as determined under the Clean Water Act (U.S. Congress, 1977). The standard is based on a 1 in 1 million (10^{-6}) cancer risk level and is derived from the following: bioconcentration factor for arsenic in fish, cancer potency factor for arsenic, assumed fish consumption rate, and assumed body weight. The bioconcentration factor used to develop the Pueblo of Isleta standard is based partly on arsenic bioconcentration data for the eastern oyster (U.S. Environmental Protection Agency, 1980). This benthic marine species may not be the most appropriate for determining an arsenic bioconcentration factor for freshwater fish. Region 6 of the U.S. Environmental Protection Agency (1996) has recommended a standard of 20.5 µg/L for freshwater fish using a lower bioconcentration factor. The New Mexico standard for arsenic is 20 µg/L. The actual arsenic concentration in edible fish tissue from the Rio Grande and fished riverside drains on Isleta Reservation is not known. To more accurately determine a bioconcentration factor, fish samples needed to be collected and the edible tissue analyzed for arsenic. The water-quality standards for the other trace elements of concern are the following: dissolved aluminum--87 µg/L, New Mexico standard; total aluminum--5.0 milligrams per liter (mg/L), Pueblo of Isleta standard; cyanide amendable to chlorination (unfiltered)--0.0052 mg/L, New Mexico and Pueblo of Isleta standard; total-recoverable silver--0.12 µg/L, Pueblo of Isleta standard; and dissolved silver--$e^{(1.72[\text{in (hardness)}]-6.52)}$, New Mexico standard. This report was prepared in cooperation with the City of Albuquerque Public Works Department, the New Mexico Environment Department, the Pueblo of Isleta, and the U.S. Environmental Protection Agency.

Purpose and Scope

The purpose of this report is to report (1) ambient concentrations of selected trace elements, principally arsenic, along the reach of the Rio Grande from the Pueblo of San Felipe to Los Lunas, New Mexico (fig. 1); (2) instantaneous loadings of these constituents into the Rio Grande from the Jemez River, riverside drains, and WWTP's along the study reach; and (3) mean concentrations of inorganic and organic forms of arsenic in the edible portions of fish tissue along the study reach. Water-quality and instantaneous loading results will be used by regulatory agencies to recommend further studies and/or control of these constituents. Results of fish-tissue analysis will be considered by regulatory agencies for estimating a site-specific bioaccumulation factor for arsenic.

The collection of data for this investigation began in October 1994 and was completed in August 1996. Eighteen sites (eight on the Rio Grande, one on the Jemez River, five on riverside drains, and four WWTP outfalls) generally were sampled four times a year for 2 years. The timing of sampling was based on seasonal flow conditions in the Rio Grande. Fish-tissue samples were collected on two occasions from four of the Rio Grande sites. Fish-tissue samples also were collected on the Isleta Reservation from the Albuquerque Riverside Drain, Atrisco Riverside Drain, and three lakes at Isleta Lakes, a recreational fishing area.

Acknowledgments

Dale Rankin, F. Eileen Roybal, Fred Gebhardt, and Steve Lewandowski of the U.S. Geological Survey (USGS) New Mexico District assisted in sample collection and processing and field measurements. Glenda Brown of the USGS National Water Quality Laboratory (NWQL) supervised the analysis of the water samples and prepared reports containing the quality-control (QC) sample results for each sampling round. Jim Brooks, Chris Hoagstrom, Mike Pilant, R. Mark Wilson, Joel Lusk, R. Sky Bristol, and Craig Springer of the U.S. Fish and Wildlife Service Albuquerque Field Office collected fish for tissue analysis.

Description of Sampling Sites

Water samples were collected from the 18 sites shown in figure 1. The sites are:

Rio Grande at San Felipe (station 08319000)--This is the most upstream site and represents background conditions unaffected by any inflow sources farther downstream. Samples were collected near the gaging station, from the San Felipe bridge, or approximately one-quarter mile downstream from the bridge. The channel is open and the bottom is cobbles with sand and gravel.

Jemez River below dam (station 08329000)--This site is approximately 2.5 miles upstream from the confluence of the Jemez River and the Rio Grande. Samples were collected near the gaging station. The channel is open and the bottom is basalt rock. This site was not sampled in the fifth sampling round (October 1995) and seventh sampling round (May 1996) because no water was being released from Jemez Canyon Reservoir at these times.

Rio Grande near Bernalillo (station 351921106332710)--This site is approximately 3.8 miles downstream from the confluence of the Rio Grande and the Jemez River. Samples were collected from the Highway 44 bridge or about 500 feet upstream from the bridge. The channel is divided by a sand bar, and the bottom is sand and gravel.

Rio Grande near Alameda (station 08329928)--This site is approximately 11.6, 8.9, and 7.4 miles downstream from the Bernalillo, Rio Rancho No. 3, and Rio Rancho No. 2 WWTP outfalls, respectively. The site is also downstream approximately 1.3 miles from the mouth of the Upper Corrales Riverside Drain. Samples were collected from the Paseo del Norte bridge or about 2,000 feet upstream from the bridge, just downstream from the confluence of Calabacillas Arroyo and the Rio Grande. The channel is open, and the bottom is sand and gravel.

Rio Grande at Albuquerque (station 08330000)--This site is downstream from a gated discharge point on the Albuquerque Riverside Drain. Samples were collected from the Central Avenue bridge or approximately 200 feet upstream from the bridge. The channel is open except during low-flow conditions when a sand bar divides the channel. The bottom is sand. This site was dropped from sampling after the first four rounds because no perennial inflow sources are between this site and the next downstream site (Rio Grande at Rio Bravo Boulevard).

Rio Grande at Rio Bravo Boulevard (station 08330150)--Samples were collected from the Rio Bravo Boulevard bridge, several hundred feet upstream from the bridge, or approximately 600 feet downstream from the bridge. The channel is open except during low-flow conditions when a sand bar sometimes divides the channel. The bottom is sand.

Rio Grande at Interstate 25 (station 345705106405210)--This site is approximately 5 miles south of the Albuquerque WWTP outfall. Samples were collected from the Interstate 25 bridge or approximately one-quarter mile downstream from the bridge. The channel is divided by a sand bar at the bridge and is sometimes divided by a sand bar at the downstream sampling location. The bottom is sand.

Rio Grande at Isleta (station 08331000)--This site is 1.3 miles south of the mouths of the Albuquerque and Atrisco Riverside Drains. Samples were collected at the Isleta bridge just upstream from the Isleta irrigation diversion structure or near the gage, approximately 1.0 mile upstream from the bridge. The channel is open and the bottom is sand.

Rio Grande at Los Lunas (station 344816106430010)--This is the most downstream sampling site, 2.3 miles south of the southern boundary of the Isleta Reservation. Samples were collected from the Los Lunas bridge or approximately 60 feet upstream from the bridge. The channel is divided by a sand bar and the bottom is sand. This site was dropped from sampling after five rounds to conserve project funds.

Upper Corrales Riverside Drain at mouth (station 351153106383510)--This drain starts just south of the Rio Rancho No. 2 WWTP outfall and flows southward along the west side of the Rio Grande for approximately 7 miles. Samples were collected within 200 feet of the drain mouth. The bottom is sand and mud.

Corrales Riverside Drain at mouth (station 350812106412010)--This drain starts approximately 1.4 miles north of the mouth of the Upper Corrales Riverside Drain and flows southward along the western side of the Rio Grande for about 5 miles. Samples were collected at the mouth of the drain where it flows into a marshy area west of the Rio Grande. The bottom is sand. This drain was sampled during the first three rounds because discharge was small (4.43 to 12.7 cubic feet per second) compared with that in the Rio Grande.

Albuquerque Riverside Drain at gate (station 350547106411610)--This drain starts about one-half mile south of the Rio Rancho No. 2 WWTP outfall on the east side of the Rio Grande and flows southward for approximately 13.4 miles before discharging into the river through a gate. The drain terminates at the gate when all water is discharged into the river, but water may be diverted into the southern continuation of the drain through another gate and culverts. Samples were collected just downstream from the gate in a concrete-lined channel that is part of the gate structure or just above the gate in the drain. The bottom is sand. This site was missed in the first sampling round, but was sampled in all remaining rounds.

Albuquerque Riverside Drain at mouth (station 345550106404810)--This drain starts approximately 1.6 miles north of the Interstate 40 bridge, directly adjacent to and east of the Albuquerque Riverside Drain at gate, and flows southward along the east side of the Rio Grande for 15 miles. This is a completely separate drain from the Albuquerque Riverside Drain upstream from the gate when all water is discharged into the river at the gate, but it is a southern continuation of the Albuquerque Riverside Drain upstream from the gate when water is diverted into this drain. Samples were collected about 60 feet upstream from the mouth or approximately 2,000 feet upstream from the mouth just downstream from a culvert. The bottom is sand and mud 60 feet upstream from the mouth and is rock (concrete riprap) 2,000 feet upstream from the mouth.

Atrisco Riverside Drain at mouth (station 345547106405510)--This drain starts approximately 0.9 mile downstream from the Interstate 40 bridge and flows southward along the west side of the Rio Grande for approximately 12.5 miles. Samples were collected about 150 feet upstream from the mouth.

Bernalillo WWTP outfall (station 351827106333710)--Discharge from a steel pipe on the east bank of the Rio Grande was sampled.

Rio Rancho No. 2 WWTP outfall (station 351533106354610)--Discharge from a steel pipe was sampled approximately 100 feet west of the Rio Grande.

Rio Rancho No. 3 WWTP outfall (station 351655106355310)--Discharge from a steel pipe was sampled approximately 150 feet west of the Rio Grande. This outfall was sampled during only the first three rounds because the discharge was very small (0.34 to 0.43 cubic foot per second) compared with that in the Rio Grande.

Albuquerque WWTP outfall (station 350104106401110)--This outfall was sampled just downstream from the gated concrete structure about 300 feet east of the Rio Grande.

METHODOLOGY

Surface Water

The timing of surface-water sampling rounds corresponded to the following seasonal flow conditions in the Rio Grande: spring high flow (May), summer thunderstorm season flow (August), autumn baseflow (October), and winter release flow (February). The sampling rounds took place during the following periods: round 1, October and November 1994; round 2, February 1995; round 3, May 1995; round 4, August 1995; round 5, October 1995; round 6, February 1996; round 7, May 1996; and round 8, August 1996.

Sample Collection

A two-person crew collected all surface-water samples; one person acted as "clean hands" and the other as "dirty hands" (Horowitz and others, 1994). Most samples were collected by wading with a USGS DH-81 sampler. The metal handle on the wading rod was covered with shrink-wrapped plastic. Samples were collected in a 3-liter polyethylene bottle with a Teflon cap and nozzle. Because of high-flow conditions during the third sampling round (May 1995), samples from the Rio Grande and the Jemez River were collected from bridges and a cableway, respectively, using a USGS D-77 sampler. Equal-width increment samples were collected with the DH-81 and D-77 samplers; a minimum of 12 vertical sections were taken. Grab samples were collected directly into the polyethylene bottle at the WWTP outfalls and on occasion at the Albuquerque Riverside Drain at the gate when velocities were high and flow was turbulent downstream from the gate.

Three liters of sample water were collected as an equipment rinse prior to actual sample collection. The rinse water was poured from the sampler into a 14-liter plastic churn splitter through a 1-inch-diameter fill hole in the lid of the churn, and the churn was rinsed. The fill hole was capped when not in use to minimize the potential for atmospheric contamination of the sample. Approximately 5 to 6 liters of water were collected for each sample. Samples were transferred to the churn splitter and transported to the USGS Albuquerque Field Headquarters (field office) for processing.

Instantaneous discharge was measured at the time of sampling at river and riverside drain sites. WWTP operators provided daily discharge values for the WWTP sites.

Sample Processing

Sample processing followed this sequence: (1) Draw whole-water samples from the churn splitter through the spigot for laboratory analysis of total-recoverable aluminum, total arsenic, total-recoverable

silver, and total cyanide and for field office determinations. Chill the sample for cyanide analysis. (2) Pump water samples collected for analysis of dissolved trace elements and major ions from the churn splitter with a peristaltic pump through the fill hole in the lid and filter through a capsule filter with a pore size of 0.45 micron. Appendix A contains the certificates of analysis for capsule filter rinsate for each batch of capsule filters used in this study. The capsule filter was conditioned by pumping approximately one-half liter of USGS inorganic-free blank water (IBW) prior to filtering the samples. The samples were collected in a processing chamber consisting of a new, clear plastic bag suspended by an external polyvinyl chloride (PVC) pipe frame. Another new plastic bag covered the work surface in the chamber. A clean chamber was set up prior to processing each sample. (3) Preserve the trace-element samples in the processing chamber with Ultrex-grade nitric acid dispensed from Teflon vials. Appendix A contains the certificates of analysis for all batches of nitric acid used in this study.

Prior to each use, sampling equipment (3-liter sample bottle, Teflon cap, Teflon nozzle, wading rod, churn splitter, and peristaltic pump tubing) was washed in white plastic basins using the following procedures: (1) Scrub with a white plastic brush with clear plastic bristles in a solution of tap water and no less than 1-percent Liquinox. (2) Rinse with tap water. (3) Soak for several minutes in a solution of deionized water, produced at the field office, and no less than 5-percent Microprocess-grade hydrochloric acid (certificates of analysis, appendix A). (4) Rinse with deionized water that has been polished by flowing through an activated carbon filter at the discharge end of the deionized water system. The inside of the pump tubing was cleaned by sequentially pumping each of the cleaning solutions through the tubing. The cleaned equipment was placed in clean, clear plastic bags. The churn splitters were double bagged and placed in white plastic garbage cans with lids.

Analytical Methods

Standard USGS analytical methods were used to analyze for major ions and trace metals (Fishman and Friedman, 1989; Damrau, 1993; Faires, 1993; Fishman, 1993; and McLain, 1993) (table 1; all tables are in the back of the report). The NWQL in Arvada, Colorado, conducted all analyses.

Quanterra Environmental Services, a USGS contract laboratory, conducted cyanide analyses using standard U.S. Environmental Protection Agency methods (U.S. Environmental Protection Agency, 1986). The laboratory treated cyanide samples to control possible interferences and the generation of false-positive results in sampling rounds 2-8. Sulfamic acid added to samples during distillation prevented interference by nitrate or nitrite, and lead carbonate added after distillation prevented interference from sulfur compounds.

Suspended sediment was analyzed at the field office. Specific conductance, pH, and alkalinity were determined at the field office during sample processing. Dissolved oxygen and temperature were measured in the stream.

Quality Control

The quality of surface-water analytical results was controlled by a designed set of QC samples and procedures. The following field QC samples were collected each sampling round: equipment blank, field duplicate, matrix spike, and spike duplicate.

The NWQL analyzed the samples from each round as a batch, except for the major ion analysis in round 1, for which the samples were split into two batches. Each batch of samples has a set of laboratory QC results associated with it. Therefore, except for the two batches of laboratory QC results for major ion analysis in data set 1, all laboratory QC results for each sample data set apply to all samples collected in that round. The following laboratory QC samples were analyzed each sample round: laboratory blank, laboratory duplicate, laboratory calibrations, and standard reference water samples.

The laboratory QC results provided by the contract laboratory for the cyanide analysis do not include all types of QC information provided by the NWQL. Although not all the same QC information appears for the cyanide analysis, the contract laboratory followed the U.S. Environmental Protection Agency-approved QC procedures.

Equipment Blank Sample Results

Equipment blank results (table 2) are useful in ascertaining whether sample equipment or sample collection methodology may be contaminating samples. Equipment blanks were collected by pouring IBW through all sampling equipment and processing the equipment blank like a surface-water sample. The equipment blank for data set 1 was collected at the field

office and analyzed for trace elements; all subsequent equipment blanks were collected at the sampling site and analyzed for trace elements and major ions. Because the equipment blanks for data sets 2-8 were collected at the sampling site, they represent possible contamination from ambient atmospheric conditions at the site as well as equipment cleanliness. For example, the equipment blank for sample data set 3 was collected on the southern walkway of the Central Avenue bridge, within several feet of heavy automobile traffic. The exhaust fumes and particulate matter cast in the air by the traffic could contaminate samples.

The equipment blank samples showed no significant contamination of the surface-water samples from ambient atmospheric conditions or sampling equipment, except possibly by zinc (table 2). Half the equipment blank samples (four) contained concentrations of zinc equal to or higher than the reporting limit of 1 µg/L. Zinc concentrations ranged from 1 to 3 µg/L in these blanks. One possible source of the zinc contamination is the silicone-coated metal spring in the spigot of the sample churn.

Field Duplicate Sample Results

Field duplicate results (tables 3-10) provide a measure of sampling precision or reproducibility or temporal variations in the system being sampled as measured by the relative percent difference (RPD). The RPD is calculated by the following formula:

$$\frac{|r_1 - r_2|}{(r_1 + r_2)/2} \times 100 = \textit{Relative percent difference} \qquad (1)$$

where r_1 is result 1; and

r_2 is result 2.

The RPD objective for this investigation is less than 20 percent. The RPD objective was exceeded in more than one field duplicate for the following metals: aluminum (dissolved), five times; copper (dissolved), three times; nickel (dissolved), three times; and zinc (dissolved), three times (table 11). Some of the large RPD's result from values that are numerically close but small. Generally these values are close to the reporting limits. For example, concentrations of nickel in data set 1 are 2 µg/L and 1 µg/L (reporting limit) (table 11); by definition the RPD is 66.67 percent.

The field duplicate in data set 1 (table 3) was collected concurrently with the surface-water sample, and the duplicates in data sets 2-8 (tables 4-10) were collected sequentially after the surface-water sample. On the basis of the timing of field duplicate sample collection, the results of field duplicate 1 are a better measure of sampling precision, and the results of field duplicates 2-8 are a better measure of short-term temporal variations in water quality.

Matrix Spike / Spike Duplicate Sample Results

Matrix spike/spike duplicate results (tables 12-19) viewed separately provide measures of how the sample matrix affects the recovery of analytes. A comparison of matrix spike/spike duplicate results provides a measure of how precise the laboratory methods are at spiked concentrations generally 10 or more times the reporting limit. The recovery of spiked analytes is measured as a percentage of the spiked concentration, and the precision is measured by the RPD of spike sample results. The recovery objective for spiked analytes is 80-120 percent, except cyanide, which varies slightly within the range of 70-119 percent. The RPD objective is less than 20 percent, except for cyanide which is either less than 17 percent or less than 21 percent.

The matrix spike/spike duplicate samples were collected by splitting aliquots for trace-element analysis during sample processing. These splits were then spiked at the laboratories. One or both spikes of the following analytes failed to meet the spike recovery objective more than one time: aluminum (dissolved) three times and zinc (dissolved) twice (table 20). The RPD objectives were exceeded only four times for all spiked pairs and analytes.

Laboratory Blank Sample Results

Laboratory blank results (tables 21-28) are useful for determining whether laboratory conditions or procedures may be contaminating samples. One or more laboratory blanks were run for each analyte in each batch of samples. The concentrations were, in general, below the reporting limits with a few notable exceptions. One of the total-cyanide blanks for the round 1 batch of samples had a reported concentration of 0.022 mg/L (table 21), but the other blank for this batch was below the reporting limit. This does not significantly affect the quality of the surface-water sample results because all surface-water

concentrations of cyanide in this batch were below the reporting limit.

Laboratory Duplicate Sample Results

The laboratory duplicate sample results (tables 29-36) are useful for determining the precision or reproducibility of laboratory analysis as measured by the RPD. The RPD objective is less than 20 percent. The bench chemist chose the laboratory duplicate samples and generally analyzed the sample as the first in a batch and reanalyzed the sample as the last in a batch. Two of the laboratory duplicate samples analyzed in data set 1 (table 29) were samples collected for a different investigation that were included in this analytical batch. Subsequent analytical batches included only samples collected for this investigation. The RPD objectives were exceeded four times in all laboratory duplicate pairs of analytes (table 37). Most of the large RPD's result from values that are numerically close but small. Generally these values are close to the reporting limits.

Laboratory Calibration Results

The laboratory calibration results (tables 38-45) were used to determine the correlation coefficient of a line generated by plotting theoretical concentrations of calibration standards against measured values of the standards. The calibration improves as the correlation coefficient approaches 1. The normal procedure for the NWQL is to rerun analyses if the correlation coefficient for the standards is below 0.990.

Standard Reference Water-Sample Results

The standard reference water-sample results (tables 46-53) provide a measure of laboratory analytical accuracy, as measured by the percent recovery of certified standard reference material that was analyzed in the same batch as the surface-water samples. The standard reference water samples were prepared by either the National Institute of Standards and Technology (standard number 1643B) or the NWQL Branch of Technical Development and Quality Systems. Standard reference water samples routinely are used in the USGS interlaboratory evaluation program, as described by Farrar and Long (1997).

Fish Tissue

Fish-tissue samples were collected and analyzed for total arsenic, inorganic arsenic, organic arsenic, and total mercury on three occasions. The fish-tissue samples were also analyzed for inorganic mercury and organic mercury on the final sampling occasion. The mercury analysis was performed at the request of the City of Albuquerque Public Works Department. Table 57 contains information on the individual fish-tissue samples. In May 1995 channel catfish and/or largemouth bass samples were collected on the Isleta Reservation from the Albuquerque Riverside Drain near the mouth, Atrisco Riverside Drain near the mouth, and Bass Lake at the Isleta Lakes recreational fishing area. In September/October 1995, channel catfish samples were collected from the Rio Grande near four of the Rio Grande surface-water sampling sites (Bernalillo, Interstate 25, Isleta, and Los Lunas) and from the Albuquerque Riverside Drain near the mouth, and a largemouth bass sample was collected from Sunrise Lake at Isleta Lakes (fig. 1). In July/August 1996 channel catfish samples were collected from the same four Rio Grande sites, from the Albuquerque Riverside Drain near the mouth, and from Turtle Lake at Isleta Lakes.

Attempts were made to collect channel catfish from the Rio Grande near San Felipe during each of the three samplings. However, no channel catfish were observed in this reach.

Sample Collection

Most fish were collected by electrofishing from a raft; fish were stunned with electric current and retrieved with nets. One sample was collected by electrofishing with a backpacking unit, and one sample was collected using a trot line. The channel catfish samples from Turtle Lake at Isleta Lakes were collected July 27 to August 11, 1996, by purchasing fish from individual fishermen. Although a notice was posted in the Isleta Lakes convenience store offering to purchase channel catfish caught from Turtle Lake, there was no way to verify that the fish purchased actually came from Turtle Lake.

At least five channel catfish were collected for each fish-tissue sample from the Rio Grande and from the Albuquerque Riverside Drain (table 57). Fish collection was not as successful in the Atrisco Riverside Drain or in the three lakes at Isleta Lakes;

two to four channel catfish or largemouth bass were collected at each of these sites.

Sample Processing

The fish-tissue sample was processed on the bank immediately after collection, except for the fish purchased from Turtle Lake over a 16-day period. The length and weight of each fish were measured. A composite sample for arsenic analysis was processed by cutting a filet off the left side of each fish, cutting off the skin, placing filets in a 500-milliliter glass sample jar, and chilling. A filet knife with a ceramic blade was used to filet the fish on a glass cutting board. The knife and the cutting board were cleaned with Liquinox and deionized water solution and rinsed with deionized water prior to processing each sample. In the first sampling round (May 1995) the composite samples were also analyzed for mercury (table 57), but in subsequent sampling rounds either the right filet of the largest fish in the composite or a filet from a fish larger than any in the composite was analyzed separately for mercury. The samples were frozen at the end of each sampling day and shipped as a batch to a private laboratory, Frontier Geosciences Environmental Research Corporation, at the end of each sampling round. No field QC samples were analyzed for fish tissue because of limited project funds.

Analytical Methods

The private laboratory used U.S. Environmental Protection Agency methods to analyze fish tissue. Arsenic was determined by method 206.2 (U.S. Environmental Protection Agency, 1983) in the first sampling round and by method 1632 (U.S. Environmental Protection Agency, 1995a), a more sensitive method, in subsequent sampling rounds. Although both of the above methods determine total arsenic in water, the laboratory experimentally developed extraction methods for tissue to preserve inorganic and organic arsenic species in water-based extracts. Mercury was determined by method 1631 (U.S. Environmental Protection Agency, 1995b). Bloom (1992) described the digestion method used for mercury speciation analysis. The laboratory QC results for the fish-tissue analyses are in appendix B.

RESULTS OF CHEMICAL ANALYSES

Results of Surface-Water Analyses

Table 54 contains the results of surface-water analyses; table 55 contains National Weather Service precipitation and air-temperature data from the Albuquerque, New Mexico, station; and table 56 contains the instantaneous loads of trace elements, major ions, and suspended sediment. The precipitation data were useful for determining which surface-water samples contained stormwater runoff (table 54). Stormwater runoff has the potential to alter the water quality of the stream. Other information used to determine which surface-water samples contained stormwater included instantaneous discharge records for USGS surface-water stations (Rio Grande at San Felipe, North Floodway Channel near Alameda (station 08329900), Rio Grande near Alameda, and Rio Grande at Albuquerque) from the USGS National Water Information System data base; visual appearance of the stream, such as color of water or floating debris or trash; visual observation of flow into the Rio Grande from arroyos; rising stage during discharge measurement; and elevated suspended-sediment concentration.

General water quality, as measured by dissolved-solids residue at 180 degrees Celsius, is better in the Rio Grande and the riverside drains than in the Jemez River and the WWTP outfalls. The mean dissolved-solids concentration in the Rio Grande at San Felipe was 213 mg/L, increasing steadily downstream to 263 mg/L at Los Lunas. The mean dissolved-solids concentration in the riverside drains ranged from 238 to 270 mg/L. In the Jemez River the mean dissolved-solids concentration was 668 mg/L, and in the WWTP outfalls ranged from 506 to 973 mg/L.

The arsenic concentrations are equal to or larger than the reporting limit (1 µg/L) for all sample results, therefore, the Pueblo of Isleta standard for arsenic (0.0175 µg/L) is exceeded in all samples (table 54). The New Mexico standard (20 µg/L) and the U.S. Environmental Protection Agency recommended standard (20.5 µg/L) are exceeded sometimes in only the Jemez River, the Bernalillo WWTP outfall, and the Rio Rancho No. 2 WWTP outfall (table 54).

The arsenic results represent several characteristics of the Rio Grande. Nearly all arsenic measured in the Rio Grande and in the riverside drains is in the dissolved phase based on total-arsenic

concentrations, which only occasionally exceeded dissolved concentrations by 1 µg/L (table 54). Most arsenic in the Jemez River and in the WWTP outfalls is dissolved. The temporal variation in dissolved-arsenic concentrations at the Rio Grande sites is small; concentrations varied no more than 1 µg/L (table 54) at any of these sites. The mean dissolved-arsenic concentration measured in the Rio Grande at San Felipe was 1.8 µg/L, generally increasing downstream to 3.6 µg/L at Los Lunas. Mean dissolved-arsenic concentrations in the riverside drains ranged from 2.8 µg/L in the Upper Corrales Drain to 4.5 µg/L in the Atrisco Drain; in the WWTP outfalls ranged from 7.9 µg/L at Albuquerque to 16.2 µg/L at Rio Rancho no. 2; and in the Jemez River was 18.2 µg/L.

The reported dissolved-arsenic concentrations are 1 µg/L greater than the reported total-arsenic concentrations in several samples, and one sample contains reported dissolved arsenic 2 µg/L greater than total arsenic (table 54). These discrepancies are within the acceptable error of the analytical method.

Dissolved-aluminum concentrations measured in the Rio Grande, Jemez River, and riverside drains ranged from less than 1 to 30 µg/L, except for one measured concentration of 40 µg/L (table 54); mean concentrations at these sites ranged from 3.4 to 17.5 µg/L. Dissolved-aluminum concentrations in the WWTP outfalls were higher, ranging from 10 to 50 µg/L, except for two outlying values of 60 and 100 µg/L at Bernalillo. The 100-µg/L concentration at the Bernalillo WWTP outfall was the only one to exceed the water-quality standard of 87 µg/L. Mean concentrations of dissolved aluminum at the WWTP outfalls ranged from 17.5 to 47.5 µg/L. Total-recoverable aluminum concentrations in the Rio Grande and Jemez River ranged from 170 to 75,000 µg/L (table 54). The highest concentrations (23,000 to 75,000 µg/L) were in six Rio Grande samples collected in round 8; all six samples contained stormwater runoff and the highest suspended-sediment concentrations (2,330 to 9,870 mg/L) measured in the study. Total-recoverable aluminum concentrations in the WWTP outfalls were lower, ranging from 40 to 310 µg/L.

Silver concentrations were below the reporting limits in the Rio Grande, Jemez River, and riverside drains. Silver (dissolved and total recoverable) was detected above the reporting limit and above the water-quality standard of 0.12 µg/L in only the Albuquerque and Bernalillo WWTP outfalls (table 54). Dissolved silver was above the reporting limit (0.2 µg/L) once at a concentration of 0.8 µg/L in the round 1 sample from the Albuquerque WWTP outfall and at the reporting limit (0.2 µg/L) in the next two sampling rounds (rounds 2 and 3). Total-recoverable silver was reported at a concentration of 2 µg/L in the round 6 sample from the Bernalillo WWTP outfall and in the round 1 sample from the Albuquerque WWTP outfall, and at the reporting limit (1 µg/L) in the subsequent five sample rounds (rounds 2-6) at the Albuquerque WWTP outfall.

The reporting limit for cyanide analysis is 0.010 mg/L, but the laboratory reports concentrations as low as 0.005 mg/L as estimates. The estimated cyanide concentrations are not explicitly quantified because the laboratory does not perform detection-limit studies at concentrations less than 0.010 mg/L. For this reason the estimated cyanide concentrations are not discussed here, but they are presented in table 54.

Cyanide, amenable to chlorination, was reported in only one sample. The round 8 sample from the Bernalillo WWTP outfall had a reported concentration of cyanide, amenable to chlorination, of 0.016 mg/L (table 54). The water-quality standard for cyanide, amenable to chlorination, is 0.0052 mg/L. Total cyanide was reported in only four samples from the Bernalillo WWTP outfall at concentrations ranging from 0.010 mg/L (reporting limit) to 0.21 mg/L. There is no water-quality standard for total cyanide.

In general, the dissolved concentrations of chromium, copper, and zinc were higher in the WWTP outfalls than the Rio Grande, Jemez River, and riverside drains, and the dissolved concentrations of barium and natural uranium were higher in the surface-water bodies than in the WWTP outfalls. Concentrations of antimony, beryllium, cadmium, and cobalt were below the reporting limit (1 µg/L) in all samples.

Results of Fish-Tissue Analyses

The results of the fish-tissue analyses may be subject to further review and reinterpretation because the level of QC associated with the fish-tissue analyses is much lower than the level of QC associated with the water analyses. No field QC samples were collected to substantiate the results of the fish-tissue analyses. Additionally, the laboratory used experimental methods, not widely practiced or officially approved by the U.S. Environmental Protection Agency, for arsenic extractions.

Mean total arsenic in 10 channel catfish fish-tissue samples from the Rio Grande and Albuquerque Riverside Drain with reported concentrations was 14.53 micrograms per kilogram (µg/kg); concentrations ranged from 4.62 to 25 µg/kg (table 58). Inorganic arsenic composed 15 to 100 percent of total arsenic in these samples, and the mean percentage was 65. The remainder was an organic form of arsenic. Six total-arsenic values are not reported in table 58. Three of these six values are not reported because the values were close to the reporting limit for method 206.2 and are not considered reliable (A. M. Falke, Frontier Geosciences Environmental Research Corporation, written commun., 1996). The other three total-arsenic values, for the samples from the Rio Grande and Sunrise Lake, are not reported because the inorganic arsenic concentration exceeded total-arsenic concentration by more than the analytical margin of error (table 58). Total-arsenic concentrations for these three samples are biased low because of analytical interferences; therefore the inorganic arsenic concentrations are more representative of total arsenic (A. M. Falke, written commun., 1996).

Mean total mercury in 13 fish-tissue samples from the Rio Grande, Albuquerque Riverside Drain, and Atrisco Riverside Drain was 281 µg/kg; concentrations ranged from 106.5 to 702.0 µg/kg (table 58). The six fish-tissue samples collected in July and August 1996 also were analyzed for inorganic and organic forms of mercury. In these six samples, inorganic mercury composed 2 percent of total mercury and organic mercury composed 98 percent of total mercury.

SELECTED REFERENCES

Bloom, N.S., 1992, On the chemical speciation of mercury in edible fish muscle tissue: Canadian Journal of Fisheries and Aquatic Sciences, v. 49, p. 1010.

Damrau, D.L., 1993, Methods of analysis by the U.S. Geological Survey National Water Quality Laboratory--Determination of low-level silver by graphite furnace atomic absorption spectrophotometry: U.S. Geological Survey Open-File Report 93-416, 14 p.

Faires, L.M., 1993, Methods of analysis by the U.S. Geological Survey National Water Quality Laboratory--Determination of metals in water by inductively coupled plasma-mass spectrometry: U.S. Geological Survey Open-File Report 92-634, 28 p.

Farrar, J.W., and Long, H.K., 1997, Report on the U.S. Geological Survey's evaluation program for standard reference samples distributed in September 1996--T-143 (trace constituents), T-145 (trace constituents), M-140 (major constituents), N-51 (nutrient constituents), N-52 (nutrient constituents), P-27 (low ionic strength constituents), and Hg-23 (mercury): U.S. Geological Survey Open-File Report 97-20, 145 p.

Fishman, M.J., ed., 1993, Methods of analysis by the U.S. Geological Survey National Water Quality Laboratory--Determination of inorganic and organic constituents in water and fluvial sediments: U.S. Geological Survey Open-File Report 93-125, 217 p.

Fishman, M.J., and Friedman, L.C., eds. 1989, Methods for determination of inorganic substances in water and fluvial sediments: U.S. Geological Survey Techniques of Water-Resources Investigations, book 5, chap. A1, 545 p.

Horowitz, A.J., Demas, C.R., Fitzgerald, K.K., Miller, T.L., and Rickert, D.A., 1994, U.S. Geological Survey protocol for the collection and processing of surface-water samples for the subsequent determination of inorganic constituents in filtered water: U.S. Geological Survey Open-File Report 94-539, 57 p.

Kelly, Todd, and Taylor, H.E., 1996, Concentrations and loads of selected trace elements and other constituents in the Rio Grande in the vicinity of Albuquerque, New Mexico, 1994: U.S. Geological Survey Open-File Report 96-126, 45 p.

McLain, B.J., 1993, Methods of analysis by the U.S. Geological Survey National Water Quality Laboratory--Determination of chromium in water by graphite furnace atomic absorption spectrophotometry: U.S. Geological Survey Open-File Report 93-449, 16 p.

New Mexico Water Quality Control Commission, 1995, Water-quality standards for interstate and intrastate streams in New Mexico: 49 p.

Pueblo of Isleta, 1992, Water quality standards: 25 p.

Timme, P.J., 1995, National Water Quality Laboratory 1995 services catalog: U.S. Geological Survey Open-File Report 95-352, 120 p.

U.S. Congress, 1977, Clean Water Act of 1977: U.S. Congress, 95th, Public Law No. 92-500.

U.S. Environmental Protection Agency, 1980, Ambient water quality for arsenic: U.S. Environmental Protection Agency, Office of Water Regulations and Standards 440/5-80-021.

———1983, Methods for chemical analysis of water and wastes: U.S. Environmental Protection Agency 600/ 4-79-020.

———1986, Test methods for evaluating solid waste, physical/chemical methods (3d ed.): U.S. Environmental Protection Agency SW-846.

———1995a, Method 1631-determination of mercury in water by oxidation purge and trap cold vapor fluorescence spectrometry: U.S. Environmental Protection Agency 821-R-95-027, April 1995 draft.

———1995b, Method 1632-determination of inorganic arsenic in water by hydride generation flame atomic absorption: U.S. Environmental Protection Agency 821-R-95-028, April 1995 draft.

———1996, Arsenic-human health criterion for fish consumption, interim strategy: U.S. Environmental Protection Agency Region 6, September 1996.

Table 1.--Analytical methods and reporting limits

[Analytical method numbers are used by the U.S. Geological Survey (USGS) National Water Quality Laboratory and the U.S. Environmental Protection Agency (EPA) (method SW9012) to specify analytical methods. Parameter codes are used by the USGS Water-Data Storage and Retrieval System (WATSTORE) data base and the EPA STORET data base; NA, not applicable; mg/L, milligrams per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius; d, dissolved; µg/L, micrograms per liter; tr, total recoverable; t, total]

Analyte	Analytical method	Analytical method number	Parameter code	Reporting limits
Specific conductance	Electrometry, field	NA	00095	1 µS/cm
pH	Electrometry, glass electrode, field	NA	00400	0.1 pH unit
Dissolved oxygen	Electrometry, field	NA	00300	0.1 mg/L
Alkalinity, t, as $CaCO_3$	Electrometry, incremental titration to pH 4.5, field	NA	00419	1 mg/L
Alkalinity, t, as $CaCO_3$	Electrometry, titration to pH 4.5, lab	I-2030-85	90410	1 mg/L
Aluminum, d, as Al	Inductively coupled plasma/mass spectrometry	I-2477-92	01106	1 µg/L
Aluminum, tr, as Al	Direct-current plasma	I-3054-86	01105	10 µg/L
Antimony, d, as Sb	Inductively coupled plasma/mass spectrometry	I-2477-92	01095	1 µg/L
Arsenic, d, as As	Atomic absorption, automated hydride	I-2062-85	01000	1 µg/L
Arsenic, t, as As	Atomic absorption, automated hydride	I-4062-85	01002	1 µg/L
Barium, d, as Ba	Inductively coupled plasma/mass spectrometry	I-2477-92	01005	1 µg/L
Beryllium, d, as Be	Inductively coupled plasma/mass spectrometry	I-2477-92	01010	1 µg/L
Cadmium, d, as Cd	Inductively coupled plasma/mass spectrometry	I-2477-92	01025	1 µg/L
Chromium, d, as Cr	Inductively coupled plasma/mass spectrometry	I-2477-92	01030	1 µg/L
Cobalt, d, as Co	Inductively coupled plasma/mass spectrometry	I-2477-92	01035	1 µg/L
Copper, d, as Cu	Inductively coupled plasma/mass spectrometry	I-2477-92	01040	1 µg/L
Lead, d, as Pb	Inductively coupled plasma/mass spectrometry	I-2477-92	01049	1 µg/L
Manganese, d, as Mn	Inductively coupled plasma/mass spectrometry	I-2477-92	01056	1 µg/L
Molybdenum, d, as Mo	Inductively coupled plasma/mass spectrometry	I-2477-92	01060	1 µg/L
Nickel, d, as Ni	Inductively coupled plasma/mass spectrometry	I-2477-92	01065	1 µg/L
Silver, d, as Ag	Graphite furnace atomic absorption	I-2725-93	01075	0.2 µg/L
Silver, tr, as Ag	Graphite furnace atomic absorption	I-4724-89	01077	1 µg/L
Uranium, d, as U	Inductively coupled plasma/mass spectrometry	I-2477-92	22703	1 µg/L
Zinc, d, as Zn	Inductively coupled plasma/mass spectrometry	I-2477-92	01090	1 µg/L
Cyanide, t, as Cn	Colorimetric, automated	SW9012	00720	[1]0.010 mg/L

Table 1.--Analytical methods and reporting limits--Concluded

Analyte	Analytical method	Analytical method number	Parameter code	Reporting limits
Cyanide, amenable to chlorination, as Cn	Colorimetric, automated	SW9012	00722	[1]0.010 mg/L
Calcium, d, as Ca (data sets 1-6)	Atomic absorption	I-1152-85	00915	0.1 mg/L
Calcium, d, as Ca (data sets 7 and 8)	Inductively coupled plasma	I-1472-87	00915	0.02 mg/L
Magnesium, d, as Mg (data sets 1-6)	Atomic absorption	I-1447-85	00925	0.1 mg/L
Magnesium, d, as Mg (data sets 7 and 8)	Inductively coupled plasma	I-1472-87	00925	0.01 mg/L
Sodium, d, as Na (data sets 1-6)	Atomic absorption	I-1735-85	00930	0.1 mg/L
Sodium, d, as Na (data sets 7 and 8)	Inductively coupled plasma	I-1472-87	00930	0.2 mg/L
Potassium, d, as K	Atomic absorption	I-1630-85	00935	0.1 mg/L
Bicarbonate, t, as HCO_3	Electrometry, incremental titration to pH 4.5, field	NA	00450	1 mg/L
Carbonate, t, as CO_3	Electrometry, incremental titration to pH 4.5, field	NA	00452	1 mg/L
Chloride, d, as Cl	Ion chromatography	I-2057-85	00940	0.1 mg/L
Sulfate, d, as SO_4	Ion chromatography	I-2057-85	00945	0.1 mg/L
Solids, d	Residue at 180 degrees Celsius, gravimetric	I-1750-85	70300	1 mg/L
Sediment, suspended	Residue at 105 degrees Celsius, gravimetric	I-3765-85	80154	1 mg/L
Sediment, suspended	Finer than 0.062 millimeter, gravimetric	NA	70331	0 percent

[1]Concentrations between 0.005 mg/L and 0.010 mg/L are reported as estimated.

