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2016 Evaluation of the Groundwater Monitoring Program at the Grand Junction, Colorado, Site

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U.S. DEPARTMENT OF ENERGY | Legacy Management

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Contents

Figures

Tables

Appendixes

Abbreviations

CCR	*Code of Colorado Regulations*
CDPHE	Colorado Department of Public Health and Environment
CRS	*Colorado Revised Statutes*
DOE	U.S. Department of Energy
ft	feet
LM	Office of Legacy Management
LTS&MP	Long-Term Surveillance and Maintenance Plan
mg/L	milligrams per liter
NFA	no further action
UMTRCA	Uranium Mill Tailings Radiation Control Act

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1.0 Introduction

The *Long-Term Surveillance and Maintenance Plan for the Grand Junction, Colorado, Site* (LTS&MP) (DOE 2006) requires a review of the groundwater monitoring program at the end of each 5-year monitoring period. The current monitoring period ended in 2015. As stated in the LTS&MP, "DOE will evaluate monitoring results in consultation with the State of Colorado to determine the requirements for future monitoring at the site," and the evaluation "will include a statistical evaluation of contaminant concentration trends." The purpose of this report is to present an evaluation of monitoring results, propose a revised monitoring program based on the evaluation, and present the results of a statistical evaluation of the progress of natural flushing in the alluvial aquifer. With Colorado Department of Public Health and Environment (CDPHE) concurrence, the LTS&MP will be updated to reflect the revised monitoring program.

2.0 General Considerations

The U.S. Department of Energy (DOE) cleaned up the mill tailings and associated materials at the Grand Junction site under its Surplus Facilities Management Program. Because the materials at the site were identical to those generated at Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I sites, the Grand Junction site was cleaned up to UMTRCA standards and wastes were disposed of in the Grand Junction UMTRCA Title I disposal cell. However, unlike UMTRCA Title I sites, the Grand Junction site does not come under the authority of the Nuclear Regulatory Commission. CDPHE has been the sole regulator for the site. The majority of surface cleanup of the site was completed in 1994, and remediation of the last building was completed in 2014. Groundwater remediation of the site, however, has been ongoing. The groundwater remedy selected for the site was natural flushing. Monitoring has been conducted and the monitoring program has been reevaluated in accordance with the LTS&MP for the Grand Junction site (DOE 2006). Institutional controls are in place to prevent inappropriate groundwater use.

The analyte list in the LTS&MP was initially based on a consideration of water-quality standards (groundwater and surface water), potential human health and ecological risks, general water-quality indicators, and historical site monitoring results. On the basis of the 2006 monitoring program evaluation (DOE 2006), analyses for arsenic, chloride, chromium, gross alpha particle activity, nitrate, and total dissolved solids were discontinued. In the 2011 monitoring program evaluation (DOE 2011), recommendations included making a reduction of analytes, adding an additional well, adding a method of determining when natural flushing is complete, and implementing a reduction in the sampling frequency. However, these recommendations did not receive CDPHE concurrence. Therefore, during the most recent 5-year monitoring period, DOE collected and analyzed groundwater and surface-water samples for the same constituents and at the same frequency as for the previous 5-year period.

According to the compliance action plan for the site (DOE 2001b), "criteria for modifying or terminating groundwater and surface water monitoring will be (1) continued decrease in concentrations of COCs [constituents of concern] as predicted and observed, (2) compliance with regulatory limits, and (3) no unacceptable risks to human health and the environment resulting from site-related contamination." Modifications may include changing or adding additional sample locations or changing the suite of analytes.

CDPHE's *Policy for Conditional Closure for Low-Threat Sites with Residual Ground Water Contamination* (CDPHE 2014) provides criteria that must be met for a conditional closure decision. This policy and associated guidance is intended for application at sites for which groundwater contamination is under CDPHE's regulatory authority. The policy is applicable to the Grand Junction site. The guidance indicates that conditional closure may be obtained if 10 conditions are met (Table 1). This policy and guidance was considered in the current evaluation of the monitoring program for the Grand Junction site. It should be noted that sites closed under this policy are granted a "conditional closure" but not a "no further action" (NFA) determination. NFAs are reserved for sites that have met Regulation 41 *The Basic Standards for Ground Water* (CDPHE 2013).

Table 1. Conditions That Must Be Met for Conditional Closure of a "Low-Threat" Site

1.	The source area has been remediated to the extent practicable.
2.	The plume size is either stable or decreasing in all dimensions.
3.	The concentrations of contaminants in the plume are either decreasing or predicted to decrease.
4.	The groundwater will meet Water Quality Regulation No. 41 water-quality standards within a reasonable period of time.
5.	Contaminant concentration trends are not dependent on the continued operation and maintenance of active remediation systems or containment systems.
6.	There are no existing or reasonably anticipated exposures above standards or screening levels through cross-media transfer including volatilization into buildings.
7.	There are no uses of groundwater downgradient of the site that would be threatened by the plume.
8.	There is no discharge to surface water in excess of surface-water standards.
9.	There is no potential for the plume to cause an exceedance of a quality standard in an adjacent aquifer.
10.	For sites that have satisfied all of the above conditions, the division will require either implementation of an institutional control in compliance with CRS 25-15-317– 327 or alternate concentration limits in compliance with 6 CCR 264.94(b).

Abbreviations:
CCR = *Code of Colorado Regulations*
CRS = *Colorado Revised Statutes*

3.0 Groundwater Conditions

Two hydrogeologic units are of importance at the Grand Junction Site: the unconsolidated alluvial aquifer along the Gunnison River and the underlying Morrison Formation aquitard. These two units and the Gunnison River are the controlling factors in contaminant migration and discharge to the river. The alluvial aquifer consists of two facies, a silty sand unit overlying a basal unit of poorly sorted, unconsolidated sands and gravels. These facies are laterally consistent across the Grand Junction site. The alluvial aquifer is bounded on the east by the Morrison Formation, on the west and north by the Gunnison River, and is open to the south where it continues along the east bank of the river (DOE 1998a).

The alluvial aquifer is in direct hydraulic connection with the Gunnison River and recharge of the aquifer is due mainly to fluctuations in the river, and to a lesser extent, to precipitation. The thickness of the alluvial aquifer averages between 20 and 25 feet (ft), with depth to ground water ranging from 5 to 10 ft below ground surface over much of the site. Aquifer pumping tests indicate that the alluvial aquifer has hydraulic conductivities ranging between 30 and 45 ft per

day. Specific yield values of approximately 0.05 over a saturated thickness of 14 ft were determined by pumping tests. Water level measurements indicate that the general gradient is from south to north, and groundwater is discharged into the Gunnison River on the west and north boundaries of the site (DOE 1998a). Groundwater in the alluvial aquifer at Grand Junction site is not currently used for any purpose and institutional controls prevent future use.

In Sections 3–6 of this report, different aspects of the current monitoring approach are described (e.g., sample locations, analytes, frequency) and their adequacy is assessed. Recommendations are then provided for the revised groundwater monitoring program where appropriate. Recommendations are summarized in Section 8.

3.1 Groundwater Monitoring Network

The groundwater monitoring network specified in the LTS&MP consists of seven monitoring wells (8-4S, 11-1S, GJ01-01, 6-2N, 14-13NA, GJ84-04, and 10-19N) completed in the alluvial aquifer. These wells are distributed throughout the site (see Figure 1), and most have an extensive monitoring history.

This current network of monitoring wells was intended to provide adequate information to monitor the progress of natural flushing (DOE 2001b). However, it is not extensive enough to monitor the alluvial aquifer on a sitewide basis. Monitoring wells are missing from key areas of the aquifer, and areal monitoring well coverage is inadequate with large areas of the aquifer unmonitored. In addition, there is no established protocol for determining when natural flushing is complete. Therefore, the recommendations below are intended to establish a long-term and sitewide strategy for monitoring the alluvial aquifer and the associated contaminant plumes.

Recommendation*:* Retain the current monitoring wells in the long-term monitoring network because of their extensive history. In addition to the permanent monitoring wells, use a Geoprobe to install temporary boreholes to sample groundwater from an extensive grid across the site every 5 years (Figure 1). This network will better define the contaminant plumes, track contaminant plumes over time, and provide data to determine if contaminant plumes and analyte concentrations are stable or decreasing. Using the Geoprobe to access and collect groundwater samples will provide extensive data at a relatively low cost compared to that of installing conventional monitoring wells.

Groundwater samples will be collected at one level across the site to assess the contaminant plume and analyte concentrations in the alluvial aquifer. Geoprobe rods will be driven to approximately 16 ft below ground surface at each temporary borehole location, which is the approximate middle of the saturated thickness of the alluvial aquifer during low groundwater (assuming 10 ft to groundwater and a 22 ft thickness of alluvial aquifer). A recent study of variation of groundwater aquifers at Office of Legacy Management (LM) sites indicated that the alluvial aquifer at the Grand Junction ranked low in vertical variation based on a statistical index (coefficient of variation) used to evaluate the data (DOE 2015). The relatively low vertical variation of the alluvial aquifer, sampling at low-water every 5 years, and sampling at the same level in the alluvial aquifer are factors that should provide adequate comparability between sampling events to evaluate plume and contaminant stability.

The sampling grid displayed in Figure 1was designed to provide extensive areal coverage of the alluvial aquifer. This sampling network is more extensive with more monitoring locations (73 boreholes and 7 monitoring wells) than that in place during the height of remedial investigation study (52 monitoring wells) conducted in the late 1980s (DOE 1989a). This sampling network will provide data for the following key areas:

- Areas of the aquifer that are not covered by the current monitoring-well network
- Former source areas (southwest dike area, former tailings area, northwest dike area and the North Pond area) where groundwater contamination was initially the highest and where the potential for residual source material is the highest
- Northeast portions of the alluvial aquifer that will be the last area to naturally flush based on groundwater modeling results
- Downgradient portion (north) of the alluvial aquifer where contaminant plumes will terminate

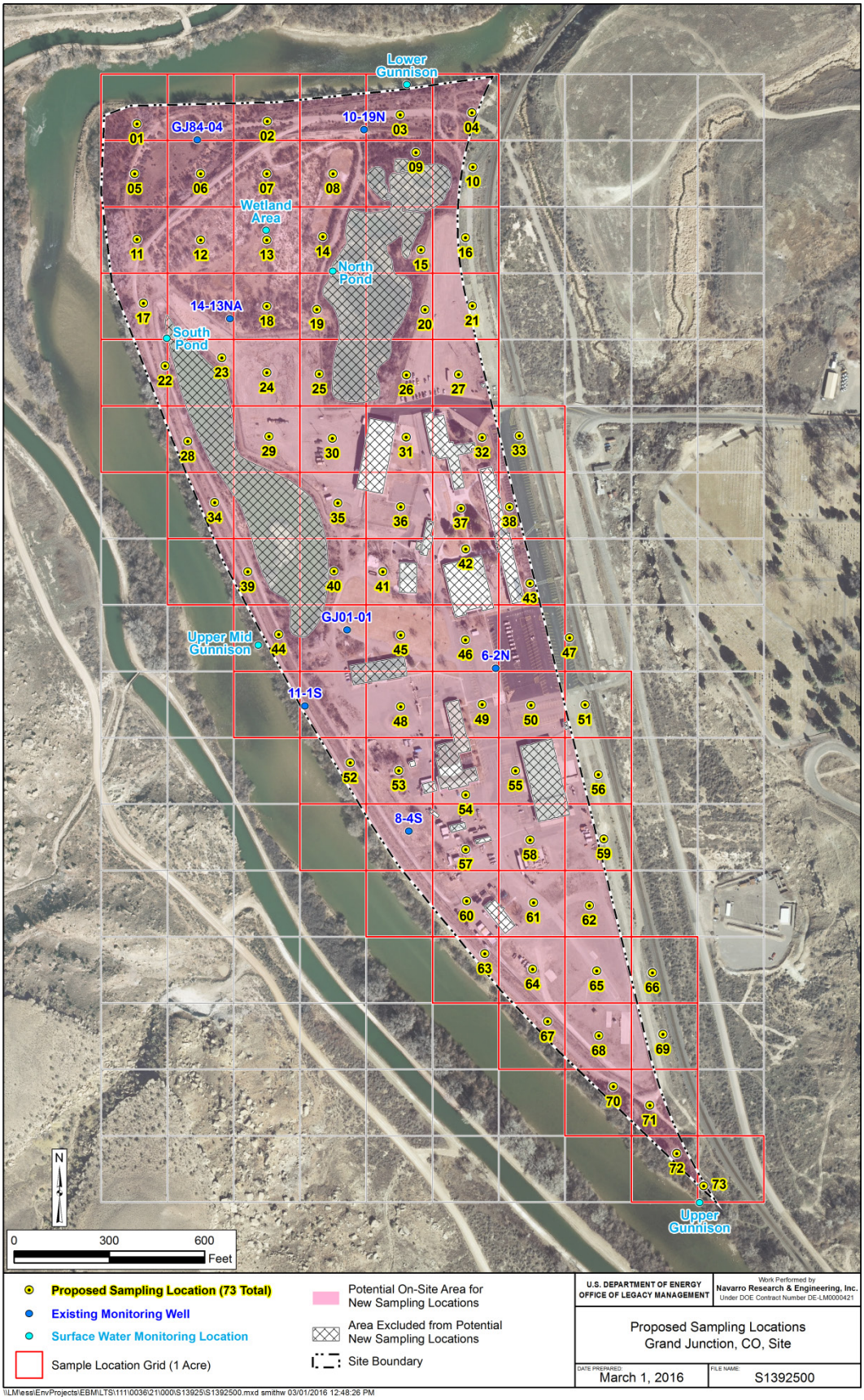

Figure 1. Proposed Monitoring Network at the Grand Junction, Colorado, Site

3.2 Groundwater Analytes

Groundwater monitoring results were evaluated against regulatory standards (molybdenum, selenium, and uranium) and background concentrations (manganese and sulfate) to determine if continued monitoring for an individual analyte is warranted. Table 2 presents a summary of analyte concentrations in the alluvial aquifer over the past 5 years, and Appendix A presents analytical results. Figures 2 through 6 present time–concentration graphs for each analyte. A discussion of each analyte, along with a recommendation for continued monitoring, is presented below.

Table 2. Summary of Analyte Concentrations in the Alluvial Aquifer from 2011 to 2015

Analyte	Standard[a] or Background (mg/L)	Range (mg/L)	Mean (mg/L)	D^c/n^d	*n* Exceeding Standard or Background
Manganese	0.72[b]	0.23–4.8	1.88	35/35	27
Molybdenum	0.21	0.012–0.157	0.058	35/35	0
Selenium	0.05	0.00014–0.035	0.0118	31/35	0
Sulfate	1150[b]	160–3000	1157	35/35	17
Uranium	0.03	0.03–0.67	0.245	35/35	35

Notes:
[a] Standards from Regulation 41, *The Basic Standards for Ground Water* (CDPHE 2013), https://www.colorado.gov/pacific/sites/default/files/41_2013%2801%29hdr.pdf.
[b] Background values are the maximum concentration measured in upgradient wells GJ84-09 and GJ84-10.
[c] Number of observations above the detection limit (excludes field duplicates).
[d] Number of observations (excludes field duplicates).
Abbreviation
mg/L = milligrams per liter

Manganese: Concentrations of manganese in background samples locations exceed the State of Colorado secondary drinking water standard of 0.05 milligram per liter (mg/L). Concentrations of manganese in the alluvial aquifer exceed background in 27 of the 35 samples collected during the assessment period. Manganese concentrations in groundwater are displayed in Figure 2.

Recommendation: Because manganese concentrations exceed background throughout the monitoring network, continue monitoring for manganese. Note: institutional controls are in place to prevent the use of groundwater for drinking water, thereby eliminating the pathway to human health risk.

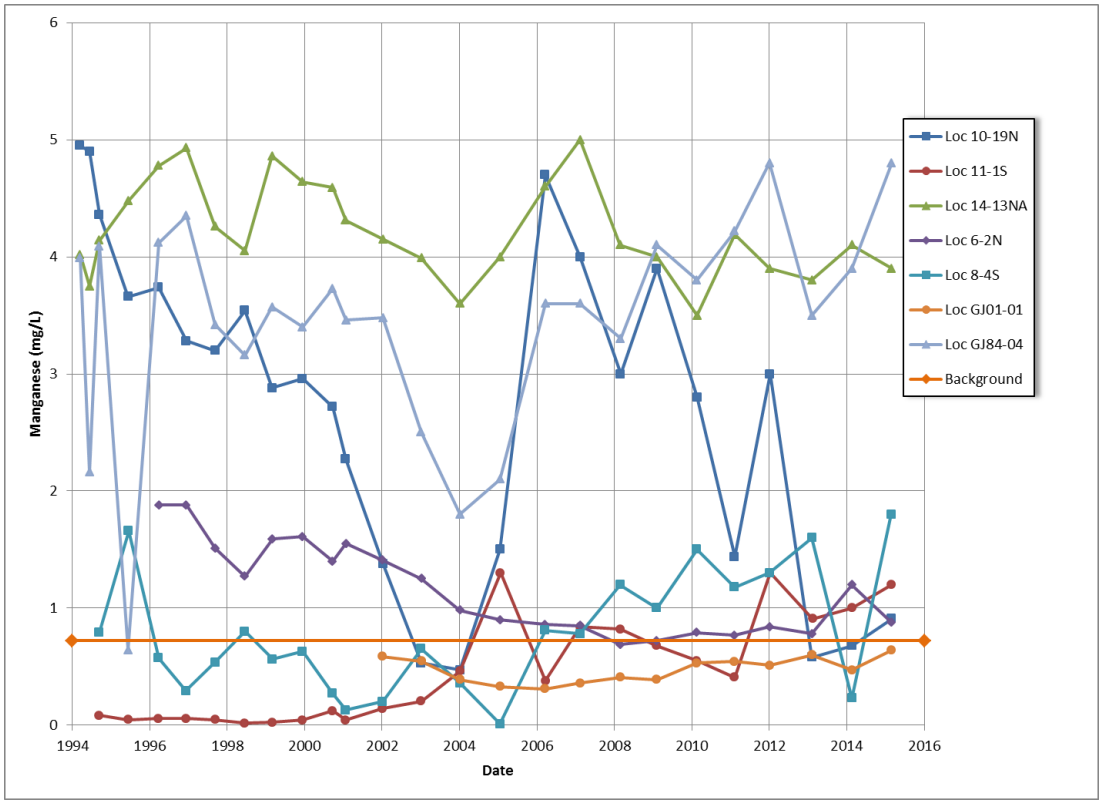

Figure 2. Manganese Concentrations in Groundwater

Molybdenum: Concentrations of molybdenum have been generally decreasing over time, and molybdenum concentrations did not exceed the State of Colorado groundwater standard of 0.21 mg/L in any monitoring wells in 2015 (Figure 3).

