LMS/MNT/S08993

Monticello Mill Tailings Site Operable Unit III Annual Groundwater Report May 2011 Through April 2012

December 2012

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Annual Groundwater Report
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Plate 1 MMTS OU III Surface Water and Groundwater Monitoring Locations

Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	contaminant of concern
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
ESD	explanation of significant difference
FS	Feasibility Study
ft	feet
gpm	gallons per minute
ITRC	Interstate Technology and Regulatory Council
LM	Office of Legacy Management
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MMTS	Monticello Mill Tailings Site
MNA	monitored natural attenuation
OU	Operable Unit
pCi/L	picocuries per liter
PRB	permeable reactive barrier
RAOs	remedial action objectives
RI	Remedial Investigation
Rifle IFRC	Rifle Integrated Field Research Challenge
ROD	record of decision
SOARS	System Operation and Analysis at Remote Sites
UDEQ	Utah Department of Environmental Quality
UDWQ	Utah Division of Water Quality
UMTRA	Uranium Mill Tailings Remedial Action
WQCS	Water Quality Compliance Strategy
ZVI	zero-valent iron

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Executive Summary

This report provides the annual analysis of water quality restoration progress, cumulative through April 2012, for Operable Unit (OU) III, surface water and groundwater, of the U.S. Department of Energy Office of Legacy Management Monticello Mill Tailings Site (MMTS). The MMTS is a Comprehensive Environmental Response, Compensation, and Liability Act National Priorities List site located in and near the city of Monticello, San Juan County, Utah.

MMTS comprises the 110-acre site of a former uranium- and vanadium-ore-processing mill (mill site) and 1,700 acres of surrounding private and municipal property. Milling operations generated 2.5 million cubic yards of waste (tailings) from 1942 to 1960. The tailings were impounded at four locations on the mill site. Inorganic constituents in the tailings contaminated groundwater and surface water in the shallow alluvium of the Montezuma Creek valley. Mill tailings dispersed by wind and water also contaminated properties surrounding and downstream of the mill site.

Remedial actions to remove and isolate radiologically contaminated soil, sediment, and debris from the former mill site (OU I) and surrounding properties (OU II) were completed in 1999 with the encapsulation of the wastes in an engineered repository located on DOE property 1 mile south of the former mill site. Contamination of groundwater and surface water remains within OU III at levels that exceed water quality protection standards. DOE implemented monitored natural attenuation with institutional controls as the OU III remedy in 2004. The remedy was modified in 2009 to include a groundwater pump-and-treat enhancement.

Environmental monitoring at OU III consists of twice-yearly collection and analysis of hydrologic and water-quality data from an established network of observation wells, seeps, and surface water locations. Monitoring is also conducted monthly to evaluate performance of the groundwater remediation system. No anomalous findings for OU III were identified for this reporting period; however, restoration of the alluvial aquifer continues to proceed more slowly than the performance criteria established in the OU III Record of Decision (June 2004). Possible geochemical and hydrogeologic causes for this outcome are identified in this report. The report also presents results of biomonitoring conducted in 2012.

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1.0 Introduction

1.1 Scope and Objectives

This report provides the annual analysis of water quality restoration progress, cumulative through April 2012, for Operable Unit (OU) III, surface water and groundwater, of the U.S. Department of Energy (DOE) Office of Legacy Management (LM) Monticello Mill Tailings Site (MMTS). The MMTS is a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priorities List site located in and near the city of Monticello, San Juan County, Utah (Figure 1, page 57).

The Record of Decision (ROD) for OU III (DOE 2004b) selected monitored natural attenuation (MNA) with institutional controls as the OU III remedy. The remedy was modified in 2009 by an Explanation of Significant Difference (ESD; DOE 2009a) to include a groundwater pump-and-treat enhancement. The ROD stipulates environmental monitoring and annual data review to evaluate the progress of the selected remedy in meeting water quality restoration objectives.

Environmental monitoring at OU III consists of twice-yearly collection and analysis of hydrologic and water-quality data from an established network of groundwater monitoring wells, groundwater seeps, and surface water locations in Montezuma Creek and adjoining wetlands. Additional environmental monitoring summarized in this report is conducted to evaluate selenium occurrence in OU III wetlands (biomonitoring) and to evaluate performance of the pump-and-treat enhancement.

This report also includes a summary of recent field investigations completed in accordance with the OU III Water Quality Compliance Strategy (WQCS) (DOE 2009c), pursuant to the ESD. The purpose of these investigations was to evaluate the contingency remedy (DOE 2009a).

2.0 Historical Information

2.1 Background Information

The MMTS was established as a CERCLA National Priorities List site in 1989 (CERCLIS ID Number UT3890090035). It comprises the 110-acre site of a former uranium- and vanadium-ore-processing mill (mill site) and 1,700 acres of surrounding private and municipal property. Ore processing generated 2.5 million cubic yards of tailings, a sandy waste product, during mill operation from 1942 to 1960. The tailings were conveyed in slurry form to four impoundments on the mill site. Groundwater and surface water contamination resulted from the leaching of radioactive and other inorganic constituents in the tailings to the underlying alluvial aquifer and to Montezuma Creek. Some mill tailings were dispersed by wind, and some entered Montezuma Creek, which resulted in the contamination of properties surrounding and downstream of the mill site.

2.1.1 OU III History

The MMTS ROD, signed in August 1990, designated OUs I and II for remediating radiologically contaminated soil, sediment, and debris on the mill site (OU I) and on the peripheral properties (OU II). Those remedial actions were completed during 1998 and 1999. All OU I and II wastes are encapsulated at the engineered LM repository located on DOE property 1 mile south of the former mill site. The MMTS ROD also designated OU III to address contaminated surface water and groundwater, stipulating that remedy selection would follow the completion of characterization activities through a CERCLA Remedial Investigation (RI) and Feasibility Study (FS).

The RI report was issued in September 1998 (DOE 1998a); however, a companion FS report was not completed beyond draft status because of ongoing OU I and II remedial actions that would significantly and unpredictably impact the groundwater and surface water setting. This condition precluded an accurate assessment of risk associated with groundwater and surface water exposure, thereby deferring selection of the OU III remedy. The U.S. Environmental Protection Agency (EPA) and the Utah Department of Environmental Quality (UDEQ) instead concurred with DOE to implement interim remedial actions (DOE 1998b) and to complete the FS when site conditions had stabilized.

Interim actions included implementing institutional controls to restrict use of contaminated groundwater, continuation of comprehensive water quality and hydrologic monitoring, additional characterization of contaminant fate and transport in OU III groundwater and surface water, and a treatability study of in situ permeable reactive barrier (PRB) technology using zero-valent iron (ZVI) as the treatment medium. Interim actions also included updating the conceptual and numerical groundwater model and the human health and ecological risk assessments. Results of the interim remedial action, documented in the RI Addendum/Focused FS report (DOE 2004a), formed the basis of the OU III remedy selection.

The OU III ROD provided specific criteria to evaluate remedy performance based on a comparison between observed rates of water quality restoration and those predicted by the OU III groundwater model. A brief description of the OU III groundwater model is provided in Section 6.1. DOE first recognized in 2006 (DOE 2006c), and later confirmed in 2007 (DOE 2007b), that aquifer restoration progress was not meeting performance criteria (see Section 6.2 for a description of the performance criteria). DOE also recognized by that time that the effectiveness of the PRB in treating the groundwater was significantly diminished due to mineral fouling. This prompted DOE to install an ex situ pump-and-treat system using ZVI in the area of the PRB in 2005 to further evaluate remediation technology alternatives and to alleviate groundwater mounding upgradient of the PRB. The ex situ system was operated as a technology demonstration project through March 2009.

In March 2009, DOE, EPA, and UDEQ concurred in the ESD to implement a contingency remedy that included pump-and-treat technology for OU III. The ESD formalized the existing pump-and-treat groundwater remediation system as an OU III remedy component.

3.0 Site Description

3.1 Physical Characteristics

The MMTS is located in rural San Juan County at an elevation of approximately 7,000 feet (ft), near and within the city of Monticello in southeastern Utah. According to the 2000 U.S. Census, the population of Monticello is about 2,100 residents. The MMTS occupies the valley of Montezuma Creek, a small stream that flows eastward from its origins in the Abajo Mountains, which rise to 11,000 ft about 5 miles west of the site. The climate is semiarid with four distinct seasons. Average annual precipitation is 15 inches (WRCC 2012), most of which occurs during late summer and early fall storms. Native woody vegetation is dominated by oak brush, piñon/juniper, sagebrush, and rabbitbrush. Willow and other phreatophytes line much of the riparian zone of Montezuma Creek. The mill site was restored with native species in 2000 and is designated and maintained as an open-space public park. Land use within about 1 mile east of the mill site is agricultural and sparse residential. The valley then transitions eastward to a rugged, undeveloped canyon.

3.2 Groundwater Contamination Plume

Figure 2, page 58 depicts the approximate present extent of uranium contamination in OU III groundwater. Uranium is the primary groundwater contaminant in OU III because (1) compared to other site contaminants of concern (COCs), it is most widely distributed at higher concentration relative to the corresponding restoration goal, and (2) by way of the groundwater ingestion pathway, it is the primary contributor to potential risk to human health. For these reasons, uranium is the focus of much of the evaluation of water quality restoration presented in this report. Additional information regarding the nature and extent of groundwater and surface water contamination is presented in Section 4.0, including a qualitative comparison of uranium concentrations in groundwater before source removal to present conditions.

3.3 Surface Water and Groundwater Hydrology

The valley of Montezuma Creek is underlain by a shallow, thin aquifer composed of alluvial sand and gravel (alluvial aquifer). These granular materials are overlain by about 5 ft of flat-lying, fine-textured floodplain deposits. Bedrock beneath the valley floor is generally within 10 to 15 ft of ground surface, and the saturated thickness of the aquifer averages about 5 ft. Groundwater flow is west to east following the slope of the valley. Where contaminated, the alluvial aquifer is underlain by low-permeability, variably saturated bedrock of the Dakota Sandstone. Contamination in the alluvial aquifer does not migrate to the deeper Burro Canyon Sandstone aquifer in detectable quantities.

Montezuma Creek forms at the confluence of North and South Creeks about 0.25 mile upstream of the mill site. Natural flow in Montezuma Creek is interrupted by the municipal reservoir (Loyd's Lake; 3,500 acre-feet capacity [UDW 2012]), located on South Creek about 0.5 mile upstream of the mill site, and by municipal diversions from North Creek in the Abajo Mountains. Leakage through the reservoir dam is a main source of base-flow in Montezuma Creek and locally recharges the alluvial aquifer. Leakage from North Creek is also a likely source of aquifer recharge. Montezuma Creek is often dry at the western boundary of the mill site but seasonally will gain 100 gallons per minute (gpm) or more from groundwater discharge in the mill site

reach. Baseflow in Montezuma Creek is typically less than about 200 gpm (approximately 0.5 cubic foot per second). Additional information regarding stream/aquifer interaction is provided in Section 5.1.

To accommodate placement of the tailings during mill operation, the eastern reach of Montezuma Creek on the mill site was rerouted 200 to 300 ft south of its natural course in the center of the valley. The new channel was about 25 ft above the natural course at the eastern boundary of the mill site and extended several hundred feet farther east. In an early effort to stabilize the site after milling ceased, an energy dissipater was constructed at that location to prevent headward erosion by the creek into the tailings areas. This structure was removed during later remedial actions, and Montezuma Creek was then restored to its natural position.

Remediation of the mill site required the removal of native alluvium to bedrock over large areas. This temporarily exposed deposits of siltstone, shale, and low-grade coal that compose the middle section of the Dakota Sandstone. Following remediation, the aquifer was reconstructed by placing uncontaminated sand and gravel in a narrow (30 to 40 ft wide) and thin (several feet thick) meandering corridor in the channel of Montezuma Creek. Common fill was then placed over the granular material to form a channel several feet wide to contain the creek. To accommodate the gradient of the restored creek, this corridor was excavated several feet into bedrock in the eastern reach of the mill site. The current creek alignment occupies the central, lowest portion of the valley.

3.3.1 Constructed Wetlands

As part of the restoration of the former mill site, three wetlands were designed and created to provide wildlife habitat (Wetlands 1, 2, and 3; see Figure 3, page59 for wetland locations). Creek water enters each wetland through an infiltration gallery constructed of cobbles and boulders built into the upstream banks. The wetlands were excavated into bedrock and locally fully penetrate the alluvial aquifer. Groundwater discharge from the alluvial aquifer therefore also contributes water to the wetlands as bank seepage, particularly at Wetland 3, where Seeps 1 and 2 discharge groundwater into the wetland near its northwest corner (see Section 4.7.1.1). The eastern base of Wetland 3 rests on native alluvium, which allows some leakage from the wetland to the alluvial aquifer. A downstream outlet connects each wetland to Montezuma Creek.

3.3.2 Aquifer Recharge and Discharge Sources

The reconstructed aquifer on the mill site is recharged by groundwater underflow from the west and by anthropogenic sources along the north margin of the valley where a seep zone is present. Underflow from the west is likely derived primarily as the combined leakage from North and South Creeks. Estimated flow volumes from these sources (underflow from the west and anthropogenic sources from the north) are on the order of 10 gpm and 100 gpm, respectively. Montezuma Creek is gaining from groundwater discharge through the mill site reach. It is expected that recharge from the north will vary annually depending on the availability of secondary water used for irrigation by Monticello residents. Water budget estimates for these flow volumes are provided in the RI Addendum for OU III of the MMTS (DOE 2004a).

Total flow of alluvial groundwater at the eastern boundary of the mill site is estimated to be 10 to 20 gpm. In the agricultural area east of the mill site, a losing-stream condition prevails (additional discussion of surface water and groundwater interaction is provided in Section 5.1,

including Figure 28, page 85 and Figure 29, page 87). The bedrock surface beneath the valley floor in this area is relatively flat but steepens sharply at the valley margins against which the aquifer terminates. The slopes of the valley margin, particularly south of Montezuma Creek in this area, are composed of up to 30 ft of sheet-wash colluvium and loess.

A gaining-stream condition resumes as a result of groundwater discharge from the alluvial aquifer within about 2,000 to 2,500 ft east of the mill site in the area of monitoring wells 82-08, P92-06, and 0200 (see Figure 3, page 59 for well locations; see also Section 5.1 for more information on stream/aquifer interaction). Farther east at the head of the canyon, the alluvial aquifer narrows to about 100 ft and remains thin. This constriction forces additional alluvial groundwater into Montezuma Creek. Also in this reach, the Dakota Sandstone aquitard has been eroded by the creek, allowing semiconfined groundwater in the Burro Canyon aquifer to discharge upward into the overlying alluvium and to Montezuma Creek. This effect is to mix and dilute the alluvial groundwater and to displace the alluvial groundwater to Montezuma Creek (gaining stream condition; see also Section 5.1). These conditions form a natural hydrologic boundary that prevents eastward movement of contaminated alluvial groundwater beyond this location. The approximate location of the contact between the Dakota Sandstone (K_d) and Burro Canyon Sandstone (Kbc) in the valley floor is indicated in Figure 3, page 59.

The canyon remains narrow for nearly 1 mile east in the reach where the creek progressively and fully incises the Burro Canyon Sandstone (total thickness of the Burro Canyon is approximately 120 ft in this area). Numerous seeps near the base of the canyon walls in this reach attest to groundwater discharge from the Burro Canyon aquifer. The canyon then widens, coincident with the transition to slope-forming mudstones of the Morrison Formation as the upper bedrock. The approximate location of the contact between the Burro Canyon Sandstone (Kbc) and Morrison Formation (Jm) in the valley floor is indicated in Figure 3, page 59. At the downstream boundary of OU III (see Figure 1, page 57), the alluvial aquifer pinches out entirely in rugged canyon terrain. All alluvial groundwater presumably discharges to the creek by this point or is absorbed into the bedrock formation.

Groundwater recharge from precipitation is probably insignificant because potential evapotranspiration significantly exceeds precipitation. Some area of the aquifer downgradient of the mill site may be recharged locally by seasonal crop irrigation using water obtained from outside the project area. Dense growths of phreatophytes in the riparian zone of Montezuma Creek likely consume significant quantities of groundwater during growing seasons.

3.3.3 Groundwater Use

UDEQ classifies alluvial aquifer groundwater within OU III as Class II, Drinking Water Quality Groundwater; however, there is no current or historical use of the alluvial aquifer for human consumption, irrigation, or livestock watering. The potential to develop the alluvial aquifer for these purposes is low because the saturated zone is thin and generally low-yielding. Local private and municipal wells tap the Burro Canyon aquifer, and municipal water is readily available to residences within OU III.

The City of Monticello has historically distributed water from the Burro Canyon aquifer for nondomestic purposes (municipal and residential irrigation), but during recent drought, which peaked in 2002, the City began (and continues) to augment the domestic supply with Burro Canyon groundwater. Pumping records obtained from the City indicate that the 10 municipal

extraction wells, distributed within a 1-mile radius of the town center, sustained a combined pumping rate of approximately 350 gpm over periods of several months during 2002. This radius encompasses the former mill site; however, no city well is located within the valley of Montezuma Creek where the Burro Canyon aquifer is overlain by a contaminated portion of the alluvial aquifer. The city wells are isolated from OU III groundwater contamination by vertical and lateral distance to the contaminant plume and by the presence of the intervening Dakota Sandstone aquitard (see Figure 4, page 60 for location of municipal wells).

The primary source of domestic-use water for Monticello area residents continues to be surface runoff from the watershed of North Creek in the Abajo Mountains. Diversion systems in the mountains route the water to the municipal water treatment plant located on North Creek about 1.5 miles northwest (upstream) of the mill site. Historical MMTS activities have had no impact on the municipal water system.

3.3.4 Surface Water Use

The segment of Montezuma Creek within OU III is protected by the State of Utah for domestic use with prior treatment (Class 1C), secondary contact recreation (Class 2B), warm water aquatic life (Class 3B), and agricultural use (Class 4). There is no known use of Montezuma Creek water for human consumption. The creek has insufficient water for boating and swimming and does not support fish. Montezuma Creek is used for limited crop irrigation; water is diverted from the creek near the center of the mill site to irrigate crops on private land immediately downstream of the mill site, and creek water is diverted for crop and pasture irrigation about 1 mile east of the mill site. The creek is accessible for livestock watering at many locations in OU III. Water retained in the municipal reservoir (Loyds Lake; see Plate 1 for location of Loyds Lake) is used primarily for residential irrigation; however, the reservoir is connected with the municipal treatment plant to augment the domestic water supply.

3.4 Groundwater Remediation Systems

3.4.1 Permeable Reactive Barrier

The PRB is a subsurface treatment system that was installed to immobilize uranium and other site contaminants as groundwater flows through the reactive media. It was installed in June 1999 on private property about 750 ft east of the former mill site. The PRB measures 103 ft long, north to south (perpendicular to flow), by about 13 ft deep by 8 ft wide (parallel to flow) and is constructed of two treatment zones. The first treatment zone is 2 ft wide and consists of crushed gravel and 13 percent ZVI by volume. The second zone is 4 ft wide and consists entirely of ZVI. A third zone, 2 ft wide and consisting entirely of crushed gravel, distributes the treated water to the aquifer.

The PRB is keyed 1 to 2 ft into low-permeability mudstone bedrock. Low-permeability subsurface slurry walls constructed of bentonite-amended soil extend north and south from the PRB to divert groundwater to the treatment zones. The north slurry wall is 97 ft long; the south slurry wall is 240 ft long. Each is about 15 ft tall, 3 to 4 ft wide, and keyed into bedrock. The slurry wall excavations were backfilled with native soil to restore the land surface to its original contour. The slurry walls do not fully extend to the margins of the aquifer, so some contaminated groundwater (estimated using Darcy's Law approximation to be less than 1 gpm) bypasses

treatment. This condition was recognized immediately following installation of the PRB and was confirmed in the April 2009 groundwater investigation.

Groundwater flow through the PRB was estimated after 2 years of operation to be about 10 gpm; however, field and laboratory studies have revealed a progressive loss of hydraulic conductivity of the ZVI by several orders of magnitude since the PRB was installed (see DOE 2005c and 2006b: *Variation in Hydraulic Conductivity Over Time at the Monticello Permeable Reactive Barrier* and *Hydraulic Conductivity of the Permeable Reactive Barrier—November 2005 Update*). The loss in hydraulic conductivity is attributed to the precipitation of calcium carbonate and iron oxide minerals. This has greatly reduced the capacity of the PRB to transmit groundwater; given the magnitude of hydraulic conductivity loss, the present rate of groundwater flow through the PRB is probably less than 1 gpm. Loss in conductivity has also contributed to approximately 5 to 8 ft of groundwater mounding in the area immediately upgradient of the PRB, some of which is also attributed to a suspected low-conductivity zone at the alluvium/PRB interface, possibly a skin-effect or smear zone, created during PRB construction (the magnitude of groundwater mounding is addressed further in Section 5.2.1). Water quality and water level monitoring at selected wells within and adjacent to the PRB continues as part of the routine, semiannual OU III monitoring program.

3.4.2 Pump-and-Treat Enhancement System

An ex situ groundwater treatment system was installed in June 2005 and expanded in March 2007 as a technology demonstration alternative to the PRB in evaluating groundwater treatment by ZVI. DOE has operated the system since 2009, as directed by the ESD, as part of the contingency remedy to enhance natural attenuation.

The ex situ system functions by pumping groundwater through two cylindrical concrete cells that contain the treatment media (ZVI/gravel mixtures). The base of each cell is constructed of concrete. Each cell, serviceable from ground surface, measures 6 ft in diameter by 6 ft in depth and is set vertically approximately 4.5 ft into the ground. Groundwater is extracted at a well located in the groundwater mound upgradient of the PRB (well EW-1 in Figure 3, page 59, PRB inset) and is pumped upward, in parallel, through the cells. A third vault (rectangular in outline; see Figure 3, page 59, PRB inset) houses monitoring and control devices.

The system is designed to discharge treated water to Montezuma Creek through an outfall pipe and to the aquifer by way of an infiltration trench. The treatment system is presently limited to 10 gpm, the maximum allowed discharge rate to Montezuma Creek by the Utah Division of Water Quality (UDWQ) (see Section 3.4.4). Each treatment cell can effectively remove uranium at an inflow rate of 4 to 5 gpm for about 1 to 1.5 years. The infiltration trench originally had the capacity to discharge about 4 gpm of treated water to the aquifer; however, it is no longer available because the discharge capacity is now minimal, possibly a result of iron-residue fouling.

3.4.3 Telemetry System

The treatment system is equipped to monitor influent pressure to each treatment cell; flow rate through each treatment cell; discharge to Montezuma Creek and the infiltration trench; and water levels in the extraction well, treatment cells, and infiltration trench. Data are collected on closely spaced time intervals (usually every 2 hours) and downloaded (usually every day) via cellular

telephone service to the LM Systems Operation and Analysis at Remote Sites (SOARS) administered in Grand Junction, Colorado. Monitoring data are available for remote real-time and historical viewing and processing. The components of the automated data collection, transmission, and display system are collectively referred to as the telemetry system.

Each treatment cell is instrumented to prevent overfilling. Automated alarms are transmitted by cellular telephone to SOARS when the well pump is deactivated or fails, when an overfill prevention sensor is triggered, or when there is a power failure. The water level in the infiltration trench can be monitored and regulated to prevent groundwater saturation at land surface. The telemetry system allows for remote activation and deactivation of the pump in the extraction well (EW-1). Flow rate adjustments are performed manually in the field.

3.4.4 Operating Parameters

The treatment system is currently operated to maximize the rate of groundwater treatment within the established allowances for discharging the effluent. These allowances are as follows:

- The maximum discharge rate of treated water to Montezuma Creek is 10 gpm.
- Treated water discharged to the creek is not to exceed 45.4 milligrams per liter (mg/L) total iron and is to have a pH of not less than 6.5 and not greater than 9.0.

The discharge allowances to Montezuma Creek were negotiated among DOE, EPA, UDEQ, and UDWQ in May 2008. These allowances are based on the Utah standard for acute iron toxicity to aquatic wildlife (1 mg/L) and the in-stream standard for pH for all water-use categories. The default perennial flow rate for the receiving surface water (Montezuma Creek) is 2 cubic ft per second, as communicated by UDWQ.

Water samples are collected monthly at influent and effluent locations to monitor the performance of the treatment system in removing uranium and to monitor compliance with the pH and iron discharge allowances. The monitoring data are also used to determine when media change-out is needed and for estimating the mass of uranium removed from the aquifer. The telemetry system monitors flow rates to ensure compliance with the discharge allowance, to recognize abnormal operating conditions, and to monitor the volume of groundwater treated.

Additional descriptions of the operating parameters, performance monitoring, media change-out criteria, and reporting requirements are provided in the treatment system operating plan that was issued in December 2009 under Program Directive MNT-2010-02. Past performance of the treatment system indicates that the treatment cell media will need to be replaced every 1 to 1.5 years.

4.0 Water Quality Assessment

4.1 Groundwater Contamination Source Removal

OU I remedial actions, completed in 1999, removed the primary source of groundwater and surface water contamination (mill tailings). All large-scale construction activities associated with OU I remediation and restoration that would impact the groundwater/surface water setting were completed by 2001; therefore, much of the current discussion regarding OU III water quality focuses on the period since tailings removal (or source removal) and site restoration. Source removal resulted in reducing uranium concentrations on the millsite and portions of Region 3, located immediately downgradient of the mill site, from as much as 7,000 µg/L to less than 1,000 µg/L (see also Section 6.2 and Figure 37, page 96).

4.2 Contaminants of Concern and Remediation Goals

COCs for OU III surface water and groundwater are arsenic, manganese, molybdenum, nitrate, selenium, uranium, vanadium, and gross alpha and gross beta activity. Table 1 lists the remediation goals for these constituents in groundwater and surface water. The groundwater goals correspond to either a maximum contaminant level as established by EPA, a maximum concentration limit from the Uranium Mill Tailings Remedial Action (UMTRA) Project, or a value derived from the OU III human health risk assessment (DOE 1998a), as indicated in the table. Surface water remediation goals correspond to water quality standards established by the State of Utah. When the OU III ROD became effective, there was no standard for uranium in surface water; however, Utah has since adopted 30 picocuries per liter (pCi/L) as the standard for domestic-use surface water (Class 1C). This standard was accepted as an OU III remediation goal under the ESD. Gross beta activity has no remediation goal because there is no activity-based standard for this constituent among the applicable or relevant and appropriate requirements for OU III, and risk factors to derive a risk-based goal are isotope-specific.

Analyses to determine activity concentrations of uranium-234 and uranium-238 in groundwater and surface water were discontinued in 2006 in concurrence with EPA and UDEQ. The metal toxicity remediation goal for groundwater (30 micrograms per liter [µg/L]), based on mass concentration, converts to approximately 20 pCi/L as uranium-234 plus uranium-238 and so is more stringent than the radiation activity-based goal of 30 pCi/L. As uranium concentrations attenuate during aquifer restoration and approach the mass-concentration goal, sample analysis may then include uranium-234 and uranium-238 to confirm that the activity-based goal is also achieved. The 30 pCi/L Utah surface water standard converts to approximately 44 µg/L. Analyses for gross alpha and gross beta activity were also discontinued in 2006 with concurrence from EPA and UDEQ.

Table 1. Contaminants of Concern and Groundwater and Surface Water Remediation Goals

COC[a]	OU III Groundwater Remediation Goal [a,b]	Surface Water Remediation Goals [a,c]
Arsenic	10 µg/L[d]	10 µg/L
Manganese	880 µg/L[e]	-------
Molybdenum	100 µg/L[f]	-------
Nitrate (as nitrogen)	10,000 µg/L[d]	4,000 µg/L
Selenium	50 µg/L[d]	5 µg/L
Uranium—metal toxicity	30 µg/L[d]	-------
Vanadium	330 µg/L[e]	-------
Uranium-234/238—radiological dose	30 pCi/L[f]	30 pCi/L[c]
Gross alpha activity	15 pCi/L[d,g]	15 pCi/L[h]
Gross beta activity	-----	-----

[a] Source: DOE 2004b.
[b] µg/L = micrograms per liter; pCi/L = picocuries per liter.
[c] State of Utah standard for surface water; Utah uranium standard post-dates OU III ROD.
[d] EPA maximum contaminant level.
[e] Based on OU III human health risk assessment.
[f] UMTRA maximum concentration limit.
[g] Excluding uranium and radon.
[h] Excluding uranium and radon for MMTS OU III.

4.3 Monitoring Schedule, Frequency, and Network

OU III groundwater and surface water samples are collected for analysis of COCs and other geochemical parameters in April and October of each year. The current monitoring network is shown in Figure 3, page 59. This network is a subset of all locations monitored since January 2000 as a consequence of revised data objectives or changing field conditions as the project has progressed (see Plate 1 for all locations that have been monitored on one or more occasions since January 2000 and Appendix D for monitoring wells decommissioned since that time).

Sampling conducted in October is more comprehensive than in April; in April, several alluvial wells located beyond the extent of contamination and several bedrock wells are omitted from sample collection. Excluding the PRB, water quality monitoring of the alluvial aquifer is conducted at 37 locations in October and at 27 locations in April. Three monitoring wells (83-70, 92-10, 93-01) completed in the Burro Canyon aquifer are sampled in October only. Three other bedrock wells (93-205, 95-06, 95-07) completed in the Burro Canyon aquifer are sampled every 5 years, as of October 2005.

Water quality monitoring within the PRB occurs at four locations (R3-M2, R3-M3, R4-M3, R4-M6) during the October and April events. Water quality monitoring is conducted in October and April each year at 10 locations in Montezuma Creek, at five locations of groundwater seeps, and at two locations in Wetland 3.

Hydrologic monitoring, conducted concurrently with semiannual water quality sampling, consists of water level measurement at all monitoring wells, measurement of flow in Montezuma Creek at established stations, and visual inspection of known groundwater seeps. Appendix E contains all OU III water level data collected since January 2000. Tabulated results of stream flow measured since 2000 are provided in Appendix F. All water level and stream flow

monitoring locations (stream flow sites coincide with water quality sampling locations on Montezuma Creek) are provided on Plate 1 and Figure 3, page 59 or are described in the text.

The remainder of Section 4.0 presents the current extent of groundwater and surface water contamination. Analysis of contaminant concentration trending is deferred to Section 6.0 following the discussion of hydrologic monitoring results in Section 5.0.

4.4 Alluvial Aquifer Water Quality

Figure 5, page 61 through Figure 11, page 67 illustrate the current extent of contamination in the alluvial aquifer for arsenic, manganese, molybdenum, nitrate (as nitrogen), selenium, uranium, and vanadium, respectively. Posted results are from April 2012 samples and October 2011 (the nine locations sampled in October 2011 are asterisked). Symbol coding identifies sample type (circles for groundwater and squares for surface water) and whether the remediation goal for the respective COC was exceeded (filled symbol) or not (open symbol) at the given location.

In the past year, each COC except molybdenum was present in alluvial groundwater at one or more location at a concentration that exceeded the respective remediation goal. Current monitoring data indicate that, except for uranium, there is generally only minor contamination by COCs with respect to spatial distribution and magnitude relative to remediation goals. Concentrations typically do not exceed the remediation goal by more than a factor of 2, and for the most part, contamination is limited to the small area between the former mill site and the PRB. Current contaminant distributions are as follows.

<u>Arsenic</u>
Arsenic contamination is generally limited to the area between the mill site and the PRB; the maximum concentration (16 µg/L at location T01-02; Figure 5, page 61) is less than two times the remediation goal. Isolated, low-level contamination was also detected at two locations near the center and west end of the mill site (12 and 11 µg/L at wells T01-25 and T01-13, respectively.

<u>Manganese</u>
Manganese contamination occurred at five locations in the western half of the mill site and at one location immediately downgradient of the PRB (Figure 6, page 62). The occurrence of manganese contamination in the western half of the mill site is temporally variable: some years manganese contamination in this area is limited to one location. Elevated manganese immediately downgradient of the PRB (at well R6-M3) is frequent and is attributed to ZVI corrosion within the PRB during its early operation (see Section 4.4.3 for additional explanation). Manganese contamination is otherwise absent downgradient of the mill site.

<u>Molybdenum</u>
Molybdenum contamination since surface remediation of the mill site was completed in 1999 has been limited to a small area of the aquifer at the south end of the PRB slurry wall. The maximum concentration observed (140 µg/L at monitoring well PW-17, October 2005 and 2011) since 1999 only slightly exceeded the remediation goal (100 µg/L). Molybdenum concentrations did not exceed the remediation goal at any location in April 2012 (Figure 7, page 63).

Nitrate
Nitrate contamination since the completion of mill site remediation has been limited to four or fewer locations along the north side of the aquifer on and immediately downgradient of the former mill site. Occasional nitrate contamination at low levels in this area is not uncommon and likely originates from livestock feedlots that are present along the north margin of the valley. Nitrate concentrations exceeded the remediation goal at only one location in April 2012, and only marginally (well T01-18, 11,000 µg/L; Figure 8, page 64). Wells T0-13 and T0-19 were not sampled for nitrate because insufficient water was available for sample collection).

Selenium
Selenium contamination is present at several locations at and downgradient of the PRB (see Figure 9, page 65). The maximum concentration measured in April 2012 (82 µg/L at monitoring well 92-08) is less than twice the remediation goal (50 µg/L). In recent years, minor and variable selenium contamination observed in this area has been attributed to releases of naturally occurring selenium in shale deposits of the Dakota Sandstone disturbed during mill site remedial actions.

Uranium
Uranium remains the most widespread contaminant in groundwater, extending about 0.75 mile (4,000 ft) downgradient of the mill site, with concentrations that are greater than 10 times the remediation goal at many locations (see Figure 10, page 66). The highest concentrations are present in the region of the aquifer that extends from the eastern boundary of the mill site to the PRB. Uranium distribution and hydrogeologic conditions of this area were studied in detail in April 2009 and reported in the annual groundwater report submitted in October 2009 (DOE 2009b). A summary of the April 2009 study is presented in Section 8.2.2.

Vanadium
Vanadium contamination in recent years has generally been limited to one or two locations near the eastern boundary of the mill site at concentrations that only marginally exceed the remediation goal. Vanadium concentrations were below the remediation goal at all locations in 2011. In April 2012, vanadium was below the remediation goal at all locations but one, where the concentration (330 µg/L at monitoring well 92-11) was equal to the goal (Figure 11, page 67).

4.4.1 Concentration Trends in the Alluvial Aquifer

Figure 12, page 69 through Figure 18, page 75 illustrate the concentrations of arsenic, manganese, molybdenum, nitrate (as nitrogen), selenium, uranium, and vanadium, respectively, as they vary over time at selected monitoring wells located along the west-to-east axis of the groundwater plume. Ordering of the wells in the legend of these figures is from west (upgradient) to east (downgradient). Monitoring data since 1992 are included in the figures to show the effect of mill site cleanup (source removal), evident at many locations by the sharp decrease in the concentration of many COCs in 1998 and 1999.

Arsenic
In Figure 12, page 69, arsenic concentrations are shown to have remained relatively stable since source removal. At the few locations where arsenic contamination remains in the groundwater, concentrations are less than twice the remediation goal.

Manganese
Figure 13, page 70 shows that manganese concentrations at most wells remain below the remediation goal. Manganese concentrations at well 92-11, located several hundred feet downgradient of the former mill site, show a steep decline to levels below the remediation goal following source removal. Concentrations at that location prior to source removal were erratic and often exceeded the remediation goal by a factor of 4 to 5. At well T01-19, a location where the manganese concentration consistently exceeds the remediation goal (see Figure 6, page 62 for current manganese distribution), upward or downward trending has not been evident since monitoring began at that location in 2001, with concentrations ranging between about 4,000 and 9,000 µg/L, or about 4.5 to 10 times the restoration goal (880 µg/L).

Molybdenum
Molybdenum concentrations clearly show the effect of source removal (Figure 14, page 71) followed by subtle downward trends. Molybdenum desorption from aquifer solids to concentrations less than the remediation goal was shown in OU III column studies to be relatively rapid (DOE 2001a). Molybdenum contamination is very limited in distribution and magnitude, as described in Section 4.4, and was not detected in groundwater above the remediation goal in April 2012.

Nitrate
The increase in nitrate concentrations in groundwater from 1999 through 2001 (Figure 15, page 72) is attributed to known fertilizer applications during site restoration. Dissipation of this pulse was complete by 2004. In April 2005, 2008, and 2010, order-of-magnitude increases again occurred at some locations, including the upgradient monitoring well (data for MW00-01 is not shown in Figure 15, page 72). To have affected well MW00-01, these inputs of nitrate must originate offsite and are possibly related to fertilizer applications on the golf course immediately upgradient (west) of the mill site. These recent inputs and the coincidence of elevated nitrate concentrations downgradient of livestock operations on the north side of the mill site suggest nitrate contamination since source removal is not related to past mill site operations. Trending in nitrate concentration is not evident, and concentrations at all locations are currently below the remediation goal.

Selenium
Selenium concentrations in groundwater increased significantly following OU I remedial actions in 1999 (Figure 16, page 73), particularly in the eastern area of the mill site where an extensive area of carbonaceous, pyritic shale of the Dakota Sandstone was freshly exposed by the excavations. Naturally occurring selenium in these deposits is presumed to have been mobilized by oxygenated groundwater within the newly reconstructed alluvial aquifer. Selenium concentrations in groundwater have generally decreased significantly since this effect of the bedrock exposure. Locations where selenium concentrations increased in April 2005, 2008, and 2010 generally coincide with those of increased nitrate. This relationship, also apparent with the nitrate release in 1999, may be associated with the ability of nitrate to oxidize and mobilize

naturally occurring selenium (Wright 1999; Wright and Butler 1993; Weres et al. 1990; see also DOE 2001b). Selenium concentrations since about 2004 have decreased to levels near or below the remediation goal, with no apparent upward or downward trending.

Uranium

Uranium concentrations show a large initial effect of source removal (Figure 17, page 74). Uranium trending since source removal is highly variable, depending on location, because the uranium plume is much greater in lateral extent than that of the remaining COCs and so is now subject to a greater variety of hydrologic and geochemical conditions that can affect concentrations. Because of the greater extent of uranium contamination with respect to lateral distribution and magnitude of concentration above the remediation goal, and because uranium is the greatest contributor to potential human health risk at OU III, a separate analysis of concentration trending for uranium in groundwater is provided in Section 6.0.

Vanadium

Vanadium concentrations also show a large initial effect of source removal, particularly at the monitoring location nearest the former mill site (monitoring well 92-11; see Figure 18, page 75). Vanadium concentrations have slowly decreased to the extent that as of April 2012 the remediation goal (330 µg/L) is met at all but one location (well 92-11).

4.4.2 Plume Expansion in the Alluvial Aquifer

The uranium contamination plume terminates between monitoring wells 92-09 and 95-03; therefore, well 95-03 is regarded as a sentinel well to detect possible but unlikely advancement of the plume past the current downgradient extent of contamination (see Figure 3, page 59 for well locations and Figure 10, page 66 for uranium concentrations). The uranium concentration shown in Figure 10, page 66 corresponding to well 95-03 is from October 2011; as indicated in Section 4.3, well 95-03 is not sampled in April sampling events.

The OU III groundwater model predicted only slight increases in uranium concentrations east of the current extent of contamination but not to exceed the remediation goal at sentinel well 95-03. Figure 19, page 76 illustrates that contaminant levels observed at well 95-03, including uranium, are not increasing, and therefore plume expansion into uncontaminated regions of the aquifer is not significant at this time and is not expected in the future. In this respect, the uranium contaminant plume is considered stable. Plume expansion into this area is prevented by the hydrologic discharge boundary described in Section 3.3.2 and Section 5.1 (alluvial aquifer discharge to Montezuma Creek combined with Burro Canyon aquifer groundwater discharge to the alluvial aquifer and creek).

Manganese concentrations at sentinel well 95-03 plot off-scale in Figure 19, page 76. The presence of manganese at well 95-03 remains steady at concentrations between 300 and 400 µg/L. Enrichment of manganese in alluvial groundwater at the several downgradient-most wells results from the discharge of Burro Canyon groundwater, in which this element is naturally more abundant.

4.4.3 PRB and Ex Situ Treatment System Performance

Figure 5, page 61 through Figure 11, page 67 (see PRB insets) show that the PRB continues to effectively reduce contaminant concentrations to acceptable levels; however, the ability of the PRB to transmit water has been compromised by internal mineralization. A relatively high manganese concentration immediately downgradient of the PRB is likely a remnant of early PRB operation when manganese, as a trace constituent of ZVI, dissolved from the ZVI and was then deposited in the aquifer matrix immediately downgradient of the PRB. Manganese concentrations are much lower in the PRB because pH—the primary control on mobility—is about 9 in the PRB and contrasts with that in the alluvium (pH neutral to slightly acidic) (DOE 2002).

Cumulatively through April 2012, the ex situ treatment system had treated about 22 million gallons of contaminated groundwater. The first media exchange occurred in March 2007 after the first cell had treated approximately 3.4 million gallons. At that time, the second cell was installed and brought online. The reactive media was changed in both cells in March 2009 after each cell had treated an additional 3.1 million gallons. The most recent exchange of the reactive media occurred in October 2011 after each cell had treated 2.1 million gallons of groundwater since the previous exchange.

On the basis of monthly inflow and outflow sampling, the treatment system has removed approximately 53 pounds of uranium from the alluvial aquifer cumulatively from June 2005 when the system was installed through April 2012, or about 14 percent of an estimated total inventory of 350 pounds[1] initially present within the aquifer between the former mill site and the PRB (as defined as Region 3 of the aquifer, which encompasses an approximate area of 3.2 acres: aquifer regions are described further in Section 6.2 and depicted in Figure 36, page 95). At this current rate of extraction (3 percent of the uranium inventory extracted per year), about 33 years would be required to remove the estimated inventory. However, the assumption of a constant mass removal rate is probably invalid because of rate-limiting factors, thus leading to a longer restoration period.

Information on treatment system performance taken from monthly monitoring results is provided quarterly in Federal Facility Agreement reports that DOE submits to EPA and UDEQ. The treatment system information provided in those reports addresses influent and effluent water quality, volume of water treated, mass of uranium removed from the groundwater by treatment, compliance with discharge allowances, and maintenance activities.

4.4.3.1 Effluent Discharge to Surface Water

Monthly sampling of treatment cell effluent began on June 26, 2008. The required parameters for discharge to the creek are total iron and pH. Analytical results for iron and pH in effluent samples are provided in Figure 20, page 77; Figure 21, page 78; and Figure 22, page 79 (effluent sample is identified as location TCOUT).

[1] This estimate assumes an area of 700 ft × 200 ft, saturated thickness of 5 ft, substrate density of 100 pounds per cubic foot, and 5 milligrams per kilogram uranium available in the aquifer substrate (unit-mass inventory approximated from column test results [DOE 2001a]).

The allowable concentration of total iron in the effluent is 45.4 mg/L. The pH of the effluent is to be within the range of 6.5 to 9.0 (see Section 3.4.4 for derivation of discharge allowances). Operation of the treatment system has complied with the discharge allowances to date. The highest concentrations of iron in the effluent (approximately 40 mg/L) typically are associated with change-out of the reactive media.

4.5 Burro Canyon Aquifer Water Quality

The Burro Canyon aquifer was sampled in the past year at wells 83-70, 92-10, and 93-01. These locations are monitored annually in October. Well 93-01 provides background water quality data for the Burro Canyon aquifer. Well 83-70 is completed beneath the main region of contamination in the alluvial aquifer, and well 92-10 is completed near the downgradient terminus of the uranium plume. Table 2 lists COC concentrations for these bedrock wells sampled in October 2011. Results indicate that the Burro Canyon aquifer is not contaminated by site-related constituents at these locations.

Bedrock aquifer wells 93-205, 95-06, and 95-07 are sampled every 5 years, as of October 2006. The wells were sampled most recently in April 2012. Prior to 2006 each of these wells was sampled at least yearly since their installation in 1993 (well 93-205) and 1995 (wells 95-06 and 95-07). The latest 5-year sampling results for these wells are provided in Table 2. Arsenic and uranium were detected at wells 93-205 and 95-06, respectively, at concentrations that slightly exceeded the remediation goals. These analytes have been detected at similar concentrations since annual monitoring began at those locations. The occurrence of these analytes at the respective concentrations is attributed to localized natural sources (DOE 1998a). The cumulative monitoring data to date for Burro Canyon monitoring wells indicate that the Burro Canyon aquifer is not contaminated by site-related constituents.

Table 2. COC Concentrations in Burro Canyon Groundwater, October 2011 and April 2012

Well	COC Concentration—October 2011[a]						
	Arsenic	Manganese	Molybdenum	Nitrate[b]	Selenium	Uranium	Vanadium
83-70	0.04	140	1.1	10U[c]	0.03U	0.02	0.01U
92-10	0.08	530	1.1	10U	0.03U	0.05	0.01U
93-01	0.45	94	1.1U	10U	0.03U	0.09	0.01U
COC Concentration—April 2012[a]							
93-205	11	350	5.4U	14	0.03U	0.24	0.01U
95-06	0.26	290	5.4U	10U	0.03U	32	0.01U
95-07	0.7	38	5.4U	10U	0.03U	0.98	0.02

[a] Concentrations expressed as µg/L
[b] Nitrate + nitrite as nitrogen
[c] U = Undetected at listed value

4.6 Surface Water Quality

Results for the surface water samples collected in April 2012 at the routine OU III sampling locations are shown in Figure 5, page 61 through Figure 11, page 67. Surface water sites sampled in October 2011 and April 2012 are identified in Figure 3, page 59. The April 2012 sampling event was conducted during a period of low stream flow, so sample results are not biased by dilution effects of spring snow-melt from the Abajo Mountains.

Uranium and selenium are the only COCs to exceed their respective remediation goals among the April 2012 samples collected from within Montezuma Creek (seeps and wetlands are addressed in Section 4.7.1). The uranium and selenium standards are not exceeded on the mill site or within about 0.75 mile downstream of the mill site to the Sorenson location, where the concentration of these analytes increases. A relatively constant concentration of uranium then persists through the remainder of OU III, although some dilution in the creek is evident. Selenium is diluted in the creek to concentrations less than the remediation goal within a short distance downstream of the Sorensen location.

Increases in the concentration of uranium and selenium at the Sorenson location are frequently observed in the monitoring data. The cause of these increases was the subject of an investigation conducted in 2009 and was reported in detail in the 2009 and 2010 OU III annual reports (DOE 2009b and DOE 2010b, respectively). Findings of that investigation are briefly summarized in Section 8.3 and conclude that the observed increase at the Sorenson location is from groundwater discharge from the alluvial aquifer in the reach of Montezuma Creek between monitoring wells P92-06 and 92-03 (there are no permanent surface water monitoring stations between the discharge source and the Sorenson location). COCs for which there are no surface water standards (manganese, molybdenum, and vanadium) are present in Montezuma Creek at concentrations that are consistent with background levels or are less than the respective groundwater standards.

4.6.1 Surface Water Diversion to Irrigation Pond

DOE, in consultation with EPA and UDEQ, collected two water samples on October 6, 2009, from the irrigation pond on peripheral property MP-00990-CS, located downstream of the mill site, for laboratory analysis of uranium. The pond (Adams Pond) and sample locations (0304 and 0305) are identified in Figure 3, page 59. Samples were collected there because of a land and water use change noted during the 2008 annual site inspection. The land use change occurred when the landowner diverted water from Montezuma Creek to the pond for subsequent application to an alfalfa field and pastures a short distance downstream. The pond has been in use for many years to capture surface runoff, but the diversion from Montezuma Creek to the pond was recent at that time. The State of Utah Division of Water Rights granted an appropriation for that surface water diversion in 2007. Use of water from Montezuma Creek for this purpose was recognized as a possible concern because the water at the point of diversion is contaminated by uranium and because evaporation in the pond could subsequently increase the uranium concentration to potentially harmful levels to human or ecological receptors.

The pond samples collected in October 2009 each contained 85 µg/L of uranium. In contrast, the sample collected from the creek at the point of diversion at that time contained 390 µg/L of uranium (location 0303, Figure 3, page 59). The pond samples collected in October 2010 each contained about 80 µg/L of uranium. In contrast, the sample collected from the creek at the point of diversion at that time contained 100 µg/L of uranium. It was concluded that evaporative concentration was insignificant, although a trigger level for additional study was not established.

4.7 Concentration Trends in Surface Water and Seeps

Figure 23, page 80 and Figure 24, page 81, respectively, present selenium and uranium concentrations in surface water samples collected from established monitoring sites along Montezuma Creek since April 2000 (seeps and wetlands are addressed separately in Section 4.7.1). Ordering of the sampling sites in the legend of these figures is from west to east in the direction of creek flow. Selenium and uranium were selected for presentation because (1) selenium in surface water is particularly relevant to OU III biomonitoring (described further in Section 7.0, and (2) the discharge of contaminated groundwater to the creek causes the in-stream standard for uranium and selenium to be exceeded at some locations.

Selenium concentrations in groundwater and in Montezuma Creek trended downward for about 5 years following OU I remedial actions. Recent increases in selenium concentrations in groundwater and surface water at some locations (for example, well 92-08 and the Sorenson location) are attributed to movement of the remnant selenium plume and variable discharge of the contaminated groundwater to Montezuma Creek. Uranium concentrations coincidently increased at downgradient locations on Montezuma Creek (for example, the Sorensen location, SW00-04, and SW92-08; Figure 24, page 81), also the likely result of the discharge of contaminated groundwater farther upstream, as stated in Section 4.6 for uranium and further explained in Section 8.3. Water quality in Montezuma Creek is linked to the concentrations of selenium and uranium in the adjacent groundwater and the discharge of that groundwater to the creek; therefore, surface water quality is expected to follow concentration trends of these constituents within the alluvial aquifer.

4.7.1 Groundwater Seeps

Seeps 3, 5, and 6 (see Figure 3, page 59 for seep locations) are located along the north margin of the mill site and are topographically higher than the alluvial aquifer. They originate from water sources that are above the valley of Montezuma Creek and are of suspected anthropogenic origin (see also Section 3.3.2). Nitrate, selenium, and uranium historically have been detected at one or more of these seeps in concentrations that exceeded a surface water remediation goal.

High nitrate levels at seeps along the north margin of the valley are attributed to known livestock operations. Nitrate concentrations at Seep 3 are persistently elevated, fluctuate widely, and exhibit no apparent trend (Figure 25, page 82). Nitrate concentrations at Seep 6 have recently declined to levels that are less than the groundwater and surface water remediation goals. Nitrate concentrations at Seep 5 remain less than the remediation goals.

Elevated selenium concentrations at Seeps 3 and 6 are likely of bedrock origin and are not related to conditions within the alluvial aquifer. Selenium concentrations at these seeps show a general downward trend (Figure 26, page 83). Elevated selenium concentrations at these locations may be associated with nitrate in the groundwater (see Section 4.4.1).

Uranium concentrations remain elevated along the north margin of the mill site at Seep 6 (approximately 1,700 µg/L; Figure 27, page 84) with no apparent trending. DOE evaluated the source of water and uranium contamination expressed at Seep 6 and initially reported the findings in the 2009 annual groundwater report for OU III. The evaluation indicated that uranium

contamination at Seep 6 likely originates from contaminated soil used to backfill a water line. Section 8.2.4 summarizes those findings.

Groundwater expressed at Seeps 3 and 5 persistently contains uranium between about 40 and 50 µg/L. Seep 5 is located in an area of former milling activities. Seep 3 is located east of the former mill activities. Seeps 3 and 5 (and Seep 6) are expressed near the contact between unconsolidated hillslope colluvium or fill and the Mancos Shale bedrock. The potential effect of these seeps on groundwater quality is addressed in Sections 6.4 and 8.2.4.

4.7.1.1 Wetland 3

Groundwater from the alluvial aquifer discharges to Wetland 3 at Seeps 1 and 2 near the northwest corner of the wetland. Since monitoring began in 2001 at these locations, flow has sometimes been too diffuse for sample collection at Seep 1, while flow at Seep 2 has been nearly constant.

Contaminant concentrations and trends at Seeps 1 and 2 are similar to those at nearby monitoring wells. Because Seeps 1 and 2 are surface expressions of the local, moderately contaminated groundwater, concentration trends at these seeps are expected to continue to mimic the groundwater trends. At Seep 2, a downward trend of selenium entering the wetland (Figure 26, page 83), similar to that at Seep 3, is observed. Selenium levels at Seep 2 are particularly relevant to biomonitoring (Section 7.0). Selenium contamination is absent at Seep 1.

Uranium contamination at Seeps 1 and 2 does not have either an upward or downward trend. Discharge of contaminated groundwater into Wetland 3 does not result in an exceedance of any surface water quality standard in Montezuma Creek immediately downstream of the wetland at location SW00-02.

5.0 Hydrologic Monitoring Assessment

5.1 Surface Water Flow

Results of periodic measurements of flow at several locations on Montezuma Creek since April 2000 are depicted in Figure 28, page 85. The ordering of the flow measurement locations in the legend is from west to east, parallel to the direction of flow. The transitional reach identified in the figure refers to the reach of Montezuma Creek between wells 0200 and 92-09 (see Figure 3, page 59 for well locations) where the upper bedrock changes from the Dakota Sandstone to sandstone of the Burro Canyon, and the valley begins to narrow into a steep-walled canyon. In this reach, flow measurement locations generally coincide with former sampling locations SW00-03 and SW92-06 and near well 92-09, depending on field conditions and property access.

Two prominent gaining reaches of Montezuma Creek are apparent in Figure 28, page 85 and Figure 29, page 87, respectively. The first is indicated between locations SW00-01 and SW00-02, spanning the mill site, and the second occurs in the Dakota/Burro Canyon transition reach. Stream gain in the mill site reach is attributed to aquifer recharge from offsite sources to the north and penetration of the alluvial aquifer by the stream channel. The gaining condition in

the Dakota/Burro Canyon transition reach is attributed to discharge of groundwater from the alluvial aquifer and the Burro Canyon aquifer as a function of topographic and bedrock control. Drainage ravines leading into Montezuma Creek are typically dry and have no influence on the reported flow data. A generalized representation of stream/aquifer interaction is depicted in Figure 29, page 87. Gaining-stream reaches where alluvial groundwater is contaminated are recognized as a natural flushing process because contamination is removed directly from the groundwater setting. Losing-stream conditions are likely to act as a flushing mechanism where uncontaminated surface water enters the aquifer to cause contaminant dilution.

October 2011 and April 2012 stream flows are indicative of low-flow conditions in Montezuma Creek, at which times flow in the creek is dominated primarily by the discharge of groundwater. Although widely spaced, these measurements are consistent with below-normal precipitation reported by City water-management officials. As described in Sections 3.3 and 4.6, aquifer/stream interaction affects surface water and groundwater quality.

5.2 Alluvial Aquifer Water Levels

The primary sources of aquifer recharge in the western portion of the site are (1) leakage through the earthen dam at the municipal reservoir (Loyd's Lake), (2) seepage from North Creek, and (3) anthropogenic sources along the north margin of the mill site. Flow volume estimates associated with these sources are provided in Section 3.3.2. Irrigation of the golf course is not likely to contribute significantly to aquifer recharge in this area because of conservative irrigation practices.

As indicated in water level hydrographs for upgradient monitoring wells (wells 82-20, MW00-01, and MW00-02; Figure 30, page 89), the area upgradient of the mill site is subject to seasonal water table fluctuations of 5 ft or more. Water levels at the upgradient wells are presently consistent with historical means. Since about 2004, the water table is in a trend of decreasing elevation.

On the mill site, the water table does not fluctuate as widely as at the upgradient wells MW00-01 and MW00-02. For example, the wide fluctuations observed at upgradient wells since 2004 (Figure 30, page 89) are not evident at the mill site wells (Figure 31, page 90). The hydraulic connection between the aquifer and the creek, with the creek serving as a groundwater discharge boundary, may dampen water table fluctuations in this area through abundant groundwater discharge. Water levels at the monitoring wells on the mill site do not exhibit wide seasonal fluctuations and have not exhibited significant upward or downward trending since 2000 (Figure 31, page 90).

Water level hydrographs for selected monitoring wells (wells 92-11, 92-07, PW-18, 92-08, 92 09, 88-85, PW-17, MW00-06, P92-06) located downgradient of the mill site are shown in Figure 32, page 91. The effect of aquifer dewatering during mill site remediation is evident as the declining water levels at wells 92-11, 88-85, and 92-07 from mid-1998 through mid-1999. During that time, nearly all groundwater underlying the mill site was either pumped from the tailings excavations or was captured at interceptor trenches in the western portion of the mill site and diverted to the creek at the east boundary of the mill site to facilitate tailings removal. The saturated thickness of the alluvial aquifer on the mill site prior to dewatering was on the order of 5 to 8 ft. The magnitude of dewatering extended downgradient to the PRB. Approximately

54 million gallons of contaminated groundwater was removed from the tailings excavations during dewatering activities (March 1998 through May 1999).

After dewatering ceased, the water table in the area upgradient of the PRB rebounded within 6 months to levels that approached pre-remediation conditions (at wells 88-85 and 92-07, for example). Water level rebound in this region was likely enhanced by mounding at the PRB (installed summer 1999). Water levels 2 or 3 ft higher in this area in April 2010 likely reflect the rapid runoff of an above-average mountain snowpack and releases from the reservoir in spring 2010. These data indicate that the effects of hydrologic perturbations on this scale are recognizable within weeks to months at OU III monitoring wells.

East of the PRB, the same period of mill site dewatering likely accounts for the observed water table decline and subsequent recovery at wells 92-08 and P92-06 (Figure 32, page 91). Because of the greater distance from the dewatering activities and possibly also an effect of impeded flow through the PRB (flow stagnation), the response at these locations is delayed by several months or more. The effect of dewatering is not apparent farther east at well 92-09, possibly because of greater dampening with distance. In response to the abundant snowpack and runoff of winter/spring 2010, water levels in the aquifer downgradient of the PRB also increased by 2 to 3 ft.

Over the period of observation indicated in Figure 32, page 91, a sitewide trend in the water table is not apparent. The effect of short-term variation in water table elevation on uranium concentration in groundwater is evaluated in Section 8.2.5.

5.2.1 Groundwater Mound at the PRB

The groundwater mound observed along the upgradient side of the PRB and extending at least 75 ft west into the alluvial aquifer (to well 88-85) developed immediately following PRB installation. With the cessation of mill site dewatering shortly before the PRB was completed, the alluvial aquifer began to refill; however, the water table in the aquifer at the upgradient interface of the PRB rose higher than expected, and a pronounced hydraulic gradient developed across that interface. The cause for this initial mounding is attributed to a suspected low conductivity zone at the interface formed during construction of the PRB (also noted in Section 3.4.1). Mounding increased over time to as much as 5 to 8 ft with the loss of hydraulic conductivity resulting from mineral fouling within the ZVI (see also Section 3.4.1). The volume of contaminated groundwater comprising the groundwater mound upgradient of the PRB is estimated to be 94,000 gallons[2].

The water level hydrograph for well 88-85, located in the groundwater mound immediately upgradient of the PRB indicates no apparent trending since the start of active remediation in 2005 (see Figure 33, page 92). This suggests that although groundwater extraction from well EW-1 may assist in preventing additional groundwater mounding in this area, the groundwater mound has not been significantly reduced by pumping (the water table decline in 2005 observed at well 88-85 is a regional effect unrelated to operation of the groundwater remediation system). The water table in the mounded area was about 4 to 5 ft below ground surface in April 2012. Since installation of the ex situ treatment system, the water table at

[2] Volume estimate assumes an area of 100 ft × 100 ft, saturated thickness of 5 ft, and 25 percent porosity.

well 88-85 has fluctuated from about 1 ft below ground surface in April 2005 to about 5 ft below ground surface in October 2009 (see Figure 32, page 91).

Groundwater extraction also has had no apparent effect on water levels at monitoring wells 92-07 and PW-17 (see Figure 33, page 92, located about 200 ft and 300 ft south of the extraction well and near the end of the south slurry wall. This suggests that groundwater withdrawal at EW-1 does not affect the quantity of groundwater flow around the south slurry wall; however, the quantity of groundwater flow around the south slurry wall was estimated to be minimal (less than 1 gpm) prior to the start of pumping. The estimated volume of water that flows past the south end of the south slurry has not increased as the groundwater mound developed over time. Supporting evidence for this conclusion, such as that obtained from the April 2009 study, is that the parameters used to estimate the quantity of bypass flow (hydraulic gradient, saturated thickness, and width of the bypass zone) have not changed as the mound developed and as groundwater extraction occurred at EW-1. A similar conclusion that the water table in the area surrounding well EW-1 was essentially unaffected in response to groundwater extraction is presented in *Ground-Water Table and Chemical Changes in an Alluvial Aquifer During Sustained Pumping at the Monticello, Utah, Zero-Valent Treatment Cells* (DOE 2008b).

5.3 Burro Canyon Aquifer Water Levels

Well pairs 95-01/95-02 and 95-03/95-04 are the easternmost groundwater monitoring locations in OU III (see Figure 3, page 59 for well locations). Wells 95-01 and 95-03 are completed in the alluvial aquifer, and wells 95-02 and 95-04 are completed in the upper 20 ft of the Burro Canyon aquifer. Groundwater is not contaminated at the location of these two well pairs. Water levels are monitored at these wells to confirm the long-term stability of the hydrologic barrier in this part of the canyon that prevents further eastward migration of the contaminant plume.

The water table at these well pairs is shown to be relatively stable over time, with a consistent upward flow gradient from the Burro Canyon aquifer to the alluvial aquifer (see Figure 34, page 93). Abundant groundwater withdrawal from the Burro Canyon aquifer by the City of Monticello from 2001 to 2004 during droughts did not affect the direction or magnitude of this gradient at these locations, nor was the hydraulic head at 95-08 significantly affected (Figure 35, page 94). This Burro Canyon well (well 95-08) is located on the mesa above well pair 95-03/95-04. The much greater static water level at well 95-08 compared to that at wells 95-02 and 95-04 is a measure of the hydraulic potential for groundwater discharge from the Burro Canyon aquifer in the floor of the canyon.

At Burro Canyon monitoring wells nearest the municipal well field (wells 83-70, 93-205, and 93-01), municipal pumping during the recent drought accounted for as much as 15 to 20 ft of water level drawdown in the aquifer (Figure 35, page 94). Water levels in those wells have since rebounded to near pre-pumping levels. Well 83-70 has been used seasonally by a private landowner for limited irrigation since about 2006, but this use has caused no significant drawdown at this location based on semiannual water level measurements (water levels since April 2011 are not reported in Figure 35, page 94, because down-hole pump equipment installed by the landowner prevents accurate measurement).

Water levels in the Burro Canyon aquifer at wells 95-02 and 95-04 were not affected by municipal well pumping: the prominent upward flow gradient from the Burro Canyon aquifer to

the alluvial aquifer remained unchanged. This indicates that the hydrologic flow boundary described in Section 3.3.2 remained intact during the period when large withdrawals were taken from the Burro Canyon aquifer.

6.0 Groundwater Restoration Assessment

6.1 Description of the OU III Groundwater Model

As documented in Monticello Mill Tailings Site OU III Remedial Investigation Addendum/Focused Feasibility Study (DOE 2004a), a groundwater flow model and contaminant transport model (groundwater model) was developed to predict the transport of dissolved uranium in the alluvial aquifer at OU III. The alluvial aquifer was represented as a single isotropic and homogeneous layer. Groundwater flow was assumed as steady state following site remediation and restoration. Boundary conditions and hydraulic properties were specified on the basis of the conceptual model documented in RI Addendum (DOE 2004a). The flow model was calibrated by trial and error: calibration targets included (1) water levels measured in 66 monitoring wells in October 2001, (2) water balance measurement information obtained during aquifer dewatering/tailings removal, (3) flow estimates through the PRB, and (4) aquifer/stream exchange measurements in Montezuma Creek. MODFLOW was used as the computer code to simulate porous media flow at OU III.

Uranium transport was simulated using the computer code MT3D96. The primary input variables used to simulate uranium transport were (1) aquifer dispersion (a property of the aquifer matrix and groundwater flow velocity), (2) bulk density of the aquifer matrix, and (3) a distribution coefficient to quantify the amount of mobile uranium sorbed to the aquifer substrate in relation to the specified dissolved concentration. The value of the distribution coefficient (K_d) applied in the model was determined by laboratory analysis using site-specific materials and standard test methods. The distribution coefficient was applied under the assumption of rapid and reversible linear sorption. Aquifer dispersion was determined using field-scale analysis of nitrate transport in the aquifer following a short-term release (fertilizer application) during site reconstruction (see DOE 2004a).

Leaching from vadose zone soil that underlay the former tailings impoundments was represented as a remnant, or secondary, source of uranium contamination to groundwater. Mass loading from this source was assigned on the basis of site-specific results from column leaching tests (concentration input) and field lysimetry (infiltration rate). The long-term effect of this source was found to be insignificant. The PRB was represented in the model by low-conductivity zones of the slurry walls and a high conductivity zone of the reactive media. Uranium removal by the PRB was assumed to be zero in the transport model.

Under these model conditions, uranium was predicted to decrease to less than 30 µg/L in the alluvial aquifer in 42 years (starting in October 2002). The observed flow stagnation at the PRB (see Section 8.2.1) could invalidate the model representation of the natural dispersive potential of the aquifer.

A potential limitation of the K_d concept applied in the model is discussed in Sections 8.0 and 9.0. The K_d approach likely resulted in an over-optimistic prediction of restoration time because

potential kinetic effects of uranium release from solid substrate to the groundwater could not be accounted for. Although the OU III column tests suggest kinetic controls on uranium desorption are in effect at OU III, these controls were not well understood. In concurrence with EPA and UDEQ, a more general representation of uranium desorption was accepted for the OU III model.

The hydrologic boundaries representing groundwater capture by Montezuma Creek and dilution of alluvial groundwater at the downgradient terminus of the uranium plume are well documented in the RI Addendum (DOE 2004a). The primary mechanisms of natural attenuation represented in the OU III model are dilution caused by dispersion and by mass removal through natural aquifer discharge to Montezuma Creek at the downgradient terminus of the contaminant plume. Natural attenuation mechanisms at OU III are not represented in the OU III model by contaminant destruction or irreversible sequestration in the subsurface.

6.2 Uranium Trending Compared to Model Prediction

The ROD for OU III stipulates that observed concentrations of uranium are to be compared to those predicted by the groundwater model for OU III as a measure of restoration. For this purpose, the alluvial aquifer is divided into five regions (see Figure 36, page 95) distinguishable by uranium distribution and by geographic and hydrologic factors. A description of the five aquifer regions follows a brief summary of the groundwater setting (see Section 3.3).

The OU III alluvial aquifer comprises mixtures of clay, silt, sand, and gravel alluvium deposited within the narrow bedrock valley of Montezuma Creek, a west-to-east-flowing stream with an average flow of less than 0.5 cubic feet per second. Depth to groundwater is typically about 6 to 8 ft. The saturated thickness of the alluvial deposits, bounded by low-permeability bedrock, is generally less than 6 to 8 ft. The aquifer extends from about 1 mile west of the former mill site (at Loyd's Lake) to about 3 miles east of the former mill site where the alluvial deposits thin to zero. The width of the aquifer varies between about 300 ft immediately downstream of the mill site to 100 ft or less farther downstream where the valley narrows into a steep-walled canyon. The base of the aquifer is underlain by low-permeability material of the Dakota Sandstone, which acts as an aquitard between the alluvial aquifer and the Burro Canyon sandstone aquifer.

The Dakota Sandstone aquitard is present for a distance of about 0.6 mile downgradient of the mill site. At that distance, erosion in the Montezuma Creek valley has removed the Dakota Sandstone to expose the Burro Canyon sandstone as the upper bedrock unit. Groundwater within the Burro Canyon sandstone discharges to the alluvial aquifer and to Montezuma Creek. This discharge condition forms a natural hydrologic barrier that stabilizes the uranium contaminant plume at its current downgradient extent. The Burro Canyon aquifer, a local drinking water source, is not impacted by contamination within the alluvial aquifer. About 1.6 miles downstream of the mill site, the upper bedrock transitions from the Burro Canyon sandstone to soft shales of the Morrison Formation (Brushy Basin Member).

The alluvial aquifer in OU III is recharged by underflow from the west (originating as leakage through the retention dam at the municipal reservoir [Loyd's Lake]), from anthropogenic sources along the north margin of the mill site, and from discharge from the Burro Canyon sandstone aquifer beginning about 0.6 mile downgradient of the mill site. Surface water/groundwater exchange is variable along Montezuma Creek (see Figure 29, page 87), but a gaining-stream condition prevails. The amount of recharge received from precipitation and crop irrigation is less

significant. Aquifer discharge occurs primarily by discharge to Montezuma Creek and by evapotranspiration by riparian phreatophytes, particularly in the canyon portion of Montezuma Creek.

For the purpose of evaluating the OU III remedy, hydrologic conditions and boundaries that control the occurrence and movement of groundwater within OU III are well characterized. The five aquifer regions identified for evaluating the OU III remedy based on geographic and hydrologic factors are described as follows (see Figure 36, page 95 for aquifer region depictions).

- Region 1 encompasses the north margin of the former mill site and former source areas. Groundwater restoration occurs by underflow from the west and inflows from recharge sources to the north. Significant quantities of groundwater in this area are displaced to Montezuma Creek. Prior to source removal, uranium concentrations in groundwater in this general area ranged as high as 7,000 µg/L (see Figure 37, page 96, which depicts the estimated uranium plume in 1995 prior to source removal). Uranium concentrations in this region presently range between about 100 and 300 µg/L (see Figure 38 page 97), and except for occasional manganese anomalies, the remaining COCs are below the respective remediation goals. Significant decreases in uranium concentrations resulting from source removal are evident in comparing these figures. Residual groundwater contamination in Region 1 probably derives from sorbed uranium within remnant native alluvium that had been in contact with highly contaminated groundwater for decades. The approximate area of Region 1 is 6 acres (approximately 2,100 ft by 125 ft).
- Region 2 encompasses the area from Wetland 3 to the eastern boundary of the former mill site. Most or all of the groundwater that flows from the former mill site passes through or originates in this area. Leakage of water from Wetland 3, which is not contaminated above the uranium remediation goal, may attenuate contaminant concentrations in this region by providing a flushing medium. Uranium concentrations persist between about 100 and 200 µg/L (see Figure 39, page 98), and concentrations of all COCs except nitrate occasionally exceed remediation goals in this region. Similar to Region 1, uranium concentrations in groundwater were on the order of several milligrams per liter prior to source removal. This area of the site was immediately adjacent to the easternmost tailings impoundment. The approximate area of Region 2 is 1 acre (approximately 300 ft by 150 ft).
- Region 3 is defined as the area between the former mill site and the PRB, encompassing the area of highest present contamination in OU III groundwater. The PRB is a convenient boundary for this region because it represents large-scale surface feature that may influence groundwater flow and contaminant transport. Uranium concentrations range from several hundred to 1,000 µg/L. No portion of this region was overlain by mill tailings: the uranium plume that extends through Region 3 persists not because of flow of contaminated water from Region 2 but is instead a remnant plume consisting of dissolved and sorbed contamination resulting from the passage of highly contaminated groundwater from the mill site for decades prior to source removal. Except in well 88-85, uranium concentrations in groundwater north of the creek are significantly lower than those south of the creek (see Figure 40, page 99). The remaining COCs are detected sporadically at concentrations that marginally exceed the respective remediation goal. Leakage from Montezuma Creek may have a local positive effect on groundwater quality in this region (for example, at well 88-85, Figure 41, page 100; additional information addressing uranium distribution in

this region is provided in Section 6.4). The approximate area of Region 3 is 3.2 acres (approximately 700 ft by 200 ft).

- Region 4 extends from the PRB to monitoring well 82-08, approximately 750 ft east (downgradient) of the PRB. Groundwater quality is affected by local irrigation north and south of the creek, uncontaminated effluent from the PRB, possible leakage from Montezuma Creek, and flow of contaminated groundwater around the south end of the PRB south slurry wall. As a result, the uranium concentration varies widely in this region (<10 µg/L at well R10-M1 to about 700 µg/L at well MW00-06; see Figure 42, page 101). Only uranium and selenium exceed remediation goals in this region, although the selenium contamination is not widespread. The OU III groundwater model did not simulate the effects of treatment by the PRB and assumed unimpeded groundwater flow through the PRB. The approximate area of Region 4 is 11.5 acres (approximately 1,000 ft by 500 ft).
- Region 5 extends east of monitoring well 82-08 to nearly the terminus of the uranium plume. One location (well 0200) of persistent but low-level selenium contamination (50 to about 80 µg/L) occurs within this region; otherwise, uranium is the only COC that exceeds a remediation goal, ranging in concentration between about 200 µg/L at most wells in the region to as much as 1,000 µg/L at well P92-06 (see Figure 43, page 102). This localized area of relatively high uranium contamination observed at well P92-06 was represented in the OU III model as an initial condition of the uranium plume; uranium contamination in groundwater at this location is not suspected to result from residual mill tailings in the subsurface in this area. This is because the subsurface at this location is not part of the creek channel that could have been affected by fluvial transport and deposition of tailings from the former mill site.

  The uranium plume extends slightly east of the most downgradient monitoring well (well 92-09) in Region 5. Significant advancement of the uranium plume beyond well 92-09 is prevented by groundwater discharge from the bedrock aquifer that causes dilution and displacement of contaminated alluvial groundwater to Montezuma Creek in this area (see Section 3.3.2 for a description of this hydrogeologic boundary). The approximate area of Region 5 is 23 acres (approximately 2,500 ft by 400 ft).

6.2.1 ROD-Specific Performance Evaluation

Beginning with the October 2004 monitoring results, the arithmetic mean of uranium concentration is computed for each of these regions from a selected group of monitoring wells. The means are then graphed with a corresponding uncertainty range of ±30 percent to illustrate how each region is progressing toward water quality restoration. The rationale for the uncertainty range is provided in Appendix B of the ROD. Water quality at the various seeps (for example, Seeps 1, 2, 3, and 6) is not factored into the assessment of model-prediction versus concentrations of uranium detected in the stated monitoring wells. This is because the influence of the seeps on water quality of the alluvial aquifer, if any, is accounted for in the groundwater monitoring data.

Model-predicted concentrations for the corresponding wells are similarly averaged, normalized to calendar date (time zero is October 2002), and graphed with the observed averages, as shown in Figure 44, page 103 and Figure 45, page 104. In these figures, solid lines represent mean model-predicted concentration; the individual points, with the corresponding uncertainty range,

represent the average of the observed concentrations for the given region. Model-predicted uranium concentrations are provided in Appendix G.

The ROD states that as of October 2004, if the model-predicted average for a given region is less than the lower limit of uncertainty for the observed average for three consecutive sampling events, aquifer restoration progress is significantly less than the model prediction. According to this measure, and as shown in Figure 44, page 103 and Figure 45, page 104, the observed concentrations in the aquifer began to deviate significantly from model-predicted values as early as April 2006 in Region 1 and soon afterward in Regions 2, 3, and 5. A significant deviation from the model prediction (Region 1) was first recognized and reported in *Monticello Mill Tailings Site Operable Unit III Annual Groundwater Report October 2005 through April 2006*, September 2006 (DOE 2006c). Observed concentrations in Region 4 were significantly lower than the model prediction through 2009 but have since risen to be consistent with the model prediction (Figure 45, page 104). As depicted in Figure 44, page 103 and Figure 45, page 104, uranium concentrations continue to be significantly higher than model-predicted values throughout most of the aquifer (Regions 1, 2, 3, and 5). The findings reported in the Annual Groundwater Report (DOE 2006c) prompted DOE to perform a second statistical analysis of the groundwater data as described in the following section.

6.3 Nonparametric Trend Analysis

Once the deviations from the model predictions were recognized, and in accordance with the OU III ROD, a separate and different statistical analysis was applied to the uranium monitoring data. This was accomplished in 2007 (see DOE 2007b) using nonparametric statistical methods to determine if statistically significant trends are present and, if so, if aquifer cleanup would be feasible by 2045 (within the 42-year period from 2002 predicted by the groundwater model).

The analysis applied the Mann-Kendall test for trend detection, the Sen's estimate of slope, and the Seasonal Kendall test for trend and slope, as described by EPA (1994) and Gilbert (1987). Uranium concentrations were evaluated by these tests on a well-by-well basis, as regional averages, and under assumptions of cyclical and noncyclical seasonal variation. The conclusion of the nonparametric trend analysis was that aquifer restoration by 2045 (42 years from 2002) was not likely (DOE 2007b). Furthermore, the absence of statistically significant trends at many monitoring wells where uranium contamination remains well above the restoration goal suggested an indefinite period of aquifer restoration. These outcomes, in conjunction with the deviations between observed and model-predicted concentrations, prompted DOE to implement a contingency response as required by the OU III ROD. The contingency response is documented in the ESD (DOE 2009a) and the WQCS (DOE 2009c).

6.4 Summary of Restoration Progress through April 2012

A summary of time-varying uranium concentration observed at individual monitoring wells within the five aquifer regions is presented below. The summaries are based on qualitative interpretation of the time-series graphs (Figure 38, page 97 through Figure 43, page 102) and are not the result of quantitative analysis. Contributing factors for the observed uranium concentration trends are also suggested.

Region 1 Trending is not evident overall at the wells in this region (Figure 38, page 97). This implies an indefinite cleanup time beyond the established 42-year period. Uranium persists at concentrations between about 100 and 200 µg/L. Persistent concentrations between about 100 and 200 µg/L may be an expression of the concentration tailing effect demonstrated in the OU III column studies.

In these tests, designed as physical analogs of the OU III groundwater environment, uranium was rapidly removed from the aquifer substrate through the first several pore volumes. Uranium concentrations in the column effluent then stabilized at between 100 and 200 µg/L through the passage of an additional 20 to 25 pore volumes of water (see Section 8.2.3 and DOE 2001a). This outcome suggests that Region 1 may be in the tailing phase of the restoration process. However, the number of pore volumes of uncontaminated water that have migrated through Region 1 is difficult to estimate because the area is affected by recharge conditions that are temporally and spatially variable. For example, aquifer recharge along the north margin of the mill site is thought to originate from anthropogenic sources (irrigation seepage and water line leaks). Such variability is confirmed by flows measured in Montezuma Creek on the mill site. During years of normal precipitation, creek gains on the order of 100 gpm were recorded in this reach. This high rate of recharge would be expected to result in the passage of many pore volumes of groundwater through the alluvial sediments in Region 1. Most of this water is captured by Montezuma Creek and so is not available to affect other regions of the aquifer. The estimated pore volume of saturated alluvial sediments comprising Region 1 is 760,000 gallons.

The contribution of uranium to Region 1 of the aquifer from seepage along the north margin of the mill site (as characterized at Seeps 3 and 5 [40 to 50 µg/L] and Seep 6 [1,000 µg/L]) may, in addition to the concentration tailing effect, prevent attainment of the remediation goal in this region (see also Section 8.2.4).

Region 2 All wells exhibit downward trending (Figure 39, page 98) since 2001 at rates that project cleanup of this region within the 42-year period, assuming linear trending continues. This projection may be invalid, however, because of the tailing effect noted for Region 1 and further described in Section 8.2.3. In Figure 39, page 98 it is apparent that since about 2006, uranium concentrations have decreased more slowly, with concentrations persisting between about 100 and 200 µg/L, similar to Region 1 values.

Contamination from Region 1 is not likely to impact Region 2 because most groundwater in Region 1 is thought to discharge to Montezuma Creek on the mill site. Uranium concentrations in Region 2 are likely to have declined initially because the aquifer is locally recharged by uncontaminated water in Wetland 3. However, long-term concentrations between 100 and 200 µg/L may be expected for these areas of the aquifer because of the concentration tailing effect.

Region 3 Three of five wells exhibit a downward trend (wells 92-11, 88-85, and PW-28) in uranium concentration. Linear trend projections for these wells, suggest that the portion of the aquifer north of Montezuma Creek (as observed at wells 92-11 and

PW-28, see Figure 40 page 99) and south of Montezuma Creek nearest the creek (as observed at well 88-85, see Figure 41, page 100) will attain cleanup goals within the 42-year period. This projection may be invalid, however, because of the concentration tailing effect. Since about 2008, concentrations at these wells are relatively static at about 200 µg/L, similar to Region 1 and 2 observations and consistent with the OU III column test results (see Section 8.2.3).

The remaining two wells (92-07 and PW-17) in Region 3 show apparent upward trends followed by a period of stability at concentrations of approximately 1,000 µg/L (Figure 41, page 100). Factors that account for the lack of restoration progress in Region 3 include flow stagnation at the PRB (see Section 8.2.1) that inhibits the natural flushing process, limited groundwater underflow to the area south of the creek from Region 2, limited recharge from Montezuma Creek (a losing stream condition in this reach) because of distance, and a greater extent and magnitude of contamination than previously characterized and represented in the groundwater model (see Section 8.2.2). The ex situ pump-and-treat enhancement has been inconsequential in reducing uranium concentrations in this area (see Section 8.1). Uranium contamination in this portion of Region 3 cannot be expected to meet the remediation goal in the near future under current conditions.

Region 4 Consistent trending is not evident at monitoring locations in this region (Figure 42, page 101); instead, concentrations are highly variable over time and location. Concentrations in wells MW00-06 and MW00-07 have generally been increasing since 2005, though well MW00-07 has had much variability in this increasing trend (well MW00-07 did not yield sufficient water for sample collection in recent years). Uranium concentrations in this area are expected to vary, either temporally or spatially, as a result of any of the following causes: (1) localized crop irrigation, (2) discharge of treated groundwater from the PRB, (3) initial wide variation in concentrations, (4) PRB-induced flow perturbations, and (5) normal plume movement (for example as evident for the past several years at MW00-06).

Region 5 Net upward trending was observed at well P92-06 from about October 2002 through about October 2008 (Figure 43, page 102). This result is not interpreted as the result of a local, continuing source of contamination. Instead, this occurrence, followed by decreasing concentrations since about October 2009, may represent normal plume movement following source removal. At the remaining wells in Region 5, there has been no apparent trend in uranium concentration since 2000. Groundwater restoration in Region 5 will not occur within the 42-year period, based on current projections. As described in Section 3.2 and Section 5.1, migration of the uranium plume beyond its terminus in Region 5 is prevented by natural hydrologic boundaries.

7.0 Biomonitoring

7.1 Summary of Biomonitoring

The *Fourth Five-Year Review Report for Monticello Mill Tailings (USDOE) Site, San Juan County, Monticello, Utah* (DOE 2012c) summarized results of the site's biomonitoring program.

Selenium data collected from surface water, groundwater, sediment, and macroinvertebrates indicate that the OU III ROD criteria for conducting biomonitoring have been satisfied and that the OU III remedy is protective of the environment.

DOE conducted an expanded sampling effort at Wetland 3 in 2012 to confirm earlier findings with greater statistical power. Although the reporting period for this report is May 2011 through April 2012, biomonitoring data were collected after April 2012 and available for inclusion in this report. All biomonitoring results through October 2012 are included in this section.

The OU III ROD (DOE 2004b) established a biomonitoring program for the mill site wetlands (Section 3.3.1) and a downstream sediment pond, stating that "the main objective of the biomonitoring is to determine if selenium levels are present in environmental media at concentrations that could cause adverse effects on environmental receptors." The program established trigger levels in surface water (5 µg/L) and sediment (4 milligrams per kilogram [mg/kg]) to determine the need for macroinvertebrate sampling. It also established a trigger level for macroinvertebrate tissue (7 mg/kg) to determine the need for avian egg sampling and to be used in the criteria for discontinuing biomonitoring.

7.2 Results of 2012 Sampling

Sampling was conducted in spring and early summer 2012 in accordance with an approved Sampling and Analysis Plan (DOE 2012h). Full results, including additional data collected for ecological evaluation, are included in *Results of 2012 Biomonitoring and Ecological Studies at the Monticello Mill Tailings Site, Monticello, Utah* (DOE 2012g).

A screening assessment performed on April 10, 2012, demonstrated that the first scheduled biomonitoring sampling event would coincide closely with the beginning of red-winged blackbird nesting season. Macroinvertebrate samples were collected from Wetland 3 on April 24, May 8, May 22, and June 5, 2012. Results are summarized in Table 3. The arithmetic mean for macroinvertebrate selenium in Wetland 3 is 3.02 mg/kg, with a standard deviation of 2.63 and a standard error of 0.54. The geometric mean is 2.17 mg/kg, the median is 2.09 mg/kg, and the weighted average, which factors in the samples' wet weight, is 3.30 mg/kg. A t-test demonstrates that the arithmetic mean is significantly below 7 mg/kg ($p<0.0001$), the ROD-specified threshold value for macroinvertebrate tissue.

Table 3. Results from 2012 Macroinvertebrate Sampling at Wetland 3

Sample No.	W3-1S1	W3-1S2	W3-1S3	W3-1S4	W3-1S5	W3-1S6	W3-2S1	W3-2S2	W3-2S3	W3-2S4	W3-2S5	W3-2S6	W3-3S1	W3-3S2	W3-3S3	W3-3S4	W3-3S5	W3-3S6	W3-4S1	W3-4S2	W3-4S3	W3-4S4	W3-4S5	W3-4S6
Date	4/24/2012						5/8/2012						5/22/2012						6/5/2012					
Selenium (mg/kg)	4.09	2.33	1.31	0.72	3.59	8.34	3.47	2.27	1.08	1.18	2.07	10.0	2.93	2.10	1.17	0.97	1.03	6.46	5.83	1.15	0.68	0.71	2.06	6.98
Total wet weight (grams)	20.8	5.6	5.3	5.5	6.0	17.2	21.0	10.9	16.6	5.5	9.5	15.7	108	137	39.4	12.1	57.2	38.7	16.9	1.0	9.4	3.1	4.0	56.7

7.3 Conclusions

In a letter (EPA 2012) dated October 10, 2012, EPA, in consultation with UDEQ, concurred with *Results of 2012 Biomonitoring and Ecological Studies at the Monticello Mill Tailings Site, Monticello, Utah* (DOE 2012g), specifically the finding that average macroinvertebrate tissue concentrations in Wetland 3 are below the tissue-based trigger levels specified in the OU III ROD. The report was approved with two comments. The first comment directed DOE to include in this annual groundwater report a summary of how criteria specified in Section 11.2.1.3 and Appendix C of the OU III ROD (DOE 2004b) have been addressed. Section 7.3.1 addresses this first comment. In response to the second comment, an errata notice, correcting a value in Table 2 of the biomonitoring results report, was issued by DOE on October 23, 2012.

7.3.1 Previous Biomonitoring and OU III ROD Criteria

The OU III ROD (DOE 2004b, page C–7) specifies criteria for discontinuing the biomonitoring program: "If no consistent increases in selenium are observed in water or sediment and if biota concentrations remain below trigger levels (if biota sampling is required) for 3 consecutive years, biomonitoring can be discontinued." Biomonitoring data collected between 2005 and 2010 have been summarized in previous annual groundwater reports (see DOE 2010b, for example), and separate detailed reports were also provided to EPA and UDEQ (DOE 2005b, 2007c, 2008c, 2008d). Three avian surveys were performed in conjunction with biomonitoring to identify bird species that use the wetlands (DOE 2005a, 2006a, and 2008a). A comprehensive statistical analysis of biomonitoring data is documented in *Monticello Mill Tailings Site Operable Unit III Biomonitoring Program Status and Analytical Update* (DOE 2011b).

Data collected between 2001 and 2012 indicate that selenium concentrations are decreasing in surface water, including in Seep 2, which discharges into Wetland 3 (see Figure 46, page 105). Selenium concentrations in alluvial aquifer groundwater are also decreasing since 2001 (see Figure 16, page 73). Average selenium concentrations in sediment are below the trigger level at all wetlands, and no consistent increases are observed (DOE 2011b). These data demonstrate that one of the OU III ROD criteria for discontinuing biomonitoring has been met: "no consistent increases in selenium are observed in water or sediment."

Macroinvertebrate sampling was required at Wetland 3 because the average surface water selenium exceeded the trigger level in 2004. Macroinvertebrates were also sampled in 2005 at Wetlands 1 and 2, and between 2005 and 2010 at the Sediment Pond; results verified that average selenium concentration in macroinvertebrate tissue is not above the trigger level at these locations. Sampling conducted at Wetland 3 between 2005 and 2010 also indicated that average concentrations of selenium in macroinvertebrates did not exceed the trigger level. These sampling results demonstrate that the second OU III ROD criterion for discontinuing biomonitoring has also been met: "if biota concentrations remain below trigger levels (if biota sampling is required) for 3 consecutive years."

8.0 Post-ROD Water Quality Investigations (2009−2012)

This section summarizes the scope and findings of recent water quality investigations (field investigations, analysis of existing site data, and literature reviews) that were conducted in

accordance with *Monticello Mill Tailings Site Operable Unit III Water Quality Compliance Strategy* (WQCS; DOE 2009c), which was developed pursuant to the 2009 ESD. The results of these investigations, complemented by the routine OU III monitoring data are used to evaluate the likely effectiveness of the OU III remedy in meeting remediation goals (i.e., groundwater standards) at OU III in a reasonable period of time. Table 4 summarizes the work elements directed by the WQCS, the scope and data-use objectives of those elements, and the status of those elements. Table 4 is followed by a scope and status description of each WQCS work element in sequence as presented in Table 4 and Section 2.0 of the WQCS.

Table 4. WQCS Work Elements

Work Element	Scope of Work	Data Use Objectives	Schedule/Implementation
Evaluate Pump-and-Treat Remediation (WQCS Section 2.1)	(1) Operate and monitor the groundwater treatment as currently configured. (2) Expand the treatment system and monitoring network if necessary.	(1&2) Determine if pump-and-treat technology combined with natural attenuation is feasible within the area of attainment between the mill site and PRB.	(1) Operation and monitoring of the ex situ treatment is ongoing since system installation in June 2005. (2) Scope and duration of active remediation is yet to be determined by DOE, EPA, and UDEQ. Evaluating the ex situ treatment system in attaining water quality remedial action objectives (RAOs) is ongoing and is reported in Federal Facility Agreement quarterly reports and in the annual groundwater reports. Progress of the treatment system in removing contaminant mass from the aquifer is summarized in Section 8.1 of this report. Progress of the remedy in attaining water quality RAOs is addressed in Sections 8.1 and 9.0 of this report. The overall feasibility of the contingency remedy in attaining RAOs is summarized in Section 9.0 of this report.

Table 4 (continued). WQCS Work Elements

Work Element	Scope of Work	Data Use Objectives	Schedule/Implementation
Evaluate Natural Attenuation Factors (WQCS Section 2.2)	(1) Evaluate flow stagnation at the PRB (WQCS Section 2.2.1) (2) Uranium plume definition in area of attainment (WQCS Section 2.2.2). (3) Evaluate uranium mobility in groundwater. (4) Evaluate contaminated seepage (WQCS Section 2.2.4). (5) Evaluate climate effects (WQCS Section 2.2.5).	(1) Flow stagnation at the PRB may limit the aquifer restoration potential. (2) Improved characterization will determine if restoration progress is limited by greater extent of contamination, if continuing source is present, and if expanding groundwater remediation is feasible. (3) Apply on-site data and research by others to identify the geochemical factors that limit restoration potential at OU III. (4) Determine long-term impact of Seep 6 in meeting groundwater and surface water restoration goals.	(1) Evaluation completed; see Section 8.2.1 of this report. (2) Evaluation completed; see Section 8.2.2 of this report. (3) Evaluation completed; see Section 8.2.3 of this report. Literature review regarding uranium behavior in groundwater is ongoing. (4) Evaluation completed; see Section 8.2.4 of this report. (5) Evaluation completed; see Section 8.2.5 of this report.
Evaluate Surface Water Restoration (WQCS Section 2.3)	(1) Use existing water quality and surface flow data to evaluate the impact to surface water by discharge of the contaminant plume to Montezuma Creek. (2) Conduct focused field sampling to evaluate the contribution of residual mill tailings in stream bank sediments on water quality in Montezuma Creek.	(1&2) Determine possible long-term impact of residual soil contamination along Montezuma Creek in meeting surface water restoration goals.	Evaluation completed; see Section 8.2 of this report.
Groundwater Modeling (WQCS Section 2.4)	Scope to be determined as information on the progress of active treatment is evaluated.	Modeling (numerical or analytical) could be employed to estimate the groundwater remediation time using new information (site-specific, literature sources, regulatory guidance).	DOE in consultation with EPA and UDEQ has determined that additional quantitative modeling is not appropriate.
Documentation and Reporting (WQCS Section 2.5)	Document status of the WQCS work elements in stand-alone reports, annual groundwater reports, and Federal Facility Agreement quarterly reports.	Apprise DOE, EPA, and UDEQ on a timely basis of the progress and results of the WQCS work elements.	Ongoing and current.
Contingency Remedy Evaluation (WQCS Section 3.0)	Evaluate site factors and literature sources to determine if water quality remedial action objectives are feasible under the contingency remedy that was implemented under the ESD (DOE 2009a).	Determine the need and schedule to conduct active groundwater remediation or to adopt an alternate remedy that is not reliant on active methods.	Evaluation is ongoing and status is summarized in Section 9.0 of this report.

8.1 Evaluate Pump-and-Treat Remediation

The ex situ groundwater pump-and-treat remediation system has operated since June 2005. The treatment system extracts groundwater from the aquifer at a location (extraction well EW-1) about 50 ft upgradient of the PRB, within the central area of the groundwater mound. The configuration and operating conditions of the ex situ remediation are provided in greater detail in Section 3.4.2.

Analysis of groundwater-level information (Section 5.2.1) indicates that the extraction system has been ineffective in reducing groundwater mounding at the PRB (see also DOE 2008b: *Ground-Water Table and Chemical Changes in an Alluvial Aquifer During Sustained Pumping at the Monticello, Utah, Zero-Valent Iron Treatment Cells*) but may have stabilized further mounding. The water level information also indicates that operation of the treatment system does not prevent groundwater flow around the southern extremity of the south slurry wall, as most recently confirmed in the April 2009 study of aquifer Region 3 south of Montezuma Creek (see Section 8.2.2 and DOE 2009b). As described in Section 6.2, uranium concentration trending has not shown a definite positive effect by active remediation to date. This conclusion was also reported in a separate study conducted by DOE, as reported in DOE 2008b.

The volume of groundwater contained in Region 3 south of Montezuma Creek is estimated to be 1.4 million gallons. By comparison, the ex situ treatment system has treated about 24 million gallons cumulative through September 2012, equivalent to 17 apparent pore volumes of groundwater removed from this area of the aquifer. However, this value is not interpreted to represent complete removal of each pore volume. Instead, preferred flow of groundwater to the extraction well (EW-1) from local recharge sources likely accounts for the discrepancy between apparent and actual pore volume removal. Groundwater flow across the east boundary of the mill site is estimated to be about 10 gpm. The amount of recharge received from Montezuma Creek to the portion of Region 3 south of the creek is currently not known.

The ex situ treatment system remains operationally effective: it is relatively inexpensive to operate, maintain, and monitor. The system is also highly effective in treating the extracted water (removing uranium from the water) and meets established discharge allowances. As currently configured, the system has removed 14 percent of the estimated uranium inventory in Region 3 since 2006, with current rates of extraction approximating 3 percent inventory removal per year. Despite the successful mass removal, measurable decreases in groundwater concentrations are not observed.

8.2 Evaluate Natural Attenuation Factors

The annual groundwater report for 2006 (DOE 2006c) first identified that water quality improvement was not progressing as predicted by the groundwater model and did not meet ROD-established performance criteria. Several possible causes were cited for the discrepancy between the expected and observed progress, and were the subject of discussions at subsequent Federal Facility Agreement meetings. The primary factors that may limit the effectiveness of MNA at OU III within the predicted time period as cited in the annual groundwater report (DOE 2006c) are flow stagnation at the PRB (Section 8.2.1), greater extent of contamination than represented in the model (Section 8.2.2), hydrogeochemical factors that control uranium mobility in porous media (Section 8.2.3), contaminated seepage (Section 8.2.4), and climate

effects (Section 8.1.5). The OU III studies summarized below were conducted since 2009 to specifically assess the importance of these factors in limiting MNA. Results of each of these studies have reported in each annual groundwater report since and including the 2009 report (DOE 2009b). The corresponding data use objectives and scope of the activities are summarized in Table 4.

Depending on the nature of contaminants involved, MNA can be accomplished through a wide variety of processes, including biodegradation; dispersion; dilution; sorption; volatilization; radioactive decay; and chemical or biological stabilization, transformation, or destruction (EPA 1999). At OU III, dilution of contaminated groundwater was assumed to be the primary mechanism responsible for natural attenuation (DOE 2004a). This was assumed to occur through recharge of uncontaminated groundwater in the western region of the contaminant plume and from the discharge and mixing of uncontaminated groundwater from the Burro Canyon Formation in the eastern region of the plume. Capture and dilution of contaminated groundwater by Montezuma Creek is also a significant process for contaminant attenuation at OU III (DOE 2004a). It was recognized that some attenuation would occur through adsorption of contaminants, particularly uranium, onto sediments. However, the partitioning between groundwater and sediments was assumed to operate in equilibrium and be rapid and reversible. Thus, as concentrations of groundwater decline through dilution, sediment concentrations would decline proportionally.

8.2.1 Flow Stagnation at the PRB

As described in Section 5.2.1, a groundwater mound has developed immediately upgradient of the PRB; this is a direct indication that flow stagnation is occurring at the PRB. The scale of the mounding is described in Section 5.2.1. Overall, flow stagnation impedes the ability for natural attenuation to progress at the site by inhibiting the flushing processes (dilution and dispersion). The modeling performed for OU III (DOE 2004a) assumed that the PRB would have an effective, constant hydraulic conductivity equal to that of the alluvial aquifer (4×10^{-2} centimeters per second) and therefore did not anticipate flow restriction through the PRB. However, mineral precipitation within the PRB has reduced the hydraulic conductivity of the PRB by several orders of magnitude to impede the natural flow of groundwater (DOE 2005c and DOE 2006b). Moreover, the reduced flow through the PRB implies that natural attenuation processes such as hydrodynamic dispersion and contaminant flushing will not be nearly as effective as assumed in the site groundwater model. Removal of the PRB (reactive media portion only, the slurry walls would remain in place) and replacement with high-permeability material will be necessary to restore groundwater flow to the condition amenable to MNA.

8.2.2 Uranium Plume Definition

An activity pursuant to the 2009 ESD and the WQCS (DOE 2009c) was conducted in April 2009 to characterize the uranium plume and groundwater setting in the area between the PRB and mill site more fully than it was characterized during the OU III remedial investigation (DOE 1998a) and the design phase of the PRB project. Objectives of this study were to (1) evaluate hydrogeologic factors in relation to the lack of restoration progress in this area of relatively high uranium concentration, (2) determine if former waste impoundments in the southeast corner of the former mill site could contribute to the persistent high uranium concentrations observed in this area, and (3) evaluate the feasibility and subsequent effectiveness of expanding pump-and-

treat remediation in a well-defined area of attainment. The methods and results of the study are reported in detail in the 2009 annual groundwater report (DOE 2009b).

The April 2009 study indicated that uranium contamination in the region between the mill site and PRB is greater in lateral extent and magnitude than was previously characterized, which may contribute to restoration progress being slower than expected. As a result of a greater density of monitoring locations installed in the April 2009 study, uranium concentrations were found to be on the order of 1,000 µg/L throughout this area. The April 2009 study also provided greater definition of the hydrogeologic boundaries affecting this region. On the basis of the refined definition of uranium contamination and of the hydrogeologic boundaries, the study concluded that expanding groundwater remediation in this area was feasible. The effect of expanding groundwater remediation in this area in achieving restoration goals is not known however. Results of the April 2009 study also indicated that the former waste impoundments in the southeast portion of the former mill site are not continuing sources of contamination to the alluvial aquifer.

8.2.3 Uranium Mobility in Groundwater

The behavior of uranium in the environment is largely dictated by its oxidation state (EPA 2010). Under oxidizing conditions, uranium(VI) typically dominates; where oxygen is more limited uranium(IV) may be common. Uranium(IV) is generally immobile and is found in relatively insoluble oxide and silicate minerals. In contrast, uranium(VI) complexes with inorganic anions such as carbonate that may enhance the solubility and mobility of this species. Roll-front uranium ore deposits have formed through precipitation of uranium(IV) phases as a result of microbiological activity (EPA 2010). It is likely that oxidizing conditions dominate at OU III. However, studies of alluvial sediments at sites similar to Monticello have indicated that zones or areas of fine-grained, reduced sediments are common throughout the alluvial deposits (Campbell et al. 2012). Less-mobile uranium tied up in these zones may be released slowly over time and serve as a long-term source of ongoing groundwater contamination.

The adsorptive behavior of uranium(VI) in groundwater is commonly described through the use of K_d values, which predict the partitioning of uranium(VI) between groundwater and soils/sediments. Most simplified transport models employ the use of single-K_d equilibrium assumptions. This approach was used in the modeling of MNA for OU III (DOE 2004b) using site-specific K_d values determined from standard laboratory batch methods. Recent studies, however, have suggested that there are limitations to a single-K_d approach for uranium, and that its behavior may not match predictions using such an approach (Fox et al. 2012).

Column tests conducted for OU III under the interim remedial action (DOE 2001a and DOE 2001b) indicate that uranium desorption at Monticello likely does depart from the constant K_d model. These tests were designed to represent physical models of the OU III groundwater environment to evaluate contaminant flushing under actual flow and geochemical conditions. In multiple tests using substrate samples collected from various locations in the uranium plume, rapid desorption occurred from initial concentrations approaching 1,000 µg/L through five to seven pore volumes. The effluent uranium concentrations were still approximately 200 µg/L after an additional 20 or more pore volumes. This “tailing effect,” whether the result of rate-limited desorption or dual porosity factors, may account for the relatively stable uranium concentrations between about 100 and 300 µg/L observed at many OU III monitoring locations.

For example, as presented in Section 6.2, the tailing effect may account for uranium concentrations that persist in the range of 100 to 200 µg/L at multiple monitoring wells in Regions 1 and 2 of the OU III aquifer. The tailing effect, which was not represented in the OU III model, will likely prolong aquifer restoration beyond the predicted 42-year restoration period.

In summary, column study results indicate that a significant amount of uranium resides with the solid substrate and is only slowly released to groundwater over time. Uranium residing with the solid substrate thus acts a secondary source of contamination to groundwater that can prolong restoration time.

8.2.3.1 Review of Literature on General Subsurface Contaminant Behavior/MNA

Literature review, as specified in Section 2.2.3.1 of the WQCS (DOE 2009c), was conducted to determine how experience with groundwater remediation at OU III compares with that at other sites. A review of literature related to MNA and groundwater remediation, in general, reveals the current state of the practice. Site-specific literature was reviewed to determine if remediation technologies employed at sites similar to OU III may have application at the MMTS. This section summarizes several recent reports related to groundwater remediation in general. Site-specific literature is summarized in Section 8.2.3.2

DOE Office of Science—Complex Systems Science for Subsurface Fate and Transport

DOE's Office of Science has been funding research to gain a better understanding of subsurface systems. This has involved the conduct of site-specific studies at DOE sites such as Hanford, Washington; and Old Rifle, Colorado (see below), with the objective of developing a common framework to support informed decision-making and policies. It has been recognized that the subsurface environment, encompassing both the vadose and saturated zones, is a heterogeneous and dynamic zone involving hydrological, microbiological, and geochemical processes. A new scientific approach given the name "complex systems science" has emerged from the need to understand and model these systems, along with a recognition that such "complex systems" are likely to be more common that previously understood.

DOE convened a workshop on the topic of complex systems in August 2009; a report on the workshop followed in March 2010 (DOE 2010a). Three major areas of study were identified, which are crucial to advancing the scientific understanding of complex subsurface systems. These areas are (1) fundamental process coupling; (2) scale transitions in hierarchical systems; and (3) integrated system behavior. Results of the workshop suggest that the simplified models of subsurface processes that have been routinely employed at sites to predict contaminant plume behaviors and groundwater remediation time frames are likely inadequate.

EPA MNA of Inorganic Contaminants, Volume 1

This guidance document recognizes that compared with organic constituents, the solid substrate within an aquifer plays a much more significant role with respect to inorganic contaminants. The guidance notes that with inorganics, there are actually two different "plumes" that are relevant—the dissolved, mobile plume of contaminants in groundwater and the "immobile" plume of contaminants partitioned to the solid phase. Key to whether MNA can be successful for a given

site is determining how "immobile" the solid phase plume is. If the immobilization is not permanent, the solid plume serves as a continuing source of contamination to the groundwater depending on geochemical conditions. This concept of MNA through immobilization of contaminants in the aquifer materials contrasts with the K_d model of contaminant behavior, which assumes reversibility of these reactions. The recognized complexity in the interactions between the dissolved and solid-phase plumes have implications beyond the application of MNA but necessarily extend to the ability of any remediation method to achieve numerical cleanup goals. The guidance notes that reactive transport models can be used to try to simulate the various geochemical processes in the subsurface, but that these methods are complex and time-consuming.

EPA MNA of Inorganic Contaminants, Volume 3

EPA developed guidance for the use of MNA for sites contaminated with radionuclides, including uranium (EPA 2010). The guidance reviewed factors governing the occurrence and behavior of uranium, most notably the oxidation state. It was noted that uranium mobility is governed by (1) the total concentrations of uranium, (2) the distribution of uranium species in water, and (3) the nature of uranium partitioning in the solid phase. The main attenuation processes discussed in the guidance are those that sequester uranium in the aquifer matrix material either through precipitation or adsorption.

A major concern with uranium in subsurface systems is the potential for previously attenuated uranium to be remobilized. This could happen through changes in groundwater chemistry. If remediation occurs under conditions that are less oxidizing than those that occur naturally within the aquifer, uranium can become mobilized as natural conditions gradually recover. Because of the potential for remobilization, it is critical to know the forms in which uranium is tied up in the aquifer materials. The EPA guidance presents possible methods to determine the nature of solid-phase uranium. It is recommended that monitoring plans for MNA include parameters that may halt uranium partitioning or result in dissolution of attenuated uranium. Alkalinity and pH may affect uranium precipitation or adsorption, while dissolved iron may indicate dissolution of important phases that sorb uranium. Changes in any of these parameters may signal the potential for MNA failure. It is recommended that contingency plans be identified for MNA remedies.

The guidance outlines a four-tiered approach for evaluating the viability of MNA, with progressively more detailed information and complex analysis required with each tier. One of the objectives of the tiered approach is to take a more holistic, systems approach as discussed in the DOE Complex Systems Report (DOE 2010a).

Decision Framework for MNA of Metals

The Interstate Technology and Regulatory Council (ITRC) conducted a review of sites across the country that had selected MNA as a remediation component for metals-contaminated groundwater (ITRC 2010). ITRC noted that MNA had commonly been applied to organic contaminants but that attenuation of metals and radionuclides involves more complicated or interdependent sets of processes and that MNA was employed less frequently for those constituents. This study builds on EPA's MNA framework for metals (EPA 2010) and places it in a decision-making context. The same geochemical factors governing MNA that were

presented in EPA's MNA framework for metals are elaborated on here. Case studies are provided, including OU III.

EPA Evaluating Natural Attenuation

In late 2011, EPA issued guidance for monitoring the performance of MNA in groundwater (EPA 2011). The guidance provides simple, statistics-based methods for data evaluation. The approach generally consists of applying regression techniques to time-concentration data collected from a series of monitoring wells. The guidance notes that the methodologies should be applied to an entire monitoring network and not just to selected wells, and it stresses that different portions of a plume may behave differently, and that these behaviors may change not only spatially but temporally as well. An example is provided using data from a site contaminated with organic constituents. The challenge of dealing with constituents that do not naturally degrade over time is not discussed.

Groundwater Cleanup Challenges at Complex Sites

Similar to DOE's Complex Systems Report (DOE 2010a), ITRC issued a report (ITRC 2012) discussing the challenges of remediating groundwater at complex sites (ITRC 2012). The ITRC report notes that even for sites where source removal has occurred, restoring aquifers to drinking water standards has proven difficult, and complete restoration may take decades, if not centuries or longer. Some of the difficulties in restoration may be contaminant- related or hydrogeologic. Others involve needing to work around complex infrastructure or natural surface features (e.g., wetlands). A number of interdependent factors can affect successful remediation of a site, and long-term management approaches other than complete restoration may be appropriate. Various alternative strategies are reviewed, including waivers of applicable, relevant, or appropriate requirements; use of alternate concentration limits; and implementation of groundwater management zones. It is noted that any long-term management strategy must ensure protection of human health and the environment.

National Research Council—Alternatives for Managing the Nation's Complex Contaminated Groundwater Sites

The National Research Council of the National Academy of Sciences recently released a prepublication copy of a report focused on contaminated groundwater at complex sites (NRC 2012). The Council surveyed a large number of contaminated sites from multiple programs across the country. They note that current remedial technologies still have significant limitations and that achieving remediation goals (e.g., maximum contaminant levels) is unlikely at most complex sites in a time frame of 50 to 100 years. When effectiveness of site remediation reaches a point of diminishing returns (i.e., "leveling off" of concentration versus time) prior to reaching cleanup goals, and optimization options have been exhausted, they recommend the transition to long-term management of groundwater plumes, either passive or active. It was recognized that an understanding of the geologic and geochemical complexity of a system is needed for successful long-term management. Five-year reviews are recognized as important tools in long-term plume management to ensure that remedies remain protective. The importance of institutional controls for long-term plume management is also stressed. While there have been notable examples of the failure of institutional controls (e.g., at Love Canal), EPA and state institutional control programs have undergone substantial improvements over the years.

8.2.3.2 Literature Review of Uranium Behavior at Other Sites

A review of site-specific relevant scientific literature revealed that there is no example of sitewide restoration of uranium-contaminated groundwater, by active or passive methods, in a setting that is directly analogous to OU III of the MMTS. Pilot- and full-scale remediation efforts demonstrate removal of contaminant mass, particularly on a local scale, but are projected to be unsuccessful in sitewide restoration within a reasonable time. Examples include the Old Rifle, Colorado, site; the Shiprock, New Mexico, site; the Fernald Preserve in Ohio; and the Hanford 300 Area, Washington. Additional information on these sites is provided below.

Old Rifle Site

The Old Rifle site has been the subject of numerous research studies conducted under a DOE initiative called the Rifle Integrated Field Research Challenge (Rifle IFRC). Several reports and papers have been published by IFRC researchers (e.g., Fox et al. 2012, Campbell et al. 2012), and many of these were summarized during a review of the natural flushing remedy for the site (DOE 2011e). Early fate and transport modeling conducted for the Old Rifle site predicted that uranium concentrations in the alluvial aquifer system would decline over time and reach groundwater cleanup standards over the majority of the site within 10 years and over the entire site within 30 years (DOE 1999). However, more than a decade after completion of surface cleanup of the uranium mill tailings, the average concentration of uranium in the groundwater at the site remains essentially unchanged.

Rifle IFRC studies point to the importance of localized, fine-grained, naturally reduced sediment zones or lenses in limiting the "flushing" of uranium from the aquifer. The less-mobile uranium(IV) is stable under reduced conditions, and uranium(VI) is present under oxidizing conditions. Attempts to mobilize uranium through the addition of bicarbonate to the system underscore the importance of subsurface heterogeneities in controlling uranium(VI) (Fox et al. 2012) and demonstrate that an equilibrium sorption/desorption approach, like that used by early models, greatly over-predicts dissolved uranium(VI) concentrations. Mobility may depend on local sediment properties such as hydraulic conductivity, grain size, surface area, mineral content, redox status, and cation exchange capacity. Other studies suggest that natural organic carbon in the naturally reduced zones may have a role to play in uranium immobilization (Campbell et al. 2012) by favoring the accumulation of uranium(IV). Slow release from these fine-grained lenses could help explain the persistence of dissolved uranium in the aquifer long after the time predicted by equilibrium sorption models.

Collectively, the studies conducted at the Old Rifle site reveal that processes affecting the fate and transport of uranium in the site's groundwater system are more complex than previously assumed. Meter-scale variability has been observed and must be incorporated into reactive transport models to produce accurate simulations. Such complexities not only limit the degree to which existing technologies can be used to fully characterize the alluvial system properties, but they also severely hamper modeling of contaminant transport on a sitewide scale. While it is not possible to definitely state that natural flushing cannot achieve the uranium cleanup standard in the permitted time frame at the Old Rifle site, current trends strongly suggest that this is the case.

Shiprock Site

Active remediation of groundwater at the Shiprock site has been conducted since 2003. A system of extraction wells, interceptor drains, and horizontal extraction trenches removes groundwater and pumps it to a pond for evaporation. The site is divided into two areas by an escarpment: the San Juan River floodplain at the base of the escarpment and the terrace area above. Groundwater on the site exists in the alluvial aquifer on the floodplain and in the alluvium and the upper few feet of weathered Mancos Shale on the terrace. Two recent documents that describe the performance of the treatment system and the site strategy were reviewed: *Annual Performance Report April 2010 through March 2011 for the Shiprock, New Mexico, Site* (DOE 2012a), and *2010 Review and Evaluation of the Shiprock Remediation Strategy* (DOE 2011a). The strategy at Shiprock combines mass removal and the dewatering of some areas of the terrace. The remediation system has not achieved the pumping rates that were originally modeled; even with enhancements and additional extraction wells, a pumping rate of 8 gpm from the terrace was not achieved. Water levels on the terrace are gradually declining, and some seeps have dried up, but the remediation strategy for the terrace will likely be revisited. The uranium mill, which was located on the terrace and operated from 1954 to 1968, contributed an estimated 50 to 390 million gallons of contaminated water to the terrace (DOE 2012i). The floodplain system has achieved near-term pumping rates, and a reduction in contaminant mass is being achieved for four key constituents (nitrate, selenium, sulfate, and uranium); however, compliance goals have not been met at the site.

Many factors that affect sitewide restoration at Shiprock have been recently studied. The water balance of the terrace (based on the water contributed to the system over the years from milling and irrigation) and the flow processes in the floodplain from river water, surface water, and terrace contributions are key factors in site restoration. Another factor is natural contamination leaching from the Mancos Shale. Preliminary results from remediation at the Shiprock site suggest that attainment of cleanup standards are possible in portions of the aquifer where large volumes of clean water recharge the system, for as long as that source of recharge can be sustained. However, contaminant concentrations in areas where flow is stagnant or where sources of contamination persist are likely to remain elevated unless those conditions can be alleviated. Likewise, if recharge sources are not sustained (e.g., in areas of active pumping), elevated concentrations will likely reestablish if contaminant sources still remain.

Fernald Preserve

The Fernald Preserve in Ohio was the location of a uranium processing facility that operated from 1951 to 1989. DOE has been conducting remediation in the underlying aquifer since operations were halted. A review of recent documents—*the Fernald Preserve 2011 Site Environmental Report* (DOE 2012b) and the *Third Five-Year Review Report for the Fernald Preserve* (DOE 2011f)—showed that the removal of uranium from the aquifer through pumping is decreasing. It is no longer necessary to treat the contaminated groundwater to meet the uranium standard (30 µg/L per month) prior to discharge to the Great Miami River. This reduction in restoration efficiency is also evident in a comparison of the actual pounds of uranium removed and the predicted future trend based on these data. In the last 4 years, 13 percent of the uranium was removed from the aquifer, and it is estimated that it will take 13 years to achieve an additional 13 percent reduction in the mass of uranium. Thus, reductions in contaminant concentration become increasingly difficult to achieve over time.

Sorbed uranium in the vadose zone of the aquifer, stagnation zones within the uranium plume, and preferential flushing pathways within the plume due to aquifer heterogeneities are issues that affect the restoration of the aquifer. Uranium is bound to sediments in the unsaturated portion of the aquifer and is only desorbed when the area is saturated during seasonal high water levels and when the extraction wells were shut down for an extended period of time. Current high water levels are lower than water levels at the time of contamination; therefore, uranium sorbed in these unsaturated zones will remain as a potential source if water levels return to historical highs. Some portions of the uranium plume between extraction wells are relatively stagnant, minimizing the flushing of the aquifer in these areas. The aquifer is both heterogeneous and anisotropic, which creates preferential flow paths within the aquifer to the extraction wells. Areas with uranium sorbed to coarse sediments flush more quickly than areas with fine sediments.

The site groundwater model is being used to help assess the impact of these potential issues. Model results will help determine how changing pumping rates, changing pulse pumping, or adding new extraction wells impacts the aquifer restoration.

Hanford 300 Area

The Hanford 300 Area in Washington is characterized by the presence of a shallow, 128-acre uranium plume in the unconfined aquifer at the site (DOE 2012e, 2012f). The sources of the uranium were unlined trenches and landfills containing wastes from uranium fuel fabrication activities. An interim ROD for the Groundwater OU (300-FF-5) selected MNA as the remedy at the site; progress toward meeting remediation goals has been evaluated during each 5-year review. The decision to rely on natural processes to meet remedial action objectives during source remediation was based on the presumption that contaminant levels would continue to decline at rates observed in monitoring data and predicted by groundwater models.

Primary contaminant sources at the 300 Area were removed, and confirmatory sampling indicated that no substantial uranium remained in shallow soils. However, evaluation of the MNA remedy during the second 5-year review period in 2006 indicated that remedial action objectives established in the interim ROD had not been achieved. Sampling of deeper portions of the vadose zone (105–123 meter depths) identified elevated concentrations (up to 4 mg/L) of uranium in an area that is periodically rewetted by a rising and falling water table where groundwater in the aquifer interacts with the Columbia River. It is hypothesized that this secondary source of uranium acts as an ongoing source of groundwater contamination that hinders MNA. Interaction between the dissolved groundwater plume and the “immobile” saturated and unsaturated solid phase “plume” results in slow downgradient migration of both plumes.

Additional characterization and treatability testing has been conducted to evaluate more-aggressive remedial alternatives. A draft proposed plan was issued in December 2011 (DOE 2011d) that selects a phased remedy as the preferred alternative. The first phase of the remedy consists of removal, treatment, and disposal of source area material to a depth of 15 ft along with polyphosphate injection in the deep vadose zone to test the effectiveness of uranium sequestration. If the attempt to immobilize uranium is not successful, a different alternative, consisting of monitoring uranium in groundwater, will be implemented. A ROD selecting this

alternative is pending. A remedy is scheduled to be in place by December 2015 that is designed to meet the federal drinking water standards throughout the groundwater plume (DOE 2012e).

Alkalinity appears to be the main controlling factor on mobility of uranium at the Hanford site; uranium is less mobile and tends to sorb to the aquifer matrix when alkalinity is lowered. Natural groundwater in the aquifer tends toward high alkalinity, while Columbia River water has low alkalinity. The objective of the sequestration testing is to attempt to immobilize uranium in insoluble uranium minerals, as opposed to using reversible sorption mechanisms. Modeling of these complex geochemical and hydrogeologic interactions is being done using "high-performance computing" methods with a Cray supercomputer. The aquifer is considered to be a future source of drinking water for the region.

8.2.3.3 Literature Review Summary

A common theme in the general literature on subsurface contamination is that remediation of these systems is much more complicated than originally thought and that simpler models used to predict subsurface contaminant behavior are likely unrealistic. As a result, groundwater cleanup progress has stalled at a number of sites, and alternative approaches to plume management are being considered. It is recognized that groundwater cleanup is likely to be a long-term effort that will require decades if not centuries to achieve. For inorganic constituents, remediation approaches must recognize that contaminants reside not only in the dissolved groundwater plumes, but also in the relatively "immobile" (but persistent) solid-phase plumes. The contaminants in the solid-phase portion of an aquifer can serve as continuing sources of dissolved groundwater contamination if they are not present in permanently immobilized forms. Extensive geochemical characterization is needed to understand the interactions between groundwater and solid-phase aquifer materials to design remediation systems capable of either contaminant removal or permanent immobilization. Supercomputing techniques may assist in these designs.

MNA has been the selected remedy for a number of sites with uranium-contaminated groundwater. Modeling results based on initial monitoring data for these sites indicated that uranium removal from these systems should proceed fairly rapidly due to uranium's presumed high mobility in groundwater. Observations have not been matching these predictions. A number of explanations have been offered for these discrepancies, including redox states of uranium, aquifer heterogeneity, biogeochemical reactions, and underestimation of original source term, among others. Other remediation approaches are being evaluated at some of these sites, including the use of alternative groundwater standards, long-term monitoring, and institutional controls.

The literature review did not identify a particular remediation technology capable of attaining restoration goals on a sitewide basis at OU III. Treatment of the groundwater (for example, with ZVI, solar evaporation, or distillation) is generally not recognized as a limiting factor in meeting remediation goals. Instead, the greatest challenge to aquifer restoration is posed by the technical impracticability of addressing the solid phase uranium "plume" that is present through most of the alluvial system. Considerable geochemical characterization would be needed to either permanently immobilize solid-phase uranium in the subsurface or to remove it to a sufficient degree that groundwater remediation goals could be met.

8.2.4 Contaminated Seepage

Seep 6 is located on the steep, south-facing hillside in the northwest portion of the former mill site (see Figure 3, page 59 for location). Uranium concentration in the water expressed at Seep 6 has remained between 1,500 and 2,000 µg/L since monitoring at the location began after the completion of mill site remediation in 1998. The WQCS (DOE 2009c) states that the source of contamination in the water expressed at Seep 6 is mill tailings or ore present in the backfill of a nearby buried irrigation water line (about 7 ft deep) or an adjacent, more deeply buried sanitary sewer line (about 20 ft deep). Radiological contamination in this water utility corridor was left in place during OU II remediation, in consultation with EPA and UDEQ, to be managed by DOE as supplemental standards material consistent with the practices described in the *Long-Term Surveillance and Maintenance Plan for the Monticello NPL Sites* (DOE 2007a).

As reported in previous annual reports for OU III (since DOE 2009b), the source of water expressed at Seep 6 is suspected to be leakage from the sewer or irrigation line. Flow of water at Seep 6 is low, probably less than 0.1 gpm. The water does not flow directly into Montezuma Creek or Wetland 2 but instead seeps into the soil immediately down-slope of the seep. The seep is generally perennial and supports a small growth of cattails. Significant wildlife habitat is not supported at Seep 6 because the seep area is less than about 100 ft by 100 ft and the topography is steep. High uranium concentrations at Seep 6 are not reflected in nearby monitoring wells, in Wetland 2, or in Montezuma Creek. Seep 6 was not represented in the OU III groundwater model (DOE 2004a); however, its continued presence may adversely impact the ability to achieve groundwater remediation goals, particularly in Region 1. Similarly, Seeps 3 and 5, which contain 40 to 50 µg/L of uranium and represent local expressions of general recharge conditions along the north margin of the mill site, may adversely impact groundwater quality as a long-term source of low-level contamination, particularly in Region 1.

The source of uranium contamination that is expressed at Seep 6, as described in the preceding paragraphs of this section, has been investigated and identified. The source of elevated uranium in the water expressed at Seeps 3 and 5 has not been identified; however, naturally occurring uranium in the Mancos Shale cannot be discounted as a possible source of uranium at the concentrations observed at Seeps 3 and 5 (DOE 2011c).

8.2.5 Climate Effects

Climate conditions could affect the progress of water quality restoration and impact natural attenuation factors. For example, high water levels that may occur from above-normal precipitation could lower concentrations from dilution, assuming additional contaminants are not desorbed from the aquifer materials. To examine a possible climate effect, Figure 47, page 106 to Figure 50, page 109 depict how uranium concentrations vary with water levels at wells T01-01, 92-11, 88-85, and P92-06, respectively. These wells were selected because they are distributed along the central portion of the uranium plume. Each data point in the figures represents the difference in uranium concentration ("del uranium") and in water level ("del water table") between successive monitoring events. This method of analysis shows that there is no apparent correlation between uranium concentration and water level at any of the locations. As a result, it cannot be concluded that climate conditions, whether in low- or high-water years, significantly affect the rate of water quality restoration in the portion of the aquifer where these wells are located.

8.3 Evaluate Surface Water Restoration

The 2009 ESD adopted the recently enacted State of Utah standard for uranium (30 pCi/L) in surface water as an OU III remediation goal. Following remediation of the mill site, uranium concentration in Montezuma Creek has not exceeded this standard at the established monitoring locations on and downstream of the mill site until the Sorenson location is reached. At this location, approximately 0.75 mile downstream of the former mill site, uranium concentrations typically increase from less than the standard at upstream locations to between about 75 and 150 µg/L, depending on the season. Concentrations of uranium in Montezuma Creek prior to OU I and OU II remediation (source removal) exceeded the standard upstream of the Sorenson location but were also observed to similarly rise at the Sorenson location.

With the recently adopted water quality protection standard for uranium, DOE increased the scope of surface water monitoring for the October 2009 sampling event to further evaluate the location of uranium influx to Montezuma Creek downstream of the mill site. That event focused on collecting samples from the creek downstream of documented areas of localized, residual soil and sediment contamination (supplemental standards material) in the floodplain of the creek.

The October 2009 results, reported in detail in the Annual Groundwater Report (DOE2010b), indicate that there is no apparent correlation between uranium concentrations in Montezuma Creek and localized residual soil contamination in the reaches of the creek where supplemental standards were applied for soil remediation. The possibility that stream-side deposits containing residual mill tailings contribute some uranium to Montezuma Creek cannot be excluded; however, the primary source of contamination to the creek downgradient of the mill site is attributed to the discharge of contaminated groundwater from the alluvial aquifer in the reach of Montezuma Creek between monitoring wells P92-06 and 92-03 (there are no permanent surface water monitoring stations between the discharge source and the Sorenson location). The concentration of uranium in Montezuma Creek at the affected locations is, therefore, expected to decrease as the uranium plume attenuates.

8.4 Groundwater Modeling

Solute transport model assumptions have been evaluated and reported in previous annual groundwater reports, as addressed in Section 6.0. The primary assumptions of the OU III groundwater model that affect uranium plume attenuation are a uniform, equilibrium-controlled distribution coefficient (K_d) and a homogeneous and isotropic aquifer (including the portion containing the PRB [Region 3]). These generalizations are the primary sources for an over-optimistic projection of the aquifer restoration period, because uniform equilibrium K_d does not accurately represent kinetically controlled geochemical interactions between a dissolved phase and the aquifer substrate, and aquifer heterogeneity can greatly affect solute transport because of rate-limited dual-domain mass transfer from low- to high-permeability zones. Reaction kinetics is recognized as an important if not dominant control on the rate of release from aquifer substrate to the dissolved, mobile phase. Aquifer heterogeneity can affect solute transport because preferred flow paths (zones of relatively high hydraulic conductivity) will be flushed more rapidly than zones of low conductivity from which a contaminant may slowly release to the conductive zone and prolong restoration.

To represent these complexities in a model would require significant additional characterization of the groundwater and geochemical setting and/or multiple uncertain assumptions. Complete

characterization/quantification of these factors is an unrealistic expectation. In this context, modeling should be viewed as a tool for evaluating the conceptual understanding of flow and contaminant processes at the site rather than as capable of providing a definitive prediction of solute fate and transport. Adding complexity to the OU III model would be expected to result in a much longer restoration period than originally predicted. This, combined with observed concentration trends at monitoring wells that project a prolonged period of aquifer restoration (Sections 4.4, 6.1, and 6.2), suggests that an effort to develop a more complex OU III fate and transport model to predict a restoration period may be unwarranted unless a regulatory decision for the OU III remedy specifically depends on such a prediction while accepting a potentially high degree of uncertainty in the forecast.

9.0 Remedy Evaluation

The potential for fully remediating the alluvial aquifer at OU III can be further evaluated by examining information collected for the site against groundwater restoration factors included in guidance developed by EPA (EPA 1993, 1996). DOE used this guidance in evaluating the restoration potential of the alluvial aquifer at the Old Rifle site (DOE 2012d), which was discussed in Section 8.2.3.2.

The guidance identifies five factors (Table 5) that should be examined at groundwater contamination sites to assess the relative difficulty of achieving remediation objectives:

- Site use
- Chemical properties
- Contaminant distribution
- Geology
- Hydraulics/flow

Although these are treated as distinct factors in EPA guidance, they are interrelated, as recent studies on complex subsurface systems have demonstrated. For example, the chemical properties of a groundwater system are affected by local geology, groundwater flow, contaminants present, and site activities (site use) that led to the release of contaminants in the subsurface. Conversely, chemical reactions in the subsurface (e.g., biologically mediated precipitation of minerals) have the potential to influence groundwater flow by affecting local hydraulic properties of the aquifer such as hydraulic conductivity and porosity.

9.1 Site Use

The general history of site use is important in understanding the nature of site releases (e.g., volume and duration; see Table 5 for restoration potential factors). The Monticello mill site was operated from 1942 until 1960 to process vanadium and uranium ores. Tailings were stored in four tailings impoundments on the 110-acre site, resulting in contamination of soil, surface water, and alluvial groundwater. Surface remediation of the MMTS site began in 1983 and continued through 1998-1999 when tailings were excavated and placed in the permanent repository.

By 1983, 2.5 million cubic yards of tailings and contaminated soil and debris (DOE 2004a) were located on site. Contaminants in these sources leached into the underlying soil and groundwater

and provided continual mass loading of contaminants to the alluvial aquifer during the decades leading up to surface remediation. This type of release ranks at the high end of the difficulty scale for groundwater restoration (Table 5).

9.2 Chemical Properties

While site-specific geochemical data on uranium at OU III are limited, the literature provides some insight into the behavior of this constituent. Uranium is not volatile, its radioisotopes decay very slowly, and biodegradation of this inorganic element is not possible. Rifle IFRC and other studies for sites similar to OU III (e.g., Williams et al. 2010; Williams et al. 2011) have shown that uranium has the potential to occur in solid forms within the aquifer, both through biologically mediated precipitation of dissolved uranium and through sorption onto aquifer sediments. While not demonstrated on a large scale, these properties are being exploited through pilot-scale testing to immobilize uranium in the subsurface. One of the biggest challenges is to ensure that the immobilization is permanent. Though the solid-phase uranium is relatively immobile, groundwater migrating through the aquifer can release it into the mobile domain under certain conditions. Thus, the reservoir of uranium within and sorbed to aquifer sediment grains can provide continuing sources of groundwater contamination over time. This conclusion is supported by the column tests performed for OU III using alluvial aquifer sediments. These tests demonstrated that while significant reductions in effluent concentrations can be realized, concentrations tail off at levels still well above remediation goals (about 100 µg/L). Those concentrations persist throughout numerous subsequent extractions/pore volumes.
(DOE 2000, 2001a).

9.3 Contaminant Distribution

Uranium concentrations are elevated throughout the aquifer, particularly downgradient of the remediated former mill site; the plume covers approximately 30 acres, extending a distance of approximately 1 mile downgradient of the former mill site. The maximum concentration in the uranium plume is about 1,000 µg/L, occurring in Region 3 of the aquifer. This region is limited to an area of about 3.2 acres immediately downgradient of the former mill site. Concentrations decrease farther downgradient, generally ranging between about 100 and 500 µg/L. The primary source of uranium was removed (tailings and underlying sediments were removed to bedrock—no primary source left). The depth to bedrock varied between approximately 10 ft and 75 ft, depending on land surface topography of the tailings impoundments.

During source removal on the mill site, the highest concentration portion of the plume (up to several thousand micrograms per liter) was dewatered and treated. Large reductions (hundreds of micrograms per liter) in groundwater concentrations occurred in response to source removal, particularly in Regions 1 and 2 of the aquifer and into a portion of Region 3. Since that time (source removal), however, concentrations have not shown large decreases. The uranium plume has not decreased in lateral extent since source removal; however, monitoring data suggest no expansion of the plume. Uranium persistence in OU III groundwater suggests a significant secondary source (sorbed phase) of uranium in sediments throughout the alluvial aquifer.

The volume of contaminated groundwater throughout OU III is estimated to be approximately 10,000,000 gallons. The depth of contamination is relatively shallow, generally within 10 ft of ground surface, and extends to a depth of about 15 ft below ground surface.

Table 5. Factors Affecting Groundwater Restoration

Examples of Factors Affecting Groundwater Restoration

Certain site characteristics may limit the effectiveness of subsurface remediation. The examples listed below are highly generalized. The particular factor or combination of factors that may critically limit restoration potential will be site specific.

Generalized Remediation Difficulty Scale
Increasing Difficulty →

	Contaminant Characteristics		
Site Use	Nature of Release	Small Volume Short Duration Slug Release →	Large Volume Long Duration Continual Release
Chemical Properties	Biotic/Abiotic Decay Potential	High →	Low
	Volatility	High →	Low
	Contaminant Retardation (Sorption) Potential	Low →	High
Contaminant Distribution	Contaminant Phase	Aqueous, Gaseous → Sorbed → LNAPLs →	DNAPLs
	Volume of Contaminated Media	Small →	Large
	Contaminant Depth	Shallow →	Deep
	Hydrogeologic Characteristics		
Geology	Stratigraphy	Simple Geology (e.g., planar bedding) →	Complex Geology (e.g., interbedded and discontinuous strata)
	Texture of Unconsolidated Deposits	Sand →	Clay
	Degree of Heterogeneity	Homogenous (e.g., well-sorted sand) →	Heterogeneous (e.g., interbedded sand, silts, clays, fractured media, karst)
Hydraulics/Flow	Hydraulic Conductivity	High (>10^{-2} cm/s) →	Low (<10^{-4} cm/s)
	Temporal Variation	Little/None →	High
	Vertical Flow	Little →	Large Downward Flow Component

Note: DNAPLs = dense nonaqueous-phase liquids, LNAPLs = light nonaqueous-phase liquids, cm/s = centimeters per second

9.4 Geology

The stratigraphy of the sediments composing the OU III aquifer is relatively simple: a thin (approximately 10 ft) layer of unconsolidated alluvium overlies low-permeability bedrock. Bedding is essentially planar, and discrete layers of interbedded fine-grained sediments (silt and clay) are generally absent, as are discrete, continuous layers of well-sorted granular (sand and gravel) sediment. Instead, the alluvium comprises poorly sorted mixtures of clay, silt, sand, and gravel. Well yields are generally low (1 gpm or less while purging monitoring wells during water quality sampling). However, as with extraction well EW-1 (14 gpm), aquifer yield may locally be high.

The clay materials present throughout the aquifer may exert significant influence on contaminant and groundwater movement. Site-specific data on the clay materials is not available for OU III, but similar sites have been described in the literature. For example, at the Old Rifle site, some of these clay zones are known to be naturally chemically reduced. The organic materials in these zones, which were deposited syngenetically with fine-grained suspended loads, are the apparent drivers for the microbially mediated redox processes that produce significant localized quantities of solid-phase uranium mass. These conditions impede groundwater cleanup at the Old Rifle site. If similar conditions exist at OU III, they may limit the ability of MNA (or any remedy) to meet cleanup goals.

9.5 Hydraulics/Flow

Based on slug test data presented in the RI Addendum/Focused FS (DOE 2004a), hydraulic conductivities can vary by as much as 3 to 4 orders of magnitude (10^{-5} to 10^{-2} centimeters per second [cm/s]). The mean hydraulic conductivity from these tests (approximately 10^{-3} cm/s) is consistent with values reported in the literature for silty sand (Freeze and Cherry 1979) and may be considered relatively low for unconsolidated alluvial deposits. Hydraulic conductivity on the order of 10^{-2} cm/s would be indicative of clean sand and would tend to favor the restoration potential. Vertical flow in the alluvial aquifer is not considered to be an important influence affecting aquifer restoration at OU III; the aquifer is thin, and vertical flow to lower bedrock formations is prevented by the Dakota Sandstone aquitard. The PRB has caused flow stagnation in the aquifer upgradient from the PRB and has prevented true MNA from occurring in this area and downgradient of the PRB.

9.6 Overall Restoration Potential

The OU III flow and transport model that provided input in selecting the MNA remedy assumed that uranium transport could be accurately represented by a process that is now known to be an unrealistic simplification. This assumption favored full restoration of the alluvial aquifer in a relatively short time. It is now known that flow and transport processes are much more complex than earlier thought, and restoration of the aquifer will be more difficult than originally conceived. Though the possibility that some form of remediation could eventually succeed cannot be ruled out, the methods used to accomplish aquifer cleanup would have to be robust enough to overcome the hydraulic, chemical, and biological processes that currently control uranium behavior on a sitewide scale.

Experience at other DOE sites has shown that remediation of uranium is more problematic than expected. The tailing effect, in which concentrations of uranium tend to remain above applicable standards over many decades, has been observed at a number of DOE's mill tailings disposal sites. Examples of such sites include those at Tuba City, Arizona (DOE 2010a), and Split Rock, Wyoming (WNI 1999), both of which have undergone active remediation. Though uranium concentrations at those locations showed decreases during the first few years of remediation, they then leveled off to relatively constant values that remained above applicable standards. Unlike OU III, the primary sources of uranium (i.e., tailings piles) at these and other former mill sites have been stabilized in place in disposal cells, and gradually decreasing remnant seepage from the cells might still be impacting underlying groundwater systems. In this respect, OU III is similar to the Old Rifle site. Primary sources have been removed and replaced with clean backfill. After initial sharp reductions in uranium (an order of magnitude or more), concentrations have leveled off in the 100 to 200 µg/L range. The proposed explanation for the recalcitrant contamination is slow release of uranium bound up in aquifer materials through adsorption, precipitation, or other mechanisms. Despite success in removing contaminant mass from the alluvial aquifer through active remediation, the processes causing slow release of uranium from the aquifer substrate may result in a prolonged restoration period to meet the current remediation goal.

Assessments of subsurface remediation at the Monticello site and other sites suggest that remediation of uranium in groundwater in alluvial aquifer settings is much more difficult than previously expected. Short of completely removing all affected aquifer materials at a site (including secondary contaminant sources), both active and passive remediation efforts face significant limitations.

Despite a better understanding of natural attenuation processes, it does not appear that alternatives to the natural flushing remedy (e.g., pump-and-treat, in situ chemical manipulation) would improve the potential for restoring the aquifer at OU III. As with natural flushing, active remediation approaches would face serious limitations in removing uranium from a heterogeneous aquifer containing persistent long-term contaminant sources. The same factors that would limit active remediation would also limit more-passive, in situ methods for either immobilizing or mobilizing uranium.

9.7 Conclusions

- The presence of the PRB and the associated stagnation of groundwater flow has limited the ability of MNA to occur at OU III. MNA has not had a chance to proceed because of these anthropogenic influences on the groundwater system.
- Cleanup of contaminant plumes in shallow alluvial aquifers appears to be more complex than originally thought, especially based on simplistic assumptions and models used to predict cleanup time frames.
- Uranium behavior in groundwater is not as straightforward as assumed by equilibrium K_d models.

- The restoration potential at OU III to meet current remediation goals is low, because (1) the volume and distribution of contamination is high, (2) the aquifer is low yielding, and (3) multiple sources of information, including site-specific data, indicate that rate-limited mass transfer of uranium bound in the substrate is a likely limiting factor in attaining the remediation goal.
- The current ex situ treatment system is incapable of remediating Region 1 of the aquifer for the reasons stated in the preceding item and because the system is ineffective in capturing the entire volume of contamination in that region. These same factors would apply to the remainder of the aquifer where uranium contamination is present.

10.0 References

Campbell, K.M., R.K. Kukkadapu, N.P. Qafoku, A.D. Peacock, E. Lesher, K.H. Williams, J.R. Bargar, M.J. Wilkins, L. Figueroa, J. Ranville, J.A. Davis, and P.E. Long, 2012. "Geochemical, Mineralogical and Microbiological Characteristics of Sediment from a Naturally Reduced Zone in a Uranium-Contamination Aquifer," *Applied Geochemistry*, 27(8): 1499–1511.

DOE (U.S. Department of Energy), 1998a. *Monticello Mill Tailings Site, Operable Unit III—Remedial Investigation*, GJO-97-6-TAR, Grand Junction Office, Grand Junction, Colorado, September.

DOE (U.S. Department of Energy), 1998b. *Record of Decision for an Interim Remedial Action at the Monticello Mill Tailings Site, Operable Unit III—Surface Water and Ground Water, Monticello, Utah*, GJO-98-51-TAR, Grand Junction Office, Grand Junction, Colorado, August.

DOE (U.S. Department of Energy), 1999. *Final Site Observational Work Plan for the UMTRA Project Old Rifle Site,* GJO-99-88-TAR, Rev. 1, Grand Junction Office, Grand Junction, Colorado, August.

DOE (U.S. Department of Energy), 2000. *Column Leaching of Unsaturated Zone Sediments, Monticello Mill Tailings Site, Operable Unit III, Monticello, Utah,* ESL-RPT-2000-11, Grand Junction Office, Grand Junction, Colorado, September.

DOE (U.S. Department of Energy), 2001a. *Column Leaching of Saturated Zone Sediments, Monticello Mill Tailings Site—Operable Unit III, Monticello, Utah,* GJO-2001-277-TAR, Grand Junction Office, Grand Junction, Colorado, July.

DOE (U.S. Department of Energy), 2001b. *Monticello Mill Tailings Site Operable Unit III Interim Remedial Action Progress Report—July 2000−July 2001*, GJO-2001-239-TAR, Grand Junction Office, Grand Junction, Colorado, August.

DOE (U.S. Department of Energy), 2002. *Monticello Mill Tailings Site Operable Unit III Evaluation of the Permeable Reactive Treatment Wall Treatability Study*, Draft Final, GJO-2002-346-TAC, Office of Legacy Management, Grand Junction, Colorado, September.

DOE (U.S. Department of Energy), 2004a. *Monticello Mill Tailings Site Operable Unit III Remedial Investigation Addendum/Focused Feasibility Study*, GJO-2003-413-TAC, Grand Junction, Colorado, January.

DOE (U.S. Department of Energy), 2004b. *Record of Decision for the Monticello Mill Tailings (USDOE) Site, Operable Unit III, Surface Water and Ground Water, Monticello, Utah*, DOE-LM/GJ629-2004, Office of Legacy Management, Grand Junction, Colorado, May.

DOE (U.S. Department of Energy), 2005a. *Final Report 2005 Avian Wetland Surveys at the Monticello Mill Tailings Site*, DOE-LM/GJ1007-2005, Office of Legacy Management, Grand Junction, Colorado, October.

DOE (U.S. Department of Energy), 2005b. *Final Report Monticello Mill Tailings Site Macroinvertebrate Sampling for 2005*, DOE-LM/GJ1021-2005, Office of Legacy Management, Grand Junction, Colorado, September.

DOE (U.S. Department of Energy), 2005c. *Variation in Hydraulic Conductivity over Time at the Monticello Permeable Reactive Barrier*, DOE-LM/GJ803-2005, ESL-RPT-2005-01, Office of Legacy Management, Grand Junction, Colorado, February.

DOE (U.S. Department of Energy), 2006a. *2006 Avian Wetland Surveys Monticello Mill Tailings Site*, DOE-LM/GJ1293-2006, Office of Legacy Management, Grand Junction, Colorado, September.

DOE (U.S. Department of Energy), 2006b. *Hydraulic Conductivity of the Monticello Permeable Reactive Barrier—November 2005 Update*, DOE-LM/GJ1086-2006, ESL-RPT-2006-01, Office of Legacy Management, Grand Junction, Colorado, January.

DOE (U.S. Department of Energy), 2006c. *Monticello Mill Tailings Site Operable Unit III Annual Ground Water Report October 2005 through April 2006*, DOE-LM/GJ1312-2006, Office of Legacy Management, Grand Junction, Colorado, September.

DOE (U.S. Department of Energy), 2007a. *Long-Term Surveillance and Maintenance Plan for the Monticello NPL Sites*, DOE-LM/1465-2007, Office of Legacy Management, Grand Junction, Colorado, June.

DOE (U.S. Department of Energy), 2007b. *Monticello Mill Tailings Site Operable Unit III—Analysis of Uranium Trends in Ground Water*, DOE-LM/1514-2007, Office of Legacy Management, Grand Junction, Colorado, August.

DOE (U.S. Department of Energy), 2007c. *Monticello Mill Tailings Site Operable Unit III Macroinvertebrate Sampling for 2006*, PNWD-3802, prepared by A.L. Bunn, R.P. Mueller, C.A. Duberstein, and J.M. Brandenberger, Pacific Northwest National Laboratory, Richland, Washington, February.

DOE (U.S. Department of Energy), 2008a. *Avian Wetland Surveys at Monticello Mill Tailings Site, 2008*, LMS/MNT/S04801, Office of Legacy Management, Grand Junction, Colorado, November.

DOE (U.S. Department of Energy), 2008b. *Ground-Water Table and Chemical Changes in an Alluvial Aquifer During Sustained Pumping at the Monticello, Utah, Zero-Valent Iron Treatment Cells*, DOE-LM-1560-2008, ESL-RPT-2008-01, Office of Legacy Management, Grand Junction, Colorado, January.

DOE (U.S. Department of Energy), 2008c. *Monticello Mill Tailings Site Operable Unit III Macroinvertebrate Sampling for 2007*, prepared by A.L. Bunn, R.P. Mueller, J.M. Brandenberger, and D.M. Wellman, Pacific Northwest National Laboratory, Richland, Washington, prepared for the Office of Legacy Management, Grand Junction, Colorado, February.

DOE (U.S. Department of Energy), 2008d. *Monticello Mill Tailings Site Macroinvertebrate Sampling for 2008 and Summary of Biomonitoring Studies*, LMS/MNT/S04916, Office of Legacy Management, Grand Junction, Colorado, December.

DOE (U.S. Department of Energy), 2009a. *Explanation of Significant Difference for the Monticello Mill Tailings (USDOE) Site, Operable Unit III, Surface Water and Ground Water, Monticello, Utah*, January, available at http://www.lm.doe.gov/monticello/ESD_document.pdf, accessed September 26, 2012.

DOE (U.S. Department of Energy), 2009b. *Monticello Mill Tailings Site Operable Unit III Annual Groundwater Report May 2008 through April 2009*, LMS/MNT/S05378, Office of Legacy Management, Grand Junction, Colorado, October.

DOE (U.S. Department of Energy), 2009c. *Monticello Mill Tailings Site Operable Unit III Water Quality Compliance Strategy*, LMS/MNT/S05072, Office of Legacy Management, Grand Junction, Colorado, December.

DOE (U.S. Department of Energy), 2010a. *Complex Systems Science for Subsurface Fate and Transport, Report from August 2009 Workshop,* DOE/SC-0123, Office of Science, March.

DOE (U.S. Department of Energy), 2010b. *Monticello Mill Tailings Site Operable Unit III Annual Groundwater Report May 2009 through April 2010*, LMS/MNT/S06596, Office of Legacy Management, Grand Junction, Colorado, September.

DOE (U.S. Department of Energy), 2011a. *2010 Review and Evaluation of the Shiprock Remediation Strategy*, LMS/SHP/S05030, Office of Legacy Management, Grand Junction, Colorado, January.

DOE (U.S. Department of Energy), 2011b. *Monticello Mill Tailings Site Operable Unit III Biomonitoring Program Status and Analytical Update*, LMS/MNT/S07361, Office of Legacy Management, Grand Junction, Colorado, March.

DOE (U.S. Department of Energy), 2011c. *Natural Contamination from the Mancos Shale*, MLS/S07480, ESL-RPT-2011-01, Office of Legacy Management, Grand Junction, Colorado, April.

DOE (U.S. Department of Energy), 2011d. *Proposed Plan for the Remediation of 200-FF-1, 200-FF-2 and 200-FF-5 Operable Units,* DOE/RL-2011-47, Draft A.

DOE (U.S. Department of Energy), 2011e. *Review of the Natural Flushing Groundwater Remedy at the Old Rifle Legacy Management Site, Rifle, Colorado*, LMS/RFO/S07263, Office of Legacy Management, Grand Junction, Colorado July.

DOE (U.S. Department of Energy), 2011f. *Third Five-Year Review Report for the Fernald Preserve*, LMS/FER/S07045, Office of Legacy Management, Grand Junction, Colorado, September.

DOE (U.S. Department of Energy), 2012a. *Annual Performance Report April 2010 Through March 2011 for the Shiprock, New Mexico, Site*, LMS/SHP/S07834, Office of Legacy Management, Grand Junction, Colorado, January.

DOE (U.S. Department of Energy), 2012b. *Fernald Preserve 2011 Site Environmental Report*, LMS/FER/S08629, Office of Legacy Management, Grand Junction, Colorado, May.

DOE (U.S. Department of Energy), 2012c. *Fourth Five-Year Review Report for Monticello Mill Tailings (USDOE) Site, San Juan County, Monticello, Utah*, LMS/MNT/S08399, Office of Legacy Management, Grand Junction, Colorado, June.

DOE (U.S. Department of Energy), 2012d. *Groundwater Compliance Action Plan for the Old Rifle, Colorado, UMTRCA Title I Processing Site,* Draft, LMS/RFO/S07857, Office of Legacy Management, Grand Junction, Colorado, March.

DOE (U.S. Department of Energy), 2012e. *Hanford Site Groundwater Monitoring for 2011,* Rev.0, DOE/RL-2011-118, Richland Operations Office, Richland, Washington, August.

DOE (U.S. Department of Energy), 2012f. *Hanford Site Third CERCLA Five-Year Review Report*, Rev. 1, DOE/RL-2011-56, Richland Operations Office, Richland Operations Office, Richland, Washington, March.

DOE (U.S. Department of Energy), 2012g. *Results of 2012 Biomonitoring and Ecological Studies at the Monticello Mill Tailings Site, Monticello, Utah*, LMS/MNT/S09326, Office of Legacy Management, Grand Junction, Colorado, August.

DOE (U.S. Department of Energy), 2012h. *Sampling and Analysis Plan for Biomonitoring at Monticello, Utah: 2012 Field Season*, LMS/MNT/S08547, Office of Legacy Management, Grand Junction, Colorado, March.

DOE (U.S. Department of Energy), 2012i. *Shiprock, New Mexico, Disposal Cell Internal Water Balance and Cell Conditions,* LMS/SHP/S08254, Office of Legacy Management, Grand Junction, Colorado, February.

EPA (U.S. Environmental Protection Agency), 1993. *Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration, Interim Final*, Directive 9234.2-25, Office of Solid Waste and Emergency Response, Washington, DC, September.

EPA (U.S. Environmental Protection Agency), 1994. *Methods for Monitoring Pump-and-Treat Performance*, EPA/600/R-94/123, Office of Research and Development, Washington, DC, June.

EPA (U.S. Environmental Protection Agency), 1996. *Presumptive Response Strategy and Ex-Situ Treatment Technologies for Contaminated Ground Water at CERCLA Sites, Final Guidance,* Directive 9283.1-12, EPA 540/R-96/023, PB96-963508, Office of Solid Waste and Emergency Response, Washington, DC, October.

EPA (U.S. Environmental Protection Agency), 1999. *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites*, Directive 9200.4-17P, Office of Solid Waste and Emergency Response, Washington, DC, April 21.

EPA (U.S. Environmental Protection Agency), 2010. *Monitored Natural Attenuation of Inorganic Contaminants in Ground Water,* Volume 3*, Assessment for Radionuclides Including Tritium, Radon, Strontium, Technetium, Uranium, Iodine, Radium, Thorium, Cesium, and Plutonium-Americium*, EPA/600/R-10/093, National Risk Management Research Laboratory, September.

EPA (U.S. Environmental Protection Agency), 2011. *An Approach for Evaluating the Progress of Natural Attenuation in Groundwater,* EPA 600/R-11/204, Office of Research and Development, National Risk Management Laboratory, Ada, Oklahoma, December.

EPA (U.S. Environmental Protection Agency), 2012. Concurrence letter from Vera Moritz, Federal Facilities Program, Office of Ecosystems Protection and Remediation, U.S. Environmental Protection Agency, to Jalena Dayvault, Monticello Site Manager, U.S. Department of Energy Office of Legacy Management, October 10.

Fox, P.M., J.A. Davis, M.B. Hay, M.E. Conrad, K.M. Campbell, K.H. Williams, and P.E. Long, 2012. "Rate-Limited U(VI) Desorption During a Small-Scale Tracer Test in a Heterogeneous Uranium-Contaminated Aquifer," *Water Resources Research*, 48, W05512, doi:10.1029/2011WR011472.

Freeze, R.A., and J.A. Cherry, 1979. *Groundwater*, Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

Gilbert, R.O., 1987. S*tatistical Methods for Environmental Pollution Monitoring*, Van Nostrand Reinhold, New York.

ITRC (Interstate Technology & Regulatory Council), 2010. *A Decision Framework for Applying Monitored Natural Attenuation Processes to Metals and Radionuclides in Groundwater*, AMPR-1, December.

ITRC (Interstate Technology & Regulatory Council), 2012. *Using Remediation Risk Management to Address Groundwater Cleanup Challenges at Complex Sites,* Technology Overview, RRM-2, January.

Weres, O., H.R. Bowman, A. Goldstein, E.C. Smith, and L. Tsao, 1990. "The Effect of Nitrate and Organic Matter upon Mobility of Selenium in Ground Water and in a Water Treatment Process," *Water, Air, and Soil Pollution*, 49:251–272, Kluwer Academic Publishers, Netherlands.

Williams, K.H., P.E. Long, J.A. Davis, M.J. Wilkins, A.L. N'Guessan, L. Yang, D. Newcomer, F.A. Spane, L.J. Kerkof, L. McGuinness, R. Dayvault, and D.R. Lovley, 2010. "Acetate Availability and Its Influence on Sustainable Bioremediation of Uranium-Contaminated Groundwater," *Geomicrobiology Journal*, special issue on Geomicrobiology of Radionuclides, Vol. 10.

Williams, K.H., P.E. Long, J.A. Davis, M.J. Wilkins, A.L. N'Guessan, C.I. Steefel, L. Yang, D. Newcomer, F.A. Spane, L.J. Kerkhof, L. McGuinness, R. Dayvault, and D.R. Lovley, 2011. "Acetate Availability and its Influence on Sustainable Bioremediation of Uranium-Contaminated Groundwater," *Geomicrobiology Journal*, 28(5-6 SPP ISS), 519–539.

UDW (Utah Division of Water Quality), 2012. http://www.waterquality.utah.gov/watersheds/lakes/LLOYDS.pdf, accessed 18 December 2012.

WNI (Western Nuclear Inc.), 1999. *Site Ground Water Characterization and Evaluation, Split Rock Mill Site, Jeffrey City, Wyoming,* prepared by Shepherd Miller, Inc.

WRCC (Western Regional Climate Center), 2012. http://www.wrcc.dri.edu/, accessed 18 December 2012.

Wright, W.G., 1999. "Oxidation and Mobilization of Selenium by Nitrate in Irrigation Drainage," *Journal of Environmental Quality*, 28(4):256−264.

Wright, W.G., and D.L. Butler, 1993. "Distribution and Mobilization of Dissolved Selenium in Ground Water of the Irrigated Grand and Uncompahgre Valleys, Western Colorado," in Allen, R.G., and C.M.U. Neale (Eds.), *Management of Irrigation and Drainage Systems—Integrated Perspectives*, American Society of Civil Engineers, New York, 770−777.

