DOE–LM/GJ969–2005

Office of Legacy Management Verification Monitoring Report for the Gunnison, Colorado, Processing Site

September 2005

U.S. Department of Energy

Office of Legacy Management

Work Performed Under DOE Contract No. DE–AC01–02GJ79491
for the U.S. Department of Energy Office of Legacy Management.

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Gunnison, Colorado, Processing Site

September 2005

Work Performed by S.M. Stoller Corporation under DOE Contract No. DE–AC01–02GJ79491
for the U.S. Department of Energy Office of Legacy Management, Grand Junction, Colorado

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Contents

Figures

Tables

Appendices

Acronyms and Abbreviations

CDPHE	Colorado Department of Public Health and Environment
COPC	constituent of potential concern
DOE	U.S. Department of Energy
DWEL	Drinking Water Equivalent Level
EPA	U. S. Environmental Protection Agency
ft	foot (feet)
GCAP	Ground Water Compliance Action Plan
IC	institutional control(s)
LM	Legacy Management
MCL	maximum concentration limit
mg/L	milligram(s) per liter
NRC	U.S. Nuclear Regulatory Commission
RRM	residual radioactive material
SOWP	Site Observational Work Plan
VMR	Verification Monitoring Report

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1.0 Introduction

1.1 Purpose of Report

The purpose of this Verification Monitoring Report (VMR) is to evaluate ground water and surface water monitoring data collected during the annual 2005 sampling event at the Gunnison, Colorado, Processing Site (Gunnison site) and to assess the status of the compliance strategy for ground water cleanup (Figure 1). Detailed information for the Gunnison site and water quality data through 1999 are found in the Final Site Observational Work Plan (SOWP) (DOE 2001). Water quality data from 2000 through 2004 are found in the previous VMRs (DOE 2003, DOE 2004b). Water quality data for 2005 are provided in Appendices A through C of this report. All water quality data for the Gunnison site are archived in the SEEPro database at the U.S. Department of Energy (DOE) Office of Legacy Management (LM) in Grand Junction, Colorado.

1.2 Site Status

Institutional controls (IC) were finalized in 2004. ICs in effect in the vicinity of the Gunnison site consist of deed restrictions on the original millsite property (specified in a Quit Claim Deed transferring the property from the State of Colorado to Gunnison County), a Gunnison County Resolution (Gunnison County 2004) establishing the New Domestic Well Constraint Area, and construction of a domestic water supply system. The New Domestic Well Constraint Area is delineated by the IC boundary (Figure 1), and the Gunnison County Resolution specifies that no new wells can be constructed within the constraint area. In 2004, DOE entered into a U.S. Nuclear Regulatory Commission (NRC) approved cooperative agreement (DOE 2004a) with Gunnison County where DOE agreed to fund (along with the Colorado Department of Public Health and Environment [CDPHE]) an extension of the domestic water supply system to account for potential future growth within the IC boundary (Figure 1).

Modifications to the long-term monitoring network were made in 2005. A letter and Technical Evaluation Report detailing the NRC review of the long-term monitoring program was sent to DOE on July 9, 2004 (NRC 2004). The NRC report recommended the following changes to the long-term monitoring program: (1) installation of five new monitor wells downgradient from the site; (2) monitoring three additional existing domestic wells south of Tomichi Creek; (3) decommissioning of 36 unneeded monitor wells; and (4) monitoring ten additional existing monitor wells. The SOWP (DOE 2001) has been conditionally accepted by NRC and CDPHE provided the recommendations in the Technical Evaluation Report were implemented and enforceable ICs were in place. A final Ground Water Compliance Action Plan (GCAP) (DOE 2005) was completed and forwarded to NRC reflecting the additions to the long-term monitoring network and the finalization of ICs.

1.3 Ground Water Quality

Ground water in the alluvial aquifer beneath and downgradient from the Gunnison site was contaminated by uranium processing activities. Uranium mill tailings and other residual radioactive material (RRM) were removed from the millsite from 1992 through 1995 and stabilized in a disposal cell 6 miles east of Gunnison. RRM beneath the site was cleaned up to just below the water table with some contaminated material left in place. Clean fill was placed above these areas to reduce radiation from emanating to the surface.