Recommendation: Because molybdenum concentrations have been below the State of Colorado groundwater standard since 2005, discontinue monitoring for molybdenum.

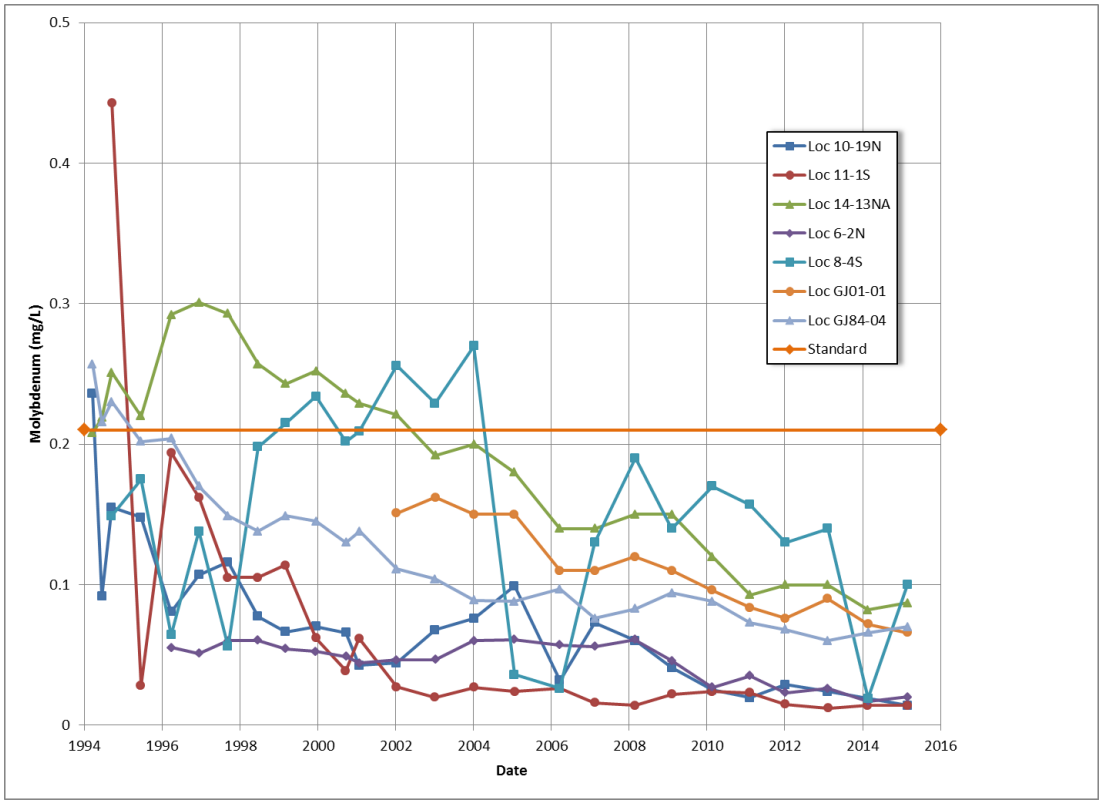

Figure 3. Molybdenum Concentrations in Groundwater

Selenium: Concentrations of selenium generally have been decreasing over time, and selenium concentrations were below the State of Colorado groundwater standard of 0.05 mg/L in all wells in 2015 (Figure 4).

Recommendation: Because selenium concentrations have been below the State of Colorado groundwater standard since 2008, discontinue sampling for selenium.

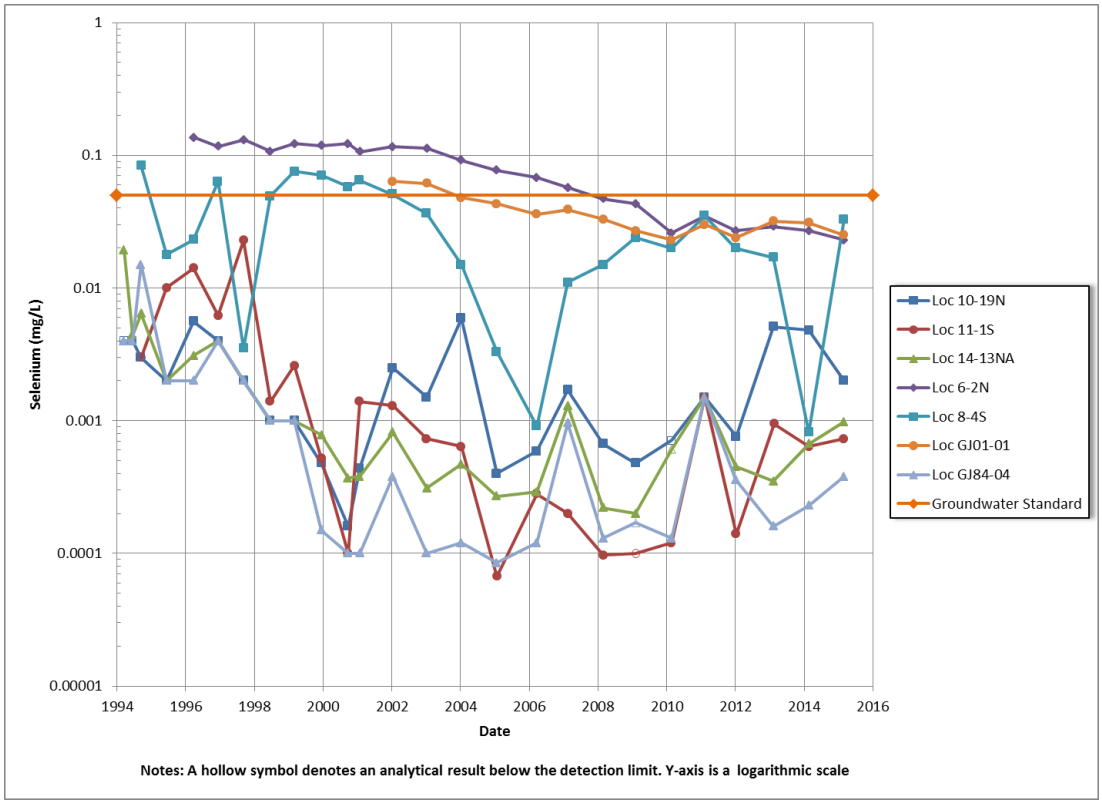

Figure 4. Selenium Concentrations in Groundwater

Sulfate: Historically, maximum background sulfate concentration (1150 mg/L) exceeded the State of Colorado secondary groundwater standard for sulfate (250 mg/L). Concentrations of sulfate exceeded background in three wells in the monitoring network during 2015 (Figure 5).

Recommendation: Because sulfate concentrations continue to exceed background, continue monitoring for sulfate.

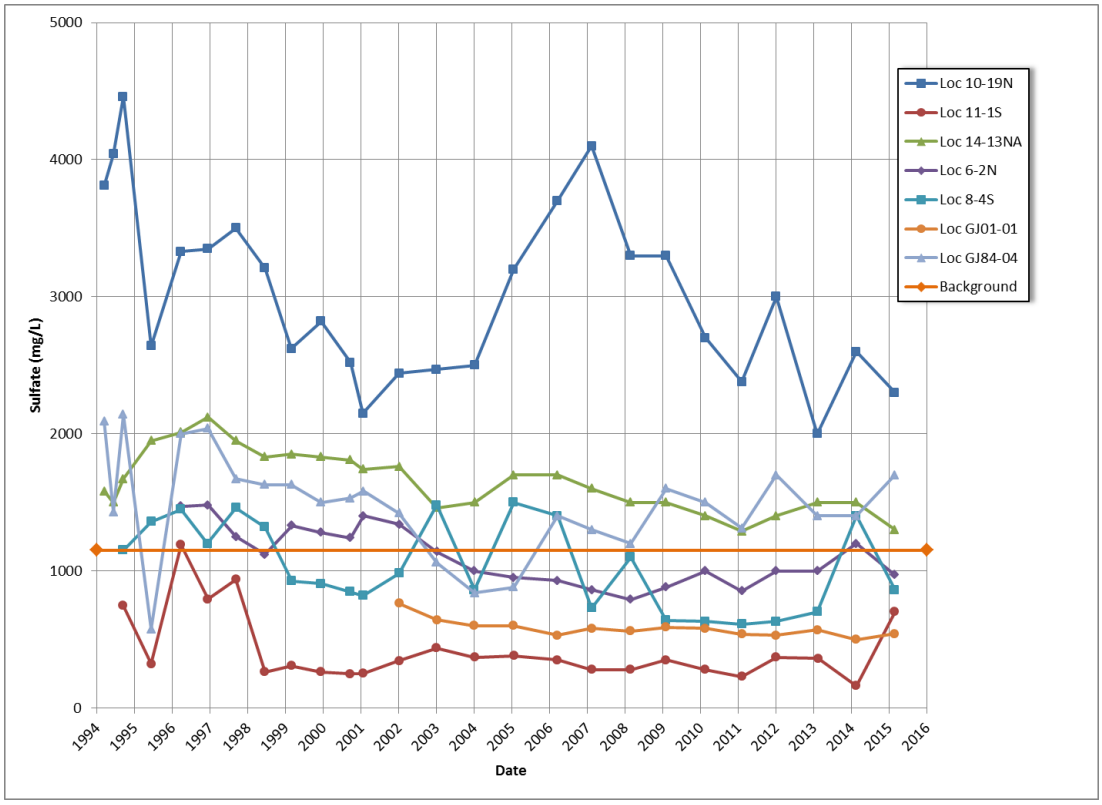

Figure 5. Sulfate Concentrations in Groundwater

Uranium: The State of Colorado groundwater standard was exceeded at all wells in the monitoring network in 2015 (Figure 6). Uranium is the most widespread contaminant throughout the aquifer and is the most elevated relative to the groundwater standard, with concentrations up to 22 times the standard measured during the monitoring period.

Recommendation: Because uranium is the most elevated concentrations relative to the standard, has the most extensive plume, and is the most mobile contaminant in the alluvial aquifer, it is expected to be the last contaminant to be naturally flushed (DOE 1989a). Continue monitoring for uranium as the main indicator of the progress of natural flushing and to determine conditional closure of the site.

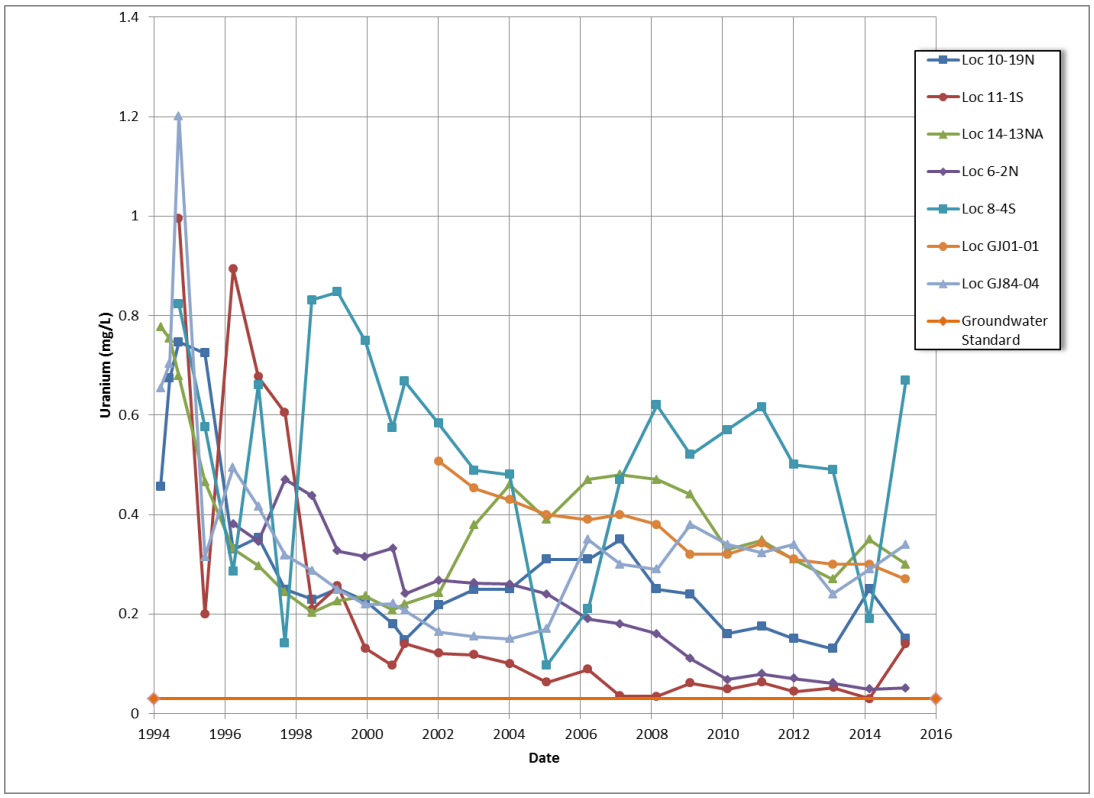

Figure 6. Uranium Concentrations in Groundwater

4.0 Surface Water

4.1 Surface-Water Monitoring Network

The surface-water monitoring network specified in the LTS&MP consists of six locations, including three Gunnison River locations, one wetland location, the North Pond, and the South Pond. Monitoring at the Upper Gunnison location provides background river water quality to better assess concentrations of constituents of concern in samples collected adjacent to and downstream of the site. Monitoring of the Upper-Mid and Lower Gunnison locations provides an assessment of impacts to the Gunnison River from groundwater discharge adjacent to and downstream of the site, respectively. The North Pond, South Pond, and Wetland Area represent all surface-water features at the site and are established monitoring locations with extensive historical data.

The North and South Ponds and the sampling location for the Wetland Area are man-made features that are considered to be "created" or "constructed" wetlands under Colorado Surface Water Regulations (5 *Code of Colorado Regulations* [CCR] 1002-31). Although the Wetland Area sampling location contains water throughout the year (it was excavated below the average low groundwater elevation), it is the only wetlands area that typically has water in the late winter when sampling is scheduled. Water levels in the wetlands at the north end of the site are dry most of the year and typically contain water only during the spring runoff. A general overview of the current surface-water monitoring network is shown in Figure 1.

Recommendation: Continue monitoring the current surface-water network.

4.2 Surface-Water Analytes

Because the ponded surface-water areas at the site are considered to be created wetlands, only narrative standards[1] (5 *Code of Colorado Regulations* [CCR] 1002-31), not numerical standards, apply to these waters. However, any site-related contamination present in ponded surface water is the result of groundwater discharge to the surface-water body; therefore, analytes monitored for the surface-water monitoring program should mirror the groundwater monitoring program. Though numerical standards do not apply to these waters, groundwater standards are provided as benchmarks for comparisons purposes only. Numerical surface-water standards do apply to the Gunnison River. Summaries of analyte concentrations in onsite ponds and the Gunnison River are shown in Table 3 and Table 4, respectively. Appendix B presents surface-water data from 2011 to 2015.

[1] Waters in wetlands "shall be free from substances attributable to human-caused point source or nonpoint source discharge in amounts, concentrations or combinations which: (i) produce color, odor, changes in pH, or other conditions in such a degree as to create a nuisance or harm water quality dependent functions or impart any undesirable taste to significant edible aquatic species of the wetland; or (ii) are toxic to humans, animals, plants, or aquatic life of the wetland."

Table 3. Summary of Analyte Concentrations[a] in Onsite Surface Water from 2011 to 2015

Analyte	Benchmark[b] (mg/L)	North Pond		South Pond		Wetland Area	
		Range[c]	Mean[c]	Range[c]	Mean[c]	Range[c]	Mean[c]
Molybdenum	0.21	0.0034–0.0073	0.0053	0.00813–0.086	0.043	0.027–1.3	0.32
Selenium	0.05	0.00058–0.0047	0.0021	0.00047–0.0015	0.00091	0.00055–0.005	0.0017
Sulfate	1150	300–2100	1027	133–1300	857	690–10000	4400
Uranium	0.03	0.032–0.15	0.09	0.0385–0.390	0.209	0.38–5.7	1.6

Notes:
[a] Units of all data are given in mg/L.
[b] Groundwater standards from Regulation 41, *The Basic Standards for Ground Water* (CDPHE 2013) (molybdenum, selenium, and uranium), https://www.colorado.gov/pacific/sites/default/files/41_2013%2801%29hdr.pdf, or background (maximum sulfate concentration from background wells GJ84-09 and GJ84-10).
[c] Based on five observations from 2011 to 2015.

Table 4. Summary of Analyte Concentrations[a] in the Gunnison River from 2011 to 2015

Analyte	Standard[b] (mg/L)	Upper Gunnison		Upper-Mid Gunnison		Lower Gunnison	
		Range	Mean	Range	Mean	Range	Mean
Molybdenum	0.16	0.0021–0.0034	0.0026	0.0019–0.0045	0.0027	0.0021–0.0048	0.003
Selenium	current conditions	0.0032–0.0092	0.0054	0.0032–0.0063	0.0047	0.0031–0.0089	0.0049
Sulfate	480	220–480	326	220–450	320	260–530	357
Uranium	0.03	0.0051–0.0095	0.0071	0.0049–0.013	0.0077	0.0068–0.016	0.01

Notes:
[a] Units of all data are given in mg/L.
[b] Standards from Regulation 35, "Classifications and Numeric Standards for Gunnison and Lower Dolores River Basins" (CDPHE 2015), https://www.colorado.gov/pacific/sites/default/files/35_2015%2806%29_1.pdf.

Molybdenum: Concentrations of molybdenum have been elevated in the past in onsite ponds but were below the State of Colorado groundwater standard in 2015 (Figure 7). Molybdenum concentrations increase slightly between upstream and downstream Gunnison River locations, but concentrations are 2 orders of magnitude below the State of Colorado surface-water standard for the Gunnison River (Table 4).

Recommendation: Because molybdenum concentrations have been below the State of Colorado groundwater standard since 2007 (with one exception) and concentrations in the Gunnison River are very low compared to the surface-water standard, discontinue monitoring surface water for molybdenum.