Table 2.--Equipment blank results

[USGS, U.S. Geological Survey; d, dissolved; µg/L, micrograms per liter; <, less than reporting limit; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter; WWTP, wastewater-treatment plant; RSD, riverside drain]

Analyte and measurement unit	Data set 1, USGS Albuquerque field office	Data set 2, Rio Grande at Albuquerque	Data set 3, Rio Grande at Albuquerque	Data set 4, Albuquerque WWTP outfall
Aluminum, d, µg/L	<1	<1	<1	<1
Aluminum, tr, µg/L	<10	<10	<10	<10
Antimony, d, µg/L	<1	<1	<1	<1
Arsenic, d, µg/L	<1	<1	<1	<1
Arsenic, t, µg/L	<1	<1	<1	<1
Barium, d, µg/L	<1	<1	<1	<1
Beryllium, d, µg/L	<1	<1	<1	<1
Cadmium, d, µg/L	<1	<1	<1	<1
Chromium, d, µg/L	<1	<1	<1	<1
Cobalt, d, µg/L	<1	<1	<1	<1
Copper, d, µg/L	<1	<1	<1	<1
Lead, d, µg/L	<1	<1	<1	<1
Manganese, d, µg/L	<1	<1	<1	<1
Molybdenum, d, µg/L	<1	<1	<1	<1
Nickel, d, µg/L	<1	<1	<1	<1
Silver, d, µg/L	<0.2	<0.2	<0.2	<0.2
Silver, tr, µg/L	<1	<1	<1	<1
Uranium, d, µg/L	<1	<1	<1	<1
Zinc, d, µg/L	1	<1	<1	3
Cyanide, t, mg/L	<0.010	--	<0.010	<0.010
Cyanide, amenable to chlorination, mg/L	<0.010	--	<0.010	<0.010
Calcium, d, mg/L	--	<0.1	<0.1	<0.1
Magnesium, d, mg/L	--	<0.1	<0.1	<0.1
Sodium, d, mg/L	--	<0.1	<0.1	<0.1
Potassium, d, mg/L	--	<0.1	<0.1	<0.1
Chloride, d, mg/L	--	<0.1	<0.1	0.3
Sulfate, d, mg/L	--	<0.1	<0.1	<0.1
Solids, residue at 180 degrees Celsius, d, mg/L	--	<1	<1	<1

Table 2.--Equipment blank results--Concluded

Analyte and measurement unit	Data set 5, Upper Corrales RSD at mouth	Data set 6, Rio Grande near Alameda	Data set 7, Rio Grande at Isleta	Data set 8, Rio Grande at Rio Bravo Boulevard
Aluminum, d, µg/L	<1	<1	<1	<1
Aluminum, tr, µg/L	10	<10	<10	<10
Antimony, d, µg/L	<1	<1	<1	<1
Arsenic, d, µg/L	<1	<1	<1	<1
Arsenic, t, µg/L	<1	<1	<1	<1
Barium, d, µg/L	<1	<1	<1	<1
Beryllium, d, µg/L	<1	<1	<1	<1
Cadmium, d, µg/L	<1	<1	<1	<1
Chromium, d, µg/L	<1	<1	<1	<1
Cobalt, d, µg/L	<1	<1	<1	<1
Copper, d, µg/L	<1	<1	<1	<1
Lead, d, µg/L	<1	<1	<1	<1
Manganese, d, µg/L	<1	<1	<1	<1
Molybdenum, d, µg/L	<1	<1	<1	<1
Nickel, d, µg/L	<1	<1	<1	<1
Silver, d, µg/L	<0.2	<0.2	<0.2	<0.2
Silver, tr, µg/L	<1	<1	<1	<1
Uranium, d, µg/L	<1	<1	<1	<1
Zinc, d, µg/L	2	<1	1	<1
Cyanide, t, mg/L	<0.010	<0.010	<0.010	<0.010
Cyanide, amenable to chlorination, mg/L	<0.010	<0.010	<0.010	<0.010
Calcium, d, mg/L	<0.1	<0.1	<0.02	<0.02
Magnesium, d, mg/L	<0.1	<0.1	<0.01	<0.01
Sodium, d, mg/L	0.1	<0.1	<0.2	<0.2
Potassium, d, mg/L	<0.1	<0.1	<0.1	<0.1
Chloride, d, mg/L	<0.1	<0.1	<0.1	<0.1
Sulfate, d, mg/L	<0.1	<0.1	<0.1	<0.1
Solids, residue at 180 degrees Celsius, d, mg/L	<1	4	<1	2

Table 3.--Field duplicate sample results for data set 1, October/November 1994

Sampling site: Atrisco Riverside Drain at mouth

[RPD, relative percent difference; mg/L, milligrams per liter; <, less than; d, dissolved; µg/L, micrograms per liter; mm, millimeter; tr, total recoverable; --, no data; t, total]

Analyte and measurement unit	Result 1	Result 2	RPD	RPD objective
Aluminum, d, µg/L	4	5	22.22	<20
Aluminum, tr, µg/L	730	700	4.20	<20
Antimony, d, µg/L	<1	<1	--	<20
Arsenic, d, µg/L	5	5	0.00	<20
Arsenic, t, µg/L	5	5	0.00	<20
Barium, d, µg/L	100	99	1.01	<20
Beryllium, d, µg/L	<1	<1	--	<20
Cadmium, d, µg/L	<1	<1	--	<20
Chromium, d, µg/L	<1	<1	--	<20
Cobalt, d, µg/L	<1	<1	--	<20
Copper, d, µg/L	<1	<1	--	<20
Lead, d, µg/L	<1	<1	--	<20
Manganese, d, µg/L	34	33	2.99	<20
Molybdenum, d, µg/L	5	5	0.00	<20
Nickel, d, µg/L	2	1	66.67	<20
Silver, d, µg/L	<0.2	<0.2	--	<20
Silver, tr, µg/L	<1	<1	--	<20
Uranium, d, µg/L	2	2	0.00	<20
Zinc, d, µg/L	<1	<1	--	<20
Cyanide, t, mg/L	<0.010	<0.010	--	<20
Cyanide, amenable to chlorination, unfiltered, mg/L	<0.010	<0.010	--	<20
Calcium, d, mg/L	48	49	2.06	<20
Magnesium, d, mg/L	7.6	7.7	1.31	<20
Sodium, d, mg/L	30	30	0.00	<20
Potassium, d, mg/L	4.1	4.2	2.41	<20
Chloride, d, mg/L	13	13	0.00	<20
Sulfate, d, mg/L	66	66	0.00	<20
Solids, residue at 180 degrees Celsius, d, mg/L	290	293	1.03	<20
Sediment, suspended, mg/L	64	69	7.52	--
Sediment, sieve diameter finer than 0.062 mm, percent	76	77	1.31	--

Table 4.--Field duplicate sample results for data set 2, February 1995

Sampling site: Bernalillo Wastewater Treatment Plant outfall
[RPD, relative percent difference; mg/L, milligrams per liter; <, less than; d, dissolved; µg/L, micrograms per liter; tr, total recoverable; --, no data; t, total]

Analyte and measurement unit	Result 1	Result 2	RPD	RPD objective
Aluminum, d, µg/L	39	40	2.53	<20
Aluminum, tr, µg/L	150	150	0.00	<20
Antimony, d, µg/L	<1	<1	--	<20
Arsenic, d, µg/L	16	16	0.00	<20
Arsenic, t, µg/L	17	18	5.71	<20
Barium, d, µg/L	28	28	0.00	<20
Beryllium, d, µg/L	<1	<1	--	<20
Cadmium, d, µg/L	<1	<1	--	<20
Chromium, d, µg/L	<1	<1	--	<20
Cobalt, d, µg/L	<1	<1	--	<20
Copper, d, µg/L	1	1	0.00	<20
Lead, d, µg/L	<1	<1	--	<20
Manganese, d, µg/L	5	5	0.00	<20
Molybdenum, d, µg/L	3	3	0.00	<20
Nickel, d, µg/L	2	2	0.00	<20
Silver, d, µg/L	<0.2	<0.2	--	<20
Silver, tr, µg/L	<1	<1	--	<20
Uranium, d, µg/L	4	4	0.00	<20
Zinc, d, µg/L	17	17	0.00	<20
Cyanide, t, mg/L	0.010	<0.010	--	<20
Cyanide, amenable to chlorination, unfiltered, mg/L	<0.010	<0.010	--	<20
Calcium, d, mg/L	79	79	0.00	<20
Magnesium, d, mg/L	12	12	0.00	<20
Sodium, d, mg/L	170	170	0.00	<20
Potassium, d, mg/L	16	15	6.45	<20
Chloride, d, mg/L	200	200	0.00	<20
Sulfate, d, mg/L	130	130	0.00	<20
Solids, residue at 180 degrees Celsius, d, mg/L	828	844	1.91	<20

Table 5.--Field duplicate sample results for data set 3, May 1995

Sampling site: Rio Rancho No. 3 Wastewater Treatment Plant outfall
[RPD, relative percent difference; mg/L, milligrams per liter; <, less than; d, dissolved; µg/L, micrograms per liter; tr, total recoverable; --, no data; t, total]

Analyte and measurement unit	Result 1	Result 2	RPD	RPD objective
Aluminum, d, µg/L	10	11	9.52	<20
Aluminum, tr, µg/L	40	30	28.57	<20
Antimony, d, µg/L	<1	<1	--	<20
Arsenic, d, µg/L	14	13	7.41	<20
Arsenic, t, µg/L	12	12	0.00	<20
Barium, d, µg/L	58	60	3.39	<20
Beryllium, d, µg/L	<1	<1	--	<20
Cadmium, d, µg/L	<1	<1	--	<20
Chromium, d, µg/L	2	2	0.00	<20
Cobalt, d, µg/L	<1	<1	--	<20
Copper, d, µg/L	3	3	0.00	<20
Lead, d, µg/L	3	3	0.00	<20
Manganese, d, µg/L	3	3	0.00	<20
Molybdenum, d, µg/L	<1	<1	--	<20
Nickel, d, µg/L	6	7	15.38	<20
Silver, d, µg/L	<0.2	<0.2	--	<20
Silver, tr, µg/L	<1	<1	--	<20
Uranium, d, µg/L	<1	<1	--	<20
Zinc, d, µg/L	46	50	8.33	<20
Cyanide, t, mg/L	<0.010	<0.010	--	<20
Cyanide, amenable to chlorination, unfiltered, mg/L	<0.010	<0.010	--	<20
Calcium, d, mg/L	120	120	0.00	<20
Magnesium, d, mg/L	17	17	0.00	<20
Sodium, d, mg/L	280	280	0.00	<20
Potassium, d, mg/L	37	37	0.00	<20
Chloride, d, mg/L	440	440	0.00	<20
Sulfate, d, mg/L	190	190	0.00	<20
Solids, residue at 180 degrees Celsius, d, mg/L	1,290	1,290	0.00	<20

Table 6.--Field duplicate sample results for data set 4, August 1995

Sampling site: Rio Grande at Interstate 25
[RPD, relative percent difference; mg/L, milligrams per liter; <, less than; d, dissolved; µg/L, micrograms per liter; mm, millimeter; tr, total recoverable; --, no data; t, total]

Analyte and measurement unit	Result 1	Result 2	RPD	RPD objective
Aluminum, d, µg/L	4	6	40.00	<20
Aluminum, tr, µg/L	6,100	7,100	15.15	<20
Antimony, d, µg/L	<1	<1	--	<20
Arsenic, d, µg/L	3	3	0.00	<20
Arsenic, t, µg/L	3	3	0.00	<20
Barium, d, µg/L	65	65	0.00	<20
Beryllium, d, µg/L	<1	<1	--	<20
Cadmium, d, µg/L	<1	<1	--	<20
Chromium, d, µg/L	<1	<1	--	<20
Cobalt, d, µg/L	<1	<1	--	<20
Copper, d, µg/L	2	1	66.67	<20
Lead, d, µg/L	<1	<1	--	<20
Manganese, d, µg/L	<1	<1	--	<20
Molybdenum, d, µg/L	8	8	0.00	<20
Nickel, d, µg/L	2	2	0.00	<20
Silver, d, µg/L	<0.2	<0.2	--	<20
Silver, tr, µg/L	<1	<1	--	<20
Uranium, d, µg/L	2	2	0.00	<20
Zinc, d, µg/L	2	3	40.00	<20
Cyanide, t, mg/L	<0.010	<0.010	--	<20
Cyanide, amenable to chlorination, unfiltered, mg/L	<0.010	<0.010	--	<20
Calcium, d, mg/L	37	36	2.74	<20
Magnesium, d, mg/L	7.4	7.5	1.34	<20
Sodium, d, mg/L	31	31	0.00	<20
Potassium, d, mg/L	4.5	4.5	0.00	<20
Chloride, d, mg/L	13	12	8.00	<20
Sulfate, d, mg/L	61	61	0.00	<20
Solids, residue at 180 degrees Celsius, d, mg/L	258	252	2.35	<20
Sediment, suspended, mg/L	419	485	14.60	--
Sediment, sieve diameter finer than 0.062 mm, percent	94	96	2.11	--

Table 7.--Field duplicate sample results for data set 5, October 1995

Sampling site: Albuquerque Riverside Drain at gate

[RPD, relative percent difference; mg/L, milligrams per liter; <, less than; d, dissolved; µg/L, micrograms per liter; mm, millimeter; tr, total recoverable; --, no data; t, total]

Analyte and measurement unit	Result 1	Result 2	RPD	RPD objective
Aluminum, d, µg/L	2	1	66.67	<20
Aluminum, tr, µg/L	690	690	0.00	<20
Antimony, d, µg/L	<1	<1	--	<20
Arsenic, d, µg/L	3	3	0.00	<20
Arsenic, t, µg/L	3	3	0.00	<20
Barium, d, µg/L	75	77	2.63	<20
Beryllium, d, µg/L	<1	<1	--	<20
Cadmium, d, µg/L	<1	<1	--	<20
Chromium, d, µg/L	2	1	66.67	<20
Cobalt, d, µg/L	<1	<1	--	<20
Copper, d, µg/L	1	1	0.00	<20
Lead, d, µg/L	<1	<1	--	<20
Manganese, d, µg/L	3	3	0.00	<20
Molybdenum, d, µg/L	4	4	0.00	<20
Nickel, d, µg/L	1	<1	--	<20
Silver, d, µg/L	<0.2	<0.2	--	<20
Silver, tr, µg/L	<1	<1	--	<20
Uranium, d, µg/L	2	2	0.00	<20
Zinc, d, µg/L	4	2	66.67	<20
Cyanide, t, mg/L	<0.010	<0.010	--	<20
Cyanide, amenable to chlorination, unfiltered, mg/L	<0.010	<0.010	--	<20
Calcium, d, mg/L	44	43	2.30	<20
Magnesium, d, mg/L	7.7	7.4	3.97	<20
Sodium, d, mg/L	24	24	0.00	<20
Potassium, d, mg/L	3.3	3.3	0.00	<20
Chloride, d, mg/L	7.4	7.5	1.34	<20
Sulfate, d, mg/L	57	58	1.74	<20
Solids, residue at 180 degrees Celsius, d, mg/L	239	245	2.48	<20
Sediment, suspended, mg/L	65	69	5.97	--
Sediment, sieve diameter finer than 0.062 mm, percent	68	77	12.41	--

Table 8.--Field duplicate sample results for data set 6, February 1996

Sampling site: Jemez River below dam
[RPD, relative percent difference; mg/L, milligrams per liter; <, less than; d, dissolved; µg/L, micrograms per liter; mm, millimeter; tr, total recoverable; --, no data; t, total]

Analyte and measurement unit	Result 1	Result 2	RPD	RPD objective
Aluminum, d, µg/L	4	5	22.22	<20
Aluminum, tr, µg/L	270	260	3.77	<20
Antimony, d, µg/L	<1	<1	--	<20
Arsenic, d, µg/L	20	20	0.00	<20
Arsenic, t, µg/L	22	21	4.65	<20
Barium, d, µg/L	104	106	1.90	<20
Beryllium, d, µg/L	<1	<1	--	<20
Cadmium, d, µg/L	<1	<1	--	<20
Chromium, d, µg/L	2	2	0.00	<20
Cobalt, d, µg/L	<1	<1	--	<20
Copper, d, µg/L	3	3	0.00	<20
Lead, d, µg/L	<1	<1	--	<20
Manganese, d, µg/L	12	12	0.00	<20
Molybdenum, d, µg/L	4	4	0.00	<20
Nickel, d, µg/L	2	2	0.00	<20
Silver, d, µg/L	<0.2	<0.2	--	<20
Silver, tr, µg/L	<1	<1	--	<20
Uranium, d, µg/L	2	2	0.00	<20
Zinc, d, µg/L	1	1	0.00	<20
Cyanide, t, mg/L	<0.010	<0.010	--	<20
Cyanide, amenable to chlorination, unfiltered, mg/L	<0.010	<0.010	--	<20
Calcium, d, mg/L	56	57	1.77	<20
Magnesium, d, mg/L	6.8	7.2	5.71	<20
Sodium, d, mg/L	120	110	8.70	<20
Potassium, d, mg/L	7.7	7.6	1.31	<20
Chloride, d, mg/L	98	99	1.02	<20
Sulfate, d, mg/L	120	130	8.00	<20
Solids, residue at 180 degrees Celsius, d, mg/L	560	565	0.89	<20
Sediment, suspended, mg/L	33	27	20.00	--
Sediment, sieve diameter finer than 0.062 mm, percent	83	97	15.56	--

Table 9.--Field duplicate sample results for data set 7, May 1996

Sampling site: Albuquerque Wastewater Treatment Plant outfall
[RPD, relative percent difference; mg/L, milligrams per liter; <, less than; d, dissolved; µg/L, micrograms per liter; mm, millimeter; tr, total recoverable; --, no data; t, total; E, estimated]

Analyte and measurement unit	Result 1	Result 2	RPD	RPD objective
Aluminum, d, µg/L	20	20	0.00	<20
Aluminum, tr, µg/L	90	100	10.53	<20
Antimony, d, µg/L	<1	<1	--	<20
Arsenic, d, µg/L	7	7	0.00	<20
Arsenic, t, µg/L	7	7	0.00	<20
Barium, d, µg/L	24	25	4.08	<20
Beryllium, d, µg/L	<1	<1	--	<20
Cadmium, d, µg/L	<1	<1	--	<20
Chromium, d, µg/L	2	2	0.00	<20
Cobalt, d, µg/L	<1	<1	--	<20
Copper, d, µg/L	3	2	40.00	<20
Lead, d, µg/L	<1	<1	--	<20
Manganese, d, µg/L	24	24	0.00	<20
Molybdenum, d, µg/L	29	29	0.00	<20
Nickel, d, µg/L	3	4	28.57	<20
Silver, d, µg/L	<0.2	<0.2	--	<20
Silver, tr, µg/L	<1	<1	--	<20
Uranium, d, µg/L	<1	<1	--	<20
Zinc, d, µg/L	29	29	0.00	<20
Cyanide, t, mg/L	0.008 E	0.006 E	28.57	<20
Cyanide, amenable to chlorination, unfiltered, mg/L	<0.010	<0.010	--	<20
Calcium, d, mg/L	41	41	0.00	<20
Magnesium, d, mg/L	6.1	6.1	0.00	<20
Sodium, d, mg/L	110	110	0.00	<20
Potassium, d, mg/L	14	14	0.00	<20
Chloride, d, mg/L	85	82	3.59	<20
Sulfate, d, mg/L	90	92	2.20	<20
Solids, residue at 180 degrees Celsius, d, mg/L	486	488	0.41	<20
Sediment, suspended, mg/L	43	37	15.00	--
Sediment, sieve diameter finer than 0.062 mm, percent	79	74	6.54	--

Table 10.--Field duplicate sample results for data set 8, August 1996

Sampling site: Rio Grande at San Felipe
[RPD, relative percent difference; mg/L, milligrams per liter; <, less than; d, dissolved; µg/L, micrograms per liter; mm, millimeter; tr, total recoverable; --, no data; t, total]

Analyte and measurement unit	Result 1	Result 2	RPD	RPD objective
Aluminum, d, µg/L	4	12	100.00	<20
Aluminum, tr, µg/L	75,000	73,000	2.70	<20
Antimony, d, µg/L	<1	<1	--	<20
Arsenic, d, µg/L	2	2	0.00	<20
Arsenic, t, µg/L	3	3	0.00	<20
Barium, d, µg/L	78	79	1.27	<20
Beryllium, d, µg/L	<1	<1	--	<20
Cadmium, d, µg/L	<1	<1	--	<20
Chromium, d, µg/L	<1	<1	--	<20
Cobalt, d, µg/L	<1	<1	--	<20
Copper, d, µg/L	1	3	100.00	<20
Lead, d, µg/L	<1	<1	--	<20
Manganese, d, µg/L	<1	<1	--	<20
Molybdenum, d, µg/L	3	4	28.57	<20
Nickel, d, µg/L	2	1	66.67	<20
Silver, d, µg/L	<0.2	<0.2	--	<20
Silver, tr, µg/L	<1	<1	--	<20
Uranium, d, µg/L	2	2	0.00	<20
Zinc, d, µg/L	6	1	142.86	<20
Cyanide, t, mg/L	<0.010	<0.010	--	<20
Cyanide, amenable to chlorination, unfiltered, mg/L	<0.010	<0.010	--	<20
Calcium, d, mg/L	41	40	2.47	<20
Magnesium, d, mg/L	7.1	7	1.42	<20
Sodium, d, mg/L	21	20	4.88	<20
Potassium, d, mg/L	2.9	3.0	3.39	<20
Chloride, d, mg/L	4.5	4.2	6.90	<20
Sulfate, d, mg/L	73	73	0.00	<20
Solids, residue at 180 degrees Celsius, d, mg/L	224	212	5.50	<20
Sediment, suspended, mg/L	9,870	8,590	13.87	--
Sediment, sieve diameter finer than 0.062 mm, percent	95	94	1.06	--

Table 11.--Field duplicate sample results that exceed the relative percent difference objective of less than 20 percent

[RPD, relative percent difference; d, dissolved; tr, total recoverable; t, total; µg/L, micrograms per liter; mg/L, milligrams per liter; E, estimated]

Analyte and measurement unit	Reporting limit	Sampling round	Result 1	Result 2	RPD
Aluminum, d, µg/L	1	1	4	5	22.22
		4	4	6	40.00
		5	2	1	66.67
		6	4	5	22.22
		8	4	12	100.00
Aluminum, tr, µg/L	10	3	40	30	28.57
Chromium, d, µg/L	1	5	2	1	66.67
Copper, d, µg/L	1	4	2	1	66.67
		7	3	2	40.00
		8	1	3	66.67
Molybdenum, d, µg/L	1	8	3	4	28.57
Nickel, d, µg/L	1	1	2	1	66.67
		7	3	4	28.57
		8	2	1	66.67
Zinc, d, µg/L	1	4	2	3	40.00
		5	4	2	66.67
		8	6	1	142.86
Cyanide, t, mg/L	0.010	7	0.008E	0.006E	28.57
Sediment, suspended, mg/L	1	6	33	27	20.00

Table 12.--Matrix spike/spike duplicate sample results for data set 1, October/November 1994

Sampling site: Albuquerque Wastewater Treatment Plant outfall
[RPD, relative percent difference; d, dissolved; µg/L, micrograms per liter; <, less than; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Sample 943180015	Spike added	Spiked sample 1 result	Spiked sample 2 result	Percent spike recovery 1	Percent spike recovery 2	Percent recovery objective	RPD	RPD objective
Aluminum, d, µg/L	28.34	40	57.12	56.34	71.95	70.00	80-120	2.7	<20
Aluminum, tr, µg/L	293	600	906	933	102.17	106.67	80-120	4.3	<20
Antimony, d, µg/L	0.31	10	11.04	10.86	107.30	105.50	80-120	1.7	<20
Arsenic, d, µg/L	10.44	10	18.8	18.5	83.60	80.60	80-120	3.7	<20
Arsenic, t, µg/L	11.08	10	21.31	21.98	102.30	109.00	80-120	6.3	<20
Barium, d, µg/L	31.57	30	59.88	61.95	94.37	101.27	80-120	7.1	<20
Beryllium, d, µg/L	0	10	9.58	9.65	95.80	96.50	80-120	0.7	<20
Cadmium, d, µg/L	0.06	10	8.39	9.41	83.30	93.50	80-120	11.5	<20
Chromium, d, µg/L	0.94	10	9.95	9.35	90.10	84.10	80-120	6.9	<20
Cobalt, d, µg/L	0.04	10	8.31	8.21	82.70	81.70	80-120	1.2	<20
Copper, d, µg/L	4.45	20	22.06	22.58	88.05	90.65	80-120	2.9	<20
Lead, d, µg/L	0.64	10	9.73	9.9	90.90	92.60	80-120	1.9	<20
Manganese, d, µg/L	18.97	30	43.49	42.86	81.73	79.63	80-120	2.6	<20
Molybdenum, d, µg/L	29.48	40	66.68	67.29	93.00	94.53	80-120	1.6	<20
Nickel, d, µg/L	3.43	10	11.38	10.51	79.50	70.80	80-120	11.6	<20
Silver, d, µg/L	0.83	2.5	3.1	3.08	90.80	90.00	80-120	0.9	<20
Silver, tr, µg/L	2.1	5	5.4	5.5	66.00	68.00	80-120	3.0	<20
Uranium, d, µg/L	1.27	10	10.09	9.96	88.20	86.90	80-120	1.5	<20
Zinc, d, µg/L	17.7	40	50.02	52.69	80.80	87.48	80-120	7.9	<20
Cyanide, t (11-03-94), mg/L	0	0.20	0.20	0.19	100.00	93.00	70-115	7.8	<21
Cyanide, t (11-05-94), mg/L	0.006	0.20	0.18	0.20	87.00	99.00	70-115	13	<21

Table 13.--Matrix spike/spike duplicate sample results for data set 2, February 1995

Sampling site: Rio Grande near Alameda
[RPD, relative percent difference; d, dissolved; µg/L, micrograms per liter; <, less than; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Sample 950480082	Spike added	Spiked sample 1 result	Spiked sample 2 result	Percent spike recovery 1	Percent spike recovery 2	Percent recovery objective	RPD	RPD objective
Aluminum, d, µg/L	18.65	42	52.22	53.1	79.93	82.02	80-120	2.6	<20
Aluminum, tr, µg/L	296	1,000	1,350	1,420	105.40	112.40	80-120	6.4	<20
Antimony, d, µg/L	0.06	10	9.76	9.85	97.00	97.90	80-120	0.9	<20
Arsenic, d, µg/L	2.75	10	14.3	13.3	115.50	105.50	80-120	9.0	<20
Arsenic, t, µg/L	2.58	10	14.7	14	121.20	114.20	80-120	5.9	<20
Barium, d, µg/L	70.36	134.6	218.58	216.96	110.12	108.92	80-120	1.1	<20
Beryllium, d, µg/L	0	10	11.05	11.29	110.50	112.90	80-120	2.1	<20
Cadmium, d, µg/L	0.01	10	9.12	9.43	91.10	94.20	80-120	3.3	<20
Chromium, d, µg/L	0	10	8.51	8.76	85.10	87.60	80-120	2.9	<20
Cobalt, d, µg/L	0	10	8.55	8.48	85.50	84.80	80-120	0.8	<20
Copper, d, µg/L	0.78	10	9.69	9.99	89.10	92.10	80-120	3.3	<20
Lead, d, µg/L	0.05	10	9.53	9.69	94.80	96.40	80-120	1.7	<20
Manganese, d, µg/L	3.08	7.4	9.52	9.53	87.03	87.16	80-120	0.1	<20
Molybdenum, d, µg/L	4.26	8.4	11.96	12.28	91.67	95.48	80-120	4.1	<20
Nickel, d, µg/L	0.71	10	9.42	9.58	87.10	88.70	80-120	1.8	<20
Silver, d, µg/L	0.05	5	4.37	4.53	86.40	89.60	80-120	3.6	<20
Silver, tr, µg/L	0	5	4.3	4.4	86.00	88.00	80-120	2.3	<20
Uranium, d, µg/L	3.28	6.8	9.74	9.89	95.00	97.21	80-120	2.3	<20
Zinc, d, µg/L	0.96	10	10.62	11.23	96.60	102.70	80-120	6.1	<20
Cyanide, t, mg/L	0	0.20	0.19	0.18	93.00	92.00	70-115	1.6	<21

Table 14.--Matrix spike/spike duplicate sample results for data set 3, May 1995

Sampling site: Jemez River below dam

[RPD, relative percent difference; d, dissolved; µg/L, micrograms per liter; <, less than; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Sample 951320213	Spike added	Spiked sample 1 result	Spiked sample 2 result	Percent spike recovery 1	Percent spike recovery 2	Percent recovery objective	RPD	RPD objective
Aluminum, d, µg/L	25.65	42	63.32	56.19	89.69	72.71	80-120	20.9	<20
Aluminum, tr, µg/L	1,330	2,500	3,660	3,810	93.20	99.20	80-120	6.2	<20
Antimony, d, µg/L	0.15	10	9.73	9.78	95.80	96.30	80-120	0.5	<20
Arsenic, d, µg/L	14.31	5	19.04	18.31	94.60	80.00	80-120	16.7	<20
Arsenic, t, µg/L	13.9	5	19.2	19.1	106.00	104.00	80-120	1.9	<20
Barium, d, µg/L	71.06	134.6	208.72	210.54	102.27	103.63	80-120	1.3	<20
Beryllium, d, µg/L	0	10	9.35	9.26	93.50	92.60	80-120	1.0	<20
Cadmium, d, µg/L	0.04	10	9.24	9.35	92.00	93.10	80-120	1.2	<20
Chromium, d, µg/L	1.17	10	9.74	9.42	85.70	82.50	80-120	3.8	<20
Cobalt, d, µg/L	0.22	10	9.47	9.57	92.50	93.50	80-120	1.1	<20
Copper, d, µg/L	2	10	11.34	11.28	93.40	92.80	80-120	0.6	<20
Lead, d, µg/L	1.12	10	10.99	10.81	98.70	96.90	80-120	1.8	<20
Manganese, d, µg/L	2.41	7.4	9.47	9.21	95.41	91.89	80-120	3.8	<20
Molybdenum, d, µg/L	2.49	8.4	10.26	10.1	92.50	90.60	80-120	2.1	<20
Nickel, d, µg/L	2.5	10	12.06	11.83	95.60	93.30	80-120	2.4	<20
Silver, d, µg/L	0	5	4.08	4.12	81.60	82.40	80-120	1.0	<20
Silver, tr, µg/L	0	5	4.3	4.4	86.00	88.00	80-120	2.3	<20
Uranium, d, µg/L	1.72	6.8	8.49	8.3	99.56	96.76	80-120	2.9	<20
Zinc, d, µg/L	3.65	10	10.71	10.77	70.60	71.20	80-120	0.8	<20
Cyanide, t, mg/L	0	0.19	0.18	0.14	95.00	76.00	70-115	22	<21

Table 15.--Matrix spike/spike duplicate sample results for data set 4, August 1995

Sampling site: Upper Corrales Riverside Drain at mouth
[RPD, relative percent difference; d, dissolved; µg/L, micrograms per liter; <, less than; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Sample 952440262	Spike added	Spiked sample 1 result	Spiked sample 2 result	Percent spike recovery 1	Percent spike recovery 2	Percent recovery objective	RPD	RPD objective
Aluminum, d, µg/L	3.78	42	45.72	44.03	99.86	95.83	80-120	4.1	<20
Aluminum, tr, µg/L	11,520	10,000	20,580	21,450	90.60	99.30	80-120	9.2	<20
Antimony, d, µg/L	0.11	10	9.22	9.73	91.10	96.20	80-120	5.4	<20
Arsenic, d, µg/L	3.06	10	14.1	14.1	110.40	110.40	80-120	0.0	<20
Arsenic, t, µg/L	2.34	10	11.15	11.73	88.10	93.90	80-120	6.4	<20
Barium, d, µg/L	71.38	134.6	192.62	197.45	90.07	93.66	80-120	3.9	<20
Beryllium, d, µg/L	0.07	10	9.99	9.66	99.20	95.90	80-120	3.4	<20
Cadmium, d, µg/L	0	10	8.78	9.26	87.80	92.60	80-120	5.3	<20
Chromium, d, µg/L	0.02	10	9.06	9.15	90.40	91.30	80-120	1.0	<20
Cobalt, d, µg/L	0.18	10	9.94	9.63	97.60	94.50	80-120	3.2	<20
Copper, d, µg/L	1.21	10	11.01	11	98.00	97.90	80-120	0.1	<20
Lead, d, µg/L	0.13	10	9.38	10.04	92.50	99.10	80-120	6.9	<20
Manganese, d, µg/L	2.41	7.4	9.6	9.42	97.16	94.73	80-120	2.5	<20
Molybdenum, d, µg/L	4.04	8.4	11.57	12.72	89.64	103.33	80-120	14.2	<20
Nickel, d, µg/L	0.91	10	10.96	11.28	100.50	103.70	80-120	3.1	<20
Silver, d, µg/L	0.06	2.5	2.13	2	82.80	77.60	80-120	6.5	<20
Silver, tr, µg/L	0	5	4.6	4.7	92.00	94.00	80-120	2.2	<20
Uranium, d, µg/L	2.08	6.8	8.36	8.57	92.35	95.44	80-120	3.3	<20
Zinc, d, µg/L	0.6	10	10.61	11.09	100.10	104.90	80-120	4.7	<20
Cyanide, t, mg/L	0	0.20	0.20	0.17	104.00	87.00	70-119	17	<17

Table 16.--Matrix spike/spike duplicate sample results for data set 5, October 1995

Sampling site: Bernalillo Wastewater Treatment Plant outfall

[RPD, relative percent difference; d, dissolved; µg/L, micrograms per liter; <, less than; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Sample 952860015	Spike added	Spiked sample 1 result	Spiked sample 2 result	Percent spike recovery 1	Percent spike recovery 2	Percent recovery objective	RPD	RPD objective
Aluminum, d, µg/L	47.91	42	86.47	86.62	91.81	92.17	80-120	0.4	<20
Aluminum, tr, µg/L	83	200	274	277	95.50	97.00	80-120	1.6	<20
Antimony, d, µg/L	0.31	10	10.26	9.62	99.50	93.10	80-120	6.6	<20
Arsenic, d, µg/L	[1]16.3	10	[1]18.2	[1]18.8	100.50	106.60	80-120	5.9	<20
Arsenic, t, µg/L	[1]16.3	10	[1]18	[1]18.9	98.50	107.40	80-120	8.6	<20
Barium, d, µg/L	23.41	134.6	155.12	156.73	97.85	99.05	80-120	1.2	<20
Beryllium, d, µg/L	0	10	10.61	10.99	106.10	109.90	80-120	3.5	<20
Cadmium, d, µg/L	0.03	10	9.48	10.16	94.50	101.30	80-120	6.9	<20
Chromium, d, µg/L	2.77	10	10.78	10.43	80.10	76.60	80-120	4.5	<20
Cobalt, d, µg/L	0.25	10	9.33	9.67	90.80	94.20	80-120	3.7	<20
Copper, d, µg/L	2.71	10	12.05	11.86	93.40	91.50	80-120	2.1	<20
Lead, d, µg/L	0.12	10	9.84	9.62	97.20	95.00	80-120	2.3	<20
Manganese, d, µg/L	26.34	7.4	33	32.9	90.00	88.65	80-120	1.5	<20
Molybdenum, d, µg/L	2.55	8.4	10.88	10.33	99.17	92.62	80-120	6.8	<20
Nickel, d, µg/L	2.6	10	11.81	12.77	92.10	101.70	80-120	9.9	<20
Silver, d, µg/L	-0.14	2.5	2.02	2.17	86.40	92.40	80-120	6.7	<20
Silver, tr, µg/L	-0.3	5	4.8	4.9	102.00	104.00	80-120	1.9	<20
Uranium, d, µg/L	2.88	6.8	9.25	9.14	93.68	92.06	80-120	1.7	<20
Zinc, d, µg/L	13.94	10	23.31	25.06	93.70	111.20	80-120	17.1	<20
Cyanide, t, mg/L	0.019	0.19	0.19	0.20	90.00	94.00	75-119	4.0	<17

[1]2X dilution needed.

Table 17.--Matrix spike/spike duplicate sample results for data set 6, February 1996

Sampling site: Rio Grande at Isleta

[RPD, relative percent difference; d, dissolved; µg/L, micrograms per liter; <, less than; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Sample 960520062	Spike added	Spiked sample 1 result	Spiked sample 2 result	Percent spike recovery 1	Percent spike recovery 2	Percent recovery objective	RPD	RPD objective
Aluminum, d, µg/L	19.81	42	57.34	60.44	89.36	96.74	80-120	7.9	<20
Aluminum, tr, µg/L	361	1,000	1,640	1,620	127.90	125.90	80-120	1.6	<20
Antimony, d, µg/L	0.12	10	10.52	10.73	104.00	106.10	80-120	2.0	<20
Arsenic, d, µg/L	2.67	10	12.41	12.31	97.40	96.40	80-120	1.0	<20
Arsenic, t, µg/L	2.85	10	12.87	12.59	100.20	97.40	80-120	2.8	<20
Barium, d, µg/L	67.06	134.6	200.81	202.3	99.37	100.48	80-120	1.1	<20
Beryllium, d, µg/L	0.02	10	10.08	10.02	100.60	100.00	80-120	0.6	<20
Cadmium, d, µg/L	0.07	10	9.33	9.7	92.60	96.30	80-120	3.9	<20
Chromium, d, µg/L	1.38	10	10.32	10.49	89.40	91.10	80-120	1.9	<20
Cobalt, d, µg/L	0.05	10	9.11	9.18	90.60	91.30	80-120	0.8	<20
Copper, d, µg/L	1.59	10	11.82	10.61	102.30	90.20	80-120	12.6	<20
Lead, d, µg/L	0.05	10	9.99	10.05	99.40	100.00	80-120	0.6	<20
Manganese, d, µg/L	17.98	7.4	24.81	25.01	92.30	95.00	80-120	2.9	<20
Molybdenum, d, µg/L	4.89	8.4	12.98	12.78	96.31	93.93	80-120	2.5	<20
Nickel, d, µg/L	1.48	10	10.68	10.65	92.00	91.70	80-120	0.3	<20
Silver, d, µg/L	-0.05	2.5	2.11	2.24	86.40	91.60	80-120	5.8	<20
Silver, tr, µg/L	0.4	5	4.5	4.5	82.00	82.00	80-120	0.0	<20
Uranium, d, µg/L	2.85	6.8	9.61	9.82	99.41	102.50	80-120	3.1	<20
Zinc, d, µg/L	1.7	10	12.14	13.2	104.40	115.00	80-120	9.7	<20
Cyanide, t, mg/L	0	0.19	0.17	0.17	89.00	88.00	75-119	1.2	<17

Table 18.--Matrix spike/spike duplicate sample results for data set 7, May 1996

Sampling site: Rio Rancho No. 2 Wastewater Treatment Plant outfall
[RPD, relative percent difference; d, dissolved; µg/L, micrograms per liter; <, less than; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Sample 961500114	Spike added	Spiked sample 1 result	Spiked sample 2 result	Percent spike recovery 1	Percent spike recovery 2	Percent recovery objective	RPD	RPD objective
Aluminum, d, µg/L	30.08	42	67.18	65.06	88.33	83.29	80-120	5.9	<20
Aluminum, tr, µg/L	151	300	485	492	111.33	113.67	80-120	2.1	<20
Antimony, d, µg/L	0.4	10	9.67	9.81	92.70	94.10	80-120	1.5	<20
Arsenic, d, µg/L	14.94	10	24.43	24.52	94.90	95.80	80-120	0.9	<20
Arsenic, t, µg/L	7.6	10	17.1	17.28	95.00	96.80	80-120	1.9	<20
Barium, d, µg/L	5.58	134.6	139.12	139.16	99.21	99.24	80-120	0.0	<20
Beryllium, d, µg/L	0.01	10	8.94	8.68	89.30	86.70	80-120	3.0	<20
Cadmium, d, µg/L	0.04	10	9.51	9.96	94.70	99.20	80-120	4.6	<20
Chromium, d, µg/L	2.93	10	11.63	11.32	87.00	83.90	80-120	3.6	<20
Cobalt, d, µg/L	0.22	10	9.47	9.25	92.50	90.30	80-120	2.4	<20
Copper, d, µg/L	3.76	10	13.17	12.51	94.10	87.50	80-120	7.3	<20
Lead, d, µg/L	0.2	10	9.84	10.13	96.40	99.30	80-120	3.0	<20
Manganese, d, µg/L	3.34	7.4	10.41	9.86	95.54	88.11	80-120	8.1	<20
Molybdenum, d, µg/L	9.95	8.4	18.12	17.49	97.26	89.76	80-120	8.0	<20
Nickel, d, µg/L	1.81	10	11.22	10.61	94.10	88.00	80-120	6.7	<20
Silver, d, µg/L	0	2.5	2.35	2.37	94.00	94.80	80-120	0.8	<20
Silver, tr, µg/L	0.1	7.5	7.5	7.3	98.67	96.00	80-120	2.7	<20
Uranium, d, µg/L	0.7	6.8	6.99	7.1	92.50	94.12	80-120	1.7	<20
Zinc, d, µg/L	36.21	10	45.85	46.33	96.40	101.20	80-120	4.9	<20
Cyanide, t, mg/L	0	0.19	0.20	0.20	105.00	106.00	75-119	1.0	<17

Table 19.--Matrix spike/spike duplicate sample results for data set 8, August 1996

Sampling site: Rio Grande near Bernalillo

[RPD, relative percent difference; d, dissolved; µg/L, micrograms per liter; <, less than; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Sample 962480210	Spike added	Spiked sample 1 result	Spiked sample 2 result	Percent spike recovery 1	Percent spike recovery 2	Percent recovery objective	RPD	RPD objective
Aluminum, d, µg/L	2.61	42	42.61	42.52	95.24	95.02	80-120	0.2	<20
Aluminum, tr, µg/L	22,740	26,740	47,100	46,980	91.10	90.65	80-120	0.5	<20
Antimony, d, µg/L	0.17	10	9.49	9.62	93.20	94.50	80-120	1.4	<20
Arsenic, d, µg/L	2.41	10	12.81	13.1	104.00	106.90	80-120	2.8	<20
Arsenic, t, µg/L	3.26	10	14.64	15.21	113.80	119.50	80-120	4.9	<20
Barium, d, µg/L	85.89	134.6	223.87	222.73	102.51	101.66	80-120	0.8	<20
Beryllium, d, µg/L	0	10	9.76	10.13	97.60	101.30	80-120	3.7	<20
Cadmium, d, µg/L	0	10	9.98	9.66	99.80	96.60	80-120	3.3	<20
Chromium, d, µg/L	0.36	10	9.41	9.65	90.50	92.90	80-120	2.6	<20
Cobalt, d, µg/L	0.14	10	9.55	9.45	94.10	93.10	80-120	1.1	<20
Copper, d, µg/L	1.22	10	10.56	10.67	93.40	94.50	80-120	1.2	<20
Lead, d, µg/L	0.06	10	9.85	9.74	97.90	96.80	80-120	1.1	<20
Manganese, d, µg/L	0.43	7.4	7.7	7.63	98.24	97.30	80-120	1.0	<20
Molybdenum, d, µg/L	3.62	8.4	11.76	12.21	96.90	102.26	80-120	5.4	<20
Nickel, d, µg/L	1.58	10	10.62	11.14	90.40	95.60	80-120	5.6	<20
Silver, d, µg/L	0.04	2.5	2.42	2.39	95.20	94.00	80-120	1.3	<20
Silver, tr, µg/L	0.1	5	5.2	5.3	102.00	104.00	80-120	1.9	<20
Uranium, d, µg/L	1.92	6.8	8.44	8.66	95.88	99.12	80-120	3.3	<20
Zinc, d, µg/L	0.65	10	15.36	10.08	147.10	94.30	80-120	43.7	<20
Cyanide, t, mg/L	0	0.097	0.084	0.087	86.00	90.00	75-119	3.9	<17

Table 20.--Matrix spike/spike duplicate sample results that exceed the percent recovery objectives or relative percent difference objectives

[RPD, relative percent difference; d, dissolved; tr, total recoverable; t, total; µg/L, micrograms per liter; mg/L, milligrams per liter; <, less than]

Analyte and measurement unit	Sampling round	Spiked sample 1 result	Spiked sample 2 result	Percent spike recovery 1	Percent spike recovery 2	Percent recovery objective	RPD	RPD objective
Aluminum, d, µg/L	1	57.12	56.34	71.95	70.00	80-120	2.7	<20
	2	52.22	53.1	79.93	82.02	80-120	2.6	<20
	3	63.32	56.19	89.69	72.71	80-120	20.9	<20
Aluminum, tr, µg/L	6	1,640	1,620	127.90	125.90	80-120	1.6	<20
Arsenic, t, µg/L	2	14.7	14	121.20	114.20	80-120	5.9	<20
Chromium, d, µg/L	5	10.78	10.43	80.10	76.60	80-120	4.5	<20
Manganese, d, µg/L	1	43.49	42.86	81.73	79.63	80-120	2.6	<20
Nickel, d, µg/L	1	11.38	10.51	79.50	70.80	80-120	11.6	
Silver, d, µg/L	4	2.13	2	82.80	77.60	80-120	6.5	<20
Silver, tr, µg/L	1	5.4	5.5	66.00	68.00	80-120	3.0	<20
Zinc, d, µg/L	3	10.71	10.77	70.60	71.20	80-120	0.8	<20
	8	15.36	10.08	147.10	94.30	80-120	43.7	<20
Cyanide, t, mg/L	3	0.19	0.18	95.00	76.00	70-115	22	<21
	4	0.20	0.17	104.00	87.00	70-119	17	<17

Table 21.--Laboratory blank results for data set 1, October/November 1994

[µg/L, micrograms per liter; <, less than reporting limit; d, dissolved; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Blank 1	Blank 2	Blank 3
Alkalinity (11-01-94), µg/L	<1	1.4	1.2
Alkalinity (11-14-94), µg/L	<1	1.4	1.4
Aluminum, d, µg/L	<1	<1	--
Aluminum, tr, µg/L	<10	--	--
Antimony, d, µg/L	<1	<1	--
Arsenic, d, µg/L	<1	<1	--
Arsenic, t, µg/L	<1	<1	<1
Barium, d, µg/L	<1	<1	--
Beryllium, d, µg/L	<1	<1	--
Cadmium, d, µg/L	<1	<1	--
Chromium, d, µg/L	<1	<1	--
Cobalt, d, µg/L	<1	<1	--
Copper, d, µg/L	<1	<1	--
Lead, d, µg/L	<1	<1	--
Manganese, d, µg/L	<1	<1	--
Molybdenum, d, µg/L	<1	<1	--
Nickel, d, µg/L	<1	<1	--
Silver, d, µg/L	<0.2	--	--
Silver, tr, µg/L	<1	<1	--
Uranium, d, µg/L	<1	<1	--
Zinc, d, µg/L	<1	<1	--
Cyanide, t (10-27-94), mg/L	<0.010	--	--
Cyanide, t (10-29-94), mg/L	<0.010	--	--
Cyanide, t (11-03-94), mg/L	0.022	<0.010	--
Cyanide, t (11-05-94), mg/L	<0.010	--	--
Calcium, d (11-01-94), mg/L	0.1	<0.1	--
Calcium, d (11-14-94), mg/L	0.1	--	--
Magnesium, d (11-01-94), mg/L	<0.1	<0.1	--
Magnesium, d (11-14-94), mg/L	<0.1	--	--
Sodium, d (11-01-94), mg/L	<0.1	--	--

Table 21.--Laboratory blank results for data set 1, October/November 1994--Concluded

Analyte and measurement unit	Blank 1	Blank 2	Blank 3
Sodium, d (11-14-94), mg/L	<0.1	<0.1	<0.1
Potassium, d (11-01-94), mg/L	<0.1	--	--
Potassium, d (11-14-94), mg/L	<0.1	--	--
Chloride, d (11-01-94), mg/L	<0.1	<0.1	<0.1
Chloride, d (11-14-94), mg/L	<0.1	<0.1	<0.1
Sulfate, d (11-01-94), mg/L	<0.1	<0.1	<0.1
Sulfate, d (11-14-94), mg/L	<0.1	<0.1	<0.1
Solids, residue at 180 degrees Celsius, d, mg/L	4	3	--

Table 22.--Laboratory blank results for data set 2, February 1995

[d, dissolved; µg/L, micrograms per liter; <, less than reporting limit; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Blank 1	Blank 2	Blank 3
Aluminum, d, µg/L	<1	<1	--
Aluminum, tr, µg/L	<10	<10	--
Antimony, d, µg/L	<1	<1	--
Arsenic, d, µg/L	<1	--	--
Arsenic, t, µg/L	<1	--	--
Barium, d, µg/L	<1	<1	--
Beryllium, d, µg/L	<1	<1	--
Cadmium, d, µg/L	<1	<1	--
Chromium, d, µg/L	<1	<1	--
Cobalt, d, µg/L	<1	<1	--
Copper, d, µg/L	<1	<1	--
Lead, d, µg/L	<1	<1	--
Manganese, d, µg/L	<1	<1	--
Molybdenum, d, µg/L	<1	<1	--
Nickel, d, µg/L	<1	<1	--
Silver, d, µg/L	<0.2	--	--
Silver, tr, µg/L	<1	<1	--
Uranium, d, µg/L	<1	<1	--
Zinc, d, µg/L	<1	<1	--
Cyanide, t, mg/L	<0.010	<0.010	--
Calcium, d, mg/L	<0.1	<0.1	--
Magnesium, d, mg/L	<0.1	<0.1	--
Sodium, d, mg/L	<0.1	<0.1	0
Potassium, d, mg/L	<0.1	<0.1	<0.1
Chloride, d, mg/L	<0.1	<0.1	--
Sulfate, d, mg/L	<0.1	<0.1	--
Solids, residue at 180 degrees Celsius, d, mg/L	<1	<1	--

Table 23.--Laboratory blank results for data set 3, May 1995

[d, dissolved; µg/L, micrograms per liter; <, less than reporting limit; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Blank 1	Blank 2	Blank 3
Aluminum, d, µg/L	<1	<1	--
Aluminum, tr, µg/L	<10	<10	<10
Antimony, d, µg/L	<1	<1	--
Arsenic, d, µg/L	<1	<1	--
Arsenic, t, µg/L	<1	<1	--
Barium, d, µg/L	<1	<1	--
Beryllium, d, µg/L	<1	<1	--
Cadmium, d, µg/L	<1	<1	--
Chromium, d, µg/L	<1	<1	--
Cobalt, d, µg/L	<1	<1	--
Copper, d, µg/L	<1	<1	--
Lead, d, µg/L	<1	<1	--
Manganese, d, µg/L	<1	<1	--
Molybdenum, d, µg/L	<1	<1	--
Nickel, d, µg/L	<1	<1	--
Silver, d, µg/L	<0.2	--	--
Silver, tr, µg/L	<1	--	--
Uranium, d, µg/L	<1	<1	--
Zinc, d, µg/L	<1	<1	--
Cyanide, t (05-06-95), mg/L	<0.010	--	--
Cyanide, t (05-12-95), mg/L	<0.010	--	--
Calcium, d, mg/L	<0.1	<0.1	<0.1
Magnesium, d, mg/L	<0.1	<0.1	<0.1
Sodium, d, mg/L, high	<80	<80	--
Potassium, d, mg/L	<0.1	--	--
Chloride, d, mg/L	<0.1	<0.1	<0.1
Sulfate, d, mg/L	<0.1	0.1	0.2
Solids, residue at 180 degrees Celsius, d, mg/L	<1	<1	--

Table 24.--Laboratory blank results for data set 4, August 1995

[d, dissolved; µg/L, micrograms per liter; <, less than reporting limit; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Blank 1	Blank 2	Blank 3	Blank 4
Aluminum, d, µg/L	<1	--	--	--
Aluminum, tr, µg/L	<10	--	--	--
Antimony, d, µg/L	<1	--	--	--
Arsenic, d, µg/L	<1	<1	--	--
Arsenic, t, µg/L	<1	<1	--	--
Barium, d, µg/L	<1	--	--	--
Beryllium, d, µg/L	<1	--	--	--
Cadmium, d, µg/L	<1	--	--	--
Chromium, d, µg/L	<1	--	--	--
Cobalt, d, µg/L	<1	--	--	--
Copper, d, µg/L	<1	--	--	--
Lead, d, µg/L	<1	--	--	--
Manganese, d, µg/L	<1	--	--	--
Molybdenum, d, µg/L	<1	--	--	--
Nickel, d, µg/L	<1	--	--	--
Silver, d, µg/L	<0.2	--	--	--
Silver, tr, µg/L	<1	<1	--	--
Uranium, d, µg/L	<1	--	--	--
Zinc, d, µg/L	<1	--	--	--
Cyanide, t, mg/L	<0.010	--	--	--
Calcium, d, mg/L	<0.1	--	--	--
Magnesium, d, mg/L	<0.1	--	--	--
Sodium, d, mg/L	<0.1	<0.1	<0.1	<0.1
Potassium, d, mg/L	<0.1	--	--	--
Chloride, d, mg/L	<0.1	<0.1	<0.1	--
Sulfate, d, mg/L	<0.1	<0.1	<0.1	--
Solids, residue at 180 degrees Celsius, d, mg/L	0	--	--	--