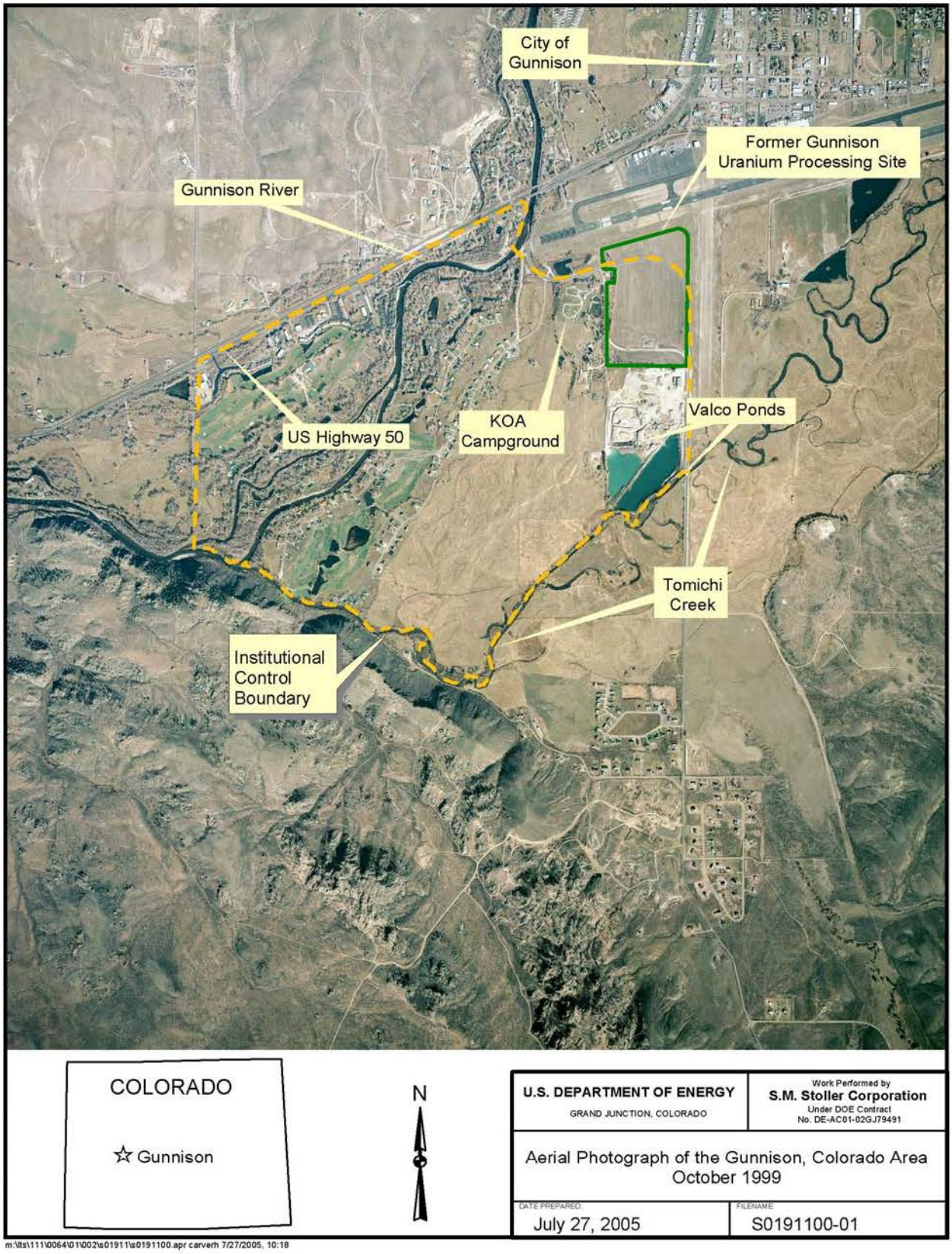

Figure 1. Aerial Photograph of the Gunnison Area

Uranium is the primary constituent of potential concern (COPC) in ground water, with concentrations measured up to 1.5 milligrams per liter (mg/L) beneath the site in the past, and exceeding the Uranium Mill Tailings Remedial Action (UMTRA) maximum concentration limit (MCL) of 0.044 mg/L more than 4,000 feet (ft) downgradient from the site boundary. Concentrations of uranium in ground water below the MCL, but above background, extend approximately 7,000 ft downgradient from the site boundary and have migrated beneath the Gunnison River just beyond the confluence with Tomichi Creek. The zone of contamination attenuates and migrates deeper into the aquifer as it progresses laterally in a southwesterly direction.

Manganese is also a COPC in ground water, with concentrations measured up to 77 mg/L beneath the site in the past. There is no MCL or UMTRA ground water standard for manganese. The U. S. Environmental Protection Agency's (EPA) drinking water equivalent level (DWEL) for manganese is 1.6 mg/L (EPA 2004). The DWEL is a lifetime exposure concentration protective of adverse, non-cancer health effects that assumes all of the exposure to a contaminant is from drinking water. Manganese does not appear to be widespread in the aquifer and concentrations beneath the site are decreasing. Concentrations of manganese are above or at the DWEL beneath the site and in two downgradient monitor wells.

1.4 Land and Water Use

The former millsite is owned by Gunnison County. Adjacent properties are owned by Gunnison County; Valco, Inc.; and other private parties. Valco, Inc. is involved in commercial aggregate mining operations just south of the Gunnison site. A domestic water supply system was constructed in 1994 to provide drinking water to potentially impacted users in the IC area (Figure 1). Because some of the area south of the site will most likely be subject to residential development in the future, expansion of the domestic supply system was funded by DOE and CDPHE in 2004 to accommodate future growth.

2.0 Monitoring Program

2.1 Monitoring Network

The monitoring network sampled during May 2005 included 27 DOE monitor wells, five surface water locations, and nine domestic wells (Figure 2 and Table 1). Monitor wells 0062 to 0067 were installed in the Fall of 2004 and were sampled for the first time in May 2005. Only COPCs, uranium and manganese, were analyzed in 2005. Results for the May 2005 sampling event are presented in this report.