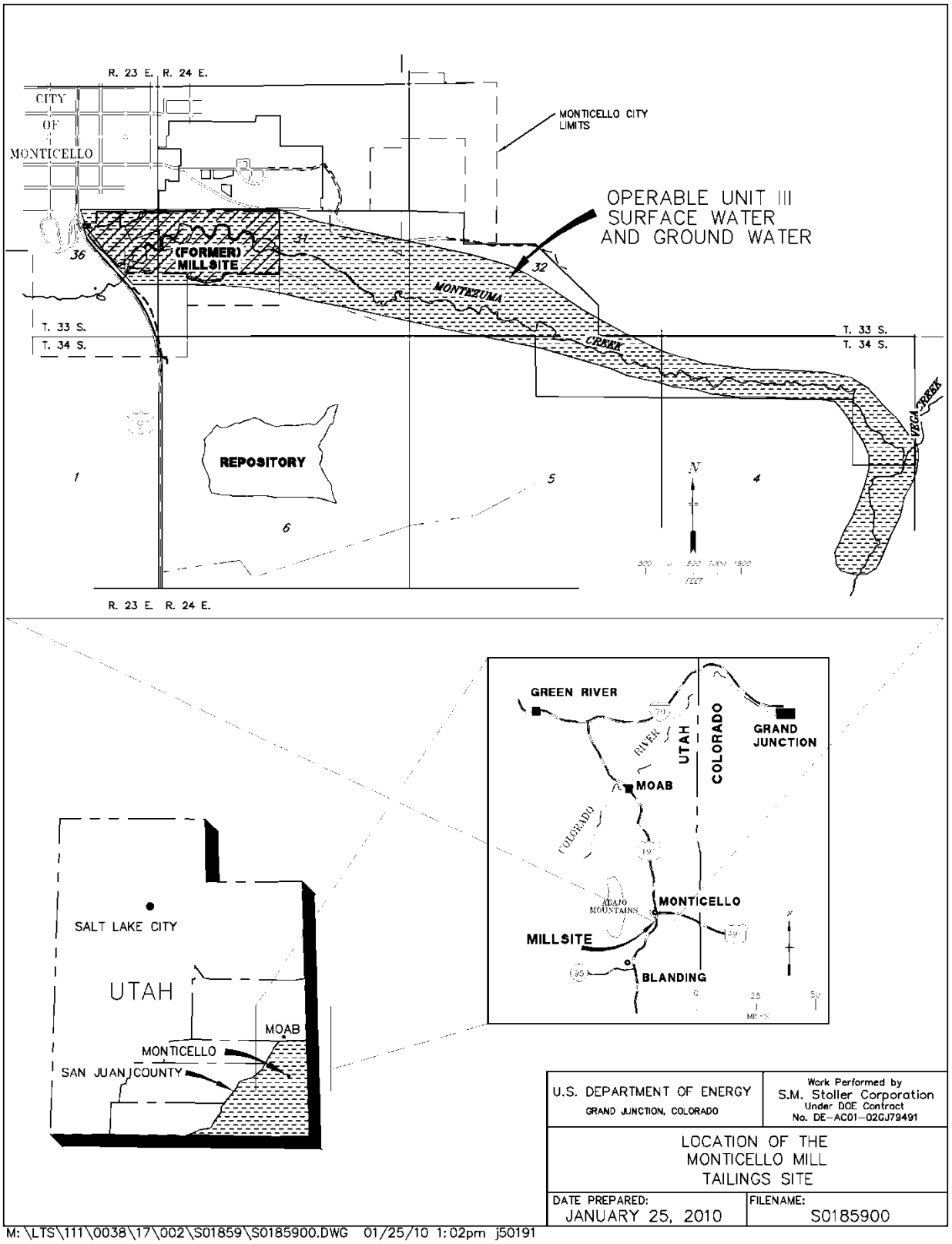

Figure 1. Location of the Monticello Mill Tailings Site

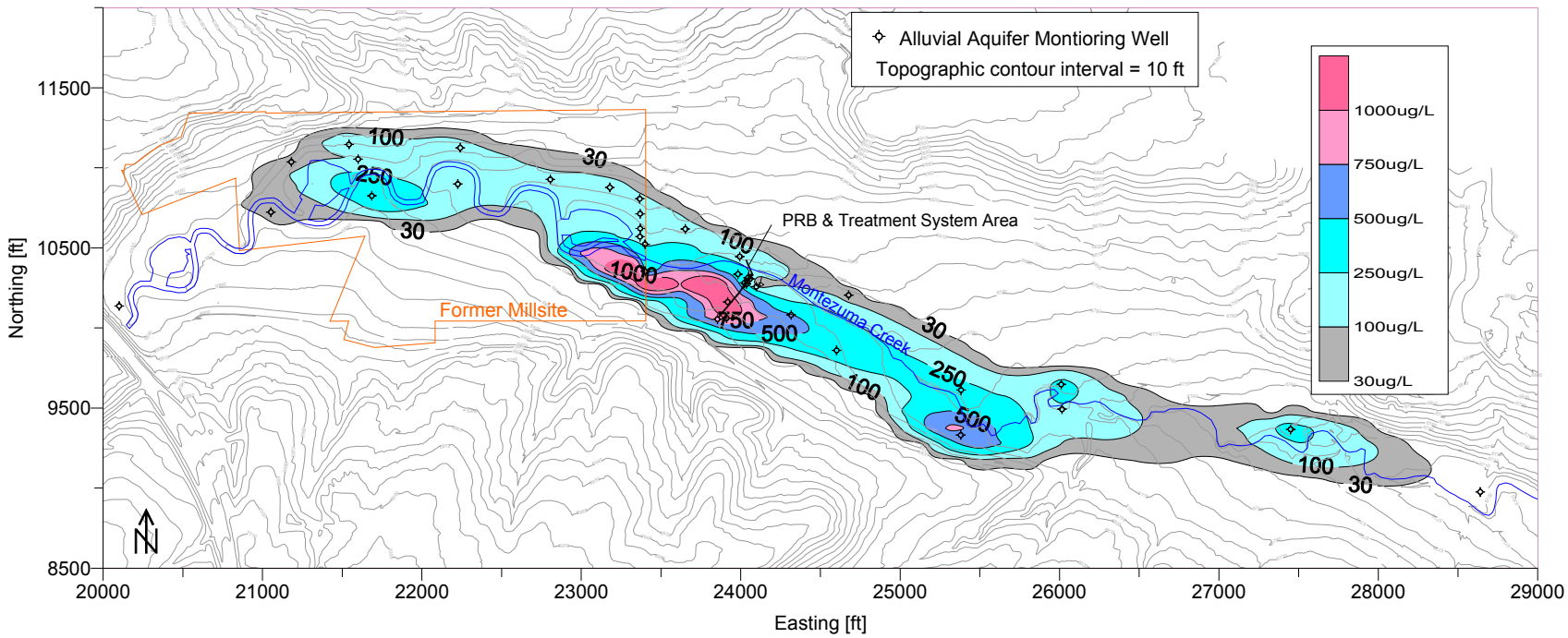

Figure 2. Uranium Groundwater Plume—Current Distribution

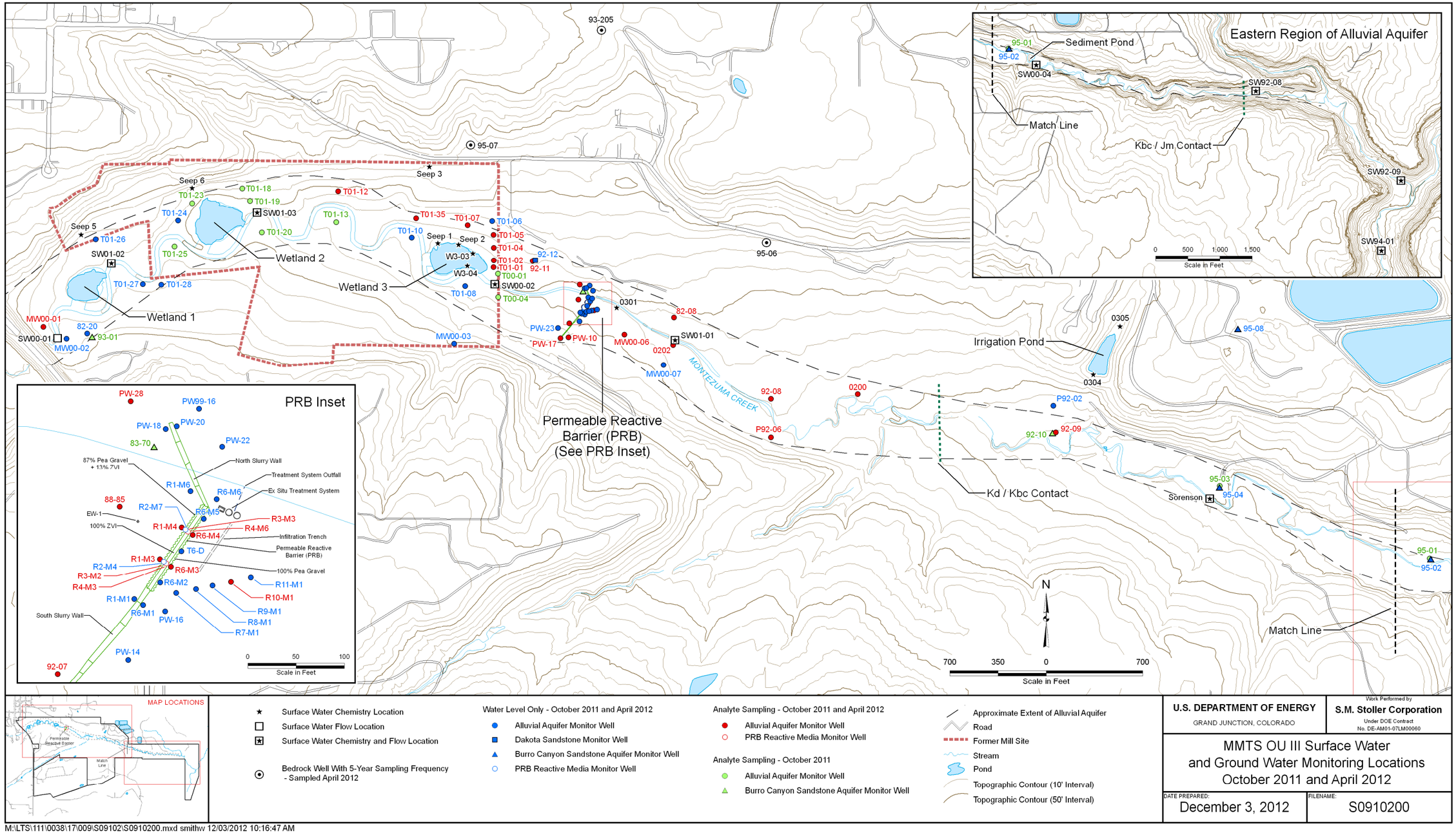

Figure 3. Reference Map for OU III Water Quality Monitoring Locations

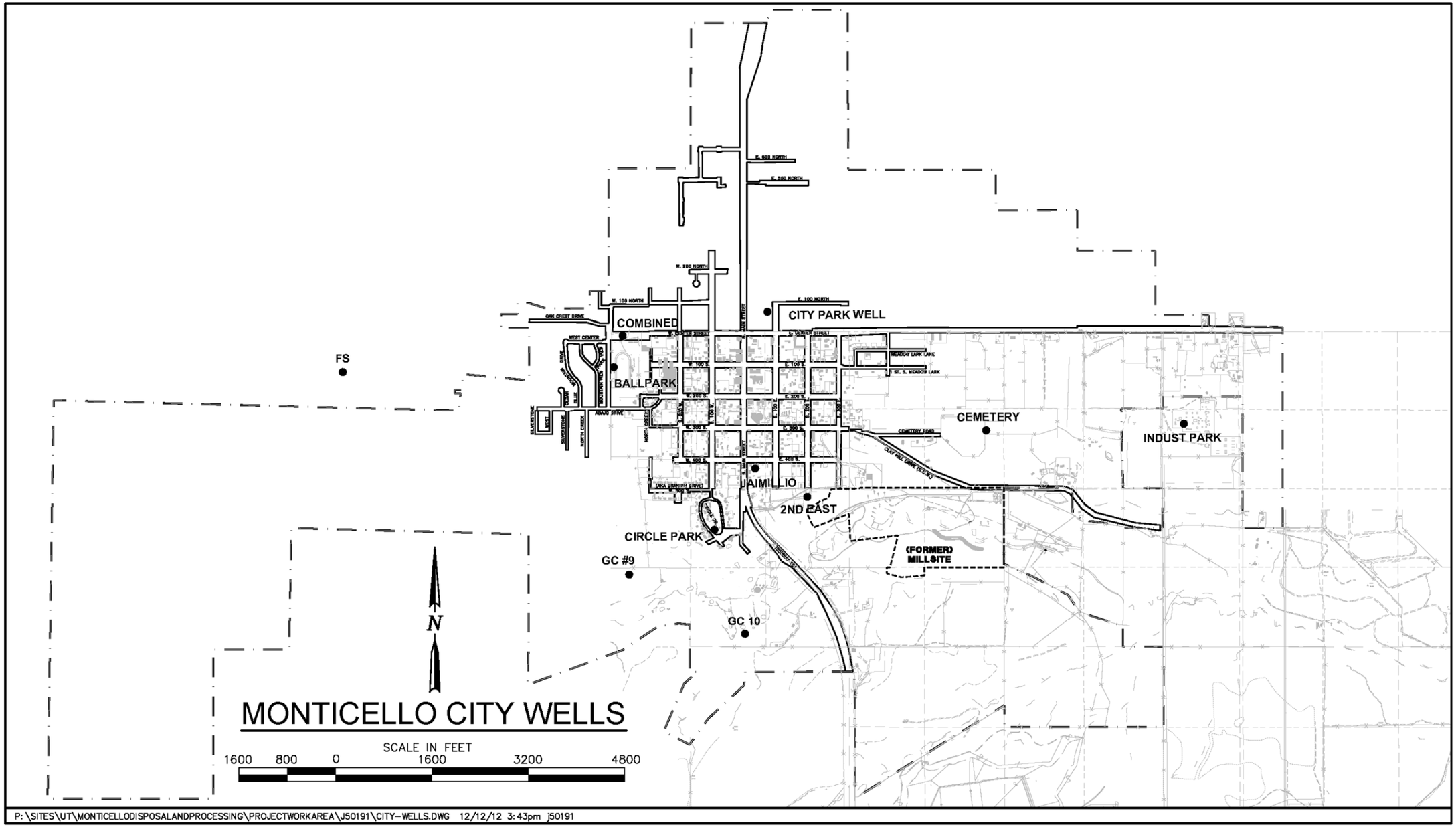

Figure 4. Monticello City Wells

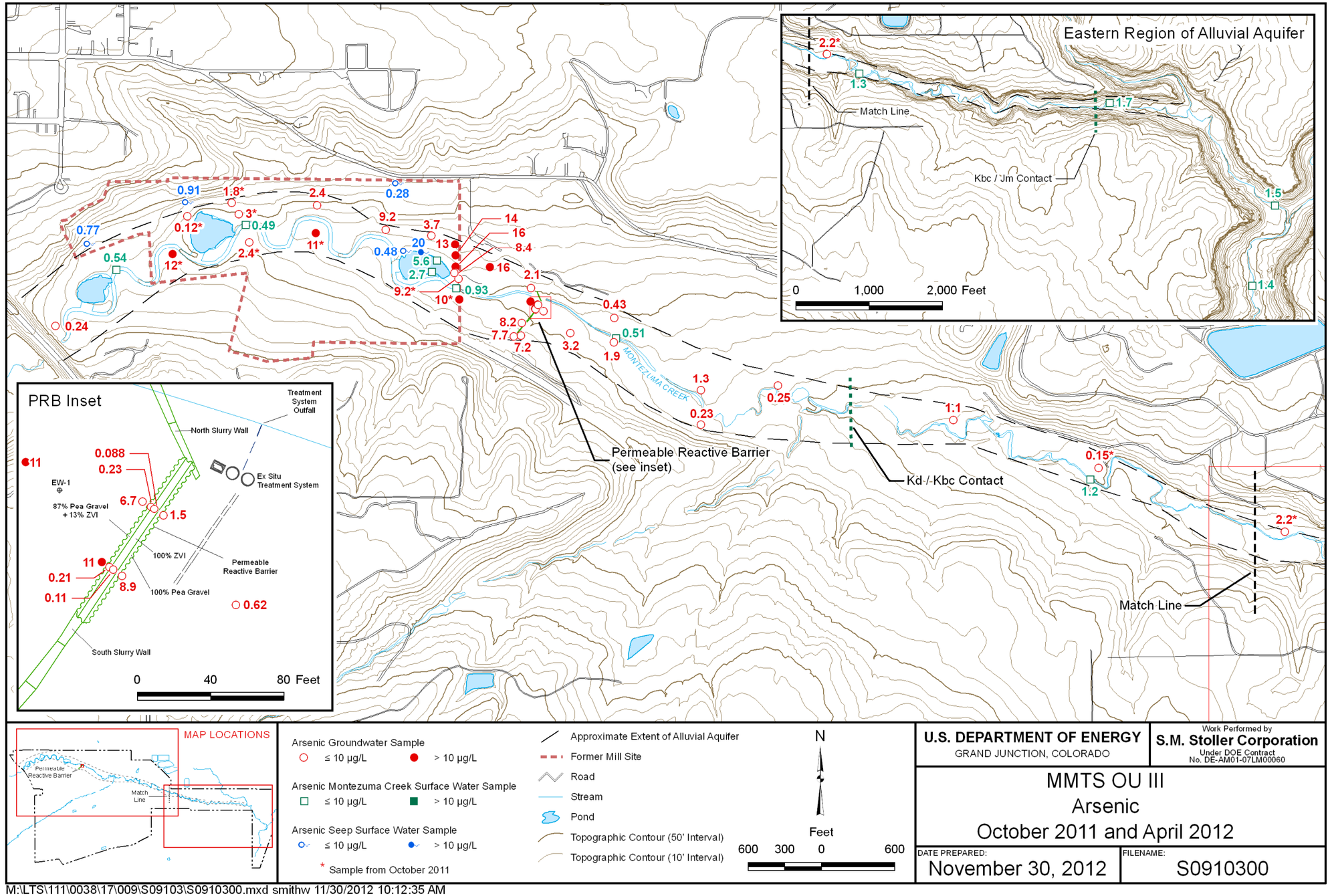

Figure 5. Distribution of Arsenic in Surface Water and Alluvial Aquifer Groundwater, April 2012

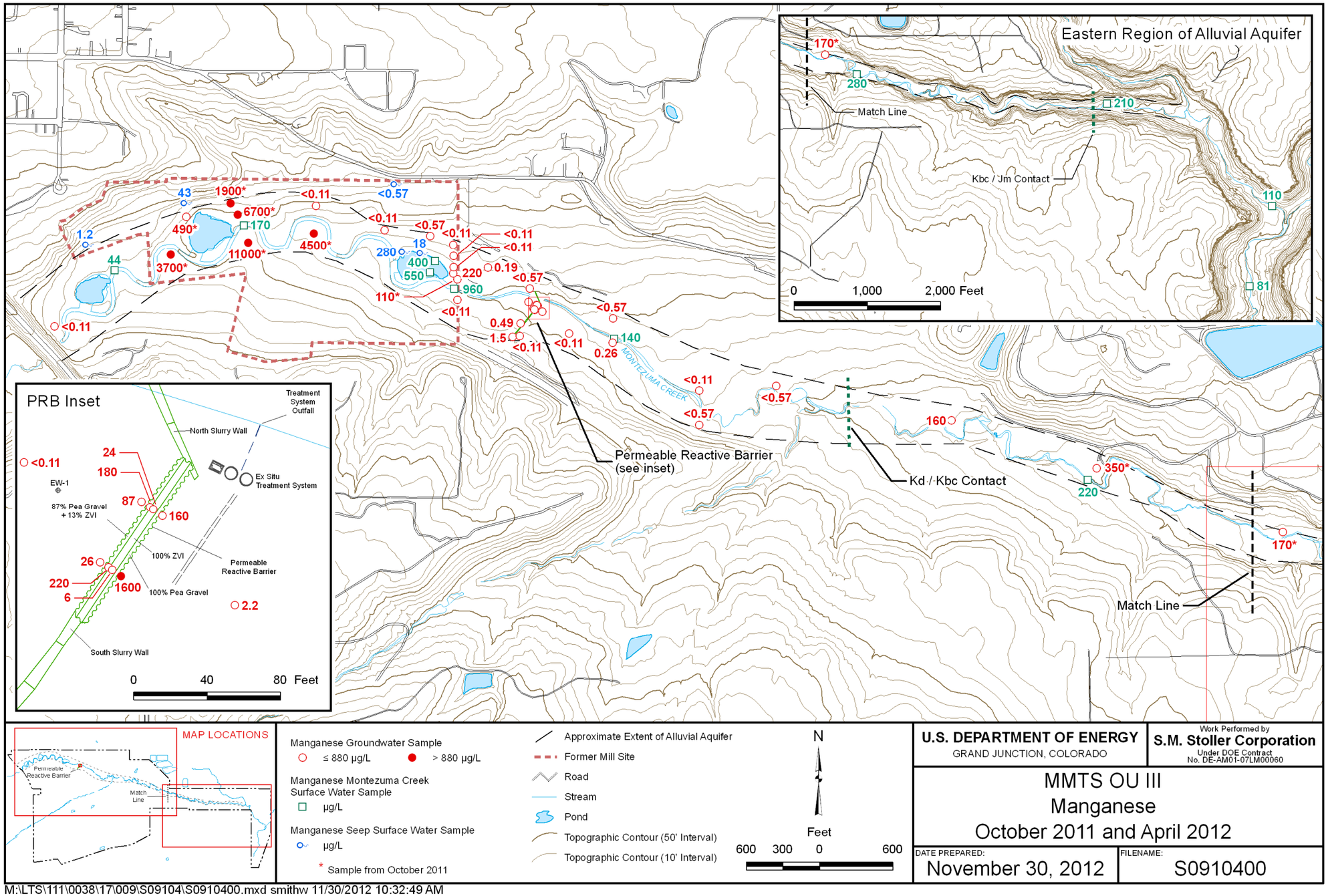

Figure 6. Distribution of Manganese in Surface Water and Alluvial Aquifer Groundwater, April 2012

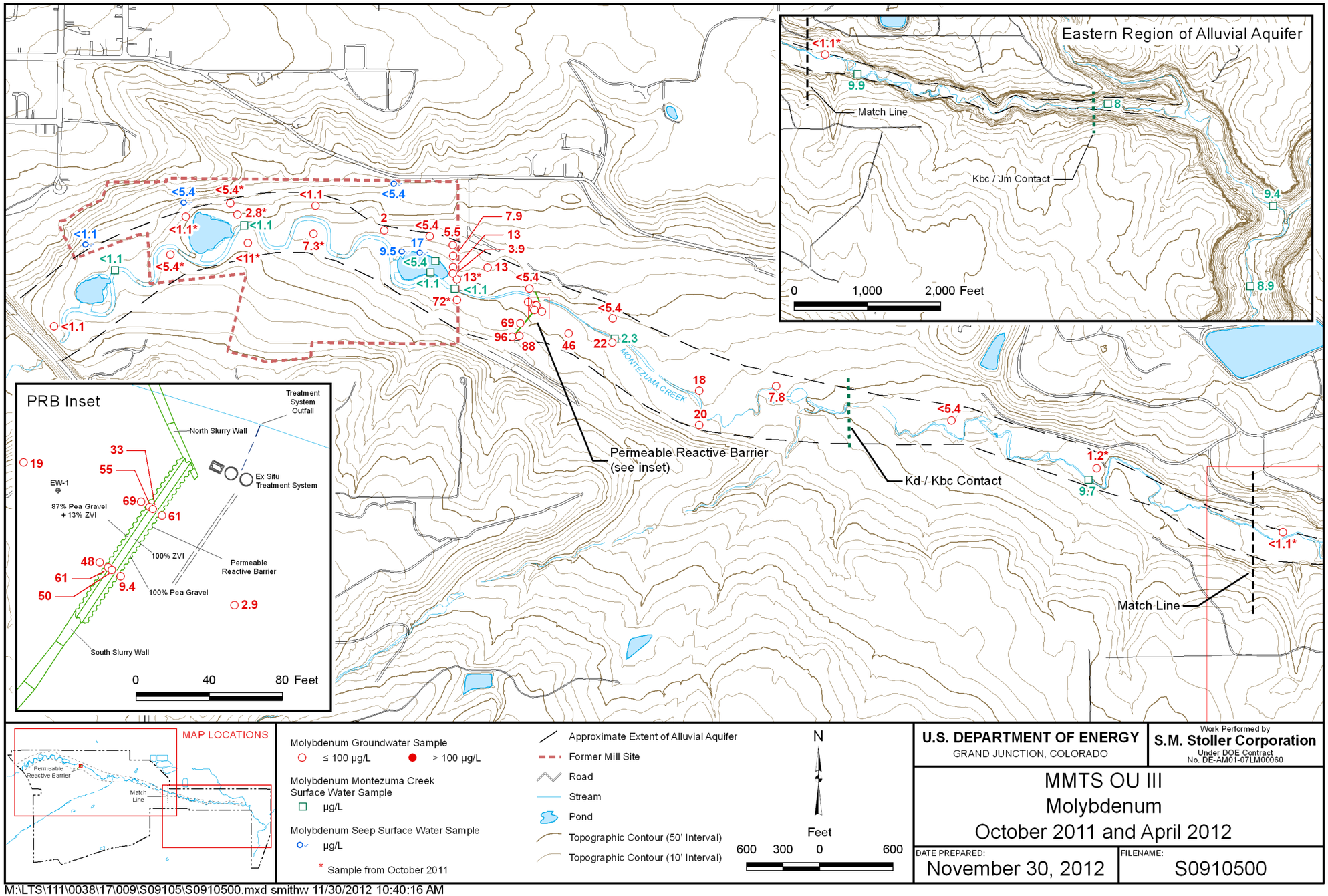

Figure 7. Distribution of Molybdenum in Surface Water and Alluvial Aquifer Groundwater, April 2012

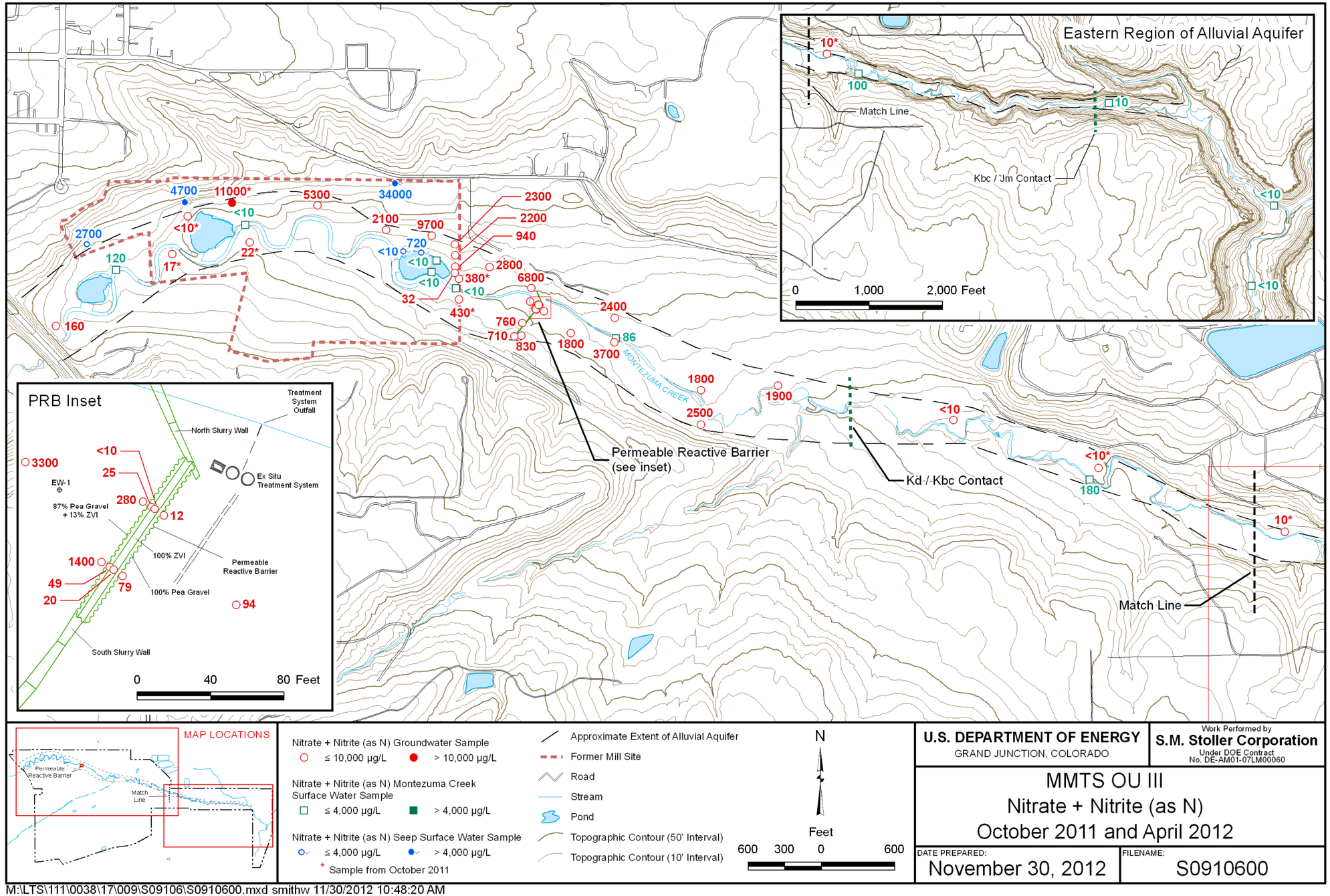

Figure 8. Distribution of Nitrate (as Nitrogen) in Surface Water and Alluvial Aquifer Groundwater, April 2012

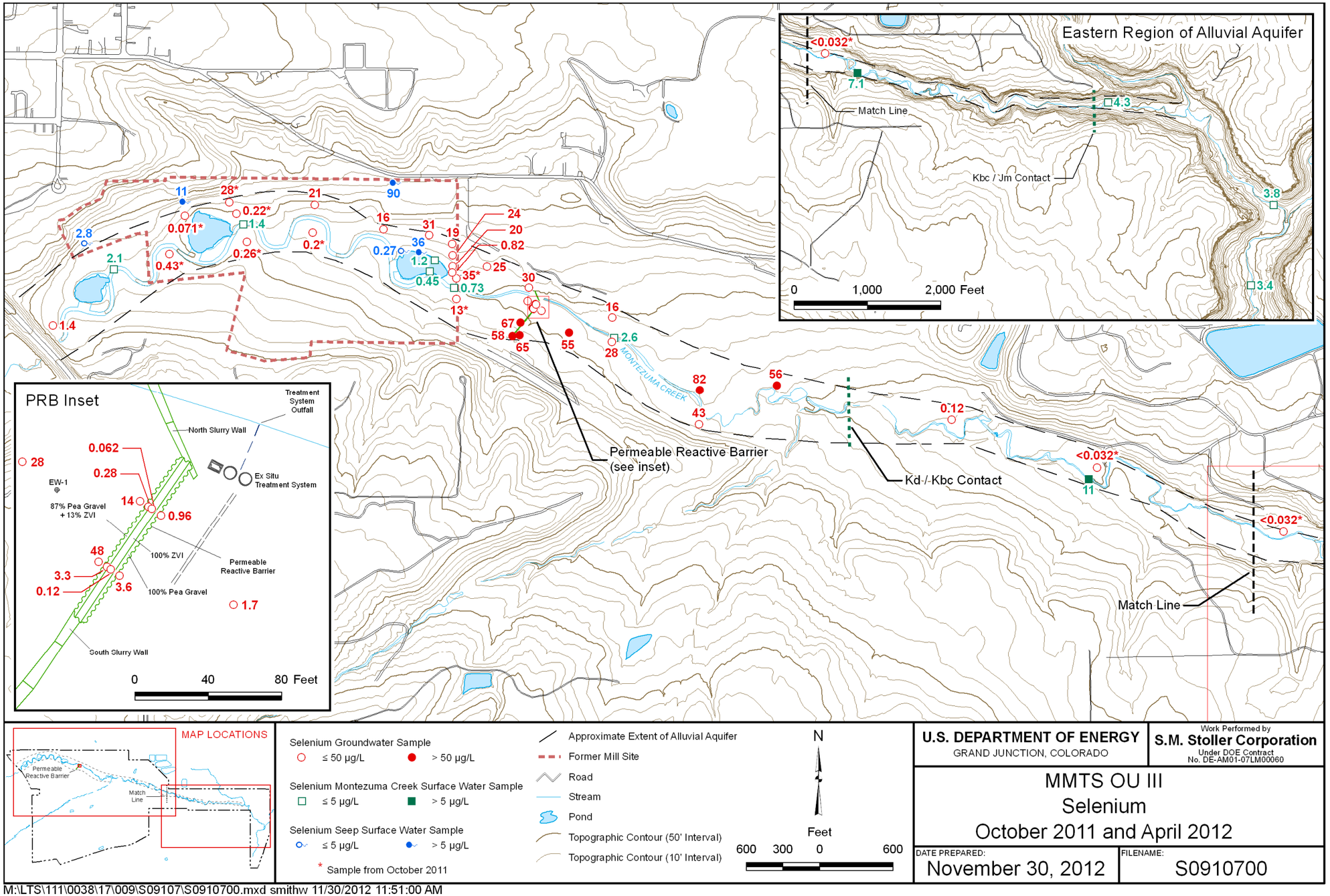

Figure 9. Distribution of Selenium in Surface Water and Alluvial Aquifer Groundwater, April 2012

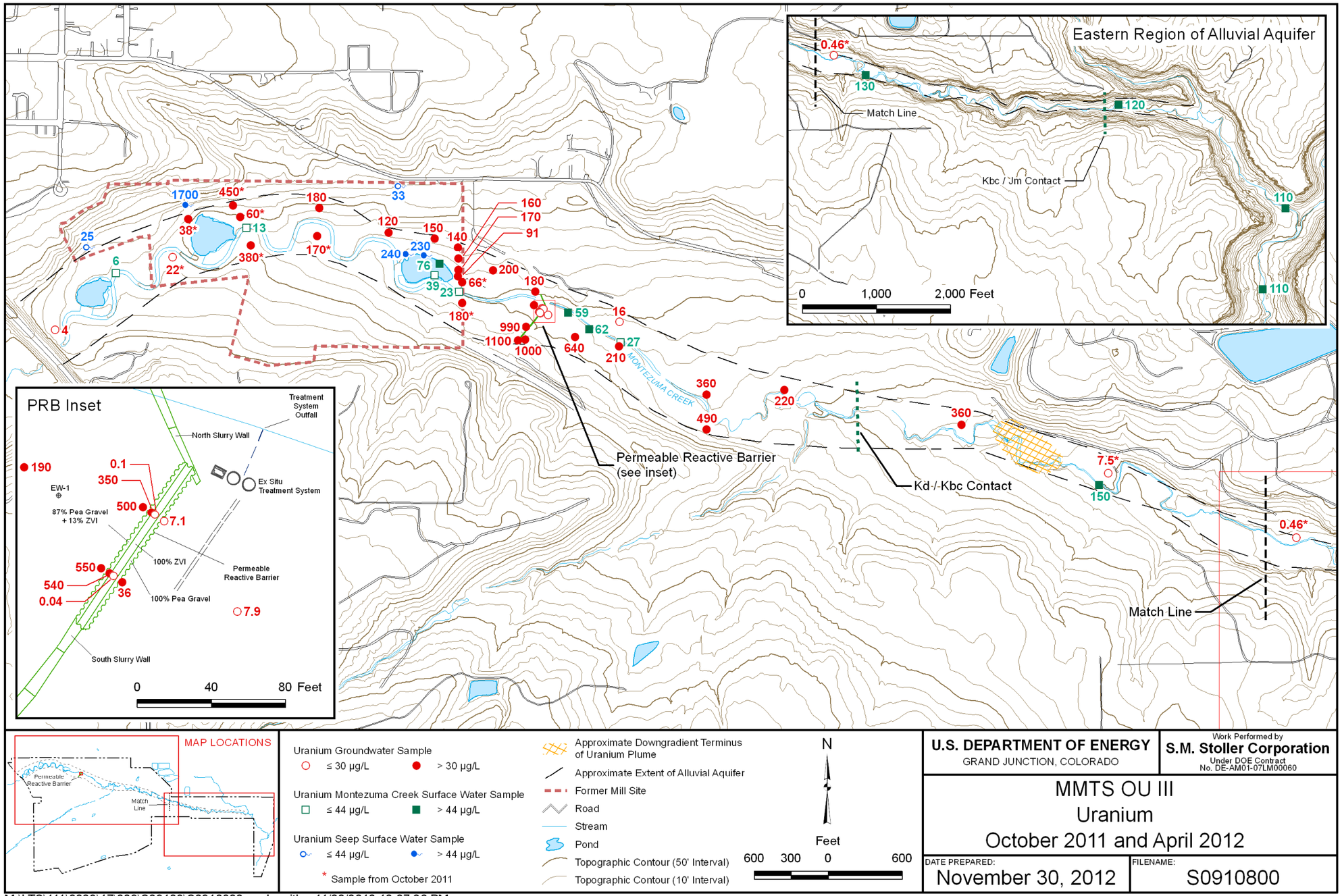

Figure 10. Distribution of Uranium in Surface Water and Alluvial Aquifer Groundwater, April 2012

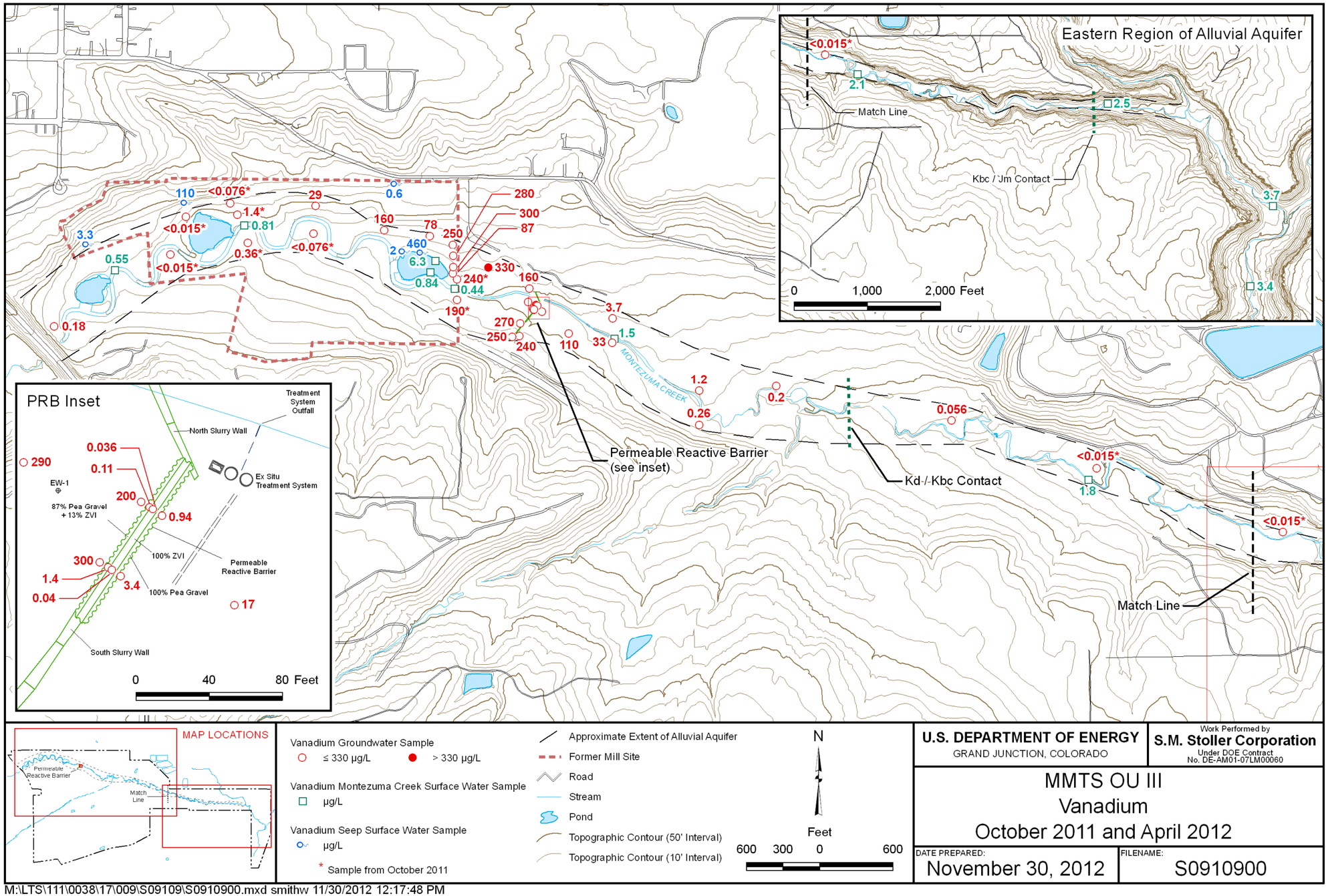

Figure 11. Distribution of Vanadium in Surface Water and Alluvial Aquifer Groundwater, April 2012

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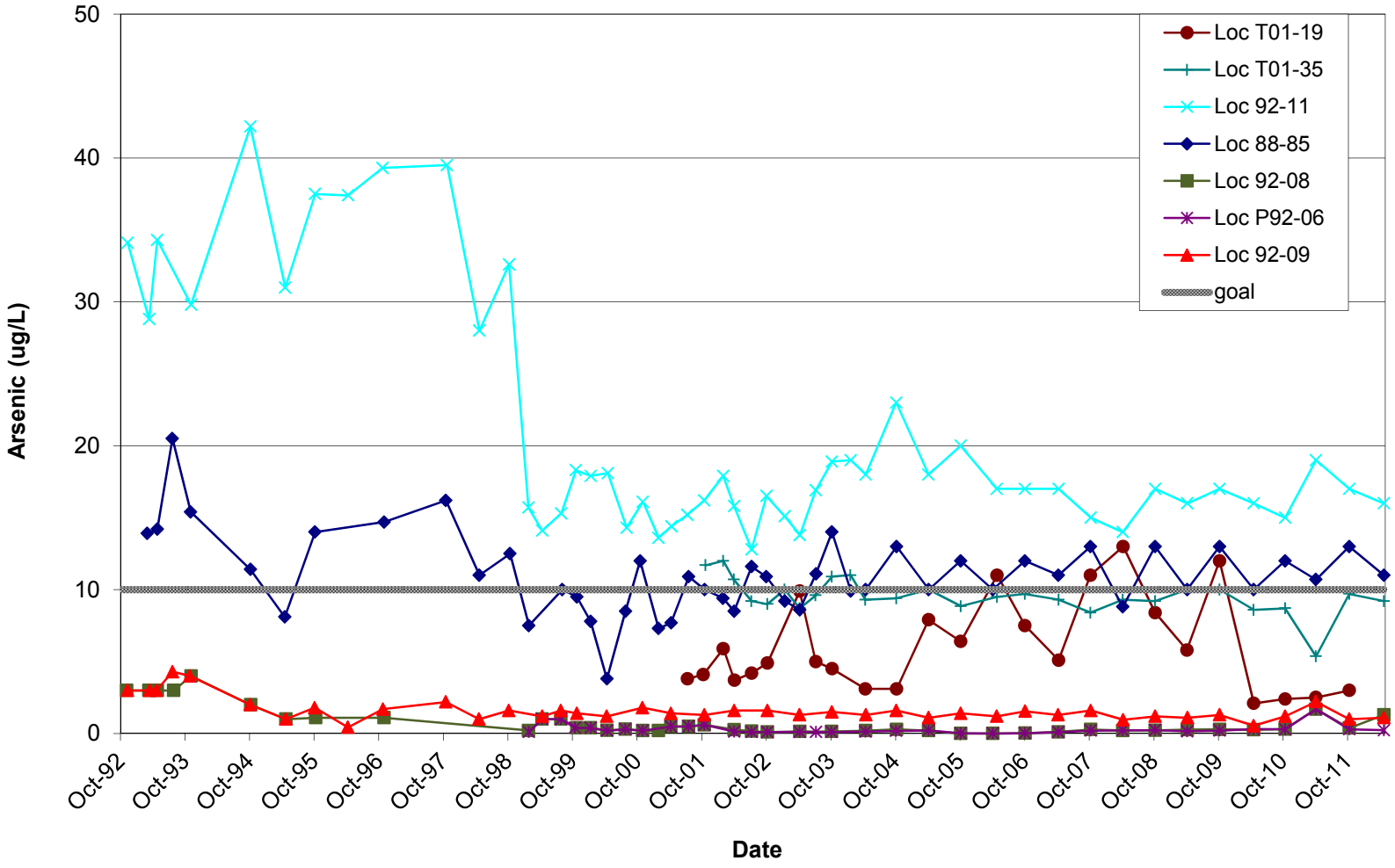

Figure 12. Arsenic Concentration over Time at Selected Alluvial Aquifer Monitoring Wells

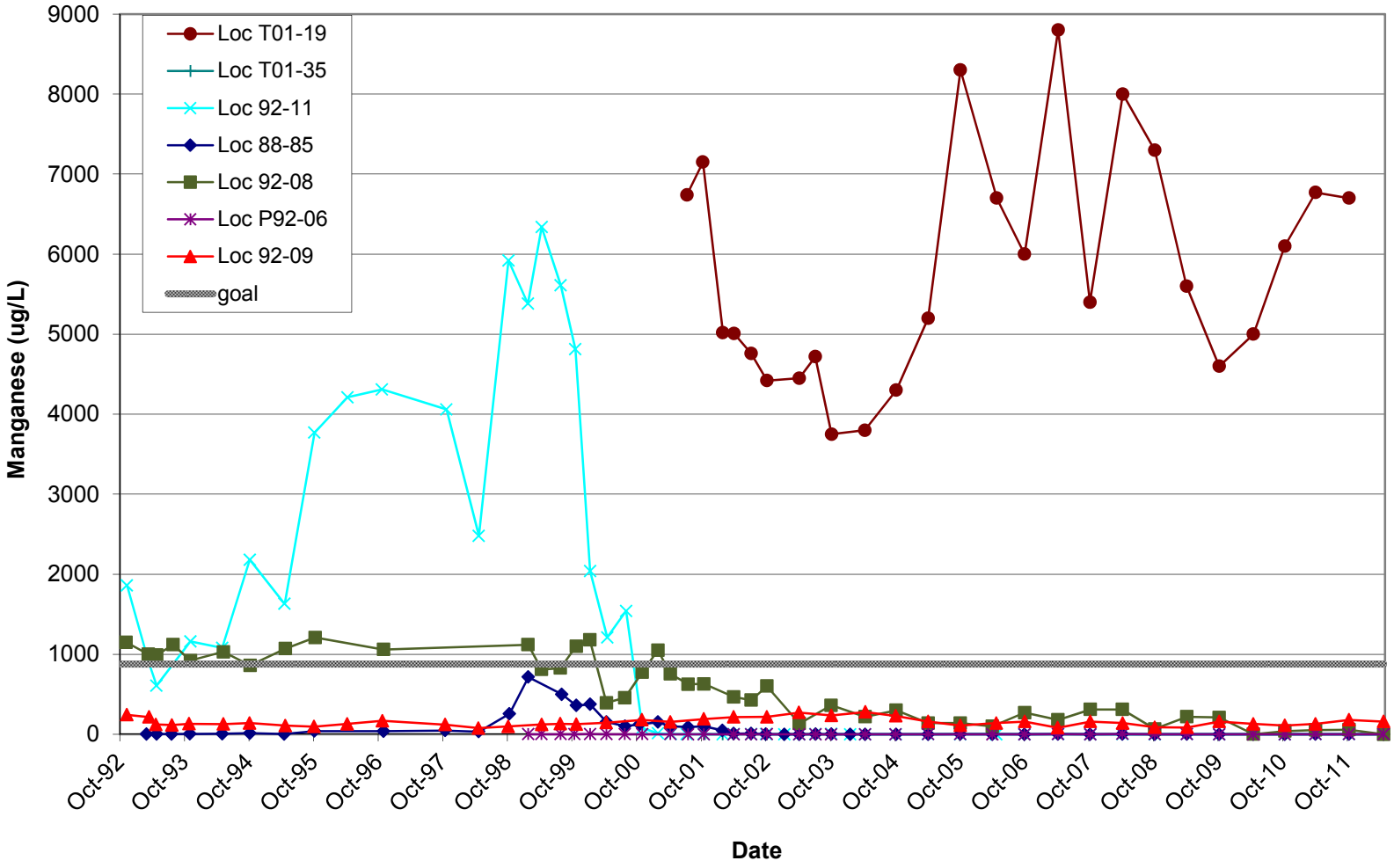

Figure 13. Manganese Concentration over Time at Selected Alluvial Aquifer Monitoring Wells

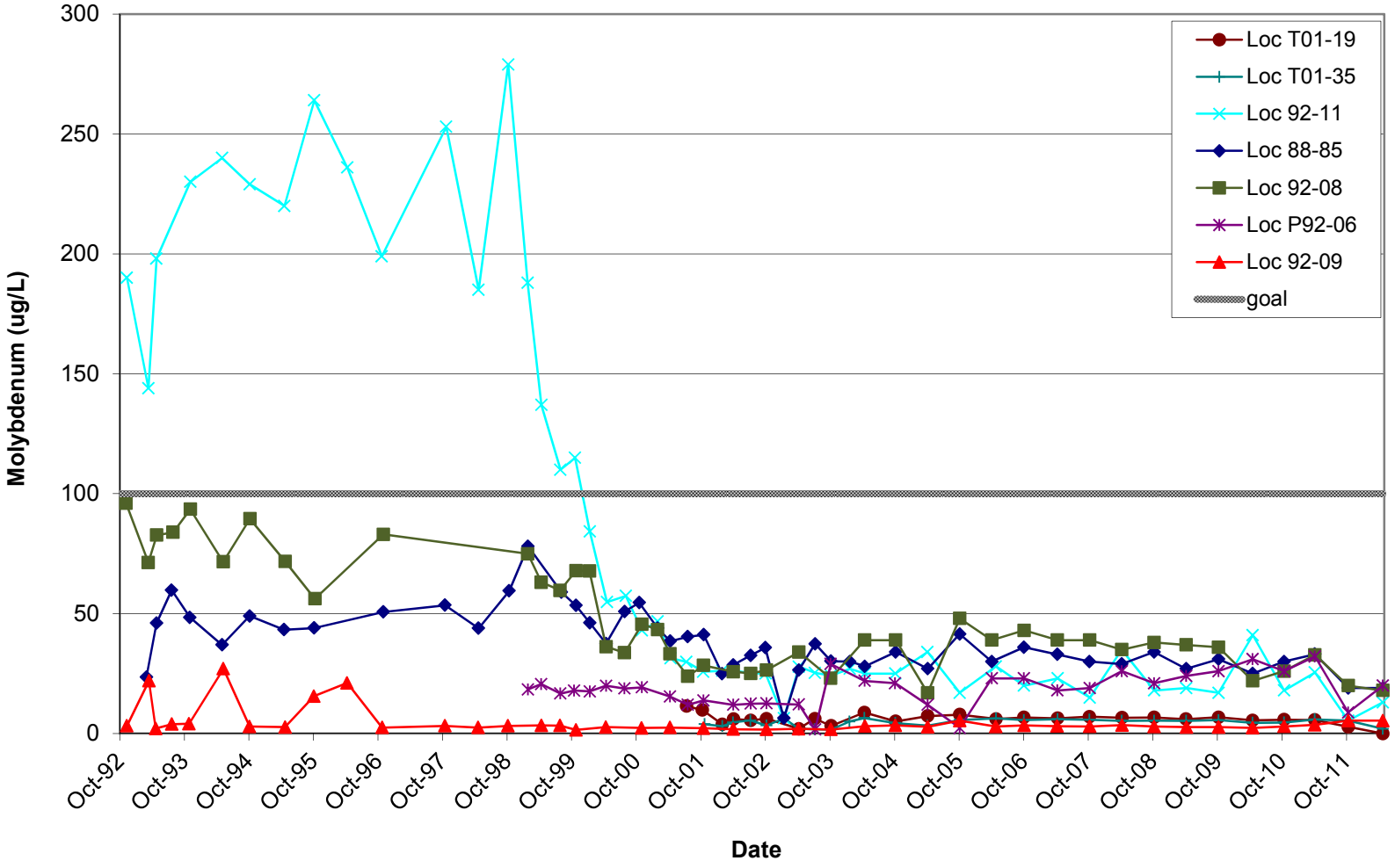

Figure 14. Molybdenum Concentration over Time at Selected Alluvial Aquifer Monitoring Wells

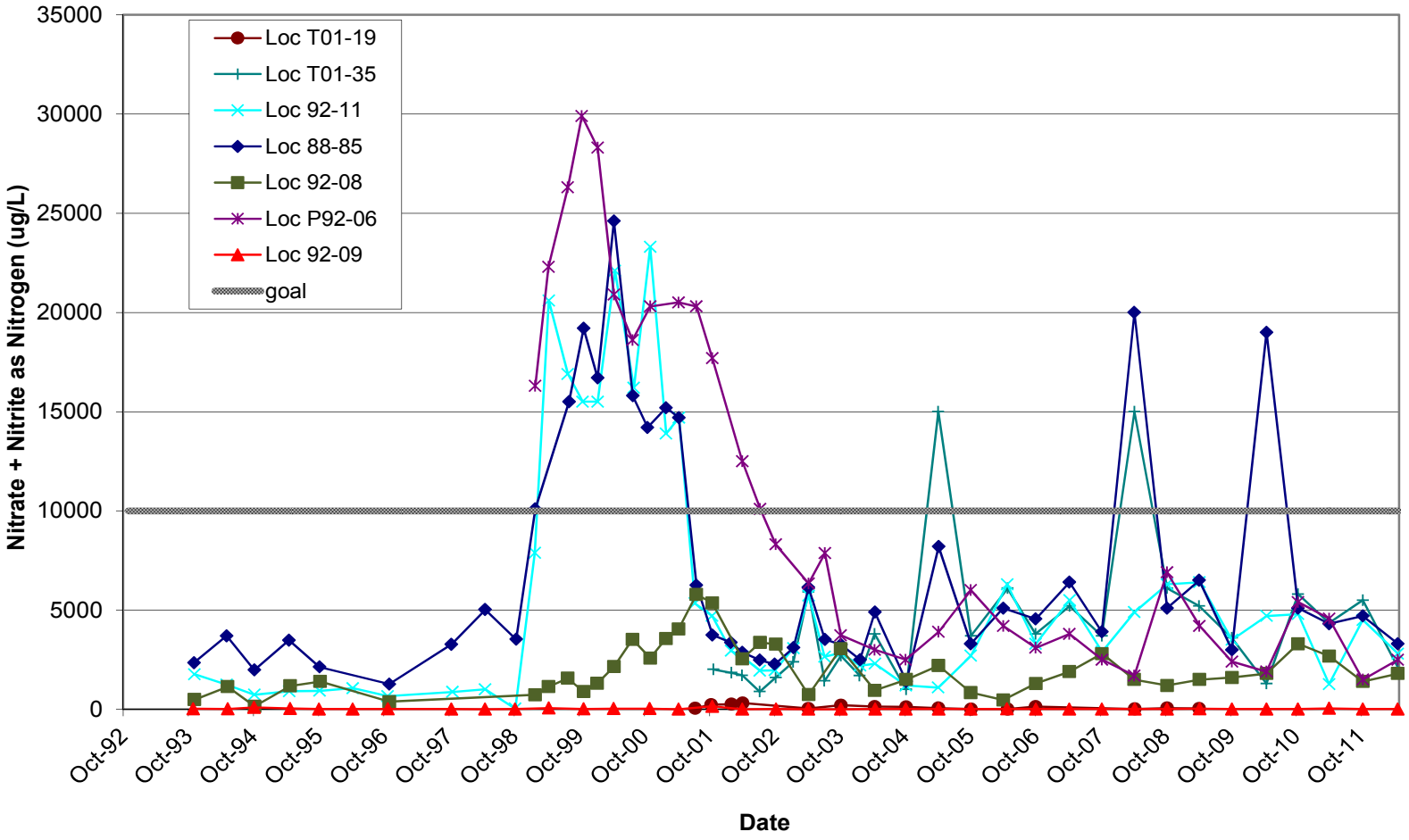

Figure 15. Nitrate (as Nitrogen) Concentration over Time at Selected Alluvial Aquifer Monitoring Wells

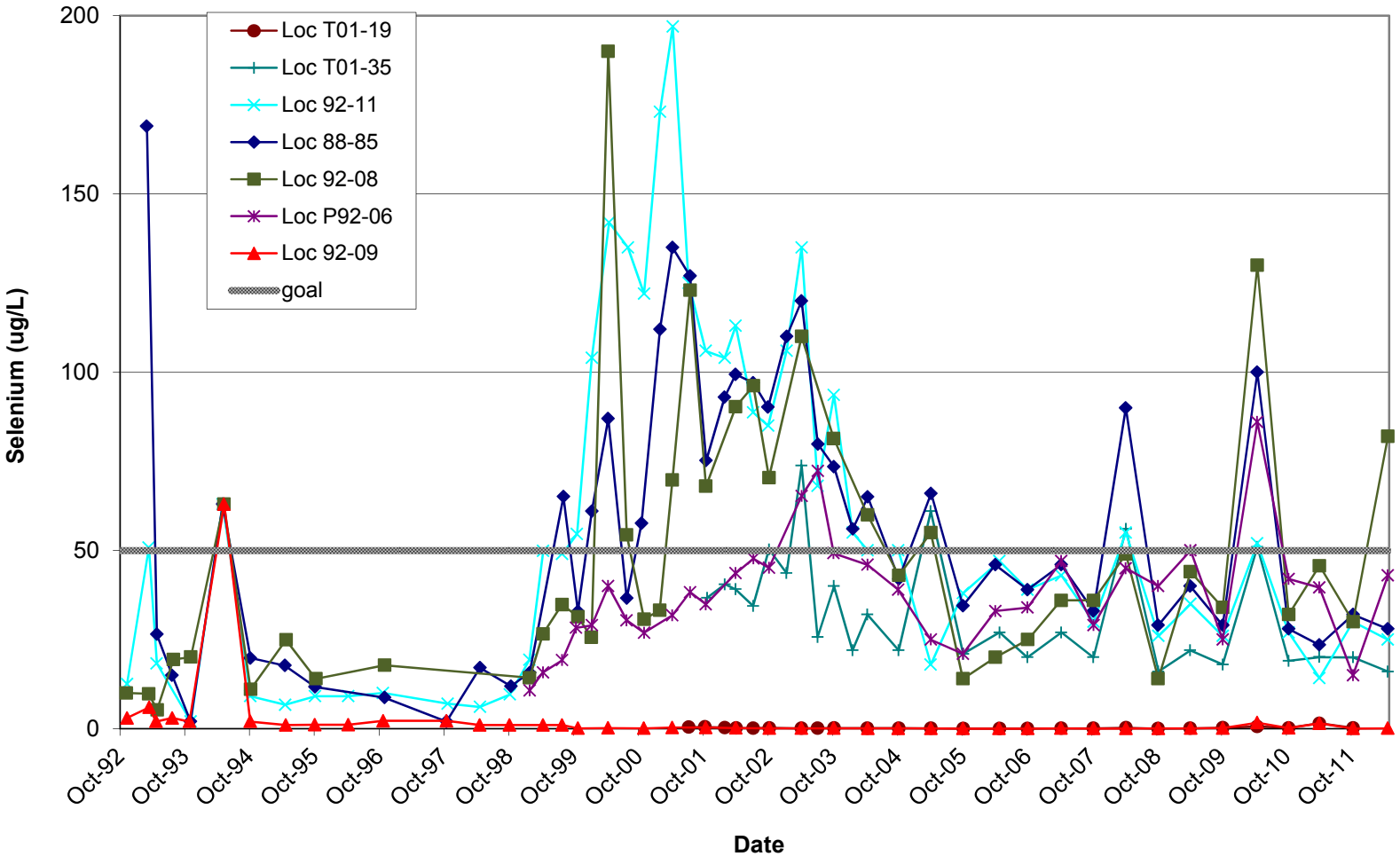

Figure 16. Selenium Concentration over Time at Selected Alluvial Aquifer Monitoring Wells

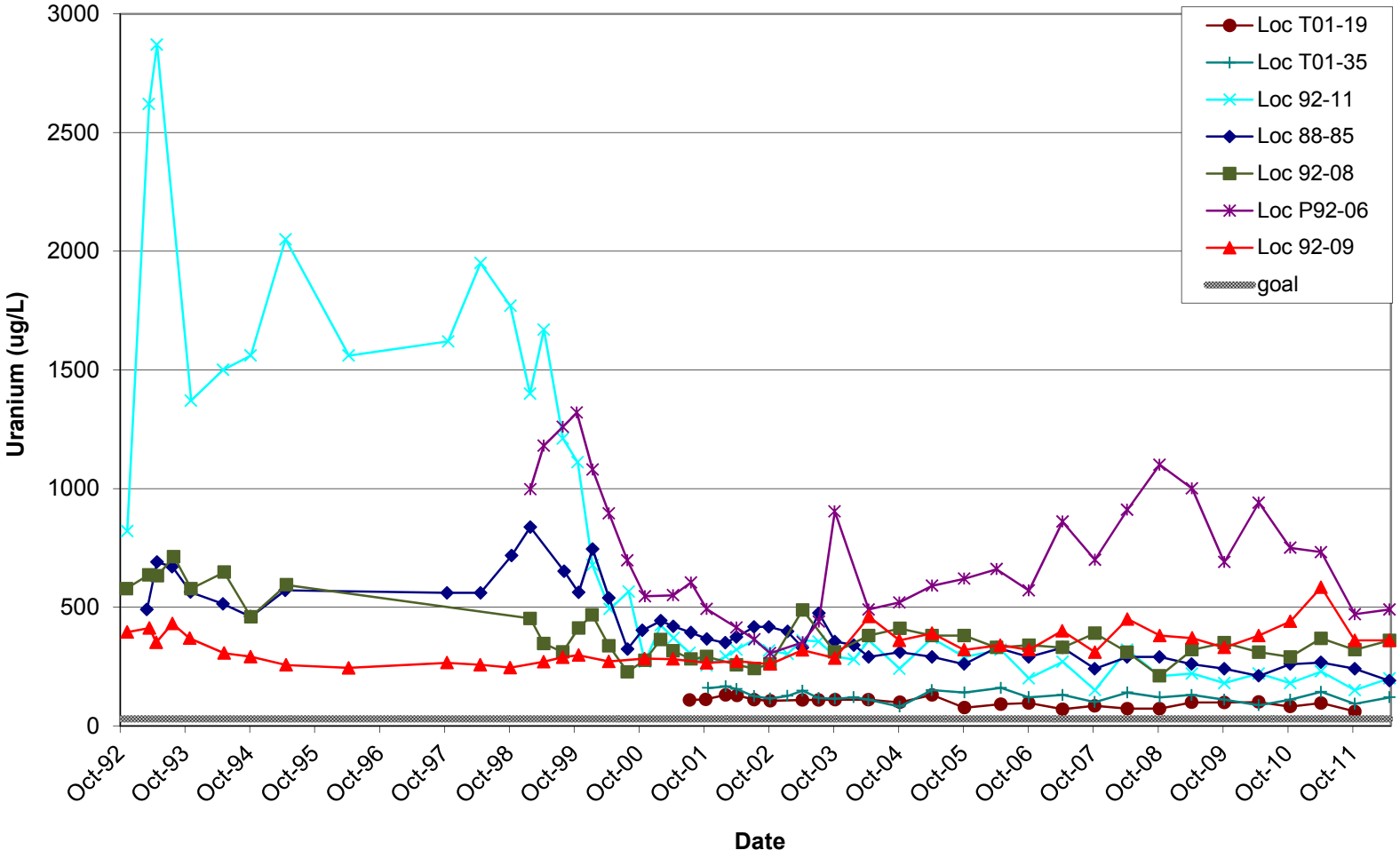

Figure 17. Uranium Concentration over Time at Selected Alluvial Aquifer Monitoring Wells

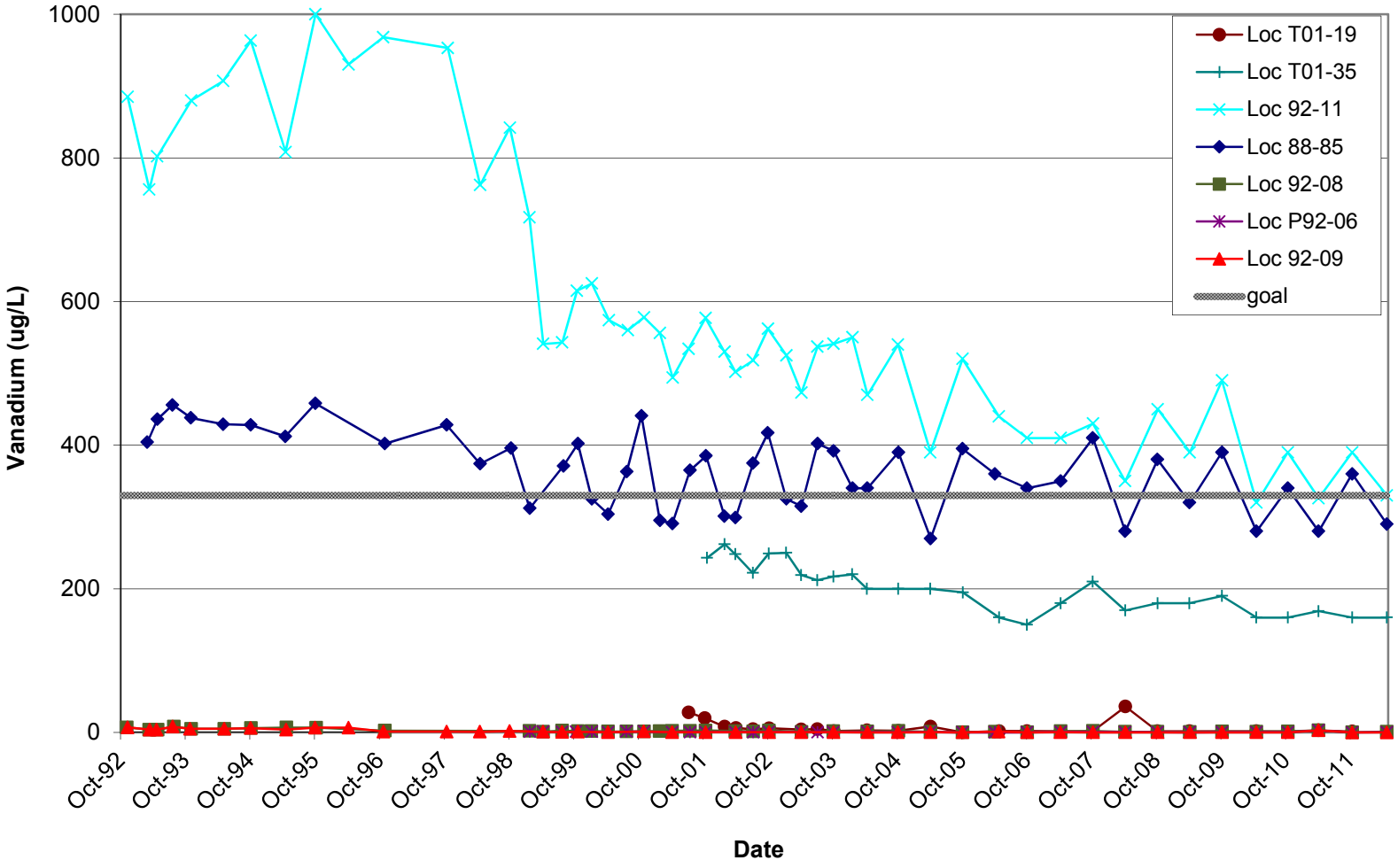

Figure 18. Vanadium Concentration over Time at Selected Alluvial Aquifer Monitoring Wells

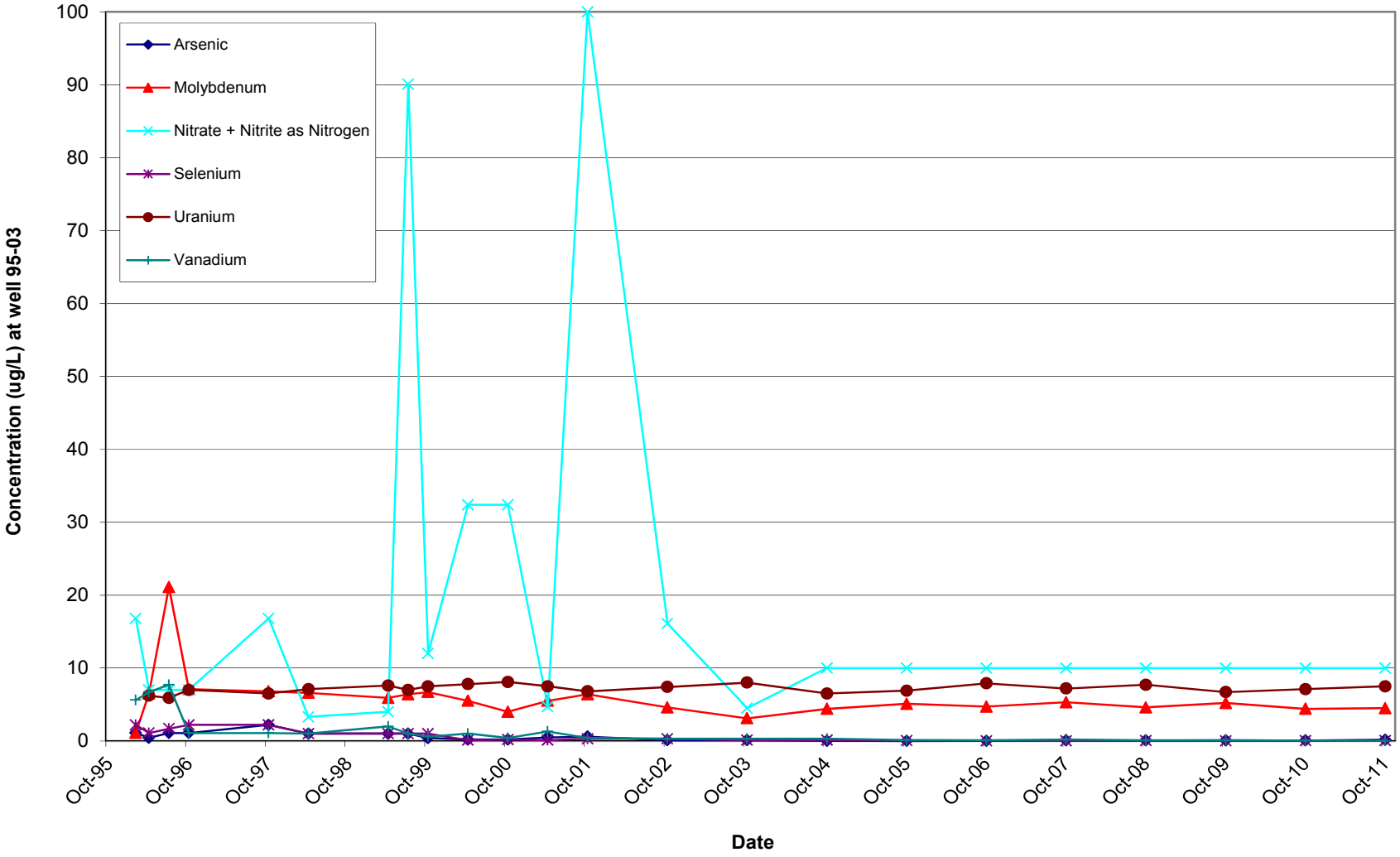

Figure 19. Contaminant Concentrations over Time at Sentinel Well 95-03

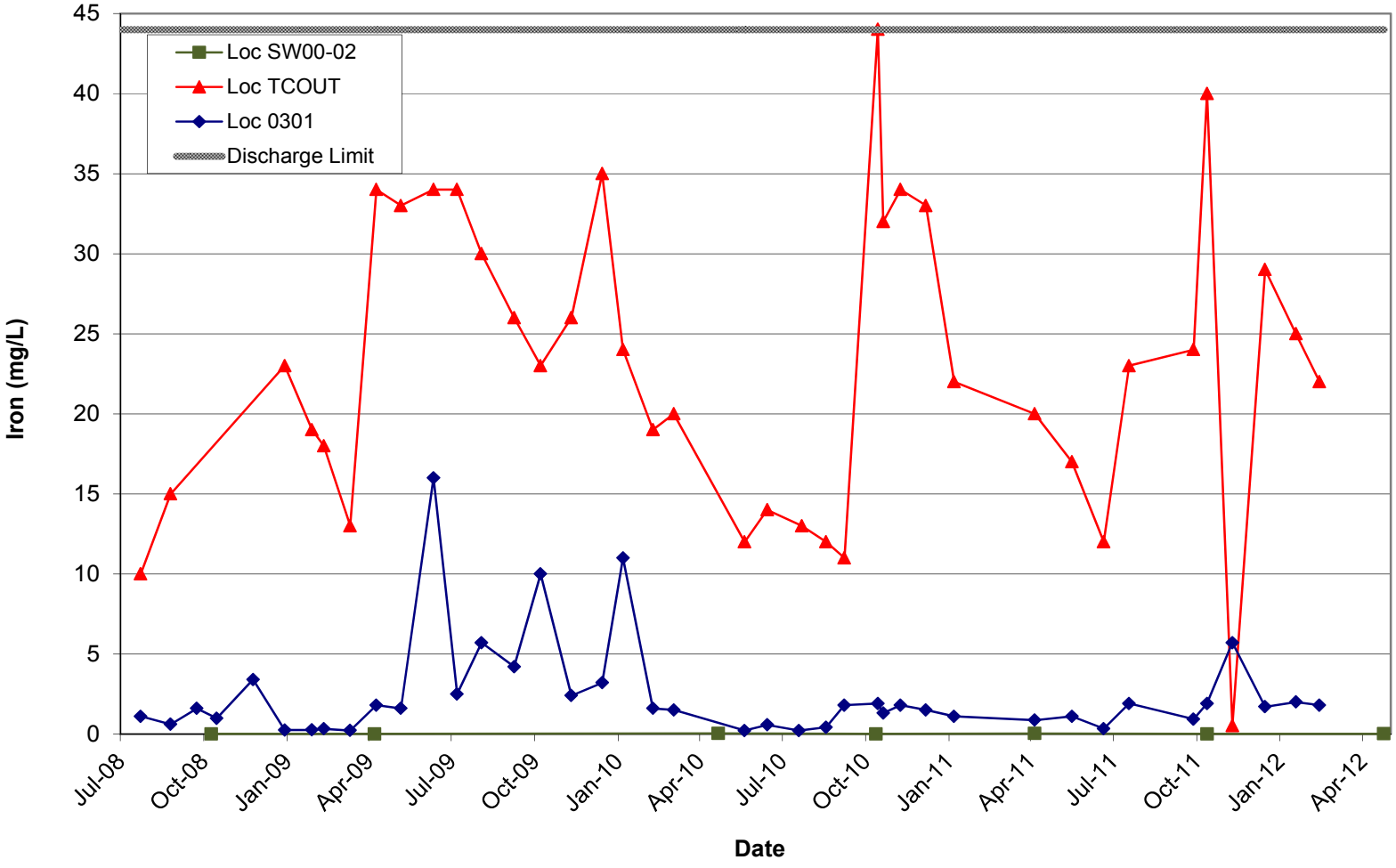

Figure 20. Ex Situ Treatment System Monitoring Results, Iron

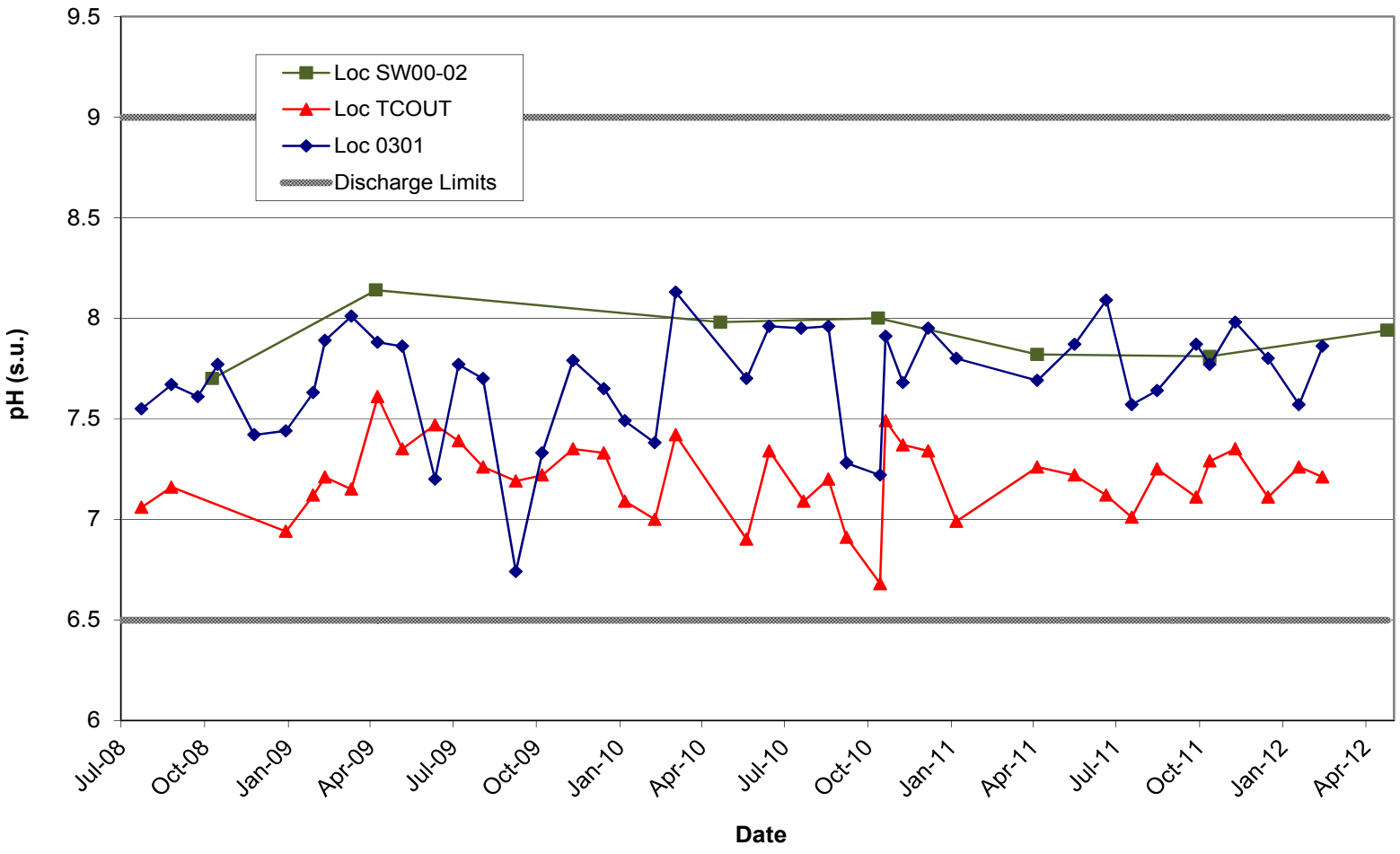

Figure 21. Ex Situ Treatment System Monitoring Results, pH

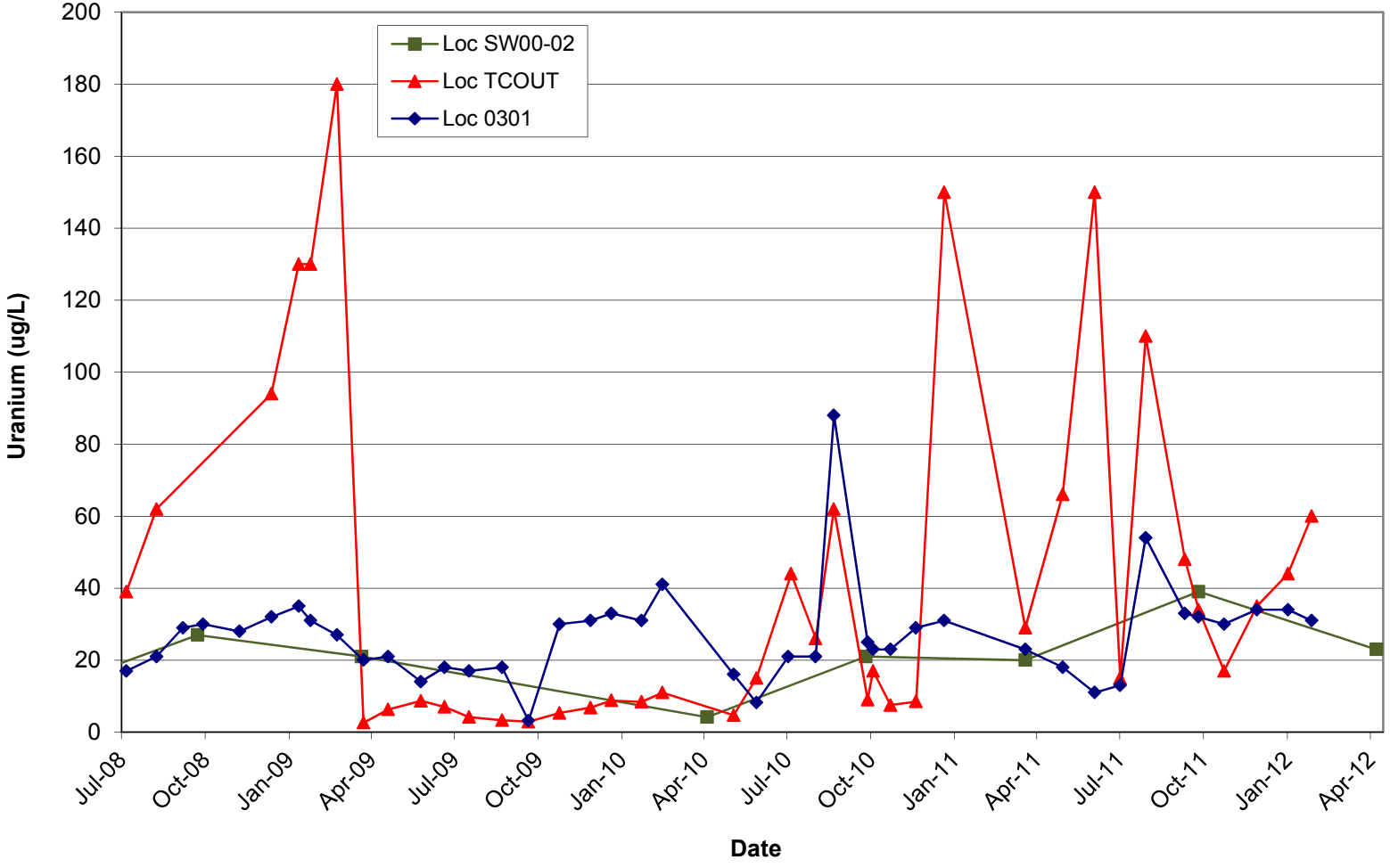

Figure 22. Ex Situ Treatment System Monitoring Results, Uranium

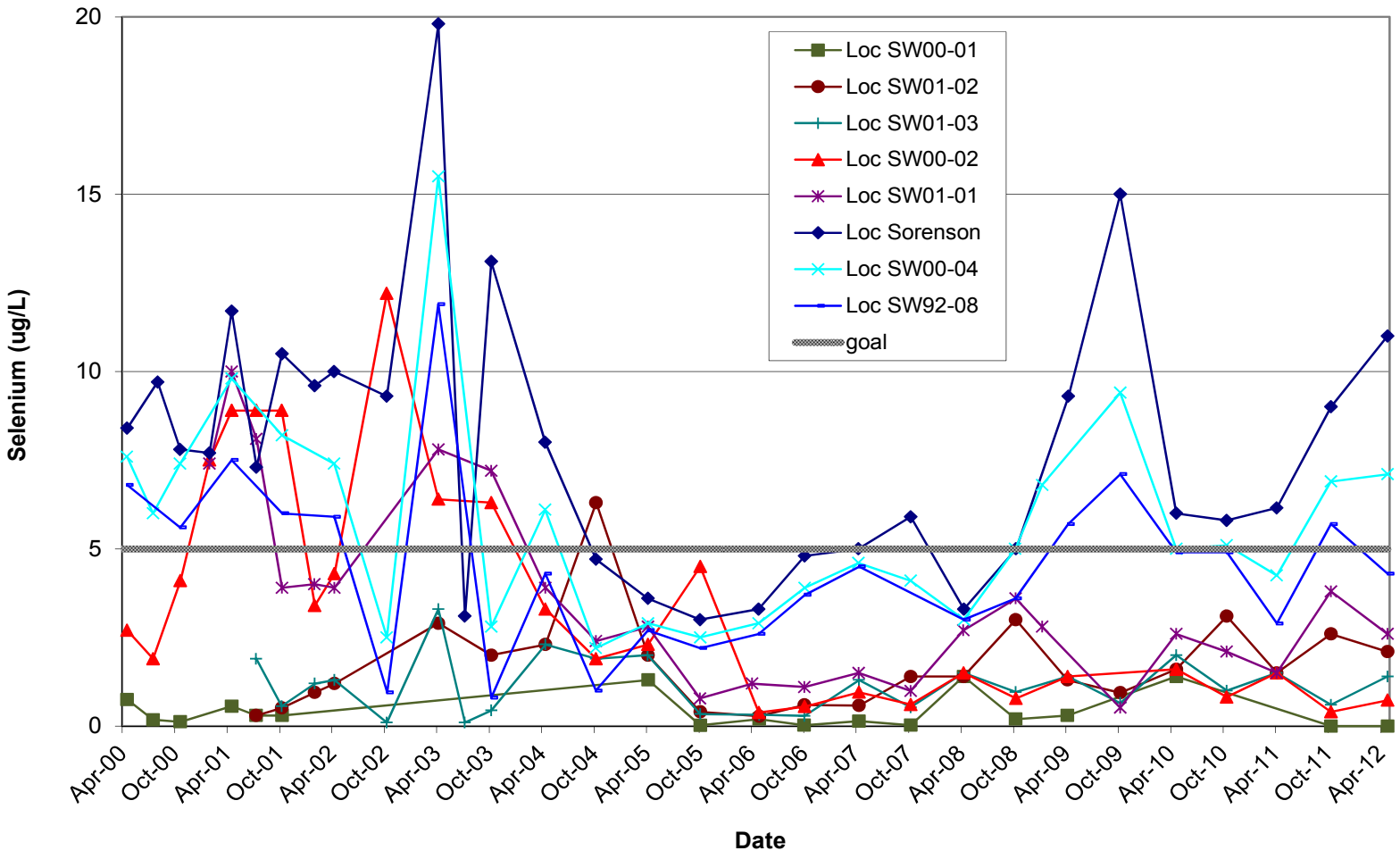

Figure 23. Selenium Concentration over Time in Montezuma Creek

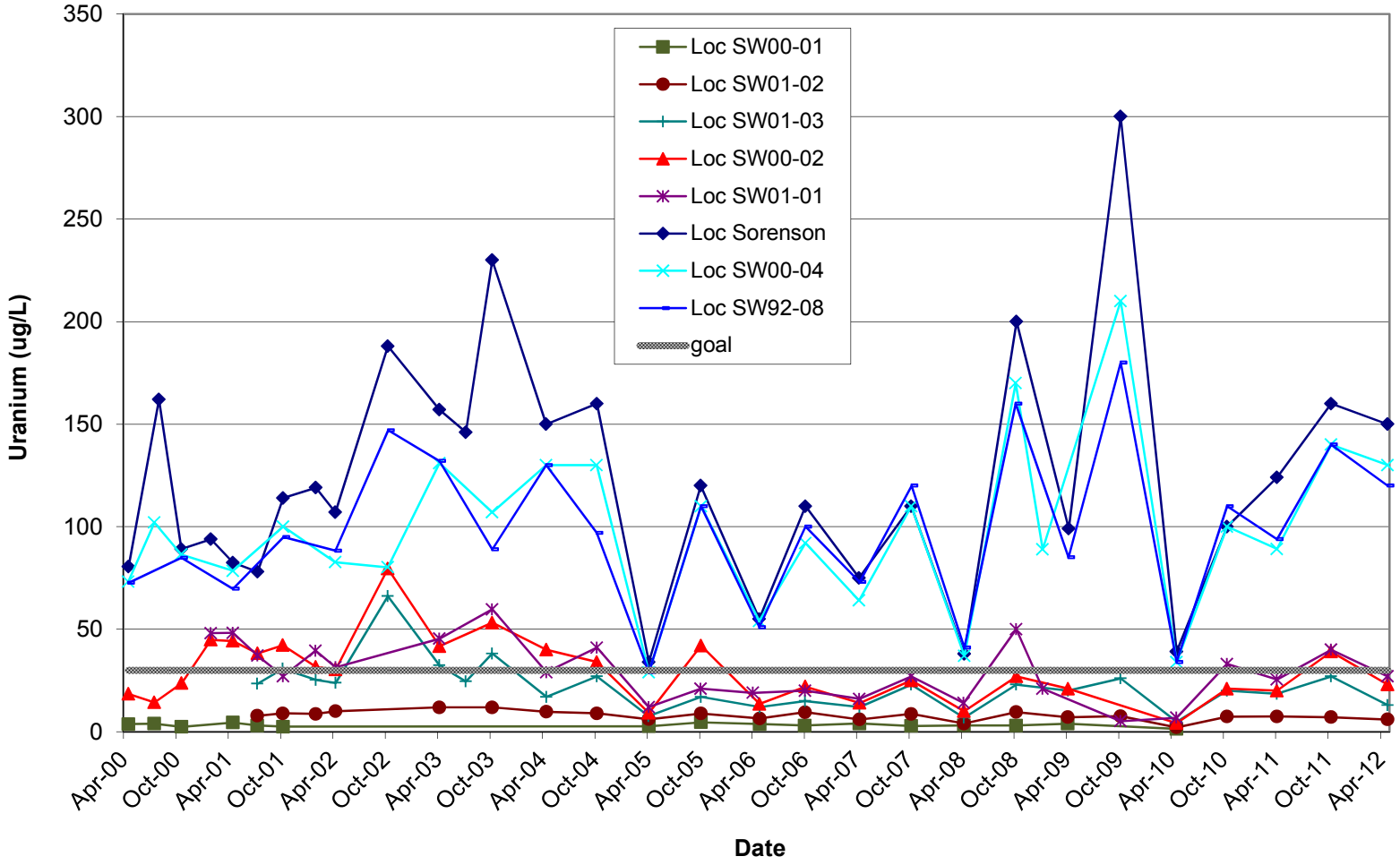

Figure 24. Uranium Concentration over Time in Montezuma Creek

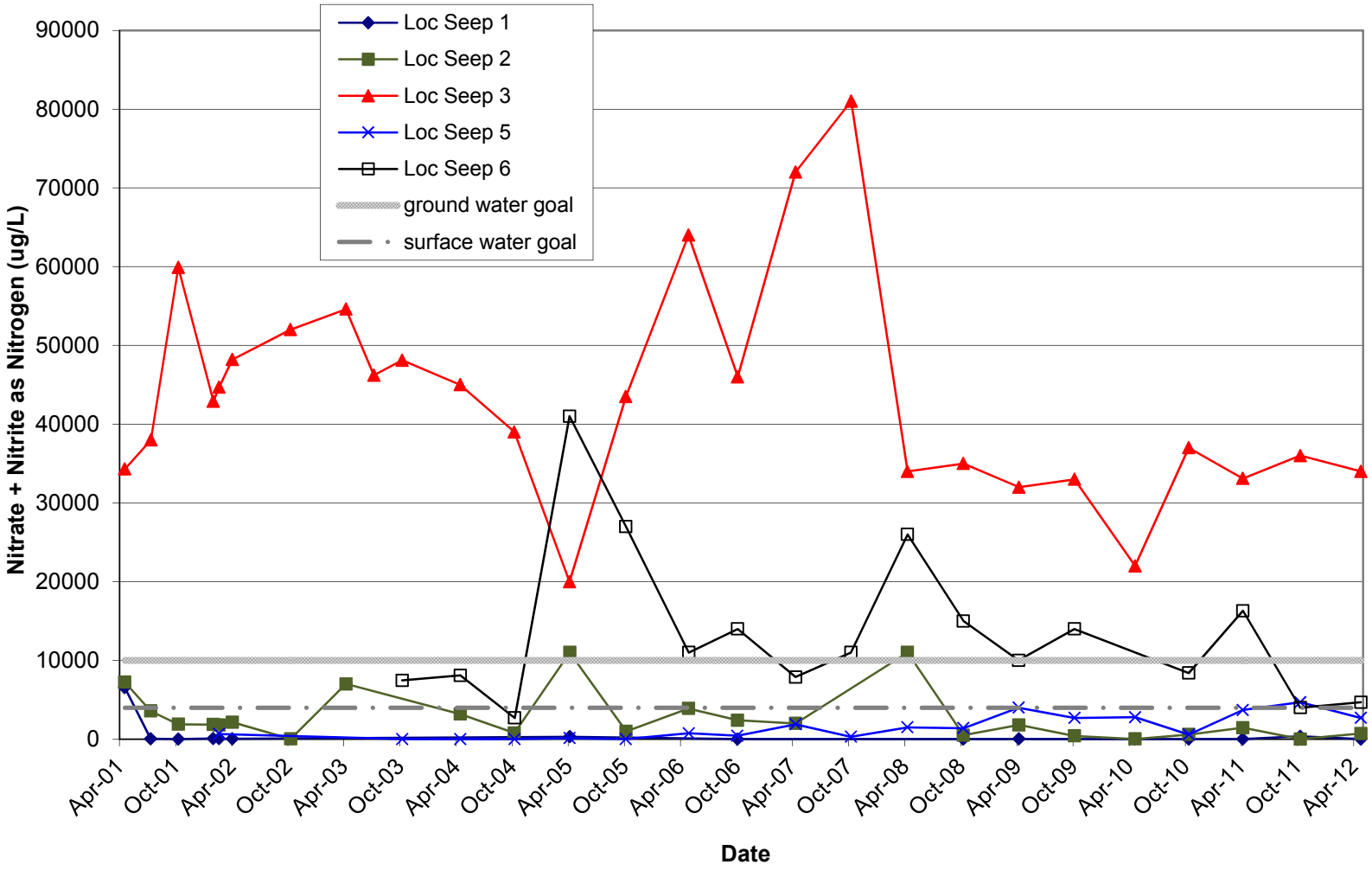

Figure 25. Nitrate (as Nitrogen) Concentration over Time at Selected Seep Locations

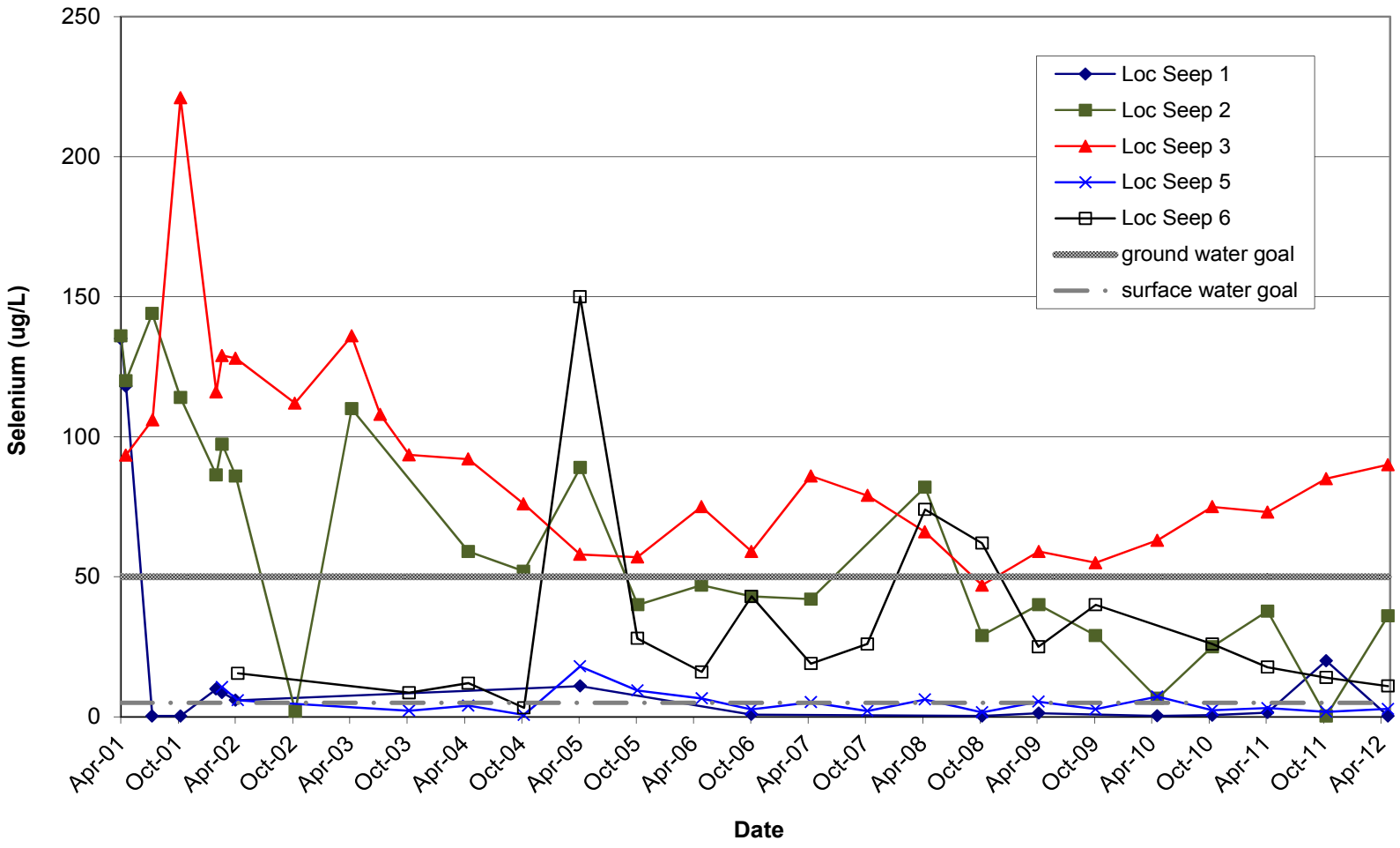

Figure 26. Selenium Concentration over Time at Selected Seep Locations

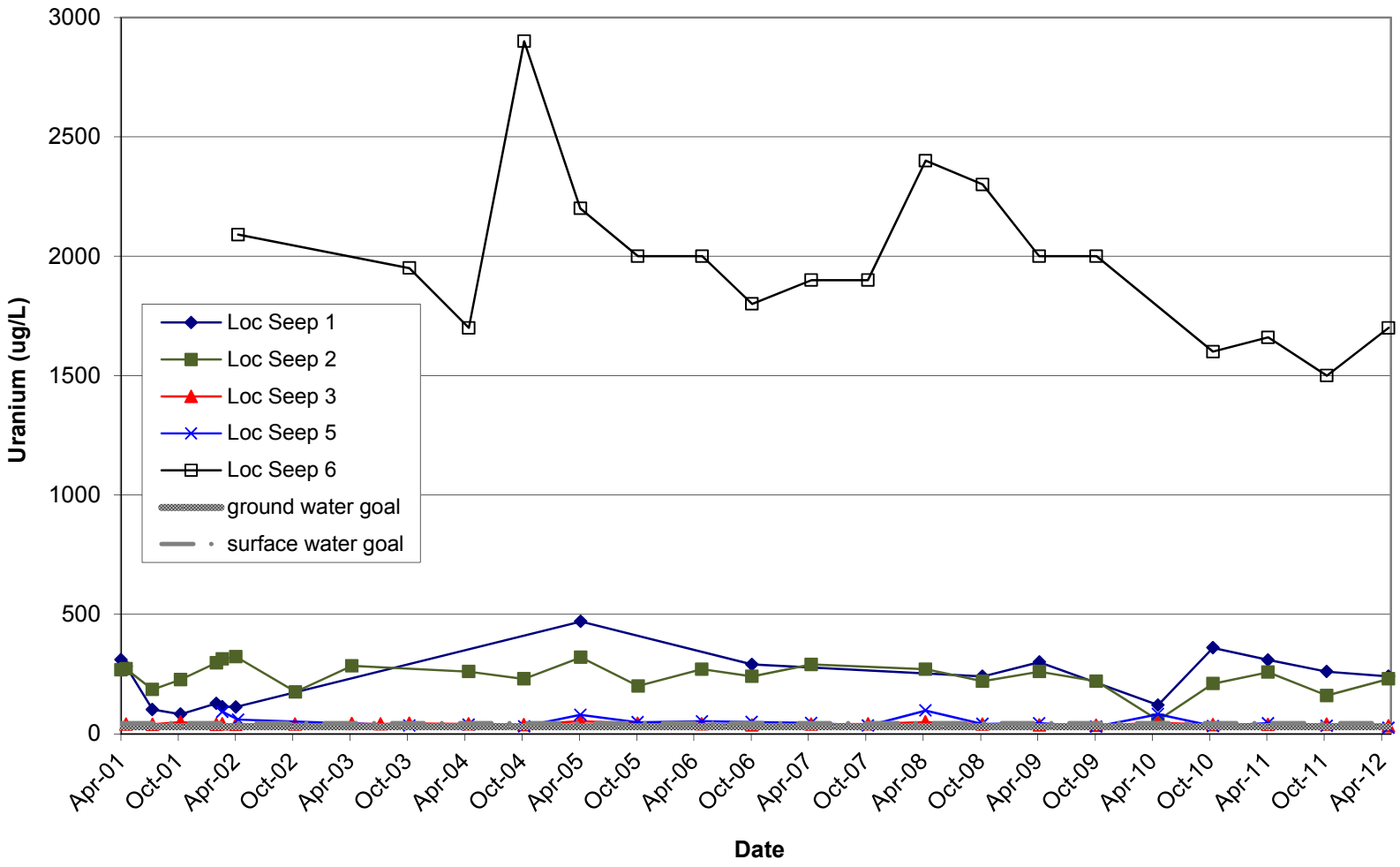

Figure 27. Uranium Concentration over Time at Selected Seep Locations

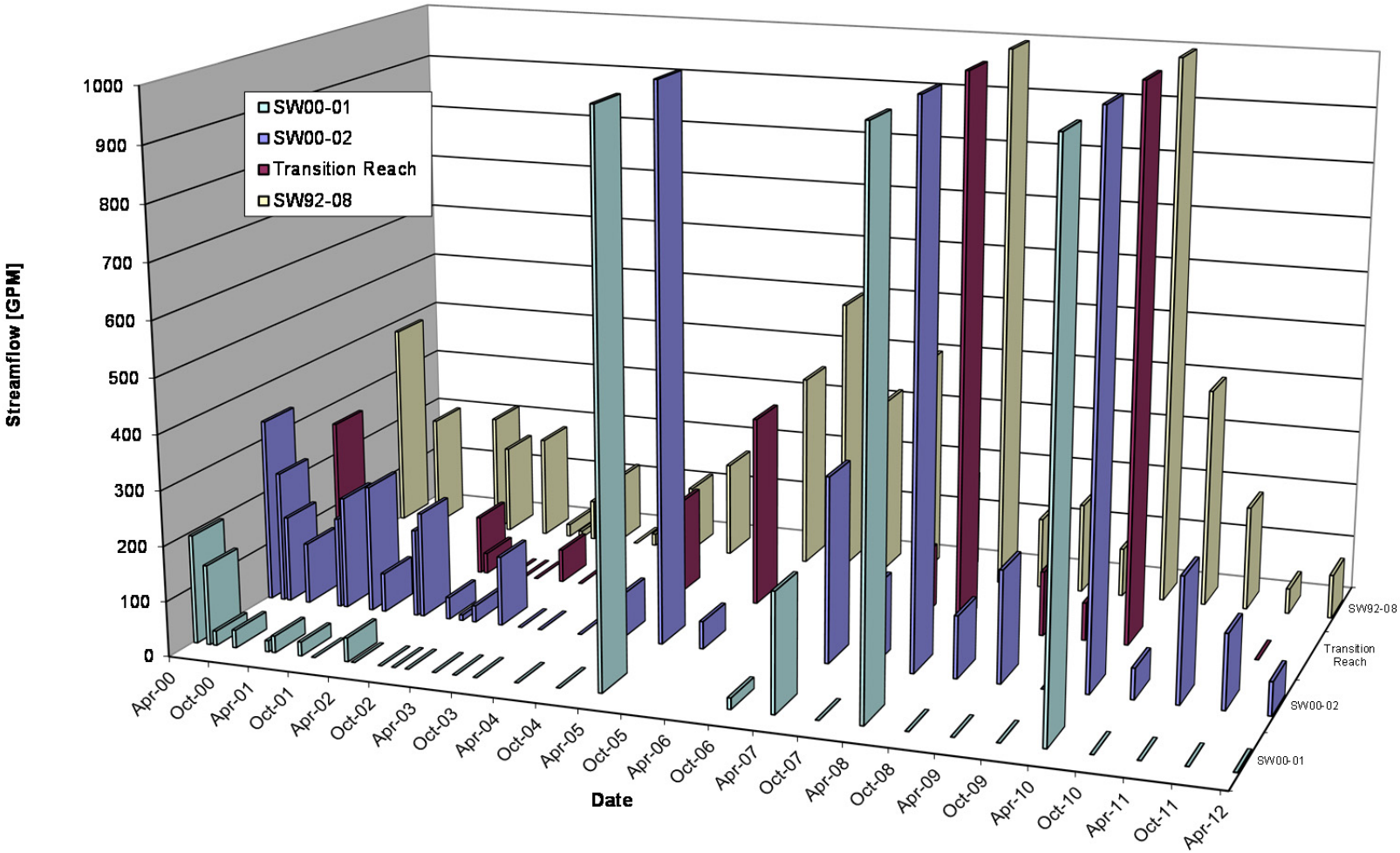

Figure 28. Stream Flow Hydrographs for Selected Sites on Montezuma Creek

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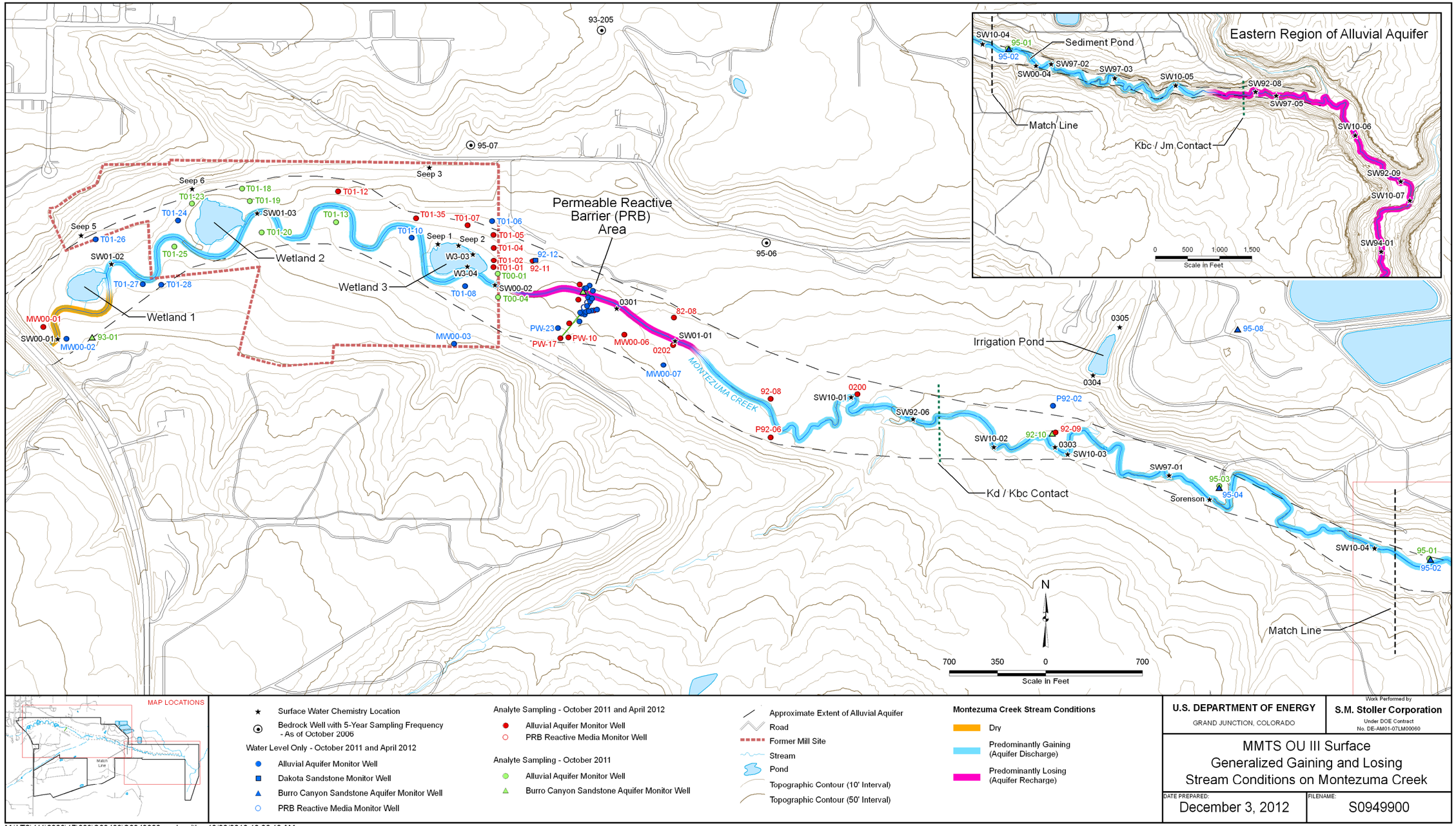

Figure 29. Generalized Gaining and Losing Stream Conditions on Montezuma Creek

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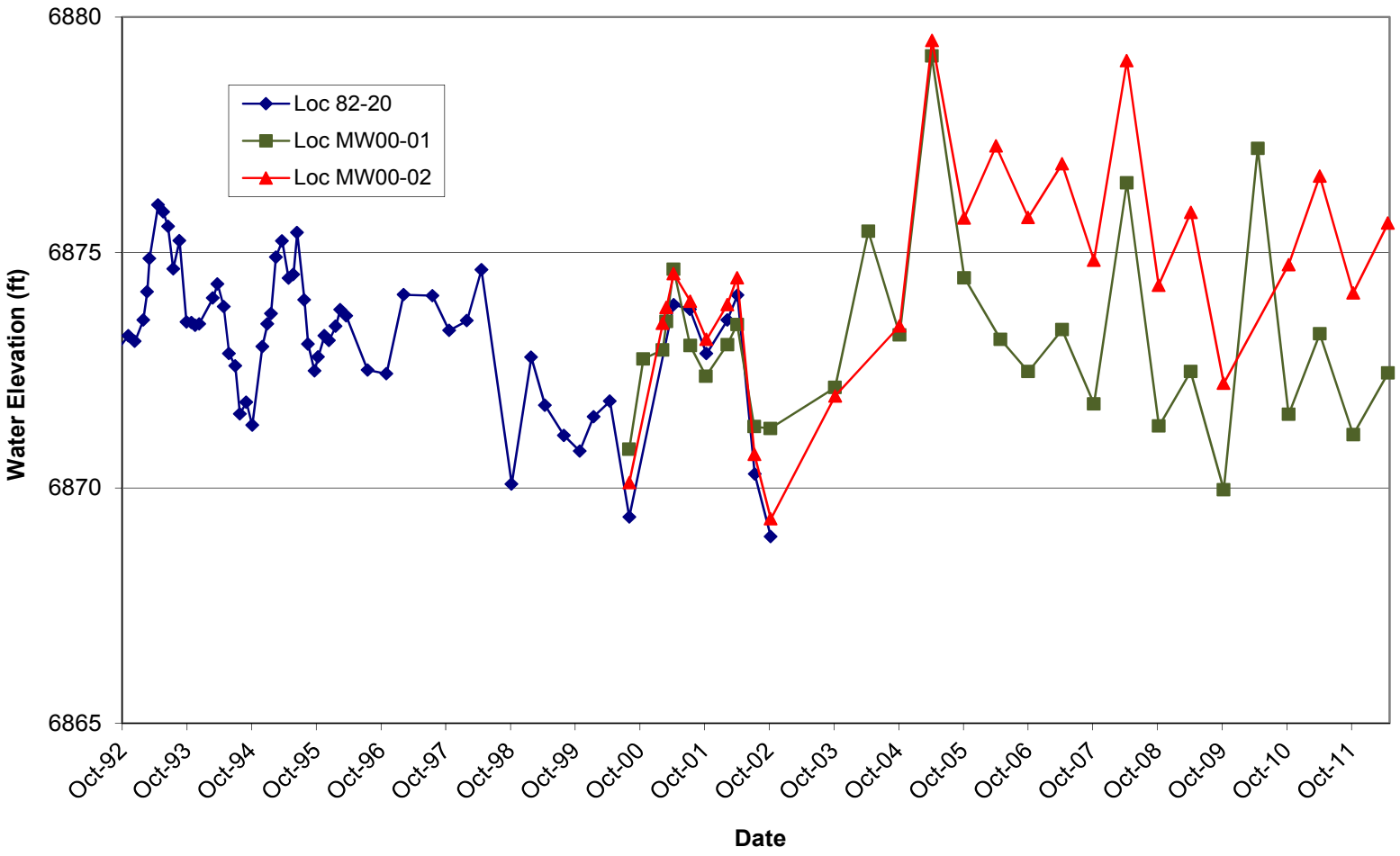

Figure 30. Water Level Hydrographs for Upgradient Alluvial Wells

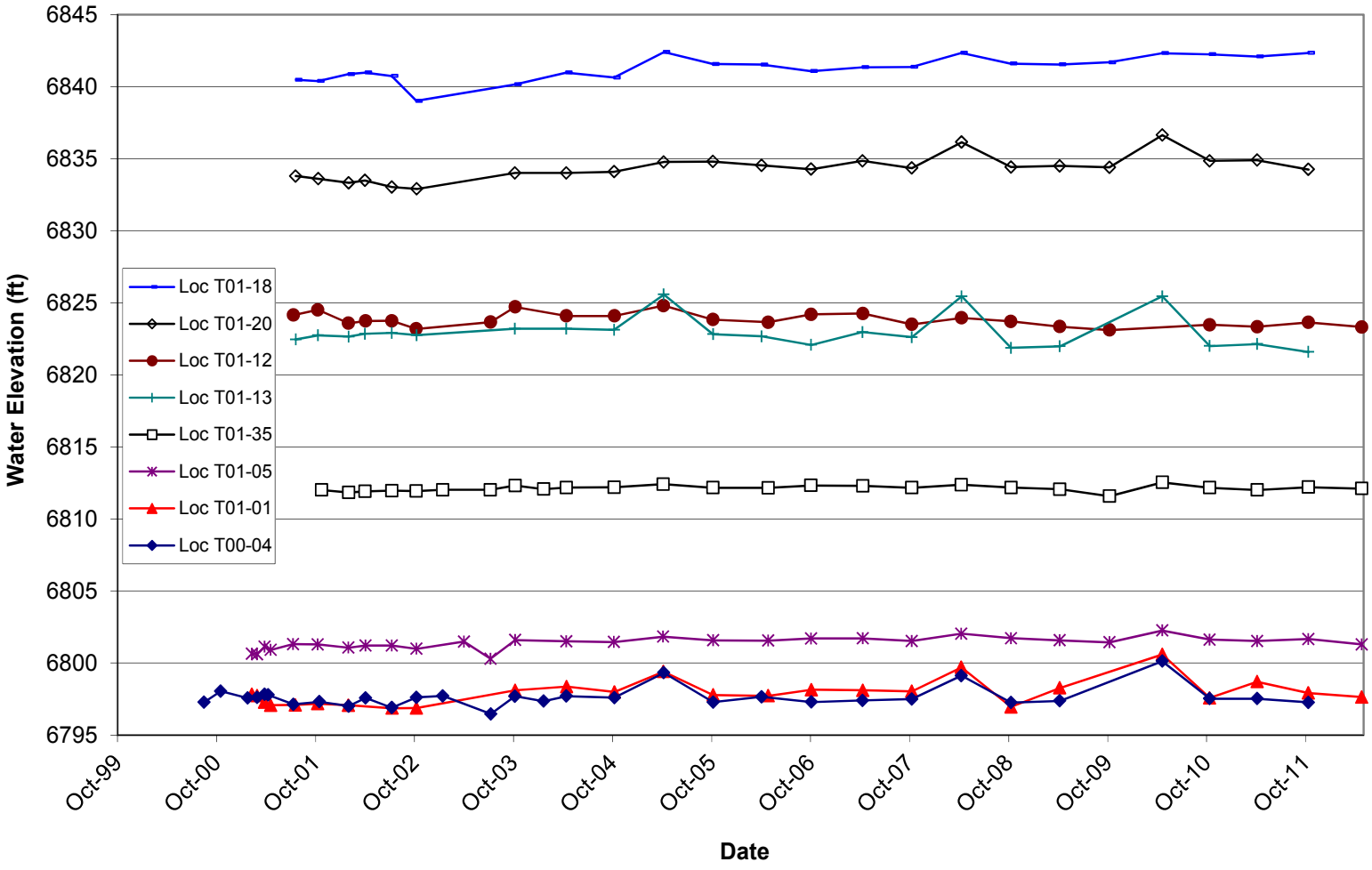

Figure 31. Water Level Hydrographs for Selected Mill Site Alluvial Wells

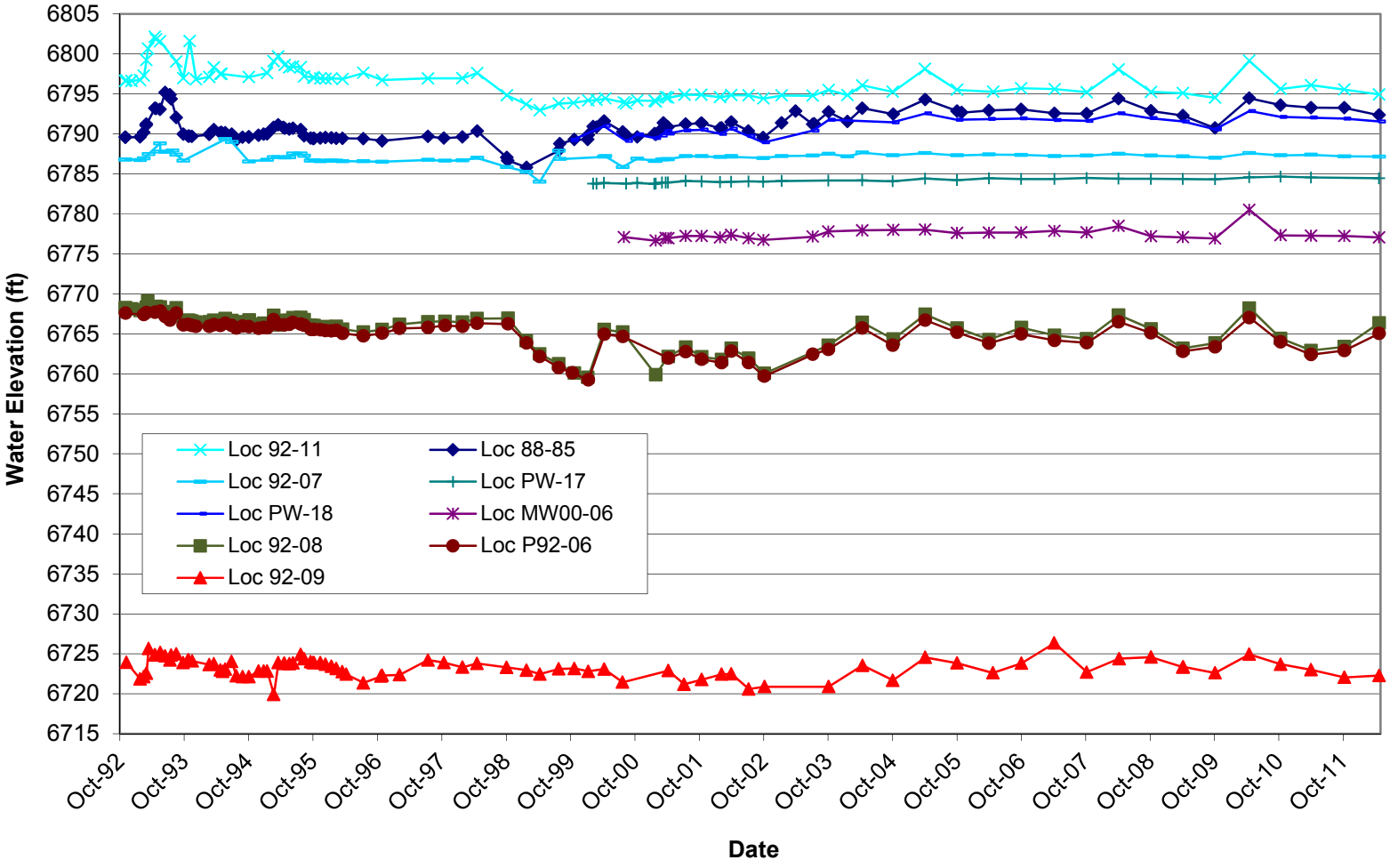

Figure 32. Water Level Hydrographs for Downgradient Wells

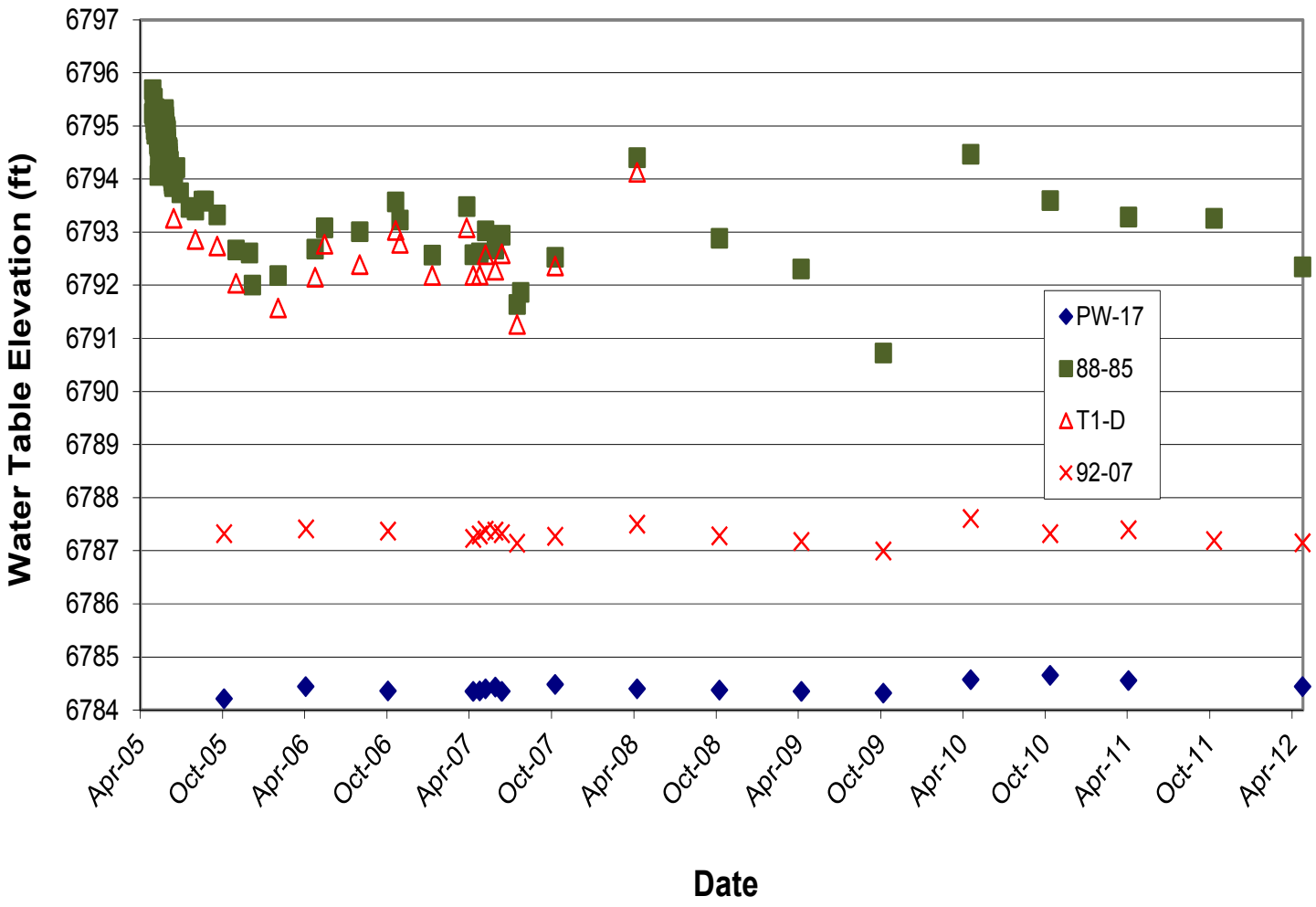

Figure 33. Water Table Trends near the PRB

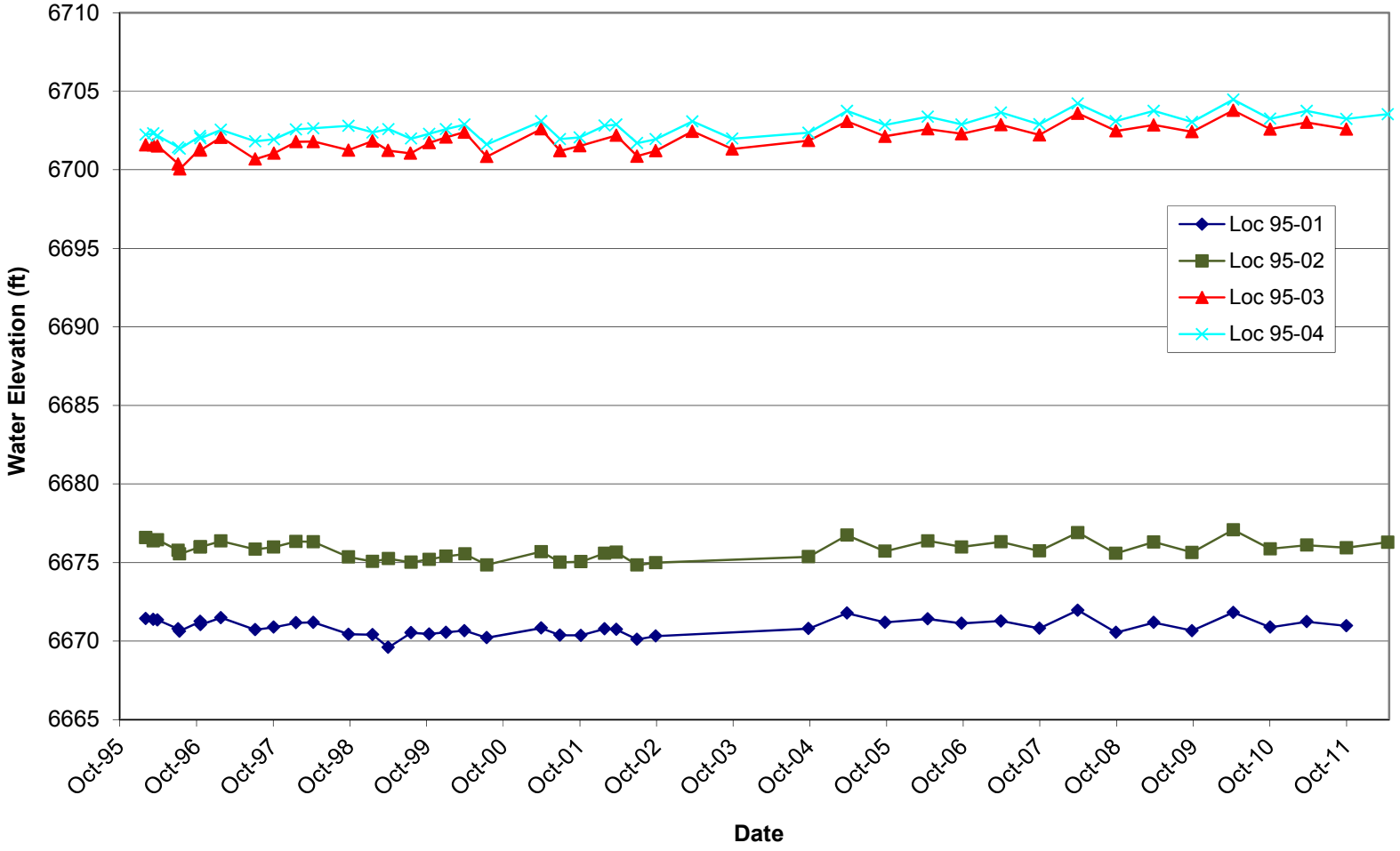

Figure 34. Water Level Hydrographs for Alluvial/Burro Canyon Well Pairs 95-01/95-02 and 95-03/95-04

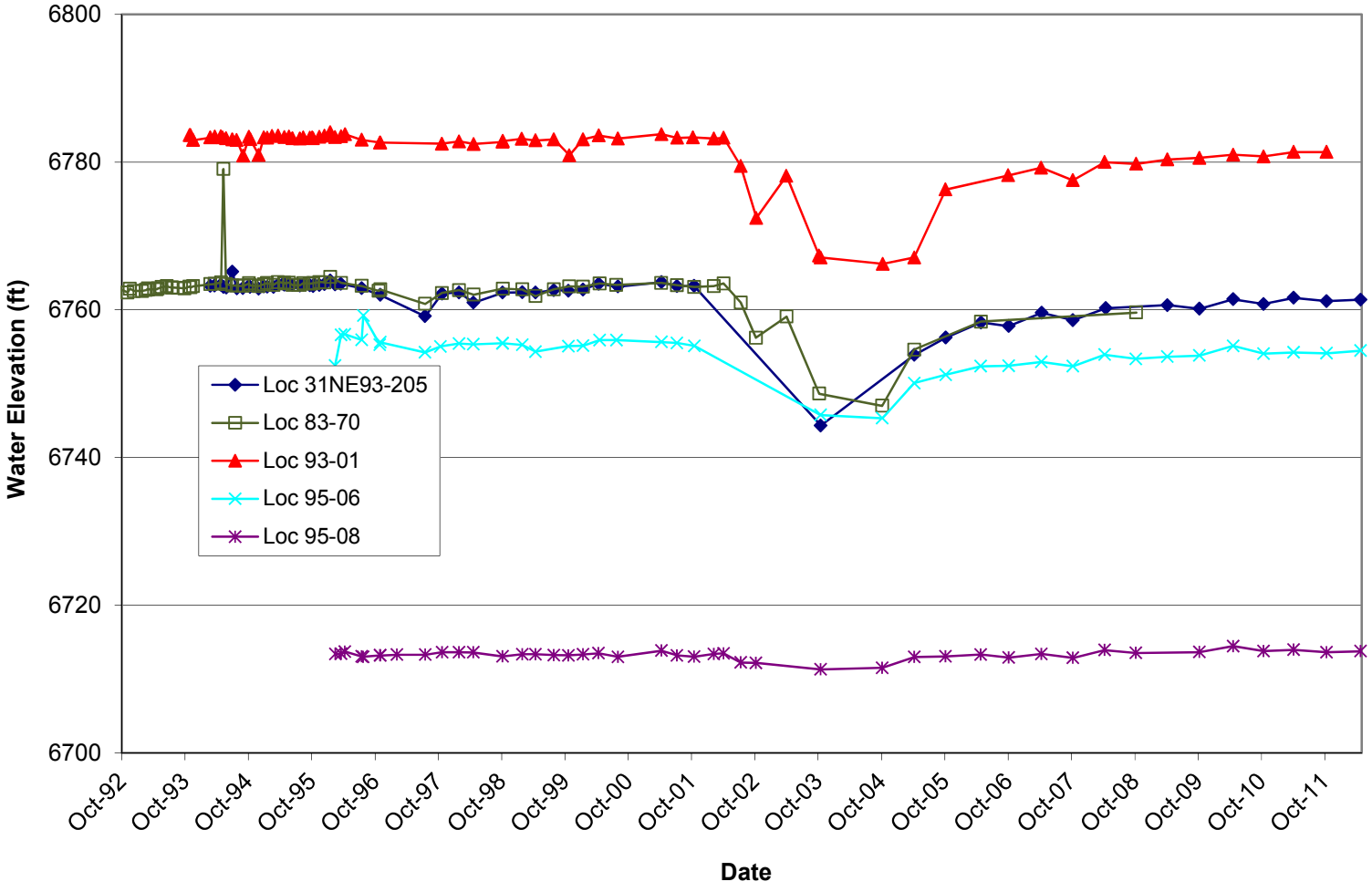

Figure 35. Water Level Hydrographs for Selected Burro Canyon Aquifer Wells

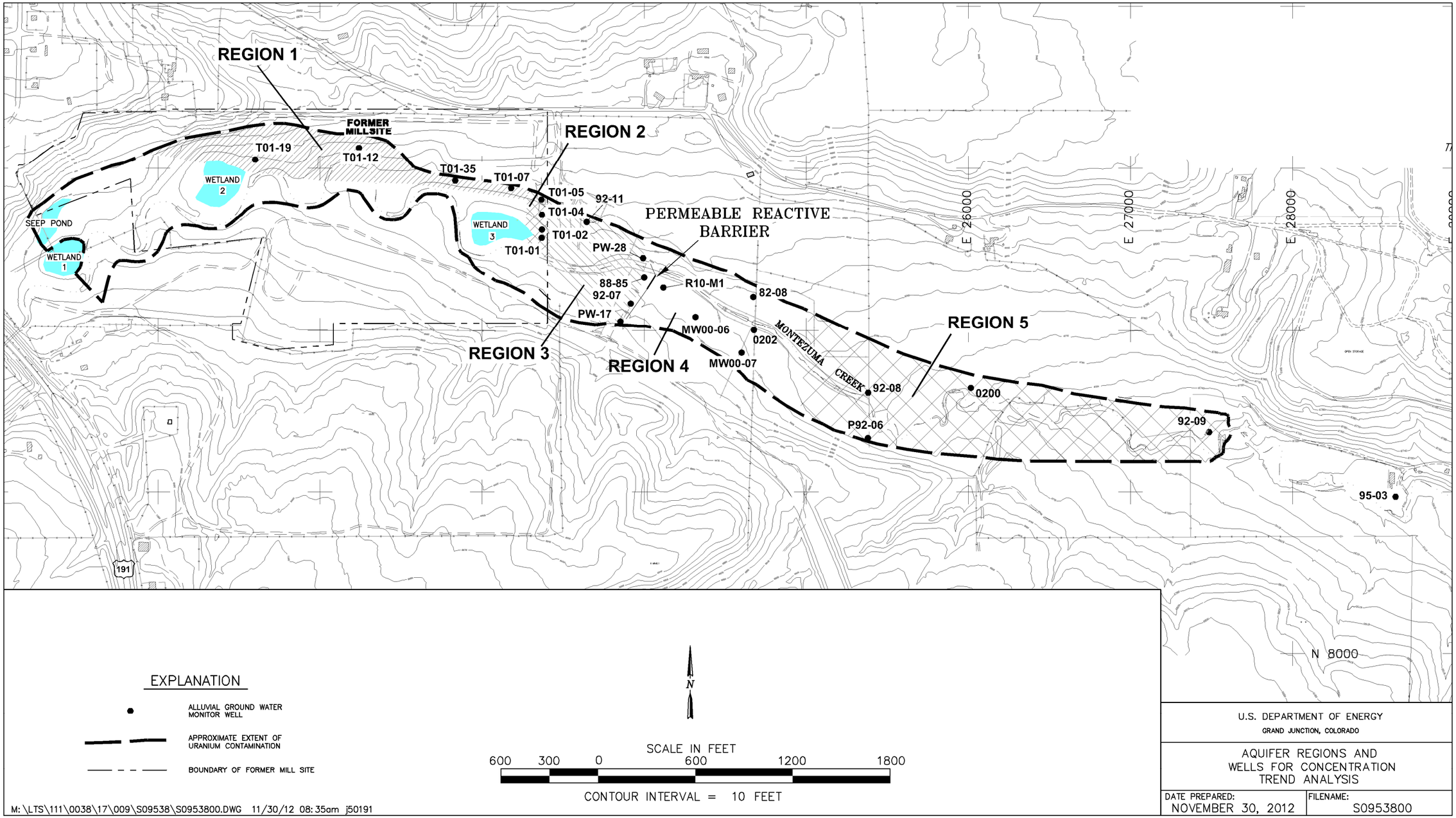

Figure 36. Aquifer Regions and Monitoring Wells Selected for Concentration Trend Analysis

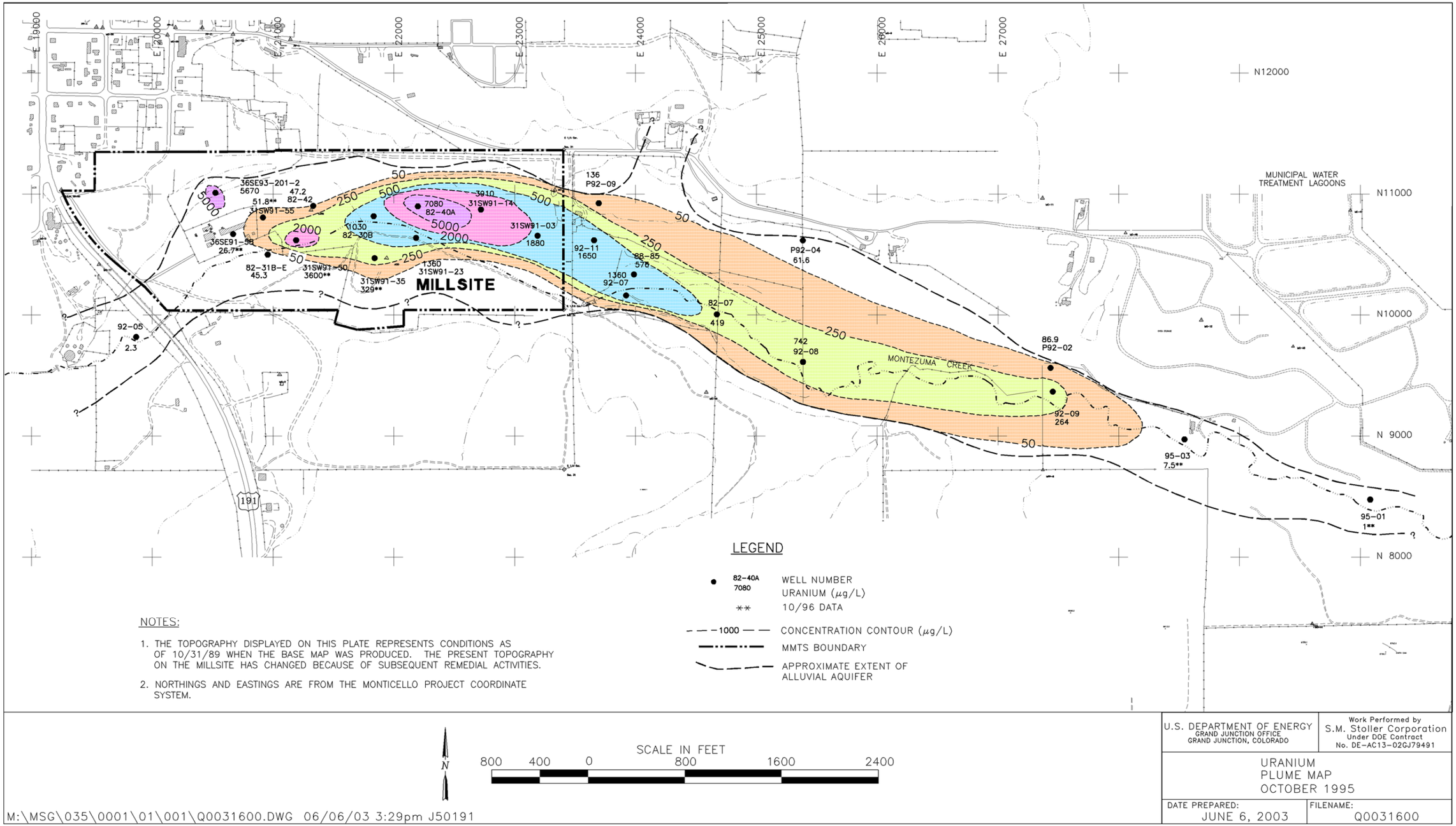

Figure 37. Uranium Plume Map October 1995

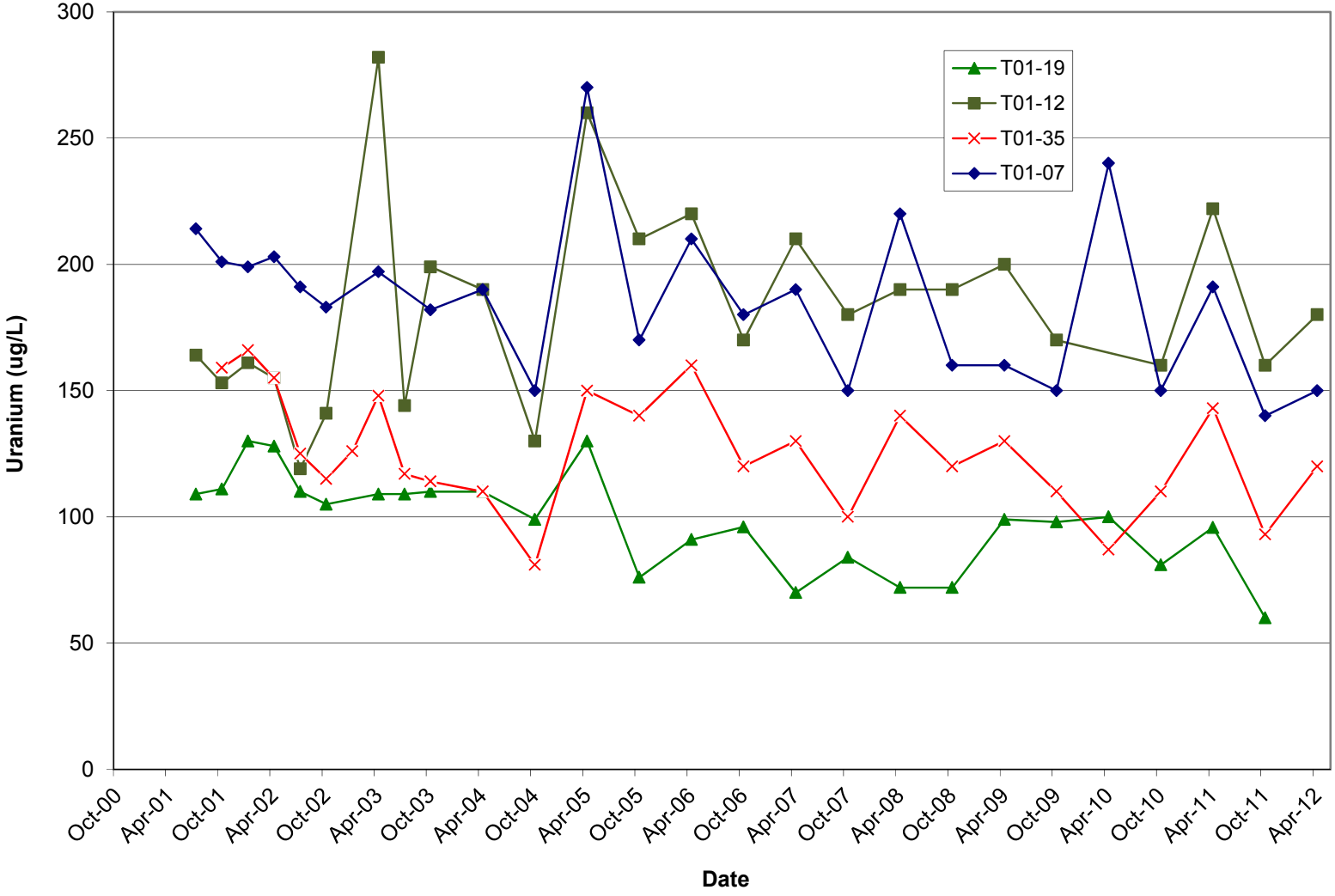

Figure 38. Region 1 Uranium Concentration Trends in Groundwater

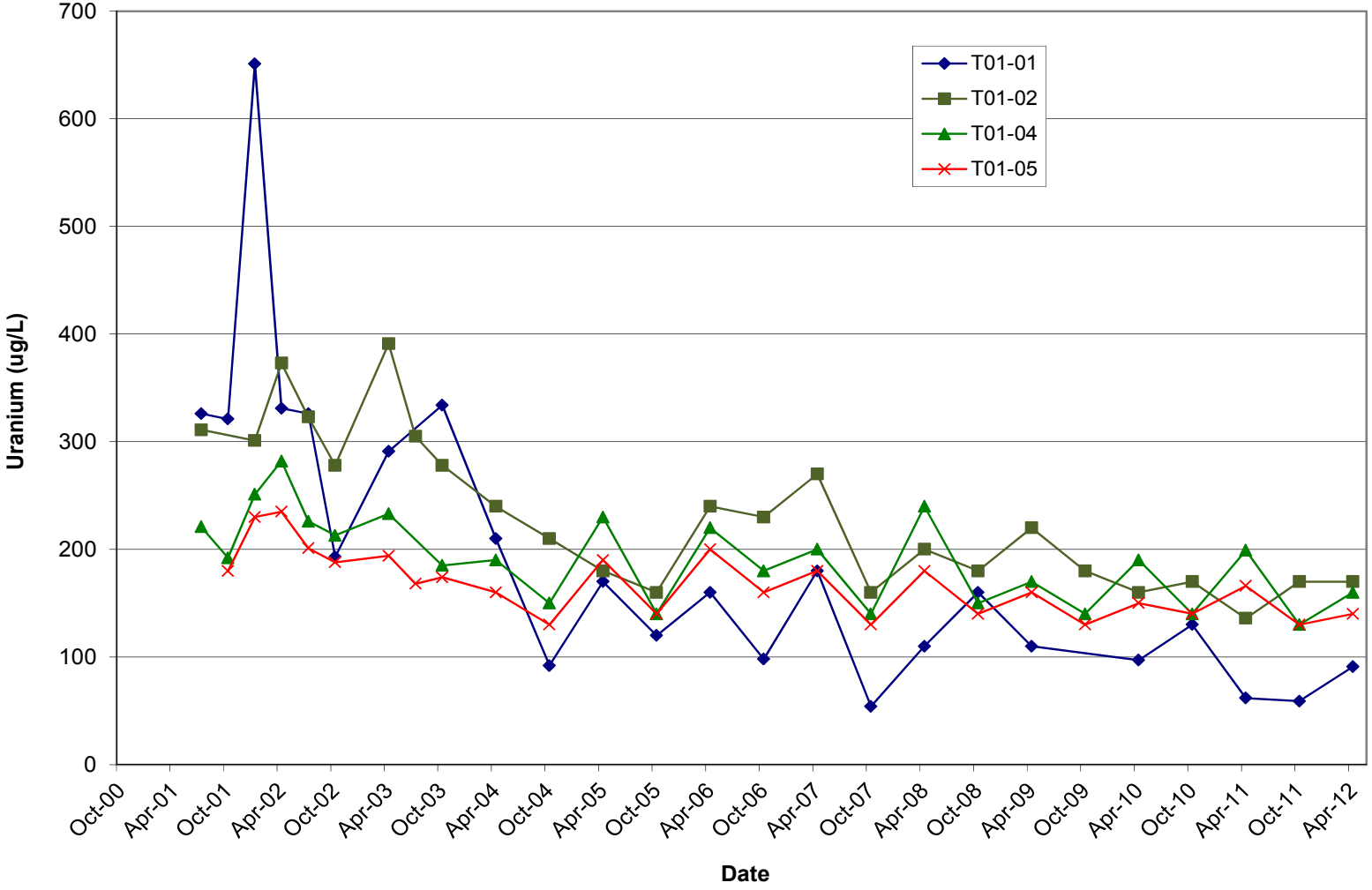

Figure 39. Region 2 Uranium Concentration Trends in Groundwater

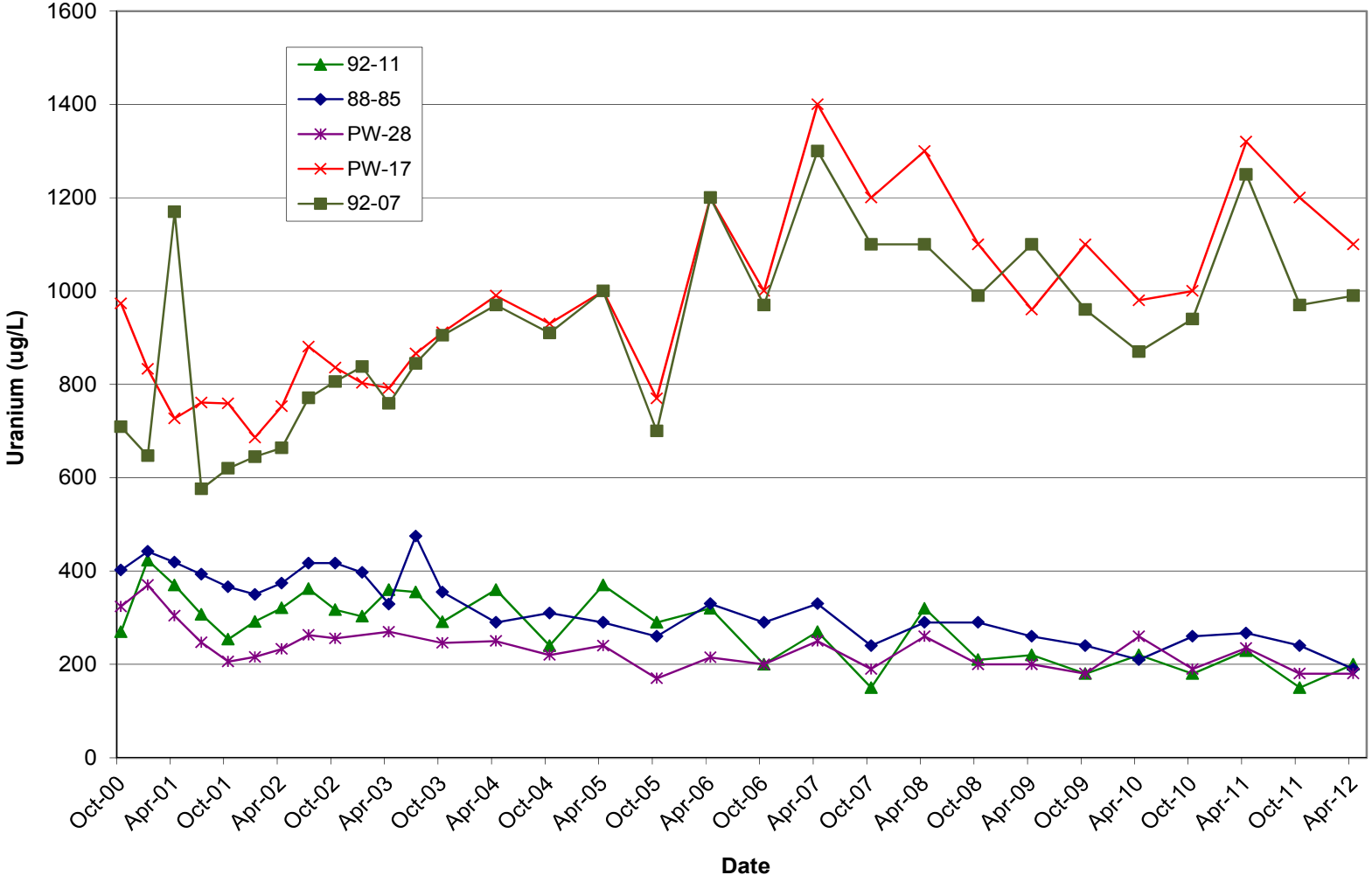

Figure 40. Region 3 Uranium Concentration Trends in Groundwater

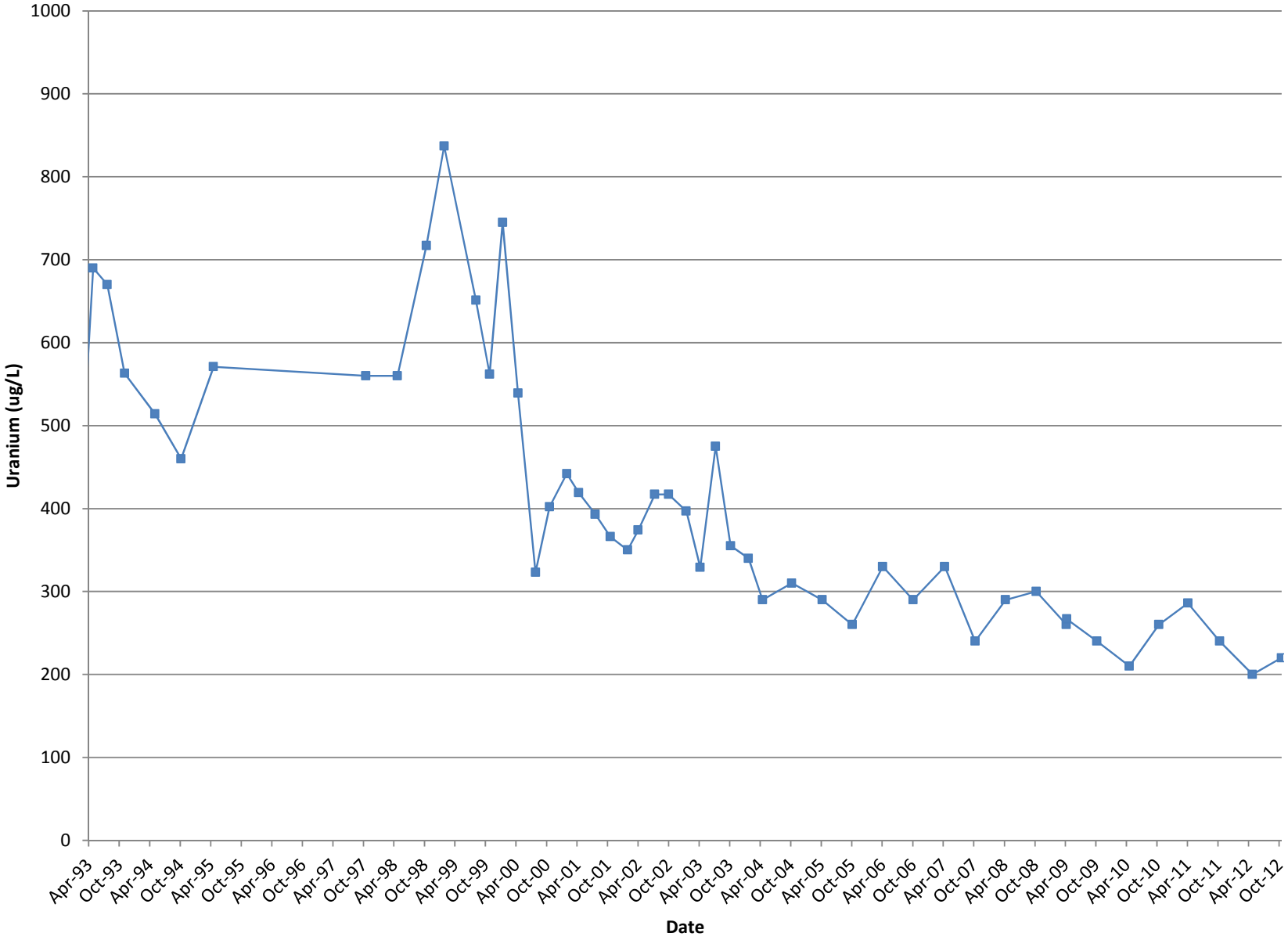

Figure 41. Uranium Concentration at Well 88-85 over Time

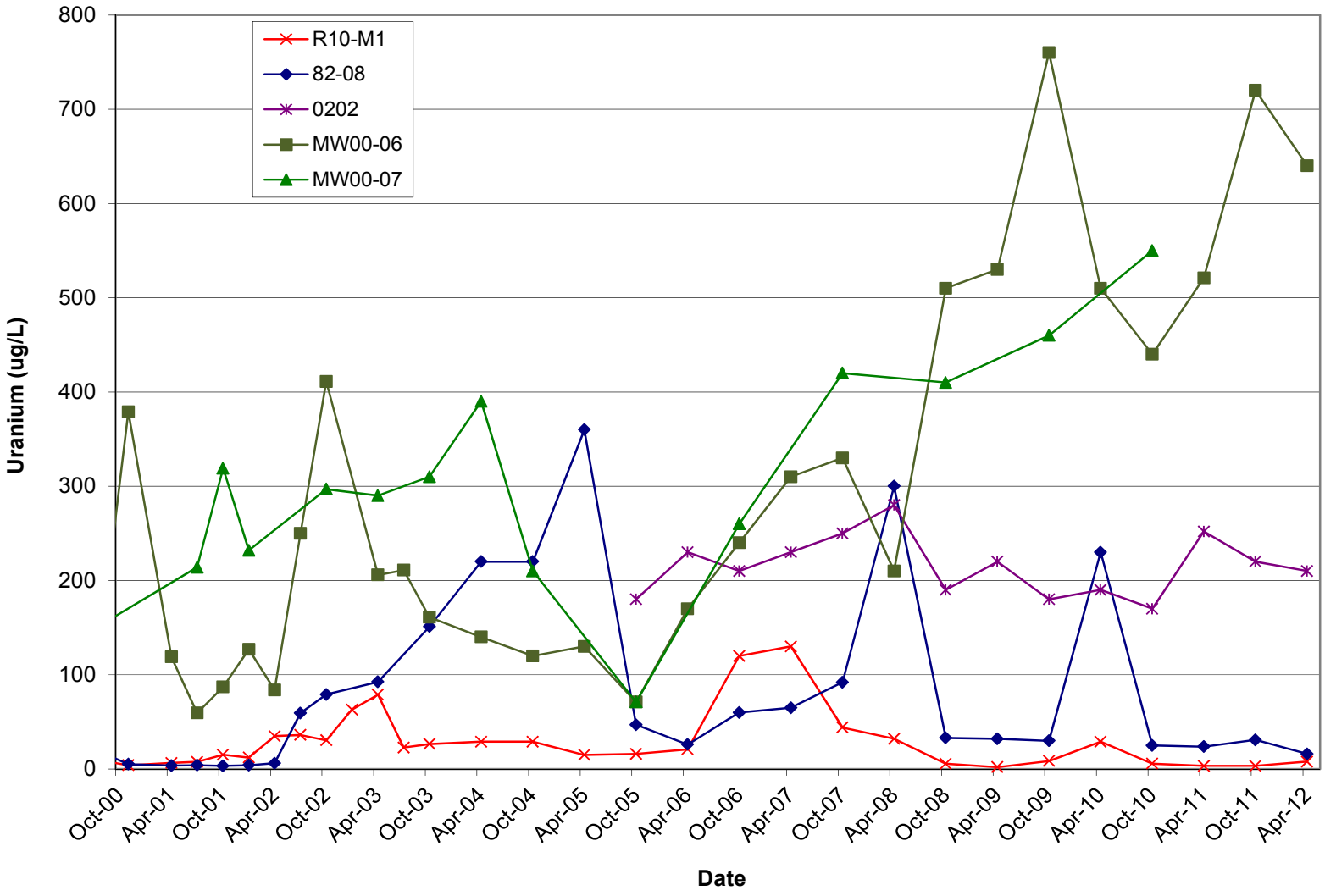

Figure 42. Region 4 Uranium Concentration Trends in Groundwater

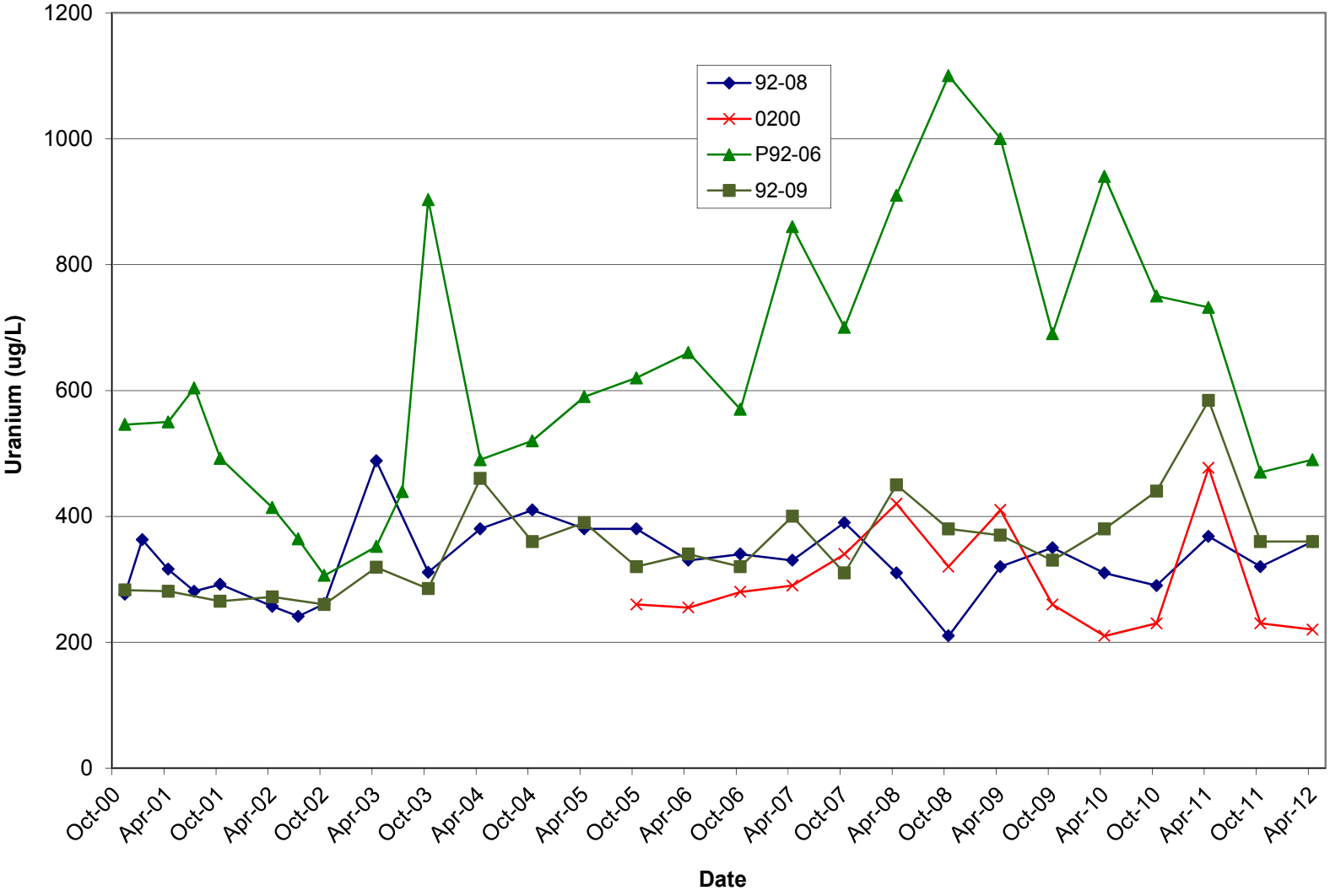

Figure 43. Region 5 Uranium Concentration Trends in Groundwater

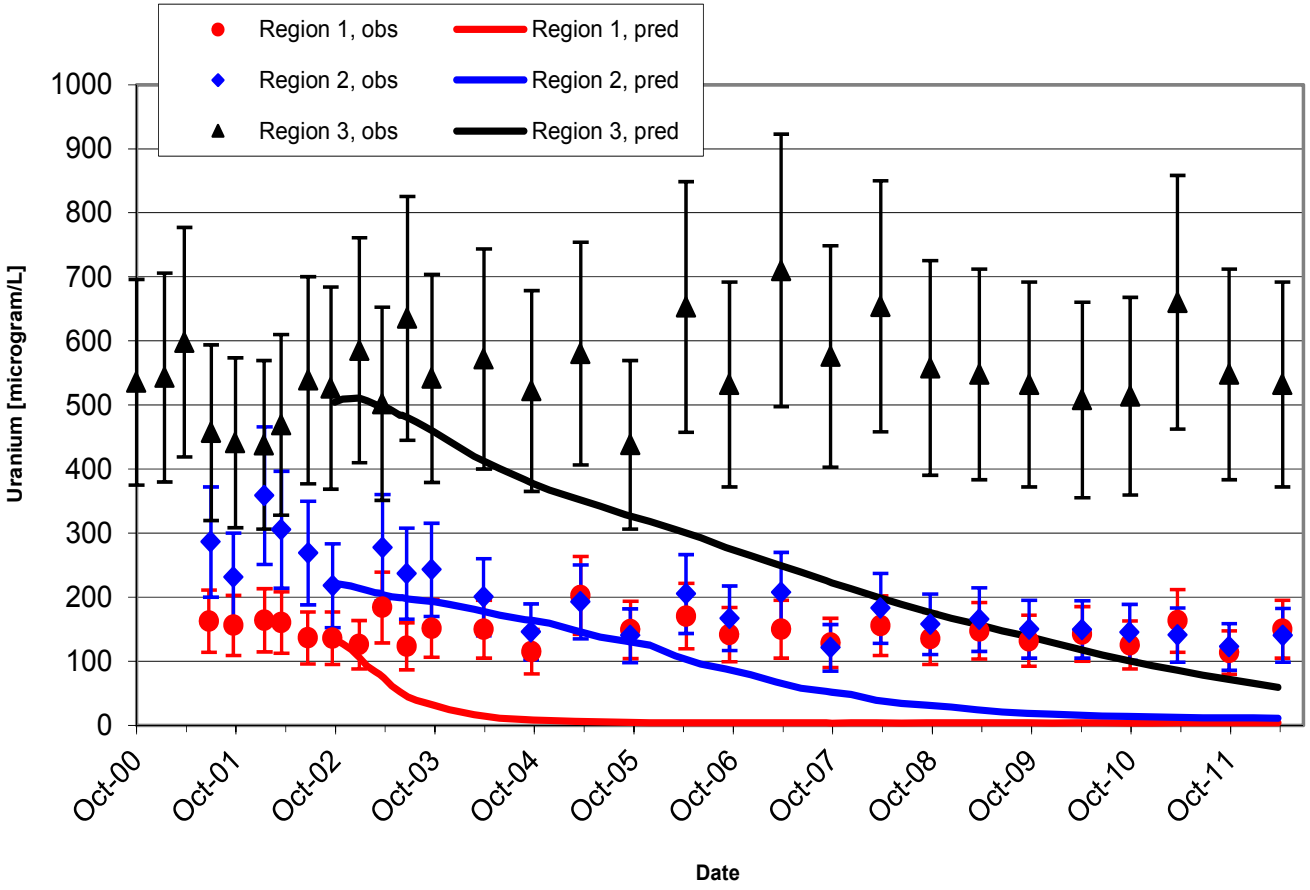

Figure 44. Comparison of Model Prediction to Observed Restoration Progress—Aquifer Regions 1 to 3