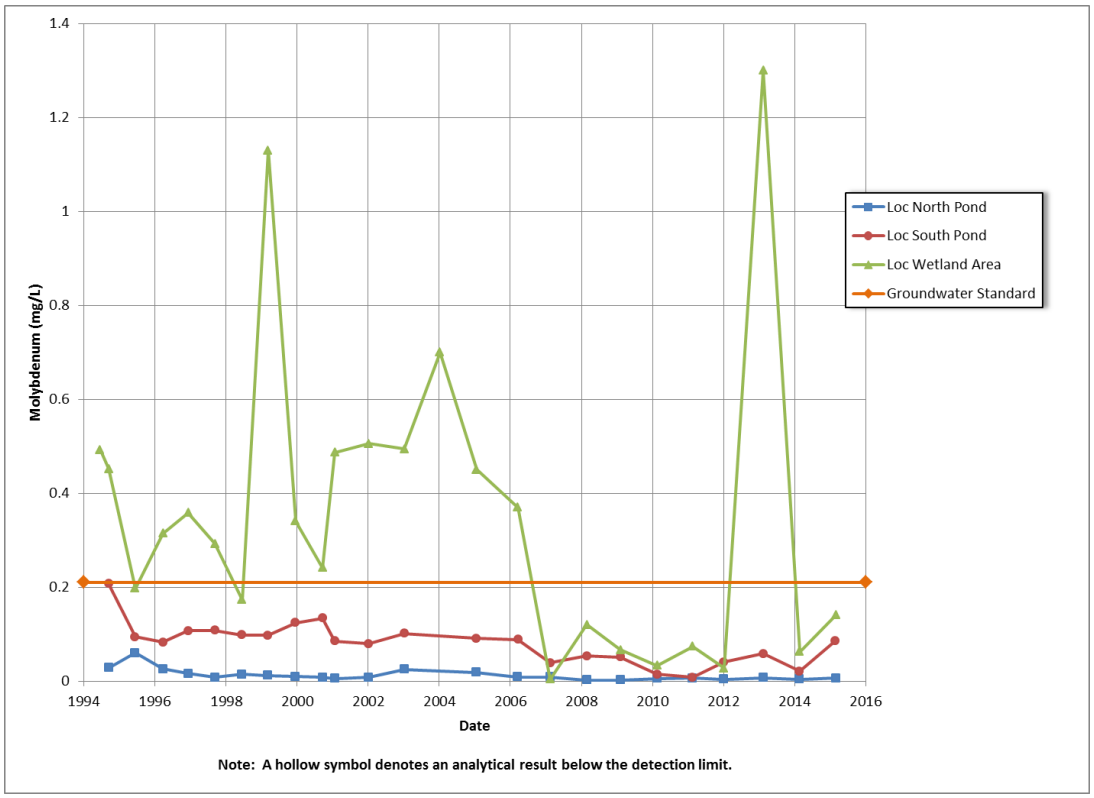

Figure 7. Molybdenum Concentrations in Ponds and Wetland Area

Selenium: Concentrations of selenium in the onsite ponds have always been below the groundwater standard (Figure 8). Selenium concentrations are essentially the same between upstream and downstream Gunnison River locations and an order of magnitude below the state surface-water standard (Table 3).

Recommendation: Selenium concentrations measured in the onsite surface-water ponds have been below the State of Colorado groundwater standard since monitoring began and groundwater has been below State of Colorado standards since 2008. Selenium levels at Middle and Lower Gunnison River locations have been within the range of background (Upper Gunnison). Discontinue monitoring of selenium in surface water.

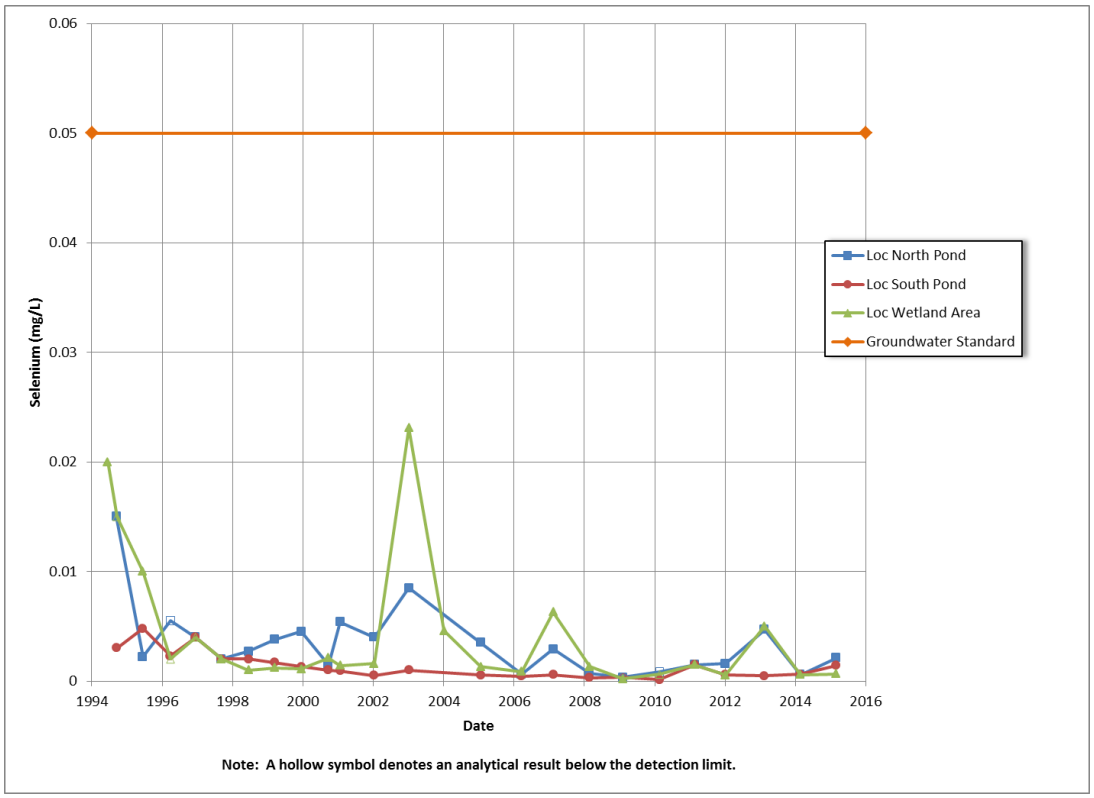

Figure 8. Selenium Concentrations in Ponds and Wetland Area

Sulfate: Sulfate concentrations exceeded the background sulfate groundwater concentration in all three onsite ponds in 2015 (Figure 9). Sulfate concentrations are essentially the same between upstream and downstream Gunnison River locations, although a slight increase in sulfate concentrations between Upper Gunnison and Lower Gunnison sampling locations may indicate groundwater discharge to the river (Table 3). Sulfate concentrations exceeded the state surface-water standard at upstream and downstream locations during the monitoring period.

Recommendation: Sulfate concentrations continue to be above background in groundwater and have the potential to impact surface water; continue to monitor surface water for sulfate.

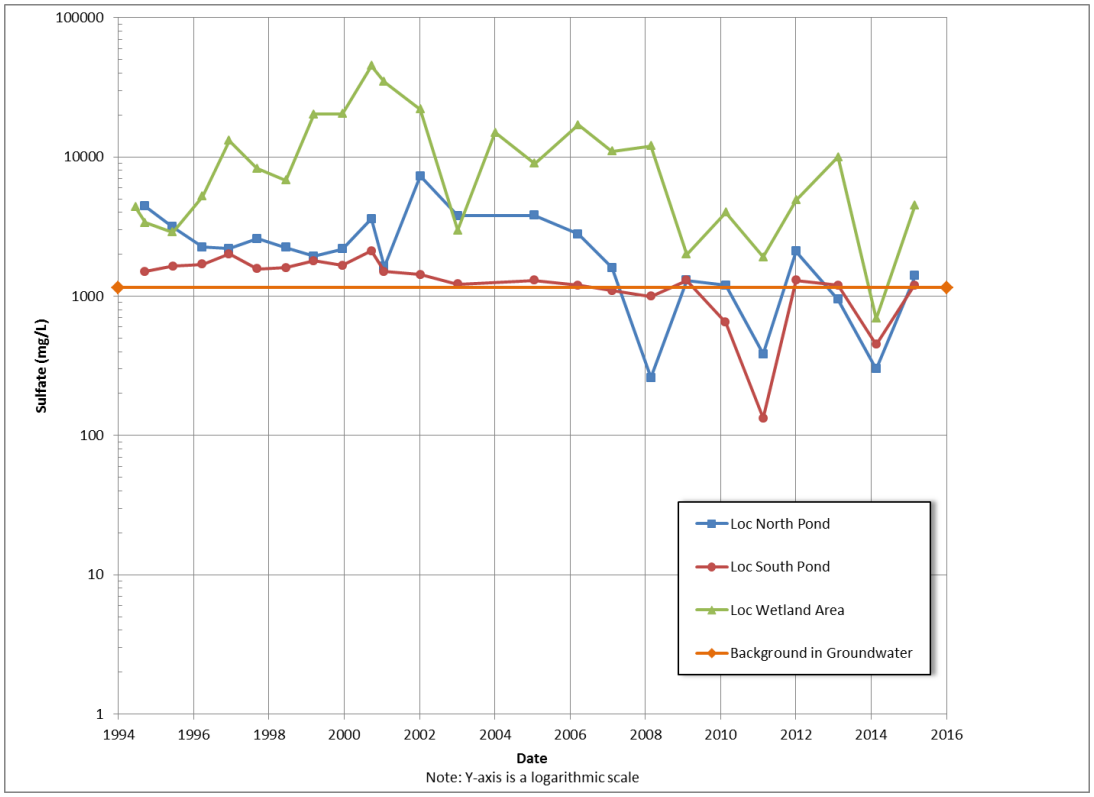

Figure 9. Sulfate Concentrations in Ponds and Wetland Area

Uranium: Concentrations of uranium continue to be elevated in onsite ponds and were above the State of Colorado groundwater standard at all onsite surface-water pond locations in 2015 (Figure 10). Uranium concentrations increase slightly between upstream of the Upper Gunnison sampling location and locations adjacent to the site, which indicates groundwater discharge to the river. However, uranium concentrations were below the State of Colorado surface-water standard (Table 3).

Recommendation: Continue monitoring surface water for uranium until conditional closure of the site is approved.

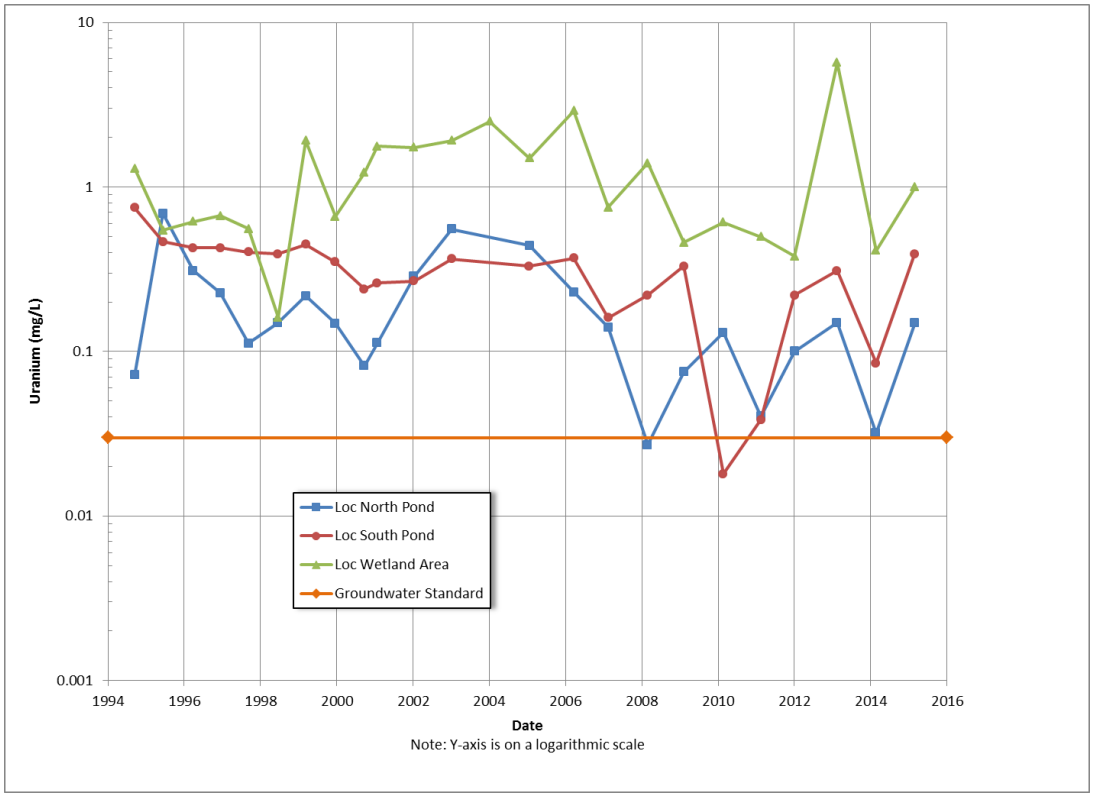

Figure 10. Uranium Concentrations in Ponds and Wetland Area

5.0 Conditional Closure Strategy

The current groundwater compliance strategy for the site is natural flushing. Trends for contaminants at the site indicate that concentrations could decrease to below standards in 50–80 years (DOE 2006). Monitoring results do indicate that concentrations are declining; however, based on observations at other sites, it may not be possible to achieve standards. Because some constituents in background exceed secondary drinking water standards and agricultural standards (e.g., manganese and sulfate), use of the groundwater is not likely even if site-related constituents could be reduced to background levels. Therefore, site-specific standards are justified. Institutional controls are in place to restrict groundwater use in perpetuity and ensure protectiveness. Table 5 compares conditions required for conditional closure with characteristics of the Grand Junction Site.

Table 5. Comparison of Conditions for Closure with Grand Junction Site Characteristics

Conditions for Closure	Grand Junction Site Characteristics
1. Source area has been remediated to the extent practicable.	Site soils removed to meet UMTRCA standards.
2. The plume size is either stable or decreasing in all dimensions.	Plume dimensions are contained based on site geology. Plume cannot expand—can only remain stable or decrease.
3. The concentrations of contaminants in the plume are either decreasing or predicted to decrease.	Average plume concentrations have declined over time using uranium as the main site-related indicator. Average concentrations are less than 10 times the standard.
4. The groundwater will meet Water Quality Regulation No. 41 water-quality standards within a reasonable period of time.	Based on trends, it has been estimated that standards could be met in 50–80 years, though experience at similar sites indicates that concentrations may tail off.
5. Contaminant concentration trends are not dependent on the continued operation and maintenance of active remediation systems or containment systems.	Concentrations are declining due to source removal and natural attenuation processes. No active remediation is taking place.
6. There are no existing or reasonably anticipated exposures above standards or screening levels through cross-media transfer including volatilization into buildings.	Based on site-related constituents, cross-media transfers are not a concern.
7. There are no uses of groundwater downgradient of the site that would be threatened by the plume.	The affected aquifer terminates at the downgradient site boundary, and the plume discharges to the Gunnison River. No downgradient groundwater is affected.
8. There is no discharge to surface water in excess of surface-water standards.	Surface water in the Gunnison River has remained well below applicable standards. Onsite ponds are considered to be “created wetlands.” Ponds have met the narrative standards required by Colorado water-quality regulations.
9. There is no potential for the plume to cause an exceedance of a groundwater-quality standard in an adjacent aquifer.	The affected aquifer is not hydraulically connected to any other aquifer either laterally or vertically. There is no potential for exceedance of a groundwater-quality standard in an adjacent aquifer.
10. For sites that have satisfied all of the above conditions, the division will require either implementation of an institutional control in compliance with CRS 25-15-317–327 or alternate concentration limits in compliance with 6 CCR 264.94(b).	Institutional controls are in place at the site.

Most of the criteria for conditional closure have been met. The plume is likely stable, and possibly decreasing in size, though portions of the site are not presently covered by the monitoring network. CDPHE's guidance notes that while the division prefers remedies where plumes are attenuating, "there may be circumstances where a stable plume, neither shrinking nor increasing, at concentrations above the Colorado groundwater standard might also be protective of human health and the environment and therefore eligible for conditional closure" (line of evidence 4D). Site conditions that might warrant conditional closure for stable plumes include one or more of those listed in Table 6 (from CDPHE guidance).

Table 6. Conditions That Might Warrant Conditional Closure of a Stable Plume

1.	There are no private or public groundwater production wells in close proximity to the site in question.
2.	Existing groundwater quality is not suitable for use, including domestic or agricultural uses, because of naturally occurring constituents.
3.	The contaminated aquifer is not capable of yielding a sufficient and sustainable quantity of water for domestic or agricultural purposes.
4.	Hydrogeologic conditions are such that the contamination is of limited extent and relatively isolated from other nearby water-bearing formations.
5.	The contaminant plume is of limited areal extent and confined to the facility property boundary and institutional controls are used to limit access to this contamination.
6.	Site-specific documentation is provided demonstrating that the constituent concentrations are naturally attenuating at a very slow rate.
7.	The division established an alternate concentration limit…that is higher than the Colorado groundwater standards.
8.	The Water Quality Control Commission establishes a site-specific groundwater standard for an aquifer.
9.	Other factors deemed appropriate on a site-specific basis.

The Grand Junction site meets the first five of the criteria listed in Table 6. Therefore, if the site plume cannot be demonstrated to be shrinking, it is possible that conditional closure could be warranted based on plume stability. The approach described will provide information to better understand changing site conditions and fill in gaps in understanding of the current plume. Results can be used to demonstrate that conditional closure is warranted either because the plume is shrinking and will likely meet standards in the future or is stable and protective in its current configuration.

***Recommendation**:* Establish a strategy for determining when conditional closure of the site can be established and the monitoring program can be discontinued.

Requirements of conditional closure of the site include decreasing or stable contaminant plumes and decreasing contaminant concentrations in the plume. Uranium will be used as the indicator parameter for conditional closure because:

- Uranium is widespread throughout the alluvial aquifer
- Uranium exceeded the standard in all wells in the monitoring network in 2015 with concentrations up to an order of magnitude above the groundwater standard
- Uranium was the constituent that was assessed in the groundwater modeling (DOE 1989a)

To justify a conditional closure, the following approach will be used:

- The uranium plume is defined as the surface area of the plume that is above the State groundwater standard of 0.03 mg/L. The plume boundary established from the initial Geoprobe sampling network will be used to determine if the plume is stable or decreasing.
- The mean uranium concentration will be determined from all sample locations in the Geoprobe sampling network (Figure 1), which includes existing monitoring wells. The mean concentration established from the initial sampling of the Geoprobe network will be compared with the average from the subsequent 5-year monitoring event.
- Results of the comparison of plume size and concentration will be used to determine if site closure can be justified on the grounds of either a shrinking plume (Table 1 conditions) or a stable plume (Table 6 criteria). Detailed information will be provided demonstrating that conditional closure is warranted. If necessary, site-specific standards will be proposed based on the most recent Geoprobe sampling results along with any recommendations for additional groundwater monitoring.