Verification monitoring will be performed annually for the first 5 years after NRC concurrence with the GCAP (DOE 2005) to ascertain that natural flushing is progressing as predicted by ground water flow and transport modeling (DOE 2001). A review of the monitoring program will be conducted after 5 years to determine if a change in the frequency of monitoring is warranted. Ongoing monitoring requirements will be evaluated in subsequent Verification Monitoring Reports and modified as determined by DOE and NRC.

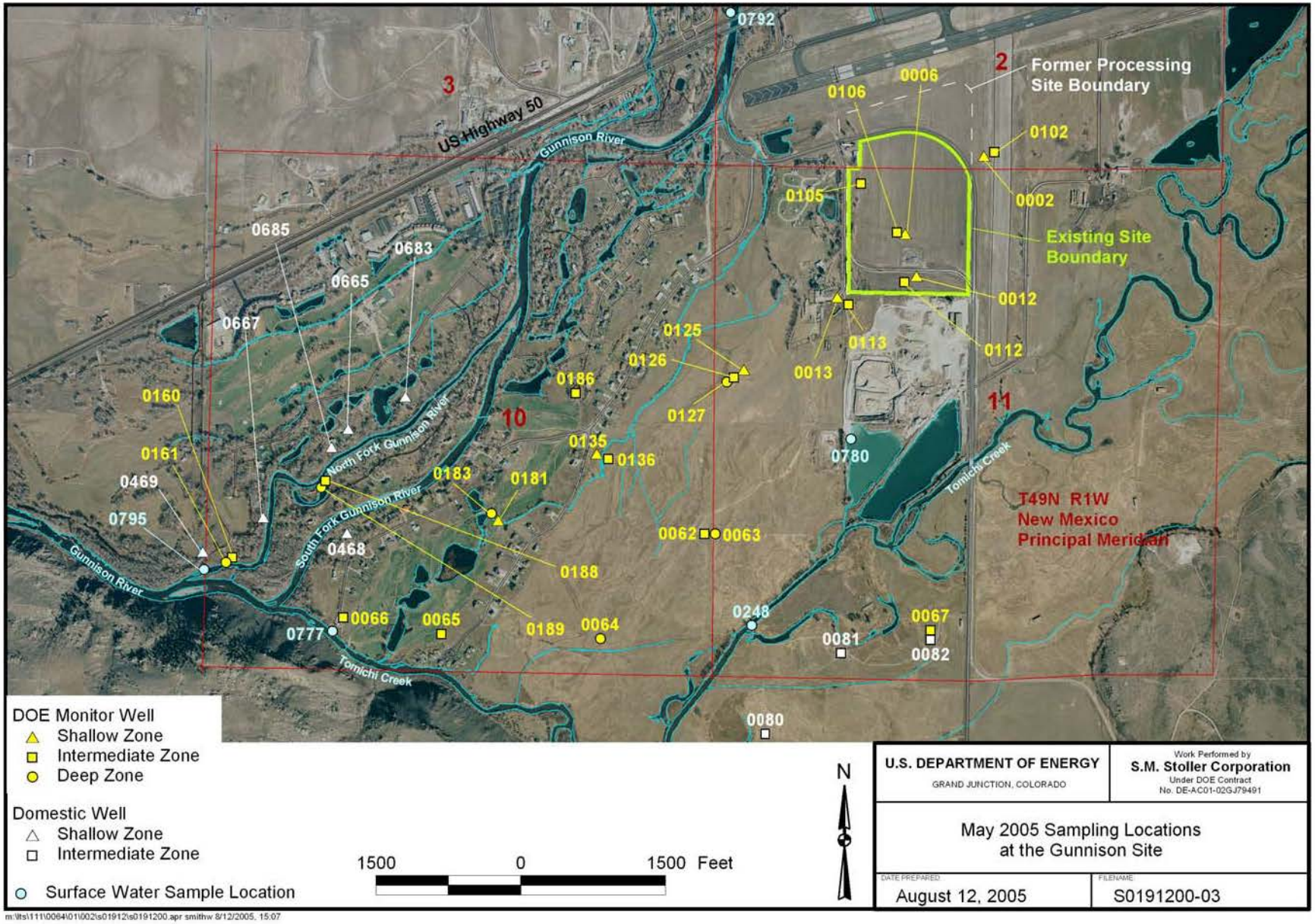

Figure 2. Monitoring Network 2005

Table 1. Ground Water and Surface Water Monitoring at the Gunnison Site

Monitor Well	Aquifer Zone	Screened Interval	Location	Rationale (Uranium)
Ground Water				
0002	Shallow	10–15	Airport	Upgradient
0102	Intermediate	42–47	Airport	Upgradient
0105	Intermediate	42–47	On-site	Upgradient edge of plume
0006	Shallow	10–15	On-site	"Hot spot"
0106	Intermediate	34–39	On-site	Monitor vertical migration
0012	Shallow	10–15	On-site	"Hot spot"
0112	Intermediate	40–45	On-site	Monitor vertical migration
0013	Shallow	11–16	Just off-site	Monitor plume migration
0113	Intermediate	41–46	Just off-site	Monitor plume migration
0067	Intermediate	40–50	South of Tomichi Creek	Confirm uranium concentration in well 0082
0125	Shallow	18–23	Valco pasture	Monitor plume migration
0126	Intermediate	54–59	Valco pasture	Monitor plume migration
0127	Deep	94–99	Valco pasture	Monitor plume migration
0135	Shallow	18–23	Valco pasture	Monitor plume migration
0136	Intermediate	53–58	Valco pasture	Monitor plume migration
0064	Deep	87–97	Valco pasture	Monitor plume migration
0062	Intermediate	48–58	Valco pasture	Monitor plume migration
0063	Deep	88–98	Valco pasture	Monitor plume migration
0181	Shallow	18–23	Golf course	Monitor plume migration
0183	Deep	93–98	Golf course	Monitor plume migration
0065	Intermediate	50–60	Golf course	Monitor plume migration
0066	Intermediate	40–50	End of Tomichi Trail	Monitor plume migration
0186	Intermediate	53–58	End of Monte Vista Dr.	Monitor plume migration
0188	Intermediate	53–58	West of Gunnison River	Monitor plume migration
0189	Deep	93–98	West of Gunnison River	Monitor plume migration
0160	Intermediate	51–56	West of Gunnison River	Adjacent to IC boundary
0161	Deep	93–98	West of Gunnison River	Adjacent to IC boundary
Surface Water				
0248	NA		Tomichi Creek	Downstream of Valco pond
0777			Tomichi Creek	Downstream – potential aquifer discharge
0780			Valco, Inc. gravel pit	Above MCL
0792			Gunnison River	Upstream
0795			Gunnison River	Downstream
Domestic Wells		**Use**		
0080	Intermediate	Potable	South of Tomichi Creek	Verify plume is not migrating beyond IC boundary
0081	Intermediate	Not in use	South of Tomichi Creek	Verify plume is not migrating beyond IC boundary
0082	Intermediate	Not in use	South of Tomichi Creek	Verify plume is not migrating beyond IC boundary
0468	Shallow	Non in use	East of Gunnison River	Elevated uranium concentrations
0469	Shallow	Potable	West of Gunnison River	Buffer zone
0665	Shallow	Potable	West of Gunnison River	Buffer zone
0667	Shallow	Potable	West of Gunnison River	Buffer zone