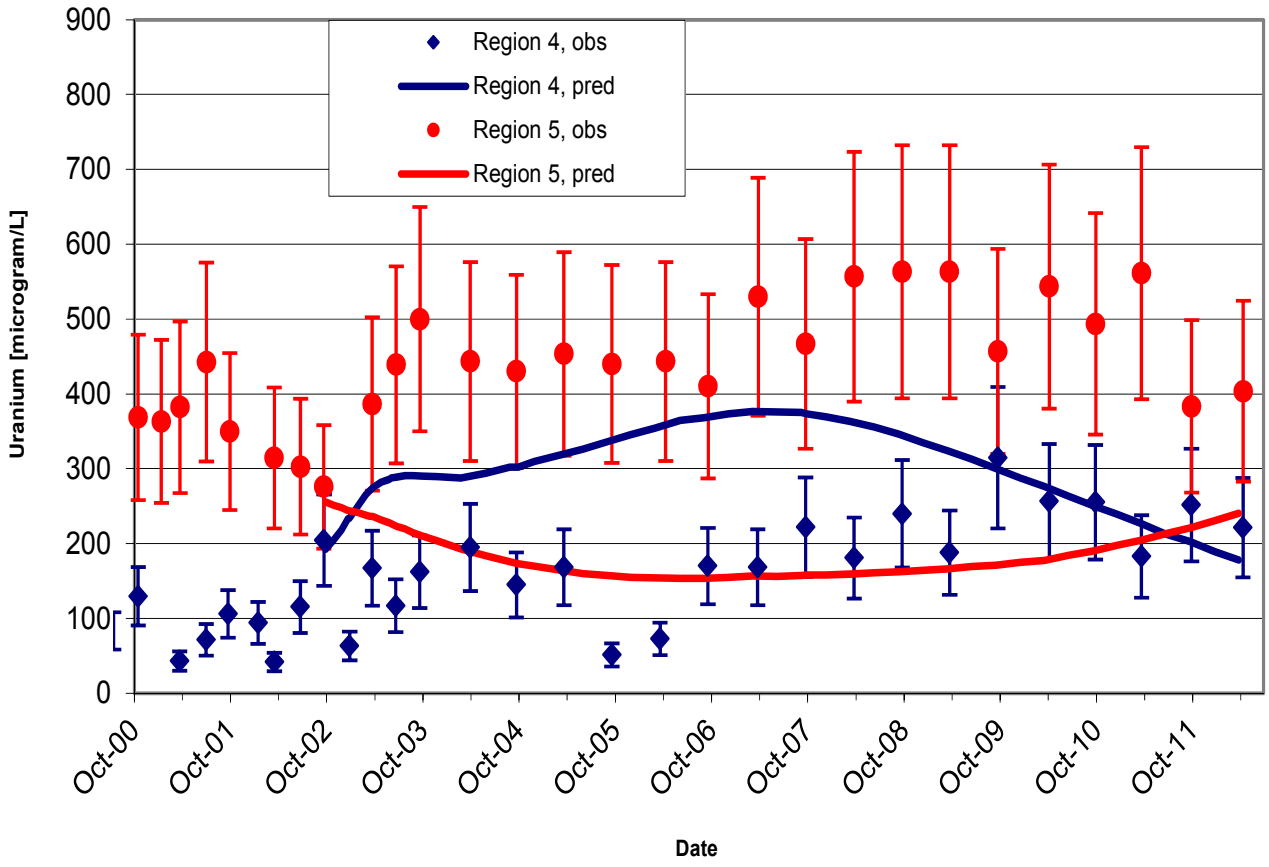

Figure 45. Comparison of Model Prediction to Observed Restoration Progress—Aquifer Regions 4 and 5

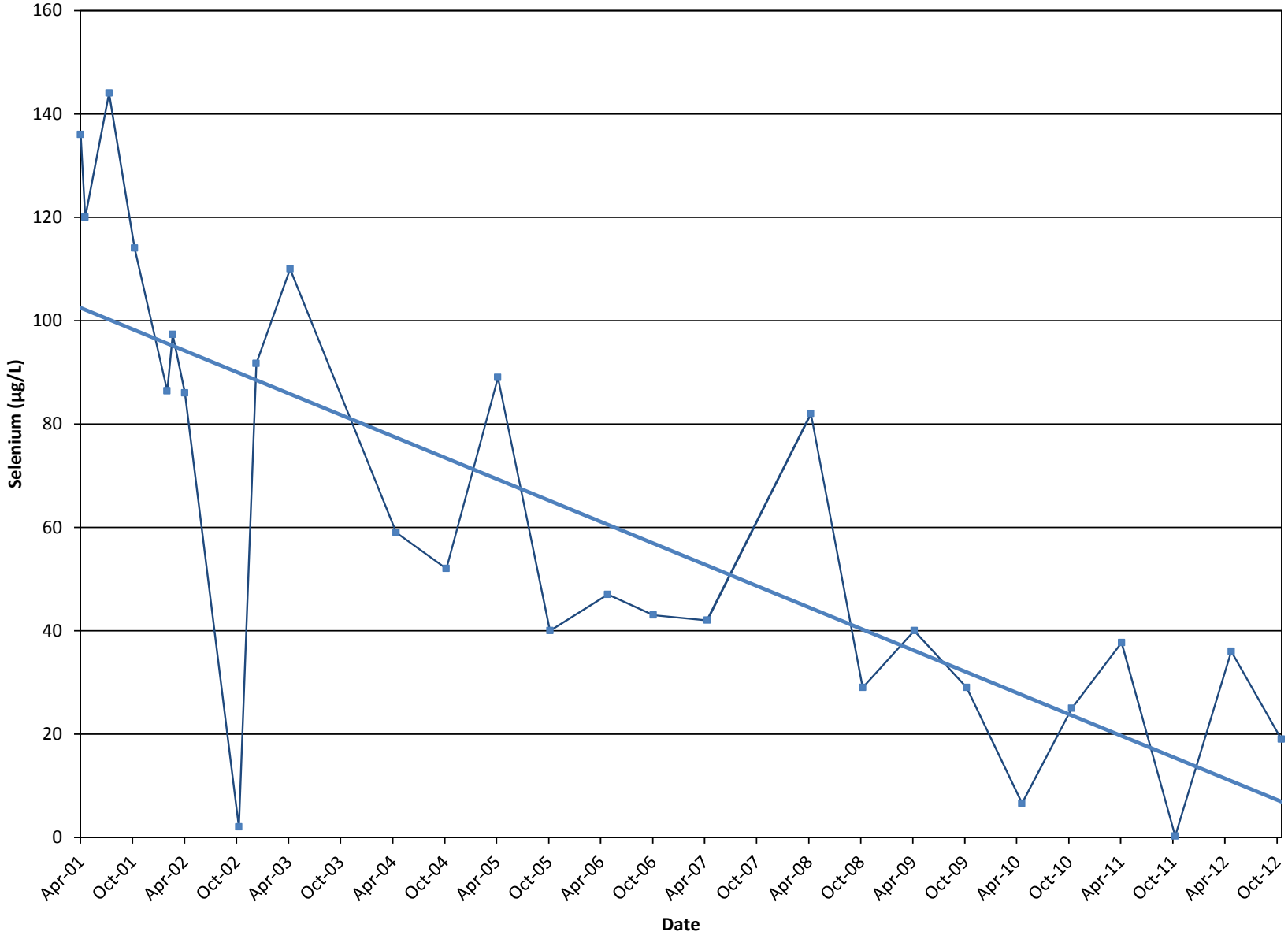

Figure 46. Selenium Concentrations in Seep 2 over Time

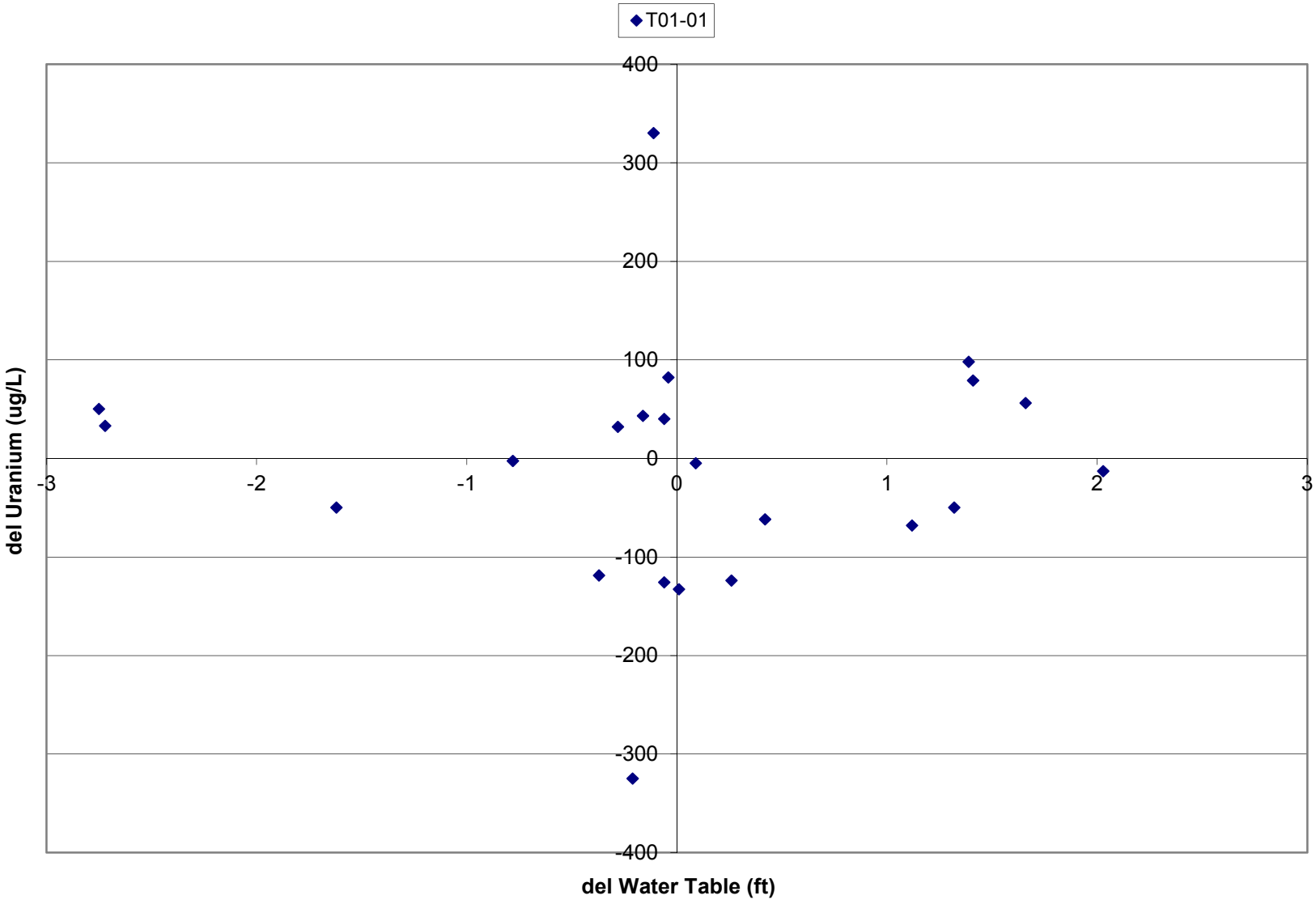

Figure 47. Uranium Concentration vs. Water Table Elevation, Well T01-01

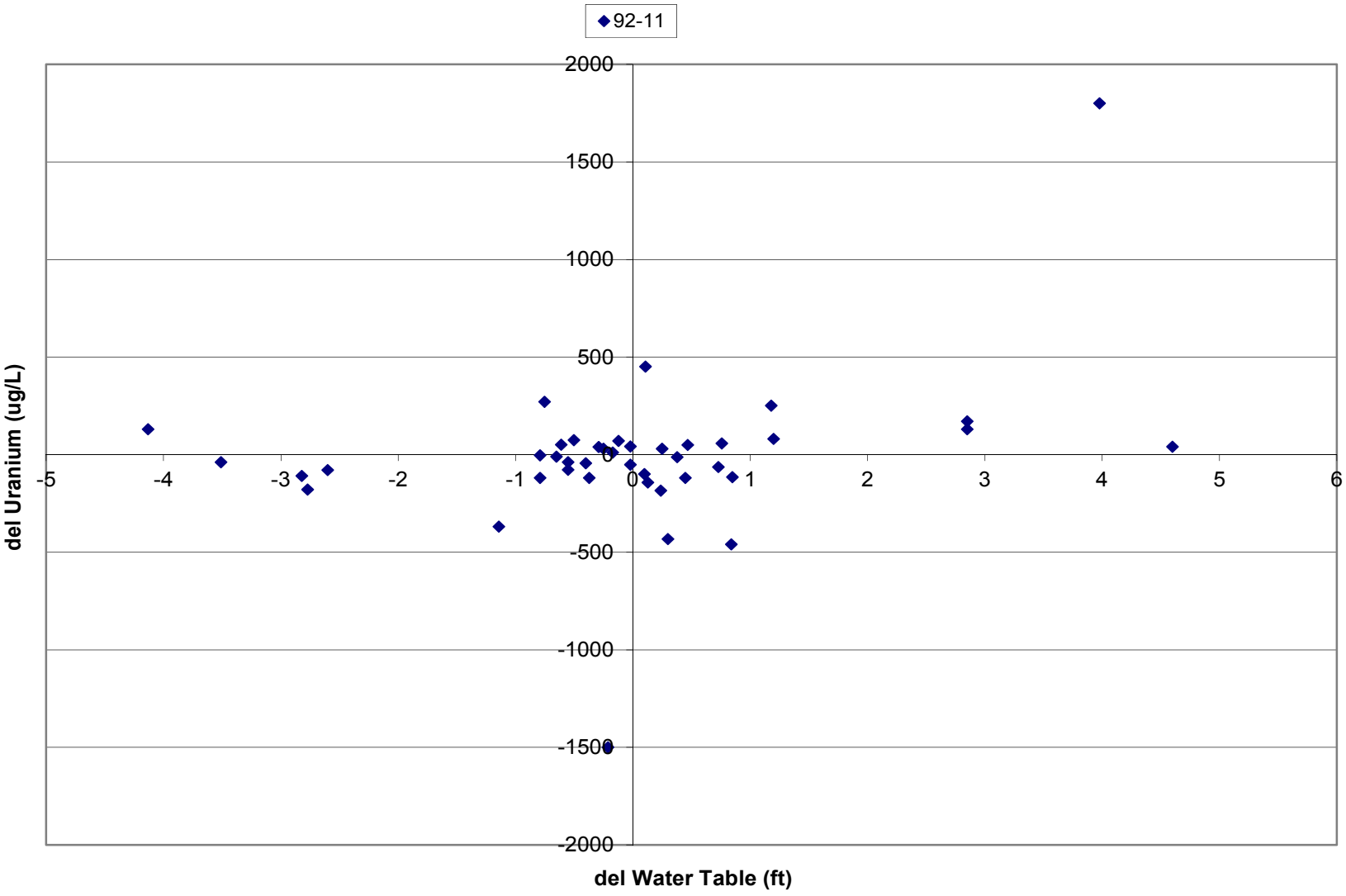

Figure 48. Uranium Concentration vs. Water Table Elevation, Well 92-11

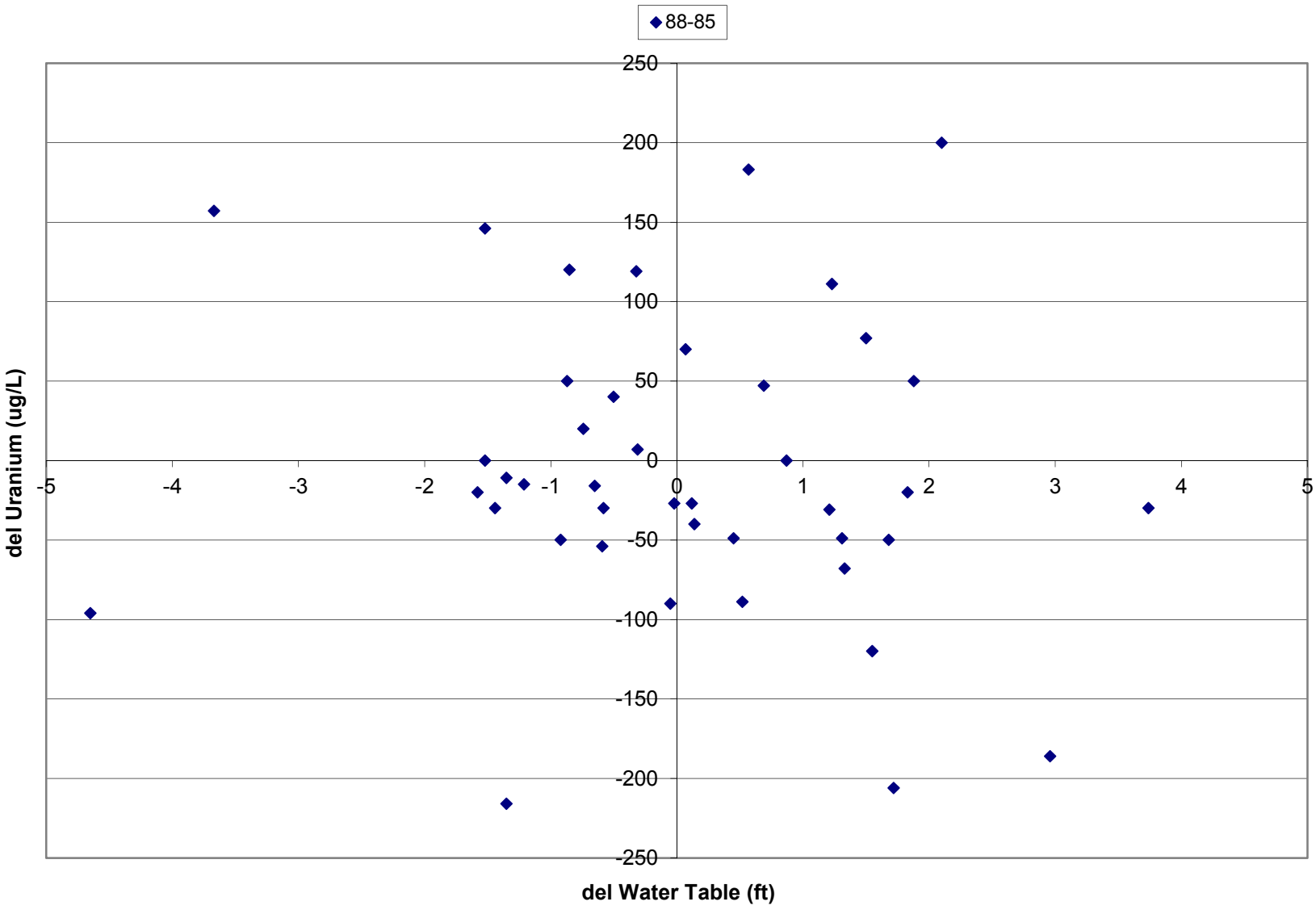

Figure 49. Uranium Concentration vs. Water Table Elevation, Well 88-85

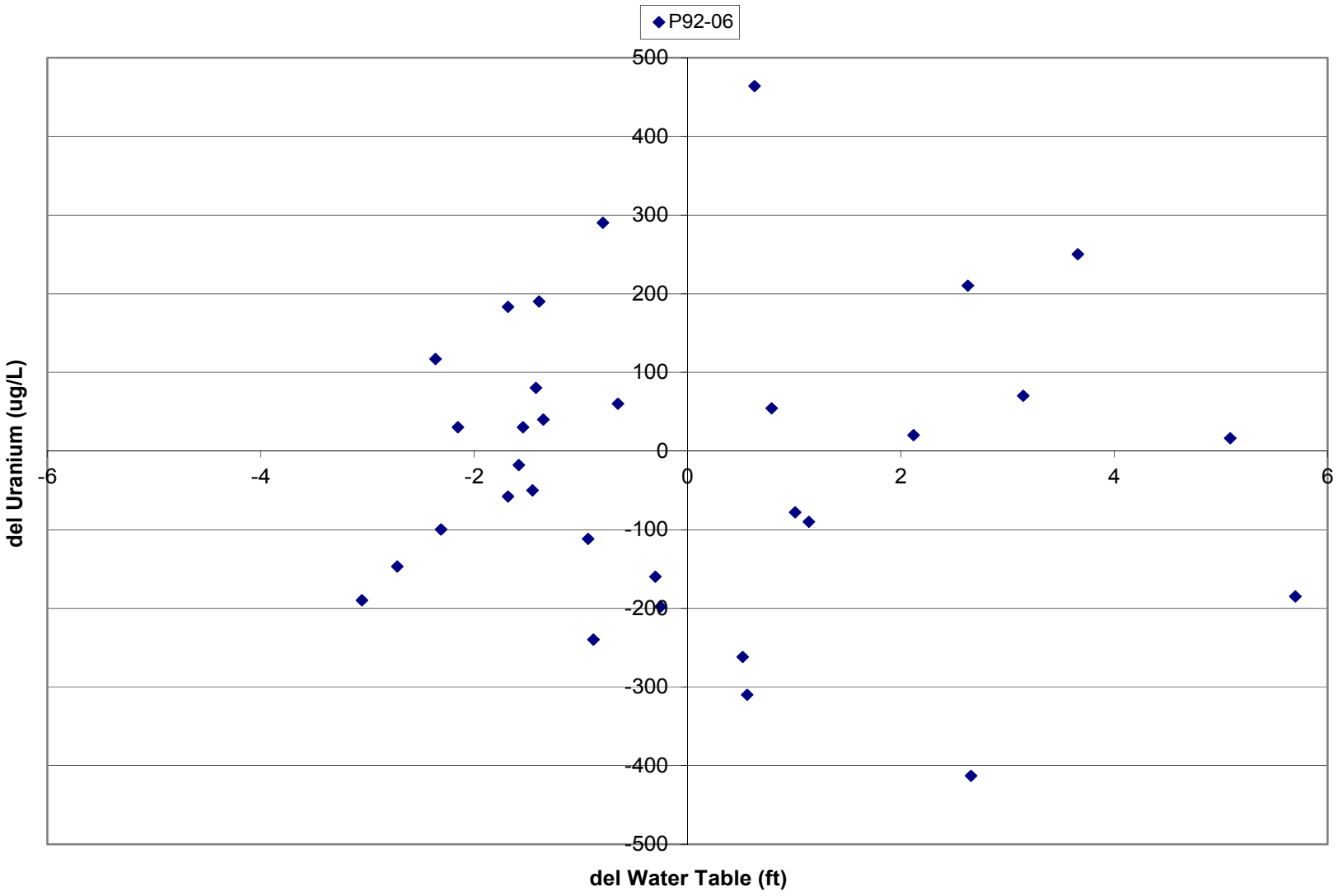

Figure 50. Uranium Concentration vs. Water Table Elevation, Well P92-06

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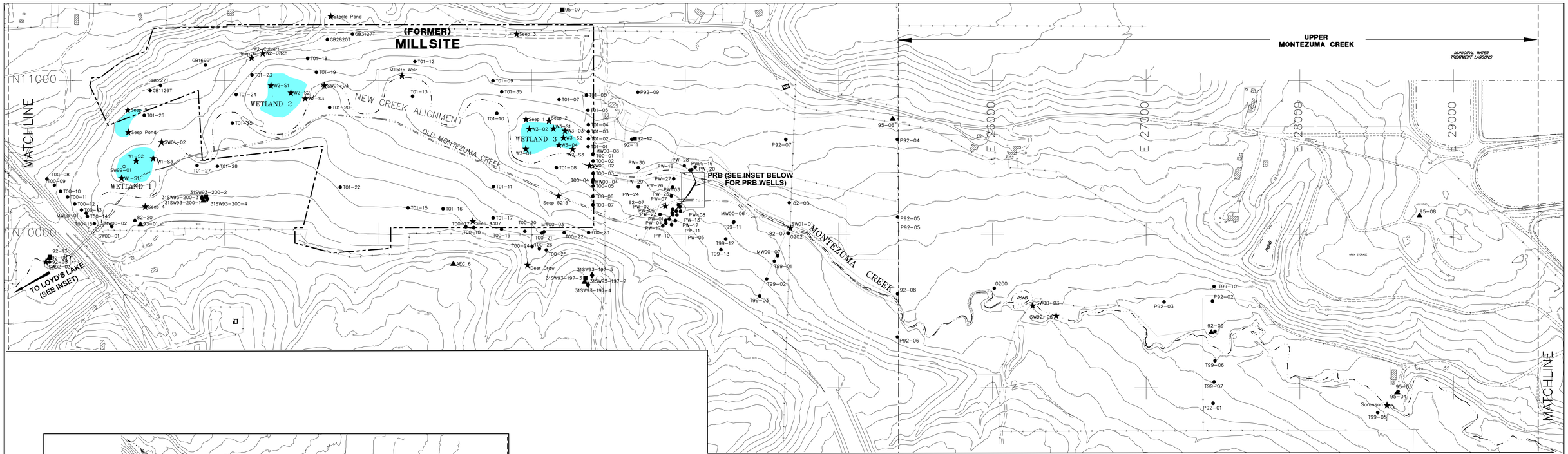
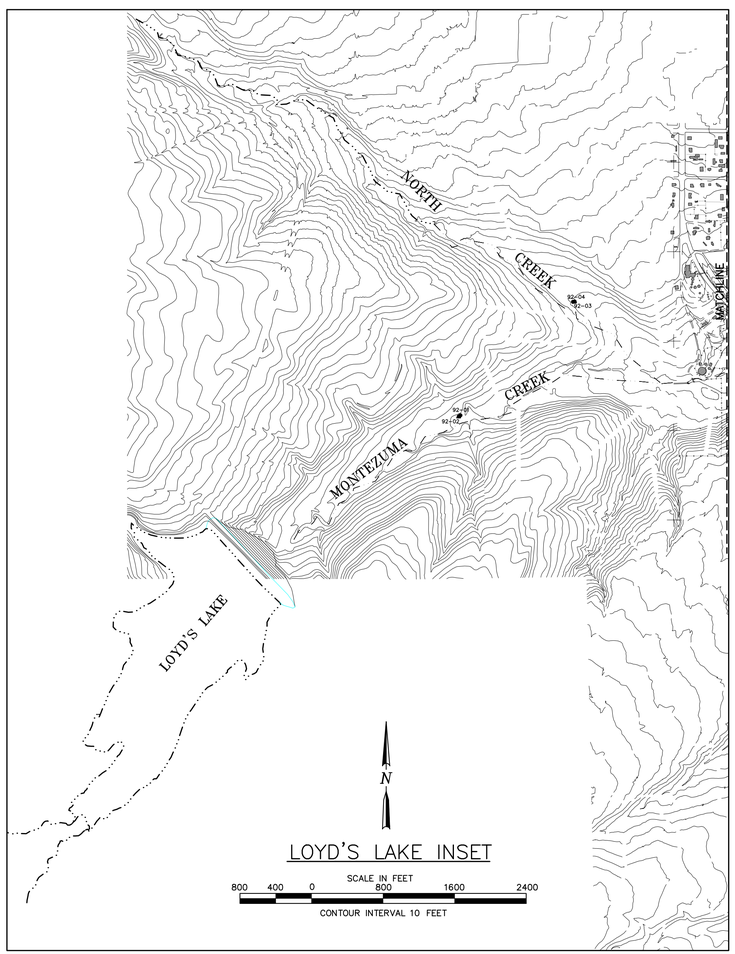
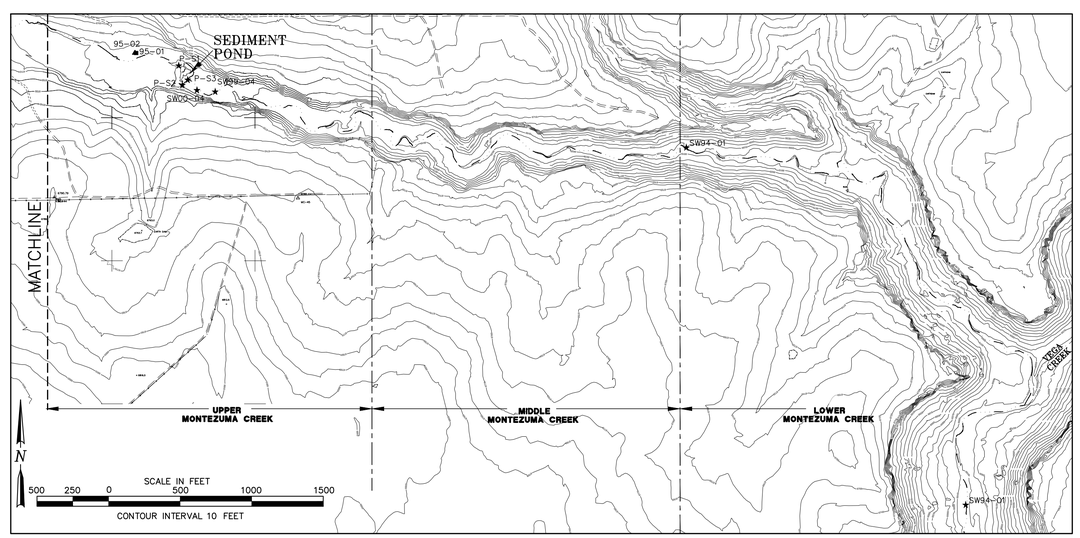
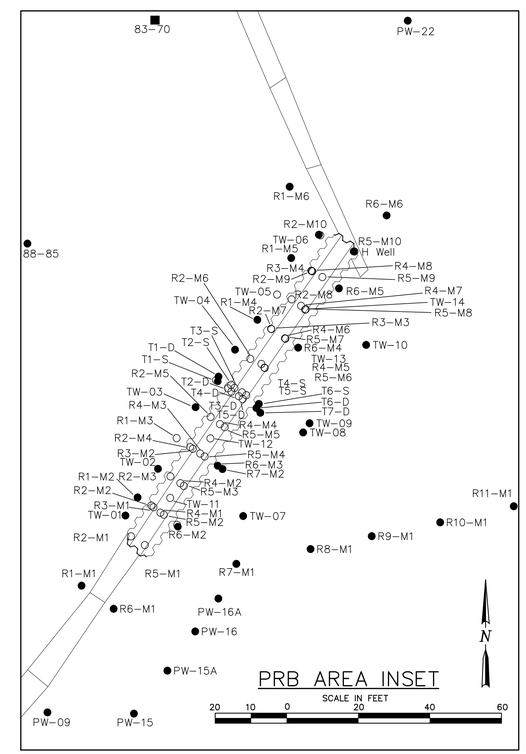




EXPLANATION

- ALLUVIAL GROUND WATER MONITORING WELL
- MANCOS SHALE GROUND WATER MONITORING WELL
- LOWER DAKOTA SANDSTONE GROUND WATER MONITORING WELL
- BURRO CANYON AQUIFER GROUND WATER MONITORING WELL
- SURFACE WATER CHEMISTRY LOCATION
- FORMER MILLSITE BOUNDARY
- NEW WETLAND AREA





U.S. DEPARTMENT OF ENERGY GRAND JUNCTION, COLORADO	Work Performed by S.M. Stoller Corporation Under DOE Contract No. DE-AM01-07LM00060
MMTS OU III SURFACE WATER AND GROUND WATER LOCATIONS AND LOYDS LAKE LOCATION	
DATE PREPARED: DECEMBER 12, 2012	FILENAME: S0679900-LOYDS-LAKE

M:\LTS\111\0038\17\007\S06799\S0679900-LOYDS-LAKE.DWG 12/12/12 3:22pm J50191

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Appendix A

Analytical Results for Alluvial Groundwater Samples, January 2000 Through April 2010

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Alluvial Groundwater -- Upgradient -- 92-05[a,b]

Analyte	Unit	10/30/00	04/11/01	07/20/01	10/10/01
Field Measurements					
Alkalinity	mg/L	--	270	321	303
Conductivity[c]	µmhos/cm	1520	1250	1366	1350
DO[c]	mg/L	--	7.7	--	--
ORP[c]	mV	84	71	--	38
pH[c]	s.u.	7.05	7.66	6.42	6.99
Temperature[c]	C	9.4	7.7	9.7	10
Turbidity[c]	NTU	42.6	4.05	60.3	70.5
Common Ions					
Ca	mg/L	266	214	206	207
Chloride	mg/L	16.4	15.2	15.4	15.6
Fluoride	µg/L	126	160	122	182
Hardness	mg/L	831	678	645	648
K	mg/L	2.90	2.39	2.49	2.53
Mg	mg/L	40.5	35.0	31.7	31.9
Na	mg/L	41.5	36.6	40.8	40.1
NO_3+NO_2 as N	µg/L	1150J	1140	54.3	510
SO_4	mg/L	545	232	454	450
TDS[c]	mg/L	1160	1060	957	--
Metals					
As	µg/L	0.2U	0.5U	0.5U	0.6U
Fe	µg/L	11.7U	9.1	15.6	0.8U
Mn	µg/L	12.9	0.63	6.8	6.6
Mo	µg/L	1.9	0.4U	3U	1.9U
Se	µg/L	1.3	2.4	0.85	0.49
U	µg/L	5.9	4.9	4.4	4.8
V	µg/L	1.3U	0.4U	0.3U	0.38
Radiological					
Alpha[d]	pCi/L	8.6UJ	7.8U	5.0UJ	8.3UJ
Alpha-U[e]	pCi/L	8.6UJ	7.8U	5.0UJ	8.3UJ
Beta	pCi/L	7.5U	8.0U	4.7U	8.2U
U	µg/L	5.9	4.9	4.4	4.8
U-234	pCi/L	--	--	3.7J	--
U-238	pCi/L	--	--	1.8J	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Upgradient -- MW00-01[a,b]

Analyte	Unit	08/01/00	11/01/00	04/09/01	07/11/01	10/08/01	04/03/02	07/08/02	10/07/02	04/07/03	10/07/03	04/12/04	10/06/04	04/05/05
Field Measurements														
Alkalinity	mg/L	254	258	242	243	276	278	303	339	276	317	312	236	302
Conductivity[c]	µmhos/cm	2390	1461	1355	1660	1710	1574	2610	1436	1324	1499	1254	1755	1449
DO[c]	mg/L	3.94	4.8	4.4	--	--	--	--	--	--	--	--	4.11	--
ORP[c]	mV	215	170	23	13	13	-87	--	--	--	59.4	229.7	34	168
pH[c]	s.u.	6.81	6.82	7.33	6.63	6.86	6.94	6.61	6.67	6.76	6.82	6.86	6.80	6.70
Temperature[c]	C	12.5	9.2	7.2	10	10.6	12	14.1	12.01	7.74	10.8	9.48	10.0	8.67
Turbidity[c]	NTU	1.67	0.98	0.4	3.38	0.57	1.51	0.95	3.23	1.06	1.05	0.81	2.51	0.66
Common Ions														
Ca	mg/L	251	255	216	287	310	276	229	250	224	253	210	330	300
Chloride	mg/L	11.9	10.1	16.6	6.51	8.45	12.8	15.2	14.2	20.5	13.1	18.0	11.0	22.0
Fluoride	µg/L	150	148	138	181	26.2U	109J	181	172	17.2U	238	150.	200.U	200.U
Hardness	mg/L	807	812	690	934	999	894	741	799	715	808	664	1040	939
K	mg/L	2.41	2.42	1.99	2.41	2.34	2.33	2.19	2.43	2.27	2.53	3.60	4.10	3.80
Mg	mg/L	43.7	42.5	36.7	52.8	54.7	49.7	41.0	42.5	37.9	42.9	34.0	53.0	46.0
Na	mg/L	38.2	34.5	38.8	36.0	37.6	37.8	37.3	46.1	41.5	45.3	41.0	44.0	40.0
NO_3+NO_2 as N	µg/L	892	555	699	57.4	235	304	466	1140	1320J	439	970.	230.	2300.
SO_4	mg/L	598	575	508	730	790	632	499	531	434	533	390	750	590
TDS[c]	mg/L	1200	1150	1070	1380	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	0.3U	0.2U	0.5U	0.5U	0.6U	0.33	0.19	0.1U	0.200	0.320	0.23	0.27	0.23
Fe	µg/L	9.1U	11.7U	14.1	5.9	0.8U	1U	4U	0.8U	4.00	12.6	9.8U	7U	7.5U
Mn	µg/L	2.3	2U	0.78	0.1U	0.1U	0.1U	0.1U	0.1U	0.360	1.80	0.077U	0.066U	0.13U
Mo	µg/L	2.3	1.3	0.4U	3U	1.9U	1.8U	1.8U	1.7U	2.00U	1.70U	3.1	0.17U	1.9
Se	µg/L	1.8	1.1	1.7	0.3U	0.97	1.1	1.2	1.1	2.10	2.00	1.8	1.1	2
U	µg/L	4.6	4.2	7.9	5.5	5.4	5.7	4.1	5.5	5.20	6.20	11J	5.3J	15
V	µg/L	1.3U	1.3U	0.4U	0.53	0.3U	1.1	0.3U	0.3U	0.300U	0.320	0.25U	0.26J	0.3UR
Radiological														
Alpha[d]	pCi/L	12.2U	8.3UJ	8.0U	12.4UJ	12.2UJ	10.3UJ	9.9U	8.9U	10.7UJ	9.7	8.6	6.3J	12.7
Alpha-U[e]	pCi/L	12.2U	8.3UJ	8.0U	12.4UJ	12.2UJ	10.3UJ	9.9U	8.9U	10.7UJ	5.4	1.0	2.7J	2.4
Beta	pCi/L	10.5U	7.4U	8.0U	12.0U	11.6U	10.2	8.9U	9.0U	11.3U	8.6U	5.3J	3.9J	3.3U
U	µg/L	4.6	4.2	7.9	5.5	5.4	5.7	4.1	5.5	5.20	6.20	11J	5.3J	15

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.

[b] Samples were filtered in the field unless otherwise noted.

[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Upgradient -- MW00-01[a,b]

Analyte	Unit	10/05/05	04/28/06	10/02/06	04/11/07	10/08/07	04/10/08[c]	10/08/08	04/06/09	10/06/09	04/20/10	10/11/10	04/05/11	10/11/11
Field Measurements														
Alkalinity	mg/L	256	273	329	258	308	329	304	251	318	118R	270	261	304
Conductivity[c]	µmhos/cm	1857	1904	2051	1785	1904	1481	1836	1651	1692	1451	1818	1676	1730
DO[c]	mg/L	3.94	1.15	4.18	3.34	--	--	--	--	--	--	--	--	--
ORP[c]	mV	90	-23.9	136	46.0	54.1	35.6	146	163	--	114.7	37.4	83.0	--
pH[c]	s.u.	6.78	6.82	6.52	6.85	6.65	6.84	6.71	6.76	6.63	6.81	6.71	6.59	6.72
Temperature[c]	C	9.7	8.58	10.75	8.17	10.61	7.71	10.31	8.99	9.95	9.29	9.65	9.99	9.35
Turbidity[c]	NTU	1.23	0.60	0.42	0.64	2.06	0.86	2.90	0.55	1.79	3.43	1.70	2.92	1.28
Common Ions														
Ca	mg/L	430	440	400	400	360	260	400	380J	370J	230	380	298	340
Chloride	mg/L	8.90	8.30	10.0	8.70	7.00	15.0	6.40	7.10	7.10	23.0	6.30	6.79	8.40
Fluoride	µg/L	200.U	200.U	230.	200.U	280.	200.U	250.	310.	300.	160.	210.	259	210.
Hardness	mg/L	1330	1370	1330	1230	1180	818	1240	1180J	1150J	723	1180	956	1060
K	mg/L	4.00	3.80	4.40	3.20	4.30	3.00	3.80J	3.60J	3.00J	2.70J	3.40J	2.69	3.30
Mg	mg/L	62.0	67.0	80.0	57.0	69.0	41.0	58.0	56.0	54.0	36.0	55.0	51.5	52.0
Na	mg/L	34.0	38.0	49.0	37.0	48.0	43.0	40.0	36.0J	42.0J	44.0J	35.0	29.6	41.0
NO_3+NO_2 as N	µg/L	140.	1100.	700.	170.	190.	980.	140.	310.	110.	2200.	100.	136	83
SO_4	mg/L	900	1000	1100	910	1000	540	910	760	750	410	850	261J	720
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	0.17	0.0075U	0.023U	0.012U	0.25	0.24	0.27	0.21U	0.28	0.31	0.28	1.70U	0.3J
Fe	µg/L	7.8U	14U	2.2U	7.4U	5.6U	1.4U	3.1U	17	1.6U	4.9U	4.9U	30.0U	4.9UJ
Mn	µg/L	0.096U	0.23U	0.097U	0.17U	0.16U	0.49	0.2U	1.3	0.1U	0.11U	0.11U	2.00U	0.11UJ
Mo	µg/L	0.068U	1.9J	0.13U	1.7	1.9	1.9	1.6	1.5	1.8	1.9	1.5	1.81	1.1UJ
Se	µg/L	0.023U	0.47	0.5	1.3	0.64	1.3	0.81	1.2	1	3.5	0.67	1.50U	0.94
U	µg/L	5.9	6.5	11	6	6.5J	9.4	5.8	4.3	5.2	10	4.4	4.32	5.9
V	µg/L	0.1U	0.7J	0.21U	0.36J	0.39J	0.29	0.19	0.34	0.26J	0.24	0.2	3.00U	0.015U
Radiological														
Alpha[d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U	µg/L	5.9	6.5	11	6	6.5J	9.4	5.8	4.3	5.2	10	4.4	4.32	5.9

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Upgradient -- MW00-01[a,b]

Analyte	Unit	04/24/12
Field Measurements		
Alkalinity	mg/L	283
Conductivity[c]	µmhos/cm	1661
DO[c]	mg/L	--
ORP[c]	mV	68.0
pH[c]	s.u.	6.78
Temperature[c]	C	10.37
Turbidity[c]	NTU	1.08
Common Ions		
Ca	mg/L	320
Chloride	mg/L	10.0
Fluoride	µg/L	120.
Hardness	mg/L	1000
K	mg/L	3.30J
Mg	mg/L	50.0
Na	mg/L	39.0J
NO_3+NO_2 as N	µg/L	160.
SO_4	mg/L	690
TDS[c]	mg/L	--
Metals		
As	µg/L	0.24
Fe	µg/L	4.9UJ
Mn	µg/L	0.11UJ
Mo	µg/L	1.1UJ
Se	µg/L	1.4
U	µg/L	4
V	µg/L	0.18
Radiological		
Alpha[d]	pCi/L	--
Alpha-U[e]	pCi/L	--
Beta	pCi/L	--
U	µg/L	4

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Upgradient -- MW00-02[a,b]

Analyte	Unit	08/02/00	11/01/00	04/09/01	07/12/01	10/11/01	04/03/02	07/09/02	10/09/02	04/07/03
Field Measurements										
Alkalinity	mg/L	254	294	243	257	282	281	291	312	220
Conductivity[c]	µmhos/cm	3290	2200	1845	1856	2020	1830	3067	1649	1504
DO[c]	mg/L	2.58	4.3	5	--	--	--	--	--	--
ORP[c]	mV	163	150	52	--	107	-23	--	--	--
pH[c]	s.u.	6.83	6.55	6.77	6.76	6.84	6.95	6.56	6.78	6.8
Temperature[c]	C	11	9.2	7.8	9.4	8.5	9.1	10.35	11.3	8.85
Turbidity[c]	NTU	3.7	0.51	0.3	0.9	1.33	2.12	1.9	95.8	2.14
Common Ions										
Ca	mg/L	366	414	316	322	370	334	279	293	266
Chloride	mg/L	6.50	7.99	9.38	5.20	6.46	6.47	7.34	12.6	13.3
Fluoride	µg/L	166	130	140	139	164	151J	198	160	17.2U
Hardness	mg/L	1200	1360	1040	1070	1210	1100	922	962	865
K	mg/L	2.46	2.71	2.28	2.38	2.37	2.40	2.31	2.49	2.18
Mg	mg/L	69.8	78.7	60.6	63.4	70.5	65.6	54.7	55.9	48.7
Na	mg/L	41.3	43.8	41.4	40.5	39.7	38.3	37.0	40.1	39.4
NO_3+NO_2 as N	µg/L	404	703	1230	42	746	190	307	690	982J
SO_4	mg/L	1020	1070	848	875	1000	815	721	715	590J
TDS[c]	mg/L	1790	1940	1600	1620	--	--	--	--	--
Metals										
As	µg/L	0.3U	0.2U	0.5U	0.5U	0.6U	0.17	0.1U	1.2	0.100U
Fe	µg/L	9.1U	11.7U	18.4	9.1	0.8U	1U	66.3	1060	6.60
Mn	µg/L	72.7	8.6	2.3	1.2	0.1U	1.5	17.8	211	1.80
Mo	µg/L	2.5	2.1	3.1	3U	1.9U	1.8U	1.8U	2.6	2.00U
Se	µg/L	1.7	1.8	2	1.6	0.94	1	1.4	1.3	2.70
U	µg/L	5.5	10	6.4	5.1	6.5	6.6	5	7.3	5.90
V	µg/L	1.3U	1.3U	0.47	0.3U	0.3U	0.3U	0.3U	1.1	0.390
Radiological										
Alpha[d]	pCi/L	11.1U	13.9UJ	11.5U	7.1UJ	12.9UJ	11.1UJ	10.3U	9.4U	11.2UJ
Alpha-U[e]	pCi/L	11.1U	13.9UJ	11.5U	7.1UJ	12.9UJ	11.1UJ	10.3U	9.4U	11.2UJ
Beta	pCi/L	11.9U	13.1U	11.9U	6.6U	11.6U	9.5U	8.9U	9.0U	11.6U
U	µg/L	5.5	10	6.4	5.1	6.5	6.6	5	7.3	5.90

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- 82-20[a,b]

Analyte	Unit	11/01/00	10/11/01	10/09/02
Field Measurements				
Alkalinity	mg/L	210	279	326
Conductivity[c]	µmhos/cm	2470	2370	2167
ORP[c]	mV	203	105	--
pH[c]	s.u.	6.53	6.56	6.75
Temperature[c]	C	9.1	8.8	11.09
Turbidity[c]	NTU	>1000	24.3	3.16
Common Ions				
Ca	mg/L	451	417	379
Chloride	mg/L	18.4	10.9	23.3
Fluoride	µg/L	140	213	173
Hardness	mg/L	1510	1400	1280
K	mg/L	2.83	2.72	2.75
Mg	mg/L	92.5	86.9	81.6
Na	mg/L	72.1	71.6	64.7
NO_3+NO_2 as N	µg/L	1180	788	3170
SO_4	mg/L	1200	1300	1090
TDS[c]	mg/L	2260	--	--
Metals				
As	µg/L	0.2U	0.6U	0.1U
Fe	µg/L	23.1	24.8	0.8U
Mn	µg/L	310	155	23.3
Mo	µg/L	2.8	1.9U	1.7U
Se	µg/L	3.6	2.7	11.3
U	µg/L	7.7	7.6	7
V	µg/L	1.3U	0.32	0.3U
Radiological				
Alpha[d]	pCi/L	12.8J	14.6UJ	10.4U
Alpha-U[e]	pCi/L	7.5J	14.6UJ	10.4U
Beta	pCi/L	11.6U	11.7U	9.1U
U	µg/L	7.7	7.6	7

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- GB1126T[a,b]

Analyte	Unit	01/14/00	04/18/00
Common Ions			
Ca	mg/L	140	291
Hardness	mg/L	691	1210
K	mg/L	0.786	2.65
Mg	mg/L	82.8	118
Na	mg/L	225	788
Metals			
As	µg/L	1.4	5.6
Fe	µg/L	8.9U	152
Mn	µg/L	530	1270
Mo	µg/L	20	225
Se	µg/L	0.10U	10
U	µg/L	158	2670
V	µg/L	62.2	2560
Radiological			
U	µg/L	158	2670

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- GB3127T[a,b]

Analyte	Unit	04/18/00
Common Ions		
Ca	mg/L	695
Hardness	mg/L	2080
K	mg/L	5.48
Mg	mg/L	84.8
Na	mg/L	189
Metals		
As	µg/L	0.24
Fe	µg/L	140
Mn	µg/L	240
Mo	µg/L	4.6
Se	µg/L	41.8
U	µg/L	122
V	µg/L	2.7
Radiological		
U	µg/L	122

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- MW00-03[a,b]

Analyte	Unit	10/15/01	04/04/02	04/10/03	04/09/09[c]
Field Measurements					
Alkalinity	mg/L	449	--	--	392
Conductivity[c]	µmhos/cm	4760	5000	3431	3910
DO[c]	mg/L	--	--	--	4.2
ORP[c]	mV	-80	120	--	-21.1
pH[c]	s.u.	7.01	7.2	7.11	7.60
Temperature[c]	C	14.4	7.3	7.55	8.3
Turbidity[c]	NTU	5.71	15.6	1.69	--
Common Ions					
Ca	mg/L	513	472	322	--
Chloride	mg/L	199	--	--	127
Fluoride	µg/L	586	--	--	--
Hardness	mg/L	2120	2010	1320	--
K	mg/L	2.95	2.28	1.61	--
Mg	mg/L	204	201	126	--
Na	mg/L	545	608	401	--
NO_3 as N	µg/L	--	--	--	452
NO_3+NO_2 as N	µg/L	332	--	--	--
SO_4	mg/L	2720	--	--	2110
Metals					
As	µg/L	1.8	0.42	0.200	--
Fe	µg/L	527	1U	1.30U	--
Mn	µg/L	4570	3790	25.8	--
Mo	µg/L	50.9	8.9	9.00	--
Se	µg/L	2.6	0.53	12.9	--
U	µg/L	864	559	534	597.5
V	µg/L	0.56	0.3U	0.300U	--
Radiological					
Alpha[d]	pCi/L	548	--	--	--
Alpha-U[e]	pCi/L	0[f]	--	--	--
Beta	pCi/L	146	--	--	--
U	µg/L	864	559	534	597.5

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- MW00-04[a,b]

Analyte	Unit	08/02/00	11/02/00	01/30/01
Field Measurements				
Alkalinity	mg/L	--	289	--
Conductivity[c]	µmhos/cm	3655	4100	4790
DO[c]	mg/L	1.49	--	--
ORP[c]	mV	-35	197	130
pH[c]	s.u.	7.29	7.03	7.29
Temperature[c]	C	19.3	13.8	4.3
Turbidity[c]	NTU	13.3	79.2	--
Common Ions				
Ca	mg/L	301	356	360
Hardness	mg/L	1070	1290	1350J
K	mg/L	20.5	19.2	17.8
Mg	mg/L	78.4	98.3	109J
Na	mg/L	496	579	638
NO_3+NO_2 as N	µg/L	--	--	29500
Metals				
As	µg/L	0.89	0.2U	0.2U
Fe	µg/L	2120	11.7U	11U
Mn	µg/L	7530	8090	9020
Mo	µg/L	245	296	457
Se	µg/L	0.46	1.8	0.66
U	µg/L	119	1080	2170
V	µg/L	1.3U	1.3U	1.5U
Radiological				
U	µg/L	119	1080	2170
U-234	pCi/L	--	--	716
U-238	pCi/L	--	--	699

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- MW00-08[a,b]

Analyte	Unit	04/09/01[c]
Field Measurements		
Conductivity[c]	µmhos/cm	3870
ORP[c]	mV	192
pH[c]	s.u.	6.73
Temperature[c]	C	6.5
Turbidity[c]	NTU	29.6

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T00-01[a,b]

Analyte	Unit	08/01/00	11/02/00	04/09/01	07/18/01	10/09/01	01/31/02	04/03/02	07/10/02	10/08/02	01/13/03	04/09/03	07/07/03	10/08/03
Field Measurements														
Alkalinity	mg/L	185	175	--	256	259	251	219	1274	272	236	176	339	290
Conductivity[c]	µmhos/cm	4980	2130	--	2420	1928	2260	1697	4238	2284	2288	1738	2019	1475
DO[c]	mg/L	0.66	3.1	2.1	--	--	--	--	--	--	--	--	--	--
ORP[c]	mV	162	131	--	99	122	--	144	--	--	--	--	-8	-26
pH[c]	s.u.	6.43	6.1	--	6.23	6.64	6.95	6.78	6.48	6.47	6.77	6.91	6.64	6.77
Temperature[c]	C	19.4	14.1	--	14.7	15.2	7.7	5.62	16.08	15.88	9.3	6.75	13.6	15.9
Turbidity[c]	NTU	4.96	44.5	--	1.27	1.57	2.08	2.72	1.13	0.93	1.84	2.05	1.04	0.6
Common Ions														
Ca	mg/L	180	127	137	157	157	173	181	194	173	216	200	234	170
Chloride	mg/L	134	87.5	96.1	91.3	94.7	74.0	51.0	69.3	80.1	79.0	98.5J	67.4	50.7
Fluoride	µg/L	691	610	525	652	749	335	25.1U	494	349	459	263J	269	374
Hardness	mg/L	677	473	506	577	569	640	658	697	639	774	711	820	601
K	mg/L	35.8	28.3	21.0	29.9	29.2	25.2	16.2	24.6	29.7	22.2	14.5	18.5	13.8
Mg	mg/L	55.2	37.8	39.9	45.0	43.0	50.4	50.0	51.7	50.2	57.0	51.5	57.2	42.8
Na	mg/L	430	317	255	336	306	242	125	251	273	253	129	183	108
NO_3+NO_2 as N	µg/L	55100	51100J	10800	9380	5940	5100	868	1200	3440	2590	275	1350	111
SO_4	mg/L	1060	694	422	887	946	853	679	886	924	941	654J	801	500
TDS[c]	mg/L	2400	1700	1590	1820	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	19.3	19.4	14.9	17.8	20.5	16.5	11.6	14.6	17.1	13.7	12.3	17.9	20.9
Fe	µg/L	9.1U	11.7U	1.0U	0.8U	0.8U	0.8U	1U	4U	0.8U	2.9U	1.30U	1U	0.800U
Mn	µg/L	4280	2440	933	1940	2290	2110	119	981	2740	1170	66.9	649	160
Mo	µg/L	163	150	86.4	144	167	103	53.1	116	142	96.4	54.5	101	82.2
Se	µg/L	10.9	12.1	9.5	13.5	39.2	18.4	22.2	24.5	14.3	73.1	15.4	16.7	16.4
U	µg/L	176	144	525	473	416	684	452	610J	372	718	486	713	565
V	µg/L	597	604	386	598	667	421	288	521	579	400	317	520	499
Radiological														
Alpha[d]	pCi/L	93.9	71.4J	497	330J	344J	472	294J	377	253	490	313	398	326
Alpha-U[e]	pCi/L	0[f]	0[f]	136	0[f]	58.2J	2.1	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]
Beta	pCi/L	80.1	58.5	149	72.1	98.4	141	146	108	101	166	140	118	99.3
U	µg/L	176	144	525	473	416	684	452	610J	372	718	486	713	565
U-234	pCi/L	--	--	--	155J	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	182J	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T00-01[a,b]

Analyte	Unit	01/20/04	04/13/04	10/07/04	10/06/05	10/04/06	10/09/07	10/09/08	10/07/09	10/11/10	10/11/11
Field Measurements											
Alkalinity	mg/L	614	242	269	347	210	132	418	273	309	235
Conductivity[c]	µmhos/cm	2086	1491	1335	1056	1325	1056	1813	1422	2012	1587
DO[c]	mg/L	--	--	0.30	--	0.95	--	--	--	--	--
ORP[c]	mV	-103.1	--	-18	-41	41	-75	-33	--	-15.7	--
pH[c]	s.u.	6.95	7.07	7.00	7.00	6.68	6.89	6.87	6.79	6.84	6.89
Temperature[c]	C	6.47	9.93	15.7	16.0	14.20	15.85	15.61	15.15	16.32	15.77
Turbidity[c]	NTU	1.35	1.06	1.33	1.83	0.99	1.70	3.17	1.80	1.76	1.44
Common Ions											
Ca	mg/L	300	190	190	140	230	130	250	200J	310J	230
Chloride	mg/L	88.0	44.0	26.0	41.0	38.0	35.0	36.0	39.0	49.0	39.0
Fluoride	µg/L	430.	440.	430.	370.	250.	340.	730.	480.	300.	300.
Hardness	mg/L	1030	652	639	461	743	436	810	644J	996J	747
K	mg/L	15.0	15.0	8.50	8.20	10.0	10.0	15.0J	10.0J	15.0J	9.80
Mg	mg/L	68.0	43.0	40.0	27.0	41.0	27.0	45.0	35.0	54.0	42.0
Na	mg/L	140	92.0	65.0	58.0	77.0	73.0J	130	78.0J	120J	87.0
NO_3+NO_2 as N	µg/L	240.	18	10.U	10.U	120.	80.	14	10.U	540.	380.
SO_4	mg/L	850	480	430	200	510	410	690	490	800	570
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--
Metals											
As	µg/L	16J	16	13	8.8	8.7	8.1	8.9	8.5	9.3	9.2
Fe	µg/L	6.7U	9.8U	7U	7.8U	2.2U	5.6U	3.1U	1.6U	4.9U	4.9UJ
Mn	µg/L	250	81	1500	3200	1100	240	1700	260	360	110
Mo	µg/L	50J	51	41	45	19	18	33	24	19	13
Se	µg/L	10J	3.3	2.4	0.21	5.4	13	1.4	2.6	22	35
U	µg/L	690	350	180J	210	98	35	230	120	130	66
V	µg/L	380	340	280J	120	180	220J	110	180	340	240
Radiological											
Alpha[d]	pCi/L	435	221	120	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	--	--	--	--	--	--	--
Beta	pCi/L	121	95.1	41.9	--	--	--	--	--	--	--
U	µg/L	690	350	180J	210	98	35	230	120	130	66
U-234	pCi/L	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T00-03[a,b]

Analyte	Unit	04/09/09[c]
Field Measurements		
Alkalinity	mg/L	271
Conductivity[c]	µmhos/cm	1392
DO[c]	mg/L	7.1
ORP[c]	mV	21
pH[c]	s.u.	7.38
Temperature[c]	C	4.6
Common Ions		
Chloride	mg/L	28.0
NO_3 as N	µg/L	678
SO_4	mg/L	755
Metals		
U	µg/L	150.3
Radiological		
U	µg/L	150.3

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- TOO-04[a,b]

Analyte	Unit	04/09/01	07/11/01	10/15/01	01/31/02	04/03/02	07/09/02	10/08/02	01/13/03	04/09/03	07/09/03	10/06/03	01/20/04	04/13/04
Field Measurements														
Alkalinity	mg/L	214	236	216	159	--	241	175	213	221	296	222	464	295
Conductivity[c]	µmhos/cm	2580	5370	2720	2210	1653	3301	1771	1722	1891	1765	1578	1706	1712
DO[c]	mg/L	1.6	--	--	--	--	--	--	--	--	--	--	--	--
ORP[c]	mV	107	--	136	--	91	--	--	--	--	101	64.1	-66.4	--
pH[c]	s.u.	6.77	6.46	6.64	7.04	7.02	6.54	6.71	7.05	6.84	6.82	7.17	7.17	7.19
Temperature[c]	C	6.7	14.7	16.3	7	7.6	16.18	15.61	8	6.95	18.7	16.23	6.57	10.29
Turbidity[c]	NTU	--	1.82	2.08	1.3	2.65	4.52	2.17	1.42	0.51	2.64	0.5	3.26	1.27
Common Ions														
Ca	mg/L	176	512	173	157	184	192	209	240	253	230	192	270	230
Chloride	mg/L	80.4	131	73.2	51.7	35.7	34.5	50.1	37.1	67.6J	59.1	48.0	60.0	45.0
Fluoride	µg/L	530	459	1020	385	290J	610	276	25.1U	160J	445	461	500.	380.
Hardness	mg/L	679	1930	667	618	707	727	760	846	885	804	666	913	780
K	mg/L	11.2	12.9	10.2	9.92	10.3	11.7	12.6	9.75	8.30	9.60	9.66	11.0	11.0
Mg	mg/L	58.1	158	57.0	54.8	60.1	60.1	57.8	59.9	61.5	55.7	45.2	58.0	50.0
Na	mg/L	295	856	380	252	122	136	124	96.0	119	113	102	97.0	94.0
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	15000	64600	16700	7910	3010	2900	4010	2470	2660	1180	1010	1400.	730.
SO_4	mg/L	480	3080	1280	899	654	733	789	721	784J	679	579	730	560
TDS[c]	mg/L	1990	5640	--	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	4.7	5.3	5.9	4.9	4.4	5.1	5.2	5.7	5.10	6.20	8.70	7.6J	8.1
Fe	µg/L	1.0U	2.2	0.8U	0.8U	1U	4U	0.8U	2.9U	1.30U	1U	0.800U	6.7U	9.8U
Mn	µg/L	1000	2220	1210	1440	408	920	292	53.5	8.60	180	18.5	2.5	0.077U
Mo	µg/L	364	237	389	348	232	301	230	195	118	217	187	130J	110
Se	µg/L	7.3	35.7	16.9	21.5	33.5	33.8	112	46.6	19.1	47.9	39.5	31J	15
U	µg/L	1310	3690	1340	1110	1440	1280J	674	1390	831	1270	680	890	650
V	µg/L	120	128	165	125	111	154	163	138	118	171	193	150	160
Radiological														
Alpha[d]	pCi/L	691	2520J	966	769	871J	928	474	914	407	736	393	573	464
Alpha-U[e]	pCi/L	0[f]	0[f]	45.4	6.4	0[f]	48.6	11.0	0[f]	0[f]	0[f]	0[f]	0[f]	17.5
Beta	pCi/L	349	511	217	200	422	165	156	282	231	214	118	141	170
U	µg/L	1310	3690	1340	1110	1440	1280J	674	1390	831	1270	680	890	650

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- TOO-04[a,b]

Analyte	Unit	10/07/04	10/06/05	10/04/06	10/09/07	10/09/08	04/09/09[c]	10/11/10	10/11/11
Field Measurements									
Alkalinity	mg/L	380	400	276	251	106	274	288	299
Conductivity[c]	µmhos/cm	1946	1556	2040	1851	1621	2474	1714	1808
DO[c]	mg/L	1.00	--	1.88	--	--	4.8	--	--
ORP[c]	mV	39	41	105	-22	81	-53	57.3	--
pH[c]	s.u.	7.03	6.93	6.70	6.87	6.97	7.51	7.02	6.91
Temperature[c]	C	15.8	15.2	14.66	15.49	15.59	6.9	16.38	15.81
Turbidity[c]	NTU	2.28	2.17	2.17	0.88	2.1	--	1.19	1.07
Common Ions									
Ca	mg/L	310	240	490	370	250	--	290	330
Chloride	mg/L	37.0	22.0	37.0	27.0	24.0	72.0	27.0	28.0
Fluoride	µg/L	500.	340.	440.	530.	780.	--	300.	350.
Hardness	mg/L	1030	805	1550	1200	822	--	938	1060
K	mg/L	13.0	11.0	12.0	10.0	8.80J	--	6.90J	5.80
Mg	mg/L	62.0	50.0	80.0	67.0	48.0	--	52.0	57.0
Na	mg/L	97.0	67.0	100	86.0	77.0	--	66.0	68.0
NO_3 as N	µg/L	--	--	--	--	--	1130	--	--
NO_3+NO_2 as N	µg/L	540.	58	310.	460.	420.	--	200.	430.
SO_4	mg/L	740	490	1000	990	620	1210	680	750
TDS[c]	mg/L	--	--	--	--	--	--	--	--
Metals									
As	µg/L	9.7	8.9	8.1	7.1	9.9	--	8.7	10
Fe	µg/L	7U	7.8U	2.2U	5.6U	3.1U	--	4.9U	4.9UJ
Mn	µg/L	1.4	9.9	2.6	55	17	--	0.25	0.11UJ
Mo	µg/L	160	160	93	94	110	--	89	72
Se	µg/L	30	2.3	9	19	17	--	6.2	13
U	µg/L	790J	700	370	260	380	511.1	230	180
V	µg/L	250J	240	170	210J	210	--	180	190
Radiological									
Alpha[d]	pCi/L	527	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	0[f]	--	--	--	--	--	--	--
Beta	pCi/L	181	--	--	--	--	--	--	--
U	µg/L	790J	700	370	260	380	511.1	230	180

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T00-05[a,b]

Analyte	Unit	04/09/09[c]
Field Measurements		
Alkalinity	mg/L	251
Conductivity[c]	µmhos/cm	4248
DO[c]	mg/L	6.5
ORP[c]	mV	-17.3
pH[c]	s.u.	7.57
Temperature[c]	C	9.7
Common Ions		
Chloride	mg/L	126
NO_3 as N	µg/L	29400
SO_4	mg/L	2440
Metals		
U	µg/L	2339.3
Radiological		
U	µg/L	2339.3

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T00-07[a,b]

Analyte	Unit	04/09/09[c]
Field Measurements		
Alkalinity	mg/L	364
Conductivity[c]	µmhos/cm	3918
DO[c]	mg/L	2.8
ORP[c]	mV	-49.7
pH[c]	s.u.	7.30
Temperature[c]	C	8.5
Common Ions		
Chloride	mg/L	146
NO_3 as N	µg/L	12400
SO_4	mg/L	2090
Metals		
U	µg/L	699.8
Radiological		
U	µg/L	699.8

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T00-17[a,b]

Analyte	Unit	08/24/00
Metals		
As	µg/L	0.44
Fe	µg/L	49.7
Mn	µg/L	80.9
Mo	µg/L	44.8
Se	µg/L	60.8
U	µg/L	638
V	µg/L	1.2U
Radiological		
U	µg/L	638

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T00-18[a,b]

Analyte	Unit	08/24/00	10/30/00
Field Measurements			
Alkalinity	mg/L	--	457
Conductivity[c]	µmhos/cm	--	5160
ORP[c]	mV	--	207
pH[c]	s.u.	--	6.75
Temperature[c]	C	--	13.3
Turbidity[c]	NTU	--	396
Common Ions			
NO_3+NO_2 as N	µg/L	--	96900
Metals			
As	µg/L	0.62	0.46
Fe	µg/L	98.3	11.7U
Mn	µg/L	1760	593
Mo	µg/L	340	514
Se	µg/L	13.6	103
U	µg/L	1110	1430
V	µg/L	1.2U	1.3U
Radiological			
U	µg/L	1110	1430
U-234	pCi/L	384	--
U-235	pCi/L	19.6	--
U-238	pCi/L	379	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T00-19[a,b]

Analyte	Unit	08/24/00
Metals		
As	µg/L	0.3U
Fe	µg/L	44
Mn	µg/L	513
Mo	µg/L	452
Se	µg/L	47.4
U	µg/L	935
V	µg/L	1.2U
Radiological		
U	µg/L	935
U-234	pCi/L	306
U-235	pCi/L	13.4
U-238	pCi/L	308

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-01[a,b]

Analyte	Unit	07/18/01	10/09/01	01/30/02	04/03/02	07/10/02	10/08/02	04/09/03	10/07/03	04/14/04	10/07/04	04/06/05	10/06/05	04/27/06
Field Measurements														
Alkalinity	mg/L	290	224	251	203	297	228	165	219	222	189	265	276	276
Conductivity[c]	µmhos/cm	2200	2060	1893	1688	3880	2007	1804	1367	1162	1142	1208	971	1463
DO[c]	mg/L	--	--	2.27	--	--	--	--	--	--	0.36	--	--	0.61
ORP[c]	mV	--	99	128.2	143	--	--	--	-36	--	-44	215	14	-25.8
pH[c]	s.u.	6.24	6.64	6.88	6.93	6.55	6.6	6.96	7.01	7.17	7.29	6.92	7.16	7.06
Temperature[c]	C	17.3	16.7	5.62	5.55	16.7	16.45	7.7	14.74	9.68	13.6	8.24	15.7	10.47
Turbidity[c]	NTU	3.26	3.36	142.3	3.5	3.25	3.88	0.92	0.83	1.11	1.86	1.26	0.77	1.92
Common Ions														
Ca	mg/L	131	143	170	200	140	115	216	162	260	150	160	130	210
Chloride	mg/L	87.4	77.2	76.4	50.4	81.5	82.5	99.8J	49.5	41.0	25.0	58.0	42.0	74.0
Fluoride	µg/L	694	673	333	192	545	382	119J	424	410.	300.	270.	280.	230.
Hardness	mg/L	467	502	606	712	492	424	754	564	859	510	544	419	701
K	mg/L	26.3	23.8	15.7	12.3	18.3	21.3	10.8	9.98	14.0	6.30	8.30	6.70	11.0
Mg	mg/L	34.0	35.2	44.0	51.7	34.7	33.3	52.2	38.7	51.0	33.0	35.0	23.0	43.0
Na	mg/L	355	259	221	111	286	272	129	95.1	82.0	53.0	75.0	55.0	97.0
NO_3+NO_2 as N	µg/L	2120	2600	1560	524	2160	2990	273	32.3	26	10.U	79	10.U	36
SO_4	mg/L	765	801	775	684	723	753	706J	449	470	370	350	200	580
TDS[c]	mg/L	1620	--	--	--	--	--	--	--	--	1600	870	670	1200
Metals														
As	µg/L	33.9	25.9	20.6	17.3	30.2	33.1	16.1	27.2	19	15	13	11	11
Fe	µg/L	0.8U	0.8U	0.8U	1U	4U	0.8U	1.30U	0.800U	9.8U	7U	7.5U	7.8U	14U
Mn	µg/L	586	553	127	16.7	155	198	9.30	83.1	450	1700	1800	2700	2700
Mo	µg/L	106	105	63.2	42.1	81.3	87	32.2	51.3	37	28	38	32	17
Se	µg/L	22.2	86.3	55.4	32.2	125	237	16.3	12.1	2.6	0.93	3.8	0.32	0.68
U	µg/L	326	321	651	331	326J	193	291	334	210	91J	170	120	160
V	µg/L	796	750	441	346	700	731	352	491	350	180J	190	110	170
Radiological														
Alpha[d]	pCi/L	182J	239J	381	230J	231	131	170	199	132	59.5	96.2	--	--
Alpha-U[e]	pCi/L	0[f]	18.5J	0[f]	2.6J	7.0	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	--	--
Beta	pCi/L	50.2	65.7	16.5U	111	59.5	57.8	84.0	68.4	53.8	24.1	38.7	--	--
U	µg/L	326	321	651	331	326J	193	291	334	210	91J	170	120	160
U-234	pCi/L	108J	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	136J	--	--	--	--	--	--	--	--	--	--	--	--

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[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-01[a,b]

Analyte	Unit	10/04/06	04/11/07	10/09/07	04/09/08[c]	10/09/08	04/07/09	04/20/10	10/11/10	04/04/11	10/11/11	04/25/12
Field Measurements												
Alkalinity	mg/L	210	280	144	237	292	296	180	294	321	220	312
Conductivity[c]	µmhos/cm	1358	1899	1082	1271	1671	1420	1239	2150	1727	1611	2131
DO[c]	mg/L	0.98	1.71	--	1.23	--	--	--	--	--	--	--
ORP[c]	mV	85	-49.0	-21	2.0	-56	67	82.7	10.4	17.2	--	65.2
pH[c]	s.u.	6.74	6.92	6.97	7.21	6.88	7.14	7.22	6.76	6.95	6.89	7.08
Temperature[c]	C	12.52	6.26	15.37	4.17	16.98	6.05	5.19	16.42	6.95	15.60	9.25
Turbidity[c]	NTU	0.83	3.87	0.99	0.80	3.98	1.88	2.40	2.34	1.92	0.96	3.32
Common Ions												
Ca	mg/L	230	400	140	170	220	280J	140	350	270	240	360
Chloride	mg/L	42.0	80.0	37.0	41.0	43.0	47.0	42.0	66.0	28.5	47.0	62.0
Fluoride	µg/L	230.	200.U	290.	180.	580.	310.	270.	260.	263	250.	220.
Hardness	mg/L	747	1260	469	560	718	917J	461	1120	880	780	1190
K	mg/L	10.0	12.0	9.90	7.60	15.0J	9.50J	8.50J	16.0J	5.49	10.0	10.0J
Mg	mg/L	42.0	63.0	29.0	33.0	41.0	53.0	27.0	60.0	49.9	44.0	70.0
Na	mg/L	78.0	120	71.0	61.0	120	110J	70.0	130	56.9	89.0	100J
NO_3+NO_2 as N	µg/L	50.	16	79	43	10.U	36	110.	750.	10U	340.	32
SO_4	mg/L	520	840	430	430	590	610	320	890	703	620	860
TDS[c]	mg/L	1000	1700	810	910	1200	1400	780	1800	1420	1300	1800
Metals												
As	µg/L	10	8.2	11	7.7	9.4	6.7	9	12	12.5	11	8.4
Fe	µg/L	2.2U	3.7U	5.6U	1.4U	6.8	9.3	4.9U	4.9U	98.4	4.9UJ	4.9UJ
Mn	µg/L	2000	620	48	830	1200	1300	280	73	841	37	220
Mo	µg/L	16	12	18	14	24	8.8	18	10	9.43	6.1	3.9J
Se	µg/L	4.9	2.5	10	6.8	7.2	0.83	6.1	46	1.50U	32	0.82
U	µg/L	98	180	54	110	160	110	97	130	61.8	59	91
V	µg/L	140	210J	250J	98	180	78	120	170	67.5	150	87
Radiological												
Alpha[d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--	--	--	--	--	--
U	µg/L	98	180	54	110	160	110	97	130	61.8	59	91
U-234	pCi/L	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-02[a,b]

Analyte	Unit	07/18/01	01/30/02	04/03/02	07/10/02	10/08/02	04/09/03	07/07/03	10/07/03	04/14/04	10/05/04	04/05/05	10/06/05	04/27/06
Field Measurements														
Alkalinity	mg/L	295	320	337	348	341	272	377	340	269	320	212	296	294
Conductivity[c]	µmhos/cm	228	1926	1886	3533	1784	1932	1776	1802	1352	1584	1297	1415	1603
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	2.41
ORP[c]	mV	--	124	149	--	--	--	97	61	--	50	127	31	-38.7
pH[c]	s.u.	6.33	6.8	6.83	6.7	6.73	6.94	6.82	6.75	7.11	7.05	6.78	7.00	7.20
Temperature[c]	C	18.6	6.78	10.83	19.9	16.18	8.96	16.2	15.09	9.74	15.2	5.80	17.2	10.44
Turbidity[c]	NTU	701	>1000	9.58	20.3	86.4	3.67	4.94	3.47	2.61	2.63	1.93	3.44	2.60
Common Ions														
Ca	mg/L	251	246	247	234	242	265	256	248	250	230	160	200	270
Chloride	mg/L	101	76.3	66.7	33.3	66.7	98.6J	68.2	73.1	72.0	38.0	74.0	59.0	81.0
Fluoride	µg/L	489	279	249	244	221	124J	102	309	440.	460.	330.	340.	360.
Hardness	mg/L	854	831	840	796	816	891	850	830	822	756	540	648	880
K	mg/L	16.6	12.2	9.38	9.84	9.64	9.14	8.92	10.1	13.0	11.0	11.0	11.0	10.0
Mg	mg/L	55.1	52.6	54.3	51.3	51.3	55.6	51.2	51.2	48.0	44.0	34.0	36.0	50.0
Na	mg/L	189	128	112	106	101	121	108	107	92.0	79.0	82.0	84.0	96.0
NO_3+NO_2 as N	µg/L	4450	2960	2820J	1770	1590	6390	2370	2300	1200.	680.	1000.	1100.	3400.
SO_4	mg/L	715	737	656	303	634	700J	611	626	550	520J	400	410	630
TDS[c]	mg/L	1640	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	15.6	17.6	22.3	18.6	18.8	17.8	23.0	28.2	24	29	19	24	20
Fe	µg/L	5.4	259	28.3	4U	0.8U	1.30U	10.00	0.800U	9.8U	7U	7.5U	7.8U	14U
Mn	µg/L	691	465	6.9	105	73.2	3.50	12.8	4.50	4.3	5.2	9.3	12	1.8
Mo	µg/L	44.4	26.9	31.3	22.5	23.7	28.9	25.9	26.8	20	31	15	25	23
Se	µg/L	125	137	133	131	118	144	86.8	98.2	32	46	12	36	43
U	µg/L	311	301	373	323J	278	391	305	278	240	210J	180	160	240
V	µg/L	472	405	507	532	609	449	581	623	450	620J	370	550	350
Radiological														
Alpha[d]	pCi/L	155J	--	210J	197	158	207	148	149	151	123	88.7	--	--
Alpha-U[e]	pCi/L	0[f]	--	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	--	--
Beta	pCi/L	46.0	--	116	52.3	59.6	107	50.3	53.8	63.5	57.0	35.7	--	--
U	µg/L	311	301	373	323J	278	391	305	278	240	210J	180	160	240
U-234	pCi/L	107J	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	138J	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-02[a,b]

Analyte	Unit	10/04/06	04/11/07	10/09/07	04/09/08[c]	10/09/08	04/07/09	10/07/09	04/20/10	10/11/10	04/04/11	10/11/11	04/25/12
Field Measurements													
Alkalinity	mg/L	302	370	291	250	362	276	337	186	333	268	338	335
Conductivity[c]	µmhos/cm	1894	1947	1670	1605	1752	2295	1875	1521	1994	1781	1991	2172
DO[c]	mg/L	4.35	6.01	--	2.33	--	--	--	--	--	--	--	--
ORP[c]	mV	151	123.5	93	105.2	75	64	--	72.0	72.7	63.5	--	140.7
pH[c]	s.u.	6.86	7.06	6.99	7.22	6.97	7.21	6.95	7.20	7.00	6.88	6.99	7.11
Temperature[c]	C	14.36	8.90	15.52	5.99	15.06	10.38	14.81	7.28	15.06	6.3	14.67	9.12
Turbidity[c]	NTU	2.47	1.78	1.19	0.99	4.08	3.35	4.15	3.24	2.67	2.3	4.18	2.56
Common Ions													
Ca	mg/L	380	420	280	200	260	340J	310J	160	300	268	310	330
Chloride	mg/L	63.0	83.0	44.0	82.0	56.0	85.0	72.0	55.0	84.0	55.1	84.0	81.0
Fluoride	µg/L	460.	400.	560.	290.	620.	490.	510.	370.	410.	347	500.U	330.
Hardness	mg/L	1210	1320	917	668	851	1100J	1000J	535	967	893	1010	1100
K	mg/L	14.0	11.0	12.0	8.10	12.0J	11.0J	10.0J	8.70J	11.0J	6.55	11.0	11.0J
Mg	mg/L	64.0	67.0	53.0	41.0	49.0	62.0	55.0	33.0	53.0	54.4	57.0	67.0
Na	mg/L	110	120	100	92.0	110	130J	100J	91.0	120	105	110	130J
NO_3+NO_2 as N	µg/L	2200.	2700.J	670.	3800.	1400.	2500.	1200.	3800.	1800.	194	1800.	940.
SO_4	mg/L	820	750	720	560	640	740	690	410	700	665	660	810
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Metals													
As	µg/L	24	19	20	18	24	18	22	21	21	9.55	21	16
Fe	µg/L	2.2U	3.7U	5.6U	1.4U	3.1U	1.3UJ	1.6U	4.9U	4.9U	30.0U	4.9UJ	4.9UJ
Mn	µg/L	0.097U	0.084U	0.16U	0.15U	10	0.39	0.1U	0.11U	1.5	2.00U	0.11UJ	0.11UJ
Mo	µg/L	28	24	28	21	22	19	23	26	22	11.1	18	13
Se	µg/L	44	41	29	28	35	32	29	51	30	4.77	31	20
U	µg/L	230	270	160	200	180	220	180	160	170	136	170	170
V	µg/L	430	410J	540J	320	460	350	520	350	430	298	420	300
Radiological													
Alpha[d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
U	µg/L	230	270	160	200	180	220	180	160	170	136	170	170
U-234	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--

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[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-03[a,b]

Analyte	Unit	10/10/01
Field Measurements		
Conductivity[c]	µmhos/cm	2080
ORP[c]	mV	136
pH[c]	s.u.	6.79
Temperature[c]	C	14
Turbidity[c]	NTU	900
Common Ions		
Ca	mg/L	247
Chloride	mg/L	92.1
Fluoride	µg/L	349
Hardness	mg/L	830
K	mg/L	10.6
Mg	mg/L	51.9
Na	mg/L	138
NO_3+NO_2 as N	µg/L	3120
SO_4	mg/L	765
Metals		
As	µg/L	17.6
Fe	µg/L	0.8U
Mn	µg/L	302
Mo	µg/L	25.6
Se	µg/L	86.8
U	µg/L	224
V	µg/L	491
Radiological		
Alpha[d]	pCi/L	130J
Alpha-U[e]	pCi/L	0[f]
Beta	pCi/L	46.2
U	µg/L	224

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[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-04[a,b]

Analyte	Unit	07/18/01	10/10/01	01/30/02	04/03/02	07/10/02	10/08/02	04/09/03	10/07/03	04/13/04	10/05/04	04/05/05	10/06/05	04/27/06
Field Measurements														
Alkalinity	mg/L	298	297	307	428	365	359	326	338	345	373	290	316	340
Conductivity[c]	µmhos/cm	2100	2010	1806	1936	3334	1763	2111	1959	1969	1763	2075	1669	1842
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	2.30
ORP[c]	mV	94	135	108	141	--	--	--	88	--	63	249	40	-32.4
pH[c]	s.u.	6.13	6.72	6.94	6.79	6.61	6.68	6.72	6.76	6.98	6.88	6.75	6.83	7.10
Temperature[c]	C	16.1	14.1	8.91	12.43	15.56	14.97	11.19	14.37	11.15	13.7	7.40	14.2	10.88
Turbidity[c]	NTU	753	974	800	8.67	3.16	51.9	4.96	1.95	0.98	3.88	1.12	2.53	1.59
Common Ions														
Ca	mg/L	251	261	260	271	241	248	311	282	370	290	300	240	320
Chloride	mg/L	98.7	81.1	79.0	75.6	60.2	71.5	138J	88.2	96.0	45.0	150	77.0	110
Fluoride	µg/L	350	388	268	226	338	267	85.2J	256	410.	370.	230.	280.	220.
Hardness	mg/L	860	881	878	921	815	834	1040	944	1200	942	980	780	1050
K	mg/L	9.75	7.88	7.71	6.53	6.32	7.56	6.67	7.00	10.0	8.40	12.0	9.60	9.10
Mg	mg/L	56.7	55.6	55.6	59.4	51.8	52.2	64.9	58.3	66.0	53.0	56.0	44.0	62.0
Na	mg/L	160	121	104	102	94.0	94.6	111	109	93.0	79.0	130	90.0	100
NO_3+NO_2 as N	µg/L	3560	2520	2160	2050J	1370	1700	5700	2670	3700.	990.	9800.	2700.	5800.
SO_4	mg/L	691	754	693	640	598	606	725J	683	610	600	770	570	700
TDS[c]	mg/L	1630	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	11.1	12.1	12.6	12.4	10.9	10.7	10.7	14.9	13	16	15	13	13
Fe	µg/L	9.1	23.1	0.8U	1U	4U	0.8U	1.30U	0.800U	240	7U	7.5U	7.8U	14U
Mn	µg/L	324	126	117	14.7	5.4	84.8	1.10	1.90	4.1	0.066U	0.13U	0.096U	0.23U
Mo	µg/L	17.9	13.4	14.8	14.9	13.7	15.2	10.00	8.00	12	13J	12	17	15
Se	µg/L	93.5	72.5	85.7	79	66.3	83.5	97.6	66.6	49	40	74	31	38
U	µg/L	221	192	251	282	226	213	233	185	190	150J	230	140	220
V	µg/L	358	360	317	329	314	369	303	382	330	370J	270	370	270
Radiological														
Alpha[d]	pCi/L	93.8J	95.6J	141	149	128	111	104	91.5	130	106	155	--	--
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	3.0	0[f]	--	--
Beta	pCi/L	37.3	37.9	9.9U	83.1	11.6U	49.0	64.0	38.7	53.3	39.9	56.0	--	--
U	µg/L	221	192	251	282	226	213	233	185	190	150J	230	140	220
U-234	pCi/L	73.9J	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	97.3J	--	--	--	--	--	--	--	--	--	--	--	--

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[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-04[a,b]

Analyte	Unit	10/03/06	04/11/07	10/09/07	04/09/08[c]	10/09/08	04/07/09	10/07/09	04/20/10	10/11/10	04/04/11	10/11/11	04/25/12
Field Measurements													
Alkalinity	mg/L	324	397	330	314	364	325	360	245	340	326	342	367
Conductivity[c]	µmhos/cm	1967	1952	1833	2543	1885	2469	1975	2583	2134	2191	2087	2270
DO[c]	mg/L	3.64	6.27	--	1.75	--	--	--	--	--	--	--	--
ORP[c]	mV	135	111.6	85	107.5	136	66	--	63.2	112	87.2	--	144.9
pH[c]	s.u.	6.67	6.99	6.88	7.01	6.91	7.05	6.83	7.12	6.95	7.01	6.97	7.09
Temperature[c]	C	13.91	9.14	14.58	7.53	14.88	10.74	13.75	7.82	13.80	8.73	13.65	9.89
Turbidity[c]	NTU	1.71	1.24	2.63	0.27	2.42	2.89	117	--	2.14	3.87	3.03	3.53
Common Ions													
Ca	mg/L	430	420	340	350	280	360J	330J	340	320	346J	320	350
Chloride	mg/L	75.0	93.0	56.0	170	69.0	110	85.0	160	99.0	118	97.0	110
Fluoride	µg/L	390.	320.	510.	280.	730.	440.	520.	400.	360.	348	500.U	310.
Hardness	mg/L	1370	1320	1110	1150	930	1180J	1080J	1120	1050	1170J	1060	1170
K	mg/L	10.0	8.20	9.50	9.90	9.10J	8.60J	7.70J	10.0J	8.20J	6.10J	7.90	7.60J
Mg	mg/L	71.0	67.0	63.0	67.0	56.0	68.0	62.0	67.0	60.0	73.8J	63.0	72.0
Na	mg/L	110	110	99.0	150	110	130J	110J	160	120	140J	120	130J
NO_3+NO_2 as N	µg/L	3300.	4600.	2400.	14000.	2500.	5200.	2700.	11000.	4300.	4370.	4300.	2200.
SO_4	mg/L	820	680	800	900	700	760	700	850	740	803	680	820
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Metals													
As	µg/L	15	13	14	14	16	15	15	17	15	7.87	16	14
Fe	µg/L	2.2U	3.7U	5.6U	1.4U	3.1U	1.3UJ	1.6U	4.9U	4.9U	30.0U	4.9UJ	4.9UJ
Mn	µg/L	0.097U	0.084U	0.16U	0.27	0.2U	0.28	9.4	0.11U	0.11U	2.00U	0.11UJ	0.11UJ
Mo	µg/L	15	17	14	19	13	13	13	18	11	13.4	7.4	7.9
Se	µg/L	31	35	30	81	26	31	23	100	24	30	28	24
U	µg/L	180	200	140	240	150	170	140	190	140	199	130	160
V	µg/L	310	310J	410J	310	350	310	360	330	330	328	340	280
Radiological													
Alpha[d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
U	µg/L	180	200	140	240	150	170	140	190	140	199	130	160
U-234	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--

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[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-05[a,b]

Analyte	Unit	10/09/01	01/30/02	04/03/02	07/09/02	10/08/02	04/09/03	07/08/03	10/07/03	04/13/04	10/05/04	04/05/05	10/06/05	04/27/06
Field Measurements														
Alkalinity	mg/L	324	--	335	342	363	346	383	260	324	377	318	154	332
Conductivity[c]	µmhos/cm	1957	1762	1940	3315	1758	2182	1644	1989	1988	1769	2409	1708	1865
DO[c]	mg/L	--	3.78	--	--	--	--	--	--	--	--	--	--	2.58
ORP[c]	mV	525	93	30	--	--	--	87	10.6	--	-13	173	-20	-32.7
pH[c]	s.u.	6.79	6.73	6.75	6.55	6.74	6.85	6.88	6.78	6.94	6.92	6.71	6.91	7.09
Temperature[c]	C	14.5	9.7	12.14	14.46	13.98	10.22	14	14.76	9.86	14.1	7.48	14.7	10.14
Turbidity[c]	NTU	129	6.1	8.09	2.73	1.77	2.39	1.76	0.79	0.55	4.38	0.61	1.90	0.49
Common Ions														
Ca	mg/L	267	264	263	238	253	331	263	285	350	300	390	250	320
Chloride	mg/L	79.4	79.4	79.3	59.7	75.6	148J	69.3	93.9	99.0	47.0	190	79.0	110
Fluoride	µg/L	371	233J	326	324	280	17.2UJ	17.2U	253	350.	380.	220.	250.	240.
Hardness	mg/L	901	892	890	806	850	1110	873	957	1130	980	1270	822	1050
K	mg/L	6.58	5.86	5.43	6.31	6.40	6.15	5.75	6.14	9.70	7.90	11.0	8.30	8.80
Mg	mg/L	56.8	56.6	56.7	51.3	52.9	68.3	52.6	59.5	62.0	56.0	72.0	48.0	62.0
Na	mg/L	114	98.1	97.0	94.7	91.2	118	101	110	96.0	79.0	170	98.0	100
NO_3+NO_2 as N	µg/L	2640	2030	2040J	1310	1750	5840	1960	2800	3800.	990.	15000.	3000.	6200.
SO_4	mg/L	732	679	645	585	599	749J	598	700	610	590	930	570	690
Metals														
As	µg/L	10.7	10	8.8	9.5	9.7	9.60	12.0	14.3	12	15	12	14	14
Fe	µg/L	0.8U	29.4	32.7	4U	0.8U	1.30U	8.60	0.800U	9.8U	7U	7.5U	7.8U	14U
Mn	µg/L	1.7	60.8	2.4	0.63	0.1U	0.100U	1.40	0.100U	0.077U	1.1	0.13U	0.096U	0.23U
Mo	µg/L	8.7	6.6	9.7	12	11.7	9.20	8.50	6.80	12	9.9J	8.1	6.7	12
Se	µg/L	68.9	66.5	58.5	55.9	72.1	90.4	42.9	59.6	42	35	77	28	37
U	µg/L	180	230	235	201J	188	194	168	174	160	130J	190	140	200
V	µg/L	289	229	226	280	314	270	331	346	310	340J	260	330	260
Radiological														
Alpha[d]	pCi/L	91.7J	130	140	118	96.3	94.0	92.6	71.6	112	83.2	118	--	--
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	2.1	0[f]	0[f]	--	--
Beta	pCi/L	26.4	9.8U	66.8	10.4U	39.7	52.0	31.6	33.2	47.3	34.3	45.3	--	--
U	µg/L	180	230	235	201J	188	194	168	174	160	130J	190	140	200

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[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-05[a,b]

Analyte	Unit	10/03/06	04/11/07	10/09/07	04/09/08[c]	10/09/08	04/07/09	10/07/09	04/20/10	10/11/10	04/05/11	10/11/11	04/25/12
Field Measurements													
Alkalinity	mg/L	323	387	329	324	346	314	366	250	355	360	353	261
Conductivity[c]	µmhos/cm	1972	1962	1865	2652	1924	2487	1998	2846	2172	2219	2101	2269
DO[c]	mg/L	3.42	6.13	--	--	--	--	--	--	--	--	--	--
ORP[c]	mV	125	100.1	59	102.7	109	51	--	46.0	122	234.4	--	151.7
pH[c]	s.u.	6.69	6.98	6.88	6.98	6.91	7.03	6.80	6.96	6.96	6.82	6.92	7.05
Temperature[c]	C	14.15	8.25	14.41	8.04	15.62	9.54	13.85	9.32	13.75	7.78	14.58	8.64
Turbidity[c]	NTU	1.13	2.25	1.09	0.37	2.81	1.63	4.52	2.54	1.46	1.99	0.87	2.48
Common Ions													
Ca	mg/L	420	420	350	360	290	370J	320J	370	330	327	310	350
Chloride	mg/L	77.0	97.0	61.0	180	73.0	110	89.0	180	100	121	98.0	110
Fluoride	µg/L	400.	200.	470.	500.U	730.	450.	460.	350.	340.	331	500.U	300.
Hardness	mg/L	1340	1330	1140	1190	963	1210J	1050J	1240	1080	1110	1030	1170
K	mg/L	8.80	8.20	8.50	8.30J	8.40J	8.30J	6.50J	8.50J	7.70J	5.65	7.10	7.50J
Mg	mg/L	70.0	68.0	65.0	71.0	58.0	70.0	60.0	76.0	62.0	70.2	63.0	71.0
Na	mg/L	110	110	100	160	110	140J	110J	180	120	135	120	130J
NO_3+NO_2 as N	µg/L	3300.	5100.	2800.	14000.	2900.	5400.	2800.	13000.	4500.	4420.	4700.	2300.
SO_4	mg/L	810	700	810	910	710	770	740	940	770	806	670	820
Metals													
As	µg/L	14	14	12	13	16	14	15	13	14	12.5	15	13
Fe	µg/L	2.2U	3.7U	5.6U	1.4U	3.1U	1.3UJ	1.6U	4.9U	4.9U	30.0U	4.9UJ	4.9UJ
Mn	µg/L	0.097U	0.084U	0.16U	0.54	0.2U	0.28	0.1U	0.11U	0.11U	2.00U	0.11UJ	0.11UJ
Mo	µg/L	8.3	14	11	12	10	11	10	10	9.6	10.6	5.3J	5.5
Se	µg/L	27	33	25	66	23	29	21	82	24	29.1	25	19
U	µg/L	160	180	130	180	140	160	130	150	140	166	130	140
V	µg/L	270	290J	380J	270	310	290	330	250	300	258	310	250
Radiological													
Alpha[d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
U	µg/L	160	180	130	180	140	160	130	150	140	166	130	140

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[b] Samples were filtered in the field unless otherwise noted.

[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-06[a,b]

Analyte	Unit	04/10/03
Field Measurements		
Conductivity[c]	µmhos/cm	5011
pH[c]	s.u.	6.25
Temperature[c]	C	8.75
Turbidity[c]	NTU	21.8
Common Ions		
Ca	mg/L	509
Hardness	mg/L	2090
K	mg/L	2.82
Mg	mg/L	199
Na	mg/L	522
Metals		
As	µg/L	0.100U
Fe	µg/L	1.30U
Mn	µg/L	458
Mo	µg/L	2.00U
Se	µg/L	102
U	µg/L	1550
V	µg/L	0.300U
Radiological		
U	µg/L	1550

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-07[a,b]

Analyte	Unit	07/11/01	10/09/01	01/31/02	04/03/02	07/09/02	10/08/02	04/09/03	10/07/03	04/13/04	10/06/04	04/05/05	10/05/05	04/27/06
Field Measurements														
Alkalinity	mg/L	374	329	386	461	387	415	369	390	382	433	334	352	379
Conductivity[c]	µmhos/cm	3290	2980	2840	2777	4660	2459	3093	2861	3077	2330	3292	2571	2878
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	4.31	--	--	0.64
ORP[c]	mV	65	119	--	153	--	--	--	147	--	65	161	65	-17.9
pH[c]	s.u.	6.25	6.77	6.89	6.62	6.48	6.71	6.61	6.74	6.76	6.80	6.63	6.77	6.84
Temperature[c]	C	11	11.6	9.6	10.89	13.22	11.93	11.46	14.34	11.45	13.0	9.12	12.6	11.20
Turbidity[c]	NTU	4.87	1.47	4.92	3.85	1.74	1.69	0.59	0.35	0.77	1.68	1.23	0.81	0.37
Common Ions														
Ca	mg/L	349	335	309	316	284	296	385	351	410	310	440	340	450
Chloride	mg/L	205	189	157	157	131	144	223J	178	180	110	270	170	220
Fluoride	µg/L	468	649	371	50.2U	635	290	17.2UJ	391	500.U	410.	500.U	500.U	500.U
Hardness	mg/L	1390	1320	1210	1240	1100	1130	1460	1310	1480	1120	1630	1240	1620
K	mg/L	5.24	4.90	4.98	4.79	4.42	4.63	5.23	5.05	10.0	7.10	9.10	7.40	9.00
Mg	mg/L	125	118	107	110	95.1	94.1	120	106	110	83.0	130	94.0	120
Na	mg/L	305	238	208	188	187	176	245	213	200	130	260	170	210
NO_3+NO_2 as N	µg/L	7350	6760	4830	4560	3440	3470	9170	5910	8900.	2700.	15000.	6900.	15000.
SO_4	mg/L	1300	1240	936	1010	905	905	1200J	1080	1100	830	1400	990	1200
TDS[c]	mg/L	2790	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	2.4	3.9	3.7	3.2	3	3.1	3.20	4.20	3.6	4.1	3.8	4.1	3.9
Fe	µg/L	0.8U	0.8U	0.8U	1U	4U	18	1.30U	0.800U	9.8U	7U	15U	7.8U	14U
Mn	µg/L	54.9	26.2	18.8	17.9	12.5	13.8	4.30	3.90	0.077U	0.066U	170	0.096U	0.23U
Mo	µg/L	3.7	3.9	1.5U	2.8	4	3.1	2.00U	1.70U	6.5	6	8.1	7.5	6.4
Se	µg/L	54.4	46.4	38.4	40.7	39	40	73.4	51.3	43	26	61	29	43
U	µg/L	214	201	199	203	191	183	197	182	190	150J	270	170	210
V	µg/L	86.2	93.3	91.9	90.9	91.1	102	91.3	95.8	98	96J	85	100	79
Radiological														
Alpha[d]	pCi/L	82.7J	97.2	91.0	138J	98.3	112	70.0	90.4	149	105	105	--	--
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	18.5	2.0	0[f]	--	--
Beta	pCi/L	35.5	50.0	28.9	64.7	15.2U	38.0	55.0	35.7	53.0	39.4	65.0	--	--
U	µg/L	214	201	199	203	191	183	197	182	190	150J	270	170	210

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-07[a,b]

Analyte	Unit	10/03/06	04/11/07	10/09/07	04/09/08[c]	10/09/08	04/07/09	10/05/09	04/20/10	10/12/10	04/05/11	10/11/11	04/24/12
Field Measurements													
Alkalinity	mg/L	365	431	375	358	388	337	379	217	380	382	375	375
Conductivity[c]	µmhos/cm	2589	3001	2472	3650	2525	3460	2612	3922	2810	3056	2792	3124
DO[c]	mg/L	1.11	5.05	--	--	--	--	--	--	--	--	--	--
ORP[c]	mV	130	194.4	96	167.8	-39	127	--	133.4	230.5	78.3	--	111.7
pH[c]	s.u.	6.55	6.77	6.84	6.72	6.74	6.77	6.56	6.72	6.79	6.61	6.69	6.71
Temperature[c]	C	12.92	10.21	15.24	9.52	13.54	10.48	12.18	12.00	11.57	10.69	12.71	11.55
Turbidity[c]	NTU	1.50	3.67	2.22	1.32	0.69	2.54	3.93	1.47	0.60	1.18	0.78	0.79
Common Ions													
Ca	mg/L	450	480	390	440	310	470J	390J	410	360	397	340	370
Chloride	mg/L	160	210	140	270	140	200	150	250	180	197	160	190
Fluoride	µg/L	500.U	500.U	500.	500.U	570.	450.	710.	440.	420.	417	510.	500.U
Hardness	mg/L	1580	1690	1390	1630	1150	1670J	1390J	1560	1300	1470	1260	1380
K	mg/L	7.90	7.10	7.70	8.40	7.00J	8.50J	6.30J	11.0J	6.70J	5.72	4.10	3.70J
Mg	mg/L	110	120	100	130	92.0	120	100	130	98.0	117	100	110
Na	mg/L	210	220	180	250	190	240J	190J	290	220	229	190	210J
NO_3+NO_2 as N	µg/L	9000.	16000.	17000.	22000.	8500.	13000.	7900.	26000.	9200.	11600.	8900.	9700.
SO_4	mg/L	990	1200	1000	1500	1000	1100	910	1400	1100	1230	940	1200
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Metals													
As	µg/L	4	4.7	3.5	3.6	4.5	4.5	4.5	3.2	3.6	1.70U	4.4	3.7
Fe	µg/L	2.2U	7.4U	5.6U	1.4U	3.1U	1.3UJ	1.6U	31	4.9U	30.0U	25UJ	25UJ
Mn	µg/L	0.097U	0.17U	0.16U	4.3	0.2U	0.15	1.2	40	2	2.00U	0.57UJ	0.57UJ
Mo	µg/L	6.2	7.4	5.6	9.2	5.8	5.8	5.4	8.8	5.8	6.03	5.4UJ	5.4UJ
Se	µg/L	30	45	29	53	27	38	25	44	28	36.8	31	31
U	µg/L	180	190	150	220	160	160	150	240	150	191	140	150
V	µg/L	80	94J	110J	84	94	90	110	67	81	77.8	87	78
Radiological													
Alpha[d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
U	µg/L	180	190	150	220	160	160	150	240	150	191	140	150

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-08[a,b]

Analyte	Unit	07/11/01	10/11/01	01/31/02	04/03/02	07/10/02	10/09/02	04/09/03	10/07/03	04/14/04	04/09/09[c]
Field Measurements											
Alkalinity	mg/L	--	--	--	--	498	--	--	--	156	63
Conductivity[c]	µmhos/cm	5160	4290	3090	4080	8082	4092	4032	4560	4674	4497
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	6.6
ORP[c]	mV	--	29	--	61	--	--	--	89.9	--	44
pH[c]	s.u.	6.73	6.77	7.07	6.93	6.54	6.64	6.75	6.69	6.11	6.10
Temperature[c]	C	23	16	3.6	8.4	20.14	17.22	6.78	18.32	13.46	8.3
Turbidity[c]	NTU	12.1	36.9	84.1	52.6	15.8	9.21	11.5	9.01	4.26	--
Common Ions											
Ca	mg/L	519	584	533	609	572	593	538	521	490	--
Chloride	mg/L	--	--	--	--	--	--	126J	--	110	122
Fluoride	µg/L	--	--	--	--	--	--	319J	--	3000.	--
Hardness	mg/L	1950	2130	2000	2120	2090	2250	2150	2160	2460	--
K	mg/L	10.2	7.06	6.17	3.23	5.58	6.89	5.09	8.66	14.0	--
Mg	mg/L	159	162	162	145	160	186	195	209	300	--
Na	mg/L	439	400	326	304	389	398	385	402	320	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	35200
NO_3+NO_2 as N	µg/L	8390	16800	--	--	25300	--	51600	--	53000.	--
SO_4	mg/L	--	--	--	--	--	--	2580J	--	2400	2870
Metals											
As	µg/L	0.5U	0.69	0.6U	0.27	0.97	0.24	0.100U	0.310	0.24	--
Fe	µg/L	18.1	30.3	0.8U	23.2	23	0.8U	1.30U	0.800U	87	--
Mn	µg/L	7770	11400	11300	11600	12800	14200	8140	13100	9100	--
Mo	µg/L	45.3	38.7	16.5	16.5	35.2	30.8	6.30	15.1	16	--
Se	µg/L	2	0.84	1.4	1.2	1.1	1.2	2.80	0.100U	3.1	--
U	µg/L	397	430	46.5R	435	416J	354	220	143	210	1450.9
V	µg/L	3.7	3	2.4	1.3	4	4	2.80	4.70	8.3	--
Radiological											
U	µg/L	397	430	46.5R	435	416J	354	220	143	210	1450.9

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-12[a,b]

Analyte	Unit	07/11/01	10/09/01	01/30/02	04/03/02	07/09/02	10/07/02	04/08/03	07/08/03	10/07/03	04/13/04	10/07/04	04/06/05	10/05/05
Field Measurements														
Alkalinity	mg/L	363	361	443	484	410	406	366	445	351	399	412	325	342
Conductivity[c]	µmhos/cm	2250	2270	2240	2180	3572	2151	3144	1894	2676	2584	2210	2764	2307
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--	3.19	--	6.81
ORP[c]	mV	10	105	--	154	--	--	--	215	110	--	74	231	34
pH[c]	s.u.	6.51	6.93	7.16	6.87	6.69	6.82	6.69	6.87	6.83	6.91	6.90	6.73	6.93
Temperature[c]	C	11.6	13	7.8	9.54	14.66	14.04	9.77	13.6	14.61	9.89	14.0	11.00	13.8
Turbidity[c]	NTU	1.56	1.47	4.95	2.2	0.5	3.47	0.58	4.45	0.86	0.42	1.03	0.91	1.29
Common Ions														
Ca	mg/L	294	316	290	299	259	294	428	293	334	350	330	400	330
Chloride	mg/L	123	128	112	115	91.0	141	233J	114	151	150	110	240	150
Fluoride	µg/L	349	440	266	25.1U	335	318	17.2UJ	259	283	290.	240.	500.U	500.U
Hardness	mg/L	1010	1070	986	1020	881	1000	1500	987	1170	1190	1100	1400	1110
K	mg/L	4.12	4.20	3.80	3.56	3.23	4.22	5.44	3.55	5.16	8.30	6.80	9.20	7.00
Mg	mg/L	67.8	69.0	63.6	66.9	57.0	65.0	104	62.0	82.3	77.0	66.0	97.0	70.0
Na	mg/L	147	131	125	124	102	153	243	123	216	150	120	200	140
NO_3+NO_2 as N	µg/L	4310	5000	3960	4040	1990	4130	11500	3540	6080	8000.	3200.	22000.	9000.
SO_4	mg/L	750	850	677	656	556	695	1170J	653	977	850	720	1100	800
TDS[c]	mg/L	1800	--	--	--	--	--	--	--	--	--	1600	2300	1800
Metals														
As	µg/L	1.2	1.5	2.2	2.1	2.2	2.5	1.70	2.30	2.40	2	2.4	1.3	2.2
Fe	µg/L	0.8U	0.8U	0.8U	1U	4U	0.8U	1.30U	1.00U	0.800U	9.8U	7U	7.5U	7.8U
Mn	µg/L	0.21	0.1U	0.1U	0.1U	0.1U	0.1U	0.100U	0.100U	0.100U	0.077U	0.066U	2.2	0.096U
Mo	µg/L	3U	1.9U	1.5U	1.8U	1.8U	1.7U	2.00U	1.70U	1.70U	5.1	3.5J	2.8J	5.9
Se	µg/L	37.5	35.3	27.6	30.6	22.7	44.4	109	25.8	51.8	40	26	69	27
U	µg/L	164	153	161	155	119	141	282	144	199	190J	130J	260	210
V	µg/L	15.6	21	27.6	28	33.5	53	27.6	37.4	30.1	32	43J	16	31
Radiological														
Alpha[d]	pCi/L	60.9J	80.2J	101	67.3J	70.3	81.8	113	67.1	96.3	118	94.7	145	--
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	5.4	0[f]	--
Beta	pCi/L	28.7	23.2	33.3	52.9	11.4U	27.2	75.0	25.7	40.5	50.0	36.8	59.5	--
U	µg/L	164	153	161	155	119	141	282	144	199	190J	130J	260	210

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[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-12[a,b]

Analyte	Unit	04/28/06	10/03/06	04/11/07	10/09/07	04/10/08[c]	10/08/08	04/07/09	10/08/09	10/12/10	04/05/11	10/11/11	04/24/12
Field Measurements													
Alkalinity	mg/L	392	361	413	378	338	190	369	393	352	413	325	393
Conductivity[c]	µmhos/cm	2326	2232	2344	2308	2751	2173	2843	2332	2401	2447	2248	2460
DO[c]	mg/L	2.07	4.68	5.08	--	1.59	--	--	--	--	--	--	--
ORP[c]	mV	-30.1	125	159	48.0	99.7	151	143	--	173.6	113.6	--	85.0
pH[c]	s.u.	6.92	6.71	6.93	6.85	6.89	6.9	6.96	6.79	6.90	6.85	6.86	6.92
Temperature[c]	C	10.61	14.15	8.78	14.27	9.42	13.98	9.25	12.87	14.74	10.44	14.74	12.95
Turbidity[c]	NTU	1.47	0.46	0.39	0.65	0.86	3.85	4.19	2.27	1.96	1.42	1.08	3.01
Common Ions													
Ca	mg/L	330	420	460	370	330	310	370J	350J	330	347	300	350
Chloride	mg/L	160	140	160	140	210	120	170	150	160	171	140	140
Fluoride	µg/L	250.	500.U	280.	440.	500.U	730.	420.	460.	410.	390	510.	370.
Hardness	mg/L	1120	1370	1500	1250	1160	1050	1270J	1180J	1120	1210	1030	1200
K	mg/L	6.80	7.20	6.60	7.60	7.60	6.30J	7.10J	5.70J	6.70J	5.20	6.60	6.30J
Mg	mg/L	72.0	79.0	86.0	80.0	81.0	68.0	83.0	74.0	71.0	83.0	68.0	79.0
Na	mg/L	140	160	160	160	190	140	180J	150J	160	173	150	140J
NO_3+NO_2 as N	µg/L	12000.	12000.	13000.	16000.	17000.	7200.	9600.	8800.	9100.	7850.	8300.	5300.
SO_4	mg/L	770	770	820	900	990	750	840	800	800	831	660	770
TDS[c]	mg/L	1700	1800	2000	2000	2200	1700	2000	1800	1800	1930	1700	1900
Metals													
As	µg/L	1.8	2.5	2.4	2.2	1.5	3.4	2.7	3.1	2.3	1.70U	2.2J	2.4
Fe	µg/L	14U	2.2U	3.7U	5.6U	1.4U	3.1U	1.3UJ	1.6U	4.9U	30.0U	4.9UJ	4.9UJ
Mn	µg/L	0.64	0.097U	0.084U	0.16U	0.36	0.2U	0.097U	0.1U	0.11U	2.00U	0.11UJ	0.11UJ
Mo	µg/L	5.4	4.2J	4.5	3.8	3.4	6.3	4.6	4.4	4.6	4.67	1.1UJ	1.1UJ
Se	µg/L	34	28	40	32	54	25	34	26	27	28.1	29	21
U	µg/L	220	170	210	180	190	190	200	170	160	222	160	180
V	µg/L	25	32	36J	48J	19	45	31	45	28	25.1	27	29
Radiological													
Alpha[d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
U	µg/L	220	170	210	180	190	190	200	170	160	222	160	180

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[b] Samples were filtered in the field unless otherwise noted.

[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-13[a,b]

Analyte	Unit	07/20/01	01/31/02	04/03/02	07/10/02	04/09/03	10/07/04	10/06/05	10/03/06	10/09/07	10/09/08	10/11/11
Field Measurements												
Alkalinity	mg/L	--	--	--	--	--	--	542	642	546	400	503
Conductivity[c]	µmhos/cm	3650	3700	3500	6376	3269	3644	3894	3685	--	--	1890
DO[c]	mg/L	--	--	--	--	--	0.69	--	1.87	--	--	--
ORP[c]	mV	--	--	63	--	--	-150	-13	-56	--	--	--
pH[c]	s.u.	6.48	7.16	7.23	6.82	6.9	6.96	6.88	6.64	--	--	6.90
Temperature[c]	C	16.5	6.8	8.8	14.65	9.33	15.4	13.2	14.41	--	--	15.70
Turbidity[c]	NTU	53.3	33.5	38.3	25.6	5.35	14.7	10.7	298	--	--	20.02
Common Ions												
Ca	mg/L	405	407	401	388	419	480	600	590	390	530	500
Chloride	mg/L	--	--	--	--	--	--	230	200	--	290	--
Fluoride	µg/L	--	--	--	--	--	--	500.U	500.U	--	1200.	--
Hardness	mg/L	1280	1280	1270	1230	1320	1470	1850	1800	1260	1660	1530
K	mg/L	17.8	16.0	14.3	15.0	12.8	18.0	16.0	20.0	20.0	16.0J	18.0
Mg	mg/L	64.6	65.0	64.1	62.9	65.3	66.0	85.0	80.0	69.0	82.0	68.0
Na	mg/L	451	372	360	359	331	290	220	360	270	280	300
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	10.U	10.U	10.U	10.	--
SO_4	mg/L	--	--	--	--	--	--	1400	1400	--	1400	--
Metals												
As	µg/L	0.5U	1.6	1.3	1.3	1.60	5.5	8.5	17	7.3	10	11
Fe	µg/L	14.9	55.6	1U	4U	1.30U	210	2500	2700	2400	350	2100
Mn	µg/L	924	1270	831	792	1130	3700	7500	6200	6000	6300	4500
Mo	µg/L	74.3	45.7	41.1	41.8	27.6	43	18	60	13	37	7.3
Se	µg/L	0.45	0.3U	0.4	0.37	0.400	0.58	0.25	0.025U	0.13	1.4	0.2J
U	µg/L	436	27.9R	391	349	328	310J	240	340	150	200	170
V	µg/L	28.7	215	104	186	233	190J	6.9	19	5.1J	0.38	0.076U
Radiological												
U	µg/L	436	27.9R	391	349	328	310J	240	340	150	200	170
U-234	pCi/L	172J	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	167J	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-18[a,b]

Analyte	Unit	07/20/01	10/10/01	01/31/02	04/04/02	04/08/03	10/08/03	04/13/04	10/07/04	10/05/05	10/03/06	10/08/07	10/08/08	10/06/09
Field Measurements														
Alkalinity	mg/L	--	--	--	--	--	--	--	--	688	--	--	640	--
Conductivity[c]	µmhos/cm	3150	2230	2450	2180	2297	--	2369	1860	2586	--	--	--	3547
DO[c]	mg/L	--	--	--	--	--	--	--	2.92	5.41	--	--	--	--
ORP[c]	mV	--	-51	--	37	--	--	--	-18	33	--	--	--	--
pH[c]	s.u.	6.75	7.02	7.22	7.3	6.89	--	7.02	7.02	6.98	--	--	--	6.77
Temperature[c]	C	16	13.7	5.8	14.7	11.04	--	14.72	13.7	14.5	--	--	--	16.03
Turbidity[c]	NTU	24.5	347	127	60.3	25.4	--	6.05	11.6	8.48	--	--	--	118.0
Common Ions														
Ca	mg/L	325	322	362	360	371	342	420	400	410	420	390	420	530J
Chloride	mg/L	--	--	--	--	--	--	--	--	--	260	220	230	--
Fluoride	µg/L	--	--	--	--	--	--	--	--	--	500.U	380.	1200.	--
Hardness	mg/L	1110	1070	1230	1220	1240	1150	1380	1370	1320	1380	1340	1400	1860J
K	mg/L	4.10	3.44	4.22	3.80	3.65	3.57	7.30	7.20	5.80	5.40	6.20	4.70J	7.00J
Mg	mg/L	72.4	64.8	78.8	78.8	77.0	71.9	80.0	89.0	73.0	80.0	89.0	85.0	130
Na	mg/L	173	156	184	179	184	176	160	160	150	180	200	190	190J
NO_3+NO_2 as N	µg/L	--	--	--	--	4090J	--	--	--	--	1400.	1400.	1900.	25000.
SO_4	mg/L	--	--	--	--	--	--	--	--	--	980	840	950	--
Metals														
As	µg/L	1.9	0.6U	0.6U	0.33	0.260	0.170	0.36	0.26	1.1	0.023U	0.4	0.46	1.2
Fe	µg/L	1040	86.7	852	899	330	37.9	340	290	580	75	160	110	780
Mn	µg/L	2150	2070	2190	2100	1700	1530	1700	1700	1900	1400	1500	1100	1800
Mo	µg/L	8.7	5.8	1.5U	1.8U	2.00U	1.70U	12	3.5J	4.2J	1.4J	3.2	2.3	3
Se	µg/L	9	1.9	25.2	16.3	26.1	2.30	29	17	8.7	8.5	6.5	5.7	66
U	µg/L	247	191	367	307	261	230	360J	340J	240	260	250	250	560
V	µg/L	2.1	0.82	0.4U	0.3U	0.300U	0.380	0.58	0.71J	0.1U	0.21U	0.42J	0.15	0.42J
Radiological														
U	µg/L	247	191	367	307	261	230	360J	340J	240	260	250	250	560
U-234	pCi/L	88.4J	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	98.3J	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-18[a,b]

Analyte	Unit	10/12/10	10/11/11
Field Measurements			
Alkalinity	mg/L	669	982
Conductivity[c]	µmhos/cm	3249	3647
DO[c]	mg/L	--	--
ORP[c]	mV	5.0	--
pH[c]	s.u.	6.91	6.87
Temperature[c]	C	15.45	14.27
Turbidity[c]	NTU	18.0	12.7
Common Ions			
Ca	mg/L	570	590
Chloride	mg/L	240	220
Fluoride	µg/L	500.U	500.U
Hardness	mg/L	1880	2010
K	mg/L	6.30J	4.30
Mg	mg/L	110	130
Na	mg/L	220	240
NO_3+NO_2 as N	µg/L	20000.	11000.
SO_4	mg/L	1600	1600
Metals			
As	µg/L	1.6	1.8J
Fe	µg/L	1100	910
Mn	µg/L	2500	1900
Mo	µg/L	2.7	5.4UJ
Se	µg/L	14	28
U	µg/L	330	450
V	µg/L	0.31	0.076U
Radiological			
U	µg/L	330	450
U-234	pCi/L	--	--
U-238	pCi/L	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-19[a,b]

Analyte	Unit	07/12/01	10/10/01	01/31/02	04/04/02	07/10/02	10/08/02	04/08/03	07/08/03	10/08/03	04/13/04	10/07/04	04/06/05	10/05/05
Field Measurements														
Alkalinity	mg/L	--	--	--	--	--	--	--	--	--	518	--	528	536
Conductivity[c]	µmhos/cm	1943	1984	2120	1780	3268	--	1764	1783	1778	1833	1931	1688	2196
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--	2.45	--	4.94
ORP[c]	mV	-89	-39	--	-11	--	--	--	-43	-43	--	-81	157	-58
pH[c]	s.u.	6.59	6.98	7.3	7.19	6.8	7.04	6.97	6.78	6.96	7.02	7.06	6.79	6.95
Temperature[c]	C	17.1	14.9	5	12.5	19.77	17.69	10.61	18	18.46	11.35	15.1	9.60	15.9
Turbidity[c]	NTU	>1000	507	414	148	155	32.7	21.1	33.9	188	17.1	33.7	19.5	26.7
Common Ions														
Ca	mg/L	273	280	244	253	212	236	249	251	241	300	310	330	330
Chloride	mg/L	134	--	114	--	--	--	--	--	--	--	--	140	--
Fluoride	µg/L	277	--	194	--	--	--	--	--	--	--	--	200.U	--
Hardness	mg/L	894	903	798	838	728	774	813	821	794	963	988	1070	1030
K	mg/L	4.29	4.31	3.89	3.69	3.97	4.12	3.46	3.78	3.98	6.50	7.30	6.20	6.80
Mg	mg/L	51.5	49.4	45.9	50.2	48.3	44.8	46.4	47.1	46.6	52.0	52.0	60.0	49.0
Na	mg/L	132	126	118	119	118	119	108	108	108	96.0	91.0	100	94.0
NO_3+NO_2 as N	µg/L	56.9	230	253	317	--	--	42.7	--	204	140.	120.	59	10.U
SO_4	mg/L	488	--	404	--	--	--	--	--	--	--	--	590	--
Metals														
As	µg/L	3.8	4.1	5.9	3.7	4.2	4.9	9.90	5.00	4.50	3.1	3.1	7.9	6.4
Fe	µg/L	612	783	1540	850	417	63.7	1030	592	262	220	210	1600	1200
Mn	µg/L	6740	7150	5020	5010	4760	4420	4450	4720	3750	3800	4300	5200	8300
Mo	µg/L	11.5	9.8	3.8	6.1	5.5	6.2	2.00U	6.20	3.20	8.8	5.1	7.3	7.9
Se	µg/L	0.41	0.5	0.3U	0.2U	0.16	0.23	0.100U	0.160	0.180	0.15	0.16	0.12	0.023U
U	µg/L	109	111	130	128	110	105	109	109	110	110J	99J	130	76
V	µg/L	27.9	19.8	8	6.3	4.4	5.9	4.10	4.70	1.90	3	2.3J	8.3	0.1U
Radiological														
Alpha[d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	81.5	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	0[f]	--
Beta	pCi/L	--	--	--	--	--	--	--	--	--	--	--	28.6	--
U	µg/L	109	111	130	128	110	105	109	109	110	110J	99J	130	76

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-19[a,b]

Analyte	Unit	04/28/06	10/03/06	04/11/07	10/08/07	04/10/08[c]	10/08/08	04/06/09	10/06/09	04/21/10	10/12/10	04/05/11	10/12/11
Field Measurements													
Alkalinity	mg/L	--	503	505	428	409	464	488	--	429	460	--	463
Conductivity[c]	µmhos/cm	--	1890	1913	1707	1897	1931	1543	1123	2324	2263	2046	2090
DO[c]	mg/L	--	2.59	2.21	--	--	--	--	--	--	--	--	--
ORP[c]	mV	--	7	-21.7	-8.4	74.9	-28	94.2	--	153.7	-15	115.5	--
pH[c]	s.u.	--	6.76	7.06	7.00	7.21	7.01	7.11	6.88	6.70	6.98	6.99	7.01
Temperature[c]	C	--	15.60	9.47	15.98	8.76	17.1	9.71	16.28	7.89	18.52	12.08	11.49
Turbidity[c]	NTU	--	68.0	73.6	30.2	--	252	40.5	99.3	88.4	18.7	61.3	25.1
Common Ions													
Ca	mg/L	290	330	350	280	280	280	310J	290J	340	340	304	310
Chloride	mg/L	120	150	--	--	130	130	140	--	--	150	--	--
Fluoride	µg/L	230.	350.	--	--	240.	610.	460.	--	--	290.	--	--
Hardness	mg/L	926	1040	1090	901	901	897	992J	930J	1090	1060	994	976
K	mg/L	6.00	6.80	5.70	6.30	6.50	6.40J	5.60J	4.80J	5.50J	6.10J	4.18	5.50
Mg	mg/L	49.0	53.0	52.0	49.0	49.0	48.0	53.0	50.0	58.0	52.0	57.1	49.0
Na	mg/L	95.0	130	100	120	94.0	110	140J	120J	160	130	134	110
NO_3+NO_2 as N	µg/L	10.U	140.	--	--	16	59	42	--	--	21	--	--
SO_4	mg/L	470	450	--	--	450	490	460	--	--	620	--	--
Metals													
As	µg/L	11	7.5	5.1	11	13	8.4	5.8	12	2.1	2.4	2.51	3
Fe	µg/L	1400	700	750	750	8200	550	390	770	94	120	564	170
Mn	µg/L	6700	6000	8800	5400	8000	7300	5600	4600	5000	6100	6770	6700
Mo	µg/L	6.1	6.7	6.4	7	6.6	6.7	6	6.8	5.5	5.8	5.68	2.8J
Se	µg/L	0.02U	0.025U	0.038U	0.1	0.26	0.024U	0.12U	0.28	0.61	0.21	1.50U	0.22J
U	µg/L	91	96	70	84	72	72	99	98	100	81	95.8	60
V	µg/L	2	1.9	0.24UJ	1.6J	36	1.7	1.8	1.6	1.8	1.3	3.00U	1.4J
Radiological													
Alpha[d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
U	µg/L	91	96	70	84	72	72	99	98	100	81	95.8	60

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-20[a,b]

Analyte	Unit	07/19/01	10/11/01	01/31/02	04/03/02	07/10/02	10/10/02	04/08/03	10/07/03	04/14/04	10/07/04	10/05/05	10/03/06	10/09/07
Field Measurements														
Alkalinity	mg/L	--	--	--	--	340	--	--	380	427	421	476	476	452
Conductivity[c]	µmhos/cm	3890	3940	3960	3880	7138	3802	3583	3643	3461	3585	3755	3749	3483
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	0.66	4.45	2.48	--
ORP[c]	mV	--	100	--	--	--	--	--	-14.7	--	-17	-7	8	-35
pH[c]	s.u.	6.6	6.92	7.17	7.02	6.81	6.9	6.8	7.13	6.98	6.91	6.77	6.68	6.84
Temperature[c]	C	15.6	13.2	8.2	11.1	15.64	16.01	9.69	15.56	12.64	14.8	16.2	13.89	14.32
Turbidity[c]	NTU	70.3	58.4	49.4	29.4	26.7	19.6	24.7	12.1	6.60	22.0	24.2	107	41.0
Common Ions														
Ca	mg/L	321	348	322	340	325	348	301	295	360	310	430	420	380
Chloride	mg/L	120	147	--	73.5	--	--	--	135	130	140	270	200	150
Fluoride	µg/L	310	231	--	78.2J	--	--	--	229	500.U	200.U	500.U	500.U	500.U
Hardness	mg/L	1020	1090	1010	1100	1050	1120	951	932	1090	955	1350	1400	1220
K	mg/L	27.0	21.0	22.4	14.9	16.3	16.3	16.2	15.6	34.0	26.0	15.0	17.0	17.0
Mg	mg/L	52.1	53.4	50.5	61.0	58.2	61.6	48.5	47.4	46.0	44.0	66.0	85.0	67.0
Na	mg/L	660	557	523	478	495	499	488	492	410	430	390	420	440
NO_3+NO_2 as N	µg/L	230	201	--	25	21	26.3	24.9	4.50U	50.	180.	10.U	24	160.
SO_4	mg/L	1780	1950	--	1610	--	--	--	1430	1200	1400	1700	1700	1600
TDS[c]	mg/L	3250	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	0.58	0.6U	0.6U	0.37	0.31	0.16	0.350	0.350	0.41	0.57	0.93	1.2	1.1
Fe	µg/L	99.4	18.2	38.9	47	8.4	0.8U	78.1	16.3	9.8U	7U	320	450	410
Mn	µg/L	2180	3260	3510	4590	4670	5390	4390	4360	3900	4900	4900	9300	7800
Mo	µg/L	39.1	38.7	33.8	31.3	26	28.9	30.9	28.9	40	32	37	24	24
Se	µg/L	0.32	0.3U	0.3U	0.2U	0.2	0.18	0.100U	0.100U	0.1	0.099	0.56	0.82	0.88
U	µg/L	255	239	69.6R	258	271J	252	319	287	360	260J	450	330	260
V	µg/L	7.6	2.8	3.2	1.3	1.8	1.8	1.10	2.50	2	1.4J	0.1U	0.42	0.87J
Radiological														
Alpha[d]	pCi/L	134J	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	0[f]	--	--	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	45.0	--	--	--	--	--	--	--	--	--	--	--	--
U	µg/L	255	239	69.6R	258	271J	252	319	287	360	260J	450	330	260
U-234	pCi/L	97.8J	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	103J	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-20[a,b]

Analyte	Unit	10/09/08	10/06/09	10/11/10	10/11/11
Field Measurements					
Alkalinity	mg/L	472	--	567	572
Conductivity[c]	µmhos/cm	3997	4084	4228	3491
DO[c]	mg/L	--	--	--	--
ORP[c]	mV	15	--	-18.4	--
pH[c]	s.u.	6.78	6.48	6.67	6.87
Temperature[c]	C	13.8	15.08	16.21	14.59
Turbidity[c]	NTU	45.3	33.5	7.85	23.7
Common Ions					
Ca	mg/L	460	540J	550	460
Chloride	mg/L	250	270	240	230
Fluoride	µg/L	900.	560.	500.U	500.U
Hardness	mg/L	1540	1800J	1790	1530
K	mg/L	12.0J	4.60J	7.90J	5.10J
Mg	mg/L	95.0	110	100	93.0
Na	mg/L	390	340J	360	360
NO_3+NO_2 as N	µg/L	16	18	50.	22
SO_4	mg/L	1700	1700	1700	2000
TDS[c]	mg/L	--	--	--	--
Metals					
As	µg/L	1	0.91	1.4	2.4J
Fe	µg/L	3.1U	170	470	660
Mn	µg/L	7300	9300	8900	11000
Mo	µg/L	25	25	19	11UJ
Se	µg/L	3.6	2.2	0.38	0.26J
U	µg/L	570	590	530	380
V	µg/L	0.52	3.5	0.44	0.36J
Radiological					
Alpha[d]	pCi/L	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--
Beta	pCi/L	--	--	--	--
U	µg/L	570	590	530	380
U-234	pCi/L	--	--	--	--
U-238	pCi/L	--	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-23[a,b]

Analyte	Unit	07/11/01	10/08/01	01/30/02	04/03/02	07/09/02	10/07/02	04/08/03	07/07/03	10/07/03	04/12/04	10/06/04	10/05/05	10/03/06
Field Measurements														
Alkalinity	mg/L	420	412	426	399	384	412	441	412	415	425	411	398	318
Conductivity[c]	µmhos/cm	1544	1511	1546	1350	2445	1413	1460	1348	1417	1605	1429	1370	1464
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--	0.44	2.24	0.96
ORP[c]	mV	-110	-109	--	32	--	--	--	-30	-46	--	-51	-42	-11
pH[c]	s.u.	6.84	7.06	7.3	7.2	6.75	6.91	6.88	6.75	6.91	6.99	6.95	7.01	6.74
Temperature[c]	C	11.6	12.1	7.2	12	12.32	12.92	10.74	14.61	12.63	11.24	11.7	12.1	11.65
Turbidity[c]	NTU	3.58	1.55	4.49	1.33	0.72	1.14	0.43	1.96	0.79	0.69	2.94	4.61	0.68
Common Ions														
Ca	mg/L	212	230	219	202	195	228	233	220	222	270	260	210	300
Chloride	mg/L	68.8	59.2	55.7	47.5	35.2	41.6	64.6	48.2	36.2	87.0	24.0	55.0	58.0
Fluoride	µg/L	307	26.2U	485	269J	1920	423	17.2UJ	130	222	240.	200.U	200.U	200.
Hardness	mg/L	697	739	706	654	631	730	748	702	712	855	810	669	943
K	mg/L	2.63	2.54	2.91	2.72	2.75	3.01	2.88	2.69	2.83	5.20	4.40	3.90	4.10
Mg	mg/L	40.7	39.9	38.7	36.4	35.0	39.0	40.4	37.1	38.2	44.0	39.0	35.0	47.0
Na	mg/L	79.0	64.7	59.5	57.9	54.5	61.6	61.1	57.5	59.4	65.0	52.0	66.0	63.0
NO_3+NO_2 as N	µg/L	7.8	92.6	7.3U	124	7.4	59.1	10.00J	24.0	4.50U	10.U	10.U	10.U	93
SO_4	mg/L	352	398	361	296	4820	372	330	346	346	340	380	360	420
TDS[c]	mg/L	1090	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	0.5U	0.6U	0.6U	0.1U	0.1U	0.1U	0.100U	0.100U	0.100U	0.016U	0.018U	0.007U	0.012U
Fe	µg/L	553	510	570	493	422	430	674	610	695	780	770	590	1300
Mn	µg/L	902	831	735	634	585	639	742	670	678	760	680	600	800
Mo	µg/L	3U	1.9U	1.5U	1.8U	1.8U	1.7U	2.00U	1.70U	1.70U	0.66	0.17U	0.068U	0.13U
Se	µg/L	0.3U	0.3U	0.3U	0.2U	0.1U	0.1U	0.100U	0.100U	0.100U	0.043U	0.029U	0.023U	0.025U
U	µg/L	48.5	44	46.5	43.2	35.7	42.5	50.2	37.9	40.6	50J	33J	50	46
V	µg/L	0.3U	0.55	0.4U	0.65	0.3U	0.3U	0.300U	0.580	0.300U	0.46	0.36J	0.1U	0.21U
Radiological														
Alpha[d]	pCi/L	19.1J	17.8J	21.1	13.2J	19.3	26.1	28.7	19.6	19.6	28.9	22.9	--	--
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0.23	--	--
Beta	pCi/L	15.0U	11.6U	8.5	20.6	7.5U	11.1	17.1	9.7U	9.7	16.0	10.0	--	--
U	µg/L	48.5	44	46.5	43.2	35.7	42.5	50.2	37.9	40.6	50J	33J	50	46

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[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-23[a,b]

Analyte	Unit	10/08/07	10/08/08	10/06/09	10/12/10	10/12/11
Field Measurements						
Alkalinity	mg/L	372	376	363	362	381
Conductivity[c]	µmhos/cm	1460	1362	1460	1516	1450
DO[c]	mg/L	--	--	--	--	--
ORP[c]	mV	-45.4	-53	--	-74.3	--
pH[c]	s.u.	6.87	6.94	6.78	6.93	6.91
Temperature[c]	C	10.91	11.26	10.62	11.49	10.56
Turbidity[c]	NTU	1.62	2.06	2.34	1.29	0.75
Common Ions						
Ca	mg/L	280	190	260J	250	230
Chloride	mg/L	30.0	34.0	24.0	39.0	37.0
Fluoride	µg/L	340.	360.	310.	170.	230.
Hardness	mg/L	889	619	818J	785	735
K	mg/L	4.10	3.70J	3.00J	3.70J	3.30
Mg	mg/L	46.0	35.0	41.0	39.0	39.0
Na	mg/L	61.0	66.0	55.0J	66.0	63.0
NO_3+NO_2 as N	µg/L	10.U	17	10.U	10.U	10.U
SO_4	mg/L	510	360	470	440	370
TDS[c]	mg/L	--	--	--	--	--
Metals						
As	µg/L	0.018U	0.012U	0.0084U	0.07	0.12J
Fe	µg/L	2100	1500	2400	1900	2200
Mn	µg/L	760	550	630	520	490
Mo	µg/L	0.46	0.69	0.52	0.58	1.1UJ
Se	µg/L	0.042	0.024U	0.1	0.068	0.071J
U	µg/L	35	40	33	39	38
V	µg/L	0.48J	0.2	0.27J	0.22	0.015U
Radiological						
Alpha[d]	pCi/L	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--
U	µg/L	35	40	33	39	38

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-24[a,b]

Analyte	Unit	07/11/01	01/30/02	04/03/02	04/07/03	04/12/04
Field Measurements						
Alkalinity	mg/L	279	--	286	282	299
Conductivity[c]	µmhos/cm	1269	1605	1258	1343	1266
ORP[c]	mV	-13	--	37	--	--
pH[c]	s.u.	6.6	7.39	6.91	6.71	6.85
Temperature[c]	C	13	7	9.1	7.61	10.23
Turbidity[c]	NTU	4.9	871	1.47	4.06	1.00
Common Ions						
Ca	mg/L	187	215	203	223	200
Chloride	mg/L	20.9	--	19.4	44.7	42.0
Fluoride	µg/L	171	--	187J	17.2U	150.
Hardness	mg/L	603	686	649	709	631
K	mg/L	3.53	3.14	3.01	3.10	4.70
Mg	mg/L	33.0	36.2	34.5	37.0	32.0
Na	mg/L	45.9	39.6	39.9	45.4	45.0
NO_3+NO_2 as N	µg/L	41.5	--	186	26.7J	11
SO_4	mg/L	406	--	385	304J	340
TDS[c]	mg/L	950	--	--	--	--
Metals						
As	µg/L	0.5U	0.83	0.24	0.100U	0.21
Fe	µg/L	15	288	85.4	2.10	9.8U
Mn	µg/L	337	296	168	37.6	59
Mo	µg/L	3U	1.5U	1.8U	2.00U	2.6
Se	µg/L	0.3U	0.3U	0.2U	0.160	0.26
U	µg/L	33.1	28.5	28.8	31.0	27J
V	µg/L	0.3U	0.4U	0.3U	0.300U	0.25U
Radiological						
Alpha[d]	pCi/L	14.8J	--	10.3J	17.1	15.0
Alpha-U[e]	pCi/L	0[f]	--	0[f]	0[f]	0[f]
Beta	pCi/L	11.6	--	18.7	11.8	9.6
U	µg/L	33.1	28.5	28.8	31.0	27J

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-25[a,b]

Analyte	Unit	10/11/01	01/31/02	04/03/02	07/10/02	10/10/02	04/08/03	10/07/03	04/14/04	10/07/04	10/05/05	10/03/06	10/09/07	10/09/08
Field Measurements														
Alkalinity	mg/L	--	--	--	522	--	--	526	--	612	704	733	720	644
Conductivity[c]	µmhos/cm	4140	3860	3360	6825	3403	3395	3323	3154	3192	3410	3197	2949	3082
DO[c]	mg/L	--	--	--	--	--	--	--	--	0.80	6.35	2.43	--	--
ORP[c]	mV	96	--	47	--	--	--	-35.8	--	-70	-32	-29	-46	-29
pH[c]	s.u.	6.65	6.8	7.4	6.43	6.57	6.56	6.91	6.67	6.64	6.54	6.44	6.55	6.63
Temperature[c]	C	11.5	8.1	13.5	15.32	15.5	8.14	15.14	10.91	15.0	15.4	14.12	13.93	13.92
Turbidity[c]	NTU	187	137	73.5	40.7	71.8	6.68	8.86	5.03	15.8	8.84	60.1	6.43	32.8
Common Ions														
Ca	mg/L	556	527	544	471	511	508	496	480	490	500	480	500	380
Chloride	mg/L	--	--	68.6	30.3	--	61.1	64.5	60.0	72.0	190	190	200	180
Fluoride	µg/L	--	--	153J	233	--	17.2U	179	500.U	500.U	500.U	500.U	330.	850.
Hardness	mg/L	2190	2000	2050	1740	1860	1810	1720	1730	1680	1660	1650	1650	1330
K	mg/L	20.5	19.9	17.2	15.9	15.5	12.9	12.8	19.0	17.0	18.0	17.0	20.0	16.0J
Mg	mg/L	195	167	169	138	143	131	116	130	110	100	110	98.0	92.0
Na	mg/L	220	188	178	161	142	143	145	130	130	170	200	190	190
NO_3+NO_2 as N	µg/L	--	--	206	4.9U	24.4	26.5J	4.50U	10.U	18	10.U	41	10.U	10.U
SO_4	mg/L	--	--	1800	1670	--	1540J	1480	1100	1300	1200	1100	810	900
Metals														
As	µg/L	1	0.64	1.5	0.26	0.34	3.30	0.760	0.74	2.5	7	7.4	8.7	2.2
Fe	µg/L	141	520	1140	105	595	3600	3860	9200	8400	18000	17000	19000	1700
Mn	µg/L	3350	3780	4430	4420	6400	8730	9640	6500	6500	4600	3800	3500	3300
Mo	µg/L	10.9	1.5U	1.8U	1.8U	1.7U	2.00U	1.70U	8.4	0.17U	4.4J	4.1	4.4	3.7
Se	µg/L	0.3U	0.3U	0.2U	0.18	0.12	0.100U	0.100U	0.17	0.15	0.63	0.75	1.5	4.2
U	µg/L	52.1	49.1	48.8	48.1	50.2	48.4	53.0	29	32J	44	61	40	48
V	µg/L	1.7	0.4U	0.66	0.7	0.52	0.300U	0.300U	0.27	0.39J	0.1U	0.41	0.71J	0.1U
Radiological														
Alpha[d]	pCi/L	--	--	--	--	--	--	28.9	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	0[f]	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--	21.6	--	--	--	--	--	--
U	µg/L	52.1	49.1	48.8	48.1	50.2	48.4	53.0	29	32J	44	61	40	48

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-25[a,b]

Analyte	Unit	10/06/09	10/11/10	10/11/11
Field Measurements				
Alkalinity	mg/L	575	600	592
Conductivity[c]	µmhos/cm	2862	3062	2828
DO[c]	mg/L	--	--	--
ORP[c]	mV	--	-15.6	--
pH[c]	s.u.	6.45	6.61	6.60
Temperature[c]	C	15.04	16.19	14.12
Turbidity[c]	NTU	33.2	8.68	10.5
Common Ions				
Ca	mg/L	460J	460	430
Chloride	mg/L	64.0	190	47.0
Fluoride	µg/L	510.	250.	500.U
Hardness	mg/L	1600J	1510	1450
K	mg/L	16.0J	16.0J	11.0
Mg	mg/L	110	88.0	91.0
Na	mg/L	140J	190	150
NO_3+NO_2 as N	µg/L	25	110.	17
SO_4	mg/L	1200	830	1200
Metals				
As	µg/L	11	9.2	12
Fe	µg/L	14000	14000	19000
Mn	µg/L	5500	3300	3700
Mo	µg/L	4.4	3.1	5.4UJ
Se	µg/L	0.59	0.38	0.43J
U	µg/L	18	36	22
V	µg/L	0.21J	0.24	0.015U
Radiological				
Alpha[d]	pCi/L	--	--	--
Alpha-U[e]	pCi/L	--	--	--
Beta	pCi/L	--	--	--
U	µg/L	18	36	22

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-26[a,b]

Analyte	Unit	07/11/01	10/08/01	01/30/02	04/03/02	07/09/02	10/07/02	04/07/03	10/07/03	04/12/04
Field Measurements										
Alkalinity	mg/L	442	425	593	464	418	436	460	469	509
Conductivity[c]	µmhos/cm	1711	1735	1754	1552	2543	1368	1606	1465	1862
ORP[c]	mV	-141	-129	--	-61	--	--	--	-68	--
pH[c]	s.u.	6.77	7.06	7.3	7.15	6.75	6.96	6.98	7.02	6.97
Temperature[c]	C	10.4	12	8.2	12.6	11.75	12.77	10.11	13.15	11.12
Turbidity[c]	NTU	8.82	4.23	2.6	4.25	4.68	4.57	1.74	2.66	1.07
Common Ions										
Ca	mg/L	233	256	235	229	194	205	261	220	340
Chloride	mg/L	81.6	95.4	86.7	77.2	44.7	34.7	84.5	43.9	110
Fluoride	µg/L	271	343	236	176J	367	255	280	210	280.
Hardness	mg/L	761	829	766	746	633	664	841	710	1070
K	mg/L	2.13	2.25	2.45	2.33	2.17	2.18	2.40	2.37	4.90
Mg	mg/L	43.4	46.2	43.5	42.3	36.2	36.9	46.0	38.9	53.0
Na	mg/L	93.8	83.3	77.3	76.8	65.3	64.0	63.7	72.3	77.0
NO_3+NO_2 as N	µg/L	25.6	76	75.4	151	4.9U	67	4.50UJ	4.50U	10.U
SO_4	mg/L	410	431	382	332	295	324	363	315	370
TDS[c]	mg/L	1230	--	--	--	--	--	--	--	--
Metals										
As	µg/L	0.5U	0.6U	0.6U	0.13	0.1U	0.1U	0.100U	0.100U	0.016U
Fe	µg/L	2610	2660	2550	2220	1810	1390	1940	1600	2600
Mn	µg/L	1100	1130	1060	994	831	802	1080	889	1200
Mo	µg/L	3U	1.9U	1.5U	1.8U	1.8U	1.7U	2.00U	1.70U	0.92
Se	µg/L	0.3U	0.3U	0.3U	0.2U	0.1U	0.1U	0.100U	0.100U	0.043U
U	µg/L	80.6	83.1	71.5	63.6	54.4	59.9	64.8	64.5	73J
V	µg/L	0.3U	0.31	0.53	0.53	0.3U	0.3U	0.300U	0.300U	0.25U
Radiological										
Alpha[d]	pCi/L	36.7J	35.8J	40.2	28.4J	26.7	30.3	36.8	30.4	38.8
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]
Beta	pCi/L	13.5U	11.8U	14.8	28.1	7.5U	10.5	19.2	11.0	19.2
U	µg/L	80.6	83.1	71.5	63.6	54.4	59.9	64.8	64.5	73J

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-27[a,b]

Analyte	Unit	07/12/01	04/03/02	07/10/02	04/08/03
Field Measurements					
Alkalinity	mg/L	--	--	333	314
Conductivity[c]	µmhos/cm	2100	2320	4421	2330
ORP[c]	mV	--	47	--	--
pH[c]	s.u.	7.05	7.05	6.75	6.88
Temperature[c]	C	20.4	7.4	16.05	5.13
Turbidity[c]	NTU	57	147	54.2	88.3
Common Ions					
Ca	mg/L	363	404	370	438
Chloride	mg/L	--	30.7	26.3	38.6
Fluoride	µg/L	--	189J	244	17.2U
Hardness	mg/L	1150	1370	1200	1410
K	mg/L	4.64	4.52	3.18	2.89
Mg	mg/L	59.4	86.9	67.7	77.8
Na	mg/L	86.8	104	94.9	87.7
NO_3+NO_2 as N	µg/L	--	320	75.7	127J
SO_4	mg/L	--	1200	1140	1240J
Metals					
As	µg/L	0.5U	0.4	0.15	0.100U
Fe	µg/L	5.6	1U	4U	1.30U
Mn	µg/L	32.9	1560	373	12.0
Mo	µg/L	4.4	1.8U	1.8U	2.00U
Se	µg/L	68.1	1.8	0.9	9.30
U	µg/L	8.6	29.3	19.3	27.6
V	µg/L	0.36	0.74	0.85	0.420
Radiological					
Alpha[d]	pCi/L	--	14.6UJ	--	13.9U
Alpha-U[e]	pCi/L	--	14.6UJ	--	13.9U
Beta	pCi/L	--	18.2	--	14.1U
U	µg/L	8.6	29.3	19.3	27.6

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-28[a,b]

Analyte	Unit	01/31/02	04/03/02
Field Measurements			
Conductivity[c]	µmhos/cm	3090	2920
pH[c]	s.u.	7.11	6.94
Temperature[c]	C	2.5	11.9
Turbidity[c]	NTU	>1000	805
Common Ions			
Ca	mg/L	526	496
Hardness	mg/L	1800	1680
K	mg/L	1.49	1.31
Mg	mg/L	119	108
Na	mg/L	143	130
Metals			
As	µg/L	0.6U	0.24
Fe	µg/L	135	33.4
Mn	µg/L	1410	830
Mo	µg/L	1.5U	1.8U
Se	µg/L	2.1	2.1
U	µg/L	9.3	9.3
V	µg/L	0.4U	1.2
Radiological			
U	µg/L	9.3	9.3

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-35[a,b]

Analyte	Unit	10/23/01	01/31/02	04/01/02	07/09/02	10/07/02	01/13/03	04/08/03	07/07/03	10/07/03	01/20/04	04/13/04	10/06/04	04/05/05
Field Measurements														
Alkalinity	mg/L	331	352	358	378	371	388	322	406	346	554	365	360	316
Conductivity[c]	µmhos/cm	1961	1900	1916	3220	1762	1906	2305	1716	2001	1715	1971	1789	2401
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	6.74	--	4.59	--
ORP[c]	mV	--	--	151	--	--	--	--	135	129	-5.1	--	44	172
pH[c]	s.u.	6.94	7.13	6.72	6.68	6.79	6.87	6.75	6.84	7.08	6.92	6.97	6.88	6.81
Temperature[c]	C	13.9	10.5	12.29	12.58	12.29	10.8	11	11.9	13.18	9.89	10.68	12.1	10.62
Turbidity[c]	NTU	2.46	4.5	0.82	2.18	2.24	0.78	1.35	4.85	0.34	0.99	0.55	2.65	0.82
Common Ions														
Ca	mg/L	278	270	276	247	259	293	346	262	281	280	340	270	360
Chloride	mg/L	76.6	74.4	79.3	53.0	75.5	61.9	158	66.5	94.0	68.0	100	56.0	190
Fluoride	µg/L	433	232	281	361	246	265	17.2UJ	164	219	290.	280.	250.	200.U
Hardness	mg/L	926	904	927	834	866	978	1150	872	944	926	1100	880	1200
K	mg/L	5.06	5.28	4.81	3.96	4.29	4.70	4.77	3.66	4.45	6.20	7.20	5.80	8.20
Mg	mg/L	56.2	55.9	57.7	52.8	53.3	59.9	70.6	52.9	58.9	55.0	62.0	50.0	73.0
Na	mg/L	94.7	92.0	93.3	81.8	90.3	95.8	131	90.7	118	95.0	98.0	82.0	170
NO_3+NO_2 as N	µg/L	2010	1840	1710J	893	1600	2390	5910	1430	2700	1700.	3800.	1000.	15000.
SO_4	mg/L	778	646	631	447	591	677	819	573	688	630	580	590	860
Metals														
As	µg/L	11.7	12	10.7	9.2	9	10	8.70	9.60	10.9	11J	9.3	9.4	9.8
Fe	µg/L	0.8U	0.8U	1U	4U	23.2	2.9U	1.30U	1U	0.800U	6.7U	9.8U	7U	7.5U
Mn	µg/L	1.7	0.1U	0.1U	0.1U	0.1U	0.3U	0.100U	0.290	0.100U	0.2	0.077U	0.066U	0.13U
Mo	µg/L	3.9	3.1	4.7	5.5	3.3	6.4U	2.00U	1.80	1.70U	5J	6.5	4.4J	3.3
Se	µg/L	36.7	40.5	39.1	34.4	50.3	43.6	73.8	25.7	40.0	22	32	22	61
U	µg/L	159	166	155	125	115	126	148	117	114	120	110J	81J	150
V	µg/L	243	262	248	222	249	250	219	212	217	220	200	200J	200
Radiological														
Alpha[d]	pCi/L	14.6	89.7	94.2	70.7	65.5	73.5	68.0	64.3	54.7	78.2	69.0	53.7	101
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]
Beta	pCi/L	11.3	29.2	43.1	10.2U	25.3	32.8	39.1	18.7	24.6	22.2	27.2	23.0	42.6
U	µg/L	159	166	155	125	115	126	148	117	114	120	110J	81J	150

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-35[a,b]

Analyte	Unit	10/05/05	04/28/06	10/02/06	04/11/07	10/09/07	04/09/08[c]	10/09/08	04/07/09	10/06/09	04/20/10	10/12/10	04/05/11	10/11/11
Field Measurements														
Alkalinity	mg/L	320	374	342	393	346	317	126	326	390	114	348	377	352
Conductivity[c]	µmhos/cm	1817	1999	1987	1988	1908	2641	2469	2487	2074	2816	2242	2209	2088
DO[c]	mg/L	8.29	5.11	4.73	6.08	--	--	--	--	--	--	--	--	--
ORP[c]	mV	77	-30.1	139	174.5	32	155.4	155.5	135	--	184.7	194.0	147.0	--
pH[c]	s.u.	6.91	6.93	6.67	6.98	6.90	6.84	7.14	7.04	6.76	6.93	6.96	6.95	6.89
Temperature[c]	C	12.8	11.35	12.57	11.18	13.40	8.61	12.37	10.21	12.55	9.68	12.30	10.38	12.44
Turbidity[c]	NTU	2.47	0.39	0.44	0.33	1.38	0.54	0.85	3.63	2.71	1.38	2.36	0.68	1.66
Common Ions														
Ca	mg/L	260	310	430	390	360	350	300	360J	370J	370	350	327	280
Chloride	mg/L	91.0	110	83.0	100	76.0	190	79.0	120	90.0	180	120	122	100
Fluoride	µg/L	210.	210.	220.	240.	380.	200.U	520.	480.	320.	310.	300.	326	500.U
Hardness	mg/L	859	1020	1360	1250	1170	1170	1000	1190J	1200J	1240	1150	1110	954
K	mg/L	6.20	6.30	6.50	5.70	6.10	6.60	6.20J	6.40J	5.20J	7.20J	6.10J	4.45	2.90
Mg	mg/L	51.0	60.0	70.0	66.0	65.0	71.0	61.0	71.0	68.0	77.0	66.0	71.7	62.0
Na	mg/L	96.0	110	110	110	100	170	120	140J	120J	180	130J	133	100
NO_3+NO_2 as N	µg/L	3700.	6100.	3800.	5200.	3700.	15000.	6100.	5200.	3600.	13000.	5800.	4350.	5500.
SO_4	mg/L	650	690	790	670	790	940	760	760	740	930	820	794	660
Metals														
As	µg/L	8.9	9.5	9.7	9.3	8.4	9.3	9.2	10	10	8.6	8.7	5.36	9.7
Fe	µg/L	7.8U	14U	2.2U	3.7U	5.6U	1.4U	12	1.3UJ	1.6U	4.9U	4.9U	30.0U	25UJ
Mn	µg/L	4.4	2.5	0.097U	0.084U	0.16U	0.78	0.2U	0.34	0.1U	0.11U	0.83	2.00U	0.57UJ
Mo	µg/L	6.3	6.3	5.6	6	5.8	5.3	5.4	5.3	5.6	4.5	4.6	5.92	5.4UJ
Se	µg/L	21	27	20	27	20	56	16	22	18	51	19	20.1	20
U	µg/L	140	160	120	130	100	140	120	130	110	87	110	143	93
V	µg/L	190	160	150	180J	210J	170	180	180	190	160	160	169	160
Radiological														
Alpha[d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U	µg/L	140	160	120	130	100	140	120	130	110	87	110	143	93

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- On-Site -- T01-35[a,b]

Analyte	Unit	04/24/12
Field Measurements		
Alkalinity	mg/L	360
Conductivity[c]	µmhos/cm	2247
DO[c]	mg/L	--
ORP[c]	mV	100.6
pH[c]	s.u.	6.96
Temperature[c]	C	12.07
Turbidity[c]	NTU	0.96
Common Ions		
Ca	mg/L	360
Chloride	mg/L	100
Fluoride	µg/L	290.
Hardness	mg/L	1200
K	mg/L	6.00J
Mg	mg/L	73.0
Na	mg/L	120J
NO_3+NO_2 as N	µg/L	2100.
SO_4	mg/L	770
Metals		
As	µg/L	9.2
Fe	µg/L	4.9UJ
Mn	µg/L	0.11UJ
Mo	µg/L	2J
Se	µg/L	16
U	µg/L	120
V	µg/L	160
Radiological		
Alpha[d]	pCi/L	--
Alpha-U[e]	pCi/L	--
Beta	pCi/L	--
U	µg/L	120

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 0200[a,b]

Analyte	Unit	10/05/04	04/07/05	10/04/05	04/05/06	10/04/06	04/12/07	10/10/07	04/10/08[c]	10/09/08	04/09/09	10/07/09	04/21/10	10/12/10
Field Measurements														
Alkalinity	mg/L	388	389	518	338	477	393	--	390	270	376	470	356	418
Conductivity[c]	µmhos/cm	2502	3651	3532	2205	3491	2421	2960	3010	1392	2852	2800	2230	3089
DO[c]	mg/L	--	0.83	3.34	1.41	0.77	--	--	0.29	--	--	--	--	0.34
ORP[c]	mV	56	85.0	3	191.9	147	190	17	45.8	16.6	--	--	--	-346.5R
pH[c]	s.u.	6.89	6.83	7.03	6.76	6.69	6.87	6.84	6.88	7.08	7.00	6.69	7.28	6.65
Temperature[c]	C	12.7	7.31	13.3	6.57	13.46	6.57	14.05	6.41	13.58	7.16	14.30	6.4	14.01
Turbidity[c]	NTU	4.17	2.05	1.08	0.74	4.00	--	0.63	0.67	1.41	3.55	1.86	3.82	1.72
Common Ions														
Ca	mg/L	340	420	410	280	370	320	360	350	340	400J	350J	260	370
Chloride	mg/L	150	390	330	95.0	360	140	160	230	180	160	100	230	160
Fluoride	µg/L	250.	500.U	500.U	260.	500.U	500.U	600.	500.U	540.	440.	480.	390.	540.
Hardness	mg/L	1170	1500	1440	1000	1460	1170	1350	1280	1260	1410J	1290J	966	1340
K	mg/L	15.0	14.0	14.0	9.00	17.0	9.10	13.0	11.0J	11.0J	11.0J	11.0J	8.10J	9.60J
Mg	mg/L	79.0	110	100	74.0	130	89.0	110	98.0	100	100	100	77.0	100
Na	mg/L	150	240	300	150	460	200	280	230	280	210J	210J	210	230
NO_3+NO_2 as N	µg/L	560.	8200.	3000.	1800.	1400.	2300.	740.	2700.	270.	1600.	360.	8400.	950.J
SO_4	mg/L	920	1100	1100	840	1300	980	1300	1100	1200	1000	1200	690	1000
Metals														
As	µg/L	0.018U	0.14	0.007U	0.0075U	0.012U	0.012U	0.19	0.17	0.19	0.11U	0.18	0.32	0.28
Fe	µg/L	7U	15U	11U	14U	2.2U	7.4U	11U	1.4U	6.2U	6.3J	1.6U	4.9U	4.9U
Mn	µg/L	5.5	2.4	0.095U	0.23U	0.097U	0.17U	6.2	0.64	0.41U	0.87	3	1.8	0.11U
Mo	µg/L	13	12	34	17	26	15	26	20	28	18	27	24	27
Se	µg/L	84	33	6.4	93	17	110	56	59	4.1	76	9	23	13
U	µg/L	290J	460	260	260	280	290	340	420	320	410	260	210	230
V	µg/L	0.21J	0.62J	0.1U	0.18J	0.41	0.072U	0.64J	0.16	0.29	0.099U	0.38J	0.26	0.28
Radiological														
Alpha[d]	pCi/L	142	221	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	0[f]	0[f]	--	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	71.4	82.2	--	--	--	--	--	--	--	--	--	--	--
U	µg/L	290J	460	260	260	280	290	340	420	320	410	260	210	230

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 0200[a,b]

Analyte	Unit	04/05/11	10/12/11	04/25/12
Field Measurements				
Alkalinity	mg/L	412	405	350
Conductivity[c]	µmhos/cm	2640	2628	2661
DO[c]	mg/L	--	0.44	--
ORP[c]	mV	76	158.6	-13.2
pH[c]	s.u.	6.85	6.84	6.76
Temperature[c]	C	8.1	13.35	8.02
Turbidity[c]	NTU	1.72	3.09	1.62
Common Ions				
Ca	mg/L	311	280	290
Chloride	mg/L	156J	160	180
Fluoride	µg/L	315	500.U	350.
Hardness	mg/L	1150	1060	1090
K	mg/L	5.72	6.30	4.60J
Mg	mg/L	90.1	87.0	88.0
Na	mg/L	178	200	200J
NO_3+NO_2 as N	µg/L	2940.	420.	1900.
SO_4	mg/L	946	900	860
Metals				
As	µg/L	1.70U	0.32J	0.25
Fe	µg/L	61.3	25UJ	25UJ
Mn	µg/L	2.00U	3.4	0.57UJ
Mo	µg/L	21.8	15J	7.8J
Se	µg/L	86.1	8.3	56
U	µg/L	477J	230	220
V	µg/L	3.00U	0.31J	0.2
Radiological				
Alpha[d]	pCi/L	--	--	--
Alpha-U[e]	pCi/L	--	--	--
Beta	pCi/L	--	--	--
U	µg/L	477J	230	220

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 0202[a,b]