6.0 Sampling Frequency

The LTS&MP specifies conducting annual groundwater and surface-water sampling in late winter. Sampling has been conducted annually during the winter quarter since 2001. During the winter months, groundwater levels are typically low, onsite pond levels are low, Gunnison River flows are low, and contaminant concentrations tend to be elevated (DOE 2001b). An example of seasonal fluctuation of groundwater levels in the alluvial aquifer is shown in Figure 11. Although historical data presented in this graph are dated, the data provide the most complete record of water levels collected during the remedial investigation period when intensive data collection activities occurred. Current water-level fluctuations in the alluvial aquifer are likely to follow the same pattern, as they are closely tied to discharge in the Gunnison River (DOE 1989a).

Recommendation: DOE proposes to continue sampling during the winter quarter to be consistent with the current practice, which will enhance comparability of data by minimizing the effects of seasonal variation. However, if the proposed strategy for long-term monitoring (Geoprobe sampling network and conditional closure strategy) is adopted, then sampling frequency can be reduced to every 5 years because assessment of compliance will be made on an aquifer-wide basis with the data obtained from the groundwater sampling with the Geoprobe, and trending in individual wells requiring annual sampling is not as critical.

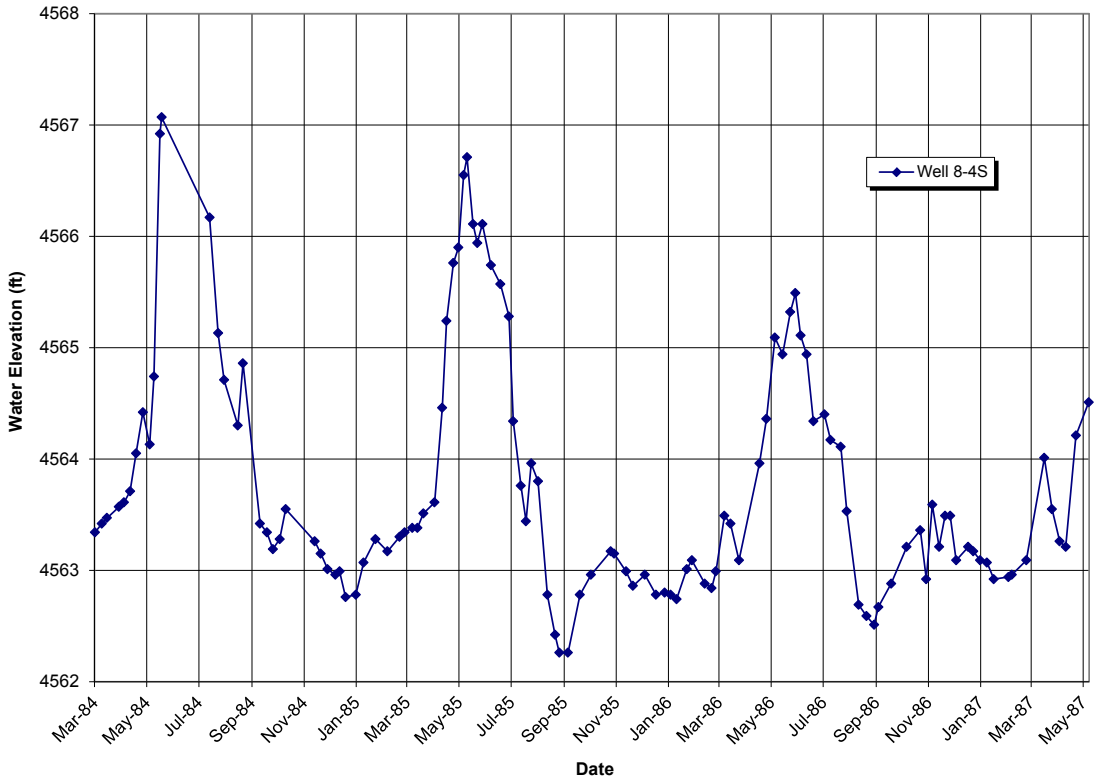

Figure 11. Water Levels in Well 8-4S

7.0 Natural Flushing Assessment

Groundwater modeling has predicted that constituents of concern in the alluvial aquifer will naturally flush to levels below applicable standards 50–80 years after the removal of soil contamination. Soil remediation commenced in 1989 with the signing of the Record of Decision (DOE 1989b). The majority of soil remediation was completed (except for small deferred areas remaining that were completed in 2014 [DOE 2001a]) in 1994 and signaled the beginning of the natural flushing period; therefore, 21 years have elapsed in the 50–80 year time frame predicted by the model.

Uranium is the best indicator of the progress of natural flushing because (1) it is widespread throughout the aquifer, (2) it exceeded the standard at all wells in the monitoring network in 2015, (3) concentrations were historically up to 2 orders of magnitude above the standard, and (4) uranium was the constituent that was modeled. To provide an overview of the natural flushing progress, the annual mean concentration of uranium from current wells in the monitoring network since 1994 was calculated and graphed in Figure 12. As shown in the figure, uranium concentrations have generally declined over time, indicating that natural flushing processes in the alluvial aquifer have been effective. Other lines of evidence that natural flushing is progressing are that maximum uranium concentrations in the current monitoring-well network have declined significantly over the past 21 years (Table 7); and other analytes including arsenic, gross alpha particle activity, nitrate, molybdenum, and selenium had concentrations in groundwater that exceeded groundwater standards in the past but are now below their respective standards.

Table 7. Comparison of Maximum Historical Uranium Concentrations to Current Concentrations

Location	Historical Maximum[a] (mg/L)	2015 Result (mg/L)	Percent Change[b]
10-19N	0.747	0.15	80
11-1S	0.994	0.14	86
14-13NA	0.777	0.3	61
6-2N	0.470	0.051	89
8-4S	0.847	0.67	21
GJ01-01	0.507	0.27	47
GJ84-04	1.2	0.34	72

Notes:
[a] Data from 1994 to 2015.
[b] Percent change = [(max concentration – 2015 concentration) ÷ max concentration] x 100.

Although results presented in Table 7 show a large percent change, the greatest decreases in concentration were realized shortly after the completion of surface remediation as shown in Figure 6. Concentration changes since that time have generally slowed. While overall concentrations continue to decline, this trend is not noted at all monitoring locations.

As stated in the LTS&MP, a statistical evaluation of contaminant concentrations is required to assess the progress of natural flushing. To meet this objective, a trend analysis using the Mann-Kendall test (Gilbert 1987) was performed to assess the temporal behavior of contaminant concentrations. This test determines if an upward trend, a downward trend, or no trend exists at a specified level of significance. For the purposes of evaluating trends at the Grand Junction site, a 95 percent level of significance ($\alpha = 0.05$) was used. Table 8 shows the number of samples, results of the trend analysis, *p* values to assess the strength of the trend (the closer to 0, the stronger the trend) and lists 2015 concentrations along with applicable benchmarks. Observations from Table 8 included the following:

- Out of the 35 analyte-location pairs, 25 had a downward trend, 8 had no discernable trend, and 2 had an upward trend
- The two upward trends were indicated for manganese; all other analytes had a downward trend (25 locations) or no trend (8)
- For uranium and manganese, benchmarks were exceeded at 13 out of 14 analyte-location pairs
- For molybdenum, selenium, and sulfate, only 3 out of the 21 analyte-well pairs exceed a benchmark

Although natural flushing is progressing at the Grand Junction site, obtaining compliance with the uranium groundwater standard within 50–80 years predicted by groundwater modeling is unlikely based on experience at other Legacy Management sites. Numerous sites with an initial natural flushing compliance strategy (e.g., the Old Rifle, Colorado and Riverton, Wyoming, sites) are not meeting the flushing time predicted by the original groundwater models. In addition, concentrations appear to plateau at levels above the groundwater standards, particularly for uranium. These sites have characteristics (a shallow alluvial aquifer that has contaminated groundwater caused by former uranium milling activities) similar to those of the Grand Junction site, and the original conceptual site models were inadequate to explain site conditions and

contaminant plume persistence (Dam et al. 2015). Ongoing studies at these sites are focusing on uranium mobility and plume persistence related to geochemical processes that occur in areas of the aquifer that contain naturally reduced sediments and evaporite deposits.

Table 8. Assessment of Contaminant Trends in Wells at the Grand Junction Site

Analyte	Location	Number of Samples	Trend[a]	*p* Value	2015 Result (mg/L)	Benchmark (Standard or Background[b])	Benchmark Exceeded in 2015? (Yes/No)
Manganese	10-19N	26	Downward	0.000316	0.91	0.72	Yes
	11-1S	24	Upward	1.7×10^{-5}	1.2		Yes
	14-13NA	26	Downward	0.036995	3.9		Yes
	6-2N	22	Downward	1.69×10^{-5}	0.88		Yes
	8-4S	24	Upward	0.031419	1.8		Yes
	GJ01-01	14	No trend	0.085237	0.64		No
	GJ84-04	26	No trend	0.05617	4.8		Yes
Molybdenum	10-19N	26	Downward	7.78×10^{-8}	0.014	0.21	No
	11-1S	24	Downward	6.91×10^{-8}	0.014		No
	14-13NA	26	Downward	3.47×10^{-7}	0.087		No
	6-2N	22	Downward	0.001528	0.02		No
	8-4S	24	No trend	0.132021	0.1		No
	GJ01-01	14	Downward	1.39×10^{-5}	0.066		No
	GJ84-04	26	Downward	1.62×10^{-10}	0.07		No
Selenium	10-19N	26	No trend	0.171012	0.002	0.05	No
	11-1S	24	Downward	0.001977	0.00073		No
	14-13NA	26	Downward	9.66×10^{-5}	0.00074		No
	6-2N	22	Downward	2.19×10^{-8}	0.023		No
	8-4S	24	Downward	0.013589	0.033		No
	GJ01-01	14	Downward	0.000344	0.025		No
	GJ84-04	26	Downward	0.006213	0.00038		No
Sulfate	10-19N	26	Downward	0.004351	2300	1150	Yes
	11-1S	24	No trend	0.111627	700		No
	14-13NA	26	Downward	4.21×10^{-5}	1300		Yes
	6-2N	22	Downward	0.000628	970		No
	8-4S	24	Downward	0.007485	860		No
	GJ01-01	14	Downward	0.001245	540		No
	GJ84-04	26	Downward	0.038682	1700		Yes
Uranium	10-19N	26	Downward	0.000337	0.15	0.03	Yes
	11-1S	24	Downward	9.49×10^{-7}	0.14		Yes
	14-13NA	26	No trend	0.233445	0.29		Yes
	6-2N	22	Downward	3.15×10^{-9}	0.051		Yes
	8-4S	24	No trend	0.094317	0.67		Yes
	GJ01-01	14	Downward	4.21×10^{-6}	0.27		Yes
	GJ84-04	26	No trend	0.066739	0.34		Yes

Notes:
[a] Data from 1994 to 2015.
[b] Standards for molybdenum, selenium, and uranium are from Regulation 41, *The Basic Standards for Ground Water* (CDPHE 2013). Background concentrations are the maximum concentration observed in samples from upgradient wells GJ84-09 and GJ84-10.

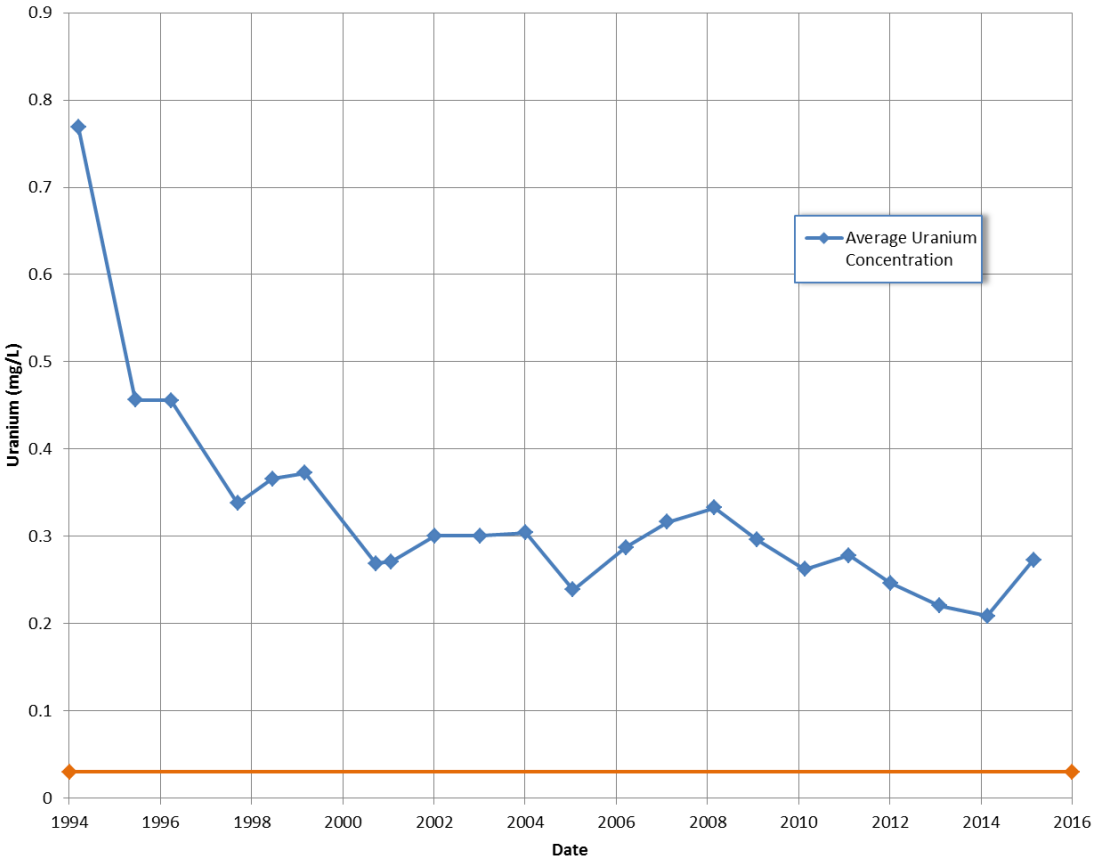

Figure 12. Average Uranium Concentrations in the Alluvial Aquifer

8.0 Summary of Recommendations

Recommendations from this evaluation of the groundwater monitoring program at the Grand Junction site through 2015 are summarized below.

- Develop a long-term monitoring strategy that includes the following:
  - Conduct an extensive monitoring event every 5 years to obtain information on uranium plume configuration and to assess groundwater concentrations of uranium across the site.
  - Use the data from the 5-year monitoring events to demonstrate plume stability or reduction and to demonstrate declining aquifer-wide uranium concentrations in order to obtain "conditional closure" of the site per CDPHE policy.
- Discontinue monitoring for molybdenum and selenium in groundwater and surface water because concentrations have been below applicable standards since 2008. Continue monitoring for manganese, sulfate, and uranium.
- Continue monitoring groundwater and surface water during the winter quarter to limit seasonal variation and to provide seasonally consistent data when groundwater and surface-water levels are typically low and analyte concentrations are typically the highest.
- Reduce sampling frequency from annual to every 5 years.

9.0 References

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Appendix A

Groundwater Data

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CLASSIC GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:21 am

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3)	mg/L	10-19N	WL	02/27/2015	N001	AL	O	338		F	#	-	-
	mg/L	11-1S	WL	02/26/2015	N001	AL	O	240		F	#	-	-
	mg/L	14-13NA	WL	02/27/2015	N001	AL	O	358		F	#	-	-
	mg/L	6-2N	WL	02/25/2015	N001	AL	O	221		F	#	-	-
	mg/L	8-4S	WL	02/26/2015	N001	AL	O	343		F	#	-	-
	mg/L	GJ01-01	WL	02/26/2015	N001	AL		277		F	#	-	-
	mg/L	GJ84-04	WL	02/27/2015	N001	AL	D	363		F	#	-	-
Calcium	mg/L	10-19N	WL	02/27/2015	N001	AL	O	370.000		F	#	0.12	-
	mg/L	11-1S	WL	02/26/2015	N001	AL	O	220.000		F	#	0.024	-
	mg/L	14-13NA	WL	02/27/2015	N001	AL	O	290.000		F	#	0.024	-
	mg/L	14-13NA	WL	02/27/2015	N002	AL	O	290.000		F	#	0.024	-
	mg/L	6-2N	WL	02/25/2015	N001	AL	O	140.000		F	#	0.024	-
	mg/L	8-4S	WL	02/26/2015	N001	AL	O	210.000		F	#	0.024	-
	mg/L	GJ01-01	WL	02/26/2015	N001	AL		130.000		F	#	0.024	-
	mg/L	GJ84-04	WL	02/27/2015	N001	AL	D	330.000		F	#	0.024	-
Chloride	mg/L	10-19N	WL	02/27/2015	N001	AL	O	230		F	#	10	-
	mg/L	11-1S	WL	02/26/2015	N001	AL	O	16		F	#	4	-
	mg/L	14-13NA	WL	02/27/2015	N001	AL	O	110		F	#	10	-
	mg/L	14-13NA	WL	02/27/2015	N002	AL	O	110		F	#	10	-
	mg/L	6-2N	WL	02/25/2015	N001	AL	O	92		F	#	5	-
	mg/L	8-4S	WL	02/26/2015	N001	AL	O	62		F	#	4	-
	mg/L	GJ01-01	WL	02/26/2015	N001	AL		58		F	#	4	-
	mg/L	GJ84-04	WL	02/27/2015	N001	AL	D	150		F	#	10	-
Dissolved Oxygen	mg/L	10-19N	WL	02/08/2011	N001	AL	O	0.83		F	#	-	-
	mg/L	10-19N	WL	02/27/2015	N001	AL	O	1.82		F	#	-	-