0683	Shallow	Potable	West of Gunnison River	Buffer zone
0685	Shallow	Potable	West of Gunnison River	Buffer zone

2.2 Results of 2005 Monitoring Program

Ground water and surface water analytical results through October 1999 are discussed in the SOWP (DOE 2001), and results from 2000 through 2004 are presented and discussed in the previous VMRs (DOE 2003, DOE 2004b). The distribution of uranium and manganese in the alluvial aquifer are shown in Figure 3 and Figure 4, respectively. Concentration versus time plots for uranium and manganese in DOE monitor wells, domestic wells, and surface water, from 1997 (post-remedial action) through 2005, are shown in Figure 5 through Figure 10, respectively. Analytical data for uranium and manganese in ground water in DOE monitor wells, domestic wells, and surface water for 2005 are provided in Appendices A through C, respectively.

2.2.1 DOE Monitor Wells

Though not separated lithologically, the alluvial aquifer (up to 130 feet deep) has been divided into three zones to facilitate discussion of vertical contaminant migration: (1) shallow zone from 10 to 15 ft; (2) intermediate zone from 35 to 60 ft; and (3) deep zone from 90 to 100 ft (Table 1). Concentrations of uranium in ground water in the shallow zone beneath the site (0006 and 0012) are still above the MCL of 0.044 mg/L (Figure 3). Although the uranium concentration in well 0006 increased slightly in 2005, the uranium concentration in well 0012 continued to decrease, and the overall trend indicates that natural flushing in ground water in the alluvial aquifer is progressing (Figure 5).

In 2005, results indicate that uranium in ground water is migrating deeper in the alluvial sequence while progressing downgradient from the site, which is consistent with historical data and model predictions. The MCL of 0.044 mg/L was not exceeded in any shallow zone monitor well downgradient from the site; however, the MCL was exceeded in the intermediate zone just off the southwest corner of the millsite (0113) and in the deep zone (0183) 4,400 feet downgradient from the site. The distribution of uranium throughout the alluvial aquifer in each of the three zones is summarized in Table 2.

In wells furthest downgradient from the millsite and across the Gunnison River (0160 and 0161), uranium concentrations are above the upper range of background (0.0085 mg/L) (DOE 1996) but less than the MCL (Figure 3). Uranium concentrations are slowly increasing in these wells (Figure 5), which is expected as ground water migrates downgradient from the site and natural flushing progresses.

Concentrations of manganese in ground water beneath the site are above the DWEL of 1.6 mg/L in the intermediate zone, with concentrations below the DWEL in the shallow zone (Figure 4). Manganese concentrations above the DWEL in wells on site are generally decreasing over time (Figure 6). Downgradient from the site, the sample collected from well 0135 had a manganese concentration that exceeded the DWEL; manganese concentrations in ground water from this well have consistently exceeded the DWEL (Figure 6).