Analyte	Unit	10/05/04	04/05/05	10/04/05	04/04/06	10/03/06	04/10/07	10/10/07	04/08/08[c]	10/08/08	04/08/09	10/08/09	04/20/10	10/12/10
Field Measurements														
Alkalinity	mg/L	363	274	338	--	356	325	365	365	312	299	--	283	312
Conductivity[c]	µmhos/cm	2018	2329	2063	2051	2193	1532	2031	2231	1934	2186	1876	1760	2062
DO[c]	mg/L	1.65	1.75	6.09	4.54	1.24	4.56	--	--	1.93	--	--	--	2.23
ORP[c]	mV	-36	179.9	-7	63.9	10	158.3	--	141.2	78.1	--	--	--	-223.3R
pH[c]	s.u.	6.54	6.84	6.69	6.86	6.52	6.64	7.19	6.64	6.77	6.75	6.71	6.82	6.72
Temperature[c]	C	13.2	6.90	13.3	11.23	14.7	7.73	14.8	8.33	13.66	10.72	13.78	7.8	15.12
Turbidity[c]	NTU	>1000	3.32	2.47	--	4.50	2.63	83.5	0.77	3.0	274	295	1.01	100
Common Ions														
Ca	mg/L	270	350	260	280	440	270	270	330	270	350J	290J	300	290J
Chloride	mg/L	74.0	140	110	94.0	100	77.0	81.0	130	98.0	120	--	110	100
Fluoride	µg/L	450.	340.	430.	440.	500.U	440.	630.	280.	440.	510.	--	300.	470.
Hardness	mg/L	925	1180	888	963	1450	909	934	1120	917	1200J	984J	992	979J
K	mg/L	12.0	8.90	9.90	11.0	12.0	8.10	11.0	9.70	10.0J	10.0J	9.40J	9.80J	10.0J
Mg	mg/L	61.0	74.0	58.0	64.0	85.0	57.0	63.0	71.0	59.0	78.0	63.0	59.0	62.0
Na	mg/L	110	110	140	110	170	93.0	140	110	130	150J	120J	94.0	140J
NO_3+NO_2 as N	µg/L	1500.	9800.	5100.	3500.	5100.	4700.	3300.	8200.	5800.	6500.	--	6000.	4800.
SO_4	mg/L	660	810	710	760	830	530	630	840	660	860	--	660	640
Metals														
As	µg/L	1.3	4	4.5	1.4	2.9	4.2	2.4	2.9	4.2	1.6	2	2.9	2.2
Fe	µg/L	770	7.5U	11U	39	2.2U	3.7U	21	1.4U	13	160	320	4.9U	4.9U
Mn	µg/L	750	1.7	0.095U	29	8.9	0.084U	14	0.51	0.2U	36	43	0.11U	17
Mo	µg/L	63	16	26	28	30	23	31	24	23	26	25	20	25
Se	µg/L	25	43	29	32	31	37	31	66	27	31	20	69	22
U	µg/L	300J	260	180	230	210	230	250	280	190	220	180	190	170
V	µg/L	21	60	72	39	53	68J	54J	50	68	34	41	42	41
Radiological														
Alpha[d]	pCi/L	220	165	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	13.9	0[f]	--	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	80.0	40.8	--	--	--	--	--	--	--	--	--	--	--
U	µg/L	300J	260	180	230	210	230	250	280	190	220	180	190	170

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 0202[a,b]

Analyte	Unit	04/04/11	10/12/11	04/24/12
Field Measurements				
Alkalinity	mg/L	334	279	290
Conductivity[c]	µmhos/cm	2251	2336	2303
DO[c]	mg/L	--	3.48	--
ORP[c]	mV	163	159.1	--
pH[c]	s.u.	6.59	6.56	6.70
Temperature[c]	C	9.2	13.24	11.47
Turbidity[c]	NTU	570	36.1	23.6
Common Ions				
Ca	mg/L	288	310	300
Chloride	mg/L	126	120	110
Fluoride	µg/L	417	630.	460.
Hardness	mg/L	1020	1080	1050
K	mg/L	6.16	6.50	9.20J
Mg	mg/L	72.8	74.0	73.0
Na	mg/L	139	140	130J
NO_3+NO_2 as N	µg/L	6370.	3700.	3700.
SO_4	mg/L	885	800	830
Metals				
As	µg/L	1.70U	1.7J	1.9
Fe	µg/L	30.0U	25UJ	4.9UJ
Mn	µg/L	3.28	5.6	0.26J
Mo	µg/L	31.1	11J	22
Se	µg/L	30.2	29	28
U	µg/L	252	220	210
V	µg/L	25.3	34	33
Radiological				
Alpha[d]	pCi/L	--	--	--
Alpha-U[e]	pCi/L	--	--	--
Beta	pCi/L	--	--	--
U	µg/L	252	220	210

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 82-07[a,b]

Analyte	Unit	04/14/00	07/27/00	04/07/03
Field Measurements				
Alkalinity	mg/L	339	236	334
Conductivity[c]	µmhos/cm	1481	1929	1881
DO[c]	mg/L	--	2.06	3.71
ORP[c]	mV	97	143	89
pH[c]	s.u.	6.67	6.5	6.77
Temperature[c]	C	7.6	23.4	8.2
Turbidity[c]	NTU	156	237	3.77
Common Ions				
Ca	mg/L	267	313	278
Chloride	mg/L	61.3	91.1	88.0
Fluoride	µg/L	338	329	17.2UJ
Hardness	mg/L	915	1090	969
K	mg/L	6.10	8.19	8.93
Mg	mg/L	60.4	74.2	66.8
Na	mg/L	96.1	135	118
NO_3+NO_2 as N	µg/L	3450	5620	3820
SO_4	mg/L	754	961	744
TDS[c]	mg/L	1530	1890	--
Metals				
As	µg/L	1.3	1.5	1.80
Fe	µg/L	7.4U	38.3	1.30U
Mn	µg/L	0.4U	6.6	0.590
Mo	µg/L	17.2	14.8	16.0
Se	µg/L	54.4	71.3	82.0
U	µg/L	120	102	277
V	µg/L	39.6	40.9	42.8
Radiological				
Alpha[d]	pCi/L	69.2J	36.2J	109J
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]
Beta	pCi/L	33.2	34.1	74.0
U	µg/L	120	102	277

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 82-08[a,b]

Analyte	Unit	01/12/00	04/14/00	07/28/00	11/02/00	04/10/01	07/19/01	10/17/01	01/30/02	04/02/02	07/10/02	10/02/02	04/09/03	10/07/03
Field Measurements														
Alkalinity	mg/L	209	224	141	142	100	54	104	95	99	184	285	260	245
Conductivity[c]	µmhos/cm	3190	3400	2480	2910	2910	2890	2720	2660	2506	5442	3487	3237	2260
DO[c]	mg/L	1.82	1.12	0.86	3.3	4.3	--	--	--	--	--	--	--	--
ORP[c]	mV	88	90	189	185	125	--	187	--	147	--	--	20.5	98
pH[c]	s.u.	--	6.35	5.92	5.57	6.25	5.45	5.72	5.81	5.83	6.08	6.44	6.63	6.3
Temperature[c]	C	10.5	9	13.3	13.2	8.7	13.7	14	7.6	10.76	12.17	14.8	11.3	15.6
Turbidity[c]	NTU	21.4	1.29	0.66	1.23	0.74	1.73	0.46	0.71	0.76	0.45	1.36	2.32	0.63
Common Ions														
Ca	mg/L	402	432	387	369	374	348	312	283	283	323	343	290	268
Chloride	mg/L	228	252	196	194	191	175	170	125	128	166	170	6.71J	125
Fluoride	µg/L	557	764	749	625	825	828	887	536	574	1250	521	687	848
Hardness	mg/L	1520	1660	1480	1410	1450	1350	1200	1100	1120	1260	1280	1090	1020
K	mg/L	8.39	7.49	7.34	7.33	6.48	6.87	6.22	5.98	5.63	6.57	7.12	5.51	5.83
Mg	mg/L	126	140	124	118	126	117	102	96.2	99.3	111	104	89.7	84.9
Na	mg/L	198	213	192	186	210	197	177	171	175	218	202	155	163
NO_3+NO_2 as N	µg/L	2830J	3650	5030	7790	7130	4880	3860	3530	3110J	4040	3430	2740J	3920
SO_4	mg/L	1380	1490	1440	1410	704	1370	1350	1160	1120	1190	1240	54.8	1030
TDS[c]	mg/L	2910	2900	2670	2500	2620	2540	--	--	--	--	--	--	--
Metals														
As	µg/L	0.67	0.38	0.3U	0.45	0.5U	0.5U	0.6U	0.6U	0.39	0.32	0.22	0.250	0.310
Fe	µg/L	783	7.4U	9.1U	12.1	1.0U	0.8U	18.4	0.8U	1U	4U	70.4	94.4	34.5
Mn	µg/L	251	9.4	18.2	65.6	27.4	39.9	60.9	58.9	20.2	9.9	64.7	23.4	12.2
Mo	µg/L	3.9	9.1	4.6	2.5	0.4U	3U	1.9U	1.5U	1.8U	3.8	1.7	2.50	4.60
Se	µg/L	5.8	17.5	12.3	15.5	54.2	37.6	26.4	41.8	44.4	57.9	47	58.8	55.9
U	µg/L	46.5	111	17.1	5.2	3.6	4	3.4	4	6.1	59.4	79.1	92.5	151
V	µg/L	13.6	7.4	4.8	6	6	4.8	5	5	4	4.7	10	4.00	5.50
Radiological														
Alpha[d]	pCi/L	24.0	51.4J	23.4	13.2UJ	12.1U	13.4UJ	13.7U	11.7U	11.5U	31.3	35.5	65.0J	88.4J
Alpha-U[e]	pCi/L	0[f]	0[f]	11.7	13.2UJ	12.1U	13.4UJ	13.7U	11.7U	11.5U	0[f]	0[f]	1.5J	0[f]
Beta	pCi/L	16.9	36.9	21.1	13.2U	11.9U	10.6U	13.4U	10U	13.2	11.3U	13.0	30.7	49.0
U	µg/L	46.5	111	17.1	5.2	3.6	4	3.4	4	6.1	59.4	79.1	92.5	151
U-234	pCi/L	--	--	--	--	--	1.5J	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	1.6J	--	--	--	--	--	--	--

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[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 82-08[a,b]

Analyte	Unit	04/14/04	10/04/04	04/06/05	10/04/05	04/05/06	10/03/06	04/10/07	10/10/07	04/08/08[c]	10/08/08	04/08/09	10/07/09	04/21/10
Field Measurements														
Alkalinity	mg/L	213	256	323	161	146	362	234	303	322	192	142	177	315
Conductivity[c]	µmhos/cm	2098	2177	4416	2525	2412	3435	2683	2990	4154	2658	2990	2640	4230
DO[c]	mg/L	--	1.27	1.31	3.83	2.47	0.39	4.92	--	0.79	--	--	--	--
ORP[c]	mV	--	35	218.2	115	160.0	16	210.4	--	163.2	115.4	--	--	208
pH[c]	s.u.	6.48	6.29	6.72	6.24	6.23	6.46	6.18	6.90	6.73	6.41	6.16	6.11	6.85
Temperature[c]	C	10.71	13.9	8.38	13.3	8.67	13.6	9.12	14.1	9.72	13.90	11.53	13.15	7.7
Turbidity[c]	NTU	0.40	1.34	1.21	0.86	1.91	1.94	1.00	0.98	0.64	0.61	1.91	1.54	2.08
Common Ions														
Ca	mg/L	280	270	620	350	320	400	410	410	520	380	460J	380J	590
Chloride	mg/L	100	94.0	480	180	130	220	190	180	450	220	230	190	530
Fluoride	µg/L	1100.	1100.	600.	510.	590.	520.	790.	920.	630.	770.	830.	1000.	960.
Hardness	mg/L	1020	971	2210	1250	1170	1450	1480	1440	1960	1400	1680J	1400J	2210
K	mg/L	9.00	8.50	16.0	11.0	9.00	9.30	7.60	22.0	15.0	12.0J	9.80J	8.40J	16.0J
Mg	mg/L	78.0	72.0	160	91.0	91.0	110	110	100	160	110	130	110	180
Na	mg/L	120	120	280	150	130	170	160	190	280	190	200J	180J	340
NO_3+NO_2 as N	µg/L	3300.	2400.	10000.	6800.	5500.	1800.	4500.	3600.	6800.	6100.	3200.	2500.	4300.
SO_4	mg/L	850	850	1600	1200	1000	1300	1300	1200	1800	1300	1400	1200	1800
TDS[c]	mg/L	--	--	--	--	--	2700	2400	2400	3700	2400	2600	2200	3300
Metals														
As	µg/L	0.31	0.33	0.74	0.32	0.31	0.39	0.012U	0.79	0.68	0.63	0.52	0.46	0.91
Fe	µg/L	9.8U	7U	15U	11U	14U	4.3U	7.4U	5.6U	1.4U	3.1U	2.6J	1.6U	9.9U
Mn	µg/L	4.7	7.2	4.3	24	3.3	57	27	38	1.2	17	5	8.1	0.23U
Mo	µg/L	18	14	15	5.7	4.8	5.7	5.8	11	18	5.8	4.7	5.6	17
Se	µg/L	39	32	54	16	23	20	22	23	59	18	20	16	78
U	µg/L	220	220J	360	47	26	60	65	92	300	33	32	30	230
V	µg/L	3.7	4.1	8.6	3.1	3.9	3.6	3.7J	13J	8.5	6.6	4.4	5.2	7.5
Radiological														
Alpha[d]	pCi/L	149	113	126	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	57.1	52.2	60.6	--	--	--	--	--	--	--	--	--	--
U	µg/L	220	220J	360	47	26	60	65	92	300	33	32	30	230
U-234	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--

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[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 82-08[a,b]

Analyte	Unit	10/12/10	04/05/11	10/11/11	04/24/12
Field Measurements					
Alkalinity	mg/L	181	182	228	112
Conductivity[c]	µmhos/cm	3217	2835	2867	2841
DO[c]	mg/L	0.64	--	1.48	--
ORP[c]	mV	-298.3R	170	165.4	10.9
pH[c]	s.u.	5.96	6.15	6.05	6.00
Temperature[c]	C	13.58	10.6	13.52	10.68
Turbidity[c]	NTU	0.77	1.10	0.66	1.65
Common Ions					
Ca	mg/L	390	348	350	360
Chloride	mg/L	220	184	190	170
Fluoride	µg/L	810.	740	970.	890.
Hardness	mg/L	1430	1320	1330	1350
K	mg/L	11.0J	6.09	5.90	4.30J
Mg	mg/L	110	110	110	110
Na	mg/L	200	171	160	160J
NO_3+NO_2 as N	µg/L	4300.	3560.	2500.	2400.
SO_4	mg/L	1200	1310	1200	1300
TDS[c]	mg/L	2400	2410	2300	2500
Metals					
As	µg/L	0.61	1.70U	0.59	0.43
Fe	µg/L	4.9U	113	25UJ	25UJ
Mn	µg/L	7.9	2.96	0.57UJ	0.57UJ
Mo	µg/L	5.2	4.87	5.4UJ	5.4UJ
Se	µg/L	17	15.4	18	16
U	µg/L	25	23.8	31	16
V	µg/L	5.5	3.00U	5.1	3.7
Radiological					
Alpha[d]	pCi/L	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--
Beta	pCi/L	--	--	--	--
U	µg/L	25	23.8	31	16
U-234	pCi/L	--	--	--	--
U-238	pCi/L	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 88-85[a,b]

Analyte	Unit	01/12/00	04/13/00	07/27/00	10/18/00	01/30/01	04/11/01	07/19/01	10/17/01	01/29/02	04/02/02	07/10/02	10/01/02	01/14/03
Field Measurements														
Alkalinity	mg/L	384	348	311	--	316	463	348	348	376	327	342	377	342
Conductivity[c]	µmhos/cm	3460	3250	2850	--	2880	1829	2450	2240	2180	2060	1927	2015	2012
DO[c]	mg/L	1.08	0.24	0.41	--	1.3	1	0.2	0.3	0.499	--	0.49	0.9	2.4
ORP[c]	mV	137	125	196	--	151	190	100.0	212	165	127	213	80.8	-345
pH[c]	s.u.	--	6.13	6.65	--	6.74	6.73	5.87	6.58	6.61	6.6	6.66	6.6	6.44
Temperature[c]	C	9.7	8.1	15.1	--	7.7	6.7	13.8	14.4	6.6	7.9	13.76	15.6	7.5
Turbidity[c]	NTU	3.52	1.64	1.52	--	2.67	3.62	1.42	0.12	0.77	152	0.41	3.02	1.67
Common Ions														
Ca	mg/L	371	362	269	321	288	282	272	252	252	251	238	256	263
Chloride	mg/L	190	182	123	149	172	161	147	110	91.3	89.5	83.7	82.6	86.6
Fluoride	µg/L	298	279	410	410	343	308	355	422	376	25.1UJ	25.1UJ	264	25.1U
Hardness	mg/L	1330	1290	946	1120	1020J	997	962	895	898	913	864	902	926
K	mg/L	17.1	14.9	16.6	18.1	15.5	14.1	17.1	15.0	11.9	11.6	12.3	12.0	9.35
Mg	mg/L	98.7	93.0	66.7	77.9	73.5J	71.0	68.7	64.6	65.3	69.5	65.5	63.9	65.3
Na	mg/L	318	292	283	295	248	233	222	163	140	140	136	131	125
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	16700J	24600	15800	14200	15200	14700	6260	3740	3360	2870	2480	2270	3100
SO_4	mg/L	1220	1130	1040	1060	1050	455	895	844	782	717	663	694	704
TDS[c]	mg/L	2880J	2610	2210	2380	2290	2170	1880	--	--	--	--	--	--
Metals														
As	µg/L	7.8	3.8	8.5	12	7.3	7.7	10.9	10	9.4	8.5	11.6	10.9	9.2
Fe	µg/L	8.9U	7.4U	9.1U	13.1	11U	1.0U	0.8U	0.8U	0.8U	1U	9.6	0.8U	2.9U
Mn	µg/L	375	155	102	124	153	99.9	91.5	99.4	49.1	9	9.3	1.8	0.3U
Mo	µg/L	46.2	37.5	50.9	54.6	43.9	38.5	40.4	41.2	24.9	28.6	32.6	35.8	6.4U
Se	µg/L	61	87	36.6	57.6	112	135	127	75.2	93	99.4	97	90.2	110
U	µg/L	745	539	323	402	442	419	393	366	350	374	417	417	397
V	µg/L	325	304	363	441	295	291	365	385	301	299	375	417	325
Radiological														
Alpha[d]	pCi/L	468	333J	167J	244J	299	172	202J	159	174	194J	236	276	232
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	12.0	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]
Beta	pCi/L	132	173	111	115	65.0	140	87.1	82.4	65.7	117	112	68.6	80.5
U	µg/L	745	539	323	402	442	419	393	366	350	374	417	417	397
U-234	pCi/L	--	--	--	--	143	--	130J	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	144	--	152J	--	--	--	--	--	--

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 88-85[a,b]

Analyte	Unit	04/08/03	07/09/03	10/07/03	01/22/04	04/15/04	10/07/04	04/07/05	10/04/05	04/04/06	10/03/06	04/10/07	10/09/07	04/08/08[c]
Field Measurements														
Alkalinity	mg/L	324	381	390	351	330	378	274	318	328	351	361	352	326
Conductivity[c]	µmhos/cm	1988	2082	2041	2001	1708	1843	2176	1665	2012	2082	2099	1917	2470
DO[c]	mg/L	1.71	--	1.26	2.56	2.12	0.59	1.18	3.60	2.63	0.94	3.12	0.93	2.50
ORP[c]	mV	196	223	137	-22	51.2	144	103.9	189	105.0	135	191.5	153	150.2
pH[c]	s.u.	6.61	6.62	6.67	6.67	6.82	6.75	6.85	6.80	6.62	6.56	6.78	7.09	6.74
Temperature[c]	C	8.07	18.3	15.7	7.83	9.97	13.0	8.37	12.8	8.72	13.4	7.48	14.6	9.25
Turbidity[c]	NTU	1.04	2.74	1.44	1.63	0.87	2.90	4.19	3.49	0.91	3.79	1.03	3.72	0.53
Common Ions														
Ca	mg/L	270	277	271	290	340	270	270	230	300	420	390	320	360
Chloride	mg/L	106	98.1	96.9	81.0	100	51.0	140	82.0	92.0	85.0	120	73.0	190
Fluoride	µg/L	17.2UJ	388	321	380.	430.	340.	320.	360.	350.	530.	380.	580.	230.
Hardness	mg/L	941	954	940	971	1120	901	897	756	1000	1360	1270	1070	1200
K	mg/L	9.40	10.1	9.72	12.0J	14.0	12.0	12.0	12.0	13.0	14.0	12.0	12.0	10.0
Mg	mg/L	64.8	63.7	63.9	60.0	67.0	55.0	54.0	44.0	61.0	76.0	73.0	66.0	73.0
Na	mg/L	131	131	130	120	110	95.0	120	99.0	110	130	120	120	140
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	6140	3520	3260	2500.	4900.	1400.	8200.	3300.	5100.	4800.	6400.	3900.	20000.
SO_4	mg/L	734	707	734	710	640	600	710	500	710	820	770	780	920
TDS[c]	mg/L	--	--	--	--	--	1400	1500	1300	1500	1700	1800	1600	2000
Metals														
As	µg/L	8.60	11.1	14.0	9.9J	10	13	10	12	10	12	11	13	8.8
Fe	µg/L	1.30U	1U	0.800U	6.7U	9.8U	7U	7.5U	11U	14U	2.2U	3.7U	5.6U	1.4U
Mn	µg/L	0.100U	0.560	1.50	0.043U	0.077U	0.066U	0.13U	3.5	0.23U	0.097U	0.084U	0.16U	0.66
Mo	µg/L	26.4	37.4	30.2	30J	28	34	27	42	30	36	33	30	29
Se	µg/L	120	79.8	73.5	56J	65	42	66	34	46	39	46	33	90
U	µg/L	329	475	355	340	290J	310J	290	260	330	290	330	240	290
V	µg/L	315	402	392	340	340	390	270	400	360	340	350J	410J	280
Radiological														
Alpha[d]	pCi/L	141J	236	168J	239	196	226	180	--	--	--	--	--	--
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	5.4	0[f]	13.0	0[f]	--	--	--	--	--	--
Beta	pCi/L	86.0	76.7	89.8	53.1	85.2	64.5	44.5	--	--	--	--	--	--
U	µg/L	329	475	355	340	290J	310J	290	260	330	290	330	240	290
U-234	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 88-85[a,b]

Analyte	Unit	10/08/08	04/07/09	04/09/09[c]	10/07/09	04/19/10	10/12/10	04/04/11	10/11/11	04/24/12
Field Measurements										
Alkalinity	mg/L	310	317	329	355	261	327	420	376	386
Conductivity[c]	µmhos/cm	2044	1308	2284	2081	2180	2265	2180	2201	2067
DO[c]	mg/L	1.35	3.14	3.8	3.84	3.90	0.35	2.53	1.28	2.45
ORP[c]	mV	-21.0	-74	-10	163.5	62	8.8R	5	-53.3	-28.3
pH[c]	s.u.	6.96	6.87	6.97	6.73	6.96	6.60	6.84	6.74	6.91
Temperature[c]	C	12.96	8.67	9.8	13.10	8.5	12.38	8.2	12.82	10.10
Turbidity[c]	NTU	0.89	1.48	--	1.07	1.17	2.18	2.10	1.18	2.26
Common Ions										
Ca	mg/L	280	380J	--	330J	340	310	303	300	310
Chloride	mg/L	87.0	140	126	110	170	120	107	120	100
Fluoride	µg/L	480.	530.	--	580.	390.	440.	391	520.	390.
Hardness	mg/L	926	1250J	--	1100J	1140	1020	1030	1020	1060
K	mg/L	12.0J	12.0J	--	10.0J	11.0J	10.0J	6.95	6.30	10.0J
Mg	mg/L	55.0	74.0	--	66.0	70.0	59.0	67.4	65.0	69.0
Na	mg/L	120	140J	--	130J	150	130	123	110	140J
NO_3 as N	µg/L	--	--	8810	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	5100.	6500.	--	3000.	19000.	5100.	4310.	4700.	3300.
SO_4	mg/L	660	800	841	770	850	730	795	710	810
TDS[c]	mg/L	1500	1800	--	1600	1900	1600	1710	1700	1800
Metals										
As	µg/L	13	10	--	13	10	12	10.7	13	11
Fe	µg/L	3.1U	1.3UJ	--	1.6U	4.9U	4.9U	118	25UJ	4.9UJ
Mn	µg/L	0.2U	1.7	--	0.1U	0.11U	0.11U	2.00U	0.57UJ	0.11UJ
Mo	µg/L	34	27	--	31	25	30	33.1	19J	19
Se	µg/L	29	40	--	29	100	28	23.5	32	28
U	µg/L	290	260	266.9	240	210	260	267	240	190
V	µg/L	380	320	--	390	280	340	280	360	290
Radiological										
Alpha[d]	pCi/L	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--	--	--	--
U	µg/L	290	260	266.9	240	210	260	267	240	190
U-234	pCi/L	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--	--

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
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Alluvial Groundwater -- Down Gradient -- 92-07[a,b]

Analyte	Unit	01/12/00	04/18/00	07/27/00	10/18/00	01/30/01	04/11/01	07/19/01	10/16/01	01/29/02	04/02/02	07/10/02	10/01/02	01/14/03
Field Measurements														
Alkalinity	mg/L	327	269	247	315	274	261	243	305	281	294	272	281	274
Conductivity[c]	µmhos/cm	3470	3150	3010	3330	2940	2610	2370	2270	2063	2236	2007	2176	1987
DO[c]	mg/L	2.5	2.96	3.45	3.1	0.8	0.7	2.6	1.5	0.37	--	0.63	0.3	0.63
ORP[c]	mV	167	103	146	194	145	149	55	192	73.9	137	195.1	111	169
pH[c]	s.u.	--	6.66	6.66	6.23	6.79	6.67	6.02	6.64	6.61	6.56	6.77	6.58	6.69
Temperature[c]	C	10.9	8.7	16.3	13.2	10.2	8.7	11.2	13	10.62	11.02	11.61	13.4	10.7
Turbidity[c]	NTU	2.53	0.83	3.84	1.43	0.31	4.2	1.91	0.2	0.9	0.73	1.31	3.83	1.12
Common Ions														
Ca	mg/L	333	325	309	344	265	358	214	214	216	230	203	223	223
Chloride	mg/L	135	117	92.5	94.2	92.0	94.9	83.2	87.3	71.8	73.3	67.3	69.4	63.8
Fluoride	µg/L	328	348	373	437	417	355	365	476	315J	274	513J	280	206
Hardness	mg/L	1160	1130	1070	1200	934J	1280	751	745	758	817	733	784	785
K	mg/L	25.8	23.4	24.2	28.0	24.5	27.5	21.0	22.0	21.2	20.5	20.0	20.9	19.9
Mg	mg/L	79.0	77.0	73.5	82.3	66.1J	93.1	52.7	51.2	53.0	59.0	54.8	55.2	55.4
Na	mg/L	391	349	356	394	317	402	264	220	201	180	171	209	173
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	26900J	36600	27000	26500	19300	17800	10700	6040	5430	5080J	3980	4430	3150
SO_4	mg/L	1310	1280	1390	1430	1220	492	907	919	821	840	785	844	782
TDS[c]	mg/L	2880J	2630	2700	2820	2390	2180	2850	--	--	--	--	--	--
Metals														
As	µg/L	7.9	8	7.2	9.6	7	7.9	8.2	8.5	7.6	7.9	8.7	9.1	8.6
Fe	µg/L	8.9U	7.4U	9.1U	11.7U	11U	18.9	0.8U	0.8U	0.8U	1U	29.2	0.8U	2.9U
Mn	µg/L	75.4	209	378	481	464	754	466	566	599	558	579	543	450
Mo	µg/L	82.7	73.3	82.8	94.9	114	95.6	89.7	104	87	90	88.3	99.7	92.8
Se	µg/L	10	14.4	4.2	6.3	16.6	27	49.6	44.8	62.6	93.7	83.1	80.5	146
U	µg/L	788	593	603	709	647	1170	576	620	645	661	747	806	838
V	µg/L	366	302	327	394	351	291	332	393	335	321	316	395	350
Radiological														
Alpha[d]	pCi/L	571	484	275J	607J	540	528	288J	450	456	528	511	586	587
Alpha-U[e]	pCi/L	29.6	76.6	0[f]	120J	112	0[f]	0[f]	24.1	12.9	73.9	0[f]	32.3	11.3
Beta	pCi/L	143	214	197	250	102	211	122	138	95.1	170	205	127	192
U	µg/L	788	593	603	709	647	1170	576	620	645	661	747	806	838
U-234	pCi/L	--	--	--	--	214	--	183J	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	214	--	214J	--	--	--	--	--	--

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Alluvial Groundwater -- Down Gradient -- 92-07[a,b]

Analyte	Unit	04/08/03	07/09/03	10/07/03	01/22/04	04/15/04	10/04/04	04/05/05	10/04/05	04/04/06	10/03/06	04/10/07	10/09/07	04/08/08[c]
Field Measurements														
Alkalinity	mg/L	258	321	345	282	271	315	284	267	284	311	329	323	--
Conductivity[c]	µmhos/cm	2010	2017	1844	1837	1641	1676	1938	1203	1683	1888	1941	1727	2066
DO[c]	mg/L	0.35	3.48	1.2	--	0.99	0.37	0.93	2.36	0.57	0.33	1.09	0.21	1.78
ORP[c]	mV	182	102	125	-33	226.6	63	147.3	50	114.4	89	208.7	151	139.0
pH[c]	s.u.	6.79	6.65	6.72	6.76	6.84	6.65	6.86	6.92	6.70	6.64	6.78	7.06	6.71
Temperature[c]	C	9.06	20.9	14.4	8.83	9.14	14.0	8.13	12.2	9.31	13.1	7.12	13.4	8.48
Turbidity[c]	NTU	1.73	2.18	1.4	0.71	1.57	2.36	0.97	1.22	0.87	2.45	1.44	2.60	0.74
Common Ions														
Ca	mg/L	235	223	211	210	300	210	240	120	210	340	350	260	280
Chloride	mg/L	88.8	86.4	79.3	68.0	85.0	41.0	99.0	38.0	54.0	61.0	69.0	52.0	120
Fluoride	µg/L	17.2UJ	420J	387	450.	450.	510.	400.	470.	430.	620.	380.	620.	310.
Hardness	mg/L	826	775	741	722	1010	710	809	403	722	1120	1150	888	959
K	mg/L	18.1	17.5	19.4	24.0J	25.0	22.0	21.0	18.0	21.0	27.0	22.0	24.0	19.0
Mg	mg/L	58.2	53.1	52.0	48.0	63.0	45.0	51.0	25.0	48.0	65.0	68.0	58.0	63.0
Na	mg/L	171	168	164	130	120	110	130	94.0	100	130	120	110	110
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	7340	2700	1850	680.	3900.	120.	5800.	580.	1500.	990.	1700.	920.	5000.
SO_4	mg/L	804	735	654	680	690	580	640	320	630	740	760	720	760
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	6.30	7.80	10.00	8.5J	7.2	11	8	10	7.9	9.2	8.1	9.1	6.7
Fe	µg/L	1.30U	1U	0.800U	6.7U	9.8U	7U	7.5U	11U	14U	2.2U	3.7U	5.6U	1.4U
Mn	µg/L	300	387	286	130	38	68	55	75	59	190	400	360	250
Mo	µg/L	80.1	85.4	89.7	86J	68	100	58	140	98	110	110	110	93
Se	µg/L	155	85.6	123	51J	100	27	43	14	47	38	51	45	70
U	µg/L	759	845	905	960	970	910J	1000	700	1200	970	1300	1100	1100
V	µg/L	285	322	394	350	310	370	270	380	340	340	350J	390J	260
Radiological														
Alpha[d]	pCi/L	472J	487	481J	563	647	607	682	--	--	--	--	--	--
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	--	--	--	--	--	--
Beta	pCi/L	166	145	249	147	273	251	137	--	--	--	--	--	--
U	µg/L	759	845	905	960	970	910J	1000	700	1200	970	1300	1100	1100
U-234	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--

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Alluvial Groundwater -- Down Gradient -- 92-07[a,b]

Analyte	Unit	10/08/08	04/08/09	04/09/09[c]	10/08/09	04/20/10	10/12/10	04/04/11	10/11/11	04/24/12
Field Measurements										
Alkalinity	mg/L	310	292	307	172	266	308	320	368	250
Conductivity[c]	µmhos/cm	1676	1162	1911	1864	1815	1901	1900	1973	1861
DO[c]	mg/L	0.40	0.40	3.4	2.43	0.36	0.52	0.49	0.53	0.53
ORP[c]	mV	10.9	-74	-32.9	24.9	128	31.0R	105	-8.8	5.6
pH[c]	s.u.	7.03	6.90	7.22	6.85	6.95	6.58	6.85	6.71	6.91
Temperature[c]	C	12.14	8.17	9.8	11.66	7.6	11.43	7.7	12.57	9.95
Turbidity[c]	NTU	1.20	0.91	--	1.01	1.71	0.78	1.56	0.68	1.57
Common Ions										
Ca	mg/L	190	310J	--	270J	280	250	248	280	280
Chloride	mg/L	52.0	64.0	64.0	67.0	89.0	64.0	45.4	81.0	68.0
Fluoride	µg/L	470.	530.	--	630.	480.	510.	452	620.	460.
Hardness	mg/L	652	1040J	--	905J	946	834	848	946	954
K	mg/L	21.0J	21.0J	--	21.0J	20.0J	20.0J	13.8	14.0	20.0J
Mg	mg/L	43.0	64.0	--	56.0	60.0	51.0	55.6	60.0	62.0
Na	mg/L	110	120J	--	110J	110	110	102	97.0	110J
NO_3 as N	µg/L	--	--	1360	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	930.	1200.	--	810.	8100.	1200.	338	1700.	760.
SO_4	mg/L	520	730	760	710	730	630	754	670	850
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--
Metals										
As	µg/L	11	8.1	--	9.5	7.8	9.6	9.66	9J	8.2
Fe	µg/L	3.1U	1.3UJ	--	1.6U	4.9U	4.9U	30.0U	25UJ	4.9UJ
Mn	µg/L	260	220	--	310	44	73	75.5	42	0.49J
Mo	µg/L	130	97	--	110	75	96	104	81	69
Se	µg/L	30	52	--	37	110	27	18.6	43	67
U	µg/L	990	1100	1047.9	960	870	940	1250	970	990
V	µg/L	380	320	--	370	250	320	255	340	270
Radiological										
Alpha[d]	pCi/L	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--	--	--	--
U	µg/L	990	1100	1047.9	960	870	940	1250	970	990
U-234	pCi/L	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--	--

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[c] Sample was unfiltered.
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[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 92-08[a,b]

Analyte	Unit	01/10/00	04/13/00	07/26/00	11/02/00	01/29/01	04/10/01	07/19/01	10/16/01	04/02/02	07/11/02	10/07/02	04/09/03	10/06/03
Field Measurements														
Alkalinity	mg/L	333	301	270	261	319	326	314	340	328	308	346	336	323
Conductivity[c]	µmhos/cm	2490	2190	1998	2190	2580	2390	2400	2420	2236	4049	2262	2279	2168
DO[c]	mg/L	1.83	2.16	0.13	3.43	2.1	2.7	--	--	--	--	--	--	--
ORP[c]	mV	186	90	102	161	22	158	86	110	158	--	--	115	50
pH[c]	s.u.	6.25	6.69	6.92	6.7	6.75	6.62	6.28	6.59	6.48	6.52	6.53	6.83	6.62
Temperature[c]	C	9.5	9.8	11.2	11.6	10.8	9	11.1	11.7	11.13	11.44	13.2	9.66	12.4
Turbidity[c]	NTU	6.36	1.79	1.14	0.86	1.66	1.1	1.07	0.51	1.29	0.92	1.13	1.87	2.09
Common Ions														
Ca	mg/L	349	293	265	312	360	326	329	319	294	275	298	326	295
Chloride	mg/L	119	87.4	69.5	81.8	127	113	118	120	90.6	91.2	107	8.85J	109
Fluoride	µg/L	283	244	286	272	260	255	280	359	145	242	289	17.2U	255
Hardness	mg/L	1170	978	888	1030	1210J	1100	1110	1070	1000	937	1010	1090	1010
K	mg/L	13.3	11.5	11.3	12.1	13.1	11.9	12.3	12.3	12.3	11.3	11.8	10.8	11.3
Mg	mg/L	72.7	59.8	55.0	61.5	76.6J	70.1	70.0	66.2	65.0	60.7	64.6	65.9	65.3
Na	mg/L	157	152	134	134	143	139	148	145	152	149	147	166	138
NO_3+NO_2 as N	µg/L	1310J	2150	3520	2580	3560	4040	5790	5360	2540J	3370	3280	736	3050
SO_4	mg/L	948	874	793	876	1070	454	897	981	843	815	872	98.5	855
TDS[c]	mg/L	2170	1780	1630	1780	2180	2000	1990	--	--	--	--	--	--
Metals														
As	µg/L	0.4U	0.22	0.3U	0.2U	0.2U	0.5U	0.5U	0.6U	0.27	0.16	0.1U	0.140	0.140
Fe	µg/L	8.9U	8.4	9.1U	11.7U	11U	1.0U	0.8U	0.8U	1U	4U	0.8U	1.30U	0.800U
Mn	µg/L	1180	393	456	777	1050	754	625	630	468	427	602	135	362
Mo	µg/L	64	36.2	33.7	45.6	43.4	33.3	23.9	28.4	25.8	25.1	26.4	34.0	23.0
Se	µg/L	24.6	190	54.4	30.7	33.2	69.8	123	68	90.3	96.2	70.4	110	81.4
U	µg/L	467	337	227	276	363	316	281	292	257	241	261	488	311
V	µg/L	1.0U	1.3	1.3U	1.5	1.9	2.4	2.3	2.7	1.9	1.6	2.8	0.660	1.70
Radiological														
Alpha[d]	pCi/L	190	161J	107J	146J	177	163	149J	128	136	129	143	268J	157J
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]
Beta	pCi/L	102	93.2	81.2	82.9	60.8	100	36.5	54.3	78.8	11.6U	49.0	129	79.1
U	µg/L	467	337	227	276	363	316	281	292	257	241	261	488	311
U-234	pCi/L	--	--	--	--	128	--	90.9J	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	121	--	117J	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 92-08[a,b]

Analyte	Unit	04/14/04	10/07/04	04/06/05	10/04/05	04/04/06	10/04/06	04/10/07	10/10/07	04/08/08[c]	10/08/08	04/08/09	10/07/09	04/20/10
Field Measurements														
Alkalinity	mg/L	309	357	338	330	270	330	280	375	281	220	288	357	326
Conductivity[c]	µmhos/cm	1885	1991	2109	1690	1727	1965	1784	2013	1972	1176	1896	2021	1990
DO[c]	mg/L	--	0.42	0.82	2.65	0.63	0.67	2.87	--	--	0.71	--	--	--
ORP[c]	mV	--	78	204.8	102	121.6	129	210.9	43	130.8	94.0	--	--	--
pH[c]	s.u.	6.78	6.73	6.77	6.83	6.72	6.57	6.79	6.69	6.81	7.03	6.80	6.59	6.84
Temperature[c]	C	10.52	12.5	7.51	12.1	9.41	13.5	8.15	12.39	7.73	14.67	8.76	11.56	9.3
Turbidity[c]	NTU	0.64	1.56	0.83	1.13	0.78	0.24	0.47	0.64	1.47	3.48	1.55	2.49	1.64
Common Ions														
Ca	mg/L	410	320	320	230	260	420	350	350	300	210	320J	340J	330
Chloride	mg/L	75.0	80.0	100	68.0	40.0	60.0	60.0	85.0	72.0	55.0	54.0	87.0	87.0
Fluoride	µg/L	270.	210.	200.U	250.	230.	350.	250.	410.	200.U	300.	370.	420.	310.
Hardness	mg/L	1330	1050	1050	751	863	1350	1150	1160	1010	697	1060J	1120J	1100
K	mg/L	17.0	15.0	14.0	13.0	13.0	16.0	13.0	15.0	11.0	11.0J	12.0J	12.0J	12.0J
Mg	mg/L	74.0	61.0	61.0	43.0	52.0	72.0	66.0	69.0	63.0	42.0	63.0	66.0	68.0
Na	mg/L	110	100	110	100	91.0	110	86.0	110	84.0	57.0	94.0J	120J	120
NO_3+NO_2 as N	µg/L	950.	1500.	2200.	840.	470.	1300.	1900.	2800.	1500.	1200.	1500.	1600.	1800.
SO_4	mg/L	730	660	740	530	710	810	760	830	790	470	710	800	860
TDS[c]	mg/L	--	1500	1600	1300	1300	--	--	--	--	--	--	--	--
Metals														
As	µg/L	0.2	0.29	0.2	0.007U	0.0075U	0.023U	0.012U	0.28	0.21	0.22	0.27	0.29	0.26
Fe	µg/L	9.8U	7U	7.5U	11U	14U	2.2U	3.7U	5.6U	1.4U	3.1U	1.3UJ	1.6U	4.9U
Mn	µg/L	220	300	140	140	100	270	180	310	310	67	220	210	0.96
Mo	µg/L	39	39	17	48	39	43	39	39	35	38	37	34	22
Se	µg/L	60	43	55	14	20	25	36	36	49	14	44	33	130
U	µg/L	380	410J	380	380	330	340	330	390	310	210	320	330	310
V	µg/L	1.3	2.1	0.95J	0.1U	1.2J	0.3	1.7J	2.1J	0.98	0.9	0.78	1.3	1.2
Radiological														
Alpha[d]	pCi/L	262	239	214	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	0.94	0[f]	0[f]	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	99.4	101	78.1	--	--	--	--	--	--	--	--	--	--
U	µg/L	380	410J	380	380	330	340	330	390	310	210	320	330	310
U-234	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 92-08[a,b]

Analyte	Unit	10/12/10	04/04/11	10/12/11	04/25/12
Field Measurements					
Alkalinity	mg/L	338	336	344	356
Conductivity[c]	µmhos/cm	1991	2006	2042	2407
DO[c]	mg/L	--	--	--	--
ORP[c]	mV	110.8	136.0	--	173.9
pH[c]	s.u.	6.77	6.47	6.74	6.66
Temperature[c]	C	11.60	9.96	11.42	8.60
Turbidity[c]	NTU	1.34	1.41	2.13	1.60
Common Ions					
Ca	mg/L	300	299	290	350
Chloride	mg/L	92.0	78.8	82.0	79.0
Fluoride	µg/L	300.	281	500.U	280.
Hardness	mg/L	988	1020	979	1190
K	mg/L	11.0J	8.32	7.30	13.0J
Mg	mg/L	58.0	65.9	62.0	76.0
Na	mg/L	110	110	110	140J
NO_3+NO_2 as N	µg/L	3300.	2680.	1400.	1800.
SO_4	mg/L	690	749	710	980
TDS[c]	mg/L	--	--	--	--
Metals					
As	µg/L	0.31	1.70U	0.38J	1.3
Fe	µg/L	4.9U	30.0U	25UJ	4.9UJ
Mn	µg/L	40	53.2	57	0.11UJ
Mo	µg/L	26	32.8	20J	18
Se	µg/L	32	45.7	30	82
U	µg/L	290	368	320	360
V	µg/L	1.5	3.00U	0.076U	1.2
Radiological					
Alpha[d]	pCi/L	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--
Beta	pCi/L	--	--	--	--
U	µg/L	290	368	320	360
U-234	pCi/L	--	--	--	--
U-238	pCi/L	--	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 92-09[a,b]

Analyte	Unit	04/12/00	10/31/00	04/10/01	10/16/01	04/03/02	10/08/02	04/07/03	10/07/03	04/16/04	10/05/04	04/07/05	10/04/05	04/26/06
Field Measurements														
Alkalinity	mg/L	356	347	367	356	427	368	212	360	340	378	335	386	348
Conductivity[c]	µmhos/cm	2610	2540	2530	2400	2524	2404	2628	2399	2622	2690	2751	2732	2657
DO[c]	mg/L	0.47	--	0.9	--	--	--	--	--	1.48	0.31	0.91	2.65	--
ORP[c]	mV	54	-52	9	-26	37	--	--	-63	-23.4	-67	-48.5	-48	-22.9
pH[c]	s.u.	6.91	7.35	6.93	6.9	6.87	6.89	6.89	6.93	7.04	6.91	7.11	7.06	7.03
Temperature[c]	C	8.8	11.9	8.1	13.6	9.77	12.3	9.85	14.1	8.88	11.7	7.94	12.6	9.75
Turbidity[c]	NTU	1.22	20.9	3.41	3.83	6.76	4.27	2.32	3.06	2.23	2.91	2.01	4.34	2.58
Common Ions														
Ca	mg/L	342	341	308	296	316	299	354	299	390	380	350	390	380
Chloride	mg/L	105	110	110	114	101	107	6.00J	104	120	110	130	180	200
Fluoride	µg/L	12U	187	149	276	25.1U	188J	17.2U	198	500.U	200.U	200.U	500.U	500.U
Hardness	mg/L	1220	1200	1090	1050	1130	1060	1240	1050	1470	1290	1200	1320	1320
K	mg/L	1.29	1.59	1.27	1.66	1.78	1.85	1.96	1.95	5.10	4.00	3.00	3.00	2.60
Mg	mg/L	88.7	84.4	78.6	74.5	82.7	76.1	87.2	74.1	120	83.0	80.0	83.0	89.0
Na	mg/L	186	191	179	177	196	184	206	203	200	180	180	180	180
NO_3+NO_2 as N	µg/L	32.4U	32.4UJ	6.2	152	4.9UJ	12.3	4.50UJ	4.50U	10.U	10.U	10.U	10.U	18
SO_4	mg/L	1010	986	1020	1030	969	956	58.0	1050	1300	1100	1100	1000	1000
TDS[c]	mg/L	2140	2070	2140	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	1.2	1.8	1.4	1.3	1.6	1.6	1.30	1.50	1.3	1.6	1.1	1.4	1.2
Fe	µg/L	1570	1730	1700	1540	1930	1870	2120	1930	2400	1800	1300	1100	1400
Mn	µg/L	145	181	155	191	216	218	273	236	280	230	160	110	140
Mo	µg/L	2.7	2.3	2.5	2.2	1.8U	1.7U	2.00U	1.70U	3.1	3.4J	2.8J	5.4	2.9J
Se	µg/L	0.2U	0.1U	0.3U	0.3U	0.2U	0.1U	0.100U	0.100U	0.063	0.082	0.068U	0.023U	0.02U
U	µg/L	271	283	281	265	272	260	319	285	460J	360J	390	320	340
V	µg/L	0.4U	1.3U	0.4U	0.3U	0.3U	0.3U	0.300U	0.300U	0.25	0.13J	0.41UR	0.1U	1.1J
Radiological														
Alpha[d]	pCi/L	146J	126J	147	137	166	178	224J	134J	346	234	288	--	--
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	4.8J	0[f]	30.0	0[f]	20.1	--	--
Beta	pCi/L	85.4	82.7	76.2	43.5	72.3	43.1	84.0	67.0	128	84.0	52.5	--	--
U	µg/L	271	283	281	265	272	260	319	285	460J	360J	390	320	340

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[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 92-09[a,b]

Analyte	Unit	10/04/06	04/09/07	10/10/07	04/10/08[c]	10/09/08	04/09/09	10/06/09	04/20/10	10/13/10	04/05/11	10/12/11	04/25/12
Field Measurements													
Alkalinity	mg/L	408	350	386	387	430	368	385	341	434	450	470	342
Conductivity[c]	µmhos/cm	2896	2728	2534	2745	2822	3112	2869	2840	3446	3030	2779	2635
DO[c]	mg/L	0.29	1.25	--	--	--	--	--	--	--	--	0.67	--
ORP[c]	mV	-19	7.1	-57	22.4	-40.3	--	--	--	-267.8R	-25	48.4	-16.9
pH[c]	s.u.	6.82	7.00	6.91	6.93	7.13	7.14	6.91	7.08	6.63	6.92	6.74	6.82
Temperature[c]	C	13.1	8.87	12.51	7.26	13.78	7.86	12.76	9.0	11.85	9.6	12.56	9.28
Turbidity[c]	NTU	4.19	1.93	2.96	0.86	1.45	3.06	2.91	2.47	1.03	4.64	2.96	2.46
Common Ions													
Ca	mg/L	410	380	380	350	420	460J	400J	420	430	349	340	300
Chloride	mg/L	250	260	210	220	340	260	260	290	300	240	220	190
Fluoride	µg/L	500.U	500.U	280.	500.U	500.U	670.	300.	210.	500.U	225J	500.U	200.U
Hardness	mg/L	1410	1320	1290	1220	1440	1560J	1360J	1450	1450	1240	1180	1070
K	mg/L	3.10	0.050U	3.10	2.50	2.00J	2.10J	2.50J	2.90J	3.20J	2.07	1.60J	0.740J
Mg	mg/L	93.0	89.0	84.0	84.0	96.0	100	88.0	97.0	92.0	90.5	80.0	77.0
Na	mg/L	230	200	210	200	240	230J	230J	210	240	233	210	210J
NO_3+NO_2 as N	µg/L	14	10.U	10.U	10.U	10.U	24	10.U	13	10.U	50U	10.U	10.U
SO_4	mg/L	1100	990	1000	1000	1100	980	1100	1100	1000	885	880	820
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Metals													
As	µg/L	1.6	1.3	1.6	0.95	1.2	1.1	1.3	0.54	1.2	2.22	1J	1.1
Fe	µg/L	1600	1100	1600	1200	330	1100	1500	470	1000	1420	1500	1400
Mn	µg/L	150	82	160	140	87	86	160	130	110	130	180	160
Mo	µg/L	3.2J	3.1	3	3.5	2.9	2.7	2.7	2.4	3	3.63	5.4UJ	5.4UJ
Se	µg/L	0.025U	0.038U	0.028U	0.019U	0.088	0.11U	0.13	1.7	0.19	1.50U	0.032U	0.12
U	µg/L	320	400	310	450	380	370	330	380	440	584	360	360
V	µg/L	0.21U	0.072UJ	0.18J	0.15U	0.1U	0.099U	0.065J	0.12	0.093	3.00U	0.015U	0.056
Radiological													
Alpha[d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
U	µg/L	320	400	310	450	380	370	330	380	440	584	360	360

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[b] Samples were filtered in the field unless otherwise noted.

[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 92-11[a,b]

Analyte	Unit	01/12/00	04/18/00	08/02/00	11/02/00	01/30/01	04/12/01	07/11/01	10/15/01	01/30/02	04/02/02	07/10/02	10/02/02	01/14/03
Field Measurements														
Alkalinity	mg/L	396	312	377	307	371	360	309	271	382	308	335	394	330
Conductivity[c]	µmhos/cm	3370	3110	5270	2600	3200	3040	2300	1994	1980	1920	3458	1883	1884
DO[c]	mg/L	1.29	0.93	0.4	--	4.1	5.3	0.8	3.3	1.1	--	4.49	1.5	2.8
ORP[c]	mV	147	102	212	160	161	117	80	133	168	177	182	263	254
pH[c]	s.u.	--	6.54	6.57	6.54	6.72	6.8	5.37	6.6	6.87	6.63	6.51	6.6	6.61
Temperature[c]	C	11.5	9.8	13.7	12.6	9.5	8.2	10.4	13.5	9	11.36	15.92	12.2	10.9
Turbidity[c]	NTU	1.03	0.95	1.34	1.55	0.64	1.38	0.92	0.74	1.11	8.78	0.46	1.69	0.97
Common Ions														
Ca	mg/L	357	358	385	297	339	347	257	245	255	252	245	254	265
Chloride	mg/L	207	208	221	149	226	213	123	91.9	85.7	78.1	69.6	73.4	73.8
Fluoride	µg/L	467	408	447	441	436	489	424	437	499	353	446	25.1U	286
Hardness	mg/L	1280	1270	1360	1040	1210J	1230	904	848	884	875	847	870	901
K	mg/L	25.6	20.7	19.8	17.3	16.2	14.5	13.0	11.3	10.7	9.45	8.35	8.93	8.35
Mg	mg/L	94.9	90.7	96.8	72.9	89.1J	87.9	63.7	57.3	60.1	59.6	57.2	57.2	58.2
Na	mg/L	306	284	267	249	245	233	168	132	114	110	104	110	109
NO_3+NO_2 as N	µg/L	15500J	22100	16200	23300J	13900	14700	5340	4700	2950	2650J	1950	1970	3080
SO_4	mg/L	1190	1100	1220	966	1120	506	769	767	718	685	609	628	670
TDS[c]	mg/L	2780	2480	2700	2090	2520	2460	1780	--	--	--	--	--	--
Metals														
As	µg/L	17.9	18.1	14.3	16.1	13.6	14.4	15.2	16.2	17.9	15.8	12.8	16.5	15.1
Fe	µg/L	8.9U	7.4U	9.1U	11.7U	11U	15.5	2.1	0.8U	0.8U	1U	15.1	0.8U	2.9U
Mn	µg/L	2040	1210	1520	77.3	11.2	2.6	0.96	0.66	0.1U	1	2.5	1.3	0.3U
Mo	µg/L	84.3	54.8	56.1	43	46.7	31.4	29.9	25.8	26.2	26.3	25.2	25	6.4U
Se	µg/L	104	142	133	122	173	197	125	106	104	113	88.7	85	106
U	µg/L	677	492	566	270	423	370	307	254	292	321	362	317	303
V	µg/L	625	574	560	578	556	494	534	577	530	502	518	562	525
Radiological														
Alpha[d]	pCi/L	342	282	186	126	191	186	126J	130	151	210	199	161	166
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]
Beta	pCi/L	131	166	186	91.1	60.4	107	44.1	44.6	54.9	85.3	64.0	54.2	62.4
U	µg/L	677	492	566	270	423	370	307	254	292	321	362	317	303
U-234	pCi/L	--	--	--	--	137	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	135	--	--	--	--	--	--	--	--

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 92-11[a,b]

Analyte	Unit	04/09/03	07/08/03	10/07/03	01/22/04	04/15/04	10/05/04	04/05/05	10/04/05	04/27/06	10/03/06	04/11/07	10/10/07	04/08/08[c]
Field Measurements														
Alkalinity	mg/L	292	383	332	362	368	360	200	298	326	330	362	307	241
Conductivity[c]	µmhos/cm	1876	1810	1863	1833	1468	1745	1282	1614	1849	1987	1968	1845	1648
DO[c]	mg/L	4.48	8.98	2.87	4.45	--	2.23	1.22	4.45	3.00	3.60	5.24	0.58	3.29
ORP[c]	mV	85	206	84	13.0	--	150	188.4	23	93.3	35	195.7	142	150.0
pH[c]	s.u.	6.86	6.74	6.73	6.71	6.92	6.81	6.99	6.83	6.96	6.73	6.88	7.08	6.83
Temperature[c]	C	11.9	12.9	13.7	10.47	10.76	12.7	8.19	14.3	14.69	13.5	9.55	12.5	10.37
Turbidity[c]	NTU	4.27	2.17	0.73	1.54	2.29	2.57	1.00	1.24	0.60	0.67	0.28	1.90	0.71
Common Ions														
Ca	mg/L	260	266	264	280	280	280	160	220	310	420	380	330	210
Chloride	mg/L	10.8J	81.0	87.5	66.0	73.0	42.0	64.0	20.0	100	69.0	100	62.0	93.0
Fluoride	µg/L	17.2U	342	251	420.	470.	450.	410.	200.U	400.	460.	390.	480.	400.
Hardness	mg/L	884	896	895	917	917	913	531	718	1030	1350	1220	1080	701
K	mg/L	10.8	8.74	9.17	12.0J	15.0	11.0	13.0	14.0	12.0	12.0	10.0	9.50	10.0
Mg	mg/L	56.9	56.2	57.3	53.0	53.0	52.0	32.0	41.0	62.0	72.0	67.0	63.0	43.0
Na	mg/L	122	113	116	100	94.0	87.0	80.0	99.0	100	110	110	100	94.0
NO_3+NO_2 as N	µg/L	5730J	2650	2850	2200.	2300.	1200.	1100.	2700.	6300.	3300.	5500.	2900.	4900.
SO_4	mg/L	69.7	628	693	660	570	610	380	500	660	810	740	780	570
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	13.8	16.9	18.9	19J	18	23	18	20	17	17	17	15	14
Fe	µg/L	1.30U	1U	0.800U	6.7U	9.8U	18	7.5U	11U	14U	2.2U	3.7U	5.6U	45
Mn	µg/L	0.100U	1.80	5.30	0.043U	0.077U	0.066U	0.13U	0.095U	0.23U	0.097U	0.084U	0.16U	0.76
Mo	µg/L	27.9	25.3	24.2	27J	25	25J	34	17	28	20	23	15	35
Se	µg/L	135	68.1	93.6	55J	50	50	18	38	47	39	43	30	55
U	µg/L	360	355	291	280	360	240J	370	290	320	200	270	150	320
V	µg/L	473	537	541	550	470	540	390	520	440	410	410J	430J	350
Radiological														
Alpha[d]	pCi/L	166J	184	151J	190	235	148	226	--	--	--	--	--	--
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	--	--	--	--	--	--
Beta	pCi/L	93.0	58.5	88.2	48.7	100	67.9	64.3	--	--	--	--	--	--
U	µg/L	360	355	291	280	360	240J	370	290	320	200	270	150	320
U-234	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 92-11[a,b]

Analyte	Unit	10/09/08	04/08/09	10/08/09	04/21/10	10/12/10	04/04/11	10/12/11	04/24/12
Field Measurements									
Alkalinity	mg/L	338	322	370	213	368	335	257	320
Conductivity[c]	µmhos/cm	1226	1516	2082	1150	2293	1925	2142	2228
DO[c]	mg/L	3.29	5.59	1.21	2.61	1.79	2.68	2.26	6.51
ORP[c]	mV	7.6	-22	85.3	200	-216.0R	110	163.9	-3.4
pH[c]	s.u.	7.08	7.06	6.86	7.23	6.53	7.00	6.77	6.90
Temperature[c]	C	12.16	11.06	12.54	9.0	14.49	7.9	12.25	11.40
Turbidity[c]	NTU	--	4.57	1.09	4.23	0.95	2.23	1.87	2.80
Common Ions									
Ca	mg/L	290	380J	330J	150	320	261	300	330
Chloride	mg/L	81.0	120	97.0	62.0	110	57.5	110	100
Fluoride	µg/L	360.	460.	500.	400.	390.	445	500.U	370.
Hardness	mg/L	955	1240J	1090J	502	1050	868	1010	1110
K	mg/L	11.0J	11.0J	8.60J	8.80J	10.0J	6.29	6.20	9.10J
Mg	mg/L	56.0	71.0	64.0	31.0	61.0	52.5	64.0	70.0
Na	mg/L	120	130J	120J	85.0	130	88.7	120	130J
NO_3+NO_2 as N	µg/L	6300.	6400.	3500.	4700.	4800.	1270.	4500.	2800.
SO_4	mg/L	700	780	730	370	760	671	690	790
TDS[c]	mg/L	--	--	--	--	--	--	--	--
Metals									
As	µg/L	17	16	17	16	15	19	17	16
Fe	µg/L	3.1U	2.2U	1.6U	4.9U	4.9U	30.0U	25UJ	6.1J
Mn	µg/L	0.2U	1.4	0.1U	1.9	0.31	2.00U	0.57UJ	0.19J
Mo	µg/L	18	19	17	41	18	25.5	5.4UJ	13
Se	µg/L	26	35	26	52	27	14.2	30	25
U	µg/L	210	220	180	220	180	229	150	200
V	µg/L	450	390	490	320	390	326	390	330
Radiological									
Alpha[d]	pCi/L	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--	--	--
U	µg/L	210	220	180	220	180	229	150	200
U-234	pCi/L	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--

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[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 95-01[a,b]

Analyte	Unit	04/10/00	11/01/00	04/10/01	10/17/01	10/08/02	10/05/04	10/04/05	10/04/06	10/10/07	10/09/08	10/06/09	10/13/10	10/12/11
Field Measurements														
Alkalinity	mg/L	213	175	222	167	195	169	166	183	173	182	179	206	190
Conductivity[c]	µmhos/cm	6730	610	732	603	599	593	591	598	552	468	587	637	600
DO[c]	mg/L	0.57	6.4	0.4	--	--	0.23	1.30	0.64	--	--	--	--	0.47
ORP[c]	mV	48	-89	-18	-50	--	-73	-82	1	-61	-60.0	--	-315.0R	-45.7
pH[c]	s.u.	7	7.35	7.17	7.2	7.19	7.22	7.17	6.88	7.16	7.36	7.19	6.59	7.01
Temperature[c]	C	9.2	12.3	8.8	13.1	14	13.3	13.1	12.6	12.72	13.83	13.34	13.82	12.94
Turbidity[c]	NTU	2.12	4.98	4.7	2.13	4.51	3.89	4.73	4.48	2.34	4.57	3.35	4.89	4.44
Common Ions														
Ca	mg/L	48.1	42.2	45.8	36.9	36.8	41.0	40.0	40.0	36.0	39.0	40.0J	40.0	39.0
Chloride	mg/L	8.18	7.03	8.41	7.04	6.76	6.50	6.90	7.60	6.70	7.70	6.50	6.60	7.00
Fluoride	µg/L	260	276	222	400	189	280.	260.	280.	310.	360.	320.	280.	260.
Hardness	mg/L	177	154	171	136	138	148	145	149	139	143	145J	145	143
K	mg/L	3.14	2.98	2.81	2.64	2.83	4.70	4.30	4.30	4.00	3.90J	3.10J	3.70J	3.80
Mg	mg/L	13.9	11.7	13.8	10.7	11.1	11.0	11.0	12.0	12.0	11.0	11.0	11.0	11.0
Na	mg/L	79.0	73.0	76.8	70.0	69.3	62.0	65.0	70.0	69.0	68.0J	63.0J	66.0	69.0
NO_3+NO_2 as N	µg/L	32.4U	32.4UJ	5.4	944	68.1	10.U	10.U	10.U	13	10.U	10.U	10.U	10.
SO_4	mg/L	114	117	150	126	123	120	120	120	120	120	120	120	110
TDS[c]	mg/L	410	385	460	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	3.5	2.6	3.2	2.4	2	2	2.4	2.1	2.1	1.7	2.9	2.8	2.2
Fe	µg/L	805	644	1280	555	634	560	710	560	630	220	900	750	570
Mn	µg/L	336	237	354	193	194	190	200	190	180	200	220	200	170
Mo	µg/L	0.4U	0.42	0.4U	1.9U	1.7U	0.17U	0.068U	0.13U	0.78	0.76	0.75	0.68	1.1UJ
Se	µg/L	0.2U	0.1U	0.3U	1.2	0.1U	0.029U	0.023U	0.025U	0.028U	0.024U	0.032U	0.034	0.032U
U	µg/L	3.7	2.6	2.1	0.26	0.47	0.3J	0.56	0.52	0.48	0.57	0.5	0.5	0.46
V	µg/L	3.5	1.3U	0.4U	0.47	0.3U	0.12J	0.1U	0.21U	0.15J	0.1U	0.13J	0.066	0.015U
Radiological														
Alpha[d]	pCi/L	2.5UJ	7.8U	5.2	4.0UJ	4.4U	5.2	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	2.5UJ	7.8U	4.2	4.0UJ	4.4U	5.0	--	--	--	--	--	--	--
Beta	pCi/L	4.8	7.5U	4.0U	5.1	5.0U	5.7	--	--	--	--	--	--	--
U	µg/L	3.7	2.6	2.1	0.26	0.47	0.3J	0.56	0.52	0.48	0.57	0.5	0.5	0.46
U-234	pCi/L	1.1U	0.52U	0.40U	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	1.5	1.2	1.0	--	--	--	--	--	--	--	--	--	--

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[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 95-03[a,b]

Analyte	Unit	04/10/00	10/31/00	04/10/01	10/11/01	10/08/02	10/07/03	10/05/04	10/04/05	10/04/06	10/10/07	10/09/08	10/06/09	10/13/10
Field Measurements														
Alkalinity	mg/L	234	225	244	235	237	231	233	238	235	237	40	245	272
Conductivity[c]	µmhos/cm	1519	1490	1490	1353	1415	1267	1309	1294	1345	1278	997	1415	1578
DO[c]	mg/L	0.57	--	2.5	--	--	--	0.53	1.79	0.23	--	--	--	--
ORP[c]	mV	23	-84	0	-75	--	-111	-86	-72	-21	-62	-49.0	--	-300.4R
pH[c]	s.u.	6.92	7.16	8.02	7.27	7.13	7.22	7.21	7.19	6.93	7.14	7.45	7.15	6.78
Temperature[c]	C	9	11.7	8	11.8	14.3	12.4	12.2	13.6	12.6	12.50	12.56	12.60	13.02
Turbidity[c]	NTU	4.44	10.2	1.97	3.76	2.1	1.77	3.48	2.36	2.98	1.63	1.52	2.05	1.01
Common Ions														
Ca	mg/L	151	147	135	145	137	127	140	140	160	140	140	150J	160
Chloride	mg/L	67.8	73.6	2.85	72.0	67.9	62.0	53.0	57.0	64.0	61.0	65.0	68.0	77.0
Fluoride	µg/L	243	12.5U	230	259	550	237	210.	200.U	200.U	210.	220.	210.	230.
Hardness	mg/L	597	586	537	570	546	507	539	535	610	555	547	580J	618
K	mg/L	3.17	3.40	2.86	3.05	3.09	2.90	5.10	4.80	4.90	4.80	4.70J	3.70J	4.50J
Mg	mg/L	53.3	53.1	48.5	50.4	49.6	46.0	46.0	45.0	51.0	50.0	48.0	50.0	53.0
Na	mg/L	111	110	106	106	102	103	87.0	85.0	100	100	100	97.0J	100
NO_3+NO_2 as N	µg/L	32.4U	32.4UJ	4.7U	100	16.1	4.50U	10.U	10.U	10.U	10.U	10.U	10.U	10.U
SO_4	mg/L	478	488	76.9	512	475	443	410	410	440	440	450	460	470
TDS[c]	mg/L	1080	1090	1100	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	0.2U	0.2U	0.5U	0.6U	0.1U	0.100U	0.018U	0.007U	0.012U	0.079	0.067	0.084	0.063
Fe	µg/L	1320	1280	1200	1250	1180	1100	970	900	1100	1200	260	1100	1100
Mn	µg/L	368	366	332	347	336	305	300	290	320	310	320	330	340
Mo	µg/L	5.5	6.4	4.6	3.1	4.4	5.10	4.7J	5.3	4.6J	5.2	4.4	4.5	4.1
Se	µg/L	0.2U	0.1U	0.3U	0.3U	0.1U	0.100U	0.029U	0.023U	0.025U	0.028U	0.025	0.032U	0.041
U	µg/L	7.8	8.1	7.5	6.8	7.4	8.00	6.5J	6.9	7.9	7.2J	7.7	6.7	7.1
V	µg/L	0.40U	1.3U	0.4U	0.3U	0.3U	0.300U	0.12U	0.1U	0.21U	0.095U	0.1U	0.05U	0.024
Radiological														
Alpha[d]	pCi/L	10.5J	8.2UJ	9.4	10.8UJ	9.2	7.8J	11.6	--	--	--	--	--	--
Alpha-U[e]	pCi/L	7.2J	8.2UJ	2.1	10.8UJ	4.1	2.3J	7.1	--	--	--	--	--	--
Beta	pCi/L	9.8	9.9	7.5U	11.5U	10.1	12.4	8.4	--	--	--	--	--	--
U	µg/L	7.8	8.1	7.5	6.8	7.4	8.00	6.5J	6.9	7.9	7.2J	7.7	6.7	7.1
U-234	pCi/L	1.1U	0.52U	3.9	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	3.3	2.9	3.4	--	--	--	--	--	--	--	--	--	--

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[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- 95-03[a,b]

Analyte	Unit	10/12/11
Field Measurements		
Alkalinity	mg/L	252
Conductivity[c]	µmhos/cm	1520
DO[c]	mg/L	0.64
ORP[c]	mV	-45.1
pH[c]	s.u.	6.98
Temperature[c]	C	13.26
Turbidity[c]	NTU	1.03
Common Ions		
Ca	mg/L	160
Chloride	mg/L	77.0
Fluoride	µg/L	230.
Hardness	mg/L	618
K	mg/L	4.80
Mg	mg/L	53.0
Na	mg/L	100
NO_3+NO_2 as N	µg/L	10.U
SO_4	mg/L	480
TDS[c]	mg/L	--
Metals		
As	µg/L	0.15J
Fe	µg/L	1200
Mn	µg/L	350
Mo	µg/L	1.2J
Se	µg/L	0.032U
U	µg/L	7.5
V	µg/L	0.015U
Radiological		
Alpha[d]	pCi/L	--
Alpha-U[e]	pCi/L	--
Beta	pCi/L	--
U	µg/L	7.5
U-234	pCi/L	--
U-238	pCi/L	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- H Well[a,b]

Analyte	Unit	12/12/01	12/13/01
Metals			
As	µg/L	0.6U	0.6U
Fe	µg/L	18600	35100
Mn	µg/L	603	656
Mo	µg/L	2.5	1.5U
Se	µg/L	0.36	1
U	µg/L	0.42	0.44
V	µg/L	0.4U	0.4U
Radiological			
U	µg/L	0.42	0.44

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- MW00-06[a,b]

Analyte	Unit	08/02/00	11/01/00	01/30/01	04/10/01	07/19/01	10/16/01	01/30/02	04/02/02	07/10/02	10/02/02	04/07/03	07/09/03	10/06/03
Field Measurements														
Alkalinity	mg/L	172	172	163	104	92	117	75	131	165	210	187	199	195
Conductivity[c]	µmhos/cm	3030	2940	2720	2390	2080	1805	1841	1671	3206	1915	1756	1780	1565
DO[c]	mg/L	0.7	--	1.5	0.9	--	--	--	--	--	--	1.88	--	--
ORP[c]	mV	-68	164	97	211	69	--	--	132	--	--	72	188	-58
pH[c]	s.u.	6.63	6.73	6.4	6.4	5.98	6.33	6.44	6.41	6.44	6.51	6.9	6.64	6.71
Temperature[c]	C	11.6	11	9.8	8.9	11.3	12.2	7	12.17	11.73	12.4	9.5	18	13.5
Turbidity[c]	NTU	13.2	334	1	3.94	1.14	0.56	1.71	6.47	1.46	1.83	1.21	2.8	0.91
Common Ions														
Ca	mg/L	208	273	217	167	150	111	123	121	131	159	165	160	132
Chloride	mg/L	51.1	104	108	134	127	99.3	77.9	85.8	76.5	74.6	88.9	99.2	88.4
Fluoride	µg/L	363	354	296	241	280	285	211	258	348	239	17.2UJ	111J	227
Hardness	mg/L	748	974	786J	630	584	436	505	524	556	618	708	651	544
K	mg/L	11.6	18.4	17.4	14.1	13.9	13.2	15.0	13.8	14.8	16.4	13.4	13.7	13.7
Mg	mg/L	55.5	71.1	59.2J	51.8	50.9	38.6	48.1	53.9	55.6	53.7	71.9	61.1	52.1
Na	mg/L	145	330	308	265	243	191	178	166	173	199	143	152	141
NO_3+NO_2 as N	µg/L	2340J	22300	16400	7280	3000	2660	2400	969J	2220	3590	869	1150	216
SO_4	mg/L	818	1220	1150	459	837	715	697	621	642	722	712	675	566
TDS[c]	mg/L	1540	2390	2200	1880	1560	--	--	--	--	--	--	--	--
Metals														
As	µg/L	2.9	4.1	3.3	2.6	2.9	3	3.1	2.8	2.5	3.6	2.90	3.00	4.00
Fe	µg/L	9.1U	11.7U	11U	1.0U	0.8U	0.8U	0.8U	1U	4U	0.8U	1.30U	1U	0.800U
Mn	µg/L	69.6	53.6	15.9	52.4	89.5	117	6.6	1.8	0.63	0.1U	0.100U	0.100U	1.50
Mo	µg/L	43.1	43.6	44.2	29.1	23.7	33.1	28.5	29.8	34.8	44.6	29.8	27.8	24.0
Se	µg/L	3.2	14	14.3	11.5	7	6.2	10	5.6	19.9	39.7	23.8	16.2	6.20
U	µg/L	152	379	367	119	59.5	87.1	127	83.9	250	411	206	211	161
V	µg/L	146	173	150	114	114	130	119	114	127	147	127	130	148
Radiological														
Alpha[d]	pCi/L	87.1	275J	260	49.5	22.8J	48.0	65.9	50.3	158	267	111J	113	106
Alpha-U[e]	pCi/L	0[f]	14.6J	24.0	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]
Beta	pCi/L	61.3	111	51.2	31.6	21.8	28.3	34.7	36.8	57.1	78.2	56.5	39.2	33.4
U	µg/L	152	379	367	119	59.5	87.1	127	83.9	250	411	206	211	161
U-234	pCi/L	--	--	117	--	17.7J	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	119	--	24.2J	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- MW00-06[a,b]

Analyte	Unit	04/14/04	10/07/04	04/06/05	10/04/05	04/04/06	10/03/06	04/10/07	10/09/07	04/08/08[c]	10/08/08	04/08/09	10/08/09	04/20/10
Field Measurements														
Alkalinity	mg/L	180	201	190	176	168	221	250	306	278	210	257	297	318
Conductivity[c]	µmhos/cm	1532	1392	1874	983	1499	1736	1794	1753	2123	1751	1897	1885	1905
DO[c]	mg/L	--	1.26	1.88	4.72	3.86	1.03	3.29	--	--	1.39	--	--	--
ORP[c]	mV	--	61	213.0	-5	146.5	90	188.2	--	112.1	117.8	--	--	--
pH[c]	s.u.	6.84	6.77	6.73	6.65	6.68	6.48	6.63	7.00	6.70	6.95	6.64	6.67	6.86
Temperature[c]	C	10.20	12.6	9.22	11.7	9.76	12.0	8.52	12.2	8.38	11.65	9.26	10.53	9.5
Turbidity[c]	NTU	0.63	1.84	0.84	0.77	3.01	0.63	0.36	1.35	0.51	1.03	2.36	1.02	0.86
Common Ions														
Ca	mg/L	180	130	170	85.0	150	250	270	250	270	200	270J	250J	260
Chloride	mg/L	85.0	48.0	130	52.0	75.0	72.0	100	69.0	160	83.0	81.0	82.0	140
Fluoride	µg/L	290.	240.	220.	150.	250.	320.	200.U	420.	200.U	370.	380.	490.	360.
Hardness	mg/L	717	518	688	319	580	913	962	892	962	693	934J	859J	921
K	mg/L	18.0	16.0	13.0	11.0	16.0	20.0	18.0	19.0	14.0	17.0J	18.0J	17.0J	17.0J
Mg	mg/L	65.0	47.0	64.0	26.0	50.0	70.0	70.0	65.0	70.0	47.0	63.0	57.0	66.0
Na	mg/L	110	100	110	90.0	98.0	140	120	120	110	120	130J	130J	140
NO_3+NO_2 as N	µg/L	310.	89	1200.	360.	510.	430.	2600.	460.	2600.	1900.	2100.	6500.R	8300.
SO_4	mg/L	580	450	600	250	550	680	710	720	720	550	690	690	660
TDS[c]	mg/L	--	960	1300	690	1100	1300	1500	1400	1600	1200	1500	1500	1400
Metals														
As	µg/L	3.1	3.6	2.8	3.3	2.6	2.9	3	3.2	2.5	3.4	3.1	3.6	3.2
Fe	µg/L	9.8U	7U	37U	7.8U	14U	2.2U	3.7U	5.6U	1.4U	4.5	9.5	1.6U	4.9U
Mn	µg/L	0.077U	0.066U	0.64U	0.58	0.23U	0.097U	0.084U	0.16U	0.81	0.2U	1.3	0.1U	0.85
Mo	µg/L	16	20	14	14	25	23	26	31	24	44	42	65	34
Se	µg/L	4.8	1.8	9.2	4	11	11	29	8.4	24	36	42	37	91
U	µg/L	140	120J	130	71	170	240	310	330	210	510	530	760	510
V	µg/L	120	140	120	130	120	100	120J	150J	100	130	120	150	120
Radiological														
Alpha[d]	pCi/L	83.3	67.1	86.5	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	44.7	35.4	29.5	--	--	--	--	--	--	--	--	--	--
U	µg/L	140	120J	130	71	170	240	310	330	210	510	530	760	510
U-234	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
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[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- MW00-06[a,b]

Analyte	Unit	10/12/10	04/05/11	10/12/11	04/24/12
Field Measurements					
Alkalinity	mg/L	296	282	344	218
Conductivity[c]	µmhos/cm	1923	1955	1912	2066
DO[c]	mg/L	1.38	--	3.49	--
ORP[c]	mV	-237.7R	160	155.5	--
pH[c]	s.u.	6.24	6.62	6.49	6.62
Temperature[c]	C	12.00	10.0	10.83	10.79
Turbidity[c]	NTU	1.08	1.39	1.30	1.91
Common Ions					
Ca	mg/L	230	237	180	270
Chloride	mg/L	90.0	68.3	87.0	85.0
Fluoride	µg/L	320.	403	500.U	330.
Hardness	mg/L	788	836	635	946
K	mg/L	16.0J	11.5	8.40	18.0J
Mg	mg/L	52.0	59.4	45.0	66.0
Na	mg/L	120	115	81.0	130J
NO_3+NO_2 as N	µg/L	2600.	1940.	1600.	1800.
SO_4	mg/L	590	877	650	770
TDS[c]	mg/L	1300	1510	1500	1700
Metals					
As	µg/L	3.1	3.64	3.2J	3.2
Fe	µg/L	4.9U	30.0U	25UJ	4.9UJ
Mn	µg/L	0.34	2.00U	0.57UJ	0.11UJ
Mo	µg/L	37	43.3	24J	46
Se	µg/L	30	26.1	43	55
U	µg/L	440	521	720	640
V	µg/L	120	85	120	110
Radiological					
Alpha[d]	pCi/L	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--
Beta	pCi/L	--	--	--	--
U	µg/L	440	521	720	640
U-234	pCi/L	--	--	--	--
U-238	pCi/L	--	--	--	--

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[c] Sample was unfiltered.
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[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- MW00-07[a,b]

Analyte	Unit	08/02/00	07/20/01	10/16/01	01/30/02	10/07/02	04/09/03	10/06/03	04/14/04	10/04/04	10/04/05	10/03/06	10/10/07	10/08/08
Field Measurements														
Alkalinity	mg/L	181	--	367	--	--	206	382	261	239	242	263	318	332
Conductivity[c]	µmhos/cm	2720	2200	1990	--	1880	1716	1525	1632	1553	1144	1796	1850	1721
DO[c]	mg/L	1.54	--	--	--	--	--	--	--	2.24	5.14	1.38	--	3.05
ORP[c]	mV	180	118	--	--	--	54	-50	--	5	52	28	--	92.2
pH[c]	s.u.	6.69	6.33	6.74	--	6.76	6.79	6.85	6.84	6.55	6.65	6.53	7.16	6.79
Temperature[c]	C	10.5	12.6	12	--	12	10.2	15.1	11.66	11.6	11.0	11.4	11.0	10.90
Turbidity[c]	NTU	3.37	>1000	--	--	338	1.02	95.7	2.39	3.16	2.84	1.95	139	4.07
Common Ions														
Ca	mg/L	212	222	235	177	226	190	222	230	150	120	260	260	220
Chloride	mg/L	35.0	--	81.9	61.5	80.5	8.11J	85.3	75.0	55.0	52.0	72.0	79.0	85.0
Fluoride	µg/L	305	--	308	421J	25.1U	17.2UJ	269	320.	280.	250.	300.	400.	370.
Hardness	mg/L	740	759	792	607	758	721	755	838	564	423	921	888	763
K	mg/L	11.0	12.4	14.0	16.4	12.7	12.5	13.0	18.0	16.0	9.80	18.0	18.0	15.0J
Mg	mg/L	51.1	49.6	49.8	40.0	47.1	59.9	48.8	64.0	46.0	30.0	66.0	58.0	52.0
Na	mg/L	103	169	149	118	152	135	168	100	110	89.0	150	150	120
NO_3+NO_2 as N	µg/L	2080	--	778	464	475	1090	576	1600.	190.	850.	690.	460.	2700.
SO_4	mg/L	725	--	725	69.2	724	68.7	670	580	500	290	690	700	560
TDS[c]	mg/L	1390	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	1.9	0.55	0.62	0.67	1.3	2.00	2.10	2.6	2.5	2.1	2.4	1.2	2.4
Fe	µg/L	9.1U	121	51	365	899	177	982	9.8U	180	7.8U	2.2U	540	3.5
Mn	µg/L	6.4	324	501	805	1260	54.4	918	3	110	5.8	9.3	480	0.2U
Mo	µg/L	42.7	34.9	38.9	24.3	29.9	45.4	40.5	48	38	31	30	40	42
Se	µg/L	7.8	10	9.9	7.4	18.5	29.9	12.7	25	5.7	9	16	11	35
U	µg/L	154	214	319	232	297	290	310	390	210J	71	260	420	410
V	µg/L	74.1	24.9	18.5	11.6	8.4	69.9	15.6	84	79	78	61	14J	89
Radiological														
Alpha[d]	pCi/L	76.2	--	168	--	176	186J	145	251	141	--	--	--	--
Alpha-U[e]	pCi/L	0[f]	--	0[f]	--	0[f]	0[f]	0[f]	0[f]	0[f]	--	--	--	--
Beta	pCi/L	53.3	--	71.6	--	88.1	70.0	47.2	98.2	59.5	--	--	--	--
U	µg/L	154	214	319	232	297	290	310	390	210J	71	260	420	410
U-234	pCi/L	--	64.2J	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	79.4J	--	--	--	--	--	--	--	--	--	--	--

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- MW00-07[a,b]

Analyte	Unit	10/08/09	10/12/10	10/12/11
Field Measurements				
Alkalinity	mg/L	357	357	365
Conductivity[c]	µmhos/cm	2044	2364	2067
DO[c]	mg/L	--	1.13	1.82
ORP[c]	mV	--	-266.6R	159.4
pH[c]	s.u.	6.57	6.75	6.62
Temperature[c]	C	10.98	12.82	10.85
Turbidity[c]	NTU	32.1	67.3	46.0
Common Ions				
Ca	mg/L	290J	300	--
Chloride	mg/L	98.0	120	--
Fluoride	µg/L	420.	320.	--
Hardness	mg/L	967J	992	--
K	mg/L	16.0J	17.0J	--
Mg	mg/L	59.0	59.0	--
Na	mg/L	150J	160	--
NO_3+NO_2 as N	µg/L	1100.	3400.	--
SO_4	mg/L	730	730	--
TDS[c]	mg/L	--	--	--
Metals				
As	µg/L	0.93	1.2	--
Fe	µg/L	1.6U	4.9U	--
Mn	µg/L	100	65	--
Mo	µg/L	34	41	--
Se	µg/L	24	24	--
U	µg/L	460	550	--
V	µg/L	37	33	--
Radiological				
Alpha[d]	pCi/L	--	--	--
Alpha-U[e]	pCi/L	--	--	--
Beta	pCi/L	--	--	--
U	µg/L	460	550	--
U-234	pCi/L	--	--	--
U-238	pCi/L	--	--	--

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- P92-02[a,b]

Analyte	Unit	04/12/00	10/31/00	04/10/01	10/17/01	04/03/02	10/09/02	04/07/03
Field Measurements								
Alkalinity	mg/L	410	428	411	438	431	429	211
Conductivity[c]	µmhos/cm	2490	3180	3000	3080	3062	2908	2608
DO[c]	mg/L	1.45	0.6	1.8	--	--	--	--
ORP[c]	mV	39	-28	-17	--	47	--	--
pH[c]	s.u.	6.9	7.17	6.83	6.9	6.8	6.88	6.91
Temperature[c]	C	10	11.4	9.1	11.4	11.33	12.9	10.43
Turbidity[c]	NTU	1.23	1.23	0.85	0.7	5.2	1.13	4.77
Common Ions								
Ca	mg/L	381	393	331	348	342	323	299
Chloride	mg/L	201	175	169	191	180	173	149
Fluoride	µg/L	277	315	242	411	50.2U	50.2UJ	17.2U
Hardness	mg/L	1580	1580	1360	1420	1410	1330	1220
K	mg/L	1.86	1.85	1.65	1.79	1.74	1.70	1.59
Mg	mg/L	153	146	129	135	135	126	114
Na	mg/L	244	229	219	217	200	211	205
NO_3+NO_2 as N	µg/L	55.4	32.4UJ	19.3	7.3U	6.9J	373	4.50UJ
SO_4	mg/L	1340	1270	1220	1280	1130	1180	996
TDS[c]	mg/L	2810	2680	2600	--	--	--	--
Metals								
As	µg/L	0.2U	0.24	0.5U	0.6U	0.22	0.1U	0.100U
Fe	µg/L	845	978	904	1120	888	480	320
Mn	µg/L	184	191	156	184	147	209	101
Mo	µg/L	3.3	2.4	2.5	1.9U	1.8U	1.7U	2.00U
Se	µg/L	1.3	1.2	0.88	0.73	0.2U	0.71	0.610
U	µg/L	65.9	62.1	58.5	54.3	54.2	52	46.2
V	µg/L	0.4U	1.3U	0.4U	0.3U	0.3U	0.3U	0.300U
Radiological								
Alpha[d]	pCi/L	28.5J	19.9J	18.1	22.2	32.0	39.2	19.0J
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	3.5	0[f]
Beta	pCi/L	13.5U	18.3	12.0U	20.1	17.5	11.9U	15.0U
U	µg/L	65.9	62.1	58.5	54.3	54.2	52	46.2

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- P92-03[a,b]

Analyte	Unit	04/12/00	10/31/00	04/11/01	10/17/01	04/03/02
Field Measurements						
Alkalinity	mg/L	383	--	400	409	450
Conductivity[c]	µmhos/cm	2770	2510	2670	2730	2541
DO[c]	mg/L	1.74	--	1.6	--	--
ORP[c]	mV	27	-35	31	-35	95
pH[c]	s.u.	6.97	7.01	7.02	6.91	6.98
Temperature[c]	C	8.6	11.4	7.5	12.3	9.87
Turbidity[c]	NTU	1.77	19.7	4.48	2.99	7.1
Common Ions						
Ca	mg/L	325	358	297	327	287
Chloride	mg/L	123	155	138	173	144
Fluoride	µg/L	12U	317	727	404	25.1U
Hardness	mg/L	1210	1310	1110	1220	1100
K	mg/L	2.89	3.66	2.70	3.84	3.75
Mg	mg/L	97.9	101	89.0	99.0	92.6
Na	mg/L	219	222	202	214	197
NO_3+NO_2 as N	µg/L	140	61.1J	13.4	478	11.9J
SO_4	mg/L	1040	1060	464	1100	895
TDS[c]	mg/L	2260	2300	2150	--	--
Metals						
As	µg/L	0.2U	0.25	0.5U	0.6U	0.21
Fe	µg/L	596	1310	943	1310	324
Mn	µg/L	234	235	227	193	93.7
Mo	µg/L	11.8	13.5	11.4	7.7	12.3
Se	µg/L	6.6	3.7	1.5	1.3	0.2U
U	µg/L	104	113	111	114	112
V	µg/L	0.77	1.3U	0.4U	0.42	0.35
Radiological						
Alpha[d]	pCi/L	46.2J	53.1J	46.9	55.5	49.6
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]
Beta	pCi/L	28.3	34.6	32.1	18.6	35.2
U	µg/L	104	113	111	114	112

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- P92-04[a,b]

Analyte	Unit	01/10/00	04/13/00	07/26/00	11/01/00	04/10/01	10/16/01
Field Measurements							
Alkalinity	mg/L	388	399	375	331	445	342
Conductivity[c]	µmhos/cm	2350	2190	2100	1640	2350	2450
DO[c]	mg/L	5.48	2.14	4.4	3.6	6.7	--
ORP[c]	mV	69	51	106	60	44	112
pH[c]	s.u.	--	6.72	6.97	6.82	6.73	6.59
Temperature[c]	C	9.4	11.3	13.2	10.6	8.7	9.4
Turbidity[c]	NTU	0.47	3.43	1.31	4.85	1.44	4.92
Common Ions							
Ca	mg/L	277	248	250	344	268	282
Chloride	mg/L	136	141	158	156	137	162
Fluoride	µg/L	317	327	384	288	336	378
Hardness	mg/L	1080	975	955	1340	1060	1100
K	mg/L	2.09	2.09	1.84	2.13	2.09	2.01
Mg	mg/L	93.2	86.5	80.3	116	94.4	95.4
Na	mg/L	148	142	137	153	146	135
NO_3+NO_2 as N	µg/L	1640J	1420	3360	3570J	1580	3310
SO_4	mg/L	702	591	630	999	472	954
TDS[c]	mg/L	1860	1630	1610	2140	1870	--
Metals							
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.5U	0.6U
Fe	µg/L	8.9U	7.4U	9.1U	11.7U	1.0U	9.6
Mn	µg/L	0.9U	0.4U	1.5U	2U	0.1U	0.23
Mo	µg/L	0.4U	0.40U	0.3U	0.3U	0.40U	1.9U
Se	µg/L	2.4	2.6	2.1	6.2	3.6	0.41
U	µg/L	37	32.1	31.3	33.1	36.2	26.7
V	µg/L	1U	0.4U	1.3U	1.3U	0.4U	0.3U
Radiological							
Alpha[d]	pCi/L	18.7	9.8J	20.1J	15.0UJ	14.3	11.7
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	15.0UJ	0[f]	0[f]
Beta	pCi/L	22.9	8.1U	12.0U	13.2U	13.8	8.2U
U	µg/L	37	32.1	31.3	33.1	36.2	26.7

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- P92-05[a,b]

Analyte	Unit	01/11/00	04/13/00	07/26/00	04/10/01
Field Measurements					
Alkalinity	mg/L	--	315	380	--
Conductivity[c]	µmhos/cm	3300	2880	2800	3130
DO[c]	mg/L	--	--	1.52	--
ORP[c]	mV	183	81	-61	225
pH[c]	s.u.	6.68	6.84	6.14	7.09
Temperature[c]	C	6	7.7	16	5.8
Turbidity[c]	NTU	25.1	34.2	4.17	91.3
Common Ions					
Ca	mg/L	345	341	342	323
Chloride	mg/L	189	201	216	--
Fluoride	µg/L	538	596	742	--
Hardness	mg/L	1320	1260	1230	1190
K	mg/L	3.33	3.34	5.28	3.59
Mg	mg/L	112	100	90.9	93.0
Na	mg/L	223	211	258	201
NO_3+NO_2 as N	µg/L	1960J	2940	703	--
SO_4	mg/L	1140	1110	1100	--
TDS[c]	mg/L	--	2290J	2360	--
Metals					
As	µg/L	0.4U	0.2U	0.3U	0.5U
Fe	µg/L	8.9U	7.4U	34	1.0U
Mn	µg/L	44.6	2.3	10	26.1
Mo	µg/L	0.4U	0.4U	0.3U	0.4U
Se	µg/L	52	56.6	2.8	152
U	µg/L	36.8	28.1	34.3	43.8
V	µg/L	1.7	0.99	1.3U	0.4U
Radiological					
Alpha[d]	pCi/L	--	11.0UJ	22.6J	--
Alpha-U[e]	pCi/L	--	11.0UJ	0[f]	--
Beta	pCi/L	--	10.3	14.3U	--
U	µg/L	36.8	28.1	34.3	43.8

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- P92-06[a,b]

Analyte	Unit	01/12/00	04/13/00	07/26/00	11/02/00	04/10/01	07/19/01	10/16/01	04/02/02	07/11/02	10/07/02	04/09/03	07/09/03	10/06/03
Field Measurements														
Alkalinity	mg/L	423	347	345	374	337	306	325	296	291	299	273	295	312
Conductivity[c]	µmhos/cm	4970	4440	4250	4180	4250	4560	4080	3583	6124	2937	2675	3337	3813
DO[c]	mg/L	2.7	2.83	3.49	5.4	8.3	--	--	--	--	--	--	--	--
ORP[c]	mV	195	85	104	191	229	84	124	169	--	--	110	211	69
pH[c]	s.u.	--	6.91	6.83	6.73	6.77	6.47	6.71	6.7	6.65	6.71	6.91	6.71	6.95
Temperature[c]	C	9	8.1	10	10.2	7.3	11.1	11.8	9.51	10.86	12.6	8.5	12	11.6
Turbidity[c]	NTU	>1000	1.66	1.58	4.75	1.97	1.26	0.83	9.87	1.23	3.64	1.09	2.52	2.34
Common Ions														
Ca	mg/L	587	485	477	455	445	511	421	344	309	265	253	321	355
Chloride	mg/L	229	215	212	201	207	242	222	164	150	130	5.34J	170	156
Fluoride	µg/L	180	192	219	205	205	227	323	272	448	331	17.2UJ	162	268
Hardness	mg/L	2020	1720	1710	1650	1630	1880	1590	1330	1190	1010	956	1180	1290
K	mg/L	6.84	7.33	7.21	7.56	6.74	8.61	8.12	7.72	7.35	6.67	6.39	7.02	7.42
Mg	mg/L	134	123	126	124	127	147	130	115	102	84.3	78.7	90.7	98.5
Na	mg/L	526	518	499	459	414	510	416	355	355	321	301	374	512
NO_3+NO_2 as N	µg/L	28300J	20900	18600	20300	20500	20300	17700	12500J	10100	8310	6220	7870	3730
SO_4	mg/L	2170	1860	1920	1860	1850	2150	2070	1540	1430	1290	60.2	1410	1840
TDS[c]	mg/L	4560J	3910	3920	3650	3770	4220	--	--	--	--	--	--	--
Metals														
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.5U	0.5U	0.6U	0.13	0.1	0.1U	0.100U	0.100U	0.100U
Fe	µg/L	8.9U	7.4U	9.1U	11.7U	1.0U	0.8U	0.8U	1U	4U	0.8U	1.30U	1U	0.800U
Mn	µg/L	2.5	0.4U	1.5U	2U	0.4	0.1U	0.1U	0.1U	0.1U	1.2	0.100U	0.100U	0.100U
Mo	µg/L	17.6	19.9	18.8	19.3	15.4	12	13.8	12	12.5	12.6	12.1	1.70U	29.0
Se	µg/L	29	40	30.4	26.9	31.8	38.3	34.9	43.6	47.7	45.1	65.3	72.3	48.4
U	µg/L	1080	895	697	546	550	604	492	414	364	306	322	439	903
V	µg/L	1U	0.4U	1.3U	1.3U	0.4U	0.3U	0.39	0.3U	0.3U	0.67	0.300U	0.300U	0.300U
Radiological														
Alpha[d]	pCi/L	650	645J	609J	319J	13.8U	336J	299	256	235	236	190J	284	543J
Alpha-U[e]	pCi/L	0[f]	30.1J	130J	0[f]	13.8U	0[f]	0[f]	0[f]	0[f]	25.8	0[f]	0[f]	0[f]
Beta	pCi/L	171	250	237	142	14.4U	83.6	83.8	104	18.7U	54.3	77.0	77.9	185
U	µg/L	1080	895	697	546	550	604	492	414	364	306	322	439	903
U-234	pCi/L	--	--	--	--	--	199J	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	226J	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- P92-06[a,b]

Analyte	Unit	04/14/04	10/04/04	04/06/05	10/04/05	04/04/06	10/03/06	04/10/07	10/10/07	04/08/08[c]	10/08/08	04/08/09	10/07/09	04/20/10
Field Measurements														
Alkalinity	mg/L	305	349	348	350	310	342	315	330	364	344	371	337	370
Conductivity[c]	µmhos/cm	2414	2606	3056	2963	2488	2515	2706	2490	2599	3840	2983	2632	2915
DO[c]	mg/L	--	2.60	2.13	3.57	4.60	2.57	5.07	--	--	2.30	--	--	--
ORP[c]	mV	--	39.0	208.9	84	112.0	98	223	60	146.9	98.1	--	--	--
pH[c]	s.u.	6.90	6.65	6.89	6.83	6.77	6.74	6.28	6.74	6.71	6.95	6.88	6.67	7.01
Temperature[c]	C	9.26	11.5	6.82	12.4	8.12	11.1	7.22	11.70	8.44	11.02	7.69	10.71	8.2
Turbidity[c]	NTU	0.51	2.70	3.93	4.22	0.91	0.92	0.89	1.33	1.85	1.96	2.38	1.46	3.81
Common Ions														
Ca	mg/L	310	280	350	390	270	360	340	330	300	430	410J	360J	410
Chloride	mg/L	97.0	96.0	130	150	110	100	140	96.0	110	190	150	120	180
Fluoride	µg/L	500.U	220.	200.U	500.U	200.U	500.U	500.U	450.	200.U	290.	340.	260.	260.
Hardness	mg/L	1090	987	1220	1340	967	1240	1220	1190	1100	1570	1480J	1290J	1520
K	mg/L	12.0	11.0	10.0	12.0	12.0	14.0	12.0	15.0	13.0	16.0J	17.0J	14.0J	16.0J
Mg	mg/L	77.0	70.0	83.0	89.0	71.0	83.0	89.0	88.0	86.0	120	110	96.0	120
Na	mg/L	230	240	220	270	210	310	240	230	200	250	230J	210J	230
NO_3+NO_2 as N	µg/L	3000.	2500.	3900.	6000.	4200.	3100.	3800.	2500.	1700.	6900.	4200.	2400.	1900.
SO_4	mg/L	930	1000	1100	1200	960	1000	1200	1100	1100	1600	1100	1100	1400
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	0.13	0.18	0.22	0.014U	0.0075U	0.023U	0.012U	0.2	0.22	0.24	0.15U	0.2	0.31
Fe	µg/L	9.8U	7U	7.5U	7.8U	14U	2.2U	7.4U	5.6U	60	6.2U	1.3UJ	1.6U	4.9U
Mn	µg/L	0.077U	0.066U	1.6	0.86	0.23U	0.097U	0.17U	0.16U	4	0.41U	0.7U	0.1U	0.11U
Mo	µg/L	22	21	12	23	23	23	18	19	26	21	24	25	31
Se	µg/L	46	39	25	21	33	34	47	29	45	40	50	25	86
U	µg/L	490	520J	590	620	660	570	860	700	910	1100	1000	690	940
V	µg/L	0.47	0.41J	0.57J	0.1U	0.21J	0.21U	0.84J	0.76J	0.45	0.38	0.099U	0.45J	0.36
Radiological														
Alpha[d]	pCi/L	305	252	498	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	0[f]	0[f]	92.7	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	124	122	105	--	--	--	--	--	--	--	--	--	--
U	µg/L	490	520J	590	620	660	570	860	700	910	1100	1000	690	940
U-234	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- P92-06[a,b]

Analyte	Unit	10/12/10	04/04/11	10/12/11	04/25/12
Field Measurements					
Alkalinity	mg/L	414	428	340	376
Conductivity[c]	µmhos/cm	3394	3084	2371	2673
DO[c]	mg/L	--	--	--	--
ORP[c]	mV	125.4	183.6	--	168.4
pH[c]	s.u.	6.80	6.75	6.82	6.79
Temperature[c]	C	11.02	7.63	11.66	8.45
Turbidity[c]	NTU	2.59	1.90	2.63	1.76
Common Ions					
Ca	mg/L	490	342	280	310
Chloride	mg/L	190	155	83.0	120
Fluoride	µg/L	500.U	204	500.U	250.
Hardness	mg/L	1760	1320	1060	1190
K	mg/L	16.0J	8.99	8.90	6.10J
Mg	mg/L	130	113	88.0	100
Na	mg/L	210	223	170	180J
NO_3+NO_2 as N	µg/L	5400.	4570.	1500.	2500.
SO_4	mg/L	1400	1110	920	1000
TDS[c]	mg/L	--	--	--	--
Metals					
As	µg/L	0.29	1.70U	0.3J	0.23
Fe	µg/L	4.9U	130	25UJ	25UJ
Mn	µg/L	0.11U	2.00U	0.57UJ	0.57UJ
Mo	µg/L	26	32.1	8.8J	20J
Se	µg/L	42	39.6	15	43
U	µg/L	750	732	470	490
V	µg/L	0.33	3.00U	0.015U	0.26
Radiological					
Alpha[d]	pCi/L	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--
Beta	pCi/L	--	--	--	--
U	µg/L	750	732	470	490
U-234	pCi/L	--	--	--	--
U-238	pCi/L	--	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- P92-07[a,b]

Analyte	Unit	01/12/00	04/14/00	08/02/00
Field Measurements				
Conductivity[c]	µmhos/cm	2760	2610	3930
DO[c]	mg/L	5.48	--	2.33
ORP[c]	mV	132	88	14
pH[c]	s.u.	--	6.89	6.8
Temperature[c]	C	7.6	10.1	13.6
Turbidity[c]	NTU	166	>1000	>1000
Common Ions				
Ca	mg/L	276	276	256
Chloride	mg/L	--	182	172
Fluoride	µg/L	--	319	390
Hardness	mg/L	1000	992	917
K	mg/L	1.90	1.87	1.66
Mg	mg/L	75.5	73.6	67.5
Na	mg/L	240	245	234
NO_3+NO_2 as N	µg/L	--	2840	5070
SO_4	mg/L	--	701	772
TDS[c]	mg/L	--	1990J	1920
Metals				
As	µg/L	0.4U	0.2U	0.3U
Fe	µg/L	8.9U	8.2	9.1U
Mn	µg/L	17	12.9	5.8
Mo	µg/L	0.44	3.5	2.9
Se	µg/L	0.88	0.93	1.4
U	µg/L	68.6	85.6	66.3
V	µg/L	8.1	0.4U	1.3U
Radiological				
Alpha[d]	pCi/L	--	37.8J	--
Alpha-U[e]	pCi/L	--	0[f]	--
Beta	pCi/L	--	19.8	--
U	µg/L	68.6	85.6	66.3

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- P92-09[a,b]

Analyte	Unit	01/11/00	04/13/00	07/28/00	11/01/00	04/10/01
Field Measurements						
Alkalinity	mg/L	600	575	441	511	385
Conductivity[c]	µmhos/cm	2710	2720	1820	660	2780
DO[c]	mg/L	2.47	3.85	4.1	--	7.9
ORP[c]	mV	9	59	-25	46	59
pH[c]	s.u.	--	6.87	6.82	7.07	6.96
Temperature[c]	C	9.1	8.7	11.3	11	7.2
Turbidity[c]	NTU	2.15	1.07	0.55	17.7	4.74
Common Ions						
Ca	mg/L	217	226	243	256	208
Chloride	mg/L	105	112	146	138	162
Fluoride	µg/L	466	491	492	508	459
Hardness	mg/L	1010	1050	1110	1140	939
K	mg/L	1.45	1.29	1.31	1.52	1.18
Mg	mg/L	113	117	121	122	102
Na	mg/L	269	267	276	286	268
NO_3+NO_2 as N	µg/L	9720J	8830	8650	9390J	5490
SO_4	mg/L	740	814	971	934	969
TDS[c]	mg/L	2040J	2160	2340	2310	2220
Metals						
As	µg/L	0.4U	0.28	0.3U	0.2U	0.5U
Fe	µg/L	8.9U	7.4U	9.1U	11.7U	1.0U
Mn	µg/L	20.1	15.5	1.5U	36.5	0.62
Mo	µg/L	18	15.1	14	15	17.7
Se	µg/L	9	7.8	10.8	9.9	9.8
U	µg/L	60	55.5	54.9	59.8	53.7
V	µg/L	1.7	0.4U	1.3U	1.3U	0.42
Radiological						
Alpha[d]	pCi/L	25.6	18.1J	41.8	28.9J	21.9
Alpha-U[e]	pCi/L	0[f]	0[f]	4.1	0[f]	0[f]
Beta	pCi/L	21.1	19.8	22.9	15.8	11.2
U	µg/L	60	55.5	54.9	59.8	53.7

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- PW-10[a,b]

Analyte	Unit	01/29/01	07/19/01	10/16/01	04/02/02	07/10/02	10/01/02	04/08/03	07/09/03	10/06/03	04/14/04	04/08/08[c]	10/08/08	04/08/09
Field Measurements														
Alkalinity	mg/L	--	280	316	298	276	289	316	--	360	269	--	290	280
Conductivity[c]	µmhos/cm	3600	2930	2530	2600	2337	3786	2190	2247	2100	1976	--	2005	2769
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	4.14	--
ORP[c]	mV	173	--	--	137	--	--	93	23	43.4	--	--	91.0	-70
pH[c]	s.u.	6.9	6.36	6.94	6.64	7	6.88	6.99	6.67	6.8	6.88	--	6.60	6.97
Temperature[c]	C	--	19.2	14.2	13.4	16.72	13.1	13.9	29	14.2	11.46	--	14.10	10.94
Turbidity[c]	NTU	172	30.2	95.9	306	147	46.7	1.64	6.05	879	--	--	116.0	98.3
Common Ions														
Ca	mg/L	331	291	244	257	225	240	238	220	211	320	270	210	300J
Chloride	mg/L	--	89.2	94.5	81.3	75.0	73.9	86.6	85.1	78.0	82.0	110	68.0	69.0
Fluoride	µg/L	--	627	582	468	330J	331	17.2UJ	176J	328	360.	300.	820.	440.
Hardness	mg/L	1100J	977	846	899	806	841	838	771	736	1070	917	710	1000J
K	mg/L	18.2	19.0	22.2	20.5	19.8	20.0	19.1	17.3	18.2	27.0	21.0	21.0J	22.0J
Mg	mg/L	66.8J	60.8	57.6	62.4	59.4	58.6	59.3	53.9	50.8	66.0	59.0	45.0	62.0
Na	mg/L	371	355	266	231	214	248	203	185	176	140	140	140	130J
NO_3+NO_2 as N	µg/L	--	16200	11000	9270J	7340	6910	8050	3860	2680	4000.	3400.	1300.	1200.
SO_4	mg/L	--	1120	1070	997	899	927	861	783	680	740	790	610	760
Metals														
As	µg/L	0.2U	2	4.8	4.2	3.9	5.6	6.10	7.00	9.10	6.4	11	7.2	7.1
Fe	µg/L	26.6	66.8	20.5	1U	11.6	0.8U	1.30U	54.6	0.800U	9.8U	6500	69	19
Mn	µg/L	199	79.6	22	23.9	29.7	14	5.60	6.50	6.50	12	350	49	9.8
Mo	µg/L	74.1	63.3	93.7	83.3	83.5	91.5	87.2	90.9	93.2	91	98	120	100
Se	µg/L	56	85	59.1	112	91.5	92.3	137	87.2	117	100	50	25	50
U	µg/L	799	711	719	714	811	828	794	869	917	1000	1100	960	1100
V	µg/L	8.6	59.7	179	138	115	191	218	228	266	240	280	240	250
Radiological														
Alpha[d]	pCi/L	--	--	587	578	--	615	492J	558J	559	663	--	--	--
Alpha-U[e]	pCi/L	--	--	93.0	87.5	--	46.2	0[f]	0[f]	0[f]	0[f]	--	--	--
Beta	pCi/L	--	--	153	191	--	127	203	187	141	260	--	--	--
U	µg/L	799	711	719	714	811	828	794	869	917	1000	1100	960	1100
U-234	pCi/L	238	225J	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	253	263J	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- PW-10[a,b]

Analyte	Unit	10/08/09	04/20/10	10/12/10	04/04/11	10/11/11	04/24/12
Field Measurements							
Alkalinity	mg/L	339	275	312	320	367	274
Conductivity[c]	µmhos/cm	2004	1920	2111	1970	1987	1883
DO[c]	mg/L	--	--	2.83	--	3.00	3.21
ORP[c]	mV	--	--	-178.3	115	56.6	-11.9
pH[c]	s.u.	7.22	7.33	6.91	7.15	6.66	6.80
Temperature[c]	C	12.67	9.4	10.82	9.0	11.87	15.67
Turbidity[c]	NTU	183	893	311	177	2.37	2.26
Common Ions							
Ca	mg/L	270J	280	260	250	270	290
Chloride	mg/L	73.0	80.0	65.0	44.9	79.0	68.0
Fluoride	µg/L	450.	470.	470.	494	520.	460.
Hardness	mg/L	892J	950	872	847	921	984
K	mg/L	18.0J	21.0J	20.0J	13.8	14.0	20.0J
Mg	mg/L	53.0	61.0	54.0	54.1	60.0	63.0
Na	mg/L	140J	160	130	135	100	120J
NO_3+NO_2 as N	µg/L	1200.	5800.	2100.	780	1600.	830.
SO_4	mg/L	740	810	700	684	710	790
Metals							
As	µg/L	4.6	6	8.6	6.61	8.4J	7.2
Fe	µg/L	21	10	4.9U	122	25UJ	4.9UJ
Mn	µg/L	40	17	5.6	38	0.57UJ	0.11UJ
Mo	µg/L	100	92	110	107	94	88
Se	µg/L	36	78	34	19.3	47	65
U	µg/L	950	940	1000	1160	1100	1000
V	µg/L	170	190	250	160	280	240
Radiological							
Alpha[d]	pCi/L	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--
U	µg/L	950	940	1000	1160	1100	1000
U-234	pCi/L	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- PW-16[a,b]

Analyte	Unit	04/11/01	07/19/01	10/16/01	01/29/02	04/03/02	07/11/02	10/01/02	04/09/03	10/07/03	04/15/04
Field Measurements											
Alkalinity	mg/L	69	101	99	93	124	106	121	156	188	170
Conductivity[c]	µmhos/cm	1930	1832	1635	1605	1611	1357	1368	1773	1483	1361
DO[c]	mg/L	0	--	--	--	--	--	--	--	--	1.41
ORP[c]	mV	120	54	--	--	-49	--	--	-72	-107	-91.7
pH[c]	s.u.	6.52	6.35	6.94	7.19	7.12	7	7.07	7.12	7.06	7.25
Temperature[c]	C	8.3	12.8	14.3	8.7	10.4	12.68	15.8	9.6	14.2	10.85
Turbidity[c]	NTU	2.25	0.81	1.08	2.5	2.61	1.1	2.16	3.61	3.84	2.15
Common Ions											
Ca	mg/L	91.7	95.8	76.5	86.0	106	78.3	68.8	164	116	190
Chloride	mg/L	105	102	94.4	74.6	77.5	71.4	68.8	9.92J	84.4	81.0
Fluoride	µg/L	149	216	223	134	108J	25.1U	25.1U	366	180	200.U
Hardness	mg/L	454	429	392	440	520	400	379	659	520	726
K	mg/L	17.1	16.1	18.0	17.5	16.5	16.5	17.3	16.0	16.4	20.0
Mg	mg/L	54.6	46.2	48.9	54.7	62.0	49.7	50.2	60.7	55.9	61.0
Na	mg/L	237	228	175	154	150	157	147	155	141	110
NO_3+NO_2 as N	µg/L	1140	195	111	335	353	19.2	29.4	632J	4.50U	30.
SO_4	mg/L	501	727	652	612	606	510	488	73.2	544	530
TDS[c]	mg/L	1440	1320	--	--	--	--	--	--	--	--
Metals											
As	µg/L	3	5	6.2	4	2.4	2.3	3.5	1.50	3.60	3.2
Fe	µg/L	8.4	0.8U	18.1	0.8U	1U	25.7	79.8	3170	5940	13000
Mn	µg/L	1190	1990	1650	844	693	871	1040	1430	698	1800
Mo	µg/L	13.2	24.8	12.6	5	5.8	3	4.1	7.70	1.70U	6
Se	µg/L	1.1	1.4	0.56	0.55	0.94	0.25	0.18	10.00	0.320	0.48
U	µg/L	5.9	20.7	28.4	32.3	52.9	20.3	20.5	33.8	24.4	12J
V	µg/L	90.4	101	70.8	52	37.1	25.2	17.8	26.5	10.00	0.96
Radiological											
Alpha[d]	pCi/L	10.3U	11.2UJ	9.6	14.5	29.5J	8.6U	8.9	23.7J	16.7J	7.1
Alpha-U[e]	pCi/L	10.3U	11.2UJ	0[f]	0[f]	0[f]	8.6U	0[f]	0.48J	0[f]	0[f]
Beta	pCi/L	18.1	13.6	18.1	21.3	36.3	19.6	18.7	22.2	23.7	14.3
U	µg/L	5.9	20.7	28.4	32.3	52.9	20.3	20.5	33.8	24.4	12J
U-234	pCi/L	--	6.2J	--	--	--	--	--	--	--	--
U-238	pCi/L	--	8.2J	--	--	--	--	--	--	--	--

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- PW-17[a,b]

Analyte	Unit	04/13/00	08/15/00	10/18/00	01/29/01	04/11/01	07/19/01	10/16/01	01/29/02	04/02/02	07/10/02	10/01/02	01/14/03	04/08/03
Field Measurements														
Alkalinity	mg/L	--	403	--	281	248	252	318	273	217	272	309	275	254
Conductivity[c]	µmhos/cm	--	3590	--	3230	2960	2720	2600	--	2548	2411	2403	2275	2197
DO[c]	mg/L	--	--	--	--	1	--	--	--	--	--	--	--	--
ORP[c]	mV	--	--	--	191	158	--	--	--	122	--	--	--	114
pH[c]	s.u.	--	6.52	6.48	6.7	6.44	6.02	6.9	--	6.6	6.33	6.48	6.95	6.81
Temperature[c]	C	--	15	--	8.7	9.7	12.8	13	--	12.75	15.75	12.7	10.6	17.1
Turbidity[c]	NTU	--	>1000	--	>1000	56.8	47.1	19.2	--	824	--	204	--	1.45
Common Ions														
Ca	mg/L	--	--	452	296	280	254	243	246	257	235	246	232	237
Chloride	mg/L	--	--	109	101	102	85.9	93.8	76.7	83.6	73.9	75.1	67.9	8.59J
Fluoride	µg/L	--	--	332	452	342	370	643	320J	909	418J	225	25.1U	17.2UJ
Hardness	mg/L	--	--	1580	1040J	988	893	852	867	916	847	868	817	835
K	mg/L	--	--	32.2	25.8	22.6	22.8	23.1	23.0	22.4	21.3	21.6	20.6	18.7
Mg	mg/L	--	--	109	74.1J	70.2	62.8	59.6	61.4	66.5	63.3	61.7	57.7	59.0
Na	mg/L	--	--	485	356	320	317	266	248	229	222	262	228	205
NO_3+NO_2 as N	µg/L	--	--	33100	24300	21800	15700	11000	10200	9300J	8410	7610	5830	8380
SO_4	mg/L	--	--	1670	1410	618	1120	1100	1060	1010	977	998	894	89.6
TDS[c]	mg/L	--	--	--	2740	2570	2160	--	--	--	--	--	--	--
Metals														
As	µg/L	2.9	5.4	7.8	6	6.8	7.6	8.4	7.8	8.3	8.8	8.8	9.1	6.70
Fe	µg/L	--	--	101	11U	10	11.9	15.9	0.8U	26.3	8.5	0.8U	2.9U	1.30U
Mn	µg/L	--	--	420	537	141	112	211	33.9	11.2	22.8	3.9	2.5	7.60
Mo	µg/L	124	86.1	94.9	116	91	86.5	98.5	85.6	91.3	90.9	94.3	96.3	88.5
Se	µg/L	18.1	5.9	9.4	15.5	48.4	44	38.9	54.5	83.4	76.3	77.2	129	139
U	µg/L	902	916	973	833	727	761	759	686	753	881	836	803	792
V	µg/L	121	211	273	221	219	232	292	269	264	254	293	297	254
Radiological														
Alpha[d]	pCi/L	--	--	--	--	509	492J	536	374	548	708	642	574	481J
Alpha-U[e]	pCi/L	--	--	--	--	9.6	0[f]	14.6	0[f]	30.7	103	67.7	22.3	0[f]
Beta	pCi/L	--	--	--	--	266	101	148	101	188	234	128	184	205
U	µg/L	902	916	973	833	727	761	759	686	753	881	836	803	792
U-234	pCi/L	--	--	--	249	--	247J	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	1480	--	276J	--	--	--	--	--	--	--

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[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- PW-17[a,b]

Analyte	Unit	07/09/03	10/06/03	01/22/04	04/14/04	10/04/04	04/06/05	10/04/05	04/04/06	10/03/06	04/10/07	10/09/07	04/08/08[c]	10/08/08
Field Measurements														
Alkalinity	mg/L	--	309	283	270	292	256	279	304	307	--	316	190	280
Conductivity[c]	µmhos/cm	2233	1973	1931	1905	1754	2170	1479	1842	1972	--	1792	2096	1939
DO[c]	mg/L	2.86	--	--	--	2.40	--	--	6.98	--	--	--	--	2.72
ORP[c]	mV	-71	-44.1	-18	--	51	25.8	150	154.3	94	--	-73	81.0	114.6
pH[c]	s.u.	7.08	7	6.83	7.00	6.88	6.96	7.00	7.13	6.76	--	7.35	6.55	6.86
Temperature[c]	C	36.6	15.7	9.59	13.91	13.2	10.04	10.9	11.99	12.3	--	13.5	9.80	14.30
Turbidity[c]	NTU	74.4	526	--	--	>1000	--	131	25.2	173	--	231	54.7	50.4
Common Ions														
Ca	mg/L	225	209	210	300	210	240	180	220	330	320	260	270	220
Chloride	mg/L	84.7	77.3	70.0	81.0	44.0	99.0	46.0	58.0	55.0	99.0	51.0	100	58.0
Fluoride	µg/L	93.0J	318	400.	440.	420.	220.	420.	400.	580.	200.U	380.	290.	840.
Hardness	mg/L	789	734	726	1010	722	826	614	759	1090	1080	896	934	747
K	mg/L	17.7	19.1	25.0J	27.0	23.0	23.0	18.0	22.0	27.0	23.0	25.0	21.0	22.0J
Mg	mg/L	55.2	51.5	49.0	64.0	48.0	55.0	40.0	51.0	65.0	68.0	60.0	63.0	48.0
Na	mg/L	197	179	160	140	130	150	120	130	160	140	130	130	130
NO_3+NO_2 as N	µg/L	4360	2820	1700.	4000.	600.	6200.	2100.	2400.	1500.	10.U	1200.	3300.	1700.
SO_4	mg/L	798	722	760	730	620	790	380	730	790	500	780	800	640
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	7.30	10.00	9.5J	7.9	11	8.7	10	8.3	9.4	9.5	7.3	10	10
Fe	µg/L	781	128	6.7U	9.8U	7U	7.5U	7.8U	14U	2.2U	440	5.6U	2600	3.1U
Mn	µg/L	37.4	72.6	3.6	0.077U	69	8.1	9.4	3.1	8.5	53	200	220	0.2U
Mo	µg/L	90.3	98.9	98J	87	110	57	140	110	120	120	120	110	130
Se	µg/L	79.1	119	50J	98	27	40	14	43	32	46	39	58	27
U	µg/L	866	911	930	990	930J	1000	770	1200	1000	1400	1200	1300	1100
V	µg/L	229	308	320	280	310	250	330	310	270	350J	320J	300	320
Radiological														
Alpha[d]	pCi/L	553	663	472	705	647	705	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	0[f]	37.1	0[f]	24.9	8.1	18.0	--	--	--	--	--	--	--
Beta	pCi/L	149	144	136	253	237	148	--	--	--	--	--	--	--
U	µg/L	866	911	930	990	930J	1000	770	1200	1000	1400	1200	1300	1100
U-234	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- PW-17[a,b]

Analyte	Unit	04/08/09	10/06/09	04/20/10	10/12/10	04/04/11	10/11/11	04/24/12
Field Measurements								
Alkalinity	mg/L	274	320	274	310	422	330	296
Conductivity[c]	µmhos/cm	1831	2006	1850	2108	2023	1998	1900
DO[c]	mg/L	--	8.33	--	2.59	--	2.50	2.22
ORP[c]	mV	-58	46.5	--	-103.1	77.7	29.8	-16.3
pH[c]	s.u.	6.99	6.82	7.12	6.91	6.99	6.69	6.82
Temperature[c]	C	10.64	11.11	8.9	11.42	9.50	13.06	21.36
Turbidity[c]	NTU	58.7	--	31.0	37.1	121	1.78	4.42
Common Ions								
Ca	mg/L	300J	270J	270	260	252	270	280
Chloride	mg/L	61.0	66.0	78.0	67.0	43.7	73.0	65.0
Fluoride	µg/L	430.	530.	490.	470.	524	620.	460.
Hardness	mg/L	1020J	913J	934	880	871	930	954
K	mg/L	24.0J	20.0J	22.0J	21.0J	14.5	15.0	20.0J
Mg	mg/L	65.0	58.0	63.0	56.0	58.6	62.0	62.0
Na	mg/L	140J	130J	140	130	123	110	120J
NO_3+NO_2 as N	µg/L	1600.	1400.	6300.	2800.	1150.	1500.	710.
SO_4	mg/L	760	780	790	730	721	720	820
TDS[c]	mg/L	--	--	--	--	--	--	--
Metals								
As	µg/L	9.4	8.4	8	8.7	8.39	9.4J	7.7
Fe	µg/L	1.3UJ	48	4.9U	4.9U	505	25UJ	26
Mn	µg/L	4.1	12	2.8	19	72.8	0.57UJ	1.5
Mo	µg/L	89	120	98	110	140	110	96
Se	µg/L	49	37	88	26	19.8	44	58
U	µg/L	960	1100	980	1000	1320	1200	1100
V	µg/L	240	320	250	280	235	300	250
Radiological								
Alpha[d]	pCi/L	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	--	--	--	--	--	--	--
Beta	pCi/L	--	--	--	--	--	--	--
U	µg/L	960	1100	980	1000	1320	1200	1100
U-234	pCi/L	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- PW-18[a,b]

Analyte	Unit	04/11/01	07/11/01	10/16/01	01/29/02	04/01/02	07/11/02	10/01/02	04/08/03	07/08/03
Field Measurements										
Alkalinity	mg/L	309	338	357	317	355	363	375	341	384
Conductivity[c]	µmhos/cm	2960	2300	2300	1915	2043	1967	2044	2072	1922
DO[c]	mg/L	4.1	--	--	0.92	--	--	--	--	--
ORP[c]	mV	219	--	--	11.1	151	--	--	194	148
pH[c]	s.u.	6.49	6.49	6.28	6.52	6.44	6.65	6.55	6.55	6.82
Temperature[c]	C	6.6	15	13.8	5.63	9.87	14.4	14.7	9	18.2
Turbidity[c]	NTU	219	3.64	0.85	4	9.28	3.38	3.13	1.67	1.81
Common Ions										
Ca	mg/L	308	292	267	260	266	267	264	281	287
Chloride	mg/L	179	144	124	85.0	83.9	87.9	85.3	11.8	101
Fluoride	µg/L	292	357	741	253J	289	277	229	17.2UJ	347
Hardness	mg/L	1100	1040	945	925	948	929	938	983	992
K	mg/L	14.6	15.5	12.8	9.43	9.07	9.38	10.1	8.14	8.92
Mg	mg/L	81.0	74.4	67.5	66.9	69.0	63.7	67.6	68.3	66.8
Na	mg/L	240	219	161	124	125	117	135	134	137
NO_3+NO_2 as N	µg/L	14700	6200	3750	2830	2370J	2440	2160	5960	3440
SO_4	mg/L	477	943	876	763	727	692	706	74.6	730
TDS[c]	mg/L	2300	2090	--	--	--	--	--	--	--
Metals										
As	µg/L	3.6	5.5	5	4.1	4.4	6	6	4.40	5.70
Fe	µg/L	1U	4	9.5	0.8U	1U	8.9	0.8U	1.30U	1U
Mn	µg/L	28.1	47.2	74.1	1.9	0.1U	1.1	3.2	0.100U	0.550
Mo	µg/L	25.1	33.1	32.1	19.4	24.1	31.2	32.9	20.2	31.6
Se	µg/L	151	104	82.6	73.6	82.6	75.8	72.6	98.6	63.6
U	µg/L	373	339	314	309	306	339	338	281	381
V	µg/L	196	266	272	200	205	278	308	222	280
Radiological										
Alpha[d]	pCi/L	179	148J	143	180	179	189	201	93.0J	192
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]
Beta	pCi/L	126	70.2	57.9	15.7U	73.8	87.6	49.6	80.0	66.4
U	µg/L	373	339	314	309	306	339	338	281	381

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- PW-20[a,b]

Analyte	Unit	04/11/01	07/11/01	10/16/01	01/29/02	04/01/02	07/11/02	10/01/02	04/08/03
Field Measurements									
Alkalinity	mg/L	420	435	351	312	328	343	380	338
Conductivity[c]	µmhos/cm	2870	2480	2290	1854	2025	1968	2046	2050
DO[c]	mg/L	2.1	--	--	2	--	--	--	--
ORP[c]	mV	129	--	--	-25	133	--	--	130
pH[c]	s.u.	6.47	6.5	6.25	6.51	6.51	6.66	6.56	6.8
Temperature[c]	C	6.8	13.7	14.2	6.34	10.98	14.05	14.7	8.6
Turbidity[c]	NTU	5	2.61	1.58	6.5	8.24	4.61	2.68	2.92
Common Ions									
Ca	mg/L	303	289	263	253	260	259	263	281
Chloride	mg/L	176	145	74.8	78.1	81.1	86.9	85.2	11.9
Fluoride	µg/L	293	384	253	244J	226	363	218	17.2UJ
Hardness	mg/L	1090	1030	938	902	924	924	932	983
K	mg/L	14.4	15.1	13.1	9.29	8.59	10.4	10.1	8.18
Mg	mg/L	80.7	74.1	68.3	65.7	66.8	67.4	66.8	68.4
Na	mg/L	238	223	164	117	118	131	134	134
NO_3+NO_2 as N	µg/L	14400	6470	569	2470	2310	2450	2130	6060
SO_4	mg/L	473	949	878	750	711	684	709	75.4
TDS[c]	mg/L	2250	2080	--	--	--	--	--	--
Metals									
As	µg/L	4	6.2	5.6	4.3	4.6	6.6	6.7	4.20
Fe	µg/L	13.7	2.3	11.3	0.8U	1U	12.7	0.8U	1.30U
Mn	µg/L	15.5	24.4	42.4	1.7	2.5	0.1U	1.3	0.540
Mo	µg/L	26.6	28.8	32.3	20.9	25.3	30.1	28.9	22.2
Se	µg/L	152	110	82.9	67.4	71.8	79.2	71.5	101
U	µg/L	375	335	315	310	318	343	330	284
V	µg/L	207	259	278	197	195	273	309	207
Radiological									
Alpha[d]	pCi/L	189	168J	152	169	177J	183	185	108J
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]
Beta	pCi/L	132	66.2	71.9	10U	98.2	93.8	56.0	77.0
U	µg/L	375	335	315	310	318	343	330	284

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[b] Samples were filtered in the field unless otherwise noted.

[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- PW-22[a,b]

Analyte	Unit	04/11/01	07/11/01	10/16/01	01/29/02	04/03/02	07/11/02	10/02/02	04/08/03	10/07/03	04/15/04
Field Measurements											
Alkalinity	mg/L	306	362	371	362	310	361	382	358	387	350
Conductivity[c]	µmhos/cm	2300	2500	2310	2090	1993	2002	2069	2107	2094	1812
ORP[c]	mV	75	--	--	--	-42	--	--	56	85	--
pH[c]	s.u.	7.35	6.53	6.56	4.35	6.75	6.66	6.57	6.77	6.68	6.78
Temperature[c]	C	7.5	13.7	14.4	8	9.7	14.03	14.5	9.3	14.7	9.49
Turbidity[c]	NTU	568	5.74	3.13	6.1	4.71	3.73	4.18	4.79	3.73	4.72
Common Ions											
Ca	mg/L	305	292	264	251	262	261	263	286	281	330
Chloride	mg/L	178	154	126	83.6	80.9	89.2	86.0	11.3J	110	120
Fluoride	µg/L	393	359	760	26.2U	234J	260	253	17.2UJ	294	380.
Hardness	mg/L	1090	1040	940	906	945	925	931	1010	992	1110
K	mg/L	11.6	13.5	13.1	10.6	9.10	9.68	10.4	8.15	9.29	13.0
Mg	mg/L	80.3	76.2	68.2	67.8	70.7	66.4	66.5	72.4	70.6	70.0
Na	mg/L	227	220	167	132	112	125	139	134	145	120
NO_3+NO_2 as N	µg/L	14000	6660	3840	3550	2410	2490	2100	5590	3550	5700.
SO_4	mg/L	480	974	867	800	714	702	464	78.0	784	690
TDS[c]	mg/L	2310	2110	--	--	--	--	--	--	--	--
Metals											
As	µg/L	2.6	3.7	3.8	3.7	3.3	4.1	4.6	2.90	4.50	3.5
Fe	µg/L	1.0U	3.8	12	0.8U	1U	13.6	0.8U	1.30U	0.800U	9.8U
Mn	µg/L	35.6	32.5	42.3	2.3	6.6	4.7	4.6	4.00	14.8	0.077U
Mo	µg/L	24.6	27	33	21.4	26.8	30	31.4	23.0	27.8	24
Se	µg/L	162	108	76	74	82.2	80.5	74.5	104	67.5	61
U	µg/L	379	339	321	286	362	350	331	325	335	290
V	µg/L	172	210	244	194	178	229	264	194	247	210
Radiological											
Alpha[d]	pCi/L	95.2	166J	155	174	187J	195	179	141J	161J	186
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]
Beta	pCi/L	83.1	60.4	60.1	15.6U	120	97.2	54.4	83.0	84.3	79.0
U	µg/L	379	339	321	286	362	350	331	325	335	290

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- PW-23[a,b]

Analyte	Unit	04/11/01	07/19/01	10/16/01	01/29/02	04/02/02	07/10/02	10/01/02	04/08/03	10/06/03	04/14/04
Field Measurements											
Alkalinity	mg/L	369	375	314	--	354	273	339	288	335	294
Conductivity[c]	µmhos/cm	3720	3370	3300	3200	3240	2996	3113	2572	2131	2104
DO[c]	mg/L	2.1	--	--	--	--	--	--	--	--	--
ORP[c]	mV	157	--	--	91	117	--	--	181	83.6	--
pH[c]	s.u.	6.58	5.92	7.04	6.64	6.56	6.76	6.79	6.79	6.99	6.79
Temperature[c]	C	10	12.9	13.2	7.6	13.3	22.59	12	11.1	19.9	11.29
Turbidity[c]	NTU	108	464	1.24	>1000	378	10.9	993	4.92	232	1.00
Common Ions											
Ca	mg/L	242	330	317	287	323	257	283	260	215	280
Chloride	mg/L	113	98.3	106	--	95.7	86.0	90.5	82.3	75.2	76.0
Fluoride	µg/L	335	477	473	--	487	376J	482	17.2UJ	250	390.
Hardness	mg/L	859	1160	1120	1020	1150	965	1000	912	761	959
K	mg/L	21.7	25.9	26.1	23.7	24.5	23.8	22.4	19.2	18.8	28.0
Mg	mg/L	61.9	81.6	78.9	73.5	83.5	78.4	71.9	63.9	54.5	63.0
Na	mg/L	286	424	345	312	347	303	366	297	245	190
NO_3+NO_2 as N	µg/L	29200	23800	20400	--	18300J	16600	14500	11000	5420	4500.
SO_4	mg/L	1120	1510	1540	--	1410	1320	1390	1170	904	870
TDS[c]	mg/L	3180	2200	--	--	--	--	--	--	--	--
Metals											
As	µg/L	6.8	8.9	9	8.8	9.2	9.9	9.5	7.90	11.8	8.9
Fe	µg/L	1U	17.1	12.6	0.8U	37.8	18.1	0.8U	1.30U	0.800U	9.8U
Mn	µg/L	437	570	748	615	266	315	229	2.80	3.90	0.077U
Mo	µg/L	91.3	93.8	108	92.9	104	106	109	96.8	116	94
Se	µg/L	51	32	19.6	29.3	49.1	41.8	39.3	96.4	92.5	64
U	µg/L	558	1040	922	891	996	1030	929	877	826	990
V	µg/L	303	296	350	275	308	302	317	294	358	320
Radiological											
Alpha[d]	pCi/L	830	428J	795	--	667	708	--	548J	725	688
Alpha-U[e]	pCi/L	447	0[f]	162	--	0[f]	0.39	--	0[f]	158	7.9
Beta	pCi/L	393	204	208	--	260	272	--	196	132	251
U	µg/L	558	1040	922	891	996	1030	929	877	826	990
U-234	pCi/L	--	353J	--	--	--	--	--	--	--	--
U-238	pCi/L	--	382J	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- PW-28[a,b]

Analyte	Unit	10/18/00	01/30/01	04/11/01	07/11/01	10/16/01	01/29/02	04/01/02	07/11/02	10/01/02	04/08/03	10/07/03	04/15/04	10/04/04
Field Measurements														
Alkalinity	mg/L	360	358	309	320	329	368	310	347	358	346	389	358	395
Conductivity[c]	µmhos/cm	3560	3530	2800	2700	2600	2440	2380	2173	2181	2385	2340	2089	2104
DO[c]	mg/L	2.3	3	2.8	--	--	--	--	--	--	--	--	--	0.97
ORP[c]	mV	74	148	79	--	--	--	157	--	--	190	15	--	-104
pH[c]	s.u.	6.55	6.64	7.27	6.39	6.24	6.6	6.31	6.58	6.48	6.62	6.59	6.76	6.58
Temperature[c]	C	15	8.7	8.8	13	13.2	8.8	10.85	12.88	13.9	10.4	13.9	10.62	13.2
Turbidity[c]	NTU	132	89.7	3.73	4.34	4.63	3.1	9.98	2.01	5.6	3.2	4.79	1.05	2.18
Common Ions														
Ca	mg/L	444	364	371	340	289	279	278	268	266	309	301	430	300
Chloride	mg/L	225	240	219	178	149	118	117	95.8	95.7	14.2J	134	140	78.0
Fluoride	µg/L	429	463	451	491	640	353	487	405	373	17.2UJ	358	470.	480.
Hardness	mg/L	1640	1370J	1410	1280	1090	1050	1050	1020	977	1140	1100	1480	1060
K	mg/L	13.5	11.5	10.1	9.31	8.24	7.27	6.64	7.07	7.23	6.02	6.07	11.0	8.30
Mg	mg/L	130	113J	117	104	89.3	85.5	87.5	85.4	76.0	90.5	84.2	99.0	75.0
Na	mg/L	300	266	268	245	193	167	167	160	154	167	169	140	120
NO_3+NO_2 as N	µg/L	17300	15700	15800	7820	5170	4530	3760J	3600	3020	6670	4760	6700.	2300.
SO_4	mg/L	1480	1350	687	1200	1090	925	868	813	772	90.6	920	850	730
TDS[c]	mg/L	--	2870	2920	2540	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	2	1.4	1.7	2	1.9	2	1.9	2	1.8	1.60	2.30	2	2.1
Fe	µg/L	11.7U	11U	70	4.7	11.2	0.8U	1U	9.5	0.8U	1.30U	0.800U	200	7U
Mn	µg/L	44.6	36.5	1.1	1.9	0.92	2.7	7.5	1.7	1.1	0.570	1.20	3.5	0.066U
Mo	µg/L	22.2	22.4	17.9	15.3	13.9	9.9	13.8	17.5	17.4	12.9	13.3	11	18
Se	µg/L	128	142	131	98.3	70.6	59.6	65.6	58	60.4	73.9	60.1	48	28
U	µg/L	324	370	304	247	206	216	233	263	256	270	246	250	220J
V	µg/L	221	179	172	194	210	188	187	205	225	195	217	200	210
Radiological														
Alpha[d]	pCi/L	--	187	59.4	99.8J	99.1	98.0	134	123	139	111J	119J	172	138
Alpha-U[e]	pCi/L	--	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0.25	0[f]
Beta	pCi/L	--	61.3	34.1	46.0	37.0	39.2	59.5	73.6	42.2	62.0	65.6	68.0	52.2
U	µg/L	324	370	304	247	206	216	233	263	256	270	246	250	220J
U-234	pCi/L	--	123	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	124	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- PW-28[a,b]

Analyte	Unit	04/05/05	10/04/05	04/27/06	10/03/06	04/11/07	10/10/07	04/08/08[c]	10/08/08	04/08/09	10/07/09	04/20/10	10/13/10	04/05/11
Field Measurements														
Alkalinity	mg/L	327	344	372	362	363	338	325	382	338	400	369	393	402
Conductivity[c]	µmhos/cm	3586	2215	2269	2363	2396	2173	3255	1088	2650	2387	3070	2700	2570
DO[c]	mg/L	--	3.89	0.93	1.26	2.94	--	0.71	1.96	--	--	--	--	--
ORP[c]	mV	203.5	-53	51.0	25	-57.9	--	163.7	2.1	--	--	--	-288.7R	160
pH[c]	s.u.	6.71	6.67	6.74	6.52	6.67	6.94	6.60	6.76	6.74	6.70	6.83	6.39	6.70
Temperature[c]	C	9.34	13.6	10.53	13.7	9.23	13.1	10.17	12.85	10.40	13.00	9.2	13.17	9.9
Turbidity[c]	NTU	2.24	3.67	0.79	2.79	4.82	4.92	2.25	4.89	4.97	4.20	4.90	3.70	4.58
Common Ions														
Ca	mg/L	480	350	350	440	360	340	430	300	430J	340J	450	340	347
Chloride	mg/L	230	140	150	120	160	110	250	120	160	130	240	160	151
Fluoride	µg/L	500.U	350.	330.	570.	350.	610.	500.U	690.	530.	480.	430.	430.	415
Hardness	mg/L	1650	1200	1230	1490	1270	1190	1530	1050	1480J	1180J	1620	1180	1230
K	mg/L	11.0	8.50	9.30	9.30	7.20	8.40	8.80	8.30J	8.80J	7.10J	9.90J	7.90J	5.57
Mg	mg/L	110	80.0	87.0	95.0	90.0	82.0	110	72.0	99.0	80.0	120	81.0	89.2
Na	mg/L	230	150	150	180	150	150	210	160	180J	160J	220	190	167
NO_3+NO_2 as N	µg/L	20000.	6100.	10000.	6500.	11000.	9400.	29000.	8900.	11000.	5500.	35000.	7900.	8150.
SO_4	mg/L	1200	740	900	910	910	900	1300	860	960	850	1300	870	704
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	1.7	1.7	1.3	1.6	2.3	2	1.6	2.2	2	2.2	2.1	2.3	5.03
Fe	µg/L	7.5U	7.8U	14U	2.2U	7.4U	5.6U	48	3.9	3.7U	1.6U	4.9U	4.9U	30.0U
Mn	µg/L	2.4	19	0.23U	0.097U	0.17U	0.16U	1.1	0.2U	1.9	0.1U	0.54	0.11U	2.00U
Mo	µg/L	9	17	15J	16	18	16	18	16	14	16	16	15	18.6
Se	µg/L	65	29	42	32	44	29	62	28	38	27	76	28	29
U	µg/L	240	170	210	200	250	190	260	200	200	180	260	190	235
V	µg/L	180	190	150	180	180J	220J	160	190	160	200	170	180	147
Radiological														
Alpha[d]	pCi/L	151	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	0[f]	--	--	--	--	--	--	--	--	--	--	--	--
Beta	pCi/L	43.7	--	--	--	--	--	--	--	--	--	--	--	--
U	µg/L	240	170	210	200	250	190	260	200	200	180	260	190	235
U-234	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- PW-28[a,b]

Analyte	Unit	10/11/11	04/23/12
Field Measurements			
Alkalinity	mg/L	377	303
Conductivity[c]	µmhos/cm	2458	2398
DO[c]	mg/L	2.71	--
ORP[c]	mV	174.2	202.5
pH[c]	s.u.	6.59	6.75
Temperature[c]	C	12.51	10.42
Turbidity[c]	NTU	4.53	4.53
Common Ions			
Ca	mg/L	320	330
Chloride	mg/L	150	140
Fluoride	µg/L	630.	420.
Hardness	mg/L	1140	1190
K	mg/L	4.40	3.20J
Mg	mg/L	82.0	88.0
Na	mg/L	150	160J
NO_3+NO_2 as N	µg/L	6600.	6800.
SO_4	mg/L	820	920
TDS[c]	mg/L	--	--
Metals			
As	µg/L	2.4J	2.1
Fe	µg/L	25UJ	25UJ
Mn	µg/L	0.57UJ	0.57UJ
Mo	µg/L	5.4UJ	5.4UJ
Se	µg/L	30	30
U	µg/L	180	180
V	µg/L	180	160
Radiological			
Alpha[d]	pCi/L	--	--
Alpha-U[e]	pCi/L	--	--
Beta	pCi/L	--	--
U	µg/L	180	180
U-234	pCi/L	--	--
U-238	pCi/L	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- PW99-16[a,b]

Analyte	Unit	10/18/00	01/31/01	04/11/01	07/11/01	10/16/01	01/29/02	04/01/02	07/11/02	10/01/02	01/14/03	04/08/03	07/08/03	10/07/03
Field Measurements														
Alkalinity	mg/L	405	329	356	386	343	380	323	333	362	358	339	409	382
Conductivity[c]	µmhos/cm	3490	3470	3420	2810	2530	2450	2314	2121	2165	2218	2352	2208	2296
DO[c]	mg/L	1.2	3.4	0.4	--	--	--	--	--	--	--	--	--	--
ORP[c]	mV	88	117	209	--	--	--	156	--	--	--	185	202	125
pH[c]	s.u.	6.39	6.75	6.41	6.46	6.49	6.25	6.3	6.6	6.5	6.58	6.68	6.68	6.61
Temperature[c]	C	14.3	8.1	8.4	12.5	13.2	7.3	11.93	13.21	13.4	10.1	10.3	17.1	14.2
Turbidity[c]	NTU	22	4.15	4.4	3.44	1.92	3	2.83	15.4	3.71	4.36	4.19	1.52	2.53
Common Ions														
Ca	mg/L	430	364	372	318	286	272	276	274	262	278	305	297	298
Chloride	mg/L	221	235	216	172	143	106	113	98.5	95.4	104	14.3J	118	125
Fluoride	µg/L	415	421	379	794	564	339	489	409	25.1U	25.1U	361J	100.0	336
Hardness	mg/L	1590	1380J	1410	1190	1070	1010	1030	998	962	1020	1120	1070	1080
K	mg/L	24.3	12.3	11.7	10.5	8.89	7.40	7.49	6.49	6.97	6.73	6.38	6.48	6.56
Mg	mg/L	125	114J	118	95.0	85.4	81.0	83.8	76.2	74.8	80.1	86.8	78.6	81.7
Na	mg/L	295	268	272	241	186	159	159	134	150	148	163	157	163
NO_3+NO_2 as N	µg/L	26000	15100	16000	7450	4900	5550	3570J	3350	2990	4020	6770	3240	4620
SO_4	mg/L	1440	1350	643	1140	1030	852	827	780	774	798	88.8	807	859
TDS[c]	mg/L	--	2820	2840	2430	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	3.4	2.6	3	3.4	2.9	3.3	3.3	3.5	3.1	3.5	2.40	3.60	3.40
Fe	µg/L	11.7U	11U	1.0U	1.6	0.8U	0.8U	1U	10	0.8U	2.9U	1.30U	1U	0.800U
Mn	µg/L	2.0U	3U	0.10U	0.15	0.51	1.3	0.1U	0.1U	1.6	0.3U	0.100U	0.580	0.200
Mo	µg/L	25.8	26	19.5	17.4	17.2	11.3	16.9	18.4	18.5	6.4U	14.0	18.3	15.3
Se	µg/L	126	140	150	103	72.9	65.4	71.7	60.6	59.8	73.3	82.4	56.2	62.3
U	µg/L	330	387	327	263	218	227	251	272	253	282	272	309	256
V	µg/L	224	207	204	218	231	202	211	226	237	230	202	240	234
Radiological														
Alpha[d]	pCi/L	--	172	134	89.4J	107	144	146	130	145	168	136J	161	120J
Alpha-U[e]	pCi/L	--	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]
Beta	pCi/L	--	48.2	104	59.9	46.5	15.5U	67.0	79.3	40.0	60.5	69.0	53.8	58.7
U	µg/L	330	387	327	263	218	227	251	272	253	282	272	309	256
U-234	pCi/L	--	122	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	--	129	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- PW99-16[a,b]

Analyte	Unit	01/22/04	04/15/04
Field Measurements			
Alkalinity	mg/L	338	357
Conductivity[c]	µmhos/cm	2129	2024
DO[c]	mg/L	4.34	--
ORP[c]	mV	-21	--
pH[c]	s.u.	6.70	6.72
Temperature[c]	C	8.81	10.24
Turbidity[c]	NTU	0.59	3.63
Common Ions			
Ca	mg/L	280	320
Chloride	mg/L	100	140
Fluoride	µg/L	460.	420.
Hardness	mg/L	983	1120
K	mg/L	9.10J	11.0
Mg	mg/L	69.0	77.0
Na	mg/L	140	140
NO_3+NO_2 as N	µg/L	3500.	6700.
SO_4	mg/L	800	820
TDS[c]	mg/L	--	--
Metals			
As	µg/L	3.5J	2.8
Fe	µg/L	6.7U	9.8U
Mn	µg/L	0.043U	0.077U
Mo	µg/L	18J	110
Se	µg/L	41J	50
U	µg/L	250	250
V	µg/L	230	210
Radiological			
Alpha[d]	pCi/L	157	162
Alpha-U[e]	pCi/L	0[f]	0[f]
Beta	pCi/L	36.4	64.7
U	µg/L	250	250
U-234	pCi/L	--	--
U-238	pCi/L	--	--

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R1-M1[a,b]

Analyte	Unit	01/10/00	04/13/00	08/16/00	10/17/00	01/23/01	04/16/01	07/10/01
Field Measurements								
Alkalinity	mg/L	283	225	206	263	235	215	272
Conductivity[c]	µmhos/cm	3180	4480	4400	2940	2500	2300	2170
DO[c]	mg/L	0.44	0.28	0.45	0.26	1.7	0.676	0.713
ORP[c]	mV	133	164	42	76	92	-145	154
pH[c]	s.u.	--	6.17	6.71	6.78	6.45	7.16	6.59
Temperature[c]	C	10.8	9.3	14.4	14.4	9.5	9.9	12.2
Turbidity[c]	NTU	1.22	8.71	8.85	5.25	4.59	3.27	6.39
Common Ions								
Ca	mg/L	--	--	--	--	--	194	207
Chloride	mg/L	--	--	--	--	--	--	82.9
Fluoride	µg/L	--	--	--	--	--	--	385
Hardness	mg/L	--	--	--	--	--	692	733
K	mg/L	--	--	--	--	--	18.9	20.5
Mg	mg/L	--	--	--	--	--	50.3	52.4
Na	mg/L	--	--	--	--	--	224	223
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	9520
SO_4	mg/L	--	--	--	--	--	--	759
Metals								
As	µg/L	9.4	8.7	12.1	13.6	12.4	9.3	11.3
Fe	µg/L	--	--	--	--	17.7	1.0U	0.7U
Mn	µg/L	--	--	--	--	757	645	634
Mo	µg/L	96J	77.6	83.8	90.8	91.8	83.4	88.9
Se	µg/L	18.9	25.2	3.8	5.5	36.5	68.4	76.7
U	µg/L	706	456	391	455	436	419	424
V	µg/L	450	345	396	455	420	339	420
Radiological								
U	µg/L	706	456	391	455	436	419	424

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[c] Sample was unfiltered.
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[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R1-M2[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/09/01
Field Measurements								
Alkalinity	mg/L	280	240	230	302	241	170	235
Conductivity[c]	µmhos/cm	3130	4800	2930	2880	2490	2340	2170
DO[c]	mg/L	0.74	0.85	0.2	0.22	0.0R	1.6	0.058
ORP[c]	mV	107	68	168	98	171	22	9
pH[c]	s.u.	6.52	6.19	6.44	6.69	6.74	6.5	6.68
Temperature[c]	C	10.7	9	13	14.9	9.4	10.2	11.5
Turbidity[c]	NTU	22.2	1.6	>1000	26.7	114	42.3	6.09
Common Ions								
Ca	mg/L	303	259	253	275	218	193	207
Chloride	mg/L	151	121	82.7	85.1	97.4	18.3J	88.6
Fluoride	µg/L	--	--	--	--	387	351	436J
Hardness	mg/L	1070	924	888	961	776	692	734
K	mg/L	23.6	20.2	21.4	23.6	22.1	18.7	20.5
Mg	mg/L	77.3	67.4	62.3	66.5	56.3	51.0	52.8
Na	mg/L	367	294	316	326	266	217	221
NO_2 as N	µg/L	8.5U	27.2U	183	27.2U	--	--	--
NO_3 as N	µg/L	22200	36800	21400	18400	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	14200	13500	9070J
SO_4	mg/L	1220	1150	1170	1180	935	579	757
Metals								
As	µg/L	11.2	8.6	11.9	13.3	11.1	8.3	11.4
Fe	µg/L	8.9U	7.4U	9.1U	11.6U	22.3	1.0U	0.7U
Mn	µg/L	845	765	681	789	759	638	679
Mo	µg/L	84.9	73.2J	80.4	94	91.5	78.1J	87.7
Se	µg/L	17.2	30.4	4.1	9	40.4	82.7	77.3
U	µg/L	609	447J	394	446	442	410	418
V	µg/L	424	293	370	439	388	323	405
Radiological								
U	µg/L	609	447J	394	446	442	410	418

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[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R1-M3[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01	10/15/01	01/28/02	04/02/02	07/09/02	09/30/02	01/14/03
Field Measurements														
Alkalinity	mg/L	303	255	241	290	266	235	281	327	283	315	315	340	317
Conductivity[c]	µmhos/cm	3220	4950	2540	2580	2650	2380	2400	2100	1863	2010	1812	1941	1905
DO[c]	mg/L	0.64	0.7	0.16	0.35	0.9	0.707	0.4	0.306	684R	0.5	0.86	2.3	2.9
ORP[c]	mV	-9	-114	-132	75	-48	-133	-11	33	14.1	-24	80	-50	-286
pH[c]	s.u.	7.17	6.52	6.65	6.77	6.81	7.18	6.42	6.46	6.38	6.64	6.61	6.61	6.65
Temperature[c]	C	10.5	8.8	13.2	15.2	9.1	9.8	12.3	13.8	9.54	12	13.19	13.9	9.2
Turbidity[c]	NTU	5.67	5.4	66	33.1	37.4	31.4	28.8	25	1	22.8	5.37	31.3	24.9
Common Ions														
Ca	mg/L	322	281	216	266	255	228	237	230	233	239	228	236	213
Chloride	mg/L	172	146	85.7	114	132	113J	116	105	79.9	81.0	75.1	74.3	76.6
Fluoride	µg/L	--	--	--	--	343	311	369	749	335J	233	270J	245	25.1U
Hardness	mg/L	1150	1000	759	921	903	810	848	807	820	851	797	828	749
K	mg/L	21.4	17.8	18.8	20.9	20.7	17.8	20.9	18.9	15.8	14.6	14.0	16.0	11.3
Mg	mg/L	83.3	73.0	53.3	62.3	64.6	58.4	62.2	56.6	57.9	61.7	55.3	57.9	52.8
Na	mg/L	353	285	275	271	258	226	245	164	144	135	123	133	111
NO_2 as N	µg/L	8.5U	27.2U	27.0U	13.6U	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	21100	34600	14400	14200	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	14600	14000	8060	2090	3030	3150	2480	2110	3170
SO_4	mg/L	1270	1140	980	990	913	623	811	800	744	697	662	666	677
Metals														
As	µg/L	10	7.6	9.8	12.7	8.5	10	11	10	9.9	8.9	11.5	12.4	10
Fe	µg/L	8.9U	7.4U	9.1U	11.6U	11.0U	1.0U	0.7U	14.3	0.8U	1U	4.7	0.8U	2.9U
Mn	µg/L	560	376	293	386	398	330	341	307	303	243	172	206	72.6
Mo	µg/L	70.2	54.9J	68.3	73.8	59.7	54	61.3	62.6	45.4	47	53.8	59.8	6.4U
Se	µg/L	26.9	49.6	12.2	38	72	102	117	97.3	119	122	125	109	164
U	µg/L	722	464J	288	356	409	361	391	495	447	497	629	636	566
V	µg/L	357	248	371	413	343	298	365	419	344	314	385	428	347
Radiological														
U	µg/L	722	464J	288	356	409	361	391	495	447	497	629	636	566

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R1-M3[a,b]

Analyte	Unit	04/07/03	07/10/03	10/08/03	01/21/04	04/16/04	10/04/04	04/06/05	10/03/05	04/04/06	10/02/06	04/10/07	10/08/07	04/07/08[c]
Field Measurements														
Alkalinity	mg/L	269	349	364	532	294	352	232	274	302	538	310	332	273
Conductivity[c]	µmhos/cm	1597	1828	1901	1846	1614	1742	1917	1345	1806	1966	1580	1763	2266
DO[c]	mg/L	2	2.08	0.95	2.55	2.45	0.50	1.03	1.74	1.74	0.63	0.91	0.29	2.32
ORP[c]	mV	9.4	41	22	-8.8	-12.4	-20	13.7	-6	53.4	-28	-58.0	-165	-4.5
pH[c]	s.u.	6.93	6.56	6.77	6.67	6.89	6.76	6.96	6.91	6.75	6.79	6.85	7.16	6.54
Temperature[c]	C	9.99	13.4	14.1	8.55	9.73	13.7	9.38	13.8	8.33	14.0	8.49	13.6	8.04
Turbidity[c]	NTU	41	18.4	335	44.3	114	27.7	228	218	153	20.4	76.2	59.0	13.3
Common Ions														
Ca	mg/L	245	251	253	260	330	260	230	210	260	380	350	290	320
Chloride	mg/L	93.8	89.6	90.0	74.0	86.0	47.0	110	67.0	79.0	66.0	83.0	59.0	170
Fluoride	µg/L	139	145J	442	430.	450.	480.	320.	440.	370.	630.	410.	560.	270.
Hardness	mg/L	853	861	880	876	1080	872	768	689	867	1230	1150	967	1070
K	mg/L	12.7	12.8	13.3	15.0J	17.0	14.0	14.0	14.0	16.0	20.0	16.0	20.0	14.0
Mg	mg/L	58.5	57.0	60.4	55.0	63.0	54.0	47.0	40.0	53.0	69.0	66.0	59.0	66.0
Na	mg/L	140	130	130	110	100	91.0	110	89.0	97.0	130	110	110	120
NO_2 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	7740	3330	2870	2200.	3900.	1100.	6200.	1800.	3800.	2800.	3700.	2200.	15000.
SO_4	mg/L	706	681	674	680	610	600	570	390	670	770	760	740	770
Metals														
As	µg/L	9.00	11.5	13.3	11J	11	16	12	14	11	13	11	14	11
Fe	µg/L	19.2	1U	0.800U	6.7U	9.8U	7U	86	7.8U	14U	2.2U	3.7U	5.6U	310
Mn	µg/L	98.7	16.8	64.9	41	45	54	180	94	8.7	37	10	49	17
Mo	µg/L	37.2	47.5	45.4	44J	39	49	43	71	52	62	60	71	51
Se	µg/L	161	105	92.5	75J	78	54	55	26	65	52	68	55	99
U	µg/L	432	635	524	510	420J	460J	370	370	570	530	690	670	550
V	µg/L	313	399	418	370	370	420	310	430	390	360	380J	470J	330
Radiological														
U	µg/L	432	635	524	510	420J	460J	370	370	570	530	690	670	550

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[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R1-M3[a,b]

Analyte	Unit	10/08/08	04/08/09	10/06/09	04/19/10	10/11/10	04/04/11	10/10/11	04/24/12
Field Measurements									
Alkalinity	mg/L	198	307	309	256	318	340	369	206
Conductivity[c]	µmhos/cm	1916	1449	1855	1790	2134	1950	2110	1840
DO[c]	mg/L	9.55	0.84	1.10	1.35	0.86	0.61	1.19	2.81
ORP[c]	mV	171.0	209	27	15	-50.4R	-25	13.6	-15.0
pH[c]	s.u.	6.74	6.91	6.89	6.97	6.73	6.90	6.75	7.05
Temperature[c]	C	10.78	8.12	12	8.3	12.40	8.6	11.80	9.40
Turbidity[c]	NTU	11.4	8.93	29.6	18.8	7.80	53.7	4.06	99.3
Common Ions									
Ca	mg/L	230	330J	280J	270	290	254	300	290
Chloride	mg/L	76.0	79.0	77.0	110	100	55.1	110	72.0
Fluoride	µg/L	990.	510.	560.	510.	500.	524	530.	460.
Hardness	mg/L	772	1090J	926J	909	951	867	1010	971
K	mg/L	16.0J	17.0J	18.0J	15.0J	15.0J	10.4	10.0	15.0J
Mg	mg/L	48.0	65.0	55.0	57.0	55.0	56.6	63.0	60.0
Na	mg/L	110	120J	110J	110	120	95.9	110	120J
NO_2 as N	µg/L	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	3300.	3000.	1600.	12000.	3700.	1190.	3900.	1400.
SO_4	mg/L	620	750	640	650	680	872	700	750
Metals									
As	µg/L	15	12	14	12	13	12.7	14	11
Fe	µg/L	4	1.3UJ	1.6U	6.8	4.9U	30.0U	25UJ	35
Mn	µg/L	21	4.5	38	13	6.7	16.9	0.57UJ	26
Mo	µg/L	64	51	67	49	51	69	36	48
Se	µg/L	36	57	50	110	35	19.4	36	48
U	µg/L	520	600	600	460	480	713	450	550
V	µg/L	420	340	410	300	380	306	400	300
Radiological									
U	µg/L	520	600	600	460	480	713	450	550

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R1-M4[a,b]

Analyte	Unit	01/11/00	04/11/00	08/15/00	10/16/00	01/23/01	04/17/01	07/10/01	10/11/01	10/15/01	01/28/02	04/02/02	07/09/02	09/30/02
Field Measurements														
Alkalinity	mg/L	384	319	284	300	325	304	350	342	--	350	322	311	360
Conductivity[c]	µmhos/cm	3290	3300	4330	2690	2580	2640	2620	2280	--	1889	2080	1877	2012
DO[c]	mg/L	0.52	0.45	0.54	1.4	0.3	0.742	0.316	0.324	--	0.694	0.3	7.47R	1.3
ORP[c]	mV	205	90	102	35	44	225	-51	26	--	-44	-24	194	-9.5
pH[c]	s.u.	6.3	6.49	6	6.56	6.78	6.6	6.27	6.71	--	6.69	6.69	6.45	6.6
Temperature[c]	C	10.5	8.5	15	14.3	9.1	9	12.1	14	--	8.4	12	12.74	15.6
Turbidity[c]	NTU	26	4.35	56.4	150	24.6	24.3	7.44	6.53	--	30.7	53.8	0.59	6.17
Common Ions														
Ca	mg/L	410	303	273	277	276	268	297	258	--	257	257	240	244
Chloride	mg/L	207	214	126	121	152	161J	148	109	121	90.3	92.7	83.7	81.8
Fluoride	µg/L	--	--	--	--	537	349	350	506	558	26.2UJ	25.1U	407	379
Hardness	mg/L	1470	1100	973	971	981	951	1050	902	--	907	923	865	858
K	mg/L	14.5	10.5	13.3	14.0	13.8	12.3	15.9	14.2	--	12.9	12.2	12.0	12.8
Mg	mg/L	108	83.5	70.7	67.9	70.8	68.4	75.5	62.6	--	64.3	68.2	64.6	60.4
Na	mg/L	326	245	291	284	262	221	260	187	--	150	144	132	132
NO_2 as N	µg/L	8.5U	27.2U	27.0U	13.6U	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	14900	25000	15900	12400	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	15400	14800	8870	3760	3800	3400	3020	2460	2050
SO_4	mg/L	1320	1260	1040	985	1020	460	896	822	848	777	728	687	691
Metals														
As	µg/L	6.3	5.6	6.6	7.3	7.1	7.7	7.6	7.5	--	6.9	6.3	7.8	8.8
Fe	µg/L	--	--	9.1U	11.6U	11U	1.0U	6	34	--	14.7	1U	4U	0.8U
Mn	µg/L	--	--	6.7	17.4	59.8	37	58	171	--	113	120	102	135
Mo	µg/L	35.6J	24.8J	39.9	47.5	43.9	37.3	39.6	44.8	--	31.1	33.1	37	44.3
Se	µg/L	53	96.7	25	13.3	68.8	139	131	93.8	--	97.9	93.9	99.4	97.5
U	µg/L	526	449	332	342	420	401	360	388	--	363	386	398	434
V	µg/L	330	208	313	354	295	261	324	356	--	295	272	317	356
Radiological														
U	µg/L	526	449	332	342	420	401	360	388	--	363	386	398	434