Table 25.--Laboratory blank results for data set 5, October 1995

[d, dissolved; µg/L, micrograms per liter; <, less than reporting limit; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Blank 1	Blank 2	Blank 3	Blank 4
Aluminum, d, µg/L	<1	<1	--	--
Aluminum, tr, µg/L	<10	<10	--	--
Antimony, d, µg/L	<1	<1	--	--
Arsenic, d, µg/L	<1	<1	--	--
Arsenic, t, µg/L	<1	<1	--	--
Barium, d, µg/L	<1	<1	--	--
Beryllium, d, µg/L	<1	<1	--	--
Cadmium, d, µg/L	<1	<1	--	--
Chromium, d, µg/L	<1	<1	--	--
Cobalt, d, µg/L	<1	<1	--	--
Copper, d, µg/L	<1	<1	--	--
Lead, d, µg/L	<1	<1	--	--
Manganese, d, µg/L	<1	<1	--	--
Molybdenum, d, µg/L	<1	<1	--	--
Nickel, d, µg/L	<1	<1	--	--
Silver, d, µg/L	<0.2	--	--	--
Silver, tr, µg/L	<1	--	--	--
Uranium, d, µg/L	<1	<1	--	--
Zinc, d, µg/L	<1	<1	--	--
Cyanide, t, mg/L	<0.010	--	--	--
Calcium, d, mg/L	<0.1	<0.1	<0.1	<0.1
Magnesium, d, mg/L	<0.1	<0.1	<0.1	<0.1
Sodium, d, mg/L	<0.1	--	--	--
Potassium, d, mg/L	<0.1	--	--	--
Chloride, d, mg/L	<0.1	<0.1	<0.1	--
Sulfate, d, mg/L	<0.1	<0.1	<0.1	--
Solids, residue at 180 degrees Celsius, d, mg/L	6	--	--	--

Table 26.--Laboratory blank results for data set 6, February 1996

[d, dissolved; µg/L, micrograms per liter; <, less than reporting limit; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Blank 1	Blank 2	Blank 3
Aluminum, d, µg/L	<1	<1	--
Aluminum, tr, µg/L	<10		
Antimony, d, µg/L	<1	<1	--
Arsenic, d, µg/L	<1	--	--
Arsenic, t, µg/L	<1	--	--
Barium, d, µg/L	<1	<1	--
Beryllium, d, µg/L	<1	<1	--
Cadmium, d, µg/L	<1	<1	--
Chromium, d, µg/L	<1	<1	--
Cobalt, d, µg/L	<1	<1	--
Copper, d, µg/L	<1	<1	--
Lead, d, µg/L	<1	<1	--
Manganese, d, µg/L	<1	<1	--
Molybdenum, d, µg/L	<1	<1	--
Nickel, d, µg/L	<1	<1	--
Silver, d, µg/L	<0.2	--	--
Silver, tr, µg/L	<1	--	--
Uranium, d, µg/L	<1	<1	--
Zinc, d, µg/L	<1	<1	--
Cyanide, t, mg/L	<0.010	--	--
Calcium, d, mg/L	<0.1	<0.1	--
Magnesium, d, mg/L	<0.1	<0.1	--
Sodium, d, mg/L	<0.1	<0.1	--
Potassium, d, mg/L	0.16	--	--
Chloride, d, mg/L	<0.1	<0.1	<0.1
Sulfate, d, mg/L	<0.1	<0.1	<0.1
Solids, residue at 180 degrees Celsius, d, mg/L	3	--	--

Table 27.--Laboratory blank results for data set 7, May 1996

[d, dissolved; µg/L, micrograms per liter; <, less than reporting limit; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Blank 1	Blank 2	Blank 3
Aluminum, d, µg/L	<1	<1	--
Aluminum, tr, µg/L	<10	<10	--
Antimony, d, µg/L	<1	<1	--
Arsenic, d, µg/L	<1	--	--
Arsenic, t, µg/L	<1	--	--
Barium, d, µg/L	<1	<1	--
Beryllium, d, µg/L	<1	<1	--
Cadmium, d, µg/L	<1	<1	--
Chromium, d, µg/L	<1	<1	--
Cobalt, d, µg/L	<1	<1	--
Copper, d, µg/L	<1	<1	--
Lead, d, µg/L	<1	<1	--
Manganese, d, µg/L	<1	<1	--
Molybdenum, d, µg/L	<1	<1	--
Nickel, d, µg/L	<1	<1	--
Silver, d, µg/L	<0.2	--	--
Silver, tr, µg/L	<1	--	--
Uranium, d, µg/L	<1	<1	--
Zinc, d, µg/L	<1	<1	--
Cyanide, t, mg/L	<0.010	--	--
Calcium, d, mg/L	<0.02	--	--
Magnesium, d, mg/L	<0.01	--	--
Sodium, d, mg/L	<0.2	--	--
Potassium, d, mg/L	<0.1	--	--
Chloride, d, mg/L	<0.1	<0.1	<0.1
Sulfate, d, mg/L	<0.1	<0.1	--
Solids, residue at 180 degrees Celsius, d, mg/L	2	--	--

Table 28.--Laboratory blank results for data set 8, August 1996

[mg/L, milligrams per liter; d, dissolved; µg/L, micrograms per liter; <, less than reporting limit; tr, total recoverable; --, no data; t, total]

Analyte and measurement unit	Blank 1	Blank 2
Alkalinity, µg/L	0.79	1.17
Aluminum, d, µg/L	<1	<1
Aluminum, tr, µg/L	<10	<10
Antimony, d, µg/L	<1	<1
Arsenic, d, µg/L	<1	--
Arsenic, t, µg/L	<1	--
Barium, d, µg/L	<1	<1
Beryllium, d, µg/L	<1	<1
Cadmium, d, µg/L	<1	<1
Chromium, d, µg/L	<1	<1
Cobalt, d, µg/L	<1	<1
Copper, d, µg/L	<1	<1
Lead, d, µg/L	<1	<1
Manganese, d, µg/L	<1	<1
Molybdenum, d, µg/L	<1	<1
Nickel, d, µg/L	<1	<1
Silver, d, µg/L	<0.2	--
Silver, tr, µg/L	<1	--
Uranium, d, µg/L	<1	<1
Zinc, d, µg/L	<1	<1
Cyanide, t, mg/L	<0.010	--
Calcium, d, mg/L	<0.02	--
Magnesium, d, mg/L	<0.01	--
Sodium, d, mg/L	<0.2	--
Potassium, d, mg/L	<0.1	--
Chloride, d, mg/L	<0.1	<0.1
Sulfate, d, mg/L	<0.1	<0.1
Solids, residue at 180 degrees Celsius, d, mg/L	1	--

Table 29.--Laboratory duplicate sample results for data set 1, October/November 1994

[RPD, relative percent difference; mg/L, milligrams per liter; <, less than; d, dissolved; µg/L, micrograms per liter; tr, total recoverable; --, no data; t, total]

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Alkalinity (11-01-94), mg/L	943050204	121	122	0.82	<20
Alkalinity (11-14-94), mg/L	943180013	236	237	0.42	<20
Aluminum, d, µg/L	943180001	9.81	10	1.92	<20
Aluminum, tr, µg/L	943180004	1,600	1,540	3.82	<20
Antimony, d, µg/L	943180001	<1	<1	--	<20
Arsenic, d, µg/L	943180002	<1	<1	--	<20
Arsenic, t, µg/L	943180002	<1	<1	--	<20
Barium, d, µg/L	943180001	85.33	91.67	7.16	<20
Beryllium, d, µg/L	943180001	<1	<1	--	<20
Cadmium, d, µg/L	943180001	<1	<1	--	<20
Chromium, d, µg/L	943180001	<1	<1	--	<20
Cobalt, d, µg/L	943180001	<1	<1	--	<20
Copper, d, µg/L	943180001	1.41	1.36	3.61	<20
Lead, d, µg/L	943180001	<1	<1	--	<20
Manganese, d, µg/L	943180001	5.94	6.09	2.49	<20
Molybdenum, d, µg/L	943180001	4.33	4.16	4.00	<20
Nickel, d, µg/L	943180001	1.78	1.85	3.86	<20
Silver, d, µg/L	943180001	<0.2	<0.2	--	<20
Silver, tr, µg/L	943180001	<1	<1	--	<20
Uranium, d, µg/L	943180001	2.56	2.79	8.60	<20
Zinc, d, µg/L	943180001	1.61	<1	--	<20
Calcium, d (11-01-94), mg/L	943050204	41.96	41.62	0.81	<20
Calcium, d (11-14-94), mg/L	943180012	45.93	45.42	1.12	<20
Magnesium, d (11-01-94), mg/L	943050204	7.49	7.59	1.33	<20
Magnesium, d (11-14-94), mg/L	943180012	7.19	7.3	1.52	<20

Table 29.--Laboratory duplicate sample results for data set 1, October/November 1994--Concluded

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Sodium, d (11-01-94), mg/L	943050204	23.6	22.8	3.45	<20
Potassium, d (11-01-94), mg/L	943050204	2.91	2.87	1.38	<20
Potassium, d (11-01-94), mg/L	943050207	4.51	4.64	2.84	<20
Chloride, d (11-01-94), mg/L	943050204	7.56	7.58	0.26	<20
Chloride, d (11-14-94), mg/L	943180012	9.19	9.23	0.43	<20
Sulfate, d (11-01-94), mg/L	943050204	56.5	56.7	0.35	<20
Sulfate, d (11-14-94), mg/L	943180012	57.94	58.08	0.24	<20
Solids, residue at 180 degrees Celsius, d, mg/L	943180015	518	520	0.39	<20

[1]943050204--Rio Grande at Rio Bravo Boulevard
943050207--Rio Grande at Los Lunas
943180001--Sample from another project
943180002--Rio Grande at San Felipe (field blank sample)
943180004--Sample from another project
943180012--Corrales Riverside Drain at mouth
943180013--Jemez River below Dam
943180015--Albuquerque Wastewater Treatment Plant outfall.

Table 30.--Laboratory duplicate sample results for data set 2, February 1995

[RPD, relative percent difference; d, dissolved; µg/L, micrograms per liter; <, less than; tr, total recoverable; --, no data; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Aluminum, d, µg/L	950480063	3.18	2.94	7.84	<20
Aluminum, tr, µg/L	950480066	355	363	2.23	<20
Antimony, d, µg/L	950480063	<1	<1	--	<20
Arsenic, d, µg/L	950480063	18.2	19.7	7.92	<20
Arsenic, t, µg/L	950480063	22.8	22.5	1.32	<20
Barium, d, µg/L	950480063	52.42	59.05	11.90	<20
Beryllium, d, µg/L	950480063	<1	<1	--	<20
Cadmium, d, µg/L	950480063	<1	<1	--	<20
Chromium, d, µg/L	950480063	<1	<1	--	<20
Cobalt, d, µg/L	950480063	<1	<1	--	<20
Copper, d, µg/L	950480063	2.12	1.44	38.20	<20
Lead, d, µg/L	950480063	<1	<1	--	<20
Manganese, d, µg/L	950480063	335.07	309.05	8.08	<20
Molybdenum, d, µg/L	950480063	7.76	7.83	0.90	<20
Nickel, d, µg/L	950480063	3.97	3.5	12.58	<20
Silver, d, µg/L	950480063	<0.2	<0.2	--	<20
Silver, tr, µg/L	950480063	<1	<1	--	<20
Uranium, d, µg/L	950480063	2.53	2.69	6.13	<20
Zinc, d, µg/L	950480063	1.54	<1	--	<20
Calcium, d, mg/L	950480065	43.1	42.4	1.64	<20

Table 30.--Laboratory duplicate sample results for data set 2, February 1995--Concluded

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Magnesium, d, mg/L	950480065	7.42	7.1	4.41	<20
Sodium, d, mg/L	950480079	<0.1	<0.1	--	<20
Potassium, d, mg/L	950480063	9.84	10.1	2.61	<20
Chloride, d, mg/L	950480063	135.5	134.5	0.74	<20
Sulfate, d, mg/L	950480063	204.4	205.1	0.34	<20
Solids, residue at 180 degrees Celsius, d, mg/L	950480063	803	805	0.25	<20

[1]950480063--Jemez River below dam
950480065--Rio Grande at Los Lunas
950480066--Rio Grande at Albuquerque
950480079--Rio Grande at Albuquerque (field blank sample).

Table 31.--Laboratory duplicate sample results for data set 3, May 1995

[RPD, relative percent difference; d, dissolved; µg/L, micrograms per liter; <, less than; tr, total recoverable; --, no data; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Aluminum, d, µg/L	951320210	18.87	19.41	2.82	<20
Aluminum, tr, µg/L	951320210	1,430	1,420	0.70	<20
Antimony, d, µg/L	951320210	<1	<1	--	<20
Arsenic, d, µg/L	951320210	1.44	1.52	5.41	<20
Arsenic, t, µg/L	951320210	1.6	1.7	6.06	<20
Barium, d, µg/L	951320210	58.51	60.31	3.03	<20
Beryllium, d, µg/L	951320210	<1	<1	--	<20
Cadmium, d, µg/L	951320210	<1	<1	--	<20
Chromium, d, µg/L	951320210	<1	<1	--	<20
Cobalt, d, µg/L	951320210	<1	<1	--	<20
Copper, d, µg/L	951320210	1.31	1.24	5.49	<20
Lead, d, µg/L	951320210	<1	<1	--	<20
Manganese, d, µg/L	951320210	10.02	10.24	2.17	<20
Molybdenum, d, µg/L	951320210	2.08	2.08	0.00	<20
Nickel, d, µg/L	951320210	2.5	2.93	15.84	<20
Silver, d, µg/L	951320210	<0.2	<0.2	--	<20
Silver, tr, µg/L	951320210	<1	<1	--	<20
Uranium, d, µg/L	951320210	1.69	1.53	9.94	<20
Zinc, d, µg/L	951320210	1.15	<1	--	<20
Calcium, d, low, mg/L	951320237	<0.1	<0.1	--	<20

Table 31.--Laboratory duplicate sample results for data set 3, May 1995--Concluded

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Calcium, d, high, mg/L	951320210	33.8	33.6	0.59	<20
Magnesium, d, low, mg/L	951320237	<0.1	<0.1	--	<20
Magnesium, d, high, mg/L	951320210	6.72	6.78	0.90	<20
Sodium, d, low, mg/L	951320237	<0.1	<0.1	--	<20
Sodium, d, mid, mg/L	951320210	15	15	0.00	<20
Sodium, d, high, g/L	951320210	90	92	2.20	<20
Potassium, d, mg/L	951320210	2.02	1.96	3.02	<20
Chloride, d, mg/L	951320213	55.3	52	6.15	<20
Sulfate, d, mg/L	951320213	80.7	80.8	0.12	<20
Solids, residue at 180 degrees Celsius, d, mg/L	951320210	187	189	1.06	<20

[1]951320210--Rio Grande at San Felipe
951320213--Jemez River below dam
951320237--Rio Grande at Albuquerque (field blank sample).

Table 32.--Laboratory duplicate sample results for data set 4, August 1995

[RPD, relative percent difference; d, dissolved; µg/L, micrograms per liter; <, less than; tr, total recoverable; --, no data; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Aluminum, d, µg/L	952440247	4.46	4.72	5.66	<20
Aluminum, tr, µg/L	952440247	6,490	6,510	0.31	<20
Antimony, d, µg/L	952440247	<1	<1	--	<20
Arsenic, d, µg/L	952440252	2.2	2.1	4.65	<20
Arsenic, t, µg/L	952440252	1.98	1.89	4.65	<20
Barium, d, µg/L	952440247	64.91	64.69	0.34	<20
Beryllium, d, µg/L	952440247	<1	<1	--	<20
Cadmium, d, µg/L	952440247	<1	<1	--	<20
Chromium, d, µg/L	952440247	<1	<1	--	<20
Cobalt, d, µg/L	952440247	<1	<1	--	<20
Copper, d, µg/L	952440247	1.41	2.04	36.52	<20
Lead, d, µg/L	952440247	<1	<1	--	<20
Manganese, d, µg/L	952440247	<1	<1	--	<20
Molybdenum, d, µg/L	952440247	7.67	7.79	1.55	<20
Nickel, d, µg/L	952440247	1.67	1.39	18.30	<20
Silver, d, µg/L	952440247	<0.2	<0.2	--	<20
Silver, tr, µg/L	952440247	<1	<1	--	<20
Uranium, d, µg/L	952440247	2.01	2.13	5.80	<20
Zinc, d, µg/L	952440247	2.93	3.06	4.34	<20
Magnesium, d, mg/L	952440248	7.39	7.3	1.23	<20

Table 32.--Laboratory duplicate sample results for data set 4, August 1995--Concluded

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Sodium, d, mg/L	952440247	30.8	31.9	3.51	<20
Sodium, d, mg/L	952440249	128.3	128.7	0.31	<20
Potassium, d, mg/L	952440247	4.49	4.11	8.84	<20
Chloride, d, mg/L	952440248	12.31	12.48	1.37	<20
Sulfate, d, mg/L	952440248	61.18	61	0.29	<20
Solids, residue at 180 degrees Celsius, d, mg/L	952440247	258	260	0.77	<20

[1]952440247--Rio Grande at Interstate 25
952440248--Rio Grande at Interstate 25 (field replicate sample)
952440249--Jemez River below dam
952440252--Rio Grande near Bernalillo.

Table 33.--Laboratory duplicate sample results for data set 5, October 1995

[RPD, relative percent difference; d, dissolved; µg/L, micrograms per liter; <, less than; tr, total recoverable; --, no data; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Aluminum, d, µg/L	952860002	1.85	2.23	18.63	<20
Aluminum, tr, µg/L	952860003	975	988	1.32	<20
Antimony, d, µg/L	952860002	<1	<1	--	<20
Arsenic, d, µg/L	952860010	3.04	3.04	0.0	<20
Arsenic, t, µg/L	952860010	3.2	3.1	3.17	<20
Barium, d, µg/L	952860002	73.46	76.41	3.94	<20
Beryllium, d, µg/L	952860002	<1	<1	--	<20
Cadmium, d, µg/L	952860002	<1	<1	--	<20
Chromium, d, µg/L	952860002	1.28	1.08	16.95	<20
Cobalt, d, µg/L	952860002	<1	<1	--	<20
Copper, d, µg/L	952860002	1.14	1.24	8.40	<20
Lead, d, µg/L	952860002	<1	<1	--	<20
Manganese, d, µg/L	952860002	6.91	7.73	11.20	<20
Molybdenum, d, µg/L	952860002	4.01	4.35	8.13	<20
Nickel, d, µg/L	952860002	<1	1.55	--	<20
Silver, d, µg/L	952860002	<0.2	<0.2	--	<20
Silver, tr, µg/L	952860002	<1	<1	--	<20
Uranium, d, µg/L	952860002	2.09	2.01	3.90	<20
Zinc, d, µg/L	952860002	<1	1.41	--	<20
Calcium, d, mg/L	952860002	39.3	38.4	2.32	<20

Table 33.--Laboratory duplicate sample results for data set 5, October 1995--Concluded

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Magnesium, d, mg/L	952860002	7.22	7.03	2.67	<20
Sodium, d, mg/L	952860002	19.9	19.9	0.00	<20
Potassium, d, mg/L	952860002	2.83	2.8	1.07	<20
Chloride, d, mg/L	952860003	5.666	5.82	2.75	<20
Sulfate, d, mg/L	952860003	50.719	50.911	0.38	<20
Solids, residue at 180 degrees Celsius, d, mg/L	952860002	209	219	4.67	<20

[1]952860002--Rio Grande at San Felipe
952860003--Rio Grande near Bernalillo
952860010--Albuquerque Riverside Drain at gate.

Table 34.--Laboratory duplicate sample results for data set 6, February 1996

[RPD, relative percent difference; d, dissolved; µg/L, micrograms per liter; <, less than; tr, total recoverable; --, no data; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Aluminum, d, µg/L	960520056	18.92	19.5	3.02	<20
Aluminum, tr, µg/L	960520056	191	187	2.12	<20
Antimony, d, µg/L	960520056	<1	<1	--	<20
Arsenic, d, µg/L	960520062	2.85	2.95	3.45	<20
Arsenic, t, µg/L	960520062	2.85	2.95	3.45	<20
Barium, d, µg/L	960520056	59.46	58.83	1.07	<20
Beryllium, d, µg/L	960520056	<1	<1	--	<20
Cadmium, d, µg/L	960520056	<1	<1	--	<20
Chromium, d, µg/L	960520056	1.44	1.24	14.93	<20
Cobalt, d, µg/L	960520056	<1	<1	--	<20
Copper, d, µg/L	960520056	1.38	1.53	10.31	<20
Lead, d, µg/L	960520056	<1	<1	--	<20
Manganese, d, µg/L	960520056	14.4	14.1	2.11	<20
Molybdenum, d, µg/L	960520056	3.94	3.81	3.35	<20
Nickel, d, µg/L	960520056	1.59	1.88	16.71	<20
Silver, d, µg/L	960520056	<0.2	<0.2	--	<20
Silver, tr, µg/L	960520056	<1	<1	--	<20
Uranium, d, µg/L	960520056	2.95	2.85	3.45	<20
Zinc, d, µg/L	960520056	2.06	1.82	12.37	<20
Calcium, d, mg/L	960520056	35.3	35.8	1.41	<20

Table 34.--Laboratory duplicate sample results for data set 6, February 1996--Concluded

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Magnesium, d, mg/L	960520056	7.58	7.69	1.44	<20
Sodium, d, mg/L	960520056	21.2	21	0.95	<20
Potassium, d, mg/L	960520056	2.84	2.92	2.78	<20
Chloride, d, mg/L	960520058	9.377	9.34	0.40	<20
Sulfate, d, mg/L	960520058	47.41	46.69	1.52	<20
Solids, residue at 180 degrees Celsius, d, mg/L	960520057	238	242	1.67	<20

[1]960520056--Rio Grande at San Felipe
960520057--Rio Grande at Rio Bravo Boulevard
960520058--Rio Grande near Alameda
960520062--Rio Grande at Isleta.

Table 35.--Laboratory duplicate sample results for data set 7, May 1996

[RPD, relative percent difference; d, dissolved; µg/L, micrograms per liter; <, less than; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Aluminum, d, µg/L	961500113	<1	<1	--	<20
Aluminum, tr, µg/L	961500115	75	77	2.63	<20
Antimony, d, µg/L	961500113	<1	<1	--	<20
Arsenic, d, µg/L	961500113	3.8	4.16	9.05	<20
Arsenic, t, µg/L	961500113	3.8	3.89	2.34	<20
Barium, d, µg/L	961500113	82.27	84.75	2.97	<20
Beryllium, d, µg/L	961500113	<1	<1	--	<20
Cadmium, d, µg/L	961500113	<1	<1	--	<20
Chromium, d, µg/L	961500113	1.39	1	32.64	<20
Cobalt, d, µg/L	961500113	<1	<1	--	<20
Copper, d, µg/L	961500113	1.54	1.3	16.90	<20
Lead, d, µg/L	961500113	<1	<1	--	<20
Manganese, d, µg/L	961500113	45.49	44.82	1.48	<20
Molybdenum, d, µg/L	961500113	5.43	5.86	7.62	<20
Nickel, d, µg/L	961500113	1.73	1.87	7.78	<20
Silver, d, µg/L	961500113	<0.2	<0.2	--	<20
Silver, tr, µg/L	961500113	<1	<1	--	<20
Uranium, d, µg/L	961500113	2.72	2.78	2.18	<20
Zinc, d, µg/L	961500113	1.38	<1	--	<20
Calcium, d, mg/L	961500117	41	40.45	1.35	<20

Table 35.--Laboratory duplicate sample results for data set 7, May 1996--Concluded

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Magnesium, d, mg/L	961500117	6.077	6.024	0.88	<20
Sodium, d, mg/L	961500117	105.4	105.7	0.28	<20
Potassium, d, mg/L	961500113	3.55	3.58	0.84	<20
Chloride, d, mg/L	961500116	82.2	83	0.97	<20
Sulfate, d, mg/L	961500116	91.6	91.1	0.55	<20
Solids, residue at 180 degrees Celsius, d, mg/L	961510049	206	200	2.96	<20
Solids, residue at 180 degrees Celsius, d, mg/L	961500116	488	478	2.07	<20

[1]961500113--Atrisco Riverside Drain at mouth
961500115--Bernalillo Wastewater Treatment Plant outfall
961500116--Albuquerque Wastewater Treatment Plant outfall (field replicate sample)
961500117--Albuquerque Wastewater Treatment Plant outfall
961510149--Rio Grande near Alameda.

Table 36.--Laboratory duplicate sample results for data set 8, August 1996

[RPD, relative percent difference; mg/L, milligrams per liter; <, less than; d, dissolved; µg/L, micrograms per liter; tr, total recoverable; --, no data; t, total]

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Alkalinity, mg/L	962480205	120.628	120.568	0.05	<20
Aluminum, d, µg/L	962480204	3.73	3.24	14.06	<20
Aluminum, tr, µg/L	962480205	48,680	49,760	2.19	<20
Antimony, d, µg/L	962480204	<1	<1	--	<20
Arsenic, d, µg/L	962480204	3.14	2.93	6.92	<20
Arsenic, t, µg/L	962480210	3.16	4.9	43.18	<20
Barium, d, µg/L	962480204	87.19	86.87	0.37	<20
Beryllium, d, µg/L	962480204	<1	<1	--	<20
Cadmium, d, µg/L	962480204	<1	<1	--	<20
Chromium, d, µg/L	962480204	<1	1.00	--	<20
Cobalt, d, µg/L	962480204	<1	1	--	<20
Copper, d, µg/L	962480204	1.28	1.25	2.37	<20
Lead, d, µg/L	962480204	<1	<1	--	<20
Manganese, d, µg/L	962480204	<1	<1	--	<20
Molybdenum, d, µg/L	962480204	5.23	5.81	10.51	<20
Nickel, d, µg/L	962480204	1.64	1.6	2.47	<20
Silver, d, µg/L	962480204	<0.2	<0.2	--	<20
Silver, tr, µg/L	962480204	<1	<1	--	<20
Uranium, d, µg/L	962480204	2.21	2.24	1.35	<20
Zinc, d, µg/L	962480204	1.52	1.3	15.60	<20

Table 36.--Laboratory duplicate sample results for data set 8, August 1996--Concluded

Analyte and measurement unit	Laboratory sample identification[1]	Result 1	Result 2	RPD	RPD objective
Calcium, d, mg/L	962480207	40.52	40.41	0.27	<20
Magnesium, d, mg/L	962480207	7.069	6.849	3.16	<20
Sodium, d, mg/L	962480207	20.66	19.98	3.35	<20
Potassium, d, mg/L	962480204	3.99	3.95	1.01	<20
Chloride, d, mg/L	962480206	<0.1	<0.1	--	<20
Sulfate, d, mg/L	962480206	<0.1	<0.1	--	<20
Solids, residue at 180 degrees Celsius, d, mg/L	962480204	220	242	9.52	<20

[1]962480204--Rio Grande at Interstate 25
962480205--Rio Grande near Alameda
962480206--Rio Grande at Rio Bravo Boulevard (field blank sample)
962480207--Rio Grande at San Felipe
962480210--Rio Grande near Bernalillo.

Table 37.--Laboratory duplicate sample results that exceed the relative percent difference objective of less than 20 percent

[RPD, relative percent difference; d, dissolved; t, total; µg/L, micrograms per liter]

Analyte and measurement unit	Reporting limit	Sampling round	Result 1	Result 2	RPD
Arsenic, t, µg/L	1	8	3.16	4.9	43.18
Chromium, d, µg/L	1	7	1.39	1	32.64
Copper, d, µg/L	1	2	2.12	1.44	38.20
		4	1.41	2.04	36.52

Table 38.--Laboratory calibration results for data set 1, October/November 1994

[Correlation is the correlation coefficient of a line generated by plotting standard values against observed values; SV, standard value; OV, observed value; mg/L, milligrams per liter; N/A, not applicable; d, dissolved; --, no data; tr, total recoverable; t, total; µg/L, micrograms per liter]

Analyte and measurement unit	Correlation	SV	OV	SV	OV	SV	OV	SV	OV	SV	OV
Alkalinity (11-01-94), mg/L	N/A	No alkalinity standards									
Alkalinity (11-14-94), mg/L	N/A	No alkalinity standards									
Aluminum, d, µg/L	1.0000	25	27.4	100	112	1,000	992	--	--	--	--
Aluminum, tr, µg/L	1.0000	10,000	10,000	--	--	--	--	--	--	--	--
Antimony, d, µg/L	1.0000	25	25	--	--	--	--	--	--	--	--
Arsenic, d, µg/L	0.9998	20	20	10	9.97	5	5.1	3	2.9	1	1
Arsenic, t, µg/L	0.9996	20	20	10	10	5	5.1	3	2.8	1	1.1
Barium, d, µg/L	1.0000	25	26.1	100	100	1,000	1,025	--	--	--	--
Beryllium, d, µg/L	1.0000	25	25	100	97.9	--	--	--	--	--	--
Cadmium, d, µg/L	1.0000	25	22.2	100	97.2	--	--	--	--	--	--
Chromium, d, µg/L	1.0000	25	25	--	--	--	--	--	--	--	--
Cobalt, d, µg/L	1.0000	25	23	100	98	--	--	--	--	--	--
Copper, d, µg/L	1.0000	25	22.3	100	97.3	--	--	--	--	--	--
Lead, d, µg/L	1.0000	25	23.9	100	98.9	--	--	--	--	--	--
Manganese, d, µg/L	1.0000	25	22.9	100	94.5	1,000	1,037	--	--	--	--
Molybdenum, d, µg/L	1.0000	25	23.3	100	98.3	--	--	--	--	--	--
Nickel, d, µg/L	1.0000	25	23.4	100	98.4	--	--	--	--	--	--
Silver, d, µg/L	0.9997	1	1.05	2	1.85	3	2.92	5	5.11	--	--
Silver, tr, µg/L	1.0000	5	5	10	9.7	--	--	--	--	--	--
Uranium, d, µg/L	1.0000	25	23.3	100	98.3	--	--	--	--	--	--
Zinc, d, µg/L	1.0000	25	24	100	98	1,000	998	--	--	--	--
Calcium, d (11-01-94), mg/L	1.0000	60	60	30	30	10	10.1	5	4.94	1	1.01
Calcium, d (11-14-94), mg/L	0.9996	60	60.5	30	29.7	10	9.53	5	4.44	1	0.8
Magnesium, d (11-01-94), mg/L	0.9996	2.5	2.52	5	4.94	10	10.1	20	19.9	35	35
Magnesium, d (11-14-94), mg/L	0.9994	2.5	2.37	5	4.61	10	10.1	20	19.5	35	34.5

Table 38.--Laboratory calibration results for data set 1, October/November 1994--Concluded

Analyte and measurement unit	Correlation	SV	OV	SV	OV	SV	OV	SV	OV	SV	OV
Sodium, d (11-01-94), mg/L	1.0000	1	1	10	10	25	25	50	50	100	100
Sodium, d (11-14-94), mg/L	1.0000	1	1	10	10	25	25	50	50	100	100
Sodium, d (11-14-94), mg/L	1.0000	80	80	150	150	200	200	300	300	400	399.2
Sodium, d (11-14-94), mg/L	1.0000	80	80	150	150	200	200	300	300	400	398.3
Potassium, d (11-01-94), mg/L	1.0000	0.1	0.1	1	1	2.5	2.5	5	5	10	10
Potassium, d (11-14-94), mg/L	1.0000	0.1	0.1	1	1	2.5	2.5	5	5	10	10
Chloride, d (11-01-94), mg/L	0.9997	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Chloride, d (11-14-94), mg/L	1.0000	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Sulfate, d (11-01-94), mg/L	0.9999	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Sulfate, d (11-14-94), mg/L	0.9998	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Solids, residue at 180 degrees Celsius, d	N/A	Gravimetric analysis; no calibration curve run									

Table 39.--Laboratory calibration results for data set 2, February 1995

[Correlation is the correlation coefficient of a line generated by plotting standard values against observed values; SV, standard value; OV, observed value; d, dissolved; µg/L, micrograms per liter; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter; N/A, not applicable]

Analyte and measurement unit	Correlation	SV	OV	SV	OV	SV	OV	SV	OV	SV	OV
Aluminum, d, µg/L	1.0000	25	34.88	100	105	1,000	1,012	--	--	--	--
Aluminum, tr, µg/L	1.0000	10,000	10,000	--	--	--	--	--	--	--	--
Antimony, d, µg/L	1.0000	25	27.07	100	102.1	--	--	--	--	--	--
Arsenic, d, µg/L	0.9997	20	19.97	10	10.96	5	4.79	3	3.02	1	1.07
Arsenic, t, µg/L	1.0000	20	19.99	10	10.01	5	5.02	3	2.93	1	1.04
Barium, d, µg/L	1.0000	25	24.77	100	97.65	1,000	1,008	--	--	--	--
Beryllium, d, µg/L	1.0000	25	24.56	100	99.56	--	--	--	--	--	--
Cadmium, d, µg/L	1.0000	25	24.94	100	99.94	--	--	--	--	--	--
Chromium, d, µg/L	1.0000	25	25	--	--	--	--	--	--	--	--
Cobalt, d, µg/L	1.0000	25	23.89	100	98.89	--	--	--	--	--	--
Copper, d, µg/L	1.0000	25	24.17	100	103.3	--	--	--	--	--	--
Lead, d, µg/L	1.0000	25	23.55	100	98.55	--	--	--	--	--	--
Manganese, d, µg/L	1.0000	25	23.85	100	98.13	1,000	1,006	--	--	--	--
Molybdenum, d, µg/L	1.0000	25	24.07	100	99.07	--	--	--	--	--	--
Nickel, d, µg/L	1.0000	25	24.14	100	99.14	--	--	--	--	--	--
Silver, d, µg/L	0.9998	1	1	2	2	3	2.99	5	4.98	--	--
Silver, tr, µg/L	1.0000	5	4.97	10	10.1	--	--	--	--	--	--
Uranium, d, µg/L	1.0000	25	23.3	100	98.3	--	--	--	--	--	--
Zinc, d, µg/L	1.0000	25	24.55	100	98.81	1,000	1,005	--	--	--	--
Calcium, d, mg/L	0.9999	60	59.7	30	30.6	10	9.96	5	4.8	1	0.91
Magnesium, d, mg/L	0.9991	35	34.9	20	20.3	10	9.95	5	4.94	2.5	2.51
Sodium, d, mg/L	1.0000	1	1	10	10	25	25	50	50	100	100
Potassium, d, mg/L	1.0000	0.1	0.1	1	1	2.5	2.5	5	5	10	10
Chloride, d, mg/L	0.9998	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Sulfate, d, mg/L	0.9999	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Solids, residue at 180 degrees Celsius, d	N/A	Gravimetric analysis; no calibration curve run									

Table 40.--Laboratory calibration results for data set 3, May 1995

[Correlation is the correlation coefficient of a line generated by plotting standard values against observed values; SV, standard value; OV, observed value; d, dissolved; µg/L, micrograms per liter; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter; N/A, not applicable]

Analyte and measurement unit	Correlation	SV	OV	SV	OV	SV	OV	SV	OV	SV	OV
Aluminum, d, µg/L	1.0000	25	27.45	100	102.5	500	502.4	--	--	--	--
Aluminum, tr, µg/L	1.0000	10,000	10,000	--	--	--	--	--	--	--	--
Antimony, d, µg/L	1.0000	25	24.55	100	99.55	--	--	--	--	--	--
Arsenic, d, µg/L	0.9993	20	19.99	10	10.54	5	5.14	3	2.68	1	1.17
Arsenic, t, µg/L	0.9991	20	19.97	10	10.09	3	2.66	1	1.26	--	--
Barium, d, µg/L	1.0000	25	25.18	100	99.68	500	500.4	--	--	--	--
Beryllium, d, µg/L	1.0000	25	24.88	100	99.88	--	--	--	--	--	--
Cadmium, d, µg/L	1.0000	25	25.07	100	100.1	--	--	--	--	--	--
Chromium, d, µg/L	1.0000	25	24.78	100	99.78	--	--	--	--	--	--
Cobalt, d, µg/L	1.0000	25	24.56	100	99.56	--	--	--	--	--	--
Copper, d, µg/L	1.0000	25	26.17	100	101.2	--	--	--	--	--	--
Lead, d, µg/L	1.0000	25	25.42	100	100.4	--	--	--	--	--	--
Manganese, d, µg/L	1.0000	25	25.23	100	100.2	--	--	--	--	--	--
Molybdenum, d, µg/L	1.0000	25	24.47	100	99.47	--	--	--	--	--	--
Nickel, d, µg/L	1.0000	25	25	--	--	--	--	--	--	--	--
Silver, d, µg/L	1.0000	1	1	2	2.05	3	2.98	5	5.02	--	--
Silver, tr, µg/L	1.0000	0	0	5	5	10	10.2	--	--	--	--
Uranium, d, µg/L	1.0000	25	24.77	100	99.77	--	--	--	--	--	--
Zinc, d, µg/L	1.0000	25	29.12	100	101.4	500	506	--	--	--	--
Calcium, d, low, mg/L	0.9994	0.0	0.0	0.1	0.1	0.5	0.5	1.0	1.0	3.0	3.0
		5	5.0	--	--	--	--	--	--	--	--
Calcium, d, high, mg/L	0.9993	0.0	0.0	1.0	0.7	5.0	5.0	10.0	9.6	30.0	31.4
		60	59.4	--	--	--	--	--	--	--	--
Magnesium, d, low, mg/L	1.0000	0.0	0.0	0.1	0.1	0.5	0.5	1	1.0	3.0	3.0
		5	5.0	--	--	--	--	--	--	--	--
Magnesium, d, high, mg/L	0.9990	0.0	0.1	2.5	2.4	5.0	5.0	10	10.0	20.0	20.6
		35.0	34.8	--	--	--	--	--	--	--	--

Table 40.--Laboratory calibration results for data set 3, May 1995--Concluded

Analyte and measurement unit	Correlation	SV	OV	SV	OV	SV	OV	SV	OV	SV	OV
Sodium, d, low, mg/L	0.9999	0.1	0.1	0.5	0.5	1	0.98	3	2.998	5.0	5.0
Sodium, d, mid, mg/L	0.9994	1.0	0.6	10.0	9.5	25.0	25.2	50.0	51.4	100.0	99.3
Sodium, d, high, mg/L	0.9967	80.0	73.5	150.0	151.7	200.0	206.5	300.0	305.0	400.0	393.3
Potassium, d, mg/L	1.0000	0.1	0.1	1.0	1.0	2.5	2.5	5.0	5.0	10.0	10.0
Chloride, d, mg/L	1.0000	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Sulfate, d, mg/L	0.9999	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Solids, residue at 180 degrees Celsius, d	N/A	Gravimetric analysis; no calibration curve run									

Table 41.--Laboratory calibration results for data set 4, August 1995

[Correlation is the correlation coefficient of a line generated by plotting standard values against observed values; SV, standard value; OV, observed value; d, dissolved; µg/L, micrograms per liter; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter; N/A, not applicable]

Analyte and measurement unit	Correlation	SV	OV	SV	OV	SV	OV	SV	OV	SV	OV
Aluminum, d, µg/L	1.0000	25	28	100	103	500	504	--	--	--	--
Aluminum, tr, µg/L	1.0000	10,000	10,000	--	--	--	--	--	--	--	--
Antimony, d, µg/L	1.0000	25	23.5	100	97.5	500	499	--	--	--	--
Arsenic, d, µg/L	0.9999	0	0	1	1.05	3	2.89	5	5.04	10	10
		20	20	--	--	--	--	--	--	--	--
Arsenic, t, µg/L	0.9991	0	0	1	1.26	3	2.65	10	10.1	20	19.98
Barium, d, µg/L	1.0000	25	23.7	100	97.9	500	498	--	--	--	--
Beryllium, d, µg/L	1.0000	25	25	--	--	--	--	--	--	--	--
Cadmium, d, µg/L	1.0000	25	23	100	99.3	500	488	--	--	--	--
Chromium, d, µg/L	1.0000	25	24.3	100	98.9	500	500	--	--	--	--
Cobalt, d, µg/L	1.0000	25	24.5	100	99.9	500	496	--	--	--	--
Copper, d, µg/L	1.0000	25	25.9	100	103	500	487	--	--	--	--
Lead, d, µg/L	1.0000	25	24.5	100	98.3	500	500	--	--	--	--
Manganese, d, µg/L	1.0000	25	23.8	100	98.1	500	500	--	--	--	--
Molybdenum, d, µg/L	1.0000	25	23.6	100	97.1	500	499	--	--	--	--
Nickel, d, µg/L	1.0000	25	24.1	100	100	500	488	--	--	--	--
Silver, d, µg/L	0.9996	1	1	2	2.03	3	3.02	5	5.23	--	--
Silver, tr, µg/L	1.0000	5	5	10	9.9	--	--	--	--	--	--
Uranium, d, µg/L	1.0000	25	24.7	100	98.5	500	501	--	--	--	--
Zinc, d, µg/L	1.0000	25	26.8	100	104	500	499	--	--	--	--
Calcium, d, mg/L	0.9999	0	0	0.1	0.11	0.5	0.47	1	0.98	3	3.11
		5.0	5.01	--	--	--	--	--	--	--	--
Calcium, d, mg/L	0.9998	0	0	1	1.03	5	4.62	10	10.2	30	30.25
		60	59.87	--	--	--	--	--	--	--	--
Magnesium, d, mg/L	0.9938	0	0	0.1	0.1	0.5	0.51	1	1.01	3	2.98
		5	5.22	--	--	--	--	--	--	--	--

Table 41.--Laboratory calibration results for data set 4, August 1995--Concluded

Analyte and measurement unit	Correlation	SV	OV	SV	OV	SV	OV	SV	OV	SV	OV
Magnesium, d, mg/L	0.9991	0	0	2.5	2.41	5	4.97	10	10.2	20	20.08
		35	34.94	--	--	--	--	--	--	--	--
Sodium, d, mg/L	1.0000	0.1	0.1	0.5	0.5	1	1	3	3	5	5
Sodium, d, mg/L	1.0000	1	1	10	10	25	25	50	50	100	100
Sodium, d, mg/L	0.9999	80	80	150	150	200	199	300	300	400	400.9
Potassium, d, mg/L	0.9998	0.1	0.1	1	1	2.5	2.5	5	5.01	10	9.97
Chloride, d, mg/L	1.0000	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Sulfate, d, mg/L	1.0000	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Solids, residue at 180 degrees Celsius, d	N/A	Gravimetric analysis; no calibration curve run									

Table 42.--Laboratory calibration results for data set 5, October 1995

[Correlation is the correlation coefficient of a line generated by plotting standard values against observed values; SV, standard value; OV, observed value; d, dissolved; µg/L, micrograms per liter; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter; N/A, not applicable]

Analyte and measurement unit	Correlation	SV	OV	SV	OV	SV	OV	SV	OV	SV	OV
Aluminum, d, µg/L	1.0000	100	108	500	510	--	--	--	--	--	--
Aluminum, tr, µg/L	1.0000	10,000	10,000	--	--	--	--	--	--	--	--
Antimony, d, µg/L	1.0000	25	22.85	100	96.4	500	505	--	--	--	--
Arsenic, d, µg/L	1.0000	1	0.98	3	3	5	4.98	10	9.99	20	20
Arsenic, t, µg/L	1.0000	1	1.04	3	2.98	5	4.95	10	10	20	20
Barium, d, µg/L	1.0000	25	24.99	100	99.3	500	501	--	--	--	--
Beryllium, d, µg/L	1.0000	25	24.66	100	99.7	--	--	--	--	--	--
Cadmium, d, µg/L	1.0000	25	24.78	100	97.3	500	500	--	--	--	--
Chromium, d, µg/L	1.0000	25	24.78	100	99.2	500	503	--	--	--	--
Cobalt, d, µg/L	1.0000	25	24.21	100	99.1	500	499	--	--	--	--
Copper, d, µg/L	1.0000	25	25.23	100	101	500	497	--	--	--	--
Lead, d, µg/L	1.0000	25	24.6	100	98.6	500	507	--	--	--	--
Manganese, d, µg/L	1.0000	25	24.95	100	99.2	500	501	--	--	--	--
Molybdenum, d, µg/L	1.0000	25	24.53	100	101	500	498	--	--	--	--
Nickel, d, µg/L	1.0000	25	24.6	100	100	500	491	--	--	--	--
Silver, d, µg/L	0.9986	1	1	2	1.98	3	2.97	5	5.12	--	--
Silver, tr, µg/L	1.0000	5	5	10	10.4	--	--	--	--	--	--
Uranium, d, µg/L	1.0000	25	23.78	100	98.3	500	501	--	--	--	--
Zinc, d, µg/L	1.0000	25	23.7	100	98.6	500	502	--	--	--	--
Calcium, d, mg/L, low	0.9992	0	-0.21	0.1	0.11	0.5	0.5	1	1.01	3	3.01
		5	5.06	--	--	--	--	--	--	--	--
Calcium, d, mg/L	0.9998	0	-0.21	1	0.9	5	4.89	10	9.79	30	30.5
		60	61.1	--	--	--	--	--	--	--	--
Magnesium, d, low, mg/L	0.9949	0	0	0.1	0.1	0.5	0.5	1	0.98	3	2.89
		5	4.89	--	--	--	--	--	--	--	--
Magnesium, d, mg/L	0.9987	0	-0.02	2.5	2.35	5	4.97	10	9.68	20	19.8
		35	35.4	--	--	--	--	--	--	--	--

Table 42.--Laboratory calibration results for data set 5, October 1995--Concluded

Analyte and measurement unit	Correlation	SV	OV	SV	OV	SV	OV	SV	OV	SV	OV
Sodium, d, mg/L	0.9999	0	0	1	1	10	10	25	25	50	50.1
		100	100	--	--	--	--	--	--	--	--
Potassium, d, mg/L	1.0000	0	0	0.1	0.1	1	1	2.5	2.5	5	5.01
		10	9.98	--	--	--	--	--	--	--	--
Chloride, d, mg/L	0.9999	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Sulfate, d, mg/L	0.9998	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Solids, residue at 180 degrees Celsius, d	N/A	Gravimetric analysis; no calibration curve run									

Table 43.--Laboratory calibration results for data set 6, February 1996

[Correlation is the correlation coefficient of a line generated by plotting standard values against observed values; SV, standard value; OV, observed value; d, dissolved; µg/L, micrograms per liter; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter; N/A, not applicable]

Analyte and measurement unit	Correlation	SV	OV	SV	OV	SV	OV	SV	OV	SV	OV
Aluminum, d, µg/L	1.0000	25	36.8	100	112	500	512	--	--	--	--
Aluminum, tr, µg/L	1.0000	10,000	10,000	--	--	--	--	--	--	--	--
Antimony, d, µg/L	1.0000	25	24.38	100	99.4	--	--	--	--	--	--
Arsenic, d, µg/L	1.0000	20	19.99	10	10	5	4.99	3	3.04	1	1
Arsenic, t, µg/L	1.0000	20	19.99	10	10	5	4.99	3	3.04	1	1
Barium, d, µg/L	1.0000	25	25.44	100	101	500	500	--	--	--	--
Beryllium, d, µg/L	1.0000	25	23.99	100	99	--	--	--	--	--	--
Cadmium, d, µg/L	1.0000	25	24.89	100	99.4	500	500	--	--	--	--
Chromium, d, µg/L	1.0000	25	23.89	100	98	500	500	--	--	--	--
Cobalt, d, µg/L	1.0000	25	23.81	100	98.8	--	--	--	--	--	--
Copper, d, µg/L	1.0000	25	24.93	100	100	500	500	--	--	--	--
Lead, d, µg/L	1.0000	25	24.89	100	99.3	500	512	--	--	--	--
Manganese, d, µg/L	1.0000	25	23.98	100	98.6	500	499	--	--	--	--
Molybdenum, d, µg/L	1.0000	25	23.97	100	97.3	500	500	--	--	--	--
Nickel, d, µg/L	1.0000	25	24.94	100	101	500	499	--	--	--	--
Silver, d, µg/L	0.9998	1	1	2	1.99	3	3.11	5	5.09	--	--
Silver, tr, µg/L	1.0000	5	5	10	9.5	--	--	--	--	--	--
Uranium, d, µg/L	1.0000	25	24.71	100	101	500	497	--	--	--	--
Zinc, d, µg/L	1.0000	25	24.65	100	100	500	499	--	--	--	--
Calcium, d, mg/L	0.9991	60	59.46	30	31.1	10	10.1	5	4.78	1	0.522
Magnesium, d, mg/L	0.9984	35	34.83	20	20.5	10	10	5	4.97	2.5	2.4
Sodium, d, low, mg/L	1.0000	0.1	0.1	0.5	0.5	1	1	3	3	5	5.01
Sodium, d, mid, mg/L	1.0000	1	1	10	10	25	25	50	50	100	100
Sodium, d, high, mg/L	1.0000	80	80	150	150	200	200	300	300	400	397
Potassium, d, mg/L	1.0000	0.1	0.1	1	1	2.5	2.5	5	5	10	10.01
Chloride, d, mg/L	1.0000	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Sulfate, d, mg/L	1.0000	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Solids, residue at 180 degrees Celsius, d	N/A	Gravimetric analysis; no calibration curve run									