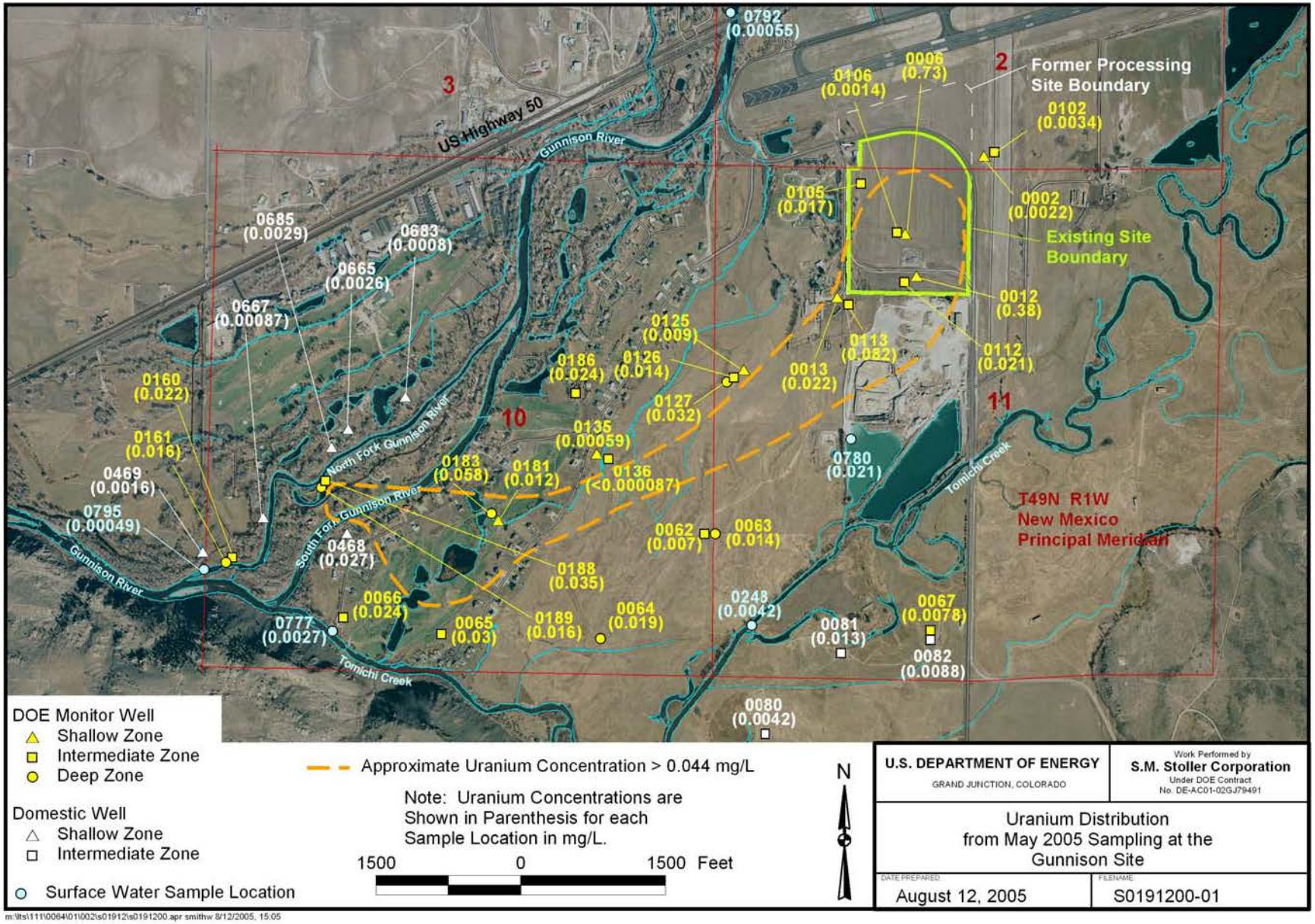

Figure 3. Distribution of Uranium at the Gunnison Site

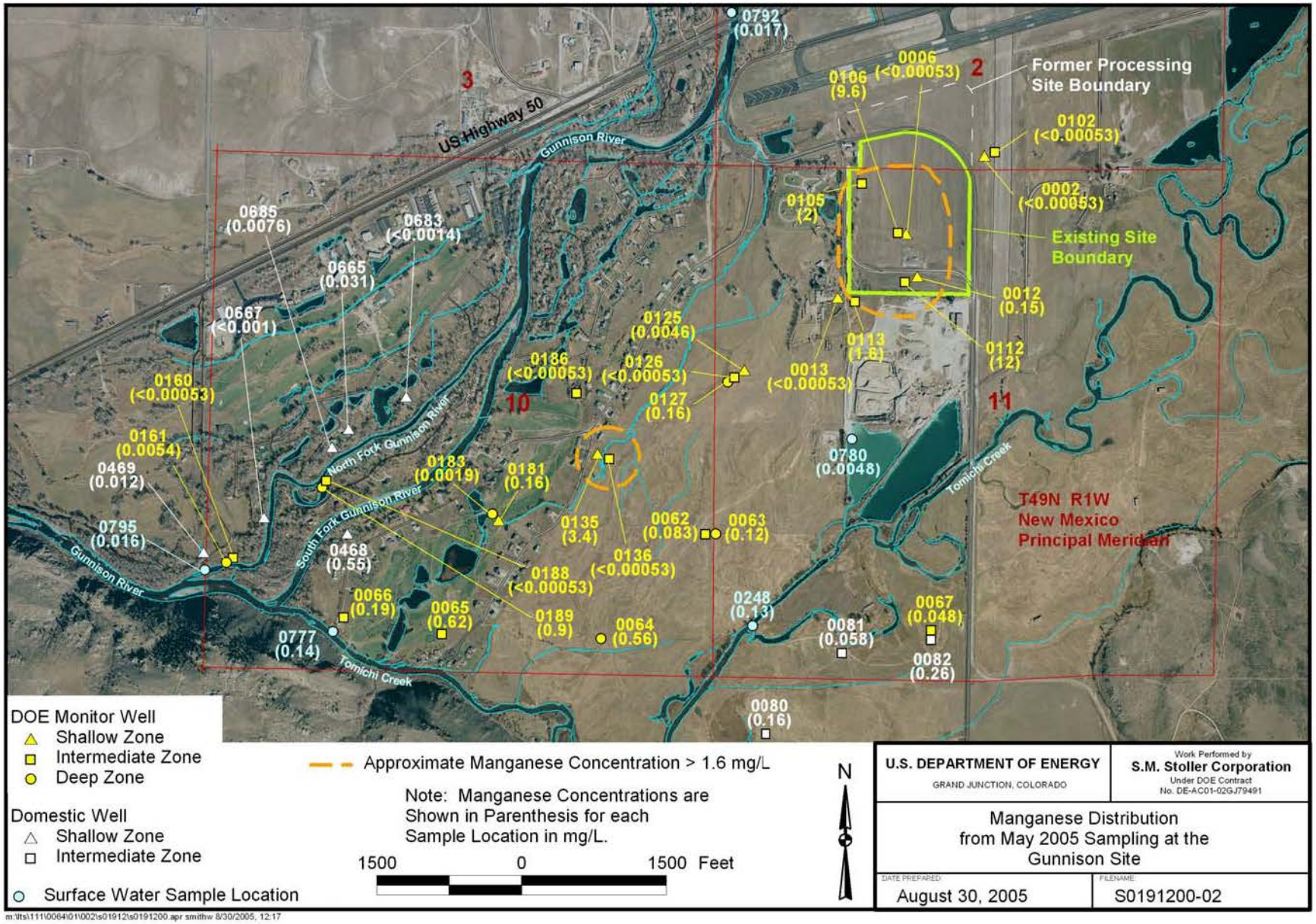