CLASSIC GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:21 am

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Dissolved Oxygen	mg/L	11-1S	WL	02/08/2011	N001	AL	O	1.25		F	#	-	-
	mg/L	11-1S	WL	02/26/2015	N001	AL	O	0.46		F	#	-	-
	mg/L	14-13NA	WL	02/08/2011	N001	AL	O	0.89		F	#	-	-
	mg/L	14-13NA	WL	02/27/2015	N001	AL	O	0.68		F	#	-	-
	mg/L	6-2N	WL	02/08/2011	N001	AL	O	1.67		F	#	-	-
	mg/L	6-2N	WL	02/25/2015	N001	AL	O	0.45		F	#	-	-
	mg/L	8-4S	WL	02/08/2011	N001	AL	O	0.82		F	#	-	-
	mg/L	8-4S	WL	02/26/2015	N001	AL	O	0.54		F	#	-	-
	mg/L	GJ01-01	WL	02/08/2011	N001	AL		1.01		F	#	-	-
	mg/L	GJ01-01	WL	02/26/2015	N001	AL		0.72		F	#	-	-
	mg/L	GJ84-04	WL	02/08/2011	N001	AL	D	0.43		F	#	-	-
	mg/L	GJ84-04	WL	02/27/2015	N001	AL	D	0.96		F	#	-	-
Iron	mg/L	10-19N	WL	02/27/2015	N001	AL	O	0.092	J	F	#	0.033	-
	mg/L	11-1S	WL	02/26/2015	N001	AL	O	0.210		F	#	0.0067	-
	mg/L	14-13NA	WL	02/27/2015	N001	AL	O	0.070	J	F	#	0.0067	-
	mg/L	14-13NA	WL	02/27/2015	N002	AL	O	0.058	J	F	#	0.0067	-
	mg/L	6-2N	WL	02/25/2015	N001	AL	O	0.013	J	F	#	0.0067	-
	mg/L	8-4S	WL	02/26/2015	N001	AL	O	0.037	J	F	#	0.0067	-
	mg/L	GJ01-01	WL	02/26/2015	N001	AL		0.015	J	F	#	0.0067	-
	mg/L	GJ84-04	WL	02/27/2015	N001	AL	D	0.220		F	#	0.0067	-
Magnesium	mg/L	10-19N	WL	02/27/2015	N001	AL	O	200.000		F	#	0.15	-
	mg/L	11-1S	WL	02/26/2015	N001	AL	O	72.000		F	#	0.03	-
	mg/L	14-13NA	WL	02/27/2015	N001	AL	O	73.000		F	#	0.03	-
	mg/L	14-13NA	WL	02/27/2015	N002	AL	O	72.000		F	#	0.03	-
	mg/L	6-2N	WL	02/25/2015	N001	AL	O	39.000		F	#	0.03	-

CLASSIC GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:21 am

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Magnesium	mg/L	8-4S	WL	02/26/2015	N001	AL	O	75.000		F	#	0.03	-
	mg/L	GJ01-01	WL	02/26/2015	N001	AL		54.000		F	#	0.03	-
	mg/L	GJ84-04	WL	02/27/2015	N001	AL	D	90.000		F	#	0.03	-
Manganese	mg/L	10-19N	WL	02/08/2011	N001	AL	O	1.440		F	#	0.002	-
	mg/L	10-19N	WL	01/06/2012	N001	AL	O	3.000		F	#	0.00011	-
	mg/L	10-19N	WL	02/06/2013	N001	AL	O	0.580		F	#	0.00011	-
	mg/L	10-19N	WL	02/20/2014	N001		O	0.680		F	#	0.00011	-
	mg/L	10-19N	WL	02/27/2015	N001	AL	O	0.910		F	#	0.0012	-
	mg/L	11-1S	WL	02/08/2011	N001	AL	O	0.409		F	#	0.002	-
	mg/L	11-1S	WL	01/06/2012	N001	AL	O	1.300		F	#	0.00011	-
	mg/L	11-1S	WL	02/14/2013	N001	AL	O	0.910		F	#	0.00011	-
	mg/L	11-1S	WL	02/19/2014	N001		O	1.000		F	#	0.00011	-
	mg/L	11-1S	WL	02/26/2015	N001	AL	O	1.200		F	#	0.00024	-
	mg/L	14-13NA	WL	02/08/2011	N001	AL	O	4.190		F	#	0.002	-
	mg/L	14-13NA	WL	01/05/2012	N001	AL	O	3.900		F	#	0.00011	-
	mg/L	14-13NA	WL	02/06/2013	N001	AL	O	3.800		F	#	0.00011	-
	mg/L	14-13NA	WL	02/06/2013	N002	AL	O	3.700		F	#	0.00011	-
	mg/L	14-13NA	WL	02/19/2014	N001		O	4.100		F	#	0.00011	-
	mg/L	14-13NA	WL	02/27/2015	N001	AL	O	3.900		F	#	0.00024	-
	mg/L	14-13NA	WL	02/27/2015	N002	AL	O	3.800		F	#	0.00024	-
	mg/L	6-2N	WL	02/08/2011	N001	AL	O	0.766		F	#	0.002	-
	mg/L	6-2N	WL	01/05/2012	N001	AL	O	0.840		F	#	0.00011	-
	mg/L	6-2N	WL	02/07/2013	N001	AL	O	0.780		F	#	0.00011	-
	mg/L	6-2N	WL	02/20/2014	N001		O	1.200		F	#	0.00011	-
	mg/L	6-2N	WL	02/25/2015	N001	AL	O	0.880		F	#	0.00024	-
	mg/L	8-4S	WL	02/08/2011	N001	AL	O	1.180		F	#	0.002	-

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Manganese	mg/L	8-4S	WL	01/05/2012	N001	AL	O	1.300		F	#	0.00011	-
	mg/L	8-4S	WL	01/05/2012	N002	AL	O	1.200		F	#	0.00011	-
	mg/L	8-4S	WL	02/06/2013	N001	AL	O	1.600		F	#	0.00011	-
	mg/L	8-4S	WL	02/20/2014	N001		O	0.230		F	#	0.00011	-
	mg/L	8-4S	WL	02/26/2015	N001	AL	O	1.800		F	#	0.00024	-
	mg/L	GJ01-01	WL	02/08/2011	N001	AL		0.545		F	#	0.002	-
	mg/L	GJ01-01	WL	02/08/2011	N002	AL		0.535		F	#	0.002	-
	mg/L	GJ01-01	WL	01/06/2012	N001	AL		0.510		F	#	0.00011	-
	mg/L	GJ01-01	WL	02/06/2013	N001	AL		0.600		F	#	0.00011	-
	mg/L	GJ01-01	WL	02/20/2014	N001			0.470		F	#	0.00011	-
	mg/L	GJ01-01	WL	02/26/2015	N001	AL		0.640		F	#	0.00024	-
	mg/L	GJ84-04	WL	02/08/2011	N001	AL	D	4.220		F	#	0.002	-
	mg/L	GJ84-04	WL	01/05/2012	0001	AL	D	4.800		F	#	0.00011	-
	mg/L	GJ84-04	WL	02/06/2013	N001	AL	D	3.500		F	#	0.00011	-
	mg/L	GJ84-04	WL	02/20/2014	N001		D	3.900		F	#	0.00011	-
	mg/L	GJ84-04	WL	02/20/2014	N002		D	3.900		F	#	0.00011	-
	mg/L	GJ84-04	WL	02/27/2015	N001	AL	D	4.800		F	#	0.00024	-
Molybdenum	mg/L	10-19N	WL	02/08/2011	N001	AL	O	0.0196	N	F	#	0.00017	-
	mg/L	10-19N	WL	01/06/2012	N001	AL	O	0.029		F	#	0.00032	-
	mg/L	10-19N	WL	02/06/2013	N001	AL	O	0.024		F	#	0.00016	-
	mg/L	10-19N	WL	02/20/2014	N001		O	0.019		F	#	0.00016	-
	mg/L	10-19N	WL	02/27/2015	N001	AL	O	0.014		FJ	#	0.00032	-
	mg/L	11-1S	WL	02/08/2011	N001	AL	O	0.0231	N	F	#	0.00017	-
	mg/L	11-1S	WL	01/06/2012	N001	AL	O	0.015		F	#	0.00032	-
	mg/L	11-1S	WL	02/14/2013	N001	AL	O	0.012		F	#	0.00016	-
	mg/L	11-1S	WL	02/19/2014	N001		O	0.014		F	#	0.00016	-

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	11-1S	WL	02/26/2015	N001	AL	O	0.014		F	#	0.00032	-
	mg/L	14-13NA	WL	02/08/2011	N001	AL	O	0.0928	N	F	#	0.00017	-
	mg/L	14-13NA	WL	01/05/2012	N001	AL	O	0.100		F	#	0.00032	-
	mg/L	14-13NA	WL	02/06/2013	N001	AL	O	0.100		F	#	0.00032	-
	mg/L	14-13NA	WL	02/06/2013	N002	AL	O	0.100		F	#	0.00032	-
	mg/L	14-13NA	WL	02/19/2014	N001		O	0.082		F	#	0.00032	-
	mg/L	14-13NA	WL	02/27/2015	N001	AL	O	0.087		F	#	0.00032	-
	mg/L	14-13NA	WL	02/27/2015	N002	AL	O	0.087		F	#	0.00032	-
	mg/L	6-2N	WL	02/08/2011	N001	AL	O	0.0351	N	F	#	0.00017	-
	mg/L	6-2N	WL	01/05/2012	N001	AL	O	0.023		F	#	0.00032	-
	mg/L	6-2N	WL	02/07/2013	N001	AL	O	0.026		F	#	0.00032	-
	mg/L	6-2N	WL	02/20/2014	N001		O	0.017		F	#	0.00032	-
	mg/L	6-2N	WL	02/25/2015	N001	AL	O	0.020		F	#	0.00032	-
	mg/L	8-4S	WL	02/08/2011	N001	AL	O	0.157	N	FJ	#	0.00017	-
	mg/L	8-4S	WL	01/05/2012	N001	AL	O	0.130		F	#	0.00032	-
	mg/L	8-4S	WL	01/05/2012	N002	AL	O	0.120		F	#	0.00032	-
	mg/L	8-4S	WL	02/06/2013	N001	AL	O	0.140		F	#	0.00032	-
	mg/L	8-4S	WL	02/20/2014	N001		O	0.019		F	#	0.00016	-
	mg/L	8-4S	WL	02/26/2015	N001	AL	O	0.100		F	#	0.00032	-
	mg/L	GJ01-01	WL	02/08/2011	N001	AL		0.0836	N	F	#	0.00017	-
	mg/L	GJ01-01	WL	02/08/2011	N002	AL		0.0803	N	F	#	0.00017	-
	mg/L	GJ01-01	WL	01/06/2012	N001	AL		0.076		F	#	0.00032	-
	mg/L	GJ01-01	WL	02/06/2013	N001	AL		0.090		F	#	0.00032	-
	mg/L	GJ01-01	WL	02/20/2014	N001			0.072		F	#	0.00032	-
	mg/L	GJ01-01	WL	02/26/2015	N001	AL		0.066		F	#	0.00032	-
	mg/L	GJ84-04	WL	02/08/2011	N001	AL	D	0.0729	N	F	#	0.00017	-

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	GJ84-04	WL	01/05/2012	0001	AL	D	0.068		F	#	0.00032	-
	mg/L	GJ84-04	WL	02/06/2013	N001	AL	D	0.060		F	#	0.00016	-
	mg/L	GJ84-04	WL	02/20/2014	N001		D	0.066		F	#	0.00032	-
	mg/L	GJ84-04	WL	02/20/2014	N002		D	0.065		F	#	0.00032	-
	mg/L	GJ84-04	WL	02/27/2015	N001	AL	D	0.070		F	#	0.00032	-
Nitrate + Nitrite as Nitrogen	mg/L	10-19N	WL	02/27/2015	N001	AL	O	0.22		F	#	0.01	-
	mg/L	11-1S	WL	02/26/2015	N001	AL	O	0.051		F	#	0.01	-
	mg/L	14-13NA	WL	02/27/2015	N001	AL	O	0.034		F	#	0.01	-
	mg/L	14-13NA	WL	02/27/2015	N002	AL	O	0.028		F	#	0.01	-
	mg/L	6-2N	WL	02/25/2015	N001	AL	O	0.91		F	#	0.05	-
	mg/L	8-4S	WL	02/26/2015	N001	AL	O	1.5		F	#	0.05	-
	mg/L	GJ01-01	WL	02/26/2015	N001	AL		3.1		F	#	0.05	-
	mg/L	GJ84-04	WL	02/27/2015	N001	AL	D	0.024		F	#	0.01	-
Oxidation Reduction Potential	mV	10-19N	WL	02/08/2011	N001	AL	O	95.1		F	#	-	-
	mV	10-19N	WL	01/06/2012	N001	AL	O	42.0		F	#	-	-
	mV	10-19N	WL	02/06/2013	N001	AL	O	77.7		F	#	-	-
	mV	10-19N	WL	02/20/2014	N001		O	74.1		F	#	-	-
	mV	10-19N	WL	02/27/2015	N001	AL	O	217.2		F	#	-	-
	mV	11-1S	WL	02/08/2011	N001	AL	O	49.2		F	#	-	-
	mV	11-1S	WL	01/06/2012	N001	AL	O	30.3		F	#	-	-
	mV	11-1S	WL	02/14/2013	N001	AL	O	26.0		F	#	-	-
	mV	11-1S	WL	02/19/2014	N001		O	-75.3		F	#	-	-
	mV	11-1S	WL	02/26/2015	N001	AL	O	-8.9		F	#	-	-
	mV	14-13NA	WL	02/08/2011	N001	AL	O	73.7		F	#	-	-
	mV	14-13NA	WL	01/05/2012	N001	AL	O	59.0		F	#	-	-

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potential	mV	14-13NA	WL	02/06/2013	N001	AL	O	37.4		F	#	-	-
	mV	14-13NA	WL	02/19/2014	N001		O	65.0		F	#	-	-
	mV	14-13NA	WL	02/27/2015	N001	AL	O	268.5		F	#	-	-
	mV	6-2N	WL	02/08/2011	N001	AL	O	113.7		F	#	-	-
	mV	6-2N	WL	01/05/2012	N001	AL	O	105.8		F	#	-	-
	mV	6-2N	WL	02/07/2013	N001	AL	O	160.4		F	#	-	-
	mV	6-2N	WL	02/20/2014	N001		O	59.3		F	#	-	-
	mV	6-2N	WL	02/25/2015	N001	AL	O	185.1		F	#	-	-
	mV	8-4S	WL	02/08/2011	N001	AL	O	94.6		F	#	-	-
	mV	8-4S	WL	01/05/2012	N001	AL	O	78.0		F	#	-	-
	mV	8-4S	WL	02/06/2013	N001	AL	O	116.6		F	#	-	-
	mV	8-4S	WL	02/20/2014	N001		O	-8.1		F	#	-	-
	mV	8-4S	WL	02/26/2015	N001	AL	O	157.9		F	#	-	-
	mV	GJ01-01	WL	02/08/2011	N001	AL		96.4		F	#	-	-
	mV	GJ01-01	WL	01/06/2012	N001	AL		26.8		F	#	-	-
	mV	GJ01-01	WL	02/06/2013	N001	AL		115.5		F	#	-	-
	mV	GJ01-01	WL	02/20/2014	N001			45.8		F	#	-	-
	mV	GJ01-01	WL	02/26/2015	N001	AL		177.7		F	#	-	-
	mV	GJ84-04	WL	02/08/2011	N001	AL	D	66.6		F	#	-	-
	mV	GJ84-04	WL	01/05/2012	N001	AL	D	44.9		F	#	-	-
	mV	GJ84-04	WL	02/06/2013	N001	AL	D	19.0		F	#	-	-
	mV	GJ84-04	WL	02/20/2014	N001		D	89.6		F	#	-	-
	mV	GJ84-04	WL	02/27/2015	N001	AL	D	63.2		F	#	-	-
pH	s.u.	10-19N	WL	02/08/2011	N001	AL	O	6.96		F	#	-	-
	s.u.	10-19N	WL	01/06/2012	N001	AL	O	7.06		F	#	-	-

CLASSIC GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:21 am

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	10-19N	WL	02/06/2013	N001	AL	O	7.10		F	#	-	-
	s.u.	10-19N	WL	02/20/2014	N001		O	7.11		F	#	-	-
	s.u.	10-19N	WL	02/27/2015	N001	AL	O	7.03		F	#	-	-
	s.u.	11-1S	WL	02/08/2011	N001	AL	O	7.19		F	#	-	-
	s.u.	11-1S	WL	01/06/2012	N001	AL	O	7.21		F	#	-	-
	s.u.	11-1S	WL	02/14/2013	N001	AL	O	7.42		F	#	-	-
	s.u.	11-1S	WL	02/19/2014	N001		O	7.34		F	#	-	-
	s.u.	11-1S	WL	02/26/2015	N001	AL	O	7.21		F	#	-	-
	s.u.	14-13NA	WL	02/08/2011	N001	AL	O	6.96		F	#	-	-
	s.u.	14-13NA	WL	01/05/2012	N001	AL	O	7.05		F	#	-	-
	s.u.	14-13NA	WL	02/06/2013	N001	AL	O	7.07		F	#	-	-
	s.u.	14-13NA	WL	02/19/2014	N001		O	7.05		F	#	-	-
	s.u.	14-13NA	WL	02/27/2015	N001	AL	O	7.07		F	#	-	-
	s.u.	6-2N	WL	02/08/2011	N001	AL	O	7.53		F	#	-	-
	s.u.	6-2N	WL	01/05/2012	N001	AL	O	7.62		F	#	-	-
	s.u.	6-2N	WL	02/07/2013	N001	AL	O	7.53		F	#	-	-
	s.u.	6-2N	WL	02/20/2014	N001		O	7.66		F	#	-	-
	s.u.	6-2N	WL	02/25/2015	N001	AL	O	7.58		F	#	-	-
	s.u.	8-4S	WL	02/08/2011	N001	AL	O	7.14		F	#	-	-
	s.u.	8-4S	WL	01/05/2012	N001	AL	O	7.25		F	#	-	-
	s.u.	8-4S	WL	02/06/2013	N001	AL	O	7.26		F	#	-	-
	s.u.	8-4S	WL	02/20/2014	N001		O	6.94		F	#	-	-
	s.u.	8-4S	WL	02/26/2015	N001	AL	O	7.15		F	#	-	-
	s.u.	GJ01-01	WL	02/08/2011	N001	AL		7.22		F	#	-	-
	s.u.	GJ01-01	WL	01/06/2012	N001	AL		7.36		F	#	-	-
	s.u.	GJ01-01	WL	02/06/2013	N001	AL		7.19		F	#	-	-