Table 44.--Laboratory calibration results for data set 7, May 1996

[Correlation is the correlation coefficient of a line generated by plotting standard values against observed values; SV, standard value; OV, observed value; d, dissolved; µg/L, micrograms per liter; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter; N/A, not applicable]

Analyte and measurement unit	Correlation	SV	OV	SV	OV	SV	OV	SV	OV	SV	OV
Aluminum, d, µg/L	1.0000	25	25.5	100	99.4	500	504	--	--	--	--
Aluminum, tr, µg/L	1.0000	10,000	10,000	--	--	--	--	--	--	--	--
Antimony, d, µg/L	0.9999	25	22.54	100	93.2	500	512	--	--	--	--
Arsenic, d, µg/L	0.9994	20	20	10	9.99	5	5.06	1	1.04	--	--
Arsenic, t, µg/L	0.9994	20	20	10	9.99	5	5.06	1	1.04	--	--
Barium, d, µg/L	1.0000	25	24.93	100	99.4	500	500	--	--	--	--
Beryllium, d, µg/L	1.0000	25	24.73	100	99.7	--	--	--	--	--	--
Cadmium, d, µg/L	0.9999	25	24.37	100	95.6	500	515	--	--	--	--
Chromium, d, µg/L	1.0000	25	23.08	100	95.3	500	502	--	--	--	--
Cobalt, d, µg/L	1.0000	25	24	100	98.3	500	512	--	--	--	--
Copper, d, µg/L	1.0000	25	23.8	100	97.5	500	499	--	--	--	--
Lead, d, µg/L	1.0000	25	24.77	100	98.2	500	501	--	--	--	--
Manganese, d, µg/L	1.0000	25	22.87	100	94.2	500	499	--	--	--	--
Molybdenum, d, µg/L	1.0000	25	23.97	100	97.6	500	507	--	--	--	--
Nickel, d, µg/L	1.0000	25	24.17	100	98	500	502	--	--	--	--
Silver, d, µg/L	0.9997	1	1	2	1.91	3	3.03	5	5.15	--	--
Silver, tr, µg/L	1.0000	5	5	10	9.7	--	--	--	--	--	--
Uranium, d, µg/L	0.9999	25	23.29	100	92.6	500	503	--	--	--	--
Zinc, d, µg/L	1.0000	25	23.47	100	96.3	500	501	--	--	--	--
Calcium, d, mg/L	1.0000	0	0	10	10	--	--	--	--	--	--
Calcium, d, mg/L	1.0000	0	0	100	100	--	--	--	--	--	--
Magnesium, d, mg/L	1.0000	0	0	10	10	--	--	--	--	--	--
Sodium, d, mg/L	1.0000	0	0	10	10	--	--	--	--	--	--
Sodium, d, mg/L	1.0000	0	0	50	50	--	--	--	--	--	--
Potassium, d, mg/L	1.0000	0.1	0.1	1	1	2.5	2.5	5	5	10	10
Chloride, d, mg/L	1.0000	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Sulfate, d, mg/L	1.0000	0.1	0.1	0.5	0.5	1	1	5	5	10	10
		50	50	100	100	200	200	300	300	--	--
Solids, residue at 180 degrees Celsius, d	N/A	Gravimetric analysis; no calibration curve run									

Table 45.--Laboratory calibration results for data set 8, August 1996

[Correlation is the correlation coefficient of a line generated by plotting standard values against observed values; SV, standard value; OV, observed value; mg/L, milligrams per liter; N/A, not applicable; d, dissolved; µg/L, micrograms per liter; --, no data; tr, total recoverable; t, total]

Analyte and measurement unit	Correlation	SV	OV	SV	OV	SV	OV	SV	OV	SV	OV
Alkalinity, mg/L	N/A	No alkalinity standards									
Aluminum, d, µg/L	1.0000	25	27.1	100	102	500	501	--	--	--	--
Aluminum, tr, µg/L	1.0000	10,000	10,000	--	--	--	--	--	--	--	--
Antimony, d, µg/L	1.0000	25	23.74	100	98.1	500	501	--	--	--	--
Arsenic, d, µg/L	0.9999	20	19.99	10	10.1	5	4.9	3	2.83	1	1.04
Arsenic, t, µg/L	0.9996	20	19.7	10	10.1	5	4.49	3	3.47	1	1.19
Barium, d, µg/L	1.0000	25	24.89	100	102	500	493	--	--	--	--
Beryllium, d, µg/L	1.0000	100	98.6	500	499	--	--	--	--	--	--
Cadmium, d, µg/L	1.0000	25	24.87	100	102	500	494	--	--	--	--
Chromium, d, µg/L	1.0000	25	24.42	100	99.2	500	502	--	--	--	--
Cobalt, d, µg/L	1.0000	25	24.58	100	100	500	491	--	--	--	--
Copper, d, µg/L	1.0000	25	24.48	100	99.7	500	494	--	--	--	--
Lead, d, µg/L	1.0000	25	24.54	100	100	500	494	--	--	--	--
Manganese, d, µg/L	1.0000	25	24.39	100	99.7	500	494	--	--	--	--
Molybdenum, d, µg/L	1.0000	25	24.33	100	100	500	499	--	--	--	--
Nickel, d, µg/L	1.0000	25	24.69	100	99.7	500	500	--	--	--	--
Silver, d, µg/L	0.9994	1	1	2	2	3	3.02	5	5.25	--	--
Silver, tr, µg/L	1.0000	5	5	10	10.2	--	--	--	--	--	--
Uranium, d, µg/L	1.0000	25	24.28	100	99.3	--	--	--	--	--	--
Zinc, d, µg/L	1.0000	25	25.6	100	101	500	501	--	--	--	--
Calcium, d, mg/L	1.0000	10	10	50	50	--	--	--	--	--	--
Magnesium, d, mg/L	1.0000	10	10	50	50	--	--	--	--	--	--
Sodium, d, mg/L	1.0000	10	10	50	50	--	--	--	--	--	--
Potassium, d, mg/L	1.0000	0.1	0.1	1	1	2.5	2.5	5	5	10	10
Chloride, d, mg/L	0.9999	0.1	0.1	1	1	5	5	10	10	50	50
		100	100	200	200	300	300	--	--	--	--
Sulfate, d, mg/L	0.9997	0.1	0.1	1	1	5	5	10	10	50	50
		100	100	200	200	300	300	--	--	--	--
Solids, residue at 180 degrees Celsius, d	N/A	Gravimetric analysis; no calibration curve run									

Table 46.--Standard reference water-sample results for data set 1, October/November 1994

[SRWS, standard reference water sample; MPV, most probable value; OV, observed value; mg/L, milligrams per liter; --, no data; d, dissolved; µg/L, micrograms per liter; N\V, no published certified value; tr, total recoverable; t, total]

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRW number	MPV	OV	Percent recovery
Alkalinity (11-01-94), mg/L	M122	38	39	102.63	M126	27	27	100.00	M128	169	173	102.37
	M130	60	60	100.00	--	--	--	--	--	--	--	--
Alkalinity (11-14-94), mg/L	M122	38	38.7	101.84	M126	27	28	103.70	M128	169	172	101.78
	M130	60	59.5	99.17	--	--	--	--	--	--	--	--
Aluminum, d, µg/L	1643B	N\V	1.9	--	T121	85.5	73.49	85.95	T123	10	6.73	67.30
	T127	85.5	72.3	84.56	T127	85.50	71.47	83.59	--	--	--	--
Aluminum, tr, µg/L	T117	79	77.7	98.35	T119	171	170	99.42	T121	85.5	93.4	109.24
	T129	50	44.6	89.20	T121	85.5	92.9	108.65	--	--	--	--
Antimony, d, µg/L	1643B	N\V	0.13	--	T121	7.61	7.8	102.50	T123	6.99	7.77	111.16
	T127	5.15	5.51	106.99	T127	5.15	5.99	116.31	--	--	--	--
Arsenic, d, µg/L	T93	5.4	5.8	107.41	T95	1	0.8	80.00	T99	5.8	7	120.69
	T105	2.3	3.2	139.13	T115	14	15.1	107.86	--	--	--	--
Arsenic, t, µg/L	T93	5.4	5.9	109.26	T95	1	1	100.00	T99	5.8	6.1	105.17
	T105	2.3	3	130.43	--	--	--	--	--	--	--	--
Barium, d, µg/L	1643B	44	41.49	94.30	T121	46.3	47.9	103.46	T123	7.65	8.25	107.84
	T127	20.6	23	111.60	T127	20.60	23.57	114.42	--	--	--	--
Beryllium, d, µg/L	1643B	19	20.53	108.05	T121	10.6	10.32	97.36	T123	8.1	9.35	115.43
	T127	14	18.4	131.71	T127	14.00	19.8	141.43	--	--	--	--

Table 46.--Standard reference water-sample results for data set 1, October/November 1994--Continued

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRW number	MPV	OV	Percent recovery
Cadmium, d, µg/L	1643B	20	18.5	92.50	T121	7.17	6.75	94.14	T123	5.86	5.11	87.20
	T127	8.34	8.17	97.96	T127	8.34	7.38	88.49	--	--	--	--
Chromium, d, µg/L	1643B	18.6	19.06	102.47	T121	16	16.4	102.50	T123	10.7	10.5	98.13
	T127	11.5	11.3	98.61	T127	11.50	11	95.65	--	--	--	--
Cobalt, d, µg/L	1643B	26	27.87	107.19	T121	4.6	3.92	85.22	T123	5.27	4.96	94.12
	T127	11.6	11	95.00	T127	11.60	9.76	84.14	--	--	--	--
Copper, d, µg/L	1643B	21.9	22.31	101.87	T121	4.8	4.35	90.63	T123	10.2	8.77	85.98
	T127	42	37.5	99.38	T127	42.00	38.61	91.93	--	--	--	--
Lead, d, µg/L	1643B	23.7	19.32	81.52	T121	7.75	6.79	87.61	T123	9.8	9.49	96.84
	T127	3.25	3.48	107.08	T127	3.25	3.71	114.15	--	--	--	--
Manganese, d, µg/L	1643B	28	29.56	105.57	T121	28.5	26.8	94.04	T123	13.6	12.62	92.79
	T127	5.43	5.13	94.48	T127	5.43	4.56	83.98	--	--	--	--
Molybdenum, d, µg/L	1643B	85	96.28	113.27	T121	12	11.44	95.33	T123	9.2	9.11	99.02
	T127	1.25	0.39	31.20	T127	1.25	0.49	39.20	--	--	--	--
Nickel, d, µg/L	1643B	49	51.1	104.29	T121	8.29	7.67	92.52	T123	4.3	4.22	98.14
	T127	9	8.23	91.44	T127	9.00	9.57	106.33	--	--	--	--
Silver, d, µg/L	T121	0.9	0.73	81.11	T123	1.4	1.1	78.57	T125	3.8	3.97	104.47
Silver, tr, µg/L	T119	4	4.1	102.50	T121	0.9	0.8	88.89	T123	1.4	1.1	78.57
Uranium, d, µg/L	1643B	N\V	0	--	T121	0.24	0.21	87.50	T123	0.26	0.25	96.15
	T127	0.8	0.8	100.00	T127	0.80	0.84	105.00	--	--	--	--

Table 46.--Standard reference water-sample results for data set 1, October/November 1994--Continued

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRW number	MPV	OV	Percent recovery
Zinc, d, µg/L	1643B	66	60.9	92.27	T121	18	16.91	93.94	T123	6	3.85	64.17
	T127	32.9	29.9	90.94	T127	32.90	28.1	85.41	--	--	--	--
Calcium, d (11-01-94), mg/L	M6	25.7	25.6	99.61	T111	20.3	20.4	100.49	M116	41.2	41.7	101.21
	M6	25.7	25.8	100.39	T111	20.3	20.5	100.99	--	--	--	--
Calcium, d (11-14-94), mg/L	M6	25.7	25.6	99.61	T111	20.3	20.7	101.97	M116	41.2	42.1	102.18
	M104	56.1	57.5	102.50	--	--	--	--	--	--	--	--
Magnesium, d (11-01-94), mg/L	M6	10.6	10.6	100.00	T111	5.97	6.05	101.34	M116	9.7	10.2	105.15
	M6	10.6	10.7	100.94	T111	5.97	6.02	100.84	--	--	--	--
Magnesium, d (11-14-94), mg/L	M6	10.6	10.3	97.17	T111	5.97	5.95	99.66	M116	9.7	9.9	102.06
	M104	35	32.9	94.00	--	--	--	--	--	--	--	--
Sodium, d (11-01-94), mg/L	T107	20.8	20.5	98.56	M116	64.3	63.1	98.13	--	--	--	--
Sodium, d (11-14-94), mg/L	M6	8.32	8	96.15	M116	64.3	64.5	100.31	T107	20.8	20.6	99.04
	M116	64.3	63.2	98.29	T107	20.8	20.2	97.12	--	--	--	--
Sodium, d (11-14-94), mg/L	M102	108	103	95.37	T99	323	304.6	94.30	M102	108	103.6	95.93
	T99	323	308	95.26	M102	108	110.8	102.59	--	--	--	-

Table 46.--Standard reference water-sample results for data set 1, October/November 1994--Concluded

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRW number	MPV	OV	Percent recovery
Sodium, d (11-14-94), mg/L	M100	281	273	97.15	T99	323	309	95.67	M102	108	103	95.37
	M102	110.8	104	93.86	M100	281	276.3	98.33	--	--	--	--
Potassium, d (11-01-94), mg/L	M120	3.9	3.61	92.56	M102	6.7	6.56	97.91	--	--	--	--
Potassium, d (11-14-94), mg/L	M130	3	2.84	94.67	M102	6.7	6.58	98.21	M126	2.62	2.5	95.42
	M122	1.19	1.07	89.92	M116	4.9	5.1	104.08	--	--	--	--
Chloride, d (11-01-94), mg/L	M122	56.1	55.8	99.47	M120	7.6	7.65	100.66	M116	208	208.5	100.24
	P18	0.94	0.91	96.81	M104	69.2	72.1	104.19	--	--	--	--
Chloride, d (11-14-94), mg/L	M122	56.1	55.85	99.55	M120	7.6	7.7	101.32	M116	208	209.8	100.87
	P18	0.94	0.88	93.62	M128	98.2	102.5	104.38	--	--	--	--
Sulfate, d (11-01-94), mg/L	M122	9.6	9.64	100.42	M120	155	155	100.00	M116	97	104	107.22
	P18	1.6	1.9	118.75	M104	225	223	99.11	--	--	--	--
Sulfate, d (11-14-94), mg/L	M122	9.6	8.59	99.48	M120	155	152.2	98.19	M116	97	103.5	106.70
	P18	1.6	1.4	87.50	M128	206	204.2	99.13	--	--	--	--
Solids, residue at 180 degrees Celsius, d, mg/L	M122	170	166	97.65	M128	689	700	101.60	--	--	--	--

Table 47.--Standard reference water-sample results for data set 2, February 1995

[SRWS, standard reference water sample; MPV, most probable value; OV, observed value; d, dissolved; µg/L, micrograms per liter; N\V, no published certified value; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Aluminum, d, µg/L	1643B	N\V	1.98	--	T121	85.5	77.28	90.39	T123	10	10.31	103.10
	T127	85.5	69.8	81.61	T123	10.00	9.46	94.60	--	--	--	--
Aluminum, tr, µg/L	T119	171	173	101.17	T121	85.5	95.6	111.81	T117	79	71	89.87
	T121	85.5	83	97.08	T119	171.00	179	104.68	--	--	--	--
Antimony, d, µg/L	1643B	N\V	0.08	--	T121	7.61	7.24	95.14	T123	6.99	7.04	100.72
	T127	5.15	5.05	98.06	T123	6.99	6.96	99.57	--	--	--	--
Arsenic, d, µg/L	T115	12.5	12.5	100.00	T117	6.9	7.9	114.49	T105	2.3	3.1	134.78
	T125	10.2	11.2	109.80	--	--	--	--	--	--	--	--
Arsenic, t, µg/L	T95	1	0.85	85.00	T99	5.8	6	103.45	T105	2.3	3.2	139.13
	T115	12.5	11.3	90.40	T117	6.9	7.5	108.70	--	--	--	--
Barium, d, µg/L	1643B	44	43.06	97.86	T121	46.3	43.9	94.82	T123	7.65	7.61	99.48
	T127	20.6	22.1	107.18	T123	7.65	8.29	108.37	--	--	--	--
Beryllium, d, µg/L	1643B	19	19.69	103.63	T121	10.6	10.08	95.09	T123	8.1	9.07	111.98
	T127	14	16.9	120.71	T123	8.10	9.33	115.19	--	--	--	--
Cadmium, d, µg/L	1643B	20	19.15	95.75	T121	7.17	7.11	99.16	T123	5.86	5.82	99.32
	T127	8.34	8.33	99.88	T123	5.86	5.86	100.00	--	--	--	--
Chromium, d, µg/L	1643B	18.6	18.6	100.00	T121	16	15.63	97.69	T123	10.7	10.29	96.17
	T127	11.5	9.9	86.09	T123	10.70	9.34	87.29	--	--	--	--

Table 47.--Standard reference water-sample results for data set 2, February 1995--Continued

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Cobalt, d, µg/L	1643B	26	27.96	107.54	T121	4.6	4.4	95.65	T123	5.27	5.14	97.53
	T127	11.6	10.2	88.10	T123	5.27	4.78	90.70	--	--	--	--
Copper, d, µg/L	1643B	21.9	22.3	101.83	T121	4.8	4.78	99.58	T123	10.2	10.56	103.53
	T127	42	38.9	92.69	T123	10.20	9.78	95.88	--	--	--	--
Lead, d, µg/L	1643B	23.7	19.88	83.88	T121	7.75	7.27	93.81	T123	9.8	9.7	98.98
	T127	3.25	3.2	98.46	T123	9.80	9.57	97.65	--	--	--	--
Manganese, d, µg/L	1643B	28	29.7	106.07	T121	28.5	27.09	95.05	T123	13.6	12.65	93.01
	T127	5.43	4.68	86.19	T123	13.60	11.94	87.79	--	--	--	--
Molybdenum, d, µg/L	1643B	85	100.4	118.12	T121	12	12.25	102.08	T123	9.2	8.85	96.20
	T127	1.25	0.65	52.00	T123	9.20	9.06	98.48	--	--	--	--
Nickel, d, µg/L	1643B	49	49.95	101.94	T121	8.29	8.23	99.28	T123	4.3	4.45	103.49
	T127	9	7.81	86.78	T123	4.30	4.09	95.12	--	--	--	--
Silver, d, µg/L	T121	0.9	0.98	108.89	T123	1.4	1.04	74.29	T125	3.8	4.14	108.95
Silver, tr, µg/L	T119	4	4.9	122.50	T121	0.9	1.1	122.22	T123	1.4	1.2	85.71
	T119	4	3.6	90.00	--	--	--	--	--	--	--	--
Uranium, d, µg/L	T121	0.24	0.18	75.00	T123	0.26	0.24	92.31	T127	0.8	0.81	101.25
	T123	0.26	0.26	100.00	--	--	--	--	--	--	--	--
Zinc, d, µg/L	1643B	66	60.24	91.27	T121	18	17.14	95.22	T123	6	5.02	83.67
	T127	32.9	30.1	91.58	T123	6.0	4.43	73.83	--	--	--	--

Table 47.--Standard reference water-sample results for data set 2, February 1995--Concluded

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Calcium, d, mg/L	M6	25.7	26.5	103.11	T111	20.3	21.1	103.94	M116	41.2	42.7	103.64
	M104	56.1	57.1	101.78	M6	25.70	27.2	105.84	--	--	--	--
Magnesium, d, mg/L	M6	10.6	10.2	96.23	T111	5.97	5.91	98.99	M116	9.7	9.51	98.04
	M104	33	31.6	95.76	M6	10.60	10.80	101.89	--	--	--	--
Sodium, d, mg/L	T107	20.8	20.3	97.60	M116	64.3	64.2	99.84	T107	20.8	20.4	98.08
Potassium, d, mg/L	M130	3	2.9	96.67	M102	6.7	6.61	98.66	M126	2.62	2.49	95.04
Chloride, d, mg/L	M122	56.1	56.7	101.07	M120	7.6	8.15	107.24	M130	21.4	21.6	100.93
	P18	0.94	0.97	103.19	--	--	--	--	--	--	--	--
Sulfate, d, mg/L	M122	9.6	8.79	91.56	M120	155	155.8	100.52	M130	58	55	94.83
	P18	1.6	1.49	93.13	--	--	--	--	--	--	--	--
Solids, residue at 180 degrees Celsius, d, mg/L	M122	170	160	94.12	M128	689	688	99.85	--	--	--	--

Table 48.--Standard reference water-sample results for data set 3, May 1995

[SRWS, standard reference water sample; MPV, most probable value; OV, observed value; d, dissolved; µg/L, micrograms per liter; --, no data; tr, total recoverable; t, total; DL CK, detection limit check; mg/L, milligrams per liter]

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Aluminum, d, µg/L	T121	85.5	80.3	93.94	1643b	--	5.58	--	T123	10	8.11	81.10
	T123	10	8.2	82.40	T123	10.00	8.13	81.30	--	--	--	--
Aluminum, tr, µg/L	T117	79	76.5	96.84	T121	85.5	85.9	100.47	T129	52	47	91.09
	T117	79	78	98.73	T121	85.50	77.9	91.11	--	--	--	--
Antimony, d, µg/L	T121	7.61	7.76	101.97	1643b	--	0.14	--	T123	7	7.05	100.86
	T123	6.99	7.1	100.86	T123	6.99	7.29	104.29	--	--	--	--
Arsenic, d, µg/L	T99	5.8	6.34	109.31	T105	2.3	3.22	140.00	T117	6.9	7.09	102.75
	T119	4.2	5	117.86	--	--	--	--	--	--	--	--
Arsenic, t, µg/L	T95	1.04	0.95	91.35	T99	5.8	6.2	106.90	T117	6.9	8.1	117.39
	T119	4.2	5.3	126.19	--	--	--	--	--	--	--	--
Barium, d, µg/L	T121	46.3	45.8	99.01	1643b	44	44.9	102.02	T123	7.7	7.67	100.26
	T123	7.65	8.1	106.01	T123	7.65	8.06	105.36	--	--	--	--
Beryllium, d, µg/L	T121	10.6	10	94.72	1643b	19	19.7	103.53	T123	8.1	8.29	102.35
	123	8.1	8.6	106.05	T123	8.10	8.78	108.40	--	--	--	--
Cadmium, d, µg/L	T121	7.17	7.24	100.98	1643b	20	18.8	93.85	T123	5.9	5.74	97.95
	T123	5.86	5.8	98.46	T123	5.86	5.94	101.37	--	--	--	--
Chromium, d, µg/L	T121	16	15.3	95.31	1643b	18.6	19	102.10	T123	11	10.1	93.93
	T123	10.7	10	96.36	T123	10.70	10.2	95.23	--	--	--	--

Table 48.--Standard reference water-sample results for data set 3, May 1995--Continued

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Cobalt, d, µg/L	T121	4.6	4.56	99.13	1643b	26	30.7	118.12	T123	5.3	5.25	99.62
	T123	5.27	5.4	103.04	T123	5.27	5.35	101.52	--	--	--	--
Copper, d, µg/L	T121	4.8	4.84	100.83	1643b	21.9	23.2	105.75	T123	10	10.6	104.31
	T123	10.2	11	109.61	T123	10.20	10.9	107.06	--	--	--	--
Lead, d, µg/L	T121	7.75	7.76	100.13	1643b	23.7	22.1	93.29	T123	9.8	10.3	104.90
	T123	9.8	11	107.79	T123	9.80	10.5	106.94	--	--	--	--
Manganese, d, µg/L	T121	28.5	28.4	99.58	1643b	28	32.9	117.32	T123	14	13.4	98.68
	T123	13.6	14	100.00	T123	13.60	13.5	99.04	--	--	--	--
Molybdenum, d, µg/L	T121	12	12.2	102.00	1643b	85	99.3	116.80	T123	9.2	8.91	96.85
	T123	9.2	8.8	96.09	T123	9.20	8.55	92.93	--	--	--	--
Nickel, d, µg/L	T121	8.29	8.7	104.95	1643b	49	51.9	105.96	T123	4.3	4.57	106.28
	T123	4.3	4.9	114.88	T123	4.30	4.98	115.81	--	--	--	--
Silver, d, µg/L	T121	0.9	0.97	107.78	DL CK	0.5	0.48	96.00	T123	1.4	0.9	64.29
	T125	3.8	3.5	91.05	T103	3.3	2.43	73.64	--	--	--	--
Silver, tr, µg/L	T119	4	3.9	97.50	T121	0.9	1.4	155.56	T123	1.4	1	71.43
	T125	3.8	3.7	97.37	T127	2.7	2.6	96.30	--	--	--	--
Uranium, d, µg/L	T121	0.24	0.22	91.67	1643b	--	0.01	--	T123	0.3	0.26	100.00
	T123	0.26	0.3	103.85	T123	0.26	0.28	107.69	--	--	--	--
Zinc, d, µg/L	T121	18	18.4	102.44	1643b	66	60.6	91.83	T123	6	5.22	87.00
	T123	6	4.9	82.33	T123	6.00	5	83.33	--	--	--	--

Table 48.--Standard reference water-sample results for data set 3, May 1995--Concluded

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Calcium, d, low, mg/L	P14	3.8	3.76	98.95	P15	0.38	0.39	102.37	P16	0.60	0.63	105.67
	P17	0.30	0.3	107.33	T123	9.20	8.55	92.93	--	--	--	--
Calcium, d, high, mg/L	M6	25.7	26.8	104.28	M104	56.1	56.4	100.53	T111	20.30	20.2	99.51
	M116	41.20	42	100.73	T123	13.60	13.5	99.04	--	--	--	--
Magnesium, d, low, mg/L	P14	0.71	0.71	100.14	P15	0.07	0.07	97.14	P16	0.09	0.09	103.33
	P17	0.05	0	80.00	--	--	--	--	--	--	--	--
Magnesium, d, high, mg/L	M6	10.6	10.6	100.00	M6	10.6	10.5	99.06	M104	33	34.8	105.45
	T111	5.97	6.1	102.68	M116	9.70	9.82	101.26	M130	335.00	339	101.19
Sodium, d, low, mg/L	P14	1.4	1.4	100.00	P17	0.28	0.31	110.71	P15	0.9	0.9	98.90
Sodium, d, mid, mg/L	M6	8.2	8.7	106.10	T107	20.8	21	100.96	M6	8.2	8.7	106.10
Sodium, d, high, mg/L	M102	108	104	96.39	M100	281	279	99.22	T99	323	316	97.71
Potassium, d, mg/L	M102	6.7	6.86	102.39	M126	2.62	2.52	96.18	M130	3	2.92	97.33
Chloride, d, mg/L	M118	55	53.4	97.09	M120	7.6	7.7	101.32	M128	98.20	96.6	98.37
	M130	21.40	23	105.61	M132	55.70	54	96.95	P18	0.94	0.89	94.68
	P22	2.92	3.06	104.79	--	--	--	--	--	--	--	--
Sulfate, d, mg/L	M118	126	124	98.49	M120	155	155	99.87	M122	9.6	9.2	95.83
	M128	206.00	206	100.10	M130	58.00	56.9	98.10	M132	60.00	59.1	98.50
	P18	1.60	1.55	96.88	P22	0.73	0.69	94.78	--	--	--	--
Solids, residue at 180 degrees Celsius, d, mg/L	M122	170	160	94.12	M128	689	696	101.02	--	--	--	--

Table 49.--Standard reference water-sample results for data set 4, August 1995

[SRWS, standard reference water sample; MPV, most probable value; OV, observed value; d, dissolved; µg/L, micrograms per liter; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Aluminum, d, µg/L	T123	10	7.78	77.80	T127	85	78.24	92.05	T117	79	70.09	88.72
	T117	79.00	72.99	92.39	--	--	--	--	--	--	--	--
Aluminum, tr, µg/L	T117	79	81	102.53	T121	85.5	85	99.42	T119	171	174	101.75
	T127	85	82	96.47	T117	79	88	111.39	--	--	--	--
Antimony, d, µg/L	T123	6.99	7	100.14	T127	5.15	5.04	97.86	T117	5.5	5.65	102.73
	T117	5.50	5.52	100.36	--	--	--	--	--	--	--	--
Arsenic, d, µg/L	T95	0.95	0.92	96.84	T125	10.2	10.52	103.14	T127	4.4	5.04	114.55
	T99	5.8	5.91	101.90	T117	6.90	7.82	113.33	T119	4.2	4.79	114.05
Arsenic, t, µg/L	T95	0.95	0.96	101.05	T125	10.2	10	99.04	T127	4.4	4.14	94.09
	T99	5.8	5.19	89.48	--	--	--	--	--	--	--	--
Barium, d, µg/L	1643b	44	40.32	91.64	T123	7.65	7.27	95.03	T127	20.6	19.05	92.48
	T117	98.5	94.38	95.82	T117	98.50	96.68	98.15	--	--	--	--
Beryllium, d, µg/L	1643b	19	19.37	101.95	T123	8.1	8.88	109.63	T127	14	13.73	98.07
	T117	4.8	4.38	91.25	T117	4.8	4.76	99.17	--	--	--	--
Cadmium, d, g/L	1643b	20	19.42	97.10	T123	5.86	5.12	87.37	T127	8.34	8.42	100.96
	T117	2.2	1.94	88.18	T117	2.2	2.35	106.82	--	--	--	--
Chromium, d, µg/L	1643b	18.6	18.43	99.09	T123	10.7	10.19	95.23	T127	11.5	11.22	97.57
	T117	10.35	9.28	89.66	T117	10.35	9.16	88.50	--	--	--	--

Table 49.--Standard reference water-sample results for data set 4, August 1995--Continued

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Cobalt, d, µg/L	1643b	26	29.48	113.38	T123	5.27	5.56	105.50	T127	11.6	11.81	101.81
	T117	4.4	4.31	97.95	T117	4.4	4.45	101.14	--	--	--	--
Copper, d, µg/L	1643b	21.9	22.73	103.79	T123	10.2	10.86	106.47	T127	42	43.39	103.31
	T117	6	5.85	97.50	T117	6.00	6.34	105.67	--	--	--	--
Lead, d, µg/L	1643b	23.7	20.01	84.43	T123	9.8	10.03	102.35	T127	3.25	3.6	110.77
	T117	5	5.05	101.00	T117	5	5.1	102.00	--	--	--	--
Manganese, d, µg/L	1643b	28	30.73	109.75	T123	13.6	13.12	96.47	T127	5.43	5.36	98.71
	T117	220	208.3	94.69	T117	220.00	213.89	97.22	--	--	--	--
Molybdenum, d, µg/L	1643b	85	97.97	115.26	T123	9.2	8.67	94.24	T127	1.25	0.5	40.00
	T117	11.8	11.6	98.31	T117	11.8	11.45	97.03	--	--	--	--
Nickel, d, µg/L	1643b	49	51.4	104.90	T123	4.3	5.1	118.60	T127	9	9.59	106.56
	T117	10	9.45	94.50	T117	10.00	10.28	102.80	--	--	--	--
Silver, d, µg/L	T121	0.9	1.27	141.11	T123	1.44	1.48	102.78	T125	3.83	3.34	87.21
	T127	2.74	2.62	95.62	--	--	--	--	--	--	--	--
Silver, tr, µg/L	T119	4	3.3	82.50	T121	0.9	1.2	133.33	T123	1.44	1.3	90.28
	T125	3.83	3.9	101.83	--	--	--	--	--	--	--	--
Uranium, d, µg/L	T123	0.27	0.22	81.48	T127	0.8	0.79	98.75	T117	2	1.89	94.50
	T117	2	2	100.00	--	--	--	--	--	--	--	--
Zinc, d, µg/L	1643b	66	68.64	104.00	T123	6	4.67	77.83	T127	32.9	34.49	104.83
	T117	176	176.4	100.24	T117	176.00	181.78	103.28	--	--	--	--

Table 49.--Standard reference water-sample results for data set 4, August 1995--Concluded

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Calcium, d, mg/L	M6	25.7	24.9	96.89	M111	20.3	20.8	102.46	M116	41.2	41.4	100.49
	M104	56.1	55.2	98.40	M6	25.70	25	97.28	M111	20.3	21.4	105.42
Magnesium, d, mg/L	M6	10.6	10.6	100.00	M111	5.97	6.2	103.85	M116	9.7	9.84	--
	M104	33	32.8	99.39	M6	10.6	10.5	99.06	M111	5.97	6	100.50
Sodium, d, mg/L	T107	20.8	20.7	99.52	M116	64.3	64	99.53	M6	8.2	8.7	106.10
	M6	8.2	9	109.76	T99	323	329	101.86	M100	281	278.4	99.07
Potassium, d, mg/L	M130	3	2.94	98.00	M102	6.7	6.49	96.87	M126	2.62	2.36	90.08
Chloride, d, mg/L	P13	0.12	0.08	66.67	M120	7.6	7.59	99.87	M130	21.4	20.98	98.04
	M132	55.7	54.07	97.07	P18	0.94	0.9	95.74	M126	20.7	19.53	94.35
Sulfate, d, mg/L	P13	0.17	0.18	105.88	M120	155	155	100.00	M130	58	56.56	97.52
	M132	60	58.39	97.32	P18	1.60	1.26	78.75	M126	6.06	5.7	94.06
Solids, residue at 180 degrees Celsius, d, mg/L	M122	170	163	95.88	M128	689	696	101.02	--	--	--	--

Table 50.--Standard reference water-sample results for data set 5, October 1995

[SRWS, standard reference water sample; MPV, most probable value; OV, observed value; d, dissolved; µg/L, micrograms per liter; --, no data; tr, total recoverable; t, total; mg/L, milligrams per liter]

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Aluminum, d, µg/L	1643b	--	1.9	--	T123	10	8.46	84.60	T123	10	8.36	83.60
	T117	79	72.3	91.56	T127	85.00	78.18	91.98	--	--	--	--
Aluminum, tr, µg/L	T117	79	69.3	87.72	T123	85	74	87.06	T125	24	17.4	72.50
	T127	85	83	97.65	T117	79	83.7	105.95	--	--	--	--
Antimony, d, µg/L	1643b	--	0.46	--	T123	6.99	6.94	99.28	T123	6.99	7.08	101.29
	T117	5.5	5.65	102.73	T127	5.15	5.16	100.19	--	--	--	--
Arsenic, d, µg/L	T95	0.95	0.8	84.21	T125	10.2	10.7	104.90	T127	4.4	4.3	97.73
	T123	20.2	20.7	102.48	--	--	--	--	--	--	--	--
Arsenic, t, µg/L	T95	0.95	0.8	84.21	T125	10.2	10.5	102.94	T127	4.4	4.4	100.00
	T123	20.2	21.3	105.45	T99	5.80	6	103.45	--	--	--	--
Barium, d, µg/L	1643b	44	40.74	92.59	T123	7.65	7.7	100.65	T123	7.65	7.52	98.30
	T117	98.5	96	97.41	T127	20.60	21.72	105.44	--	--	--	--
Beryllium, d, µg/L	1643b	19	19.33	104.89	T123	8.1	8.63	106.54	T123	8.1	8.9	109.88
	T117	4.8	5.17	107.71	T127	14	15.97	114.07	--	--	--	--
Cadmium, d, µg/L	1643b	20	19.43	97.15	T123	5.86	5.45	93.00	T123	5.86	5.82	99.32
	T117	2.2	2.4	109.09	T127	8.34	8.37	100.36	--	--	--	--
Chromium, d, µg/L	1643b	18.6	18.04	96.99	T123	10.7	9.93	92.80	T123	10.7	10.57	98.79
	T117	10.35	10.2	98.94	T127	11.5	11.88	103.30	--	--	--	--

Table 50.--Standard reference water-sample results for data set 5, October 1995--Continued

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Cobalt, d, µg/L	1643b	26	27.51	105.81	T123	5.27	5.37	101.90	T123	5.27	5.56	105.50
	T117	4.4	4.65	105.68	T127	11.6	12.37	106.64	--	--	--	--
Copper, d, µg/L	1643b	21.9	22.17	101.23	T123	10.2	10.64	104.31	T123	10.2	11.47	112.45
	T117	6	7.1	118.33	T127	42.00	45.83	109.12	--	--	--	--
Lead, d, µg/L	1643b	23.7	19.36	81.69	T123	9.8	9.74	99.39	T123	9.8	9.71	99.08
	T117	5	4.68	93.60	T127	3.25	3.42	105.23	--	--	--	--
Manganese, d, µg/L	1643b	28	29.96	107.00	T123	13.6	12.95	95.22	T123	13.6	13.35	98.16
	T117	220	217	98.75	T127	5.43	5.44	100.18	--	--	--	--
Molybdenum, d, µg/L	1643b	85	100.8	118.55	T123	9.2	8.75	95.11	T123	9.2	9.36	101.74
	T117	11.8	12.7	107.54	T127	1.25	0.53	42.40	--	--	--	--
Nickel, d, µg/L	1643b	49	49.75	101.53	T123	4.3	4.06	94.42	T123	4.3	5.15	119.77
	T117	10	12.4	123.90	T127	9	10.35	115.00	--	--	--	--
Silver, d, µg/L	T121	0.9	1.28	142.22	T123	1.44	1.53	106.25	T125	3.83	3.3	86.16
	T127	2.74	2.8	102.19	--	--	--	--	--	--	--	--
Silver, tr, µg/L	T119	4	3.6	90.00	T121	0.9	1.1	122.22	T123	1.44	1.7	118.06
	T133	7.44	7.5	100.81	--	--	--	--	--	--	--	--
Uranium, d, µg/L	1643b	--	0.01	--	T123	0.27	0.3	111.11	T123	0.27	0.25	92.59
	T117	2	1.93	96.50	T127	0.8	0.83	103.75	--	--	--	--
Zinc, d, µg/L	1643b	66	67.57	102.38	T123	6	5.48	91.33	T123	6	6.42	107.00
	T117	176	175	99.44	T127	32.90	33.73	102.52	--	--	--	--

Table 50.--Standard reference water-sample results for data set 5, October 1995--Concluded

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Calcium, d, mg/L	M6	26.5	25.6	96.60	M116	42.5	41.2	96.94	T111	20.8	20.3	97.60
	M104	57.2	56.1	98.08	M6	26.20	25.6	97.71	M116	42.3	41.2	97.40
	T111	21	20.3	96.67	M104	57.4	56.1	97.74	--	--	--	--
Magnesium, d, mg/L	M6	10.6	10.6	100.00	M116	9.74	9.7	99.59	T111	6.1	5.97	97.87
	M104	32.7	33	100.92	M6	10.3	10.6	102.91	M116	9.71	9.7	99.90
	T111	6.13	5.97	97.39	M104	32.5	33	101.54	--	--	--	--
Sodium, d, mg/L	T107	20.8	20.6	99.04	M6	8.2	8.4	102.44	--	--	--	--
Potassium, d, mg/L	M130	3	2.99	99.67	M126	2.62	2.46	93.89	M102	6.7	6.79	101.34
Chloride, d, mg/L	P22	2.92	2.967	101.61	M132	55.7	56.25	100.99	M112	46	49.28	107.12
	M118	55	55.6	101.06	P22	2.92	2.908	99.59	M122	56.1	56.83	101.30
Sulfate, d, mg/L	P22	0.728	0.688	94.51	M132	60	59.42	99.03	M112	25	23.7	94.81
	M118	126	125	99.16	P22	0.73	0.547	75.14	M122	9.6	9.13	95.10
Solids, residue at 180 degrees Celsius, d, mg/L	M122	170	153	90.00	M128	689	686	99.56	--	--	--	--

Table 51.--Standard reference water-sample results for data set 6, February 1996

[SRWS, standard reference water sample; MPV, most probable value; OV, observed value; d, dissolved; µg/L, micrograms per liter; --, no data; tr, total recoverable; t, total; DL CK, detection limit check; mg/L, milligrams per liter]

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Aluminum, d, µg/L	1643b	--	22.91	--	T117	79	73.17	92.62	T133	52.1	49.42	94.86
	T117	79	75	94.94	1643b	--	22.27	--	--	--	--	--
Aluminum, tr, µg/L	T127	85	78.8	92.71	T117	79	72	91.14	T117	79	70	88.61
	T121	85.5	82.5	96.49	T117	79	72	91.14	--	--	--	--
Antimony, d, µg/L	1643b	--	0.34	--	T117	5.5	6.26	113.82	T133	14.4	15.77	109.51
	T117	5.5	6.39	116.18	1643b	--	0.05	--	--	--	--	--
Arsenic, d, µg/L	T105	2.3	2.85	123.91	T117	6.9	7.03	101.88	T119	4.2	4.8	114.29
	T121	8	8.42	105.25	T125	10.2	10.37	--	--	--	--	--
Arsenic, t, µg/L	T105	2.3	2.85	123.91	T117	6.9	7.03	101.88	T119	4.2	4.8	114.29
	T127	4.4	4.34	98.64	--	--	--	--	--	--	--	--
Barium, d, µg/L	1643b	44	42.21	95.93	T117	98.5	102	103.58	T133	148	152.1	102.76
	T117	98.5	102	103.88	1643b	44.00	43.22	98.23	--	--	--	--
Beryllium, d, µg/L	1643b	19	20.16	106.11	T117	4.8	4.9	102.08	T133	35	37.75	107.86
	T117	4.8	5.06	105.42	1643b	19	21.46	112.95	--	--	--	--
Cadmium, d, µg/L	1643b	20	20.55	102.75	T117	2.2	2.13	96.82	T133	23	22.5	97.83
	T117	2.2	2.04	92.73	1643b	20	20.21	101.05	--	--	--	--
Chromium, d, µg/L	1643b	18.6	17.55	94.35	T117	10.35	9	86.96	T133	38	35.1	92.37
	T117	10.35	9.64	93.14	1643b	18.6	18.1	97.31	--	--	--	--

Table 51.--Standard reference water-sample results for data set 6, February 1996--Continued

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Cobalt, d, µg/L	1643b	26	28.16	108.31	T117	4.4	4.13	93.86	T133	20	19.92	99.60
	T117	4.4	4.29	97.50	1643b	26	28.52	109.69	--	--	--	--
Copper, d, µg/L	1643b	21.9	22.52	102.83	T117	6	6.85	114.17	T133	85.3	86.93	101.91
	T117	6	7.29	121.50	1643b	21.90	23.78	108.58	--	--	--	--
Lead, d, µg/L	1643b	23.7	20.14	84.98	T117	5	4.85	97.00	T133	27.8	27.54	99.06
	T117	5	4.98	99.60	1643b	23.7	20.36	85.91	--	--	--	--
Manganese, d, µg/L	1643b	28	30.44	108.71	T117	220	210.5	95.66	T133	121	118.5	97.97
	T117	220	216	98.10	1643b	28.00	30.83	110.11	--	--	--	--
Molybdenum, d, µg/L	1643b	85	99.6	117.18	T117	11.8	12.12	102.71	T133	46	47.9	104.13
	T117	11.8	12	102.03	1643b	85	102	119.98	--	--	--	--
Nickel, d, µg/L	1643b	49	51.49	105.08	T117	10	9.8	98.00	T133	27.2	29.6	108.82
	T117	10	10.1	100.60	1643b	49.00	53.94	110.08	--	--	--	--
Silver, d, µg/L	T121	0.9	0.95	105.56	DL CK	0.5	0.48	96.00	T123	1.44	1.8	125.00
	T125	3.83	2.57	67.10	T127	2.71	2.78	102.58	--	--	--	--
Silver, tr, µg/L	T119	4	3.1	77.50	T121	0.9	1	111.11	T123	1.44	1.5	104.17
Uranium, d, µg/L	1643b	--	0.01	--	T117	2	1.95	97.50	T133	0.77	0.81	105.19
	T117	2	1.95	97.50	1643b	--	0.01	--	--	--	--	--
Zinc, d, µg/L	1643b	66	65.89	99.83	T117	176	175.8	99.89	T133	53	54.15	102.17
	T117	176	176	100.26	1643b	66.00	66.15	100.23	--	--	--	--

Table 51.--Standard reference water-sample results for data set 6, February 1996--Concluded

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Calcium, d, mg/L	M6	25.7	25.8	100.39	T111	20.3	20.4	100.49	M116	41.2	40.6	98.54
	M104	56.1	55.8	99.47	--	--	--	--	--	--	--	--
Magnesium, d, mg/L	M6	10.6	10.4	98.11	T111	5.97	6.08	101.84	M116	9.7	9.5	97.94
	M104	33	32.7	99.09	--	--	--	--	--	--	--	--
Sodium, d, mg/L	P17	0.28	0.327	116.79	P14	1.4	1.467	104.79	T107	20.8	21	100.96
	M116	64.3	66.2	102.95	M6	8.2	8.1	98.78	M102	108	103	95.46
Potassium, d, mg/L	M130	3	3	100.00	M102	6.7	7.07	105.52	M122	1.19	1.16	97.48
	M116	4.9	5.23	106.73	M126	2.62	2.74	104.58	--	--	--	--
Chloride, d, mg/L	M120	7.6	7.6	100.00	M132	55.7	55.42	99.50	M132	55.7	53.93	96.82
	M122	56.1	55.5	98.89	M122	56.1	54.85	97.77	M130	21.4	22	102.9
Sulfate, d, mg/L	M120	155	152.9	98.67	M120	155	151.2	97.54	M132	60	55.5	92.50
	M132	60	55.7	92.91	M122	9.60	8.718	90.81	M122	9.6	8.48	88.35
Solids, residue at 180 degrees Celsius, d, mg/L	M130	200	199	99.50	M132	277	279	100.72	--	--	--	--

Table 52.--Standard reference water-sample results for data set 7, May 1996

[SRWS, standard reference water sample; MPV, most probable value; OV, observed value; d, dissolved; µg/L, micrograms per liter; --, no data; tr, total recoverable; t, total; DL CK, detection limit check; mg/L, milligrams per liter]