Figure 4. Distribution of Manganese at the Gunnison Site

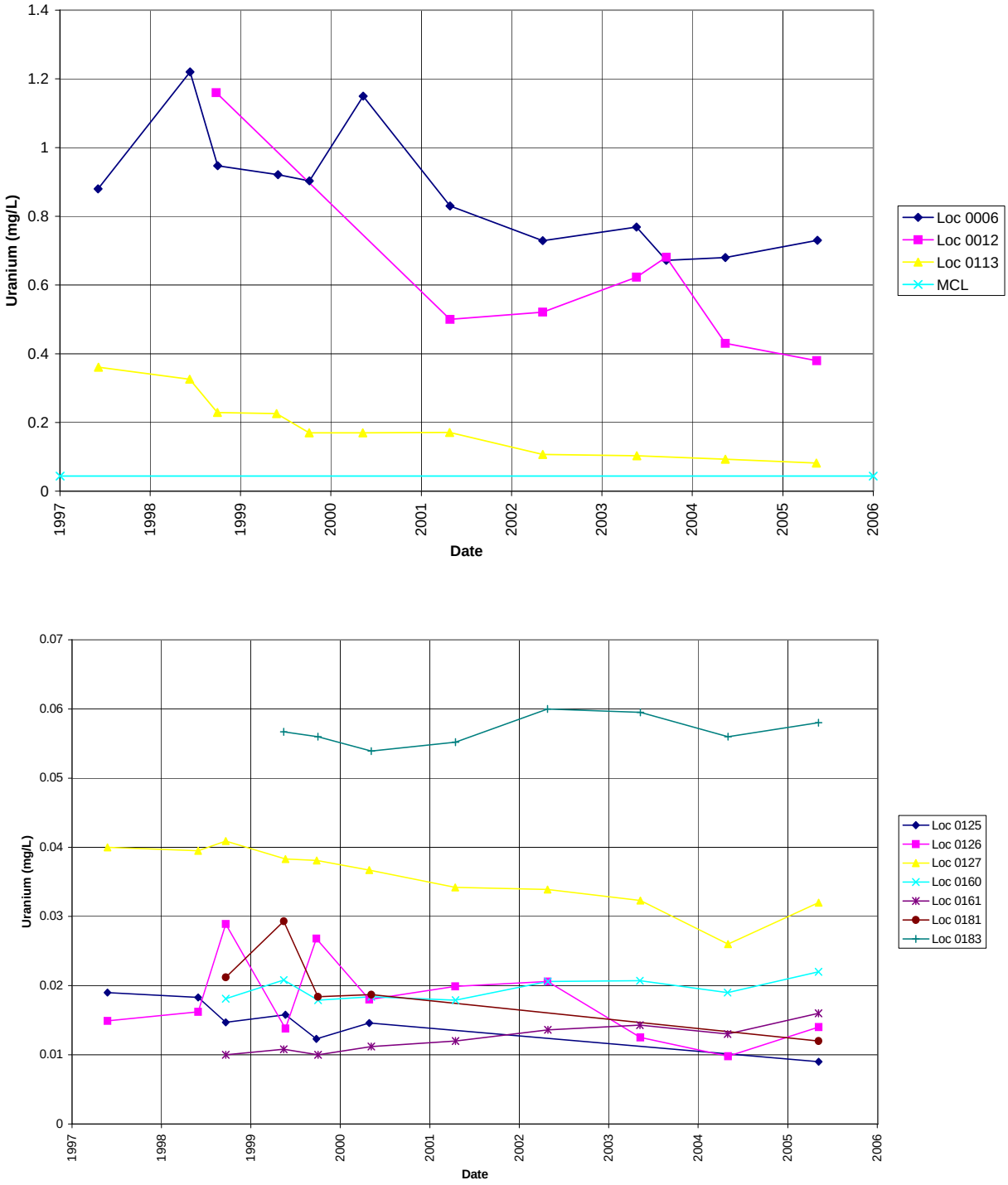

Figure 5. Uranium Concentrations in Ground Water in DOE Monitor Wells at the Gunnison Site