CLASSIC GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:21 am

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	GJ01-01	WL	02/20/2014	N001			7.38		F	#	-	-
	s.u.	GJ01-01	WL	02/26/2015	N001	AL		7.32		F	#	-	-
	s.u.	GJ84-04	WL	02/08/2011	N001	AL	D	7.02		F	#	-	-
	s.u.	GJ84-04	WL	01/05/2012	N001	AL	D	7.08		F	#	-	-
	s.u.	GJ84-04	WL	02/06/2013	N001	AL	D	7.10		F	#	-	-
	s.u.	GJ84-04	WL	02/20/2014	N001		D	7.17		F	#	-	-
	s.u.	GJ84-04	WL	02/27/2015	N001	AL	D	7.09		F	#	-	-
Potassium	mg/L	10-19N	WL	02/27/2015	N001	AL	O	15.000		F	#	0.26	-
	mg/L	11-1S	WL	02/26/2015	N001	AL	O	4.800		F	#	0.052	-
	mg/L	14-13NA	WL	02/27/2015	N001	AL	O	18.000		F	#	0.052	-
	mg/L	14-13NA	WL	02/27/2015	N002	AL	O	18.000		F	#	0.052	-
	mg/L	6-2N	WL	02/25/2015	N001	AL	O	9.000		F	#	0.052	-
	mg/L	8-4S	WL	02/26/2015	N001	AL	O	8.500		F	#	0.052	-
	mg/L	GJ01-01	WL	02/26/2015	N001	AL		6.800		F	#	0.052	-
	mg/L	GJ84-04	WL	02/27/2015	N001	AL	D	14.000		F	#	0.052	-
Selenium	mg/L	10-19N	WL	02/08/2011	N001	AL	O	0.00150	U	F	#	0.0015	-
	mg/L	10-19N	WL	01/06/2012	N001	AL	O	0.00076		F	#	3.2E-05	-
	mg/L	10-19N	WL	02/06/2013	N001	AL	O	0.0051		F	#	0.00016	-
	mg/L	10-19N	WL	02/20/2014	N001		O	0.0048		F	#	0.00016	-
	mg/L	10-19N	WL	02/27/2015	N001	AL	O	0.002		FJ	#	0.00032	-
	mg/L	11-1S	WL	02/08/2011	N001	AL	O	0.00150	U	F	#	0.0015	-
	mg/L	11-1S	WL	01/06/2012	N001	AL	O	0.00014		F	#	3.2E-05	-
	mg/L	11-1S	WL	02/14/2013	N001	AL	O	0.00095		F	#	3.2E-05	-
	mg/L	11-1S	WL	02/19/2014	N001		O	0.00064		F	#	0.00016	-
	mg/L	11-1S	WL	02/26/2015	N001	AL	O	0.00073	J	FJ	#	0.00032	-

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	14-13NA	WL	02/08/2011	N001	AL	O	0.00150	U	F	#	0.0015	-
	mg/L	14-13NA	WL	01/05/2012	N001	AL	O	0.00045		F	#	3.2E-05	-
	mg/L	14-13NA	WL	02/06/2013	N001	AL	O	0.00027		F	#	3.2E-05	-
	mg/L	14-13NA	WL	02/06/2013	N002	AL	O	0.00035		F	#	3.2E-05	-
	mg/L	14-13NA	WL	02/19/2014	N001		O	0.00067		F	#	3.2E-05	-
	mg/L	14-13NA	WL	02/27/2015	N001	AL	O	0.00074	J	FJ	#	0.00032	-
	mg/L	14-13NA	WL	02/27/2015	N002	AL	O	0.00098	J	FJ	#	0.00032	-
	mg/L	6-2N	WL	02/08/2011	N001	AL	O	0.035		F	#	0.0015	-
	mg/L	6-2N	WL	01/05/2012	N001	AL	O	0.027		F	#	0.00032	-
	mg/L	6-2N	WL	02/07/2013	N001	AL	O	0.029		F	#	0.00032	-
	mg/L	6-2N	WL	02/20/2014	N001		O	0.027		F	#	0.00032	-
	mg/L	6-2N	WL	02/25/2015	N001	AL	O	0.023		F	#	0.00032	-
	mg/L	8-4S	WL	02/08/2011	N001	AL	O	0.035		F	#	0.0015	-
	mg/L	8-4S	WL	01/05/2012	N001	AL	O	0.020		F	#	0.00032	-
	mg/L	8-4S	WL	01/05/2012	N002	AL	O	0.019		F	#	0.00032	-
	mg/L	8-4S	WL	02/06/2013	N001	AL	O	0.017		F	#	0.00032	-
	mg/L	8-4S	WL	02/20/2014	N001		O	0.00082		F	#	0.00016	-
	mg/L	8-4S	WL	02/26/2015	N001	AL	O	0.033		F	#	0.00032	-
	mg/L	GJ01-01	WL	02/08/2011	N001	AL		0.0301		F	#	0.0015	-
	mg/L	GJ01-01	WL	02/08/2011	N002	AL		0.0297		F	#	0.0015	-
	mg/L	GJ01-01	WL	01/06/2012	N001	AL		0.024		F	#	0.00032	-
	mg/L	GJ01-01	WL	02/06/2013	N001	AL		0.032		F	#	0.00032	-
	mg/L	GJ01-01	WL	02/20/2014	N001			0.031		F	#	0.00032	-
	mg/L	GJ01-01	WL	02/26/2015	N001	AL		0.025		F	#	0.00032	-
	mg/L	GJ84-04	WL	02/08/2011	N001	AL	D	0.00150	U	F	#	0.0015	-
	mg/L	GJ84-04	WL	01/05/2012	0001	AL	D	0.00036		F	#	3.2E-05	-

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	GJ84-04	WL	02/06/2013	N001	AL	D	0.00016		F	#	3.2E-05	-
	mg/L	GJ84-04	WL	02/20/2014	N001		D	0.00023		F	#	3.2E-05	-
	mg/L	GJ84-04	WL	02/20/2014	N002		D	0.00023		F	#	3.2E-05	-
	mg/L	GJ84-04	WL	02/27/2015	N001	AL	D	0.00038	J	FJ	#	0.00032	-
Sodium	mg/L	10-19N	WL	02/27/2015	N001	AL	O	560.000		F	#	0.23	-
	mg/L	11-1S	WL	02/26/2015	N001	AL	O	80.000		F	#	0.047	-
	mg/L	14-13NA	WL	02/27/2015	N001	AL	O	390.000		F	#	0.047	-
	mg/L	14-13NA	WL	02/27/2015	N002	AL	O	390.000		F	#	0.047	-
	mg/L	6-2N	WL	02/25/2015	N001	AL	O	370.000		F	#	0.047	-
	mg/L	8-4S	WL	02/26/2015	N001	AL	O	240.000		F	#	0.047	-
	mg/L	GJ01-01	WL	02/26/2015	N001	AL		180.000		F	#	0.047	-
	mg/L	GJ84-04	WL	02/27/2015	N001	AL	D	480.000		F	#	0.047	-
Specific Conductance	umhos/cm	10-19N	WL	02/08/2011	N001	AL	O	5197		F	#	-	-
	umhos/cm	10-19N	WL	01/06/2012	N001	AL	O	5810		F	#	-	-
	umhos/cm	10-19N	WL	02/06/2013	N001	AL	O	3955		F	#	-	-
	umhos/cm	10-19N	WL	02/20/2014	N001		O	5089		F	#	-	-
	umhos/cm	10-19N	WL	02/27/2015	N001	AL	O	4793		F	#	-	-
	umhos/cm	11-1S	WL	02/08/2011	N001	AL	O	822		F	#	-	-
	umhos/cm	11-1S	WL	01/06/2012	N001	AL	O	988		F	#	-	-
	umhos/cm	11-1S	WL	02/14/2013	N001	AL	O	955		F	#	-	-
	umhos/cm	11-1S	WL	02/19/2014	N001		O	557		F	#	-	-
	umhos/cm	11-1S	WL	02/26/2015	N001	AL	O	1683		F	#	-	-
	umhos/cm	14-13NA	WL	02/08/2011	N001	AL	O	3262		F	#	-	-
	umhos/cm	14-13NA	WL	01/05/2012	N001	AL	O	3169		F	#	-	-
	umhos/cm	14-13NA	WL	02/06/2013	N001	AL	O	2966		F	#	-	-

CLASSIC GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:21 am

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Specific Conductance	umhos/cm	14-13NA	WL	02/19/2014	N001		O	3280		F	#	-	-
	umhos/cm	14-13NA	WL	02/27/2015	N001	AL	O	3258		F	#	-	-
	umhos/cm	6-2N	WL	02/08/2011	N001	AL	O	2353		F	#	-	-
	umhos/cm	6-2N	WL	01/05/2012	N001	AL	O	2389		F	#	-	-
	umhos/cm	6-2N	WL	02/07/2013	N001	AL	O	2326		F	#	-	-
	umhos/cm	6-2N	WL	02/20/2014	N001		O	2835		F	#	-	-
	umhos/cm	6-2N	WL	02/25/2015	N001	AL	O	2527		F	#	-	-
	umhos/cm	8-4S	WL	02/08/2011	N001	AL	O	1808		F	#	-	-
	umhos/cm	8-4S	WL	01/05/2012	N001	AL	O	1672		F	#	-	-
	umhos/cm	8-4S	WL	02/06/2013	N001	AL	O	1744		F	#	-	-
	umhos/cm	8-4S	WL	02/20/2014	N001		O	2436		F	#	-	-
	umhos/cm	8-4S	WL	02/26/2015	N001	AL	O	2364		F	#	-	-
	umhos/cm	GJ01-01	WL	02/08/2011	N001	AL		1717		F	#	-	-
	umhos/cm	GJ01-01	WL	01/06/2012	N001	AL		1616		F	#	-	-
	umhos/cm	GJ01-01	WL	02/06/2013	N001	AL		1563		F	#	-	-
	umhos/cm	GJ01-01	WL	02/20/2014	N001			1609		F	#	-	-
	umhos/cm	GJ01-01	WL	02/26/2015	N001	AL		1725		F	#	-	-
	umhos/cm	GJ84-04	WL	02/08/2011	N001	AL	D	3373		F	#	-	-
	umhos/cm	GJ84-04	WL	01/05/2012	N001	AL	D	3598		F	#	-	-
	umhos/cm	GJ84-04	WL	02/06/2013	N001	AL	D	2844		F	#	-	-
	umhos/cm	GJ84-04	WL	02/20/2014	N001		D	3145		F	#	-	-
	umhos/cm	GJ84-04	WL	02/27/2015	N001	AL	D	3815		F	#	-	-
Sulfate	mg/L	10-19N	WL	02/08/2011	N001	AL	O	2380		F	#	10	-
	mg/L	10-19N	WL	01/06/2012	N001	AL	O	3000		F	#	25	-
	mg/L	10-19N	WL	02/06/2013	N001	AL	O	2000		F	#	25	-
	mg/L	10-19N	WL	02/20/2014	N001		O	2600		F	#	25	-

CLASSIC GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:21 am

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	10-19N	WL	02/27/2015	N001	AL	O	2300		F	#	25	-
	mg/L	11-1S	WL	02/08/2011	N001	AL	O	230		F	#	1	-
	mg/L	11-1S	WL	01/06/2012	N001	AL	O	370		F	#	5	-
	mg/L	11-1S	WL	02/14/2013	N001	AL	O	360		F	#	2.5	-
	mg/L	11-1S	WL	02/19/2014	N001		O	160		F	#	2.5	-
	mg/L	11-1S	WL	02/26/2015	N001	AL	O	700		F	#	10	-
	mg/L	14-13NA	WL	02/08/2011	N001	AL	O	1290		F	#	10	-
	mg/L	14-13NA	WL	01/05/2012	N001	AL	O	1400		F	#	25	-
	mg/L	14-13NA	WL	02/06/2013	N001	AL	O	1500		F	#	10	-
	mg/L	14-13NA	WL	02/06/2013	N002	AL	O	1500		F	#	10	-
	mg/L	14-13NA	WL	02/19/2014	N001		O	1500		F	#	12	-
	mg/L	14-13NA	WL	02/27/2015	N001	AL	O	1300		F	#	25	-
	mg/L	14-13NA	WL	02/27/2015	N002	AL	O	1300		F	#	25	-
	mg/L	6-2N	WL	02/08/2011	N001	AL	O	854		F	#	5	-
	mg/L	6-2N	WL	01/05/2012	N001	AL	O	1000		F	#	10	-
	mg/L	6-2N	WL	02/07/2013	N001	AL	O	1000		F	#	10	-
	mg/L	6-2N	WL	02/20/2014	N001		O	1200		F	#	12	-
	mg/L	6-2N	WL	02/25/2015	N001	AL	O	970		F	#	12	-
	mg/L	8-4S	WL	02/08/2011	N001	AL	O	611		FJ	#	2	-
	mg/L	8-4S	WL	01/05/2012	N001	AL	O	630		F	#	10	-
	mg/L	8-4S	WL	01/05/2012	N002	AL	O	610		F	#	10	-
	mg/L	8-4S	WL	02/06/2013	N001	AL	O	700		F	#	5	-
	mg/L	8-4S	WL	02/20/2014	N001		O	1400		F	#	12	-
	mg/L	8-4S	WL	02/26/2015	N001	AL	O	860		F	#	10	-
	mg/L	GJ01-01	WL	02/08/2011	N001	AL		537		F	#	2	-
	mg/L	GJ01-01	WL	02/08/2011	N002	AL		538		F	#	2	-

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	GJ01-01	WL	01/06/2012	N001	AL		530		F	#	10	-
	mg/L	GJ01-01	WL	02/06/2013	N001	AL		570		F	#	5	-
	mg/L	GJ01-01	WL	02/20/2014	N001			500		F	#	10	-
	mg/L	GJ01-01	WL	02/26/2015	N001	AL		540		F	#	10	-
	mg/L	GJ84-04	WL	02/08/2011	N001	AL	D	1310		F	#	10	-
	mg/L	GJ84-04	WL	01/05/2012	0001	AL	D	1700		F	#	25	-
	mg/L	GJ84-04	WL	02/06/2013	N001	AL	D	1400		F	#	10	-
	mg/L	GJ84-04	WL	02/20/2014	N001		D	1400		F	#	12	-
	mg/L	GJ84-04	WL	02/20/2014	N002		D	1400		F	#	12	-
	mg/L	GJ84-04	WL	02/27/2015	N001	AL	D	1700		F	#	25	-
Temperature	C	10-19N	WL	02/08/2011	N001	AL	O	11.44		F	#	-	-
	C	10-19N	WL	01/06/2012	N001	AL	O	13.06		F	#	-	-
	C	10-19N	WL	02/06/2013	N001	AL	O	12.13		F	#	-	-
	C	10-19N	WL	02/20/2014	N001		O	10.62		F	#	-	-
	C	10-19N	WL	02/27/2015	N001	AL	O	9.65		F	#	-	-
	C	11-1S	WL	02/08/2011	N001	AL	O	11.64		F	#	-	-
	C	11-1S	WL	01/06/2012	N001	AL	O	12.62		F	#	-	-
	C	11-1S	WL	02/14/2013	N001	AL	O	13.64		F	#	-	-
	C	11-1S	WL	02/19/2014	N001		O	13.74		F	#	-	-
	C	11-1S	WL	02/26/2015	N001	AL	O	12.75		F	#	-	-
	C	14-13NA	WL	02/08/2011	N001	AL	O	12.94		F	#	-	-
	C	14-13NA	WL	01/05/2012	N001	AL	O	14.08		F	#	-	-
	C	14-13NA	WL	02/06/2013	N001	AL	O	13.54		F	#	-	-
	C	14-13NA	WL	02/19/2014	N001		O	12.94		F	#	-	-
	C	14-13NA	WL	02/27/2015	N001	AL	O	11.86		F	#	-	-
	C	6-2N	WL	02/08/2011	N001	AL	O	16.55		F	#	-	-

CLASSIC GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:21 am

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	6-2N	WL	01/05/2012	N001	AL	O	15.58		F	#	-	-
	C	6-2N	WL	02/07/2013	N001	AL	O	17.84		F	#	-	-
	C	6-2N	WL	02/20/2014	N001		O	16.71		F	#	-	-
	C	6-2N	WL	02/25/2015	N001	AL	O	18.10		F	#	-	-
	C	8-4S	WL	02/08/2011	N001	AL	O	12.24		F	#	-	-
	C	8-4S	WL	01/05/2012	N001	AL	O	14.07		F	#	-	-
	C	8-4S	WL	02/06/2013	N001	AL	O	13.72		F	#	-	-
	C	8-4S	WL	02/20/2014	N001		O	12.54		F	#	-	-
	C	8-4S	WL	02/26/2015	N001	AL	O	13.08		F	#	-	-
	C	GJ01-01	WL	02/08/2011	N001	AL		12.95		F	#	-	-
	C	GJ01-01	WL	01/06/2012	N001	AL		15.03		F	#	-	-
	C	GJ01-01	WL	02/06/2013	N001	AL		14.88		F	#	-	-
	C	GJ01-01	WL	02/20/2014	N001			13.48		F	#	-	-
	C	GJ01-01	WL	02/26/2015	N001	AL		13.43		F	#	-	-
	C	GJ84-04	WL	02/08/2011	N001	AL	D	11.64		F	#	-	-
	C	GJ84-04	WL	01/05/2012	N001	AL	D	12.55		F	#	-	-
	C	GJ84-04	WL	02/06/2013	N001	AL	D	12.69		F	#	-	-
	C	GJ84-04	WL	02/20/2014	N001		D	12.74		F	#	-	-
	C	GJ84-04	WL	02/27/2015	N001	AL	D	11.07		F	#	-	-
Turbidity	NTU	10-19N	WL	02/08/2011	N001	AL	O	5.90		F	#	-	-
	NTU	10-19N	WL	01/06/2012	N001	AL	O	9.90		F	#	-	-
	NTU	10-19N	WL	02/06/2013	N001	AL	O	1.15		F	#	-	-
	NTU	10-19N	WL	02/20/2014	N001		O	4.78		F	#	-	-
	NTU	10-19N	WL	02/27/2015	N001	AL	O	2.00		F	#	-	-
	NTU	11-1S	WL	02/08/2011	N001	AL	O	1.43		F	#	-	-
	NTU	11-1S	WL	01/06/2012	N001	AL	O	1.98		F	#	-	-