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[c] Sample was unfiltered.
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[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R1-M4[a,b]

Analyte	Unit	01/14/03	04/07/03	07/10/03	10/08/03	01/21/04	04/16/04	10/04/04	04/06/05	10/03/05	04/04/06	10/02/06	04/10/07	10/08/07
Field Measurements														
Alkalinity	mg/L	350	343	347	389	586	316	414	203	290	307	343	323	317
Conductivity[c]	µmhos/cm	2000	2084	2082	2017	1797	1659	2001	1973	1474	1865	1994	1639	1785
DO[c]	mg/L	1.5	1.55	1.78	0.86	1.81	1.95	0.59	0.97	2.13	1.71	0.86	1.59	0.60
ORP[c]	mV	-335	12.9	57	-9	69.0	-11.0	-23	-5.8	128	49.1	84	75.1	3.3
pH[c]	s.u.	6.59	6.91	6.69	6.74	6.66	6.83	6.74	6.91	6.82	6.62	6.52	6.81	7.16
Temperature[c]	C	9.7	8.75	13.6	14.7	8.14	10.20	13.7	9.53	14.4	8.04	14.50	8.80	13.8
Turbidity[c]	NTU	8.41	31.3	9.14	13.4	3.75	6.66	4.03	19.2	31.4	25.5	18.0	42.5	14.8
Common Ions														
Ca	mg/L	244	268	271	263	280	260	290	230	180	270	400	360	290
Chloride	mg/L	87.9	95.7	100	99.6	84.0	88.0	53.0	120	73.0	84.0	72.0	100	61.0
Fluoride	µg/L	25.1U	112	345J	267	380.	370.	220.	310.	400.	380.	580.	460.	540.
Hardness	mg/L	864	946	947	925	946	880	975	768	598	905	1290	1180	971
K	mg/L	10.8	10.6	11.3	12.2	14.0	15.0	14.0	13.0	13.0	15.0	18.0	15.0	17.0
Mg	mg/L	61.9	67.3	65.6	65.2	60.0	56.0	61.0	47.0	36.0	56.0	71.0	69.0	60.0
Na	mg/L	122	129	136	137	110	110	96.0	110	97.0	99.0	130	120	110
NO_2 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	3220	6010	3830	3130	2500.	4300.	1300.	6700.	2300.	4200.	3300.	4400.	2100.
SO_4	mg/L	682	741	712	723	720	620	600	590	430	680	790	770	730
Metals														
As	µg/L	7.5	6.40	7.10	9.40	8J	7.6	9.8	8.2	9.7	7.5	9.3	8.6	9.6
Fe	µg/L	2.9U	1.30U	1U	27.1	6.7U	9.8U	7U	7.5U	7.8U	14U	2.2U	3.7U	5.6U
Mn	µg/L	131	90.2	116	130	32	13	33	11	25	9.3	12	11	24
Mo	µg/L	6.4U	30.2	36.3	40.1	35J	36	46	38	57	44	53	48	60
Se	µg/L	120	131	85.4	72.5	61J	76	46	62	30	57	49	55	49
U	µg/L	447	390	472	465	420	350J	420J	300	300	440	440	510	620
V	µg/L	310	269	314	351	310	280	340	260	340	310	290	310J	370J
Radiological														
U	µg/L	447	390	472	465	420	350J	420J	300	300	440	440	510	620

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[c] Sample was unfiltered.
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[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R1-M4[a,b]

Analyte	Unit	04/07/08[c]	10/07/08	04/07/09	10/05/09	04/19/10	10/11/10	04/04/11	10/10/11	04/24/12
Field Measurements										
Alkalinity	mg/L	285	230	--	340	260	326	466	414	222
Conductivity[c]	µmhos/cm	2315	1750	1077	1855	1893	2063	2075	2089	2090
DO[c]	mg/L	3.11	4.37	1.02	2.77	1.67	1.02	1.30	0.79	7.91
ORP[c]	mV	0.6	-36	-258	-13	-15	28.8R	8	125.7	105
pH[c]	s.u.	6.44	6.76	6.94	6.86	6.95	6.57	6.94	6.71	7.00
Temperature[c]	C	8.98	12.5	9.69	13.0	8.6	12.53	8.7	12.29	9.60
Turbidity[c]	NTU	4.85	15.9	16.8	20.1	22.1	53.4	38.2	1.41	407
Common Ions										
Ca	mg/L	330	220	310J	280J	290	280	253	300	280
Chloride	mg/L	170	69.0	86.0	78.0	130	94.0	59.2	100	78.0
Fluoride	µg/L	320.	810.	580.	560.	520.	480.	458	540.	480.
Hardness	mg/L	1110	735	1030J	930J	975	922	862	1010	959
K	mg/L	14.0	14.0J	15.0J	14.0J	16.0J	15.0J	10.4	11.0	16.0J
Mg	mg/L	70.0	45.0	62.0	56.0	61.0	54.0	55.8	64.0	63.0
Na	mg/L	120	100	120J	110J	120	120	101	110	120J
NO_2 as N	µg/L	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	17000.	2300.	1600.	1000.	13000.	3000.	425J	3400.	280.
SO_4	mg/L	830	550	740	640	690	640	760	700	750
Metals										
As	µg/L	8.1	9.7	7.8	9.6	7.5	8.7	7.64	9.3	6.7
Fe	µg/L	480	3.1U	10	1.6U	6.8	4.9U	30.0U	25UJ	4.9UJ
Mn	µg/L	22	26	9.1	35	2.5	9.3	21.8	20	87
Mo	µg/L	47	64	52	69	47	60	63.7	42	69
Se	µg/L	100	36	33	35	100	32	10.3	45	14
U	µg/L	460	480	490	540	410	510	581J	640	500
V	µg/L	280	340	270	330	240	290	185J	280	200
Radiological										
U	µg/L	460	480	490	540	410	510	581J	640	500

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[c] Sample was unfiltered.
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[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R1-M5[a,b]

Analyte	Unit	01/12/00	04/12/00	08/15/00	10/16/00	01/22/01	04/16/01	07/09/01
Field Measurements								
Alkalinity	mg/L	391	330	413	336	333	292	309
Conductivity[c]	µmhos/cm	3080	4680	4540	2780	2860	2690	2680
DO[c]	mg/L	0.32	0.5	0.88	1.4	3R	1.1	0.245
ORP[c]	mV	122	-88	177	-32	16	31	-84
pH[c]	s.u.	6.39	6.13	6.88	6.56	6.75	6.67	6.22
Temperature[c]	C	10.3	8.2	15.5	15	9.1	10	12.6
Turbidity[c]	NTU	13.6	5.27	16	2.41	3.22	2.05	4.29
Common Ions								
Ca	mg/L	--	340	291	295	289	287	315
Chloride	mg/L	--	193	138	128	171	174J	159
Fluoride	µg/L	--	--	--	--	584	305	366
Hardness	mg/L	--	1210	1030	1030	1030	1020	1120
K	mg/L	--	9.70	12.2	13.0	12.6	11.4	14.1
Mg	mg/L	--	87.6	74.1	72.3	75.1	74.2	81.2
Na	mg/L	--	230	285	291	263	230	251
NO_2 as N	µg/L	--	--	27.0U	27.2U	--	--	--
NO_3 as N	µg/L	--	--	15100	12400	--	--	--
NO_3+NO_2 as N	µg/L	--	21300	--	--	17000	14800	8560
SO_4	mg/L	--	1150	1030	1030	1080	474R	949
Metals								
As	µg/L	5.8	5.1	5.3	5.8	4.7	3.3	5
Fe	µg/L	--	7.4U	9.1U	11.6U	11.9	22.6	11.3
Mn	µg/L	--	8.6	17.5	38.5	43.8	39.5	45
Mo	µg/L	37.8	26.7	30.7	35.4	29.5	24.5	26.2
Se	µg/L	50.4	80.6	41.8	18.5	87	143	121
U	µg/L	536	397	245	258	306	310	300
V	µg/L	304	214	306	350	284	243	296
Radiological								
U	µg/L	536	397	245	258	306	310	300

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R1-M6[a,b]

Analyte	Unit	10/18/00	01/29/01	04/17/01	07/09/01
Field Measurements					
Alkalinity	mg/L	480	336	290	319
Conductivity[c]	µmhos/cm	2720	2860	2940	2690
DO[c]	mg/L	0.28	1.6	9.1R	0.463
ORP[c]	mV	177	244	-1	-71
pH[c]	s.u.	6.79	6.73	6.42	6.13
Temperature[c]	C	15.7	9.1	10.1	13.6
Turbidity[c]	NTU	550	8.3	24.4	3.27
Common Ions					
Ca	mg/L	--	--	291	325
Chloride	mg/L	--	--	--	164
Fluoride	µg/L	--	--	--	319
Hardness	mg/L	--	--	1040	1150
K	mg/L	--	--	10.6	13.3
Mg	mg/L	--	--	75.2	82.1
Na	mg/L	--	--	234	242
NO_3+NO_2 as N	µg/L	--	--	--	9060
SO_4	mg/L	--	--	--	954
Metals					
As	µg/L	5.9	6.3	5	5.3
Fe	µg/L	--	11U	1.0U	11.2
Mn	µg/L	--	48.3	55.4	73.4
Mo	µg/L	38.5	29	24.7J	27.5
Se	µg/L	26.7	68.2	143	127
U	µg/L	270	314	316	298
V	µg/L	288	276	243	301
Radiological					
U	µg/L	270	314	316	298

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R10-M1[a,b]

Analyte	Unit	01/12/00	02/29/00	04/11/00	08/15/00	10/16/00	01/23/01	04/17/01	07/10/01	10/11/01	10/15/01	01/29/02	04/02/02	07/10/02
Field Measurements														
Alkalinity	mg/L	52	78	110	76	87	71	82	72	107	--	91	114	137
Conductivity[c]	µmhos/cm	2440	2500	4490	2160	2140	2130	2220	2150	1714	--	1450	1660	1424
DO[c]	mg/L	--	0.28	0.23	0.38	1.4	2.3	2.6	0.7	0.274	--	1.1	0.8	1.15
ORP[c]	mV	51	-111	-60	-58	189	146	173	47	-86	--	-70	-49	-97
pH[c]	s.u.	6.07	6.67	6.8	6.61	6.58	6.21	6.45	6.71	6.9	--	6.66	6.94	7.05
Temperature[c]	C	10.3	9.5	9	18.5	14.5	8.8	11.3	12	13.5	--	9.77	12.2	13.28
Turbidity[c]	NTU	>1000	6.94	1.15	>1000	57	5.54	32.5	1.94	74.4	--	7	8.33	0.97
Common Ions														
Ca	mg/L	191	199	197	110	120	111	114	143	93.8	--	95.7	104	92.7
Chloride	mg/L	166	178	199	101	100	136	128J	140	108	109	85.9	92.2	80.3
Fluoride	µg/L	--	401	--	--	--	208	181	285	267	411	185J	182J	202J
Hardness	mg/L	779	820	859	479	514	499	541	631	429	--	462	522	471
K	mg/L	14.7	12.1	13.5	12.1	13.5	12.8	12.3	14.7	12.6	--	12.8	11.8	13.1
Mg	mg/L	73.4	78.5	89.1	49.6	52.1	53.9	62.2	66.5	47.2	--	54.2	63.8	58.2
Na	mg/L	364	284	297	284	294	266	228	229	183	--	152	148	136
NO_2 as N	µg/L	--	--	27.2U	27.0U	13.6U	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	960	--	695	950	17500	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	91.8	--	--	--	2240	1470	1100	606	483	346	508	140
SO_4	mg/L	1070	1090	1140	864	843	837	577	799	635	648	608	597	520
Metals														
As	µg/L	3.7	2.5	3.8	4.7	3.1	3.4	2.8	3.9	4.2	--	3.1	3.2	3.8
Fe	µg/L	8.9U	8.9U	7.4U	9.1U	11.6U	28	1.0U	5.1	14	--	24.8	1U	7
Mn	µg/L	945J	1070	1490	1050	1310	1110	812	659	481	--	42.6	23.2	6
Mo	µg/L	29.6	59.4	44.6J	26	17	12.7	11.5J	17.2	14.9	--	9	14.9	7.3
Se	µg/L	0.37	0.15	0.56	0.2	0.1U	0.14	0.47	0.3U	0.3U	--	0.32	0.77	0.38
U	µg/L	5.4	59.8	69J	8.8	4.1	1.9	6.4	7.6	15.1	--	12.2	34.9	35.1
V	µg/L	163	123	116	142	168	121	101	125	145	--	111	96.3	123
Radiological														
U	µg/L	5.4	59.8	69J	8.8	4.1	1.9	6.4	7.6	15.1	--	12.2	34.9	35.1

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R10-M1[a,b]

Analyte	Unit	10/01/02	01/14/03	04/07/03	07/10/03	10/07/03	01/21/04	04/15/04	10/04/04	04/06/05	10/03/05	04/04/06	10/02/06	04/10/07
Field Measurements														
Alkalinity	mg/L	147	185	185	189	190	325	190	235	147	165	157	336	344
Conductivity[c]	µmhos/cm	1436	1564	1760	1597	1499	1568	1437	1435	1730	1029	1551	2008	1668
DO[c]	mg/L	2.5	1.71	2.15	1.99	0.72	1.39	2.25	0.61	1.84	1.65	1.14	0.62	1.01
ORP[c]	mV	-14.4	-231	24.3	-86	14	-47	73.2	-36	94.6	-45	48.6	-71	-111
pH[c]	s.u.	6.85	6.8	7.11	6.93	6.82	6.74	6.87	6.85	6.79	7.04	6.89	6.76	6.89
Temperature[c]	C	14.8	10.2	8.82	15	14.9	7.42	10.16	14.4	10.14	14.6	9.30	14.2	8.21
Turbidity[c]	NTU	2.58	153	2.17	12.8	2.54	0.75	18.9	4.61	3.87	3.37	2.13	11.8	8.59
Common Ions														
Ca	mg/L	93.4	129	179	140	127	160	170	150	160	96.0	150	350	360
Chloride	mg/L	76.2	83.2	94.8	95.6	92.0	82.0	85.0	51.0	130	63.0	82.0	69.0	100
Fluoride	µg/L	25.1U	25.1U	80.6	152J	228	200.U	200.U	180.	200.U	210.	200.U	290.	320.
Hardness	mg/L	456	586	746	573	546	663	676	597	647	363	618	1210	1200
K	mg/L	13.5	12.1	11.6	13.8	11.9	15.0J	16.0	14.0	13.0	11.0	14.0	18.0	14.0
Mg	mg/L	54.1	64.2	72.7	54.3	55.7	64.0	61.0	54.0	60.0	30.0	59.0	82.0	72.0
Na	mg/L	133	131	135	137	136	110	100	100	110	88.0	100	130	120
NO_2 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	150	455R	365	540	111	58	100.	35	41	68	77	430.	3900.
SO_4	mg/L	500	570	723	603	560	610	560	490	590	260	590	790	770
Metals														
As	µg/L	4.2	4	3.30	2.80	3.30	2.5J	1.6	1.4	0.98	1.4	0.7	1.1	3.5
Fe	µg/L	21	2.9U	1.30U	15.5	14.1	6.7U	9.8U	7U	7.5U	12	72	2.2U	3.7U
Mn	µg/L	6.2	2.2	20.0	780	220	230	1400	1200	1100	830	800	970	46
Mo	µg/L	6.3	6.4U	16.3	7.80	1.70U	4.2J	13	5.6	3.1	13	4.9	14	25
Se	µg/L	0.22	2.4	19.0	0.130	0.260	0.11J	0.28	0.14	0.16	0.083	0.02U	6.2	38
U	µg/L	30.5	63.1	79.0	22.8	26.5	43	29J	29J	15	16	21	120	130
V	µg/L	131	136	114	99.8	112	80	63	57	33	50	24	33	130J
Radiological														
U	µg/L	30.5	63.1	79.0	22.8	26.5	43	29J	29J	15	16	21	120	130

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R10-M1[a,b]

Analyte	Unit	10/09/07	04/08/08[c]	10/08/08	04/08/09	10/06/09	04/19/10	10/11/10	04/04/11	10/11/11	04/24/12
Field Measurements											
Alkalinity	mg/L	356	144	134	87	200	141	128	150	572	98
Conductivity[c]	µmhos/cm	1884	2081	1084	1375	1625	1375	1259	1470	1338	1515
DO[c]	mg/L	0.38	-22.14	4.05	1.03	1.62	1.60	0.65	0.80	1.43	1.52
ORP[c]	mV	-106	-53.7	-56.2	-214	-8.0	-6	-31.1R	5	-22.7	-60.0
pH[c]	s.u.	7.25	6.86	7.29	7.04	6.78	6.87	6.64	6.59	6.83	7.31
Temperature[c]	C	12.9	7.37	12.78	8.51	12.1	8.6	12.58	9.7	12.28	11.20
Turbidity[c]	NTU	6.88	2.11	8.14	32.0	64.7	7.09	4.16	5.56	7.42	28.9
Common Ions											
Ca	mg/L	310	260	95.0	130J	160J	150	89.0	117	120	160
Chloride	mg/L	68.0	170	74.0	87.0	91.0	95.0	85.0	59.4	75.0	89.0
Fluoride	µg/L	340.	240.	430.	270.	240.	180.	170.	196	230.	140.
Hardness	mg/L	1040	913	348	506J	651J	593	383	517	456	614
K	mg/L	14.0	12.0	11.0J	12.0J	15.0J	13.0J	13.0J	11.1	12.0	14.0J
Mg	mg/L	64.0	64.0	27.0	44.0	61.0	53.0	39.0	54.6	38.0	52.0
Na	mg/L	120	110	87.0	120J	120J	110	96.0	115	94.0	120J
NO_2 as N	µg/L	--	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	10.U	100.	17	68	69	1400.	1000.	147	180.	94
SO_4	mg/L	750	730	310	500	550	520	340	606	440	570
Metals											
As	µg/L	1.9	1.2	0.93	0.55	0.86	1.2	0.8	2.06	0.82	0.62
Fe	µg/L	5.6U	110	12	2.6U	16	9.3	4.9U	30.0U	4.9UJ	6.5J
Mn	µg/L	2500	1600	680	870	1100	9.5	130	164	32	2.2
Mo	µg/L	29	12	6.9	3.6	4.6	2.8	2.5	2.12	1.1UJ	2.9J
Se	µg/L	0.028U	0.28	0.26	0.12U	0.46	13	1	1.50U	1.4	1.7
U	µg/L	44	32	5.6	2.1	8.6	29	5.7	3.4	3.3	7.9
V	µg/L	83J	38	28	18	31	36	23	12.1	21	17
Radiological											
U	µg/L	44	32	5.6	2.1	8.6	29	5.7	3.4	3.3	7.9

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R11-M1[a,b]

Analyte	Unit	01/12/00	02/29/00	04/11/00	08/16/00	10/16/00	01/29/01	04/17/01	07/10/01	10/11/01	10/15/01	01/29/02	04/02/02	07/10/02
Field Measurements														
Alkalinity	mg/L	>70	153	100	120	130	59	84	92	100	--	--	124	122
Conductivity[c]	µmhos/cm	2550	1727	4070	2130	2080	2180	2210	2230	1739	--	1620	1597	1446
DO[c]	mg/L	--	1.6	0.7	--	--	--	--	--	--	--	--	2	--
ORP[c]	mV	-30	34	57	-139	178	155	217	-17	-52	--	95	-28	-38
pH[c]	s.u.	7.17	6.65	6.65	6.47	6.57	6.2	6.63	6.82	6.9	--	7	6.94	7.04
Temperature[c]	C	11	6	7.9	19.7	15.9	6.6	10.4	15	13.9	--	6.2	12.5	15.27
Turbidity[c]	NTU	--	11.9	4.56	>1000	311	184	>1000	>1000	200	--	312	441	6.32
Common Ions														
Ca	mg/L	207	228	211	130	123	113	117	149	91.9	--	84.1	108	90.3
Chloride	mg/L	186	53.8	169	122	102	--	131J	156	113	113	83.1	88.8	85.9
Fluoride	µg/L	--	361	--	--	--	--	258	218	358	263	234J	25.1RUJ	273J
Hardness	mg/L	829	809	815	528	501	487	546	677	416	--	415	541	462
K	mg/L	13.9	7.30	9.16	10.5	11.9	11.7	11.8	14.9	11.1	--	10.2	11.1	12.3
Mg	mg/L	75.7	58.1	69.9	49.4	47.0	49.8	61.7	74.0	45.2	--	49.9	66.0	57.4
Na	mg/L	330	108	215	259	284	256	234	241	188	--	137	146	144
NO_2 as N	µg/L	--	--	27.2U	53.1	34.3	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	1050	--	1060	452	6070	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	772	--	--	--	--	1020	914J	781	785	706	616	179
SO_4	mg/L	1100	713	1020	831	829	--	570	828	621	630	570	581	511
Metals														
As	µg/L	3.5	1.7	2.2	2.2	1.3	1	0.97	1.5	1.5	--	1.2	1.8	1.9
Fe	µg/L	2040	8.9U	7.4U	9.1U	11.6U	87.5	17.4	200	25.8	--	80	1U	14.5
Mn	µg/L	1010J	17.7	587	1250	1050	1220	1040	1080	662	--	387	211	100
Mo	µg/L	32.6	42.7	51.5J	34.1	26.4	16.7	15.9J	17.8	18.3	--	11.7	14.7	10.6
Se	µg/L	0.1U	3.6	5.1	0.56	0.10U	0.13	0.3U	0.32	0.3U	--	0.3U	0.55	0.31
U	µg/L	22.8	144	67.6J	12.9	6.8	2.3	9.4	10	11.5	--	18.9	48.8	25.8
V	µg/L	114	132	112	118	117	80.9	78	93.9	101	--	76.6	86.7	91.3
Radiological														
U	µg/L	22.8	144	67.6J	12.9	6.8	2.3	9.4	10	11.5	--	18.9	48.8	25.8

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[c] Sample was unfiltered.
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[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R11-M1[a,b]

Analyte	Unit	10/01/02	04/07/03	07/10/03	10/07/03	04/15/04
Field Measurements						
Alkalinity	mg/L	130	182	185	165	152
Conductivity[c]	µmhos/cm	1420	1684	1566	1487	1401
DO[c]	mg/L	6.8	1.89	2.77	1.13	2.10
ORP[c]	mV	-23.1	42.4	11	5	41.0
pH[c]	s.u.	7	7.13	6.76	6.86	6.94
Temperature[c]	C	15	8.45	20.1	15.2	10.41
Turbidity[c]	NTU	125	423	360	216	84
Common Ions						
Ca	mg/L	83.0	159	136	116	140
Chloride	mg/L	--	96.3	104	97.0	91.0
Fluoride	µg/L	--	17.2UJ	237J	208	200.U
Hardness	mg/L	416	713	588	521	588
K	mg/L	11.7	10.6	11.5	11.3	14.0
Mg	mg/L	50.7	76.8	60.4	56.2	58.0
Na	mg/L	135	135	136	140	110
NO_2 as N	µg/L	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	263	310	152	120.
SO_4	mg/L	--	711	600	538	560
Metals						
As	µg/L	2.2	1.70	1.70	2.00	1.6
Fe	µg/L	51.6	1.30U	21.3	0.800U	9.8U
Mn	µg/L	89.1	20.6	604	343	120
Mo	µg/L	9.4	10.5	9.40	11.6	9.2
Se	µg/L	0.25	6.00	0.100U	0.220	0.3
U	µg/L	24.5	54.1	24.7	23.0	23J
V	µg/L	104	89.0	84.7	104	77
Radiological						
U	µg/L	24.5	54.1	24.7	23.0	23J

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[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R2-M1[a,b]

Analyte	Unit	01/11/00	04/12/00	08/16/00	10/17/00	01/23/01	04/16/01	07/09/01
Field Measurements								
Alkalinity	mg/L	107	--	108	226	228	265	275
Conductivity[c]	µmhos/cm	2570	5040	2490	2660	2440	2360	2170
DO[c]	mg/L	0.16	0.09	0.31	0.3	3.2	0.639	0.056
ORP[c]	mV	-312	-228	-283	-214	-99	32	-71
pH[c]	s.u.	8.02	6.74	7.73	7.87	7.23	7.37	7.23
Temperature[c]	C	10.6	9.5	14	15.1	9.6	10.7	14.5
Turbidity[c]	NTU	17.4	9.07	3.2	5.21	2.43	9.43	9.7
Common Ions								
Ca	mg/L	--	--	--	--	--	191	211
Chloride	mg/L	--	--	--	--	--	--	89.4
Fluoride	µg/L	--	--	--	--	--	--	1380J
Hardness	mg/L	--	--	--	--	--	693	748
K	mg/L	--	--	--	--	--	16.1	19.1
Mg	mg/L	--	--	--	--	--	52.5	53.8
Na	mg/L	--	--	--	--	--	231	239
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	1530J
SO_4	mg/L	--	--	--	--	--	--	771
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	--	--	10600	12400	15100
Mn	µg/L	--	--	--	--	434	360	455
Mo	µg/L	21.8	53.5	20.1	20.5	21.2	26.6	25.6
Se	µg/L	3.5	28.7	0.45	2.2	15.7	42.4	37.4
U	µg/L	18.7	79.7	12.6	35.6	53.3	77.8	70.5
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	18.7	79.7	12.6	35.6	53.3	77.8	70.5

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R2-M10[a,b]

Analyte	Unit	01/12/00	04/12/00	08/15/00	10/18/00	01/22/01	04/16/01	07/09/01
Field Measurements								
Alkalinity	mg/L	123	180	275	170	340	304	375
Conductivity[c]	µmhos/cm	2570	4500	3570	2330	2530	2666	2710
DO[c]	mg/L	0.25	0.04	0.51	0.742	0.7	1	0.178
ORP[c]	mV	-299	-316	-130	-236	-178	-192	-219
pH[c]	s.u.	7.63	7.41	7.98	7.76	7.6	7.7	7.03
Temperature[c]	C	10.7	9.2	16.4	16.6	8.9	9.8	13.9
Turbidity[c]	NTU	7.33	43.9	12	6.48	19	2.8	3.7
Common Ions								
Ca	mg/L	--	--	--	--	--	240	290
Chloride	mg/L	--	--	--	--	--	--	163
Fluoride	µg/L	--	--	--	--	--	--	152
Hardness	mg/L	--	--	--	--	--	901	1070
K	mg/L	--	--	--	--	--	10.9	13.7
Mg	mg/L	--	--	--	--	--	73.2	83.2
Na	mg/L	--	--	--	--	--	222	246
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	34.2
SO_4	mg/L	--	--	--	--	--	--	940
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	--	--	35500	36400	43800
Mn	µg/L	--	--	--	--	449	383	542
Mo	µg/L	0.4U	4.9	4.9	6.8	13.7	17.5	3.9
Se	µg/L	1.5	10	0.25	0.87	10	82.5	14.4
U	µg/L	0.1U	0.1U	0.1U	0.10U	0.27	3.4	1.2
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.1U	0.1U	0.10U	0.27	3.4	1.2

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R2-M2[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/16/01	07/09/01
Field Measurements								
Alkalinity	mg/L	265	285	211	279	250	249	257
Conductivity[c]	µmhos/cm	2900	4930	2600	2740	2480	2270	2210
DO[c]	mg/L	0.21	0.22	0.35	0.3	2.5	0.504	0.063
ORP[c]	mV	48	-36	56	-69	7	-20	-50
pH[c]	s.u.	7.26	6.72	7.08	7.23	6.9	6.93	6.85
Temperature[c]	C	10.9	9	14.2	15	9.2	10.4	11.8
Turbidity[c]	NTU	11.2	5.37	8.19	1.43	8.35	12.5	3.29
Common Ions								
Ca	mg/L	265	255	203	266	219	195	212
Chloride	mg/L	156	127	83.5	85.3	104	94.8J	90.5
Fluoride	µg/L	--	--	--	--	380	327	504J
Hardness	mg/L	984	914	749	939	780	695	747
K	mg/L	21.0	19.2	20.7	22.4	21.6	18.6	20.1
Mg	mg/L	78.3	67.4	58.8	66.8	56.6	50.6	52.8
Na	mg/L	365	282	308	316	261	218	221
NO_2 as N	µg/L	1270	1710	623	1220	--	--	--
NO_3 as N	µg/L	9580	28700	4370	9630	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	10200	10700	6450J
SO_4	mg/L	1230	1170	1080	1130	939	567	757
Metals								
As	µg/L	0.4U	0.24	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	5600	7250	3040	1920	2950	1640	1410
Mn	µg/L	583	548	353	437	489	439	545
Mo	µg/L	28.5	41.2J	56.4	42.6	66.1	62.8	70.5
Se	µg/L	12.8	29.4	2	6.1	39.1	69.2	67.3
U	µg/L	145	161J	143	265	323	329	367
V	µg/L	1U	0.4U	1.2U	1.2U	20.1	26.9	40.8
Radiological								
U	µg/L	145	161J	143	265	323	329	367

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R2-M3[a,b]

Analyte	Unit	01/11/00	04/12/00	08/16/00	10/17/00	01/24/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	343	280	197	333	252	253	273
Conductivity[c]	µmhos/cm	3000	4800	3420	2650	2430	2280	2240
DO[c]	mg/L	0.4	0.13	0.3	0.19	0.1	0.879	0.366
ORP[c]	mV	-149	-144	-158	-142	31	107	-52
pH[c]	s.u.	7.01	6.74	7.58	7.29	7.34	6.86	6.81
Temperature[c]	C	10.9	8.9	16.6	15.8	8.2	8.5	12
Turbidity[c]	NTU	3.93	8.25	4.47	7.05	6.42	3.65	2.36
Common Ions								
Ca	mg/L	--	--	--	--	--	202	228
Chloride	mg/L	--	--	--	--	--	--	98.5
Fluoride	µg/L	--	--	--	--	--	--	362
Hardness	mg/L	--	--	--	--	--	719	801
K	mg/L	--	--	--	--	--	17.0	19.4
Mg	mg/L	--	--	--	--	--	52.2	56.3
Na	mg/L	--	--	--	--	--	219	220
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	5800J
SO_4	mg/L	--	--	--	--	--	--	768
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	--	--	1380	1290	2770
Mn	µg/L	--	--	--	--	305	286	355
Mo	µg/L	32.4J	32.8	46	18	30.8	34.4	45.8
Se	µg/L	17.4	29.3	2.2	11.1	38	59.4	76.4
U	µg/L	228	138	153	206	151	211	288
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.40U	4.6
Radiological								
U	µg/L	228	138	153	206	151	211	288

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R2-M4[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/11/01	10/15/01	01/28/02	04/02/02	07/09/02	09/30/02	04/07/03
Field Measurements														
Alkalinity	mg/L	195	250	319	282	267	272	315	363	355	350	354	356	318
Conductivity[c]	µmhos/cm	3000	4830	2390	2540	2530	2360	2340	2120	1883	2000	1795	1898	1762
DO[c]	mg/L	0.4	0.46	0.26	0.08	0.7	0.71	0.376	0.207	8.12R	0.7	0.82	2.2	2.05
ORP[c]	mV	-121	-133	-184	-116	-125	24	-118	-67	-31	-155	-133	-34.1	-53.6
pH[c]	s.u.	7.63	6.73	7.13	7.42	7.11	7.13	7.01	6.81	6.64	7.06	7	7.2	7.07
Temperature[c]	C	11.3	8.3	14.8	15.2	9.2	8.5	11.9	14.4	9.23	12.4	14.42	14.6	9
Turbidity[c]	NTU	14.7	14.7	--	8.09	12.7	3.23	2.98	7.85	15.9	55.3	3.67	12.2	93.8
Common Ions														
Ca	mg/L	239	236	177	230	227	202	237	222	222	229	205	201	221
Chloride	mg/L	174	149	86.6	107	138	115J	115	99.2	79.9	80.7	75.5	74.6	97.1
Fluoride	µg/L	--	--	--	--	303	280	261	422	162J	364	319J	25.1U	149
Hardness	mg/L	917	901	656	843	829	732	845	785	785	826	754	739	789
K	mg/L	16.0	16.5	18.3	21.1	20.1	16.8	19.6	18.8	15.3	14.7	15.9	15.8	13.4
Mg	mg/L	77.8	75.8	51.9	65.3	63.6	55.2	61.4	56.1	56.0	61.7	58.8	57.5	57.7
Na	mg/L	347	289	275	280	251	217	217	163	142	136	138	132	140
NO_2 as N	µg/L	218	603	578	964	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	5490	13500	4210	4470	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	7720	5260	2760	1420	223	656	498	201	1550
SO_4	mg/L	1230	1120	956	983	925	589	783	645	656	671	638	613	708
Metals														
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U	0.6U	0.6U	0.2	0.58	0.21	0.100
Fe	µg/L	4480	5870	4590	9370	14500	9730	19800	20500	20600	22400	28100	34500	15000
Mn	µg/L	431	426	277	470	419	383	467	304	339	293	264	260	220
Mo	µg/L	24.3	19.1J	35.6	24.2	25.6	28.4	24.9	28.6	16.3	19	19.9	11.6	29.2
Se	µg/L	14.1	27.6	5.9	18.9	45.7	66.7	39.8	43.6	41.5	37	30.6	8.9	51.2
U	µg/L	101	136J	86.4	104	113	124	130	259	178	169	172	90	221
V	µg/L	1U	0.4U	1.2U	1.2U	2.5	0.40U	4.5	31.1	15.4	10	34.6	12.3	5.60
Radiological														
U	µg/L	101	136J	86.4	104	113	124	130	259	178	169	172	90	221

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R2-M4[a,b]

Analyte	Unit	07/10/03	10/08/03	04/16/04
Field Measurements				
Alkalinity	mg/L	350	377	280
Conductivity[c]	µmhos/cm	1909	1918	1549
DO[c]	mg/L	1.85	0.84	1.40
ORP[c]	mV	-66	-52	-52.4
pH[c]	s.u.	6.79	6.85	7.10
Temperature[c]	C	13.7	14.2	9.13
Turbidity[c]	NTU	29.1	50.9	29.1
Common Ions				
Ca	mg/L	233	237	220
Chloride	mg/L	91.6	91.1	80.0
Fluoride	µg/L	310J	265	290.
Hardness	mg/L	820	837	763
K	mg/L	13.8	13.5	20.0
Mg	mg/L	57.9	59.6	52.0
Na	mg/L	133	128	110
NO_2 as N	µg/L	--	--	--
NO_3 as N	µg/L	--	--	--
NO_3+NO_2 as N	µg/L	870	960	610.
SO_4	mg/L	637	679	560
Metals				
As	µg/L	0.460	0.700	0.56
Fe	µg/L	13900	13400	8100
Mn	µg/L	190	170	160
Mo	µg/L	35.0	38.9	50
Se	µg/L	36.4	40.4	25
U	µg/L	394	416	360J
V	µg/L	26.9	46.8	35
Radiological				
U	µg/L	394	416	360J

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R2-M5[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	331	265	375	311	301	252	295
Conductivity[c]	µmhos/cm	3010	3110	2510	2610	2570	2440	2340
DO[c]	mg/L	0.25	0.5	0.88	0.3	0	0.867	0.358
ORP[c]	mV	-173	-35	-99	-60	-119	-98	-99
pH[c]	s.u.	6.93	6.9	6.74	7.05	6.83	6.86	6.33
Temperature[c]	C	10.1	8.3	16	15.1	9.1	8.8	13.2
Turbidity[c]	NTU	5.35	6.08	21.1	1.24	3.68	3.16	9.79
Common Ions								
Ca	mg/L	--	--	--	--	--	223	243
Chloride	mg/L	--	--	--	--	--	--	122
Fluoride	µg/L	--	--	--	--	--	--	341
Hardness	mg/L	--	--	--	--	--	792	865
K	mg/L	--	--	--	--	--	16.8	20.3
Mg	mg/L	--	--	--	--	--	57.0	62.8
Na	mg/L	--	--	--	--	--	219	240
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	5230
SO_4	mg/L	--	--	--	--	--	--	816
Metals								
As	µg/L	0.4U	0.2U	0.34	0.83	1.7	3	2.6
Fe	µg/L	--	--	--	--	3920	2540	5010
Mn	µg/L	--	--	--	--	302	285	357
Mo	µg/L	33.3J	39	50.6	52.6	45.5	48.4	47.8
Se	µg/L	26.1	41.7	9.3	41.4	68.4	106	92.6
U	µg/L	346	344	209	283	320	321	298
V	µg/L	1U	6.1	39.7	78.2	105	132	144
Radiological								
U	µg/L	346	344	209	283	320	321	298

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R2-M6[a,b]

Analyte	Unit	01/11/00	04/12/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	354	315	250	311	307	300	329
Conductivity[c]	µmhos/cm	3050	5180	4210	2640	2690	2530	2590
DO[c]	mg/L	0.27	0.31	0.78	0.6	0.2	0.494	0.378
ORP[c]	mV	-63	-82	214	13	23	-29	-80
pH[c]	s.u.	6.57	6.28	7.08	6.84	6.85	6.7	6.35
Temperature[c]	C	10	9.3	16.1	15.9	9.6	9	11.9
Turbidity[c]	NTU	3.67	2.96	1.86	1.65	96.3	2.03	11.1
Common Ions								
Ca	mg/L	--	--	--	--	--	256	295
Chloride	mg/L	--	--	--	--	--	--	147
Fluoride	µg/L	--	--	--	--	--	--	336
Hardness	mg/L	--	--	--	--	--	897	1040
K	mg/L	--	--	--	--	--	13.6	16.1
Mg	mg/L	--	--	--	--	--	62.7	74.4
Na	mg/L	--	--	--	--	--	220	264
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	6540
SO_4	mg/L	--	--	--	--	--	--	900
Metals								
As	µg/L	0.86	1.1	0.51	0.27	0.73	0.5U	0.91
Fe	µg/L	--	--	--	--	617	575	3610
Mn	µg/L	--	--	--	--	173	116	201
Mo	µg/L	43.2J	38.9	53.1	32.4	36.7	33.4J	36.3
Se	µg/L	37.6	63	10	12.9	69.1	110	106
U	µg/L	677	466	310	257	334	358	316
V	µg/L	103	82.3	39.9	30.6	51.5	44.3	83.9
Radiological								
U	µg/L	677	466	310	257	334	358	316

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R2-M7[a,b]

Analyte	Unit	01/11/00	04/11/00	08/15/00	10/16/00	01/23/01	04/17/01	07/10/01	10/11/01	10/15/01	01/28/02	04/02/02	07/09/02	09/30/02
Field Measurements														
Alkalinity	mg/L	382	316	279	237	275	292	333	428	--	825	363	392	421
Conductivity[c]	µmhos/cm	3260	3230	4030	2460	2490	2600	2580	2290	--	2140	2090	1888	2043
DO[c]	mg/L	0.45	0.67	0.48	0.6	0	0.602	0.292	0.171	--	0.354	0.7	--	3
ORP[c]	mV	31	102	-56	-90	-25	-80	-196	-164	--	-82	-94	-104	-24.1
pH[c]	s.u.	6.59	6.49	7	7	7.22	6.83	6.78	7.3	--	6.89	6.91	7.04	7.02
Temperature[c]	C	10.5	8.6	14.8	15.4	9.4	9.3	12.2	14.1	--	8.3	10.9	13.96	16.1
Turbidity[c]	NTU	8.58	3.15	5.29	9.17	4.8	8.9	4.01	1.87	--	25.8	13.9	1.19	7.75
Common Ions														
Ca	mg/L	383	301	223	211	227	232	263	233	--	242	251	229	229
Chloride	mg/L	198	196	109	107	149	133J	151	118	120	90.4	93.7	85.2	81.8
Fluoride	µg/L	--	--	--	--	271	252	230	372	443	26.2UJ	25.1U	536	236
Hardness	mg/L	1380	1090	806	778	856	849	976	833	--	867	907	833	823
K	mg/L	17.7	12.9	13.8	14.6	13.6	12.0	15.7	13.9	--	12.7	12.1	12.5	13.0
Mg	mg/L	102	81.9	60.4	60.9	70.2	65.5	77.5	61.1	--	63.9	68.0	63.5	61.1
Na	mg/L	332	260	279	284	265	222	262	186	--	152	143	143	132
NO_2 as N	µg/L	65.8	48.4	44.2	49.9	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	14000	23800	4110	3190	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	4670	6760	128	175	22.2	280	366	129	188
SO_4	mg/L	1280	1200	976	933	967	787	877	780	812	755	718	653	656
Metals														
As	µg/L	0.79	0.86	0.3U	0.2U	0.2U	0.5U	0.5U	0.6U	--	0.6U	0.13	0.11	0.1U
Fe	µg/L	--	--	3780	3630	2140	5050	20400	40900J	--	30100	24600	30000	27200
Mn	µg/L	--	--	197	191	221	258	607	447	--	512	333	327	268
Mo	µg/L	42.1J	37J	46.3	46.2	32	24.7	13.5	7.6	--	9.3	1.8U	9.8	13.3
Se	µg/L	48.6	83	6.4	4	28.8	73.8	11.1	11.5	--	13.5	22	12.1	13.8
U	µg/L	654	522	274	168	249	291	109	104	--	108	130	90	128
V	µg/L	133	88.3	24.2	17.3	15.9	14.7	4.2	1.1	--	0.57	2.1	1.3	4.3
Radiological														
U	µg/L	654	522	274	168	249	291	109	104	--	108	130	90	128

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R2-M7[a,b]

Analyte	Unit	04/07/03	07/10/03	10/08/03	04/16/04
Field Measurements					
Alkalinity	mg/L	356	368	391	281
Conductivity[c]	µmhos/cm	1821	1963	1934	1479
DO[c]	mg/L	1.55	1.97	0.84	2.62
ORP[c]	mV	-61.1	-90	-65	-116.1
pH[c]	s.u.	6.9	6.95	6.93	7.24
Temperature[c]	C	8.64	14.4	15.2	10.10
Turbidity[c]	NTU	47.6	17	21.2	18.0
Common Ions					
Ca	mg/L	247	236	248	210
Chloride	mg/L	92.8	98.6	98.0	80.0
Fluoride	µg/L	121	92.4J	344	340.
Hardness	mg/L	886	854	884	739
K	mg/L	10.9	11.0	12.1	16.0
Mg	mg/L	65.3	64.3	64.4	52.0
Na	mg/L	127	132	136	100
NO_2 as N	µg/L	--	--	--	--
NO_3 as N	µg/L	--	--	--	--
NO_3+NO_2 as N	µg/L	603	117	838	25
SO_4	mg/L	711	663	679	510
Metals					
As	µg/L	0.100U	0.100U	0.100U	0.016U
Fe	µg/L	16000	12000	12500	14000
Mn	µg/L	263	275	192	200
Mo	µg/L	10.9	21.6	30.0	27
Se	µg/L	39.4	11.1	27.2	0.34
U	µg/L	249	334	339	190J
V	µg/L	1.10	1.40	19.8	2.9
Radiological					
U	µg/L	249	334	339	190J

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R2-M8[a,b]

Analyte	Unit	01/12/00	04/12/00	08/16/00	10/18/00	01/23/01	04/16/01	07/10/01
Field Measurements								
Alkalinity	mg/L	391	370	312	318	404	353	328
Conductivity[c]	µmhos/cm	3190	5150	2770	2660	2550	2710	2610
DO[c]	mg/L	0.57	0.14	0.24	--	0	0.794	0.263
ORP[c]	mV	-157	-206	-134	-146	-73	-100	-144
pH[c]	s.u.	7.16	6.82	6.96	7.35	7.24	6.93	6.59
Temperature[c]	C	8.1	9	16.3	15.7	7.4	9.8	12.4
Turbidity[c]	NTU	22.6	43.9	6.2	5.72	12.6	23.2	15.9
Common Ions								
Ca	mg/L	--	--	--	--	--	262	291
Chloride	mg/L	--	--	--	--	--	--	152
Fluoride	µg/L	--	--	--	--	--	--	289
Hardness	mg/L	--	--	--	--	--	934	1050
K	mg/L	--	--	--	--	--	11.7	16.2
Mg	mg/L	--	--	--	--	--	67.9	77.8
Na	mg/L	--	--	--	--	--	219	231
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	3420
SO_4	mg/L	--	--	--	--	--	--	911
Metals								
As	µg/L	0.4U	0.21	0.3U	0.2U	0.2U	0.5U	0.56
Fe	µg/L	--	--	--	--	10000	9770	14500
Mn	µg/L	--	--	--	--	228	223	336
Mo	µg/L	27.4	12	20.4	17	16.7	16.3	15
Se	µg/L	35.1	49	15.5	11.5	54.6	95	71.1
U	µg/L	208	108	147	155	190	251	204
V	µg/L	1.1	0.4U	11.3	6.9	15.1	23.4	21.8
Radiological								
U	µg/L	208	108	147	155	190	251	204

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R2-M9[a,b]

Analyte	Unit	01/12/00	04/12/00	08/15/00	10/16/00	01/22/01	04/16/01	07/09/01
Field Measurements								
Alkalinity	mg/L	330	365	227	334	364	354	346
Conductivity[c]	µmhos/cm	2890	5260	4340	2700	2800	2700	2680
DO[c]	mg/L	0.3	0.18	0.62	1.4	0.2	0.769	0.779
ORP[c]	mV	-224	-158	-60	-62	-71	-100	-157
pH[c]	s.u.	7.23	6.64	6.79	6.44	7.01	7.08	6.56
Temperature[c]	C	10.4	8.1	16.2	16.4	8.3	10.5	13.3
Turbidity[c]	NTU	7.51	8.54	9.43	4.6	13.2	12.7	11.3
Common Ions								
Ca	mg/L	--	317	237	261	265	267	303
Chloride	mg/L	--	200	134	124	165	167J	156
Fluoride	µg/L	--	--	--	--	303	306	262
Hardness	mg/L	--	1160	892	949	971	961	1090
K	mg/L	--	9.65	12.3	12.6	12.3	11.8	15.2
Mg	mg/L	--	90.5	72.9	72.3	75.1	71.4	80.1
Na	mg/L	--	267	283	281	264	228	251
NO_2 as N	µg/L	--	--	627	643	--	--	--
NO_3 as N	µg/L	--	--	4570	5640	--	--	--
NO_3+NO_2 as N	µg/L	--	12100	--	--	6380	6970	2980
SO_4	mg/L	--	1180	1010	1020	1060	466	925
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.21	0.2U	0.5U	0.52
Fe	µg/L	--	22000	15800	13000	14700	16500	22600
Mn	µg/L	--	483	264	203	240	269	311
Mo	µg/L	20.4	16.9	19.5	24.9	17.5	16.4	14
Se	µg/L	18.4	56.6	16.1	9.7	49.6	91.1	68.6
U	µg/L	60.1	96.6	124	121	118	112	118
V	µg/L	1U	0.40U	8.7	23.8	30.2	31.4	43.8
Radiological								
U	µg/L	60.1	96.6	124	121	118	112	118

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R3-M1[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/16/01	07/09/01
Field Measurements								
Alkalinity	mg/L	236	--	230	288	280	267	298
Conductivity[c]	µmhos/cm	2910	--	2610	2700	2540	2340	2230
DO[c]	mg/L	0.2	--	0.22	0.1	--	0.967	0.044
ORP[c]	mV	-75	--	-132	-184	-52	-57	-111
pH[c]	s.u.	7.44	--	7.12	7.46	7.25	7.1	7.06
Temperature[c]	C	10.9	--	14.7	15.6	7.3	10.7	12
Turbidity[c]	NTU	14.4	--	4.45	2.77	2.13	3.47	2.26
Common Ions								
Ca	mg/L	220	241	205	247	217	192	219
Chloride	mg/L	159	129	83.9	86.8	108	97.3J	91.9
Fluoride	µg/L	--	--	--	--	325	337	379J
Hardness	mg/L	873	867	754	892	783	688	768
K	mg/L	21.7	18.2	20.9	22.0	21.1	17.8	19.5
Mg	mg/L	78.5	64.5	58.9	66.8	58.5	50.7	53.6
Na	mg/L	362	274	306	312	260	217	227
NO_2 as N	µg/L	734	1120	646	1260	--	--	--
NO_3 as N	µg/L	3840	29500	3940	5850	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	4500	6940	3510J
SO_4	mg/L	1240	1170	1080	1110	949	578	765
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	21600	13200	7820	8970	14600	10800	12600
Mn	µg/L	880	466	360	484	529	480	508
Mo	µg/L	18.7	44.5J	55.8	34.6	42.9	47.4	43.8
Se	µg/L	9	31.5	2.7	5.3	35	60.8	53.3
U	µg/L	41.4	157J	135	160	131	166	184
V	µg/L	1U	3	1.2U	1.5	6	18.1	5.4
Radiological								
U	µg/L	41.4	157J	135	160	131	166	184

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R3-M2[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/16/01	07/11/01	09/30/02	04/07/03	07/10/03	10/08/03	04/16/04	10/04/04
Field Measurements														
Alkalinity	mg/L	180	330	220	294	293	276	318	399	308	357	399	315	366
Conductivity[c]	µmhos/cm	2850	4920	2450	2550	2510	2390	2370	1961	1915	1731	1907	1549	1740
DO[c]	mg/L	0.23	0.28	0.22	0.196	0.9	0.78	0.369	3.2	1.82	2.05	1	2.20	0.57
ORP[c]	mV	-187	-211	-177	-156	-129	-13	-85	-34	-97.2	-93	-111	-148.1	-119
pH[c]	s.u.	7.55	7	7.08	7.52	7.16	7.03	6.89	7.19	7.06	6.95	6.96	7.38	6.95
Temperature[c]	C	11.2	8.1	15.3	15.2	9.2	8.5	12.3	15	9.08	14.6	14.6	9.53	13.8
Turbidity[c]	NTU	2.46	7.4	2.8	13.6	14.3	7.16	4.18	14.5	47.9	16	126	19.8	19.7
Common Ions														
Ca	mg/L	224	263	184	239	234	232	246	222	238	232	242	240	250
Chloride	mg/L	175	146	85.6	108	108	115J	116	74.3	103	90.1	92.7	80.0	46.0
Fluoride	µg/L	--	--	--	--	209	330	337	259	188	390J	279	350.	400.
Hardness	mg/L	894	955	679	866	852	825	870	794	838	817	853	822	847
K	mg/L	16.6	16.2	18.3	21.4	20.5	17.7	20.0	15.7	14.0	13.7	14.0	20.0	15.0
Mg	mg/L	81.3	72.5	53.4	65.4	65.0	59.7	62.0	58.1	59.3	57.8	60.4	54.0	54.0
Na	mg/L	355	270	283	283	255	227	215	129	145	132	131	110	95.0
NO_2 as N	µg/L	8.5U	712	795	988	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	1810	15000	4630	4860	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	4300	7970	3720	118	1930	813	534	310.	200.
SO_4	mg/L	1260	1110	956	981	755	608	791	624	729	652	678	580	580
Metals														
As	µg/L	0.4U	0.25	0.3U	0.2U	0.2U	0.5U	0.5U	0.1U	0.100U	0.120	0.100	0.12	0.17
Fe	µg/L	7710	11900	8710	20000	19400	12400	17300	36700	15800	22600	21500	20000	11000
Mn	µg/L	635	498	343	488	417	345	431	288	277	240	194	240	120
Mo	µg/L	24.8	21.2J	42.4	24.9	31.4	35	32.5	16.9	37.2	38.9	33.0	51	55
Se	µg/L	8.5	33.2	6.5	19.8	43.4	93.4	62.8	10.6	68.4	22.0	19.6	12	18
U	µg/L	15.9	98.2J	70.6	65	69.9	188	215	97	263	255	282	350J	450J
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	6.5	15.6	2.4	1.10	3.40	12.8	3.4	11
Radiological														
U	µg/L	15.9	98.2J	70.6	65	69.9	188	215	97	263	255	282	350J	450J

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Alluvial Groundwater -- Down Gradient -- R3-M2[a,b]

Analyte	Unit	04/06/05	10/03/05	04/04/06	10/02/06	04/10/07	10/08/07	04/07/08[c]	10/08/08	04/08/09	10/06/09	04/19/10	10/11/10	04/04/11
Field Measurements														
Alkalinity	mg/L	255	283	316	336	334	335	262	250	322	333	281	325	320
Conductivity[c]	µmhos/cm	1613	1137	1734	1930	1603	1737	2006	1408	1402	1875	1650	1902	1920
DO[c]	mg/L	0.90	1.80	1.11	1.07	0.78	0.22	1.62	9.26	1.02	1.45	0.60	0.61	0.90
ORP[c]	mV	-168.5	-104	-12.6	-65	-88.0	-170	-72.6	-6.1	-174	-113	-92	-86.2R	-75
pH[c]	s.u.	7.50	7.09	6.88	6.90	7.37	7.31	7.07	7.15	7.33	7.23	7.49	6.82	7.10
Temperature[c]	C	9.70	13.6	8.01	14.40	7.85	13.9	8.14	11.69	8.30	12.0	8.8	12.39	8.9
Turbidity[c]	NTU	13.1	9.69	32.6	15.0	18.5	24.5	16.0	3.98	4.47	8.58	25.2	6.22	16.1
Common Ions														
Ca	mg/L	190	140	250	360	330	280	260	190	310J	260J	240	250	268
Chloride	mg/L	99.0	49.0	72.0	59.0	86.0	56.0	140	62.0	78.0	79.0	85.0	75.0	77.8
Fluoride	µg/L	400.	450.	390.	610.	330.	630.	320.	880.	410.	510.	420.	530.	432
Hardness	mg/L	660	469	843	1170	1100	950	900	652	1040J	876J	826	826	910
K	mg/L	17.0	14.0	18.0	22.0	18.0	21.0	16.0	17.0J	18.0J	16.0J	16.0J	17.0J	11.0
Mg	mg/L	45.0	29.0	53.0	67.0	68.0	61.0	61.0	43.0	65.0	55.0	55.0	49.0	58.4
Na	mg/L	110	87.0	93.0	130	110	110	110	100	120J	110J	110	110	102
NO_2 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	880.	170.	230.	220.	190.	46	1100.	10.U	110.	10.U	140.	15	10U
SO_4	mg/L	520	300	640	750	750	690	680	480	720	640	620	580	728
Metals														
As	µg/L	0.17	0.007U	0.0075U	0.012U	0.012U	0.17	0.53	0.26	0.15U	0.24	0.24	0.22	1.70U
Fe	µg/L	5200	4200	6500	7900	6900	6300	5200	5500	7000	6500	4800	5100	3910
Mn	µg/L	140	130	200	220	200	220	180	180	260	250	180	200	198
Mo	µg/L	76	73	60	70	74	72	110	87	69	69	120	81	66.8
Se	µg/L	12	6.7	12	14	11	5.8	12	2.3	6.4	3.1	3.1	1.3	1.50U
U	µg/L	500	290	600	540	640	560	490	430	550	480	590	480	687
V	µg/L	4.4	3.4	8.3	3.5	6.8J	5.3J	21	0.97	1.2	1.3	1.1	0.95	3.00U
Radiological														
U	µg/L	500	290	600	540	640	560	490	430	550	480	590	480	687

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R3-M2[a,b]

Analyte	Unit	10/10/11	04/24/12
Field Measurements			
Alkalinity	mg/L	390	254
Conductivity[c]	µmhos/cm	2009	1880
DO[c]	mg/L	0.47	1.27
ORP[c]	mV	-83.4	-45.0
pH[c]	s.u.	7.00	7.21
Temperature[c]	C	11.57	9.20
Turbidity[c]	NTU	1.99	5.46
Common Ions			
Ca	mg/L	280	280
Chloride	mg/L	96.0	72.0
Fluoride	µg/L	520.	410.
Hardness	mg/L	946	954
K	mg/L	11.0	16.0J
Mg	mg/L	60.0	62.0
Na	mg/L	100	120J
NO_2 as N	µg/L	--	--
NO_3 as N	µg/L	--	--
NO_3+NO_2 as N	µg/L	80.	49
SO_4	mg/L	670	750
Metals			
As	µg/L	0.27J	0.21
Fe	µg/L	4700	2400
Mn	µg/L	190	220
Mo	µg/L	70	61
Se	µg/L	2.9J	3.3
U	µg/L	640	540
V	µg/L	1.6J	1.4
Radiological			
U	µg/L	640	540

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R3-M3[a,b]

Analyte	Unit	01/11/00	04/11/00	08/15/00	10/16/00	01/23/01	04/17/01	07/10/01	09/30/02	04/07/03	07/10/03	10/08/03	04/16/04	10/04/04
Field Measurements														
Alkalinity	mg/L	389	317	292	235	316	303	387	399	343	367	414	280	440
Conductivity[c]	µmhos/cm	3220	3250	3970	2320	2670	2540	2630	2061	1910	1907	1952	1547	1815
DO[c]	mg/L	0.47	0.44	0.56	0.7	0.1	1.014	0.295	3.9	1.43	2.08	0.79	2.21	0.40
ORP[c]	mV	-72	113	-39	-107	-126	-126	-192	-13.8	-50.1	-65	-107	-149.5	-169
pH[c]	s.u.	6.66	6.47	7.23	7.18	7.32	7.03	6.75	6.85	6.93	6.85	6.96	7.45	7.29
Temperature[c]	C	10.4	8.5	15.1	16	10.1	9.1	12.6	16.3	8.73	14.9	14.9	10.52	14.3
Turbidity[c]	NTU	8.85	3.03	2.79	9.26	3.77	22.7	7.94	11.8	33.3	15.4	20.2	11.6	3.40
Common Ions														
Ca	mg/L	380	258	227	208	241	241	293	247	246	225	232	230	260
Chloride	mg/L	199	196	106	103	150	131J	151	81.7	98.6	97.4	96.4	77.0	52.0
Fluoride	µg/L	--	--	--	--	302	250	254	350	192	151J	242	390.	440.
Hardness	mg/L	1360	929	812	755	885	876	1050	877	890	825	828	801	884
K	mg/L	18.2	11.0	14.5	15.0	13.3	12.4	15.7	13.3	10.3	11.1	11.3	17.0	13.0
Mg	mg/L	100	69.2	59.5	57.3	68.8	66.6	77.3	63.3	66.9	63.8	60.3	55.0	57.0
Na	mg/L	334	220	278	285	260	227	261	134	127	132	134	110	98.0
NO_2 as N	µg/L	104	65.1	125	64.8	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	13500	23300	3820	1940	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	6490	4340	1500	390	484	502	456	10.U	24
SO_4	mg/L	1290	1200	981	921	976	790	900	665	704	650	661	520	570
Metals														
As	µg/L	0.4U	0.36	0.3U	0.2U	0.2U	0.5U	0.5U	0.1U	0.100U	0.100U	0.100U	0.016U	0.018U
Fe	µg/L	--	--	1010	1290	6830	2610	17800	23000	6030	8870	10000	9900	28000
Mn	µg/L	--	--	197	172	269	296	587	212	161	204	148	170	230
Mo	µg/L	38J	35.1J	51.2	53.6	25.6	23.9J	18	16.3	23.6	30.6	23.0	51	22
Se	µg/L	45.2	82.4	8.4	4	37.2	56.9	30.4	18.1	39.5	20.5	19.1	0.33	1.2
U	µg/L	594	534	345	202	268	286	164	192	326	262	322	190J	300J
V	µg/L	40.5	53	15.1	7.9	4.7	6.7	2.1	4.4	6.40	5.20	3.40	0.41	0.13J
Radiological														
U	µg/L	594	534	345	202	268	286	164	192	326	262	322	190J	300J

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R3-M3[a,b]

Analyte	Unit	04/06/05	10/03/05	04/04/06	10/02/06	04/10/07	10/08/07	04/07/08[c]	10/07/08	04/07/09	10/06/09	04/19/10	10/11/10	04/04/11
Field Measurements														
Alkalinity	mg/L	197	324	371	392	335	343	228	216	288	671	283	297	420
Conductivity[c]	µmhos/cm	1743	1381	1892	1902	1915	1695	2078	1520	1232	1775	1700	1823	2000
DO[c]	mg/L	1.03	1.51	0.90	5.87	2.66	0.30	1.99	3.47	0.60	0.57	0.44	0.50	0.88
ORP[c]	mV	-216.6	-184	-76.5	-76	-92.0	-168	-75.9	-143	-189	-137	-155	-91.6R	-105
pH[c]	s.u.	8.01	7.54	6.96	6.81	7.41	7.49	7.01	7.47	7.65	7.55	7.74	6.85	7.38
Temperature[c]	C	10.22	14.3	7.70	14.4	8.67	13.9	8.30	12.57	8.87	11.2	9.3	12.73	9.6
Turbidity[c]	NTU	5.63	9.20	6.87	6.02	13.5	17.0	3.79	5.6	1.55	6.87	8.28	4.21	21.3
Common Ions														
Ca	mg/L	160	170	270	310	320	250	260	170	280J	240J	240	220	245
Chloride	mg/L	110	65.0	84.0	67.0	86.0	56.0	160	59.0	78.0	79.0	110	73.0	61.9
Fluoride	µg/L	270.	370.	310.	470.	360.	580.	230.	560.	510.	460.	300.	460.	414
Hardness	mg/L	597	573	905	1050	1090	871	921	597	971J	826J	834	755	854
K	mg/L	16.0	13.0	16.0	19.0	17.0	20.0	16.0J	16.0J	18.0J	16.0J	16.0J	16.0J	11.1
Mg	mg/L	48.0	36.0	56.0	67.0	70.0	60.0	66.0	42.0	66.0	55.0	57.0	50.0	58.8
Na	mg/L	110	95.0	98.0	130	120	110	110	98.0	120J	110J	110	110	104
NO_2 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	16	10.U	56	13	10.U	10.U	10.U	10.U	100.U	10.U	10.U	10.U	10U
SO_4	mg/L	520	350	680	730	730	670	720	460	700	610	630	530	688
Metals														
As	µg/L	0.081	0.007U	0.0075U	0.012U	0.012U	0.12	0.14	0.15	0.11U	0.19	0.22	0.24	1.70U
Fe	µg/L	4900	12000	21000	13000	13000	11000	8100	5200	8600	8800	8900	6500	7680
Mn	µg/L	77	180	230	220	190	220	150	130	190	200	180	140	189
Mo	µg/L	55	46	18	33	36	42	51	65	53	56	47	46	60.9
Se	µg/L	0.38	0.34	1.4	0.8	0.038U	0.13	0.56	0.31	0.12U	0.3	0.33	0.3	1.50U
U	µg/L	150	170	500	270	430	400	400	290	310	310	260	300	384
V	µg/L	0.41UR	0.1U	0.14UJ	0.21U	0.29J	0.095U	0.69	0.1U	0.099U	0.094J	0.14	0.35	3.00U
Radiological														
U	µg/L	150	170	500	270	430	400	400	290	310	310	260	300	384

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R3-M3[a,b]

Analyte	Unit	10/10/11	04/24/12
Field Measurements			
Alkalinity	mg/L	354	286
Conductivity[c]	µmhos/cm	1906	1840
DO[c]	mg/L	0.53	3.26
ORP[c]	mV	-137.6	-70
pH[c]	s.u.	7.26	7.31
Temperature[c]	C	12.72	9.90
Turbidity[c]	NTU	1.18	22.4
Common Ions			
Ca	mg/L	240	260
Chloride	mg/L	91.0	74.0
Fluoride	µg/L	470.	400.
Hardness	mg/L	838	909
K	mg/L	11.0	17.0J
Mg	mg/L	58.0	63.0
Na	mg/L	99.0	120J
NO_2 as N	µg/L	--	--
NO_3 as N	µg/L	--	--
NO_3+NO_2 as N	µg/L	20.	25
SO_4	mg/L	630	730
Metals			
As	µg/L	0.31J	0.23
Fe	µg/L	8500	8400
Mn	µg/L	200	180
Mo	µg/L	45	55
Se	µg/L	0.22J	0.28
U	µg/L	340	350
V	µg/L	0.015U	0.11
Radiological			
U	µg/L	340	350

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R3-M4[a,b]

Analyte	Unit	01/12/00	04/12/00	08/15/00	10/16/00	01/22/01	04/16/01	07/09/01
Field Measurements								
Alkalinity	mg/L	247	375	225	300	342	388	345
Conductivity[c]	µmhos/cm	2810	5300	4070	2600	2770	2800	2690
DO[c]	mg/L	0.27	0.11	0.5	1.5	0.4	0.974	0.296
ORP[c]	mV	-290	-212	-203	-182	-121	-112	-151
pH[c]	s.u.	7.5	6.84	7.32	7.4	7.38	7.12	6.61
Temperature[c]	C	10.4	8.1	16.8	16.5	8.2	10.3	13.1
Turbidity[c]	NTU	2.95	11.9	7.81	8.49	13.2	16.9	6.2
Common Ions								
Ca	mg/L	--	312	197	246	259	275	303
Chloride	mg/L	--	201	130	122	165	170J	155
Fluoride	µg/L	--	--	--	--	321	273	288
Hardness	mg/L	--	1150	785	919	956	984	1090
K	mg/L	--	9.49	12.3	12.9	12.5	11.7	15.5
Mg	mg/L	--	90.9	71.1	73.9	75.1	72.1	80.3
Na	mg/L	--	247	289	288	263	228	253
NO_2 as N	µg/L	--	--	168	827	--	--	--
NO_3 as N	µg/L	--	--	470	3380	--	--	--
NO_3+NO_2 as N	µg/L	--	10900	--	--	5060	9040	3340
SO_4	mg/L	--	1190	1010	1020	1050	470	919
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	31100	25700	20700	22700	15300	24200
Mn	µg/L	--	606	401	359	321	224	309
Mo	µg/L	10	15.1	10.6	16	16.8	18.9	17.7
Se	µg/L	13.1	54	6.1	6.4	47.4	97.1	69
U	µg/L	1.7	36.5	27	85	73.2	164	161
V	µg/L	1U	0.4U	1.2U	1.2U	3.6	11.2	15.6
Radiological								
U	µg/L	1.7	36.5	27	85	73.2	164	161

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[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R4-M1[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/16/01	07/09/01
Field Measurements								
Alkalinity	mg/L	43	83	50	39	67	118	105
Conductivity[c]	µmhos/cm	2610	4320	2360	2330	2080	2060	1913
DO[c]	mg/L	0.18	0.06	0.16	0.19	1.6	0.605	0.099
ORP[c]	mV	-186	-533	-393	-380	-325	-148	-181
pH[c]	s.u.	7.76	8.34	9.38	9.4	8.1	8.28	7.94
Temperature[c]	C	11.2	10.4	13.7	15.1	9.7	9.9	12.2
Turbidity[c]	NTU	7.62	84	4.34	3.78	3.79	8.78	3.97
Common Ions								
Ca	mg/L	120	137	127	94.6	83.6	106	102
Chloride	mg/L	157	126	85.3	89.3	108	98.5J	90.9
Fluoride	µg/L	--	--	--	--	194	417	742J
Hardness	mg/L	610	625	548	561	449	493	474
K	mg/L	21.6	19.4	20.9	22.3	21.1	18.7	19.5
Mg	mg/L	75.4	68.8	56.0	78.9	58.4	55.5	53.2
Na	mg/L	363	289	316	311	262	234	220
NO_2 as N	µg/L	8.5U	560	27.0U	13.6U	--	--	--
NO_3 as N	µg/L	18.1U	5750	31.0U	14.8U	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	7.1U	4.7U	4.7UJ
SO_4	mg/L	1140	1140	1070	1060	837	495	709
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	95.8	13200	338	687	7950	15300	15900
Mn	µg/L	223	744	89	562	616	342	364
Mo	µg/L	0.4U	10.8J	5	5.1	0.73	0.30U	2.9U
Se	µg/L	0.1U	3.8	0.11	0.1U	0.12	2.7	2.6
U	µg/L	0.1U	0.10UJ	0.10U	0.10U	0.1U	0.10U	0.1U
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.10UJ	0.10U	0.10U	0.1U	0.10U	0.1U

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R4-M2[a,b]

Analyte	Unit	01/11/00	04/12/00	08/16/00	10/17/00	01/24/01	04/16/01	07/10/01
Field Measurements								
Alkalinity	mg/L	32	105	31	110	120	149	218
Conductivity[c]	µmhos/cm	2500	4420	3500	2320	2230	2180	2160
DO[c]	mg/L	0.14	0.09	0.53	0.37	0	1.1	0.193
ORP[c]	mV	-390	-308	-15	-239	-273	-190	-177
pH[c]	s.u.	9.03	7.45	8.65	7.86	7.97	8.06	7.58
Temperature[c]	C	11.7	9.8	17.2	16.3	9.3	12.2	12.1
Turbidity[c]	NTU	5.05	5.18	3.69	10.5	7.68	4.71	3.02
Common Ions								
Ca	mg/L	--	--	--	--	--	129	174
Chloride	mg/L	--	--	--	--	--	--	109
Fluoride	µg/L	--	--	--	--	--	--	539
Hardness	mg/L	--	--	--	--	--	547	680
K	mg/L	--	--	--	--	--	16.5	19.5
Mg	mg/L	--	--	--	--	--	54.5	59.6
Na	mg/L	--	--	--	--	--	220	220
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	4.7UJ
SO_4	mg/L	--	--	--	--	--	--	767
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	--	--	21600	25000	36200
Mn	µg/L	--	--	--	--	402	350	483
Mo	µg/L	0.4UJ	4.6	5.7	0.3U	1.9	6.4	2.9U
Se	µg/L	0.1U	6.8	0.11	0.1U	2.4	25.9	4
U	µg/L	0.11	0.10U	0.10U	0.10U	0.1U	0.1U	0.1U
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.11	0.10U	0.10U	0.10U	0.1U	0.1U	0.1U

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[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R4-M3[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/11/01	10/15/01	01/31/02	04/02/02	07/09/02	09/30/02	04/07/03
Field Measurements														
Alkalinity	mg/L	39	45	30	93	60	92	88	278	241	288	355	284	267
Conductivity[c]	µmhos/cm	2710	4330	2100	2240	2080	2090	1936	1870	1730	1874	1767	1647	1735
DO[c]	mg/L	0.43	0.05	0.13	0.06	0	0.856	0.597	0.178	0.78	0.6	0.83	1.6	1.69
ORP[c]	mV	-352	-414	-423	-316	-286	-74	-162	-189	-137	-203	-216	-52	-138.8
pH[c]	s.u.	9.3	8.05	8.5	8.19	8.05	7.64	7.73	7.61	7.48	7.45	7.54	7.51	7.07
Temperature[c]	C	11.8	8.8	14.7	15.7	9.2	8.8	12.5	14.5	8.47	11.6	14.98	15.5	8.87
Turbidity[c]	NTU	2.99	6.8	3.22	3.28	13.6	4.42	3.39	8.31	4.2	17	6.84	12.1	16.5
Common Ions														
Ca	mg/L	137	138	82.5	105	102	118	103	144	169	182	188	150	163
Chloride	mg/L	177	158	87.6	108	136	117J	117	98.1	80.1	80.4	73.8	73.1	93.1
Fluoride	µg/L	--	--	--	--	416	731	695	413	177	248	25.1UJ	141	90.7
Hardness	mg/L	697	646	409	544	509	543	515	591	661	710	699	606	644
K	mg/L	18.5	15.8	18.1	21.4	19.2	17.5	18.9	18.7	15.5	14.8	14.0	16.3	14.4
Mg	mg/L	86.2	73.1	49.2	68.4	61.8	60.2	62.7	56.3	58.0	62.1	55.8	56.2	57.5
Na	mg/L	365	277	274	280	247	231	214	163	143	136	121	130	143
NO_2 as N	µg/L	8.5U	13.6U	13.5U	13.6U	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	18.1U	41.6	15.5U	14.8U	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	150	6.9	7.9	7.3U	7.3U	156	4.9U	30.6	4.50U
SO_4	mg/L	1210	1090	876	930	865	530	710	680	675	636	601	557	683
Metals														
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U	0.6U	0.6U	0.1U	0.1U	0.1U	0.100U
Fe	µg/L	348	7250	1880	12400	12000	16600	12300	29900	39800	45900	46000	36400	28200
Mn	µg/L	1070	616	171	885	338	357	336	396	519	454	411	321	374
Mo	µg/L	8.8	4.5J	6.5	9.1	3.8	0.3U	2.9U	1.9U	1.5U	1.8U	1.8U	1.7U	3.80
Se	µg/L	0.13	0.49	0.1U	0.1U	0.88	4.2	0.3U	0.3U	0.3U	0.2U	0.21	0.12	0.220
U	µg/L	0.1U	0.10UJ	0.10U	0.10U	0.1U	0.10U	0.1U	0.1U	0.17	0.1U	0.1U	0.1U	0.160
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U	0.3U	0.4U	0.3U	0.3U	0.3U	0.300U
Radiological														
U	µg/L	0.1U	0.10UJ	0.10U	0.10U	0.1U	0.10U	0.1U	0.1U	0.17	0.1U	0.1U	0.1U	0.160

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Alluvial Groundwater -- Down Gradient -- R4-M3[a,b]

Analyte	Unit	07/10/03	10/08/03	04/16/04	10/04/04	04/06/05	10/03/05	04/04/06	10/02/06	04/10/07	10/08/07	04/08/08[c]	10/08/08	04/08/09
Field Measurements														
Alkalinity	mg/L	315	405	127	244	75	207	165	58	37.0	23	60	70	48
Conductivity[c]	µmhos/cm	1845	1755	641	1206	1056	878	1155	1178	1109	847	1021	506	889
DO[c]	mg/L	1.45	2.82	1.05	0.87	1.31	1.72	1.55	3.55	1.10	0.39	-5.76	6.06	3.08
ORP[c]	mV	-169	-196	-221	-115	-255	-239	-200.3	-66	-121	-252	-70.04	-18.1	-172
pH[c]	s.u.	7.31	7.41	8.15	7.41	8.39	8.11	8.26	8.07	8.80	10.06	9.04	8.94	9.27
Temperature[c]	C	15.6	14.8	9.80	14.8	10.81	13.9	8.10	14.6	8.15	13.8	8.97	11.92	8.31
Turbidity[c]	NTU	31.1	49.3	31.1	57.3	27.9	29.1	18.8	37.5	24.7	33.6	5.80	5.04	6.25
Common Ions														
Ca	mg/L	171	232	110	140	46.0	76.0	140	110	66.0	26.0	61.0	6.60	48.0J
Chloride	mg/L	87.9	91.3	78.0	46.0	100	48.0	73.0	57.0	83.0	56.0	130	--	81.0
Fluoride	µg/L	17.2UR	314	200.U	120.	220.	230.	200.U	200.U	200.U	190.	200.U	--	120.
Hardness	mg/L	655	830	505	580	280	313	580	555	420	246	428	103	375J
K	mg/L	12.9	13.9	20.0	15.0	19.0	15.0	19.0	22.0	13.0	22.0	18.0	20.0J	18.0J
Mg	mg/L	55.3	60.8	56.0	56.0	40.0	30.0	56.0	68.0	62.0	44.0	67.0	21.0	62.0
Na	mg/L	127	132	110	95.0	110	86.0	95.0	120	95.0	120	100	59.0	120J
NO_2 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	4.50U	4.50U	10.U	10.U	10.U	10.U	35	19	10.U	10.U	10.U	380.	10.U
SO_4	mg/L	543	666	470	470	320	220	590	540	560	430	500	--	490
Metals														
As	µg/L	0.100U	0.100U	0.016U	0.018U	0.057	0.007U	0.0075U	0.012U	0.012U	0.047	0.059	0.037	0.066U
Fe	µg/L	37300	46700	20000	35000	320	7500	21000	8400	1200	49	1100	18	2.2J
Mn	µg/L	353	330	260	310	51	210	300	300	150	17	27	12	9.2
Mo	µg/L	2.00	1.70U	8.6	10	36	47	21	43	39	280	40	24	50
Se	µg/L	0.210	0.100U	0.068	0.058	0.068U	0.023U	0.25	0.025U	0.038U	0.16	0.019U	0.024U	0.12U
U	µg/L	0.100U	0.100U	0.0069UJ	0.0083U	0.0022U	0.0048U	0.0034U	0.12J	0.16	0.061	0.1U	0.054	0.08U
V	µg/L	0.300U	0.300U	0.25U	0.12U	0.41UR	0.1U	0.14UJ	0.21U	0.072UJ	0.095U	0.15U	0.1U	0.099U
Radiological														
U	µg/L	0.100U	0.100U	0.0069UJ	0.0083U	0.0022U	0.0048U	0.0034U	0.12J	0.16	0.061	0.1U	0.054	0.08U

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R4-M3[a,b]

Analyte	Unit	10/06/09	04/19/10	10/11/10	04/04/11	10/11/11	04/24/12
Field Measurements							
Alkalinity	mg/L	--	46	--	96	74	72
Conductivity[c]	µmhos/cm	895	928	644	1110	857	1000
DO[c]	mg/L	1.85	1.57	2.08	2.56	0	1.51
ORP[c]	mV	-150.0	-74	-36.5R	-50	-15.1	-80.0
pH[c]	s.u.	9.0	8.48	7.20	8.86	8.70	9.29
Temperature[c]	C	11.6	8.5	14.36	9.5	9.93	9.90
Turbidity[c]	NTU	24.5	2.67	7.44	17.1	11.7	7.64
Common Ions							
Ca	mg/L	11.0J	33.0	18.0	30.3	20.0	24.0
Chloride	mg/L	--	65.0	--	60.9	66.0	86.0
Fluoride	µg/L	--	160.	--	103	100.	100.U
Hardness	mg/L	122J	317	168	326	190	258
K	mg/L	17.0J	18.0J	16.0J	12.8	13.0	18.0J
Mg	mg/L	23.0	57.0	30.0	60.9	34.0	48.0
Na	mg/L	66.0J	110	110	112	96.0	120J
NO_2 as N	µg/L	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	110.	--	10U	10.U	20.
SO_4	mg/L	--	370	--	484	300	480
Metals							
As	µg/L	0.0084U	0.11	0.09	1.70U	0.13J	0.11
Fe	µg/L	25	7.3	4.9U	30.0U	4.9UJ	4.9UJ
Mn	µg/L	20	14	9.2	9.31	3	6
Mo	µg/L	12	49	55	58	51	50
Se	µg/L	0.14	0.13	0.14	1.50U	0.22J	0.12
U	µg/L	0.13	0.054	0.04	0.256	0.11	0.04
V	µg/L	0.13J	0.089	0.066	3.00U	0.015U	0.04
Radiological							
U	µg/L	0.13	0.054	0.04	0.256	0.11	0.04

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R4-M4[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	44	117	50	102	85	140	196
Conductivity[c]	µmhos/cm	2720	2870	2120	2220	2150	2160	2110
DO[c]	mg/L	0.22	0.12	0.34	0.19	0	0.735	0.258
ORP[c]	mV	-378	47	-289	-375	-272	-191	-266
pH[c]	s.u.	9.17	7.96	8.7	8.58	7.96	7.72	7.46
Temperature[c]	C	11	9.7	15.5	15.2	9.9	9.2	13.1
Turbidity[c]	NTU	3.73	9.17	17.7	3.02	5.21	4	7.45
Common Ions								
Ca	mg/L	--	--	--	--	--	119	153
Chloride	mg/L	--	--	--	--	--	--	123
Fluoride	µg/L	--	--	--	--	--	--	292
Hardness	mg/L	--	--	--	--	--	535	641
K	mg/L	--	--	--	--	--	16.5	20.1
Mg	mg/L	--	--	--	--	--	57.8	62.8
Na	mg/L	--	--	--	--	--	219	243
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	16.8
SO_4	mg/L	--	--	--	--	--	--	765
Metals								
As	µg/L	0.4U	0.42	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	--	--	12200	22400	33100
Mn	µg/L	--	--	--	--	399	446	487
Mo	µg/L	0.4UJ	0.4U	3.4	0.3U	1	0.3U	2.9U
Se	µg/L	0.1U	6.4	0.1U	0.1U	0.34	7.3	0.3U
U	µg/L	0.1U	0.10U	0.1U	0.10U	0.12	0.1U	0.1U
V	µg/L	1U	0.4U	1.2	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.10U	0.1U	0.10U	0.12	0.1U	0.1U

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R4-M5[a,b]

Analyte	Unit	01/11/00	04/12/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	156	110	44	35	30	81	65
Conductivity[c]	µmhos/cm	2760	4500	3120	1960	2060	2080	2030
DO[c]	mg/L	0.17	0.08	0.54	0.636	0.3	0.988	0.3
ORP[c]	mV	-262	-286	59	-350	-415	-229	-331
pH[c]	s.u.	7.51	7.36	9.18	9.36	9.33	8.18	7.83
Temperature[c]	C	10.5	9.1	16	16	10.2	9.6	12.5
Turbidity[c]	NTU	5.18	15.4	9.87	3.13	9.02	10.2	5.75
Common Ions								
Ca	mg/L	--	--	--	--	--	77.7	105
Chloride	mg/L	--	--	--	--	--	--	138
Fluoride	µg/L	--	--	--	--	--	--	296
Hardness	mg/L	--	--	--	--	--	481	559
K	mg/L	--	--	--	--	--	13.7	17.5
Mg	mg/L	--	--	--	--	--	69.6	72.0
Na	mg/L	--	--	--	--	--	226	248
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	19.5
SO_4	mg/L	--	--	--	--	--	--	782
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	--	--	146	4150	11800
Mn	µg/L	--	--	--	--	35.7	107	483
Mo	µg/L	13.1J	20.5	24.1	31.6	21.8	11.4J	3
Se	µg/L	0.1U	3.3	0.1U	0.1	0.1	0.3U	0.3U
U	µg/L	0.43	0.10U	0.1U	0.10U	0.11	0.12	0.1U
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.43	0.10U	0.1U	0.10U	0.11	0.12	0.1U

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R4-M6[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/16/00	01/23/01	04/17/01	07/10/01	10/11/01	10/15/01	01/28/02	04/02/02	07/09/02	09/30/02
Field Measurements														
Alkalinity	mg/L	69	42	34	38	45	241	10	48	--	199	243	258	293
Conductivity[c]	µmhos/cm	2730	2720	3100	1935	2000	1990	2090	1472	--	1809	1845	1612	1695
DO[c]	mg/L	0.34	0.42	1.3	0.6	0.1	0.58	0.193	0.195	--	0.396	0.295	0.82	3.3
ORP[c]	mV	-320	124	153	-162	-343	-202	-322	-200	--	-193	-253	-245	-53
pH[c]	s.u.	9.59	8.12	9.24	9.37	9.28	8.58	8.33	9.04	--	7.59	7.76	7.54	7.52
Temperature[c]	C	10.9	9	14.1	15.1	9.7	9.1	12.4	13.9	--	8.6	11	15.06	16.5
Turbidity[c]	NTU	5.49	6.39	1.61	2.07	2.12	8.34	8.93	4.66	--	8.81	9.3	5.33	389
Common Ions														
Ca	mg/L	165	147	66.8	51.3	55.0	67.8	101	23.8	--	123	158	137	128
Chloride	mg/L	206	195	111	102	141	132J	149	112	108	89.4	91.6	84.2	80.8
Fluoride	µg/L	--	--	--	--	322	513	215	26.2U	26.2U	925J	537	265	139
Hardness	mg/L	821	732	353	341	393	441	578	283	--	584	686	613	580
K	mg/L	17.7	13.8	15.0	15.7	14.5	12.8	16.1	15.1	--	13.0	12.2	12.4	13.0
Mg	mg/L	99.2	88.7	45.1	51.8	62.0	66.1	79.2	54.4	--	67.2	70.7	65.8	63.3
Na	mg/L	334	281	283	285	248	225	256	178	--	151	144	140	136
NO_2 as N	µg/L	8.5U	27.2U	27.0U	13.6U	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	18.1U	29.6U	31.0U	14.8U	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	7.1U	10	33.2	7.3U	7.3U	104	190	4.9U	23.4
SO_4	mg/L	1200	1100	788	763	788	462	805	566	542	672	644	572	569
Metals														
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U	0.6U	--	0.6U	0.1U	0.1U	0.1U
Fe	µg/L	--	--	9.1U	93.2	593	1100	382	753J	--	29300	46600	39300	39300
Mn	µg/L	--	--	13.2	27.9	194	163	92.5	160	--	432	469	391	354
Mo	µg/L	0.4UJ	0.4UJ	3.9	5.9	4.6	4.4J	9.2	2.2	--	1.5U	1.8U	1.8U	1.7U
Se	µg/L	0.1U	0.2U	0.1U	0.1U	0.1U	0.3U	0.3U	0.3U	--	0.3U	0.2U	0.12	0.13
U	µg/L	0.42	0.10U	0.10U	0.10U	0.11	0.1U	0.1U	0.1U	--	0.1U	0.1U	0.1U	0.1U
V	µg/L	1.5	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U	0.3U	--	0.4U	0.3U	0.3U	0.3U
Radiological														
U	µg/L	0.42	0.10U	0.10U	0.10U	0.11	0.1U	0.1U	0.1U	--	0.1U	0.1U	0.1U	0.1U

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R4-M6[a,b]

Analyte	Unit	04/07/03	07/10/03	10/08/03	04/16/04	10/04/04	04/06/05	10/03/05	04/04/06	10/02/06	04/10/07	10/08/07	04/07/08[c]	10/07/08
Field Measurements														
Alkalinity	mg/L	117	97	138	58	113	54	113	93	36	19.0	38	54	52
Conductivity[c]	µmhos/cm	1240	1381	1358	935	1003	1073	765	1240	982	1050	818	1094	698
DO[c]	mg/L	1.14	1.85	0.65	2.21	0.65	0.85	1.15	0.66	3.94	0.97	0.43	2.64	2.86
ORP[c]	mV	-149.9	-150	-214	-244.8	-311	-227.4	-148	-250.4	-125	-122	-192	-82.3	-170
pH[c]	s.u.	7.05	7.38	7.74	9.05	8.74	9.76	9.48	8.03	8.48	9.44	9.72	9.61	9.70
Temperature[c]	C	9.67	15	14.9	10.03	14.3	10.02	14.2	7.90	14.7	8.87	14.2	8.17	12.64
Turbidity[c]	NTU	23.9	17.9	32.1	11.2	25.5	16.4	13.6	9.49	9.91	14.9	20.1	4.37	7.14
Common Ions														
Ca	mg/L	77.6	53.4	66.0	34.0	39.0	19.0	5.70	100	23.0	43.0	6.90	35.0	4.50
Chloride	mg/L	101	99.1	93.7	87.0	52.0	120	63.0	84.0	70.0	95.0	62.0	120	63.0
Fluoride	µg/L	702	151J	863	100.U	100.U	220.	100.U	200.U	100.U	100.U	100.U	100.U	260.
Hardness	mg/L	428	373	432	221	328	155	130	538	263	359	124	330	73.0
K	mg/L	10.7	10.8	12.3	15.0J	14.0	14.0	13.0	15.0	17.0	15.0	17.0	18.0	11.0J
Mg	mg/L	57.0	58.2	64.9	33.0	56.0	26.0	28.0	70.0	50.0	61.0	26.0	59.0	15.0
Na	mg/L	123	128	136	97.0	99.0	100	92.0	96.0	120	100J	110	100	81.0
NO_2 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	4.50U	4.50U	4.50U	10.U	10.U	10.U	10.U	29	44	10.U	10.U	10.U	10.U
SO_4	mg/L	533	484	496	300	370	220	150	590	390	400	290	380	130
Metals														
As	µg/L	0.100U	0.100U	0.100U	0.016U	0.018U	0.081	0.007U	0.0075U	0.012U	0.012U	0.022	0.066	0.064
Fe	µg/L	15300	11000	17500	450	6700	7.5U	7.8U	15000	2.2U	53	5.6U	370	12
Mn	µg/L	236	170	318	77	380	32	32	550	37	80	16	35	16
Mo	µg/L	2.00U	2.40	1.70U	3	0.17U	2.5	15	4.8	29	6.9	70	17	15
Se	µg/L	0.100U	0.100U	0.100U	0.051	0.041	0.068U	0.023U	0.02U	0.025U	0.038U	0.1	0.019U	0.024U
U	µg/L	0.100U	0.100U	0.100U	0.0069U	0.0083U	0.0022U	0.052	0.0034U	0.0048U	0.0014U	0.012U	0.1U	0.061
V	µg/L	0.310	0.300U	0.300U	0.25U	0.12U	0.41UR	0.1U	0.14UJ	0.21U	0.072U	0.13J	0.15U	0.1U
Radiological														
U	µg/L	0.100U	0.100U	0.100U	0.0069U	0.0083U	0.0022U	0.052	0.0034U	0.0048U	0.0014U	0.012U	0.1U	0.061

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R4-M6[a,b]

Analyte	Unit	04/07/09	10/06/09	04/19/10	10/11/10	04/04/11	10/10/11	04/24/12
Field Measurements								
Alkalinity	mg/L	53	56	42	79	180	117	84
Conductivity[c]	µmhos/cm	527	820	1075	819	1070	879	995
DO[c]	mg/L	1.60	1.45	0.92	0.44	0.92	1.51	2.91
ORP[c]	mV	-284	-86	-43	-72.5R	-110	-76.8	-75
pH[c]	s.u.	9.81	9.48	9.67	9.32	9.15	9.45	9.29
Temperature[c]	C	9.51	9.3	9.8	12.91	9.4	12.77	11.20
Turbidity[c]	NTU	7.69	29.2	16.5	8.62	13.6	5.71	25.4
Common Ions								
Ca	mg/L	17.0J	13.0J	26.0	7.20	19.5	17.0	32.0
Chloride	mg/L	77.0	83.0	83.0	97.0	69.1	67.0	89.0
Fluoride	µg/L	120.	100.U	100.U	110.	162	120.	100.U
Hardness	mg/L	182J	135J	287	88.0	194	141	253
K	mg/L	14.0J	13.0J	18.0J	13.0J	11.1	13.0	17.0J
Mg	mg/L	34.0	25.0	54.0	17.0	35.3	24.0	42.0
Na	mg/L	87.0J	86.0J	100	87.0	106	89.0	120J
NO_2 as N	µg/L	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	10.U	10.U	26	10.U	10U	10.U	10.U
SO_4	mg/L	180	270	330	100	228	170	200
Metals								
As	µg/L	0.054U	0.0084U	0.069	0.067	1.70U	0.15J	0.088
Fe	µg/L	3.5J	13	35	4.9U	56.3	4.9UJ	9.3J
Mn	µg/L	25	19	36	12	22.5	16	24
Mo	µg/L	17	18	21	19	39.5	44	33
Se	µg/L	0.061U	0.032U	0.14	0.1	1.50U	0.092J	0.062
U	µg/L	0.074	0.015	0.063	0.005	0.132	0.023	0.1
V	µg/L	0.099U	0.052J	0.037	0.024	3.00U	0.015U	0.036
Radiological								
U	µg/L	0.074	0.015	0.063	0.005	0.132	0.023	0.1

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R4-M7[a,b]

Analyte	Unit	01/12/00	04/12/00	08/16/00	10/18/00	01/23/01	04/16/01	07/10/01
Field Measurements								
Alkalinity	mg/L	143	80	34	35	35	98	18
Conductivity[c]	µmhos/cm	5190	4500	2110	2160	1935	2040	2020
DO[c]	mg/L	0.2	0.07	0.2	0.382	1.5	0.26	0.305
ORP[c]	mV	-365	-308	-315	-299	-343	-193	-291
pH[c]	s.u.	7.93	7.73	9.14	9	8.92	8.08	7.86
Temperature[c]	C	9.6	9.6	--	16	8.4	10.7	13.1
Turbidity[c]	NTU	6.31	4.51	7.8	1.84	3.27	7.23	5.66
Common Ions								
Ca	mg/L	--	--	--	--	--	68.4	86.2
Chloride	mg/L	--	--	--	--	--	--	156
Fluoride	µg/L	--	--	--	--	--	--	355
Hardness	mg/L	--	--	--	--	--	438	518
K	mg/L	--	--	--	--	--	11.5	16.0
Mg	mg/L	--	--	--	--	--	64.8	73.4
Na	mg/L	--	--	--	--	--	217	264
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	58.3
SO_4	mg/L	--	--	--	--	--	--	758
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	--	--	1450	1810	1880
Mn	µg/L	--	--	--	--	279	223	181
Mo	µg/L	0.4U	0.4U	5.7	8.6	4.8	4.5	5.3
Se	µg/L	0.2	0.2U	0.15	0.1U	0.13	0.3U	0.3U
U	µg/L	0.1U	0.10U	0.10U	0.10U	0.11	0.1U	0.1U
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.10U	0.10U	0.10U	0.11	0.1U	0.1U

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R4-M8[a,b]

Analyte	Unit	01/12/00	04/12/00	08/15/00	10/16/00	01/22/01	04/16/01	07/09/01
Field Measurements								
Alkalinity	mg/L	58	55	74	46	47	118	121
Conductivity[c]	µmhos/cm	2650	4440	3380	2200	2250	2400	2350
DO[c]	mg/L	0.3	0.01	0.54	1.2	0.2	1.027	0.252
ORP[c]	mV	-375	-400	-14	-206	-241	-209	-241
pH[c]	s.u.	8.98	8.48	9.19	9.51	8.1	7.64	7.17
Temperature[c]	C	10.8	8.7	15.5	16.2	7.5	10.3	16
Turbidity[c]	NTU	2.24	3.23	5.42	3.98	6.42	8.86	14.5
Common Ions								
Ca	mg/L	--	171	79.8	60.3	114	144	156
Chloride	mg/L	--	197	121	119	160	165J	153
Fluoride	µg/L	--	--	--	--	1230	963	1270
Hardness	mg/L	--	797	450	531	596	652	717
K	mg/L	--	11.3	12.7	14.0	13.0	12.0	16.2
Mg	mg/L	--	89.8	60.8	92.4	75.5	70.9	79.5
Na	mg/L	--	265	291	291	269	228	266
NO_2 as N	µg/L	--	--	27.0U	13.6U	--	--	--
NO_3 as N	µg/L	--	--	31.0U	14.8U	--	--	--
NO_3+NO_2 as N	µg/L	--	32.4U	--	--	570	7.3	33.9
SO_4	mg/L	--	1100	851	911	916	457	862
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.7
Fe	µg/L	--	2930	9.1U	65.1	15600	34600	29100
Mn	µg/L	--	573	84.4	85.9	721	429	440
Mo	µg/L	0.4U	0.4U	3.4	0.3U	1.1	0.30U	2.9U
Se	µg/L	0.1U	0.2U	0.1U	0.18	0.11	10	1.9
U	µg/L	0.1U	0.10U	0.10U	0.10U	0.1U	0.1U	0.1U
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.10U	0.10U	0.10U	0.1U	0.1U	0.1U

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R5-M1[a,b]

Analyte	Unit	01/11/00	04/12/00	08/16/00	10/18/00	01/23/01	04/16/01	07/09/01
Field Measurements								
Alkalinity	mg/L	25	61	53	40	43	88	92
Conductivity[c]	µmhos/cm	2290	4280	2330	2410	2050	2030	1857
DO[c]	mg/L	0.25	0.02	0.71	0.1	3	0.678	0.166
ORP[c]	mV	-325	-346	-234	-165	-331	-173	-199
pH[c]	s.u.	9.68	8.72	9.86	10.09	8.75	8.18	7.9
Temperature[c]	C	10.9	9.9	14.4	15.1	10.4	10.4	12.5
Turbidity[c]	NTU	2.8	5.49	2.92	1.92	6.63	8.32	8.98
Common Ions								
Ca	mg/L	--	--	--	--	--	86.0	90.8
Chloride	mg/L	--	--	--	--	--	--	87.5
Fluoride	µg/L	--	--	--	--	--	--	331J
Hardness	mg/L	--	--	--	--	--	433	448
K	mg/L	--	--	--	--	--	16.7	19.5
Mg	mg/L	--	--	--	--	--	52.9	53.8
Na	mg/L	--	--	--	--	--	226	230
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	5.5J
SO_4	mg/L	--	--	--	--	--	--	701
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	--	--	540	8600	13300
Mn	µg/L	--	--	--	--	531	515	696
Mo	µg/L	0.4U	7.8	9	10.5	3.3	0.3U	2.9U
Se	µg/L	0.1U	0.2U	0.1U	0.1U	0.1U	1.6	0.73
U	µg/L	0.1U	0.10U	0.1U	0.10U	0.1U	0.1U	0.1U
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.10U	0.1U	0.10U	0.1U	0.1U	0.1U

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R5-M10[a,b]

Analyte	Unit	01/12/00	04/12/00	08/15/00	10/18/00	01/22/01	04/16/01	07/09/01
Field Measurements								
Alkalinity	mg/L	45	90	40	21	45	47	39
Conductivity[c]	µmhos/cm	2590	4260	3440	2170	2200	2200	2120
DO[c]	mg/L	0.25	0.06	0.53	--	1.3	0.1	0.263
ORP[c]	mV	-349	-315	229	-65	-355	-262	-395
pH[c]	s.u.	9.08	8.07	8.95	9.4	9.27	8.5	7.67
Temperature[c]	C	11.3	10.1	15.7	16.4	9.4	10.4	13.7
Turbidity[c]	NTU	2.84	5.32	4.49	1.15	10.4	4.71	8.63
Common Ions								
Ca	mg/L	--	--	--	--	--	119	125
Chloride	mg/L	--	--	--	--	--	--	159
Fluoride	µg/L	--	--	--	--	--	--	1940
Hardness	mg/L	--	--	--	--	--	599	645
K	mg/L	--	--	--	--	--	11.2	14.0
Mg	mg/L	--	--	--	--	--	73.2	80.8
Na	mg/L	--	--	--	--	--	231	246
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	40.3
SO_4	mg/L	--	--	--	--	--	--	822
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	--	--	1470	4750	4480
Mn	µg/L	--	--	--	--	243	385	346
Mo	µg/L	6.8	0.4U	6.1	7.4	1.7	0.3U	2.9U
Se	µg/L	0.1U	0.2U	0.1U	0.33	0.1U	3.1	0.3U
U	µg/L	0.1U	0.10U	0.1U	0.10U	0.1U	0.1U	0.1U
V	µg/L	1U	0.4U	1.2U	1.4	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.10U	0.1U	0.10U	0.1U	0.1U	0.1U

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R5-M2[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/16/01	07/09/01
Field Measurements								
Alkalinity	mg/L	31	66	41	40	46	65	100
Conductivity[c]	µmhos/cm	2620	4370	2350	2290	2040	1990	1822
DO[c]	mg/L	0.19	0.05	0.14	0.09	1.2	0.594	0.033
ORP[c]	mV	-362	-475	-386	-154	-344	-185	-188
pH[c]	s.u.	9.81	8.3	9.38	9.85	8.43	8.03	7.69
Temperature[c]	C	11.8	8.8	13.5	14.6	10	10.3	12.7
Turbidity[c]	NTU	2.47	9.1	2.46	5.31	3.94	2.53	2.88
Common Ions								
Ca	mg/L	119	121	128	90.7	72.0	93.8	89.4
Chloride	mg/L	159	127	84.4	90.6	103	99.3J	91.5
Fluoride	µg/L	--	--	--	--	12.5U	195	981J
Hardness	mg/L	603	584	536	563	422	462	445
K	mg/L	21.5	19.4	20.6	22.8	21.7	18.7	20.2
Mg	mg/L	74.2	68.5	52.5	81.8	58.7	55.3	53.9
Na	mg/L	363	289	307	316	264	229	247
NO_2 as N	µg/L	8.5U	319	27.0U	13.6U	--	--	--
NO_3 as N	µg/L	18.1U	1750	31.0U	14.8U	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	7.1U	4.7U	4.7UJ
SO_4	mg/L	1140	1140	1070	1060	835	481	698
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	125	7100	228	11.6U	2620	9760	10900
Mn	µg/L	327	800	93.4	66.8	486	378	408
Mo	µg/L	0.4U	9.3J	6.7	10	1.4	0.30U	2.9U
Se	µg/L	0.1U	1.6	0.1U	0.1U	0.1U	0.89	0.71
U	µg/L	0.1U	0.1UJ	0.10U	0.10U	0.1U	0.10U	0.1U
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.1UJ	0.10U	0.10U	0.1U	0.10U	0.1U

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R5-M3[a,b]

Analyte	Unit	01/11/00	04/12/00	08/16/00	10/17/00	01/24/01	04/16/01	07/10/01
Field Measurements								
Alkalinity	mg/L	42	80	36	80	54	77	77
Conductivity[c]	µmhos/cm	2500	4400	3510	2210	2050	2060	2000
DO[c]	mg/L	0.4	0.1	0.35	0.3	0	0.968	0.916
ORP[c]	mV	-238	-378	-6	-345	-275	-183	-158
pH[c]	s.u.	9.8	8.06	9.17	9.22	8.23	7.98	7.39
Temperature[c]	C	11.8	9.7	15.8	16.1	9.2	11.2	12.1
Turbidity[c]	NTU	1.43	5.79	9.87	6.85	5.24	3.2	2.75
Common Ions								
Ca	mg/L	--	--	--	--	--	109	121
Chloride	mg/L	--	--	--	--	--	112J	112
Fluoride	µg/L	--	--	--	--	--	621	1980
Hardness	mg/L	--	--	--	--	--	516	553
K	mg/L	--	--	--	--	--	17.5	19.4
Mg	mg/L	--	--	--	--	--	59.1	61.0
Na	mg/L	--	--	--	--	--	230	220
NO_3+NO_2 as N	µg/L	--	--	--	--	--	4.7U	4.7UJ
SO_4	mg/L	--	--	--	--	--	532	757
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	--	--	7780	14100	15500
Mn	µg/L	--	--	--	--	595	381	460
Mo	µg/L	0.4UJ	4.6	5.3	0.3U	1.2	0.30U	2.9U
Se	µg/L	0.1U	1	0.1U	0.1U	0.13	1.9	0.3U
U	µg/L	0.1U	0.10U	0.1U	0.10U	0.1U	0.10U	0.1U
V	µg/L	1U	0.68	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.10U	0.1U	0.10U	0.1U	0.10U	0.1U

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R5-M4[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/11/01	07/09/02
Field Measurements									
Alkalinity	mg/L	27	31	50	35	24	43	46	246
Conductivity[c]	µmhos/cm	2720	4180	2050	2890	1958	2010	1927	1575
DO[c]	mg/L	0.27	0	0.14	0.1	0	0.874	0.474	0.63
ORP[c]	mV	-400	-445	-316	-237	-288	-20	-198	-221
pH[c]	s.u.	10.28	8.84	9.52	9.96	8.7	7.51	8.04	7.51
Temperature[c]	C	11.9	9.2	15.7	16	9.2	8.8	12.3	14.55
Turbidity[c]	NTU	1.63	6.81	1.83	0.67	4.55	3.32	6.94	6.88
Common Ions									
Ca	mg/L	146	132	66.7	56.9	75.0	94.2	92.8	132
Chloride	mg/L	183	157	88.7	104	141	116J	115	75.8
Fluoride	µg/L	--	--	--	--	445	964	1120	374J
Hardness	mg/L	720	633	365	467	442	488	497	571
K	mg/L	17.7	16.5	17.9	21.4	19.6	17.7	19.5	14.9
Mg	mg/L	86.2	73.6	48.2	78.8	61.9	61.3	64.5	58.5
Na	mg/L	360	290	277	277	249	230	215	128
NO_2 as N	µg/L	8.5U	13.6U	13.5U	13.6U	--	--	--	--
NO_3 as N	µg/L	18.1U	14.8U	15.5U	14.8U	--	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	122	4.7U	7.3U	4.9U
SO_4	mg/L	1300	1050	835	886	824	479	719	569
Metals									
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U	0.1U
Fe	µg/L	128	849	85.4	11.6U	609	5740	6150	32300
Mn	µg/L	437	515	81.1	80.7	439	561	560	394
Mo	µg/L	0.4U	7.4	8.7	10	4.8	0.3U	3.8	1.8U
Se	µg/L	0.1U	0.2U	0.1U	0.1U	0.1U	0.44	0.3U	0.23
U	µg/L	0.1U	0.1U	0.1U	0.10U	0.1U	0.10U	0.1U	0.1U
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U	0.3U
Radiological									
U	µg/L	0.1U	0.1U	0.1U	0.10U	0.1U	0.10U	0.1U	0.1U

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R5-M5[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	41	51	31	67	51	83	49
Conductivity[c]	µmhos/cm	2580	2810	2040	2140	2090	2030	1818
DO[c]	mg/L	0.22	2.44	0.42	0.17	0.1U	1.086	0.227
ORP[c]	mV	-232	78	-291	-437	-320	-88	-274
pH[c]	s.u.	9.92	7.94	9.1	8.86	8.36	7.51	7.58
Temperature[c]	C	11.1	10.2	18.1	15.3	10	9.4	12.8
Turbidity[c]	NTU	3.84	10.6	11.1	3.28	5.69	31.1	13.4
Common Ions								
Ca	mg/L	--	--	--	--	--	102	88.0
Chloride	mg/L	--	--	--	--	--	--	124
Fluoride	µg/L	--	--	--	--	--	--	819
Hardness	mg/L	--	--	--	--	--	487	473
K	mg/L	--	--	--	--	--	16.2	19.9
Mg	mg/L	--	--	--	--	--	56.4	61.4
Na	mg/L	--	--	--	--	--	212	237
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	16.3
SO_4	mg/L	--	--	--	--	--	--	715
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	--	--	4370	18700	13300
Mn	µg/L	--	--	--	--	489	647	491
Mo	µg/L	7.4J	0.4U	6	0.3U	1.3	3.8	2.9U
Se	µg/L	0.1U	0.59	0.1U	0.1U	0.15	0.3U	0.3U
U	µg/L	0.46	0.10U	0.1U	0.10U	0.1U	0.1U	0.1U
V	µg/L	1U	0.40U	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.46	0.10U	0.1U	0.10U	0.1U	0.1U	0.1U

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R5-M6[a,b]

Analyte	Unit	01/11/00	04/12/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	38	45	54	34	58	67	57
Conductivity[c]	µmhos/cm	2590	4390	3240	2040	2090	2060	1896
DO[c]	mg/L	0.17	0	0.72	0.72	0	0.522	0.276
ORP[c]	mV	-332	-370	33	-262	-289	-223	-343
pH[c]	s.u.	8.3	7.97	8.97	9.22	8.26	7.87	8.07
Temperature[c]	C	10.5	9.3	16.6	15.4	9.9	9.5	12
Turbidity[c]	NTU	4.36	2.18	4.95	1.93	3.91	4.74	6.7
Common Ions								
Ca	mg/L	--	--	--	--	--	85.5	69.0
Chloride	mg/L	--	--	--	--	--	--	140
Fluoride	µg/L	--	--	--	--	--	--	79
Hardness	mg/L	--	--	--	--	--	487	458
K	mg/L	--	--	--	--	--	13.1	16.9
Mg	mg/L	--	--	--	--	--	66.5	69.4
Na	mg/L	--	--	--	--	--	230	248
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	27.1
SO_4	mg/L	--	--	--	--	--	--	699
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	--	--	6000	9750	4450
Mn	µg/L	--	--	--	--	366	391	224
Mo	µg/L	0.4U	0.4U	4.6	6.4	2	0.3UJ	2.9U
Se	µg/L	0.1U	0.2U	0.1U	0.1U	0.14	0.3U	0.3U
U	µg/L	0.1U	0.10U	0.1U	0.10U	0.1U	0.1U	0.1U
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.10U	0.1U	0.10U	0.1U	0.1U	0.1U

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R5-M7[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/16/00	01/23/01	04/17/01	07/10/01	07/09/02
Field Measurements									
Alkalinity	mg/L	66	40	--	51	44	117	72	174
Conductivity[c]	µmhos/cm	2650	2740	3270	2050	2070	2090	1994	1465
DO[c]	mg/L	0.41	1.34	0.87	0.3	1.9	1.064	0.225	0.64
ORP[c]	mV	-337	145	-61	-354	-222	-145	-335	-275
pH[c]	s.u.	9.21	8.58	8.89	8.95	8.21	7.59	7.9	7.77
Temperature[c]	C	11.4	9.1	14.1	15.1	9.5	9.2	12.8	13.88
Turbidity[c]	NTU	5.17	4.15	2.13	1.99	7.73	4.03	4.23	5.23
Common Ions									
Ca	mg/L	181	150	77.1	65.4	67.5	88.9	90.7	98.3
Chloride	mg/L	200	203	93.1	99.3	141	128J	138	84.7
Fluoride	µg/L	--	--	--	--	105	57.9	168	791
Hardness	mg/L	880	747	406	432	437	487	518	500
K	mg/L	18.3	14.0	17.4	17.2	16.3	13.5	16.8	11.5
Mg	mg/L	104	90.5	51.9	65.3	65.3	64.3	70.8	61.9
Na	mg/L	348	289	283	286	256	221	249	125
NO_2 as N	µg/L	8.5U	27.2U	27.0U	13.6U	--	--	--	--
NO_3 as N	µg/L	18.1U	29.6U	31.0U	14.8U	--	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	151	6.1	27.1	4.9U
SO_4	mg/L	1170	1120	859	838	809	497	732	542
Metals									
As	µg/L	0.4U	0.2	0.3U	0.2U	0.2U	0.5U	0.5U	0.1U
Fe	µg/L	--	--	804	876	3620	14300	9600	26000
Mn	µg/L	--	--	226	183	389	452	457	360
Mo	µg/L	0.4UJ	0.4UJ	9.1	7.8	5.3	0.3UJ	2.9U	1.8U
Se	µg/L	0.1U	0.2U	0.1U	0.1U	0.1U	0.3U	0.3U	0.1U
U	µg/L	0.1U	0.10U	0.1U	0.10U	0.1U	0.1U	0.1U	0.1U
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U	0.3U
Radiological									
U	µg/L	0.1U	0.10U	0.1U	0.10U	0.1U	0.1U	0.1U	0.1U

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R5-M8[a,b]

Analyte	Unit	01/12/00	04/12/00	08/16/00	10/18/00	01/23/01	04/16/01	07/10/01
Field Measurements								
Alkalinity	mg/L	41	35	35	34	22	74	20
Conductivity[c]	µmhos/cm	2690	4290	1970	2090	1901	2950	2000
DO[c]	mg/L	0.13	0.05	0.23	--	0.1	0.64	0.272
ORP[c]	mV	-423	-381	-178	-141	-160	-206	-381
pH[c]	s.u.	8.64	8.27	9.52	9.5	9.47	7.91	8.68
Temperature[c]	C	10.8	9.8	15	16.5	8.9	11.9	12.3
Turbidity[c]	NTU	5.76	2.8	9.6	1.56	2.01	40.7	19.9
Common Ions								
Ca	mg/L	--	--	--	--	--	70.3	95.0
Chloride	mg/L	--	--	--	--	--	--	151
Fluoride	µg/L	--	--	--	--	--	--	432
Hardness	mg/L	--	--	--	--	--	413	499
K	mg/L	--	--	--	--	--	12.9	16.0
Mg	mg/L	--	--	--	--	--	57.7	63.5
Na	mg/L	--	--	--	--	--	208	261
NO_3+NO_2 as N	µg/L	--	--	--	--	--	--	60.3
SO_4	mg/L	--	--	--	--	--	--	743
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	--	--	286	3050	737
Mn	µg/L	--	--	--	--	242	241	189
Mo	µg/L	0.4U	0.4U	6.3	8.3	4.5	5.4	2.9U
Se	µg/L	0.1U	0.2U	0.1U	0.1U	0.1U	0.3U	0.3U
U	µg/L	0.1U	0.10U	0.10U	0.10U	0.1U	0.1U	0.1U
V	µg/L	1U	0.4U	1.4	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.10U	0.10U	0.10U	0.1U	0.1U	0.1U

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R5-M9[a,b]

Analyte	Unit	01/12/00	04/12/00	08/15/00	10/16/00	01/22/01	04/16/01	07/09/01
Field Measurements								
Alkalinity	mg/L	45	50	75	66	60	123	70
Conductivity[c]	µmhos/cm	2640	4350	3220	2150	2160	2180	2150
DO[c]	mg/L	0.31	0.2	0.48	1.1	0.3	1.025	0.204
ORP[c]	mV	-345	-296	109	-69	-323	-211	-358
pH[c]	s.u.	9.2	8.81	9.2	9.42	8.52	7.75	7.87
Temperature[c]	C	10.9	8.8	15.6	16.2	8.8	11.1	13.5
Turbidity[c]	NTU	3.37	2.7	5.05	3.43	8.45	3.94	5.18
Common Ions								
Ca	mg/L	--	159	66.9	60.7	87.0	111	117
Chloride	mg/L	--	195	107	114	149	162J	151
Fluoride	µg/L	--	--	--	--	787	1260	1160
Hardness	mg/L	--	759	409	503	500	563	619
K	mg/L	--	12.6	14.7	14.5	12.2	12.0	16.1
Mg	mg/L	--	88.0	58.8	85.4	68.6	69.5	79.3
Na	mg/L	--	272	308	289	257	228	265
NO_2 as N	µg/L	--	--	27.0U	13.6U	--	--	--
NO_3 as N	µg/L	--	--	31.0U	14.8U	--	--	--
NO_3+NO_2 as N	µg/L	--	32.4U	--	--	134	5.9	28.6
SO_4	mg/L	--	1070	837	901	861	439	794
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	423	9.1U	11.6U	4640	15400	9030
Mn	µg/L	--	324	61.2	57.7	538	560	662
Mo	µg/L	6.8	0.4U	4.3	5.1	1.1	0.30U	2.9U
Se	µg/L	0.1U	0.2U	0.1U	0.1U	0.1U	0.43	0.3U
U	µg/L	0.1U	0.1U	0.10U	0.10U	0.1U	0.1U	0.1U
V	µg/L	1U	0.41	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.1U	0.10U	0.10U	0.1U	0.1U	0.1U

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R6-M1[a,b]

Analyte	Unit	04/12/00	10/18/00	04/16/01	07/10/01
Field Measurements					
Alkalinity	mg/L	48	150	56	76
Conductivity[c]	µmhos/cm	4380	--	2070	1868
DO[c]	mg/L	0.4	--	0.913	0.438
ORP[c]	mV	-29	14	45	114
pH[c]	s.u.	6.25	6.58	6.84	6.5
Temperature[c]	C	11.1	14.4	10.9	13
Turbidity[c]	NTU	4.65	--	10.4	2.06
Common Ions					
Ca	mg/L	--	--	84.2	96.7
Chloride	mg/L	--	--	--	89.8
Fluoride	µg/L	--	--	--	185
Hardness	mg/L	--	--	412	434
K	mg/L	--	--	15.4	16.2
Mg	mg/L	--	--	48.9	46.8
Na	mg/L	--	--	232	225
NO_3+NO_2 as N	µg/L	--	--	--	614
SO_4	mg/L	--	--	--	699
Metals					
As	µg/L	4.1	1.4	3.4	4
Fe	µg/L	--	--	1.0U	0.7U
Mn	µg/L	--	--	1170	1580
Mo	µg/L	53.5	8.6	13.8	25.3
Se	µg/L	2	1.6	1.3	0.93
U	µg/L	9.3	37.5	6.2	7.5
V	µg/L	126	44.8	81	95.9
Radiological					
U	µg/L	9.3	37.5	6.2	7.5

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R6-M2[a,b]

Analyte	Unit	01/11/00	02/29/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/09/01	10/15/01	01/28/02	04/02/02	07/10/02	10/01/02
Field Measurements														
Alkalinity	mg/L	18	32	70	50	30	82	68	82	141	113	104	125	201
Conductivity[c]	µmhos/cm	2690	2420	4240	2260	2250	2210	2040	1825	1562	1636	1492	1366	1569
DO[c]	mg/L	0.27	0.18	0.36	0.15	0.47	3.3	0	0.099	0.276	1.100	0.500	0.79	3.7
ORP[c]	mV	-198	-212	-283	-342	-214	-282	-211	-210	-169	-44	-151	-156	-41.1
pH[c]	s.u.	9.22	9.37	8.43	8.78	8.95	8.24	7.72	8.24	7.48	7.13	7.51	7.52	7.33
Temperature[c]	C	11.5	9.7	9.1	13.8	13.3	10.1	9.6	12.1	14.6	9.1	13	13.08	14.2
Turbidity[c]	NTU	2.24	150	7.7	13.6	6.53	6.63	62.8	4.67	5.49	23.4	11.8	2.33	6.18
Common Ions														
Ca	mg/L	135	117	117	111	106	102	86.6	77.3	69.9	87.1	76.6	71.0	94.1
Chloride	mg/L	160	137	141	86.9	90.3	140	102J	90.7	94.5	74.7	76.9	69.5	68.1
Fluoride	µg/L	--	177	--	--	--	309	61.5	60.9J	52.4U	157J	127J	116J	143
Hardness	mg/L	620	572	589	467	505	545	432	413	377	446	429	393	466
K	mg/L	19.5	20.5	18.2	19.3	22.1	21.0	16.9	19.3	19.8	16.4	16.8	15.9	18.5
Mg	mg/L	68.7	68.0	72.0	46.1	58.3	70.4	52.5	53.4	49.2	55.4	57.7	52.4	56.1
Na	mg/L	363	328	288	301	311	270	211	224	177	150	146	136	143
NO_2 as N	µg/L	8.5U	--	46.0	13.5U	13.6U	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	18.1U	--	29.6U	15.5U	14.8U	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	12U	--	--	--	7.1U	9.9	23.8J	7.3U	354	145	4.9U	33.9
SO_4	mg/L	1150	1070	1100	980	998	866	474	663	616	588	569	493	507
Metals														
As	µg/L	3.7	1.7	0.41	2.3	2.5	1.8	0.68	0.89	0.71	0.88	0.98	1	3.4
Fe	µg/L	8.9U	8.9U	616	9.1U	11.6U	1560	3800	307	3800	5220	3360	943	6700
Mn	µg/L	834	306	840	293	362	1000	823	576	428	532	538	583	872
Mo	µg/L	0.4U	5.4	6.1J	4.8	13	2.5	0.3UJ	2.9U	1.9U	1.5U	1.8U	1.8U	1.7U
Se	µg/L	0.1U	0.1U	0.2U	0.1U	0.1U	0.95	0.31	0.3U	0.3U	0.3U	0.2U	0.1U	0.1U
U	µg/L	0.1U	0.1U	0.1UJ	0.10U	0.10U	0.47	0.1U	0.1U	0.12	0.2	0.6	0.4	1.6
V	µg/L	1U	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U	0.3U	0.57	0.83	0.33	1.1
Radiological														
U	µg/L	0.1U	0.1U	0.1UJ	0.10U	0.10U	0.47	0.1U	0.1U	0.12	0.2	0.6	0.4	1.6

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R6-M2[a,b]

Analyte	Unit	01/14/03	04/07/03	07/10/03	10/08/03	01/21/04	04/16/04
Field Measurements							
Alkalinity	mg/L	248	181	251	317	360	214
Conductivity[c]	µmhos/cm	1630	1745	1739	1700	1527	1550
DO[c]	mg/L	0.81	1.58	2.13	0.78	1.14	1.87
ORP[c]	mV	-245	-108.2	-139	-168	-185	-171.2
pH[c]	s.u.	7.11	7.02	7.1	7.23	7.41	7.56
Temperature[c]	C	10.7	8.78	13.5	14.5	8.35	9.65
Turbidity[c]	NTU	15.2	18	14.7	15.2	2.8	8.17
Common Ions							
Ca	mg/L	146	149	145	130	140	180
Chloride	mg/L	70.4	95.9	86.4	83.4	70.0	82.0
Fluoride	µg/L	116	66.9	17.2U	225	200.U	200.U
Hardness	mg/L	592	612	581	547	568	684
K	mg/L	16.4	16.4	15.1	16.5	20.0J	19.0
Mg	mg/L	55.3	58.2	53.2	53.9	53.0	57.0
Na	mg/L	131	155	148	140	110	100
NO_2 as N	µg/L	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	299R	4.50U	11.4	4.50U	11	20.
SO_4	mg/L	599	676	630	580	570	500
Metals							
As	µg/L	1.6	0.760	0.780	0.780	0.46J	0.55
Fe	µg/L	24200	20400	28300	27500	29000	23000
Mn	µg/L	801	651	624	474	440	540
Mo	µg/L	6.4U	4.40	1.70U	1.70U	1.5J	2.4
Se	µg/L	0.1U	0.100U	0.100U	0.100U	0.01U	0.13
U	µg/L	1.3	1.20	0.880	0.870	0.31	0.45J
V	µg/L	0.9U	0.530	0.300U	0.300U	0.083UJ	0.25U
Radiological							
U	µg/L	1.3	1.20	0.880	0.870	0.31	0.45J

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R6-M3[a,b]

Analyte	Unit	02/29/00	04/11/00	08/16/00	10/18/00	01/24/01	04/18/01	07/11/01	10/16/01	01/28/02	04/02/02	07/09/02	10/01/02	01/14/03
Field Measurements														
Alkalinity	mg/L	--	171	--	--	532	--	--	--	448	429	232	--	393
Conductivity[c]	µmhos/cm	2500	2700	2550	2590	2510	2460	2440	2400	2077	2010	1994	2113	2020
DO[c]	mg/L	--	--	0.55	--	--	--	--	--	--	3.7	--	--	0.69
ORP[c]	mV	-123	65	-142	-93	66	-13	-22	-44	-25	-51	-50	-52.7	-220
pH[c]	s.u.	6.47	6.9	6.76	7.09	6.66	6.9	6.73	7.2	6.46	6.86	6.73	6.72	6.59
Temperature[c]	C	9.2	8.9	16.1	16.3	8.7	13.7	13.4	15.9	9.23	13.7	15.04	16.5	9.8
Turbidity[c]	NTU	150	--	283	>1000	178	839	--	576	274	488	246	--	145
Common Ions														
Ca	mg/L	295	268	224	--	252	243	270	199	213	205	150	221	239
Chloride	mg/L	--	176	151	--	154	--	139	130	127	124	83.9	110	109
Fluoride	µg/L	--	--	--	--	344	--	259	361	307	192	273J	215	110
Hardness	mg/L	1000	925	773	--	860	831	918	697	727	737	559	752	817
K	mg/L	15.4	13.6	12.8	--	12.8	12.1	13.4	13.7	11.8	11.9	11.7	12.6	11.8
Mg	mg/L	65.1	62.2	52.0	--	56.1	54.4	59.2	48.6	47.4	54.7	44.8	48.6	53.4
Na	mg/L	229	218	209	--	206	203	211	193	188	167	138	204	200
NO_2 as N	µg/L	--	37.7	27.0U	--	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	229	31.0U	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	214	--	--	--	1010	--	1310	701	62.9	171	4.9U	321	366R
SO_4	mg/L	--	814	717	--	706	--	715	721	679	664	513	667	653
Metals														
As	µg/L	0.66	1.2	1.1	1	0.68	0.66	0.6	0.91	0.85	0.95	0.88	1.2	3.4
Fe	µg/L	8.9U	261	9.1U	--	282	286	325	57.3	437	1430	210	990	2560
Mn	µg/L	5580	4300	2740	--	3310	3040	3130	2220	3580	2820	3260	3330	2970
Mo	µg/L	50.5	34.2J	48.5	38.4	30.8	30.1	29.6	32.2	27.2	17.5	22.6	37.8	6.4U
Se	µg/L	2.4	1.7	0.79	0.9	0.3	0.3U	0.3U	0.3U	0.3U	0.2U	0.26	0.21	0.1U
U	µg/L	250	169J	158	119	111	129	94.4	69	70.3	41.3	36.3	76.4	74.7
V	µg/L	45.5	33.7	52.2	54.2	61.4	59.6	59.6	105	62	28.9	39.7	63.5	8.5
Radiological														
U	µg/L	250	169J	158	119	111	129	94.4	69	70.3	41.3	36.3	76.4	74.7

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R6-M3[a,b]

Analyte	Unit	04/07/03	07/10/03	10/08/03	01/21/04	04/15/04	10/04/04	04/06/05	10/03/05	04/04/06	10/02/06	04/10/07	10/09/07	04/07/08[c]
Field Measurements														
Alkalinity	mg/L	311	455	387	437	255	208	229	348	202	337	217	286	--
Conductivity[c]	µmhos/cm	2171	2149	1860	1562	1660	1405	1940	1294	1894	1760	1462	1652	1900
DO[c]	mg/L	1.73	2.04	0.58	3.67	1.26	0.42	1.29	1.70	1.14	0.43	0.59	0.47	-4.52
ORP[c]	mV	-25	-21	-28	-123	-34.2	-160	-17.9	-88	-22.4	-76	-93.0	-56	-59.2
pH[c]	s.u.	6.88	6.69	6.8	7.14	6.88	7.22	6.88	7.02	6.86	6.72	6.87	6.93	6.70
Temperature[c]	C	8.52	14.9	14.7	7.75	10.39	14.7	8.89	14.3	8.95	14.8	7.75	11.7	7.82
Turbidity[c]	NTU	152	51.4	89.1	6.49	19.5	87.2	130	53.1	20.9	43.0	13.2	12.7	29.7
Common Ions														
Ca	mg/L	219	257	239	180	230	100	180	220	170	230	200	240	160
Chloride	mg/L	101	107	108	74.0	88.0	49.0	110	83.0	85.0	96.0	95.0	84.0	100
Fluoride	µg/L	79.8	251J	258	200.U	200.	100.U	200.U	260.	210.	440.	280.	470.	210.
Hardness	mg/L	801	862	824	684	834	468	651	726	663	768	693	805	642
K	mg/L	14.2	11.3	12.5	15.0J	19.0	14.0	15.0	15.0	16.0	17.0	14.0	16.0	16.0
Mg	mg/L	61.7	53.5	55.2	57.0	63.0	53.0	49.0	43.0	58.0	47.0	47.0	50.0	59.0
Na	mg/L	156	188	192	110	110	99.0	120	130	100	160	130	160	110
NO_2 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	346	25.7	4.50U	10.U	17	10.U	27	10.U	18	18	10.U	10.U	68
SO_4	mg/L	714	663	695	610	590	460	550	470	590	610	570	560	590
Metals														
As	µg/L	0.420	2.50	3.60	0.58J	0.58	0.55	1	4.2	2.1	2.6	5.5	6.4	2.5
Fe	µg/L	360	1290	2790	25000	3000	15000	5700	4200	6300	960	4200	4900	3700
Mn	µg/L	3330	2240	2790	2000	2100	580	1200	1100	1300	1100	1800	1100	1400
Mo	µg/L	12.8	26.4	20.4	3.5J	5.8	6.3	2.9	26	9.6	49	21	24	9.6
Se	µg/L	36.3	0.100U	0.100U	0.01U	1.1	0.08	0.14	0.023U	0.02U	1.8	0.038U	0.069	0.87
U	µg/L	43.9	93.7	66.9	6.4	21J	2.7J	14	65	42	140	46	36	20
V	µg/L	5.80	54.3	8.50	0.086J	1.9	0.18J	0.41UR	1.6	0.25J	280	3.6J	5J	24
Radiological														
U	µg/L	43.9	93.7	66.9	6.4	21J	2.7J	14	65	42	140	46	36	20

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R6-M3[a,b]

Analyte	Unit	10/08/08	04/08/09	10/06/09	04/19/10	10/11/10	04/04/11	10/11/11	04/24/12
Field Measurements									
Alkalinity	mg/L	240	340	--	438	--	365	384	276
Conductivity[c]	µmhos/cm	1874	1179	1950	1810	1856	2000	1819	1810
DO[c]	mg/L	4.39	1.02	1.75	0.98	0.43	0.75	1.68	1.52
ORP[c]	mV	-53.8	-181	-73	-50	-55.6R	-45	-4.8	-100
pH[c]	s.u.	7.21	7.00	6.86	6.91	6.66	6.76	6.54	6.90
Temperature[c]	C	12.23	8.04	12.0	8.6	12.92	8.7	11.82	10.30
Turbidity[c]	NTU	11.4	778	110	142	19.4	20.5	13.8	112
Common Ions									
Ca	mg/L	160	240J	240J	120	170	222	220	210
Chloride	mg/L	70.0	--	--	91.0	--	87.4	79.0	85.0
Fluoride	µg/L	620.	--	--	210.	--	332	370.	330.
Hardness	mg/L	560	793J	801J	526	573	757	751	722
K	mg/L	15.0J	14.0J	13.0J	17.0J	13.0J	8.90	9.10	14.0J
Mg	mg/L	39.0	47.0	49.0	55.0	36.0	49.1	49.0	48.0
Na	mg/L	120	150J	140J	110	120	138	130	140J
NO_2 as N	µg/L	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	10.U	--	--	130.	--	10U	12	79
SO_4	mg/L	450	--	--	530	--	574	550	530
Metals									
As	µg/L	7	2.6	6.8	0.36	3.7	4.61	6.1	8.9
Fe	µg/L	3600	3400	3000	160	1400	2340	2300	3700
Mn	µg/L	1400	590	1300	140	980	1190	1200	1600
Mo	µg/L	22	28	20	3	17	16.8	5.4UJ	9.4
Se	µg/L	0.16	0.73	0.094	2.3	0.51	1.50U	0.2J	3.6
U	µg/L	39	53	41	11	39	46.5	42	36
V	µg/L	2.1	6.6	6.2	0.4	16	4.1	4.8	3.4
Radiological									
U	µg/L	39	53	41	11	39	46.5	42	36

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R6-M4[a,b]

Analyte	Unit	01/11/00	03/01/00	04/11/00	08/16/00	10/16/00	01/23/01	04/17/01	07/10/01	10/11/01	10/15/01	01/28/02	04/02/02	07/09/02
Field Measurements														
Alkalinity	mg/L	54	47	141	--	51	--	98	--	99	--	133	122	141
Conductivity[c]	µmhos/cm	2540	2540	3090	--	2210	2090	2150	2020	1632	--	1618	1661	1416
DO[c]	mg/L	0.58	1.5	1.45	--	2.6	--	8R	0.395	0.87	--	0.573	0.908	--
ORP[c]	mV	-302	-103	152	--	86	-35	-78	-135	7	--	-122	-94	-103
pH[c]	s.u.	8.74	8.11	7.29	--	6.57	7.56	7.54	7.19	7.45	--	7.29	7.36	7.11
Temperature[c]	C	11.6	7.8	8.4	--	15.5	9.4	12	12.8	14.7	--	8.9	9.6	15.95
Turbidity[c]	NTU	20.4	--	97.5	--	28.6	22.1	19.4	94.5	314	--	211	86.6	97.2
Common Ions														
Ca	mg/L	139	146	234	105	116	96.9	117	117	78.1	--	94.5	102	96.8
Chloride	mg/L	166	159	198	88.3	94.6	128	119J	140	106	110	88.7	92.8	83.9
Fluoride	µg/L	--	143	--	--	--	120	121	128	26.2U	172	124J	66	220J
Hardness	mg/L	665	685	955	456	498	486	548	565	440	--	509	552	481
K	mg/L	18.8	16.9	15.7	14.6	16.3	17.1	15.3	16.0	15.1	--	13.6	12.8	12.1
Mg	mg/L	77.3	77.7	90.1	47.0	50.7	59.2	62.1	66.2	59.4	--	66.2	72.3	58.1
Na	mg/L	350	310	288	277	296	245	218	251	181	--	152	147	126
NO_2 as N	µg/L	8.5U	--	1080	156	312	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	18.1U	--	6260	1090	4450	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	12U	--	--	--	2410	201	217	8.5	86.4	158	291	4.9U
SO_4	mg/L	1090	1110	1230	853	876	825	544	757	649	648	627	601	539
Metals														
As	µg/L	23.4	22.8	0.73	0.62	0.83	11.7	0.94	0.5U	2	--	2.4	2.3	0.82
Fe	µg/L	8.9U	8.9U	7.4U	304	116	354	53.2	57.4	1970J	--	5840	7110	1280
Mn	µg/L	615J	881	3400	1400	1240	990	1410	921	639	--	1140	1040	1280
Mo	µg/L	16.6J	14.3	22.1J	17.4	20.5	5.4	12.8J	11.3	9.5	--	4.6	1.8U	7.5
Se	µg/L	0.1U	0.1U	15.1	0.84	0.37	0.23	0.3U	0.3U	0.3U	--	0.3U	0.2U	0.14
U	µg/L	20.3	37.8	50	6	4.6	13	14.4	3.7	2.5	--	3.2	4.4	4.8
V	µg/L	84.8	95.5	3.9	5.1	2.7	10.6	3.7	2.5	2.8	--	2	1.5	0.3U
Radiological														
U	µg/L	20.3	37.8	50	6	4.6	13	14.4	3.7	2.5	--	3.2	4.4	4.8

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[c] Sample was unfiltered.
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[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R6-M4[a,b]

Analyte	Unit	09/30/02	01/14/03	04/07/03	07/10/03	10/08/03	01/21/04	04/15/04	10/04/04	04/06/05	10/03/05	04/04/06	10/02/06	04/10/07
Field Measurements														
Alkalinity	mg/L	171	278	206	256	198	421	152	181	110	126	155	70	28.0
Conductivity[c]	µmhos/cm	1488	1647	1727	1643	1544	1541	1274	1280	1558	833	1510	1071	1224
DO[c]	mg/L	10.2R	0.85	0.93	1.98	1.42	1.71	1.96	0.69	1.31	1.35	1.14	0.79	0.93
ORP[c]	mV	-18.6	-207	-70.5	-103	-138	-150	-152.1	-192	-132.3	-227	-115.9	-123	-212
pH[c]	s.u.	6.98	6.95	6.81	6.99	7.08	7.29	7.44	7.53	7.50	8.19	7.28	7.99	8.09
Temperature[c]	C	17.8	10	8.87	15	14.8	8.44	11.21	14.4	9.93	13.9	7.62	14.6	8.06
Turbidity[c]	NTU	318	529	167	339	118	7.36	8.65	7.35	15.3	14.2	11.6	8.30	10.5
Common Ions														
Ca	mg/L	96.8	148	157	145	122	150	150	84.0	120	37.0	110	34.0	67.0
Chloride	mg/L	78.7	85.4	93.6	97.6	93.4	82.0	83.0	54.0	120	35.0	82.0	68.0	--
Fluoride	µg/L	165	25.1U	76.5	17.2UR	20.3U	200.U	200.U	100.U	150.	120.	200.U	200.U	--
Hardness	mg/L	486	636	653	607	557	626	593	440	473	224	621	270	447
K	mg/L	13.7	11.9	12.5	11.9	12.0	14.0J	16.0	13.0	13.0	13.0	17.0	17.0	15.0
Mg	mg/L	59.3	64.7	63.4	59.4	61.2	61.0	53.0	56.0	42.0	32.0	84.0	45.0	68.0
Na	mg/L	133	123	135	133	135	110	99.0	95.0	110	93.0	99.0	120	110
NO_2 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	35.7	466R	51.8	4.50U	36.3	50.U	10.U	10.U	10.U	10.U	28	10.U	--
SO_4	mg/L	525	570	657	590	550	600	500	430	480	120	620	390	--
Metals														
As	µg/L	0.4	2	0.210	1.60	1.90	1.3J	1	1	1.1	1	1	1.3	1.4
Fe	µg/L	723	33600	4540	27000	26900	39000	12000	16000	6400	1300	8900	380	910
Mn	µg/L	748	816	929	908	726	590	940	410	750	140	1300	160	650
Mo	µg/L	7	6.4U	3.40	4.20	1.70U	3.9J	6.5	3.1J	3.9	19	6.1	15	13
Se	µg/L	0.27	0.1U	17.5	0.100U	0.100U	0.01U	0.27	0.049	0.12	0.023U	0.28	0.025U	0.038U
U	µg/L	9	2.9	5.50	3.70	2.80	1	1.1J	0.43J	0.78	3.3	3.4	0.12	0.19
V	µg/L	0.3U	0.9U	0.620	0.300U	0.300U	0.12J	0.39	0.12U	0.47	0.1U	0.14UJ	0.24	0.4J
Radiological														
U	µg/L	9	2.9	5.50	3.70	2.80	1	1.1J	0.43J	0.78	3.3	3.4	0.12	0.19

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R6-M4[a,b]

Analyte	Unit	10/08/07	04/07/08[c]	10/07/08	04/07/09	10/06/09	04/19/10	10/11/10	04/04/11	10/10/11	04/24/12
Field Measurements											
Alkalinity	mg/L	59	208	96	55	--	64	88	112	83	26
Conductivity[c]	µmhos/cm	894	2049	794	731	1110	1150	1148	1230	1238	1090
DO[c]	mg/L	0.34	5.22	3.09	1.25	0.89	1.01	0.70	0.74	6.90	2.33
ORP[c]	mV	-240	-99.3	-105	-272	-105	74	-50.3R	-90	-12.0	-80
pH[c]	s.u.	7.87	7.03	7.57	8.56	7.46	6.60	7.44	7.86	6.58	7.67
Temperature[c]	C	14.7	7.66	12.89	9.85	10.3	11.9	13.53	8.7	14.07	10.20
Turbidity[c]	NTU	6.60	4.00	39.9	46.8	15.7	20.3	32.7	77.7	3.27	95
Common Ions											
Ca	mg/L	31.0	220	24.0	46.0J	45.0J	63.0	46.0	51.2	58.0	55.0
Chloride	mg/L	66.0	170	65.0	92.0	--	92.0	74.0	60.4	88.0	89.0
Fluoride	µg/L	160.	200.U	300.	120.	--	100.U	120.	108	200.U	100.U
Hardness	mg/L	222	862	134	329J	285J	388	275	377	363	339
K	mg/L	15.0	17.0	11.0J	16.0J	13.0J	16.0J	15.0J	11.2	15.0	15.0J
Mg	mg/L	35.0	76.0	18.0	52.0	42.0	56.0	39.0	60.6	53.0	49.0
Na	mg/L	100	110	90.0	110J	98.0J	100	110	108	99.0	110J
NO_2 as N	µg/L	--	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	10.U	10.U	10.U	10.U	--	23	51	10U	10.U	12
SO_4	mg/L	320	740	210	380	--	450	330	495	440	390
Metals											
As	µg/L	2.6	2.4	1.3	1.5	2.2	0.61	2.7	2.09	2.4	1.5
Fe	µg/L	1800	10000	1100	380	2600	1000	1000	473	960	1300
Mn	µg/L	240	1100	120	130	250	260	130	125	130	160
Mo	µg/L	46	5.5	21	49	13	13	52	40.9	39	61
Se	µg/L	0.085	0.33	0.27	0.23U	0.29	1.9	0.72	1.50U	0.79	0.96
U	µg/L	1.5	6.7	0.24	2.3	0.83	0.84	20	7.05	3.7	7.1
V	µg/L	2.2J	5.9	0.65	0.75	0.72	0.45	0.69	3.00U	1.4J	0.94
Radiological											
U	µg/L	1.5	6.7	0.24	2.3	0.83	0.84	20	7.05	3.7	7.1

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R6-M5[a,b]

Analyte	Unit	01/12/00	03/01/00	04/12/00	08/15/00	10/16/00	01/22/01	04/16/01	07/09/01	10/11/01	10/15/01	01/31/02	04/02/02	07/09/02
Field Measurements														
Alkalinity	mg/L	105	80	100	73	96	68	113	97	105	--	93	136	98
Conductivity[c]	µmhos/cm	2660	2560	4350	3340	2120	1966	2130	2110	1684	--	1451	1715	1291
DO[c]	mg/L	0.35	0.4	0.2	0.47	0.4	0	1.1	0.326	0.2	--	0.34	0.581	1.75
ORP[c]	mV	-257	-135	-66	-42	-76	-277	-155	-242	-224	--	-137	-18	-162
pH[c]	s.u.	7.94	8.28	8.24	8.31	7.26	7.41	7.51	7.4	7.99	--	7.5	7.89	7.25
Temperature[c]	C	11.3	7.9	8.7	16.5	16.4	9.1	11	13.5	14.7	--	9.76	10	16.1
Turbidity[c]	NTU	1.45	--	3.6	0.62	4.56	4.58	3.76	8.69	22.5	--	14.2	27.1	10.9
Common Ions														
Ca	mg/L	--	166	170	92.4	99.5	80.8	102	133	68.1	--	83.2	102	59.0
Chloride	mg/L	--	169	190	92.7	99.0	137	142J	145	112	110	89.9	91.2	84.9
Fluoride	µg/L	--	69	--	--	--	158	49.7	61.6	118	75.3	67	71	340J
Hardness	mg/L	--	754	765	424	448	449	515	634	419	--	477	540	390
K	mg/L	--	16.0	13.8	15.1	17.3	18.0	15.1	15.8	14.4	--	12.9	12.0	11.6
Mg	mg/L	--	82.4	82.8	46.9	48.5	60.0	63.1	73.4	60.4	--	65.3	69.4	58.9
Na	mg/L	--	305	276	290	292	256	215	263	176	--	145	140	125
NO_2 as N	µg/L	--	--	--	27.0U	501	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	47.4	2760	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	12U	32.4U	--	--	225	65	30.9	7.3U	7.3U	7.3U	475	4.9U
SO_4	mg/L	--	1110	1110	845	845	813	427	796	624	624	607	564	478
Metals														
As	µg/L	8.5	4	2.4	5.4	2	1.7	1.8	2.8	1.8	--	1.4	1.4	1.3
Fe	µg/L	--	8.9U	353	280	91.6	58.2	1060	1500	1020	--	3730	5170	2680
Mn	µg/L	--	4270	3590	1600	2620	1610	1940	2150	880	--	1130	1160	721
Mo	µg/L	53.5	47	33.4	28.5	27.4	20.7	10	14.2	5.7	--	1.5U	1.8U	2.4
Se	µg/L	0.1	0.1U	0.92	0.1U	0.25	0.1U	0.84	0.3U	0.3U	--	0.3U	0.2U	0.1U
U	µg/L	14.7	13.1	9.9	5.3	4.6	3.1	4.1	3.5	2.3	--	0.93	3.6	0.27
V	µg/L	8.4	23.5	2.3	1.7	13	13.6	1.7	1.2	0.57	--	0.4U	0.3U	0.3U
Radiological														
U	µg/L	14.7	13.1	9.9	5.3	4.6	3.1	4.1	3.5	2.3	--	0.93	3.6	0.27

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R6-M5[a,b]

Analyte	Unit	09/30/02	01/14/03	04/07/03	07/10/03	10/08/03	01/21/04	04/16/04	04/06/05
Field Measurements									
Alkalinity	mg/L	121	187	164	201	199	390	230	138
Conductivity[c]	µmhos/cm	1361	1488	1652	1559	1647	1539	1284	1678
DO[c]	mg/L	4.9	0.6	0.57	1.15	0.7	1.36	2.45	0.83
ORP[c]	mV	-83.3	-222	-120.9	-145	-147	-179	-141.6	-158.1
pH[c]	s.u.	7.46	7.04	6.57	7.21	6.93	7.37	7.62	7.50
Temperature[c]	C	16.85	9.9	8.58	15.4	15.8	8.70	9.77	9.95
Turbidity[c]	NTU	7.13	51.1	28.6	148	115	13.5	39.5	409
Common Ions									
Ca	mg/L	52.0	96.3	143	122	124	150	120	130
Chloride	mg/L	80.7	88.1	95.5	102	103	88.0	89.0	120
Fluoride	µg/L	123	25.1U	59.6	107J	153	200.U	200.U	200.U
Hardness	mg/L	383	530	626	573	600	642	526	510
K	mg/L	12.6	10.4	12.0	10.7	11.2	12.0J	14.0J	13.0
Mg	mg/L	61.4	70.2	65.2	65.2	70.6	65.0	55.0	45.0
Na	mg/L	132	124	138	137	138	110	110	110
NO_2 as N	µg/L	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	48.8	284R	4.60	4.50U	4.50U	50.U	190.	28
SO_4	mg/L	475	548	653	579	612	630	510	520
Metals									
As	µg/L	1	1.1	1.10	1	1.30	0.54J	0.31	0.25
Fe	µg/L	3250	15200	11200	23700	17000	34000	1900	7500
Mn	µg/L	614	1150	1080	891	856	520	630	800
Mo	µg/L	1.7U	6.4U	2.00U	3.00	1.70U	1.4J	5.8	3.9
Se	µg/L	0.1U	0.1U	3.80	0.100U	0.340	0.01U	3.2	0.13
U	µg/L	0.48	1.2	5.80	0.700	0.930	0.19	2.4	1.4
V	µg/L	0.3U	1	0.300U	0.300U	0.300U	0.083UJ	0.25U	0.41UR
Radiological									
U	µg/L	0.48	1.2	5.80	0.700	0.930	0.19	2.4	1.4

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R6-M6[a,b]

Analyte	Unit	10/18/00	01/29/01	04/17/01	07/09/01
Field Measurements					
Alkalinity	mg/L	75	254	75	83
Conductivity[c]	µmhos/cm	2110	2370	2310	2180
DO[c]	mg/L	0.13	--	2.4	0.528
ORP[c]	mV	-113	-46	-134	-60
pH[c]	s.u.	7.08	7.04	6.98	5.96
Temperature[c]	C	16.5	6.2	10.4	16.7
Turbidity[c]	NTU	20.3	138	5.51	4.4
Common Ions					
Ca	mg/L	--	--	112	146
Chloride	mg/L	--	--	--	27.8
Fluoride	µg/L	--	--	--	122
Hardness	mg/L	--	--	567	685
K	mg/L	--	--	11.0	12.8
Mg	mg/L	--	--	69.7	77.9
Na	mg/L	--	--	228	244
NO_3+NO_2 as N	µg/L	--	--	--	275
SO_4	mg/L	--	--	--	823
Metals					
As	µg/L	13.2	2.7	12	7.3
Fe	µg/L	--	1080	1140	1120
Mn	µg/L	--	2880	2360	2700
Mo	µg/L	14.3	14.4	5.8J	9.1
Se	µg/L	0.35	10	0.3U	0.3U
U	µg/L	9.7	142	5.3	11.3
V	µg/L	1.2U	5.6	3.6	6.7
Radiological					
U	µg/L	9.7	142	5.3	11.3

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R7-M1[a,b]

Analyte	Unit	02/29/00	04/11/00	01/29/01	04/17/01	07/10/01
Field Measurements						
Alkalinity	mg/L	48	60	188	73	18.5
Conductivity[c]	µmhos/cm	2430	4440	2730	2100	2010
DO[c]	mg/L	--	0.9	--	1.8	0.697
ORP[c]	mV	-54	24	158	95	-67
pH[c]	s.u.	6.05	6.93	6.37	6.61	7
Temperature[c]	C	8.7	8.5	8.3	10.9	13.9
Turbidity[c]	NTU	172	55	99.1	223	83
Common Ions						
Ca	mg/L	176	155	178	86.9	110
Chloride	mg/L	150	140	--	107J	104
Fluoride	µg/L	311	--	--	137	365
Hardness	mg/L	705	686	697	432	495
K	mg/L	17.5	19.4	19.8	16.1	17.6
Mg	mg/L	64.6	72.5	61.4	52.3	53.6
Na	mg/L	315	306	304	217	221
NO_2 as N	µg/L	--	336	--	--	--
NO_3 as N	µg/L	--	5530	--	--	--
NO_3+NO_2 as N	µg/L	2810	--	--	263	127
SO_4	mg/L	1090	1140	--	472	703
Metals						
As	µg/L	1.6	6	2.1	4.5	13.5
Fe	µg/L	8.9U	7.4U	11.0U	155	230
Mn	µg/L	2060	852	497	1940	1630
Mo	µg/L	51.6	38.5J	37.8	13.7J	22.6
Se	µg/L	1.3	3.1	0.84	0.3U	0.3U
U	µg/L	45.3	40.6J	92.7	16.8	30.7
V	µg/L	93	103	103	22.9	22
Radiological						
U	µg/L	45.3	40.6J	92.7	16.8	30.7

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R7-M2[a,b]

Analyte	Unit	03/01/00	04/11/00	01/24/01	04/18/01	07/10/01
Field Measurements						
Alkalinity	mg/L	--	66	311	--	93
Conductivity[c]	µmhos/cm	--	1539	2890	2750	2360
DO[c]	mg/L	--	--	--	--	1.1
ORP[c]	mV	--	73	152	75	14
pH[c]	s.u.	--	6.92	6.57	6.53	7.18
Temperature[c]	C	--	11	7.4	11.1	14.7
Turbidity[c]	NTU	--	25	80.5	--	24
Common Ions						
Ca	mg/L	325	220	274	239	171
Chloride	mg/L	--	182	--	--	122
Fluoride	µg/L	--	--	--	--	241
Hardness	mg/L	1140	823	970	850	646
K	mg/L	16.1	14.7	14.6	12.4	15.2
Mg	mg/L	79.7	66.5	69.4	61.5	53.1
Na	mg/L	282	285	265	240	217
NO_2 as N	µg/L	--	131	--	--	--
NO_3 as N	µg/L	--	7980	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	5190
SO_4	mg/L	--	1240	--	--	762
Metals						
As	µg/L	0.4U	0.43	1.1	2.1	3.7
Fe	µg/L	8.9U	7.4U	41	1.0U	0.7U
Mn	µg/L	1050	168	190	111	186
Mo	µg/L	94.9	48.7J	48.1	41.2	19.5
Se	µg/L	176	14	10.6	15.5	2.3
U	µg/L	376	57.9J	279	210	21.5
V	µg/L	16.7	33.5	60.2	89.3	165
Radiological						
U	µg/L	376	57.9J	279	210	21.5

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R8-M1[a,b]

Analyte	Unit	04/11/00
Field Measurements		
Alkalinity	mg/L	71
Conductivity[c]	µmhos/cm	4440
ORP[c]	mV	17
pH[c]	s.u.	6.72
Temperature[c]	C	9.7
Turbidity[c]	NTU	2.05
Common Ions		
Ca	mg/L	178
Chloride	mg/L	164
Hardness	mg/L	728
K	mg/L	14.8
Mg	mg/L	68.9
Na	mg/L	274
NO_2 as N	µg/L	649
NO_3 as N	µg/L	8760
SO_4	mg/L	1150
Metals		
As	µg/L	3.9
Fe	µg/L	7.4U
Mn	µg/L	1200
Mo	µg/L	66J
Se	µg/L	5.3
U	µg/L	48.1J
V	µg/L	81.3
Radiological		
U	µg/L	48.1J

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R9-M1[a,b]

Analyte	Unit	01/12/00	02/29/00	04/11/00	10/16/00	04/17/01	07/10/01	10/11/01	10/15/01	01/29/02	04/02/02	07/10/02	10/01/02	01/14/03
Field Measurements														
Alkalinity	mg/L	99	51	90	103	74	99	120	--	125	138	167	160	188
Conductivity[c]	µmhos/cm	2550	2590	4570	2210	2130	1980	1694	--	1518	1593	1452	1442	1607
DO[c]	mg/L	--	0.35	0.58	--	2.1	0.568	0.653	--	2.6	1.7	0.94	0.5	2.84
ORP[c]	mV	110	36	-25	201	164	62	-108	--	82	-61	-8.2	-15.5	-240
pH[c]	s.u.	6.57	6.5	6.7	6.15	6.37	6.97	7.05	--	6.36	7.03	7.01	6.88	6.9
Temperature[c]	C	9.3	8.1	9.5	14.3	12	12.2	13.7	--	8.98	13	13.95	15	9.5
Turbidity[c]	NTU	--	4.53	1.56	39	6.94	12.7	24.7	--	93	35.1	1.13	2.89	10.1
Common Ions														
Ca	mg/L	185	178	188	132	110	132	94.0	--	104	125	116	99.9	137
Chloride	mg/L	168	164	176	96.8	118J	123	98.3	100	80.8	83.6	76.9	74.9	78.6
Fluoride	µg/L	--	361	--	--	154	359	301	246	26.2RUJ	150J	117J	159	25.1U
Hardness	mg/L	745	748	783	544	518	566	445	--	485	574	511	468	584
K	mg/L	15.4	13.2	13.9	14.5	15.9	15.7	16.0	--	13.8	14.0	13.0	14.5	12.2
Mg	mg/L	68.7	73.7	76.1	52.0	59.1	57.3	51.1	--	54.6	63.7	53.7	53.1	58.8
Na	mg/L	342	299	273	280	221	218	173	--	136	139	123	131	125
NO_2 as N	µg/L	--	--	789	13.6U	--	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	1030	--	6580	17500	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	301	--	--	1830	200	463	373	245	388	107	66.1	503R
SO_4	mg/L	1060	1100	1180	872	538	744	616	588	624	602	532	493	578
Metals														
As	µg/L	2.8	2.8	3.4	3.2	2.8	3.5	3.9	--	3.4	2.8	3.2	3	3.5
Fe	µg/L	8.9U	8.9U	7.4U	11.6U	21.7	0.7U	17.6	--	0.8U	1U	5.8	0.8U	2.9U
Mn	µg/L	932J	1590	1890	1040	807	1540	1230	--	1.3	13.2	102	11	16.9
Mo	µg/L	28.2	46.9	62.9J	13.4	10J	26.1	15.5	--	7.3	7.4	12.1	6.9	6.4U
Se	µg/L	0.49	0.39	4.8	0.1U	0.51	0.67	0.41	--	0.96	1.1	0.63	0.44	3.8
U	µg/L	12	23.2	80.7J	4.4	4.7	17.8	28	--	33.4	41.6	33.6	26.9	59.9
V	µg/L	97.4	108	74.5	122	75.9	89.5	91.1	--	87.9	72.3	84.1	73.2	97.9
Radiological														
U	µg/L	12	23.2	80.7J	4.4	4.7	17.8	28	--	33.4	41.6	33.6	26.9	59.9

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- R9-M1[a,b]

Analyte	Unit	04/07/03	07/10/03	10/07/03	01/21/04	04/15/04
Field Measurements						
Alkalinity	mg/L	222	187	209	347	221
Conductivity[c]	µmhos/cm	1856	1591	1513	1555	1481
DO[c]	mg/L	1.7	2.17	0.98	1.81	1.48
ORP[c]	mV	10.2	17	-28	-8.6	-59.1
pH[c]	s.u.	7.03	6.72	6.85	6.77	6.93
Temperature[c]	C	9.23	14.9	14.6	7.35	9.91
Turbidity[c]	NTU	4.54	4.18	15.1	4.12	14.6
Common Ions						
Ca	mg/L	199	142	138	170	200
Chloride	mg/L	96.5	93.0	88.0	74.0	85.0
Fluoride	µg/L	219	93.7J	171	200.U	200.U
Hardness	mg/L	766	561	567	672	759
K	mg/L	12.6	12.7	13.0	15.0J	17.0
Mg	mg/L	65.4	50.2	54.1	60.0	63.0
Na	mg/L	138	139	132	110	110
NO_2 as N	µg/L	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--
NO_3+NO_2 as N	µg/L	1220	395	128	53	24
SO_4	mg/L	729	592	557	600	580
Metals						
As	µg/L	3.20	1.40	2.70	1.6J	0.41
Fe	µg/L	1.30U	1U	13.9	6.7U	320
Mn	µg/L	257	256	139	720	5300
Mo	µg/L	11.4	1.70U	1.70U	6.5J	8.8
Se	µg/L	33.8	0.160	0.400	0.17J	0.084
U	µg/L	63.7	18.4	30.3	39	26J
V	µg/L	103	43.5	85.0	64	11
Radiological						
U	µg/L	63.7	18.4	30.3	39	26J

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T1-D[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	321	243	250	293	267	265	291
Conductivity[c]	µmhos/cm	3200	3100	3830	2570	2600	2520	2420
DO[c]	mg/L	0.63	0.45	1.16	0.658	0.3	0.623	0.397
ORP[c]	mV	206	100	172	188	24	-28	-1
pH[c]	s.u.	6.36	6.45	6.7	6.54	6.72	6.78	6.25
Temperature[c]	C	9.8	8.4	14.1	13.7	9.4	9.4	12.3
Turbidity[c]	NTU	12.2	4.71	28.1	18.1	5.52	1.28	2.88
Common Ions								
Ca	mg/L	322	280	224	253	261	255	266
Chloride	mg/L	191	160	91.7	106	144	124J	131
Fluoride	µg/L	--	--	--	--	356	298	351
Hardness	mg/L	1150	1000	790	882	921	899	941
K	mg/L	19.9	16.6	17.0	18.3	18.1	16.1	18.6
Mg	mg/L	84.3	73.0	56.0	60.7	65.3	63.6	67.3
Na	mg/L	344	275	282	282	258	228	247
NO_2 as N	µg/L	8.5U	27.2U	27.0U	13.6U	--	--	--
NO_3 as N	µg/L	20600	34200	14300	12900	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	14900	14500	8280
SO_4	mg/L	1340	1170	960	961	959	704	849
Metals								
As	µg/L	9.7	6.9	8.6	9.4	9.4	8.4	9.2
Fe	µg/L	8.9U	7.4U	9.1U	11.6U	11.0U	10.6	0.7U
Mn	µg/L	426	384	203	266	240	167	180
Mo	µg/L	60.4	51.1J	57.4	62.4	52.4	45	51.5
Se	µg/L	41.1	54.6	12.5	17.9	79.6	126	116
U	µg/L	739	466	266	312	358	361	376
V	µg/L	341	236	318	367	310	278	328
Radiological								
U	µg/L	739	466	266	312	358	361	376

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T1-S[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	324	245	256	292	288	260	309
Conductivity[c]	µmhos/cm	3330	3150	3830	2680	2680	2560	2470
DO[c]	mg/L	0.77	0.62	0.83	1.1	0.3	0.458	0.383
ORP[c]	mV	196	98	157	2.03	6	-37	43
pH[c]	s.u.	6.37	6.54	6.87	6.59	6.78	6.79	6.28
Temperature[c]	C	7.9	8.1	14.3	12.3	9	9	13.1
Turbidity[c]	NTU	10.2	4.67	0.56	0.46	24.1	2.36	4.1
Common Ions								
Ca	mg/L	335	269	224	269	252	263	277
Chloride	mg/L	187	161	91.9	115	152	125J	135
Fluoride	µg/L	--	--	--	--	339	303	374
Hardness	mg/L	1200	962	788	934	892	924	974
K	mg/L	20.7	16.4	16.9	19.2	17.7	15.7	18.1
Mg	mg/L	88.1	70.4	55.5	63.7	63.7	65.0	68.5
Na	mg/L	351	267	277	283	248	227	246
NO_2 as N	µg/L	8.5U	27.2U	27.0U	13.6U	--	--	--
NO_3 as N	µg/L	19900	35300	13700	12500	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	14800	14500	8090
SO_4	mg/L	1310	1190	963	967	975	710	858
Metals								
As	µg/L	9.7	7.5	8.8	9.7	9.2	8.6	9.5
Fe	µg/L	8.9U	7.4U	9.1U	11.6U	11U	1.0U	14.9
Mn	µg/L	259	255	79.2	112	95.8	71.6	89.8
Mo	µg/L	56.1	50.1J	53.6	59.9	48.7	42	47
Se	µg/L	35.6	54.3	13.5	25.5	89	124	118
U	µg/L	753	451	245	324	364	366	367
V	µg/L	344	217	325	386	295	277	329
Radiological								
U	µg/L	753	451	245	324	364	366	367