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Aluminum, d, µg/L	T117	79	67.45	85.38	T117	79	67.38	85.29	T127	85	80.46	94.66
Aluminum, tr, µg/L	T127	85	101	118.82	T117	79	74	93.67	T127	85	81	95.29
	T127	85	89	104.71	T121	85.5	88	102.92	--	--	--	--
Antimony, d, µg/L	T117	5.5	5.71	103.82	T117	5.5	5.63	102.36	T127	5.15	4.77	92.62
Arsenic, d, µg/L	T127	4.4	4.7	106.82	T123	20.2	22.66	112.18	T127	4.4	4.7	106.82
Arsenic, t, µg/L	T117	6.9	6.85	99.28	T125	10.2	11.6	113.73	T123	20.2	22.6	112.18
Barium, d, µg/L	1643b	44	44.59	101.34	T117	98.5	95.4	96.85	T117	98.5	100	101.52
	T127	20.6	21	101.94	1643b	44.00	45.43	103.25	--	--	--	--
Beryllium, d, µg/L	1643b	19	19.24	101.26	T117	4.8	4.67	97.29	T117	4.8	4.7	97.92
	T127	14	13.8	98.36	1643b	19	19.74	103.89	--	--	--	--
Cadmium, d, µg/L	1643b	20	19.67	98.35	T117	2.2	2.26	102.73	T117	2.2	2.35	106.82
	T127	8.34	7.88	94.48	1643b	20	19.46	97.30	--	--	--	--
Chromium, d, µg/L	1643b	18.6	17.64	94.84	T117	10.35	9.41	90.92	T117	10.35	9.2	88.89
	T127	11.5	11	95.74	1643b	18.6	17.44	93.76	--	--	--	--
Cobalt, d, µg/L	1643b	26	27.28	104.92	T117	4.4	4.18	95.00	T117	4.4	4.22	95.91
	T127	11.6	10.8	93.36	1643b	26	27.59	106.12	--	--	--	--
Copper, d, µg/L	1643b	21.9	21.05	96.12	T117	6	6.53	108.83	T117	6	6.14	102.33
	T127	42	40.2	95.79	1643b	21.90	21.99	100.41	--	--	--	--

Table 52.--Standard reference water-sample results for data set 7, May 1996--Continued

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Lead, d, µg/L	1643b	23.7	20.4	86.08	T117	5	4.64	92.80	T117	5	4.82	96.40
	T127	3.25	3.28	100.92	1643b	23.7	20.05	84.60	--	--	--	--
Manganese, d, µg/L	1643b	28	28.61	102.18	T117	220	203.9	92.68	T117	220	201.9	91.78
	T127	5.43	4.85	89.32	1643b	28.00	27.94	99.79	--	--	--	--
Molybdenum, d, µg/L	1643b	85	96.25	113.24	T117	11.8	11.98	101.53	T117	11.8	11.34	96.10
	T127	1.25	0.44	35.20	1643b	85	100.2	117.86	--	--	--	--
Nickel, d, µg/L	1643b	49	48.59	99.16	117	10	9.94	99.40	T117	10	9.51	95.10
	T127	9	8.41	93.44	1643b	49.00	46.92	95.76	--	--	--	--
Silver, d, µg/L	T123	1.44	1.73	120.14	T125	3.83	2.67	69.71	T127	2.71	2.82	104.06
	DL CK	0.5	0.49	98.00	--	--	--	--	--	--	--	--
Silver, tr, µg/L	T119	4	1.5	37.50	T123	1.44	1.4	97.22	T125	3.83	3.9	101.83
	T121	0.9	0.8	88.89	--	--	--	--	--	--	--	--
Uranium, d, µg/L	T117	2	1.87	93.50	T117	2	1.88	94.00	T127	0.8	0.8	100.00
Zinc, d, µg/L	1643b	66	63.64	96.42	T117	176	169.77	96.46	T117	176	171.5	97.42
	T127	32.9	31	94.26	1643b	66.00	61.63	93.38	--	--	--	--
Calcium, d, mg/L	T115	50.09	50.93	101.68	T121	5.08	5.121	100.81	--	--	--	--
Magnesium, d, mg/L	T115	26.88	27.61	102.72	T121	1.21	1.229	101.57	--	--	--	--
Sodium, d, mg/L	T115	137.4	142.3	103.57	T121	7.19	7.183	99.90	--	--	--	--
Potassium, d, mg/L	M130	3	3.08	102.67	M116	4.9	4.92	100.41	M102	6.9	6.87	99.57
	M122	1.19	1.14	95.80	M126	2.62	2.67	101.91	--	--	--	--

Table 52.--Standard reference water-sample results for data set 7, May 1996--Concluded

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Chloride, d, mg/L	M130	21.4	21.7	101.40	P22	2.92	2.99	102.40	M132	55.7	55.2	99.10
	M134	65	66.4	102.15	M128	98.2	95.9	97.66	--	--	--	--
Sulfate, d, mg/L	M130	58	58.1	100.17	P22	0.73	0.69	94.52	M132	60	60.2	100.33
	M134	78	77.5	99.36	M128	206	207	100.49	--	--	--	--
Solids, residue at 180 degrees Celsius, d, mg/L	M130	200	184	92.00	M132	277	254	91.70	--	--	--	--

Table 53.--Standard reference water-sample results for data set 8, August 1996

[SRWS, standard reference water sample; MPV, most probable value; OV, observed value; mg/L, milligrams per liter; --, no data; d, dissolved; µg/L, micrograms per liter; tr, total recoverable; t, total]

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Alkalinity, mg/L	M134	62.9	63.81	101.44	M122	38	38.41	101.07	M132	94	94.52	100.56
	M136	152	154	101.06	--	--	--	--	--	--	--	--
Aluminum, d, µg/L	1643B	2	1.87	93.50	133	47.99	46.06	95.98	T117	79	69.54	88.03
	T133	47.99	47.5	99.04	1643b	2.00	2.06	103.00	--	--	--	--
Aluminum, tr, µg/L	T121	85.5	88	102.92	T117	79	89	112.66	T127	85	94	110.59
	T121	85.5	78	91.23	T127	85	83	97.65	--	--	--	--
Antimony, d, µg/L	T133	14.26	14.43	101.19	T117	5.5	5.62	102.18	T123	14.26	13.9	97.34
Arsenic, d, µg/L	T125	10.2	9.86	96.67	T123	20.2	19.52	96.63	T133	27.1	29.08	107.31
	T131	56.6	63.1	111.40	--	--	--	--	--	--	--	--
Arsenic, t, µg/L	T125	10.2	9.62	94.31	T123	20.2	20.34	100.69	T131	56.6	51.55	91.08
	T133	27.1	24.4	89.89	--	--	--	--	--	--	--	--
Barium, d, µg/L	1643B	44	42.16	95.82	T133	149	148.8	99.82	T117	98.5	97.1	98.58
	T133	149	149	100.09	1643b	44.00	42.53	96.66	--	--	--	--
Beryllium, d, µg/L	1643B	19	19.31	101.63	T133	34.94	34.24	98.00	T117	4.8	4.64	96.67
	T133	34.94	36.8	105.44	1643b	19	20.97	110.37	--	--	--	--
Cadmium, d, µg/L	1643B	20	18.69	93.45	T133	22.2	22.63	101.94	T117	2.2	2	90.91
	T133	22.2	23.6	106.49	1643b	20	19.7	98.50	--	--	--	--
Chromium, d, µg/L	1643B	18.6	18.3	98.39	T133	37.22	36.4	97.80	T117	10.4	9.94	96.04
	T133	37.22	36.7	98.66	1643b	18.6	19.01	102.20	--	--	--	--

Table 53.--Standard reference water-sample results for data set 8, August 1996--Continued

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Cobalt, d, µg/L	1643B	26	28.21	108.50	T133	20.41	20.47	100.29	T117	4.4	4.46	101.36
	T133	20.41	20.2	98.97	1643b	26	28.76	110.62	--	--	--	--
Copper, d, µg/L	1643B	21.9	21.94	100.18	T133	86.07	84.09	97.70	T117	6	6.29	104.83
	T133	86.07	88.4	102.66	1643b	21.90	23.4	106.85	--	--	--	--
Lead, d, µg/L	1643B	23.7	20.12	84.89	T133	27.61	27.54	99.75	T117	5	5.02	100.40
	T133	27.61	28.2	102.06	1643b	23.7	20.65	87.13	--	--	--	--
Manganese, d, µg/L	1643B	28	30.36	108.43	T133	121.4	120.8	99.50	T117	220	207.9	94.51
	T133	121.4	117	96.09	1643b	28.00	30.68	109.57	--	--	--	--
Molybdenum, d, µg/L	1643B	85	97.85	115.12	T133	47.35	47.75	100.84	T117	11.8	11.93	101.10
	T133	47.35	49.3	104.03	1643b	85	102	119.98	--	--	--	--
Nickel, d, µg/L	1643B	49	48.81	99.61	T133	27.94	27.77	99.39	T117	10	15.13	151.30
	T133	27.94	27.5	98.25	1643b	49.00	51.05	104.18	--	--	--	--
Silver, d, µg/L	T123	1.44	1.26	87.50	T125	3.83	4.04	104.58	T127	2.71	2.9	107.01
Silver, tr, µg/L	T119	4	5.2	130.00	T123	1.44	1.4	97.22	T125	3.83	4.1	107.05
Uranium, d, µg/L	T133	0.77	0.76	98.70	T117	2	1.9	95.00	T133	0.77	0.76	98.70
Zinc, d, µg/L	1643B	66	61.45	93.11	T133	51.52	51.97	100.87	T117	176	170.5	96.90
	T133	51.52	52.1	101.03	1643b	66.00	61.63	93.38	--	--	--	--
Calcium, d, mg/L	512A	48.9	49.99	102.23	T133	6.94	7.034	101.35	512A	48.9	48.91	100.02
	512A	48.9	50.4	103.01	T135	10.33	10.53	101.94	--	--	--	--

Table 53.--Standard reference water-sample results for data set 8, August 1996--Concluded

Analyte and measurement unit	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery	SRWS number	MPV	OV	Percent recovery
Magnesium, d, mg/L	512A	25.3	25.98	102.69	T133	5.66	5.658	99.96	512A	25.3	25.58	101.11
	512A	25.3	25.5	100.83	T135	1.99	2.022	101.61	--	--	--	--
Sodium, d, mg/L	512A	8.2	8.309	101.33	T133	29.23	29.52	100.99	512A	8.2	8.184	99.80
	512A	8.2	8	97.61	T135	31.11	30.83	99.10	--	--	--	--
Potassium, d, mg/L	M130	3	3	100.00	M102	6.9	6.89	99.86	M116	1.19	1.15	96.64
	M122	4.9	5.11	104.29	M122	2.62	2.72	103.82	--	--	--	--
Chloride, d, mg/L	P13	0.12	0.033	27.50	M122	56.1	57.18	101.93	M128	98.2	100	101.87
	M130	21.4	21.6	100.79	M132	55.7	56.16	100.83	--	--	--	--
Sulfate, d, mg/L	P13	0.17	0.111	65.29	M122	9.6	9.6	100.00	M128	206	208	100.97
	M130	58	58.2	100.34	M132	60.00	59.89	99.82	--	--	--	--
Solids, residue at 180 degrees Celsius, d, mg/L	M130	200	180	90.00	M140	370	360	97.30	M140	370	346	93.51
	M132	277	274	98.92	--	--	--	--	--	--	--	--

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996

[ft^3/s, cubic feet per second; deg C, degrees Celsius; µS/cm, microsiemens per centimeter at 25 degrees Celsius; <, less than; --, no data; mg/L, milligrams per liter; µg/L, micrograms per liter; L, laboratory analysis; SW, sample contains stormwater runoff; mm, millimeter]

Sampling site (fig. 1)	Date	Discharge, instantaneous (ft^3/s)	Temperature water (deg C)	Specific conductance (µS/cm)	pH water whole, field (standard units)	Oxygen, dissolved (mg/L)	Alkalinity, whole water, field (mg/L as $CaCO_3$)
Rio Grande at San Felipe	10-24-94	796	12.5	343	7.65	9.6	120L
	02-07-95	987	4.0	334	8.67	11.2	112
	05-04-95	4,280	13.0	283	7.58	9.5	87
	08-21-95	1,100SW	21.0	370	7.76	7.2	115
	10-02-95	1,220	15.0	361	7.65	8.1	111
	02-12-96	1,210	3.0	341	7.96	11.6	111
	05-19-96	960	14.0	360	7.63	7.6	117
	08-26-96	1,100SW	19.0	357	8.23	6.8	124L
Jemez River below dam	10-31-94	0.21	8.0	1,240	8.3	9.7	236L
	02-13-95	0.81	7.0	1,270	8.47	9.3	232
	05-05-95	561	13.5	588	7.72	9.0	120
	08-24-95	86.5	20.0	1,060	7.55	7.5	139
	02-14-96	36.1	6.0	903	8.22	12.2	165
	08-27-96	170	22.0	1,210	8.21	7.6	175L
Rio Grande near Bernalillo	10-25-94	454	11.0	344	8.39	8.8	120L
	02-08-95	962	4.0	328	7.24	10.4	120
	05-01-95	4,670	13.0	356	7.58	9.6	99
	08-21-95	707	25.0	368	7.66	7.5	122
	10-02-95	806	17.0	354	7.52	8.8	103
	02-12-96	1,160	5.0	355	8.30	13.4	113
	05-19-96	600	16.5	365	7.79	--	117
	08-26-96	810SW	22.0	388	7.49	6.7	115L
Rio Grande near Alameda	10-25-94	488	14.5	363	8.22	8.6	122L
	02-08-95	914	5.0	347	8.60	10.6	129
	05-01-95	3,470	16.0	362	7.82	8.9	102
	08-22-95	767SW	22.0	370	7.65	6.6	126
	10-02-95	740	21.0	352	7.77	7.8	112
	02-13-96	1,260	4.5	362	8.09	10.6	114
	05-19-96	490	--	371	7.93	--	117
	08-26-96	760SW	26.0	388	8.02	6.5	121L

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Aluminum, dissolved (µg/L)	Aluminum, total recoverable (µg/L)	Antimony, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Arsenic, total (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)
Rio Grande at San Felipe	10	520	<1	2	2	85	<1
	20	170	<1	2	2	66	<1
	20	1,400	<1	1	2	59	<1
	20	1,600	<1	2	2	70	<1
	2	800	<1	2	2	73	<1
	20	190	<1	2	2	59	<1
	20	340	<1	1	2	68	<1
	4	75,000	<1	2	3	78	<1
Jemez River below dam	1	8,000	<1	14	19	200	<1
	3	710	<1	18	24	52	<1
	30	1,300	<1	14	13	71	<1
	2	210	<1	18	18	100	<1
	4	270	<1	20	22	100	<1
	1	630	<1	25	24	124	<1
Rio Grande near Bernalillo	10	540	<1	3	3	92	<1
	20	270	<1	2	2	69	<1
	20	1,300	<1	3	3	67	<1
	30	2,200	<1	2	2	75	<1
	2	980	<1	2	2	77	<1
	20	190	<1	2	2	62	<1
	20	350	<1	2	2	63	<1
	3	23,000	<1	2	3	86	<1
Rio Grande near Alameda	10	1,000	<1	3	3	84	<1
	20	300	<1	3	3	70	<1
	30	2,000	<1	3	3	67	<1
	20	3,000	<1	2	2	69	<1
	4	1,300	<1	2	2	66	<1
	30	250	<1	2	3	63	<1
	2	550	<1	2	2	65	<1
	5	49,000	<1	3	3	90	<1

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)
Rio Grande at San Felipe	<1.0	<1	<1	1	<1	6	4
	<1.0	<1	<1	<1	<1	16	4
	<1.0	<1	<1	1	<1	10	2
	<1.0	<1	<1	1	<1	12	4
	<1.0	1	<1	1	<1	7	4
	<1.0	1	<1	1	<1	14	4
	<1.0	1	<1	1	<1	12	4
	<1.0	<1	<1	1	<1	<1	3
Jemez River below dam	<1.0	<1	<1	2	<1	210	10
	<1.0	<1	<1	2	<1	340	8
	<1.0	1	<1	2	1	2	2
	<1.0	<1	<1	2	<1	400	4
	<1.0	2	<1	3	<1	12	4
	<1.0	<1	<1	2	<1	20	6
Rio Grande near Bernalillo	<1.0	<1	<1	<1	<1	2	5
	<1.0	<1	<1	<1	<1	9	4
	<1.0	<1	<1	1	<1	6	2
	<1.0	<1	<1	1	<1	6	3
	<1.0	1	<1	<1	<1	4	5
	<1.0	1	<1	1	<1	9	4
	<1.0	1	<1	1	<1	8	4
	<1.0	<1	<1	1	<1	<1	4
Rio Grande near Alameda	<1.0	<1	<1	1	<1	3	4
	<1.0	<1	<1	<1	<1	3	4
	<1.0	<1	<1	1	<1	3	2
	<1.0	<1	<1	2	<1	2	4
	<1.0	1	<1	2	<1	2	4
	<1.0	1	<1	1	<1	3	4
	<1.0	<1	<1	1	<1	3	4
	<1.0	<1	<1	1	<1	<1	4

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)	Silver, total recoverable (µg/L)	Uranium, natural, dissolved (µg/L)	Zinc, dissolved (µg/L)	Cyanide, total (mg/L)
Rio Grande at San Felipe	2	<0.2	<1	3	2	<0.010
	<1	<0.2	<1	3	2	--
	3	<0.2	<1	2	1	<0.010
	2	<0.2	<1	2	2	<0.010
	<1	<0.2	<1	2	<1	<0.010
	2	<0.2	<1	3	2	<0.010
	2	<0.2	<1	2	3	<0.010
	2	<0.2	<1	2	6	<0.010
Jemez River below dam	3	<0.2	<1	3	<1	<0.010
	4	<0.2	<1	3	2	--
	3	<0.2	<1	2	4	<0.010
	2	<0.2	<1	2	3	<0.010
	2	<0.2	<1	2	1	<0.010
	2	<0.2	<1	3	<1	<0.010
Rio Grande near Bernalillo	2	<0.2	<1	3	<1	<0.010
	<1	<0.2	<1	3	<1	--
	3	<0.2	<1	2	<1	<0.010
	2	<0.2	<1	2	1	<0.010
	<1	<0.2	<1	2	1	<0.010
	1	<0.2	<1	3	1	<0.010
	2	<0.2	<1	3	1	<0.010
	2	<0.2	<1	2	<1	<0.010
Rio Grande near Alameda	2	<0.2	<1	3	<1	<0.010
	<1	<0.2	<1	3	<1	--
	3	<0.2	<1	2	1	<0.010
	3	<0.2	<1	2	2	<0.010
	1	<0.2	<1	2	5	<0.010
	1	<0.2	<1	3	2	<0.010
	2	<0.2	<1	3	<1	<0.010
	1	<0.2	<1	2	16	<0.010

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Cyanide amenable to chlorination, unfiltered (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Bicarbonate, whole water, field (mg/L as HCO_3)
Rio Grande at San Felipe	<0.010	41	7.0	21	2.6	--
	--	37	6.8	21	2.6	137
	<0.010	33	6.7	15	2.0	106
	<0.010	35	8.2	24	3.3	140
	<0.010	39	7.2	20	2.8	135
	<0.010	35	7.6	21	2.8	135
	<0.010	39	7.6	23	2.9	143
	<0.010	41	7.1	21	2.9	--
Jemez River below dam	<0.010	74	12	190	7.6	--
	--	74	12	180	9.8	276
	<0.010	42	5.1	70	5.3	146
	<0.010	66	8.3	130	7.0	170
	<0.010	56	6.8	120	7.7	201
	<0.010	70	9.0	170	11	--
Rio Grande near Bernalillo	<0.010	41	7.1	21	2.6	--
	--	39	7.0	22	2.7	146
	<0.010	36	6.7	26	2.7	121
	<0.010	36	7.8	23	3.2	149
	<0.010	39	7.1	21	2.9	126
	<0.010	39	7.2	24	3.0	138
	<0.010	39	7.6	23	3.1	143
	<0.010	44	7.2	25	3.3	--
Rio Grande near Alameda	<0.010	42	7.1	23	2.9	--
	--	41	7.0	23	2.8	157
	<0.010	36	6.6	26	3.0	124
	<0.010	36	7.5	24	3.4	154
	<0.010	38	7.2	21	3.0	137
	<0.010	41	7.5	24	3.1	139
	<0.010	40	7.5	24	3.2	143
	<0.010	43	6.4	27	3.5	--

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Carbonate, whole water, field (mg/L as CO_3)	Chloride, dissolved (mg/L)	Sulfate, dissolved (mg/L as SO_4)	Solids, residue at 180 deg C, dissolved (mg/L)	Sediment, suspended (mg/L)	Sediment, suspended, sieve diameter finer than 0.062 mm (percent)
Rio Grande at San Felipe	--	5.7	54	223	55	66
	0	7.6	42	213	29	60
	0	4.0	47	187	165	69
	0	6.4	57	216	150	93
	0	5.4	51	209	60	77
	0	6.5	43	226	19	95
	0	6.8	56	204	40	70
	--	4.5	73	224	9,870	95
Jemez River below dam	--	130	220	826	244	93
	4	140	200	803	68	98
	0	55	80	371	50	94
	0	92	240	694	48	84
	0	98	120	563	33	83
	--	150	230	748	103	86
Rio Grande near Bernalillo	--	6.0	54	225	36	88
	0	7.4	41	213	26	69
	0	13	56	230	243	56
	0	6.4	58	230	178	96
	0	5.7	51	208	68	86
	0	9.2	46	232	19	78
	0	6.7	56	186	54	73
	--	9.6	76	182	2,330	92
Rio Grande near Alameda	--	7.3	57	239	65	91
	0	8.6	45	223	49	60
	0	13	56	232	217	72
	0	7.1	57	235	208	95
	0	6.4	52	218	107	80
	0	9.4	47	233	44	64
	0	7.3	58	206	62	63
	--	11	79	238	4,560	98

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Date	Discharge, instantaneous (ft^3/s)	Temperature water (deg C)	Specific conductance (µS/cm)	pH water whole, field (standard units)	Oxygen, dissolved (mg/L)	Alkalinity, whole water, field (mg/L as $CaCO_3$)
Rio Grande at Albuquerque	10-26-94	460SW	12.5	360	8.19	8.4	122L
	02-09-95	928	5.0	368	8.44	10.2	121
	05-02-95	3,380	14.0	346	8.02	8.3	93
	08-22-95	881SW	24.0	372	7.81	7.0	133
Rio Grande at Rio Bravo Boulevard	10-26-94	505SW	13.0	366	8.48	8.9	121L
	02-09-95	947	7.0	356	8.28	11.1	121
	05-02-95	3,820	16.0	349	8.00	7.7	95
	08-22-95	755SW	31.0	366	7.72	6.0	143
	10-03-95	790	14.0	388	7.68	8.3	117
	02-13-96	1,150	6.0	368	8.06	10.7	115
	05-20-96	460	16.5	381	7.95	8.0	120
	08-27-96	650SW	21.0	366	7.80	7.0	124L
Rio Grande at Interstate 25	10-27-94	375	12.0	429	8.04	9.0	114L
	02-10-95	962	7.0	387	8.32	10.0	123
	05-03-95	3,800	19.0	361	7.71	7.8	99
	08-23-95	855SW	22.0	405	7.46	6.1	135
	10-03-95	774	16.0	406	7.45	7.7	120
	02-13-96	1,270	8.5	412	7.77	10.0	118
	05-20-96	420	20.0	432	7.92	7.7	120
	08-27-96	710SW	23.0	410	7.97	6.8	123L
Rio Grande at Isleta	10-27-94	593	18.0	430	8.06	8.0	124L
	02-10-95	951	10.5	410	8.52	9.0	123
	05-03-95	4,450	17.0	365	7.74	8.2	102
	08-23-95	1,140SW	26.0	392	7.36	5.8	198
	10-03-95	957	19.0	401	7.50	7.4	120
	02-14-96	1,310	7.0	394	7.86	9.4	118
	05-20-96	560	22.0	438	7.92	7.4	127
	08-27-96	1,000SW	23.5	411	7.96	6.5	123L
Rio Grande at Los Lunas	10-28-94	310	11.0	458	8.15	8.3	132L
	02-10-95	946	11.5	416	7.55	8.8	123
	05-04-95	3,450	18.0	368	7.59	7.7	100
	08-24-95	627	21.5	427	7.46	6.3	174
	10-04-95	550	14.5	450	7.52	7.7	122

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Aluminum, dissolved (µg/L)	Aluminum, total recoverable (µg/L)	Antimony, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Arsenic, total (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)
Rio Grande at Albuquerque	10	1,300	<1	2	3	80	<1
	20	360	<1	3	2	66	<1
	20	1,900	<1	3	3	64	<1
	20	5,500	<1	3	3	70	<1
Rio Grande at Rio Bravo Boulevard	10	1,600	<1	3	3	82	<1
	20	580	<1	2	2	67	<1
	30	2,000	<1	3	3	65	<1
	6	6,600	<1	2	2	66	<1
	2	1,800	<1	2	2	69	<1
	20	550	<1	2	2	66	<1
	20	990	<1	2	2	66	<1
	3	32,000	<1	3	3	89	<1
Rio Grande at Interstate 25	20	1,400	<1	4	4	77	<1
	20	450	<1	3	3	64	<1
	30	3,300	<1	3	3	64	<1
	4	6,500	<1	3	3	65	<1
	4	1,700	<1	3	3	63	<1
	20	670	<1	3	3	64	<1
	10	790	<1	3	3	59	<1
	4	38,000	<1	3	4	87	<1
Rio Grande at Isleta	10	1,100	<1	4	4	78	<1
	10	720	<1	3	3	68	<1
	30	2,300	<1	3	4	65	<1
	3	10,000	<1	3	3	67	<1
	4	1,600	<1	3	3	68	<1
	20	360	<1	3	3	67	<1
	3	730	<1	3	3	64	<1
	3	31,000	<1	3	3	88	<1
Rio Grande at Los Lunas	10	1,300	<1	4	5	88	<1
	10	930	<1	4	3	70	<1
	30	2,800	<1	3	3	65	<1
	2	10,000	<1	3	3	73	<1
	2	1,500	<1	4	4	74	<1

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)
Rio Grande at Albuquerque	<1.0	<1	<1	<1	<1	1	4
	<1.0	<1	<1	<1	<1	2	4
	<1.0	<1	<1	1	<1	2	2
	<1.0	<1	<1	2	<1	6	4
Rio Grande at Rio Bravo Boulevard	<1.0	<1	<1	<1	<1	2	5
	<1.0	<1	<1	1	<1	2	4
	<1.0	<1	<1	1	1	3	2
	<1.0	<1	<1	1	<1	1	5
	<1.0	1	<1	2	<1	<1	4
	<1.0	2	<1	2	<1	2	4
	<1.0	<1	<1	1	<1	2	5
	<1.0	<1	<1	1	<1	<1	4
Rio Grande at Interstate 25	<1.0	<1	<1	1	<1	5	7
	<1.0	<1	<1	<1	<1	4	5
	<1.0	<1	<1	1	<1	4	3
	<1.0	<1	<1	1	<1	<1	8
	<1.0	2	<1	2	<1	3	6
	<1.0	1	<1	2	<1	4	6
	<1.0	1	<1	1	<1	2	9
	<1.0	<1	<1	1	<1	<1	5
Rio Grande at Isleta	<1.0	<1	<1	1	<1	12	7
	<1.0	<1	<1	1	<1	22	5
	<1.0	<1	<1	1	<1	6	3
	<1.0	<1	<1	1	<1	3	7
	<1.0	2	<1	1	<1	7	6
	<1.0	1	<1	2	<1	18	5
	<1.0	<1	<1	2	<1	6	9
	<1.0	<1	<1	1	3	<1	5
Rio Grande at Los Lunas	<1.0	<1	<1	1	<1	2	7
	<1.0	<1	<1	1	<1	4	6
	<1.0	<1	<1	1	<1	3	3
	<1.0	<1	<1	1	<1	<1	9
	<1.0	1	<1	2	<1	2	7

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)	Silver, total recoverable (µg/L)	Uranium, natural, dissolved (µg/L)	Zinc, dissolved (µg/L)	Cyanide, total (mg/L)
Rio Grande at Albuquerque	1	<0.2	<1	3	<1	<0.010
	1	<0.2	<1	3	1	--
	3	<0.2	<1	2	<1	<0.010
	1	<0.2	<1	2	1	<0.010
Rio Grande at Rio Bravo Boulevard	1	<0.2	<1	3	<1	<0.010
	1	<0.2	<1	3	2	--
	3	<0.2	<1	2	1	<0.010
	2	<0.2	<1	2	<1	<0.010
	<1	<0.2	<1	2	1	<0.010
	2	<0.2	<1	3	8	<0.010
	2	<0.2	<1	3	<1	<0.010
	1	<0.2	<1	2	<1	<0.010
Rio Grande at Interstate 25	2	<0.2	<1	2	4	<0.010
	1	<0.2	<1	3	3	--
	3	<0.2	<1	2	1	<0.010
	2	<0.2	<1	2	3	<0.010
	<1	<0.2	<1	2	2	<0.010
	2	<0.2	<1	3	5	<0.010
	2	<0.2	<1	3	3	<0.010
	2	<0.2	<1	2	2	<0.010
Rio Grande at Isleta	2	<0.2	<1	3	3	<0.010
	1	<0.2	<1	3	2	--
	2	<0.2	<1	2	2	<0.010
	2	<0.2	<1	2	1	<0.010
	1	<0.2	<1	2	2	<0.010
	1	<0.2	<1	3	2	<0.010
	2	<0.2	<1	3	4	<0.010
	2	<0.2	<1	2	<1	<0.010
Rio Grande at Los Lunas	2	<0.2	<1	2	2	<0.010
	1	<0.2	<1	3	2	--
	2	<0.2	<1	2	1	<0.010
	2	<0.2	<1	2	2	<0.010
	1	<0.2	<1	2	3	<0.010

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Cyanide amenable to chlorination, unfiltered (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Bicarbonate, whole water, field (mg/L as HCO_3)
Rio Grande at Albuquerque	<0.010	42	7.1	23	2.8	--
	--	40	7.4	23	2.7	148
	<0.010	35	6.7	24	2.6	113
	<0.010	37	8.3	24	3.2	162
Rio Grande at Rio Bravo Boulevard	<0.010	42	7.1	24	2.9	--
	--	42	7.4	23	2.7	148
	<0.010	37	6.6	24	2.6	116
	<0.010	36	8.1	24	3.3	174
	<0.010	40	7.3	23	3.0	143
	<0.010	41	7.6	25	3.0	140
	<0.010	41	7.7	24	3.1	146
	<0.010	41	6.6	23	3.2	--
Rio Grande at Interstate 25	<0.010	41	6.7	34	4.5	--
	--	41	7.3	28	3.4	150
	<0.010	36	6.6	26	2.8	121
	<0.010	37	7.4	31	4.5	165
	<0.010	41	7.0	28	4.0	146
	<0.010	39	7.2	32	3.9	144
	<0.010	40	7.4	35	4.6	146
	<0.010	43	6.6	30	4.0	--
Rio Grande at Isleta	<0.010	44	7.1	31	4.2	--
	--	43	7.3	29	3.6	150
	<0.010	37	6.7	27	3.1	124
	<0.010	35	7.1	29	4.4	242
	<0.010	42	7.2	28	3.9	147
	<0.010	41	7.4	29	3.6	144
	<0.010	42	7.5	33	4.6	155
	<0.010	45	7.0	29	4.1	--
Rio Grande at Los Lunas	<0.010	47	7.5	36	4.5	--
	--	43	7.4	31	4.2	150
	<0.010	37	6.5	26	3.0	122
	<0.010	37	7.6	32	4.5	212
	<0.010	43	7.3	32	4.0	149

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Carbonate, whole water, field (mg/L as CO_3)	Chloride, dissolved (mg/L)	Sulfate, dissolved (mg/L as SO_4)	Solids, residue at 180 deg C, dissolved (mg/L)	Sediment, suspended (mg/L)	Sediment, suspended, sieve diameter finer than 0.062 mm (percent)
Rio Grande at Albuquerque	--	7.6	57	223	82	86
	0	9.9	45	238	41	69
	0	12	55	226	222	79
	0	7.6	57	237	400	93
Rio Grande at Rio Bravo Boulevard	--	7.6	57	232	1,140	10
	0	9.5	45	227	54	70
	0	12	54	226	238	78
	0	7.5	57	233	414	97
	0	6.5	53	223	110	90
	0	9.7	48	238	66	64
	0	7.6	59	266	76	73
	--	9.0	69	196	2,770	99
Rio Grande at Interstate 25	--	19	60	272	94	92
	0	14	48	246	57	77
	0	14	55	234	411	59
	0	13	61	258	419	94
	0	11	55	242	127	79
	0	16	52	262	59	54
	0	16	63	240	66	54
	--	14	74	220	3,300	96
Rio Grande at Isleta	--	15	63	274	89	90
	0	14	50	253	63	77
	0	14	57	236	555	47
	0	12	57	248	846	97
	0	11	57	244	116	80
	0	13	51	256	65	63
	0	15	63	238	70	69
	--	13	74	248	2,640	96
Rio Grande at Los Lunas	--	19	66	298	97	91
	0	16	52	257	74	92
	0	34	41	234	389	83
	0	15	60	264	786	97
	0	15	60	261	115	87

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Date	Discharge, instantaneous (ft^3/s)	Temperature water (deg C)	Specific conductance (µS/cm)	pH water whole, field (standard units)	Oxygen, dissolved (mg/L)	Alkalinity, whole water, field (mg/L as $CaCO_3$)
Upper Corrales Riverside Drain at mouth	10-31-94	50.4	14.0	394	8.39	8.0	130L
	02-13-95	20.7	11.0	404	8.20	8.9	128
	05-08-95	56.9	9.0	360	7.32	8.6	106
	08-24-95	57.5	23.5	369	7.53	6.7	156
	10-04-95	36.1	17.5	375	7.90	8.5	116
	02-14-96	20.5	13.5	374	8.51	11.4	122
	05-21-96	45	13.5	382	7.61	7.1	100
	08-28-96	48SW	20.5	379	7.90	6.0	125L
Corrales Riverside Drain at mouth	11-01-94	4.43	13.0	388	8.09	7.3	130L
	02-13-95	5.45	9.5	429	8.05	8.6	137
	05-08-95	12.7	11.0	414	7.31	7.6	131
Albuquerque Riverside Drain at gate	02-14-95	73.9	8.0	407	8.43	8.6	126
	05-08-95	171	13.0	353	7.51	8.8	107
	08-24-95	11.8SW	22.5	389	7.45	6.5	150
	10-05-95	131	15.0	405	7.60	8.1	126
	02-15-96	77.7	6.5	401	7.81	9.4	124
	05-21-96	77E	15.5	401	7.91	7.7	129
	08-28-96	87SW	21.0	400	7.95	6.8	130L
Albuquerque Riverside Drain at mouth	11-03-94	70	14.5	486	7.80	6.2	150L
	02-14-95	50.7	12.0	468	8.21	6.8	140
	05-09-95	173	12.5	398	7.78	7.4	121
	08-25-95	141SW	20.5	423	7.44	6.2	152
	10-05-95	164	14.0	435	7.67	7.5	130
	02-15-96	51.3	10.5	460	7.88	7.0	141
	05-21-96	94	18.5	433	8.05	7.4	134
	08-28-96	180SW	21.5	412	7.91	6.4	134L
Atrisco Riverside Drain at mouth	11-02-94	58.0	14.0	420	7.78	6.6	135L
	02-14-95	49.7	12.0	468	8.10	8.4	131
	05-09-95	67.9	13.0	411	7.45	7.2	123
	08-25-95	43.3	19.5	414	7.33	5.8	177
	10-05-95	46.3	18.5	430	7.42	7.1	131
	02-15-96	54.5	7.0	421	8.01	9.8	130
	05-21-96	34	21.5	446	8.37	--	133
	08-28-96	56	23.5	441	8.04	7.2	138L

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Aluminum, dissolved (µg/L)	Aluminum, total recoverable (µg/L)	Antimony, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Arsenic, total (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)
Upper Corrales Riverside Drain at mouth	8	500	<1	3	3	96	<1
	5	160	<1	3	4	100	<1
	40	1,000	<1	2	3	77	<1
	4	10,000	<1	3	2	71	<1
	2	570	<1	3	3	78	<1
	4	40	<1	3	3	86	<1
	<1	750	<1	2	2	74	<1
	2	5,600	<1	3	3	99	<1
Corrales Riverside Drain at mouth	10	2,100	<1	4	4	110	<1
	7	520	<1	3	4	130	<1
	20	500	<1	3	3	99	<1
Albuquerque Riverside Drain at gate	3	140	<1	4	3	93	<1
	20	1,000	<1	3	3	71	<1
	4	7,200	<1	3	3	72	<1
	2	690	<1	3	3	75	<1
	1	60	<1	3	3	92	<1
	<1	1,400	<1	3	3	75	<1
	2	14,000	<1	3	3	95	<1
Albuquerque Riverside Drain at mouth	4	220	<1	6	6	120	<1
	3	280	<1	5	5	110	<1
	30	850	<1	4	4	80	<1
	2	5,100	<1	4	3	82	<1
	1	1,300	<1	4	3	79	<1
	4	80	<1	5	5	110	<1
	<1	980	<1	3	4	81	<1
	2	8,600	<1	4	4	103	<1
Atrisco Riverside Drain at mouth	4	730	<1	5	5	100	<1
	4	110	<1	5	5	87	<1
	10	330	<1	4	4	84	<1
	2	1,100	<1	4	5	92	<1
	<1	530	<1	5	5	87	<1
	4	190	<1	4	4	87	<1
	<1	50	<1	4	4	82	<1
	1	2,000	<1	5	5	98	<1

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)
Upper Corrales Riverside Drain at mouth	<1.0	<1	<1	<1	<1	21	4
	<1.0	<1	<1	<1	<1	44	4
	<1.0	<1	<1	1	<1	22	3
	<1.0	<1	<1	1	<1	2	4
	<1.0	1	<1	1	<1	4	4
	<1.0	1	<1	1	<1	44	4
	<1.0	<1	<1	1	<1	12	4
	<1.0	<1	<1	1	<1	3	4
Corrales Riverside Drain at mouth	<1.0	<1	<1	<1	<1	16	5
	<1.0	<1	<1	<1	<1	200	4
	<1.0	<1	<1	1	<1	91	4
Albuquerque Riverside Drain at gate	<1.0	<1	<1	<1	<1	5	4
	<1.0	<1	<1	1	<1	6	3
	<1.0	<1	<1	1	<1	<1	4
	<1.0	2	<1	1	<1	3	4
	<1.0	1	<1	1	<1	6	4
	<1.0	1	<1	1	<1	6	4
	<1.0	<1	<1	<1	<1	<1	4
Albuquerque Riverside Drain at mouth	<1.0	<1	<1	<1	<1	150	7
	<1.0	<1	<1	<1	<1	360	5
	<1.0	<1	<1	1	<1	69	4
	<1.0	<1	<1	<1	<1	7	5
	<1.0	2	<1	1	<1	18	5
	<1.0	1	<1	1	<1	350	6
	<1.0	1	<1	1	<1	32	5
	<1.0	<1	<1	1	<1	4	5
Atrisco Riverside Drain at mouth	<1.0	<1	<1	<1	<1	34	5
	<1.0	<1	<1	<1	<1	58	4
	<1.0	<1	<1	1	<1	120	4
	<1.0	<1	<1	<1	<1	150	5
	<1.0	2	<1	2	<1	45	5
	<1.0	1	<1	2	<1	89	4
	<1.0	1	<1	2	<1	45	5
	<1.0	<1	<1	1	<1	64	6

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)	Silver, total recoverable (µg/L)	Uranium, natural, dissolved (µg/L)	Zinc, dissolved (µg/L)	Cyanide, total (mg/L)
Upper Corrales Riverside Drain at mouth	2	<0.2	<1	2	<1	<0.010
	1	<0.2	<1	3	1	--
	2	<0.2	<1	2	<1	<0.010
	<1	<0.2	<1	2	<1	<0.010
	1	<0.2	<1	2	1	<0.010
	<1	<0.2	<1	3	<1	<0.010
	2	<0.2	<1	3	3	<0.010
	2	<0.2	<1	2	<1	<0.010
Corrales Riverside Drain at mouth	1	<0.2	<1	2	<1	<0.010
	1	<0.2	<1	2	<1	--
	3	<0.2	<1	2	<1	<0.010
Albuquerque Riverside Drain at gate	<1	<0.2	<1	4	1	--
	3	<0.2	<1	2	1	<0.010
	1	<0.2	<1	2	<1	<0.010
	<1	<0.2	<1	2	4	<0.010
	1	<0.2	<1	3	<1	<0.010
	2	<0.2	<1	3	1	<0.010
	1	<0.2	<1	3	<1	<0.010
Albuquerque Riverside Drain at mouth	2	<0.2	<1	2	<1	<0.010
	1	<0.2	<1	4	<1	--
	3	<0.2	<1	3	1	<0.010
	2	<0.2	<1	2	<1	<0.010
	2	<0.2	<1	2	1	<0.010
	2	<0.2	<1	4	5	<0.010
	2	<0.2	<1	3	1	<0.010
	2	<0.2	<1	3	<1	<0.010
Atrisco Riverside Drain at mouth	2	<0.2	<1	2	<1	<0.010
	1	<0.2	<1	3	1	--
	3	<0.2	<1	2	2	0.008E
	2	<0.2	<1	2	1	<0.010
	1	<0.2	<1	2	1	<0.010
	1	<0.2	<1	3	2	<0.010
	2	<0.2	<1	3	1	<0.010
	2	<0.2	<1	2	2	<0.010

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Cyanide amenable to chlorination, unfiltered (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Bicarbonate, whole water, field (mg/L as HCO_3)
Upper Corrales Riverside Drain at mouth	<0.010	45	7.5	26	3.4	--
	--	49	7.6	24	3.1	156
	<0.010	41	7.2	22	2.5	129
	<0.010	37	7.8	25	3.1	190
	<0.010	41	6.9	23	3.2	142
	<0.010	44	7.1	23	3.0	134
	<0.010	43	7.6	24	3.1	122
	<0.010	47	7.9	23	3.3	--
Corrales Riverside Drain at mouth	<0.010	46	7.2	25	3.6	--
	--	53	7.9	27	3.3	167
	<0.010	49	7.9	26	3.1	160
Albuquerque Riverside Drain at gate	--	50	7.6	26	2.7	154
	<0.010	40	6.8	22	2.7	131
	<0.010	40	8.2	25	3.1	183
	<0.010	44	7.6	24	3.3	154
	<0.010	45	7.6	25	2.9	152
	<0.010	44	7.8	26	3.1	158
	<0.010	48	8.1	26	3.6	--
Albuquerque Riverside Drain at mouth	<0.010	54	8.6	34	4.9	--
	--	54	8.2	33	4.1	171
	<0.010	44	7.4	26	3.2	148
	<0.010	43	8.7	28	3.8	185
	<0.010	47	7.7	27	3.7	159
	<0.010	48	7.6	33	4.3	172
	<0.010	48	8.1	29	3.6	164
	<0.010	50	8.2	28	4.0	--
Atrisco Riverside Drain at mouth	<0.010	48	7.6	30	4.1	--
	--	53	8.0	29	3.5	160
	0.006E	45	7.3	29	3.2	150
	<0.010	42	7.9	28	3.6	216
	<0.010	47	7.2	30	3.9	160
	<0.010	46	7.4	28	3.6	159
	<0.010	50	7.6	32	3.6	148
	<0.010	50	7.8	31	4.3	--

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Carbonate, whole water, field (mg/L as CO_3)	Chloride, dissolved (mg/L)	Sulfate, dissolved (mg/L as SO_4)	Solids, residue at 180 deg C, dissolved (mg/L)	Sediment, suspended (mg/L)	Sediment, suspended, sieve diameter finer than 0.062 mm (percent)
Upper Corrales Riverside Drain at mouth	--	9.7	61	259	60	73
	0	12	55	253	19	89
	0	11	55	231	123	85
	0	6.7	60	239	857	97
	0	7.0	55	235	53	75
	7	8.6	51	239	12	71
	0	8.3	58	210	87	81
	--	6.4	71	242	539	91
Corrales Riverside Drain at mouth	--	9.2	58	260	93	98
	0	12	60	274	35	100
	0	12	58	265	44	91
Albuquerque Riverside Drain at gate	0	12	56	258	18	61
	0	9.5	55	222	113	86
	0	7.8	61	250	535	99
	0	7.4	57	239	65	75
	0	9.5	56	252	14	65
	0	8.7	62	242	145	64
	--	7.3	73	254	1,080	93
Albuquerque Riverside Drain at mouth	--	16	69	313	31	93
	0	17	64	303	26	76
	0	12	58	258	75	87
	0	9.5	63	270	377	95
	0	9.5	60	255	99	76
	0	15	61	293	17	89
	0	11	65	222	104	79
	--	10	73	242	630	92
Atrisco Riverside Drain at mouth	--	13	66	290	64	76
	0	14	62	271	29	70
	0	14	61	266	47	79
	0	11	59	265	119	87
	0	12	62	269	73	68
	0	11	60	270	39	69
	7	15	66	274	31	66
	--	13	72	254	193	61

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Date	Discharge, mean daily (ft^3/s)	Temperature water (deg C)	Specific conductance (µS/cm)	pH water whole, field (standard units)	Oxygen, dissolved (mg/L)	Alkalinity, whole water, field (mg/L as $CaCO_3$)
Bernalillo Wastewater Treatment Plant outfall	11-03-94	0.72	17.5	1,400	7.83	5.7	121L
	02-15-95	0.74	13.5	1,240	7.44	6.5	144
	05-10-95	0.80	17.0	1,420	7.21	5.7	138
	08-28-95	0.91	25.0	1,300	7.30	5.7	163
	10-06-95	0.71	19.0	1,420	7.19	4.7	145
	02-16-96	0.88	14.0	1,390	7.29	5.0	122
	05-22-96	0.64	21.5	1,360	7.45	5.0	154
	08-29-96	0.75	25.0	1,270	7.60	6.4	118L
Rio Rancho No. 2 Wastewater Treatment Plant outfall	11-04-94	2.7	22.0	797	7.64	6.4	172L
	02-15-95	3.1	16.5	827	7.74	6.9	168
	05-10-95	2.5	20.5	880	7.46	6.6	149
	08-28-95	0.78	28.0	834	7.19	5.8	140
	10-06-95	2.8	23.0	707	7.03	6.2	126
	02-16-96	3.0	17.0	712	7.30	6.7	109
	05-22-96	1.1	23.5	766	7.32	--	126
	08-29-96	2.5	28.0	775	7.52	5.8	180L
Rio Rancho No. 3 Wastewater Treatment Plant outfall	11-04-94	0.37	21.0	2,110	7.36	6.3	139L
	02-15-95	0.38	17.0	1,040	7.30	6.5	172
	05-10-95	0.34	20.0	2,120	6.93	6.6	120
	08-28-95	0.43	28.0	1,090	7.17	5.8	164
Albuquerque Wastewater Treatment Plant outfall	11-01-94	91	22.5	823	7.30	4.6	121L
	02-16-95	86	19.0	825	7.01	6.8	141
	05-09-95	82	23.0	836	6.85	5.5	164
	08-28-95	93	28.0	801	6.98	6.0	116
	10-06-95	89	24.5	808	6.55	4.3	105
	02-15-96	87	11.0	833	6.86	6.8	114
	05-22-96	78	26.0	794	7.00	6.4	122
	08-29-96	81	28.5	764	7.12	5.6	118L