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	11-1S	WL	02/14/2013	N001	AL	O	4.53		F	#	-	-
	NTU	11-1S	WL	02/19/2014	N001		O	6.46		F	#	-	-
	NTU	11-1S	WL	02/26/2015	N001	AL	O	1.56		F	#	-	-
	NTU	14-13NA	WL	02/08/2011	N001	AL	O	2.73		F	#	-	-
	NTU	14-13NA	WL	01/05/2012	N001	AL	O	2.69		F	#	-	-
	NTU	14-13NA	WL	02/06/2013	N001	AL	O	6.14		F	#	-	-
	NTU	14-13NA	WL	02/19/2014	N001		O	0.96		F	#	-	-
	NTU	14-13NA	WL	02/27/2015	N001	AL	O	1.06		F	#	-	-
	NTU	6-2N	WL	02/08/2011	N001	AL	O	2.43		F	#	-	-
	NTU	6-2N	WL	01/05/2012	N001	AL	O	0.42		F	#	-	-
	NTU	6-2N	WL	02/07/2013	N001	AL	O	1.91		F	#	-	-
	NTU	6-2N	WL	02/20/2014	N001		O	1.43		F	#	-	-
	NTU	6-2N	WL	02/25/2015	N001	AL	O	1.12		F	#	-	-
	NTU	8-4S	WL	02/08/2011	N001	AL	O	1.76		F	#	-	-
	NTU	8-4S	WL	01/05/2012	N001	AL	O	5.14		F	#	-	-
	NTU	8-4S	WL	02/06/2013	N001	AL	O	2.53		F	#	-	-
	NTU	8-4S	WL	02/20/2014	N001		O	2.01		F	#	-	-
	NTU	8-4S	WL	02/26/2015	N001	AL	O	0.53		F	#	-	-
	NTU	GJ01-01	WL	02/08/2011	N001	AL		2.69		F	#	-	-
	NTU	GJ01-01	WL	01/06/2012	N001	AL		4.99		F	#	-	-
	NTU	GJ01-01	WL	02/06/2013	N001	AL		5.55		F	#	-	-
	NTU	GJ01-01	WL	02/20/2014	N001			2.08		F	#	-	-
	NTU	GJ01-01	WL	02/26/2015	N001	AL		1.70		F	#	-	-
	NTU	GJ84-04	WL	02/08/2011	N001	AL	D	2.58		F	#	-	-
	NTU	GJ84-04	WL	01/05/2012	N001	AL	D	13.4		F	#	-	-
	NTU	GJ84-04	WL	02/06/2013	N001	AL	D	4.30		F	#	-	-

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	GJ84-04	WL	02/20/2014	N001		D	0.41		F	#	-	-
	NTU	GJ84-04	WL	02/27/2015	N001	AL	D	0.85		F	#	-	-
Uranium	mg/L	10-19N	WL	02/08/2011	N001	AL	O	0.175		F	#	6.7E-05	-
	mg/L	10-19N	WL	01/06/2012	N001	AL	O	0.150		F	#	2.9E-05	-
	mg/L	10-19N	WL	02/06/2013	N001	AL	O	0.130		F	#	1.5E-05	-
	mg/L	10-19N	WL	02/20/2014	N001		O	0.250	E	FJ	#	1.5E-05	-
	mg/L	10-19N	WL	02/27/2015	N001	AL	O	0.150		FJ	#	2.9E-05	-
	mg/L	11-1S	WL	02/08/2011	N001	AL	O	0.0627		F	#	6.7E-05	-
	mg/L	11-1S	WL	01/06/2012	N001	AL	O	0.044		F	#	2.9E-05	-
	mg/L	11-1S	WL	02/14/2013	N001	AL	O	0.052		F	#	1.5E-05	-
	mg/L	11-1S	WL	02/19/2014	N001		O	0.030		F	#	1.5E-05	-
	mg/L	11-1S	WL	02/26/2015	N001	AL	O	0.140		F	#	2.9E-05	-
	mg/L	14-13NA	WL	02/08/2011	N001	AL	O	0.348		F	#	6.7E-05	-
	mg/L	14-13NA	WL	01/05/2012	N001	AL	O	0.310		F	#	2.9E-05	-
	mg/L	14-13NA	WL	02/06/2013	N001	AL	O	0.270		F	#	2.9E-05	-
	mg/L	14-13NA	WL	02/06/2013	N002	AL	O	0.270		F	#	2.9E-05	-
	mg/L	14-13NA	WL	02/19/2014	N001		O	0.350		F	#	2.9E-05	-
	mg/L	14-13NA	WL	02/27/2015	N001	AL	O	0.290		F	#	2.9E-05	-
	mg/L	14-13NA	WL	02/27/2015	N002	AL	O	0.300		F	#	2.9E-05	-
	mg/L	6-2N	WL	02/08/2011	N001	AL	O	0.0797		F	#	6.7E-05	-
	mg/L	6-2N	WL	01/05/2012	N001	AL	O	0.070		F	#	2.9E-05	-
	mg/L	6-2N	WL	02/07/2013	N001	AL	O	0.061		F	#	2.9E-05	-
	mg/L	6-2N	WL	02/20/2014	N001		O	0.049		F	#	2.9E-05	-
	mg/L	6-2N	WL	02/25/2015	N001	AL	O	0.051		F	#	2.9E-05	-
	mg/L	8-4S	WL	02/08/2011	N001	AL	O	0.616		F	#	6.7E-05	-
	mg/L	8-4S	WL	01/05/2012	N001	AL	O	0.500		F	#	2.9E-05	-

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	8-4S	WL	01/05/2012	N002	AL	O	0.490		F	#	2.9E-05	-
	mg/L	8-4S	WL	02/06/2013	N001	AL	O	0.490		F	#	2.9E-05	-
	mg/L	8-4S	WL	02/20/2014	N001		O	0.190		F	#	1.5E-05	-
	mg/L	8-4S	WL	02/26/2015	N001	AL	O	0.670		F	#	2.9E-05	-
	mg/L	GJ01-01	WL	02/08/2011	N001	AL		0.342		F	#	6.7E-05	-
	mg/L	GJ01-01	WL	02/08/2011	N002	AL		0.319		F	#	6.7E-05	-
	mg/L	GJ01-01	WL	01/06/2012	N001	AL		0.310		F	#	2.9E-05	-
	mg/L	GJ01-01	WL	02/06/2013	N001	AL		0.300		F	#	2.9E-05	-
	mg/L	GJ01-01	WL	02/20/2014	N001			0.300		F	#	2.9E-05	-
	mg/L	GJ01-01	WL	02/26/2015	N001	AL		0.270		F	#	2.9E-05	-
	mg/L	GJ84-04	WL	02/08/2011	N001	AL	D	0.323		F	#	6.7E-05	-
	mg/L	GJ84-04	WL	01/05/2012	0001	AL	D	0.340		F	#	2.9E-05	-
	mg/L	GJ84-04	WL	02/06/2013	N001	AL	D	0.240		F	#	1.5E-05	-
	mg/L	GJ84-04	WL	02/20/2014	N001		D	0.290		F	#	2.9E-05	-
	mg/L	GJ84-04	WL	02/20/2014	N002		D	0.290		F	#	2.9E-05	-
	mg/L	GJ84-04	WL	02/27/2015	N001	AL	D	0.340		F	#	2.9E-05	-

CLASSIC GROUNDWATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:21 am

PARAMETER	UNITS	LOCATION CODE	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE200 WHERE site_code='GJO01' AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #1/1/2011# and #12/1/2015#

SAMPLE ID CODES: 000X = Filtered sample. N00X = Unfiltered sample. X = replicate number.

LOCATION TYPES: WL WELL

ZONES OF COMPLETION: a zone of completion with a "-" is cross-screened and, therefore, has two zones of completion (1st zone - 2nd zone).

AL ALLUVIUM

FLOW CODES: D DOWN GRADIENT O ON-SITE

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
>	Result above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic & Radiochemistry: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Z	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.	J	Estimated value.
L	Less than 3 bore volumes purged prior to sampling.	N	Presumptive evidence that analyte is present. The analyte is "tentatively identified".	Q	Qualitative result due to sampling technique
R	Unusable result.	U	Parameter analyzed for but was not detected.	X	Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

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Appendix B

Surface-Water Data

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SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:24 am

PARAMETER	UNITS	LOCATION CODE	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT		UN-CERTAINTY
Alkalinity, Total (As CaCO3)	mg/L	Lower Gunnison	02/26/2015	N001	121				#	-	-
	mg/L	North Pond	02/27/2015	N001	280				#	-	-
	mg/L	South Pond	02/25/2015	0001	135				#	-	-
	mg/L	Upper Gunnison	02/26/2015	N001	134				#	-	-
	mg/L	Upper Mid Gunnison	02/26/2015	N001	118				#	-	-
	mg/L	Wetland Area	02/27/2015	N001	405				#	-	-
Calcium	mg/L	Lower Gunnison	02/26/2015	N001	81.000				#	0.024	-
	mg/L	North Pond	02/27/2015	N001	210.000				#	0.024	-
	mg/L	South Pond	02/25/2015	0001	130.000				#	0.024	-
	mg/L	Upper Gunnison	02/26/2015	N001	79.000				#	0.024	-
	mg/L	Upper Mid Gunnison	02/26/2015	N001	78.000				#	0.024	-
	mg/L	Wetland Area	02/27/2015	0001	340.000				#	2.4	-
Chloride	mg/L	Lower Gunnison	02/26/2015	N001	11				#	2	-
	mg/L	North Pond	02/27/2015	N001	150				#	10	-
	mg/L	South Pond	02/25/2015	0001	75				#	5	-
	mg/L	Upper Gunnison	02/26/2015	N001	9.1				#	2	-
	mg/L	Upper Mid Gunnison	02/26/2015	N001	9.2				#	2	-
	mg/L	Wetland Area	02/27/2015	0001	450				#	20	-
Dissolved Oxygen	mg/L	Lower Gunnison	02/26/2015	N001	11.88				#	-	-
	mg/L	North Pond	02/27/2015	N001	6.71				#	-	-
	mg/L	South Pond	02/25/2015	N001	10.95				#	-	-
	mg/L	Upper Gunnison	02/26/2015	N001	11.40				#	-	-
	mg/L	Upper Mid Gunnison	02/26/2015	N001	12.61				#	-	-
	mg/L	Wetland Area	02/27/2015	N001	1.11				#	-	-
Iron	mg/L	Lower Gunnison	02/26/2015	N001	0.160				#	0.0067	-
	mg/L	North Pond	02/27/2015	N001	0.220				#	0.0067	-
	mg/L	South Pond	02/25/2015	0001	0.270				#	0.0067	-
	mg/L	Upper Gunnison	02/26/2015	N001	0.170				#	0.0067	-
	mg/L	Upper Mid Gunnison	02/26/2015	N001	0.520				#	0.0067	-
	mg/L	Wetland Area	02/27/2015	0001	0.670	U			#	0.67	-
Magnesium	mg/L	Lower Gunnison	02/26/2015	N001	29.000				#	0.03	-
	mg/L	North Pond	02/27/2015	N001	130.000				#	0.03	-
	mg/L	South Pond	02/25/2015	0001	86.000				#	0.03	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:24 am

PARAMETER	UNITS	LOCATION CODE	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA		DETECTION LIMIT	UN-CERTAINTY
Magnesium	mg/L	Upper Gunnison	02/26/2015	N001	29.000				#	0.03	-
	mg/L	Upper Mid Gunnison	02/26/2015	N001	29.000				#	0.03	-
	mg/L	Wetland Area	02/27/2015	0001	240.000				#	3	-
Molybdenum	mg/L	Lower Gunnison	02/09/2011	N001	0.0032	N			#	0.00017	-
	mg/L	Lower Gunnison	01/06/2012	N001	0.0021				#	0.00032	-
	mg/L	Lower Gunnison	02/14/2013	0001	0.0026				#	0.00016	-
	mg/L	Lower Gunnison	02/20/2014	0001	0.0048				#	0.00016	-
	mg/L	Lower Gunnison	02/26/2015	N001	0.0024				#	0.00032	-
	mg/L	North Pond	02/17/2011	0001	0.0064	N			#	0.00017	-
	mg/L	North Pond	01/05/2012	N001	0.0034				#	0.00032	-
	mg/L	North Pond	02/14/2013	N001	0.0073				#	0.00016	-
	mg/L	North Pond	02/20/2014	N001	0.0035				#	0.00016	-
	mg/L	North Pond	02/27/2015	N001	0.006				#	0.00032	-
	mg/L	South Pond	02/17/2011	N001	0.0081	N			#	0.00017	-
	mg/L	South Pond	01/05/2012	N001	0.040				#	0.00032	-
	mg/L	South Pond	02/14/2013	N001	0.058				#	0.00016	-
	mg/L	South Pond	02/20/2014	N001	0.021				#	0.00016	-
	mg/L	South Pond	02/25/2015	0001	0.086				#	0.00032	-
	mg/L	Upper Gunnison	02/09/2011	N001	0.0022	BN			#	0.00017	-
	mg/L	Upper Gunnison	01/05/2012	N001	0.0021				#	0.00032	-
	mg/L	Upper Gunnison	02/14/2013	0001	0.0029				#	0.00016	-
	mg/L	Upper Gunnison	02/19/2014	0001	0.0034				#	0.00016	-
	mg/L	Upper Gunnison	02/26/2015	N001	0.0023				#	0.00032	-
	mg/L	Upper Mid Gunnison	02/09/2011	N001	0.0022	BN			#	0.00017	-
	mg/L	Upper Mid Gunnison	01/06/2012	N001	0.0019			J	#	0.00032	-
	mg/L	Upper Mid Gunnison	02/14/2013	0001	0.0026				#	0.00016	-
	mg/L	Upper Mid Gunnison	02/19/2014	0001	0.0045				#	0.00016	-
	mg/L	Upper Mid Gunnison	02/26/2015	N001	0.0021				#	0.00032	-
	mg/L	Wetland Area	02/17/2011	0001	0.0736	N			#	0.00017	-
	mg/L	Wetland Area	01/05/2012	N001	0.027				#	0.00032	-
	mg/L	Wetland Area	02/14/2013	0001	1.300				#	0.00016	-
	mg/L	Wetland Area	02/20/2014	0001	0.062				#	0.00016	-
	mg/L	Wetland Area	02/27/2015	0001	0.140				#	0.00032	-
Nitrate + Nitrite as Nitrogen	mg/L	Lower Gunnison	02/26/2015	N001	0.48				#	0.01	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:24 am

PARAMETER	UNITS	LOCATION CODE	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Nitrate + Nitrite as Nitrogen	mg/L	North Pond	02/27/2015	N001	0.051			#	0.01	-
	mg/L	South Pond	02/25/2015	0001	0.027			#	0.01	-
	mg/L	Upper Gunnison	02/26/2015	N001	0.48			#	0.01	-
	mg/L	Upper Mid Gunnison	02/26/2015	N001	0.47			#	0.01	-
	mg/L	Wetland Area	02/27/2015	0001	0.029			#	0.01	-
Oxidation Reduction Potential	mV	Lower Gunnison	02/09/2011	N001	159.5			#	-	-
	mV	Lower Gunnison	01/06/2012	N001	60.2			#	-	-
	mV	Lower Gunnison	02/14/2013	N001	206			#	-	-
	mV	Lower Gunnison	02/20/2014	N001	62.1			#	-	-
	mV	Lower Gunnison	02/26/2015	N001	87.0			#	-	-
	mV	North Pond	02/17/2011	N001	176			#	-	-
	mV	North Pond	01/05/2012	N001	103.4			#	-	-
	mV	North Pond	02/14/2013	N001	217.0			#	-	-
	mV	North Pond	02/20/2014	N001	66.2			#	-	-
	mV	North Pond	02/27/2015	N001	-105.6			#	-	-
	mV	South Pond	02/17/2011	N001	185			#	-	-
	mV	South Pond	01/05/2012	N001	12.7			#	-	-
	mV	South Pond	02/14/2013	N001	105.9			#	-	-
	mV	South Pond	02/20/2014	N001	-4.6			#	-	-
	mV	South Pond	02/25/2015	N001	10.1			#	-	-
	mV	Upper Gunnison	02/09/2011	N001	88.4			#	-	-
	mV	Upper Gunnison	01/05/2012	N001	60.6			#	-	-
	mV	Upper Gunnison	02/14/2013	N001	198.0			#	-	-
	mV	Upper Gunnison	02/19/2014	N001	121.6			#	-	-
	mV	Upper Gunnison	02/26/2015	N001	74.4			#	-	-
	mV	Upper Mid Gunnison	02/09/2011	N001	103.5			#	-	-
	mV	Upper Mid Gunnison	01/06/2012	N001	48.0			#	-	-
	mV	Upper Mid Gunnison	02/14/2013	N001	198.9			#	-	-
	mV	Upper Mid Gunnison	02/19/2014	N001	45.2			#	-	-
	mV	Upper Mid Gunnison	02/26/2015	N001	45.1			#	-	-
	mV	Wetland Area	02/17/2011	N001	203.6			#	-	-
	mV	Wetland Area	01/05/2012	N001	131.5			#	-	-
	mV	Wetland Area	02/14/2013	N001	239			#	-	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:24 am

PARAMETER	UNITS	LOCATION CODE	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT		UN-CERTAINTY
Oxidation Reduction Potential	mV	Wetland Area	02/20/2014	N001	83.2				#	-	-
	mV	Wetland Area	02/27/2015	N001	-142.8				#	-	-
pH	s.u.	Lower Gunnison	02/09/2011	N001	6.72				#	-	-
	s.u.	Lower Gunnison	01/06/2012	N001	8.33				#	-	-
	s.u.	Lower Gunnison	02/14/2013	N001	8.31				#	-	-
	s.u.	Lower Gunnison	02/20/2014	N001	8.29				#	-	-
	s.u.	Lower Gunnison	02/26/2015	N001	8.58				#	-	-
	s.u.	North Pond	02/17/2011	N001	7.24				#	-	-
	s.u.	North Pond	01/05/2012	N001	7.69				#	-	-
	s.u.	North Pond	02/14/2013	N001	7.92				#	-	-
	s.u.	North Pond	02/20/2014	N001	8.19				#	-	-
	s.u.	North Pond	02/27/2015	N001	7.77				#	-	-
	s.u.	South Pond	02/17/2011	N001	6.34				#	-	-
	s.u.	South Pond	01/05/2012	N001	7.23				#	-	-
	s.u.	South Pond	02/14/2013	N001	7.94				#	-	-
	s.u.	South Pond	02/20/2014	N001	7.50				#	-	-
	s.u.	South Pond	02/25/2015	N001	8.43				#	-	-
	s.u.	Upper Gunnison	02/09/2011	N001	8.04				#	-	-
	s.u.	Upper Gunnison	01/05/2012	N001	8.40				#	-	-
	s.u.	Upper Gunnison	02/14/2013	N001	8.30				#	-	-
	s.u.	Upper Gunnison	02/19/2014	N001	8.14				#	-	-
	s.u.	Upper Gunnison	02/26/2015	N001	8.48				#	-	-
	s.u.	Upper Mid Gunnison	02/09/2011	N001	7.91				#	-	-
	s.u.	Upper Mid Gunnison	01/06/2012	N001	8.27				#	-	-
	s.u.	Upper Mid Gunnison	02/14/2013	N001	8.28				#	-	-
	s.u.	Upper Mid Gunnison	02/19/2014	N001	8.30				#	-	-
	s.u.	Upper Mid Gunnison	02/26/2015	N001	8.57				#	-	-
	s.u.	Wetland Area	02/17/2011	N001	8.15				#	-	-
	s.u.	Wetland Area	01/05/2012	N001	7.79				#	-	-
	s.u.	Wetland Area	02/14/2013	N001	9.03				#	-	-
	s.u.	Wetland Area	02/20/2014	N001	7.74				#	-	-
	s.u.	Wetland Area	02/27/2015	N001	7.54				#	-	-
Potassium	mg/L	Lower Gunnison	02/26/2015	N001	3.000				#	0.052	-
	mg/L	North Pond	02/27/2015	N001	16.000				#	0.052	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:24 am