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T2-D[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	390	323	273	313	298	280	322
Conductivity[c]	µmhos/cm	3170	3130	3970	2620	2650	2540	2450
DO[c]	mg/L	0.46	0.4	0.99	0.572	0.1	0.627	0.291
ORP[c]	mV	-165	76	-19	-12	-6	-38	-77
pH[c]	s.u.	7.21	7.23	7	6.79	6.89	7.02	6.36
Temperature[c]	C	10.3	8.1	15.2	14.5	9.6	10.6	12.9
Turbidity[c]	NTU	10.7	3.7	3.85	3.65	3.82	4.88	10.9
Common Ions								
Ca	mg/L	316	306	231	269	258	264	274
Chloride	mg/L	201	171	94.2	111	149	125J	133
Fluoride	µg/L	--	--	--	--	349	304	339
Hardness	mg/L	1170	1110	808	931	914	928	962
K	mg/L	18.4	17.2	16.3	18.9	17.6	15.5	18.3
Mg	mg/L	92.4	84.9	56.2	63.0	65.5	65.2	67.4
Na	mg/L	349	307	277	281	253	239	245
NO_2 as N	µg/L	779	1330	656	733	--	--	--
NO_3 as N	µg/L	2710	12200	5680	6670	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	7790	8770	5690
SO_4	mg/L	1350	1180	967	960	963	711	856
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	28800	13800	1370	2110	2050	2660	1480
Mn	µg/L	627	537	299	415	356	278	238
Mo	µg/L	16.4	22J	36.3	32.7	31.8	30.1	38.9
Se	µg/L	17.8	43.9	10	17.3	52.8	102	88.9
U	µg/L	107	151	172	226	227	260	323
V	µg/L	1.0U	0.4U	11.2	9.3	3.2	10.8	35.4
Radiological								
U	µg/L	107	151	172	226	227	260	323

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T2-S[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	303	264	--	324	333	285	316
Conductivity[c]	µmhos/cm	3090	3150	1390	2610	2640	2570	2490
DO[c]	mg/L	0.41	0.42	0.86	1.084	0	0.582	0.388
ORP[c]	mV	-177	100	-47	-71	-111	-85	-51
pH[c]	s.u.	7.44	6.67	7.13	6.91	7.11	6.95	6.31
Temperature[c]	C	10.1	7.9	15.2	14.3	9.1	9.3	13.3
Turbidity[c]	NTU	3.69	13.6	3.22	0.66	7.81	6.03	32.6
Common Ions								
Ca	mg/L	266	285	205	245	249	264	276
Chloride	mg/L	199	159	93.2	111	149	126J	135
Fluoride	µg/L	--	--	--	--	298	329	341
Hardness	mg/L	1010	1030	741	871	891	926	972
K	mg/L	17.2	16.9	16.7	18.3	17.1	15.2	18.0
Mg	mg/L	84.8	76.4	55.6	62.9	65.4	64.7	68.8
Na	mg/L	342	288	268	278	248	227	248
NO_2 as N	µg/L	335	39.2	248	258	--	--	--
NO_3 as N	µg/L	5260	30400	3330	4040	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	6400	13200	7430
SO_4	mg/L	1320	1160	938	949	958	715	861
Metals								
As	µg/L	0.4U	1	0.3U	0.2U	0.2U	4.5	4.3
Fe	µg/L	21800	7730	4630	8540	9680	381	708
Mn	µg/L	835	283	288	367	360	101	115
Mo	µg/L	16	38.1J	28.5	30	24.2	39.1	43.3
Se	µg/L	15.2	51.7	6.6	11.7	48.8	120	86.7
U	µg/L	86.2	342	100	168	194	347	343
V	µg/L	1U	49.6	4	10	7.6	180	195
Radiological								
U	µg/L	86.2	342	100	168	194	347	343

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T3-D[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	405	295	272	307	296	305	322
Conductivity[c]	µmhos/cm	3120	3110	3980	2580	2590	2500	2390
DO[c]	mg/L	0.42	0.72	1.07	0.322	0	0.958	0.3
ORP[c]	mV	-229	12	-96	-106	-123	-53	-196
pH[c]	s.u.	7.43	7.55	7.19	7.02	7.08	7.23	6.77
Temperature[c]	C	10.7	9.1	14.9	14.8	9.6	9.7	12.7
Turbidity[c]	NTU	4.06	6.14	3.42	3.8	6.72	7.47	8.52
Common Ions								
Ca	mg/L	283	255	209	231	216	230	236
Chloride	mg/L	193	184	93.3	108	151	125J	130
Fluoride	µg/L	--	--	--	--	223	174	251
Hardness	mg/L	1060	981	752	838	807	847	859
K	mg/L	16.6	15.1	17.1	18.8	17.3	15.4	18.1
Mg	mg/L	86.8	83.5	55.8	63.4	64.9	66.1	65.6
Na	mg/L	323	281	276	282	247	233	243
NO_2 as N	µg/L	597	368	480	347	--	--	--
NO_3 as N	µg/L	933	2760	2550	1660	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	1220	1060	917
SO_4	mg/L	1280	1180	961	951	960	696	824
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	36900	28700	8170	18000	24700	20300	26300
Mn	µg/L	584	527	413	499	514	520	490
Mo	µg/L	11.7	10.9J	26.4	16	11.3	11	14
Se	µg/L	11.7	16.9	5.2	5.5	8.6	26.5	27.4
U	µg/L	30	31.4	61.3	82.9	24	44.6	80.8
V	µg/L	1U	0.4U	1.4	1.2U	1.4U	1.4	1.7
Radiological								
U	µg/L	30	31.4	61.3	82.9	24	44.6	80.8

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T3-S[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	273	273	284	393	306	287	352
Conductivity[c]	µmhos/cm	2960	3070	3950	2620	2600	2500	2470
DO[c]	mg/L	0.41	0.61	0.99	0.539	0	0.978	0.34
ORP[c]	mV	-246	59	-97	-100	-122	-136	-127
pH[c]	s.u.	7.68	7.02	7.16	6.95	7.19	7.18	6.45
Temperature[c]	C	10.7	8.8	16.1	15.1	9.2	10.3	13.2
Turbidity[c]	NTU	11.9	19.2	0.94	7.26	11.2	15.2	6.74
Common Ions								
Ca	mg/L	266	274	220	255	232	253	271
Chloride	mg/L	193	168	94.6	111	149	125J	133
Fluoride	µg/L	--	--	--	--	291	293	327
Hardness	mg/L	1050	1010	785	895	849	900	955
K	mg/L	14.6	16.9	16.7	18.3	17.0	15.6	18.4
Mg	mg/L	92.9	78.9	57.3	62.8	65.6	65.1	67.5
Na	mg/L	338	291	284	280	247	231	248
NO_2 as N	µg/L	329	289	1180	789	--	--	--
NO_3 as N	µg/L	734	19700	4520	5160	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	4930	7740	4780
SO_4	mg/L	1240	1200	964	952	938	720	857
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	19300	11100	6150	12200	11300	2900	9270
Mn	µg/L	1200	531	274	408	394	294	296
Mo	µg/L	14.8	23.7J	38.8	24.4	22.5	27.4	33
Se	µg/L	11.7	36.4	9.1	13.9	47	99.9	85.7
U	µg/L	30.6	166	115	149	102	258	282
V	µg/L	1U	3.5	1.2U	1.5	1.4U	22.6	11
Radiological								
U	µg/L	30.6	166	115	149	102	258	282

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T4-D[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	149	125	119	232	235	236	302
Conductivity[c]	µmhos/cm	2870	2840	3470	2380	2420	2350	2290
DO[c]	mg/L	0.32	0.19	0.7	0.733	0	1.1	0.154
ORP[c]	mV	-327	94	-229	-240	-241	-40	-265
pH[c]	s.u.	7.67	7.68	7.59	7.65	7.64	7.48	7.3
Temperature[c]	C	10.5	9.4	15	14.9	9.6	11.4	12.9
Turbidity[c]	NTU	3.47	4.16	5.69	7.63	4.2	25.9	7.68
Common Ions								
Ca	mg/L	198	172	117	153	177	165	196
Chloride	mg/L	192	185	92.8	103	151	126J	127
Fluoride	µg/L	--	--	--	--	269	42	55.5
Hardness	mg/L	895	768	517	645	715	667	754
K	mg/L	18.8	14.6	17.5	18.9	17.3	14.6	19.7
Mg	mg/L	97.3	82.1	54.6	63.9	66.4	62.0	64.2
Na	mg/L	353	270	277	277	256	227	240
NO_2 as N	µg/L	8.5U	27.2U	27.0U	13.6U	--	--	--
NO_3 as N	µg/L	18.1U	29.6U	31.0U	14.8U	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	117	7.3	10.8
SO_4	mg/L	1220	1170	907	925	933	651	799
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	47000	34000	17000	34100	43100	38000	53300
Mn	µg/L	596	439	336	612	561	575	663
Mo	µg/L	0.41U	0.4UJ	3.1	0.3U	8.2	0.3U	3.5
Se	µg/L	0.1U	2.9	0.1U	0.1U	0.14	0.3U	0.59
U	µg/L	0.1U	0.10U	0.10U	0.10U	0.1U	0.11	0.1U
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.10U	0.10U	0.10U	0.1U	0.11	0.1U

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T4-S[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	117	48	42	57	32	74	315
Conductivity[c]	µmhos/cm	2660	2730	3320	1989	2030	2100	2420
DO[c]	mg/L	0.27	0.12	1.8	0.852	0	1.1	0.239
ORP[c]	mV	-413	72	-39	-152	-372	-177	-302
pH[c]	s.u.	8.88	8.27	9.24	7.67	9	7.81	7.23
Temperature[c]	C	11.4	9	15.7	15.6	9.7	9.8	13.5
Turbidity[c]	NTU	6.41	6.01	1.6	0.66	3.92	4.77	6.27
Common Ions								
Ca	mg/L	174	166	78.8	59.5	66.7	111	232
Chloride	mg/L	187	186	88.7	98.8	143	123J	133
Fluoride	µg/L	--	--	--	--	258	375	133
Hardness	mg/L	817	766	402	403	410	530	856
K	mg/L	16.2	14.2	18.2	19.2	19.3	16.4	18.2
Mg	mg/L	92.9	85.4	49.9	61.7	59.1	61.3	67.1
Na	mg/L	347	275	281	281	248	228	244
NO_2 as N	µg/L	8.5U	27.2U	13.5U	13.6U	--	--	--
NO_3 as N	µg/L	18.1U	29.6U	15.5U	14.8U	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	123	4.7U	13.9
SO_4	mg/L	1190	1130	848	819	788	580	857
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	925	2480	9.1U	11.6U	1220	14200	52800
Mn	µg/L	1220	467	73	33.6	444	428	490
Mo	µg/L	31.5	14.4J	47.4	81.2	18.4	4.1	6.4
Se	µg/L	0.1U	0.2U	0.1U	0.1U	0.1U	2.8	31
U	µg/L	0.1U	0.10U	0.10U	0.1U	0.1U	0.1U	0.1U
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.10U	0.10U	0.1U	0.1U	0.1U	0.1U

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T5-D[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	76	45	40	158	196	218	282
Conductivity[c]	µmhos/cm	2760	2700	3100	2340	2250	2340	2240
DO[c]	mg/L	0.29	0.13	0.51	0.499	0	0.69	0.228
ORP[c]	mV	-315	19	-273	-240	-256	-177	-207
pH[c]	s.u.	7.81	9.66	8.23	7.75	7.78	7.65	7.35
Temperature[c]	C	11.2	9	15.3	14.9	9.8	10.1	12.6
Turbidity[c]	NTU	3.42	3.74	8.1	2.5	6.55	3.91	5.17
Common Ions								
Ca	mg/L	183	152	83.4	134	162	171	186
Chloride	mg/L	208	185	90.0	106	150	126J	124
Fluoride	µg/L	--	--	--	--	273	105	68.8
Hardness	mg/L	858	718	431	589	673	694	726
K	mg/L	19.9	14.8	18.2	19.0	17.7	15.1	19.7
Mg	mg/L	97.4	82.3	54.2	61.8	65.3	64.9	63.4
Na	mg/L	349	274	281	277	252	234	236
NO_2 as N	µg/L	8.5U	27.2U	13.5U	13.6U	--	--	--
NO_3 as N	µg/L	18.1U	29.6U	15.5U	14.8U	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	109	5.3	13
SO_4	mg/L	1300	1150	853	927	934	653	788
Metals								
As	µg/L	0.4U	0.2U	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	26300	19300	2860	27400	36900	33700	46100
Mn	µg/L	896J	448	227	608	491	567	622
Mo	µg/L	0.4UJ	0.4UJ	2.6	0.3U	4.8	0.3U	2.9U
Se	µg/L	0.1U	1.3	0.13	0.1U	5.2	0.3U	0.3U
U	µg/L	0.1U	0.1U	0.10U	0.10U	0.1U	0.10U	0.1U
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.1U	0.10U	0.10U	0.1U	0.10U	0.1U

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T5-S[a,b]

Analyte	Unit	01/11/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements								
Alkalinity	mg/L	48	37	60	30	43	60	117
Conductivity[c]	µmhos/cm	2650	2680	3250	2000	1975	2090	2070
DO[c]	mg/L	0.42	0.32	0.86	0.626	0	0.426	0.25
ORP[c]	mV	-326	15	-167	-211	-218	-34	-305
pH[c]	s.u.	9.44	9.72	9.34	7.51	9.44	7.78	7.72
Temperature[c]	C	11.4	9	15.8	15.8	9.9	10.1	13.1
Turbidity[c]	NTU	2.6	4.17	1.09	2.02	4.43	3.37	6.49
Common Ions								
Ca	mg/L	164	169	84.1	64.5	63.8	94.9	143
Chloride	mg/L	192	201	87.9	96.5	142	124J	131
Fluoride	µg/L	--	--	--	--	290	469	501
Hardness	mg/L	774	763	399	396	407	505	631
K	mg/L	16.8	14.1	18.5	19.9	20.0	16.0	18.7
Mg	mg/L	88.4	82.8	45.9	57.0	60.1	65.0	66.6
Na	mg/L	351	276	281	284	252	231	240
NO_2 as N	µg/L	597	27.2U	13.5U	13.6U	--	--	--
NO_3 as N	µg/L	935	29.6U	15.5U	14.8U	--	--	--
NO_3+NO_2 as N	µg/L	--	--	--	--	118	4.7U	18.6
SO_4	mg/L	1280	1160	838	834	781	537	800
Metals								
As	µg/L	0.4U	0.29	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	187	79.6	9.1U	11.6U	211	6980	19200
Mn	µg/L	323J	269	93	67.6	302	1780	424
Mo	µg/L	64.7J	39.4J	80.8	134	36.4	10	5.2
Se	µg/L	0.1U	0.2U	0.1U	0.1U	0.1U	0.3U	3.9
U	µg/L	0.1U	0.10U	0.10U	0.10U	0.1U	0.1U	0.1U
V	µg/L	1U	0.4U	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological								
U	µg/L	0.1U	0.10U	0.10U	0.10U	0.1U	0.1U	0.1U

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T6-D[a,b]

Analyte	Unit	01/12/00	03/01/00	04/11/00	08/16/00	10/17/00	01/23/01	04/17/01	07/12/01	10/15/01	01/28/02	04/02/02	07/09/02	09/30/02
Field Measurements														
Alkalinity	mg/L	50	--	75	--	33	--	--	--	155	170	211	173	174
Conductivity[c]	µmhos/cm	2590	2400	2610	1990	2200	2070	1990	1977	1710	1667	1776	1437	1469
DO[c]	mg/L	--	--	--	0.77	--	--	--	--	1.1	--	1.1	2.24	5.2R
ORP[c]	mV	222	-170	74	-159	-86	-282	-142	-163	218	-76	-166	-140	-82.6
pH[c]	s.u.	6.44	7.2	7.72	6.93	6.67	7.26	7.44	7.24	7.48	7.08	7.33	7.11	7.01
Temperature[c]	C	7.5	8.5	10.5	17.4	16.1	9.3	11.7	13.6	15.5	7.9	11	16.99	18.36
Turbidity[c]	NTU	34.3	>1000	35.2	--	696	165	--	99	80.8	>1000	>1000	52.4	331
Common Ions														
Ca	mg/L	165	164	178	95.1	103	--	121	126	93.0	116	137	104	91.5
Chloride	mg/L	177	169	174	92.1	99.0	--	120J	17.5	103	83.9	83.3	77.6	77.0
Fluoride	µg/L	--	94.1	--	--	--	--	97.8	90.6	125	171J	126	133J	25.1U
Hardness	mg/L	718	743	750	417	478	--	560	572	463	527	615	494	475
K	mg/L	16.4	16.5	15.4	15.0	19.0	--	16.8	18.7	18.0	14.2	14.4	13.3	14.5
Mg	mg/L	74.2	81.1	74.3	43.7	53.7	--	62.5	62.6	56.0	57.6	66.3	56.8	59.9
Na	mg/L	363	304	279	288	286	--	230	247	169	140	142	123	129
NO_2 as N	µg/L	8.5U	--	95.5	58.6	28.4	--	--	--	--	--	--	--	--
NO_3 as N	µg/L	3500	--	1300	911	1950	--	--	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	--	179	--	--	--	--	1080	8.4	98.6	7.3U	182	4.9U	14.8
SO_4	mg/L	1090	1090	1150	820	881	--	557	736	630	634	576	389	516
Metals														
As	µg/L	3.4	18.5	3.3	5.2	2.6	0.97	3.6	1.1	0.6U	0.6U	0.77	2.2	0.68
Fe	µg/L	377	105	7.4U	9.1U	11.6U	13.6	2260	859	44.6	7080	13900	11000	5580
Mn	µg/L	1760J	2870	2240	1770	3210	828	2760	2140	159	873	1150	940	816
Mo	µg/L	53.7J	24.8	36.7J	28.8	13.3	11.2	4.7	13.5	9.5	1.5U	1.8U	1.8U	1.7U
Se	µg/L	0.39	0.1U	1.4	0.1U	0.1U	0.26	0.41	0.3U	0.79	0.3U	0.2U	0.1U	0.1U
U	µg/L	6.6	15.7	22.6J	19.7	1.8	2.1	6.5	5.9	7.3	2.4	4.8	3.1	2.4
V	µg/L	84.4	10	28.2	9.3	16	1.4U	1.5	0.37	1.5	0.4U	0.3U	0.3U	0.3U
Radiological														
U	µg/L	6.6	15.7	22.6J	19.7	1.8	2.1	6.5	5.9	7.3	2.4	4.8	3.1	2.4

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T6-D[a,b]

Analyte	Unit	01/14/03	04/07/03	07/10/03	10/08/03	01/21/04	04/16/04
Field Measurements							
Alkalinity	mg/L	283	215	207	259	452	187
Conductivity[c]	µmhos/cm	1685	1875	1567	1588	1569	1352
DO[c]	mg/L	0.78	1.18	2.51	0.63	1.52	2.06
ORP[c]	mV	-369	-80.9	-42	-160	-171	-136.5
pH[c]	s.u.	7.02	6.95	7.11	7.25	7.28	7.28
Temperature[c]	C	10.1	9.64	14.5	14.3	8.56	10.49
Turbidity[c]	NTU	491	248	>1000	955	37.5	455
Common Ions							
Ca	mg/L	150	206	125	136	170	150
Chloride	mg/L	80.1	97.3	91.8	90.1	78.0	83.0
Fluoride	µg/L	25.1U	45.0	17.2UR	20.3U	200.U	200.U
Hardness	mg/L	621	774	538	596	663	568
K	mg/L	12.4	12.3	12.3	13.5	15.0J	16.0
Mg	mg/L	59.9	63.1	54.8	62.2	58.0	47.0
Na	mg/L	122	142	132	131	110	100
NO_2 as N	µg/L	--	--	--	--	--	--
NO_3 as N	µg/L	--	--	--	--	--	--
NO_3+NO_2 as N	µg/L	375R	112	4.50U	4.50U	50.U	10.U
SO_4	mg/L	589	748	554	576	620	530
Metals							
As	µg/L	1.6	0.240	0.190	2.10	1.5J	1.5
Fe	µg/L	38500	11600	2450	29200	46000	14000
Mn	µg/L	667	861	829	537	450	640
Mo	µg/L	6.4U	2.00U	2.60	1.70U	3.7J	4
Se	µg/L	0.1U	32.6	0.340	0.100U	0.01U	0.26
U	µg/L	4.6	2.80	0.820	2.30	0.89	2.3J
V	µg/L	1.1	0.580	0.320	0.300U	0.083UJ	0.25U
Radiological							
U	µg/L	4.6	2.80	0.820	2.30	0.89	2.3J

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T6-S[a,b]

Analyte	Unit	02/29/00	04/11/00	10/17/00	04/17/01	07/12/01
Field Measurements						
Alkalinity	mg/L	75	68	--	--	--
Conductivity[c]	µmhos/cm	2490	2740	1771	1910	2040
DO[c]	mg/L	--	--	--	--	0.425
ORP[c]	mV	-167	65	77	-58	-218
pH[c]	s.u.	7.81	8.04	6.48	7.13	7.38
Temperature[c]	C	7.9	10.4	16.7	11.3	14.6
Turbidity[c]	NTU	--	24.2	436	--	144
Common Ions						
Ca	mg/L	170	171	89.3	128	118
Chloride	mg/L	171	174	98.1	120J	--
Fluoride	µg/L	910	--	--	76.5	--
Hardness	mg/L	771	742	463	575	545
K	mg/L	16.8	15.2	19.9	16.8	18.1
Mg	mg/L	84.1	76.5	58.4	62.1	60.7
Na	mg/L	301	279	282	229	234
NO_2 as N	µg/L	--	554	63.9	--	--
NO_3 as N	µg/L	--	5440	414	--	--
NO_3+NO_2 as N	µg/L	12U	--	--	29	--
SO_4	mg/L	1120	1160	877	571	--
Metals						
As	µg/L	7.2	1.2	1.1	0.78	2.6
Fe	µg/L	151	7.4U	699	15500	2850
Mn	µg/L	2380	1410	3200	1910	2490
Mo	µg/L	15	16.5J	17	0.3U	38.2
Se	µg/L	0.1	3.3	0.1U	0.3U	0.3U
U	µg/L	5.6	5.3	1.7	1.4	2.8
V	µg/L	4.6	3.9	7.9	0.4U	1.1
Radiological						
U	µg/L	5.6	5.3	1.7	1.4	2.8

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T7-D[a,b]

Analyte	Unit	02/29/00	04/11/00	10/17/00	01/24/01	04/18/01	07/12/01
Field Measurements							
Alkalinity	mg/L	79	70	--	--	--	--
Conductivity[c]	µmhos/cm	2520	2790	2370	2120	2110	2000
DO[c]	mg/L	3	--	--	--	--	--
ORP[c]	mV	-215	76	135	-278	128	-160
pH[c]	s.u.	8.08	7.66	6.24	6.93	7.19	7.13
Temperature[c]	C	9	10.8	16	9	10.3	14.3
Turbidity[c]	NTU	269	30.3	73.3	167	50.9	76
Common Ions							
Ca	mg/L	176	210	123	--	124	126
Chloride	mg/L	169	181	96.6	--	118J	--
Fluoride	µg/L	307	--	--	--	113	--
Hardness	mg/L	778	885	520	--	564	566
K	mg/L	18.4	17.5	16.8	--	16.6	18.0
Mg	mg/L	82.2	87.6	51.6	--	61.8	61.0
Na	mg/L	307	330	282	--	224	247
NO_2 as N	µg/L	--	489	135	--	--	--
NO_3 as N	µg/L	--	1510	6820	--	--	--
NO_3+NO_2 as N	µg/L	86.7	--	--	--	1110	--
SO_4	mg/L	1120	1170	887	--	553	--
Metals							
As	µg/L	23.2	2.8	0.96	4.5	0.5U	3
Fe	µg/L	8.9U	7.4U	11.6U	564	2080	1340
Mn	µg/L	2880	1690	2320	1120	2020	2970
Mo	µg/L	35.2	43J	10	8.3	4.1	29.5
Se	µg/L	0.44	2.3	0.13	0.28	0.3U	0.35
U	µg/L	50.2	20.7J	6	8.2	5.7	10.8
V	µg/L	94.6	52.3	18.8	15.2	3.7	4.1
Radiological							
U	µg/L	50.2	20.7J	6	8.2	5.7	10.8

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T99-01[a,b]

Analyte	Unit	01/13/00	04/19/00	07/27/00
Field Measurements				
Alkalinity	mg/L	--	152	182
Conductivity[c]	µmhos/cm	3340	3910	2300
DO[c]	mg/L	5.32	--	2.63
ORP[c]	mV	194	138	177
pH[c]	s.u.	--	6.19	6.61
Temperature[c]	C	8	8.8	18.6
Turbidity[c]	NTU	311	138	>1000
Common Ions				
Ca	mg/L	287	253	232
Chloride	mg/L	140	130	75.3
Fluoride	µg/L	237	282	298
Hardness	mg/L	1030	898	831
K	mg/L	23.7	18.5	15.9
Mg	mg/L	76.3	64.7	61.0
Na	mg/L	352	262	227
NO_3+NO_2 as N	µg/L	16800J	8310	10600
SO_4	mg/L	1220	1070	992
TDS[c]	mg/L	2580	2000	2200
Metals				
As	µg/L	2.4	2	2.4
Fe	µg/L	8.9U	7.4U	9.1U
Mn	µg/L	0.9U	1.2	1.5U
Mo	µg/L	63.5	50.7	48.3
Se	µg/L	25	14	9
U	µg/L	443	199	257
V	µg/L	86.5	72.6	78.5
Radiological				
Alpha[d]	pCi/L	195	113	138J
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]
Beta	pCi/L	86.2	88.7	90.9
U	µg/L	443	199	257

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T99-03[a,b]

Analyte	Unit	01/13/00	04/19/00
Field Measurements			
Conductivity[c]	µmhos/cm	8850	--
DO[c]	mg/L	3.4	--
ORP[c]	mV	221	--
Temperature[c]	C	9.1	--
Turbidity[c]	NTU	502	--
Common Ions			
Ca	mg/L	403	444
Hardness	mg/L	5410	5560
K	mg/L	2.53	2.20
Mg	mg/L	1070	1080
Na	mg/L	760	744
Metals			
As	µg/L	0.89	0.7
Fe	µg/L	8.9U	11.7
Mn	µg/L	479	337
Mo	µg/L	2.3J	3.4
Se	µg/L	6	3.7
U	µg/L	36.3	33.5
V	µg/L	1.0U	5
Radiological			
U	µg/L	36.3	33.5

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T99-05[a,b]

Analyte	Unit	04/10/00	11/01/00	04/10/01
Field Measurements				
Alkalinity	mg/L	191	--	247
Conductivity[c]	µmhos/cm	552	320	620
DO[c]	mg/L	1.2	--	7.5
ORP[c]	mV	65	-60	-37
pH[c]	s.u.	7.16	7.36	7.62
Temperature[c]	C	8.9	7.9	7.7
Turbidity[c]	NTU	4.53	511	2.49
Common Ions				
Ca	mg/L	56.1	58.2	57.9
Chloride	mg/L	1.51	--	2.79
Fluoride	µg/L	228	--	200
Hardness	mg/L	203	--	210
K	mg/L	0.980	1.76	0.938
Mg	mg/L	15.2	15.1	15.9
Na	mg/L	38.8	38.9	43.6
NO_3+NO_2 as N	µg/L	32.4U	--	5.8
SO_4	mg/L	67.4	--	78.9
TDS[c]	mg/L	323	--	400
Metals				
As	µg/L	0.42	0.2U	0.5U
Fe	µg/L	11.9	11.7U	18.2
Mn	µg/L	60	25.5	28.7
Mo	µg/L	0.4U	5.1	0.4U
Se	µg/L	0.2U	2.4	0.3U
U	µg/L	8.8	10.9	13
V	µg/L	0.40U	1.3U	0.47
Radiological				
Alpha[d]	pCi/L	2.2UJ	--	4.2
Alpha-U[e]	pCi/L	2.2UJ	--	0[f]
Beta	pCi/L	2.7	--	4.0U
U	µg/L	8.8	10.9	13

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- T99-11[a,b]

Analyte	Unit	01/13/00	04/18/00	07/27/00
Field Measurements				
Alkalinity	mg/L	268	122	360
Conductivity[c]	µmhos/cm	3270	2430	2050
DO[c]	mg/L	3.32	--	0.93
ORP[c]	mV	188	166	103
pH[c]	s.u.	--	6.33	6.63
Temperature[c]	C	10.2	9.3	10.8
Turbidity[c]	NTU	3.85	2.34	4.7
Common Ions				
Ca	mg/L	297	231	196
Chloride	mg/L	142	149	69.2
Fluoride	µg/L	262	335	354
Hardness	mg/L	1070	849	720
K	mg/L	21.9	14.4	12.9
Mg	mg/L	78.6	66.0	56.1
Na	mg/L	372	238	193
NO_3+NO_2 as N	µg/L	20200J	3380	3890
SO_4	mg/L	1290	993	871
TDS[c]	mg/L	2690	1840	1640
Metals				
As	µg/L	4.5	2.6	3.5
Fe	µg/L	8.9U	9.3	10
Mn	µg/L	0.9U	3.9	14
Mo	µg/L	56.4	40.9	41.9
Se	µg/L	28.4	4.7	3.8
U	µg/L	775	96.5	134
V	µg/L	164	134	157
Radiological				
Alpha[d]	pCi/L	524	63.0	70.8J
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]
Beta	pCi/L	151	34.9	49.3
U	µg/L	775	96.5	134

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- TW-01[a,b]

Analyte	Unit	08/15/00	10/17/00	01/23/01	04/17/01	07/09/01
Field Measurements						
Alkalinity	mg/L	225	315	236	210	242
Conductivity[c]	µmhos/cm	2860	2850	2480	2340	2170
DO[c]	mg/L	0.34	0.23	1.6	1.2	0.152
ORP[c]	mV	132	68	115	-19	36
pH[c]	s.u.	6.43	6.88	6.39	6.45	6.67
Temperature[c]	C	14.3	14.1	10	9.7	10.9
Turbidity[c]	NTU	2.98	1.38	3.56	1.53	1.23
Common Ions						
Ca	mg/L	--	--	--	193	204
Chloride	mg/L	--	--	--	--	85.7
Fluoride	µg/L	--	--	--	--	443J
Hardness	mg/L	--	--	--	691	722
K	mg/L	--	--	--	19.1	20.5
Mg	mg/L	--	--	--	50.7	51.7
Na	mg/L	--	--	--	220	221
NO_3+NO_2 as N	µg/L	--	--	--	--	9110J
SO_4	mg/L	--	--	--	--	757
Metals						
As	µg/L	10.9	13.2	12.5	8.6	11.7
Fe	µg/L	--	--	13.5	1.0U	0.7U
Mn	µg/L	--	--	823	694	729
Mo	µg/L	86	103	97	82.4J	91.7
Se	µg/L	3.5	11	44.8	70.9	72.4
U	µg/L	418	498	471	422	437
V	µg/L	381	442	413	337	416
Radiological						
U	µg/L	418	498	471	422	437

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- TW-02[a,b]

Analyte	Unit	08/15/00	10/17/00	01/24/01	04/17/01	07/10/01
Field Measurements						
Alkalinity	mg/L	240	287	239	222	231
Conductivity[c]	µmhos/cm	2650	2690	2450	2280	2230
DO[c]	mg/L	0.25	0.21	5.5R	0.397	0.451
ORP[c]	mV	129	72	180	-37	11
pH[c]	s.u.	6.53	6.79	6.78	6.74	6.75
Temperature[c]	C	14	14.9	8.7	9.6	11.4
Turbidity[c]	NTU	12.5	1.38	52.8	1.37	0.61
Common Ions						
Ca	mg/L	--	--	--	191	218
Chloride	mg/L	--	--	--	--	95.4
Fluoride	µg/L	--	--	--	--	403
Hardness	mg/L	--	--	--	684	768
K	mg/L	--	--	--	17.9	20.0
Mg	mg/L	--	--	--	50.4	54.4
Na	mg/L	--	--	--	216	217
NO_3+NO_2 as N	µg/L	--	--	--	--	8650J
SO_4	mg/L	--	--	--	--	758
Metals						
As	µg/L	11	12.4	8.6	10.5	11.6
Fe	µg/L	--	--	11U	1U	1.5
Mn	µg/L	--	--	2210	573	614
Mo	µg/L	74.7	84.4	68.7	71.8	76.6
Se	µg/L	7	14.8	47.6	87	86.1
U	µg/L	348	391	396	381	396
V	µg/L	356	412	310	303	389
Radiological						
U	µg/L	348	391	396	381	396

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- TW-03[a,b]

Analyte	Unit	08/15/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements						
Alkalinity	mg/L	240	288	279	249	262
Conductivity[c]	µmhos/cm	2450	2670	2590	2400	2190
DO[c]	mg/L	0.38	0.25	0.3	0.713	0.675
ORP[c]	mV	128	85	-158	1	-27
pH[c]	s.u.	6.57	6.82	6.73	6.72	6.26
Temperature[c]	C	13.9	15.1	9.8	10.4	12.3
Turbidity[c]	NTU	6.97	0.96	3.53	3.42	19.3
Common Ions						
Ca	mg/L	--	--	--	218	236
Chloride	mg/L	--	--	--	--	116
Fluoride	µg/L	--	--	--	--	352
Hardness	mg/L	--	--	--	777	835
K	mg/L	--	--	--	17.2	25.0
Mg	mg/L	--	--	--	56.4	59.6
Na	mg/L	--	--	--	223	224
NO_3+NO_2 as N	µg/L	--	--	--	--	7170
SO_4	mg/L	--	--	--	--	769
Metals						
As	µg/L	10.6	11.9	9.5	9.7	10.8
Fe	µg/L	--	--	11.0U	1.0U	24
Mn	µg/L	--	--	456	264	398
Mo	µg/L	64.1	68.4	60	51.6	57.9
Se	µg/L	11.7	49.4	74.2	110	102
U	µg/L	263	345	401	367	376
V	µg/L	363	399	311	277	338
Radiological						
U	µg/L	263	345	401	367	376

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- TW-04[a,b]

Analyte	Unit	08/15/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements						
Alkalinity	mg/L	265	282	290	262	291
Conductivity[c]	µmhos/cm	2570	2700	2710	2480	2440
DO[c]	mg/L	0.24	0.874	0.4	0.5	0.262
ORP[c]	mV	126	136	34	-24	-47
pH[c]	s.u.	6.58	6.6	6.74	6.56	6.26
Temperature[c]	C	14.2	15.5	10.2	8.9	11.8
Turbidity[c]	NTU	7.79	68.9	45.7	2.85	10.3
Common Ions						
Ca	mg/L	--	--	--	240	248
Chloride	mg/L	--	--	--	--	130
Fluoride	µg/L	--	--	--	--	352
Hardness	mg/L	--	--	--	848	876
K	mg/L	--	--	--	15.7	17.5
Mg	mg/L	--	--	--	60.5	62.4
Na	mg/L	--	--	--	218	219
NO_3+NO_2 as N	µg/L	--	--	--	--	7910
SO_4	mg/L	--	--	--	--	833
Metals						
As	µg/L	9.5	11.3	9.4	7.2	9.1
Fe	µg/L	--	--	11U	1U	17.7
Mn	µg/L	--	--	144	163	182
Mo	µg/L	54.3	62.3	50.2	47.2J	44.9
Se	µg/L	13.2	30.6	94.4	121	120
U	µg/L	265	330	371	374	385
V	µg/L	324	372	296	259	303
Radiological						
U	µg/L	265	330	371	374	385

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- TW-05[a,b]

Analyte	Unit	08/15/00	10/18/00	01/23/01	04/16/01	07/10/01
Field Measurements						
Alkalinity	mg/L	365	336	327	309	332
Conductivity[c]	µmhos/cm	2840	2860	2720	2840	2860
DO[c]	mg/L	1.45	0.93	3R	1.2	0.331
ORP[c]	mV	119	83	181	4	104
pH[c]	s.u.	6.65	6.66	6.78	6.73	6.34
Temperature[c]	C	15.5	15.4	8.7	10.6	11.6
Turbidity[c]	NTU	28.9	7.08	13	8.23	14.6
Common Ions						
Ca	mg/L	--	--	--	258	317
Chloride	mg/L	--	--	--	--	166
Fluoride	µg/L	--	--	--	--	322
Hardness	mg/L	--	--	--	915	1130
K	mg/L	--	--	--	9.89	12.1
Mg	mg/L	--	--	--	65.7	82.5
Na	mg/L	--	--	--	207	282
NO_3+NO_2 as N	µg/L	--	--	--	--	10900
SO_4	mg/L	--	--	--	--	976
Metals						
As	µg/L	1.1	2	3.6	3.9	4.4
Fe	µg/L	--	--	19.2	14.8	12.4
Mn	µg/L	--	--	655	314	574
Mo	µg/L	81.3	76.5	42.2	34.4	37.9
Se	µg/L	26.7	16.3	67.8	105	98.7
U	µg/L	260	302	343	339	337
V	µg/L	81.2	165	237	204	245
Radiological						
U	µg/L	260	302	343	339	337

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- TW-06[a,b]

Analyte	Unit	08/15/00	10/18/00	01/22/01	04/16/01	07/09/01
Field Measurements						
Alkalinity	mg/L	360	324	330	309	318
Conductivity[c]	µmhos/cm	2780	2770	2880	2520	2760
DO[c]	mg/L	0.6	0.485	0.6	2.7	0.343
ORP[c]	mV	122	80	140	229	56
pH[c]	s.u.	6.82	6.52	6.81	6.71	6.29
Temperature[c]	C	15.5	16	9.4	10.2	13
Turbidity[c]	NTU	7.29	8.17	4.58	5.8	1.64
Common Ions						
Ca	mg/L	--	--	--	300	327
Chloride	mg/L	--	--	--	--	163
Fluoride	µg/L	--	--	--	--	331
Hardness	mg/L	--	--	--	1060	1150
K	mg/L	--	--	--	10.0	12.4
Mg	mg/L	--	--	--	76.1	81.8
Na	mg/L	--	--	--	231	241
NO_3+NO_2 as N	µg/L	--	--	--	--	8900
SO_4	mg/L	--	--	--	--	951
Metals						
As	µg/L	5.5	5.6	6	3.4	6.1
Fe	µg/L	--	--	17	1.0U	15.9
Mn	µg/L	--	--	63.2	72.1	86.5
Mo	µg/L	34.5	38.9	35.3	29.8	31.8
Se	µg/L	47.3	10.9	60	139	124
U	µg/L	291	271	317	321	293
V	µg/L	323	352	297	258	307
Radiological						
U	µg/L	291	271	317	321	293

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- TW-07[a,b]

Analyte	Unit	04/17/01	07/10/01
Field Measurements			
Alkalinity	mg/L	137	107
Conductivity[c]	µmhos/cm	2310	1961
DO[c]	mg/L	--	1.092
ORP[c]	mV	42	8
pH[c]	s.u.	6.57	7.22
Temperature[c]	C	10.3	12.3
Turbidity[c]	NTU	46.7	19
Common Ions			
Ca	mg/L	117	128
Chloride	mg/L	--	110
Fluoride	µg/L	--	182
Hardness	mg/L	502	549
K	mg/L	16.1	17.6
Mg	mg/L	51.0	55.7
Na	mg/L	222	221
NO_3+NO_2 as N	µg/L	--	712
SO_4	mg/L	--	721
Metals			
As	µg/L	0.5U	7.5
Fe	µg/L	1U	55.3
Mn	µg/L	2350	2310
Mo	µg/L	22.9J	24.1
Se	µg/L	3.3	7.9
U	µg/L	14.7	31
V	µg/L	10.8	19.3
Radiological			
U	µg/L	14.7	31

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- TW-08[a,b]

Analyte	Unit	08/17/00	10/17/00	01/24/01	04/17/01	07/10/01
Field Measurements						
Alkalinity	mg/L	--	--	--	234	118
Conductivity[c]	µmhos/cm	--	2550	2300	2480	2090
DO[c]	mg/L	--	--	--	--	0.759
ORP[c]	mV	--	132	-196	43	49
pH[c]	s.u.	--	6.62	7.42	7.54	7.21
Temperature[c]	C	--	14.6	9.8	9.2	12.8
Turbidity[c]	NTU	--	>1000	62.4	--	19.6
Common Ions						
Ca	mg/L	158	--	--	164	142
Chloride	mg/L	115	--	--	--	128
Fluoride	µg/L	246	--	--	--	209
Hardness	mg/L	648	--	--	653	626
K	mg/L	15.8	--	--	12.4	16.5
Mg	mg/L	61.6	--	--	59.1	65.8
Na	mg/L	291	--	--	235	221
NO_3+NO_2 as N	µg/L	--	--	--	--	112
SO_4	mg/L	1030	--	--	--	773
Metals						
As	µg/L	1.6	2.2	1.8	0.5U	4.1
Fe	µg/L	9.1U	--	95.7	1.0U	51.8
Mn	µg/L	2650	--	2330	1130	2800
Mo	µg/L	32.3	35.5	40.7	22.4	23.4
Se	µg/L	0.21	0.1U	0.21	1.2	0.41
U	µg/L	23.2	23.6	53.4	36.1	23
V	µg/L	51.5	61.6	45.2	67.2	50.5
Radiological						
U	µg/L	23.2	23.6	53.4	36.1	23

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- TW-09[a,b]

Analyte	Unit	08/17/00	10/17/00	01/23/01	04/16/01	07/10/01
Field Measurements						
Alkalinity	mg/L	420	396	433	211	274
Conductivity[c]	µmhos/cm	2040	1855	1925	569	1047
DO[c]	mg/L	--	0.764	--	0.2	0.552
ORP[c]	mV	-37	156	-220	19	-22
pH[c]	s.u.	7.26	7.12	7.32	7.91	7.27
Temperature[c]	C	16.6	14.3	10.9	9.6	11.7
Turbidity[c]	NTU	>1000	1.43	3.5	27.7	8.14
Common Ions						
Ca	mg/L	106	--	--	20.3	52.5
Chloride	mg/L	124	--	--	--	32.0
Fluoride	µg/L	1100	--	--	--	678
Hardness	mg/L	382	--	--	70.3	177
K	mg/L	10.5	--	--	12.9	10.5
Mg	mg/L	28.6	--	--	4.76	11.1
Na	mg/L	248	--	--	59.3	105
NO_3+NO_2 as N	µg/L	--	--	--	--	576
SO_4	mg/L	375	--	--	--	90.3
Metals						
As	µg/L	0.78	0.47	0.87	0.50U	2.3
Fe	µg/L	81.8	--	68	315	1120
Mn	µg/L	496	--	526	142	435
Mo	µg/L	41.7	35.5	20.7	10.7	13.2
Se	µg/L	0.52	2.4	0.1U	0.3U	0.3U
U	µg/L	18.3	7.1	4.4	1.3	2.3
V	µg/L	1.2U	2.2	1.4U	1.1	0.32
Radiological						
U	µg/L	18.3	7.1	4.4	1.3	2.3

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- TW-10[a,b]

Analyte	Unit	08/15/00	11/02/00	01/23/01	04/16/01	07/10/01
Field Measurements						
Alkalinity	mg/L	85	64	68	99	93
Conductivity[c]	µmhos/cm	3720	2180	2180	2250	2140
DO[c]	mg/L	0.6	0.931	1.5	1.8	0.193
ORP[c]	mV	-154	54	-49	-28	-127
pH[c]	s.u.	7.95	7.18	7.71	7.6	7.09
Temperature[c]	C	16.6	14.2	10.1	9.7	12.9
Turbidity[c]	NTU	11.9	1.28	7.05	1.45	2.7
Common Ions						
Ca	mg/L	--	106	--	109	141
Chloride	mg/L	--	--	--	--	153
Fluoride	µg/L	--	--	--	--	97.9
Hardness	mg/L	--	511	--	543	643
K	mg/L	--	16.8	--	13.5	14.2
Mg	mg/L	--	59.9	--	65.8	70.6
Na	mg/L	--	293	--	217	258
NO_3+NO_2 as N	µg/L	--	--	--	--	509
SO_4	mg/L	--	--	--	--	795
Metals						
As	µg/L	9.4	2	3.3	0.5U	1.5
Fe	µg/L	--	243	175	86.5	10
Mn	µg/L	--	2580	1420	1550	1000
Mo	µg/L	14	12.7	7.6	5.8	9.6
Se	µg/L	0.1U	0.1U	0.1U	0.3U	0.3U
U	µg/L	2.3	0.1U	3.7	5	5.6
V	µg/L	1.9	6.8	4.6	14.5	23.4
Radiological						
U	µg/L	2.3	0.1U	3.7	5	5.6

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- TW-11[a,b]

Analyte	Unit	08/16/00	10/17/00	01/24/01	04/16/01	07/10/01
Field Measurements						
Alkalinity	mg/L	30	37	46	99	189
Conductivity[c]	µmhos/cm	3560	2200	2060	2070	2100
DO[c]	mg/L	0.22	0.2	0	0.568	0.077
ORP[c]	mV	-62	-289	-321	-204	-171
pH[c]	s.u.	9.18	9.19	8.3	8.71	6.83
Temperature[c]	C	17.5	15.6	9.6	10.7	11.7
Turbidity[c]	NTU	2.96	5.37	4.84	3.5	1.47
Common Ions						
Ca	mg/L	--	--	--	102	157
Chloride	mg/L	--	--	--	--	94.4
Fluoride	µg/L	--	--	--	--	172
Hardness	mg/L	--	--	--	468	614
K	mg/L	--	--	--	17.0	19.6
Mg	mg/L	--	--	--	51.7	54.0
Na	mg/L	--	--	--	218	219
NO_3+NO_2 as N	µg/L	--	--	--	--	4.7UJ
SO_4	mg/L	--	--	--	--	754
Metals						
As	µg/L	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	6960	13700	28200
Mn	µg/L	--	--	245	365	451
Mo	µg/L	3.5	8.2	4.2	3.6	4.8
Se	µg/L	0.1U	0.1U	0.12	7.9	7.4
U	µg/L	0.1U	0.10U	0.1U	0.1U	0.1U
V	µg/L	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological						
U	µg/L	0.1U	0.10U	0.1U	0.1U	0.1U

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- TW-12[a,b]

Analyte	Unit	08/16/00	10/17/00	01/23/01	04/17/01	07/10/01
Field Measurements						
Alkalinity	mg/L	72	180	268	249	300
Conductivity[c]	µmhos/cm	2150	2330	2480	2370	2290
DO[c]	mg/L	0.41	0.19	0	0.594	0.202
ORP[c]	mV	-267	-257	-166	-58	-248
pH[c]	s.u.	7.85	7.99	7.33	7.28	7.32
Temperature[c]	C	16	16	9	10	13.2
Turbidity[c]	NTU	5.77	2.84	8.02	7.41	11
Common Ions						
Ca	mg/L	--	--	--	181	205
Chloride	mg/L	--	--	--	--	119
Fluoride	µg/L	--	--	--	--	233
Hardness	mg/L	--	--	--	699	769
K	mg/L	--	--	--	17.6	20.5
Mg	mg/L	--	--	--	60.0	62.4
Na	mg/L	--	--	--	228	241
NO_3+NO_2 as N	µg/L	--	--	--	--	20
SO_4	mg/L	--	--	--	--	810
Metals						
As	µg/L	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	43900	45600	49300
Mn	µg/L	--	--	622	562	496
Mo	µg/L	1.5	0.3U	8.7	17.6	8.3
Se	µg/L	0.1U	4	5.2	65.5	24.5
U	µg/L	0.10U	0.10U	0.1U	0.10U	0.1U
V	µg/L	1.2U	1.2U	1.4U	0.4U	0.3U
Radiological						
U	µg/L	0.10U	0.10U	0.1U	0.10U	0.1U

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- TW-13[a,b]

Analyte	Unit	08/16/00	10/18/00	01/23/01	04/17/01	07/10/01
Field Measurements						
Alkalinity	mg/L	45	42	33	67	231
Conductivity[c]	µmhos/cm	2970	1844	1986	2020	2440
DO[c]	mg/L	0.26	0.586	0	0.798	0.265
ORP[c]	mV	67	-100	-151	-54	-313
pH[c]	s.u.	9.44	9.55	9.58	9.4	7.53
Temperature[c]	C	16.5	14.7	10.6	9.3	13.2
Turbidity[c]	NTU	1.84	3.31	4.51	2.39	5.37
Common Ions						
Ca	mg/L	--	--	--	74.4	207
Chloride	mg/L	--	--	--	--	148
Fluoride	µg/L	--	--	--	--	70.6
Hardness	mg/L	--	--	--	454	836
K	mg/L	--	--	--	13.2	16.3
Mg	mg/L	--	--	--	65.2	77.4
Na	mg/L	--	--	--	224	266
NO_3+NO_2 as N	µg/L	--	--	--	--	17.4
SO_4	mg/L	--	--	--	--	884
Metals						
As	µg/L	0.3U	0.2U	0.2U	0.5U	0.74
Fe	µg/L	--	--	105	136	42700
Mn	µg/L	--	--	24.6	38.8	636
Mo	µg/L	4.7	9.3	11.1	17J	2.9U
Se	µg/L	0.1U	0.1U	0.1U	0.3U	1.2
U	µg/L	0.10U	0.10U	0.1U	0.1U	0.1U
V	µg/L	1.2U	2.1	1.4U	0.4U	0.3U
Radiological						
U	µg/L	0.10U	0.10U	0.1U	0.1U	0.1U

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Alluvial Groundwater -- Down Gradient -- TW-14[a,b]

Analyte	Unit	08/16/00	10/18/00	01/24/01	04/16/01	07/10/01
Field Measurements						
Alkalinity	mg/L	33	42	22	60	24
Conductivity[c]	µmhos/cm	1920	1955	1901	2120	2080
DO[c]	mg/L	0.12	0.626	0.6	0.436	0.162
ORP[c]	mV	-354	-252	-273	-210	-355
pH[c]	s.u.	9.44	9.19	9.68	8.84	9.26
Temperature[c]	C	14.9	15.7	9.8	9.8	13.2
Turbidity[c]	NTU	6.77	1.85	1.06	4.64	6.64
Common Ions						
Ca	mg/L	--	--	--	65.2	124
Chloride	mg/L	--	--	--	--	154
Fluoride	µg/L	--	--	--	--	481
Hardness	mg/L	--	--	--	432	586
K	mg/L	--	--	--	12.4	15.6
Mg	mg/L	--	--	--	65.3	67.0
Na	mg/L	--	--	--	221	263
NO_3+NO_2 as N	µg/L	--	--	--	--	31
SO_4	mg/L	--	--	--	--	815
Metals						
As	µg/L	0.3U	0.2U	0.2U	0.5U	0.5U
Fe	µg/L	--	--	2100	495	190
Mn	µg/L	--	--	215	123	66.1
Mo	µg/L	8.1	12.2	4.1	7.1	6.2
Se	µg/L	0.1U	0.1U	0.12	0.3U	0.3U
U	µg/L	0.1U	0.10U	0.1U	0.1U	0.1U
V	µg/L	1.2U	1.3	1.4U	0.4U	0.3U
Radiological						
U	µg/L	0.1U	0.10U	0.1U	0.1U	0.1U

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

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Appendix B

Analytical Results for Bedrock Groundwater Samples, January 2000 Through April 2010

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Bedrock Groundwaters -- Upgradient -- 92-06[a,b]

Analyte	Unit	10/30/00	10/10/01
Field Measurements			
Alkalinity	mg/L	189	182
Conductivity[c]	µmhos/cm	560	560
DO[c]	mg/L	1.4	--
ORP[c]	mV	-51	-46
pH[c]	s.u.	7.24	7.52
Temperature[c]	C	11.3	11.6
Turbidity[c]	NTU	0.84	4.3
Common Ions			
Ca	mg/L	72.8	69.3
Chloride	mg/L	2.15	2.44
Fluoride	µg/L	124	242
Hardness	mg/L	225	214
K	mg/L	1.98	1.81
Mg	mg/L	10.5	9.99
Na	mg/L	32.1	31.4
NO_3+NO_2 as N	µg/L	32.4UJ	358R
SO_4	mg/L	91.0	96.8
TDS[c]	mg/L	340	--
Metals			
As	µg/L	0.28	0.6U
Fe	µg/L	109	84
Mn	µg/L	433	406
Mo	µg/L	1.9	1.9U
Se	µg/L	0.1U	0.3U
U	µg/L	0.1U	0.1U
V	µg/L	1.3U	0.3U
Radiological			
Alpha[d]	pCi/L	7.6U	11.4UJ
Alpha-U[e]	pCi/L	7.6U	11.4UJ
Beta	pCi/L	7.4U	13.1
U	µg/L	0.1U	0.1U
U-234	pCi/L	0.52U	--
U-238	pCi/L	0.10U	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Upgradient -- 92-13[a,b]

Analyte	Unit	10/30/00	10/10/01
Field Measurements			
Alkalinity	mg/L	275	271
Conductivity[c]	µmhos/cm	649	592
ORP[c]	mV	109	37
pH[c]	s.u.	9.64	9.48
Temperature[c]	C	11.2	11.6
Turbidity[c]	NTU	5.66	11.9
Common Ions			
Ca	mg/L	7.06	6.15
Chloride	mg/L	4.50	5.06
Fluoride	µg/L	1220	1190
Hardness	mg/L	25.2	22.7
K	mg/L	2.35	2.20
Mg	mg/L	1.85	1.78
Na	mg/L	145	135
NO_3+NO_2 as N	µg/L	2710J	2610
SO_4	mg/L	36.3	40.7
TDS[c]	mg/L	458	--
Metals			
As	µg/L	40.6	37.6
Fe	µg/L	11.7U	34
Mn	µg/L	2U	1.9
Mo	µg/L	75.6	70.7
Se	µg/L	2.2	1.8
U	µg/L	2.2	1.8
V	µg/L	2.3	3.9
Radiological			
Alpha[d]	pCi/L	9.0U	6.8J
Alpha-U[e]	pCi/L	9.0U	5.6J
Beta	pCi/L	7.5U	4.7U
U	µg/L	2.2	1.8
U-234	pCi/L	6.5	--
U-238	pCi/L	0.88	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- On-Site -- 31SW93-200-4[a,b]

Analyte	Unit	10/10/01	10/10/02	10/06/03
Field Measurements				
Alkalinity	mg/L	167	333	114
Conductivity[c]	µmhos/cm	3960	4705	3840
ORP[c]	mV	19	--	33.8
pH[c]	s.u.	7.21	6.76	7.11
Temperature[c]	C	13.4	14.41	15.29
Turbidity[c]	NTU	2.34	16.4	1.04
Common Ions				
Ca	mg/L	538	464	503
Chloride	mg/L	285	177	137
Fluoride	µg/L	425	126U	294
Hardness	mg/L	1930	1790	1830
K	mg/L	17.5	22.2	17.9
Mg	mg/L	142	154	140
Na	mg/L	310	695	341
NO_3+NO_2 as N	µg/L	12600	1030	4520
SO_4	mg/L	2140	2700	2160
Metals				
As	µg/L	0.6U	2.3	0.100U
Fe	µg/L	198	4550	372
Mn	µg/L	94.8	827	53.1
Mo	µg/L	1.9U	1.7U	1.70U
Se	µg/L	8.6	0.1U	2.50
U	µg/L	11.5	44.8	10.00
V	µg/L	0.35	0.3U	0.300U
Radiological				
Alpha[d]	pCi/L	17.0	18.9	12.0U
Alpha-U[e]	pCi/L	9.1	0[f]	12.0U
Beta	pCi/L	16.9	26.3	21.2
U	µg/L	11.5	44.8	10.00

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- On-Site -- 93-01[a,b]

Analyte	Unit	11/01/00	10/09/01	10/09/02	10/06/03	10/08/04	10/05/05	10/02/06	10/09/07	10/08/08	10/07/09	10/13/10	10/11/11
Field Measurements													
Alkalinity	mg/L	200	187	375	344	395	390	399	412	382	--	394	375
Conductivity[c]	µmhos/cm	584	586	691	692	733	741	731	694	755	712	737	708
DO[c]	mg/L	5.5R	--	--	--	0.95	3.02	0.51	--	--	--	--	--
ORP[c]	mV	83	49	--	157.2	142	24	22	86	-45	--	-33.1	--
pH[c]	s.u.	7.21	7.58	7.61	7.79	7.58	7.56	7.27	7.53	7.47	7.43	7.53	7.52
Temperature[c]	C	9.5	9.9	9.53	10.97	10.0	10.1	10.36	9.63	11.77	9.33	11.09	9.36
Turbidity[c]	NTU	2.18	18.6	4.23	0.82	1.43	1.82	0.42	1.29	1.58	1.52	1.72	2.22
Common Ions													
Ca	mg/L	67.6	67.0	27.6	25.3	29.0	29.0	30.0	26.0	31.0	31.0J	30.0	33.0
Chloride	mg/L	2.42	2.72	5.55	5.01	5.30	5.40	6.10	4.90	4.60	4.30	4.30	4.60
Fluoride	µg/L	137	169	340	704	660.	600.	670.	710.	600.	610.	560.	530.
Hardness	mg/L	214	211	98.2	91.6	104	103	108	97.0	111	110J	107	115
K	mg/L	2.23	1.99	2.84	2.74	5.00	4.80	4.90	4.60	4.50J	3.60J	4.10J	4.20
Mg	mg/L	10.9	10.5	7.12	6.90	7.60	7.40	8.00	7.80	8.10	8.00	7.80	8.00
Na	mg/L	38.2	38.2	123	128	110	120	140	130	120J	120J	120	110
NO_3+NO_2 as N	µg/L	32.4U	88.7	12.7	102	24	10.U	24	10.U	10.U	10.U	10.U	10.U
SO_4	mg/L	102	110	5.35	2.96	1.00	0.720	1.50	1.50	11.0	10.0	6.20	13.0
TDS[c]	mg/L	380	--	--	--	--	--	--	--	--	--	--	--
Metals													
As	µg/L	1	0.6U	2.3	1.90	0.34	0.29	0.31	0.27	0.37	0.38	0.34	0.45J
Fe	µg/L	46.8	48.2	0.8U	0.800U	7U	11U	43	19	54	1.6U	4.9U	4.9U
Mn	µg/L	393	372	89.7	27.3	55	67	70	67	88	88	79	94
Mo	µg/L	1.3	1.9U	1.7U	1.70U	0.17U	0.068U	0.13U	0.029U	0.03U	0.02U	0.16	1.1UJ
Se	µg/L	0.1U	0.3U	0.1U	0.100U	0.029U	0.023U	0.025U	0.028U	0.024U	0.032U	0.032U	0.032U
U	µg/L	0.1U	0.1U	0.2	0.100U	0.11J	0.0048U	0.12J	0.0035U	0.062	0.077	0.077	0.098
V	µg/L	1.3U	0.99	11	2.70	0.44J	0.1U	0.21U	0.28J	0.1U	0.2J	0.14	0.015U
Radiological													
Alpha[d]	pCi/L	7.6U	4.0UJ	5.3	7.1	8.5	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	7.6U	4.0UJ	5.2	7.1[g]	8.4	--	--	--	--	--	--	--
Beta	pCi/L	7.4U	3.8U	5.8	5.9U	7.7	--	--	--	--	--	--	--
U	µg/L	0.1U	0.1U	0.2	0.100U	0.11J	0.0048U	0.12J	0.0035U	0.062	0.077	0.077	0.098
U-234	pCi/L	0.52U	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	0.10U	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] Uranium activity is below detection limits.

Bedrock Groundwaters -- Cross Gradient -- 31NE93-205[a,b]

Analyte	Unit	10/31/00	10/15/01	10/04/06	04/25/12
Field Measurements					
Alkalinity	mg/L	--	185	173	136
Conductivity[c]	µmhos/cm	589	846	734	639
DO[c]	mg/L	0.3	--	0.66	--
ORP[c]	mV	33	-57	18	-30.6
pH[c]	s.u.	6.85	6.85	6.89	6.85
Temperature[c]	C	13.2	15.9	11.8	12.03
Turbidity[c]	NTU	1.36	1.01	4.26	4.40
Common Ions					
Ca	mg/L	72.6	63.1	64.0	42.0
Chloride	mg/L	2.76	2.88	3.30	2.70
Fluoride	µg/L	99.5	188	100.U	160.
Hardness	mg/L	268	234	230	158
K	mg/L	4.31	3.85	5.40	1.60J
Mg	mg/L	21.1	18.5	17.0	13.0
Na	mg/L	89.4	81.3	80.0	65.0J
NO_3+NO_2 as N	µg/L	32.4U	515R	10.U	14
SO_4	mg/L	289	289	210	150
TDS[c]	mg/L	592	--	--	--
Metals					
As	µg/L	25.5	32.7	31	11
Fe	µg/L	627	584	540	89J
Mn	µg/L	691	652	650	350
Mo	µg/L	0.63	1.9U	1.4	5.4UJ
Se	µg/L	0.1U	0.52	0.025U	0.032U
U	µg/L	0.27	0.69	0.16	0.24
V	µg/L	1.3U	0.3U	0.21U	0.015U
Radiological					
Alpha[d]	pCi/L	9.1U	3.8	--	--
Alpha-U[e]	pCi/L	9.1U	3.3	--	--
Beta	pCi/L	7.5U	6.1	--	--
U	µg/L	0.27	0.69	0.16	0.24
U-234	pCi/L	1.6	--	--	--
U-238	pCi/L	0.10U	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Cross Gradient -- 31SW93-197-2[a,b]

Analyte	Unit	07/26/00	10/19/00
Field Measurements			
Alkalinity	mg/L	165	172
Conductivity[c]	µmhos/cm	499	497
DO[c]	mg/L	0.13	0.18
ORP[c]	mV	-96	-112
pH[c]	s.u.	7.31	7.48
Temperature[c]	C	14	13
Turbidity[c]	NTU	1.33	0.77
Common Ions			
Ca	mg/L	58.3	58.8
Chloride	mg/L	1.99	1.47
Fluoride	µg/L	165	152
Hardness	mg/L	184	186
K	mg/L	2.05	2.14
Mg	mg/L	9.43	9.51
Na	mg/L	32.9	31.9
NO_3+NO_2 as N	µg/L	32.4U	32.4U
SO_4	mg/L	73.1	77.4
TDS[c]	mg/L	323	320
Metals			
As	µg/L	0.3U	0.2U
Fe	µg/L	272	299
Mn	µg/L	280	290
Mo	µg/L	0.3U	2.1
Se	µg/L	0.1U	0.1U
U	µg/L	0.10U	0.1U
V	µg/L	1.3U	1.3U
Radiological			
Alpha[d]	pCi/L	3.3UJ	7.7U
Alpha-U[e]	pCi/L	3.3UJ	7.7U
Beta	pCi/L	3.8U	7.5U
U	µg/L	0.10U	0.1U
U-234	pCi/L	0.30U	0.52U
U-235	pCi/L	0.19U	--
U-238	pCi/L	0.15U	0.10U

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Cross Gradient -- 31SW93-197-3[a,b]

Analyte	Unit	07/26/00	10/20/00
Field Measurements			
Alkalinity	mg/L	1973	--
Conductivity[c]	µmhos/cm	7800	573
DO[c]	mg/L	2.5	--
ORP[c]	mV	59	27
pH[c]	s.u.	7.62	7.64
Temperature[c]	C	16.4	14.2
Turbidity[c]	NTU	60.4	182
Common Ions			
Ca	mg/L	24.8	22.5
Chloride	mg/L	6.85	4.55
Fluoride	µg/L	718	641
Hardness	mg/L	98.7	90.6
K	mg/L	4.33	4.23
Mg	mg/L	8.92	8.36
Na	mg/L	146	129
NO_3+NO_2 as N	µg/L	32.4U	334
SO_4	mg/L	30.6	17.1
TDS[c]	mg/L	700	505
Metals			
As	µg/L	2.5	0.64
Fe	µg/L	17.8	11.7U
Mn	µg/L	6.9	12.8
Mo	µg/L	25.8	17
Se	µg/L	0.11	2.5
U	µg/L	2.1	1.5
V	µg/L	1.3U	1.3U
Radiological			
Alpha[d]	pCi/L	9.6J	9.0U
Alpha-U[e]	pCi/L	6.3J	9.0U
Beta	pCi/L	7.7U	7.5U
U	µg/L	2.1	1.5
U-234	pCi/L	2.7	0.52U
U-235	pCi/L	0.080U	--
U-238	pCi/L	0.58	0.65

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Cross Gradient -- 31SW93-197-4[a,b]

Analyte	Unit	07/27/00	10/19/00
Field Measurements			
Alkalinity	mg/L	915	--
Conductivity[c]	µmhos/cm	2800	3010
ORP[c]	mV	118	34
pH[c]	s.u.	7.16	7.44
Temperature[c]	C	11.7	10.9
Turbidity[c]	NTU	200	>1000
Common Ions			
Ca	mg/L	54.3	51.7
Chloride	mg/L	27.4	--
Fluoride	µg/L	886	--
Hardness	mg/L	223	209
K	mg/L	9.10	9.26
Mg	mg/L	21.3	19.5
Na	mg/L	618	634
NO_3+NO_2 as N	µg/L	3960J	--
SO_4	mg/L	622	--
TDS[c]	mg/L	2040	--
Metals			
As	µg/L	0.3U	0.2U
Fe	µg/L	13.4	53.3
Mn	µg/L	25.7	28.1
Mo	µg/L	0.3U	4
Se	µg/L	0.26	0.59
U	µg/L	3.9	4.4
V	µg/L	1.3U	1.3
Radiological			
Alpha[d]	pCi/L	13.9UJ	--
Alpha-U[e]	pCi/L	13.9UJ	--
Beta	pCi/L	14.9U	--
U	µg/L	3.9	4.4
U-234	pCi/L	4.1	--
U-235	pCi/L	0.17U	--
U-238	pCi/L	1.2	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Cross Gradient -- 31SW93-197-5[a,b]

Analyte	Unit	04/24/00	07/26/00	10/19/00
Field Measurements				
Alkalinity	mg/L	508	496	546
Conductivity[c]	µmhos/cm	2710	4170	2540
DO[c]	mg/L	--	5.87R	8.8R
ORP[c]	mV	140	194	207
pH[c]	s.u.	6.14	6.88	6.71
Temperature[c]	C	10.5	11.8	11.4
Turbidity[c]	NTU	72.1	151	116
Common Ions				
Ca	mg/L	325	317	330
Chloride	mg/L	--	92.2	97.4
Fluoride	µg/L	--	345	688
Hardness	mg/L	1090	1060	1110
K	mg/L	5.09	4.85	5.09
Mg	mg/L	67.9	65.7	68.3
Na	mg/L	258	255	259
NO_3+NO_2 as N	µg/L	--	1300	1230
SO_4	mg/L	--	928	920
TDS[c]	mg/L	--	2150	2150
Metals				
As	µg/L	0.2U	0.3U	0.2U
Fe	µg/L	7.4U	9.1U	11.7U
Mn	µg/L	1.4	1.5U	2.8
Mo	µg/L	0.40U	0.30U	0.3U
Se	µg/L	13.9	12.5	11.8
U	µg/L	23.2	22.2	23.4
V	µg/L	0.4U	1.3U	1.3U
Radiological				
Alpha[d]	pCi/L	--	14.2U	13.1UJ
Alpha-U[e]	pCi/L	--	14.2U	13.1UJ
Beta	pCi/L	--	15.0	13.2U
U	µg/L	23.2	22.2	23.4
U-234	pCi/L	16.3	10.1	12.4
U-235	pCi/L	--	0.42U	--
U-238	pCi/L	9.2	7.3	9.6

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Cross Gradient -- 95-07[a,b]

Analyte	Unit	10/31/00	10/16/01	10/04/06	04/25/12
Field Measurements					
Alkalinity	mg/L	1046	1272	1449	1164
Conductivity[c]	µmhos/cm	2350	2270	2269	2245
DO[c]	mg/L	--	--	0.92	--
ORP[c]	mV	-85	-105	39	-33.5
pH[c]	s.u.	7.81	7.6	7.62	7.67
Temperature[c]	C	11.9	14.6	14.0	12.33
Turbidity[c]	NTU	476	272	32.5	3.85
Common Ions					
Ca	mg/L	17.7	15.7	11.0	11.0
Chloride	mg/L	26.8	30.1	30.0	27.0
Fluoride	µg/L	2670	2770	3200.	2700.
Hardness	mg/L	79.2	69.1	50.9	50.1
K	mg/L	6.82	5.92	12.0	5.90J
Mg	mg/L	8.50	7.25	5.70	5.50
Na	mg/L	563	503	500	540J
NO_3+NO_2 as N	µg/L	32.4U	206R	10.U	10.U
SO_4	mg/L	6.63	6.77	8.70	3.30
TDS[c]	mg/L	1530	--	--	--
Metals					
As	µg/L	0.52	0.96	0.69	0.7
Fe	µg/L	95.9	36.9	230	130
Mn	µg/L	89.8	46	61	38
Mo	µg/L	3.5	1.9U	0.13U	5.4UJ
Se	µg/L	0.1U	0.3U	0.025U	0.032UJ
U	µg/L	2.1	1.7	1.1	0.98
V	µg/L	1.3U	0.3U	0.21U	0.027
Radiological					
Alpha[d]	pCi/L	11.3UJ	11.0	--	--
Alpha-U[e]	pCi/L	11.3UJ	9.8	--	--
Beta	pCi/L	13.2	8.2U	--	--
U	µg/L	2.1	1.7	1.1	0.98
U-234	pCi/L	2.8	--	--	--
U-238	pCi/L	1.1	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Cross Gradient -- AEC 6[a,b]

Analyte	Unit	07/27/00
Field Measurements		
Alkalinity	mg/L	136
Conductivity[c]	µmhos/cm	351
DO[c]	mg/L	0.1
ORP[c]	mV	-275
pH[c]	s.u.	8.98
Temperature[c]	C	14.8
Turbidity[c]	NTU	8.35
Common Ions		
Ca	mg/L	28.5
Chloride	mg/L	1.76
Fluoride	µg/L	85.1
Hardness	mg/L	105
K	mg/L	2.08
Mg	mg/L	8.24
Na	mg/L	32.6
NO_3+NO_2 as N	µg/L	32.4U
SO_4	mg/L	40.6
TDS[c]	mg/L	233
Metals		
As	µg/L	2.2
Fe	µg/L	47.8
Mn	µg/L	96.5
Mo	µg/L	0.3U
Se	µg/L	0.1U
U	µg/L	0.10U
V	µg/L	1.3U
Radiological		
Alpha[d]	pCi/L	3.6UJ
Alpha-U[e]	pCi/L	3.6UJ
Beta	pCi/L	4.9U
U	µg/L	0.10U
U-234	pCi/L	0.17U
U-235	pCi/L	0.10U
U-238	pCi/L	0.12U

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Down Gradient -- 83-70[a,b]

Analyte	Unit	04/18/00	10/19/00	10/16/01	10/07/02	10/07/03	10/04/04	10/04/05	10/03/06	10/10/07	10/09/08	10/07/09	10/12/10	10/12/11
Field Measurements														
Alkalinity	mg/L	144	236	121	223	195	210	200	197	187	10	200	215	199
Conductivity[c]	µmhos/cm	610	613	611	597	573	611	601	600	583	523	588	648	553
DO[c]	mg/L	1.33	0.47	--	--	--	1.18	2.22	--	--	--	--	4.09	4.64
ORP[c]	mV	74	-94	-123	--	-128	-127	-126	23	--	210.0	--	-162.5R	161.7
pH[c]	s.u.	6.96	7.44	7.32	7.45	7.54	7.66	7.64	7.25	8.16	7.04	7.66	7.90	6.65
Temperature[c]	C	10.3	12.3	11.6	11.2	11.3	12.4	18.2	11.3	12.6	10.17	12.59	11.44	9.25
Turbidity[c]	NTU	1.28	1.81	0.62	1.02	0.51	1.41	9.83	4.22	1.33	6.87	0.66	23.4	4.71
Common Ions														
Ca	mg/L	55.3	54.1	45.0	51.2	48.3	58.0	59.0	58.0	52.0	56.0	57.0J	55.0	45.0
Chloride	mg/L	2.93	2.87	3.66	3.50	3.31	3.10	3.40	3.90	3.00	3.00	2.90	2.80	2.80
Fluoride	µg/L	138	144	26.2U	159	174	170.	100.U	140.	220.	260.	200.	170.	150.
Hardness	mg/L	184	180	150	172	163	190	193	190	175	185	188J	179	151
K	mg/L	2.89	2.83	2.40	2.71	2.57	4.20	4.00	3.90	3.60	3.50J	2.80J	3.20J	2.80
Mg	mg/L	11.1	11.0	9.09	10.8	10.4	11.0	11.0	11.0	11.0	11.0	11.0	10.0	9.50
Na	mg/L	63.1	62.1	53.9	58.9	66.1	52.0	52.0	61.0	57.0J	56.0	54.0J	53.0	53.0
NO_3+NO_2 as N	µg/L	32.4U	32.4U	110	9.9	4.50U	10.U	10.U	15	10.U	10.U	10.U	10.U	10.U
SO_4	mg/L	102	103	110	110	106	98.0	100	100	100	100	110	100	80.0
TDS[c]	mg/L	335	382	--	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	0.2U	0.2U	0.6U	0.1U	0.120	0.31	0.007U	0.3	0.12	0.15	0.13	0.1	0.043J
Fe	µg/L	344	375	310	412	571	250	310	200	350	3.1U	400	300	170
Mn	µg/L	298	282	234	272	255	270	260	260	260	270	280	250	140
Mo	µg/L	0.4U	0.4	1.9U	1.7U	1.70U	2.7J	0.068U	3.2J	1.2	1.1	1.1	0.95	1.1UJ
Se	µg/L	0.2U	0.1U	0.3U	0.1U	0.100U	0.029U	0.023U	0.025U	0.028U	0.024U	0.032U	0.034	0.032U
U	µg/L	0.10U	0.1U	0.1U	0.1U	0.320	0.0083U	0.0048U	0.0048U	0.0035U	0.036	0.024	0.091	0.022
V	µg/L	0.4U	1.3U	0.3U	0.3U	0.300U	0.32J	0.1U	0.21U	0.095U	0.1U	0.05U	0.036	0.015U
Radiological														
Alpha[d]	pCi/L	3.7U	7.8U	2.9U	3.9U	3.6UJ	4.0	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	3.7U	7.8U	2.9U	3.9U	3.6UJ	4.0[g]	--	--	--	--	--	--	--
Beta	pCi/L	4.7	7.4U	3.1	4.9	4.0U	3.9	--	--	--	--	--	--	--
U	µg/L	0.10U	0.1U	0.1U	0.1U	0.320	0.0083U	0.0048U	0.0048U	0.0035U	0.036	0.024	0.091	0.022
U-234	pCi/L	0.44U	0.52U	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	0.10U	0.10U	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] Uranium activity is below detection limits.

Bedrock Groundwaters -- Down Gradient -- 92-10[a,b]

Analyte	Unit	04/19/00	10/31/00	10/16/01	10/09/02	10/07/03	10/05/04	10/04/05	10/04/06	10/10/07	10/09/08	10/06/09	10/13/10	10/12/11
Field Measurements														
Alkalinity	mg/L	191	182	180	199	280	187	178	191	179	194	215	194	208
Conductivity[c]	µmhos/cm	590	720	617	627	614	880	704	752	747	604	869	975	1025
DO[c]	mg/L	1.41	--	--	--	--	--	1.11	0.20	--	--	--	--	0.71
ORP[c]	mV	53	-109	-67	--	-109	-60	-92	-37	-92	-76.7	--	-322.9R	-48.6
pH[c]	s.u.	7.57	7.76	7.51	7.42	7.49	7.52	7.45	7.29	7.41	7.53	7.38	6.98	7.15
Temperature[c]	C	9.3	10	10.8	11.8	10.8	11.3	11.1	11.5	11.13	11.98	11.48	11.07	12.46
Turbidity[c]	NTU	3.67	1.68	32.9	4.78	4.25	7.14	4.36	2.39	2.65	118.0	27.8	22.9	110
Common Ions														
Ca	mg/L	64.0	80.7	62.1	66.8	67.2	100	89.0	99.0	92.0	100	110J	120	120
Chloride	mg/L	5.99	18.2	9.78	12.2	14.6	32.0	20.0	25.0	26.0	29.0	32.0	40.0	44.0
Fluoride	µg/L	153	172	193	217J	166	140.	120.	140.	180.	130.	170.	120.	120.
Hardness	mg/L	206	258	200	217	220	320	284	313	300	320	353J	382	386
K	mg/L	2.73	2.84	2.54	2.66	2.56	4.70	4.20	4.20	4.10	4.30J	3.40J	4.20J	3.90
Mg	mg/L	11.3	13.7	11.0	12.3	12.6	17.0	15.0	16.0	17.0	17.0	19.0	20.0	21.0
Na	mg/L	46.1	56.0	43.5	45.0	49.2	58.0	43.0	53.0	53.0	53.0J	52.0J	57.0	59.0
NO_3+NO_2 as N	µg/L	32.4U	32.4UJ	193	486R	4.50U	10.U	10.U	10.U	10.U	10.U	10.U	10.U	10.U
SO_4	mg/L	105	155	126	131	135	210	160	180	190	210	220	240	270
TDS[c]	mg/L	345	453	--	--	--	--	--	--	--	--	--	--	--
Metals														
As	µg/L	0.2U	0.2U	0.6U	0.1U	0.100U	0.23	0.007U	0.012U	0.028	0.018	0.087	0.051	0.085J
Fe	µg/L	397	564	381	396	475	510	470	570	620	3.1U	680	660	750
Mn	µg/L	310	365	303	329	329	420	380	410	410	510J	480	480	530
Mo	µg/L	0.4U	1.1	2.4	1.7U	1.90	0.17U	0.068U	1.8J	1.7	1.6	1.5	1.4	1.1UJ
Se	µg/L	0.2U	0.1U	0.3U	0.1U	0.100U	0.029U	0.023U	0.025U	0.028U	0.024U	0.032U	0.032U	0.032U
U	µg/L	0.10U	0.1U	0.22	0.1U	0.120	0.0083U	0.0048U	0.11J	0.0035U	0.31	0.07	0.045	0.058
V	µg/L	0.4U	1.3U	0.3U	0.3U	0.300U	0.12U	0.1U	0.21U	0.095U	0.26	0.05U	0.019	0.015U
Radiological														
Alpha[d]	pCi/L	3.6U	8.5U	2.9U	4.6	3.6UJ	7.9	--	--	--	--	--	--	--
Alpha-U[e]	pCi/L	3.6U	8.5U	2.9U	4.6[g]	3.6UJ	7.9[g]	--	--	--	--	--	--	--
Beta	pCi/L	3.2U	7.5U	2.8	5.0U	5.9	6.8	--	--	--	--	--	--	--
U	µg/L	0.10U	0.1U	0.22	0.1U	0.120	0.0083U	0.0048U	0.11J	0.0035U	0.31	0.07	0.045	0.058
U-234	pCi/L	1.1U	0.52U	--	--	--	--	--	--	--	--	--	--	--
U-238	pCi/L	0.10U	0.10U	--	--	--	--	--	--	--	--	--	--	--

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[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] Uranium activity is below detection limits.

Bedrock Groundwaters -- Down Gradient -- 92-12[a,b]

Analyte	Unit	04/18/00	11/02/00	10/16/01	10/09/02	10/07/03
Field Measurements						
Alkalinity	mg/L	286	293	354	352	397
Conductivity[c]	µmhos/cm	801	800	823	845	857
ORP[c]	mV	90	164	85	--	107
pH[c]	s.u.	7.58	7.74	7.56	7.45	7.67
Temperature[c]	C	10.8	10.1	10.8	10.3	12.4
Turbidity[c]	NTU	104	534	>1000	245	5.82
Common Ions						
Ca	mg/L	36.6	36.1	37.1	40.3	42.0
Chloride	mg/L	3.38	3.97	4.51	4.15	4.10
Fluoride	µg/L	432	432	600	25.1URJ	281
Hardness	mg/L	136	135	141	156	164
K	mg/L	3.52	3.38	3.52	3.60	3.86
Mg	mg/L	10.8	10.8	11.7	13.4	14.3
Na	mg/L	128	124	127	127	137
NO_3+NO_2 as N	µg/L	679	735J	1280	1430	658
SO_4	mg/L	104	101	110	106	107
TDS[c]	mg/L	172R	525	--	--	--
Metals						
As	µg/L	0.29	0.39	0.6U	0.12	0.350
Fe	µg/L	7.4U	11.7U	7.8	0.8U	0.800U
Mn	µg/L	2.3	2U	1.2	0.65	1.60
Mo	µg/L	27.1	25.7	17.1	13.5	20.4
Se	µg/L	2.2	2.7	3.8	3.7	3.00
U	µg/L	0.1U	2	2.1	2.4	2.60
V	µg/L	0.5	1.3U	0.3U	0.3U	0.480
Radiological						
Alpha[d]	pCi/L	6.0U	8.9U	4.3	5.2U	5.2J
Alpha-U[e]	pCi/L	6.0U	8.9U	2.9	5.2U	3.4J
Beta	pCi/L	6.3U	7.6	4.0	5.1U	5.6U
U	µg/L	0.1U	2	2.1	2.4	2.60
U-234	pCi/L	1.1U	0.52U	--	--	--
U-238	pCi/L	0.89	0.76	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Down Gradient -- 95-02[a,b]

Analyte	Unit	11/01/00	10/17/01	10/08/02
Field Measurements				
Alkalinity	mg/L	180	165	167
Conductivity[c]	µmhos/cm	600	603	589
DO[c]	mg/L	0	--	--
ORP[c]	mV	-85	-54	--
pH[c]	s.u.	7.14	7.21	7.19
Temperature[c]	C	12.1	12.6	12.4
Turbidity[c]	NTU	4.99	2.86	0.79
Common Ions				
Ca	mg/L	39.2	37.0	36.5
Chloride	mg/L	6.02	6.41	6.45
Fluoride	µg/L	258	329	349
Hardness	mg/L	144	137	137
K	mg/L	2.95	2.68	2.82
Mg	mg/L	11.2	10.8	11.1
Na	mg/L	72.6	70.6	69.5
NO_3+NO_2 as N	µg/L	32.4UJ	2630R	12.6
SO_4	mg/L	114	128	123
TDS[c]	mg/L	378	--	--
Metals				
As	µg/L	0.57	0.71	0.59
Fe	µg/L	488	563	599
Mn	µg/L	217	211	207
Mo	µg/L	0.32	1.9U	1.7U
Se	µg/L	0.1U	0.42	0.1U
U	µg/L	0.25	0.1U	0.18
V	µg/L	1.3U	0.3U	0.3U
Radiological				
Alpha[d]	pCi/L	7.5U	4.1UJ	4.3U
Alpha-U[e]	pCi/L	7.5U	4.1UJ	4.3U
Beta	pCi/L	7.4U	5.1	5.0U
U	µg/L	0.25	0.1U	0.18
U-234	pCi/L	0.52U	--	--
U-238	pCi/L	0.13	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Down Gradient -- 95-04[a,b]

Analyte	Unit	10/31/00	10/11/01	10/08/02	10/07/03
Field Measurements					
Alkalinity	mg/L	240	218	253	235
Conductivity[c]	µmhos/cm	1580	1588	1592	1462
ORP[c]	mV	-95	-72	--	-97
pH[c]	s.u.	7.02	7.21	7.1	7.19
Temperature[c]	C	10.9	9.9	13.5	11.9
Turbidity[c]	NTU	3.27	1.78	4.52	4.3
Common Ions					
Ca	mg/L	161	154	158	148
Chloride	mg/L	74.8	78.2	81.1	75.7
Fluoride	µg/L	12.5RU	221	160	192
Hardness	mg/L	628	597	606	573
K	mg/L	3.59	3.22	3.58	3.45
Mg	mg/L	54.9	51.6	51.3	49.3
Na	mg/L	122	117	121	125
NO_3+NO_2 as N	µg/L	32.4UJ	38	8.8	4.50U
SO_4	mg/L	515	539	549	525
TDS[c]	mg/L	1170	--	--	--
Metals					
As	µg/L	0.96	0.73	0.24	0.240
Fe	µg/L	1410	1370	1460	1350
Mn	µg/L	439	408	481	482
Mo	µg/L	6.2	4.3	6.2	5.20
Se	µg/L	0.1U	0.3U	0.1U	0.100U
U	µg/L	4.8	4.5	1.9	2.30
V	µg/L	1.3U	0.3U	0.3U	0.300U
Radiological					
Alpha[d]	pCi/L	8.5UJ	11.4UJ	8.8U	6.9UJ
Alpha-U[e]	pCi/L	8.5UJ	11.4UJ	8.8U	6.9UJ
Beta	pCi/L	10.3	11.5U	8.9	7.9
U	µg/L	4.8	4.5	1.9	2.30
U-234	pCi/L	0.52U	--	--	--
U-238	pCi/L	2.0	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Down Gradient -- 95-06[a,b]

Analyte	Unit	04/19/00	10/31/00	10/17/01	10/04/06	04/25/12
Field Measurements						
Alkalinity	mg/L	321	353	317	423	268
Conductivity[c]	µmhos/cm	2270	2220	2220	1919	1701
DO[c]	mg/L	--	--	--	0.80	--
ORP[c]	mV	47	-61	-22	-5	--
pH[c]	s.u.	7.14	7.33	7.08	7.04	7.12
Temperature[c]	C	12.1	11.9	12.2	11.6	11.95
Turbidity[c]	NTU	15.4	17.6	11.2	6.52	1.82
Common Ions						
Ca	mg/L	235	229	211	220	150
Chloride	mg/L	112	110	114	88.0	67.0
Fluoride	µg/L	124	136	352	230.	200.U
Hardness	mg/L	857	830	771	768	548
K	mg/L	7.64	7.17	6.87	10.0	4.60J
Mg	mg/L	65.5	62.6	59.2	53.0	42.0
Na	mg/L	241	229	219	220	160J
NO_3+NO_2 as N	µg/L	32.4U	38.5	428R	10.U	10.U
SO_4	mg/L	823	821	844	670	520
TDS[c]	mg/L	1720	1720	--	--	--
Metals						
As	µg/L	0.2U	0.33	0.6U	0.012U	0.26
Fe	µg/L	248	1440	567	810	1200
Mn	µg/L	481	688	445	450	290
Mo	µg/L	6.5	3	1.9U	0.13U	5.4UJ
Se	µg/L	0.2U	0.1U	2.7	0.025U	0.032U
U	µg/L	64.3	57.2	64.4	46	32
V	µg/L	0.4U	1.3U	0.3U	0.21U	0.015U
Radiological						
Alpha[d]	pCi/L	61.1	47.1J	38.3J	--	--
Alpha-U[e]	pCi/L	0[f]	0[f]	0[f]	--	--
Beta	pCi/L	27.2	24.3	13.9	--	--
U	µg/L	64.3	57.2	64.4	46	32
U-234	pCi/L	46.3	26.7	--	--	--
U-238	pCi/L	26.9	22.1	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Bedrock Groundwaters -- Down Gradient -- 95-08[a,b]

Analyte	Unit	10/31/00
Field Measurements		
Alkalinity	mg/L	286
Conductivity[c]	µmhos/cm	595
DO[c]	mg/L	2.3
ORP[c]	mV	101
pH[c]	s.u.	7.75
Temperature[c]	C	12.4
Turbidity[c]	NTU	4.3
Common Ions		
Ca	mg/L	28.1
Chloride	mg/L	5.78
Fluoride	µg/L	813
Hardness	mg/L	107
K	mg/L	3.57
Mg	mg/L	8.93
Na	mg/L	94.0
NO_3+NO_2 as N	µg/L	32.4U
SO_4	mg/L	34.3
TDS[c]	mg/L	365
Metals		
As	µg/L	0.21
Fe	µg/L	11.7U
Mn	µg/L	44.9
Mo	µg/L	0.3U
Se	µg/L	0.1U
U	µg/L	0.1U
V	µg/L	1.3U
Radiological		
Alpha[d]	pCi/L	8.1U
Alpha-U[e]	pCi/L	8.1U
Beta	pCi/L	7.5U
U	µg/L	0.1U
U-234	pCi/L	1.1
U-238	pCi/L	0.10U

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Samples were filtered in the field unless otherwise noted.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.

Appendix C

Analytical Results for Surface Water Samples, January 2000 Through April 2010

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Upstream -- SW00-01[a]

Analyte	Unit	04/18/00	07/17/00	10/20/00	04/17/01	07/11/01	10/09/01	04/07/05	10/05/05	04/28/06	10/02/06	04/11/07	10/08/07	04/09/08[g]
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	196	130	263	218	196	98	145	202	228	183	227	186	213
Conductivity[c]	µmhos/cm	1544	847	8190	792	652	632	562	1389	1011	1332	959	1157	613
DO[c]	mg/L	--	--	--	--	--	--	--	8.81	--	8.30	--	--	--
pH[c]	s.u.	8.13	8.21	7.56	8.3	8.18	8.08	7.24	8.24	8.26	7.99	8.31	8.35	7.94
Temperature[c]	C	5.6	19.5	3.1	13.1	19.7	9.8	5.6	8.4	7.17	12.09	6.43	13.1	4.01
Common Ions														
Ca[b]	mg/L	148	135	124	107	83.6	78.8	84.0	270	170	340	200	230	93.0
Chloride[b]	mg/L	9.67	7.42	6.45	10.8	8.48	19.8	9.70	11.0	11.0	7.20	11.0	5.10	9.90
Fluoride[b]	µg/L	174	201	202	10.4U	592	473	100.U	200.U	120.	260.	140.	240.	110.
Hardness[b]	mg/L	461	431	388	338	272	244	263	831	532	1020	606	706	290
K[b]	mg/L	1.50	2.04	1.91	2.18	1.29	12.4	2.00	3.90	2.20	5.40	2.20	4.40	1.80
Mg[b]	mg/L	22.2	22.9	19.0	17.1	15.4	11.5	13.0	38.0	26.0	41.0	26.0	32.0	14.0
Na[b]	mg/L	27.7	25.5	21.6	34.9	30.3	12.1	19.0	35.0	28.0	27.0	29.0	23.0	21.0
NO_3+NO_2 as N[b]	µg/L	32.4U	238	32.4U	4.7U	37	1680	170.	12	48	10.U	10.U	10.U	67
SO_4[b]	mg/L	298	319	225	162J	146	165	130	600	370	650	320	530	140
TDS[c]	mg/L	660	682	588	542	425	495	--	--	--	--	--	--	--
Metals														
As[b]	µg/L	0.24	0.3U	0.45	0.5U	0.5U	2.4	0.24	0.007U	0.0075U	0.012U	0.012U	0.35	0.36
Fe[b]	µg/L	7.4U	9.1U	21.9	40.6	5.1	80.7J	6.8U	7.8U	14U	6.6	3.7U	5.6U	350
Mn[b]	µg/L	6.6	5	8.2	10.8	3.6	23.2	16	3.7	32	6	33	7.6	24
Mo[b]	µg/L	0.4U	2.1	1.7	0.4U	3.5	2.4	1.5	1.8J	2.1J	2J	2	2.7	2.1
Se[b]	µg/L	0.75	0.18	0.12	0.56	0.3U	0.3U	1.3	0.023U	0.02U	0.025U	0.038U	0.028U	1.4
U[b]	µg/L	3.7	3.9	2.4	4.5	3	2.5	2.7	4.6	3.7	3	4	2.8	3.1
V[b]	µg/L	1.1	1.3U	1.3U	0.87	1.6	5	0.3UR	0.1U	0.76J	0.45	0.4J	0.96J	1
Radiological														
Alpha[c,d]	pCi/L	6.4U	6.6UJ	9.0U	4.6U	2.8UJ	10.3UJ	2.9	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	6.4U	6.6UJ	9.0U	4.6U	2.8UJ	10.3UJ	0.24	--	--	--	--	--	--
Beta[c]	pCi/L	6.3U	7.6U	7.5U	4.0U	2.7U	23.9	4.2	--	--	--	--	--	--
U[b]	µg/L	3.7	3.9	2.4	4.5	3	2.5	2.7	4.6	3.7	3	4	2.8	3.1
U-234[c]	pCi/L	--	--	0.52U	3.5	0.76UJ	4.1	1.8	--	--	--	--	--	--
U-235[c]	pCi/L	--	--	--	--	--	--	0.056U	--	--	--	--	--	--
U-238[c]	pCi/L	--	--	0.85	2.2	1.3	1.4	0.86	--	--	--	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Upstream -- SW00-01[a]

Analyte	Unit	10/08/08	04/06/09	04/21/10
Field Measurements				
Alkalinity[c]	mg/L	--	--	114
Alkalinity[b]	mg/L	172	193	--
Conductivity[c]	µmhos/cm	1162	1004	531
DO[c]	mg/L	--	--	--
pH[c]	s.u.	8.23	8.22	7.88
Temperature[c]	C	16.04	9.34	7.40
Common Ions				
Ca[b]	mg/L	230	240J	70.0
Chloride[b]	mg/L	6.40	18.0	6.50
Fluoride[b]	µg/L	400.	230.	160.
Hardness[b]	mg/L	698	727J	220
K[b]	mg/L	5.70J	3.80J	1.40J
Mg[b]	mg/L	30.0	31.0	11.0
Na[b]	mg/L	20.0	34.0J	16.0
NO_3+NO_2 as N[b]	µg/L	11	10.U	140.
SO_4[b]	mg/L	520	430	100
TDS[c]	mg/L	--	--	--
Metals				
As[b]	µg/L	0.51	0.27	0.4
Fe[b]	µg/L	3.1U	24	35
Mn[b]	µg/L	0.2U	4.2	7.3
Mo[b]	µg/L	2.5	2.6	1.6
Se[b]	µg/L	0.2	0.3	1.4
U[b]	µg/L	3	3.9	1.4
V[b]	µg/L	0.69	0.35	0.55
Radiological				
Alpha[c,d]	pCi/L	--	--	--
Alpha-U[c,e]	pCi/L	--	--	--
Beta[c]	pCi/L	--	--	--
U[b]	µg/L	3	3.9	1.4
U-234[c]	pCi/L	--	--	--
U-235[c]	pCi/L	--	--	--
U-238[c]	pCi/L	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Upstream -- SW92-03[a]

Analyte	Unit	10/30/00	04/17/01	07/12/01	10/09/01
Field Measurements					
Alkalinity[b]	mg/L	225	216	177	103
Conductivity[c]	µmhos/cm	839	777	678	650
pH[c]	s.u.	7.58	8.25	7.88	7.83
Temperature[c]	C	6.5	15.7	16.1	8.8
Common Ions					
Ca[b]	mg/L	132	107	89.7	81.2
Chloride[b]	mg/L	7.26	10.7	8.57	22.9
Fluoride[b]	µg/L	196	148	132	449
Hardness[b]	mg/L	412	335	286	250
K[b]	mg/L	1.97	2.42	1.15	12.4
Mg[b]	mg/L	20.0	16.4	15.1	11.5
Na[b]	mg/L	23.1	33.5	32.2	11.6
NO_3+NO_2 as N[b]	µg/L	32.4UJ	4.7U	49.9	1650
SO_4[b]	mg/L	241	160J	147	166
TDS[c]	mg/L	602	540	445	478
Metals					
As[b]	µg/L	0.34	0.5U	0.5U	2.4
Fe[b]	µg/L	11.7U	17.1	11.5	0.8UJ
Mn[b]	µg/L	7.2	11.8	14	27.2
Mo[b]	µg/L	1.9	0.4U	3U	3
Se[b]	µg/L	0.15	0.65	0.3U	0.57
U[b]	µg/L	2.5	4.3	2.9	2.3
V[b]	µg/L	1.3U	0.96	1.3	4.8
Radiological					
Alpha[c,d]	pCi/L	9.1U	4.4U	5.2UJ	9.7J
Alpha-U[c,e]	pCi/L	9.1U	4.4U	5.2UJ	6.2J
Beta[c]	pCi/L	9.4	4.0U	4.1U	25.3
U[b]	µg/L	2.5	4.3	2.9	2.3
U-234[c]	pCi/L	1.9	2.5	0.76UJ	2.3
U-238[c]	pCi/L	0.99	1.9	1.1	1.2

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- Deer Draw[a]

Analyte	Unit	08/28/00
Metals		
As[b]	µg/L	2.4
Fe[b]	µg/L	449
Mn[b]	µg/L	49.6
Mo[b]	µg/L	20.4
Se[b]	µg/L	1.5
U[b]	µg/L	17.9
V[b]	µg/L	11
Radiological		
U[b]	µg/L	17.9
U-234[b]	pCi/L	5.8
U-235[b]	pCi/L	0.32U
U-238[b]	pCi/L	5.7

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- Millsite Weir[a]

Analyte	Unit	10/09/01
Field Measurements		
Alkalinity[b]	mg/L	220
Conductivity[c]	µmhos/cm	1305
pH[c]	s.u.	7.66
Temperature[c]	C	13.9
Common Ions		
Ca[b]	mg/L	218
Chloride[b]	mg/L	19.2
Fluoride[b]	µg/L	245
Hardness[b]	mg/L	711
K[b]	mg/L	3.48
Mg[b]	mg/L	40.4
Na[b]	mg/L	42.4
NO_3+NO_2 as N[b]	µg/L	612
SO_4[b]	mg/L	581
TDS[c]	mg/L	1120
Metals		
As[b]	µg/L	1
Fe[b]	µg/L	20J
Mn[b]	µg/L	40.9
Mo[b]	µg/L	1.9U
Se[b]	µg/L	0.87
U[b]	µg/L	23.2
V[b]	µg/L	16.8
Radiological		
Alpha[c,d]	pCi/L	16.4J
Alpha-U[c,e]	pCi/L	0[f]
Beta[c]	pCi/L	15.9
U[b]	µg/L	23.2
U-234[c]	pCi/L	8.8
U-238[c]	pCi/L	9.2

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- SW00-02[a]

Analyte	Unit	04/18/00	07/17/00	10/20/00	01/30/01	04/17/01	07/12/01	10/08/01	01/31/02	04/10/02	10/09/02	12/10/02	04/07/03	10/08/03
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	208	145	328	264	126	230	185	278	278	138	226	290	273
Conductivity[c]	µmhos/cm	1444	1474	1629	2030	1601	1475	1624	1482	1624	1605	1646	1539	1511
DO[c]	mg/L	--	--	--	--	--	--	--	11.85	--	--	--	--	--
pH[c]	s.u.	8.09	7.87	7.93	7.6	7.92	7.86	7.9	7.91	8.26	8.17	8.34	--	8.29
Temperature[c]	C	5.5	24.1	12.2	1.8	18.6	21.4	17.1	0.24	6.8	18	0.93	11.7	10.58
Common Ions														
Ca[b]	mg/L	234	246	277	301	228	217	248	247	243	201	--	224	224
Chloride[b]	mg/L	20.6	15.6	19.4	39.9	47.5	24.3	24.7	28.6	24.5	45.9	--	44.8	35.2
Fluoride[b]	µg/L	164	162	178	202	276	197	205	131	124	178J	--	17.2U	169
Hardness[b]	mg/L	758	817	902	990J	767	724	842	814	826	732	--	757	762
K[b]	mg/L	2.27	2.79	2.92	2.72	2.61	3.16	3.49	2.71	2.85	4.71	--	2.79	3.63
Mg[b]	mg/L	42.2	49.2	51.0	58.0J	48.0	44.2	54.1	47.8	53.3	55.8	--	48.1	49.2
Na[b]	mg/L	42.6	44.9	47.9	60.4	68.4	63.8	63.5	51.6	62.7	91.3	--	67.9	73.3
NO_3+NO_2 as N[b]	µg/L	361	46.6	730	874	1220	131	168	327	166	15.6	--	347	4.50U
SO_4[b]	mg/L	577	720	661	836	311	596	724	624	625	750	--	549	590
TDS[c]	mg/L	1110	1310	1320	1610	1280	1180	1320	1300	1320	1220	--	1180	1250
Metals														
As[b]	µg/L	0.2U	0.3U	0.24	0.48	1.1	2.8	2.9	1.3	1.7	1.9	2.3	1.10	2.60
Fe[b]	µg/L	7.4U	9.1U	11.7U	11U	1.0U	14.6	16.4J	0.8U	1U	0.8U	6.3	1.30U	0.800U
Mn[b]	µg/L	73.4	12.6	88.2	19.7	95.2	26.1	13.3	100	62.8	26.1	32.4	43.8	45.1
Mo[b]	µg/L	3	2.6	4.1	6.1	12	6.7	2.9	1.5U	2	7.1	5.1	2.00U	1.70U
Se[b]	µg/L	2.7	1.9	4.1	7.5	8.9	8.9	8.9	3.4	4.3	12.1	11.3	6.40	6.30
U[b]	µg/L	18.4	14.3	23.7	44.8	44.3	38.2	42.2	31.6	30.3	79.5	77.5	41.6	53.2
V[b]	µg/L	4.1	1.8	2.3	12.2	20.6	70.5	89.4	24	32.8	53.2	60	31.3	54.4
Radiological														
Alpha[c,d]	pCi/L	10.7U	15.0J	12.2J	20.7	15.4	18.7J	20.5J	16.9	17.7	43.0	--	14.4J	25.1
Alpha-U[c,e]	pCi/L	10.7U	5.2J	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	--	0[f]	0[f]
Beta[c]	pCi/L	13.0	12.8U	9.9	9.3U	18.4	10.1U	11.6U	5.1U	11.5	11.1	--	9.8U	11.3
U[b]	µg/L	18.4	14.3	23.7	44.8	44.3	38.2	42.2	31.6	30.3	79.5	77.5	41.6	53.2
U-234[c]	pCi/L	--	--	9.0	16.4	17.3	16.3J	14.2	12.2	11.6	23.9	--	16.1	18.9
U-235[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	0.84
U-238[c]	pCi/L	--	--	8.9	15.4	21.5	13.0	15.9	11.0	10.5	28.2	--	14.2J	17.5

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- SW00-02[a]

Analyte	Unit	04/14/04	10/07/04	04/06/05	10/05/05	04/27/06	10/04/06	04/11/07	10/08/07	04/09/08[g]	10/09/08	04/07/09	04/21/10	10/12/10
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	148	397
Alkalinity[b]	mg/L	260	233	95	218	241	271	235	258	228	300	224	--	--
Conductivity[c]	µmhos/cm	1229	1615	840	2300	1317	1758	1442	1765	905	1749	1865	681	1788
DO[c]	mg/L	--	--	--	--	--	10.61	--	--	--	--	--	--	--
pH[c]	s.u.	8.28	8.01	7.92	7.38	8.21	7.84	8.31	8.24	8.23	7.7	8.14	7.98	8.00
Temperature[c]	C	8.85	15.6	8.08	15.9	18.88	13.86	3.65	13.0	6.63	6.08	15.3	7.61	9.48
Common Ions														
Ca[b]	mg/L	260	270	130	290	250	490	310	410	130	300	330J	94.0	350
Chloride[b]	mg/L	35.0	21.0	20.0	63.0	16.0	20.0	18.0	16.0	26.0	24.0	28.0	13.0	23.0
Fluoride[b]	µg/L	200.U	200.U	130.	200.U	200.U	200.U	200.U	280.	140.	510.	200.U	140.	130.
Hardness[b]	mg/L	855	884	415	951	810	1510	963	1300	415	963	1050J	296	1100
K[b]	mg/L	5.00	5.00	2.70	5.80	3.50	5.30	3.30	5.10	2.20	5.50J	4.50J	1.70J	4.50J
Mg[b]	mg/L	50.0	51.0	22.0	55.0	45.0	70.0	46.0	67.0	22.0	52.0	55.0	15.0	55.0
Na[b]	mg/L	64.0	60.0	29.0	86.0	41.0	57.0	44.0	61.0	32.0	62.0	56.0J	22.0	61.0
NO_3+NO_2 as N[b]	µg/L	27	10.U	610.	2000.	10.U	190.	10.U	10.U	100.	10.U	10.U	190.	10.U
SO_4[b]	mg/L	480	670	240	720	640	860	600	990	270	740	700	150	740
TDS[c]	mg/L	1100	1300	580	1500	1200	1500	1200	1700	660	1400	1300	440	1400
Metals														
As[b]	µg/L	0.76	0.57	0.27	0.79	0.45	0.4	0.012U	0.54	0.34	0.87	0.49	0.44	0.67
Fe[b]	µg/L	9.8U	7U	7.5U	150	14U	6.4	3.7U	5.6U	130	3.1U	4.3J	37	4.9U
Mn[b]	µg/L	63	45	32	670	39	77	47	34	25	120	100	30	150
Mo[b]	µg/L	5	3J	1.6	5.5	2.3J	1.6J	2	2.5	2.7	2	1.8	2	1.5
Se[b]	µg/L	3.3	1.9	2.3	4.5	0.39	0.55	1	0.61	1.5	0.78	1.4	1.6	0.82
U[b]	µg/L	40J	34J	9.2	42	14	22	14	25	10	27	21	4.2	21
V[b]	µg/L	20	7.7J	1J	0.98	4.5	4.8	2.5J	9.4J	1.6	2.9	2.3	0.84	0.87
Radiological														
Alpha[c,d]	pCi/L	23.0	22.4	8.0	--	--	--	--	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	0[f]	0[f]	0.64	--	--	--	--	--	--	--	--	--	--
Beta[c]	pCi/L	11.9	9.3J	6.4	--	--	--	--	--	--	--	--	--	--
U[b]	µg/L	40J	34J	9.2	42	14	22	14	25	10	27	21	4.2	21
U-234[c]	pCi/L	15.3	13.7	4.3	--	--	--	--	--	--	--	--	--	--
U-235[c]	pCi/L	0.88	0.70	0.16	--	--	--	--	--	--	--	--	--	--
U-238[c]	pCi/L	13.5	11.1	2.9	--	--	--	--	--	--	--	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- SW00-02[a]

Analyte	Unit	04/05/11	10/10/11	04/24/12
Field Measurements				
Alkalinity[c]	mg/L	--	--	--
Alkalinity[b]	mg/L	293	290	320
Conductivity[c]	µmhos/cm	1664	1932	1827
DO[c]	mg/L	--	--	--
pH[c]	s.u.	7.82	7.81	7.94
Temperature[c]	C	4.64	12.12	9.86
Common Ions				
Ca[b]	mg/L	279	340	330
Chloride[b]	mg/L	--	36.0	33.0
Fluoride[b]	µg/L	--	200.U	200.U
Hardness[b]	mg/L	896	1090	1070
K[b]	mg/L	2.61	3.60	4.70J
Mg[b]	mg/L	48.5	59.0	59.0
Na[b]	mg/L	47.7	70.0	70.0J
NO_3+NO_2 as N[b]	µg/L	10U	10.U	10.U
SO_4[b]	mg/L	--	820	740
TDS[c]	mg/L	1390	1600	1500
Metals				
As[b]	µg/L	1.70U	0.68	0.93
Fe[b]	µg/L	30.0U	4.9UJ	14J
Mn[b]	µg/L	158	1000	960
Mo[b]	µg/L	1.63	1.1UJ	1.1UJ
Se[b]	µg/L	1.50U	0.4J	0.73
U[b]	µg/L	20	39	23
V[b]	µg/L	3.00U	1J	0.44
Radiological				
Alpha[c,d]	pCi/L	--	--	--
Alpha-U[c,e]	pCi/L	--	--	--
Beta[c]	pCi/L	--	--	--
U[b]	µg/L	20	39	23
U-234[c]	pCi/L	--	--	--
U-235[c]	pCi/L	--	--	--
U-238[c]	pCi/L	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- SW01-02[a]

Analyte	Unit	07/11/01	10/08/01	01/31/02	04/10/02	04/07/03	10/08/03	04/14/04	10/07/04	04/06/05	10/05/05	04/28/06	10/03/06	04/11/07
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	205	192	270	325	253	285	292	354	175	214	233	294	245
Conductivity[c]	µmhos/cm	1500	1989	1727	1886	1617	1701	1266	2150	772	1632	1358	1951	1377
DO[c]	mg/L	--	--	11.68	--	--	--	--	--	--	--	--	6.17	--
pH[c]	s.u.	7.93	7.82	7.66	8.05	--	7.65	7.79	7.77	7.25	7.26	7.62	7.05	7.63
Temperature[c]	C	27.1	19.9	0.4	8.2	14.7	24.61	14.46	14.6	3.62	12.3	9.08	10.99	8.03
Common Ions														
Ca[b]	mg/L	238	343	303	324	240	284	250	430	120	350	280	370	310
Chloride[b]	mg/L	8.75	6.39	14.1	9.96	36.6	12.2	11.0	16.0	14.0	13.0	11.0	11.0	12.0
Fluoride[b]	µg/L	228	201	112	143	56.7	182	100.	200.U	100.	200.U	200.U	200.U	200.U
Hardness[b]	mg/L	802	1150	1010	1090	811	964	805	1380	378	1090	868	1240	951
K[b]	mg/L	2.46	2.79	2.35	2.37	2.07	3.39	3.70	5.10	2.30	4.30	2.90	4.60	2.90
Mg[b]	mg/L	50.5	71.9	60.8	67.8	51.5	62.0	44.0	75.0	19.0	52.0	41.0	76.0	43.0
Na[b]	mg/L	43.6	45.1	43.6	46.7	62.9	55.6	52.0	66.0	25.0	42.0	35.0	50.0	38.0
NO_3+NO_2 as N[b]	µg/L	26.3	7.3U	38	52.8	154	4.50U	340.	1200.	510.	200.	130.	250.	45
SO_4[b]	mg/L	677	1000	827	851	633	781	510	950	210	820	600	1000	590
TDS[c]	mg/L	1250	1720	1570	1640	1280	1480	1200	1800	510	1400	1000	1700	1200
Metals														
As[b]	µg/L	0.5U	0.6U	0.6U	0.32	0.100	0.470	0.17	0.27	0.22	0.007U	0.0075U	0.012U	0.012U
Fe[b]	µg/L	3.8	11.1J	0.8U	1U	1.30U	0.80U	9.8U	7U	7.5U	7.8U	14U	19	3.7U
Mn[b]	µg/L	12	14.6	47.7	26	3.80	6.20	8.3	510	23	16	50	150	52
Mo[b]	µg/L	3.7	1.9U	1.5U	1.8U	2.00U	1.70U	2.6	3.2J	1.3	1.6J	2J	1.3J	1.9
Se[b]	µg/L	0.3U	0.51	0.95	1.2	2.90	2.00	2.3	6.3	2	0.4	0.28	0.49	0.58
U[b]	µg/L	7.8	9	8.7	10	11.9	11.9	9.7J	9J	6.1	8.9	6.5	9.1	6
V[b]	µg/L	1.5	0.71	0.69	0.7	1.10	1.90	0.25U	0.58J	0.3UR	0.1U	0.73J	0.42	0.64J
Radiological														
Alpha[c,d]	pCi/L	10.9UJ	14.9UJ	9.5U	10.1U	9.6UJ	13.6	9.5	7.3	5.4	--	--	--	--
Alpha-U[c,e]	pCi/L	10.9UJ	14.9UJ	9.5U	10.1U	9.6UJ	3.4	1.4	0[f]	0[f]	--	--	--	--
Beta[c]	pCi/L	10.0U	14.4U	9.3U	9.6U	9.8U	10.6U	5.6J	5.5U	4.5	--	--	--	--
U[b]	µg/L	7.8	9	8.7	10	11.9	11.9	9.7J	9J	6.1	8.9	6.5	9.1	6
U-234[c]	pCi/L	5.0J	4.3	5.4	7.6	6.5	6.0	4.6	6.3	3.5	--	--	--	--
U-235[c]	pCi/L	--	--	--	--	--	0.22	0.26	0.12J	0.10	--	--	--	--
U-238[c]	pCi/L	2.9	3.5	3.2	3.5	3.8J	4.0	3.2	2.9	2.2	--	--	--	--

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- SW01-02[a]

Analyte	Unit	10/08/07	04/09/08[g]	10/08/08	04/06/09	10/08/09	04/21/10	10/12/10	04/05/11	10/11/11	04/24/12
Field Measurements											
Alkalinity[c]	mg/L	--	--	--	--	--	125	--	--	--	--
Alkalinity[b]	mg/L	304	96	298	244	302	--	339	--	242	236
Conductivity[c]	µmhos/cm	1975	794	2013	1406	2018	655	1980	1722	1850	1813
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--
pH[c]	s.u.	10.5	7.71	7.54	7.47	6.74	7.77	7.52	7.44	7.25	7.75
Temperature[c]	C	13.1	4.12	12.06	12.55	6.03	8.46	17.36	17.74	--	23.20
Common Ions											
Ca[b]	mg/L	380	120	410	380J	440J	82.0	410	313	360	350
Chloride[b]	mg/L	9.60	12.0	13.0	19.0	9.00	8.40	13.0	12.7	8.50	17.0
Fluoride[b]	µg/L	390.	110.	530.	250.	200.U	150.	200.U	184	240.	200.U
Hardness[b]	mg/L	1270	374	1290	1190J	1400J	258	1290	1000	1180	1130
K[b]	mg/L	5.00	1.90	5.20J	4.00J	3.90J	1.50J	4.10J	2.67	4.20	3.80J
Mg[b]	mg/L	78.0	18.0	65.0	58.0	72.0	13.0	64.0	53.0	69.0	61.0
Na[b]	mg/L	57.0	25.0	54.0	47.0J	47.0J	19.0	53.0	42.9	50.0	54.0J
NO_3+NO_2 as N[b]	µg/L	240.	150.	560.	85	25	170.	500.	11.7	170.	120.
SO_4[b]	mg/L	1100	220	1000	780	1000	130	930	788	1000	810
TDS[c]	mg/L	1900	560	--	1500	1800	380	1600	1480	1700	1600
Metals											
As[b]	µg/L	0.53	0.33	0.43	0.37	1.4	0.42	0.63	1.70U	0.81	0.54
Fe[b]	µg/L	9.9	230	23	20	37	35	4.9U	30.0U	5.2J	4.9UJ
Mn[b]	µg/L	160	21	48	32	140	14	84	41	22	44
Mo[b]	µg/L	2.2	2	1.8	2	1.8	1.7	1.7	1.84	1.1UJ	1.1UJ
Se[b]	µg/L	1.4	1.4	3	1.3	0.94	1.6	3.1	1.50U	2.6	2.1
U[b]	µg/L	8.7	4	9.6	7.1	7.6	2.1	7.4	7.43	7.1	6
V[b]	µg/L	0.86J	0.8	0.47	0.42	1.4	0.61	0.54	3.00U	1.5	0.55
Radiological											
Alpha[c,d]	pCi/L	--	--	--	--	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	--	--	--	--	--	--	--	--	--	--
Beta[c]	pCi/L	--	--	--	--	--	--	--	--	--	--
U[b]	µg/L	8.7	4	9.6	7.1	7.6	2.1	7.4	7.43	7.1	6
U-234[c]	pCi/L	--	--	--	--	--	--	--	--	--	--
U-235[c]	pCi/L	--	--	--	--	--	--	--	--	--	--
U-238[c]	pCi/L	--	--	--	--	--	--	--	--	--	--

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[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- SW01-03[a]

Analyte	Unit	07/11/01	10/08/01	01/31/02	04/10/02	10/09/02	12/10/02	04/07/03	07/08/03	10/08/03	04/14/04	10/07/04	04/05/05	10/05/05
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	241	241	304	280	120	269	310	162	272	266	297	179	264
Conductivity[c]	µmhos/cm	1488	1653	1505	1573	1376	1516	1524	771	1401	1167	1693	811	1590
DO[c]	mg/L	--	--	9.71	--	--	--	--	--	--	--	--	--	--
pH[c]	s.u.	7.17	7.12	7.45	7.58	8.2	8.05	--	8	7.8	7.96	7.86	7.83	7.25
Temperature[c]	C	18.9	15.2	2.79	8.2	17.2	0.23	11.4	28.8	18.53	12.10	13.6	10.25	12.5
Common Ions														
Ca[b]	mg/L	229	258	256	247	161	--	227	143	202	210	300	120	310
Chloride[b]	mg/L	19.3	21.7	29.8	23.7	34.3	--	42.9	44.1	30.8	30.0	20.0	19.0	17.0
Fluoride[b]	µg/L	209	235	193	92.9	165J	--	17.2U	17.2U	161	200.U	200.U	120.	200.U
Hardness[b]	mg/L	762	856	837	816	598	--	763	544	695	685	963	386	972
K[b]	mg/L	2.63	2.66	2.61	2.32	1.84	--	2.34	1.70	2.94	3.70	4.30	2.50	4.00
Mg[b]	mg/L	46.1	51.5	48.1	48.5	47.7	--	47.6	45.4	46.2	39.0	52.0	21.0	48.0
Na[b]	mg/L	51.9	53.0	50.3	48.8	60.0	--	62.2	68.4	63.1	52.0	56.0	27.0	45.0
NO_3+NO_2 as N[b]	µg/L	46.1	34.5	103	104	10.9	--	477	4.50U	4.50U	370.	170.	550.	23
SO_4[b]	mg/L	594	705	621	558	643	--	542	463	519	440	710	220	700
TDS[c]	mg/L	1220	1330	1330	1220	1100	--	1170	955	1090	1000	--	--	--
Metals														
As[b]	µg/L	0.5U	0.6U	0.6U	0.26	0.11	0.1U	0.120	0.650	0.560	0.21	0.24	0.26	0.007U
Fe[b]	µg/L	6.7	11.3J	0.8U	1U	0.8U	2.5U	1.30U	12.2	0.800U	9.8U	7U	7.5U	7.8U
Mn[b]	µg/L	9.1	5.4	191	90.4	7.4	8.8	9.40	1.20	104	4.1	90	19	17
Mo[b]	µg/L	3U	1.9U	1.5U	1.8U	1.7U	3.6	2.00U	1.70U	1.70U	2.3	2.5J	1.3	2.6J
Se[b]	µg/L	1.9	0.56	1.2	1.3	0.1U	0.18	3.30	0.100U	0.420	2.3	1.9	2	0.34
U[b]	µg/L	23.4	30.7	25.2	23.8	66.1	94.3	32.4	24.5	38.1	17	27J	7.6	17
V[b]	µg/L	4	3	2	1.9	0.83	1.1	1.80	1.10	1.10	0.25U	0.85J	0.3UR	0.1U
Radiological														
Alpha[c,d]	pCi/L	10.0UJ	20.2J	15.1	14.0	37.6	--	16.0J	15.0	23.3	11.6	19.5	6.6	--
Alpha-U[c,e]	pCi/L	10.0UJ	0[f]	0[f]	0[f]	0[f]	--	0[f]	0[f]	0[f]	0[f]	0.24	0.32	--
Beta[c]	pCi/L	10.2	12.0	7.5U	13.6	15.0	--	9.8U	8.4U	13.3	4.3J	10.7	1.8J	--
U[b]	µg/L	23.4	30.7	25.2	23.8	66.1	94.3	32.4	24.5	38.1	17	27J	7.6	17
U-234[c]	pCi/L	8.8J	12.8	9.7	10.0	22.7	--	12.6	8.2	13.4	7.6	10.5	3.8	--
U-235[c]	pCi/L	--	--	--	--	--	--	--	--	0.56	0.47	0.46	0.083	--
U-238[c]	pCi/L	9.1	11.4	8.8	8.6	24.5	--	11.1J	9.3	11.7	5.5	8.3	2.4	--

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- SW01-03[a]

Analyte	Unit	04/28/06	10/03/06	04/11/07	10/08/07	04/09/08[g]	10/08/08	04/07/09	10/06/09	04/20/10	10/12/10	04/05/11	10/11/11	04/24/12
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	86	--	--	--	--
Alkalinity[b]	mg/L	241	232	258	291	364	288	272	263	--	302	193	310	300
Conductivity[c]	µmhos/cm	1408	1492	1350	1842	854	1697	1938	1683	807	1813	1617	1695	1752
DO[c]	mg/L	--	8.62	--	--	--	--	--	--	--	--	--	--	7.68
pH[c]	s.u.	7.89	7.36	7.89	7.83	7.78	7.56	7.62	7.44	7.79	7.46	7.61	7.35	7.65
Temperature[c]	C	10.60	13.62	7.78	13.1	3.76	14.68	3.61	5.29	11.92	12.16	14.36	--	18.57
Common Ions														
Ca[b]	mg/L	280	380	320	440	130	310	340J	320J	110	330	278	310	320
Chloride[b]	mg/L	15.0	20.0	18.0	15.0	18.0	23.0	27.0	20.0	16.0	22.0	23.7	22.0	29.0
Fluoride[b]	µg/L	200.U	200.U	200.U	310.	120.	560.	200.U	230.	160.	200.	200	200.U	200.U
Hardness[b]	mg/L	880	1170	988	1380	411	988	1070J	1020J	349	1040	896	988	1030
K[b]	mg/L	3.20	5.20	3.30	4.90	2.10	5.20J	5.80J	4.60J	1.80J	4.60J	2.78	3.90	3.70J
Mg[b]	mg/L	44.0	54.0	46.0	69.0	21.0	52.0	54.0	53.0	18.0	53.0	49.1	52.0	56.0
Na[b]	mg/L	39.0	46.0	42.0	60.0	28.0	58.0	55.0J	55.0J	25.0	59.0	46.7	56.0	57.0J
NO_3+NO_2 as N[b]	µg/L	27	130.	10.U	10.U	180.	15	120.	28	240.	19	10U	10.U	10.U
SO_4[b]	mg/L	620	700	610	970	250	750	690	700	190	730	694	680	700
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As[b]	µg/L	0.0075U	0.012U	0.012U	0.36	0.34	0.37	0.4	0.35	0.39	0.41	2.34	0.49J	0.49
Fe[b]	µg/L	14U	2.2U	3.7U	5.6U	240	15	27	59	13	4.9U	30.0U	6.1J	16J
Mn[b]	µg/L	17	91	33	72	24	58	85	110	27	120	53.1	120	170
Mo[b]	µg/L	2J	1.5J	1.9	2.2	2	1.5	1.6	1	1.7	1.4	1.76	1.1UJ	1.1UJ
Se[b]	µg/L	0.32	0.29	1.3	0.53	1.5	0.96	1.4	0.65	2	1	1.50U	0.6	1.4
U[b]	µg/L	12	15	12	23	6.8	23	20	26	4.8	20	18.5	27	13
V[b]	µg/L	1J	0.64	0.85J	0.93J	0.91	0.44	0.58	0.45	0.61	0.33J	3.00U	0.015U	0.81
Radiological														
Alpha[c,d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Beta[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U[b]	µg/L	12	15	12	23	6.8	23	20	26	4.8	20	18.5	27	13
U-234[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- SW99-01[a]

Analyte	Unit	01/13/00
Field Measurements		
Alkalinity[b]	mg/L	217
Conductivity[c]	µmhos/cm	982
Temperature[c]	C	0.3
Common Ions		
Ca[b]	mg/L	140
Chloride[b]	mg/L	8.97
Fluoride[b]	µg/L	151
Hardness[b]	mg/L	436
K[b]	mg/L	1.68
Mg[b]	mg/L	21.1
Na[b]	mg/L	29.0
NO_3+NO_2 as N[b]	µg/L	84.7J
SO_4[b]	mg/L	255
TDS[c]	mg/L	695
Metals		
As[b]	µg/L	0.4U
Fe[b]	µg/L	8.9U
Mn[b]	µg/L	11.3
Mo[b]	µg/L	0.4U
Se[b]	µg/L	0.46
U[b]	µg/L	3.2
V[b]	µg/L	1U
Radiological		
Alpha[c,d]	pCi/L	7.5U
Alpha-U[c,e]	pCi/L	7.5U
Beta[c]	pCi/L	10.5U
U[b]	µg/L	3.2

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[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- Seep 1[a]

Analyte	Unit	04/02/01	04/18/01	07/11/01	10/09/01	01/31/02	02/19/02	04/03/02	04/06/05	10/04/06	10/08/08	04/07/09	04/20/10	10/12/10
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	217	--
Alkalinity[b]	mg/L	--	200	299	300	329	340	--	--	188	360	292	--	453
Conductivity[c]	µmhos/cm	--	2520	2850	2250	1882	2100	2029	2100	--	1835	2430	2427	2643
pH[c]	s.u.	--	6.82	6.98	7.19	7.33	7.61	7.21	7.52	--	7.00	7.37	7.32	8.01
Temperature[c]	C	--	10.8	18.8	13.5	0.72	4.6	7.43	15.8	--	14	12.7	20.71	9.98
Common Ions														
Ca[b]	mg/L	--	307	237	166	147	--	144	270	370	240	330J	240	280
Chloride[b]	mg/L	--	159	119	125	108	--	107	150	73.0	55.0	69.0	70.0	120
Fluoride[b]	µg/L	--	334	1450	1260	696	--	814	290.	480.	840.	490.	250.	560.
Hardness[b]	mg/L	--	1040	812	560	497	--	490	934	1230	805	1090J	813	996
K[b]	mg/L	--	12.1	10.4	8.78	6.92	--	7.37	13.0	11.0	9.00J	9.40J	3.40J	11.0J
Mg[b]	mg/L	--	66.1	53.4	35.3	31.5	--	31.7	63.0	75.0	50.0	64.0	52.0	72.0
Na[b]	mg/L	--	162	410	297	251	--	244	190	190	120	160J	250	230
NO_3 as N[b]	µg/L	9330	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N[b]	µg/L	--	6540	55	7.3U	92	69.9	49.3	310.	10.U	10.U	32	10.U	10.U
SO_4[b]	mg/L	--	442J	1150	762	619	--	571	860	960	630	840	880	960
TDS[c]	mg/L	--	--	2260	--	1460	--	--	--	--	--	--	--	--
Metals														
As[b]	µg/L	19.9	17.6	0.83	3.1	0.6U	0.6U	0.31	0.78	1.2	0.88	0.34	1.1	1.3
Fe[b]	µg/L	2.8	1U	23.7	612J	13.7	177	1U	7.5U	2.2U	32	23	22	4.9U
Mn[b]	µg/L	0.26	0.10U	553	310	323	278	231	95	3600	950	250	470	3.9
Mo[b]	µg/L	20.7	18.9	7	7.3	4.3	6.4	7.5	16	29	11	10	1.8	6
Se[b]	µg/L	135	118	0.3U	0.3U	9.9	8.7	5.9	11	0.8	0.3	1.3	0.35	0.58
U[b]	µg/L	310	282	101	82.2	127	113	112	470	290	240	300	120	360
V[b]	µg/L	518	494	1.4	0.4	0.4U	1.6	0.3U	17	6.2	0.89	0.27	1.7	2.7
Radiological														
Alpha[c,d]	pCi/L	--	--	79.8J	--	68.2	--	--	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	--	--	3.1J	--	0[f]	--	--	--	--	--	--	--	--
Beta[c]	pCi/L	--	--	29.7	--	9.6U	--	--	--	--	--	--	--	--
U[b]	µg/L	310	282	101	82.2	127	113	112	470	290	240	300	120	360
U-234[c]	pCi/L	--	98.0	42.4J	--	43.1	--	--	--	--	--	--	--	--
U-238[c]	pCi/L	--	104	34.3	--	42.5	--	--	--	--	--	--	--	--

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[c] Sample was unfiltered.
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[e] Gross alpha minus uranium activity. Result rounded as appropriate.
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On-Site -- Seep 1[a]

Analyte	Unit	04/05/11	10/10/11	04/24/12
Field Measurements				
Alkalinity[c]	mg/L	--	--	--
Alkalinity[b]	mg/L	324	335	312
Conductivity[c]	µmhos/cm	2499	2135	2256
pH[c]	s.u.	7.34	7.35	7.07
Temperature[c]	C	10.65	11.77	11.83
Common Ions				
Ca[b]	mg/L	259	300	270
Chloride[b]	mg/L	93.8	88.0	79.0
Fluoride[b]	µg/L	751	520.	800.
Hardness[b]	mg/L	877	1000	905
K[b]	mg/L	9.53	9.40	15.0J
Mg[b]	mg/L	55.9	62.0	56.0
Na[b]	mg/L	188	110	180J
NO_3 as N[b]	µg/L	--	--	--
NO_3+NO_2 as N[b]	µg/L	10U	370.	10.U
SO_4[b]	mg/L	840	740	800
TDS[c]	mg/L	--	--	--
Metals				
As[b]	µg/L	1.70U	17	0.48
Fe[b]	µg/L	30.0U	33J	65
Mn[b]	µg/L	156	120	280
Mo[b]	µg/L	17.4	7.1J	9.5
Se[b]	µg/L	1.50U	20	0.27
U[b]	µg/L	309	260	240
V[b]	µg/L	3.00U	410	2
Radiological				
Alpha[c,d]	pCi/L	--	--	--
Alpha-U[c,e]	pCi/L	--	--	--
Beta[c]	pCi/L	--	--	--
U[b]	µg/L	309	260	240
U-234[c]	pCi/L	--	--	--
U-238[c]	pCi/L	--	--	--

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[g] All samples were unfiltered in April 2008.

On-Site -- Seep 2[a]

Analyte	Unit	04/02/01	04/18/01	07/11/01	10/09/01	01/31/02	02/19/02	04/03/02	10/10/02	12/10/02	04/08/03	04/14/04	10/07/04	04/06/05
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	--	292	340	286	305	311	364	310	313	344	327	354	339
Conductivity[c]	µmhos/cm	--	2580	1909	1844	1697	1880	1990	2685	1731	--	1590	1766	2318
DO[c]	mg/L	--	--	--	--	7.15	--	--	--	--	--	--	--	--
pH[c]	s.u.	--	7.02	6.68	6.78	6.97	7.08	7.03	7.74	7.44	--	7.12	7.11	6.83
Temperature[c]	C	--	9.7	19.5	15.3	3.31	4.1	7.49	18.83	6.78	--	9.16	14.6	8.69
Common Ions														
Ca[b]	mg/L	--	324	223	245	251	--	259	328	--	296	260	280	330
Chloride[b]	mg/L	--	170	77.4	61.1	67.1	--	67.6	86.2	--	122	80.0	42.0	170
Fluoride[b]	µg/L	--	324	448	473	221	--	230	25.1UJ	--	91.6	370.	390.	280.
Hardness[b]	mg/L	--	1090	752	810	838	--	872	1140	--	982	851	913	1090
K[b]	mg/L	--	11.2	12.6	11.6	9.27	--	10.3	1.29	--	9.66	14.0	12.0	15.0
Mg[b]	mg/L	--	67.8	47.5	48.2	51.4	--	54.7	77.1	--	59.0	49.0	52.0	64.0
Na[b]	mg/L	--	164	143	112	94.6	--	103	161	--	118	90.0	80.0	150
NO_3 as N[b]	µg/L	8940	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N[b]	µg/L	--	7240	3590	1890	1860	1800	2160	24.8	--	7020	3200.	780.	11000.
SO_4[b]	mg/L	--	448J	622	687	674	--	647	1220	--	736	570	600	860
TDS[c]	mg/L	--	--	1460	--	1460	--	--	--	--	1640	--	1400	1900
Metals														
As[b]	µg/L	16.1	16.3	18.5	17.7	16.2	13.1	16.2	0.24	17.9	12.9	22	26	20
Fe[b]	µg/L	101	14	43.9	14J	0.8U	4.6	1U	0.8U	2.5U	1.30U	9.8U	7U	7.5U
Mn[b]	µg/L	2.7	0.1U	2.6	5	0.1U	1.2	1	19.5	0.62	0.100U	0.077U	4.1	0.13U
Mo[b]	µg/L	17.8	20.3	24.8	25.8	17	18.4	23.9	1.7U	18.9	20.0	22	21	25
Se[b]	µg/L	136	120	144	114	86.4	97.3	86	2	91.7	110	59	52	89
U[b]	µg/L	267	272	185	227	297	313	323	175	258	284	260J	230J	320
V[b]	µg/L	441	456	564	537	369	388	431	5.3	433	443	530	520	430
Radiological														
Alpha[c,d]	pCi/L	--	--	76.8J	--	168	--	--	--	--	126J	--	--	--
Alpha-U[c,e]	pCi/L	--	--	0[f]	--	0[f]	--	--	--	--	0[f]	--	--	--
Beta[c]	pCi/L	--	--	39.7	--	10U	--	--	--	--	66.0	--	--	--
U[b]	µg/L	267	272	185	227	297	313	323	175	258	284	260J	230J	320
U-234[c]	pCi/L	--	92.3	65.0J	--	90.5	--	--	--	--	100	--	--	--
U-238[c]	pCi/L	--	101	65.4	--	103	--	--	--	--	94.2J	--	--	--

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On-Site -- Seep 2[a]

Analyte	Unit	10/06/05	04/27/06	10/04/06	04/11/07	04/09/08[g]	10/08/08	04/07/09	10/08/09	04/20/10	10/12/10	04/05/11	10/10/11	04/24/12
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	171	--	--	--	--
Alkalinity[b]	mg/L	304	314	311	351	270	315	293	356	--	438	341	377	332
Conductivity[c]	µmhos/cm	1430	1852	1961	1894	2315	924	2460	1850	1215	1971	2099	2084	2206
DO[c]	mg/L	--	--	3.38	--	--	--	--	--	--	--	--	--	--
pH[c]	s.u.	7.18	7.17	6.95	7.14	7.20	7.07	7.44	7.07	7.21	7.42	7.06	7.03	7.08
Temperature[c]	C	12.6	11.78	12.94	7.55	6.17	14.04	5.90	12.38	16.40	13.11	6.10	12.35	8.6
Common Ions														
Ca[b]	mg/L	220	290	420	350	320	260	340J	320J	150	300	298	210	350
Chloride[b]	mg/L	51.0	88.0	56.0	71.0	140	48.0	75.0	59.0	53.0	72.0	--	84.0	84.0
Fluoride[b]	µg/L	320.	330.	480.	380.	210.	750.	390.	490.	190.	400.	--	930.	350.
Hardness[b]	mg/L	714	951	1330	1120	1060	851	1100J	1030J	486	971	987	718	1140
K[b]	mg/L	13.0	14.0	15.0	13.0	14.0	14.0J	13.0J	12.0J	6.00J	13.0J	8.38	9.10	13.0J
Mg[b]	mg/L	40.0	55.0	68.0	60.0	63.0	49.0	60.0	56.0	27.0	54.0	59.1	47.0	64.0
Na[b]	mg/L	92.0	100	110	110	140	98.0	120J	95.0J	60.0	110	114	180	120J
NO_3 as N[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N[b]	µg/L	1000.	3900.	2400.	2000.	11000.	510.	1800.	420.	25	590.	1460.	10.U	720.
SO_4[b]	mg/L	480	700	840	730	850	620	740	700	310	700	--	770	840
TDS[c]	mg/L	1200	1500	1700	1600	1900	1300	1600	1500	890	1500	1750	810	1800
Metals														
As[b]	µg/L	22	22	21	20	22	26	19	23	4.2	23	21.7	1J	20
Fe[b]	µg/L	7.8U	14U	6.6	3.7U	3500	3.1U	1.3UJ	8.4	250	4.9U	30.0U	270	4.9UJ
Mn[b]	µg/L	0.93	1.6	42	5.1	90	10	0.87	19	160	33	2.00U	240	18
Mo[b]	µg/L	23	27	30	37	26	26	25	31	4.4	25	24.3	5.4UJ	17
Se[b]	µg/L	40	47	43	42	82	29	40	29	6.6	25	37.7	0.24J	36
U[b]	µg/L	200	270	240	290	270	220	260	220	57	210	258	160	230
V[b]	µg/L	580	450	480	580J	450	570	440	590	23	520	372	0.076U	460
Radiological														
Alpha[c,d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Beta[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U[b]	µg/L	200	270	240	290	270	220	260	220	57	210	258	160	230
U-234[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- Seep 3[a]

Analyte	Unit	04/18/01	07/12/01	10/09/01	01/31/02	02/19/02	04/03/02	10/09/02	12/10/02	04/08/03	07/08/03	10/08/03	04/14/04	10/07/04
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	390	435	390	427	429	--	438	411	560	470	431	311	435
Conductivity[c]	µmhos/cm	3650	3640	5060	3554	4000	3883	3923	3741	4000	3441	3711	3042	3600
DO[c]	mg/L	--	--	--	7.42	--	--	--	--	--	--	--	--	--
pH[c]	s.u.	7.12	6.99	7	6.84	6.8	7.31	6.87	7.2	--	7.44	7.19	7.03	6.99
Temperature[c]	C	10	22.3	13.7	2.1	2.5	11.18	13.7	2.85	5.1	20.3	18.38	10.36	13.5
Common Ions														
Ca[b]	mg/L	429	485	522	472	--	493	497	--	502	495	480	490	460
Chloride[b]	mg/L	256	303	509	286	--	283	310	--	318	310	314	250	280
Fluoride[b]	µg/L	473	587	919	425	--	342	50.2UJ	--	34.4U	294	266	510.	380.
Hardness[b]	mg/L	1550	1730	2190	1680	--	1770	1790	--	1790	1750	1730	1680	1640
K[b]	mg/L	7.74	8.80	12.3	8.02	--	8.48	8.60	--	7.87	8.73	8.95	15.0	13.0
Mg[b]	mg/L	116	125	215	121	--	130	133	--	130	125	128	110	120
Na[b]	mg/L	265	281	462	268	--	256	276	--	291	285	294	230	240
NO_3+NO_2 as N[b]	µg/L	34300	38000	59300	42900	44700	47100	52000	--	54600	45100	48100	45000.	39000.
SO_4[b]	mg/L	594J	1350	1870	1350	--	1350	1410	--	1390	1320	1360	1100	1200
TDS[c]	mg/L	--	3230	--	3230	--	--	3230	--	3240	--	--	--	--
Metals														
As[b]	µg/L	0.5U	0.5U	0.6U	0.6U	0.6U	0.11	0.1U	0.1U	0.100U	0.100U	0.100U	0.016U	0.13
Fe[b]	µg/L	1.0U	2.3	14.3J	0.8U	13.5	1U	0.8U	2.7	1.30U	1U	0.800U	9.8U	7U
Mn[b]	µg/L	0.1U	9.7	21.2	3.7	8.3	4.7	10.6	6.3	2.90	13.9	17.0	2.9	8.8
Mo[b]	µg/L	0.4U	3U	1.9U	1.5U	1.5U	1.8U	1.7U	3U	2.00U	1.70U	1.70U	1.6	1.7J
Se[b]	µg/L	93.4	106	221	116	129	128	112	115	136	106	93.5	92	76
U[b]	µg/L	40.6	39.3	49.3	38.6	41	38	40.1	40.3	42.0	40.5	43.5	41	38J
V[b]	µg/L	0.4U	0.3U	0.72	0.4U	0.51	0.37	0.61	1	0.530	0.530	0.330	0.61	0.7J
Radiological														
Alpha[c,d]	pCi/L	--	23.2J	--	34.2	--	--	30.6	--	25.0J	--	--	--	--
Alpha-U[c,e]	pCi/L	--	0[f]	--	0[f]	--	--	0[f]	--	0[f]	--	--	--	--
Beta[c]	pCi/L	--	13.2U	--	15.1U	--	--	18.9	--	26.8J	--	--	--	--
U[b]	µg/L	40.6	39.3	49.3	38.6	41	38	40.1	40.3	42.0	40.5	43.5	41	38J
U-234[c]	pCi/L	24.3	22.8J	--	22.1	--	--	19.7	--	25.3	--	--	--	--
U-238[c]	pCi/L	19.6	14.9	--	13.5	--	--	15.1	--	14.6J	--	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- Seep 3[a]

Analyte	Unit	04/05/05	10/05/05	04/27/06	10/04/06	04/11/07	10/09/07	04/09/08[g]	10/08/08	04/07/09	10/05/09	04/21/10	10/12/10	04/06/11
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	342	--	--
Alkalinity[b]	mg/L	376	378	383	308	425	378	334	380	368	372	--	461	371
Conductivity[c]	µmhos/cm	3061	3610	3381	3685	3870	3743	3675	3530	3720	3628	3492	3754	3445
DO[c]	mg/L	--	--	--	8.43	--	--	--	--	--	--	--	--	--
pH[c]	s.u.	7.12	7.15	7.27	7.24	7.14	7.13	7.53	7.72	7.49	6.95	7.54	7.62	7.31
Temperature[c]	C	12.01	15.2	14.82	21.16	5.37	16.01	4.07	6.80	11.8	13.67	11.47	15.01	8.08
Common Ions														
Ca[b]	mg/L	450	470	490	480	530	500	390	370	410J	470J	440	480	389
Chloride[b]	mg/L	320	290	270	290	260	250	350	230	240	240	280	280	295
Fluoride[b]	µg/L	530.	500.U	500.U	500.U	500.U	730.	520.	1400.	600.	590.	600.	590.	443
Hardness[b]	mg/L	1580	1670	1760	1730	1860	1830	1510	1420	1520J	1710J	1550	1730	1430
K[b]	mg/L	11.0	13.0	15.0	13.0	12.0	13.0	13.0	9.20J	14.0J	7.40J	12.0J	14.0J	7.78
Mg[b]	mg/L	110	120	130	130	130	140	130	120	120	130	110	130	112
Na[b]	mg/L	200	240	250	310	280	310	260	270	260J	250J	240	260	263
NO_3+NO_2 as N[b]	µg/L	20000.	43000.	64000.	46000.	72000.	81000.	34000.	35000.	32000.	33000.	22000.	37000.	33100.
SO_4[b]	mg/L	1000	1200	1300	1400	1500	1500	1300	1300	1200	1400	1100	1400	1240
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As[b]	µg/L	0.11	0.007U	0.0075U	0.012U	0.012U	0.037	0.27	0.12	0.087U	0.15	0.26	0.23	1.70U
Fe[b]	µg/L	15U	7.8U	14U	4.3U	7.4U	11U	170	16U	1.3UJ	8.1U	6.7	4.9U	30.0U
Mn[b]	µg/L	2	5.1	2.6	11	0.17U	0.33U	16	1U	7.3	9.6	6.1	18	2.00U
Mo[b]	µg/L	1.7J	2.2J	1.7J	2.2J	1.2	2	2.6	1.8	1.6	1.9	1.8	1.7	1.72
Se[b]	µg/L	58	57	75	59	86	79	66	47	59	55	63	75	73.1
U[b]	µg/L	52	44	41	36	40	41	49	40	36	35	45	38	38.9
V[b]	µg/L	0.3UR	0.1U	1.5	1.1	0.68J	0.67J	0.9	0.31	0.099U	0.35	0.41	0.39J	3.00U
Radiological														
Alpha[c,d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Beta[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U[b]	µg/L	52	44	41	36	40	41	49	40	36	35	45	38	38.9
U-234[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- Seep 3[a]

Analyte	Unit	10/10/11	04/24/12
Field Measurements			
Alkalinity[c]	mg/L	--	--
Alkalinity[b]	mg/L	366	420
Conductivity[c]	µmhos/cm	3665	3849
DO[c]	mg/L	--	--
pH[c]	s.u.	7.62	7.43
Temperature[c]	C	14.15	22.74
Common Ions			
Ca[b]	mg/L	450	440
Chloride[b]	mg/L	270	300
Fluoride[b]	µg/L	540.	540.
Hardness[b]	mg/L	1660	1630
K[b]	mg/L	9.10	10.0J
Mg[b]	mg/L	130	130
Na[b]	mg/L	280	290J
NO_3+NO_2 as N[b]	µg/L	36000.	34000.
SO_4[b]	mg/L	1300	1400
TDS[c]	mg/L	--	--
Metals			
As[b]	µg/L	0.31J	0.28
Fe[b]	µg/L	25UJ	25UJ
Mn[b]	µg/L	11	0.57UJ
Mo[b]	µg/L	5.4UJ	5.4UJ
Se[b]	µg/L	85	90
U[b]	µg/L	40	33
V[b]	µg/L	0.015U	0.6
Radiological			
Alpha[c,d]	pCi/L	--	--
Alpha-U[c,e]	pCi/L	--	--
Beta[c]	pCi/L	--	--
U[b]	µg/L	40	33
U-234[c]	pCi/L	--	--
U-238[c]	pCi/L	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- Seep 4[a]

Analyte	Unit	07/12/01	10/08/01
Field Measurements			
Alkalinity[b]	mg/L	312	315
Conductivity[c]	µmhos/cm	2220	2650
pH[c]	s.u.	6.84	6.77
Temperature[c]	C	10.5	11
Common Ions			
Ca[b]	mg/L	386	418
Chloride[b]	mg/L	21.3	13.8
Fluoride[b]	µg/L	155	72.5
Hardness[b]	mg/L	1310	1400
K[b]	mg/L	2.94	2.81
Mg[b]	mg/L	84.2	86.2
Na[b]	mg/L	83.3	78.2
NO_3+NO_2 as N[b]	µg/L	1040	592
SO_4[b]	mg/L	1100	1270
TDS[c]	mg/L	2040	--
Metals			
As[b]	µg/L	0.5U	0.6U
Fe[b]	µg/L	5.4	0.8UJ
Mn[b]	µg/L	1.5	0.89
Mo[b]	µg/L	3U	1.9U
Se[b]	µg/L	7.3	4.3
U[b]	µg/L	7.2	7.1
V[b]	µg/L	0.3U	0.3U
Radiological			
Alpha[c,d]	pCi/L	10.0UJ	--
Alpha-U[c,e]	pCi/L	10.0UJ	--
Beta[c]	pCi/L	9.4U	--
U[b]	µg/L	7.2	7.1
U-234[c]	pCi/L	6.5J	--
U-238[c]	pCi/L	2.9	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- Seep 4307[a]

Analyte	Unit	04/14/00	10/20/00
Field Measurements			
Alkalinity[b]	mg/L	345	106
Conductivity[c]	µmhos/cm	8490	1671
pH[c]	s.u.	7.39	8.97
Temperature[c]	C	7.3	18.2
Common Ions			
Ca[b]	mg/L	--	126
Chloride[b]	mg/L	--	52.6
Fluoride[b]	µg/L	--	375
Hardness[b]	mg/L	--	430
K[b]	mg/L	--	8.26
Mg[b]	mg/L	--	27.9
Na[b]	mg/L	--	179
NO_3+NO_2 as N[b]	µg/L	80000	488
SO_4[b]	mg/L	--	668
Metals			
As[b]	µg/L	0.2U	0.36
Fe[b]	µg/L	7.4U	11.7U
Mn[b]	µg/L	4	2.0U
Mo[b]	µg/L	514	110
Se[b]	µg/L	161	3.5
U[b]	µg/L	1480	197
V[b]	µg/L	0.4U	1.3U
Radiological			
Alpha[c,d]	pCi/L	--	110J
Alpha-U[c,e]	pCi/L	--	0[f]
Beta[c]	pCi/L	--	68.0
U[b]	µg/L	1480	197
U-234[c]	pCi/L	487	67.9
U-235[c]	pCi/L	20.7	--
U-238[c]	pCi/L	492	71.1

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- Seep 5215[a]

Analyte	Unit	04/14/00	07/17/00	09/14/00	10/20/00
Field Measurements					
Alkalinity[b]	mg/L	405	--	--	520
Conductivity[c]	µmhos/cm	5550	--	--	6860
pH[c]	s.u.	6.95	--	--	8.15
Temperature[c]	C	6.7	--	--	20.9
Common Ions					
Ca[b]	mg/L	--	367	--	487
Chloride[b]	mg/L	--	--	--	147
Fluoride[b]	µg/L	--	--	--	274
Hardness[b]	mg/L	--	1960	--	2060
K[b]	mg/L	--	2.63	--	5.40
Mg[b]	mg/L	--	254	--	206
Na[b]	mg/L	--	1490	--	1170
NO_3+NO_2 as N[b]	µg/L	81900	--	--	54100
SO_4[b]	mg/L	--	--	--	3610
Metals					
As[b]	µg/L	0.7	0.5	--	0.86
Fe[b]	µg/L	7.4U	9.2	--	11.7U
Mn[b]	µg/L	8.1	41.5	--	448
Mo[b]	µg/L	1320	1820	--	1430
Se[b]	µg/L	16.7	17.5	--	24.4
U[b]	µg/L	824	1160	--	1050
V[b]	µg/L	0.4U	6.1	--	1.5
Radiological					
Alpha[c,d]	pCi/L	--	--	--	609J
Alpha[b,d]	pCi/L	--	--	15.9	--
Alpha-U[c,e]	pCi/L	--	--	--	0[f]
Alpha-U[b,e]	pCi/L	--	--	0[f]	--
Beta[c]	pCi/L	--	--	--	337
Beta[b]	pCi/L	--	--	7.6U	--
U[b]	µg/L	824	1160	--	1050
U-234[c]	pCi/L	325	374	--	358
U-234[b]	pCi/L	--	--	10.8	--
U-235[c]	pCi/L	12.4	18.0	--	--
U-235[b]	pCi/L	--	--	0.45U	--
U-238[c]	pCi/L	327	373	--	375
U-238[b]	pCi/L	--	--	9.6	--

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[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

[g] All samples were unfiltered in April 2008.