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Aluminum, dissolved (µg/L)	Aluminum, total recoverable (µg/L)	Antimony, dissolved (µg/L)	Arsenic, dissolved (µg/L)	Arsenic, total (µg/L)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)
Bernalillo Wastewater Treatment Plant outfall	60	120	<1	20	22	20	<1
	40	150	<1	16	18	28	<1
	30	80	<1	19	18	24	<1
	100	150	<1	11	10	27	<1
	50	70	<1	16	16	23	<1
	20	90	<1	15	16	22	<1
	50	80	<1	12	13	25	<1
	30	60	<1	12	15	33	<1
Rio Rancho No. 2 Wastewater Treatment Plant outfall	30	100	<1	17	17	21	<1
	30	60	<1	18	21	15	<1
	20	60	<1	14	16	11	<1
	30	70	<1	14	14	6	<1
	30	310	<1	14	15	7	<1
	30	290	<1	19	20	6	<1
	30	150	<1	15	16	6	<1
	42	90	<1	19	19	11	<1
Rio Rancho No. 3 Wastewater Treatment Plant outfall	10	60	<1	14	14	47	<1
	20	60	<1	15	17	17	<1
	10	40	<1	14	12	58	<1
	30	80	<1	14	14	12	<1
Albuquerque Wastewater Treatment Plant outfall	30	290	<1	10	11	32	<1
	30	150	<1	10	11	37	<1
	30	190	<1	9	9	42	<1
	20	210	<1	7	7	24	<1
	20	150	<1	7	8	25	<1
	20	180	<1	8	8	25	<1
	20	90	<1	7	7	24	<1
	16	60	<1	5	5	20	<1

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Cadmium, dissolved (µg/L)	Chromium, dissolved (µg/L)	Cobalt, dissolved (µg/L)	Copper, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Molybdenum, dissolved (µg/L)
Bernalillo Wastewater Treatment Plant outfall	<1.0	<1	<1	<1	<1	22	2
	<1.0	<1	<1	1	<1	5	3
	<1.0	2	<1	2	2	1	3
	<1.0	<1	<1	1	<1	26	2
	<1.0	3	<1	3	<1	26	3
	<1.0	2	<1	3	<1	10	2
	<1.0	3	<1	2	<1	2	1
	<1.0	<1	<1	2	<1	1	3
Rio Rancho No. 2 Wastewater Treatment Plant outfall	<1.0	<1	<1	3	<1	4	10
	<1.0	2	<1	4	<1	2	11
	<1.0	2	<1	5	1	2	12
	<1.0	1	<1	6	<1	1	13
	<1.0	3	<1	9	<1	3	9
	<1.0	3	<1	4	<1	2	7
	<1.0	3	<1	4	<1	3	10
	<1.0	1	<1	5	<1	2	12
Rio Rancho No. 3 Wastewater Treatment Plant outfall	<1.0	<1	<1	2	1	3	<1
	<1.0	1	<1	2	<1	2	7
	<1.0	2	<1	3	3	3	<1
	<1.0	1	<1	4	1	1	7
Albuquerque Wastewater Treatment Plant outfall	<1.0	<1	<1	4	<1	19	29
	<1.0	<1	<1	3	<1	27	20
	<1.0	2	<1	5	2	24	30
	<1.0	<1	<1	4	<1	17	41
	<1.0	2	<1	5	<1	18	28
	<1.0	2	<1	5	<1	20	26
	<1.0	2	<1	3	<1	24	29
	<1.0	<1	<1	1	<1	42	34

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Nickel, dissolved (µg/L)	Silver, dissolved (µg/L)	Silver, total recoverable (µg/L)	Uranium, natural, dissolved (µg/L)	Zinc, dissolved (µg/L)	Cyanide, total (mg/L)
Bernalillo Wastewater Treatment Plant outfall	3	<0.2	<1	3	9	0.009E
	2	<0.2	<1	4	17	0.010
	4	<0.2	<1	3	22	0.007E
	2	<0.2	<1	5	20	0.021
	3	<0.2	<1	3	14	0.019
	2	<0.2	2	2	28	0.005E
	3	<0.2	<1	3	21	0.007E
	3	<0.2	<1	2	34	0.016
Rio Rancho No. 2 Wastewater Treatment Plant outfall	1	<0.2	<1	1	41	<0.010
	<1	<0.2	<1	2	36	<0.010
	2	<0.2	<1	1	40	<0.010
	1	<0.2	<1	<1	38	<0.010
	1	<0.2	<1	<1	47	<0.010
	1	<0.2	<1	<1	35	<0.010
	2	<0.2	<1	<1	36	<0.010
	1	<0.2	<1	1	43	<0.010
Rio Rancho No. 3 Wastewater Treatment Plant outfall	3	<0.2	<1	<1	35	<0.010
	<1	<0.2	<1	<1	42	<0.010
	6	<0.2	<1	<1	46	<0.010
	1	<0.2	<1	<1	48	<0.010
Albuquerque Wastewater Treatment Plant outfall	3	0.8	2	1	18	<0.010
	2	0.2	1	1	21	<0.010
	4	0.2	1	2	29	<0.010
	2	<0.2	1	<1	22	<0.010
	4	<0.2	1	<1	23	<0.010
	5	<0.2	1	<1	30	<0.010
	3	<0.2	<1	<1	29	0.008E
	4	<0.2	<1	<1	19	<0.010

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Cyanide amenable to chlorination, unfiltered (mg/L)	Calcium, dissolved (mg/L)	Magnesium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Bicarbonate, whole water, field (mg/L as HCO_3)
Bernalillo Wastewater Treatment Plant outfall	<0.010	79	12	180	16	--
	<0.010	79	12	170	16	176
	<0.010	78	12	190	17	160
	<0.010	70	12	160	13	199
	<0.010	80	12	170	16	177
	<0.010	77	12	170	17	149
	<0.010	77	11	180	16	188
	0.016	74	11	170	17	--
Rio Rancho No. 2 Wastewater Treatment Plant outfall	<0.010	22	2.5	140	13	--
	<0.010	20	2.9	140	14	205
	<0.010	20	3.1	160	14	182
	<0.010	15	3.2	150	12	171
	<0.010	15	2.3	120	13	154
	<0.010	12	2.0	130	13	133
	<0.010	15	2.0	140	3.1	154
	<0.010	17	2.6	140	15	--
Rio Rancho No. 3 Wastewater Treatment Plant outfall	<0.010	120	17	270	34	--
	<0.010	28	4.2	180	30	210
	<0.010	120	17	280	37	146
	<0.010	24	4.6	180	26	200
Albuquerque Wastewater Treatment Plant outfall	<0.010	39	5.8	100	13	--
	<0.010	40	6.0	110	14	172
	<0.010	39	6.2	110	14	200
	<0.010	32	6.1	100	11	142
	<0.010	42	6.2	110	14	128
	<0.010	40	6.3	100	15	139
	<0.010	41	6.1	110	14	149
	<0.010	42	6.1	100	14	--

Table 54.--Concentrations of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Concluded

Sampling site (fig. 1)	Carbonate, whole water, field (mg/L as CO_3)	Chloride, dissolved (mg/L)	Sulfate, dissolved (mg/L as SO_4)	Solids, residue at 180 deg C, dissolved (mg/L)	Sediment, suspended (mg/L)	Sediment, suspended, sieve diameter finer than 0.062 mm (percent)
Bernalillo Wastewater Treatment Plant outfall	--	230	130	882	25	97
	0	200	130	828	52	98
	0	230	140	898	26	80
	0	190	130	806	81	92
	0	220	140	860	49	81
	0	230	140	882	67	88
	0	230	140	834	32	79
	--	220	130	796	55	61
Rio Rancho No. 2 Wastewater Treatment Plant outfall	--	54	90	519	20	98
	0	65	95	519	14	82
	0	72	97	568	30	83
	0	62	96	541	71	89
	0	53	80	463	49	82
	0	50	80	474	56	95
	0	60	94	480	39	70
	--	56	96	486	33	87
Rio Rancho No. 3 Wastewater Treatment Plant outfall	--	430	190	1,280	40	92
	0	130	88	642	29	78
	0	440	190	1,290	40	77
	0	150	95	679	31	80
Albuquerque Wastewater Treatment Plant outfall	--	80	85	518	24	80
	0	83	92	524	16	68
	0	75	92	513	22	70
	0	82	81	506	51	86
	0	92	93	541	40	80
	0	89	94	532	19	76
	0	85	90	486	43	79
	--	88	90	452	25	74

Table 55.--National Weather Service precipitation and air-temperature data at the Albuquerque, New Mexico, station

[T, trace precipitation]

Sampling site (fig. 1)	Date	Surface-water sample time	Air-temperature time	Air temperature (degrees Celsius)	Daily precipitation (inches)	Previous daily precipitation (inches)
Rio Grande at San Felipe	10-24-94	1400	1350	21	0.00	0.00
	02-07-95	1100	1053	14	0.00	0.00
	05-04-95	1030	1052	18	0.00	0.00
	08-21-95	1115	1052	28	0.04	T
	10-02-95	0930	0950	18	0.00	0.00
	02-12-96	1015	0952	8	0.00	0.00
	05-19-96	0830	0858	26	0.00	0.00
	08-26-96	0945	0958	19	0.15	0.33
Jemez River below dam	10-31-94	0930	0951	16	0.00	0.00
	02-13-95	1030	1053	10	0.01	0.00
	05-05-95	1015	0958	18	T	0.00
	08-24-95	1145	1152	31	0.00	0.16
	02-14-96	1215	1151	14	0.00	0.00
	08-27-96	1515	1458	27	T	0.15
Rio Grande near Bernalillo	10-25-94	0910	0850	12	0.00	0.00
	02-08-95	0900	0853	2	0.00	0.00
	05-01-95	1100	1051	21	T	0.00
	08-21-95	1445	1450	32	0.04	T
	10-02-95	1245	1252	22	0.00	0.00
	02-12-96	1300	1250	13	0.00	0.00
	05-19-96	1145	1158	31	0.00	0.00
	08-26-96	1130	1158	24	0.15	0.33
Rio Grande near Alameda	10-25-94	1400	1351	18	0.00	0.00
	02-08-95	1230	1254	11	0.00	0.00
	05-01-95	1530	1550	24	T	0.00
	08-22-95	0900	0850	26	0.02	0.04
	10-02-95	1430	1451	23	0.00	0.00
	02-13-96	0900	0850	7	0.00	0.00
	05-19-96	1500	1458	34	0.00	0.00
	08-26-96	1445	1458	25	0.15	0.33

Table 55.--National Weather Service precipitation and air-temperature data at the Albuquerque, New Mexico, station--Continued

Sampling site (fig. 1)	Date	Surface-water sample time	Air-temperature time	Air temperature (degrees Celsius)	Daily precipitation (inches)	Previous daily precipitation (inches)
Rio Grande at Albuquerque	10-26-94	0940	0951	14	0.40	0.00
	02-09-95	0900	0852	8	0.00	0.00
	05-02-95	1030	1050	23	T	T
	08-22-95	1230	1252	27	0.02	0.04
Rio Grande at Rio Bravo Boulevard	10-26-94	1440	1450	14	0.40	0.00
	02-09-95	1200	1153	14	0.00	0.00
	05-02-95	1500	1452	24	T	T
	08-22-95	1400	1352	31	0.02	0.04
	10-03-95	0845	0852	15	0.00	0.00
	02-13-96	1300	1250	13	0.00	0.00
	05-20-96	0845	0858	23	0.00	0.00
	08-27-96	0830	0858	22	T	0.15
Rio Grande at Interstate 25	10-27-94	1000	0950	14	0.00	0.40
	02-10-95	1030	1052	10	0.00	0.00
	05-03-95	1100	1050	18	0.00	T
	08-23-95	1000	0950	24	0.16	0.02
	10-03-95	1100	1050	19	0.00	0.00
	02-13-96	1600	1550	13	0.00	0.00
	05-20-96	1100	1058	27	0.00	0.00
	08-27-96	1100	1058	23	T	0.15
Rio Grande at Isleta	10-27-94	1500	1450	20	0.00	0.40
	02-10-95	1500	1452	13	0.00	0.00
	05-03-95	1500	1451	22	0.00	T
	08-23-95	1530	1553	23	0.16	0.02
	10-03-95	1400	1350	23	0.00	0.00
	02-14-96	0940	0950	10	0.00	0.00
	08-27-96	1300	1258	26	T	0.15

Table 55.--National Weather Service precipitation and air-temperature data at the Albuquerque, New Mexico, station--Continued

Sampling site (fig. 1)	Date	Surface-water sample time	Air-temperature time	Air temperature (degrees Celsius)	Daily precipitation (inches)	Previous daily precipitation (inches)
Rio Grande at Los Lunas	10-28-94	1000	0950	60	0.00	0.40
	02-10-95	1700	1653	12	0.00	0.00
	05-04-95	1500	1450	26	0.00	0.00
	08-24-95	0920	0850	22	0.00	0.16
	10-04-95	0930	0950	22	0.00	0.00
Upper Corrales Riverside Drain at mouth	10-31-94	1315	1250	16	0.00	0.00
	02-13-95	1230	1250	12	0.01	0.00
	05-08-95	0900	0850	12	0.00	T
	08-24-95	1415	1353	30	0.00	0.16
	10-04-95	1330	1353	26	0.00	0.00
	02-14-96	1400	1351	18	0.00	0.00
	05-21-96	0830	0858	23	0.00	0.00
	08-28-96	0800	0758	21	0.06	T
Corrales Riverside Drain at mouth	11-01-94	1500	1451	22	0.00	0.00
	02-13-95	1430	1452	14	0.01	0.00
	05-08-95	1100	1053	17	0.00	T
Albuquerque Riverside Drain at gate	02-14-95	0800	0752	8	0.00	0.01
	05-08-95	1500	1454	19	0.00	T
	08-24-95	1650	1650	31	0.00	0.16
	10-05-95	1130	1152	16	0.00	0.00
	02-15-96	0850	0850	8	0.00	0.00
	05-21-96	1000	0958	24	0.00	0.00
	08-28-96	0930	0958	23	0.06	T
Albuquerque Riverside Drain at mouth	11-03-94	0930	0952	14	0.04	0.00
	02-14-95	1100	1050	12	0.00	0.01
	05-09-95	0930	0950	17	0.00	0.00
	08-25-95	0920	0850	23	T	0.00
	10-05-95	0930	0950	15	0.00	0.00

Table 55.--National Weather Service precipitation and air-temperature data at the Albuquerque, New Mexico, station--Continued

Sampling site (fig. 1)	Date	Surface-water sample time	Air-temperature time	Air temperature (degrees Celsius)	Daily precipitation (inches)	Previous daily precipitation (inches)
Albuquerque Riverside Drain at mouth	02-15-96	1115	1051	12	0.00	0.00
	05-21-96	1300	1258	28	0.00	0.00
	08-28-96	1145	1158	27	0.06	T
	11-02-94	0930	0950	17	0.00	0.00
	02-14-95	1200	1152	13	0.00	0.01
	05-09-95	1130	1051	19	0.00	0.00
	08-25-95	1130	1152	29	T	0.00
	10-05-95	1315	1252	17	0.00	0.00
	02-15-96	1330	1350	18	0.00	0.00
	05-21-96	1500	1458	31	0.00	0.00
	08-28-96	1330	1358	28	0.06	T
Bernalillo Wastewater Treatment Plant outfall	11-03-94	1257	1252	13	0.00	0.00
	02-15-95	1100	1053	10	0.02	0.00
	05-10-95	0830	0852	17	0.00	0.00
	08-28-95	1015	0952	27	0.00	0.30
	10-06-95	0830	0853	9	0.00	0.00
	02-16-96	0800	0750	1	0.00	0.00
	05-22-96	0800	0758	22	0.00	0.00
	08-29-96	0830	0858	23	0.35	0.06
Rio Rancho No. 2 Wastewater Treatment Plant outfall	11-04-94	1045	1051	9	T	0.04
	02-15-95	1400	1353	14	0.02	0.00
	05-10-95	1000	0952	19	0.00	0.00
	08-28-95	1230	1254	29	0.00	0.30
	10-06-95	1000	0950	12	0.00	0.00
	02-16-96	0900	0850	4	0.00	0.00
	05-22-96	0900	0858	23	0.00	0.00
	08-29-96	1045	1058	25	0.35	0.06

Table 55.--National Weather Service precipitation and air-temperature data at the Albuquerque, New Mexico, station--Concluded

Sampling site (fig. 1)	Date	Surface-water sample time	Air-temperature time	Air temperature (degrees Celsius)	Daily precipitation (inches)	Previous daily precipitation (inches)
Rio Rancho No. 3 Wastewater Treatment Plant outfall	11-04-94	1000	0950	8	T	0.04
	02-15-95	1300	1252	12	0.02	0.00
	05-10-95	1130	1152	22	0.00	0.00
	08-28-95	1150	1152	29	0.00	0.30
Albuquerque Wastewater Treatment Plant outfall	11-01-94	0945	0954	13	0.00	0.00
	02-16-95	0900	0851	5	0.00	0.02
	05-09-95	1330	1351	23	0.00	0.00
	08-28-95	0845	0852	24	0.00	0.30
	10-06-95	1130	1150	15	0.00	0.00
	02-15-96	1500	1450	20	0.00	0.00
	05-22-96	1120	1058	26	0.00	0.00
	08-29-96	1200	1158	27	0.35	0.06

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996

[All loads reported in tons per day; E, scientific notation; <, less than; --, no data; deg C, degrees Celsius]

Sampling site (fig. 1)	Date	Aluminum, dissolved	Aluminum, total recoverable	Antimony, dissolved	Arsenic, dissolved	Arsenic, total	Barium, dissolved	Beryllium, dissolved
Rio Grande at San Felipe	10/24/94	2.15E-2	1.12E+0	<2.15E-3	4.29E-3	4.29E-3	1.82E-1	<2.15E-3
	02/07/95	5.32E-2	4.52E-1	<2.66E-3	5.32E-3	5.32E-3	1.76E-1	<2.66E-3
	05/04/95	2.31E-1	1.62E+1	<1.15E-2	1.15E-2	2.31E-2	6.81E-1	<1.15E-2
	08/21/95	5.93E-2	4.74E+0	<2.97E-3	5.93E-3	5.93E-3	2.08E-1	<2.97E-3
	10/02/95	6.58E-3	2.63E+0	<3.29E-3	6.58E-3	6.58E-3	2.40E-1	<3.29E-3
	02/12/96	6.52E-2	6.20E-1	<3.26E-3	6.52E-3	6.52E-3	1.92E-1	<3.26E-3
	05/19/96	5.18E-2	8.80E-1	<2.59E-3	2.59E-3	5.18E-3	1.76E-1	<2.59E-3
	08/26/96	1.19E-2	2.22E+2	<2.97E-3	5.93E-3	8.90E-3	2.31E-1	<2.97E-3
Jemez River below dam	10/31/94	5.66E-7	4.53E-3	<5.66E-7	7.93E-6	1.08E-5	1.13E-4	<5.66E-7
	02/13/95	6.57E-6	1.55E-3	<2.19E-6	3.94E-5	5.02E-5	1.14E-4	<2.19E-6
	05/05/95	4.54E-2	1.97E+0	<1.51E-3	2.12E-2	1.97E-2	1.07E-1	<1.51E-3
	08/24/95	4.66E-4	4.90E-2	<2.33E-4	4.20E-3	4.20E-3	2.33E-2	<2.33E-4
	02/14/96	3.89E-4	2.63E-2	<9.73E-5	1.95E-3	2.14E-3	9.73E-3	<9.73E-5
	08/27/96	4.58E-4	2.89E-1	<4.58E-4	1.15E-2	1.10E-2	5.68E-2	<4.58E-4
Rio Grande near Bernalillo	10/25/94	1.22E-2	6.61E-1	<1.22E-3	3.67E-3	3.67E-3	1.13E-1	<1.22E-3
	02/08/95	5.19E-2	7.00E-1	<2.59E-3	5.19E-3	5.19E-3	1.79E-1	<2.59E-3
	05/01/95	2.52E-1	1.64E+1	<1.26E-2	3.78E-2	3.78E-2	8.44E-1	<1.26E-2
	08/21/95	5.72E-2	4.19E+0	<1.91E-3	3.81E-3	3.81E-3	1.43E-1	<1.91E-3
	10/02/95	4.35E-3	2.13E+0	<2.17E-3	4.35E-3	4.35E-3	1.67E-1	<2.17E-3
	02/12/96	6.25E-2	5.94E-1	<3.13E-3	6.25E-3	6.25E-3	1.94E-1	<3.13E-3
	05/19/96	3.24E-2	5.66E-1	<1.62E-3	3.24E-3	3.24E-3	1.02E-1	<1.62E-3
	08/26/96	6.55E-3	5.02E+1	<2.18E-3	4.37E-3	6.55E-3	1.88E-1	<2.18E-3
Rio Grande near Alameda	10/25/94	1.32E-2	1.32E+0	<1.32E-3	3.95E-3	3.95E-3	1.11E-1	<1.32E-3
	02/08/95	4.93E-2	7.39E-1	<2.46E-3	7.39E-3	7.39E-3	1.72E-1	<2.46E-3
	05/01/95	2.81E-1	1.87E+1	<9.36E-3	2.81E-2	2.81E-2	6.27E-1	<9.36E-3
	08/22/95	4.14E-2	6.20E+0	<2.07E-3	4.14E-3	4.14E-3	1.43E-1	<2.07E-3
	10/02/95	7.98E-3	2.59E+0	<2.00E-3	3.99E-3	3.99E-3	1.32E-1	<2.00E-3
	02/13/96	1.02E-1	8.49E-1	<3.40E-3	6.79E-3	1.02E-2	2.14E-1	<3.40E-3
	05/19/96	2.64E-3	7.27E-1	<1.32E-3	2.64E-3	2.64E-3	8.59E-2	<1.32E-3
	08/26/96	1.02E-2	1.00E+2	<2.05E-3	6.15E-3	6.15E-3	1.84E-1	<2.05E-3

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Cadmium, dissolved	Chro-mium, dissolved	Cobalt, dissolved	Copper, dis-solved	Lead, dissolved	Manga-nese, dis-solved	Molyb-denum, dis-solved	Nickel, dissolved
Rio Grande at San Felipe	<2.15E-3	<2.15E-3	<2.15E-3	2.15E-3	<2.15E-3	1.29E-2	8.58E-3	4.29E-3
	<2.66E-3	<2.66E-3	<2.66E-3	<2.66E-3	<2.66E-3	4.26E-2	1.06E-2	<2.66E-3
	<1.15E-2	<1.15E-2	<1.15E-2	1.15E-2	<1.15E-2	1.15E-1	2.31E-2	3.46E-2
	<2.97E-3	<2.97E-3	<2.97E-3	2.97E-3	<2.97E-3	3.56E-2	1.19E-2	5.93E-3
	<3.29E-3	3.29E-3	<3.29E-3	3.29E-3	<3.29E-3	2.30E-2	1.32E-2	<3.29E-3
	<3.26E-3	3.26E-3	<3.26E-3	3.26E-3	<3.26E-3	4.57E-2	1.30E-2	6.52E-3
	<2.59E-3	2.59E-3	<2.59E-3	2.59E-3	<2.59E-3	3.11E-2	1.04E-2	5.18E-3
	<2.97E-3	<2.97E-3	<2.97E-3	2.97E-3	<2.97E-3	<2.97E-3	8.90E-3	5.93E-3
Jemez River below dam	<5.66E-7	<5.66E-7	<5.66E-7	1.13E-6	<5.66E-7	1.19E-4	5.66E-6	1.70E-6
	<2.19E-6	<2.19E-6	<2.19E-6	4.38E-6	<2.19E-6	7.44E-4	1.75E-5	8.76E-6
	<1.51E-3	1.51E-3	<1.51E-3	3.02E-3	1.51E-3	3.02E-3	3.02E-3	4.54E-3
	<2.33E-4	<2.33E-4	<2.33E-4	4.66E-4	<2.33E-4	9.33E-2	9.33E-4	4.66E-4
	<9.73E-5	1.95E-4	<9.73E-5	2.92E-4	<9.73E-5	1.17E-3	3.89E-4	1.95E-4
	<4.58E-4	<4.58E-4	<4.58E-4	9.17E-4	<4.58E-4	9.17E-3	2.75E-3	9.17E-4
Rio Grande near Bernalillo	<1.22E-3	<1.22E-3	<1.22E-3	<1.22E-3	<1.22E-3	2.45E-3	6.12E-3	2.45E-3
	<2.59E-3	<2.59E-3	<2.59E-3	<2.59E-3	<2.59E-3	2.33E-2	1.04E-2	<2.59E-3
	<1.26E-2	<1.26E-2	<1.26E-2	1.26E-2	<1.26E-2	7.55E-2	2.52E-2	3.78E-2
	<1.91E-3	<1.91E-3	<1.91E-3	1.91E-3	<1.91E-3	1.14E-2	5.72E-3	3.81E-3
	<2.17E-3	2.17E-3	<2.17E-3	<2.17E-3	<2.17E-3	8.69E-3	1.09E-2	<2.17E-3
	<3.13E-3	3.13E-3	<3.13E-3	3.13E-3	<3.13E-3	2.81E-2	1.25E-2	3.13E-3
	<1.62E-3	1.62E-3	<1.62E-3	1.62E-3	<1.62E-3	1.29E-2	6.47E-3	3.24E-3
	<2.18E-3	<2.18E-3	<2.18E-3	2.18E-3	<2.18E-3	<2.18E-3	8.74E-3	4.37E-3
Rio Grande near Alameda	<1.32E-3	<1.32E-3	<1.32E-3	1.32E-3	<1.32E-3	3.95E-3	5.26E-3	2.63E-3
	<2.46E-3	<2.46E-3	<2.46E-3	<2.46E-3	<2.46E-3	7.39E-3	9.86E-3	<2.46E-3
	<9.36E-3	<9.36E-3	<9.36E-3	9.36E-3	<9.36E-3	2.81E-2	1.87E-2	2.81E-2
	<2.07E-3	<2.07E-3	<2.07E-3	4.14E-3	<2.07E-3	4.14E-3	8.27E-3	6.20E-3
	<2.00E-3	2.00E-3	<2.00E-3	3.99E-3	<2.00E-3	3.99E-3	7.98E-3	2.00E-3
	<3.40E-3	3.40E-3	<3.40E-3	3.40E-3	<3.40E-3	1.02E-2	1.36E-2	3.40E-3
	<1.32E-3	<1.32E-3	<1.32E-3	1.32E-3	<1.32E-3	3.96E-3	5.28E-3	2.64E-3
	<2.05E-3	<2.05E-3	<2.05E-3	2.05E-3	<2.05E-3	<2.05E-3	8.20E-3	2.05E-3

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Silver, dissolved	Silver, total recoverable	Uranium, natural, dissolved	Zinc, dissolved	Cyanide, total	Cyanide, amenable to chlorination	Calcium, dissolved	Magnesium, dissolved
Rio Grande at San Felipe	<4.29E-4	<2.15E-3	6.44E-3	4.29E-3	<2.15E-5	<2.15E-5	8.80E+1	1.50E+1
	<5.32E-4	<2.66E-3	7.98E-3	5.32E-3	--	--	9.85E+1	1.81E+1
	<2.31E-3	<1.15E-2	2.31E-2	1.15E-2	<1.15E-4	<1.15E-4	3.81E+2	7.73E+1
	<5.93E-4	<2.97E-3	5.93E-3	5.93E-3	<2.97E-5	<2.97E-5	1.04E+2	2.43E+1
	<6.58E-4	<3.29E-3	6.58E-3	<3.29E-3	<3.29E-5	<3.29E-5	1.28E+2	2.37E+1
	<6.52E-4	<3.26E-3	9.79E-3	6.52E-3	<3.26E-5	<3.26E-5	1.14E+2	2.48E+1
	<5.18E-4	<2.59E-3	5.18E-3	7.76E-3	<2.59E-5	<2.59E-5	1.01E+2	1.97E+1
	<5.93E-4	<2.97E-3	5.93E-3	1.78E-2	<2.97E-5	<2.97E-5	1.22E+2	2.11E+1
Jemez River below dam	<1.13E-7	<5.66E-7	1.70E-6	<5.66E-7	<5.66E-9	<5.66E-9	4.19E-2	6.79E-3
	<4.38E-7	<2.19E-6	6.57E-6	4.38E-6	--	--	1.62E-1	2.63E-2
	<3.02E-4	<1.51E-3	3.02E-3	6.05E-3	<1.51E-5	<1.51E-5	6.35E+1	7.71E+0
	<4.66E-5	<2.33E-4	4.66E-4	7.00E-4	<2.33E-6	<2.33E-6	1.54E+1	1.94E+0
	<1.95E-5	<9.73E-5	1.95E-4	9.73E-5	<9.73E-7	<9.73E-7	5.45E+0	6.62E-1
	<9.17E-5	<4.58E-4	1.37E-3	<4.58E-4	<4.58E-6	<4.58E-6	3.21E+1	4.12E+0
Rio Grande near Bernalillo	<2.45E-4	<1.22E-3	3.67E-3	<1.22E-3	<1.22E-5	<1.22E-5	5.02E+1	8.69E+0
	<5.19E-4	<2.59E-3	7.78E-3	<2.59E-3	--	--	1.01E+2	1.82E+1
	<2.52E-3	<1.26E-2	2.52E-2	<1.26E-2	<1.26E-4	<1.26E-4	4.53E+2	8.44E+1
	<3.81E-4	<1.91E-3	3.81E-3	1.91E-3	<1.91E-5	<1.91E-5	6.86E+1	1.49E+1
	<4.35E-4	<2.17E-3	4.35E-3	2.17E-3	<2.17E-5	<2.17E-5	8.47E+1	1.54E+1
	<6.25E-4	<3.13E-3	9.38E-3	3.13E-3	<3.13E-5	<3.13E-5	1.22E+2	2.25E+1
	<3.24E-4	<1.62E-3	4.85E-3	1.62E-3	<1.62E-5	<1.62E-5	6.31E+1	1.23E+1
	<4.37E-4	<2.18E-3	4.37E-3	<2.18E-3	<2.18E-5	<2.18E-5	9.61E+1	1.57E+1
Rio Grande near Alameda	<2.63E-4	<1.32E-3	3.95E-3	<1.32E-3	<1.32E-5	<1.32E-5	5.53E+1	9.34E+0
	<4.93E-4	<2.46E-3	7.39E-3	<2.46E-3	--	--	1.01E+2	1.72E+1
	<1.87E-3	<9.36E-3	1.87E-2	9.36E-3	<9.36E-5	<9.36E-5	3.37E+2	6.17E+1
	<4.14E-4	<2.07E-3	4.14E-3	4.14E-3	<2.07E-5	<2.07E-5	7.44E+1	1.55E+1
	<3.99E-4	<2.00E-3	3.99E-3	9.98E-3	<2.00E-5	<2.00E-5	7.58E+1	1.44E+1
	<6.79E-4	<3.40E-3	1.02E-2	6.79E-3	<3.40E-5	<3.40E-5	1.39E+2	2.55E+1
	<2.64E-4	<1.32E-3	3.96E-3	<1.32E-3	<1.32E-5	<1.32E-5	5.28E+1	9.91E+0
	<4.10E-4	<2.05E-3	4.10E-3	3.28E-2	<2.05E-5	<2.05E-5	8.81E+1	1.31E+1

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Sodium, dissolved	Potassium, dissolved	Bicarbonate, whole water	Carbonate, whole water	Chloride, dissolved	Sulfate, dissolved	Solids, residue at 180 deg C, dissolved	Sediment, suspended
Rio Grande at San Felipe	4.51E+1	5.58E+0	--	--	1.22E+1	1.16E+2	4.79E+2	1.18E+2
	5.59E+1	6.92E+0	3.65E+2	0.00E+0	2.02E+1	1.12E+2	5.67E+2	7.72E+1
	1.73E+2	2.31E+1	1.22E+3	0.00E+0	4.62E+1	5.42E+2	2.16E+3	1.90E+3
	7.12E+1	9.79E+0	4.15E+2	0.00E+0	1.90E+1	1.69E+2	6.41E+2	4.45E+2
	6.58E+1	9.21E+0	4.44E+2	0.00E+0	1.78E+1	1.68E+2	6.87E+2	1.97E+2
	6.85E+1	9.13E+0	4.40E+2	0.00E+0	2.12E+1	1.40E+2	7.37E+2	0.00E+0
	5.95E+1	7.51E+0	3.70E+2	0.00E+0	1.76E+1	1.45E+2	5.28E+2	1.04E+2
	6.23E+1	8.60E+0	--	--	1.33E+1	2.16E+2	6.64E+2	2.93E+4
Jemez River below dam	1.08E-1	4.30E-3	--	--	7.36E-2	1.25E-1	4.68E-1	1.38E-1
	3.94E-1	2.15E-2	6.04E-1	8.76E-3	3.06E-1	4.37E-1	1.76E+0	1.49E-1
	1.06E+2	8.02E+0	2.21E+2	0.00E+0	8.32E+1	1.21E+2	5.61E+2	7.56E+1
	3.03E+1	1.63E+0	3.96E+1	0.00E+0	2.15E+1	5.60E+1	1.62E+2	1.12E+1
	1.17E+1	7.49E-1	1.96E+1	0.00E+0	9.54E+0	1.17E+1	5.48E+1	3.21E+0
	7.79E+1	5.04E+0	--	--	6.87E+1	1.05E+2	3.43E+2	4.72E+1
Rio Grande near Bernalillo	2.57E+1	3.18E+0	--	--	7.34E+0	6.61E+1	2.75E+2	4.41E+1
	5.71E+1	7.00E+0	3.79E+2	0.00E+0	1.92E+1	1.06E+2	5.52E+2	6.74E+1
	3.27E+2	3.40E+1	1.52E+3	0.00E+0	1.64E+2	7.05E+2	2.90E+3	3.06E+3
	4.38E+1	6.10E+0	2.84E+2	0.00E+0	1.22E+1	1.11E+2	4.38E+2	3.39E+2
	4.56E+1	6.30E+0	2.74E+2	0.00E+0	1.24E+1	1.11E+2	4.52E+2	1.48E+2
	7.51E+1	9.38E+0	4.32E+2	0.00E+0	2.88E+1	1.44E+2	7.26E+2	5.94E+1
	3.72E+1	5.01E+0	2.31E+2	0.00E+0	1.08E+1	9.06E+1	3.01E+2	8.74E+1
	5.46E+1	7.21E+0	--	--	2.10E+1	1.66E+2	3.97E+2	5.09E+3
Rio Grande near Alameda	3.03E+1	3.82E+0	--	--	9.60E+0	7.50E+1	3.14E+2	8.55E+1
	5.67E+1	6.90E+0	3.87E+2	0.00E+0	2.12E+1	1.11E+2	5.50E+2	1.21E+2
	2.43E+2	2.81E+1	1.16E+3	0.00E+0	1.22E+2	5.24E+2	2.17E+3	2.03E+3
	4.96E+1	7.03E+0	3.18E+2	0.00E+0	1.47E+1	1.18E+2	4.86E+2	4.30E+2
	4.19E+1	5.99E+0	2.73E+2	0.00E+0	1.28E+1	1.04E+2	4.35E+2	2.13E+2
	8.15E+1	1.05E+1	4.72E+2	0.00E+0	3.19E+1	1.60E+2	7.91E+2	1.49E+2
	3.17E+1	4.23E+0	1.89E+2	0.00E+0	9.64E+0	7.66E+1	2.72E+2	8.19E+1
	5.53E+1	7.17E+0	--	--	2.25E+1	1.62E+2	4.88E+2	9.34E+3

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Date	Alumi-num, dis-solved	Aluminum, total recover-able	Anti-mony, dis-solved	Arsenic, dissolved	Arsenic, total	Barium, dis-solved	Beryl-lium, dissolved
Rio Grande at Albuquerque	10/26/94	1.24E-2	1.61E+0	<1.24E-3	2.48E-3	3.72E-3	9.92E-2	<1.24E-3
	02/09/95	5.00E-2	9.01E-1	<2.50E-3	7.51E-3	5.00E-3	1.65E-1	<2.50E-3
	05/02/95	1.82E-1	1.73E+1	<9.11E-3	2.73E-2	2.73E-2	5.83E-1	<9.11E-3
	08/22/95	4.75E-2	1.31E+1	<2.38E-3	7.13E-3	7.13E-3	1.66E-1	<2.38E-3
Rio Grande at Rio Bravo Boulevard	10/26/94	1.36E-2	2.18E+0	<1.36E-3	4.08E-3	4.08E-3	1.12E-1	<1.36E-3
	02/09/95	5.11E-2	1.48E+0	<2.55E-3	5.11E-3	5.11E-3	1.71E-1	<2.55E-3
	05/02/95	3.09E-1	2.06E+1	<1.03E-2	3.09E-2	3.09E-2	6.69E-1	<1.03E-2
	08/22/95	1.22E-2	1.34E+1	<2.04E-3	4.07E-3	4.07E-3	1.34E-1	<2.04E-3
	10/03/95	4.26E-3	3.83E+0	<2.13E-3	4.26E-3	4.26E-3	1.47E-1	<2.13E-3
	02/13/96	6.20E-2	1.71E+0	<3.10E-3	6.20E-3	6.20E-3	2.05E-1	<3.10E-3
	05/20/96	2.48E-2	1.23E+0	<1.24E-3	2.48E-3	2.48E-3	8.19E-2	<1.24E-3
	08/27/96	5.26E-3	5.61E+1	<1.75E-3	5.26E-3	5.26E-3	1.56E-1	<1.75E-3
Rio Grande at Interstate 25	10/27/94	2.02E-2	1.42E+0	<1.01E-3	4.04E-3	4.04E-3	7.78E-2	<1.01E-3
	02/10/95	5.19E-2	1.17E+0	<2.59E-3	7.78E-3	7.78E-3	1.66E-1	<2.59E-3
	05/03/95	3.07E-1	3.38E+1	<1.02E-2	3.07E-2	3.07E-2	6.56E-1	<1.02E-2
	08/23/95	9.22E-3	1.50E+1	<2.31E-3	6.92E-3	6.92E-3	1.50E-1	<2.31E-3
	10/03/95	8.35E-3	3.55E+0	<2.09E-3	6.26E-3	6.26E-3	1.31E-1	<2.09E-3
	02/13/96	6.85E-2	2.29E+0	<3.42E-3	1.03E-2	1.03E-2	2.19E-1	<3.42E-3
	05/20/96	1.13E-2	8.95E-1	<1.13E-3	3.40E-3	3.40E-3	6.68E-2	<1.13E-3
	08/27/96	7.66E-3	7.27E+1	<1.91E-3	5.74E-3	7.66E-3	1.67E-1	<1.91E-3
Rio Grande at Isleta	10/27/94	1.60E-2	1.76E+0	<1.60E-3	6.39E-3	6.39E-3	1.25E-1	<1.60E-3
	02/10/95	2.56E-2	1.85E+0	<2.56E-3	7.69E-3	7.69E-3	1.74E-1	<2.56E-3
	05/03/95	3.60E-1	2.76E+1	<1.20E-2	3.60E-2	4.80E-2	7.80E-1	<1.20E-2
	08/23/95	9.22E-3	3.07E+1	<3.07E-3	9.22E-3	9.22E-3	2.06E-1	<3.07E-3
	10/03/95	1.03E-2	4.13E+0	<2.58E-3	7.74E-3	7.74E-3	1.75E-1	<2.58E-3
	02/14/96	7.06E-2	1.27E+0	<3.53E-3	1.06E-2	1.06E-2	2.37E-1	<3.53E-3
	05/20/96	4.53E-3	1.10E+0	<1.51E-3	4.53E-3	4.53E-3	9.66E-2	<1.51E-3
	08/27/96	8.09E-3	8.36E+1	<2.70E-3	8.09E-3	8.09E-3	2.37E-1	<2.70E-3
Rio Grande at Los Lunas	10/28/94	8.36E-3	1.09E+0	<8.36E-4	3.34E-3	4.18E-3	7.35E-2	<8.36E-4
	02/10/95	2.55E-2	2.37E+0	<2.55E-3	1.02E-2	7.65E-3	1.79E-1	<2.55E-3
	05/04/95	2.79E-1	2.60E+1	<9.30E-3	2.79E-2	2.79E-2	6.05E-1	<9.30E-3
	08/24/95	3.38E-3	1.69E+1	<1.69E-3	5.07E-3	5.07E-3	1.23E-1	<1.69E-3
	10/04/95	2.97E-3	2.22E+0	<1.48E-3	5.93E-3	5.93E-3	1.10E-1	<1.48E-3

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Cadmium, dissolved	Chromium, dissolved	Cobalt, dissolved	Copper, dissolved	Lead, dissolved	Manganese, dissolved	Molybdenum, dissolved	Nickel, dissolved
Rio Grande at Albuquerque	<1.24E-3	<1.24E-3	<1.24E-3	<1.24E-3	<1.24E-3	1.24E-3	4.96E-3	1.24E-3
	<2.50E-3	<2.50E-3	<2.50E-3	<2.50E-3	<2.50E-3	5.00E-3	1.00E-2	2.50E-3
	<9.11E-3	<9.11E-3	<9.11E-3	9.11E-3	<9.11E-3	1.82E-2	1.82E-2	2.73E-2
	<2.38E-3	<2.38E-3	<2.38E-3	4.75E-3	<2.38E-3	1.43E-2	9.50E-3	2.38E-3
Rio Grande at Rio Bravo Boulevard	<1.36E-3	<1.36E-3	<1.36E-3	<1.36E-3	<1.36E-3	2.72E-3	6.81E-3	1.36E-3
	<2.55E-3	<2.55E-3	<2.55E-3	2.55E-3	<2.55E-3	5.11E-3	1.02E-2	2.55E-3
	<1.03E-2	<1.03E-2	<1.03E-2	1.03E-2	1.03E-2	3.09E-2	2.06E-2	3.09E-2
	<2.04E-3	<2.04E-3	<2.04E-3	2.04E-3	<2.04E-3	2.04E-3	1.02E-2	4.07E-3
	<2.13E-3	2.13E-3	<2.13E-3	4.26E-3	<2.13E-3	<2.13E-3	8.52E-3	<2.13E-3
	<3.10E-3	6.20E-3	<3.10E-3	6.20E-3	<3.10E-3	6.20E-3	1.24E-2	6.20E-3
	<1.24E-3	<1.24E-3	<1.24E-3	1.24E-3	<1.24E-3	2.48E-3	6.20E-3	2.48E-3
	<1.75E-3	<1.75E-3	<1.75E-3	1.75E-3	<1.75E-3	<1.75E-3	7.01E-3	1.75E-3
Rio Grande at Interstate 25	<1.01E-3	<1.01E-3	<1.01E-3	1.01E-3	<1.01E-3	5.06E-3	7.08E-3	2.02E-3
	<2.59E-3	<2.59E-3	<2.59E-3	<2.59E-3	<2.59E-3	1.04E-2	1.30E-2	2.59E-3
	<1.02E-2	<1.02E-2	<1.02E-2	1.02E-2	<1.02E-2	4.10E-2	3.07E-2	3.07E-2
	<2.31E-3	<2.31E-3	<2.31E-3	2.31E-3	<2.31E-3	<2.31E-3	1.84E-2	4.61E-3
	<2.09E-3	4.17E-3	<2.09E-3	4.17E-3	<2.09E-3	6.26E-3	1.25E-2	<2.09E-3
	<3.42E-3	3.42E-3	<3.42E-3	6.85E-3	<3.42E-3	1.37E-2	2.05E-2	6.85E-3
	<1.13E-3	1.13E-3	<1.13E-3	1.13E-3	<1.13E-3	2.26E-3	1.02E-2	2.26E-3
	<1.91E-3	<1.91E-3	<1.91E-3	1.91E-3	<1.91E-3	<1.91E-3	9.57E-3	3.83E-3
Rio Grande at Isleta	<1.60E-3	<1.60E-3	<1.60E-3	1.60E-3	<1.60E-3	1.92E-2	1.12E-2	3.20E-3
	<2.56E-3	<2.56E-3	<2.56E-3	2.56E-3	<2.56E-3	5.64E-2	1.28E-2	2.56E-3
	<1.20E-2	<1.20E-2	<1.20E-2	1.20E-2	<1.20E-2	7.20E-2	3.60E-2	2.40E-2
	<3.07E-3	<3.07E-3	<3.07E-3	3.07E-3	<3.07E-3	9.22E-3	2.15E-2	6.15E-3
	<2.58E-3	5.16E-3	<2.58E-3	2.58E-3	<2.58E-3	1.81E-2	1.55E-2	2.58E-3
	<3.53E-3	3.53E-3	<3.53E-3	7.06E-3	<3.53E-3	6.36E-2	1.77E-2	3.53E-3
	<1.51E-3	<1.51E-3	<1.51E-3	3.02E-3	<1.51E-3	9.06E-3	1.36E-2	3.02E-3
	<2.70E-3	<2.70E-3	<2.70E-3	2.70E-3	8.09E-3	<2.70E-3	1.35E-2	5.39E-3
Rio Grande at Los Lunas	<8.36E-4	<8.36E-4	<8.36E-4	8.36E-4	<8.36E-4	1.67E-3	5.85E-3	1.67E-3
	<2.55E-3	<2.55E-3	<2.55E-3	2.55E-3	<2.55E-3	1.02E-2	1.53E-2	2.55E-3
	<9.30E-3	<9.30E-3	<9.30E-3	9.30E-3	<9.30E-3	2.79E-2	2.79E-2	1.86E-2
	<1.69E-3	<1.69E-3	<1.69E-3	1.69E-3	<1.69E-3	<1.69E-3	1.52E-2	3.38E-3
	<1.48E-3	1.48E-3	<1.48E-3	2.97E-3	<1.48E-3	2.97E-3	1.04E-2	1.48E-3