PARAMETER	UNITS	LOCATION CODE	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA		DETECTION LIMIT	UN-CERTAINTY
Potassium	mg/L	South Pond	02/25/2015	0001	18.000				#	0.052	-
	mg/L	Upper Gunnison	02/26/2015	N001	3.000				#	0.052	-
	mg/L	Upper Mid Gunnison	02/26/2015	N001	3.000				#	0.052	-
	mg/L	Wetland Area	02/27/2015	0001	50.000	J			#	5.2	-
Selenium	mg/L	Lower Gunnison	02/09/2011	N001	0.0030	B			#	0.0015	-
	mg/L	Lower Gunnison	01/06/2012	N001	0.0032				#	3.2E-05	-
	mg/L	Lower Gunnison	02/14/2013	0001	0.0056				#	0.00016	-
	mg/L	Lower Gunnison	02/20/2014	0001	0.0089				#	0.00016	-
	mg/L	Lower Gunnison	02/26/2015	N001	0.0036		J		#	0.00032	-
	mg/L	North Pond	02/17/2011	0001	0.0015	U			#	0.0015	-
	mg/L	North Pond	01/05/2012	N001	0.0016				#	3.2E-05	-
	mg/L	North Pond	02/14/2013	N001	0.0047				#	0.00016	-
	mg/L	North Pond	02/20/2014	N001	0.0005				#	0.00016	-
	mg/L	North Pond	02/27/2015	N001	0.0021		J		#	0.00032	-
	mg/L	South Pond	02/17/2011	N001	0.0015	U			#	0.0015	-
	mg/L	South Pond	01/05/2012	N001	0.0005				#	3.2E-05	-
	mg/L	South Pond	02/14/2013	N001	0.0004				#	3.2E-05	-
	mg/L	South Pond	02/20/2014	N001	0.0006				#	3.2E-05	-
	mg/L	South Pond	02/25/2015	0001	0.0014		J		#	0.00032	-
	mg/L	Upper Gunnison	02/09/2011	N001	0.0032	B			#	0.0015	-
	mg/L	Upper Gunnison	01/05/2012	N001	0.0033				#	3.2E-05	-
	mg/L	Upper Gunnison	02/14/2013	0001	0.0057				#	0.00016	-
	mg/L	Upper Gunnison	02/19/2014	0001	0.0092				#	0.00016	-
	mg/L	Upper Gunnison	02/26/2015	N001	0.0053		J		#	0.00032	-
	mg/L	Upper Mid Gunnison	02/09/2011	N001	0.0032	B			#	0.0015	-
	mg/L	Upper Mid Gunnison	01/06/2012	N001	0.0032				#	3.2E-05	-
	mg/L	Upper Mid Gunnison	02/14/2013	0001	0.0061				#	0.00016	-
	mg/L	Upper Mid Gunnison	02/19/2014	0001	0.0063				#	0.00016	-
	mg/L	Upper Mid Gunnison	02/26/2015	N001	0.0046		J		#	0.00032	-
	mg/L	Wetland Area	02/17/2011	0001	0.0015	U			#	0.0015	-
	mg/L	Wetland Area	01/05/2012	N001	0.0005				#	3.2E-05	-
	mg/L	Wetland Area	02/14/2013	0001	0.005				#	0.00016	-
	mg/L	Wetland Area	02/20/2014	0001	0.0005				#	0.00016	-
	mg/L	Wetland Area	02/27/2015	0001	0.0006	J	J		#	0.00032	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:24 am

PARAMETER	UNITS	LOCATION CODE	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sodium	mg/L	Lower Gunnison	02/26/2015	N001	49.000			#	0.047	-
	mg/L	North Pond	02/27/2015	N001	410.000			#	0.047	-
	mg/L	South Pond	02/25/2015	0001	320.000			#	0.047	-
	mg/L	Upper Gunnison	02/26/2015	N001	46.000			#	0.047	-
	mg/L	Upper Mid Gunnison	02/26/2015	N001	48.000			#	0.047	-
	mg/L	Wetland Area	02/27/2015	0001	1600.000			#	4.7	-
Specific Conductance	umhos/cm	Lower Gunnison	02/09/2011	N001	995			#	-	-
	umhos/cm	Lower Gunnison	01/06/2012	N001	713			#	-	-
	umhos/cm	Lower Gunnison	02/14/2013	N001	993			#	-	-
	umhos/cm	Lower Gunnison	02/20/2014	N001	1370			#	-	-
	umhos/cm	Lower Gunnison	02/26/2015	N001	811			#	-	-
	umhos/cm	North Pond	02/17/2011	N001	1278			#	-	-
	umhos/cm	North Pond	01/05/2012	N001	4258			#	-	-
	umhos/cm	North Pond	02/14/2013	N001	1960			#	-	-
	umhos/cm	North Pond	02/20/2014	N001	860			#	-	-
	umhos/cm	North Pond	02/27/2015	N001	3281			#	-	-
	umhos/cm	South Pond	02/17/2011	N001	482			#	-	-
	umhos/cm	South Pond	01/05/2012	N001	2865			#	-	-
	umhos/cm	South Pond	02/14/2013	N001	2238			#	-	-
	umhos/cm	South Pond	02/20/2014	N001	1145			#	-	-
	umhos/cm	South Pond	02/25/2015	N001	2550			#	-	-
	umhos/cm	Upper Gunnison	02/09/2011	N001	849			#	-	-
	umhos/cm	Upper Gunnison	01/05/2012	N001	690			#	-	-
	umhos/cm	Upper Gunnison	02/14/2013	N001	999			#	-	-
	umhos/cm	Upper Gunnison	02/19/2014	N001	1209			#	-	-
	umhos/cm	Upper Gunnison	02/26/2015	N001	788			#	-	-
	umhos/cm	Upper Mid Gunnison	02/09/2011	N001	849			#	-	-
	umhos/cm	Upper Mid Gunnison	01/06/2012	N001	674			#	-	-
	umhos/cm	Upper Mid Gunnison	02/14/2013	N001	989			#	-	-
	umhos/cm	Upper Mid Gunnison	02/19/2014	N001	1137			#	-	-
	umhos/cm	Upper Mid Gunnison	02/26/2015	N001	782			#	-	-
	umhos/cm	Wetland Area	02/17/2011	N001	4810			#	-	-
	umhos/cm	Wetland Area	01/05/2012	N001	9162			#	-	-
	umhos/cm	Wetland Area	02/14/2013	N001	16303			#	-	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:24 am

PARAMETER	UNITS	LOCATION CODE	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT		UN-CERTAINTY
Specific Conductance	umhos/cm	Wetland Area	02/20/2014	N001	1406				#	-	-
	umhos/cm	Wetland Area	02/27/2015	N001	8863				#	-	-
Sulfate	mg/L	Lower Gunnison	02/09/2011	N001	323				#	1	-
	mg/L	Lower Gunnison	01/06/2012	N001	260				#	2.5	-
	mg/L	Lower Gunnison	02/14/2013	0001	400				#	2.5	-
	mg/L	Lower Gunnison	02/20/2014	0001	530				#	5	-
	mg/L	Lower Gunnison	02/26/2015	N001	270				#	5	-
	mg/L	North Pond	02/17/2011	0001	384				#	2	-
	mg/L	North Pond	01/05/2012	N001	2100				#	25	-
	mg/L	North Pond	02/14/2013	N001	950				#	10	-
	mg/L	North Pond	02/20/2014	N001	300				#	5	-
	mg/L	North Pond	02/27/2015	N001	1400				#	25	-
	mg/L	South Pond	02/17/2011	N001	133				#	1	-
	mg/L	South Pond	01/05/2012	N001	1300				#	25	-
	mg/L	South Pond	02/14/2013	N001	1200				#	10	-
	mg/L	South Pond	02/20/2014	N001	450				#	5	-
	mg/L	South Pond	02/25/2015	0001	1200				#	12	-
	mg/L	Upper Gunnison	02/09/2011	N001	269				#	1	-
	mg/L	Upper Gunnison	01/05/2012	N001	220				#	2.5	-
	mg/L	Upper Gunnison	02/14/2013	0001	400				#	2.5	-
	mg/L	Upper Gunnison	02/19/2014	0001	480				#	5	-
	mg/L	Upper Gunnison	02/26/2015	N001	260				#	5	-
	mg/L	Upper Mid Gunnison	02/09/2011	N001	269				#	1	-
	mg/L	Upper Mid Gunnison	01/06/2012	N001	220				#	2.5	-
	mg/L	Upper Mid Gunnison	02/14/2013	0001	400				#	2.5	-
	mg/L	Upper Mid Gunnison	02/19/2014	0001	450				#	5	-
	mg/L	Upper Mid Gunnison	02/26/2015	N001	260				#	5	-
	mg/L	Wetland Area	02/17/2011	0001	1910				#	10	-
	mg/L	Wetland Area	01/05/2012	N001	4900				#	50	-
	mg/L	Wetland Area	02/14/2013	0001	10000				#	100	-
	mg/L	Wetland Area	02/20/2014	0001	690				#	5	-
	mg/L	Wetland Area	02/27/2015	0001	4500				#	50	-
Temperature	C	Lower Gunnison	02/09/2011	N001	2.90				#	-	-
	C	Lower Gunnison	01/06/2012	N001	3.88				#	-	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:24 am

PARAMETER	UNITS	LOCATION CODE	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT		UN-CERTAINTY
Temperature	C	Lower Gunnison	02/14/2013	N001	0.64				#	-	-
	C	Lower Gunnison	02/20/2014	N001	6.33				#	-	-
	C	Lower Gunnison	02/26/2015	N001	5.91				#	-	-
	C	North Pond	02/17/2011	N001	10.50				#	-	-
	C	North Pond	01/05/2012	N001	6.97				#	-	-
	C	North Pond	02/14/2013	N001	8.95				#	-	-
	C	North Pond	02/20/2014	N001	6.56				#	-	-
	C	North Pond	02/27/2015	N001	5.33				#	-	-
	C	South Pond	02/17/2011	N001	6.75				#	-	-
	C	South Pond	01/05/2012	N001	6.15				#	-	-
	C	South Pond	02/14/2013	N001	6.11				#	-	-
	C	South Pond	02/20/2014	N001	11.35				#	-	-
	C	South Pond	02/25/2015	N001	7.31				#	-	-
	C	Upper Gunnison	02/09/2011	N001	2.71				#	-	-
	C	Upper Gunnison	01/05/2012	N001	3.69				#	-	-
	C	Upper Gunnison	02/14/2013	N001	0.51				#	-	-
	C	Upper Gunnison	02/19/2014	N001	8.52				#	-	-
	C	Upper Gunnison	02/26/2015	N001	5.95				#	-	-
	C	Upper Mid Gunnison	02/09/2011	N001	2.74				#	-	-
	C	Upper Mid Gunnison	01/06/2012	N001	3.16				#	-	-
	C	Upper Mid Gunnison	02/14/2013	N001	21.97				#	-	-
	C	Upper Mid Gunnison	02/19/2014	N001	13.73				#	-	-
	C	Upper Mid Gunnison	02/26/2015	N001	7.35				#	-	-
	C	Wetland Area	02/17/2011	N001	6.46				#	-	-
	C	Wetland Area	01/05/2012	N001	2.66				#	-	-
	C	Wetland Area	02/14/2013	N001	10.32				#	-	-
	C	Wetland Area	02/20/2014	N001	8.75				#	-	-
	C	Wetland Area	02/27/2015	N001	7.14				#	-	-
Turbidity	NTU	Lower Gunnison	02/09/2011	N001	7.29				#	-	-
	NTU	Lower Gunnison	01/06/2012	N001	5.89				#	-	-
	NTU	Lower Gunnison	02/14/2013	N001	44.3				#	-	-
	NTU	Lower Gunnison	02/20/2014	N001	22.1				#	-	-
	NTU	Lower Gunnison	02/26/2015	N001	6.47				#	-	-
	NTU	North Pond	02/17/2011	N001	17.5				#	-	-
	NTU	North Pond	01/05/2012	N001	8.04				#	-	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:24 am

PARAMETER	UNITS	LOCATION CODE	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT		UN-CERTAINTY
Turbidity	NTU	North Pond	02/14/2013	N001	5.98				#	-	-
	NTU	North Pond	02/20/2014	N001	7.39				#	-	-
	NTU	North Pond	02/27/2015	N001	6.40				#	-	-
	NTU	South Pond	02/17/2011	N001	5.51				#	-	-
	NTU	South Pond	01/05/2012	N001	7.39				#	-	-
	NTU	South Pond	02/14/2013	N001	8.03				#	-	-
	NTU	South Pond	02/20/2014	N001	7.45				#	-	-
	NTU	South Pond	02/25/2015	N001	75.5				#	-	-
	NTU	Upper Gunnison	02/09/2011	N001	8.23				#	-	-
	NTU	Upper Gunnison	01/05/2012	N001	6.03				#	-	-
	NTU	Upper Gunnison	02/14/2013	N001	26.5				#	-	-
	NTU	Upper Gunnison	02/19/2014	N001	18.1				#	-	-
	NTU	Upper Gunnison	02/26/2015	N001	6.47				#	-	-
	NTU	Upper Mid Gunnison	02/09/2011	N001	6.92				#	-	-
	NTU	Upper Mid Gunnison	01/06/2012	N001	3.84				#	-	-
	NTU	Upper Mid Gunnison	02/14/2013	N001	34.7				#	-	-
	NTU	Upper Mid Gunnison	02/19/2014	N001	20.7				#	-	-
	NTU	Upper Mid Gunnison	02/26/2015	N001	5.80				#	-	-
	NTU	Wetland Area	02/17/2011	N001	40.5				#	-	-
	NTU	Wetland Area	01/05/2012	N001	5.96				#	-	-
	NTU	Wetland Area	02/14/2013	N001	42.8				#	-	-
	NTU	Wetland Area	02/20/2014	N001	24.8				#	-	-
	NTU	Wetland Area	02/27/2015	N001	36.6				#	-	-
Uranium	mg/L	Lower Gunnison	02/09/2011	N001	0.0124				#	6.7E-05	-
	mg/L	Lower Gunnison	01/06/2012	N001	0.0068				#	2.9E-05	-
	mg/L	Lower Gunnison	02/14/2013	0001	0.0082				#	1.5E-05	-
	mg/L	Lower Gunnison	02/20/2014	0001	0.016				#	1.5E-05	-
	mg/L	Lower Gunnison	02/26/2015	N001	0.0073				#	2.9E-05	-
	mg/L	North Pond	02/17/2011	0001	0.0404				#	6.7E-05	-
	mg/L	North Pond	01/05/2012	N001	0.100				#	2.9E-05	-
	mg/L	North Pond	02/14/2013	N001	0.150				#	1.5E-05	-
	mg/L	North Pond	02/20/2014	N001	0.032				#	1.5E-05	-
	mg/L	North Pond	02/27/2015	N001	0.150				#	2.9E-05	-
	mg/L	South Pond	02/17/2011	N001	0.0385				#	6.7E-05	-
	mg/L	South Pond	01/05/2012	N001	0.220				#	2.9E-05	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:24 am

PARAMETER	UNITS	LOCATION CODE	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT		UN-CERTAINTY
Uranium	mg/L	South Pond	02/14/2013	N001	0.310				#	1.5E-05	-
	mg/L	South Pond	02/20/2014	N001	0.085				#	1.5E-05	-
	mg/L	South Pond	02/25/2015	0001	0.390				#	2.9E-05	-
	mg/L	Upper Gunnison	02/09/2011	N001	0.0066				#	6.7E-05	-
	mg/L	Upper Gunnison	01/05/2012	N001	0.0051				#	2.9E-05	-
	mg/L	Upper Gunnison	02/14/2013	0001	0.0083				#	1.5E-05	-
	mg/L	Upper Gunnison	02/19/2014	0001	0.0095				#	1.5E-05	-
	mg/L	Upper Gunnison	02/26/2015	N001	0.0062				#	2.9E-05	-
	mg/L	Upper Mid Gunnison	02/09/2011	N001	0.0065				#	6.7E-05	-
	mg/L	Upper Mid Gunnison	01/06/2012	N001	0.0049				#	2.9E-05	-
	mg/L	Upper Mid Gunnison	02/14/2013	0001	0.008				#	1.5E-05	-
	mg/L	Upper Mid Gunnison	02/19/2014	0001	0.013				#	1.5E-05	-
	mg/L	Upper Mid Gunnison	02/26/2015	N001	0.0059				#	2.9E-05	-
	mg/L	Wetland Area	02/17/2011	0001	0.499				#	6.7E-05	-
	mg/L	Wetland Area	01/05/2012	N001	0.380				#	2.9E-05	-
	mg/L	Wetland Area	02/14/2013	0001	5.700				#	0.00029	-
	mg/L	Wetland Area	02/20/2014	0001	0.410				#	1.5E-05	-
	mg/L	Wetland Area	02/27/2015	0001	1.000				#	2.9E-05	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE GJO01, Grand Junction Site
REPORT DATE: 12/10/2015 7:24 am

PARAMETER	UNITS	LOCATION CODE	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE800 WHERE site_code='GJO01' AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #1/1/2011# and #12/1/2015#

SAMPLE ID CODES: 000X = Filtered sample. N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

*	Replicate analysis not within control limits.
+	Correlation coefficient for MSA < 0.995.
>	Result above upper detection limit.
A	TIC is a suspected aldol-condensation product.
B	Inorganic: Result is between the IDL and CRDL. Organic & Radiochemistry: Analyte also found in method blank.
C	Pesticide result confirmed by GC-MS.
D	Analyte determined in diluted sample.
E	Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H	Holding time expired, value suspect.
I	Increased detection limit due to required dilution.
J	Estimated
M	GFAA duplicate injection precision not met.
N	Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
P	> 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
S	Result determined by method of standard addition (MSA).
U	Analytical result below detection limit.
W	Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Z	Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

F	Low flow sampling method used.	G	Possible grout contamination, pH > 9.
J	Estimated value.	L	Less than 3 bore volumes purged prior to sampling.
N	Presumptive evidence that analyte is present. The analyte is "tentatively identified".	Q	Qualitative result due to sampling technique
R	Unusable result.	U	Parameter analyzed for but was not detected.
X	Location is undefined.		

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

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