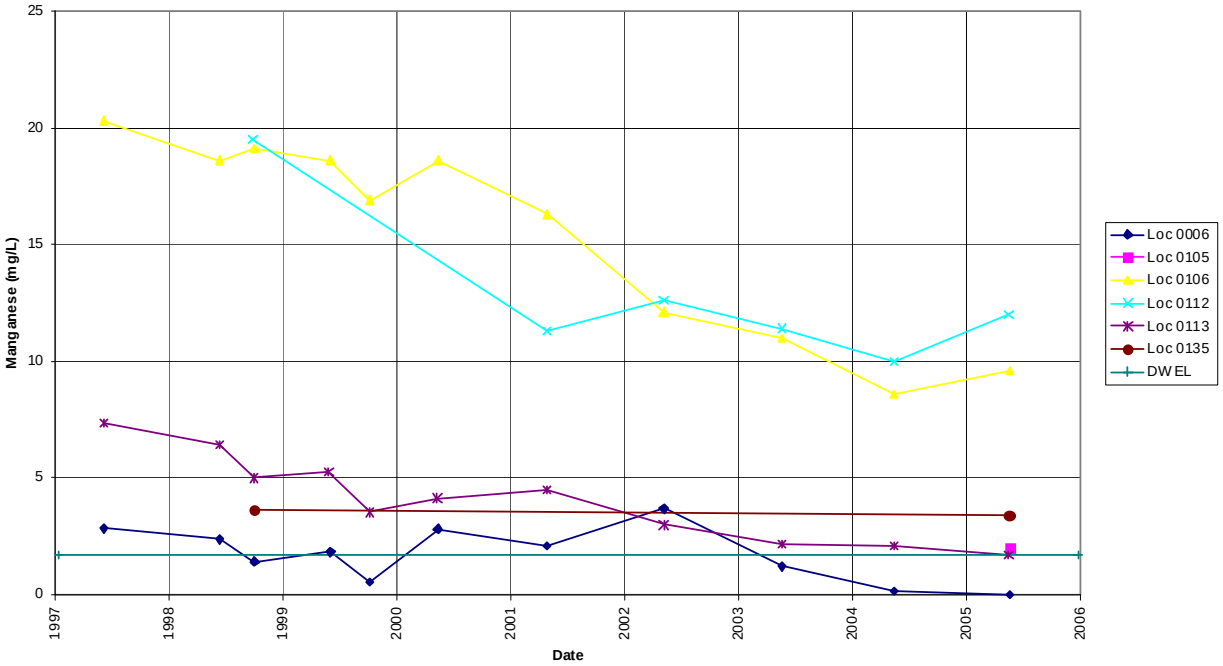

Figure 6. Manganese Concentrations in Ground Water for DOE Monitor Wells at the Gunnison Site