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Silver, dissolved	Silver, total recoverable	Uranium, natural, dissolved	Zinc, dissolved	Cyanide, total	Cyanide, amenable to chlorination	Calcium, dissolved	Magnesium, dissolved
Rio Grande at Albuquerque	<2.48E-4	<1.24E-3	3.72E-3	<1.24E-3	<1.24E-5	<1.24E-5	5.21E+1	8.81E+0
	<5.00E-4	<2.50E-3	7.51E-3	2.50E-3	--	--	1.00E+2	1.85E+1
	<1.82E-3	<9.11E-3	1.82E-2	<9.11E-3	<9.11E-5	<9.11E-5	3.19E+2	6.11E+1
	<4.75E-4	<2.38E-3	4.75E-3	2.38E-3	<2.38E-5	<2.38E-5	8.79E+1	1.97E+1
Rio Grande at Rio Bravo Boulevard	<2.72E-4	<1.36E-3	4.08E-3	<1.36E-3	<1.36E-5	<1.36E-5	5.72E+1	9.67E+0
	<5.11E-4	<2.55E-3	7.66E-3	5.11E-3	--	--	1.07E+2	1.89E+1
	<2.06E-3	<1.03E-2	2.06E-2	1.03E-2	<1.03E-4	<1.03E-4	3.81E+2	6.80E+1
	<4.07E-4	<2.04E-3	4.07E-3	<2.04E-3	<2.04E-5	<2.04E-5	7.33E+1	1.65E+1
	<4.26E-4	<2.13E-3	4.26E-3	2.13E-3	<2.13E-5	<2.13E-5	8.52E+1	1.55E+1
	<6.20E-4	<3.10E-3	9.30E-3	2.48E-2	<3.10E-5	<3.10E-5	1.27E+2	2.36E+1
	<2.48E-4	<1.24E-3	3.72E-3	<1.24E-3	<1.24E-5	<1.24E-5	5.08E+1	9.55E+0
	<3.50E-4	<1.75E-3	3.50E-3	<1.75E-3	<1.75E-5	<1.75E-5	7.18E+1	1.16E+1
Rio Grande at Interstate 25	<2.02E-4	<1.01E-3	2.02E-3	4.04E-3	<1.01E-5	<1.01E-5	4.15E+1	6.77E+0
	<5.19E-4	<2.59E-3	7.78E-3	7.78E-3	--	--	1.06E+2	1.89E+1
	<2.05E-3	<1.02E-2	2.05E-2	1.02E-2	<1.02E-4	<1.02E-4	3.69E+2	6.76E+1
	<4.61E-4	<2.31E-3	4.61E-3	6.92E-3	<2.31E-5	<2.31E-5	8.53E+1	1.71E+1
	<4.17E-4	<2.09E-3	4.17E-3	4.17E-3	<2.09E-5	<2.09E-5	8.56E+1	1.46E+1
	<6.85E-4	<3.42E-3	1.03E-2	1.71E-2	<3.42E-5	<3.42E-5	1.34E+2	2.47E+1
	<2.26E-4	<1.13E-3	3.40E-3	3.40E-3	<1.13E-5	<1.13E-5	4.53E+1	8.38E+0
	<3.83E-4	<1.91E-3	3.83E-3	3.83E-3	<1.91E-5	<1.91E-5	8.23E+1	1.26E+1
Rio Grande at Isleta	<3.20E-4	<1.60E-3	4.80E-3	4.80E-3	<1.60E-5	<1.60E-5	7.03E+1	1.14E+1
	<5.13E-4	<2.56E-3	7.69E-3	5.13E-3	--	--	1.10E+2	1.87E+1
	<2.40E-3	<1.20E-2	2.40E-2	2.40E-2	<1.20E-4	<1.20E-4	4.44E+2	8.04E+1
	<6.15E-4	<3.07E-3	6.15E-3	3.07E-3	<3.07E-5	<3.07E-5	1.08E+2	2.18E+1
	<5.16E-4	<2.58E-3	5.16E-3	5.16E-3	<2.58E-5	<2.58E-5	1.08E+2	1.86E+1
	<7.06E-4	<3.53E-3	1.06E-2	7.06E-3	<3.53E-5	<3.53E-5	1.45E+2	2.61E+1
	<3.02E-4	<1.51E-3	4.53E-3	6.04E-3	<1.51E-5	<1.51E-5	6.34E+1	1.13E+1
	<5.39E-4	<2.70E-3	5.39E-3	<2.70E-3	<2.70E-5	<2.70E-5	1.21E+2	1.89E+1
Rio Grande at Los Lunas	<1.67E-4	<8.36E-4	1.67E-3	1.67E-3	<8.36E-6	<8.36E-6	3.93E+1	6.27E+0
	<5.10E-4	<2.55E-3	7.65E-3	5.10E-3	--	--	1.10E+2	1.89E+1
	<1.86E-3	<9.30E-3	1.86E-2	9.30E-3	<9.30E-5	<9.30E-5	3.44E+2	6.05E+1
	<3.38E-4	<1.69E-3	3.38E-3	3.38E-3	<1.69E-5	<1.69E-5	6.25E+1	1.28E+1
	<2.97E-4	<1.48E-3	2.97E-3	4.45E-3	<1.48E-5	<1.48E-5	6.38E+1	1.08E+1

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Sodium, dissolved	Potassium, dissolved	Bicarbonate, whole water	Carbonate, whole water	Chloride, dissolved	Sulfate, dissolved	Solids, residue at 180 deg C, dissolved	Sediment, suspended
Rio Grande at Albuquerque	2.85E+1	3.47E+0	--	--	9.43E+0	7.07E+1	2.77E+2	1.02E+2
	5.75E+1	6.76E+0	3.70E+2	0.00E+0	2.48E+1	1.13E+2	5.95E+2	1.03E+2
	2.19E+2	2.37E+1	1.03E+3	0.00E+0	1.09E+2	5.01E+2	2.06E+3	2.02E+3
	5.70E+1	7.60E+0	3.85E+2	0.00E+0	1.81E+1	1.35E+2	5.63E+2	9.50E+2
Rio Grande at Rio Bravo Boulevard	3.27E+1	3.95E+0	--	--	1.03E+1	7.76E+1	3.16E+2	1.55E+3
	5.87E+1	6.89E+0	3.78E+2	0.00E+0	2.43E+1	1.15E+2	5.80E+2	1.38E+2
	2.47E+2	2.68E+1	1.19E+3	0.00E+0	1.24E+2	5.56E+2	2.33E+3	2.45E+3
	4.89E+1	6.72E+0	3.54E+2	0.00E+0	1.53E+1	1.16E+2	4.74E+2	8.43E+2
	4.90E+1	6.39E+0	3.05E+2	0.00E+0	1.38E+1	1.13E+2	4.75E+2	2.34E+2
	7.75E+1	9.30E+0	4.34E+2	0.00E+0	3.01E+1	1.49E+2	7.38E+2	2.05E+2
	2.98E+1	3.84E+0	1.81E+2	0.00E+0	9.43E+0	7.32E+1	3.30E+2	9.43E+1
	4.03E+1	5.61E+0	--	--	1.58E+1	1.21E+2	3.43E+2	4.85E+3
Rio Grande at Interstate 25	3.44E+1	4.55E+0	--	--	1.92E+1	6.07E+1	2.75E+2	9.50E+1
	7.26E+1	8.82E+0	3.89E+2	0.00E+0	3.63E+1	1.24E+2	6.38E+2	1.48E+2
	2.66E+2	2.87E+1	1.24E+3	0.00E+0	1.43E+2	5.63E+2	2.40E+3	4.21E+3
	7.15E+1	1.04E+1	3.80E+2	0.00E+0	3.00E+1	1.41E+2	5.95E+2	9.66E+2
	5.84E+1	8.35E+0	3.05E+2	0.00E+0	2.30E+1	1.15E+2	5.05E+2	2.65E+2
	1.10E+2	1.34E+1	4.93E+2	0.00E+0	5.48E+1	1.78E+2	8.97E+2	2.02E+2
	3.96E+1	5.21E+0	1.65E+2	0.00E+0	1.81E+1	7.13E+1	2.72E+2	7.47E+1
	5.74E+1	7.66E+0	--	--	2.68E+1	1.42E+2	4.21E+2	6.32E+3
Rio Grande at Isleta	4.96E+1	6.71E+0	--	--	2.40E+1	1.01E+2	4.38E+2	1.42E+2
	7.44E+1	9.23E+0	3.85E+2	0.00E+0	3.59E+1	1.28E+2	6.49E+2	1.62E+2
	3.24E+2	3.72E+1	1.49E+3	0.00E+0	1.68E+2	6.84E+2	2.83E+3	6.66E+3
	8.91E+1	1.35E+1	7.44E+2	0.00E+0	3.69E+1	1.75E+2	7.62E+2	2.60E+3
	7.22E+1	1.01E+1	3.79E+2	0.00E+0	2.84E+1	1.47E+2	6.30E+2	2.99E+2
	1.02E+2	1.27E+1	5.09E+2	0.00E+0	4.59E+1	1.80E+2	9.04E+2	2.30E+2
	4.98E+1	6.94E+0	2.34E+2	0.00E+0	2.26E+1	9.51E+1	3.59E+2	1.06E+2
	7.82E+1	1.11E+1	--	--	3.50E+1	2.00E+2	6.69E+2	7.12E+3
Rio Grande at Los Lunas	3.01E+1	3.76E+0	--	--	1.59E+1	5.52E+1	2.49E+2	8.11E+1
	7.91E+1	1.07E+1	3.83E+2	0.00E+0	4.08E+1	1.33E+2	6.55E+2	1.89E+2
	2.42E+2	2.79E+1	1.13E+3	0.00E+0	3.16E+2	3.81E+2	2.18E+3	3.62E+3
	5.41E+1	7.61E+0	3.58E+2	0.00E+0	2.54E+1	1.01E+2	4.46E+2	1.33E+3
	4.74E+1	5.93E+0	2.21E+2	0.00E+0	2.22E+1	8.90E+1	3.87E+2	1.71E+2

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Date	Aluminum, dissolved	Aluminum, total recoverable	Antimony, dissolved	Arsenic, dissolved	Arsenic, total	Barium, dissolved	Beryllium, dissolved
Upper Corrales Riverside Drain at mouth	10/31/94	1.09E-3	6.79E-2	<1.36E-4	4.08E-4	4.08E-4	1.30E-2	<1.36E-4
	02/13/95	2.79E-4	8.93E-3	<5.58E-5	1.67E-4	2.23E-4	5.58E-3	<5.58E-5
	05/08/95	6.14E-3	1.53E-1	<1.53E-4	3.07E-4	4.60E-4	1.18E-2	<1.53E-4
	08/24/95	6.20E-4	1.55E+0	<1.55E-4	4.65E-4	3.10E-4	1.10E-2	<1.55E-4
	10/04/95	1.95E-4	5.55E-2	<9.73E-5	2.92E-4	2.92E-4	7.59E-3	<9.73E-5
	02/14/96	2.21E-4	2.21E-3	<5.53E-5	1.66E-4	1.66E-4	4.75E-3	<5.53E-5
	05/21/96	<1.21E-4	9.10E-2	<1.21E-4	2.43E-4	2.43E-4	8.98E-3	<1.21E-4
	08/28/96	2.59E-4	7.25E-1	<1.29E-4	3.88E-4	3.88E-4	1.28E-2	<1.29E-4
Corrales Riverside Drain at mouth	11/01/94	1.19E-4	2.51E-2	<1.19E-5	4.78E-5	4.78E-5	1.31E-3	<1.19E-5
	02/13/95	1.03E-4	7.64E-3	<1.47E-5	4.41E-5	5.88E-5	1.91E-3	<1.47E-5
	05/08/95	6.85E-4	1.71E-2	<3.42E-5	1.03E-4	1.03E-4	3.39E-3	<3.42E-5
Albuquerque Riverside Drain at gate	02/14/95	5.98E-4	2.79E-2	<1.99E-4	7.97E-4	5.98E-4	1.85E-2	<1.99E-4
	05/08/95	9.22E-3	4.61E-1	<4.61E-4	1.38E-3	1.38E-3	3.27E-2	<4.61E-4
	08/24/95	1.27E-4	2.29E-1	<3.18E-5	9.54E-5	9.54E-5	2.29E-3	<3.18E-5
	10/05/95	7.06E-4	2.44E-1	<3.53E-4	1.06E-3	1.06E-3	2.65E-2	<3.53E-4
	02/15/96	2.09E-4	1.26E-2	<2.09E-4	6.28E-4	6.28E-4	1.93E-2	<2.09E-4
	05/21/96	<2.08E-4	2.91E-1	<2.08E-4	6.23E-4	6.23E-4	1.56E-2	<2.08E-4
	08/28/96	4.69E-4	3.28E+0	<2.35E-4	7.04E-4	7.04E-4	2.23E-2	<2.35E-4
Albuquerque Riverside Drain at mouth	11/03/94	7.55E-4	4.15E-2	<1.89E-4	1.13E-3	1.13E-3	2.26E-2	<1.89E-4
	02/14/95	4.10E-4	3.83E-2	<1.37E-4	6.83E-4	6.83E-4	1.50E-2	<1.37E-4
	05/09/95	1.40E-2	3.96E-1	<4.66E-4	1.87E-3	1.87E-3	3.73E-2	<4.66E-4
	08/25/95	7.60E-4	1.94E+0	<3.80E-4	1.52E-3	1.14E-3	3.12E-2	<3.80E-4
	10/05/95	4.42E-4	5.75E-1	<4.42E-4	1.77E-3	1.33E-3	3.49E-2	<4.42E-4
	02/15/96	5.53E-4	1.11E-2	<1.38E-4	6.92E-4	6.92E-4	1.52E-2	<1.38E-4
	05/21/96	<2.53E-4	2.48E-1	<2.53E-4	7.60E-4	1.01E-3	2.05E-2	<2.53E-4
	08/28/96	9.71E-4	4.17E+0	<4.85E-4	1.94E-3	1.94E-3	5.00E-2	<4.85E-4
Atrisco Riverside Drain at mouth	11/02/94	6.25E-4	1.14E-1	<1.56E-4	7.82E-4	7.82E-4	1.56E-2	<1.56E-4
	02/14/95	5.36E-4	1.47E-2	<1.34E-4	6.70E-4	6.70E-4	1.17E-2	<1.34E-4
	05/09/95	1.83E-3	6.04E-2	<1.83E-4	7.32E-4	7.32E-4	1.54E-2	<1.83E-4
	08/25/95	2.33E-4	1.28E-1	<1.17E-4	4.67E-4	5.84E-4	1.07E-2	<1.17E-4
	10/05/95	<1.25E-4	6.62E-2	<1.25E-4	6.24E-4	6.24E-4	1.09E-2	<1.25E-4
	02/15/96	5.88E-4	2.79E-2	<1.47E-4	5.88E-4	5.88E-4	1.28E-2	<1.47E-4
	05/21/96	<9.17E-5	4.58E-3	<9.17E-5	3.67E-4	3.67E-4	7.52E-3	<9.17E-5
	08/28/96	1.51E-4	3.02E-1	<1.51E-4	7.55E-4	7.55E-4	1.48E-2	<1.51E-4

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Cadmium, dissolved	Chromium, dissolved	Cobalt, dissolved	Copper, dissolved	Lead, dissolved	Manganese, dissolved	Molybdenum, dissolved	Nickel, dissolved
Upper Corrales Riverside Drain at mouth	<1.36E-4	<1.36E-4	<1.36E-4	<1.36E-4	<1.36E-4	2.85E-3	5.44E-4	2.72E-4
	<5.58E-5	<5.58E-5	<5.58E-5	<5.58E-5	<5.58E-5	2.46E-3	2.23E-4	5.58E-5
	<1.53E-4	<1.53E-4	<1.53E-4	1.53E-4	<1.53E-4	3.37E-3	4.60E-4	3.07E-4
	<1.55E-4	<1.55E-4	<1.55E-4	1.55E-4	<1.55E-4	3.10E-4	6.20E-4	<1.55E-4
	<9.73E-5	9.73E-5	<9.73E-5	9.73E-5	<9.73E-5	3.89E-4	3.89E-4	9.73E-5
	<5.53E-5	5.53E-5	<5.53E-5	5.53E-5	<5.53E-5	2.43E-3	2.21E-4	<5.53E-5
	<1.21E-4	<1.21E-4	<1.21E-4	1.21E-4	<1.21E-4	1.46E-3	4.85E-4	2.43E-4
	<1.29E-4	<1.29E-4	<1.29E-4	1.29E-4	<1.29E-4	3.88E-4	5.18E-4	2.59E-4
Corrales Riverside Drain at mouth	<1.19E-5	<1.19E-5	<1.19E-5	<1.19E-5	<1.19E-5	1.91E-4	5.97E-5	1.19E-5
	<1.47E-5	<1.47E-5	<1.47E-5	<1.47E-5	<1.47E-5	2.94E-3	5.88E-5	1.47E-5
	<3.42E-5	<3.42E-5	<3.42E-5	3.42E-5	<3.42E-5	3.12E-3	1.37E-4	1.03E-4
Albuquerque Riverside Drain at gate	<1.99E-4	<1.99E-4	<1.99E-4	<1.99E-4	<1.99E-4	9.96E-4	7.97E-4	<1.99E-4
	<4.61E-4	<4.61E-4	<4.61E-4	4.61E-4	<4.61E-4	2.77E-3	1.38E-3	1.38E-3
	<3.18E-5	<3.18E-5	<3.18E-5	3.18E-5	<3.18E-5	<3.18E-5	1.27E-4	3.18E-5
	<3.53E-4	7.06E-4	<3.53E-4	3.53E-4	<3.53E-4	1.06E-3	1.41E-3	<3.53E-4
	<2.09E-4	2.09E-4	<2.09E-4	2.09E-4	<2.09E-4	1.26E-3	8.38E-4	2.09E-4
	<2.08E-4	2.08E-4	<2.08E-4	2.08E-4	<2.08E-4	1.25E-3	8.30E-4	4.15E-4
	<2.35E-4	<2.35E-4	<2.35E-4	<2.35E-4	<2.35E-4	<2.35E-4	9.38E-4	2.35E-4
Albuquerque Riverside Drain at mouth	<1.89E-4	<1.89E-4	<1.89E-4	<1.89E-4	<1.89E-4	2.83E-2	1.32E-3	3.77E-4
	<1.37E-4	<1.37E-4	<1.37E-4	<1.37E-4	<1.37E-4	4.92E-2	6.83E-4	1.37E-4
	<4.66E-4	<4.66E-4	<4.66E-4	4.66E-4	<4.66E-4	3.22E-2	1.87E-3	1.40E-3
	<3.80E-4	<3.80E-4	<3.80E-4	<3.80E-4	<3.80E-4	2.66E-3	1.90E-3	7.60E-4
	<4.42E-4	8.84E-4	<4.42E-4	4.42E-4	<4.42E-4	7.96E-3	2.21E-3	8.84E-4
	<1.38E-4	1.38E-4	<1.38E-4	1.38E-4	<1.38E-4	4.84E-2	8.30E-4	2.77E-4
	<2.53E-4	2.53E-4	<2.53E-4	2.53E-4	<2.53E-4	8.11E-3	1.27E-3	5.07E-4
	<4.85E-4	<4.85E-4	<4.85E-4	4.85E-4	<4.85E-4	1.94E-3	2.43E-3	9.71E-4
Atrisco Riverside Drain at mouth	<1.56E-4	<1.56E-4	<1.56E-4	<1.56E-4	<1.56E-4	5.32E-3	7.82E-4	3.13E-4
	<1.34E-4	<1.34E-4	<1.34E-4	<1.34E-4	<1.34E-4	7.77E-3	5.36E-4	1.34E-4
	<1.83E-4	<1.83E-4	<1.83E-4	1.83E-4	<1.83E-4	2.20E-2	7.32E-4	5.49E-4
	<1.17E-4	<1.17E-4	<1.17E-4	<1.17E-4	<1.17E-4	1.75E-2	5.84E-4	2.33E-4
	<1.25E-4	2.50E-4	<1.25E-4	2.50E-4	<1.25E-4	5.62E-3	6.24E-4	1.25E-4
	<1.47E-4	1.47E-4	<1.47E-4	2.94E-4	<1.47E-4	1.31E-2	5.88E-4	1.47E-4
	<9.17E-5	9.17E-5	<9.17E-5	1.83E-4	<9.17E-5	4.12E-3	4.58E-4	1.83E-4
	<1.51E-4	<1.51E-4	<1.51E-4	1.51E-4	<1.51E-4	9.66E-3	9.06E-4	3.02E-4

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Silver, dissolved	Silver, total recoverable	Uranium, natural dissolved	Zinc, dissolved	Cyanide, total	Cyanide, amenable to chlorination	Calcium, dissolved	Magnesium, dissolved
Upper Corrales Riverside Drain at mouth	<2.72E-5	<1.36E-4	2.72E-4	<1.36E-4	<1.36E-6	<1.36E-6	6.11E+0	1.02E+0
	<1.12E-5	<5.58E-5	1.67E-4	5.58E-5	--	--	2.73E+0	4.24E-1
	<3.07E-5	<1.53E-4	3.07E-4	<1.53E-4	<1.53E-6	<1.53E-6	6.29E+0	1.10E+0
	<3.10E-5	<1.55E-4	3.10E-4	<1.55E-4	<1.55E-6	<1.55E-6	5.74E+0	1.21E+0
	<1.95E-5	<9.73E-5	1.95E-4	9.73E-5	<9.73E-7	<9.73E-7	3.99E+0	6.72E-1
	<1.11E-5	<5.53E-5	1.66E-4	<5.53E-5	<5.53E-7	<5.53E-7	2.43E+0	3.92E-1
	<2.43E-5	<1.21E-4	3.64E-4	3.64E-4	<1.21E-6	<1.21E-6	5.22E+0	9.22E-1
	<2.59E-5	<1.29E-4	2.59E-4	<1.29E-4	<1.29E-6	<1.29E-6	6.08E+0	1.02E+0
Corrales Riverside Drain at mouth	<2.39E-6	<1.19E-5	2.39E-5	<1.19E-5	<1.19E-7	<1.19E-7	5.49E-1	8.60E-2
	<2.94E-6	<1.47E-5	2.94E-5	<1.47E-5	--	--	7.79E-1	1.16E-1
	<6.85E-6	<3.42E-5	6.85E-5	<3.42E-5	<3.42E-7	<3.42E-7	1.68E+0	2.70E-1
Albuquerque Riverside Drain at gate	<3.98E-5	<1.99E-4	7.97E-4	1.99E-4	--	--	9.96E+0	1.51E+0
	<9.22E-5	<4.61E-4	9.22E-4	4.61E-4	<4.61E-6	<4.61E-6	1.84E+1	3.13E+0
	<6.36E-6	<3.18E-5	6.36E-5	<3.18E-5	<3.18E-7	<3.18E-7	1.27E+0	2.61E-1
	<7.06E-5	<3.53E-4	7.06E-4	1.41E-3	<3.53E-6	<3.53E-6	1.55E+1	2.68E+0
	<4.19E-5	<2.09E-4	6.28E-4	<2.09E-4	<2.09E-6	<2.09E-6	9.43E+0	1.59E+0
	<4.15E-5	<2.08E-4	6.23E-4	2.08E-4	<2.08E-6	<2.08E-6	9.13E+0	1.62E+0
	<4.69E-5	<2.35E-4	7.04E-4	<2.35E-4	<2.35E-6	<2.35E-6	1.13E+1	1.90E+0
Albuquerque Riverside Drain at mouth	<3.77E-5	<1.89E-4	3.77E-4	<1.89E-4	<1.89E-6	<1.89E-6	1.02E+1	1.62E+0
	<2.73E-5	<1.37E-4	5.47E-4	<1.37E-4	--	--	7.38E+0	1.12E+0
	<9.33E-5	<4.66E-4	1.40E-3	4.66E-4	<4.66E-6	<4.66E-6	2.05E+1	3.45E+0
	<7.60E-5	<3.80E-4	7.60E-4	<3.80E-4	<3.80E-6	<3.80E-6	1.63E+1	3.31E+0
	<8.84E-5	<4.42E-4	8.84E-4	4.42E-4	<4.42E-6	<4.42E-6	2.08E+1	3.40E+0
	<2.77E-5	<1.38E-4	5.53E-4	6.92E-4	<1.38E-6	<1.38E-6	6.64E+0	1.05E+0
	<5.07E-5	<2.53E-4	7.60E-4	2.53E-4	<2.53E-6	<2.53E-6	1.22E+1	2.05E+0
	<9.71E-5	<4.85E-4	1.46E-3	<4.85E-4	<4.85E-6	<4.85E-6	2.43E+1	3.98E+0
Atrisco Riverside Drain at mouth	<3.13E-5	<1.56E-4	3.13E-4	<1.56E-4	<1.56E-6	<1.56E-6	7.51E+0	1.19E+0
	<2.68E-5	<1.34E-4	4.02E-4	1.34E-4	--	--	7.10E+0	1.07E+0
	<3.66E-5	<1.83E-4	3.66E-4	3.66E-4	1.46E-6	1.10E-6	8.24E+0	1.34E+0
	<2.33E-5	<1.17E-4	2.33E-4	1.17E-4	<1.17E-6	<1.17E-6	4.90E+0	9.22E-1
	<2.50E-5	<1.25E-4	2.50E-4	1.25E-4	<1.25E-6	<1.25E-6	5.87E+0	8.99E-1
	<2.94E-5	<1.47E-4	4.41E-4	2.94E-4	<1.47E-6	<1.47E-6	6.76E+0	1.09E+0
	<1.83E-5	<9.17E-5	2.75E-4	9.17E-5	<9.17E-7	<9.17E-7	4.58E+0	6.97E-1
	<3.02E-5	<1.51E-4	3.02E-4	3.02E-4	<1.51E-6	<1.51E-6	7.55E+0	1.18E+0

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Sodium, dissolved	Potassium, dissolved	Bicarbonate, whole water	Carbonate, whole water	Chloride, dissolved	Sulfate, dissolved	Solids, residue at 180 deg C, dissolved	Sediment, suspended
Upper Corrales Riverside Drain at mouth	3.53E+0	4.62E-1	--	--	1.32E+0	8.29E+0	3.52E+1	8.15E+0
	1.34E+0	1.73E-1	8.71E+0	0.00E+0	6.70E-1	3.07E+0	1.41E+1	1.06E+0
	3.37E+0	3.84E-1	1.98E+1	0.00E+0	1.69E+0	8.44E+0	3.54E+1	1.89E+1
	3.88E+0	4.81E-1	2.95E+1	0.00E+0	1.04E+0	9.30E+0	3.70E+1	1.33E+2
	2.24E+0	3.11E-1	1.38E+1	0.00E+0	6.81E-1	5.35E+0	2.29E+1	5.16E+0
	1.27E+0	1.66E-1	7.41E+0	3.87E-1	4.75E-1	2.82E+0	1.32E+1	6.63E-1
	2.91E+0	3.76E-1	1.48E+1	0.00E+0	1.01E+0	7.04E+0	2.55E+1	1.06E+1
	2.98E+0	4.27E-1	--	--	8.28E-1	9.19E+0	3.13E+1	6.98E+1
Corrales Riverside Drain at mouth	2.99E-1	4.30E-2	--	--	1.10E-1	6.93E-1	3.11E+0	1.11E+0
	3.97E-1	4.85E-2	2.45E+0	0.00E+0	1.76E-1	8.82E-1	4.03E+0	5.14E-1
	8.90E-1	1.06E-1	5.48E+0	0.00E+0	4.11E-1	1.99E+0	9.07E+0	1.51E+0
Albuquerque Riverside Drain at gate	5.18E+0	5.38E-1	3.07E+1	0.00E+0	2.39E+0	1.12E+1	5.14E+1	3.59E+0
	1.01E+1	1.24E+0	6.04E+1	0.00E+0	4.38E+0	2.54E+1	1.02E+2	5.21E+1
	7.95E-1	9.86E-2	5.82E+0	0.00E+0	2.48E-1	1.94E+0	7.95E+0	1.70E+1
	8.48E+0	1.17E+0	5.44E+1	0.00E+0	2.61E+0	2.01E+1	8.44E+1	2.30E+1
	5.24E+0	6.07E-1	3.18E+1	0.00E+0	1.99E+0	1.17E+1	5.28E+1	2.93E+0
	5.40E+0	6.44E-1	3.28E+1	0.00E+0	1.81E+0	1.29E+1	5.02E+1	3.01E+1
	6.10E+0	8.44E-1	--	--	1.71E+0	1.71E+1	5.96E+1	2.53E+2
Albuquerque Riverside Drain at mouth	6.42E+0	9.25E-1	--	--	3.02E+0	1.30E+1	5.91E+1	5.85E+0
	4.51E+0	5.60E-1	2.34E+1	0.00E+0	2.32E+0	8.75E+0	4.14E+1	3.55E+0
	1.21E+1	1.49E+0	6.90E+1	0.00E+0	5.60E+0	2.71E+1	1.20E+2	3.50E+1
	1.06E+1	1.44E+0	7.03E+1	0.00E+0	3.61E+0	2.39E+1	1.03E+2	1.43E+2
	1.19E+1	1.64E+0	7.03E+1	0.00E+0	4.20E+0	2.65E+1	1.13E+2	4.38E+1
	4.56E+0	5.95E-1	2.38E+1	0.00E+0	2.07E+0	8.44E+0	4.05E+1	2.35E+0
	7.35E+0	9.12E-1	4.16E+1	0.00E+0	2.79E+0	1.65E+1	5.63E+1	2.64E+1
	1.36E+1	1.94E+0	--	--	4.85E+0	3.54E+1	1.17E+2	3.06E+2
Atrisco Riverside Drain at mouth	4.69E+0	6.41E-1	--	--	2.03E+0	1.03E+1	4.53E+1	1.00E+1
	3.89E+0	4.69E-1	2.14E+1	0.00E+0	1.88E+0	8.31E+0	3.63E+1	3.89E+0
	5.31E+0	5.86E-1	2.75E+1	0.00E+0	2.56E+0	1.12E+1	4.87E+1	8.60E+0
	3.27E+0	4.20E-1	2.52E+1	0.00E+0	1.28E+0	6.89E+0	3.09E+1	1.39E+1
	3.74E+0	4.87E-1	2.00E+1	0.00E+0	1.50E+0	7.74E+0	3.36E+1	9.11E+0
	4.11E+0	5.29E-1	2.34E+1	0.00E+0	1.62E+0	8.82E+0	3.97E+1	5.73E+0
	2.93E+0	3.30E-1	1.36E+1	6.42E-1	1.37E+0	6.05E+0	2.51E+1	2.84E+0
	4.68E+0	6.49E-1	--	--	1.96E+0	1.09E+1	3.83E+1	2.91E+1

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Date	Aluminum, dissolved	Aluminum, total recoverable	Antimony, dissolved	Arsenic, dissolved	Arsenic, total	Barium, dissolved	Beryllium, dissolved
Bernalillo Wastewater Treatment Plant outfall	11/03/94	1.16E-4	2.33E-4	<1.94E-6	3.88E-5	4.27E-5	3.88E-5	<1.94E-6
	02/15/95	7.98E-5	2.99E-4	<2.00E-6	3.19E-5	3.59E-5	5.59E-5	<2.00E-6
	05/10/95	6.47E-5	1.73E-4	<2.16E-6	4.10E-5	3.88E-5	5.18E-5	<2.16E-6
	08/28/95	2.45E-4	3.68E-4	<2.45E-6	2.70E-5	2.45E-5	6.62E-5	<2.45E-6
	10/06/95	9.57E-5	1.34E-4	<1.91E-6	3.06E-5	3.06E-5	4.40E-5	<1.91E-6
	02/16/96	4.74E-5	2.14E-4	<2.37E-6	3.56E-5	3.80E-5	5.22E-5	<2.37E-6
	05/22/96	8.63E-5	1.38E-4	<1.73E-6	2.07E-5	2.24E-5	4.31E-5	<1.73E-6
	08/29/96	6.07E-5	1.21E-4	<2.02E-6	2.43E-5	3.03E-5	6.67E-5	<2.02E-6
Rio Rancho No. 2 Wastewater Treatment Plant outfall	11/04/94	2.18E-4	7.28E-4	<7.28E-6	1.24E-4	1.24E-4	1.53E-4	<7.28E-6
	02/15/95	2.51E-4	5.01E-4	<8.36E-6	1.50E-4	1.76E-4	1.25E-4	<8.36E-6
	05/10/95	1.35E-4	4.04E-4	<6.74E-6	9.44E-5	1.08E-4	7.41E-5	<6.74E-6
	08/28/95	6.31E-5	1.47E-4	<2.10E-6	2.94E-5	2.94E-5	1.26E-5	<2.10E-6
	10/06/95	2.26E-4	2.34E-3	<7.55E-6	1.06E-4	1.13E-4	5.28E-5	<7.55E-6
	02/16/96	2.43E-4	2.35E-3	<8.09E-6	1.54E-4	1.62E-4	4.85E-5	<8.09E-6
	05/22/96	8.90E-5	4.45E-4	<2.97E-6	4.45E-5	4.74E-5	1.78E-5	<2.97E-6
	08/29/96	2.83E-4	6.07E-4	<6.74E-6	1.28E-4	1.28E-4	7.41E-5	<6.74E-6
Rio Rancho No. 3 Wastewater Treatment Plant outfall	11/04/94	9.98E-6	5.99E-5	<9.98E-7	1.40E-5	1.40E-5	4.69E-5	<9.98E-7
	02/15/95	2.05E-5	6.15E-5	<1.02E-6	1.54E-5	1.74E-5	1.74E-5	<1.02E-6
	05/10/95	9.17E-6	3.67E-5	<9.17E-7	1.28E-5	1.10E-5	5.32E-5	<9.17E-7
	08/28/95	3.48E-5	9.27E-5	<1.16E-6	1.62E-5	1.62E-5	1.39E-5	<1.16E-6
Albuquerque Wastewater Treatment Plant outfall	11/01/94	7.36E-3	7.11E-2	<2.45E-4	2.45E-3	2.70E-3	7.85E-3	<2.45E-4
	02/16/95	6.96E-3	3.48E-2	<2.32E-4	2.32E-3	2.55E-3	8.58E-3	<2.32E-4
	05/09/95	6.63E-3	4.20E-2	<2.21E-4	1.99E-3	1.99E-3	9.29E-3	<2.21E-4
	08/28/95	5.01E-3	5.27E-2	<2.51E-4	1.76E-3	1.76E-3	6.02E-3	<2.51E-4
	10/06/95	4.80E-3	3.60E-2	<2.40E-4	1.68E-3	1.92E-3	6.00E-3	<2.40E-4
	02/15/96	4.69E-3	4.22E-2	<2.35E-4	1.88E-3	1.88E-3	5.86E-3	<2.35E-4
	05/22/96	4.21E-3	1.89E-2	<2.10E-4	1.47E-3	1.47E-3	5.05E-3	<2.10E-4
	08/29/96	3.49E-3	1.31E-2	<2.18E-4	1.09E-3	1.09E-3	4.37E-3	<2.18E-4

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Cadmium, dissolved	Chro-mium, dissolved	Cobalt, dissolved	Copper, dis-solved	Lead, dissolved	Manga-nese, dis-solved	Molyb-denum, dis-solved	Nickel, dissolved
Bernalillo Wastewater Treatment Plant outfall	<1.94E-6	<1.94E-6	<1.94E-6	<1.94E-6	<1.94E-6	4.27E-5	3.88E-6	5.82E-6
	<2.00E-6	<2.00E-6	<2.00E-6	2.00E-6	<2.00E-6	9.98E-6	5.99E-6	3.99E-6
	<2.16E-6	4.31E-6	<2.16E-6	4.31E-6	4.31E-6	2.16E-6	6.47E-6	8.63E-6
	<2.45E-6	<2.45E-6	<2.45E-6	2.45E-6	<2.45E-6	6.38E-5	4.91E-6	4.91E-6
	<1.91E-6	5.74E-6	<1.91E-6	5.74E-6	<1.91E-6	4.98E-5	5.74E-6	5.74E-6
	<2.37E-6	4.74E-6	<2.37E-6	7.12E-6	<2.37E-6	2.37E-5	4.74E-6	4.74E-6
	<1.73E-6	5.18E-6	<1.73E-6	3.45E-6	<1.73E-6	3.45E-6	1.73E-6	5.18E-6
	<2.02E-6	<2.02E-6	<2.02E-6	4.04E-6	<2.02E-6	2.02E-6	6.07E-6	6.07E-6
Rio Rancho No. 2 Wastewater Treatment Plant outfall	<7.28E-6	<7.28E-6	<7.28E-6	2.18E-5	<7.28E-6	2.91E-5	7.28E-5	7.28E-6
	<8.36E-6	1.67E-5	<8.36E-6	3.34E-5	<8.36E-6	1.67E-5	9.19E-5	<8.36E-6
	<6.74E-6	1.35E-5	<6.74E-6	3.37E-5	6.74E-6	1.35E-5	8.09E-5	1.35E-5
	<2.10E-6	2.10E-6	<2.10E-6	1.26E-5	<2.10E-6	2.10E-6	2.73E-5	2.10E-6
	<7.55E-6	2.26E-5	<7.55E-6	6.79E-5	<7.55E-6	2.26E-5	6.79E-5	7.55E-6
	<8.09E-6	2.43E-5	<8.09E-6	3.24E-5	<8.09E-6	1.62E-5	5.66E-5	8.09E-6
	<2.97E-6	8.90E-6	<2.97E-6	1.19E-5	<2.97E-6	8.90E-6	2.97E-5	5.93E-6
	<6.74E-6	6.74E-6	<6.74E-6	3.37E-5	<6.74E-6	1.35E-5	8.09E-5	6.74E-6
Rio Rancho No. 3 Wastewater Treatment Plant outfall	<9.98E-7	<9.98E-7	<9.98E-7	2.00E-6	9.98E-7	2.99E-6	<9.98E-7	2.99E-6
	<1.02E-6	1.02E-6	<1.02E-6	2.05E-6	<1.02E-6	2.05E-6	7.17E-6	<1.02E-6
	<9.17E-7	1.83E-6	<9.17E-7	2.75E-6	2.75E-6	2.75E-6	<9.17E-7	5.50E-6
	<1.16E-6	1.16E-6	<1.16E-6	4.64E-6	1.16E-6	1.16E-6	8.11E-6	1.16E-6
Albuquerque Wastewater Treatment Plant outfall	<2.45E-4	<2.45E-4	<2.45E-4	9.81E-4	<2.45E-4	4.66E-3	7.11E-3	7.36E-4
	<2.32E-4	<2.32E-4	<2.32E-4	6.96E-4	<2.32E-4	6.26E-3	4.64E-3	4.64E-4
	<2.21E-4	4.42E-4	<2.21E-4	1.11E-3	4.42E-4	5.31E-3	6.63E-3	8.84E-4
	<2.51E-4	<2.51E-4	<2.51E-4	1.00E-3	<2.51E-4	4.26E-3	1.03E-2	5.01E-4
	<2.40E-4	4.80E-4	<2.40E-4	1.20E-3	<2.40E-4	4.32E-3	6.72E-3	9.60E-4
	<2.35E-4	4.69E-4	<2.35E-4	1.17E-3	<2.35E-4	4.69E-3	6.10E-3	1.17E-3
	<2.10E-4	4.21E-4	<2.10E-4	6.31E-4	<2.10E-4	5.05E-3	6.10E-3	6.31E-4
	<2.18E-4	<2.18E-4	<2.18E-4	2.18E-4	<2.18E-4	9.17E-3	7.42E-3	8.74E-4

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Continued

Sampling site (fig. 1)	Silver, dissolved	Silver, total recoverable	Uranium, natural dissolved	Zinc, dissolved	Cyanide, total	Cyanide, amenable to chlorination	Calcium, dissolved	Magnesium, dissolved
Bernalillo Wastewater Treatment Plant outfall	<3.88E-7	<1.94E-6	5.82E-6	1.75E-5	1.75E-8	<1.94E-8	1.53E-1	2.33E-2
	<3.99E-7	<2.00E-6	7.98E-6	3.39E-5	2.00E-8	<2.00E-8	1.58E-1	2.39E-2
	<4.31E-7	<2.16E-6	6.47E-6	4.74E-5	1.51E-8	<2.16E-8	1.68E-1	2.59E-2
	<4.91E-7	<2.45E-6	1.23E-5	4.91E-5	5.15E-8	<2.45E-8	1.72E-1	2.94E-2
	<3.83E-7	<1.91E-6	5.74E-6	2.68E-5	3.64E-8	<1.91E-8	1.53E-1	2.30E-2
	<4.74E-7	4.74E-6	4.74E-6	6.64E-5	1.19E-8	<2.37E-8	1.83E-1	2.85E-2
	<3.45E-7	<1.73E-6	5.18E-6	3.62E-5	1.21E-8	<1.73E-8	1.33E-1	1.90E-2
	<4.04E-7	<2.02E-6	4.04E-6	6.87E-5	3.24E-8	3.24E-8	1.50E-1	2.22E-2
Rio Rancho No. 2 Wastewater Treatment Plant outfall	<1.46E-6	<7.28E-6	7.28E-6	2.98E-4	<7.28E-8	<7.28E-8	1.60E-1	1.82E-2
	<1.67E-6	<8.36E-6	1.67E-5	3.01E-4	<8.36E-8	<8.36E-8	1.67E-1	2.42E-2
	<1.35E-6	<6.74E-6	6.74E-6	2.70E-4	<6.74E-8	<6.74E-8	1.35E-1	2.09E-2
	<4.21E-7	<2.10E-6	<2.10E-6	7.99E-5	<2.10E-8	<2.10E-8	3.15E-2	6.73E-3
	<1.51E-6	<7.55E-6	<7.55E-6	3.55E-4	<7.55E-8	<7.55E-8	1.13E-1	1.74E-2
	<1.62E-6	<8.09E-6	<8.09E-6	2.83E-4	<8.09E-8	<8.09E-8	9.71E-2	1.62E-2
	<5.93E-7	<2.97E-6	<2.97E-6	1.07E-4	<2.97E-8	<2.97E-8	4.45E-2	5.93E-3
	<1.35E-6	<6.74E-6	6.74E-6	2.90E-4	<6.74E-8	<6.74E-8	1.15E-1	1.75E-2
Rio Rancho No. 3 Wastewater Treatment Plant outfall	<2.00E-7	<9.98E-7	<9.98E-7	3.49E-5	<9.98E-9	<9.98E-9	1.20E-1	1.70E-2
	<2.05E-7	<1.02E-6	<1.02E-6	4.30E-5	<1.02E-8	<1.02E-8	2.87E-2	4.30E-3
	<1.83E-7	<9.17E-7	<9.17E-7	4.22E-5	<9.17E-9	<9.17E-9	1.10E-1	1.56E-2
	<2.32E-7	<1.16E-6	<1.16E-6	5.56E-5	<1.16E-8	<1.16E-8	2.78E-2	5.33E-3
Albuquerque Wastewater Treatment Plant outfall	1.96E-4	4.91E-4	2.45E-4	4.42E-3	<2.45E-6	<2.45E-6	9.57E+0	1.42E+0
	4.64E-5	2.32E-4	2.32E-4	4.87E-3	<2.32E-6	<2.32E-6	9.27E+0	1.39E+0
	4.42E-5	2.21E-4	4.42E-4	6.41E-3	<2.21E-6	<2.21E-6	8.62E+0	1.37E+0
	<5.01E-5	2.51E-4	<2.51E-4	5.52E-3	<2.51E-6	<2.51E-6	8.02E+0	1.53E+0
	<4.80E-5	2.40E-4	<2.40E-4	5.52E-3	<2.40E-6	<2.40E-6	1.01E+1	1.49E+0
	<4.69E-5	2.35E-4	<2.35E-4	7.04E-3	<2.35E-6	<2.35E-6	9.38E+0	1.48E+0
	<4.21E-5	<2.10E-4	<2.10E-4	6.10E-3	1.68E-6	<2.10E-6	8.62E+0	1.28E+0
	<4.37E-5	<2.18E-4	<2.18E-4	4.15E-3	<2.18E-6	<2.18E-6	9.17E+0	1.33E+0

Table 56.--Instantaneous loads of selected constituents in the Rio Grande, Jemez River, riverside drains, and wastewater-treatment plant outfalls in the vicinity of Albuquerque, New Mexico, October 1994 to August 1996--Concluded

Sampling site (fig. 1)	Sodium, dissolved	Potassium, dissolved	Bicarbonate, whole water	Carbonate, whole water	Chloride, dissolved	Sulfate, dissolved	Solids, residue at 180 deg C, dissolved	Sediment, suspended
Bernalillo Wastewater Treatment Plant outfall	3.49E-1	3.11E-2	--	--	4.46E-1	2.52E-1	1.71E+0	4.85E-2
	3.39E-1	3.19E-2	3.51E-1	0.00E+0	3.99E-1	2.59E-1	1.65E+0	1.04E-1
	4.10E-1	3.67E-2	3.45E-1	0.00E+0	4.96E-1	3.02E-1	1.94E+0	5.61E-2
	3.93E-1	3.19E-2	4.88E-1	0.00E+0	4.66E-1	3.19E-1	1.98E+0	1.99E-1
	3.25E-1	3.06E-2	3.39E-1	0.00E+0	4.21E-1	2.68E-1	1.65E+0	9.38E-2
	4.03E-1	4.03E-2	3.53E-1	0.00E+0	5.46E-1	3.32E-1	2.09E+0	1.59E-1
	3.11E-1	2.76E-2	3.24E-1	0.00E+0	3.97E-1	2.42E-1	1.44E+0	5.52E-2
	3.44E-1	3.44E-2	--	--	4.45E-1	2.63E-1	1.61E+0	1.11E-1
Rio Rancho No. 2 Wastewater Treatment Plant outfall	1.02E+0	9.46E-2	--	--	3.93E-1	6.55E-1	3.78E+0	1.46E-1
	1.17E+0	1.17E-1	1.71E+0	0.00E+0	5.43E-1	7.94E-1	4.34E+0	1.17E-1
	1.08E+0	9.44E-2	1.23E+0	0.00E+0	4.85E-1	6.54E-1	3.83E+0	2.02E-1
	3.15E-1	2.52E-2	3.60E-1	0.00E+0	1.30E-1	2.02E-1	1.14E+0	1.49E-1
	9.06E-1	9.81E-2	1.16E+0	0.00E+0	4.00E-1	6.04E-1	3.50E+0	3.70E-1
	1.05E+0	1.05E-1	1.08E+0	0.00E+0	4.04E-1	6.47E-1	3.83E+0	4.53E-1
	4.15E-1	9.19E-3	4.57E-1	0.00E+0	1.78E-1	2.79E-1	1.42E+0	1.16E-1
	9.44E-1	1.01E-1	--	--	3.77E-1	6.47E-1	3.28E+0	2.22E-1
Rio Rancho No. 3 Wastewater Treatment Plant outfall	2.69E-1	3.39E-2	--	--	4.29E-1	1.90E-1	1.28E+0	3.99E-2
	1.84E-1	3.07E-2	2.15E-1	0.00E+0	1.33E-1	9.02E-2	6.58E-1	2.97E-2
	2.57E-1	3.39E-2	1.34E-1	0.00E+0	4.03E-1	1.74E-1	1.18E+0	3.67E-2
	2.09E-1	3.01E-2	2.32E-1	0.00E+0	1.74E-1	1.10E-1	7.87E-1	3.59E-2
Albuquerque Wastewater Treatment Plant outfall	2.45E+1	3.19E+0	--	--	1.96E+1	2.09E+1	1.27E+2	5.89E+0
	2.55E+1	3.25E+0	3.99E+1	0.00E+0	1.92E+1	2.13E+1	1.21E+2	3.71E+0
	2.43E+1	3.10E+0	4.42E+1	0.00E+0	1.66E+1	2.03E+1	1.13E+2	4.86E+0
	2.51E+1	2.76E+0	3.56E+1	0.00E+0	2.06E+1	2.03E+1	1.27E+2	1.28E+1
	2.64E+1	3.36E+0	3.07E+1	0.00E+0	2.21E+1	2.23E+1	1.30E+2	9.60E+0
	2.35E+1	3.52E+0	3.26E+1	0.00E+0	2.09E+1	2.20E+1	1.25E+2	4.46E+0
	2.31E+1	2.94E+0	3.13E+1	0.00E+0	1.79E+1	1.89E+1	1.02E+2	9.04E+0
	2.18E+1	3.06E+0	--	--	1.92E+1	1.97E+1	9.87E+1	5.46E+0

Table 57.--Fish-tissue sample information

[E, estimated; Hg, filet also analyzed for mercury; Hg only, filet analyzed only for mercury; Hg all, all filets in composite sample analyzed for mercury; >, greater than; CC, channel catfish; LMB, largemouth bass]

Sampling site (fig. 1)	Date	Sample type	Number of fish composited	Length (centimeters)	Weight (grams)
Rio Grande at Bernalillo	10-23-95	CC	5	40 - 46E	680 - 800E
				40 - 46E	680 - 800E
				40 - 46E	680 - 800E
				40 - 46E	680 - 800E
				56E	1,300 - 1,800E Hg
	07-22-96	CC	5	37	530
				42	730
				47	980
				47	1,030
				51	1,500 Hg
Rio Grande at Interstate 25	10-24-95	CC	5	41	790
				45	960
				46	820
				46	980
				47	960
			1	50	1,620 Hg only
	07-23-96	CC	5	33	270
				35	400
				43	700
				43	770
				47	850 Hg
Rio Grande at Isleta	09-18-95	CC	5	41	530
				41	580
				44	760
				45	920
				46	840
			1	60	2,390 Hg only
	07-23-96	CC	5	38	440
				47	860
				47	920
				47	950
				51	1,100E Hg

Table 57.--Fish-tissue sample information--Continued

Sampling site (fig. 1)	Date	Sample type	Number of fish composited	Length (centimeters)	Weight (grams)
Rio Grande at Los Lunas	10-25-95	CC	5	41	650
				41	710
				41	710
				41	770
				50	1,280 Hg
	07-24-96	CC	5	27	150
				34	340
				41	590
				41	620
				47	950 Hg
Albuquerque Riverside Drain at mouth	05-16-95	CC	5	37	480 Hg all
				40	550
				40	570
				41	570
				44	880
	10-24-95	CC	5	44	950
				46	1,010
				47	1,020
				50	1,220
				58	1,980
			1	72	>2,270E Hg only
	07-24-96	CC	5	33	300
				35	390
				44	700
				48	900
				53	1,300 Hg
Atrisco Riverside Drain at mouth	05-16-95	CC	2	55	1,580 Hg all
				61	2,420
	05-16-95	LMB	2	41	1,080 Hg all
				41	1,400
Bass Lake at Isleta Lakes	05-16-95	LMB	3	31	450 Hg all
				38	680
				48	1,810

Table 57.--Fish-tissue sample information--Concluded

Sampling site (fig. 1)	Date	Sample type	Number of fish composited	Length (centimeters)	Weight (grams)
Sunrise Lake at Isleta Lakes	10-25-95	LMB	4	31	450
				34	620
				39	960
				39	1,160 Hg
Turtle Lake at Isleta Lakes	07-27-96 to 08-11-96	CC	4	36	350
				37	380
				42	660
				46	1,150 Hg

Table 58.--Concentrations of arsenic and mercury in fish-tissue samples from the Rio Grande, riverside drains, and Isleta Lakes in the vicinity of Albuquerque, New Mexico, 1995 and 1996

[µg/kg, micrograms per kilogram; ND, not detected; NR, not reported; RSD, riverside drain; E, estimated; CC, channel catfish; LMB, largemouth bass; --, not analyzed; <, less than]

Sampling site (fig. 1)	Date and sample type	Dry fraction (percent)	Arsenic, µg/kg, wet weight			Mercury, µg/kg, wet weight		
			Total	Inorganic	Organic	Total	Inorganic	Organic
Rio Grande at Bernalillo	10-23-95, CC	14.1	23.6	12.1	11.5	--	--	--
		23.1	--	--	--	192.2	--	--
	07-22-96, CC	22.3	5.98	3.52	2.46	--	--	--
		19.3	--	--	--	255.3	5.3	251
Rio Grande at Interstate 25	10-24-95, CC	18.7	13.7	14.2	ND	--	--	--
		21.7	--	--	--	163.1	--	--
	07-23-96, CC	22.8	4.62	3.9	0.72	--	--	--
		22.2	--	--	--	255.8	6	249.8
Rio Grande at Isleta	09-18-95, CC	19.9	NR	[1]10.1	ND	--	--	--
		24.0	--	--	--	162.9	--	--
	07-23-96, CC	21.4	15.3	3.9	11.4	--	--	--
		18.6	--	--	--	310	6	304
Rio Grande at Los Lunas	10-25-95, CC	20.7	NR	[1]14.8	ND	--	--	--
		20.1	--	--	--	271.9	--	--
	07-24-96, CC	22.9	25	3.86	21.14	--	--	--
		22.8	--	--	--	285.8	5.4	280.4
Albuquerque RSD at mouth	05-16-95, CC	19.9	NR	<120	<250	106.5	--	--
	10-24-95, CC	19.8	16.5	15.0	1.5	--	--	--
		24.3	--	--	--	702.0	--	--
	07-24-96, CC	18.9	15.7	4.45	11.25	--	--	--
		20.2	--	--	--	312.8	6.4	306.4
Atrisco RSD at mouth	05-16-95, CC	16.4	NR	<120	<250	219.8	--	--
	05-16-95, LMB	18.7	<58	<120	<250	416.4	--	--
Bass Lake at Isleta Lakes	05-16-95, LMB	18.0	NR	<120	<250	293.4	--	--
Sunrise Lake at Isleta Lakes	10-25-95, LMB	23.3	NR	[1]20.0	ND	--	--	--
		22.4	--	--	--	179.8	--	--
Turtle Lake at Isleta Lakes	07-27-96 to 08-11-96, CC	21.7	7.6	2.86	4.74	--	--	--
		23.0	--	--	--	61.3	1.1E	60.2

[1]Inorganic arsenic value is representative of total arsenic and is used as the total arsenic value.