On-Site -- Seep 6[a]

Analyte	Unit	04/10/02	10/08/03	04/14/04	10/08/04	04/05/05	10/05/05	04/28/06	10/04/06	04/11/07	10/08/07	04/09/08[g]	10/08/08	04/06/09
Field Measurements														
Alkalinity[b]	mg/L	--	177	--	375	232	224	261	250	290	170	264	316	252
Conductivity[c]	µmhos/cm	2550	3370	--	4550	3565	3742	3310	3733	3119	3613	3615	3790	3080
DO[c]	mg/L	--	--	--	--	--	--	--	742	--	--	--	--	--
pH[c]	s.u.	7.62	8.14	--	7.60	7.93	8.03	8.11	7.77	8.13	7.94	7.90	8.01	7.93
Temperature[c]	C	9.3	22.85	--	8.54	11.55	16.8	13.02	15.60	5.20	10.95	3.78	8.70	7.21
Common Ions														
Ca[b]	mg/L	326	303	330	490	500	440	370	450	370	430	460	460	430J
Chloride[b]	mg/L	--	258	250	320	250	280	300	360	290	300	210	280	240
Fluoride[b]	µg/L	--	233	500.U	500.U	500.U	500.U	500.U	500.U	500.U	610.	500.U	1300.	690.
Hardness[b]	mg/L	1280	1280	1360	2010	1910	1720	1460	1740	1420	1690	1770	1810	1610J
K[b]	mg/L	8.45	9.87	19.0	13.0	15.0	16.0	15.0	16.0	11.0	13.0	13.0	15.0J	15.0J
Mg[b]	mg/L	114	126	130	190	160	150	130	150	120	150	150	160	130
Na[b]	mg/L	274	361	290	410	250	280	260	350	250	330	230	290	240J
NO_3+NO_2 as N[b]	µg/L	--	7470	8100.	2700.	41000.	27000.	11000.	14000.	7900.	11000.	26000.	15000.	10000.
SO_4[b]	mg/L	--	1520	1500	1900	1700	1600	1300	1600	1300	1800	1700	1700	1200
Metals														
As[b]	µg/L	0.88	1.40	0.73	0.59	0.9	0.68	0.86	0.88	1.1	0.68	1.1	0.88	0.91
Fe[b]	µg/L	1U	0.800U	9.8U	7U	15U	7.8U	14U	5.8	7.4U	11U	560	6.2U	1.3UJ
Mn[b]	µg/L	0.1U	445	20	1300	56	64	29	140	36	150	56	45	5.8
Mo[b]	µg/L	17.5	6.80	20	15	19J	24	13J	13	14	10	17	12	12
Se[b]	µg/L	15.5	8.60	12	3.2	150	28	16	43	19	26	74	62	25
U[b]	µg/L	2090	1950	1700J	2900J	2200	2000	2000	1800	1900	1900	2400	2300	2000
V[b]	µg/L	227	145	190	45	220	270	230	190	230J	170J	150	170	240
Radiological														
U[b]	µg/L	2090	1950	1700J	2900J	2200	2000	2000	1800	1900	1900	2400	2300	2000

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- Seep 6[a]

Analyte	Unit	10/05/09	10/12/10	04/06/11	10/12/11	04/24/12
Field Measurements						
Alkalinity[b]	mg/L	315	344	306	313	241
Conductivity[c]	µmhos/cm	4050	3666	3104	3252	3257
DO[c]	mg/L	--	--	--	--	--
pH[c]	s.u.	7.63	7.94	7.79	7.84	7.95
Temperature[c]	C	10.20	17.54	7.15	9.51	14.85
Common Ions						
Ca[b]	mg/L	510J	480	375	410	360
Chloride[b]	mg/L	280	210	274	200	270
Fluoride[b]	µg/L	570.	660.	1110.	570.	530.
Hardness[b]	mg/L	1970J	1820	1370	1560	1390
K[b]	mg/L	8.70J	16.0J	7.66	8.30	9.30J
Mg[b]	mg/L	170	150	105	130	120
Na[b]	mg/L	290J	240	220	220	240J
NO_3+NO_2 as N[b]	µg/L	14000.	8400.	16300.	4000.	4700.
SO_4[b]	mg/L	1900	1700	1150J	1400	1200
Metals						
As[b]	µg/L	0.82	0.82	2.85	0.76J	0.91
Fe[b]	µg/L	8.1U	4.9U	30.0U	25UJ	25UJ
Mn[b]	µg/L	200	110	27.6	300	43
Mo[b]	µg/L	9.4	9.5	9.69	5.4UJ	5.4UJ
Se[b]	µg/L	40	26	17.7	14	11
U[b]	µg/L	2000	1600	1660	1500	1700
V[b]	µg/L	140	150	226	89	110
Radiological						
U[b]	µg/L	2000	1600	1660	1500	1700

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- Seep Pond[a]

Analyte	Unit	07/11/01
Field Measurements		
Alkalinity[b]	mg/L	176
Conductivity[c]	µmhos/cm	1227
pH[c]	s.u.	8.4
Temperature[c]	C	20.1
Common Ions		
Ca[b]	mg/L	71.2
Chloride[b]	mg/L	204
Fluoride[b]	µg/L	451
Hardness[b]	mg/L	343
K[b]	mg/L	1.53
Mg[b]	mg/L	40.0
Na[b]	mg/L	113
NO_3+NO_2 as N[b]	µg/L	30
SO_4[b]	mg/L	139
TDS[c]	mg/L	787
Metals		
As[b]	µg/L	1.2
Fe[b]	µg/L	13.1
Mn[b]	µg/L	17.1
Mo[b]	µg/L	5.5
Se[b]	µg/L	3.5
U[b]	µg/L	59.8
V[b]	µg/L	5.3
Radiological		
Alpha[c,d]	pCi/L	20.7J
Alpha-U[c,e]	pCi/L	0[f]
Beta[c]	pCi/L	10U
U[b]	µg/L	59.8
U-234[c]	pCi/L	24.4J
U-238[c]	pCi/L	19.7

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- W2-Culvert[a]

Analyte	Unit	02/20/02
Field Measurements		
Alkalinity[b]	mg/L	232
Conductivity[c]	µmhos/cm	3290
pH[c]	s.u.	7.49
Temperature[c]	C	0.4
Common Ions		
NO_3+NO_2 as N[b]	µg/L	18000
Metals		
As[b]	µg/L	0.6U
Fe[b]	µg/L	6.4
Mn[b]	µg/L	31.8
Mo[b]	µg/L	18.7
Se[b]	µg/L	21.6
U[b]	µg/L	1940
V[b]	µg/L	73.3
Radiological		
U[b]	µg/L	1940

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- W2-Ditch[a]

Analyte	Unit	02/20/02
Field Measurements		
Alkalinity[b]	mg/L	233
Conductivity[c]	µmhos/cm	3560
pH[c]	s.u.	7.39
Temperature[c]	C	1.9
Common Ions		
NO_3+NO_2 as N[b]	µg/L	17900
Metals		
As[b]	µg/L	0.6U
Fe[b]	µg/L	11.3
Mn[b]	µg/L	40.8
Mo[b]	µg/L	19.5
Se[b]	µg/L	23.1
U[b]	µg/L	2330
V[b]	µg/L	73.6
Radiological		
U[b]	µg/L	2330

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- W3-01[a]

Analyte	Unit	10/10/02	12/10/02	04/08/03
Field Measurements				
Alkalinity[b]	mg/L	220	176	160
Conductivity[c]	µmhos/cm	2124	1573	2300
pH[c]	s.u.	7.9	7.36	--
Temperature[c]	C	14.2	2.9	6.8
Common Ions				
Ca[b]	mg/L	261	--	253
Chloride[b]	mg/L	75.4	--	162
Fluoride[b]	µg/L	170J	--	17.2U
Hardness[b]	mg/L	948	--	946
K[b]	mg/L	3.42	--	5.37
Mg[b]	mg/L	71.9	--	76.4
Na[b]	mg/L	152	--	168
NO_3+NO_2 as N[b]	µg/L	22	--	4.50U
SO_4[b]	mg/L	965	--	910
TDS[c]	mg/L	1800	--	1760
Metals				
As[b]	µg/L	1.1	0.25	0.720
Fe[b]	µg/L	0.8U	33.4	14.8
Mn[b]	µg/L	26	41.1	181
Mo[b]	µg/L	10	10	8.60
Se[b]	µg/L	10	5.7	18.3
U[b]	µg/L	128	132	145
V[b]	µg/L	26.5	2.7	8.00
Radiological				
Alpha[c,d]	pCi/L	89.6	--	106J
Alpha-U[c,e]	pCi/L	3.6	--	4.7J
Beta[c]	pCi/L	11.6U	--	44.9J
U[b]	µg/L	128	132	145
U-234[c]	pCi/L	39.4	--	52.0
U-238[c]	pCi/L	46.6	--	49.3J

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- W3-02[a]

Analyte	Unit	10/10/02	12/10/02	04/08/03
Field Measurements				
Alkalinity[b]	mg/L	288	286	190
Conductivity[c]	µmhos/cm	1822	1725	2170
pH[c]	s.u.	7.75	7.78	--
Temperature[c]	C	11.2	7.21	6
Common Ions				
Ca[b]	mg/L	235	--	246
Chloride[b]	mg/L	68.2	--	144
Fluoride[b]	µg/L	226J	--	586
Hardness[b]	mg/L	828	--	906
K[b]	mg/L	8.40	--	5.50
Mg[b]	mg/L	58.5	--	70.9
Na[b]	mg/L	103	--	154
NO_3+NO_2 as N[b]	µg/L	221	--	89.0
SO_4[b]	mg/L	704	--	837
TDS[c]	mg/L	1440	--	1640
Metals				
As[b]	µg/L	10	15.6	1.50
Fe[b]	µg/L	0.8U	3.5	37.1
Mn[b]	µg/L	76.4	24.1	906
Mo[b]	µg/L	20.3	22.2	7.80
Se[b]	µg/L	69.3	85.4	19.7
U[b]	µg/L	251	242	152
V[b]	µg/L	299	388	20.8
Radiological				
Alpha[c,d]	pCi/L	137	--	91.0J
Alpha-U[c,e]	pCi/L	0[f]	--	0[f]
Beta[c]	pCi/L	48.0	--	41.1J
U[b]	µg/L	251	242	152
U-234[c]	pCi/L	76.0	--	52.6
U-238[c]	pCi/L	92.0	--	50.2J

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- W3-03[a]

Analyte	Unit	10/10/02	12/10/02	04/08/03	10/08/03	04/14/04	10/07/04	04/06/05	10/06/05	04/27/06	10/04/06	04/11/07	10/09/07	04/09/08[g]
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	163	163	155	304	275	216	307	292	279	264	393	166	220
Conductivity[c]	µmhos/cm	2181	1736	2060	1640	16.53	1332	1423	1252	1685	1612	2199	1174	1277
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	3.78	--	--	--
pH[c]	s.u.	8.17	7.95	--	7.71	7.43	7.70	6.82	7.81	7.94	6.74	7.17	7.47	7.72
Temperature[c]	C	14.2	3.89	6.4	13.08	11.10	12.4	11.02	8.0	20.68	12.48	3.33	13.6	8.88
Common Ions														
Ca[b]	mg/L	240	--	224	200	300	190	190	150	220	300	380	180J	160
Chloride[b]	mg/L	91.1	--	137	79.9	86.0	32.0	76.0	54.0	83.0	79.0	120	50.0	41.0
Fluoride[b]	µg/L	198J	--	17.2U	186	220.	160.	200.U	200.U	250.	200.U	500.U	160.	120.
Hardness[b]	mg/L	933	--	840	705	1050	631	660	519	788	947	1290	569J	531
K[b]	mg/L	5.85	--	4.84	6.52	10.0	9.80	6.90	7.30	13.0	12.0	14.0	16.0	4.60
Mg[b]	mg/L	81.1	--	68.1	49.9	73.0	38.0	45.0	35.0	58.0	48.0	84.0	29.0	32.0
Na[b]	mg/L	163	--	148	120	110	60.0	90.0	82.0	120	110	160	63.0	59.0
NO_3+NO_2 as N[b]	µg/L	23	--	4.50U	4.50U	10.U	10.U	10.U	10.U	10.U	31	16	10.U	18
SO_4[b]	mg/L	1030	--	832	548	680	470	450	300	710	620	1000	420	410
TDS[c]	mg/L	1830	--	1550	1310	1400	--	--	--	--	--	--	--	--
Metals														
As[b]	µg/L	2.5	6.6	0.620	1.10	0.99	1.7	2.8	1.8	1.7	1.4	5.2	2.4	0.68
Fe[b]	µg/L	0.8U	9.1	1.30U	75.4	9.8U	7U	150	260	31	400	210	72	260
Mn[b]	µg/L	148	106	345	690	77	90	810	1300	290	660	1500	770J	230
Mo[b]	µg/L	15.6	23.3	6.50	1.70U	5.5	2.4J	1.3	0.068U	6.4	2.7J	5.6	4.5	3.1
Se[b]	µg/L	37.1	72.6	15.5	1.20	1.6	0.72	0.62	0.023U	0.59	0.87	1.9	0.47	2.3
U[b]	µg/L	200	272	121	84.8	120J	31J	63	7.8	100	69	130	33	56
V[b]	µg/L	55.8	203	6.30	0.920	4.5	2.3J	0.3UR	0.1U	3.3	1.6	17J	4.2J	4.7
Radiological														
Alpha[c,d]	pCi/L	129	--	81.0J	41.8	74.2	22.1	30.2	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	0[f]	--	0[f]	0[f]	0[f]	0[f]	0[f]	--	--	--	--	--	--
Beta[c]	pCi/L	41.3	--	28.4J	19.0	33.6	14.0	16.1	--	--	--	--	--	--
U[b]	µg/L	200	272	121	84.8	120J	31J	63	7.8	100	69	130	33	56
U-234[c]	pCi/L	67.5	--	43.3	29.2	38.8	11.6	19.9	--	--	--	--	--	--
U-235[c]	pCi/L	--	--	--	1.3	2.1	0.43	0.88	--	--	--	--	--	--
U-238[c]	pCi/L	72.7	--	41.2J	27.9	37.7	11.2	19.0	--	--	--	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- W3-03[a]

Analyte	Unit	10/08/08	04/07/09	10/06/09	04/20/10	10/12/10	04/05/11	10/10/11	04/24/12
Field Measurements									
Alkalinity[c]	mg/L	--	--	--	158	--	--	--	--
Alkalinity[b]	mg/L	298	364	380	--	270	349	240	360
Conductivity[c]	µmhos/cm	3014	3080	1896	980	2688	2010	3171	2711
DO[c]	mg/L	--	--	--	--	--	--	--	--
pH[c]	s.u.	7.51	7.12	7.32	7.07	7.65	7.31	7.87	7.68
Temperature[c]	C	12.86	13.3	8.74	15.84	6.85	6.67	11.36	11.26
Common Ions									
Ca[b]	mg/L	440	480J	310J	120	410	288	360	370
Chloride[b]	mg/L	110	100	77.0	32.0	150	85.7	180	110
Fluoride[b]	µg/L	1000.	300.	380.	120.	230.	258	500.U	240.
Hardness[b]	mg/L	1500	1580J	1000J	390	1330	972	1300	1300
K[b]	mg/L	18.0J	5.50J	16.0J	4.60J	14.0J	6.08	16.0	11.0J
Mg[b]	mg/L	97.0	93.0	55.0	22.0	74.0	61.5	97.0	92.0
Na[b]	mg/L	200	180J	100J	43.0	170	127	220	170J
NO_3+NO_2 as N[b]	µg/L	31	11	10.U	10.U	10.U	10U	10.U	10.U
SO_4[b]	mg/L	1600	1200	610	220	1200	737	1200	1100
TDS[c]	mg/L	--	--	--	--	--	--	--	--
Metals									
As[b]	µg/L	1.5	0.54	3.3	3.2	2	1.70U	3.2	5.6
Fe[b]	µg/L	140	500	160	400	130	582	25UJ	25UJ
Mn[b]	µg/L	1600	1700	1900	520	720	1340	210	400
Mo[b]	µg/L	40	3.8	17	1.3	11	5.34	15J	5.4UJ
Se[b]	µg/L	2.8	0.15U	5.5	2.9	1.6	1.50U	3.2	1.2
U[b]	µg/L	640	100	180	30	160	127	160	76
V[b]	µg/L	3.2	0.61	25	11	3.7	3.00U	7.4	6.3
Radiological									
Alpha[c,d]	pCi/L	--	--	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	--	--	--	--	--	--	--	--
Beta[c]	pCi/L	--	--	--	--	--	--	--	--
U[b]	µg/L	640	100	180	30	160	127	160	76
U-234[c]	pCi/L	--	--	--	--	--	--	--	--
U-235[c]	pCi/L	--	--	--	--	--	--	--	--
U-238[c]	pCi/L	--	--	--	--	--	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- W3-04[a]

Analyte	Unit	10/10/02	12/10/02	04/08/03	10/08/03	04/14/04	10/07/04	04/06/05	10/06/05	04/27/06	10/04/06	04/11/07	10/09/07	04/09/08[g]
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	182	191	142	229	210	220	218	174	369	256	317	154	197
Conductivity[c]	µmhos/cm	2019	1817	2040	1454	1253	1417	1219	1038	1984	1373	2290	1020	902
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	9.45	--	--	--
pH[c]	s.u.	8	8.19	--	8.02	7.91	7.75	7.75	7.63	7.75	7.19	7.23	7.70	8.30
Temperature[c]	C	14	4.07	6.1	13.06	15.00	11.4	13.07	7.8	20.06	14.25	3.56	14.0	6.26
Common Ions														
Ca[b]	mg/L	231	--	219	199	190	180	170	110	250	260	470	160J	130
Chloride[b]	mg/L	82.2	--	139	39.3	61.0	43.0	66.0	45.0	100	66.0	94.0	48.0	21.0
Fluoride[b]	µg/L	25.1UJ	--	17.2U	182	200.U	200.U	150.	150.	200.U	200.U	200.U	140.	140.
Hardness[b]	mg/L	878	--	823	700	697	618	593	386	921	802	1490	494J	415
K[b]	mg/L	6.15	--	4.86	4.36	7.40	10.0	6.10	4.10	15.0	12.0	18.0	16.0	2.30
Mg[b]	mg/L	73.1	--	67.0	49.4	54.0	41.0	41.0	27.0	72.0	37.0	77.0	23.0	22.0
Na[b]	mg/L	145	--	147	78.7	100	71.0	81.0	70.0	150	52.0	130	43.0	31.0
NO_3+NO_2 as N[b]	µg/L	19.5	--	4.50U	4.50U	10.U	10.U	21	10.U	10.U	10.U	10.U	10.U	99
SO_4[b]	mg/L	928	--	791	576	590	520	450	280	830	420	980	360	270
TDS[c]	mg/L	1690	--	1540	1180	1200	--	--	--	--	--	--	--	--
Metals														
As[b]	µg/L	3.7	3.5	0.980	1.30	0.66	1.9	0.68	2.3	1.8	0.77	2.4	2.1	0.35
Fe[b]	µg/L	0.8U	7.2	26.0	46.8	9.8U	7U	7.5U	63	49	2.2U	5700	33	120
Mn[b]	µg/L	84.1	31	484	135	270	350	86	1400	640	2100	2300	1800J	25
Mo[b]	µg/L	14.9	10.7	6.00	1.80	4.3	2.1J	3.3	7.7	4.7J	2.4J	2.7	5.1	2.3
Se[b]	µg/L	31.4	35.7	17.4	3.60	1.4	0.5	2.8	0.2	0.02U	0.025U	0.038U	0.22	1.6
U[b]	µg/L	196	191	128	51.6	66J	28J	76	9.2	20	20	40	10	9.8
V[b]	µg/L	97.1	118	8.80	4.50	0.25U	1.2J	1.3J	0.1U	1.3J	0.67	0.24UJ	1.7J	1.6
Radiological														
Alpha[c,d]	pCi/L	134	--	81.0J	25.4	38.2	21.9	26.4	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	4.1	--	0[f]	0[f]	0.69	0.98	0[f]	--	--	--	--	--	--
Beta[c]	pCi/L	11.7U	--	28.0J	16.4	17.9	19.6	13.6	--	--	--	--	--	--
U[b]	µg/L	196	191	128	51.6	66J	28J	76	9.2	20	20	40	10	9.8
U-234[c]	pCi/L	56.7	--	44.3	17.8	18.9	10.5	14.4	--	--	--	--	--	--
U-235[c]	pCi/L	--	--	--	1.0	0.81	0.52	0.68	--	--	--	--	--	--
U-238[c]	pCi/L	73.2	--	43.5J	16.4	17.8	9.9	12.9	--	--	--	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- W3-04[a]

Analyte	Unit	10/09/08	04/07/09	10/07/09	04/20/10	10/12/10	04/05/11	10/10/11	04/24/12
Field Measurements									
Alkalinity[c]	mg/L	--	--	--	141	353	--	--	384
Alkalinity[b]	mg/L	300	230	384	--	--	412	329	--
Conductivity[c]	µmhos/cm	1720	1490	1959	754	1799	1997	1809	3578
DO[c]	mg/L	--	--	--	--	--	--	--	3.56
pH[c]	s.u.	7.92	7.09	7.29	7.19	7.87	7.30	7.08	7.58
Temperature[c]	C	6.41	5.6	9.68	19.50	9.64	9.74	13.12	9.95
Common Ions									
Ca[b]	mg/L	290	220J	310J	100	340	348	320	470
Chloride[b]	mg/L	24.0	40.0	82.0	16.0	25.0	39.8	31.0	130
Fluoride[b]	µg/L	360.	290.	380.	110.	200.	208	230.	500.U
Hardness[b]	mg/L	942	735J	1010J	316	1070	1170	1020	1790
K[b]	mg/L	5.50J	13.0J	17.0J	3.60J	3.80J	5.88	3.90	23.0J
Mg[b]	mg/L	53.0	45.0	57.0	16.0	54.0	73.6	54.0	150
Na[b]	mg/L	62.0	110J	100J	29.0	61.0	100	60.0	290J
NO_3+NO_2 as N[b]	µg/L	10.U	10.U	27	10.U	10.U	10U	10.U	10.U
SO_4[b]	mg/L	780	530	670	180	770	832	700	1600
TDS[c]	mg/L	--	--	--	--	--	--	--	--
Metals									
As[b]	µg/L	0.91	0.94	3.2	1.5	1	1.70U	2.7	2.7
Fe[b]	µg/L	3.1U	620	41	420	650	319	2400	170
Mn[b]	µg/L	220	2300	1900	350	960	1670	3500	550
Mo[b]	µg/L	2.1	3	18	1.3	1.1	2.31	2.7J	1.1UJ
Se[b]	µg/L	0.87	0.1U	6.5	0.52	0.6	1.50U	0.2J	0.45J
U[b]	µg/L	27	34	190	6.4	16	33.1	40	39
V[b]	µg/L	3.2	0.75	28	1	0.72	3.00U	0.015U	0.84
Radiological									
Alpha[c,d]	pCi/L	--	--	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	--	--	--	--	--	--	--	--
Beta[c]	pCi/L	--	--	--	--	--	--	--	--
U[b]	µg/L	27	34	190	6.4	16	33.1	40	39
U-234[c]	pCi/L	--	--	--	--	--	--	--	--
U-235[c]	pCi/L	--	--	--	--	--	--	--	--
U-238[c]	pCi/L	--	--	--	--	--	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

On-Site -- Wetland 3[a]

Analyte	Unit	02/19/02
Field Measurements		
Alkalinity[b]	mg/L	112
Conductivity[c]	µmhos/cm	1280
pH[c]	s.u.	7.46
Temperature[c]	C	2.7
Common Ions		
NO_3+NO_2 as N[b]	µg/L	167
Metals		
As[b]	µg/L	1.1
Fe[b]	µg/L	13.5
Mn[b]	µg/L	308
Mo[b]	µg/L	3.8
Se[b]	µg/L	17.9
U[b]	µg/L	76.8
V[b]	µg/L	27.6
Radiological		
U[b]	µg/L	76.8

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Cross Gradient -- Pehrson Seep[a]

Analyte	Unit	02/20/02
Field Measurements		
Conductivity[c]	µmhos/cm	9320
pH[c]	s.u.	8.36
Temperature[c]	C	1.8
Common Ions		
NO_3+NO_2 as N[b]	µg/L	1150
Metals		
As[b]	µg/L	1
Fe[b]	µg/L	12.1
Mn[b]	µg/L	75.5
Mo[b]	µg/L	1.5U
Se[b]	µg/L	3.9
U[b]	µg/L	16.3
V[b]	µg/L	2
Radiological		
U[b]	µg/L	16.3

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Cross Gradient -- Seep 5[a]

Analyte	Unit	02/19/02	04/10/02	10/08/03	04/14/04	10/08/04	04/05/05	10/05/05	04/28/06	10/03/06	04/11/07	10/08/07	04/09/08[g]	10/08/08
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	254	327	262	218	291	261	190	270	190	268	172	317	296
Conductivity[c]	µmhos/cm	1078	1023	959	880	1050	1055	1579	1334	1255	1106	1010	1123	1331
DO[c]	mg/L	--	--	--	--	--	--	10.30	--	7.97	--	--	--	--
pH[c]	s.u.	7.83	8.22	8.27	8.40	8.29	7.92	8.17	8.06	7.91	8.26	8.08	8.12	8.15
Temperature[c]	C	0.3	10.9	18.47	15.9	9.6	11.4	18.3	10.59	13.78	9.02	12.32	4.14	9.64
Common Ions														
Ca[b]	mg/L	--	79.4	68.4	61.0	80.0	100	160	120	120	110	86.0	150	110
Chloride[b]	mg/L	--	--	117	98.0	89.0	140	290	230	200	150	130	130	210
Fluoride[b]	µg/L	--	--	261	850.	370.	320.	310.	380.	340.	330.	480.	330.	500.
Hardness[b]	mg/L	--	331	306	264	348	398	618	477	477	431	363	531	452
K[b]	mg/L	--	0.484	0.551	8.50	2.00	1.30	1.40	0.810	3.50	0.0250U	0.0430U	3.40	0.720J
Mg[b]	mg/L	--	32.2	32.9	27.0	36.0	36.0	53.0	43.0	43.0	38.0	36.0	38.0	43.0
Na[b]	mg/L	--	81.7	88.4	69.0	74.0	75.0	92.0	92.0	100	86.0	95.0	84.0	100
NO_3+NO_2 as N[b]	µg/L	656	--	4.50U	10.U	10.U	140.	10.U	750.	430.	1900.	310.	1500.	1400.
SO_4[b]	mg/L	--	--	86.6	170	90.0	130	190	140	140	110	110	110	110
Metals														
As[b]	µg/L	0.6U	0.57	0.870	0.68	0.62	0.47	0.8	0.61	0.85	2.5	0.81	2.5	0.91
Fe[b]	µg/L	8.8	1U	0.800U	9.8U	7U	7.5U	7.8U	14U	22	3.7U	5.6U	8900	3.1U
Mn[b]	µg/L	50.9	7.1	0.890	12	0.066U	0.13U	11	6.4	19	10	7.7	250	0.2U
Mo[b]	µg/L	4.4	4.9	1.80	3.7	2.4J	2.6	3.4J	3.1J	3.3J	3.5	3.2	4.5	1.9
Se[b]	µg/L	10.6	5.9	2.20	4	0.65	18	9.4	6.6	2.6	5.2	2.1	6.2	1.6
U[b]	µg/L	92.2	59.1	34.7	38	31J	79	48	52	49	45	34	97	41
V[b]	µg/L	5.8	4.6	2.00	2.8	1.5	1.5J	0.1U	2.5	1.6	3.7J	2.5J	19	1.4
Radiological														
U[b]	µg/L	92.2	59.1	34.7	38	31J	79	48	52	49	45	34	97	41

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Cross Gradient -- Seep 5[a]

Analyte	Unit	04/06/09	10/05/09	04/21/10	10/12/10	04/06/11	10/12/11	04/24/12
Field Measurements								
Alkalinity[c]	mg/L	--	--	231	--	--	--	--
Alkalinity[b]	mg/L	234	239	--	286	288	250	198
Conductivity[c]	µmhos/cm	972	1116	1224	1584	1396	1353	795
DO[c]	mg/L	--	--	--	--	--	--	--
pH[c]	s.u.	8.23	7.90	8.13	8.09	7.37	8.15	8.18
Temperature[c]	C	10.00	11.63	9.04	19.43	4.26	8.38	15.14
Common Ions								
Ca[b]	mg/L	92.0J	91.0J	100	130	127	110	85.0
Chloride[b]	mg/L	150	140	140	290	217	210	170
Fluoride[b]	µg/L	310.	350.	310.	300.	305	270.	270.
Hardness[b]	mg/L	378J	392J	410	543	517	460	369
K[b]	mg/L	1.20UJ	0.550J	0.210J	1.10J	0.370	0.420J	0.560J
Mg[b]	mg/L	36.0	40.0	39.0	53.0	48.5	45.0	38.0
Na[b]	mg/L	94.0J	96.0J	85.0	110	101	100	96.0J
NO_3+NO_2 as N[b]	µg/L	4000.	2700.	2800.	600.	3710.	4700.	2700.
SO_4[b]	mg/L	110	110	110	150	117	120	100
Metals								
As[b]	µg/L	0.81	0.79	0.78	1.1	1.70U	0.6	0.77
Fe[b]	µg/L	2.1J	1.6U	4.9U	4.9U	30.0U	4.9UJ	4.9UJ
Mn[b]	µg/L	6.4	5.6	3.2J	11	2.00U	0.97J	1.2
Mo[b]	µg/L	2.9	2.1	2.9	1.8	2.1	1.1UJ	1.1UJ
Se[b]	µg/L	5.4	2.7	7.2	2.4	3.09	1.8	2.8
U[b]	µg/L	44	30	82	32	44.1	33	25
V[b]	µg/L	3.3	2.4	2.1	1.8	3.00U	1.3J	3.3
Radiological								
U[b]	µg/L	44	30	82	32	44.1	33	25

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Cross Gradient -- Steele Pond[a]

Analyte	Unit	10/23/01	02/19/02
Field Measurements			
Alkalinity[b]	mg/L	102	58
Conductivity[c]	µmhos/cm	1226	5640
pH[c]	s.u.	9.81	8.91
Temperature[c]	C	9.4	0.1
Common Ions			
Ca[b]	mg/L	53.1	--
Chloride[b]	mg/L	213	--
Fluoride[b]	µg/L	299	--
Hardness[b]	mg/L	249	--
K[b]	mg/L	7.55	--
Mg[b]	mg/L	28.2	--
Na[b]	mg/L	128	--
NO_3+NO_2 as N[b]	µg/L	2480	1050
SO_4[b]	mg/L	213	--
TDS[c]	mg/L	727	--
Metals			
As[b]	µg/L	0.6U	0.6U
Fe[b]	µg/L	35.5	8.5
Mn[b]	µg/L	4.3	32.4
Mo[b]	µg/L	3.9	1.5U
Se[b]	µg/L	9.3	4
U[b]	µg/L	23.5	7.6
V[b]	µg/L	7.8	3.3
Radiological			
Alpha[c,d]	pCi/L	96.0	--
Alpha-U[c,e]	pCi/L	78.8	--
Beta[c]	pCi/L	31.9	--
U[b]	µg/L	23.5	7.6
U-234[c]	pCi/L	8.5	--
U-238[c]	pCi/L	8.7	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- 0301[a]

Analyte	Unit	07/23/08	08/25/08	09/23/08	10/15/08	11/24/08	12/29/08	01/28/09	02/10/09	03/11/09	04/09/09	05/06/09	06/11/09	07/07/09
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	287	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	1310	1578	1616	1755	1731	1822	1866	1800	1590	1816	1647	1543	1540
DO[c]	mg/L	--	--	--	9.73	--	--	--	--	--	--	--	--	--
pH[c]	s.u.	7.55	7.67	7.61	7.77	7.42	7.44	7.63	7.89	8.01	7.88	7.86	7.20	7.77
Temperature[c]	C	20.6	22.3	19.30	12.45	6.60	2.66	0.51	1.8	2.60	3.18	17.60	10.83	21.04
Metals														
Fe[c]	µg/L	1100	610	1600	980	3400	250	260	330	220	1800	1600	16000	2500
U[c]	µg/L	17	21	29	30	28	32	35	31	27	20	21	14	18
Radiological														
U[c]	µg/L	17	21	29	30	28	32	35	31	27	20	21	14	18

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- 0301[a]

Analyte	Unit	08/03/09	09/08/09	10/07/09	11/10/09	12/14/09	01/06/10	02/08/10	03/03/10	05/20/10	06/14/10	07/19/10	08/18/10	09/07/10
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	1570	1993	1996	1864	1637	1781	1882	1293	1309	819	1577	1615	1930
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
pH[c]	s.u.	7.70	6.74	7.33	7.79	7.65	7.49	7.38	8.13	7.74	7.96	7.95	7.96	7.28
Temperature[c]	C	21.28	16.46	13.63	5.10	1.2	1.50	2.9	8.22	12.60	15.91	21.02	20.35	14.2
Metals														
Fe[c]	µg/L	5700	4200	10000	2400	3200	11000	1600	1500J	210	570	210	420	1800
U[c]	µg/L	17	18	3.2	30	31	33	31	41	16J	8.2	21	21	88
Radiological														
U[c]	µg/L	17	18	3.2	30	31	33	31	41	16J	8.2	21	21	88

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- 0301[a]

Analyte	Unit	10/14/10	10/20/10	11/08/10	12/06/10	01/06/11	02/14/11	03/21/11	04/05/11	05/16/11	06/20/11	07/18/11	08/15/11	09/27/11
Field Measurements														
Alkalinity[c]	mg/L	--	314	--	--	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	1918	1818	1842	1739	1893	1771	1771	1700	1649	1098	1527	1751	1676
DO[c]	mg/L	--	--	--	--	--	10.78	--	--	--	--	--	--	--
pH[c]	s.u.	7.22	7.91	7.68	7.95	7.80	7.82	7.79	7.69	7.87	8.09	7.57	7.64	7.87
Temperature[c]	C	8.42	10.34	7.63	6.13	0.62	6.99	5.94	3.1	16.66	15.89	25.19	16.86	13.49
Metals														
Fe[c]	µg/L	1900	1300	1800	1500	1100	980	850	870	1100	340	1900	13000	930
U[c]	µg/L	25	23	23	29	31	27	23	23	18	11	13	54	33
Radiological														
U[c]	µg/L	25	23	23	29	31	27	23	23	18	11	13	54	33

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- 0301[a]

Analyte	Unit	10/12/11	11/09/11	12/15/11	01/18/12	02/13/12	03/15/12	04/23/12
Field Measurements								
Alkalinity[c]	mg/L	--	--	--	--	220	--	--
Conductivity[c]	µmhos/cm	1758	1756	1859	1946	1861	1975	1902
DO[c]	mg/L	--	--	--	--	11.48	--	--
pH[c]	s.u.	7.77	7.98	7.80	7.57	7.86	7.73	7.62
Temperature[c]	C	11.09	5.47	1.40	0.97	4.25	7.06	15.20
Metals								
Fe[c]	µg/L	1900	5700	1700	2000	1800	960	2900
U[c]	µg/L	32	30	34	34	31	29	59
Radiological								
U[c]	µg/L	32	30	34	34	31	29	59

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- 0302[a]

Analyte	Unit	07/23/08	08/25/08	09/23/08	10/15/08	11/24/08	12/29/08	01/28/09	02/10/09	03/11/09	04/09/09	05/06/09	06/11/09	07/07/09
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	273	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	1327	1590	1605	1743	1692	1830	1852	1700	1828	1782	1647	1366	1547
DO[c]	mg/L	--	--	--	9.83	--	--	--	--	--	--	--	--	--
pH[c]	s.u.	7.59	7.75	7.70	8.06	7.89	7.29	7.88	7.98	8.02	7.96	7.92	7.84	7.52
Temperature[c]	C	21.0	22.6	19.8	12.02	6.49	3.45	0.32	1.6	3.41	2.89	18.08	10.41	21.48
Metals														
Fe[c]	µg/L	540	530	620	470	610	220	210	250	180	1200	1400	980	2000
U[c]	µg/L	16	21	28	28	27	33	35	30	26	20	20	14	18
Radiological														
U[c]	µg/L	16	21	28	28	27	33	35	30	26	20	20	14	18

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- 0302[a]

Analyte	Unit	08/03/09	09/08/09	10/07/09	11/10/09	12/14/09	01/06/10	02/08/10	03/03/10	05/20/10	06/14/10	07/19/10	08/18/10	09/07/10
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	1559	1907	1994	1830	1620	1732	1885	1223	1309	780	1572	16.18	1905
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
pH[c]	s.u.	7.77	7.78	7.58	7.85	7.77	7.71	7.58	8.13	7.85	8.13	7.91	8.03	7.60
Temperature[c]	C	21.11	20.17	13.87	5.16	0.85	1.27	3.3	8.55	13.23	16.15	21.76	19.87	14.6
Metals														
Fe[c]	µg/L	4600	270	1100	1400	1200	4600	770	12000J	220	330	300	310	340
U[c]	µg/L	17	23	4.5	30	31	33	32	39	17J	8.4	20	21	81
Radiological														
U[c]	µg/L	17	23	4.5	30	31	33	32	39	17J	8.4	20	21	81

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- 0302[a]

Analyte	Unit	10/14/10	10/20/10	11/08/10	12/06/10	01/06/11	02/14/11	03/21/11	04/05/11	05/16/11	06/20/11	07/18/11	08/15/11	09/27/11
Field Measurements														
Alkalinity[c]	mg/L	--	364	--	--	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	1903	1827	1854	1753	1891	1759	1769	1700	1647	1084	1544	1722	1719
DO[c]	mg/L	--	--	--	--	--	11.85	--	--	--	--	--	--	--
pH[c]	s.u.	7.32	7.91	7.91	7.91	7.69	7.86	7.85	7.81	7.94	8.17	7.75	7.80	7.75
Temperature[c]	C	7.99	10.04	7.75	6.14	0.92	7.58	5.87	3.1	16.92	16.52	26.22	17.92	13.38
Metals														
Fe[c]	µg/L	1100	930	1300	1500	720	720	960	830	1200	360	1500	1200	790
U[c]	µg/L	25	23	22	29	31	27	24	22	18	11	12	49	33
Radiological														
U[c]	µg/L	25	23	22	29	31	27	24	22	18	11	12	49	33

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- 0302[a]

Analyte	Unit	10/12/11	11/09/11	12/15/11	01/18/12	02/13/12	03/15/12	04/23/12
Field Measurements								
Alkalinity[c]	mg/L	--	--	--	--	224	--	--
Conductivity[c]	µmhos/cm	1743	1789	44	2040	1867	2011	1609
DO[c]	mg/L	--	--	--	--	12.01	--	--
pH[c]	s.u.	7.89	7.78	6.74	7.56	7.74	7.58	7.68
Temperature[c]	C	11.03	5.34	6.59	0.81	3.91	7.45	16.97
Metals								
Fe[c]	µg/L	1200	1400	1000	1900	1100	930	1400
U[c]	µg/L	33	29	32	35	30	29	62
Radiological								
U[c]	µg/L	33	29	32	35	30	29	62

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- 0303[a]

Analyte	Unit	10/06/09	10/13/10
Field Measurements			
Alkalinity[b]	mg/L	335	288
Conductivity[c]	µmhos/cm	2166	1770
pH[c]	s.u.	7.62	7.39
Temperature[c]	C	12.66	12.76
Metals			
U[b]	µg/L	390	100
Radiological			
U[b]	µg/L	390	100

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- 0304[a]

Analyte	Unit	10/06/09	10/13/10
Field Measurements			
Alkalinity[b]	mg/L	42	80
Conductivity[c]	µmhos/cm	2395	2428
pH[c]	s.u.	8.60	8.14
Temperature[c]	C	14.21	14.44
Metals			
U[b]	µg/L	85	69
Radiological			
U[b]	µg/L	85	69

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- 0305[a]

Analyte	Unit	10/06/09	10/13/10
Field Measurements			
Alkalinity[b]	mg/L	40	69
Conductivity[c]	µmhos/cm	2443	2443
pH[c]	s.u.	8.46	8.26
Temperature[c]	C	14.69	12.49
Metals			
U[b]	µg/L	85	73
Radiological			
U[b]	µg/L	85	73

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- City Sewage Lagoon[a]

Analyte	Unit	10/04/06
Field Measurements		
Alkalinity[b]	mg/L	213
Conductivity[c]	µmhos/cm	1225
pH[c]	s.u.	8.20
Temperature[c]	C	18.6
Common Ions		
Ca[b]	mg/L	68.0
Chloride[b]	mg/L	230
Fluoride[b]	µg/L	250.
Hardness[b]	mg/L	252
K[b]	mg/L	17.0
Mg[b]	mg/L	20.0
Na[b]	mg/L	150
NO_3+NO_2 as N[b]	µg/L	12
SO_4[b]	mg/L	90.0
Metals		
As[b]	µg/L	6.3
Fe[b]	µg/L	35
Mn[b]	µg/L	94
Mo[b]	µg/L	1.9J
Se[b]	µg/L	0.025U
U[b]	µg/L	1.9
V[b]	µg/L	3.5
Radiological		
U[b]	µg/L	1.9

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.

[b] Sample was filtered in the field.

[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

[g] All samples were unfiltered in April 2008.

Downstream -- SW00-03[a]

Analyte	Unit	04/18/00	07/17/00
Field Measurements			
Alkalinity[b]	mg/L	209	143
Conductivity[c]	µmhos/cm	1515	1487
pH[c]	s.u.	8.08	7.87
Temperature[c]	C	6.3	21.8
Common Ions			
Ca[b]	mg/L	237	230
Chloride[b]	mg/L	24.5	24.9
Fluoride[b]	µg/L	162	190
Hardness[b]	mg/L	775	780
K[b]	mg/L	2.41	3.62
Mg[b]	mg/L	44.5	49.9
Na[b]	mg/L	49.3	59.3
NO_3+NO_2 as N[b]	µg/L	327	32.4U
SO_4[b]	mg/L	613	704
TDS[c]	mg/L	1170	1300
Metals			
As[b]	µg/L	0.2U	0.39
Fe[b]	µg/L	7.4U	9.1U
Mn[b]	µg/L	76.1	49.2
Mo[b]	µg/L	3.7	0.3U
Se[b]	µg/L	7.1	3.9
U[b]	µg/L	33.8	45.1
V[b]	µg/L	3	2.6
Radiological			
Alpha[c,d]	pCi/L	10.8	29.8J
Alpha-U[c,e]	pCi/L	0[f]	0[f]
Beta[c]	pCi/L	11.9	23.3
U[b]	µg/L	33.8	45.1

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW00-04[a]

Analyte	Unit	04/17/00	07/17/00	10/19/00	04/17/01	10/09/01	04/09/02	10/09/02	04/07/03	10/08/03	04/13/04	10/06/04	04/06/05	10/05/05
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	197	--	--	175	208	530	224	229	243	223	281	85	244
Conductivity[c]	µmhos/cm	1549	1598	1661	1602	1680	1628	1347	1720	1454	1598	1522	867	1818
pH[c]	s.u.	8.18	8.03	8.14	8.1	8.04	8.2	8.09	--	7.69	7.65	7.94	8.10	7.36
Temperature[c]	C	15.8	23.3	8.6	15.4	12.5	14.6	13.4	7.6	16.5	10.61	13.3	12.69	11.4
Common Ions														
Ca[b]	mg/L	222	214	239	187	202	206	119	207	139	250	190	120	290
Chloride[b]	mg/L	35.4	44.2	36.5	69.2	53.4	46.8	56.8	69.7	68.9	55.0	63.0	38.0	69.0
Fluoride[b]	µg/L	174	196	203	206	157	129	156J	37.7	262	200.U	200.U	130.	200.U
Hardness[b]	mg/L	754	746	816	656	712	735	450	730	512	851	647	394	951
K[b]	mg/L	3.21	4.59	4.54	4.44	4.94	3.87	4.72	4.34	7.13	7.40	9.50	4.60	6.70
Mg[b]	mg/L	48.6	51.3	53.3	45.8	50.4	53.6	37.2	51.7	40.0	55.0	42.0	23.0	55.0
Na[b]	mg/L	73.6	96.5	84.5	98.2	97.3	94.1	122	115	139	90.0	97.0	44.0	91.0
NO_3+NO_2 as N[b]	µg/L	376	32.4U	467	622	147	150	41	69.3	4.50U	10.U	10.U	710.	130.
SO_4[b]	mg/L	654	700	678	285	689	643	457	638	491	550	480	230	770
TDS[c]	mg/L	1190	1340	1350	1220	1240	1280	983	1280	1060	1200	--	--	--
Metals														
As[b]	µg/L	0.42	0.66	0.8	0.78	0.78	1	1	0.490	1.30	0.74	2.2	0.68	0.86
Fe[b]	µg/L	7.4U	9.1U	11.7U	1U	0.8UJ	1U	47.7	1.30U	17.8	9.8U	7U	7.5U	7.8U
Mn[b]	µg/L	117	17.6	189	159	60	230	37	171	124	120	350	86	130
Mo[b]	µg/L	8	12.5	12.5	13.7	9	8.8	7.2	8.50	1.70U	16	14	3.9	12
Se[b]	µg/L	7.6	5.9	7.4	9.8	8.2	7.4	2.5	15.5	2.80	6.1	2.2	2.9	2.5
U[b]	µg/L	73.2	102	86.4	78.5	100	82.7	80.2	131	107	130J	130J	29	110
V[b]	µg/L	3.9	1.3U	2.8	8.6	2.2	3.5	1	0.300U	3.90	0.5U	1.6J	2.6	0.71
Radiological														
Alpha[c,d]	pCi/L	46.0	55.2J	41.9J	28.9	49.4J	55.3	46.9	60.0J	61.7J	91.2	87.8	15.3	--
Alpha-U[c,e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	1.3	0[f]	0[f]	--
Beta[c]	pCi/L	21.4	37.4	29.9	26.6	21.5	26.2	14.4	31.4J	46.3	33.3	33.4	10.0	--
U[b]	µg/L	73.2	102	86.4	78.5	100	82.7	80.2	131	107	130J	130J	29	110
U-234[c]	pCi/L	--	--	30.9	28.4	34.9	28.1	23.8	48.9	38.4	43.7	45.8	9.5	--
U-235[c]	pCi/L	--	--	--	--	--	--	--	--	1.7	2.4	2.3	0.51	--
U-238[c]	pCi/L	--	--	32.8	38.5	36.9	29.6	29.1	45.1J	38.4	43.8	44.8	8.7	--

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[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW00-04[a]

Analyte	Unit	04/26/06	10/04/06	04/09/07	10/08/07	04/10/08[g]	10/06/08	04/08/09	10/06/09	04/20/10	10/13/10	04/05/11	10/11/11	04/25/12
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	210
Alkalinity[b]	mg/L	226	292	175	258	221	22	250	270	167	282	294	296	--
Conductivity[c]	µmhos/cm	1430	1800	1530	1754	1160	2177	1706	1925	760	1783	1780	1696	1774
pH[c]	s.u.	8.18	7.77	8.10	8.42	6.95	7.55	7.34	8.09	8.71	8.07	7.94	7.85	7.79
Temperature[c]	C	14.75	19.0	12.74	13.1	1.21	17.91	10.37	13.25	13.3	11.18	10.3	--	13.69
Common Ions														
Ca[b]	mg/L	270	360	290	310	140	240	280J	240J	110	220	249	230	230
Chloride[b]	mg/L	29.0	67.0	40.0	53.0	35.0	110	55.0	110	26.0	120	60.3	68.0	82.0
Fluoride[b]	µg/L	200.U	200.U	200.U	290.	120.	570.	230.	360.	170.	160.	286	220.	230.
Hardness[b]	mg/L	872	1170	938	1030	461	855	946J	875J	361	751	861	797	838
K[b]	mg/L	4.50	8.90	4.90	8.00	2.80	15.0J	5.90J	7.50J	2.60J	11.0J	4.05	6.50	8.10J
Mg[b]	mg/L	48.0	66.0	52.0	63.0	27.0	62.0	60.0	67.0	21.0	49.0	58.0	54.0	64.0
Na[b]	mg/L	59.0	100	74.0	100	45.0	130	93.0J	140J	36.0	120	92.2	97.0	120J
NO_3+NO_2 as N[b]	µg/L	36	120.	25	27	360.	190.	100.	76	460.	330.	108	200.	100.
SO_4[b]	mg/L	610	800	620	870	310	780	700	730	240	510	688	600	650
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As[b]	µg/L	0.66	0.98	0.99	0.79	0.57	1.2	0.62	0.81	0.76	2.6	2.15	1.1J	1.3
Fe[b]	µg/L	42	10	3.7U	5.6U	460	3.8	10	6	12	4.9U	30.0U	4.9UJ	6.1J
Mn[b]	µg/L	160	180	180	120	86	240	220	50	64	160	224	170	280
Mo[b]	µg/L	6	9	6.9	12	4.7	13	7.9	19	4.2	9.1	8.3	9.7	9.9
Se[b]	µg/L	2.9	3.9	4.6	4.1	3	5	6.8	9.4	5	5.1	4.25	6.9	7.1
U[b]	µg/L	54	92	64	110	37	170	89	210	34	100	89.1	140	130
V[b]	µg/L	2.6	1.3	2.7J	3J	4.7	2.7	1.6	1.5	3.8	5.6	3.00U	0.076U	2.1
Radiological														
Alpha[c,d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Beta[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U[b]	µg/L	54	92	64	110	37	170	89	210	34	100	89.1	140	130
U-234[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-235[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW01-01[a]

Analyte	Unit	01/30/01	04/17/01	07/12/01	10/09/01	01/30/02	04/10/02	04/07/03	10/08/03	04/14/04	10/07/04	04/06/05	10/04/05	04/04/06
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	265	155	213	190	247	257	250	288	282	266	102	249	187
Conductivity[c]	µmhos/cm	1978	1624	1408	1400	1563	1607	1441	1520	1233	1665	783	1594	1376
DO[c]	mg/L	--	--	--	--	9.85	--	--	--	--	8.53	--	--	--
pH[c]	s.u.	8.23	8.15	7.93	7.94	7.73	7.84	7.84	8.14	8.03	8.00	8.11	8.06	7.97
Temperature[c]	C	0.8	21.1	21.7	12.8	-0.3	6.7	10.5	16.4	6.94	9.9	13.98	13.2	16.77
Common Ions														
Ca[b]	mg/L	289	203	199	209	291	239	214	218	290	290	120	310	250
Chloride[b]	mg/L	38.8	49.0	23.8	25.3	27.8	24.4	48.2	40.0	35.0	22.0	19.0	20.0	19.0
Fluoride[b]	µg/L	175	227	211	269	161J	130	17.2U	161	200.U	200.U	100.U	200.U	200.U
Hardness[b]	mg/L	956J	705	681	687	960	825	737	762	938	947	378	976	810
K[b]	mg/L	2.75	2.85	2.84	5.23	3.08	2.73	2.98	4.87	4.50	5.50	2.40	4.20	3.90
Mg[b]	mg/L	56.9J	48.2	44.7	40.0	56.7	55.3	49.1	52.9	52.0	54.0	19.0	49.0	45.0
Na[b]	mg/L	60.6	72.7	63.4	46.0	61.1	60.1	70.2	83.5	60.0	62.0	28.0	48.0	45.0
NO_3+NO_2 as N[b]	µg/L	764	967	39.1	595	385	81	185	4.50U	260.	10.U	530.	41	29
SO_4[b]	mg/L	825	317	595	576	674	633	569	606	450	640	190	760	650
TDS[c]	mg/L	1570	1480	1140	1070	1560	1290	1160	1240	1100	1300	540	1300	1100
Metals														
As[b]	µg/L	0.57	1.3	2.3	2.2	1.5	1.5	1	2.00	0.73	0.69	0.34	0.35	0.4
Fe[b]	µg/L	11U	1.0U	5	18.9J	29.7	1U	1.30U	0.800U	9.8U	7U	6.8U	7.8U	70
Mn[b]	µg/L	64.2	23.9	3.8	6.8	21.2	10	16.3	10.00	9.4	3.1	28	22	39
Mo[b]	µg/L	7.6	16	4.4	1.9U	1.5U	1.8U	2.00U	1.70U	7.5	3.6J	2.7	3.7J	2.9
Se[b]	µg/L	7.4	10	8.1	3.9	4	3.9	7.80	7.20	3.9	2.4	2.8	0.78	1.2
U[b]	µg/L	48.1	48.2	37.1	27.1	39.5	31.4	45.4	59.7	29J	41J	12	21	19
V[b]	µg/L	10.6	29.7	59.1	47	28.2	24.7	31.8	36.1	19	10J	2.6	4.9	5.4
Radiological														
Alpha[c,d]	pCi/L	25.7	19.4	15.9J	16.3J	25.3	20.4	27.2J	25.9J	20.3	25.5	8.3	--	--
Alpha-U[c,e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	--	--
Beta[c]	pCi/L	10.2	12.5	9.3U	9.0U	9.4U	11.2	10.3J	16.0	8.7	12.8	4.7	--	--
U[b]	µg/L	48.1	48.2	37.1	27.1	39.5	31.4	45.4	59.7	29J	41J	12	21	19
U-234[c]	pCi/L	22.4	18.3	13.0J	11.2	15.4	13.0	16.7	22.7	11.6	15.0	4.7	--	--
U-235[c]	pCi/L	--	--	--	--	--	--	--	0.93	0.52	0.50	0.21	--	--
U-238[c]	pCi/L	16.6	20.6	12.5	9.9	14.0	10.9	15.7J	20.2	9.8	13.3	3.6	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW01-01[a]

Analyte	Unit	10/03/06	04/10/07	10/08/07	04/08/08[g]	10/08/08	04/08/09	10/07/09	04/21/10	10/12/10	04/05/11	10/11/11	04/24/12
Field Measurements													
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	310
Alkalinity[b]	mg/L	261	305	218	214	80	238	333	152	311	336	332	--
Conductivity[c]	µmhos/cm	1753	1325	1738	999	1761	1669	1948	665	1879	1630	1762	1790
DO[c]	mg/L	8.05	--	--	--	--	--	--	--	4.92	--	11.73	--
pH[c]	s.u.	7.27	8.33	8.35	8.13	7.62	8.02	8.12	8.16	7.60	7.80	7.72	7.86
Temperature[c]	C	14.4	9.07	13.1	12.55	15.78	13.89	14.39	7.7	17.40	15.7	11.05	22.50
Common Ions													
Ca[b]	mg/L	450	290	380	140	290	320J	290J	96.0	330	280	300	310
Chloride[b]	mg/L	22.0	20.0	18.0	23.0	32.0	33.0	100	15.0	27.0	28.0	33.0	39.0
Fluoride[b]	µg/L	200.U	200.U	300.	110.	560.	210.	500.	150.	210.	274	210.	200.U
Hardness[b]	mg/L	1400	909	1220	453	938	1030J	971J	306	1050	913	967	1020
K[b]	mg/L	7.10	3.40	5.30	2.40	7.10J	5.00J	11.0J	1.90J	5.10J	3.11	4.50	5.50J
Mg[b]	mg/L	68.0	45.0	66.0	25.0	52.0	57.0	60.0	16.0	56.0	52.0	53.0	60.0
Na[b]	mg/L	55.0	44.0	62.0	34.0	69.0	61.0J	120J	24.0	64.0	55.1	64.0	74.0J
NO_3+NO_2 as N[b]	µg/L	460.	20.	31	240.	230.	62	49	340.	140.	10U	590.	86
SO_4[b]	mg/L	880	600	980	310	710	700	740	170	760	706	700	760
TDS[c]	mg/L	1500	1200	1700	710	1400	1300	1500	450	1400	1390	1400	1500
Metals													
As[b]	µg/L	0.65	0.012U	0.64	0.39	1.2	0.17U	0.28	0.54	1	1.70U	0.46J	0.51
Fe[b]	µg/L	3.6	3.7U	5.6U	1.4U	3.1U	16	1.6U	45	4.9U	50	4.9UJ	14J
Mn[b]	µg/L	42	21	5.8	7.2	35	80	110	35	39	95.9	360	140
Mo[b]	µg/L	1.6J	2.2	2.9	3.2	5.3	2.8	9.2	2.2	3.1	3.06	7.9	2.3J
Se[b]	µg/L	1.1	1.5	0.99	2.7	3.6	2.8	0.52	2.6	2.1	1.50U	3.8	2.6
U[b]	µg/L	20	16	27	14	50	21	5.2	6.8	33	25.5	40	27
V[b]	µg/L	7.2	5.7J	13J	6.4	20	0.96	1.3	2.9	11	3.01	3	1.5
Radiological													
Alpha[c,d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Beta[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
U[b]	µg/L	20	16	27	14	50	21	5.2	6.8	33	25.5	40	27
U-234[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
U-235[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
U-238[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW10-01[a]

Analyte	Unit	10/07/09
Field Measurements		
Alkalinity[b]	mg/L	409
Conductivity[c]	µmhos/cm	2551
pH[c]	s.u.	7.49
Temperature[c]	C	16.74
Common Ions		
Ca[b]	mg/L	410J
Chloride[b]	mg/L	81.0
Fluoride[b]	µg/L	320.
Hardness[b]	mg/L	1370J
K[b]	mg/L	17.0J
Mg[b]	mg/L	85.0
Na[b]	mg/L	180J
NO_3+NO_2 as N[b]	µg/L	10.U
SO_4[b]	mg/L	1100
Metals		
As[b]	µg/L	0.59
Fe[b]	µg/L	17
Mn[b]	µg/L	160
Mo[b]	µg/L	36
Se[b]	µg/L	17
U[b]	µg/L	430
V[b]	µg/L	1.9
Radiological		
U[b]	µg/L	430

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW10-02[a]

Analyte	Unit	10/06/09
Field Measurements		
Alkalinity[b]	mg/L	360
Conductivity[c]	µmhos/cm	2148
pH[c]	s.u.	7.20
Temperature[c]	C	12.65
Common Ions		
Ca[b]	mg/L	300J
Chloride[b]	mg/L	110
Fluoride[b]	µg/L	300.
Hardness[b]	mg/L	1020J
K[b]	mg/L	8.60J
Mg[b]	mg/L	66.0
Na[b]	mg/L	150J
NO_3+NO_2 as N[b]	µg/L	1100.
SO_4[b]	mg/L	860
Metals		
As[b]	µg/L	0.37
Fe[b]	µg/L	4.4
Mn[b]	µg/L	130
Mo[b]	µg/L	32
Se[b]	µg/L	20
U[b]	µg/L	360
V[b]	µg/L	1.8
Radiological		
U[b]	µg/L	360

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW10-03[a]

Analyte	Unit	10/06/09
Field Measurements		
Alkalinity[b]	mg/L	346
Conductivity[c]	µmhos/cm	2176
pH[c]	s.u.	7.60
Temperature[c]	C	11.15
Common Ions		
Ca[b]	mg/L	310J
Chloride[b]	mg/L	100
Fluoride[b]	µg/L	310.
Hardness[b]	mg/L	1050J
K[b]	mg/L	8.80J
Mg[b]	mg/L	68.0
Na[b]	mg/L	150J
NO_3+NO_2 as N[b]	µg/L	1000.
SO_4[b]	mg/L	840
Metals		
As[b]	µg/L	0.44
Fe[b]	µg/L	1.6U
Mn[b]	µg/L	170
Mo[b]	µg/L	31
Se[b]	µg/L	19
U[b]	µg/L	350
V[b]	µg/L	2.2
Radiological		
U[b]	µg/L	350

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW10-04[a]

Analyte	Unit	10/06/09
Field Measurements		
Alkalinity[b]	mg/L	283
Conductivity[c]	µmhos/cm	2051
pH[c]	s.u.	7.84
Temperature[c]	C	11.88
Common Ions		
Ca[b]	mg/L	270J
Chloride[b]	mg/L	110
Fluoride[b]	µg/L	290.
Hardness[b]	mg/L	967J
K[b]	mg/L	7.50J
Mg[b]	mg/L	71.0
Na[b]	mg/L	150J
NO_3+NO_2 as N[b]	µg/L	310.
SO_4[b]	mg/L	770
Metals		
As[b]	µg/L	0.8
Fe[b]	µg/L	15
Mn[b]	µg/L	130
Mo[b]	µg/L	21
Se[b]	µg/L	12
U[b]	µg/L	240
V[b]	µg/L	1.3
Radiological		
U[b]	µg/L	240

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.

[b] Sample was filtered in the field.

[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

[g] All samples were unfiltered in April 2008.

Downstream -- SW10-05[a]

Analyte	Unit	10/07/09
Field Measurements		
Alkalinity[b]	mg/L	235
Conductivity[c]	µmhos/cm	1843
pH[c]	s.u.	8.16
Temperature[c]	C	5.95
Common Ions		
Ca[b]	mg/L	220J
Chloride[b]	mg/L	96.0
Fluoride[b]	µg/L	280.
Hardness[b]	mg/L	801J
K[b]	mg/L	7.50J
Mg[b]	mg/L	61.0
Na[b]	mg/L	140J
NO_3+NO_2 as N[b]	µg/L	12
SO_4[b]	mg/L	670
Metals		
As[b]	µg/L	1.1
Fe[b]	µg/L	1.6U
Mn[b]	µg/L	87
Mo[b]	µg/L	17
Se[b]	µg/L	7.3
U[b]	µg/L	180
V[b]	µg/L	1.8
Radiological		
U[b]	µg/L	180

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.

[b] Sample was filtered in the field.

[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

[g] All samples were unfiltered in April 2008.

Downstream -- SW10-06[a]

Analyte	Unit	10/07/09
Field Measurements		
Alkalinity[b]	mg/L	247
Conductivity[c]	µmhos/cm	1820
pH[c]	s.u.	8.19
Temperature[c]	C	4.92
Common Ions		
Ca[b]	mg/L	220J
Chloride[b]	mg/L	89.0
Fluoride[b]	µg/L	330.
Hardness[b]	mg/L	792J
K[b]	mg/L	7.10J
Mg[b]	mg/L	59.0
Na[b]	mg/L	130J
NO_3+NO_2 as N[b]	µg/L	10.U
SO_4[b]	mg/L	660
Metals		
As[b]	µg/L	1.1
Fe[b]	µg/L	1.6U
Mn[b]	µg/L	28
Mo[b]	µg/L	16
Se[b]	µg/L	6.6
U[b]	µg/L	180
V[b]	µg/L	2.2
Radiological		
U[b]	µg/L	180

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW10-07[a]

Analyte	Unit	10/07/09
Field Measurements		
Alkalinity[b]	mg/L	243
Conductivity[c]	µmhos/cm	1828
pH[c]	s.u.	8.10
Temperature[c]	C	4.63
Common Ions		
Ca[b]	mg/L	210J
Chloride[b]	mg/L	95.0
Fluoride[b]	µg/L	260.
Hardness[b]	mg/L	767J
K[b]	mg/L	7.20J
Mg[b]	mg/L	59.0
Na[b]	mg/L	130J
NO_3+NO_2 as N[b]	µg/L	10.U
SO_4[b]	mg/L	670
Metals		
As[b]	µg/L	1.2
Fe[b]	µg/L	1.6U
Mn[b]	µg/L	41
Mo[b]	µg/L	16
Se[b]	µg/L	6.5
U[b]	µg/L	180
V[b]	µg/L	2.3
Radiological		
U[b]	µg/L	180

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.

[b] Sample was filtered in the field.

[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

[g] All samples were unfiltered in April 2008.

Downstream -- SW92-06[a]

Analyte	Unit	01/13/00	10/08/09
Field Measurements			
Alkalinity[b]	mg/L	221	358
Conductivity[c]	µmhos/cm	1370	1897
pH[c]	s.u.	8	7.26
Temperature[c]	C	3.2	11.15
Common Ions			
Ca[b]	mg/L	219	240J
Chloride[b]	mg/L	15.1	120
Fluoride[b]	µg/L	137	330.
Hardness[b]	mg/L	714	822J
K[b]	mg/L	3.15	7.30J
Mg[b]	mg/L	40.6	54.0
Na[b]	mg/L	42.7	140J
NO_3+NO_2 as N[b]	µg/L	537J	23
SO_4[b]	mg/L	525	630
TDS[c]	mg/L	1140	--
Metals			
As[b]	µg/L	0.4U	1.3
Fe[b]	µg/L	8.9U	160
Mn[b]	µg/L	74.5	1200
Mo[b]	µg/L	1.6	21
Se[b]	µg/L	2.4	1.2
U[b]	µg/L	28.2	130
V[b]	µg/L	1.0U	7.8
Radiological			
Alpha[c,d]	pCi/L	9.6	--
Alpha-U[c,e]	pCi/L	0[f]	--
Beta[c]	pCi/L	13.6	--
U[b]	µg/L	28.2	130

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW92-08[a]

Analyte	Unit	04/17/00	10/19/00	04/17/01	10/10/01	04/09/02	10/10/02	04/07/03	10/08/03	04/13/04	10/06/04	04/06/05	10/05/05	04/26/06
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	172	250	155	233	223	253	230	284	235	253	198	238	203
Conductivity[c]	µmhos/cm	1497	1622	1472	1655	1533	1335	1670	1296	1321	1361	852	1719	1376
pH[c]	s.u.	8.31	10.78	8.33	8.34	8.75	8.13	--	8.32	8.37	8.11	8.02	7.85	8.17
Temperature[c]	C	16	6.8	15.9	7.3	14.3	4.4	8.6	12.1	15.58	13.5	13.35	9.18	15.5
Common Ions														
Ca[b]	mg/L	204	231	157	199	185	134	200	133	240	160	120	290	250
Chloride[b]	mg/L	37.8	34.8	74.4	53.9	47.0	52.2	68.7	66.0	55.0	56.0	36.0	68.0	30.0
Fluoride[b]	µg/L	190	209	194	171	155	295J	48.6	192	230.	240.	110.	200.U	200.U
Hardness[b]	mg/L	703	783	559	696	666	471	699	477	809	548	390	951	814
K[b]	mg/L	3.28	4.41	4.93	5.20	4.02	4.18	4.31	6.18	7.60	8.70	4.50	6.40	4.60
Mg[b]	mg/L	46.9	50.1	40.6	48.3	49.6	33.1	48.4	35.3	51.0	36.0	22.0	55.0	46.0
Na[b]	mg/L	74.6	81.5	101	94.9	95.0	102	113	126	89.0	95.0	43.0	83.0	60.0
NO_3+NO_2 as N[b]	µg/L	109	282	186	7.3U	99.4	340	4.50U	4.50U	10.U	10.U	690.	46	18
SO_4[b]	mg/L	630	648	242	666	601	443	621	402	530	410	230	730	610
TDS[c]	mg/L	1170	1320	1080	1210	1210	992	1260	955	1100	--	--	--	--
Metals														
As[b]	µg/L	0.58	0.89	0.5U	0.6U	1.1	1.4	0.520	1.60	1.1	1.5	0.68	1	0.84
Fe[b]	µg/L	7.4U	11.7U	25.3	21.1J	49.6	35.5	1.30U	0.800U	150	7U	7.5U	7.8U	14U
Mn[b]	µg/L	131	123	153	14.8	300	23.1	266	20.6	260	50	110	78	140
Mo[b]	µg/L	9	11.8	12.4	7.4	7.5	13.7	9.00	1.70U	14	12	3.8	12	5.8
Se[b]	µg/L	6.8	5.6	7.5	6	5.9	0.95	11.9	0.800	4.3	1	2.7	2.2	2.6
U[b]	µg/L	72.6	84.8	69.7	94.9	88.3	147	132	88.9	130J	97J	29	110	51
V[b]	µg/L	3.3	3	4.5	1.7	3	2.5	0.300U	1.80	2.1	2.1J	2.3J	0.38	2.3
Radiological														
Alpha[c,d]	pCi/L	36.0J	41.0J	32.1	50.2J	54.4	81.0	61.0J	41.6J	80.0	63.4	17.1	--	--
Alpha-U[c,e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	--	--
Beta[c]	pCi/L	19.6	29.0	23.6	22.4	28.5	27.0	32.5J	25.8	32.1	25.0	10.4	--	--
U[b]	µg/L	72.6	84.8	69.7	94.9	88.3	147	132	88.9	130J	97J	29	110	51
U-234[c]	pCi/L	--	29.3	24.8	38.3	27.5	45.6	48.4	31.1	42.7	37.6	10.1	--	--
U-235[c]	pCi/L	--	--	--	--	--	--	--	1.6	2.0	2.1	0.32	--	--
U-238[c]	pCi/L	--	29.8	33.3	36.2	31.2	52.4	49.3J	30.4	42.9	37.3	8.8	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW92-08[a]

Analyte	Unit	10/04/06	04/11/07	10/09/07	04/10/08[g]	10/06/08	04/08/09	10/07/09	04/20/10	10/13/10	04/05/11	10/11/11	04/25/12
Field Measurements													
Alkalinity[c]	mg/L	--	--	--	--	--	--	257	--	--	--	--	--
Alkalinity[b]	mg/L	319	237	246	--	170	243	--	165	268	342	283	--
Conductivity[c]	µmhos/cm	1809	1480	1722	1096	2188	1705	1771	750	1777	1730	1621	1717
pH[c]	s.u.	7.28	8.15	8.09	7.89	8.02	7.70	8.24	8.81	8.20	8.15	7.84	8.16
Temperature[c]	C	19.0	9.88	13.2	2.04	18.87	10.20	5.06	13.1	9.90	10.8	--	19.18
Common Ions													
Ca[b]	mg/L	340	290	310	150	260	270J	230J	110	230	229	220	210
Chloride[b]	mg/L	73.0	44.0	53.0	40.0	100	57.0	95.0	26.0	110	62.0	65.0	78.0
Fluoride[b]	µg/L	200.U	200.U	330.	130.	590.	200.U	280.	170.	170.	317	220.	240.
Hardness[b]	mg/L	1120	938	1040	490	913	917J	826J	361	780	793	763	763
K[b]	mg/L	8.60	5.00	8.50	3.30	13.0J	6.00J	7.20J	2.60J	10.0J	4.25	6.50	7.50J
Mg[b]	mg/L	65.0	52.0	64.0	28.0	64.0	59.0	61.0	21.0	50.0	53.6	52.0	58.0
Na[b]	mg/L	110	77.0	110	48.0	140	94.0J	130J	36.0	120	93.8	97.0	120J
NO_3+NO_2 as N[b]	µg/L	15	10.U	10.U	340.	78	23	10.U	340.	110.	10U	10.U	10.
SO_4[b]	mg/L	780	630	810	340	790	680	670	230	540	650	530	570
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Metals													
As[b]	µg/L	1.1	1.1	1.3	0.77	1.6	0.74	1.1	0.88	1.9	1.70U	1.2	1.7
Fe[b]	µg/L	18	3.7U	5.6U	720	6.2	16	1.6U	11	4.9U	30.0U	4.9UJ	4.9UJ
Mn[b]	µg/L	130	220	160	130	130	190	31	63	93	193	120	210
Mo[b]	µg/L	10	7.8	12	5	13	8	16	4.5	10	9.25	7.9	8
Se[b]	µg/L	3.7	4.5	4.2	3	3.6	5.7	7.1	4.9	4.9	2.89	5.7	4.3
U[b]	µg/L	100	73	120	41	160	85	180	34	110	93.9	140	120
V[b]	µg/L	0.99	2.8J	4.5J	5.1	3.3	1.2	1.9	4.2	3.7	3.00U	0.03U	2.5
Radiological													
Alpha[c,d]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
Beta[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
U[b]	µg/L	100	73	120	41	160	85	180	34	110	93.9	140	120
U-234[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
U-235[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--
U-238[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW92-09[a]

Analyte	Unit	04/08/09	10/07/09	04/20/10	10/13/10	10/11/11	04/25/12
Field Measurements							
Alkalinity[c]	mg/L	--	--	--	--	--	286
Alkalinity[b]	mg/L	228	225	179	264	275	--
Conductivity[c]	µmhos/cm	1609	1820	770	1793	1611	1701
pH[c]	s.u.	8.07	8.19	8.85	8.25	7.95	8.25
Temperature[c]	C	11.60	4.68	12.9	8.88	--	20.1
Common Ions							
Ca[b]	mg/L	270J	220J	120	230	210	210
Chloride[b]	mg/L	61.0	98.0	29.0	110	65.0	80.0
Fluoride[b]	µg/L	250.	260.	170.	170.	230.	240.
Hardness[b]	mg/L	917J	792J	390	780	734	759
K[b]	mg/L	6.10J	7.20J	2.80J	9.70J	6.50	7.40J
Mg[b]	mg/L	59.0	59.0	22.0	50.0	51.0	57.0
Na[b]	mg/L	95.0J	130J	39.0	120	97.0	120J
NO_3+NO_2 as N[b]	µg/L	10.U	10.U	260.	54	49	10.U
SO_4[b]	mg/L	690	680	240	550	520	580
Metals							
As[b]	µg/L	0.81	1.2	0.94	1.6	1.4	1.5
Fe[b]	µg/L	15	1.6U	8.7	4.9U	29	4.9UJ
Mn[b]	µg/L	160	36	62	38	74	110
Mo[b]	µg/L	8	16	4.6	9.6	8.3	9.4
Se[b]	µg/L	5.2	6.6	4.7	4.6	5.4	3.8
U[b]	µg/L	87	180	36	110	130	110
V[b]	µg/L	1.9	2.3	4.3	3.4	3.6	3.7
Radiological							
U[b]	µg/L	87	180	36	110	130	110

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW94-01[a]

Analyte	Unit	04/17/00	10/19/00	04/17/01	10/10/01	04/09/02	04/08/09	10/07/09	04/20/10	10/13/10	10/11/11	04/25/12
Field Measurements												
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	240
Alkalinity[b]	mg/L	220	--	180	220	297	376	246	171	271	292	--
Conductivity[c]	µmhos/cm	1469	1625	1465	1625	1554	1660	1859	740	1770	1223	1719
pH[c]	s.u.	8.36	10.1	8.38	8.33	8.24	7.83	7.32	8.74	8.18	7.74	7.74
Temperature[c]	C	16.2	6.1	16.1	6.9	14.3	12.50	4.60	13.6	8.60	--	20.47
Common Ions												
Ca[b]	mg/L	171	207	153	194	189	270J	220J	100	230	220	210
Chloride[b]	mg/L	59.6	36.9	78.6	54.8	49.0	60.0	96.0	29.0	110	67.0	82.0
Fluoride[b]	µg/L	283	208	208	166	231J	380.	270.	190.	160.	220.	240.
Hardness[b]	mg/L	651	722	549	679	674	917J	796J	336	784	759	759
K[b]	mg/L	4.68	4.62	4.81	5.37	4.09	6.10J	7.40J	3.40J	9.80J	6.60	7.40J
Mg[b]	mg/L	54.3	49.8	40.6	47.2	49.0	59.0	60.0	21.0	51.0	51.0	57.0
Na[b]	mg/L	92.6	84.8	105	94.2	94.8	95.0J	130J	40.0	120	97.0	120J
NO_3+NO_2 as N[b]	µg/L	32.4U	138	27.9	7.3U	61.9	10.U	13	190.	37	17	10.U
SO_4[b]	mg/L	498	637	242	657	589	660	710	220	550	540	590
TDS[c]	mg/L	1100	1290	1090	1180	1210	--	--	--	--	--	--
Metals												
As[b]	µg/L	1.5	0.81	0.65	0.77	1.1	0.84	1.2	1.4	1.7	1.3	1.4
Fe[b]	µg/L	7.4	16.5	41.6	18.8J	1U	7.7	1.6U	9.4	4.9U	4.9UJ	4.9UJ
Mn[b]	µg/L	91.5	21.3	84.3	9.7	40.7	140	48	57	52	56	81
Mo[b]	µg/L	7.9	12.2	11.6	8.7	9.9	8.3	16	4.3	9.7	8.3	8.9
Se[b]	µg/L	3.3	5.3	6.3	4.4	5.2	5.5	5.9	3.8	4.1	5.7	3.4
U[b]	µg/L	38.7	82.2	71.8	93.7	89.9	87	170	27	110	130	110
V[b]	µg/L	3.7	1.5	3	2.1	3	2	2.4	3.5	3.5	3.9	3.4
Radiological												
Alpha[c,d]	pCi/L	17.6J	51.2J	27.8	48.5J	48.1	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	--	--	--	--	--	--
Beta[c]	pCi/L	13.5	28.4	26.8	15.7	29.7	--	--	--	--	--	--
U[b]	µg/L	38.7	82.2	71.8	93.7	89.9	87	170	27	110	130	110
U-234[c]	pCi/L	--	29.1	25.7	33.5	27.6	--	--	--	--	--	--
U-238[c]	pCi/L	--	32.7	31.3	33.9	32.3	--	--	--	--	--	--

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW97-01[a]

Analyte	Unit	10/06/09
Field Measurements		
Alkalinity[b]	mg/L	320
Conductivity[c]	µmhos/cm	2263
pH[c]	s.u.	7.62
Temperature[c]	C	12.71
Common Ions		
Ca[b]	mg/L	320J
Chloride[b]	mg/L	130
Fluoride[b]	µg/L	340.
Hardness[b]	mg/L	1120J
K[b]	mg/L	9.30J
Mg[b]	mg/L	77.0
Na[b]	mg/L	170J
NO_3+NO_2 as N[b]	µg/L	730.
SO_4[b]	mg/L	890
Metals		
As[b]	µg/L	1.2
Fe[b]	µg/L	1.6U
Mn[b]	µg/L	190
Mo[b]	µg/L	28
Se[b]	µg/L	16
U[b]	µg/L	310
V[b]	µg/L	1.6
Radiological		
U[b]	µg/L	310

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.

[b] Sample was filtered in the field.

[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

[g] All samples were unfiltered in April 2008.

Downstream -- SW97-02[a]

Analyte	Unit	10/06/09
Field Measurements		
Alkalinity[b]	mg/L	266
Conductivity[c]	µmhos/cm	1894
pH[c]	s.u.	8.10
Temperature[c]	C	13.10
Common Ions		
Ca[b]	mg/L	220J
Chloride[b]	mg/L	100
Fluoride[b]	µg/L	350.
Hardness[b]	mg/L	809J
K[b]	mg/L	7.10J
Mg[b]	mg/L	63.0
Na[b]	mg/L	140J
NO_3+NO_2 as N[b]	µg/L	60.
SO_4[b]	mg/L	730
Metals		
As[b]	µg/L	0.81
Fe[b]	µg/L	1.6U
Mn[b]	µg/L	44
Mo[b]	µg/L	19
Se[b]	µg/L	9.2
U[b]	µg/L	210
V[b]	µg/L	1.4
Radiological		
U[b]	µg/L	210

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.

[b] Sample was filtered in the field.

[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

[g] All samples were unfiltered in April 2008.

Downstream -- SW97-03[a]

Analyte	Unit	10/07/09
Field Measurements		
Alkalinity[b]	mg/L	263
Conductivity[c]	µmhos/cm	1836
pH[c]	s.u.	8.05
Temperature[c]	C	7.71
Common Ions		
Ca[b]	mg/L	220J
Chloride[b]	mg/L	100
Fluoride[b]	µg/L	320.
Hardness[b]	mg/L	796J
K[b]	mg/L	6.90J
Mg[b]	mg/L	60.0
Na[b]	mg/L	130J
NO_3+NO_2 as N[b]	µg/L	17
SO_4[b]	mg/L	730
Metals		
As[b]	µg/L	0.95
Fe[b]	µg/L	1.6U
Mn[b]	µg/L	73
Mo[b]	µg/L	17
Se[b]	µg/L	8.1
U[b]	µg/L	190
V[b]	µg/L	1.9
Radiological		
U[b]	µg/L	190

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW97-05[a]

Analyte	Unit	10/07/09
Field Measurements		
Alkalinity[c]	mg/L	505
Conductivity[c]	µmhos/cm	1832
pH[c]	s.u.	8.25
Temperature[c]	C	4.87
Common Ions		
Ca[b]	mg/L	220J
Chloride[b]	mg/L	98.0
Fluoride[b]	µg/L	310.
Hardness[b]	mg/L	796J
K[b]	mg/L	7.00J
Mg[b]	mg/L	60.0
Na[b]	mg/L	130J
NO_3+NO_2 as N[b]	µg/L	10.U
SO_4[b]	mg/L	700
Metals		
As[b]	µg/L	1.1
Fe[b]	µg/L	1.6U
Mn[b]	µg/L	23
Mo[b]	µg/L	16
Se[b]	µg/L	6.9
U[b]	µg/L	190
V[b]	µg/L	2
Radiological		
U[b]	µg/L	190

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- SW99-04[a]

Analyte	Unit	01/13/00
Field Measurements		
Alkalinity[b]	mg/L	262
Conductivity[c]	µmhos/cm	1562
pH[c]	s.u.	7.68
Temperature[c]	C	0
Common Ions		
Ca[b]	mg/L	226
Chloride[b]	mg/L	29.7
Fluoride[b]	µg/L	144
Hardness[b]	mg/L	752
K[b]	mg/L	3.07
Mg[b]	mg/L	45.6
Na[b]	mg/L	68.1
NO_3+NO_2 as N[b]	µg/L	636J
SO_4[b]	mg/L	564
TDS[c]	mg/L	1280
Metals		
As[b]	µg/L	0.58
Fe[b]	µg/L	8.9U
Mn[b]	µg/L	185
Mo[b]	µg/L	6
Se[b]	µg/L	2.8
U[b]	µg/L	63.8
V[b]	µg/L	1.0U
Radiological		
Alpha[c,d]	pCi/L	29.1
Alpha-U[c,e]	pCi/L	0[f]
Beta[c]	pCi/L	18.0
U[b]	µg/L	63.8

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.

[b] Sample was filtered in the field.

[c] Sample was unfiltered.

[d] Total gross alpha excluding radon which is lost during analysis.

[e] Gross alpha minus uranium activity. Result rounded as appropriate.

[f] Uranium activity greater than gross alpha.

[g] All samples were unfiltered in April 2008.

Downstream -- Sorenson[a]

Analyte	Unit	01/13/00	04/18/00	08/02/00	10/19/00	01/30/01	04/17/01	07/12/01	10/09/01	01/31/02	04/09/02	10/09/02	04/07/03	07/08/03
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	289	224	188	298	215	166	202	207	250	375	305	250	250
Conductivity[c]	µmhos/cm	1635	1700	3240	1663	2060	1677	1551	1805	1786	1765	1959	--	1112
DO[c]	mg/L	--	--	--	--	--	--	--	--	9.45	--	--	--	--
pH[c]	s.u.	7.65	7.9	7.8	8.02	8.03	7.97	7.91	7.89	7.26	8.07	7.87	--	8
Temperature[c]	C	0	5.5	19.7	11.3	-0.1	18.1	20.4	10.1	0.2	17.7	11.6	--	22.9
Common Ions														
Ca[b]	mg/L	251	257	270	273	277	200	184	233	264	235	215	229	196
Chloride[b]	mg/L	25.7	37.7	51.6	35.8	51.7	65.1	53.8	61.2	57.3	53.1	84.2	71.7	69.2
Fluoride[b]	µg/L	145	186	267	195	187	194	222	245	121	103	238J	17.2U	17.2U
Hardness[b]	mg/L	830	854	941	914	931J	701	653	810	896	838	763	797	697
K[b]	mg/L	2.93	3.02	5.46	4.12	3.35	4.19	5.97	7.46	4.06	4.48	5.77	4.57	5.43
Mg[b]	mg/L	49.4	51.5	64.8	56.5	58.1J	49.0	47.1	55.5	57.6	60.9	54.9	54.6	50.4
Na[b]	mg/L	62.9	72.7	117	78.9	82.6	94.6	96.8	101	97.4	99.2	162	115	140
NO_3+NO_2 as N[b]	µg/L	643J	725	233	842	1010	870	240	982	1060	430	139	371	4.50U
SO_4[b]	mg/L	628	693	909	727	826	325	573	747	744	730	745	685	629
TDS[c]	mg/L	1380	1310	1680	1460	1620	1280	1160	1450	1570	1420	1580	1400	1380
Metals														
As[b]	µg/L	0.4U	0.39	0.64	0.9	0.55	1.3	2.7	1	1.2	1.5	1.3	0.560	1.20
Fe[b]	µg/L	8.9U	12.4	9.1U	11.7U	11U	9.4	23.9	56.6J	167	1U	0.8U	24.7	24.8
Mn[b]	µg/L	123	117	20.8	170	174	90.1	14.2	96.5	189	165	63.9	118	50.7
Mo[b]	µg/L	5.5	8.7	19	11	12.1	13.6	11	9.5	6.1	11.8	20.3	10.00	14.4
Se[b]	µg/L	3.1	8.4	9.7	7.5	7.7	11.7	7.3	10.5	9.6	10	9.3	19.8	3.10
U[b]	µg/L	65.8	80.5	162	87	93.9	82.5	78	114	119	107	188	157	146
V[b]	µg/L	1.0U	2.8	2.5	4.8	3.9	16.5	14.6	7	7.9	9	1.9	4.90	1.40
Radiological														
Alpha[c,d]	pCi/L	21.8	44.5	87.8	42.5J	44.2	30.1	36.0J	73.4J	67.1	86.0	119	77.0J	61.2
Alpha-U[c,e]	pCi/L	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	0[f]	9.4	0[f]	0[f]	0[f]
Beta[c]	pCi/L	13.0	28.7	47.7	31.7	22.1	26.0	18.7	23.7	7.7U	39.3	32.7	33.1J	28.0
U[b]	µg/L	65.8	80.5	162	87	93.9	82.5	78	114	119	107	188	157	146
U-234[c]	pCi/L	--	--	--	31.4	33.0	31.6	26.5J	41.7	41.8	38.9	58.7	55.2	46.0
U-235[c]	pCi/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U-238[c]	pCi/L	--	--	--	33.0	33.4	46.5	26.2	43.5	41.0	37.7	69.1	53.6J	56.6

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- Sorenson[a]

Analyte	Unit	10/08/03	04/13/04	10/07/04	04/06/05	10/04/05	04/26/06	10/04/06	04/09/07	10/08/07	04/10/08[g]	10/09/08	04/09/09	10/08/09
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	300	145	262	184	258	210	288	260	260	210	138	255	348
Conductivity[c]	µmhos/cm	1900	1415	1592	902	1687	1448	1774	1602	1860	977	743	1925	2428
DO[c]	mg/L	--	--	--	--	--	--	7.74	--	--	--	--	--	--
pH[c]	s.u.	7.95	8.05	7.41	8.09	8.07	8.10	7.36	8.01	8.38	7.96	7.60	7.84	7.64
Temperature[c]	C	14.1	15.71	14.4	13.11	15.3	17.35	9.9	11.59	13.1	1.69	12.23	4.76	6.25
Common Ions														
Ca[b]	mg/L	221	280	240	140	300	240	350	290	360	140	310	310J	320J
Chloride[b]	mg/L	88.5	56.0	59.0	28.0	62.0	30.0	67.0	45.0	51.0	28.0	170	58.0	130
Fluoride[b]	µg/L	202	210.	200.U	120.	200.U	210.	200.U	200.U	280.	100.	630.	230.	310.
Hardness[b]	mg/L	781	938	809	453	976	793	1130	930	1180	453	1120	1030J	1110J
K[b]	mg/L	7.59	7.90	9.20	3.20	6.50	5.00	7.90	5.00	8.50	2.70	8.70J	5.90J	7.90J
Mg[b]	mg/L	55.6	58.0	51.0	25.0	55.0	47.0	61.0	50.0	69.0	25.0	84.0	63.0	76.0
Na[b]	mg/L	168	99.0	93.0	39.0	79.0	57.0	100	73.0	100	38.0	180	92.0J	170J
NO_3+NO_2 as N[b]	µg/L	560	180.	110.	660.	250.	71	310.	71	240.	400.	340.	240.	720.J
SO_4[b]	mg/L	736	590	540	260	800	670	760	620	950	290	960	780	880
TDS[c]	mg/L	1540	1300	1200	630	1500	1200	1400	1300	1700	690	2000	1500	1800
Metals														
As[b]	µg/L	1.70	0.79	1.2	0.58	0.81	0.73	0.68	0.76	0.74	0.63	1.4	0.6	0.95
Fe[b]	µg/L	23.4	9.8U	7U	7.5U	7.8U	14U	19	3.7U	5.6U	760	3.1U	37	22
Mn[b]	µg/L	125	180	180	82	98	130	140	100	110	75	490	140	220
Mo[b]	µg/L	23.6	19	17	4.2	13	6.6	14	7.5	13	4.6	16	8.1	25
Se[b]	µg/L	13.1	8	4.7	3.6	3	3.3	4.8	5	5.9	3.3	5	9.3	15
U[b]	µg/L	230	150J	160J	34	120	55	110	75	110	38	200	99	300
V[b]	µg/L	1.70	4	1.7	3.9	2.2	4.1	3.1	3.8J	4.2J	5.7	0.96	1	1.1
Radiological														
Alpha[c,d]	pCi/L	107J	95.0	80.2	17.0	--	--	--	--	--	--	--	--	--
Alpha-U[c,e]	pCi/L	0[f]	0[f]	0[f]	0[f]	--	--	--	--	--	--	--	--	--
Beta[c]	pCi/L	64.9	41.1	39.6	13.0	--	--	--	--	--	--	--	--	--
U[b]	µg/L	230	150J	160J	34	120	55	110	75	110	38	200	99	300
U-234[c]	pCi/L	80.6	48.6	55.0	11.4	--	--	--	--	--	--	--	--	--
U-235[c]	pCi/L	3.5	2.8	2.7	0.64	--	--	--	--	--	--	--	--	--
U-238[c]	pCi/L	77.5	47.6	55.2	10.0	--	--	--	--	--	--	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- Sorenson[a]

Analyte	Unit	04/20/10	10/13/10	04/05/11	10/11/11	04/25/12
Field Measurements						
Alkalinity[c]	mg/L	--	--	--	--	210
Alkalinity[b]	mg/L	230	284	320	308	--
Conductivity[c]	µmhos/cm	825	1860	1970	1698	1914
DO[c]	mg/L	--	--	--	--	--
pH[c]	s.u.	8.23	7.57	7.61	7.53	7.77
Temperature[c]	C	13.2	13.31	9.2	--	11.10
Common Ions						
Ca[b]	mg/L	130	230	283	250	270
Chloride[b]	mg/L	27.0	120	60.9	69.0	88.0
Fluoride[b]	µg/L	170.	260.	223	350.	220.
Hardness[b]	mg/L	419	776	959	855	950
K[b]	mg/L	2.70J	11.0J	3.78	6.80	8.00J
Mg[b]	mg/L	23.0	49.0	61.2	56.0	67.0
Na[b]	mg/L	37.0	120	88.4	95.0	120J
NO_3+NO_2 as N[b]	µg/L	610.	590.	269	330.	180.
SO_4[b]	mg/L	250	500	757	640	710
TDS[c]	mg/L	620	1200	1530	1400	1500
Metals						
As[b]	µg/L	0.7	2.5	1.70U	0.96J	1.2
Fe[b]	µg/L	7.6	4.9U	35.7	5.2J	24J
Mn[b]	µg/L	65	100	177	99	220
Mo[b]	µg/L	4.6	9.4	9.2	10	9.7
Se[b]	µg/L	6	5.8	6.15	9	11
U[b]	µg/L	39	100	124	160	150
V[b]	µg/L	3.9	6.9	3.00U	0.076U	1.8
Radiological						
Alpha[c,d]	pCi/L	--	--	--	--	--
Alpha-U[c,e]	pCi/L	--	--	--	--	--
Beta[c]	pCi/L	--	--	--	--	--
U[b]	µg/L	39	100	124	160	150
U-234[c]	pCi/L	--	--	--	--	--
U-235[c]	pCi/L	--	--	--	--	--
U-238[c]	pCi/L	--	--	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCEFF[a]

Analyte	Unit	10/05/05	08/01/06	04/10/07	03/10/08	07/23/08	08/25/08	09/23/08	10/15/08	11/24/08	12/29/08
Field Measurements											
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	463	--	--
Alkalinity[b]	mg/L	356	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	1615	--	--	--	1497	1648	17.40	1910	1957	2010
DO[c]	mg/L	2.10	--	--	--	--	--	--	2.92	--	--
pH[c]	s.u.	7.22	--	--	--	7.00	7.25	7.06	7.17	6.86	6.66
Temperature[c]	C	12.6	--	--	--	15.6	20.2	18.6	13.70	11.20	8.80
Common Ions											
Ca[b]	mg/L	210	--	--	--	--	--	--	--	--	--
Chloride[b]	mg/L	74.0	--	--	--	--	--	--	--	--	--
Fluoride[b]	µg/L	340.	--	--	--	--	--	--	--	--	--
Hardness[b]	mg/L	693	--	--	--	--	--	--	--	--	--
K[b]	mg/L	13.0	--	--	--	--	--	--	--	--	--
Mg[b]	mg/L	41.0	--	--	--	--	--	--	--	--	--
Na[b]	mg/L	96.0	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N[b]	µg/L	10.U	--	--	--	--	--	--	--	--	--
SO_4[b]	mg/L	480	--	--	--	--	--	--	--	--	--
TDS[c]	mg/L	1200	--	--	--	--	--	--	--	--	--
Metals											
As[c]	µg/L	--	--	--	0.041U	--	--	--	--	--	--
As[b]	µg/L	0.007U	--	--	--	--	--	--	--	--	--
Fe[c]	µg/L	--	--	--	--	9300	21000	18000	17000	41000	22000
Fe[b]	µg/L	22000	--	--	--	--	--	--	--	--	--
Mn[b]	µg/L	210	--	--	--	--	--	--	--	--	--
Mo[b]	µg/L	21	--	--	--	--	--	--	--	--	--
Se[c]	µg/L	--	--	--	9.2	--	--	--	--	--	--
Se[b]	µg/L	1.5	5.3	39	--	--	--	--	--	--	--
U[c]	µg/L	--	--	--	--	54	12	14	17	18	100
U[b]	µg/L	3.8	--	--	--	--	--	--	--	--	--
V[b]	µg/L	0.1U	--	--	--	--	--	--	--	--	--
Radiological											
U[c]	µg/L	--	--	--	--	54	12	14	17	18	100
U[b]	µg/L	3.8	--	--	--	--	--	--	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCEFF1[a]

Analyte	Unit	01/28/09	02/10/09	03/11/09	04/09/09	05/06/09	06/11/09	07/07/09	08/03/09	09/08/09	10/07/09	11/10/09	12/14/09	01/06/10
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	2096	2100	2434	2245	2197	2054	1938	2020	2166	2010	2127	1961	1976
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
pH[c]	s.u.	6.67	6.88	7.08	7.56	7.25	7.46	7.35	7.31	7.20	7.14	7.22	7.26	7.13
Temperature[c]	C	7.97	6.5	7.9	9.18	9.84	10.40	13.76	13.44	14.41	13.3	11.78	10.30	9.55
Metals														
Fe[c]	µg/L	3500	18000	14000	36000	35000	34000	34000	32000	23000	21000	21000	22000	22000
U[c]	µg/L	290	140	170	2.5	6.1	11	6.7	4.2	2.8	3.5	6.7	9.1	12
Radiological														
U[c]	µg/L	290	140	170	2.5	6.1	11	6.7	4.2	2.8	3.5	6.7	9.1	12

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCEFF1[a]

Analyte	Unit	02/08/10	03/03/10	05/20/10	06/14/10	07/19/10	08/18/10	09/07/10	10/14/10	10/20/10	11/08/10	12/06/10	01/06/11	02/14/11
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	381	--	--	--	--
Conductivity[c]	µmhos/cm	2085	1635	1881	1932	1646	1819	1970	2238	2174	2197	2154	2094	2177
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	3.19
pH[c]	s.u.	6.88	7.44	7.14	7.37	7.61	6.82	7.01	6.46	7.74	7.59	7.43	6.96	7.32
Temperature[c]	C	6.8	13.5	9.68	13.47	26.15	17.06	14.5	12.25	12.29	10.59	10.58	8.73	8.79
Metals														
Fe[c]	µg/L	15000	18000J	13000	18000	2300	15000	13000	49000	37000	39000	34000	20000	24000
U[c]	µg/L	11	16	5.9	7.9	20	19J	79	0.68	0.25	0.67	1.4	120	4.1
Radiological														
U[c]	µg/L	11	16	5.9	7.9	20	19J	79	0.68	0.25	0.67	1.4	120	4.1

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCEFF1[a]

Analyte	Unit	03/21/11	04/05/11	05/16/11	06/20/11	07/18/11	08/15/11	10/12/11	11/09/11	12/15/11	01/18/12	02/13/12	03/15/12	04/23/12
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	336	--	--
Conductivity[c]	µmhos/cm	2196	2070	2094	2025	2047	1993	2207	2167	2147	2223	2115	2356	1748
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--	2.12	--	--
pH[c]	s.u.	6.95	6.95	7.05	6.84	7.00	6.99	7.38	7.56	7.46	7.29	7.24	7.27	6.79
Temperature[c]	C	7.55	6.7	9.13	12.96	16.78	12.88	14.01	11.71	9.36	7.87	7.35	8.70	12.96
Metals														
Fe[c]	µg/L	23000	24000	13000	11000	32000	13000	43000	36000	33000	23000	21000	22000	15000
U[c]	µg/L	5.7	4.7	83	170	19	170	20	10	24	54	66	52	76
Radiological														
U[c]	µg/L	5.7	4.7	83	170	19	170	20	10	24	54	66	52	76

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCEFF2[a]

Analyte	Unit	04/10/07	03/10/08	07/23/08	08/25/08	09/23/08	10/15/08	11/24/08	12/29/08	01/28/09	02/10/09	03/11/09	04/09/09	05/06/09
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	380	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	--	--	1487	1649	1746	1917	1938	1998	2067	2070	2440	2223	2191
DO[c]	mg/L	--	--	--	--	--	3.05	--	--	--	--	--	--	--
pH[c]	s.u.	--	--	7.01	7.13	7.00	7.22	7.11	6.84	6.94	7.10	7.01	7.73	7.34
Temperature[c]	C	--	--	15.6	19.5	19.4	13.61	11.51	8.55	7.52	6.9	7.61	9.36	9.94
Metals														
As[c]	µg/L	--	0.041U	--	--	--	--	--	--	--	--	--	--	--
Fe[c]	µg/L	--	--	8000	14000	14000	24000	31000	28000	21000	24000	13000	37000	33000
Se[c]	µg/L	--	8.2	--	--	--	--	--	--	--	--	--	--	--
Se[b]	µg/L	75	--	--	--	--	--	--	--	--	--	--	--	--
U[c]	µg/L	--	--	92	96	68	60	55	66	120	63	190	1.7	4
Radiological														
U[c]	µg/L	--	--	92	96	68	60	55	66	120	63	190	1.7	4

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCEFF2[a]

Analyte	Unit	06/11/09	07/07/09	08/03/09	09/08/09	10/07/09	11/10/09	12/14/09	01/06/10	02/08/10	03/03/10	05/20/10	06/14/10	07/19/10
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	2060	1948	2006	2198	2035	2143	1963	2020	2080	1656	1836	1925	1704
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
pH[c]	s.u.	7.58	7.53	7.35	7.26	7.32	7.43	7.39	7.13	6.97	7.48	7.21	7.31	7.5
Temperature[c]	C	10.33	12.12	14.01	14.04	13.4	11.88	9.87	9.06	6.4	13.30	10.15	12.74	25.76
Metals														
As[c]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe[c]	µg/L	36000	35000	33000	28000	29000	33000	25000	26000	17000	22000J	12000	13000	1600
Se[c]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Se[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U[c]	µg/L	7.2	6.8	3.8	2.3	1.1	3.3	3.4	4.9	9.9	6.4	1.9	22	14
Radiological														
U[c]	µg/L	7.2	6.8	3.8	2.3	1.1	3.3	3.4	4.9	9.9	6.4	1.9	22	14

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCEFF2[a]

Analyte	Unit	08/18/10	09/07/10	10/14/10	10/20/10	11/08/10	12/06/10	01/06/11	02/14/11	03/21/11	04/05/11	05/16/11	06/20/11	07/18/11
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	388	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	1848	1955	2246	2164	2190	2149	2134	2157	2176	2040	2099	2037	1993
DO[c]	mg/L	--	--	--	--	--	--	--	3.40	--	--	--	--	--
pH[c]	s.u.	7.08	6.67	6.56	7.44	7.47	7.30	6.83	7.03	6.93	7.16	7.23	7.09	7.11
Temperature[c]	C	17.01	14.5	12.36	12.11	10.32	10.20	8.76	8.46	7.43	6.8	9.13	13.02	19.43
Metals														
As[c]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe[c]	µg/L	11000	13000	34000	28000	33000	28000	24000	15000	14000	15000	12000	17000	60000
Se[c]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Se[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U[c]	µg/L	26	78	27	28	9.6	18	75	51	48	60	93	41	14
Radiological														
U[c]	µg/L	26	78	27	28	9.6	18	75	51	48	60	93	41	14

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCEFF2[a]

Analyte	Unit	08/15/11	09/27/11	10/12/11	11/09/11	12/15/11	01/18/12	02/13/12	03/15/12	04/23/12
Field Measurements										
Alkalinity[c]	mg/L	--	--	--	--	--	--	337	--	--
Conductivity[c]	µmhos/cm	2004	2198	2187	2170	2147	2229	2185	2348	2044
DO[c]	mg/L	--	--	--	--	--	--	3.21	--	--
pH[c]	s.u.	7.19	7.16	7.32	7.68	7.31	7.34	7.33	7.28	7.15
Temperature[c]	C	13.43	15.31	14.29	11.68	9.30	7.44	7.45	9.40	11.52
Metals										
As[c]	µg/L	--	--	--	--	--	--	--	--	--
Fe[c]	µg/L	23000	20000	41000	35000	30000	25000	23000	22000	18000
Se[c]	µg/L	--	--	--	--	--	--	--	--	--
Se[b]	µg/L	--	--	--	--	--	--	--	--	--
U[c]	µg/L	4.3	47J	23	17	28	45	60	49	49
Radiological										
U[c]	µg/L	4.3	47J	23	17	28	45	60	49	49

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCINF[a]

Analyte	Unit	10/05/05	08/01/06	04/10/07	03/10/08	07/23/08	08/25/08	09/23/08	10/15/08	11/24/08	12/29/08	01/28/09	02/10/09	03/11/09
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	156	--	--	--	--	--
Alkalinity[b]	mg/L	194	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	1575	--	--	--	1497	1709	1813	1897	1946	2011	2065	2090	2452
DO[c]	mg/L	4.78	--	--	--	--	--	--	4.51	--	--	--	--	--
pH[c]	s.u.	6.77	--	--	--	6.78	6.93	6.65	6.94	6.80	6.18	6.88	6.53	6.87
Temperature[c]	C	12.7	--	--	--	15.4	16.0	16.51	15.35	11.40	8.94	8.07	6.6	8.06
Common Ions														
Ca[b]	mg/L	210	--	--	--	--	--	--	--	--	--	--	--	--
Chloride[b]	mg/L	75.0	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride[b]	µg/L	350.	--	--	--	--	--	--	--	--	--	--	--	--
Hardness[b]	mg/L	693	--	--	--	--	--	--	--	--	--	--	--	--
K[b]	mg/L	13.0	--	--	--	--	--	--	--	--	--	--	--	--
Mg[b]	mg/L	41.0	--	--	--	--	--	--	--	--	--	--	--	--
Na[b]	mg/L	100	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N[b]	µg/L	2700.	--	--	--	--	--	--	--	--	--	--	--	--
SO_4[b]	mg/L	480	--	--	--	--	--	--	--	--	--	--	--	--
TDS[c]	mg/L	1200	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As[c]	µg/L	--	--	--	9	--	--	--	--	--	--	--	--	--
As[b]	µg/L	10	--	--	--	--	--	--	--	--	--	--	--	--
Fe[c]	µg/L	--	--	--	--	3.1UJ	3.1U	3.1U	3.1U	22U	27	1.3U	1.3U	1.3U
Fe[b]	µg/L	7.8U	--	--	--	--	--	--	--	--	--	--	--	--
Mn[b]	µg/L	15	--	--	--	--	--	--	--	--	--	--	--	--
Mo[b]	µg/L	50	--	--	--	--	--	--	--	--	--	--	--	--
Se[c]	µg/L	--	--	--	75J	--	--	--	--	--	--	--	--	--
Se[b]	µg/L	32	41	47	--	--	--	--	--	--	--	--	--	--
U[c]	µg/L	--	--	--	--	260	280	350	350	360	350	340	330	330
U[b]	µg/L	270	--	--	--	--	--	--	--	--	--	--	--	--
V[b]	µg/L	320	--	--	--	--	--	--	--	--	--	--	--	--
Radiological														
U[c]	µg/L	--	--	--	--	260	280	350	350	360	350	340	330	330
U[b]	µg/L	270	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCINF[a]

Analyte	Unit	04/09/09	05/06/09	06/11/09	07/07/09	08/03/09	09/08/09	10/07/09	11/10/09	12/14/09	01/06/10	02/08/10	03/03/10	05/20/10
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	2268	2225	2021	1893	2022	2120	1995	2107	1926	2029	2120	1543	1894
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
pH[c]	s.u.	6.98	6.59	6.93	6.80	6.28	6.76	6.97	6.91	6.88	6.65	6.79	7.15	6.97
Temperature[c]	C	9.45	10.68	10.73	12.78	13.56	17.22	13.32	12.12	8.70	9.36	6.6	10.60	9.31
Common Ions														
Ca[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardness[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
K[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Mg[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Na[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
SO_4[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As[c]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
As[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe[c]	µg/L	15	11J	1.3U	19J	1.6U	1.6UJ	9.3J	1.4U	1.4U	13U	1.4U	4.9U	4.9U
Fe[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Mn[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Mo[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Se[c]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Se[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U[c]	µg/L	360	340	310	310	340	350	350	340	340	330	320	350	220
U[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
V[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Radiological														
U[c]	µg/L	360	340	310	310	340	350	350	340	340	330	320	350	220
U[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCINF[a]

Analyte	Unit	06/14/10	07/19/10	08/18/10	09/07/10	10/14/10	10/20/10	11/08/10	12/06/10	01/06/11	02/14/11	03/21/11	04/05/11	05/16/11
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	344	--	--	--	--	--	--	--
Alkalinity[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	2006	1768	1977	1960	2234	2116	2163	2115	2114	2143	2174	2040	2050
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	6.10	--	--	--
pH[c]	s.u.	6.50	6.81	6.69	6.54	6.49	6.98	6.95	6.80	6.57	6.75	6.70	6.72	6.74
Temperature[c]	C	10.63	23.8	12.88	14.3	13.07	12.34	10.56	10.10	9.01	7.91	7.53	7.1	9.59
Common Ions														
Ca[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Fluoride[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardness[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
K[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Mg[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Na[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
SO_4[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Metals														
As[c]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
As[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe[c]	µg/L	7.4	1400	4.9U	4.9U	4.9U	22U	22U	22U	22U	22U	22U	22U	150
Fe[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Mn[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Mo[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Se[c]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Se[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
U[c]	µg/L	240	240	310	300	350	340	320J	340	330	330	300	330	320
U[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
V[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Radiological														
U[c]	µg/L	240	240	310	300	350	340	320J	340	330	330	300	330	320
U[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCINF[a]

Analyte	Unit	06/20/11	07/18/11	08/15/11	09/27/11	10/12/11	11/09/11	12/15/11	01/18/12	02/13/12	03/15/12	04/23/12
Field Measurements												
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	225	--	--
Alkalinity[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	2026	1993	2051	1406	2163	2200	2114	2189	2154	2279	--
DO[c]	mg/L	--	--	--	--	--	--	--	--	4.25	--	--
pH[c]	s.u.	6.73	6.77	6.83	7.78	6.87	6.62	7.05	6.99	6.92	6.86	--
Temperature[c]	C	11.98	15.98	13.15	15.97	13.72	12.15	9.77	8.11	7.48	7.95	--
Common Ions												
Ca[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--
Chloride[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--
Fluoride[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--
Hardness[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--
K[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--
Mg[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--
Na[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--
NO_3+NO_2 as N[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--
SO_4[b]	mg/L	--	--	--	--	--	--	--	--	--	--	--
TDS[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--
Metals												
As[c]	µg/L	--	--	--	--	--	--	--	--	--	--	--
As[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--
Fe[c]	µg/L	22U	4.9U	4.9U	6200	22U	22U	22U	36	22U	22U	4.9U
Fe[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--
Mn[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--
Mo[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--
Se[c]	µg/L	--	--	--	--	--	--	--	--	--	--	--
Se[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--
U[c]	µg/L	320	340	320	91	330	320	330	300	320	330	290
U[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--
V[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--
Radiological												
U[c]	µg/L	320	340	320	91	330	320	330	300	320	330	290
U[b]	µg/L	--	--	--	--	--	--	--	--	--	--	--

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[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCOUT[a]

Analyte	Unit	07/23/08	08/25/08	12/29/08	01/28/09	02/10/09	03/11/09	04/09/09	05/06/09	06/11/09	07/07/09	08/03/09	09/08/09	10/07/09
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	1496	1664	1986	2034	2055	2423	2235	2176	2059	1935	1973	2165	2041
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
pH[c]	s.u.	7.06	7.16	6.94	7.12	7.21	7.15	7.61	7.35	7.47	7.39	7.26	7.19	7.22
Temperature[c]	C	15.8	20.4	9.17	7.77	6.4	7.92	7.92	10.02	10.30	12.58	13.69	14.24	14.11
Metals														
Fe[c]	µg/L	10000	15000	23000	18000	18000	13000	34000	33000	34000	34000	30000	26000	23000
U[c]	µg/L	39	62	94	130	130	180	2.6	6.3	8.7	7	4.2	3.3	2.9
Radiological														
U[c]	µg/L	39	62	94	130	130	180	2.6	6.3	8.7	7	4.2	3.3	2.9

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCOUT[a]

Analyte	Unit	11/10/09	12/14/09	01/06/10	02/08/10	03/03/10	05/20/10	06/14/10	07/22/10	08/18/10	09/07/10	10/14/10	10/20/10	11/08/10
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	374	--
Conductivity[c]	µmhos/cm	2132	1943	1962	2080	1672	1908	1917	1750	1832	1950	2238	2143	2182
DO[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
pH[c]	s.u.	7.35	7.33	7.09	7.00	7.42	6.86	7.34	7.09	7.20	6.91	6.68	7.49	7.37
Temperature[c]	C	11.96	9.50	8.88	7.0	13.95	10.90	13.07	12.71	16.90	14.1	12.36	12.42	10.32
Metals														
Fe[c]	µg/L	26000	35000	24000	19000	20000J	12000	14000	13000	12000	11000	44000	32000	34000
U[c]	µg/L	5.3	6.8	8.8	8.4	11	4.7	15	44	26	62	9	17	7.5
Radiological														
U[c]	µg/L	5.3	6.8	8.8	8.4	11	4.7	15	44	26	62	9	17	7.5

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCOUT[a]

Analyte	Unit	12/06/10	01/06/11	02/14/11	03/21/11	04/05/11	05/16/11	06/20/11	07/18/11	08/15/11	09/27/11	10/12/11	11/09/11	12/15/11
Field Measurements														
Alkalinity[c]	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--
Conductivity[c]	µmhos/cm	2138	2099	2136	2194	2060	2101	2044	2034	1830	2175	2205	2145	2143
DO[c]	mg/L	--	--	5.23	--	--	--	--	--	--	--	--	--	--
pH[c]	s.u.	7.34	6.99	7.19	7.15	7.26	7.22	7.12	7.01	7.25	7.11	7.29	7.35	7.11
Temperature[c]	C	10.23	8.88	10.10	7.37	6.9	9.64	12.91	20.03	13.18	13.45	13.50	11.68	8.62
Metals														
Fe[c]	µg/L	33000	22000	22000	19000	20000	17000	12000	23000	240000J	24000	40000	34000	29000
U[c]	µg/L	8.5	150	16	18	29	66	150	15	110	48	34	18	35
Radiological														
U[c]	µg/L	8.5	150	16	18	29	66	150	15	110	48	34	18	35

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Downstream -- TCOUT[a]

Analyte	Unit	01/18/12	02/13/12	03/15/12	04/23/12
Field Measurements					
Alkalinity[c]	mg/L	--	353	--	--
Conductivity[c]	µmhos/cm	2248	2176	1248	2061
DO[c]	mg/L	--	5.69	--	--
pH[c]	s.u.	7.26	7.21	7.31	7.38
Temperature[c]	C	7.45	7.46	8.41	11.57
Metals					
Fe[c]	µg/L	25000	22000	20000	17000
U[c]	µg/L	44	60	72	54
Radiological					
U[c]	µg/L	44	60	72	54

[a] Definition of Qualifiers: -- – No Data. R – Data unusable. J – Estimated quantity. U – Not detected; value is sample detection limit. UJ – Not detected, associated value is estimated.
[b] Sample was filtered in the field.
[c] Sample was unfiltered.
[d] Total gross alpha excluding radon which is lost during analysis.
[e] Gross alpha minus uranium activity. Result rounded as appropriate.
[f] Uranium activity greater than gross alpha.
[g] All samples were unfiltered in April 2008.

Appendix D

OU III Monitoring Wells Abandoned in 2005 and 2006

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LOCATION CODE	BOREHOLE DEPTH	SCREEN DEPTH	SCREEN LENGTH	ZONE_OF COMPLETION	DECOMMISSIONED DATE	ORIGINAL EASTING	ORIGINAL NORTHING	WELL DEPTH
31SW93-197-2	208.8			KB	21-Apr-06	23345.4	9691.6	207.85
31SW93-197-3	159			KD	21-Apr-06	23351.9	9713.9	159
31SW93-197-4	69			KM	21-Apr-06	23368.4	9671.3	69
31SW93-197-5	45			KM	21-Apr-06	23395.3	9731.8	44.3
31SW93-200-1	170			KB	18-Apr-06	20865.4	10218.9	170
31SW93-200-2	122	111.6	10	KD	18-Apr-06	20881.2	10243.3	122
31SW93-200-3	35	24.65	10	KM	18-Apr-06	20855.2	10234.9	35
31SW93-200-4	24.5			KM	07-Sep-05	20889.5	10228.3	24.5
82-07	20	9.5	3	QA	14-Sep-05	24669.3	10006	13
82-20	22.5	15.4	4	QA	07-Sep-05	20418.6	10089.6	21
92-01	24.25	21.4	2.5	QA	19-Apr-06	16615.2	9169	24.25
92-02	216	185.4	30	KB	19-Apr-06	16596.2	9156.2	216
92-03	12.75	9.9	2.5	QA	19-Apr-06	17873.7	10437.7	12.75
92-04	205	174.4	30	KB	19-Apr-06	17891.9	10440.7	205
92-05	16.83	11.5	4.9	QA	21-Apr-06	19863.1	9818.8	16.83
92-13	114.3	103.7	10	KD	21-Apr-06	19864.8	9853.2	114.3
MW00-04	9	3.28	5.03	QA	07-Sep-05	23397.22	10341.52	8.66
MW00-08	14	7.25	5.03	QA	07-Sep-05	23398.68	10519.99	12.63
P92-01	11.5	8.7	2.5	QA	07-Sep-05	27438.68	8900.92	11.5
P92-03	13.4	10.4	2.5	QA	07-Sep-05	27116.36	9559.16	13.25
P92-04	23	19.8	2.5	QA	14-Sep-05	25380.49	10617.28	22.63
P92-05	7.25	4.4	2.5	QA	14-Sep-05	25382	10112.44	7.25
P92-07	13.66	10.8	2.6	QA	14-Sep-05	24654.5	10616.84	13.66
P92-09	15.9	12.6	2.5	QA	14-Sep-05	23691.61	10924.45	15.33
T00-08	6.5	1.2	5	QA	07-Sep-05	19845.87	10359.74	6.5
T00-09	23	17.75	5	QA	07-Sep-05	19894.68	10319.08	23
T00-10	21.25	16	5	QA	07-Sep-05	19934.4	10279.38	21.25
T00-11	20.5	14.75	5	QA	07-Sep-05	19980.15	10242.27	20.08
T00-12	17.16	11.92	5	QA	07-Sep-05	20026.93	10196.5	17.16
T00-13	14.5	9.25	5	QA	07-Sep-05	20070.75	10157.74	14.5
T00-14	9.83	4.78	4.8	QA	07-Sep-05	20109.09	10115.73	9.83
T00-15	10.25	5	5	QA	07-Sep-05	20154.36	10069.1	10.25
T01-03	13.94	8.69	5	QA	07-Sep-05	23369.43	10668.93	13.94
T01-11	7.7	4.92	2.5	QA	07-Sep-05	22751.05	10309.65	7.64
T01-15	12.75	7.6	4.9	QA	07-Sep-05	22196.02	10171.77	12.75

LOCATION CODE	BOREHOLE DEPTH	SCREEN DEPTH	SCREEN LENGTH	ZONE_OF COMPLETION	DECOMMISSIONED DATE	ORIGINAL EASTING	ORIGINAL NORTHING	WELL DEPTH
T01-16	15.7	10.55	4.9	QA	07-Sep-05	22423.71	10165.72	15.7
T01-17	11	5.7	4.9	QA	07-Sep-05	22749.69	10106.38	11
T01-22	7.9	5.15	2.5	QA	07-Sep-05	21754.89	10305.94	7.9
T99-03	24.5			QA	14-Sep-05	24484.89	9597.82	22.9
T99-05	11.5			QA	07-Sep-05	28506.75	8838.29	11.31
T99-06	10.5			QA	07-Sep-05	27448.07	9173.88	9.23
T99-07	10.5			QA	07-Sep-05	27444.31	9039.02	10.5
T99-10	7.5			QA	07-Sep-05	27441.58	9659.99	7.5

ALL DIMENSIONS IN FEET
QA QUATERNARY ALLUVIUM
KM MANCOS SHALE FORMATION
KD DAKOTA SANDSTONE FORMATION

Appendix E

Groundwater Level Data Since 2000

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Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
0200	10/05/04	7.27	6755.42	31NE93-205	10/12/10	179.84	6760.78
	04/07/05	5.22	6757.47		04/05/11	179.00	6761.62
	10/04/05	5.26	6757.43		10/12/11	179.45	6761.17
	04/05/06	6.90	6755.79		04/25/12	179.25	6761.37
	10/04/06	5.88	6756.81	31SW93-197-2	04/24/00	144.94	6767.10
	04/12/07	6.78	6755.91		07/26/00	144.99	6767.05
	10/10/07	6.44	6756.25		04/10/01	144.57	6767.47
	04/10/08	5.45	6757.24		07/09/01	145.00	6767.04
	10/09/08	5.78	6756.91		10/16/01	145.23	6766.81
	04/09/09	6.92	6755.77		04/03/02	144.84	6767.20
	10/07/09	6.59	6756.10		07/11/02	147.37	6764.67
	04/21/10	5.19	6757.50		10/16/03	159.20	6752.84
	10/12/10	6.40	6756.29	31SW93-197-3	04/24/00	144.60	6767.25
	04/05/11	7.28	6755.41		07/26/00	144.81	6767.04
	10/12/11	6.54	6756.15		04/10/01	144.57	6767.28
	04/25/12	6.97	6755.72		07/09/01	144.76	6767.09
0202	10/04/04	14.71	6771.10		10/16/01	144.86	6766.99
	04/05/05	11.23	6774.58		04/03/02	144.65	6767.20
	10/04/05	14.48	6771.33		07/11/02	145.65	6766.20
	04/04/06	14.81	6771.00		10/16/03	157.90	6753.95
	10/03/06	14.53	6771.28	31SW93-197-4	04/24/00	67.46	6843.95
	04/10/07	14.22	6771.59		07/27/00	67.42	6843.99
	10/10/07	15.05	6770.76		04/10/01	71.09	6840.32
	04/08/08	10.25	6775.56		07/09/01	71.04	6840.37
	10/08/08	14.00	6771.81		10/10/01	71.05	6840.36
	04/08/09	15.61	6770.20		04/03/02	70.95	6840.46
	10/08/09	15.72	6770.09		07/11/02	Dry	(6840.00)
	04/20/10	8.00	6777.81		10/09/02	70.87	6840.54
	10/12/10	15.44	6770.37		10/16/03	70.80	6840.61
	04/04/11	15.62	6770.19	31SW93-197-5	04/24/00	43.16	6866.08
	10/12/11	15.68	6770.13		07/26/00	43.59	6865.65
	04/24/12	14.71	6771.10		04/10/01	43.39	6865.85
31NE93-205	01/13/00	177.88	6762.74		07/09/01	43.53	6865.71
	04/14/00	177.10	6763.52		10/10/01	43.82	6865.42
	08/02/00	77.47	6863.15		04/03/02	43.68	6865.56
	04/10/01	176.88	6763.74		07/11/02	43.95	6865.29
	07/09/01	177.41	6763.21		10/09/02	44.04	6865.20
	10/15/01	177.40	6763.22		10/16/03	44.00	6865.24
	10/16/03	196.30	6744.32	31SW93-200-1	01/13/00	116.98	6781.31
	04/07/05	186.73	6753.89		04/14/00	116.42	6781.87
	10/06/05	184.39	6756.23		08/02/00	116.81	6781.48
	04/28/06	182.33	6758.29		04/10/01	102.20	6781.68
	10/04/06	182.82	6757.80		07/10/01	102.41	6781.47
	04/12/07	181.03	6759.59		10/10/01	102.52	6781.36
	10/10/07	182.02	6758.60		02/06/02	102.43	6781.45
	04/16/08	180.40	6760.22		04/04/02	102.38	6781.50
	04/07/09	180.00	6760.62		07/11/02	106.03	6777.85
	10/09/09	180.48	6760.14		10/09/02	113.25	6770.63
	04/21/10	179.20	6761.42		10/15/03	119.10	6764.78

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
31SW93-200-2	01/13/00	114.36	6783.00	82-07	10/06/03	13.72	6771.98
	04/14/00	113.91	6783.45		04/20/04	11.28	6774.42
	08/02/00	114.26	6783.10	82-08	01/12/00	13.14	6774.26
	04/10/01	100.20	6783.18		04/14/00	12.37	6775.03
	07/10/01	100.72	6782.66		07/28/00	12.85	6774.55
	10/10/01	100.73	6782.65		03/06/01	13.00	6774.40
	02/06/02	100.86	6782.52		03/27/01	13.00	6774.40
	04/04/02	100.82	6782.56		04/10/01	12.99	6774.41
	07/11/02	101.11	6782.27		07/19/01	13.02	6774.38
	10/09/02	100.35	6783.03		10/10/01	12.99	6774.41
	10/15/03	102.00	6781.38		10/17/01	13.02	6774.38
31SW93-200-3	01/13/00	20.61	6877.17		01/30/02	13.30	6774.10
	04/14/00	21.74	6876.04		04/02/02	12.88	6774.52
	08/02/00	20.63	6877.15		07/10/02	13.22	6774.18
	04/10/01	5.17	6878.82		10/02/02	13.36	6774.04
	07/10/01	5.37	6878.62		04/09/03	12.79	6774.61
	10/10/01	4.88	6879.11		10/07/03	12.79	6774.61
	02/06/02	6.28	6877.71		04/14/04	12.53	6774.87
	04/04/02	6.71	6877.28		10/04/04	12.70	6774.70
	07/11/02	6.19	6877.80		04/06/05	11.55	6775.85
	10/09/02	6.24	6877.75		10/04/05	12.92	6774.48
	10/15/03	6.30	6877.69		04/05/06	12.88	6774.52
31SW93-200-4	01/13/00	20.43	6877.28		10/03/06	12.93	6774.47
	04/14/00	20.80	6876.91		04/10/07	12.87	6774.53
	08/02/00	20.55	6877.16		10/10/07	13.00	6774.40
	04/10/01	4.30	6878.89		04/08/08	10.69	6776.71
	07/10/01	4.17	6879.02		10/08/08	13.01	6774.39
	10/10/01	4.09	6879.10		04/08/09	13.00	6774.40
	02/06/02	5.45	6877.74		10/07/09	Dry	(6765.30)
	04/04/02	5.87	6877.32		10/07/09	13.18	6774.22
	07/11/02	5.53	6877.66		04/21/10	8.84	6778.56
	10/09/02	5.46	6877.73		10/12/10	13.00	6774.40
	04/01/03	6.00	6877.19		04/05/11	13.00	6774.40
	10/06/03	5.42	6877.77		10/11/11	13.10	6774.30
	10/16/03	70.80	6812.39		04/24/12	13.12	6774.28
	04/20/04	5.72	6877.47	82-20	01/13/00	18.19	6871.51
82-07	01/12/00	Dry	(6771.50)		04/14/00	17.86	6871.84
	04/14/00	12.15	6773.55		08/02/00	20.32	6869.38
	07/27/00	13.36	6772.34		04/10/01	15.81	6873.89
	03/06/01	Dry	(6771.50)		07/10/01	15.91	6873.79
	03/27/01	Dry	(6771.50)		10/11/01	16.85	6872.85
	04/09/01	Dry	(6771.50)		02/06/02	16.14	6873.56
	07/18/01	Dry	(6771.50)		04/04/02	15.61	6874.09
	10/11/01	Dry	(6771.50)		07/11/02	19.41	6870.29
	01/30/02	Dry	(6771.50)		10/09/02	20.74	6868.96
	04/02/02	Dry	(6771.50)	83-70	01/13/00	37.79	6763.12
	07/10/02	Dry	(6771.50)		04/18/00	37.36	6763.55
	10/02/02	Dry	(6771.50)		07/24/00	37.54	6763.37
	04/07/03	12.44	6773.26		04/09/01	37.27	6763.64

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
83-70	07/09/01	37.58	6763.33	88-85	04/04/06	4.16	6792.93
	10/16/01	37.82	6763.09		10/03/06	4.02	6793.07
	02/07/02	37.70	6763.21		04/10/07	4.52	6792.57
	04/03/02	37.36	6763.55		10/09/07	4.57	6792.52
	07/11/02	39.93	6760.98		04/08/08	2.69	6794.40
	10/07/02	44.71	6756.20		10/08/08	4.21	6792.88
	04/02/03	41.82	6759.09		04/07/09	4.79	6792.30
	10/07/03	52.26	6748.65		10/07/09	6.37	6790.72
	04/20/04	44.77	6756.14		04/19/10	2.63	6794.46
	10/04/04	53.90	6747.01		10/12/10	3.50	6793.59
	04/07/05	46.31	6754.60		04/04/11	3.81	6793.28
	04/27/06	42.52	6758.39		10/11/11	3.83	6793.26
	10/09/08	41.29	6759.62		04/24/12	4.75	6792.34
	04/05/11	12.60	6788.31	92-01	10/15/03	19.80	6961.71
88-85	01/10/00	8.55	6789.28	92-02	10/15/03	187.50	6797.88
	01/12/00	7.97	6789.86	92-03	10/15/03	10.69	6955.27
	02/09/00	6.91	6790.92	92-04	10/15/03	184.40	6780.61
	02/29/00	7.00	6790.83	92-05	04/14/00	16.57	6878.21
	04/10/00	6.25	6791.58		07/25/00	17.56	6877.22
	04/13/00	6.25	6791.58		04/11/01	14.84	6879.94
	07/27/00	7.60	6790.23		07/20/01	17.45	6877.33
	08/15/00	8.02	6789.81		10/10/01	17.65	6877.13
	10/16/00	7.95	6789.62		10/15/03	17.85	6876.93
	01/23/01	7.07	6790.02	92-06	01/13/00	109.37	6785.58
	01/30/01	7.18	6789.91		04/14/00	108.75	6786.20
	03/01/01	6.57	6790.52		07/25/00	109.25	6785.70
	03/14/01	5.72	6791.37		04/10/01	108.62	6786.33
	03/27/01	6.08	6791.01		07/09/01	109.06	6785.89
	04/09/01	6.25	6790.84		10/10/01	109.20	6785.75
	07/19/01	5.87	6791.22		10/15/03	125.25	6769.70
	10/15/01	5.75	6791.34	92-07	04/10/00	18.71	6787.14
	10/17/01	5.75	6791.34		04/18/00	18.65	6787.20
	01/29/02	6.40	6790.69		07/27/00	20.00	6785.85
	02/07/02	6.35	6790.74		10/16/00	18.74	6786.91
	04/03/02	5.62	6791.47		01/23/01	17.40	6786.62
	07/09/02	6.74	6790.35		01/30/01	17.40	6786.62
	09/30/02	7.56	6789.53		03/06/01	17.23	6786.79
	01/14/03	5.71	6791.38		03/27/01	17.18	6786.84
	04/02/03	4.26	6792.83		04/09/01	17.18	6786.84
	04/08/03	4.38	6792.71		07/19/01	16.81	6787.21
	07/09/03	5.90	6791.19		10/16/01	16.82	6787.20
	07/16/03	5.83	6791.26		01/29/02	16.92	6787.10
	10/07/03	4.35	6792.74		04/02/02	16.79	6787.23
	01/22/04	5.56	6791.53		07/09/02	16.88	6787.14
	04/15/04	3.88	6793.21		09/30/02	17.05	6786.97
	10/07/04	4.62	6792.47		01/14/03	16.79	6787.23
	04/07/05	2.79	6794.30		04/08/03	16.49	6787.53
	10/04/05	4.23	6792.86		07/09/03	16.74	6787.28
	10/31/05	4.43	6792.66		10/07/03	16.52	6787.50

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
92-07	01/22/04	16.84	6787.18	92-09	01/13/00	10.48	6722.81
	04/15/04	16.35	6787.67		04/12/00	10.21	6723.08
	10/04/04	16.70	6787.32		07/25/00	11.84	6721.45
	04/05/05	16.43	6787.59		04/10/01	10.39	6722.90
	10/04/05	16.70	6787.32		07/09/01	12.11	6721.18
	04/04/06	16.61	6787.41		10/16/01	11.53	6721.76
	10/03/06	16.65	6787.37		02/06/02	10.86	6722.43
	04/10/07	16.79	6787.23		04/03/02	10.90	6722.39
	10/09/07	16.75	6787.27		04/03/02	10.81	6722.48
	04/08/08	16.52	6787.50		07/11/02	12.70	6720.59
	10/08/08	16.74	6787.28		10/08/02	12.41	6720.88
	04/08/09	16.85	6787.17		04/07/03	10.45	6722.84
	04/08/09	16.83	6787.19		10/07/03	12.41	6720.88
	10/08/09	17.03	6786.99		04/16/04	9.74	6723.55
	04/20/10	16.42	6787.60		10/05/04	11.61	6721.68
	10/12/10	16.70	6787.32		04/07/05	8.75	6724.54
	04/04/11	16.63	6787.39		10/04/05	9.45	6723.84
	10/11/11	16.83	6787.19		04/26/06	10.68	6722.61
	04/24/12	16.87	6787.15		10/04/06	9.49	6723.80
92-08	01/10/00	16.12	6759.56		04/09/07	6.95	6726.34
	04/13/00	10.15	6765.53		10/10/07	10.59	6722.70
	07/26/00	10.47	6765.21		04/10/08	8.91	6724.38
	01/29/01	15.80	6759.88		10/09/08	8.71	6724.58
	04/10/01	13.51	6762.17		04/07/09	9.95	6723.34
	07/19/01	12.35	6763.33		04/09/09	9.93	6723.36
	10/16/01	13.55	6762.13		10/06/09	10.68	6722.61
	02/06/02	13.89	6761.79		04/20/10	8.36	6724.93
	04/02/02	12.50	6763.18		10/13/10	9.61	6723.68
	07/11/02	13.71	6761.97		04/05/11	10.30	6722.99
	10/07/02	15.64	6760.04		10/12/11	11.24	6722.05
	04/09/03	10.24	6765.44		04/25/12	11.02	6722.27
	10/06/03	12.10	6763.58	92-10	01/13/00	12.86	6720.94
	04/14/04	9.24	6766.44		04/19/00	12.68	6721.12
	10/07/04	11.35	6764.33		07/25/00	13.67	6720.13
	04/06/05	8.24	6767.44		04/10/01	12.50	6721.30
	10/04/05	9.95	6765.73		07/09/01	13.55	6720.25
	04/04/06	11.40	6764.28		10/16/01	13.35	6720.45
	10/04/06	9.90	6765.78		02/06/02	12.90	6720.90
	04/10/07	10.86	6764.82		04/03/02	12.85	6720.95
	10/10/07	11.31	6764.37		07/11/02	14.27	6719.53
	04/08/08	8.33	6767.35		10/08/02	14.28	6719.52
	10/08/08	10.06	6765.62		04/01/03	13.12	6720.68
	04/08/09	12.49	6763.19		10/07/03	14.95	6718.85
	10/07/09	11.83	6763.85		04/20/04	13.38	6720.42
	04/20/10	7.45	6768.23		10/05/04	14.32	6719.48
	10/12/10	11.25	6764.43		04/06/05	12.13	6721.67
	04/04/11	12.77	6762.91		10/04/05	12.43	6721.37
	10/12/11	12.30	6763.38		04/26/06	12.68	6721.12
	04/25/12	9.33	6766.35		10/04/06	12.86	6720.94

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
92-10	04/10/07	12.45	6721.35	92-12	01/13/00	56.23	6758.82
	10/10/07	12.96	6720.84		04/18/00	53.38	6761.67
	04/10/08	11.79	6722.01		08/02/00	55.20	6759.85
	10/09/08	11.76	6722.04		04/09/01	53.80	6761.25
	04/07/09	11.86	6721.94		07/09/01	52.22	6762.83
	10/06/09	12.28	6721.52		10/16/01	51.18	6763.87
	04/20/10	10.94	6722.86		02/07/02	54.60	6760.45
	10/13/10	10.76	6723.04		04/03/02	53.17	6761.88
	04/05/11	12.04	6721.76		07/11/02	51.91	6763.14
	10/12/11	12.47	6721.33		10/02/02	54.29	6760.76
92-11	01/12/00	19.55	6794.18		04/01/03	58.06	6756.99
	02/29/00	19.49	6794.24		10/07/03	61.50	6753.55
	04/18/00	19.31	6794.42		04/20/04	60.53	6754.52
	08/02/00	19.81	6793.92		10/05/04	62.29	6752.76
	08/15/00	19.95	6793.78		04/06/05	61.38	6753.67
	10/16/00	19.56	6794.17		10/04/05	58.63	6756.42
	01/23/01	19.59	6794.14		04/27/06	56.20	6758.85
	01/30/01	19.68	6794.05		10/04/06	55.95	6759.10
	03/27/01	19.14	6794.59		04/10/07	54.82	6760.23
	04/09/01	19.21	6794.52		10/10/07	55.05	6760.00
	07/11/01	18.83	6794.90		04/14/08	54.00	6761.05
	10/15/01	18.85	6794.88		10/07/08	54.24	6760.81
	01/30/02	19.14	6794.59		04/08/09	53.33	6761.72
	04/02/02	18.89	6794.84		10/08/09	53.55	6761.50
	07/10/02	18.91	6794.82		04/21/10	52.71	6762.34
	10/02/02	19.31	6794.42		10/12/10	52.72	6762.33
	01/14/03	18.93	6794.80		04/05/11	52.28	6762.77
	04/09/03	18.17	6795.56		10/12/11	52.51	6762.54
	07/08/03	18.96	6794.77		04/24/12	52.00	6763.05
	10/07/03	18.23	6795.50	92-13	01/13/00	106.48	6788.23
	01/22/04	18.88	6794.85		04/14/00	106.35	6788.36
	04/15/04	17.68	6796.05		07/25/00	106.57	6788.14
	10/05/04	18.47	6795.26		04/10/01	106.10	6788.61
	04/05/05	15.62	6798.11		07/09/01	106.51	6788.20
	10/04/05	18.22	6795.51		10/10/01	106.46	6788.25
	04/27/06	18.47	6795.26		10/15/03	107.60	6787.11
	10/03/06	18.02	6795.71	93-01	01/13/00	106.92	6783.06
	04/11/07	18.14	6795.59		04/14/00	106.38	6783.60
	10/10/07	18.51	6795.22		08/02/00	106.80	6783.18
	04/08/08	15.66	6798.07		04/10/01	106.22	6783.76
	10/09/08	18.48	6795.25		07/10/01	106.70	6783.28
	04/08/09	18.65	6795.08		10/09/01	106.65	6783.33
	04/08/09	18.62	6795.11		02/06/02	106.80	6783.18
	10/08/09	19.20	6794.53		04/04/02	106.70	6783.28
	04/21/10	14.60	6799.13		07/11/02	110.51	6779.47
	10/12/10	18.11	6795.62		10/09/02	117.55	6772.43
	04/04/11	17.64	6796.09		04/01/03	111.85	6778.13
	10/12/11	18.19	6795.54		10/06/03	122.65	6767.33
	04/24/12	18.80	6794.93		10/15/03	122.90	6767.08

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
93-01	04/20/04	114.63	6775.35	95-02	07/11/02	4.15	6674.84
	10/08/04	123.76	6766.22		10/08/02	4.00	6674.99
	04/07/05	122.90	6767.08		10/05/04	3.62	6675.37
	10/05/05	113.70	6776.28		04/06/05	2.25	6676.74
	10/02/06	111.78	6778.20		10/04/05	3.27	6675.72
	04/10/07	110.74	6779.24		04/26/06	2.61	6676.38
	10/09/07	112.45	6777.53		10/04/06	3.00	6675.99
	04/10/08	109.99	6779.99		04/10/07	2.67	6676.32
	10/08/08	110.22	6779.76		10/10/07	3.25	6675.74
	04/07/09	109.63	6780.35		04/10/08	2.08	6676.91
	10/07/09	109.42	6780.56		10/07/08	3.41	6675.58
	04/20/10	108.98	6781.00		04/07/09	2.68	6676.31
	10/13/10	109.23	6780.75		10/06/09	3.35	6675.64
	04/05/11	108.62	6781.36		04/21/10	1.91	6677.08
	10/11/11	108.62	6781.36		10/13/10	3.12	6675.87
95-01	01/13/00	5.27	6670.56		04/05/11	2.88	6676.11
	04/10/00	5.17	6670.66		10/12/11	3.05	6675.94
	07/25/00	5.62	6670.21		04/25/12	2.70	6676.29
	04/10/01	5.00	6670.83	95-03	01/13/00	2.71	6702.07
	07/09/01	5.46	6670.37		04/10/00	2.38	6702.40
	10/17/01	5.47	6670.36		07/25/00	3.94	6700.84
	02/06/02	5.05	6670.78		04/10/01	2.18	6702.60
	04/03/02	5.09	6670.74		07/09/01	3.57	6701.21
	07/11/02	5.72	6670.11		10/11/01	3.25	6701.53
	10/08/02	5.51	6670.32		04/03/02	2.59	6702.19
	10/05/04	5.04	6670.79		07/11/02	3.91	6700.87
	04/06/05	4.05	6671.78		10/08/02	3.57	6701.21
	10/04/05	4.64	6671.19		04/01/03	2.33	6702.45
	04/26/06	4.42	6671.41		10/07/03	3.46	6701.32
	10/04/06	4.70	6671.13		04/20/04	2.32	6702.46
	04/10/07	4.55	6671.28		10/05/04	2.92	6701.86
	10/10/07	5.02	6670.81		04/06/05	1.70	6703.08
	04/10/08	3.87	6671.96		10/04/05	2.65	6702.13
	10/09/08	5.28	6670.55		04/26/06	2.18	6702.60
	04/07/09	4.65	6671.18		10/04/06	2.49	6702.29
	10/06/09	5.23	6670.60		04/10/07	1.92	6702.86
	10/06/09	5.17	6670.66		10/10/07	2.56	6702.22
	04/20/10	4.01	6671.82		04/10/08	1.19	6703.59
	10/13/10	4.95	6670.88		10/09/08	2.30	6702.48
	04/05/11	4.60	6671.23		04/07/09	1.93	6702.85
	10/12/11	4.86	6670.97		10/05/09	3.61	6701.17
95-02	01/13/00	3.59	6675.40		10/06/09	2.36	6702.42
	04/12/00	3.45	6675.54		04/20/10	0.99	6703.79
	07/25/00	4.14	6674.85		10/13/10	2.19	6702.59
	04/10/01	3.30	6675.69		04/05/11	1.76	6703.02
	07/09/01	3.97	6675.02		10/12/11	2.19	6702.59
	10/17/01	3.94	6675.05	95-04	01/13/00	3.65	6702.59
	02/06/02	3.40	6675.59		04/10/00	3.36	6702.88
	04/03/02	3.33	6675.66		07/25/00	4.63	6701.61

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
95-04	04/10/01	3.15	6703.09	95-06	04/25/12	70.45	6754.46
	07/09/01	4.28	6701.96	95-07	01/13/00	70.61	6812.73
	10/11/01	4.18	6702.06		04/14/00	70.49	6812.85
	02/06/02	3.43	6702.81		08/02/00	70.29	6813.05
	04/03/02	3.36	6702.88		04/10/01	70.27	6813.07
	07/11/02	4.54	6701.70		07/09/01	70.24	6813.10
	10/08/02	4.29	6701.95		10/16/01	70.32	6813.02
	04/01/03	3.16	6703.08		10/15/03	70.50	6812.84
	10/07/03	4.26	6701.98		10/05/04	70.61	6812.73
	04/20/04	3.22	6703.02		04/07/05	70.20	6813.14
	10/05/04	3.88	6702.36		10/06/05	70.39	6812.95
	04/06/05	2.49	6703.75		04/28/06	70.40	6812.94
	10/04/05	3.39	6702.85		10/04/06	69.82	6813.52
	04/26/06	2.86	6703.38		04/11/07	70.25	6813.09
	10/04/06	3.35	6702.89		10/10/07	70.45	6812.89
	04/10/07	2.59	6703.65		04/09/08	69.81	6813.53
	10/10/07	3.34	6702.90		10/07/08	70.50	6812.84
	04/10/08	2.02	6704.22		04/07/09	70.39	6812.95
	10/07/08	3.14	6703.10		10/09/09	70.20	6813.14
	04/07/09	2.49	6703.75		04/19/10	70.00	6813.34
	10/06/09	3.19	6703.05		10/12/10	70.40	6812.94
	04/20/10	1.77	6704.47		04/05/11	70.54	6812.80
	10/13/10	2.99	6703.25		10/12/11	70.27	6813.07
	04/05/11	2.49	6703.75		04/25/12	70.35	6812.99
	10/12/11	3.00	6703.24		04/25/12	70.35	6812.99
	04/25/12	2.70	6703.54	95-08	01/13/00	128.17	6713.34
95-06	01/13/00	69.78	6755.13		04/12/00	128.00	6713.51
	04/19/00	69.01	6755.90		08/02/00	128.50	6713.01
	07/25/00	69.01	6755.90		04/10/01	127.65	6713.86
	04/10/01	69.26	6755.65		07/09/01	128.30	6713.21
	07/09/01	69.40	6755.51		10/16/01	128.47	6713.04
	10/17/01	69.80	6755.11		02/06/02	128.11	6713.40
	10/15/03	79.15	6745.76		04/03/02	128.03	6713.48
	10/05/04	79.59	6745.32		07/11/02	129.27	6712.24
	04/07/05	74.84	6750.07		10/08/02	129.31	6712.20
	10/06/05	73.70	6751.21		10/15/03	130.20	6711.31
	04/26/06	72.55	6752.36		10/05/04	129.98	6711.53
	10/04/06	72.49	6752.42		04/07/05	128.51	6713.00
	04/11/07	71.96	6752.95		10/04/05	128.44	6713.07
	10/10/07	72.55	6752.36		04/26/06	128.19	6713.32
	04/09/08	70.99	6753.92		10/05/06	128.60	6712.91
	10/07/08	71.55	6753.36		04/11/07	128.10	6713.41
	04/07/09	71.26	6753.65		10/10/07	128.63	6712.88
	10/09/09	71.11	6753.80		04/09/08	127.57	6713.94
	04/21/10	69.79	6755.12		10/07/08	127.97	6713.54
	10/13/10	70.86	6754.05		10/06/09	127.86	6713.65
	04/05/11	70.67	6754.24		04/20/10	127.05	6714.46
	10/12/11	70.80	6754.11		10/13/10	127.72	6713.79
	04/25/12	70.41	6754.50		04/05/11	127.54	6713.97

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
95-08	10/12/11	127.87	6713.64	MW00-02	02/27/01	9.43	6873.83
	04/25/12	127.73	6713.78		04/09/01	8.71	6874.55
AEC 6	07/27/00	159.68			07/12/01	9.30	6873.96
GB1126T	04/14/00	30.75			10/11/01	10.11	6873.15
	08/01/00	33.40			02/06/02	9.37	6873.89
GB1227T	01/13/00	Dry			04/03/02	8.80	6874.46
	04/14/00	Dry			07/09/02	12.55	6870.71
	08/01/00	Dry			10/09/02	13.92	6869.34
GB1690T	01/13/00	Dry			04/07/03	8.97	6874.29
	04/14/00	Dry			10/08/03	11.31	6871.95
	08/01/00	Dry			04/20/04	7.55	6875.71
GB2820T	01/13/00	23.17			10/06/04	9.82	6873.44
	04/14/00	24.10			04/07/05	3.76	6879.50
	08/01/00	Dry			10/05/05	7.53	6875.73
GB3127T	01/13/00	Dry			04/03/06	6.00	6877.26
	04/14/00	6.69			10/02/06	7.52	6875.74
	08/01/00	Dry			04/11/07	6.38	6876.88
MW00-01	08/01/00	11.95	6870.82		10/08/07	8.43	6874.83
	10/20/00	10.03	6872.74		04/10/08	4.19	6879.07
	02/06/01	9.84	6872.93		10/07/08	8.96	6874.30
	02/27/01	9.24	6873.53		04/07/09	7.41	6875.85
	04/09/01	8.13	6874.64		10/09/09	11.04	6872.22
	07/11/01	9.75	6873.02		10/11/10	8.52	6874.74
	10/08/01	10.40	6872.37		04/05/11	6.64	6876.62
	02/06/02	9.73	6873.04		10/12/11	9.12	6874.14
	04/03/02	9.30	6873.47		04/23/12	7.64	6875.62
	07/08/02	11.47	6871.30	MW00-03	08/02/00	10.65	6842.50
	10/07/02	11.51	6871.26		10/20/00	11.02	6842.13
	04/07/03	9.00	6873.77		04/09/01	10.42	6842.73
	10/07/03	10.64	6872.13		07/10/01	10.45	6842.70
	04/12/04	7.32	6875.45		10/15/01	11.02	6842.13
	10/06/04	9.52	6873.25		02/06/02	12.27	6840.88
	04/05/05	3.60	6879.17		04/03/02	12.65	6840.50
	10/05/05	8.31	6874.46		07/11/02	13.32	6839.83
	04/28/06	9.62	6873.15		10/09/02	13.49	6839.66
	10/02/06	10.30	6872.47		04/09/03	12.16	6840.99
	04/11/07	9.41	6873.36		10/08/03	13.58	6839.57
	10/08/07	10.99	6871.78		04/20/04	12.37	6840.78
	04/10/08	6.29	6876.48		10/07/04	13.63	6839.52
	10/08/08	11.46	6871.31		04/07/05	8.41	6844.74
	04/06/09	10.30	6872.47		10/06/05	10.82	6842.33
	10/06/09	12.81	6869.96		04/03/06	8.27	6844.88
	04/20/10	5.56	6877.21		10/02/06	10.22	6842.93
	10/11/10	11.21	6871.56		04/11/07	10.48	6842.67
	04/05/11	9.50	6873.27		10/09/07	10.83	6842.32
	10/11/11	11.64	6871.13		04/15/08	7.00	6846.15
	04/24/12	10.33	6872.44		10/07/08	8.20	6844.95
MW00-02	08/02/00	13.15	6870.11		04/07/09	8.41	6844.74
	02/06/01	9.77	6873.49		10/09/09	9.83	6843.32

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
MW00-03	04/20/10	6.25	6846.90	MW00-07	03/06/01	21.07	6769.78
	10/11/10	8.51	6844.64		03/27/01	20.95	6769.90
	04/05/11	8.77	6844.38		04/10/01	21.05	6769.80
	10/10/11	10.95	6842.20		07/20/01	20.89	6769.96
	04/23/12	11.13	6842.02		10/16/01	20.97	6769.88
MW00-04	08/02/00	9.54	6797.61		01/30/02	20.56	6770.29
	08/15/00	10.26	6796.89		04/02/02	20.70	6770.15
	10/16/00	9.10	6798.05		04/02/02	20.70	6770.15
	01/23/01	9.78	6797.37		07/10/02	21.70	6769.15
	03/06/01	9.70	6797.45		10/02/02	21.29	6769.56
	04/09/01	9.40	6797.75		04/09/03	19.19	6771.66
	07/10/01	9.55	6797.60		10/06/03	20.49	6770.36
	10/10/01	9.86	6797.29		04/14/04	17.85	6773.00
	02/06/02	9.94	6797.21		10/04/04	20.31	6770.54
	04/04/02	8.97	6798.18		04/06/05	16.59	6774.26
	07/11/02	9.98	6797.17		10/04/05	20.01	6770.84
	10/09/02	9.72	6797.43		04/03/06	20.49	6770.36
MW00-06	08/02/00	16.05	6777.09		10/03/06	20.03	6770.82
	01/30/01	16.48	6776.66		04/10/07	19.75	6771.10
	03/27/01	16.15	6776.99		10/10/07	20.56	6770.29
	04/10/01	16.19	6776.95		04/08/08	15.61	6775.24
	07/19/01	15.90	6777.24		10/08/08	19.18	6771.67
	10/16/01	15.91	6777.23		04/08/09	20.93	6769.92
	01/30/02	16.08	6777.06		10/08/09	20.94	6769.91
	04/02/02	15.76	6777.38		04/19/10	13.14	6777.71
	07/10/02	16.18	6776.96		10/12/10	20.75	6770.10
	10/02/02	16.40	6776.74		04/05/11	20.81	6770.04
	04/07/03	15.40	6777.74		10/12/11	20.90	6769.95
	07/09/03	15.99	6777.15	MW00-08	08/01/00	Dry	(6793.87)
	10/06/03	15.34	6777.80		08/15/00	14.75	6794.31
	04/14/04	15.21	6777.93		10/16/00	10.09	6798.97
	10/07/04	15.15	6777.99		01/23/01	12.21	6796.85
	04/06/05	15.11	6778.03		03/06/01	11.65	6797.41
	10/04/05	15.54	6777.60		04/09/01	14.77	6794.29
	04/04/06	15.48	6777.66		07/10/01	11.98	6797.08
	10/03/06	15.46	6777.68		10/10/01	11.84	6797.22
	04/10/07	15.28	6777.86		02/06/02	11.84	6797.22
	10/09/07	15.46	6777.68		04/04/02	11.52	6797.54
	04/08/08	14.66	6778.48		07/11/02	11.92	6797.14
	10/08/08	15.94	6777.20		10/09/02	12.10	6796.96
	04/08/09	16.06	6777.08	P92-01	01/13/00	13.70	6734.86
	10/08/09	16.22	6776.92		04/12/00	Dry	(6734.60)
	04/20/10	12.63	6780.51		07/25/00	13.75	6734.81
	10/12/10	15.82	6777.32		04/10/01	Dry	(6734.60)
	04/05/11	15.88	6777.26		07/09/01	Dry	(6734.60)
	10/12/11	15.91	6777.23		10/10/01	Dry	(6734.60)
	04/24/12	16.09	6777.05		02/06/02	Dry	(6734.60)
MW00-07	08/02/00	20.32	6770.53		04/03/02	13.75	6734.81
	01/30/01	21.26	6769.59		07/11/02	Dry	(6734.60)

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
P92-01	10/08/02	Dry	(6734.60)	P92-05	04/13/00	7.95	6781.43
P92-02	01/13/00	12.60	6724.42		07/26/00	7.30	6782.08
	04/12/00	12.38	6724.64		04/10/01	8.51	6780.87
	07/25/00	13.37	6723.65		07/09/01	6.54	6782.84
	04/10/01	12.33	6724.69		10/16/01	9.40	6779.98
	07/09/01	14.10	6722.92		02/06/02	9.33	6780.05
	10/17/01	13.01	6724.01		04/03/02	9.55	6779.83
	02/06/02	12.96	6724.06		07/11/02	5.65	6783.73
	04/03/02	13.00	6724.02		10/07/02	9.47	6779.91
	04/03/02	13.03	6723.99	P92-06	01/12/00	15.50	6759.23
	07/11/02	14.82	6722.20		04/13/00	9.80	6764.93
	10/08/02	15.03	6721.99		07/26/00	10.05	6764.68
	04/07/03	12.20	6724.82		04/10/01	12.77	6761.96
	10/07/03	15.13	6721.89		07/19/01	11.98	6762.75
	04/20/04	11.88	6725.14		10/16/01	12.91	6761.82
	10/05/04	13.64	6723.38		02/06/02	13.35	6761.38
	04/06/05	10.65	6726.37		04/02/02	11.90	6762.83
	10/04/05	11.20	6725.82		07/11/02	13.35	6761.38
	04/26/06	12.43	6724.59		10/07/02	15.03	6759.70
	10/04/06	11.20	6725.82		04/09/03	9.94	6764.79
	04/10/07	11.87	6725.15		07/09/03	12.30	6762.43
	10/10/07	12.26	6724.76		10/06/03	11.67	6763.06
	04/09/08	10.69	6726.33		04/14/04	9.01	6765.72
	04/07/09	11.66	6725.36		10/04/04	11.16	6763.57
	10/06/09	11.74	6725.28		04/06/05	8.01	6766.72
	04/20/10	9.54	6727.48		10/04/05	9.55	6765.18
	10/13/10	11.00	6726.02		04/04/06	10.90	6763.83
	04/05/11	11.97	6725.05		10/03/06	9.76	6764.97
	10/12/11	12.71	6724.31		04/10/07	10.55	6764.18
	04/25/12	13.00	6724.02		10/10/07	10.85	6763.88
P92-03	01/13/00	9.89	6729.60		04/08/08	8.22	6766.51
	04/12/00	9.66	6729.83		10/08/08	9.61	6765.12
	07/25/00	9.16	6730.33		04/08/09	11.92	6762.81
	04/11/01	15.24	6724.25		10/07/09	11.36	6763.37
	07/09/01	9.56	6729.93		04/20/10	7.70	6767.03
	10/17/01	9.73	6729.76		10/12/10	10.75	6763.98
	02/06/02	10.33	6729.16		04/04/11	12.33	6762.40
	04/03/02	10.20	6729.29		10/12/11	11.81	6762.92
	04/03/02	10.29	6729.20		04/25/12	9.69	6765.04
	07/11/02	10.15	6729.34	P92-07	01/12/00	12.21	6805.70
	10/08/02	10.78	6728.71		04/14/00	10.28	6807.63
P92-04	01/10/00	23.49	6792.41		08/02/00	11.54	6806.37
	04/13/00	22.56	6793.34		03/05/01	9.75	6807.33
	07/26/00	23.15	6792.75		03/27/01	8.75	6808.33
	04/10/01	22.53	6793.37		04/10/01	8.65	6808.43
	07/09/01	23.18	6792.72		07/09/01	9.61	6807.47
	10/16/01	24.00	6791.90		10/16/01	12.50	6804.58
	07/11/02	24.58	6791.32	P92-09	01/11/00	14.88	6821.33
P92-05	01/11/00	8.58	6780.80		04/13/00	14.60	6821.61

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
P92-09	07/28/00	14.35	6821.86	PW-05	01/10/00	29.90	6782.60
	03/05/01	13.21	6821.98		02/09/00	29.83	6782.67
	03/27/01	12.98	6822.21		02/29/00	29.86	6782.64
	04/10/01	13.10	6822.09		04/10/00	29.91	6782.59
	07/09/01	13.73	6821.46		08/15/00	28.77	6782.53
	10/17/01	15.17	6820.02		10/16/00	28.85	6782.45
	04/03/02	15.98	6819.21		01/22/01	Dry	(6782.16)
	07/11/02	Dry	(6819.97)		03/06/01	28.82	6782.48
	10/08/02	Dry	(6819.97)		03/27/01	26.82	6784.48
PW-01	01/10/00	30.69	6784.60		04/09/01	28.80	6782.50
	02/09/00	30.50	6784.79	PW-06	01/10/00	26.72	6782.44
	02/29/00	30.53	6784.76		02/09/00	26.71	6782.45
	04/10/00	30.47	6784.82		02/29/00	26.66	6782.50
	08/15/00	28.51	6784.74		04/10/00	26.77	6782.39
	10/16/00	28.36	6784.89		08/15/00	24.77	6782.33
	01/22/01	28.55	6784.70		10/16/00	24.68	6782.42
	03/06/01	28.37	6784.88		01/22/01	Dry	(6781.72)
	03/27/01	20.34	6792.91		03/06/01	24.66	6782.44
	04/09/01	28.37	6784.88		03/27/01	24.62	6782.48
PW-02	01/10/00	21.96	6786.12		04/09/01	24.75	6782.35
	02/09/00	21.61	6786.47	PW-07	01/10/00	Dry	(6783.84)
	02/29/00	21.68	6786.40		02/09/00	Dry	(6783.84)
	04/10/00	21.53	6786.55		02/29/00	Dry	(6783.84)
	08/15/00	20.12	6786.33		04/10/00	Dry	(6783.84)
	10/16/00	20.08	6786.37		08/15/00	Dry	(6783.84)
	01/22/01	20.14	6786.31		10/17/00	Dry	(6783.84)
	03/06/01	19.93	6786.52		01/22/01	Dry	(6783.84)
	03/27/01	16.86	6789.59		03/06/01	Dry	(6783.84)
	04/09/01	19.96	6786.49		03/27/01	Dry	(6783.84)
PW-03	01/10/00	15.71	6787.18		04/09/01	Dry	(6783.84)
	02/09/00	15.49	6787.40	PW-08	01/10/00	Dry	(6783.29)
	02/29/00	15.45	6787.44		02/09/00	Dry	(6783.29)
	04/10/00	15.30	6787.59		02/29/00	Dry	(6783.29)
	08/15/00	14.22	6787.38		04/10/00	Dry	(6783.29)
	10/16/00	14.07	6787.53		08/15/00	Dry	(6783.29)
	01/22/01	14.16	6787.44		10/16/00	Dry	(6783.29)
	03/06/01	14.00	6787.60		01/22/01	Dry	(6783.29)
	03/27/01	13.86	6787.74		03/06/01	Dry	(6783.29)
	04/09/01	13.95	6787.65		03/27/01	Dry	(6783.29)
PW-04	01/10/00	34.53	6783.21		04/09/01	Dry	(6783.29)
	02/09/00	34.45	6783.29	PW-09	01/10/00	19.47	6782.37
	02/29/00	34.46	6783.28		02/09/00	19.12	6782.72
	04/10/00	34.38	6783.36		02/29/00	19.35	6782.49
	08/15/00	32.02	6783.35		04/10/00	19.16	6782.68
	10/16/00	Dry	(6782.90)		08/15/00	17.15	6782.40
	01/22/01	32.06	6783.31		10/16/00	17.25	6782.30
	03/06/01	31.98	6783.39		01/22/01	17.23	6782.32
	03/27/01	31.94	6783.43		03/06/01	16.76	6782.79
	04/09/01	31.95	6783.42		03/27/01	16.72	6782.83

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
PW-09	04/09/01	16.81	6782.74	PW-12	04/10/00	Dry	(6782.98)
PW-10	02/09/00	34.00	6782.03		08/15/00	Dry	(6782.98)
	02/29/00	34.07	6781.96		10/16/00	Dry	(6782.98)
	04/10/00	33.98	6782.05		01/22/01	21.75	6783.01
	08/15/00	32.00	6782.04		03/14/01	21.47	6783.29
	10/16/00	31.90	6782.14		03/27/01	21.49	6783.27
	01/22/01	32.05	6781.99		04/09/01	21.50	6783.26
	01/29/01	32.02	6782.02	PW-13	01/10/00	Dry	(6781.91)
	03/06/01	31.90	6782.14		02/09/00	Dry	(6781.91)
	03/27/01	31.87	6782.17		02/29/00	Dry	(6781.91)
	04/09/01	31.80	6782.14		04/10/00	Dry	(6781.91)
	07/19/01	31.67	6782.27		08/15/00	Dry	(6781.91)
	10/16/01	31.70	6782.24		10/16/00	Dry	(6781.91)
	01/29/02	31.61	6782.33		01/22/01	19.88	6782.85
	04/02/02	31.67	6782.27		03/06/01	Dry	(6781.91)
	07/10/02	31.74	6782.20		03/27/01	Dry	(6781.91)
	09/30/02	31.77	6782.17		04/09/01	Dry	(6781.91)
	10/06/03	31.38	6782.56	PW-14	01/10/00	19.70	6781.88
	04/14/04	31.41	6782.53		02/09/00	19.20	6782.38
	10/04/04	31.50	6782.44		02/29/00	19.49	6782.09
	04/07/05	31.28	6782.66		04/10/00	19.35	6782.23
	10/04/05	31.55	6782.39		08/15/00	18.75	6781.90
	04/03/06	31.40	6782.54		10/16/00	18.83	6781.82
	10/03/06	31.47	6782.47		01/22/01	18.82	6781.83
	04/11/07	31.55	6782.39		03/06/01	18.46	6782.19
	10/09/07	31.50	6782.44		03/27/01	18.36	6782.29
	10/07/08	31.44	6782.50		04/09/01	18.30	6782.14
	10/08/08	31.51	6782.43		07/19/01	18.37	6782.07
	04/08/09	31.63	6782.31		10/16/01	18.21	6782.23
	04/08/09	31.72	6782.22		01/29/02	18.27	6782.17
	10/08/09	31.75	6782.19		04/02/02	18.25	6782.19
	04/19/10	30.81	6783.13		04/02/02	18.25	6782.19
	04/20/10	30.82	6783.12		07/10/02	18.25	6782.19
	10/12/10	31.51	6782.43		09/30/02	18.27	6782.17
	04/04/11	31.60	6782.34		10/08/03	17.88	6782.56
	10/11/11				04/20/04	17.65	6782.79
	04/24/12				10/04/04	17.75	6782.69
PW-11	02/09/00	29.40	6781.85		04/07/05	17.69	6782.75
	02/29/00	29.36	6781.89		10/04/05	17.93	6782.51
	04/10/00	29.39	6781.86		04/03/06	17.53	6782.91
	08/15/00	26.45	6781.90		10/03/06	17.80	6782.64
	10/16/00	26.43	6781.92		04/10/07	17.31	6783.13
	01/22/01	26.48	6781.87		10/09/07	17.71	6782.73
	03/06/01	26.40	6781.95		04/08/08	17.34	6783.10
	03/27/01	26.39	6781.96		10/07/08	18.00	6782.44
	04/09/01	26.40	6781.95		04/08/09	18.09	6782.35
PW-12	01/10/00	Dry	(6782.98)		10/05/09	18.55	6781.89
	02/09/00	Dry	(6782.98)		04/19/10	16.96	6783.48
	02/29/00	Dry	(6782.98)		10/12/10	17.84	6782.60

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
PW-14	04/05/11	18.06	6782.38	PW-16	10/31/05	12.18	6784.54
	10/10/11	17.95	6782.49		04/03/06	11.20	6785.52
	04/24/12	18.21	6782.23		10/02/06	11.86	6784.86
PW-14A	04/10/00	18.86	6782.18		04/10/07	11.13	6785.59
	08/15/00	17.36	6781.96		10/09/07	11.88	6784.84
	10/16/00	17.40	6781.92		04/08/08	10.91	6785.81
	01/22/01	17.47	6781.85		10/07/08	12.32	6784.40
	03/06/01	17.38	6781.94		04/08/09	12.60	6784.12
	03/27/01	17.03	6782.29		10/05/09	13.32	6783.40
	04/09/01	17.19	6782.13		04/19/10	10.63	6786.09
PW-15	01/10/00	Dry	(6783.03)		10/12/10	12.22	6784.50
	02/09/00	Dry	(6783.03)		04/05/11	12.62	6784.10
	02/29/00	Dry	(6783.03)		10/10/11	12.42	6784.30
	04/10/00	Dry	(6783.03)		04/24/12	12.81	6783.91
	08/15/00	Dry	(6783.03)	PW-16A	04/10/00	14.05	6783.88
	10/16/00	Dry	(6783.03)		08/15/00	13.40	6783.09
	01/22/01	Dry	(6783.03)		10/16/00	13.00	6783.49
	03/06/01	Dry	(6783.03)		01/22/01	12.97	6783.52
	03/27/01	Dry	(6783.03)		02/28/01	12.78	6783.71
	04/09/01	Dry	(6783.03)		03/27/01	12.56	6783.93
PW-15A	04/10/00	15.95	6783.34		04/09/01	12.65	6783.84
	08/15/00	14.90	6782.50	PW-17	02/09/00	35.74	6783.78
	10/16/00	14.40	6783.00		02/29/00	35.74	6783.78
	01/22/01	14.45	6782.95		04/10/00	35.65	6783.87
	03/06/01	14.14	6783.26		08/15/00	33.88	6783.78
	03/27/01	13.98	6783.42		10/16/00	33.80	6783.86
	04/09/01	14.10	6783.30		01/22/01	33.91	6783.75
PW-16	01/10/00	15.97	6782.93		01/29/01	33.90	6783.76
	02/09/00	15.26	6783.64		03/06/01	33.76	6783.90
	02/29/00	15.54	6783.36		03/27/01	33.75	6783.91
	04/10/00	15.25	6783.65		04/09/01	33.65	6783.91
	08/15/00	14.17	6782.73		07/19/01	33.44	6784.12
	10/16/00	13.71	6783.19		10/16/01	33.50	6784.06
	01/22/01	13.69	6783.21		01/29/02	33.59	6783.97
	03/06/01	13.45	6783.45		04/02/02	33.55	6784.01
	03/27/01	13.31	6783.59		07/10/02	33.51	6784.05
	04/09/01	13.21	6783.51		09/30/02	33.54	6784.02
	07/19/01	13.12	6783.60		01/14/03	33.44	6784.12
	10/16/01	13.00	6783.72		04/08/03	33.41	6784.15
	01/29/02	12.97	6783.75		10/06/03	33.40	6784.16
	04/03/02	12.83	6783.89		04/14/04	33.37	6784.19
	07/11/02	13.00	6783.72		10/04/04	33.49	6784.07
	09/30/02	13.07	6783.65		04/06/05	33.15	6784.41
	04/09/03	12.06	6784.66		10/04/05	33.14	6784.21
	10/07/03	11.64	6785.08		04/03/06	32.91	6784.44
	04/15/04	11.00	6785.72		10/03/06	32.99	6784.36
	10/04/04	11.46	6785.26		04/10/07	33.00	6784.35
	04/07/05	11.10	6785.62		10/09/07	32.87	6784.48
	10/03/05	12.02	6784.70		04/08/08	32.95	6784.40

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
PW-17	10/08/08	32.98	6784.37	PW-20	02/28/01	16.86	6786.54
	04/08/09	33.00	6784.35		03/27/01	16.69	6786.71
	04/08/09	33.00	6784.35		04/09/01	16.84	6786.56
	10/06/09	33.03	6784.32		07/11/01	12.92	6786.65
	04/20/10	32.78	6784.57		10/16/01	12.99	6786.58
	10/12/10	32.70	6784.65		01/29/02	13.07	6786.50
	04/04/11	32.80	6784.55		04/01/02	12.74	6786.83
	10/11/11				07/11/02	13.27	6786.30
	04/24/12	32.91	6784.44		09/30/02	13.61	6785.96
PW-18	04/10/00	10.95	6790.97		04/08/03	12.31	6787.26
	08/15/00	12.81	6789.11		10/08/03	12.17	6787.40
	10/16/00	12.00	6789.92		04/20/04	12.11	6787.46
	01/22/01	12.44	6789.48		10/04/04	12.51	6787.06
	02/28/01	12.12	6789.80		04/07/05	11.31	6788.26
	03/27/01	11.59	6790.33		10/03/05	12.29	6787.28
	04/09/01	11.88	6790.04		04/03/06	12.15	6787.42
	07/11/01	9.30	6790.43		10/02/06	12.24	6787.33
	10/16/01	9.22	6790.51		04/11/07	12.26	6787.31
	01/29/02	9.72	6790.01		10/09/07	12.44	6787.13
	04/01/02	9.10	6790.63		04/08/08	11.00	6788.57
	07/11/02	10.03	6789.70		10/07/08	12.35	6787.22
	09/30/02	10.79	6788.94		04/08/09	12.61	6786.96
	04/08/03	8.11	6791.62		10/05/09	13.02	6786.55
	07/08/03	9.33	6790.40		04/19/10	10.12	6789.45
	10/08/03	7.96	6791.77		10/12/10	12.02	6787.55
	04/20/04	7.81	6791.92		04/05/11	11.94	6787.63
	10/04/04	8.28	6791.45		10/10/11	12.11	6787.46
	04/07/05	7.18	6792.55		04/23/12	12.42	6787.15
	10/03/05	7.97	6791.76	PW-22	01/10/00	12.75	6785.31
	04/03/06	7.88	6791.85		02/09/00	13.33	6787.20
	10/02/06	7.80	6791.93		02/29/00	13.96	6786.57
	04/11/07	8.00	6791.73		04/10/00	14.27	6786.26
	10/09/07	8.10	6791.63		08/15/00	15.15	6785.38
	04/08/08	7.16	6792.57		10/16/00	14.07	6785.51
	10/07/08	7.78	6791.95		01/22/01	14.08	6785.50
	04/08/09	8.18	6791.55		02/28/01	13.84	6785.74
	10/05/09	9.16	6790.57		03/27/01	13.69	6785.89
	04/19/10	6.87	6792.86		04/09/01	12.03	6785.75
	10/12/10	7.62	6792.11		07/11/01	11.65	6785.80
	04/05/11	7.71	6792.02		10/16/01	11.69	6785.76
	10/10/11	7.82	6791.91		01/29/02	11.73	6785.72
	04/23/12	8.17	6791.56		04/03/02	11.26	6786.19
PW-20	01/10/00	12.50	6785.91		07/11/02	11.90	6785.55
	02/09/00	15.99	6787.41		09/30/02	12.19	6785.26
	02/29/00	16.50	6786.90		04/08/03	11.02	6786.43
	04/10/00	16.58	6786.82		10/07/03	10.97	6786.48
	08/15/00	17.49	6785.91		04/15/04	10.80	6786.65
	10/16/00	17.25	6786.15		10/04/04	11.21	6786.24
	01/22/01	17.18	6786.22		04/07/05	10.03	6787.42

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
PW-22	10/03/05	10.90	6786.55	PW-24	01/23/01	16.90	6786.05
	04/03/06	10.85	6786.60		03/06/01	16.70	6786.25
	10/02/06	10.94	6786.51		03/27/01	16.63	6786.32
	04/11/07	10.90	6786.55		04/09/01	16.70	6786.25
	10/09/07	11.27	6786.18	PW-25	02/09/00	11.55	6790.98
	10/07/08	11.16	6786.29		02/29/00	11.71	6790.82
	10/05/09	11.79	6785.66		04/10/00	10.86	6791.67
	04/19/10	9.00	6788.45		08/15/00	10.62	6789.63
	10/12/10	10.84	6786.61		10/16/00	9.67	6790.58
	04/05/11	10.75	6786.70		01/23/01	10.12	6790.13
	10/10/11	10.88	6786.57		03/06/01	9.45	6790.80
	04/23/12	11.23	6786.22		03/27/01	9.03	6791.22
PW-23	02/09/00	24.42	6785.58		04/09/01	9.31	6790.94
	02/29/00	24.35	6785.65	PW-26	02/09/00	10.00	6791.18
	04/10/00	24.26	6785.74		02/29/00	10.18	6791.00
	08/15/00	23.55	6785.60		04/10/00	9.29	6791.89
	10/16/00	23.53	6785.62		08/15/00	9.44	6789.72
	03/14/01	23.39	6785.76		10/16/00	8.43	6790.73
	03/27/01	23.41	6785.74		01/23/01	8.89	6790.27
	04/09/01	23.46	6785.69		03/06/01	8.19	6790.97
	07/19/01	23.23	6785.92		03/27/01	7.79	6791.37
	10/16/01	23.46	6785.69		04/09/01	8.04	6791.12
	01/29/02	23.60	6785.55	PW-27	02/09/00	8.04	6791.25
	04/02/02	23.47	6785.68		02/29/00	8.23	6791.06
	07/10/02	23.50	6785.65		04/10/00	5.97	6791.99
	09/30/02	23.60	6785.55		08/15/00	7.90	6789.76
	04/08/03	23.24	6785.91		10/16/00	6.87	6790.79
	10/06/03	23.38	6785.77		01/23/01	7.32	6790.34
	04/14/04	23.21	6785.94		03/06/01	6.57	6791.09
	10/04/04	23.58	6785.57		03/27/01	6.14	6791.52
	04/07/05	23.27	6785.88		04/09/01	6.42	6791.24
	10/04/05	23.53	6785.62	PW-28	01/10/00	11.30	6789.32
	04/03/06	23.43	6785.72		02/09/00	12.73	6790.17
	10/03/06	23.55	6785.60		02/29/00	12.96	6789.94
	04/11/07	23.60	6785.55		04/10/00	12.25	6790.65
	04/08/08	23.41	6785.74		08/15/00	14.11	6788.79
	10/07/08	23.53	6785.62		10/16/00	12.65	6789.57
	04/08/09	Dry	(6784.71)		01/23/01	13.07	6789.15
	10/05/09	23.78	6785.37		01/30/01	13.22	6789.00
	04/19/10	23.26	6785.89		02/28/01	12.72	6789.50
	10/12/10	23.59	6785.56		03/27/01	12.32	6789.90
	04/05/11	23.59	6785.56		04/09/01	12.57	6789.65
	10/10/11	23.55	6785.60		07/11/01	9.74	6790.19
	04/24/12	23.61	6785.54		10/16/01	9.69	6790.24
PW-24	02/09/00	18.70	6786.24		01/29/02	10.26	6789.67
	02/29/00	18.66	6786.28		04/01/02	9.65	6790.28
	04/10/00	18.54	6786.40		07/11/02	10.48	6789.45
	08/15/00	16.85	6786.10		09/30/02	11.14	6788.79
	10/16/00	16.73	6786.22		04/08/03	8.61	6791.32