APPENDIX A

CERTIFICATES OF ANALYSIS

Cartridge filters used in sample round 1

Certificate of Analysis

CARTRIDGE FILTERS

Gelman lot #5269002

Element	Method	Concentration		Units
Aluminum	ICP-MS	<	0.3	ug/L
Antimony	ICP-MS	<	0.2	ug/L
Barium	ICP-MS	<	0.2	ug/L
Beryllium	ICP-MS	<	0.2	ug/L
Boron	ICP-OES	<	2.5	ug/L
Cadmium	ICP-MS	<	0.3	ug/L
Calcium	ICP-OES	<	0.006	mg/L
Chromium	ICP-MS	<	0.2	ug/L
Cobalt	ICP-MS	<	0.2	ug/L
Copper	ICP-MS	<	0.4	ug/L
Iron	ICP-MS	<	6	ug/L
Lead	ICP-MS	<	0.3	ug/L
Magnesium	ICP-OES	<	0.001	mg/L
Manganese	ICP-MS	<	0.2	ug/L
Molybdenum	ICP-MS	<	0.2	ug/L
N-Ammonia	Colorimetric	<	0.001	mg/L
N-Nitrite	Colorimetric	<	0.002	mg/L
N-Nitrite + Nitrate	Colorimetric	<	0.001	mg/L
Nickel	ICP-MS	<	0.5	ug/L
P-Ortho Phosphate	Colorimetric	<	0.001	mg/L
Silica	ICP-OES	<	0.02	mg/L
Silver	ICP-MS	<	0.2	ug/L
Sodium	ICP-OES	<	0.025	mg/L
Strontium	ICP-MS	<	0.1	ug/L
Thallium	ICP-MS	<	0.1	ug/L
Uranium	ICP-MS	<	0.2	ug/L
Zinc	ICP-MS	<	0.8	ug/L

ICP-MS = Inductively Coupled Plasma-Mass Spectrophotometry
ICP-OES = Inductively Coupled Plasma-Optical Emission Spectrophotometry
The Quality Water Service Unit in Ocala, Fla. rinses the filters with 1L of deionized water and collects the next 250 mL aliquot through the test filters. Analyses were performed by the National Water Quality Laboratory in Arvada, CO.

Direct questions to Chief, Quality Management Program, NWQL.

8/22/94

Cartridge filters used in sample round 2

Certificate of Analysis

CARTRIDGE FILTERS

Gelman lot #5760001

Element	Method	Concentration		Units
Aluminum	ICP-MS	<	1	ug/L
Antimony	ICP-MS	<	0.2	ug/L
Barium	ICP-MS	<	0.2	ug/L
Beryllium	ICP-MS	<	0.2	ug/L
Boron	ICP-OES	<	0.2	ug/L
Cadmium	ICP-MS	<	0.3	ug/L
Calcium	ICP-OES	<	0.05	mg/L
Chromium	ICP-MS	<	0.2	ug/L
Cobalt	ICP-MS	<	0.2	ug/L
Copper	ICP-MS	<	0.5	ug/L
Iron	ICP-MS	<	4	ug/L
Lead	ICP-MS	<	0.3	ug/L
Magnesium	ICP-OES	<	0.006	mg/L
Manganese	ICP-MS	<	0.1	ug/L
Molybdenum	ICP-MS	<	0.2	ug/L
N-Ammonia	Colorimetric	<	0.007	mg/L
N-Nitrite	Colorimetric	<	0.001	mg/L
N-Nitrite + Nitrate	Colorimetric	<	0.005	mg/L
Nickel	ICP-MS	<	0.5	ug/L
P-Ortho Phosphate	Colorimetric	<	0.001	mg/L
Silica	ICP-OES	<	0.04	mg/L
Silver	ICP-MS	<	0.2	ug/L
Sodium	ICP-OES	<	0.03	mg/L
Strontium	ICP-MS	<	0.1	ug/L
Thallium	ICP-MS	<	0.1	ug/L
Uranium	ICP-MS	<	0.2	ug/L
Zinc	ICP-MS	<	0.8	ug/L

ICP-MS = Inductively Coupled Plasma-Mass Spectrophotometry
ICP-OES = Inductively Coupled Plasma-Optical Emission Spectrophotometry
The Quality Water Service Unit in Ocala, Fla. rinses the filters with 1L of deionized water and collects the next 250 mL aliquot through the test filters. Analyses were performed by the National Water Quality Laboratory in Arvada, CO.

Direct questions to Chief, Quality Management Program, NWQL.

10/28/94

Cartridge filters used in sample rounds 3 and 4

Certificate of Analysis

CARTRIDGE FILTERS

Gelman lot #6027001

Element	Method	Concentration	Units
Aluminum	ICP-MS	< 0.3	ug/L
Antimony	ICP-MS	< 0.2	ug/L
Barium	ICP-MS	< 0.2	ug/L
Beryllium	ICP-MS	< 0.2	ug/L
Boron	ICP-OES	< 2	ug/L
Cadmium	ICP-MS	< 0.3	ug/L
Calcium	ICP-OES	< 0.01	mg/L
Chromium	ICP-MS	< 0.2	ug/L
Cobalt	ICP-MS	< 0.2	ug/L
Copper	ICP-MS	< 0.2	ug/L
Iron	ICP-MS	< 3	ug/L
Lead	ICP-MS	< 0.3	ug/L
Magnesium	ICP-OES	< 0.006	mg/L
Manganese	ICP-MS	< 0.1	ug/L
Molybdenum	ICP-MS	< 0.2	ug/L
N-Ammonia	Colorimetric	< 0.01	mg/L
N-Nitrite	Colorimetric	< 0.003	mg/L
N-Nitrite + Nitrate	Colorimetric	< 0.007	mg/L
Nickel	ICP-MS	< 0.5	ug/L
P-Ortho Phosphate	Colorimetric	< 0.003	mg/L
Silica	ICP-OES	< 0.02	mg/L
Silver	ICP-MS	< 0.2	ug/L
Sodium	ICP-OES	< 0.03	mg/L
Strontium	ICP-MS	< 0.1	ug/L
Thallium	ICP-MS	< 0.1	ug/L
Uranium	ICP-MS	< 0.2	ug/L
Zinc	ICP-MS	< 0.5	ug/L

ICP-MS = Inductively Coupled Plasma-Mass Spectrophotometry
ICP-OES = Inductively Coupled Plasma-Optical Emission Spectrophotometry
The Quality Water Service Unit in Ocala, Fla. rinses the filters with 1L of deionized water and collects the next 250 mL aliquot through the test filters. Analyses were performed by the National Water Quality Laboratory in Arvada, CO.

Direct questions to Chief, Quality Management Program, NWQL.

Alfred Dussault
QA Acceptance

03/03/95
Date

March 3, 1995

Cartridge filters used in sample round 4

Certificate of Analysis

CARTRIDGE FILTERS

Gelman lot #7431001

Element	Method	Concentration		Units
Aluminum	ICP-MS	<	0.4	ug/L
Antimony	ICP-MS	<	0.2	ug/L
Barium	ICP-MS	<	0.2	ug/L
Beryllium	ICP-MS	<	0.2	ug/L
Boron	ICP-OES	<	2	ug/L
Cadmium	ICP-MS	<	0.3	ug/L
Calcium	ICP-OES	<	0.01	mg/L
Chromium	ICP-MS	<	0.2	ug/L
Cobalt	ICP-MS	<	0.2	ug/L
Copper	ICP-MS	<	0.2	ug/L
Iron	ICP-MS	<	5	ug/L
Lead	ICP-MS	<	0.3	ug/L
Magnesium	ICP-OES	<	0.006	mg/L
Manganese	ICP-MS	<	0.1	ug/L
Molybdenum	ICP-MS	<	0.2	ug/L
N-Ammonia	Colorimetric	<	0.01	mg/L
N-Nitrite	Colorimetric	<	0.003	mg/L
N-Nitrite + Nitrate	Colorimetric	<	0.007	mg/L
Nickel	ICP-MS	<	0.5	ug/L
P-Ortho Phosphate	Colorimetric	<	0.005	mg/L
Silica	ICP-OES	<	0.02	mg/L
Silver	ICP-MS	<	0.2	ug/L
Sodium	ICP-OES	<	0.03	mg/L
Strontium	ICP-MS	<	0.1	ug/L
Thallium	ICP-MS	<	0.1	ug/L
Uranium	ICP-MS	<	0.2	ug/L
Zinc	ICP-MS	<	0.5	ug/L

ICP-MS = Inductively Coupled Plasma-Mass Spectrophotometry
ICP-OES = Inductively Coupled Plasma-Optical Emission Spectrophotometry
The Quality Water Service Unit in Ocala, Fla. rinses the filters with 1L of deionized water and collects the next 250 mL aliquot through the test filters. Analyses were performed by the National Water Quality Laboratory in Arvada, CO.

Direct questions to Chief, Quality Management Program, NWQL.

Alfred Duncell
QA Acceptance

06/16/95
Date

June 14, 1995

Cartridge filters used in sample round 5

Certificate of Analysis

CAPSULE FILTERS

Gelman lot #8000201

Element	Method	Concentration		Units	MDL
Aluminum	ICP-MS	<	0.3	ug/L	0.3
Antimony	ICP-MS	<	0.2	ug/L	0.2
Barium	ICP-MS	<	0.2	ug/L	0.2
Beryllium	ICP-MS	<	0.2	ug/L	0.2
Boron	ICP-OES	<	2	ug/L	2
Cadmium	ICP-MS	<	0.3	ug/L	0.3
Calcium	ICP-OES	<	0.01	mg/L	0.01
Chromium	ICP-MS	<	0.2	ug/L	0.2
Cobalt	ICP-MS	<	0.2	ug/L	0.2
Copper	ICP-MS	<	0.2	ug/L	0.2
Iron	ICP-OES	<	3	ug/L	3
Lead	ICP-MS	<	0.3	ug/L	0.3
Magnesium	ICP-OES	<	0.006	mg/L	0.006
Manganese	ICP-MS	<	0.1	ug/L	0.1
Molybdenum	ICP-MS	<	0.2	ug/L	0.2
N-Ammonia	Colorimetric	<	0.03	mg/L	0.002
N-Nitrite	Colorimetric	<	0.002	mg/L	0.001
N-Nitrite + Nitrate	Colorimetric	<	0.005	mg/L	0.005
Nickel	ICP-MS	<	0.5	ug/L	0.5
P-Ortho Phosphate	Colorimetric	<	0.004	mg/L	0.001
Silica	ICP-OES	<	0.02	mg/L	0.02
Silver	ICP-MS	<	0.2	ug/L	0.2
Sodium	ICP-OES	<	0.03	mg/L	0.03
Strontium	ICP-MS	<	0.1	ug/L	0.1
Thallium	ICP-MS	<	0.1	ug/L	0.1
Uranium	ICP-MS	<	0.2	ug/L	0.2
Zinc	ICP-MS	<	0.5	ug/L	0.5

ICP-MS = Inductively Coupled Plasma-Mass Spectrophotometry
ICP-OES = Inductively Coupled Plasma-Optical Emission Spectrophotometry
The Quality Water Service Unit in Ocala, Fla. rinses the filters with 1L of deionized water and collects the next 250 mL aliquot through the test filters. Analyses were performed by the National Water Quality Laboratory in Arvada, CO.

Direct questions to Chief, Quality Management Program, NWQL.

Alfred Dassall
QA Acceptance

9/18/95
Date

September 18, 1995

Cartridge filters used in sample round 6

Certificate of Analysis

CAPSULE FILTERS

Gelman lot #8000101

Element	Method	Concentration	Units	MDL
Aluminum	ICP-MS	< 0.3	ug/L	0.3
Antimony	ICP-MS	< 0.2	ug/L	0.2
Barium	ICP-MS	< 0.2	ug/L	0.2
Beryllium	ICP-MS	< 0.2	ug/L	0.2
Boron	ICP-OES	< 2	ug/L	2
Cadmium	ICP-MS	< 0.3	ug/L	0.3
Calcium	ICP-OES	< 0.01	mg/L	0.01
Chromium	ICP-MS	< 0.2	ug/L	0.2
Cobalt	ICP-MS	< 0.2	ug/L	0.2
Copper	ICP-MS	< 0.2*	ug/L	0.2
Iron	ICP-OES	< 3	ug/L	3
Lead	ICP-MS	< 0.3	ug/L	0.3
Magnesium	ICP-OES	< 0.006	mg/L	0.006
Manganese	ICP-MS	< 0.1	ug/L	0.1
Molybdenum	ICP-MS	< 0.2	ug/L	0.2
N-Ammonia	Colorimetric	< 0.005	mg/L	0.002
N-Nitrite	Colorimetric	< 0.001	mg/L	0.001
N-Nitrite + Nitrate	Colorimetric	< 0.005	mg/L	0.005
Nickel	ICP-MS	< 0.5	ug/L	0.5
P-Ortho Phosphate	Colorimetric	< 0.001	mg/L	0.001
Silica	ICP-OES	< 0.02	mg/L	0.02
Silver	ICP-MS	< 0.2	ug/L	0.2
Sodium	ICP-OES	< 0.03	mg/L	0.03
Strontium	ICP-MS	< 0.1	ug/L	0.1
Thallium	ICP-MS	< 0.1	ug/L	0.1
Uranium	ICP-MS	< 0.2	ug/L	0.2
Zinc	ICP-MS	< 0.5	ug/L	0.5

ICP-MS = Inductively Coupled Plasma-Mass Spectrophotometry
ICP-OES = Inductively Coupled Plasma-Optical Emission Spectrophotometry
The Quality Water Service Unit in Ocala, Fla. rinses the filters with 1L of deionized water and collects the next 250 mL aliquot through the test filters. Analyses were performed by the National Water Quality Laboratory in Arvada, CO.

Direct questions to Chief, Quality Management Program, NWQL.

Alfred Driscoll — QA Acceptance

October 10, 1995 — Date

Cartridge filters used in sample round 7

Certificate of Analysis

CARTRIDGE FILTERS --Gelman lot #9881001

Element	Method	Concentration	MRL	Units
Aluminum	ICP-MS	< 0.3	0.3	ug/L
Antimony	ICP-MS	< 0.2	0.2	ug/L
Barium	ICP-MS	< 0.2	0.2	ug/L
Beryllium	ICP-MS	< 0.2	0.2	ug/L
Boron	ICP-OES	< 2	2	ug/L
Cadmium	ICP-MS	< 0.3	0.3	ug/L
Calcium	ICP-OES	< 0.003	0.002	mg/L
Chromium	ICP-MS	< 0.2	0.2	ug/L
Cobalt	ICP-MS	< 0.2	0.2	ug/L
Copper	ICP-MS	0.24	0.2	ug/L
Iron	ICP-MS	< 3	3	ug/L
Lead	ICP-MS	< 0.3	0.3	ug/L
Magnesium	ICP-OES	< 0.001	0.001	mg/L
Manganese	ICP-MS	< 0.2	0.1	ug/L
Molybdenum	ICP-MS	< 0.2	0.2	ug/L
N-Ammonia	Colorimetric	< 0.01*	0.002	mg/L
N-Nitrite	Colorimetric	< 0.003*	0.001	mg/L
N-Nitrite + Nitrate	Colorimetric	< 0.005	0.005	mg/L
Nickel	ICP-MS	< 0.5	0.5	ug/L
P-Ortho Phosphate	Colorimetric	< 0.002*	0.001	mg/L
Silica	ICP-OES	< 0.02	0.02	mg/L
Silver	ICP-MS	< 0.2	0.2	ug/L
Sodium	ICP-OES	< 0.03	0.03	mg/L
Strontium	ICP-MS	< 0.1	0.1	ug/L
Thallium	ICP-MS	< 0.1	0.1	ug/L
Uranium	ICP-MS	< 0.2	0.2	ug/L
Zinc	ICP-MS	< 0.5	0.5	ug/L

MRL = Mimimum reporting level
ICP-MS = Inductively Coupled Plasma-Mass Spectrophotometry
ICP-OES = Inductively Coupled Plasma-Optical Emission Spectrophotometry

The Quality Water Service Unit in Ocala, Fla. rinsed each of 8 test filters with 1L of deionized water and collected the next 250 mL aliquot for analysis at the National Water Quality Laboratory in Arvada, CO.

* One sample of 8 contained ammonia of 0.034 mg/L. A reanalysis of this sample had a value was 0.010 0.010 mg/L.The same sample had a value of 0.003 mg/L NO2 and 0.002 mg/L of PO4.

Direct questions to Chief, Quality Management Program, NWQL.

Approved by _____ Date 4/26/96

Certificate of Analysis

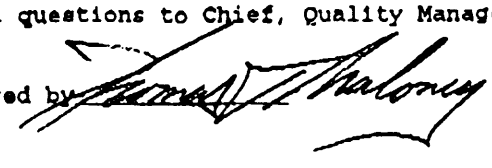
CARTRIDGE FILTERS --Gelman lot #0530001

Element	Method	Concentration	MRL	Units
Aluminum	ICP-MS	< 0.3	0.3	ug/L
Antimony	ICP-MS	< 0.2	0.2	ug/L
Barium	ICP-MS	< 0.2	0.2	ug/L
Beryllium	ICP-MS	< 0.2	0.2	ug/L
Boron	ICP-OES	< 2	2	ug/L
Cadmium	ICP-MS	< 0.3	0.3	ug/L
Calcium	ICP-OES	< 0.002	0.002	mg/L
Chromium	ICP-MS	< 0.2	0.2	ug/L
Cobalt	ICP-MS	< 0.3	0.2	ug/L
Copper	ICP-MS	< 0.2	0.2	ug/L
Iron	ICP-MS	< 3	3	ug/L
Lead	ICP-MS	< 0.3	0.3	ug/L
Magnesium	ICP-OES	< 0.001	0.001	mg/L
Manganese	ICP-MS	< 0.2	0.1	ug/L
Molybdenum	ICP-MS	< 0.2	0.2	ug/L
N-Ammonia	Colorimetric	< 0.002	0.002	mg/L
N-Nitrite	Colorimetric	< 0.001	0.001	mg/L
N-Nitrite + Nitrate	Colorimetric	< 0.005	0.005	mg/L
Nickel	ICP-MS	< 0.5	0.5	ug/L
P-Ortho Phosphate	Colorimetric	< 0.001	0.001	mg/L
Silica	ICP-OES	< 0.02	0.02	mg/L
Silver	ICP-MS	< 0.2	0.2	ug/L
Sodium	ICP-OES	< 0.03	0.03	mg/L
Strontium	ICP-MS	< 0.1	0.1	ug/L
Thallium	ICP-MS	< 0.1	0.1	ug/L
Uranium	ICP-MS	< 0.2	0.2	ug/L
Zinc	ICP-MS	< 0.5	0.5	ug/L

MRL = Mimimum reporting level
ICP-MS = Inductively Coupled Plasma-Mass Spectrophotometry
ICP-OES = Inductively Coupled Plasma-Optical Emission Spectrophotometry

The Quality Water Service Unit in Ocala, Fla. rinsed each of 19 test filters with 1L of deionized water and collected the next 250 mL aliquot for analysis at the National Water Quality Laboratory in Arvada, CO.

Direct questions to Chief, Quality Management Program, NWQL.

Approved by 

Date July 19, 1996

Ultrex-grade nitric acid used in sample round 1

Certificate of Analysis

Ultrex Nitric Acid packaged in Teflon vials

Eagle-Picher Lot #NA-4012-1GS-1

Aluminum	ICP-MS	<	0.08	µg/L
Antimony	ICP-MS	<	0.08	µg/L
Barium	ICP-MS	<	0.08	µg/L
Berylium	ICP-MS	<	0.08	µg/L
Boron	ICP-OES	<	0.6	µg/L
Cadmium	ICP-MS	<	0.12	µg/L
Calcium	ICP-OES	<	0.002	µg/L
Chromium	ICP-MS	<	0.08	µg/L
Cobalt	ICP-MS	<	0.08	µg/L
Copper	ICP-MS	<	0.08	µg/L
Iron	ICP-OES	<	0.09	µg/L
Lead	ICP-MS	<	0.12	µg/L
Magnesium	ICP-OES	<	0.0003	mg/L
Manganese	ICP-MS	<	0.04	µg/L
Molybdenum	ICP-MS	<	0.08	µg/L
Nickel	ICP-MS	<	0.2	µg/L
Silica	ICP-OES	<	0.006	mg/L
Silver	ICP-MS	<	0.08	µg/L
Sodium	ICP-OES	<	0.007	mg/L
Strontium	ICP-MS	<	0.04	µg/L
Thallium	ICP-MS	<	0.04	µg/L
Uranium	ICP-MS	<	0.08	µg/L
Zinc	ICP-MS	<	0.2	µg/L

ICP-MS = Inductively Coupled Plasma-Mass Spectrophotometry
ICP-OES = Inductively Coupled Plasma-Optical Emission Spectrophotometry

These values do not represent the detection limits of the methods used for analysis, but are the results of concentrating the acid.
The amounts reported are calculated on 250 mL of sample.

Analyses were performed by the National Water Quality Laboratory (NWQL)
Water Resources Division, U. S. Geological Survey,
5293 Ward Road, Arvada, Colorado 80002.

Direct questions to Chief, Quality Management Program, NWQL.

2/28/94

Ultrex-grade nitric acid used in sample rounds 1, 2, and 3

Certificate of Analysis

ULTREX NITRIC ACID IN TEFLON AMPULES

Eagle-Picher lot # NA4286

Element	Method	Concentration		Units
Aluminum	ICP-MS	<	0.5	ug/L
Antimony	ICP-MS	<	0.2	ug/L
Barium	ICP-MS	<	0.2	ug/L
Beryllium	ICP-MS	<	0.2	ug/L
Boron	ICP-OES	<	0.2	ug/L
Cadmium	ICP-MS	<	0.3	ug/L
Calcium	ICP-OES	<	0.01	mg/L
Chromium	ICP-MS	<	0.2	ug/L
Cobalt	ICP-MS	<	0.2	ug/L
Copper	ICP-MS	<	0.5	ug/L
Iron	ICP-MS	<	3	ug/L
Lead	ICP-MS	<	0.3	ug/L
Magnesium	ICP-OES	<	0.01	mg/L
Manganese	ICP-MS	<	0.1	ug/L
Molybdenum	ICP-MS	<	0.2	ug/L
Nickel	ICP-MS	<	0.5	ug/L
Silica	ICP-OES	<	0.04	mg/L
Silver	ICP-MS	<	0.2	ug/L
Sodium	ICP-OES	<	0.03	mg/L
Strontium	ICP-MS	<	0.1	ug/L
Thallium	ICP-MS	<	0.1	ug/L
Uranium	ICP-MS	<	0.2	ug/L
Zinc	ICP-MS	<	0.5	ug/L

ICP-MS = Inductively Coupled Plasma-Mass Spectrophotometry
ICP-OES = Inductively Coupled Plasma-Optical Emission Spectrophotometry

The Quality Assurance Unit prepared the test samples by diluting the contents of each ampule to 250 mL of deionized water. Analyses were performed by the National Water Quality Laboratory in Arvada, CO.

Direct questions to Chief, Quality Management Program, NWQL.

11/15/94

Ultrex-grade nitric acid used in sample rounds 4 and 5

Certificate of Analysis

1 mL Nitric Acid in Teflon® Ampules

Eagle Picher Lot Number NA5030

Element	Method	Concentration		Units
Aluminum	ICP - MS	<	0.3	µg/L
Antimony	ICP - MS	<	0.2	µg/L
Barium	ICP - MS	<	0.2	µg/L
Beryllium	ICP - MS	<	0.2	µg/L
Boron	ICP - OES	<	2	µg/L
Cadmium	ICP - MS	<	0.3	µg/L
Calcium	ICP - OES	<	0.02	mg/L
Chromium	ICP - MS	<	0.2	µg/L
Cobalt	ICP - MS	<	0.2	µg/L
Copper	ICP - MS	<	0.2	µg/L
Iron	ICP - OES	<	3	µg/L
Lead	ICP - MS	<	0.3	µg/L
Magnesium	ICP-OES	<	0.01	mg/L
Manganese	ICP - MS	<	0.1	µg/L
Molybdenum	ICP - MS	<	0.2	µg/L
Nickel	ICP - MS	<	0.5	µg/L
Silica	ICP - OES	<	0.02	mg/L
Silver	ICP - MS	<	0.2	µg/L
Sodium	ICP - OES	<	0.03	mg/L
Strontium	ICP - MS	<	0.1	µg/L
Thallium	ICP - MS	<	0.1	µg/L
Uranium	ICP - MS	<	0.2	µg/L
Zinc	ICP - MS	<	0.5	µg/L

ICP - MS = Inductively Coupled Plasma - Mass Spectrometry
ICP - OES = Inductively Coupled Plasma-Optical Emission Spectrophotometry
Analyses were performed by the National Water Quality Laboratory (NWQL), WRD, U. S. Geological Survey, 5293 Ward Road, Arvada, Colorado 80002.
Direct questions to Chief, Quality Management Program, NWQL.

Alfred Driscoll
QA Acceptance

3/1/95
Date

March 1, 1995

Ultrex-grade nitric acid used in sample rounds 6, 7, and 8

Certificate of Analysis

1 mL Nitric Acid in Teflon® Ampules

Lot Number NA-5236-1GS1

Element	Method	Concentration		Units	MDL
Aluminum	ICP - MS	<	0.3	µg/L	0.3
Antimony	ICP - MS	<	0.2	µg/L	0.2
Barium	ICP - MS	<	0.2	µg/L	0.2
Beryllium	ICP - MS	<	0.2	µg/L	0.2
Boron	ICP - OES	<	2	µg/L	2
Cadmium	ICP - MS	<	0.3	µg/L	0.3
Calcium	ICP - OES	<	0.01	mg/L	0.01
Chromium	ICP - MS	<	0.2	µg/L	0.2
Cobalt	ICP - MS	<	0.2	µg/L	0.2
Copper	ICP - MS	<	0.2	µg/L	0.2
Iron	ICP - OES	<	3	µg/L	3
Lead	ICP - MS	<	0.3	µg/L	0.3
Magnesium	ICP-OES	<	0.01	mg/L	0.01
Manganese	ICP - MS	<	0.1	µg/L	0.1
Molybdenum	ICP - MS	<	0.2	µg/L	0.2
Nickel	ICP - MS	<	0.5	µg/L	0.5
Silica	ICP - OES	<	0.02	mg/L	0.02
Silver	ICP - MS	<	0.2	µg/L	0.2
Sodium	ICP - OES	<	0.07	mg/L	0.03
Strontium	ICP - MS	<	0.1	µg/L	0.1
Thallium	ICP - MS	<	0.1	µg/L	0.2
Uranium	ICP - MS	<	0.2	µg/L	0.2
Zinc	ICP - MS	<	0.5	µg/L	0.5

ICP - MS = Inductively Coupled Plasma - Mass Spectrometry
ICP - OES = Inductively Coupled Plasma-Optical Emission Spectrophotometry
Analyses were performed by the National Water Quality Laboratory (NWQL), WRD, U. S. Geological Survey, 5293 Ward Road, Arvada, Colorado 80002.
Direct questions to Chief, Quality Management Program, NWQL.

Alfred Duncan — QA Acceptance

10/3/95 — Date

October 3, 1995

Microprocess-grade hydrochloric acid used in sample round 1

MALLINCKRODT CHEMICAL

CERTIFICATE OF ANALYSIS

ITEM: HYDROCHLORIC ACID MICROPROCESS GRADE Standard of VWR
CODE: H992
LOT : KMEV

TESTS	LIMITS	RESULTS
COLOR	APHA 10 Max.	< APHA 10
ASSAY	36.5 - 38.0%	37.6%
ARSENIC & ANTIMONY	0.005 ppm Max.	< 0.005 ppm
RESIDUE AFTER IGNITION	5 ppm Max.	< 5 ppm
PHOSPHATE	0.05 ppm Max.	< 0.05 ppm
SULFATE	0.5 ppm Max.	< 0.5 ppm
SULFITE	0.8 ppm Max.	< 0.8 ppm
FREE HALOGEN	To Pass Test	Passes Test
EXTRACTABLE ORGANIC SUBSTANCES	5 ppm Max.	< 5 ppm
PARTICLES 1 u & GREATER	25/ml Max.	< 25/ml
TRACE METALS	To Pass Test	Passes Test

Expressed in ppm Max.

		LIMITS	RESULTS			LIMITS	RESULTS
ALUMINUM	(Al)	0.3	< 0.03	MAGNESIUM	(Mg)	0.3	< 0.01
BORON	(B)	0.1	0.01	MANGANESE	(Mn)	0.3	< 0.004
CALCIUM	(Ca)	0.3	< 0.02	NICKEL	(Ni)	0.1	< 0.02
CHROMIUM	(Cr)	0.2	< 0.01	POTASSIUM	(K)	0.3	< 0.05
COPPER	(Cu)	0.1	< 0.02	SODIUM	(Na)	0.3	< 0.02
GOLD	(Au)	0.3	< 0.02	TIN	(Sn)	0.3	< 0.01
IRON	(Fe)	0.2	< 0.03	TITANIUM	(Ti)	0.3	< 0.05
LEAD	(Pb)	0.1	< 0.02	ZINC	(Zn)	0.3	< 0.02

This product meets as a minimum, the Semiconductor Equipment and Materials International (SEMI) specification as detailed in the Book of SEMI Standards (8088).

Randy Salley
Manager, Quality Control
Mallinckrodt Chemical, Inc.
4/19/94 wgw

Microprocess-grade hydrochloric acid used in sample rounds 2-8

MALLINCKRODT CHEMICAL

CERTIFICATE OF ANALYSIS

ITEM: HYDROCHLORIC ACID MICROPROCESS GRADE Standard of VWR
CODE: H992
LOT : KMMH

TESTS	LIMITS	RESULTS
COLOR	APHA 10 Max.	APHA 5
ASSAY	36.5 - 38.0%	37.3%
ARSENIC & ANTIMONY	0.005 ppm Max.	0.005 ppm
RESIDUE AFTER IGNITION	5 ppm Max.	0.2 ppm
PHOSPHATE	0.05 ppm Max.	0.01 ppm
SULFATE	0.5 ppm Max.	0.5 ppm
SULFITE	0.8 ppm Max.	0.2 ppm
FREE HALOGEN	To Pass Test	Passes Test
EXTRACTABLE ORGANIC SUBSTANCES	5 ppm Max.	5 ppm
PARTICLES 1 u & GREATER	25/ml Max.	1/ml>1.0
TRACE METALS Expressed in ppm Max.	To Pass Test	Passes Test

		LIMITS	RESULTS			LIMITS	RESULTS
ALUMINUM	(Al)	0.3	0.009	MAGNESIUM	(Mg)	0.3	0.070
BORON	(B)	0.1	0.010	MANGANESE	(Mn)	0.3	<0.001
CALCIUM	(Ca)	0.3	0.270	NICKEL	(Ni)	0.1	<0.001
CHROMIUM	(Cr)	0.2	<0.001	POTASSIUM	(K)	0.3	0.008
COPPER	(Cu)	0.1	<0.001	SODIUM	(Na)	0.3	0.050
GOLD	(Au)	0.3	<0.001	TIN	(Sn)	0.3	0.016
IRON	(Fe)	0.2	0.054	TITANIUM	(Ti)	0.3	<0.001
LEAD	(Pb)	0.1	<0.002	ZINC	(Zn)	0.3	0.015

This product meets as a minimum, the Semiconductor Equipment and Materials International (SEMI) specification as detailed in the Book of SEMI Standards (8088).

Randy Salley
Manager, Quality Control
Mallinckrodt Chemical, Inc.
10/07/94 var

APPENDIX B

LETTER REPORTS FOR FISH-TISSUE ANALYSIS

FRONTIER GEOSCIENCES
ENVIRONMENTAL RESEARCH CORPORATION
414 Pontius North • Seattle, WA 98109
(206) 622-6960 • fax: (206) 622-6870

Ralph Wilcox
U.S.G.S., WRD
4501 Indian School Road, NE, Suite 200
Albuquerque, NM 87110

June 1, 1995

Dear Mr. Wilcox,

Attached to this letter are the results of the analysis of four fish tissue samples for total inorganic arsenic, monomethylarsonate, dimethylarsonate, total arsenic and total mercury.

The samples were analyzed as previously stated for arsenic species. Total arsenic was determined by Zeeman corrected graphite furnace atomic absorption spectrometry. We use cold vapor atomic fluorescence spectroscopy to determine total mercury. No analytical problems were encountered.

In general, the concentration of arsenic in all of the samples is very low. No inorganic or methyl arsenic species were detected in any of the samples.

Mercury was detected in all samples. The mean concentration is 0.25 µg/g wet weight.

Thank You for this opportunity to work with you and I look forward to future cooperative ventures.

Sincerely,

Anne Falke
Research Scientist

Results for May, 1995 Sampling Event

Revised May 28, 1996

Anne M. Falke, Ph.D.
Frontier Geosciences

Table 1. Concentrations of total mercury and total arsenic in fish filets.

Sample[a]	Dry Fraction	Concentration (µg/g wet weight) [Hg]	[As]
345550106404810-CC	0.199	0.1065	rep 1: *NR*[c] rep 2: ND[b] RPD: see below
345547106405510-CC	0.164	rep 1: 0.2198 rep 2: 0.2062 mean: 0.2129 RPD: 6.5%	*NR*[c]
345547106405510-LMB	0.187	0.4164	ND[b]
345612106403310-LMB	0.180	0.2934	*NR*[c]
DORM-2			
rep 1		4.202	16.24
rep 2		4.173	13.03
mean		4.188	14.63
RPD		0.7%	21.9%
certified		4.640±0.260	18.0±1.1
recovery		90.3%	81.3%
Preparation Blank		0.003	0.001
Method Blank			0.005±0.003 (n=9)

[a]Samples are codes by the field location followed by the sample type; CC- channel catfish, LMB- large mouth bass.
[b]ND - concentration below the limit of detection, 0.058µg/g for arsenic in fish tissue.
Note Since arsenic concentrations in sample are at or below the detection limit, no meaningful measure of precision could be obtained from duplicate analysis of this sample.

[c]*NR - Concentration not reported (censored by U.S. Geological Survey) on the basis of personal communication with Anne M. Falke, Frontier Geosciences, May 1996.*

Table 2. QA data for arsenic speciation analysis (all concentrations are in μg/g as arsenic).

Parameter	As(V)	As(III)	MeAs	Me_2As
Matrix Spike:				
Spike	0.986	0.132	0.273	0.254
Spiked Sample	0.913	0.154	0.194	0.226
Sample Conc.	ND	ND	ND	ND
Recovery	92.5%	118%	71.1%	88.6%
MDL (μg/g)[a]	0.12	0.12	0.15	0.25

[a]Determined as 2.994 x standard deviation of 7 consecutive analysis at a concentration less than 5 times the detection limit.

FRONTIER GEOSCIENCES
ENVIRONMENTAL RESEARCH CORPORATION
414 Pontius North • Seattle, WA 98109
(206) 622-6960 • fax: (206) 622-6870

Ralph Wilcox
U.S.G.S., WRD
4501 Indian School Road, NE, Suite 200
Albuquerque, NM 87110

November 28, 1995

Dear Mr. Wilcox,

Enclosed are the results for arsenic and mercury analysis of Rio Grande fish tissue.

All arsenic analysis was performed by hydride generation atomic absorption spectrometry (HG-AAS). Total arsenic on the previous sample set (June 1, 1995) was by graphite furnace AAS, however, concentrations in the present sample set were too low to be detected by this method (detection limit = 58 ng/g compared to 0.3 ng/g for HG-AAS). For that reason I chose to use the more sensitive (and more costly) technique of HG-AAS. This required an additional oxidative digestion step to convert all arsenic in the sample to As(V). We are not charging for the additional costs on this sample set, however, if the more sensitive method is requested for future samples we will have to bill at the higher rate for them.

One thing that was interesting to me when comparing these results to those from the spring was the difference in the inorganic/organic ratio. Most of the arsenic was present in the inorganic form for these samples, whereas last spring, mainly organic arsenic was found. Was there any difference in the sample handling (storage times, preservation methods)?

Again, Thanks for the opportunity to work with you.

Most Sincerely,

Anne M. Falke
Research Scientist

Results for October, 1995 Sampling Event

Revised May 28, 1996

Anne M. Falke, Ph.D.
Frontier Geosciences

Table 1. Concentrations (ng/g, wet weight basis) of arsenic species in fish tissue samples.

Sample #[a]	*Dry fraction*	*Total As*[b]	*Inorganic As*[c]	*Organic As*
08331000	0.1993	3.01	10.1	ND
08329500	0.1406	23.6	12.1	11.5
06404810	0.1984	16.5	15.0	1.5
06405210	0.1867	13.7	14.2	ND
06403610	0.2331	13.9	20.0	ND
06430010	0.2074	10.4	14.8	ND

[a]For simplicity and brevity, only the last 8 digits of the field sample number is used to identify the sample.

[b]Determined by hydride generation, cryogenic trapping and chromatographic separation, followed by quartz-furnace atomic absorption spectrometry (HG-AAS) after oxidative digestion.

[c]Determined by HG-AAS after digestion in dilute HCl (speciation preserved).

Table 2. Concentration (ng/g) of mercury in fish tissue samples[a].

Sample #[b]	*Dry Fraction*	*Wet weight conc.*	*Dry weight conc.*
08331000	0.2401	162.9	678.5
08329500	0.2314	192.2	830.6
06404810	0.2428	702.0	2,891
06405210	0.2166	163.1	753.0
06403610	0.2241	179.8	802.3
06430010	0.2010	271.9	1,352

[a]Determined by cold vapor atomic fluorescence after total oxidative digestion.

[b]For simplicity and brevity, only the last 8 digits of the field sample number is used to identify the sample.

Table 3. QA results.

Parameter	*Total Arsenic (ng/g)*	*Inorganic Arsenic (ng/g)*	*Mercury*
Method Blanks	0.27 ± 0.28 (n=3)	0 (n=2)	0.12±0.05 (n=3)
Preparation Blanks	6.3	5.2	0.4 ± 0.2 (n=3)
Lab Control Standard Identity Certified Conc. Experimental Conc. Recovery			 NRCC DORM-2 4,640 ± 260 4,743 102.2%
Spike recovery Sample ID Sample conc. Sample + spike Spike (experimental) Spike added Recovery	 8329500 23.6 1529 1505 1723 87.4%	 8329500 12.1 1011 999 862 116%	 06403610 179.8 388.4 208.6 196.6 106.1
Duplicate analysis[a] sample rep 1 rep 2 RPD	 8329500 (MS/MSD) 87.4% recovery 88.4% recovery 1.2%	 8329500 (MS/MSD) 116% recovery 102% recovery 12.7%	 06403610 176.3 183.3 3.9%

[a]Relative percent deviation for arsenic analysis is based on an MS/MSD pair and, therefore, the RPD is calculated using percent recovery (due to variations in sample mass, spiking levels were different in the two spiked samples).

FRONTIER
GEOSCIENCES
ENVIRONMENTAL RESEARCH CORPORATION
414 Pontius North • Seattle, WA 98109
(206) 622-6960 • fax: (206) 622-6870

Ralph Wilcox
U.S.G.S., WRD
4501 Indian School Road, NE, Suite 200
Albuquerque, NM 87110

October 24, 1996

Dear Mr. Wilcox,

Enclosed are the results for mercury and arsenic analysis on Rio Grande fish tissue. I apologize for the delay in getting this report to you.

Samples were received on August 22, 1996 cold and in good condition. The lid to the filet from Rio Grande near Bernalillo for mercury analysis was cracked. Though I have no reason to believe that this would affect the results, I want to make sure it is noted just in case something seems awry.

Arsenic analysis was performed on all tissues and QA samples following the appropriate digestion by hydride generation atomic absorption spectrometry. Mercury analysis was by cold vapor atomic fluorescence spectrometry.

Except for the precision QC for the total arsenic analysis, all QC is in control. The large relative percent difference between two different digests of the same homogenized fish filets may, in part, be due to sample inhomogeneity. More likely, the difference can be attributed to signal suppression in the analysis by nitric acid. Until we find an alternative digestion procedure, nitric acid is necessary to completely digest biological materials. For arsenic analysis, this must be followed by evaporation of the nitric acid. If the nitric acid is not completely removed, it interferes with the hydride generation process, resulting in a significantly lower analyte recovery. Recovery of an analytical spike in this sample was 16.2%, further indication of suppression by nitric acid. This suppression was not evident in other samples.

Please feel free to call with any questions..

Most Respectfully,

Anne M. Falke, Ph.D.
Research Scientist

Table 1. Arsenic concentrations (ng/g, wet basis) in fish tissue.

Sample ID	Location	*Dry fraction*	*Total As*	*Inorganic As*	*Organic As*
08331000	Isleta	0.2141	15.3	3.9	11.4
08329500	Bernalillo	0.2227	5.98	3.52	2.46
345550106404810	Albuquerque	0.1885	15.7	4.45	11.25
345705106405210	I-25	0.2284	4.62	3.9	0.72
345618106403710	Turtle Lake	0.2172	7.6	2.86	4.74
344816106430010	Los Lunas	0.2293	25	3.86	21.14

Table 2. Mercury concentrations (ng/g wet basis) in fish tissue

Sample ID	Location	*Dry fraction*	*MeHg*	*Ionic Hg*	*Total Hg*
08331000	Isleta	0.1863	304	6	310
08329500	Bernalillo	0.1925	251	5.3	256.3
345550106404810	Albuquerque	0.2023	306.4	6.4	312.8
345705106405210	I-25	0.2221	249.8	6	255.8
345618106403710	Turtle Lake	0.2296	60.2	1.1*	61.3
344816106430010	Los Lunas	0.2276	280.4	5.4	285.8

*Value is an estimate, < MDL (2.9 ng/g Hg(II))

Table 3. QA/QC results

Parameter	*Total As*	*Inorganic As*	*Methyl Hg*	*Ionic Hg*	*MeAs*	*Me2As*
Method Blanks	5.9 (n=1)	0 (n=1)	1.4 ± 0.3 (n=3)	0.7 ± 0.1 (n=3)	0 (n=1)	0 (n=1)
Lab Control Standard						
Identity	DORM-2		DORM-2			
Certified Conc.	18000	not certified	4470	not certified	not certified	not certified
Experimental Conc.	19427		4428			
Recovery	108%		99%			
Spike Recovery						
Sample ID	345550106404810	344816106430010	345705106405210	345705106405210	344816106430010	344816106430010
Spiked sample	31.63	792.9	933.5	509.2	800.3	4270
Sample Conc.	15.69	3.86	249.8	6	0	0
Spike detected	15.94	789.0	683.7	503.2	800.3	4270
Spike added	17.94	943	728.7	508.9	1000	5000
Recovery	88.9%	83.7%	93.8%	98.9%	80.0%	85.4%
Duplicate Analysis						
Sample ID	345618106403710	344816106430010 (MS/MSD)	344816106430010	344816106430010	344816106430010	344816106430010
Rep 1	7.64	792.9	280.4	5.4	800.3	4270
Rep 2	4.02	753.4	275.2	5.3	870	3376
RPD	62.1%	5.1%	1.9%	1.9%	8.3%	23.4%

*U.S. GOVERNMENT PRINTING OFFICE:1997-673-815/85015