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
PW-28	10/07/03	8.47	6791.46	PW99-16	10/16/01	13.27	6786.49
	04/15/04	8.27	6791.66		01/29/02	13.45	6786.31
	10/04/04	8.78	6791.15		04/01/02	13.10	6786.66
	04/05/05	7.34	6792.59		07/11/02	13.60	6786.16
	10/04/05	8.49	6791.44		09/30/02	13.86	6785.90
	04/27/06	8.64	6791.29		01/14/03	12.91	6786.85
	10/03/06	8.30	6791.63		04/08/03	12.60	6787.16
	04/11/07	8.44	6791.49		10/07/03	12.55	6787.21
	10/10/07	8.51	6791.42		01/22/04	13.19	6786.57
	04/08/08	7.25	6792.68		04/15/04	12.43	6787.33
	04/14/08	7.25	6792.68		10/04/04	12.70	6787.06
	10/08/08	8.37	6791.56		04/07/05	11.87	6787.89
	04/08/09	8.70	6791.23		10/03/05	12.68	6787.08
	04/08/09	8.67	6791.26		04/03/06	12.71	6787.05
	10/07/09	9.82	6790.11		10/02/06	12.64	6787.12
	04/20/10	6.63	6793.30		04/11/07	12.67	6787.09
	10/13/10	8.54	6791.39		10/09/07	12.83	6786.93
	04/05/11	8.00	6791.93		04/08/08	11.49	6788.27
	10/11/11	8.23	6791.70		10/07/08	12.79	6786.97
	04/23/12	8.57	6791.36		04/08/09	12.94	6786.82
PW-29	02/09/00	10.79	6792.18		10/09/09	13.46	6786.30
	02/29/00	10.88	6792.09		04/19/10	10.67	6789.09
	04/10/00	9.63	6793.34		10/12/10	12.51	6787.25
	08/15/00	9.77	6791.17		04/05/11	12.27	6787.49
	10/16/00	8.59	6792.35		10/10/11	12.50	6787.26
	01/23/01	9.34	6791.60		04/23/12	12.83	6786.93
	03/06/01	8.64	6792.30	R1-M1	01/10/00	8.10	6789.87
	03/27/01	8.18	6792.76		02/09/00	7.29	6790.68
	04/09/01	8.37	6792.57		02/29/00	7.49	6790.48
PW-30	02/29/00	8.38	6793.98		04/10/00	6.63	6791.34
	04/10/00	7.09	6795.27		08/14/00	8.46	6789.51
	08/15/00	6.92	6793.59		10/16/00	7.64	6790.33
	10/18/00	5.56	6794.89		01/22/01	8.01	6789.96
	01/23/01	6.40	6794.05		03/01/01	7.57	6790.40
	03/06/01	6.01	6794.44		03/27/01	7.27	6790.70
	03/27/01	5.73	6794.72		04/09/01	7.27	6790.70
	04/09/01	5.65	6794.80		07/09/01	6.87	6791.10
PW99-16	01/10/00	17.29	6785.88		10/10/01	6.73	6791.24
	02/09/00	15.91	6787.26		02/07/02	7.43	6790.54
	02/29/00	16.52	6786.65		04/02/02	6.57	6791.20
	04/10/00	16.54	6786.63		07/09/02	7.62	6790.15
	08/15/00	17.38	6785.83		09/30/02	8.34	6789.43
	10/16/00	17.14	6786.07		04/02/03	5.20	6792.57
	01/22/01	17.06	6786.15		07/16/03	6.07	6791.70
	01/31/01	17.06	6786.15		10/08/03	5.31	6792.46
	02/28/01	16.75	6786.46		04/20/04	4.71	6793.06
	03/27/01	16.59	6786.62		10/04/04	5.51	6792.26
	04/09/01	16.73	6786.48		04/07/05	3.56	6794.21
	07/11/01	13.27	6786.49		10/03/05	5.00	6792.77

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
R1-M1	10/31/05	5.40	6792.37	R1-M3	04/16/04	3.08	6792.83
	10/02/06	4.80	6792.97		10/04/04	3.83	6792.08
	04/10/07	5.16	6792.61		04/06/05	1.43	6794.48
	10/09/07	5.37	6792.40		10/03/05	3.27	6792.64
	10/07/08	4.81	6792.96		10/31/05	3.69	6792.22
	10/05/09	6.71	6791.06		04/04/06	3.29	6792.62
	04/19/10	3.27	6794.50		10/02/06	2.97	6792.94
	10/11/10	4.39	6793.38		04/10/07	3.42	6792.49
	04/05/11	4.13	6793.64		10/08/07	3.55	6792.36
	10/10/11	4.51	6793.26		10/08/07	3.46	6792.45
	04/24/12	5.43	6792.34		04/07/08	1.79	6794.12
R1-M2	01/10/00	6.77	6789.83		10/08/08	2.91	6793.00
	02/09/00	6.01	6790.59		04/08/09	3.72	6792.19
	02/29/00	6.19	6790.41		10/06/09	4.96	6790.95
	04/10/00	5.39	6791.21		04/19/10	1.70	6794.21
	08/14/00	7.05	6789.55		10/11/10	2.45	6793.46
	10/16/00	6.25	6790.35		04/04/11	2.72	6793.19
	01/22/01	6.62	6789.98		10/10/11	2.61	6793.30
	03/01/01	6.19	6790.41		04/24/12	3.62	6792.29
	03/27/01	5.81	6790.79	R1-M4	01/10/00	6.50	6789.35
	04/09/01	5.93	6790.67		02/09/00	5.75	6790.10
	07/09/01	5.64	6790.96		02/29/00	5.92	6789.93
	02/07/02	6.12	6790.48		04/10/00	5.13	6790.72
	07/09/02	6.56	6790.04		08/14/00	6.40	6789.45
	09/30/02	7.24	6789.36		10/16/00	5.71	6790.14
	07/16/03	6.10	6790.50		01/22/01	6.03	6789.82
	10/31/05	4.33	6792.27		02/28/01	5.68	6790.17
R1-M3	01/10/00	6.12	6789.79		03/27/01	5.33	6790.52
	02/09/00	5.35	6790.56		04/09/01	5.43	6790.42
	02/29/00	5.57	6790.34		07/09/01	5.18	6790.67
	04/10/00	4.80	6791.11		10/11/01	4.96	6790.89
	08/14/00	6.37	6789.54		01/28/02	5.53	6790.32
	10/16/00	5.57	6790.34		02/07/02	5.57	6790.28
	01/22/01	5.95	6789.96		04/02/02	4.97	6790.88
	03/01/01	5.54	6790.37		07/09/02	5.95	6789.90
	03/27/01	5.17	6790.74		09/30/02	6.69	6789.16
	04/09/01	5.29	6790.62		01/14/03	5.14	6790.71
	07/09/01	5.00	6790.91		04/02/03	3.87	6791.98
	10/11/01	4.81	6791.10		07/16/03	5.02	6790.83
	01/28/02	5.41	6790.50		10/08/03	3.78	6792.07
	02/07/02	5.45	6790.46		01/21/04	5.11	6790.74
	04/02/02	4.86	6791.05		04/16/04	3.34	6792.51
	07/09/02	5.84	6790.07		10/04/04	4.11	6791.74
	09/30/02	6.58	6789.33		04/06/05	2.26	6793.59
	01/14/03	6.20	6789.71		10/03/05	3.53	6792.32
	04/02/03	3.65	6792.26		10/31/05	3.76	6792.09
	07/16/03	4.92	6790.99		04/04/06	3.57	6792.28
	10/08/03	3.59	6792.32		10/02/06	3.18	6792.67
	01/21/04	4.96	6790.95		04/10/07	3.66	6792.19

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
R1-M4	10/08/07	3.66	6792.19	R1-M6	10/09/07	6.03	6792.13
	04/07/08	1.99	6793.86		04/08/08	4.54	6793.62
	10/07/08	3.08	6792.77		04/14/08	4.55	6793.61
	10/07/08	3.02	6792.83		10/07/08	5.42	6792.74
	04/07/09	3.88	6791.97		04/08/09	6.21	6791.95
	10/05/09	5.10	6790.75		10/05/09	7.33	6790.83
	04/19/10	2.08	6793.77		04/19/10	4.52	6793.64
	10/11/10	2.58	6793.27		10/12/10	5.11	6793.05
	04/04/11	3.06	6792.79		04/05/11	5.40	6792.76
	10/10/11	2.77	6793.08		10/10/11	5.19	6792.97
	04/24/12	3.79	6792.06		04/23/12	6.11	6792.05
R1-M5	01/10/00	6.14	6789.47	R10-M1	01/10/00	13.60	6781.51
	02/09/00	5.40	6790.21		02/09/00	12.68	6782.43
	02/29/00	5.61	6790.00		02/29/00	13.05	6782.06
	04/10/00	4.80	6790.81		04/10/00	12.85	6782.26
	08/14/00	6.21	6789.40		08/14/00	13.75	6781.36
	10/16/00	5.52	6790.09		10/16/00	13.67	6781.44
	01/22/01	5.84	6789.77		01/22/01	13.72	6781.39
	02/28/01	5.51	6790.10		02/28/01	13.59	6781.52
	03/27/01	5.09	6790.52		03/27/01	13.34	6781.77
	04/09/01	5.24	6790.37		04/09/01	13.47	6781.64
	07/09/01	4.92	6790.69		07/09/01	13.27	6781.84
	02/07/02	5.32	6790.29		10/11/01	13.25	6781.86
	07/09/02	5.71	6789.90		01/28/02	13.32	6781.79
	09/30/02	6.45	6789.16		02/07/02	13.33	6781.78
	07/16/03	4.82	6790.79		04/02/02	12.93	6782.18
	10/31/05	3.60	6792.01		07/09/02	13.30	6781.81
R1-M6	08/15/00	10.58	6789.42		09/30/02	13.35	6781.76
	10/16/00	9.92	6790.08		01/14/03	12.82	6782.29
	01/22/01	8.32	6789.84		04/02/03	12.70	6782.41
	02/28/01	7.93	6790.23		07/16/03	13.33	6781.78
	03/27/01	7.55	6790.61		10/07/03	12.79	6782.32
	04/09/01	7.72	6790.44		01/21/04	12.83	6782.28
	07/09/01	7.36	6790.80		04/15/04	12.84	6782.27
	10/10/01	7.13	6791.03		10/04/04	12.72	6782.39
	02/07/02	7.76	6790.40		04/06/05	12.60	6782.51
	04/02/02	7.12	6791.04		10/03/05	12.79	6782.32
	07/09/02	8.14	6790.02		10/31/05	12.86	6782.25
	09/30/02	8.92	6789.24		04/04/06	12.48	6782.63
	04/02/03	6.10	6792.06		10/02/06	12.23	6782.88
	07/16/03	7.26	6790.90		04/10/07	11.76	6783.35
	10/08/03	6.01	6792.15		10/08/07	12.12	6782.99
	04/20/04	6.55	6791.61		04/08/08	12.11	6783.00
	10/04/04	6.30	6791.86		10/07/08	13.20	6781.91
	04/07/05	4.73	6793.43		10/08/08	13.24	6781.87
	10/03/05	5.83	6792.33		04/08/09	13.31	6781.80
	10/31/05	6.04	6792.12		10/06/09	13.45	6781.66
	10/02/06	5.61	6792.55		04/19/10	11.51	6783.60
	04/10/07	5.99	6792.17		10/11/10	13.19	6781.92

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
R10-M1	04/04/11	13.36	6781.75	R2-M10	01/10/00	8.54	6787.17
	10/11/11	13.32	6781.79		02/09/00	7.83	6787.88
	04/24/12	13.53	6781.58		03/01/00	7.92	6787.79
R11-M1	01/10/00	13.30	6781.49		04/10/00	10.50	6785.21
	02/09/00	11.82	6782.97		08/14/00	8.15	6787.41
	02/29/00	12.33	6782.46		10/16/00	7.92	6787.64
	04/10/00	12.28	6782.51		01/22/01	8.41	6787.15
	08/14/00	13.24	6781.55		04/09/01	7.35	6788.21
	10/16/00	13.27	6781.52		07/09/01	6.39	6789.17
	01/22/01	13.29	6781.50		10/31/05	4.52	6791.04
	02/28/01	13.18	6781.61	R2-M2	01/10/00	9.24	6787.19
	03/27/01	12.94	6781.85		02/09/00	8.52	6787.91
	04/09/01	13.06	6781.73		03/01/00	8.67	6787.76
	07/09/01	12.89	6781.90		04/10/00	7.64	6788.79
	10/11/01	12.89	6781.90		08/14/00	8.97	6787.46
	01/28/02	13.00	6781.79		10/16/00	8.70	6787.73
	02/07/02	12.99	6781.80		01/22/01	9.24	6787.19
	04/02/02	12.51	6782.28		03/01/01	8.57	6787.86
	07/09/02	13.00	6781.79		04/09/01	8.15	6788.28
	09/30/02	13.11	6781.68		07/09/01	7.20	6789.23
	04/02/03	12.13	6782.66		10/31/05	4.46	6791.97
	07/16/03	12.95	6781.84	R2-M3	01/10/00	8.85	6787.18
	10/07/03	12.52	6782.27		02/09/00	8.09	6787.94
	04/20/04	12.42	6782.37		03/01/00	8.25	6787.78
	10/04/04	12.58	6782.21		04/10/00	7.23	6788.80
	04/07/05	12.35	6782.44		08/14/00	8.57	6787.46
	10/03/05	12.73	6782.06		10/16/00	8.28	6787.75
	10/31/05	12.87	6781.92		01/22/01	8.84	6787.19
	04/03/06	12.60	6782.19		02/28/01	7.86	6788.17
	10/02/06	12.38	6782.41		04/09/01	7.75	6788.28
	04/10/07	11.91	6782.88		07/09/01	6.80	6789.23
	10/09/07	12.23	6782.56		10/31/05	4.04	6791.99
	10/07/08	13.13	6781.66	R2-M4	01/10/00	8.62	6787.22
	10/05/09	13.26	6781.53		02/09/00	7.92	6787.92
	04/19/10	11.18	6783.61		03/01/00	8.08	6787.76
	10/12/10	13.00	6781.79		04/10/00	7.05	6788.79
	04/05/11	13.00	6781.79		08/14/00	8.39	6787.45
	10/10/11	13.11	6781.68		10/16/00	8.10	6787.74
	04/24/12	13.22	6781.57		01/22/01	8.65	6787.19
R2-M1	01/10/00	9.76	6787.18		03/01/01	7.97	6787.87
	02/09/00	9.04	6787.90		04/09/01	7.55	6788.29
	03/01/00	9.20	6787.74		07/09/01	6.59	6789.25
	08/14/00	9.50	6787.44		10/11/01	6.21	6789.63
	10/16/00	9.23	6787.71		01/28/02	6.01	6789.83
	01/22/01	9.79	6787.15		04/02/02	5.38	6790.46
	04/09/01	8.68	6788.26		07/09/02	6.12	6789.72
	07/09/01	7.72	6789.22		09/30/02	7.25	6788.59
	07/16/03	6.32	6790.62		04/02/03	4.24	6791.60
	10/31/05	5.28	6791.66		07/16/03	5.23	6790.61

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
R2-M4	10/08/03	4.07	6791.77	R2-M7	07/09/02	6.18	6789.62
	04/16/04	3.43	6792.41		09/30/02	7.13	6788.67
	10/04/04	4.45	6791.39		04/02/03	4.22	6791.58
	04/07/05	2.18	6793.66		07/16/03	5.18	6790.62
	10/03/05	2.36	6793.48		10/08/03	4.13	6791.67
	10/31/05	3.85	6791.99		04/16/04	3.57	6792.23
	10/02/06	3.11	6792.73		10/04/04	4.40	6791.40
	04/10/07	3.47	6792.37		04/07/05	2.33	6793.47
	10/09/07	3.70	6792.14		10/03/05	3.73	6792.07
	04/14/08	2.00	6793.84		10/31/05	4.02	6791.78
	10/07/08	2.81	6793.03		10/02/06	3.25	6792.55
	10/05/09	4.69	6791.15		04/10/07	3.65	6792.15
	04/19/10	2.00	6793.84		10/09/07	3.82	6791.98
	10/11/10	2.64	6793.20		04/14/08	2.10	6793.70
	04/05/11	2.66	6793.18		10/07/08	3.01	6792.79
	10/10/11	3.39	6792.45		04/08/09	3.83	6791.97
	04/24/12	3.52	6792.32		10/05/09	5.07	6790.73
R2-M5	01/10/00	8.51	6787.20		04/19/10	2.03	6793.77
	02/09/00	7.76	6787.95		10/11/10	2.62	6793.18
	03/01/00	7.94	6787.77		04/05/11	2.33	6793.47
	08/14/00	8.24	6787.47		10/10/11	2.73	6793.07
	10/16/00	7.97	6787.74		04/24/12	3.74	6792.06
	01/22/01	8.51	6787.20	R2-M8	01/10/00	8.47	6787.29
	04/09/01	7.35	6788.36		02/09/00	7.83	6787.93
	07/09/01	6.46	6789.25		03/01/00	7.99	6787.77
	10/31/05	3.86	6791.85		04/10/00	6.94	6788.82
R2-M6	01/10/00	8.51	6787.20		08/14/00	8.30	6787.46
	02/09/00	7.78	6787.93		10/16/00	8.04	6787.72
	03/01/00	7.95	6787.76		01/22/01	8.56	6787.20
	04/10/00	6.91	6788.80		04/09/01	7.47	6788.29
	08/14/00	8.26	6787.45		07/09/01	6.50	6789.26
	10/16/00	7.98	6787.73		10/31/05	3.93	6791.83
	01/22/01	8.55	6787.16	R2-M9	01/10/00	8.44	6787.14
	04/09/01	7.42	6788.29		02/09/00	7.69	6787.89
	07/09/01	6.50	6789.21		03/01/00	7.86	6787.72
	10/31/05	3.86	6791.85		04/10/00	6.81	6788.77
R2-M7	01/10/00	8.60	6787.20		08/14/00	8.16	6787.42
	02/09/00	7.85	6787.95		10/16/00	7.89	6787.69
	03/01/00	7.99	6787.81		01/22/01	8.46	6787.12
	04/10/00	6.97	6788.83		02/28/01	7.77	6787.81
	08/14/00	8.35	6787.45		04/09/01	7.36	6788.22
	10/16/00	8.07	6787.73		07/09/01	6.39	6789.19
	01/22/01	8.65	6787.15		10/31/05	3.81	6791.77
	02/28/01	7.92	6787.88	R3-M1	01/10/00	9.25	6787.17
	04/09/01	7.50	6788.30		02/09/00	8.50	6787.92
	07/09/01	6.58	6789.22		03/01/00	8.67	6787.75
	10/11/01	6.18	6789.62		04/10/00	7.64	6788.78
	01/28/02	5.92	6789.88		08/14/00	8.97	6787.45
	04/02/02	5.31	6790.49		10/16/00	8.69	6787.73

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
R3-M1	01/22/01	9.25	6787.17	R3-M3	07/16/03	5.12	6790.64
	03/01/01	8.55	6787.87		10/08/03	4.08	6791.68
	04/09/01	8.15	6788.27		04/16/04	3.50	6792.26
	07/09/01	7.21	6789.21		10/04/04	4.38	6791.38
	10/31/05	4.45	6791.97		04/06/05	2.33	6793.43
R3-M2	01/10/00	8.61	6787.19		10/03/05	3.60	6792.16
	02/09/00	7.88	6787.92		10/31/05	3.91	6791.85
	03/01/00	8.07	6787.73		04/04/06	3.69	6792.07
	04/10/00	7.02	6788.78		10/02/06	3.22	6792.54
	08/14/00	8.35	6787.45		04/10/07	3.61	6792.15
	10/16/00	8.09	6787.71		10/08/07	3.55	6792.21
	01/22/01	8.62	6787.18		04/07/08	2.05	6793.71
	03/01/01	7.95	6787.85		10/07/08	3.05	6792.71
	04/09/01	7.51	6788.29		10/07/08	2.98	6792.78
	07/09/01	6.53	6789.27		04/07/09	3.76	6792.00
	09/30/02	7.14	6788.66		10/06/09	5.03	6790.73
	04/02/03	4.15	6791.65		04/19/10	2.03	6793.73
	07/16/03	5.07	6790.73		10/11/10	1.56	6794.20
	10/08/03	4.21	6791.59		04/04/11	2.89	6792.87
	04/16/04	3.43	6792.37		10/10/11	2.68	6793.08
	10/04/04	4.30	6791.50		04/24/12	3.71	6792.05
	04/06/05	2.20	6793.60	R3-M4	01/10/00	8.42	6787.13
	10/03/05	3.48	6792.32		02/09/00	7.67	6787.88
	10/31/05	3.88	6791.92		03/01/00	7.86	6787.69
	04/04/06	3.51	6792.29		04/10/00	6.80	6788.75
	10/02/06	3.11	6792.69		08/14/00	8.13	6787.42
	04/10/07	3.36	6792.44		10/16/00	7.90	6787.65
	10/08/07	3.45	6792.35		01/22/01	8.46	6787.09
	04/07/08	2.02	6793.78		02/28/01	7.75	6787.80
	10/08/08	2.91	6792.89		04/09/01	7.33	6788.22
	04/08/09	3.64	6792.16		07/09/01	6.37	6789.18
	04/08/09	3.71	6792.09		10/31/05	3.76	6791.79
	10/06/09	4.95	6790.85	R4-M1	01/10/00	9.22	6787.19
	04/19/10	1.99	6793.81		02/09/00	8.49	6787.92
	10/11/10	2.54	6793.26		02/29/00	8.71	6787.70
	04/04/11	7.71	6788.09		04/10/00	7.62	6788.79
	10/10/11	2.66	6793.14		08/14/00	8.95	6787.46
	04/24/12	3.60	6792.20		10/16/00	8.68	6787.73
R3-M3	01/10/00	8.57	6787.19		01/22/01	9.24	6787.17
	02/09/00	7.82	6787.94		03/01/01	8.55	6787.86
	03/01/00	7.99	6787.77		03/27/01	8.05	6788.36
	04/10/00	6.95	6788.81		04/09/01	8.14	6788.27
	08/14/00	8.32	6787.44		07/09/01	7.18	6789.23
	10/16/00	8.06	6787.70		02/07/02	6.52	6789.89
	01/22/01	8.60	6787.16		07/09/02	6.81	6789.60
	04/09/01	7.45	6788.31		09/30/02	7.75	6788.66
	07/09/01	6.52	6789.24		07/16/03	5.84	6790.57
	09/30/02	7.09	6788.67		10/31/05	6.25	6790.16
	04/02/03	4.20	6791.56	R4-M2	01/10/00	8.08	6787.89

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
R4-M2	02/09/00	8.05	6787.92	R4-M3	10/11/10	5.58	6790.18
	02/29/00	8.27	6787.70		04/04/11	6.81	6788.95
	04/10/00	7.18	6788.79		10/11/11	6.96	6788.80
	08/14/00	8.52	6787.45		04/24/12	8.12	6787.64
	10/16/00	8.26	6787.71	R4-M4	01/10/00	8.46	6787.20
	01/22/01	8.30	6787.67		02/09/00	7.72	6787.94
	03/27/01	7.59	6788.38		02/29/00	8.00	6787.66
	04/09/01	7.70	6788.27		08/14/00	8.20	6787.46
	07/09/01	6.75	6789.22		10/16/00	7.94	6787.72
	02/07/02	6.06	6789.91		01/22/01	8.49	6787.17
	07/09/02	6.36	6789.61		03/27/01	7.35	6788.31
	09/30/02	7.32	6788.65		04/09/01	7.37	6788.29
	07/16/03	5.37	6790.60		07/09/01	6.45	6789.21
	10/31/05	5.62	6790.35		02/07/02	5.75	6789.91
R4-M3	01/10/00	8.56	6787.20		07/09/02	6.05	6789.61
	02/09/00	7.84	6787.92		09/30/02	6.99	6788.67
	02/29/00	8.05	6787.71		07/16/03	5.10	6790.56
	04/10/00	6.95	6788.81		10/31/05	5.42	6790.24
	08/14/00	8.30	6787.46	R4-M5	01/10/00	8.53	6787.19
	10/16/00	8.05	6787.71		02/09/00	7.82	6787.90
	01/22/01	8.60	6787.16		02/29/00	8.05	6787.67
	03/01/01	7.88	6787.88		04/10/00	6.91	6788.81
	03/27/01	7.38	6788.38		08/14/00	8.28	6787.44
	04/09/01	7.47	6788.29		10/16/00	8.03	6787.69
	07/09/01	6.53	6789.23		01/22/01	8.65	6787.07
	10/11/01	6.16	6789.60		03/27/01	7.38	6788.34
	02/07/02	5.80	6789.96		04/09/01	7.48	6788.24
	02/07/02	5.84	6789.92		07/09/01	6.53	6789.19
	04/02/02	5.27	6790.49		07/09/02	6.12	6789.60
	07/09/02	6.13	6789.63		09/30/02	7.09	6788.63
	09/30/02	7.00	6788.76		07/16/03	5.18	6790.54
	04/02/03	4.18	6791.58		10/31/05	5.34	6790.38
	07/16/03	5.23	6790.53	R4-M6	01/10/00	8.55	6787.16
	10/08/03	4.53	6791.23		02/09/00	7.80	6787.91
	01/21/04	6.17	6789.59		02/29/00	8.07	6787.64
	04/16/04	3.55	6792.21		04/10/00	6.91	6788.80
	10/04/04	5.09	6790.67		08/14/00	8.28	6787.43
	04/06/05	2.30	6793.46		10/16/00	8.02	6787.69
	10/03/05	4.93	6790.83		01/22/01	8.55	6787.16
	10/31/05	5.44	6790.32		02/28/01	7.88	6787.83
	04/04/06	4.69	6791.07		03/27/01	7.36	6788.35
	10/02/06	5.81	6789.95		04/09/01	7.46	6788.25
	04/10/07	6.41	6789.35		07/09/01	6.51	6789.20
	10/08/07	6.93	6788.83		10/11/01	6.13	6789.58
	04/07/08	3.17	6792.59		01/28/02	5.83	6789.88
	10/08/08	6.68	6789.08		02/07/02	5.80	6789.91
	04/08/09	7.42	6788.34		04/02/02	5.21	6790.50
	10/06/09	8.25	6787.51		07/09/02	6.10	6789.61
	04/19/10	4.51	6791.25		09/30/02	7.05	6788.66

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
R4-M6	04/02/03	4.16	6791.55	R4-M8	07/09/02	6.08	6789.59
	07/16/03	5.16	6790.55		09/30/02	7.04	6788.63
	10/08/03	4.19	6791.52		07/16/03	5.16	6790.51
	01/21/04	5.63	6790.08		10/31/05	5.37	6790.30
	04/16/04	3.53	6792.18	R5-M1	01/10/00	9.66	6787.18
	10/04/04	5.20	6790.51		02/09/00	8.94	6787.90
	04/06/05	2.31	6793.40		03/01/00	9.10	6787.74
	10/03/05	4.90	6790.81		04/10/00	8.06	6788.78
	10/31/05	5.42	6790.29		08/14/00	9.40	6787.44
	04/04/06	4.61	6791.10		10/16/00	9.13	6787.71
	10/02/06	5.28	6790.43		01/22/01	9.65	6787.19
	04/10/07	6.28	6789.43		04/09/01	8.58	6788.26
	10/08/07	6.78	6788.93		07/09/01	7.63	6789.21
	04/07/08	2.89	6792.82		07/16/03	6.27	6790.57
	10/07/08	6.01	6789.70		10/31/05	6.56	6790.28
	04/07/09	7.34	6788.37	R5-M10	01/10/00	8.49	6787.14
	10/06/09	7.69	6788.02		02/09/00	7.76	6787.87
	04/19/10	4.50	6791.21		03/01/00	7.92	6787.71
	10/11/10	4.88	6790.83		04/10/00	6.85	6788.78
	04/04/11	6.70	6789.01		08/14/00	8.20	6787.43
	10/10/11	6.48	6789.23		10/16/00	7.95	6787.68
	04/24/12	8.00	6787.71		01/22/01	8.51	6787.12
R4-M7	01/10/00	8.41	6787.17		04/09/01	7.41	6788.22
	02/09/00	7.68	6787.90		07/09/01	6.45	6789.18
	02/29/00	7.91	6787.67		07/16/03	5.08	6790.55
	04/10/00	6.80	6788.78		10/31/05	4.82	6790.81
	08/14/00	8.15	6787.43	R5-M2	01/10/00	9.23	6787.16
	10/16/00	7.90	6787.68		02/09/00	8.48	6787.91
	01/22/01	8.45	6787.13		03/01/00	8.64	6787.75
	03/27/01	7.29	6788.29		04/10/00	7.62	6788.77
	04/09/01	7.36	6788.22		08/14/00	8.94	6787.45
	07/09/01	6.38	6789.20		10/16/00	8.68	6787.71
	02/07/02	5.71	6789.87		01/22/01	9.24	6787.15
	07/09/02	5.99	6789.59		03/01/01	8.55	6787.84
	09/30/02	6.95	6788.63		04/09/01	8.13	6788.26
	07/16/03	5.03	6790.55		07/09/01	7.12	6789.27
	10/31/05	5.28	6790.30		07/16/03	5.02	6791.37
R4-M8	01/10/00	8.51	6787.16		10/31/05	6.00	6790.39
	02/09/00	7.78	6787.89	R5-M3	01/10/00	8.69	6787.29
	02/29/00	8.04	6787.63		02/09/00	8.05	6787.93
	04/10/00	6.91	6788.76		03/01/00	8.23	6787.75
	08/14/00	8.25	6787.42		04/10/00	7.19	6788.79
	10/16/00	8.00	6787.67		08/14/00	8.52	6787.46
	01/22/01	8.56	6787.11		10/16/00	8.26	6787.72
	02/28/01	7.86	6787.81		01/22/01	8.80	6787.18
	03/27/01	7.03	6788.64		04/09/01	7.70	6788.28
	04/09/01	7.44	6788.23		07/09/01	6.76	6789.22
	07/09/01	6.49	6789.18		10/31/05	5.66	6790.32
	02/07/02	5.82	6789.85	R5-M4	01/10/00	8.55	6787.21

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
R5-M4	02/09/00	7.84	6787.92	R5-M8	10/16/00	7.82	6787.70
	03/01/00	8.01	6787.75		01/22/01	8.37	6787.15
	04/10/00	6.96	6788.80		04/09/01	7.28	6788.24
	08/14/00	8.31	6787.45		07/09/01	6.34	6789.18
	10/16/00	8.06	6787.70		10/31/05	5.22	6790.30
	01/22/01	8.60	6787.16	R5-M9	01/10/00	8.52	6787.14
	03/01/01	7.90	6787.86		02/09/00	7.78	6787.88
	04/09/01	7.47	6788.29		03/01/00	7.96	6787.70
	07/09/01	6.53	6789.23		04/10/00	6.89	6788.77
	07/09/02	6.15	6789.61		08/14/00	8.25	6787.41
	07/16/03	5.17	6790.59		10/16/00	8.00	6787.66
	10/31/05	5.46	6790.30		01/22/01	8.55	6787.11
R5-M5	01/10/00	8.44	6787.19		02/28/01	7.83	6787.83
	02/09/00	7.68	6787.95		04/09/01	7.43	6788.23
	03/01/00	7.84	6787.79		07/09/01	6.49	6789.17
	08/14/00	8.17	6787.46		10/31/05	4.79	6790.87
	10/16/00	7.91	6787.72	R6-M1	01/10/00	14.52	6783.02
	01/22/01	8.48	6787.15		02/09/00	13.95	6783.59
	04/09/01	7.35	6788.28		02/29/00	14.30	6783.24
	07/09/01	6.42	6789.21		04/10/00	13.81	6783.73
	10/31/05	5.32	6790.31		08/14/00	14.54	6783.00
R5-M6	01/10/00	8.50	6787.20		10/16/00	14.21	6783.33
	02/09/00	7.80	6787.90		01/22/01	14.20	6783.34
	03/01/00	7.97	6787.73		03/01/01	13.99	6783.55
	04/10/00	6.91	6788.79		03/27/01	13.78	6783.76
	08/14/00	8.27	6787.43		04/09/01	13.82	6783.72
	10/16/00	8.02	6787.68		07/09/01	13.72	6783.82
	01/22/01	8.60	6787.10		10/10/01	13.61	6783.93
	04/09/01	7.45	6788.25		02/07/02	13.55	6783.99
	07/09/01	6.52	6789.18		04/02/02	13.33	6784.08
	10/31/05	5.40	6790.30		07/09/02	13.80	6783.61
R5-M7	01/10/00	8.50	6787.20		09/30/02	13.80	6783.61
	02/09/00	7.80	6787.90		04/02/03	12.71	6784.70
	03/01/00	7.97	6787.73		07/16/03	13.50	6783.91
	04/10/00	6.89	6788.81		10/08/03	12.54	6784.87
	08/14/00	8.26	6787.44		04/20/04	11.64	6785.77
	10/16/00	8.00	6787.70		10/04/04	12.33	6785.08
	01/22/01	8.55	6787.15		04/07/05	12.02	6785.39
	02/28/01	7.86	6787.84		10/03/05	12.80	6784.61
	04/09/01	7.45	6788.25		10/31/05	13.03	6784.38
	07/09/01	6.50	6789.20		04/03/06	11.92	6785.49
	07/09/02	6.09	6789.61		10/02/06	12.55	6784.86
	07/16/03	5.14	6790.56		04/10/07	11.92	6785.49
	10/31/05	5.38	6790.32		10/09/07	12.63	6784.78
R5-M8	01/10/00	8.35	6787.17		04/14/08	11.60	6785.81
	02/09/00	7.62	6787.90		10/07/08	13.01	6784.40
	03/01/00	7.79	6787.73		04/08/09	13.25	6784.16
	04/10/00	6.72	6788.80		10/05/09	14.07	6783.34
	08/14/00	8.09	6787.43		04/19/10	11.40	6786.01

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
R6-M1	10/11/10	12.85	6784.56	R6-M3	10/16/00	10.05	6785.66
	04/05/11	13.19	6784.22		01/22/01	9.86	6785.85
	10/10/11	12.85	6784.56		03/01/01	9.52	6786.19
	04/24/12	13.40	6784.01		03/27/01	9.36	6786.35
R6-M2	01/10/00	8.95	6787.23		04/09/01	9.52	6786.19
	02/09/00	8.30	6787.88		07/09/01	9.36	6786.35
	02/29/00	8.50	6787.68		10/11/01	9.28	6786.43
	04/10/00	7.43	6788.75		02/07/02	9.15	6786.56
	08/14/00	8.74	6787.44		04/02/02	9.05	6786.66
	10/16/00	8.45	6787.73		07/09/02	8.68	6787.03
	01/22/01	9.04	6787.14		09/30/02	9.00	6786.71
	03/01/01	8.35	6787.83		01/14/03	8.29	6787.42
	03/27/01	7.88	6788.30		04/02/03	7.58	6788.13
	04/09/01	7.95	6788.23		07/16/03	8.86	6786.85
	07/09/01	7.09	6789.09		10/08/03	8.68	6787.03
	10/11/01	6.83	6789.35		01/21/04	7.51	6788.20
	01/28/02	6.91	6789.27		04/15/04	8.13	6787.58
	02/07/02	7.00	6789.18		10/04/04	7.67	6788.04
	04/02/02	6.97	6789.21		04/06/05	7.83	6787.88
	07/09/02	7.34	6788.84		10/03/05	9.13	6786.58
	09/30/02	8.08	6788.10		10/31/05	8.81	6786.90
	01/14/03	6.58	6789.60		04/04/06	7.80	6787.91
	04/02/03	6.07	6790.11		10/02/06	9.12	6786.59
	07/16/03	6.76	6789.42		04/10/07	8.23	6787.48
	10/08/03	5.61	6790.57		10/09/07	9.17	6786.54
	01/21/04	7.48	6788.70		04/07/08	7.96	6787.75
	04/16/04	10.05	6786.13		10/08/08	9.42	6786.29
	10/04/04	7.62	6788.56		04/08/09	9.42	6786.29
	04/07/05	5.12	6791.06		10/06/09	9.72	6785.99
	10/03/05	7.53	6788.65		04/19/10	8.68	6787.03
	10/31/05	8.00	6788.18		10/11/10	8.94	6786.77
	04/03/06	7.35	6788.83		04/04/11	9.31	6786.40
	10/02/06	7.34	6788.84		10/11/11	8.96	6786.75
	04/10/07	7.22	6788.96		04/24/12	9.60	6786.11
	10/09/07	7.53	6788.65	R6-M4	01/10/00	9.37	6786.16
	04/14/08	4.87	6791.31		02/09/00	8.55	6786.98
	10/07/08	7.59	6788.59		02/29/00	8.92	6786.61
	04/08/09	8.17	6788.01		04/10/00	8.14	6787.39
	10/05/09	8.53	6787.65		08/14/00	10.27	6785.26
	04/19/10	7.43	6788.75		10/16/00	9.58	6785.95
	10/11/10	6.01	6790.17		01/22/01	10.04	6785.49
	04/05/11	7.61	6788.57		02/28/01	9.50	6786.03
	10/10/11	7.79	6788.39		03/27/01	8.99	6786.54
	04/24/12	9.65	6786.53		04/09/01	9.41	6786.12
R6-M3	01/10/00	10.11	6785.60		07/09/01	8.55	6786.98
	02/09/00	9.53	6786.18		10/11/01	7.64	6787.89
	02/29/00	9.70	6786.01		01/28/02	8.15	6787.38
	04/10/00	9.34	6786.37		02/07/02	8.23	6787.30
	08/14/00	9.90	6785.81		04/02/02	7.95	6787.58

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
R6-M4	07/09/02	8.63	6786.90	R6-M5	04/07/05	6.05	6789.49
	09/30/02	8.58	6786.95		10/03/05	7.82	6787.72
	01/14/03	6.65	6788.88		10/31/05	7.59	6787.95
	04/02/03	6.21	6789.32		04/03/06	7.26	6788.28
	07/16/03	7.58	6787.95		10/02/06	7.58	6787.96
	10/08/03	6.09	6789.44		04/10/07	7.44	6788.10
	01/21/04	7.19	6788.34		10/09/07	8.64	6786.90
	04/15/04	6.86	6788.67		04/14/08	7.17	6788.37
	10/04/04	7.42	6788.11		10/07/08	8.53	6787.01
	04/06/05	5.48	6790.05		04/08/09	9.71	6785.83
	10/03/05	7.80	6787.73		10/05/09	10.16	6785.38
	10/31/05	8.07	6787.46		04/19/10	6.95	6788.59
	04/04/06	7.21	6788.32		10/11/10	8.39	6787.15
	10/02/06	7.40	6788.13		04/05/11	8.77	6786.77
	04/10/07	7.17	6788.36		10/10/11	8.96	6786.58
	10/08/07	8.20	6787.33		04/24/12	9.02	6786.52
	04/07/08	6.39	6789.14	R6-M6	08/15/00	14.47	6785.13
	10/07/08	8.46	6787.07		10/16/00	14.30	6785.30
	04/07/09	8.54	6786.99		01/22/01	12.12	6785.10
	10/06/09	9.46	6786.07		02/28/01	11.76	6785.46
	04/19/10	7.10	6788.43		03/27/01	11.61	6785.61
	10/11/10	8.08	6787.45		04/09/01	11.65	6785.57
	04/04/11	8.53	6787.00		07/09/01	11.78	6785.44
	10/10/11	8.88	6786.65		10/10/01	11.84	6785.38
	04/24/12	9.06	6786.47		02/07/02	11.92	6785.30
R6-M5	01/10/00	9.14	6786.40		04/02/02	11.30	6785.92
	02/09/00	8.20	6787.34		07/09/02	12.15	6785.07
	02/29/00	8.57	6786.97		09/30/02	12.30	6784.92
	04/10/00	7.91	6787.63		04/02/03	11.02	6786.20
	08/14/00	9.21	6786.33		07/16/03	11.92	6785.30
	10/16/00	9.02	6786.52		10/08/03	11.08	6786.14
	01/22/01	9.39	6786.15		04/20/04	11.04	6786.18
	02/28/01	8.60	6786.94		10/04/04	11.38	6785.84
	03/27/01	8.14	6787.40		04/07/05	10.38	6786.84
	04/09/01	8.23	6787.31		10/03/05	11.35	6785.87
	07/09/01	7.54	6788.00		10/31/05	11.49	6785.73
	10/11/01	7.36	6788.18		04/03/06	11.23	6785.99
	02/07/02	7.30	6788.24		10/02/06	11.16	6786.06
	04/02/02	6.64	6788.90		04/10/07	10.98	6786.24
	07/09/02	7.30	6788.24		10/09/07	11.34	6785.88
	09/30/02	8.20	6787.34		04/08/08	10.20	6787.02
	01/14/03	6.47	6789.07		10/07/08	11.48	6785.74
	04/02/03	6.03	6789.51		04/08/09	11.70	6785.52
	07/16/03	7.30	6788.24		10/05/09	11.85	6785.37
	10/08/03	6.18	6789.36		04/19/10	9.32	6787.90
	01/21/04	7.57	6787.97		10/12/10	11.36	6785.86
	04/16/04	6.32	6789.22		04/05/11	11.23	6785.99
	10/04/04	7.65	6787.89		10/10/11	11.45	6785.77
	04/06/05	6.06	6789.48		04/23/12	11.72	6785.50

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
R7-M1	01/10/00	12.92	6783.08	R8-M1	01/10/00	13.14	6782.46
	02/09/00	12.21	6783.79		02/09/00	13.12	6782.48
	02/29/00	12.51	6783.49		02/29/00	13.28	6782.32
	04/10/00	12.10	6783.90		04/10/00	12.95	6782.65
	08/14/00	13.04	6782.96		08/14/00	Dry	(6782.20)
	10/16/00	12.58	6783.42		10/16/00	Dry	(6782.20)
	01/22/01	12.50	6783.50		01/22/01	Dry	(6782.20)
	02/28/01	12.31	6783.69		02/28/01	13.30	6782.30
	03/27/01	12.08	6783.92		03/27/01	Dry	(6782.20)
	04/09/01	12.15	6783.85		04/09/01	13.15	6782.45
	07/09/01	11.91	6784.09		07/09/01	12.96	6782.64
	10/10/01	11.46	6784.54		10/10/01	12.90	6782.70
	02/07/02	11.26	6784.74		02/07/02	12.77	6782.83
	04/02/02	11.11	6784.89		04/02/02	12.43	6783.17
	07/09/02	11.50	6784.50		07/09/02	12.31	6783.29
	09/30/02	11.53	6784.47		09/30/02	12.45	6783.15
	04/02/03	10.58	6785.42		04/02/03	11.40	6784.20
	07/16/03	11.15	6784.85		07/16/03	11.87	6783.73
	10/08/03	10.27	6785.73		10/08/03	10.93	6784.67
	04/20/04	9.88	6786.12		04/20/04	10.88	6784.72
	10/04/04	10.17	6785.83		10/04/04	10.88	6784.72
	04/07/05	9.94	6786.06		04/07/05	10.39	6785.21
	10/03/05	10.92	6785.08		10/03/05	11.28	6784.32
	10/31/05	10.98	6785.02		10/31/05	11.46	6784.14
	04/03/06	10.24	6785.76		04/03/06	10.82	6784.78
	10/02/06	10.79	6785.21		10/02/06	11.02	6784.58
	04/10/07	9.50	6786.50		04/10/07	9.29	6786.31
	10/09/07	10.57	6785.43		10/09/07	10.59	6785.01
	04/14/08	8.95	6787.05		04/14/08	9.95	6785.65
	10/07/08	11.50	6784.50		10/07/08	12.01	6783.59
	04/08/09	11.66	6784.34		04/08/09	12.27	6783.33
	10/05/09	12.47	6783.53		10/05/09	12.59	6783.01
	04/19/10	9.19	6786.81		04/19/10	10.23	6785.37
	10/12/10	11.02	6784.98		10/12/10	11.60	6784.00
	04/05/11	11.67	6784.33		04/05/11	12.06	6783.54
	10/10/11	11.58	6784.42		10/10/11	12.31	6783.29
	04/24/12	12.18	6783.82		04/24/12	12.64	6782.96
R7-M2	02/09/00	11.33	6784.45	R9-M1	01/10/00	13.46	6781.75
	02/29/00	11.68	6784.10		02/09/00	12.67	6782.54
	04/10/00	11.31	6784.47		02/29/00	13.06	6782.15
	08/14/00	12.12	6783.66		04/10/00	12.83	6782.38
	10/16/00	11.76	6784.02		08/14/00	13.57	6781.64
	01/22/01	11.91	6783.87		10/16/00	13.40	6781.81
	03/01/01	11.67	6784.11		01/22/01	Dry	(6780.67)
	03/27/01	11.39	6784.39		02/28/01	13.40	6781.81
	04/09/01	11.41	6784.37		03/27/01	Dry	(6780.67)
	07/09/01	10.93	6784.85		04/09/01	13.35	6781.86
	07/16/03	9.20	6786.58		07/09/01	13.19	6782.02
	10/31/05	8.85	6786.93		10/11/01	13.12	6782.09

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
R9-M1	01/28/02	13.13	6782.08	T00-01	10/06/05	9.04	6797.48
	02/07/02	13.17	6782.04		04/03/06	8.30	6798.22
	04/02/02	13.80	6781.41		10/04/06	8.70	6797.82
	07/09/02	13.14	6782.07		04/10/07	8.57	6797.95
	09/30/02	13.23	6781.98		10/09/07	8.96	6797.56
	01/14/03	12.70	6782.51		04/09/08	6.84	6799.68
	04/02/03	12.51	6782.70		10/09/08	9.61	6796.91
	07/16/03	13.13	6782.08		04/07/09	8.52	6798.00
	10/07/03	12.50	6782.71		10/07/09	9.87	6796.65
	01/21/04	12.20	6783.01		04/20/10	5.96	6800.56
	04/15/04	12.19	6783.02		10/11/10	9.21	6797.31
	10/04/04	11.85	6783.36		04/05/11	8.00	6798.52
	04/07/05	11.42	6783.79		10/11/11	8.84	6797.68
	10/03/05	11.78	6783.43	T00-02	08/15/00	10.03	6796.74
	10/31/05	11.90	6783.31		10/16/00	9.30	6797.47
	04/03/06	11.42	6783.79		01/23/01	9.50	6797.27
	10/02/06	11.13	6784.08		02/27/01	8.60	6798.17
	04/10/07	9.95	6785.26		03/27/01	9.23	6797.54
	10/09/07	10.91	6784.30		04/09/01	9.28	6797.49
	04/14/08	10.98	6784.23		07/10/01	9.79	6796.98
	10/07/08	12.69	6782.52		10/10/01	9.44	6797.33
	04/08/09	12.92	6782.29		02/06/02	9.97	6796.80
	10/05/09	13.04	6782.17		04/04/02	9.54	6797.23
	04/19/10	11.01	6784.20		07/11/02	Dry	(6796.50)
	10/12/10	12.75	6782.46		10/09/02	9.80	6796.97
	04/05/11	13.00	6782.21		04/20/10	3.99	6802.78
	10/10/11	13.01	6782.20	T00-03	08/15/00	7.94	6797.33
	04/24/12	13.19	6782.02		10/16/00	6.85	6798.42
T00-01	08/01/00	11.95	6796.62		01/23/01	7.57	6797.70
	08/15/00	12.02	6796.55		02/27/01	7.59	6797.68
	10/16/00	11.25	6797.32		03/27/01	7.39	6797.88
	01/23/01	11.48	6797.09		04/09/01	7.43	6797.84
	02/27/01	10.74	6797.83		07/10/01	7.92	6797.35
	03/27/01	11.22	6797.35		10/10/01	7.75	6797.52
	04/09/01	11.06	6797.51		02/06/02	8.08	6797.19
	07/18/01	9.52	6797.00		04/04/02	7.39	6797.88
	10/09/01	9.44	6797.08		07/11/02	8.26	6797.01
	01/31/02	9.55	6796.97		10/09/02	7.34	6797.93
	04/03/02	8.53	6797.99	T00-04	08/15/00	9.18	6797.27
	07/10/02	9.70	6796.82		10/16/00	8.40	6798.05
	10/08/02	9.67	6796.85		01/23/01	8.88	6797.57
	01/13/03	9.49	6797.03		02/27/01	8.84	6797.61
	04/09/03	8.40	6798.12		03/27/01	8.63	6797.82
	07/07/03	9.71	6796.81		04/09/01	8.67	6797.78
	10/08/03	8.71	6797.81		07/11/01	7.18	6797.13
	01/20/04	9.39	6797.13		10/15/01	7.00	6797.31
	04/13/04	8.24	6798.28		01/31/02	7.30	6797.01
	10/07/04	8.81	6797.71		04/03/02	6.73	6797.58
	04/07/05	7.05	6799.47		07/09/02	7.41	6796.90

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
T00-04	10/08/02	6.69	6797.62	T00-07	02/27/01	11.14	6811.95
	01/13/03	6.60	6797.71		03/27/01	11.07	6812.02
	04/09/03	6.62	6797.69		04/09/01	11.30	6811.79
	07/09/03	7.85	6796.46		07/10/01	11.93	6811.16
	10/06/03	6.62	6797.69		10/10/01	12.00	6811.09
	01/20/04	6.96	6797.35		02/06/02	11.95	6811.14
	04/13/04	6.61	6797.70		04/04/02	11.76	6811.33
	10/07/04	6.71	6797.60		07/11/02	12.15	6810.94
	04/07/05	4.98	6799.33		10/09/02	11.67	6811.42
	10/06/05	7.03	6797.28	T00-08	10/20/00	Dry	(6903.49)
	04/03/06	6.65	6797.66		02/06/01	7.77	6904.11
	10/04/06	7.02	6797.29		02/27/01	6.98	6904.90
	04/10/07	6.91	6797.40		04/10/01	9.91	6904.05
	10/09/07	6.81	6797.50		07/10/01	9.71	6904.25
	04/09/08	5.19	6799.12		10/10/01	9.39	6904.57
	10/09/08	7.06	6797.25		02/06/02	10.32	6903.64
	04/07/09	6.94	6797.37		04/04/02	10.35	6903.61
	10/09/09	Dry	(6796.40)		07/11/02	10.37	6903.59
	04/20/10	4.18	6800.13		10/09/02	9.70	6904.26
	10/11/10	6.78	6797.53	T00-09	10/20/00	23.97	6879.98
	04/05/11	6.78	6797.53		02/06/01	24.05	6879.90
	10/11/11	7.05	6797.26		02/27/01	23.95	6880.00
T00-05	08/15/00	12.39	6797.06		04/10/01	25.14	6880.94
	10/16/00	11.77	6797.68		07/10/01	25.38	6880.70
	01/23/01	12.20	6797.25		10/10/01	26.19	6879.89
	02/27/01	12.10	6797.35		02/06/02	26.66	6879.42
	03/27/01	11.93	6797.52		04/04/02	26.56	6879.52
	04/09/01	11.93	6797.52		07/11/02	26.65	6879.43
	07/10/01	12.14	6797.31		10/09/02	Dry	(6878.38)
	10/10/01	12.24	6797.21	T00-10	10/20/00	21.85	6877.04
	02/06/02	12.32	6797.13		02/06/01	21.93	6876.96
	04/04/02	12.01	6797.44		02/27/01	21.84	6877.05
	07/11/02	12.43	6797.02		04/10/01	23.81	6877.16
	10/09/02	11.96	6797.49		07/10/01	23.93	6877.04
T00-06	08/15/00	Dry	(6806.15)		10/10/01	23.99	6876.98
	10/16/00	14.43	6806.34		02/06/02	23.96	6877.01
	01/23/01	14.45	6806.32		04/04/02	23.95	6877.02
	02/27/01	14.45	6806.32		07/11/02	24.00	6876.97
	03/27/01	14.37	6806.40		10/09/02	24.08	6876.89
	04/09/01	14.33	6806.44	T00-11	10/20/00	21.03	6871.05
	07/10/01	14.51	6806.26		02/06/01	21.17	6870.91
	10/10/01	14.63	6806.14		02/27/01	20.72	6871.36
	02/06/02	14.52	6806.25		04/10/01	22.09	6872.12
	04/04/02	14.52	6806.25		02/06/02	23.13	6871.08
	07/11/02	14.49	6806.28		04/04/02	22.80	6871.41
	10/09/02	14.54	6806.23		07/11/02	24.00	6870.21
T00-07	08/15/00	11.93	6811.16		10/09/02	Dry	(6871.17)
	10/16/00	11.83	6811.26	T00-12	10/20/00	17.42	6871.38
	01/23/01	11.76	6811.33		02/06/01	17.55	6871.25

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
T00-12	02/27/01	17.15	6871.65	T01-01	02/27/01	9.09	6797.73
	04/10/01	18.65	6872.29		03/27/01	9.54	6797.28
	07/10/01	19.45	6871.49		04/18/01	9.75	6797.07
	10/10/01	19.88	6871.06		07/18/01	9.00	6797.09
	02/06/02	19.48	6871.46		10/09/01	8.91	6797.18
	04/04/02	19.20	6871.74		01/30/02	9.02	6797.07
	07/11/02	20.85	6870.09		04/03/02	Dry	(6795.24)
	10/09/02	20.80	6870.14		07/10/02	9.23	6796.86
T00-13	10/20/00	10.22	6873.07		10/08/02	9.22	6796.87
	02/06/01	11.67	6873.10		04/09/03	7.83	6798.26
	02/27/01	11.06	6873.71		10/07/03	7.99	6798.10
	04/10/01	12.00	6874.74		04/14/04	7.73	6798.36
	07/10/01	13.55	6873.19		10/07/04	8.10	6797.99
	10/10/01	14.11	6872.63		04/06/05	6.69	6799.40
	02/06/02	13.57	6873.17		10/06/05	8.31	6797.78
	04/04/02	13.13	6873.61		04/27/06	8.37	6797.72
	07/11/02	15.35	6871.39		10/04/06	7.95	6798.14
	10/09/02	15.30	6871.44		04/11/07	7.99	6798.10
T00-14	10/20/00	9.00	6872.81		10/09/07	8.05	6798.04
	02/06/01	8.67	6873.14		04/09/08	6.39	6799.70
	02/27/01	8.03	6873.78		10/09/08	9.14	6796.95
	04/10/01	10.95	6874.84		04/07/09	7.82	6798.27
	07/10/01	12.55	6873.24		10/09/09	Dry	(6795.24)
	10/10/01	13.14	6872.65		04/20/10	5.49	6800.60
	02/06/02	12.57	6873.22		04/20/10	5.56	6800.53
	04/04/02	12.12	6873.67		10/11/10	8.51	6797.58
	07/11/02	14.44	6871.35		04/04/11	7.39	6798.70
	10/09/02	14.40	6871.39		10/11/11	8.17	6797.92
T00-15	10/20/00	7.80	6872.56		04/25/12	8.45	6797.64
	02/06/01	6.92	6873.44	T01-02	02/08/01	10.78	6797.48
	02/27/01	6.20	6874.16		02/27/01	10.56	6797.70
	04/10/01	9.16	6875.28		03/27/01	10.51	6797.75
	07/10/01	10.80	6873.64		04/18/01	10.58	6797.68
	10/10/01	11.45	6872.99		07/18/01	9.59	6797.92
	02/06/02	10.87	6873.57		01/30/02	9.75	6797.91
	04/04/02	10.38	6874.06		04/03/02	9.55	6798.11
	07/11/02	12.87	6871.57		07/10/02	9.67	6797.99
	10/09/02	12.90	6871.54		10/08/02	9.67	6797.99
T00-17	10/20/00	8.72	6852.58		04/09/03	9.42	6798.24
T00-18	10/20/00	10.99	6851.18		07/07/03	9.61	6798.05
T00-19	10/20/00	7.72	6851.03		10/07/03	9.36	6798.30
T00-20	10/20/00	9.91	6846.06		04/14/04	9.28	6798.38
T00-21	10/20/00	Dry	(6843.80)		10/05/04	9.31	6798.35
T00-22	10/20/00	Dry	(6839.84)		04/05/05	8.30	6799.36
T00-23	10/20/00	Dry	(6826.30)		10/06/05	9.34	6798.32
T00-24	10/20/00	15.13	6849.72		04/27/06	9.36	6798.30
T00-25	10/20/00	Dry	(6860.77)		10/04/06	9.36	6798.30
T00-26	10/20/00	Dry	(6851.05)		04/11/07	9.34	6798.32
T01-01	02/08/01	9.00	6797.82		01/09/08	9.41	6798.25

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
T01-02	04/09/08	8.34	6799.32	T01-05	02/27/01	22.25	6800.61
	10/09/08	9.41	6798.25		03/27/01	21.73	6801.13
	04/07/09	9.33	6798.33		04/18/01	21.95	6800.91
	10/07/09	9.45	6798.21		07/10/01	20.90	6801.31
	04/20/10	7.35	6800.31		10/09/01	20.92	6801.29
	10/11/10	9.32	6798.34		01/30/02	21.14	6801.07
	04/04/11	9.13	6798.53		04/03/02	21.00	6801.21
	10/11/11	9.20	6798.46		07/09/02	21.00	6801.21
	04/25/12	9.40	6798.26		10/08/02	21.22	6800.99
T01-03	02/08/01	14.56	6796.95		04/01/03	20.72	6801.49
	02/27/01	13.19	6798.32		04/09/03	20.74	6801.47
	03/27/01	13.03	6798.48		07/08/03	21.92	6800.29
	04/18/01	13.24	6798.27		10/07/03	20.62	6801.59
	07/10/01	11.90	6798.75		04/13/04	20.70	6801.51
	10/10/01	11.87	6798.78		10/05/04	20.75	6801.46
	01/30/02	12.14	6798.51		04/05/05	20.38	6801.83
	04/04/02	12.06	6798.59		10/06/05	20.64	6801.57
	07/11/02	12.10	6798.55		04/27/06	20.66	6801.55
	10/09/02	12.10	6798.55		10/03/06	20.51	6801.70
T01-04	02/08/01	15.55	6798.99		04/11/07	20.50	6801.71
	02/27/01	15.44	6799.10		10/09/07	20.68	6801.53
	03/27/01	15.31	6799.23		04/09/08	20.18	6802.03
	04/18/01	15.45	6799.09		10/09/08	20.49	6801.72
	07/18/01	14.60	6799.55		04/07/09	20.64	6801.57
	10/10/01	14.60	6799.55		10/07/09	20.77	6801.44
	01/30/02	14.80	6799.35		04/20/10	19.95	6802.26
	04/03/02	14.65	6799.50		10/11/10	20.59	6801.62
	07/10/02	14.70	6799.45		04/05/11	20.68	6801.53
	10/08/02	14.80	6799.35		10/11/11	20.55	6801.66
	04/09/03	14.39	6799.76		04/25/12	20.92	6801.29
	10/07/03	14.41	6799.74	T01-06	02/14/01	Dry	(6804.52)
	04/13/04	14.37	6799.78		02/27/01	Dry	(6804.52)
	10/05/04	14.42	6799.73		03/27/01	24.06	6804.09
	04/05/05	13.97	6800.18		04/18/01	24.30	6803.85
	10/06/05	14.32	6799.83		07/18/01	24.71	6803.70
	04/27/06	14.36	6799.79		10/09/01	24.97	6803.44
	10/03/06	14.24	6799.91		01/30/02	25.15	6803.26
	04/11/07	14.30	6799.85		04/03/02	25.10	6803.31
	10/09/07	14.35	6799.80		07/09/02	Dry	(6804.52)
	04/09/08	13.94	6800.21		10/08/02	25.05	6803.36
	10/09/08	14.42	6799.73		04/01/03	23.04	6805.37
	04/07/09	14.40	6799.75		04/10/03	23.72	6804.69
	10/07/09	14.54	6799.61		10/08/03	24.51	6803.90
	04/20/10	13.61	6800.54		04/20/04	24.10	6804.31
	10/11/10	14.36	6799.79		10/06/04	24.47	6803.94
	04/04/11	14.31	6799.84		04/07/05	22.52	6805.89
	10/11/11	14.33	6799.82		10/06/05	24.44	6803.97
	04/25/12	14.55	6799.60		04/03/06	23.62	6804.79
T01-05	02/08/01	22.22	6800.64		10/03/06	24.45	6803.96

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
T01-06	04/11/07	24.84	6803.57	T01-08	04/03/06	3.78	6804.33
	10/09/07	29.23	6799.18		10/02/06	4.63	6803.48
	04/09/08	22.51	6805.90		04/11/07	3.81	6804.30
	10/07/08	24.96	6803.45		10/09/07	5.04	6803.07
	04/07/09	24.66	6803.75		04/10/08	3.01	6805.10
	10/09/09	25.02	6803.39		10/07/08	5.72	6802.39
	04/20/10	22.23	6806.18		04/07/09	3.80	6804.31
	10/12/10	24.89	6803.52		10/09/09	7.12	6800.99
	04/05/11	24.86	6803.55		04/20/10	2.92	6805.19
	10/12/11	24.86	6803.55		10/11/10	5.70	6802.41
	04/23/12	24.89	6803.52		04/05/11	3.74	6804.37
T01-07	07/11/01	19.95	6803.34		10/10/11	6.56	6801.55
	10/09/01	19.95	6803.34		04/23/12	4.98	6803.13
	01/31/02	20.02	6803.27	T01-09	07/10/01	Dry	(6813.38)
	04/03/02	19.96	6803.33		10/09/01	Dry	(6813.38)
	07/09/02	19.90	6803.39		01/31/02	Dry	(6813.38)
	10/08/02	19.96	6803.33		04/03/02	Dry	(6813.38)
	04/09/03	19.83	6803.46		07/09/02	Dry	(6813.38)
	10/07/03	19.75	6803.54		10/07/02	Dry	(6813.38)
	04/13/04	19.80	6803.49		04/01/03	Dry	(6813.38)
	10/06/04	19.87	6803.42		10/08/03	Dry	(6813.38)
	04/05/05	19.55	6803.74		04/20/04	Dry	(6813.38)
	10/06/05	19.79	6803.50		10/06/04	Dry	(6813.38)
	04/27/06	19.70	6803.59		04/07/05	Dry	(6813.38)
	10/03/06	19.61	6803.68		10/05/05	Dry	(6813.38)
	04/11/07	19.61	6803.68		04/03/06	Dry	(6813.38)
	10/09/07	19.66	6803.63		10/02/06	Dry	(6813.38)
	04/09/08	19.44	6803.85		04/11/07	Dry	(6813.38)
	10/09/08	19.63	6803.66		10/09/07	Dry	(6813.38)
	04/07/09	19.71	6803.58		04/09/08	Dry	(6813.38)
	10/05/09	19.77	6803.52		04/07/09	Dry	(6813.38)
	04/20/10	19.20	6804.09		10/09/09	Dry	(6813.38)
	10/12/10	19.63	6803.66		04/20/10	Dry	(6813.38)
	04/05/11	19.74	6803.55		10/12/10	Dry	(6813.38)
	10/11/11	19.65	6803.64		04/05/11	Dry	(6813.38)
	04/24/12	19.74	6803.55		10/12/11	Dry	(6813.38)
T01-08	07/11/01	4.26	6803.85		04/23/12	Dry	(6813.38)
	10/11/01	4.46	6803.65	T01-10	07/10/01	7.03	6810.42
	01/31/02	5.15	6802.96		10/10/01	8.07	6809.38
	04/01/02	4.96	6803.15		01/31/02	8.87	6808.58
	07/09/02	4.48	6803.63		04/01/02	7.92	6809.53
	10/08/02	5.12	6802.99		07/09/02	Dry	(6808.10)
	04/02/03	3.17	6804.94		10/08/02	8.56	6808.89
	04/09/03	3.52	6804.59		04/01/03	7.30	6810.15
	10/06/03	5.84	6802.27		10/08/03	8.63	6808.82
	04/13/04	3.19	6804.92		04/20/04	8.21	6809.24
	10/07/04	5.77	6802.34		10/06/04	8.74	6808.71
	04/07/05	2.60	6805.51		04/07/05	6.75	6810.70
	10/06/05	4.57	6803.54		10/06/05	7.87	6809.58

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
T01-10	04/03/06	6.39	6811.06	T01-13	10/09/02	6.92	6822.75
	10/02/06	8.23	6809.22		04/08/03	6.50	6823.17
	04/11/07	8.21	6809.24		10/06/03	6.47	6823.20
	10/09/07	6.96	6810.49		04/13/04	6.47	6823.20
	04/09/08	4.02	6813.43		10/06/04	6.55	6823.12
	10/07/08	8.09	6809.36		04/07/05	4.09	6825.58
	04/07/09	7.58	6809.87		10/06/05	6.85	6822.82
	10/09/09	8.88	6808.57		04/03/06	7.00	6822.67
	04/20/10	4.86	6812.59		10/03/06	7.59	6822.08
	10/11/10	7.83	6809.62		04/10/07	6.70	6822.97
	04/05/11	8.48	6808.97		10/09/07	7.05	6822.62
	10/12/11	8.73	6808.72		04/10/08	4.22	6825.45
	04/23/12	8.44	6809.01		10/09/08	7.80	6821.87
T01-11	07/10/01	Dry	(6831.48)		04/07/09	7.69	6821.98
	10/10/01	Dry	(6831.48)		04/20/10	4.22	6825.45
	02/06/02	Dry	(6831.48)		10/11/10	7.67	6822.00
	04/04/02	Dry	(6831.48)		04/05/11	7.53	6822.14
	07/11/02	Dry	(6831.48)		10/11/11	8.08	6821.59
	10/09/02	Dry	(6831.48)	T01-15	07/10/01	Dry	(6857.30)
T01-12	07/11/01	20.19	6824.15		10/10/01	Dry	(6857.30)
	10/09/01	19.83	6824.51		02/06/02	Dry	(6857.30)
	01/30/02	20.76	6823.58		04/04/02	Dry	(6857.30)
	04/03/02	20.60	6823.74		07/11/02	Dry	(6857.30)
	07/09/02	20.59	6823.75		10/09/02	Dry	(6857.30)
	10/07/02	21.15	6823.19	T01-16	07/10/01	Dry	(6850.91)
	04/08/03	20.12	6824.22		10/10/01	Dry	(6850.91)
	07/08/03	20.68	6823.66		02/06/02	Dry	(6850.91)
	10/07/03	19.62	6824.72		04/04/02	Dry	(6850.91)
	04/13/04	20.25	6824.09		07/11/02	Dry	(6850.91)
	10/07/04	20.25	6824.09		10/09/02	Dry	(6850.91)
	04/06/05	19.54	6824.80	T01-17	07/10/01	Dry	(6843.76)
	10/05/05	20.50	6823.84		10/10/01	5.07	6850.07
	04/28/06	20.69	6823.65		02/06/02	5.77	6849.37
	10/03/06	20.14	6824.20		04/04/02	8.35	6846.79
	04/11/07	20.08	6824.26		07/11/02	9.06	6846.08
	10/09/07	20.84	6823.50		10/09/02	10.49	6844.65
	04/10/08	20.39	6823.95	T01-18	07/20/01	20.01	6840.48
	10/08/08	20.63	6823.71		10/10/01	20.10	6840.39
	04/07/09	20.99	6823.35		01/30/02	19.62	6840.87
	10/08/09	21.23	6823.11		04/03/02	19.51	6840.98
	10/12/10	20.86	6823.48		07/09/02	19.75	6840.74
	04/05/11	21.00	6823.34		10/07/02	21.48	6839.01
	10/11/11	20.70	6823.64		04/07/03	19.56	6840.93
	04/24/12	21.02	6823.32		10/07/03	20.33	6840.16
T01-13	07/20/01	7.21	6822.46		04/12/04	19.51	6840.98
	10/10/01	6.93	6822.74		10/06/04	19.85	6840.64
	01/31/02	7.02	6822.65		04/07/05	18.08	6842.41
	04/01/02	6.82	6822.85		10/05/05	18.91	6841.58
	07/09/02	6.76	6822.91		04/03/06	18.95	6841.54

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
T01-18	10/03/06	19.41	6841.08	T01-20	10/03/06	11.13	6834.27
	04/10/07	19.14	6841.35		04/10/07	10.55	6834.85
	10/08/07	19.12	6841.37		10/09/07	11.05	6834.35
	04/09/08	18.14	6842.35		04/10/08	9.25	6836.15
	10/08/08	18.89	6841.60		10/09/08	10.98	6834.42
	04/07/09	18.94	6841.55		04/07/09	10.90	6834.50
	10/06/09	18.80	6841.69		10/06/09	11.00	6834.40
	04/20/10	18.16	6842.33		04/20/10	8.76	6836.64
	10/12/10	18.24	6842.25		10/11/10	10.55	6834.85
	04/05/11	18.40	6842.09		04/05/11	10.50	6834.90
	10/11/11	18.14	6842.35		10/11/11	11.14	6834.26
T01-19	07/12/01	8.92	6839.72	T01-22	07/10/01	Dry	(6860.55)
	10/10/01	9.05	6839.59		10/10/01	Dry	(6860.55)
	01/30/02	8.70	6839.94		02/06/02	Dry	(6860.55)
	04/03/02	8.78	6839.86		04/04/02	Dry	(6860.55)
	07/09/02	10.00	6838.64		07/11/02	Dry	(6860.55)
	10/07/02	10.35	6838.29		10/09/02	Dry	(6860.55)
	04/08/03	8.90	6839.74	T01-23	07/11/01	9.67	6849.22
	07/07/03	9.82	6838.82		10/08/01	10.77	6848.12
	10/07/03	9.39	6839.25		01/30/02	10.12	6848.77
	04/12/04	8.87	6839.77		04/03/02	9.64	6849.25
	10/06/04	9.03	6839.61		07/09/02	12.50	6846.39
	04/05/05	7.60	6841.04		10/07/02	13.59	6845.30
	10/05/05	8.06	6840.58		04/08/03	14.40	6844.49
	04/28/06	8.52	6840.12		07/07/03	12.28	6846.61
	10/03/06	8.78	6839.86		10/07/03	11.07	6847.82
	04/11/07	8.86	6839.78		04/12/04	9.05	6849.84
	10/08/07	8.26	6840.38		10/06/04	9.74	6849.15
	04/10/08	7.54	6841.10		04/07/05	8.43	6850.46
	10/08/08	8.08	6840.56		10/05/05	8.46	6850.43
	04/06/09	8.04	6840.60		04/03/06	8.05	6850.84
	10/06/09	9.21	6839.43		10/03/06	7.66	6851.23
	04/21/10	7.18	6841.46		04/10/07	7.41	6851.48
	10/12/10	7.37	6841.27		10/08/07	7.15	6851.74
	04/05/11	7.89	6840.75		04/09/08	7.03	6851.86
	10/12/11	7.20	6841.44		10/08/08	7.15	6851.74
T01-20	07/19/01	11.60	6833.80		04/07/09	6.95	6851.94
	10/11/01	11.79	6833.61		10/06/09	7.86	6851.03
	01/31/02	12.07	6833.33		04/20/10	6.80	6852.09
	04/01/02	11.91	6833.49		10/12/10	6.69	6852.20
	07/09/02	12.37	6833.03		04/05/11	6.58	6852.31
	10/09/02	12.49	6832.91		10/12/11	6.79	6852.10
	04/08/03	11.90	6833.50	T01-24	07/11/01	8.69	6850.14
	10/06/03	11.39	6834.01		10/08/01	9.82	6849.01
	04/13/04	11.39	6834.01		01/30/02	9.05	6849.78
	10/06/04	11.30	6834.10		04/03/02	8.51	6850.32
	04/07/05	10.63	6834.77		07/09/02	Dry	(6849.12)
	10/05/05	10.60	6834.80		10/07/02	Dry	(6849.12)
	04/03/06	10.86	6834.54		04/01/03	8.67	6850.16

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
T01-24	04/07/03	8.75	6850.08	T01-26	04/07/03	16.66	6861.58
	10/07/03	Dry	(6849.12)		10/07/03	18.80	6859.44
	04/12/04	7.88	6850.95		04/12/04	15.65	6862.59
	10/06/04	8.67	6850.16		10/06/04	17.75	6860.49
	04/07/05	7.20	6851.63		04/07/05	14.58	6863.66
	10/05/05	7.32	6851.51		10/05/05	15.83	6862.41
	04/03/06	6.83	6852.00		04/03/06	15.50	6862.74
	10/03/06	6.32	6852.51		10/03/06	15.67	6862.57
	04/11/07	6.00	6852.83		04/11/07	14.96	6863.28
	10/08/07	5.72	6853.11		10/08/07	15.52	6862.72
	04/09/08	5.62	6853.21		04/10/08	3.67	6874.57
	10/07/08	5.75	6853.08		10/07/08	16.06	6862.18
	04/07/09	5.51	6853.32		04/07/09	15.16	6863.08
	10/09/09	6.61	6852.22		10/08/09	8.29	6869.95
	04/20/10	5.29	6853.54		04/20/10	14.14	6864.10
	10/12/10	5.15	6853.68		10/12/10	14.83	6863.41
	04/05/11	5.05	6853.78		04/05/11	14.38	6863.86
	10/12/11	5.30	6853.53		10/12/11	15.82	6862.42
	04/23/12	5.22	6853.61		04/23/12	4.69	6873.55
T01-25	07/10/01	13.98	6842.35	T01-27	07/12/01	0.05	6864.66
	10/11/01	12.42	6843.91		10/10/01	0.13	6864.58
	01/31/02	11.60	6844.73		04/01/02	1.05	6863.66
	04/01/02	10.89	6845.44		07/09/02	2.25	6862.46
	07/09/02	10.84	6845.49		10/09/02	2.33	6862.38
	10/09/02	10.49	6845.84		04/08/03	1.17	6863.54
	04/08/03	9.95	6846.38		10/08/03	1.60	6863.11
	10/06/03	9.03	6847.30		10/07/04	0.45	6864.26
	04/13/04	8.58	6847.75		04/07/05	0.00	6864.71
	10/06/04	7.53	6848.80		04/03/06	0.59	6864.12
	04/07/05	6.65	6849.68		10/02/06	2.26	6862.45
	10/05/05	6.23	6850.10		04/11/07	0.56	6864.15
	04/03/06	6.59	6849.74		10/09/07	0.91	6863.80
	10/03/06	7.50	6848.83		04/10/08	0.62	6864.09
	04/11/07	6.16	6850.17		10/07/08	2.06	6862.65
	10/09/07	9.84	6846.49		04/07/09	1.50	6863.21
	04/10/08	4.39	6851.94		10/09/09	2.28	6862.43
	10/09/08	7.90	6848.43		04/20/10	0.71	6864.00
	04/07/09	7.01	6849.32		10/13/10	2.21	6862.50
	10/06/09	7.39	6848.94		04/05/11	1.02	6863.69
	04/20/10	4.13	6852.20		10/12/11	1.29	6863.42
	10/11/10	7.27	6849.06		04/23/12	1.22	6863.49
	04/05/11	6.32	6850.01	T01-28	07/11/01	3.54	6865.66
	10/11/11	7.25	6849.08		10/10/01	4.06	6865.14
T01-26	07/11/01	17.08	6861.16		01/31/02	3.98	6865.22
	10/08/01	18.37	6859.87		04/01/02	4.03	6865.17
	01/30/02	17.78	6860.46		07/09/02	Dry	(6864.08)
	04/03/02	17.21	6861.03		10/09/02	5.03	6864.17
	07/09/02	19.35	6858.89		04/01/03	4.35	6864.85
	10/07/02	19.75	6858.49		04/08/03	4.50	6864.70

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
T01-28	10/08/03	Dry	(6864.08)	T1-D	08/14/00	6.39	6789.43
	04/20/04	3.95	6865.25		10/16/00	5.70	6790.12
	10/07/04	4.49	6864.71		01/22/01	6.00	6789.82
	04/07/05	4.87	6864.33		02/28/01	5.71	6790.11
	10/05/05	4.50	6864.70		03/27/01	5.36	6790.46
	04/03/06	4.14	6865.06		04/09/01	7.47	6788.35
	10/02/06	4.03	6865.17		07/09/01	5.20	6790.62
	04/11/07	3.84	6865.36		02/07/02	5.60	6790.22
	10/09/07	3.92	6865.28		07/09/02	5.92	6789.90
	04/10/08	3.67	6865.53		09/30/02	6.68	6789.14
	10/07/08	4.30	6864.90		07/16/03	5.01	6790.81
	04/07/09	3.92	6865.28		10/31/05	3.79	6792.03
	10/09/09	4.72	6864.48	T1-S	01/10/00	6.56	6789.28
	04/20/10	3.54	6865.66		02/09/00	5.87	6789.97
	10/11/10	4.18	6865.02		02/29/00	6.05	6789.79
	04/05/11	3.53	6865.67		04/10/00	5.17	6790.67
	10/10/11	3.96	6865.24		08/14/00	6.44	6789.40
	04/23/12	3.88	6865.32		10/16/00	5.77	6790.07
T01-35	10/23/01	12.25	6812.01		01/22/01	6.10	6789.74
	01/31/02	12.42	6811.84		03/27/01	5.33	6790.51
	04/01/02	12.35	6811.91		04/09/01	5.52	6790.32
	07/09/02	12.30	6811.96		07/09/01	5.26	6790.58
	10/07/02	12.33	6811.93		02/07/02	5.64	6790.20
	01/13/03	12.24	6812.02		07/09/02	5.97	6789.87
	04/08/03	12.11	6812.15		09/30/02	6.72	6789.12
	07/07/03	12.24	6812.02		07/16/03	5.04	6790.80
	10/07/03	11.95	6812.31		10/31/05	4.80	6791.04
	01/20/04	12.19	6812.07	T2-D	01/10/00	8.54	6787.21
	04/13/04	12.08	6812.18		02/09/00	7.81	6787.94
	10/06/04	12.06	6812.20		03/01/00	8.00	6787.75
	04/05/05	11.85	6812.41		04/10/00	6.94	6788.81
	10/05/05	12.09	6812.17		08/14/00	8.30	6787.45
	04/28/06	12.10	6812.16		10/16/00	8.02	6787.73
	10/02/06	11.94	6812.32		01/22/01	8.59	6787.16
	04/11/07	11.96	6812.30		02/28/01	7.88	6787.87
	10/09/07	12.09	6812.17		04/09/01	7.45	6788.30
	04/09/08	11.89	6812.37		07/09/01	6.52	6789.23
	10/09/08	12.08	6812.18		10/31/05	3.91	6791.84
	04/07/09	12.20	6812.06	T2-S	01/10/00	8.51	6787.20
	10/06/09	12.68	6811.58		02/09/00	7.78	6787.93
	04/20/10	11.72	6812.54		03/01/00	7.95	6787.76
	10/12/10	12.09	6812.17		04/10/00	6.92	6788.79
	04/05/11	12.25	6812.01		08/14/00	8.26	6787.45
	10/11/11	12.05	6812.21		10/16/00	7.99	6787.72
	04/24/12	12.15	6812.11		01/22/01	8.55	6787.16
T1-D	01/10/00	6.35	6789.47		04/09/01	7.40	6788.31
	02/09/00	5.68	6790.14		07/09/01	6.48	6789.23
	02/29/00	5.88	6789.94		10/31/05	3.83	6791.88
	04/10/00	5.10	6790.72	T3-D	01/10/00	8.55	6787.18

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
T3-D	02/09/00	7.80	6787.93	T4-S	07/16/03	5.02	6790.55
	03/01/00	7.95	6787.78		10/31/05	5.28	6790.29
	04/10/00	6.93	6788.80	T5-D	01/10/00	8.51	6787.20
	08/14/00	8.28	6787.45		02/09/00	7.88	6787.83
	10/16/00	8.02	6787.71		03/01/00	7.94	6787.77
	01/22/01	8.59	6787.14		04/10/00	6.91	6788.80
	02/28/01	7.86	6787.87		08/14/00	8.26	6787.45
	04/09/01	7.43	6788.30		10/16/00	8.00	6787.71
	07/09/01	6.52	6789.21		01/22/01	8.55	6787.16
	10/31/05	3.87	6791.86		02/28/01	7.85	6787.86
T3-S	01/10/00	8.58	6787.19		04/09/01	7.43	6788.28
	02/09/00	7.35	6788.42		07/09/01	6.50	6789.21
	03/01/00	8.00	6787.77		10/31/05	6.38	6789.33
	04/10/00	6.97	6788.80	T5-S	01/10/00	8.50	6787.20
	08/14/00	8.35	6787.42		02/09/00	7.78	6787.92
	10/16/00	8.05	6787.72		03/01/00	7.93	6787.77
	01/22/01	8.60	6787.17		04/10/00	6.90	6788.80
	04/09/01	7.47	6788.30		08/14/00	8.25	6787.45
	07/09/01	6.57	6789.20		10/16/00	8.01	6787.69
	10/31/05	3.89	6791.88		01/22/01	8.60	6787.10
T4-D	01/10/00	8.53	6787.20		04/09/01	7.43	6788.27
	02/09/00	7.80	6787.93		07/09/01	6.50	6789.20
	02/29/00	8.04	6787.69		10/31/05	5.40	6790.30
	04/10/00	6.92	6788.81	T6-D	01/10/00	10.95	6784.71
	08/14/00	8.28	6787.45		02/09/00	9.80	6785.86
	10/16/00	8.03	6787.70		02/29/00	9.94	6785.72
	01/22/01	8.57	6787.16		04/10/00	9.35	6786.31
	02/28/01	7.88	6787.85		08/14/00	10.33	6785.33
	03/27/01	7.38	6788.35		10/16/00	10.04	6785.62
	04/09/01	7.45	6788.28		01/22/01	11.50	6784.16
	07/09/01	6.52	6789.21		02/28/01	10.17	6785.49
	02/07/02	5.84	6789.89		03/27/01	9.99	6785.67
	07/09/02	6.12	6789.61		04/09/01	10.27	6785.39
	09/30/02	7.08	6788.65		07/09/01	9.20	6786.46
	07/16/03	5.15	6790.58		10/11/01	8.55	6787.11
	10/31/05	5.42	6790.31		01/28/02	8.40	6787.26
T4-S	01/10/00	8.40	6787.17		04/02/02	8.67	6786.99
	02/09/00	7.63	6787.94		07/09/02	8.36	6787.30
	02/29/00	7.94	6787.63		09/30/02	8.41	6787.25
	04/10/00	6.77	6788.80		01/14/03	6.86	6788.80
	08/14/00	8.16	6787.41		04/02/03	6.88	6788.78
	10/16/00	7.76	6787.81		07/16/03	8.38	6787.28
	01/22/01	8.47	6787.10		10/08/03	7.19	6788.47
	03/27/01	7.14	6788.43		01/21/04	7.48	6788.18
	04/09/01	7.27	6788.30		04/16/04	8.05	6787.61
	07/09/01	6.38	6789.19		10/04/04	7.52	6788.14
	02/07/02	5.68	6789.89		04/07/05	7.22	6788.44
	07/09/02	5.93	6789.64		10/04/05	8.16	6787.50
	09/30/02	6.84	6788.73		10/31/05	8.35	6787.31

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
T6-D	04/03/06	7.45	6788.21	T99-03	03/06/01	23.82	6796.70
	10/02/06	8.39	6787.27		03/27/01	23.78	6796.74
	04/10/07	7.84	6787.82		04/10/01	Dry	(6795.18)
	10/09/07	9.11	6786.55		07/09/01	22.35	6798.17
	04/14/08	7.95	6787.71		10/17/01	23.45	6797.07
	10/07/08	10.21	6785.45		02/06/02	24.18	6796.34
	04/08/09	10.05	6785.61		04/02/02	24.98	6795.54
	10/05/09	10.46	6785.20		04/02/02	24.98	6795.54
	04/19/10	8.21	6787.45		10/07/02	Dry	(6795.18)
	10/11/10	7.44	6788.22	T99-05	01/13/00	11.28	6701.78
	04/05/11	10.00	6785.66		04/10/00	10.95	6702.11
	10/10/11	10.21	6785.45		07/25/00	12.92	6700.14
	04/24/12	10.60	6785.06		04/10/01	11.05	6702.01
T6-S	01/10/00	10.12	6785.52		07/09/01	12.77	6700.29
	02/09/00	9.40	6786.24		10/10/01	12.68	6700.38
	02/29/00	8.78	6786.86		02/06/02	11.49	6701.57
	04/10/00	7.59	6788.05		04/03/02	11.33	6701.73
	08/14/00	10.28	6785.36		07/11/02	12.95	6700.11
	10/16/00	9.80	6785.84		10/08/02	12.51	6700.55
	01/22/01	10.45	6785.19	T99-06	01/13/00	Dry	(6722.54)
	03/27/01	7.81	6787.83		04/12/00	Dry	(6722.54)
	04/09/01	8.22	6787.42		07/25/00	Dry	(6722.54)
	07/09/01	7.40	6788.24		04/10/01	Dry	(6722.54)
	02/07/02	6.57	6789.07		07/09/01	Dry	(6722.54)
	07/09/02	6.83	6788.81		10/10/01	Dry	(6722.54)
	09/30/02	7.40	6788.24		02/06/02	Dry	(6722.54)
	07/16/03	6.47	6789.17		04/03/02	Dry	(6722.54)
	10/31/05	6.55	6789.09		07/11/02	Dry	(6722.54)
T7-D	02/29/00	9.69	6786.04		10/08/02	Dry	(6722.54)
	04/10/00	9.26	6786.47	T99-07	01/13/00	Dry	(6728.98)
	08/14/00	11.92	6783.81		04/12/00	Dry	(6728.98)
	10/16/00	10.42	6785.31		07/25/00	Dry	(6728.98)
	01/22/01	11.95	6783.78		04/10/01	Dry	(6728.98)
	02/28/01	10.70	6785.03		07/09/01	Dry	(6728.98)
	03/27/01	9.89	6785.84		10/10/01	12.71	6729.21
	04/09/01	10.00	6785.73		02/06/02	12.81	6729.11
	07/09/01	8.95	6786.78		04/03/02	12.82	6729.10
	02/07/02	8.71	6787.02		07/11/02	Dry	(6728.98)
	07/16/03	8.78	6786.95		10/08/02	Dry	(6728.98)
	10/31/05	8.36	6787.37	T99-10	01/13/00	Dry	(6735.35)
T99-01	01/13/00	27.82	6768.36		04/12/00	Dry	(6735.35)
	04/18/00	24.27	6771.91		07/25/00	Dry	(6735.35)
	07/27/00	26.91	6769.27		04/10/01	Dry	(6735.35)
T99-02	01/13/00	35.10	6775.75		07/09/01	Dry	(6735.35)
	04/18/00	35.20	6775.65		10/10/01	10.00	6735.66
	07/25/00	Dry	(6775.76)		02/06/02	10.03	6735.63
T99-03	01/13/00	21.40	6799.12		04/03/02	10.07	6735.59
	04/18/00	22.03	6798.49		07/11/02	Dry	(6735.35)
	07/25/00	22.47	6798.05		10/08/02	10.00	6735.66

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
T99-11	01/13/00	18.05	6776.64	TW-06	07/09/01	4.69	6790.76
	04/18/00	16.95	6777.74		10/31/05	3.32	6792.13
	07/27/00	16.58	6778.11	TW-07	08/14/00	Dry	(6783.34)
T99-12	01/13/00	Dry	(6776.92)		10/16/00	Dry	(6783.34)
	04/18/00	23.55	6777.60		01/22/01	11.95	6783.51
	07/24/00	Dry	(6776.92)		03/06/01	11.20	6784.26
T99-13	01/13/00	Dry	(6784.45)		03/27/01	11.18	6784.28
	04/18/00	19.04	6785.68		04/09/01	11.14	6784.32
	07/24/00	Dry	(6784.45)		07/09/01	10.60	6784.86
TCINF	09/07/10				10/31/05	10.22	6785.24
TW-01	08/14/00	7.02	6789.52	TW-08	08/14/00	11.71	6783.49
	10/16/00	6.23	6790.31		10/16/00	10.14	6785.06
	01/22/01	6.58	6789.96		01/22/01	11.53	6783.67
	04/09/01	5.87	6790.67		03/01/01	11.27	6783.93
	07/09/01	5.58	6790.96		03/27/01	10.88	6784.32
	02/07/02	6.07	6790.47		04/09/01	11.04	6784.16
	10/31/05	4.28	6792.26		07/09/01	9.80	6785.40
TW-02	08/14/00	6.30	6789.52		10/31/05	9.36	6785.84
	10/16/00	5.57	6790.25	TW-09	08/14/00	9.51	6785.73
	01/22/01	5.58	6790.24		10/16/00	8.91	6786.33
	04/09/01	5.21	6790.61		01/22/01	9.65	6785.59
	07/09/01	4.89	6790.93		04/09/01	6.95	6788.29
	10/31/05	3.61	6792.21		07/09/01	7.34	6787.90
TW-03	08/14/00	6.21	6789.40		10/31/05	6.20	6789.04
	10/16/00	5.52	6790.09	TW-10	08/14/00	10.48	6784.46
	01/22/01	5.85	6789.76		10/16/00	10.15	6784.79
	04/09/01	5.30	6790.31		01/22/01	10.46	6784.48
	07/09/01	5.05	6790.56		03/14/01	9.43	6785.51
	02/07/02	5.42	6790.19		03/27/01	9.88	6785.06
	10/31/05	3.59	6792.02		04/09/01	9.70	6785.24
TW-04	08/14/00	6.12	6789.41		07/09/01	9.34	6785.60
	10/16/00	5.43	6790.10		02/07/02	9.13	6785.81
	01/22/01	5.80	6789.73		10/31/05	8.95	6785.99
	03/14/01	4.75	6790.78	TW-11	08/14/00	8.01	6788.19
	04/09/01	5.18	6790.35		10/16/00	8.49	6787.71
	07/09/01	4.90	6790.63		01/22/01	8.93	6787.27
	10/31/05	3.46	6792.07		03/27/01	7.84	6788.36
TW-05	08/14/00	6.41	6788.88		04/09/01	7.96	6788.24
	10/16/00	6.05	6789.24		07/09/01	6.99	6789.21
	01/22/01	6.28	6789.01		10/31/05	5.92	6790.28
	04/09/01	6.06	6789.23	TW-12	08/14/00	8.16	6787.52
	07/09/01	5.46	6789.83		10/16/00	7.99	6787.69
	02/07/02	5.26	6790.03		01/22/01	8.55	6787.13
	10/31/05	3.35	6791.94		03/27/01	7.34	6788.34
TW-06	08/14/00	6.10	6789.35		04/09/01	7.42	6788.26
	10/16/00	5.29	6790.16		07/09/01	6.50	6789.18
	01/22/01	5.62	6789.83		02/07/02	5.81	6789.87
	03/06/01	16.20	6779.25		10/31/05	5.40	6790.28
	04/09/01	5.03	6790.42	TW-13	08/14/00	8.25	6787.36

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Groundwater Levels[a]

Well Id	Collect Date	Depth to Water	Water Elevation	Well Id	Collect Date	Depth to Water	Water Elevation
TW-13	10/16/00	7.94	6787.67				
	01/22/01	8.48	6787.13				
	03/14/01	7.16	6788.45				
	03/27/01	7.28	6788.33				
	04/09/01	7.38	6788.23				
	07/09/01	6.42	6789.19				
	10/31/05	5.33	6790.28				
TW-14	08/14/00	8.74	6786.76				
	10/16/00	7.82	6787.68				
	01/22/01	8.36	6787.14				
	03/27/01	7.18	6788.32				
	04/09/01	7.27	6788.23				
	07/09/01	6.31	6789.19				
	10/31/05	5.21	6790.29				

[a]Numbers in parentheses indicate elevation of bottom of well for dry measurements.

Appendix F

Stream Flow Measurement Results Since 2000

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Collect Date	Surface ID	Calculated Flow (ft^3/sec)	Comments
1/14/2000	CARB POND TRENCH OUT	0.25	Carb Pond trench outfall
1/14/2000	MNT CR E OF HWY CULV	0.22	MONTEZUMA CREEK 100 FT EAST OF HIGHWAY CULVERT
1/14/2000	MC>CUTOFFTRENCH CLAY	0.19	Montezuma Creek above groundwater cutoff trench, clay bottom
4/14/2000	MIDPOND OUTFALL PIPE	0.26	Middle Pond outfall pipe (groundwater impoundment in old Vanadium Pile area)
4/14/2000	>VANPILE-STEEP/LINED	0.38	Montezuma Creek above old Vanadium Pile, where gradient steepens/lined
4/14/2000	SW00-01	0.44	MONTEZUMA CREEK 100 FT EAST OF HIGHWAY CULVERT
4/14/2000	SW00-02	0.74	Pipe outfall at east end of mill site
4/17/2000	SW94-01	2.11	
4/17/2000	SW92-08	0.85	
4/17/2000	SW00-04	0.95	
4/18/2000	Sorenson	0.72	
4/18/2000	SW00-03	0.58	
6/21/2000	SW00-01	0.32	MONTEZUMA CREEK, culvert pair under road on mill site just east of highway
6/21/2000	MC>CARBPOND/OLDVPILE	0.32	Montezuma Creek above Carb Pond/old Vanadium Pile, clay bottom
6/21/2000	MIDPOND OUTFALL PIPE	0.23	Middle Pond outfall pipe (groundwater impoundment in old Vanadium Pile area)
6/21/2000	MC E END OF MILL SITE	0.53	MONTEZUMA CREEK EAST END OF MILL SITE, clay bottom
6/21/2000	MC PERT CLVRT W END	0.50	MONTEZUMA CREEK, PERT CULVERT, west end, top of corrugation.
7/17/2000	SW00-01	0.06	MONTEZUMA CREEK, culvert pair under road on mill site just east of highway
7/17/2000	SW00-02	0.35	
7/17/2000	SW00-03	0.24	BELOW BOWRING POND
7/17/2000	SW00-04	0.26	BELOW CANYON POND
8/17/2000	SW00-01	0.02	Culvert pair under road on mill site just east of highway. All flow in South culvert, measure w/bu
8/18/2000	MC>VPILE LAKE>LINER	0.0048	Montezuma Creek above Vanadium Pile LAKE, clay bottom, JUST ABOVE LINER AND STEEP GRADIENT
8/18/2000	MIDPOND OUTFALL PIPE	0.17	Middle Pond outfall pipe (groundwater impoundment in old Vanadium Pile area)
10/19/2000	Sorenson	0.43	
10/19/2000	SW94-01	0.44	
10/19/2000	SW92-09	0.37	
10/19/2000	SW92-08	0.46	
10/19/2000	SW00-04	0.38	BELOW CANYON POND
10/20/2000	SW00-01	0.10	In-pipe velocity/area method; Creek flows through temporary culvert just west of mill site road and east
10/20/2000	SW00-02	0.25	Bucket/stopwatch at outflow from culvert from mill site to Somerville

Collect Date	Surface ID	Calculated Flow (ft^3/sec)	Comments
3/27/2001	PRB CULVERT-WEST END	0.45	PRB CULVERT, WEST END; in-stream velocity/area method
3/27/2001	SW00-02	0.42	TWIN PIPES AT ROCK DAM; in-pipe velocity area
3/27/2001	SW00-01	0.049	MONTEZUMA CREEK; just below highway culvert; in-stream velocity/area method
3/27/2001	WETLAND #1 OUTFALL	0.569	OUTFALL FROM WETLAND #1. in-stream velocity/area method
3/28/2001	SW00-01	0.06	MONTEZUMA CREEK; just below highway culvert; in-stream velocity/area method
3/28/2001	WETLAND #1 OUTFALL	0.49	OUTFALL FROM WETLAND #1; WATER FROM BRIDGE FOOTER EXCAVATION PUMPED TO WETLAND #1. PUMP IS SURGING I
3/28/2001	WETLAND #2 OUTFALL	0.711	OUTFALL FROM WETLAND #2; in-stream velocity/area method
3/28/2001	SW00-02	0.6	TWIN PIPES AT ROCK DAM; in-pipe velocity area
3/28/2001	PRB CULVERT-WEST END	0.66	In-stream velocity/area method
4/18/2001	SW00-01	0.07	MONTEZUMA CREEK; just below highway culvert; in-stream velocity/area method
4/18/2001	SW00-02	0.46	TWIN PIPES AT ROCK DAM; bucket & stopwatch method
4/18/2001	PRB CULVERT-WEST END	0.52	Stagnant between 0 & 0.6 ft; in-stream velocity/area method
8/1/2001	SW94-01	0.36	In-stream velocity/area method
8/1/2001	SW95-01	0	Vega Creek above confluence with Montezuma Creek. Dry
8/1/2001	MC<CABIN	0.54	Montezuma Creek several hundred ft below Cabin; in-stream velocity/area method
8/1/2001	SW92-08	0.49	In-stream velocity/area method
8/1/2001	Sorenson	0.66	Measured near shack east of microbus; below steep gradient; in-stream velocity/area method
8/1/2001	MIDWAY SOREN&SEDPOND	0.63	Montezuma Creek at meander about midway between Sorenson and Sediment Pond; west of City's gate valve
8/1/2001	SW01-01	0.49	Montezuma Creek at 1st culvert east of PRB culvert; in-stream velocity/area method
8/1/2001	SOMER DIVERS OUTFLL	0.32	Outfall to creek from Somerville diversion on mill site: 6-inch solid pipe from diversion to outfall o
8/1/2001	PRB CULVERT-WEST END	0.04	In-stream velocity/area method
8/1/2001	SW00-02	0.09	About 100 ft west near midpoint of Wetland #3. No outflow from wetland to creek, Seeps 1–3 are flowing
8/1/2001	MC, 10FT>STLs. DITCH	0.42	Montezuma Creek 10 ft above Steele's ditch & Somerville diversion; in-stream velocity/area method
8/1/2001	SW01-03	0.44	In creek just below Wetland #2 outflow; in-stream velocity/area method
8/1/2001	MC,50FT BLW REEMERGE	0.19	Montezuma Creek 50 ft below point of re-emergence from dry reach betw T01-27 and T01-25
8/1/2001	MC BTWN T01-27&-25	0	Montezuma Creek between approx. T01-27 and T01-25. Creek bed is dry in this reach

Collect Date	Surface ID	Calculated Flow (ft^3/sec)	Comments
8/1/2001	MC,25FT>T01-27	0.05	Montezuma Creek 25 ft above point where dry reach begins at T01-27. Noticeably less flow than station.
8/1/2001	SW01-02	0.34	In creek just below outflow from Wetland #1. Noticeably higher flow than next station
8/1/2001	MC>SEEP#4	0.25	Montezuma Creek just above Seep #4; in-stream velocity/area method
8/1/2001	SW00-01	0.06	MONTEZUMA CREEK; just below highway culvert; in-stream velocity/area method
10/10/2001	300 FT ABV CABIN	0.29	300 ft above cabin
10/10/2001	MC<CABIN	0.47	
10/10/2001	MIDWAY SOREN&SEDPOND	0.28	sor/95-01
10/10/2001	SW00-01	0	
10/10/2001	SW00-02	0.16	
10/10/2001	SW00-04	0.38	
10/10/2001	SW01-01	0.15	
10/10/2001	SW92-08	0.37	
10/10/2001	SW94-01	0.45	
10/10/2001	Sorenson	0.36	
3/6/2002	PRB CULVERT-WEST END	0.36	
3/6/2002	SW00-01	0.1	
3/6/2002	SW00-02	0.36	
3/6/2002	SW00-04	0.42	
3/6/2002	SW01-03	0.24	
3/6/2002	SW92-06	0.24	
3/6/2002	Sorenson	0.39	
4/9/2002	300 FT ABV CABIN	0.53	300 ft above cabin
4/9/2002	PRB CULVERT-WEST END	0.24	
4/9/2002	SW00-01	0	
4/9/2002	SW00-02	0.44	
4/9/2002	SW00-04	0.41	
4/9/2002	SW01-01	0.23	
4/9/2002	SW92-06	0.09	
4/9/2002	SW92-08	0.43	
4/9/2002	SW94-01	0.42	
4/9/2002	Sorenson	0.28	
8/5/2002	MIDWAY SOREN&SEDPOND	0.07	sor/95-01
8/5/2002	SW00-01	0	
8/5/2002	SW00-02	0.06	
8/5/2002	SW00-04	0.13	
8/5/2002	SW01-01	0	

Collect Date	Surface ID	Calculated Flow (ft^3/sec)	Comments
8/5/2002	SW92-06	0	
8/5/2002	SW92-08	0.05	
8/5/2002	Sorenson	0.05	
10/10/2002	300 FT ABV CABIN	0	300 ft above cabin
10/10/2002	MC<CABIN	0	
10/10/2002	SW00-01	0	
10/10/2002	SW00-02	0.02	
10/10/2002	SW00-04	0.1	
10/10/2002	SW01-01	0	
10/10/2002	SW01-02	0	
10/10/2002	SW01-03	0	
10/10/2002	SW92-06	0	
10/10/2002	SW92-08	0.03	
10/10/2002	SW92-09	0	
10/10/2002	SW94-01	0	
10/10/2002	Sorenson	0.05	
12/11/2002	300 FT ABV CABIN	0.15	300 ft above cabin
12/11/2002	MC<CABIN	0.15	
12/11/2002	SW00-01	0	
12/11/2002	SW00-02	0.03	
12/11/2002	SW00-04	0.1	
12/11/2002	SW01-02	0	
12/11/2002	SW01-03	0.07	
12/11/2002	SW92-06	0	
12/11/2002	SW92-08	0.21	
4/8/2003	0.25_MILE_W_SW92-08	0.38	0.25 MILE WEST OF SW92-08
4/8/2003	MC,150yd_DS_CABIN	0.45	Montezuma Creek 150 yds downstream of cabin
4/8/2003	MC,150yd_DS_CABIN	0.43	Montezuma Creek 150 yds downstream of cabin
4/8/2003	MC,25FT_BLW_WIER	0.25	MC, 25 ft below weir on mill site
4/8/2003	MC,W_OF_WELL_92-09	0.14	MONTEZUMA CREEK WEST OF WELL 92-09
4/8/2003	SW00-02	0.28	
4/8/2003	SW00-04	0.46	
4/8/2003	SW92-08	0.28	
4/8/2003	SW94-01	0.49	
4/8/2003	Sorenson	0.26	
4/9/2003	SW01-02	0.09	
7/16/2003	100YD_BLW_BOWR_PND	0	Dry below Bowring pond for 100 yds. All surface water stations had insufficient flow for measurement.

Collect Date	Surface ID	Calculated Flow (ft^3/sec)	Comments
7/16/2003	BLW_PRB_CULVERT	0	Dry to drop below PRB culvert, All surface water stations had insufficient flow for measurement
7/16/2003	BOWRING_POND	0	Dry to Bowring pond, All surface water stations had insufficient flow for measurement
7/16/2003	MILL SITE	0	Mill site; all surface water stations had insufficient flow for measurement
7/16/2003	OUTLET_WL2	0	Creek was dry to outlet of wetland 2. All surface water stations had insufficient flow for measurement
7/16/2003	SW01-01	0	Small amount of flow to just past SW01-01. All surface water stations had insufficient flow for measurement
7/16/2003	SW92-08	0	Small amount of flow to SW92-08, dries. All surface water stations had insufficient flow for measurement
7/16/2003	SW92-08_TO_SW94-01	0	No flow from SW92-08 to last station SW94-01. All surface water stations had insufficient flow for measurement
7/16/2003	WL2_TO_WL3	0	Small amount of flow from WL 2 to WL 3. All surface water stations had insufficient flow for measurement
7/16/2003	WL3_OUTLET	0	Damp/wet at WL 3 outlet. All surface water stations had insufficient flow for measurement
10/15/2003	MC,_100YD_W_OF_CBIN	0.05	Montezuma Creek 100 yds west of cabin
10/15/2003	MC,_DUE_E_OF_CABIN	0.04	Montezuma Creek due east of cabin
10/15/2003	SW00-04	0.19	
10/15/2003	SW92-08	0.05	
10/15/2003	SW94-01	0.02	
4/14/2004	SW01-01	0.18	
4/14/2004	SW01-02	0.16	
4/14/2004	SW01-03	0.2	
4/14/2004	SW92-08	0.27	
10/6/2004	MC_AT_CABIN	0.42	Montezuma Creek at cabin
10/6/2004	MC_AT_VEGA_CREEK	0.28	Montezuma Creek at Vega Creek (Vega Creek is dry)
10/6/2004	MC_AT_WELL_92-09	0.38	MONTEZUMA CREEK AT WELL 92-09
10/6/2004	MC_CLV_SW01-01_92-08	0.13	MONTEZUMA CREEK AT CULVERT BETWEEN SW01-01 AND WELL 92-08
10/6/2004	SW00-01	0	
10/6/2004	SW00-02	0.18	
10/6/2004	SW00-04	0.49	
10/6/2004	SW92-08	0.39	
10/6/2004	Sorenson	0.24	
4/5/2005	SW00-01	4	
4/5/2005	SW00-02	5	
10/5/2005	MC_AT_CABIN	0.66	MONTEZUMA CREEK AT CABIN

Collect Date	Surface ID	Calculated Flow (ft^3/sec)	Comments
10/5/2005	SW92-08	0.79	
10/5/2005	SW00-04	0.72	
10/5/2005	Sorenson	0.91	SORENSON AT NEW CULVERT
10/5/2005	WEIR_NEAR_WELL_92-09	0.77	ADAMS' NEW WEIR NEAR WELL 92-09
10/5/2005	SW01-01	0.46	
4/4/2006	SW92-08	1.13	
4/4/2006	SW01-01	1.38	
4/30/2007	MC_AT_CABIN	1.08	Cabin
4/30/2007	MIDWAY SOREN&SEDPOND	0.85	Between Sorenson and Sediment Pond
4/30/2007	SOMER EAST CULVERT	0.88	Somerville east culvert; partially filled pipe method
4/30/2007	SW00-01	0.48	
4/30/2007	SW00-02	0.75	
4/30/2007	SW92-08	0.91	
10/9/2007	100YD UP SEDPOND	0.60	100 yd upstream of Sediment Pond
10/9/2007	50YD UP CABIN	0.46	Cabin; 50 yd upstream of previous measurement at cabin
10/9/2007	MC_AT_CABIN	0.49	Cabin
10/9/2007	SOMER EAST CULVERT	0.25	Somerville east culvert
10/9/2007	SW00-01	0	DRY
10/9/2007	SW00-02	0.31	
10/9/2007	SW92-08	0.39	
10/9/2007	Sorenson	0.79	
4/16/2008	BTWN SW92-09&VEGACR	6.82	Between SW92-09 & Vega Creek
4/16/2008	MIDWAY SOREN&SEDPOND	7.34	Between Sorenson & Sediment Pond
4/16/2008	SOMER EAST CULVERT	7.01	Somerville east culvert
4/16/2008	SW00-01	6.03	
4/16/2008	SW00-02	6.20	
4/16/2008	SW92-08	8.20	
10/6/2008	>MILL SITE DIVERSION	0.25	Above mill site diversion; Somerville diverting water to alfalfa field
10/6/2008	CULVERT AT PRB	0.11	
10/6/2008	MC_AT_CABIN	0.31	Stagnant between 0.8 & 1.0
10/6/2008	SW00-01	0.0	DRY
10/6/2008	SW92-08	0.29	
10/6/2008	SW92-09	0.31	Stagnant between 1.1 & 1.2
10/6/2008	Sorenson	0.06	Adams diverting from creek at 92-09 (above Sorensen)
4/10/2009	ADAMS WEIR>15ft	0.26	15 ft below Adam's weir; Adams diverting from creek to storage pond above valley
4/10/2009	CULVERT AT PRB	0.49	
4/10/2009	MC_AT_CABIN	0.32	Cabin; (stagnant between 0.8 & 1.0)

Collect Date	Surface ID	Calculated Flow (ft^3/sec)	Comments
4/10/2009	SEDPOND>300yds	0.52	300 yd below Sediment Pond
4/10/2009	SW00-01	0	DRY
4/10/2009	SW00-02	0.45	
4/10/2009	SW92-08	0.37	SW92-08
4/10/2009	SW92-08>100yds	0.37	SW92-08 100 yd downstream
4/10/2009	SW92-09	0.42	SW92-09
4/10/2009	Sorenson	0.36	Sorensen; Adams diverting from creek at 92-09 (above Sorensen)
4/10/2009	Sorenson>100yds	0.33	100 yd below Sorenson; Burro outcrop in creek
10/22/2009	CULVERT AT PRB	0	Culvert at PRB; DRY
10/22/2009	MC_AT_CABIN	0.12	Cabin
10/22/2009	SW00-01	0	SW00-01
10/22/2009	SW00-02	0	SW00-02; DRY
10/22/2009	SW92-08	0.20	SW92-08
10/22/2009	SW92-09	0.10	SW92-09
10/22/2009	SW99-04	0.26	Below Sediment Pond
10/22/2009	Sorenson	0.16	Sorenson
10/22/2009	WEIR_NEAR_WELL_92-09	0.15	Adams weir
4/15/2010	SW00-01		Very high stream prevented flow measurement
4/15/2010	SW00-02		Very high stream prevented flow measurement
4/15/2010	SW00-04		Very high stream prevented flow measurement
4/15/2010	SW01-01		Very high stream prevented flow measurement
4/15/2010	SW01-02		Very high stream prevented flow measurement
4/15/2010	SW01-03		Very high stream prevented flow measurement
4/15/2010	SW92-08		Very high stream prevented flow measurement
4/15/2010	SW92-09		Very high stream prevented flow measurement
4/15/2010	SW94-01		Very high stream prevented flow measurement
4/15/2010	Sorenson		Very high stream prevented flow measurement
10/13/2010	CULVERT AT PRB	0.25	
10/13/2010	MC_AT_CABIN	0.74	
10/13/2010	SOMER DIVERS OUTFLL	0.28	All creek flow diverted; returns to creek at end of washout pipe, about 300 ft downstream of divers
10/13/2010	SW00-01	0	Dry
10/13/2010	SW00-02	0.13	Possibly biased low
10/13/2010	SW92-08	0.89	
10/13/2010	SW92-09	0.54	
10/13/2010	Sorenson	0.87	
10/13/2010	Vega	0	Dry
4/5/2011	SW00-01	0	Dry

Collect Date	Surface ID	Calculated Flow (ft^3/sec)	Comments
4/5/2011	SW00-02	0.5	
4/5/2011	SW01-01	0.56	
4/5/2011	SW92-08	0.42	
4/5/2011	Sorenson	0.15	Sorenson data looks suspect—too low
10/11/2011	SW00-01	0	DRY
10/11/2011	SW00-02	0	Insufficient water for measurement/very minor flow
10/11/2011	SW00-04	1.20	
10/11/2011	SW01-01	0	Insufficient water for measurement/very minor flow
10/11/2011	SW01-02	0	Insufficient water for measurement/very minor flow
10/11/2011	SW01-03	1.00	
10/11/2011	SW92-08	1.25	
10/11/2011	SW92-09	0.75	
10/11/2011	SW94-01	0.80	
10/11/2011	Sorenson	0	Insufficient water for measurement/very minor flow
4/12/2012	>MILL SITE DIVERSION	1.00	Above Somerville diversion on mill site
4/12/2012	SW00-01	0	DRY
4/12/2012	SW00-02	0.30	
4/12/2012	SW00-04	0.75	
4/12/2012	SW01-02	1.00	
4/12/2012	SW92-08	0.75	
4/12/2012	Sorenson	0	DRY

Appendix G

OU III Groundwater Model-Predicted Uranium Concentrations

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Table G−1. Uranium Concentration Variation: Background Locations

Observations					
Date Sampled	**Loc 92-01**	**Loc 92-03**	**Loc 92-05**	**Loc MW00-01**	**Loc MW00-02**
	Uranium (mg/L)	**Uranium (mg/L)**	**Uranium (mg/L)**	**Uranium (mg/L)**	**Uranium (mg/L)**
11/12/1992	0.0058	0.0048			
03/08/1993	0.0049				
04/22/1993	0.0062				
07/20/1993	0.0046				
07/22/1993			0.0031		
10/26/1993	0.0063		0.0053		
10/27/1993		0.0028			
05/02/1994	0.0053		0.0057		
10/04/1994	0.006	0.0033			
10/05/1994			0.0058		
04/18/1995			0.0039		
04/19/1995	0.005	0.0025			
04/08/1996					
07/23/1996					
10/13/1997			0.0061		
10/14/1997					
04/21/1998					
10/05/1998			0.0052		
10/06/1998					
04/13/1999					
10/13/1999			0.0053		
10/25/1999					
04/10/2000					
08/01/2000				0.0046	
08/02/2000					0.0055
10/30/2000			0.0059		
11/01/2000				0.0042	0.01
04/09/2001				0.0079	0.0064
04/10/2001					
04/11/2001			0.0049		
07/11/2001				0.0055	
07/12/2001					0.0051
07/20/2001			0.0044		
10/08/2001				0.0054	
10/10/2001			0.0048		
10/11/2001					0.0065
10/17/2001					
04/03/2002				0.0057	0.0066
07/08/2002				0.0041	
07/09/2002					0.005
10/07/2002				0.0055	
10/08/2002					
10/09/2002					0.0073
04/07/2003				0.0052	0.0059
10/07/2003				0.0062	

Table G−2. Model-Predicted Uranium Concentrations at Selected Region 1 Wells

Model Time Day	Model Time Yr	Normalized Time Calendar	T01-07 U (µg/L)	T01-12 U (µg/L)	T01-19 U (µg/L)	T01-35 U (µg/L)	Mean U Predicted U (µg/L)
0	0.0	15-Oct-02	179.1	136.1	104.0	116.7	134.0
365	1.0	15-Oct-03	44.2	6.8	9.7	63.3	31.0
730	2.0	14-Oct-04	11.7	0.9	1.6	17.7	8.0
1067	2.9	16-Sep-05	7.1	0.8	1.3	10.1	4.8
1436	3.9	19-Sep-06	4.9	0.8	1.3	8.0	3.7
1825	5.0	14-Oct-07	4.9	0.8	1.2	7.5	3.6
2173	6.0	26-Sep-08	5.1	0.8	1.3	7.4	3.7
2264	6.2	26-Dec-08	4.9	0.8	1.4	7.8	3.7
2542	7.0	29-Sep-09	4.8	0.8	1.3	7.7	3.7
2911	8.0	03-Oct-10	4.7	0.8	1.3	7.5	3.6
3279	9.0	07-Oct-11	4.8	0.8	1.3	7.8	3.7
3650	10.0	12-Oct-12	4.9	0.8	1.3	7.5	3.6
4015	11.0	12-Oct-13	4.6	0.8	1.3	7.8	3.6
4384	12.0	15-Oct-14	4.8	0.8	1.3	7.9	3.7
4752	13.0	19-Oct-15	4.7	0.8	1.3	7.4	3.6
5121	14.0	22-Oct-16	5.0	0.8	1.3	7.7	3.7
5475	15.0	11-Oct-17	4.9	0.8	1.3	7.7	3.7
5490	15.0	25-Oct-17	4.5	0.8	1.3	7.7	3.6
5859	16.1	29-Oct-18	5.0	0.8	1.3	7.7	3.7
6227	17.1	02-Nov-19	4.8	0.8	1.4	7.9	3.7
6596	18.1	04-Nov-20	4.9	0.8	1.3	7.6	3.6
6965	19.1	08-Nov-21	4.7	0.8	1.3	7.9	3.7
7300	20.0	10-Oct-22	4.7	0.8	1.3	7.6	3.6
7611	20.9	17-Aug-23	4.6	0.8	1.3	7.5	3.5
7980	21.9	19-Aug-24	4.9	0.8	1.3	7.5	3.6
8439	23.1	22-Nov-25	4.8	0.8	1.3	7.8	3.7
8808	24.1	26-Nov-26	4.8	0.8	1.3	7.6	3.6
9125	25.0	09-Oct-27	5.0	0.8	1.2	7.5	3.6
9544	26.1	30-Nov-28	4.9	0.8	1.3	7.6	3.6
9821	26.9	04-Sep-29	4.8	0.8	1.3	7.8	3.7
10191	27.9	09-Sep-30	4.7	0.8	1.3	7.9	3.7
10562	28.9	15-Sep-31	4.8	0.8	1.3	7.5	3.6
10654	29.2	16-Dec-31	4.8	0.8	1.2	7.6	3.6
10747	29.4	18-Mar-32	4.6	0.8	1.2	7.9	3.6
10950	30.0	07-Oct-32	4.7	0.8	1.3	7.8	3.7
11302	31.0	24-Sep-33	4.7	0.8	1.3	7.8	3.6
11672	32.0	29-Sep-34	5.0	0.8	1.2	7.6	3.7
12042	33.0	04-Oct-35	5.1	0.8	1.2	8.0	3.8
12413	34.0	09-Oct-36	4.8	0.8	1.3	8.0	3.7
12782	35.0	13-Oct-37	4.8	0.8	1.3	8.0	3.7
13153	36.0	19-Oct-38	5.1	0.8	1.3	7.8	3.8
13523	37.0	24-Oct-39	5.0	0.8	1.2	7.8	3.7
13893	38.1	28-Oct-40	4.8	0.8	1.3	7.9	3.7
14262	39.1	01-Nov-41	4.6	0.8	1.4	7.8	3.6
14600	40.0	05-Oct-42	4.8	0.8	1.3	8.0	3.7
14997	41.1	06-Nov-43	5.0	0.8	1.2	8.0	3.8

Table G−2 (continued). Model-Predicted Uranium Concentrations at Selected Region 1 Wells

Model Time Day	Model Time Yr	Normalized Time Calendar	T01-07 U (µg/L)	T01-12 U (µg/L)	T01-19 U (µg/L)	T01-35 U (µg/L)	Mean U Predicted U (µg/L)
15330	42.0	04-Oct-44	4.9	0.8	1.2	7.9	3.7
15695	43.0	04-Oct-45	5.0	0.8	1.3	7.8	3.7
16060	44.0	04-Oct-46	4.9	0.8	1.3	7.8	3.7
16425	45.0	04-Oct-47	4.9	0.8	1.4	7.7	3.7
16836	46.1	18-Nov-48	4.8	0.8	1.3	7.9	3.7
17206	47.1	23-Nov-49	5.1	0.8	1.3	7.9	3.8
17573	48.1	25-Nov-50	4.7	0.8	1.3	7.9	3.7
17851	48.9	30-Aug-51	4.7	0.8	1.3	7.7	3.6
18250	50.0	02-Oct-52	5.0	0.8	1.3	7.6	3.7

Table G−3. Model-Predicted Uranium Concentrations at Selected Region 2 Wells

Model Time Day	Model Time Yr	Normalized Time Calendar	T01-01 U (µg/L)	T01-02 U (µg/L)	T01-04 U (µg/L)	T01-05 U (µg/L)	Mean U Predicted U (µg/L)
0	0.0	15-Oct-02	209.8	274.6	223.2	178.0	221.4
365	1.0	15-Oct-03	201.2	203.7	204.4	160.9	192.6
730	2.0	14-Oct-04	185.3	186.2	187.7	93.5	163.2
1067	2.9	16-Sep-05	157.6	159.1	162.6	45.0	131.1
1436	3.9	19-Sep-06	104.0	109.1	120.0	18.8	88.0
1825	5.0	14-Oct-07	60.4	63.5	73.4	9.1	51.6
2173	6.0	26-Sep-08	35.4	37.9	44.3	6.4	31.0
2264	6.2	26-Dec-08	33.5	35.7	38.7	5.9	28.5
2542	7.0	29-Sep-09	21.0	22.1	25.7	5.5	18.6
2911	8.0	03-Oct-10	16.3	16.7	17.8	5.1	14.0
3279	9.0	07-Oct-11	14.1	14.3	13.3	4.7	11.6
3650	10.0	12-Oct-12	13.0	13.1	11.8	4.8	10.7
4015	11.0	12-Oct-13	12.0	12.1	10.8	4.7	9.9
4384	12.0	15-Oct-14	11.8	11.8	10.4	4.7	9.7
4752	13.0	19-Oct-15	11.4	11.4	10.2	4.7	9.4
5121	14.0	22-Oct-16	11.4	11.3	10.3	4.5	9.4
5475	15.0	11-Oct-17	11.4	11.3	10.3	4.9	9.5
5490	15.0	25-Oct-17	11.4	11.3	10.2	4.8	9.4
5859	16.1	29-Oct-18	11.4	11.3	10.2	4.7	9.4
6227	17.1	02-Nov-19	11.4	11.3	10.2	4.7	9.4
6596	18.1	04-Nov-20	11.4	11.3	10.2	4.5	9.3
6965	19.1	08-Nov-21	11.4	11.3	10.2	4.7	9.4
7300	20.0	10-Oct-22	11.4	11.3	10.3	5.0	9.5
7611	20.9	17-Aug-23	11.4	11.3	10.2	4.8	9.4
7980	21.9	19-Aug-24	11.4	11.3	10.4	4.8	9.5
8439	23.1	22-Nov-25	11.4	11.3	10.2	4.6	9.4
8808	24.1	26-Nov-26	11.4	11.3	10.2	4.9	9.4
9125	25.0	09-Oct-27	11.4	11.3	10.2	4.8	9.4
9544	26.1	30-Nov-28	11.4	11.3	10.3	4.7	9.4
9821	26.9	04-Sep-29	11.4	11.3	10.3	4.8	9.4
10191	27.9	09-Sep-30	11.4	11.3	10.3	4.8	9.4
10562	28.9	15-Sep-31	11.4	11.3	10.2	4.8	9.4
10654	29.2	16-Dec-31	11.4	11.3	10.4	4.9	9.5
10747	29.4	18-Mar-32	11.4	11.3	10.3	4.9	9.5
10950	30.0	07-Oct-32	11.4	11.3	10.2	4.7	9.4
11302	31.0	24-Sep-33	11.4	11.3	10.2	4.9	9.4
11672	32.0	29-Sep-34	11.4	11.3	10.3	4.7	9.4
12042	33.0	04-Oct-35	11.4	11.3	10.1	4.4	9.3
12413	34.0	09-Oct-36	11.4	11.3	10.3	4.8	9.5
12782	35.0	13-Oct-37	11.4	11.3	10.2	5.0	9.5
13153	36.0	19-Oct-38	11.4	11.3	10.1	4.8	9.4
13523	37.0	24-Oct-39	11.4	11.3	10.4	4.7	9.4
13893	38.1	28-Oct-40	11.4	11.3	10.3	4.7	9.4
14262	39.1	01-Nov-41	11.4	11.3	10.5	4.9	9.5
14600	40.0	05-Oct-42	11.4	11.3	10.4	4.6	9.4
14997	41.1	06-Nov-43	11.4	11.3	10.6	4.9	9.5

Table G−3 (continued). Model-Predicted Uranium Concentrations at Selected Region 2 Wells

Model Time Day	Model Time Yr	Normalized Time Calendar	T01-01 U (µg/L)	T01-02 U (µg/L)	T01-04 U (µg/L)	T01-05 U (µg/L)	Mean U Predicted U (µg/L)
15330	42.0	04-Oct-44	11.4	11.3	10.4	4.4	9.4
15695	43.0	04-Oct-45	11.4	11.3	10.3	4.9	9.5
16060	44.0	04-Oct-46	11.4	11.3	10.3	4.6	9.4
16425	45.0	04-Oct-47	11.4	11.3	10.3	5.0	9.5
16836	46.1	18-Nov-48	11.4	11.3	10.4	4.7	9.5
17206	47.1	23-Nov-49	11.4	11.3	10.4	4.6	9.4
17573	48.1	25-Nov-50	11.4	11.3	10.3	4.8	9.5
17851	48.9	30-Aug-51	11.4	11.3	10.2	4.8	9.4
18250	50.0	02-Oct-52	11.4	11.3	10.4	4.9	9.5

Table G−4. Model-Predicted Uranium Concentrations at Selected Region 3 Wells

Model Time Day	Model Time Yr	Normalized Time Calendar	92-07 U (µg/L)	88-85 U (µg/L)	92-11 U (µg/L)	PW-17 U (µg/L)	PW-28 U (µg/L)	Mean U Predicted U (µg/L)
0	0.0	15-Oct-02	799.5	365.6	288.0	793.6	273.2	504
365	1.0	15-Oct-03	711.1	387.7	221.8	696.3	274.4	458
730	2.0	14-Oct-04	585.7	320.7	191.9	535.6	251.9	377
1067	2.9	16-Sep-05	506.2	270.8	175.4	470.7	221.0	329
1436	3.9	19-Sep-06	440.2	230.7	151.7	373.1	192.7	278
1825	5.0	14-Oct-07	368.8	196.9	103.0	268.5	173.9	222
2173	6.0	26-Sep-08	295.3	172.3	63.1	208.3	148.8	178
2264	6.2	26-Dec-08	275.2	165.4	58.0	195.6	142.0	167
2542	7.0	29-Sep-09	237.9	138.7	37.1	169.4	113.7	139
2911	8.0	03-Oct-10	183.4	98.2	22.6	127.9	75.3	101
3279	9.0	07-Oct-11	141.4	61.6	15.2	93.9	46.5	72
3650	10.0	12-Oct-12	98.7	37.9	10.5	65.5	27.6	48
4015	11.0	12-Oct-13	67.4	23.7	8.8	45.7	16.8	32
4384	12.0	15-Oct-14	45.7	16.9	8.6	33.1	12.2	23
4752	13.0	19-Oct-15	30.3	13.7	7.5	25.5	9.8	17
5121	14.0	22-Oct-16	21.6	12.2	7.6	21.2	8.8	14
5475	15.0	11-Oct-17	17.3	11.4	7.2	18.3	8.1	12
5490	15.0	25-Oct-17	17.2	11.3	7.3	18.5	8.1	12
5859	16.1	29-Oct-18	15.0	10.9	7.3	16.7	7.8	12
6227	17.1	02-Nov-19	13.1	10.6	7.3	15.4	7.7	11
6596	18.1	04-Nov-20	12.1	10.6	7.1	14.5	7.6	10
6965	19.1	08-Nov-21	11.5	10.6	7.2	13.7	7.7	10
7300	20.0	10-Oct-22	11.3	10.5	7.4	13.7	7.5	10
7611	20.9	17-Aug-23	11.1	10.5	7.2	13.2	7.6	10
7980	21.9	19-Aug-24	11.0	10.5	7.2	12.8	7.7	10
8439	23.1	22-Nov-25	10.9	10.5	7.3	12.6	7.7	10
8808	24.1	26-Nov-26	10.9	10.5	7.0	12.5	7.7	10
9125	25.0	09-Oct-27	10.9	10.5	7.1	12.1	7.6	10
9544	26.1	30-Nov-28	10.9	10.5	7.4	12.1	7.6	10
9821	26.9	04-Sep-29	10.9	10.5	7.4	12.0	7.6	10
10191	27.9	09-Sep-30	10.8	10.5	7.1	11.8	7.6	10
10562	28.9	15-Sep-31	10.8	10.5	7.3	11.9	7.6	10
10654	29.2	16-Dec-31	10.8	10.5	7.4	11.9	7.7	10
10747	29.4	18-Mar-32	10.8	10.5	7.6	11.9	7.7	10
10950	30.0	07-Oct-32	10.8	10.5	7.3	11.8	7.7	10
11302	31.0	24-Sep-33	10.8	10.5	7.3	11.6	7.7	10
11672	32.0	29-Sep-34	10.8	10.5	7.3	11.4	7.6	10
12042	33.0	04-Oct-35	10.8	10.5	7.4	11.3	7.6	10
12413	34.0	09-Oct-36	10.8	10.5	7.1	11.3	7.7	9
12782	35.0	13-Oct-37	10.8	10.5	7.4	11.3	7.5	9
13153	36.0	19-Oct-38	10.8	10.5	7.3	11.2	7.7	9
13523	37.0	24-Oct-39	10.8	10.5	7.2	11.1	7.7	9
13893	38.1	28-Oct-40	10.8	10.5	7.1	11.1	7.6	9
14262	39.1	01-Nov-41	10.8	10.5	7.3	11.0	7.6	9
14600	40.0	05-Oct-42	10.8	10.5	7.3	10.9	7.7	9
14997	41.1	06-Nov-43	10.8	10.5	7.4	10.8	7.7	9

Table G−4 (continued). Model-Predicted Uranium Concentrations at Selected Region 3 Wells

Model Time Day	Model Time Yr	Normalized Time Calendar	92-07 U (µg/L)	88-85 U (µg/L)	92-11 U (µg/L)	PW-17 U (µg/L)	PW-28 U (µg/L)	Mean U Predicted U (µg/L)
15330	42.0	04-Oct-44	10.8	10.6	7.3	10.8	7.6	9
15695	43.0	04-Oct-45	10.8	10.5	7.5	10.9	7.7	9
16060	44.0	04-Oct-46	10.8	10.5	7.3	10.8	7.6	9
16425	45.0	04-Oct-47	10.8	10.6	7.5	10.7	7.5	9
16836	46.1	18-Nov-48	10.8	10.6	7.4	10.7	7.7	9
17206	47.1	23-Nov-49	10.8	10.5	7.2	10.6	7.7	9
17573	48.1	25-Nov-50	10.8	10.5	7.4	10.6	7.7	9
17851	48.9	30-Aug-51	10.8	10.5	7.3	10.5	7.8	9
18250	50.0	02-Oct-52	10.8	10.5	7.3	10.3	7.9	9

Table G−5. Model-Predicted Uranium Concentrations at Selected Region 4 Wells

Model Time Day	Model Time Yr	Normalized Time Calendar	MW00-07 U (µg/L)	MW00-06 U (µg/L)	R10-M1 U (µg/L)	82-08 U (µg/L)	Mean U Predicted U (µg/L)
0	0.0	15-Oct-02	279.3	374.9	30.3	84.8	192.3
365	1.0	15-Oct-03	341.5	339.8	391.0	89.4	290.4
730	2.0	14-Oct-04	426.4	305.8	380.8	95.8	302.2
1067	2.9	16-Sep-05	519.0	381.6	317.8	125.5	336.0
1436	3.9	19-Sep-06	596.5	411.1	265.3	201.0	368.5
1825	5.0	14-Oct-07	638.2	373.5	218.4	263.3	373.3
2173	6.0	26-Sep-08	608.4	319.4	189.2	267.4	346.1
2264	6.2	26-Dec-08	592.5	300.4	183.0	264.5	335.1
2542	7.0	29-Sep-09	535.0	259.0	160.1	245.5	299.9
2911	8.0	03-Oct-10	452.4	212.3	122.2	216.0	250.7
3279	9.0	07-Oct-11	366.7	170.9	82.6	188.9	202.3
3650	10.0	12-Oct-12	275.5	127.4	51.0	164.0	154.5
4015	11.0	12-Oct-13	211.9	90.3	31.3	135.6	117.3
4384	12.0	15-Oct-14	163.5	61.3	20.8	103.5	87.3
4752	13.0	19-Oct-15	128.2	39.5	15.6	72.0	63.8
5121	14.0	22-Oct-16	97.4	27.8	13.2	46.4	46.2
5475	15.0	11-Oct-17	73.1	20.3	11.9	30.2	33.9
5490	15.0	25-Oct-17	72.2	20.6	11.9	29.3	33.5
5859	16.1	29-Oct-18	53.8	16.0	11.2	19.0	25.0
6227	17.1	02-Nov-19	40.8	14.1	10.9	13.8	19.9
6596	18.1	04-Nov-20	31.8	12.7	10.7	11.0	16.6
6965	19.1	08-Nov-21	26.1	11.9	10.6	9.7	14.6
7300	20.0	10-Oct-22	22.6	11.5	10.6	9.0	13.4
7611	20.9	17-Aug-23	20.0	11.3	10.6	8.6	12.6
7980	21.9	19-Aug-24	17.8	11.1	10.6	8.5	12.0
8439	23.1	22-Nov-25	16.1	11.0	10.6	8.3	11.5
8808	24.1	26-Nov-26	14.9	10.9	10.6	8.3	11.2
9125	25.0	09-Oct-27	14.2	10.9	10.6	8.3	11.0
9544	26.1	30-Nov-28	13.5	10.8	10.6	8.3	10.8
9821	26.9	04-Sep-29	13.2	10.8	10.6	8.3	10.7
10191	27.9	09-Sep-30	12.8	10.8	10.6	8.4	10.6
10562	28.9	15-Sep-31	12.4	10.7	10.6	8.3	10.5
10654	29.2	16-Dec-31	12.4	10.7	10.6	8.3	10.5
10747	29.4	18-Mar-32	12.3	10.7	10.6	8.2	10.5
10950	30.0	07-Oct-32	12.2	10.7	10.6	8.3	10.5
11302	31.0	24-Sep-33	11.9	10.7	10.6	8.3	10.4
11672	32.0	29-Sep-34	11.7	10.7	10.6	8.4	10.4
12042	33.0	04-Oct-35	11.5	10.7	10.6	8.3	10.3
12413	34.0	09-Oct-36	11.4	10.7	10.6	8.3	10.2
12782	35.0	13-Oct-37	11.3	10.7	10.6	8.3	10.2
13153	36.0	19-Oct-38	11.0	10.7	10.6	8.3	10.2
13523	37.0	24-Oct-39	10.8	10.7	10.6	8.2	10.1
13893	38.1	28-Oct-40	10.7	10.7	10.6	8.3	10.1
14262	39.1	01-Nov-41	10.5	10.7	10.6	8.4	10.0
14600	40.0	05-Oct-42	10.5	10.6	10.6	8.3	10.0
14997	41.1	06-Nov-43	10.4	10.6	10.6	8.3	10.0

Table G−5 (continued). Model-Predicted Uranium Concentrations at Selected Region 4 Wells

Model Time Day	Model Time Yr	Normalized Time Calendar	MW00-07 U (µg/L)	MW00-06 U (µg/L)	R10-M1 U (µg/L)	82-08 U (µg/L)	Mean U Predicted U (µg/L)
15330	42.0	04-Oct-44	10.3	10.6	10.6	8.2	9.9
15695	43.0	04-Oct-45	10.2	10.6	10.6	8.2	9.9
16060	44.0	04-Oct-46	10.1	10.6	10.6	8.3	9.9
16425	45.0	04-Oct-47	9.9	10.6	10.6	8.2	9.8
16836	46.1	18-Nov-48	9.8	10.6	10.6	8.3	9.8
17206	47.1	23-Nov-49	9.8	10.6	10.6	8.3	9.8
17573	48.1	25-Nov-50	9.8	10.6	10.6	8.3	9.8
17851	48.9	30-Aug-51	9.7	10.6	10.6	8.3	9.8
18250	50.0	02-Oct-52	9.7	10.6	10.6	8.4	9.8

Table G−6. Model-Predicted Uranium Concentrations at Selected Region 5 Wells

Model Time Day	Model Time Yr	Normalized Time Calendar	P92-06 U (µg/L)	P92-02 U (µg/L)	92-09 U (µg/L)	92-08 U (µg/L)	Mean U Predicted U (µg/L)
0	0.0	15-Oct-02	276.1	52.0	242.7	247.0	204.5
365	1.0	15-Oct-03	216.4	63.1	211.0	202.2	173.2
730	2.0	14-Oct-04	171.1	77.0	181.0	167.6	149.1
1067	2.9	16-Sep-05	140.7	75.9	156.4	173.7	136.7
1436	3.9	19-Sep-06	146.7	79.7	136.6	177.8	135.2
1825	5.0	14-Oct-07	177.1	87.7	124.2	172.0	140.3
2173	6.0	26-Sep-08	198.9	97.7	122.3	165.8	146.2
2264	6.2	26-Dec-08	205.5	99.9	123.4	163.4	148.1
2542	7.0	29-Sep-09	228.7	108.4	130.4	153.5	155.3
2911	8.0	03-Oct-10	268.9	121.2	144.0	156.3	172.6
3279	9.0	07-Oct-11	326.2	134.1	157.6	179.5	199.4
3650	10.0	12-Oct-12	389.7	144.4	168.2	224.4	231.7
4015	11.0	12-Oct-13	450.3	148.9	172.6	258.8	257.6
4384	12.0	15-Oct-14	481.3	145.5	171.2	266.1	266.0
4752	13.0	19-Oct-15	488.5	138.5	169.3	253.4	262.4
5121	14.0	22-Oct-16	462.4	130.9	171.9	226.2	247.8
5475	15.0	11-Oct-17	415.1	125.5	178.3	197.6	229.1
5490	15.0	25-Oct-17	413.1	124.9	178.7	196.5	228.3
5859	16.1	29-Oct-18	353.8	121.8	187.2	166.3	207.3
6227	17.1	02-Nov-19	288.5	118.8	196.6	134.6	184.6
6596	18.1	04-Nov-20	229.0	117.6	210.0	103.7	165.0
6965	19.1	08-Nov-21	180.6	123.8	226.3	75.7	151.6
7300	20.0	10-Oct-22	143.9	134.1	249.3	54.2	145.4
7611	20.9	17-Aug-23	116.3	150.8	270.8	38.8	144.2
7980	21.9	19-Aug-24	88.3	170.9	291.3	26.5	144.3
8439	23.1	22-Nov-25	62.2	188.3	299.0	17.4	141.7
8808	24.1	26-Nov-26	46.3	192.4	291.1	13.5	135.8
9125	25.0	09-Oct-27	37.0	189.2	271.7	11.6	127.4
9544	26.1	30-Nov-28	28.4	175.8	236.3	10.1	112.7
9821	26.9	04-Sep-29	23.9	161.3	208.7	9.7	100.9
10191	27.9	09-Sep-30	20.1	140.0	174.6	9.3	86.0
10562	28.9	15-Sep-31	17.5	116.0	139.7	9.1	70.6
10654	29.2	16-Dec-31	17.0	111.9	130.9	9.0	67.2
10747	29.4	18-Mar-32	16.4	103.7	123.2	9.0	63.1
10950	30.0	07-Oct-32	15.5	91.4	106.2	9.0	55.5
11302	31.0	24-Sep-33	14.2	73.0	80.8	8.9	44.2
11672	32.0	29-Sep-34	13.1	54.4	59.4	9.0	34.0
12042	33.0	04-Oct-35	12.4	39.3	42.8	8.9	25.8
12413	34.0	09-Oct-36	11.8	27.3	31.0	8.9	19.8
12782	35.0	13-Oct-37	11.4	19.9	23.0	8.9	15.8
13153	36.0	19-Oct-38	11.0	14.8	17.7	8.9	13.1
13523	37.0	24-Oct-39	10.8	11.2	14.5	8.9	11.3
13893	38.1	28-Oct-40	10.5	9.3	12.4	8.9	10.3
14262	39.1	01-Nov-41	10.3	8.2	11.1	8.9	9.6
14600	40.0	05-Oct-42	10.2	7.6	10.4	8.9	9.3
14997	41.1	06-Nov-43	10.0	7.2	9.8	8.9	9.0

Table G−6 (continued). Model-Predicted Uranium Concentrations at Selected Region 5 Wells

Model Time Day	Model Time Yr	Normalized Time Calendar	P92-06 U (µg/L)	P92-02 U (µg/L)	92-09 U (µg/L)	92-08 U (µg/L)	Mean U Predicted U (µg/L)
15330	42.0	04-Oct-44	9.9	7.0	9.6	8.9	8.8
15695	43.0	04-Oct-45	9.7	6.9	9.3	8.9	8.7
16060	44.0	04-Oct-46	9.6	6.8	9.2	8.9	8.6
16425	45.0	04-Oct-47	9.4	6.8	9.1	8.9	8.5
16836	46.1	18-Nov-48	9.3	6.8	8.9	8.9	8.5
17206	47.1	23-Nov-49	9.2	6.8	8.9	8.8	8.4
17573	48.1	25-Nov-50	9.1	6.8	8.8	8.9	8.4
17851	48.9	30-Aug-51	9.1	6.7	8.8	8.8	8.4
18250	50.0	02-Oct-52	9.0	6.7	8.8	8.8	8.3

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Appendix H

Analytical Results for Post-ROD Biomonitoring Baseline Surface Water, Sediment, and Benthic Macroinvertebrate Samples

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Table H-1: Biomonitoring Sediment and Surface Water Data[a]

		Sediment	Surface Water							
Surface Location	Date Sampled	Se (mg/kg)	Se (µg/L)	Se[b] (µg/L)	Alkalinity[b] (mg/L)	Conductivity (µmhos/cm)	ORP (mV)	pH (s.u.)	Temperature (C)	Turbidity (NTU)
P-S1	10/06/04	3.3	3.7	3	273	1481	--	8.1	14.5	--
	10/06/04	--	3.6	2.9	--	--	--	--	--	--
	04/05/05	1.3	2.9	2.2	170	810	--	7.92	12.08	38.5
	10/11/05	1.9	3	2.8	--	--	--	--	--	--
	04/19/06	0.56	3.6EJ	--	--	--	--	--	--	--
	10/04/06	0.58	4.1E	--	--	--	--	--	--	--
	04/09/07	4.3	4.5	--	--	--	--	--	--	--
	04/08/08	1.1	4	--	--	858	82	7.32	8.6	--
	04/08/08	--	3.9	--	--	--	--	--	--	--
	06/23/10	--	9.3	--	260	2024	156.1	7.1	20.76	20.6
	06/23/10	--	9.3	--	--	--	--	--	--	--
P-S2	10/06/04	3	1.6	1.2	292	1500	--	7.72	13.3	53.5
	04/05/05	0.86	2.8	2.4	171	785	--	7.99	13.1	37.4
	10/11/05	0.51	3.2E	2.8	--	--	--	--	--	--
	04/19/06	0.55	3.4J	--	--	--	--	--	--	--
	10/04/06	0.74	4.5	--	--	--	--	--	--	--
	04/09/07	0.069U	3.9	--	--	--	--	--	--	--
	04/08/08	0.45	3.8	--	--	845	90	7.3	9.1	--
	06/23/10	--	8.9	--	240	1621	91	8.28	22.29	12
P-S3	10/06/04	2.2	2	1.6	306	1523	--	7.72	12.2	50.7
	04/05/05	3.4	3	2.5	176	803	--	8.04	13.92	33.6
	10/11/05	4.1	3.1	2.6	--	--	--	--	--	--
	04/19/06	1.4	3.4J	--	--	--	--	--	--	--
	10/04/06	0.78	4	--	--	--	--	--	--	--
	04/09/07	0.069U	3.9	--	--	--	--	--	--	--
	04/08/08	1.7	4	--	--	805	90	7.35	8.1	--
	06/23/10	--	8.7	--	238	1597	71.9	8.3	21.56	10.9
P-S4	06/23/10	--	9.5	--	244	1606	83.2	8.21	20.88	11.3
P-S5	06/23/10	--	8.9	--	234	1584	64.5	8.17	21.01	9.99
P-S6	06/23/10	--	7.9	--	246	1554	92.3	8.12	22.44	6.7
UMC-S1	06/25/10	--	0.66	--	218	906	71	7.25	13.29	12.8
UMC-S2	06/25/10	--	0.75	--	230	894	71.9	8.21	14.95	9.42
UMC-S3	06/25/10	--	0.48	--	206	677	187.7	6.36	15.17	10.1
UMC-S4	06/25/10	--	0.56	--	201	646	191.4	6.76	19.43	10.1
VC-S1	06/24/10	--	0.37	--	182	555	157.9	6.34	14.23	15.6
VC-S2	06/24/10	--	0.34	--	184	435	110.2	8.22	13.24	12.6
VC-S3	06/24/10	--	0.35	--	175	432	105.6	8.21	14.03	12.1
VC-S4	06/24/10	--	0.33	--	162	427	115.1	7.75	15.24	12.3
VC-S5	06/24/10	--	0.33	--	190	426	113.7	8.15	16.17	11.6
VC-S6	06/24/10	--	0.22	--	170	411	121.7	8.18	16.88	12.9

Table H-1: Biomonitoring Sediment and Surface Water Data[a]

		Sediment	Surface Water							
Surface Location	Date Sampled	Se (mg/kg)	Se (µg/L)	Se[b] (µg/L)	Alkalinity[b] (mg/L)	Conductivity (µmhos/cm)	ORP (mV)	pH (s.u.)	Temperature (C)	Turbidity (NTU)
W1-S1	10/06/04	0.18	2.8	2.3	328	1830	--	6.6	9.9	1.91
	04/05/05	0.14J	4.1	3.8	323	1606	--	6.84	10.89	1.57
	10/11/05	0.033U	0.67	0.75	--	--	--	--	--	--
	04/19/06	0.13	0.56J	--	--	--	--	--	--	--
	10/04/06	0.16	0.71	--	--	--	--	--	--	--
	04/09/07	0.068U	1	--	--	--	--	--	--	--
W1-S2	10/06/04	0.17	1.5	1	--	1861	--	7.15	7.6	12.5
	04/05/05	0.15J	2.1	1.9	280	1324	--	7.25	12.78	35.6
	10/11/05	0.034U	0.44J	0.73	--	--	--	--	--	--
	04/19/06	0.21	0.49J	--	--	--	--	--	--	--
	10/04/06	0.31	0.6	--	--	--	--	--	--	--
	04/09/07	0.13U	0.52	--	--	--	--	--	--	--
W1-S3	10/06/04	0.32	1.7	1.3	308	1786	--	7.26	7.8	152
	04/05/05	0.2J	1.9	1.6	281	1255	--	7.45	12.96	12.5
	10/11/05	0.035U	0.29J	0.33	--	--	--	--	--	--
	04/19/06	0.19	0.43J	--	--	--	--	--	--	--
	10/04/06	0.23	0.025U	--	--	--	--	--	--	--
	10/04/06	--	0.025U	--	--	--	--	--	--	--
	04/09/07	0.07U	0.82	--	--	--	--	--	--	--
W2-S1	10/06/04	0.082	0.045	0.029U	336	1463	--	7.52	12.7	196
	04/05/05	0.099U	0.068U	0.068U	294	1478	--	7.54	14.81	12.6
	10/11/05	0.034U	0.023U	0.59	--	--	--	--	--	--
	04/19/06	0.13	0.02U	--	--	--	--	--	--	--
	10/04/06	0.044U	0.025U	--	--	--	--	--	--	--
	04/09/07	0.15U	0.038U	--	--	--	--	--	--	--
W2-S2	10/06/04	0.12	0.03	0.041	341	1400	--	7.65	9.2	33.4
	04/05/05	0.17J	0.068U	0.068U	332	1533	--	7.29	15.82	3.54
	10/11/05	0.045U	0.11J	0.64	--	--	--	--	--	--
	04/19/06	0.11	0.2J	--	--	--	--	--	--	--
	10/04/06	0.035U	0.025U	--	--	--	--	--	--	--
	04/09/07	0.09U	0.44	--	--	--	--	--	--	--
W2-S3	10/06/04	0.13	0.093	0.068	215	1496	--	7.81	10	8.8
	04/05/05	0.18J	0.78	0.99	233	1364	--	7.39	14.89	9.53
	10/11/05	0.04U	0.1J	0.58	--	--	--	--	--	--
	04/19/06	0.29	0.13J	--	--	--	--	--	--	--
	10/04/06	0.27	0.025U	--	--	--	--	--	--	--
	04/09/07	0.071U	0.038U	--	--	--	--	--	--	--
W3-S1	10/06/04	1.3	14	10	338	1645	--	7.27	12.5	43.2
	04/05/05	0.64	3	2.4	193	1152	--	7.58	14.6	8.78
	10/11/05	0.32	0.54	1.1	--	--	--	--	--	--
	04/19/06	6.9	3.5J	--	--	--	--	--	--	--
	10/04/06	1.7	4.2	--	--	--	--	--	--	--
	04/09/07	8.8	22	--	--	--	--	--	--	--
	04/09/07	7.3	20	--	--	--	--	--	--	--
	04/08/08	1.3	14	--	--	756	125	5.87	5.3	--
W3-S2	10/06/04	0.63	1.1	0.8	236	1304	--	7.52	13.1	43.5
	04/05/05	0.88	2.1	2.2	191	1054	--	7.47	13.78	10.4
	10/11/05	0.37	0.4J	0.93	--	--	--	--	--	--
	04/19/06	1	0.56J	--	--	--	--	--	--	--
	10/04/06	0.84	1.6	--	--	--	--	--	--	--
	04/09/07	0.069U	0.74	--	--	--	--	--	--	--
	04/08/08	0.86	2.5	--	--	890	82	6.1	4.5	--

Table H-1: Biomonitoring Sediment and Surface Water Data[a]

		Sediment	Surface Water							
Surface Location	Date Sampled	Se (mg/kg)	Se (µg/L)	Se[b] (µg/L)	Alkalinity[b] (mg/L)	Conductivity (µmhos/cm)	ORP (mV)	pH (s.u.)	Temperature (C)	Turbidity (NTU)
W3-S3	10/06/04	0.43	1.5	1	205	1240	--	7.79	11.1	71.4
	04/05/05	0.2J	2.6	2	199	1248	--	7.38	14.62	11.4
	10/11/05	0.27	0.21J	0.77	--	--	--	--	--	--
	04/19/06	0.45	1.4J	--	--	--	--	--	--	--
	04/19/06	--	3J	--	--	--	--	--	--	--
	10/04/06	0.32	0.025U	--	--	--	--	--	--	--
	04/09/07	0.06U	0.52	--	--	--	--	--	--	--
	04/08/08	0.36	1.7	--	--	673	69	7.01	6.4	--
W3-S4	06/24/10	--	1.9	--	391	1551	224.8	7.01	25.43	68.9
W3-S5	06/24/10	--	3.1	--	270	1858	221.8	7.58	23.12	17.2

[a]Definition of Qualifiers: -- - No Data. J - Estimated quantity. U - Not detected; value is sample detection limit. UJ - Not detected, associated value is estimated.

[b]Sample was filtered in the field.

Table H−2. Macroinvertebrate Selenium Data

Location	Date Sampled	Se (mg/kg)
Wetland 1 – S1 (inlet)	5/23/05	1.64
Wetland 1 – S2 (middle)	5/23/05	3.11
Wetland 1 – S3 (outlet)	5/23/05	3.51
Wetland 2 – S1 (inlet)	5/24/05	1.76
Wetland 2 – S1 (middle)	5/24/05	1.60
Wetland 2 – S3 (outlet)	5/24/05	1.39
Wetland 2 – Composite Sample	5/24/05 (Rep 1)	1.69
	5/24/05 (Rep 2)	1.66
Wetland 3 – S1 (inlet)	5/24/05	6.21
	5/17/06	6.47
	5/24/07	--
	6/10/08	13.0
Wetland 3 – S2 (middle)	5/24/05	10.3
	5/17/06	3.69
	5/24/07 (Split 1)	6.80
	5/24/07 (Split 2)	9.46
	6/10/08	5.06
Wetland 3 – S3 (outlet)	5/24/05	5.18
	5/17/06	5.93
	5/24/07	3.91
	6/10/08	3.71
Wetland 3 – Composite Sample	5/17/06	7.98
Sediment Pond – S1 (inlet)	5/24/05	4.26
	5/17/06 (Rep 1)	4.20
	5/17/06 (Rep 2)	3.09
	5/23/07	6.15
	6/11/08	4.9
Sediment Pond – S2 (middle)	5/24/05	3.15
	5/17/06	5.15
	5/23/07 (Split 1)	8.02
	5/23/07 (Split 2)	8.78
	6/10/08 (Split 1)	4.5
	6/10/08 (Split 2)	4.32
Sediment Pond – S3 (outlet)	5/24/05	3.84
	5/17/06 (Rep 1)	4.74
	5/17/06 (Rep 2)	4.80
	5/23/07	3.55
	6/11/08	7.64
Sediment Pond – Composite Sample	5/17/06 (Split 1)	3.95
	5/17/06 (Split 2, Rep 1)	2.44
	5/17/06 (Split 2, Rep 2)	4.64

Appendix I

Selected Results of Uranium Geochemistry Literature Search

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Amonette, J.E. and R.G. Ford, 2010a. "Appendix A – Radioactive Decay Processes," *Monitored Natural Attenuation of Inorganic Contaminants in Ground Water Assessment for Radionuclides Including Tritium, Radon, Strontium, Technetium, Uranium, Iodine, Radium, Thorium, Cesium, and Plutonium-Americium*, 3:123–127.

Amonette, J.E. and R.G. Ford, 2010b. "Uranium," *Monitored Natural Attenuation of Inorganic Contaminants in Ground Water Assessment for Radionuclides Including Tritium, Radon, Strontium, Technetium, Uranium, Iodine, Radium, Thorium, Cesium, and Plutonium-Americium*, 3:53–67.

Anderson, R., H. Vrionis, I. Ortiz-Bernad, C. Resch, P. Long, R. Dayvault, K. Karp, S. Marutzky, D. Metzler, A. Peacock, D. White, M. Lowe, and D. Lovley, 2003. "Stimulating the In Situ Activity of Geobacter Species to Remove Uranium from the Groundwater of a Uranium-Contaminated Aquifer," *Applied and Environmental Microbiology*, 60(10):5884–5891.

Bargar, J., R. Bernier-Latmani, D. Giammar, and B. Tebo, 2008. "Biogenic Uraninite Nanoparticles and Their Importance for Uranium Remediation," *Elements*, 4:407–412.

Barger, J., R. Reitmeyer, and J. Davis, 1999. "Spectroscopic confirmation of Uranium(VI) – Carbonato Adsorption Complexes on Hematite," *Environmental Science & Technology*, 33(14):2481–2483.

Berglund, S. and V. Cvetkovic, 1995. "Pump-and-Treat Remediation of Heterogeneous Aquifers: Effects on Rate-Limited Mass Transfer," *Ground Water*, 33(4):675–685.

Bopp, C.J., C. Lundstrom, T. Johnson, R. Sanford, P. Long, and K. Williams, 2010. "Uranium 238/U235U Isotope Ratios as Indicators of Reduction: Results from an In Situ Biostimulation Experiments at Rifle, Colorado, U.S.A.," *Environmental Science Technology*, 44:5927–5933, e-paper.

Brady, P. and C. Bethke, 2000a. "Beyond the K_d Approach," *Ground Water*, 38(3):321–322.

Brady, P. and C. Bethke, 2000b. "Beyond the K_d Approach Undermines Ground Water Cleanup," *Ground Water*, 38(3):435–443.

Curtis, G., J. Davis, and D. Naftz, 2006. "Simulation of reactive transport of uranium(VI) in groundwater with variable chemical conditions," *Water Resource*, 42, W04404: 1–15.

Curtis, G.P., J.A., Davis, and A.L. Schwartzman, 2006. *Tests of Uranium(VI) adsorption Models in a Field Setting*, prepared for the Division of Fuel, Engineering, and Radiological Research Office of Nuclear Regulatory Research, August.

Daniel, G. and J. Hering, 2001. "Time Scales for Sorption-Desorption and Surface Precipitation of Uranyl on Goethite," *Environmental Science & Technology*, 35(16):3332–3337.

Francis, C., M. Timpson, S. Le, M. Elless, and J. Wilson, 1997. *The Use of Carbonate Lixiviants to Remove Uranium From Uranium-Contaminated Soils*, May.

FRTR (Federal Remediation Technologies Roundtable), 2012. *Federal Remediation Technologies Roundtable*, http://www.frtr.gov/default.htm, last updated April 30, 2012, accessed August 3, 2012.

Grassi, V., L. Toran, G. Stevens, A. Bednar, and C. Young, 2005. *A Case Study of Uranium Mobility in Groundwater at the Dupont Chambers Works Site*, prepared for the WM'05 Conference, February 27–March 3, 2005.

Jang, J., B. Dempsey, and W. Burgos, 2006. "Solubility of schoepite: Comparisons and selection of complexation constants for U (VI)," *Water Research*, 40:2738–2746.

Johnson, R., 1994. "Nonlinear Adsorption of Uranyl: Analytical Modeling of Liner Migration," *Ground Water*, 32(2):293–303.

Liu, C., S. Zhenquing, and J. Zachara, 2009. "Kinetics of uranium(VI) Desorption from Contaminated Sediments: Effect of Geochemical Conditions and Model Evaluation," *Environmental Science & Technology*, 43(17):6560–6566.

Liu, G., C. Zheng, and S. Gorelick, 2004. "Limits of applicability of the advection-dispersion model in aquifers containing connected high-conductivity channels," *Water Resources Research*, 40, W08308: 1–19.

Long, P.E, 2012. *Microbiological, Geochemical and Hydrologic Processes Controlling Uranium Mobility: An Integrated Field Scale Subsurface Research Challenge Site at Rifle, Colorado*, prepared for the U.S. Department of Energy, February.

Lovelace, K., S. Walker, R. Wilhelm, R. Puls, R.G. Ford, R.T. Wilkin, S. Acree, S. Mangion, P.V. Brady, and C. Bethke, 2007. "Evolution of Inorganic Contaminant Plume," *Monitored Natural Attenuation of Inorganic Contaminants in Ground Water*, *Technical Basis for Assessment*, 1:1–77.

Nimmons, M.J., 2007. *Evaluation of Screening of Remedial Technologies for Uranium at the 300-FF-5 Operable Unit, Hanford Site, Washington*, prepared for the U.S. Department of Energy, August.

Qafoku, N.P., J.M. Zachara, L. Chongxuan, P.L. Gassman, O.S. Qafoku, and S.C. Smith, 2005. "Kinetic Desorption and Sorption of U (VI) during Reactive Transport in a Contaminated Hanford Sediment," *Environmental Science & Technology*, 39(9):3157–3165.

Schofield, E., H. Veeramani, J. Sharp, E. Suvorova, R. Bernier-Latmani, A. Mehta, J. Stahlman, S. Webb, D. Clak, S. Conradson, E. Ilton, and J. Bargar, 2008. "Structure of Biogenic Uraninite Produced by Shewanella oneidensis Strain MR-1," *Environmental Science & Technology*, 42(21):7898–7904.

Serne, R.J., C.F. Brown, H.T. Schaef, E.M. Pierce, J. Lindberg, Z. Wang, P. Gassman, and J. Catalano, 2002. *300 Area Uranium Leach and Adsorption Project*, prepared for Bechtel Hanford Company, Inc., and for the U.S. Department of Energy, November.

Simmons, C.T., R.J. Hunt, 2012. "Updating the Debate on Model Complexity," *GSA Today,* 22(8):28–29, August.

Um, W., R.J. Serne, C.F. Brown, and G.V. Last, 2007. "U(VI) adsorption on an aquifer sediments at the Hanford Site," *Epub*, 93(1-4):255-69, April 19.

Webb, S.M., C.C. Fuller, B.M. Tebo, and, J.R. Bargar, 2006. "Determination of Uranyl Incorporation into Biogenic Manganese Oxides Using X-ray Absorption Spectroscopy and Scattering," *Environmental Science & Technology*, 40(3):771–777.

Zhu, C., 2003. "A case against K_d-based transport models: natural attenuation at a mill tailings site," *Computers & Geosciences*, 29:351–359.

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