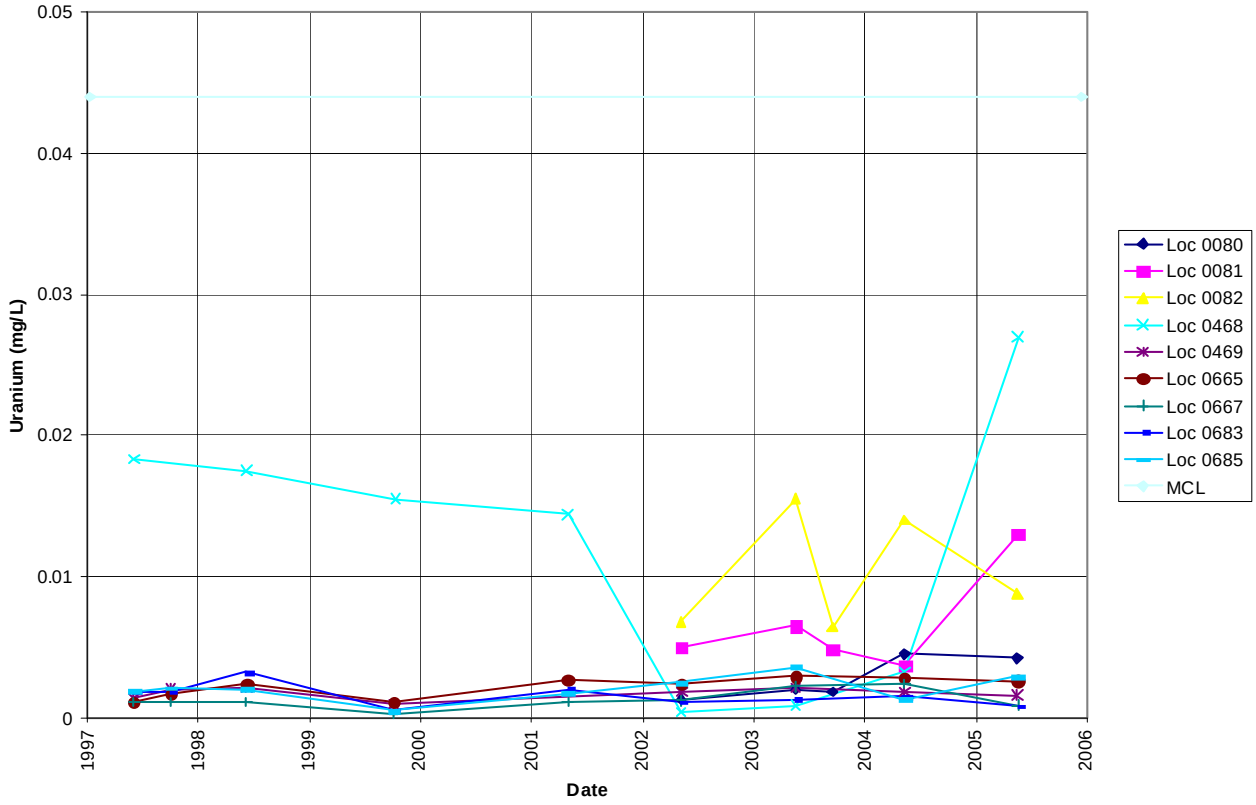

Figure 7. Uranium Concentrations in Ground Water in Domestic Wells at the Gunnison Site

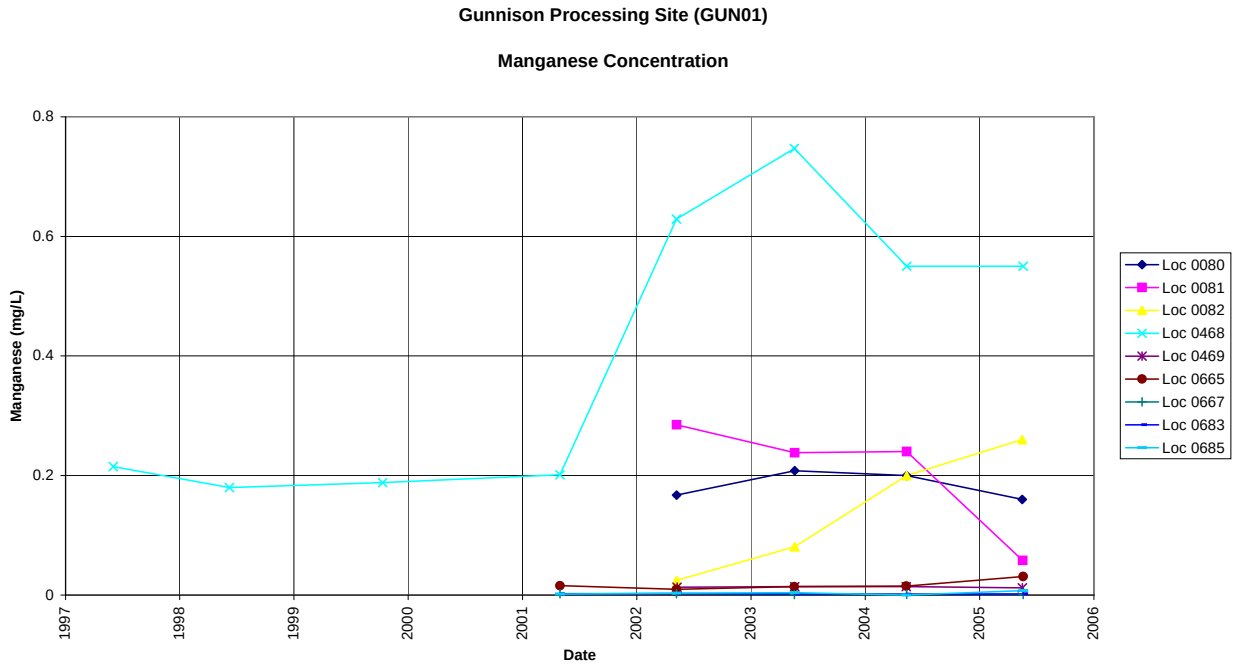

Figure 8. Manganese Concentrations in Ground Water in Domestic Wells at the Gunnison Site

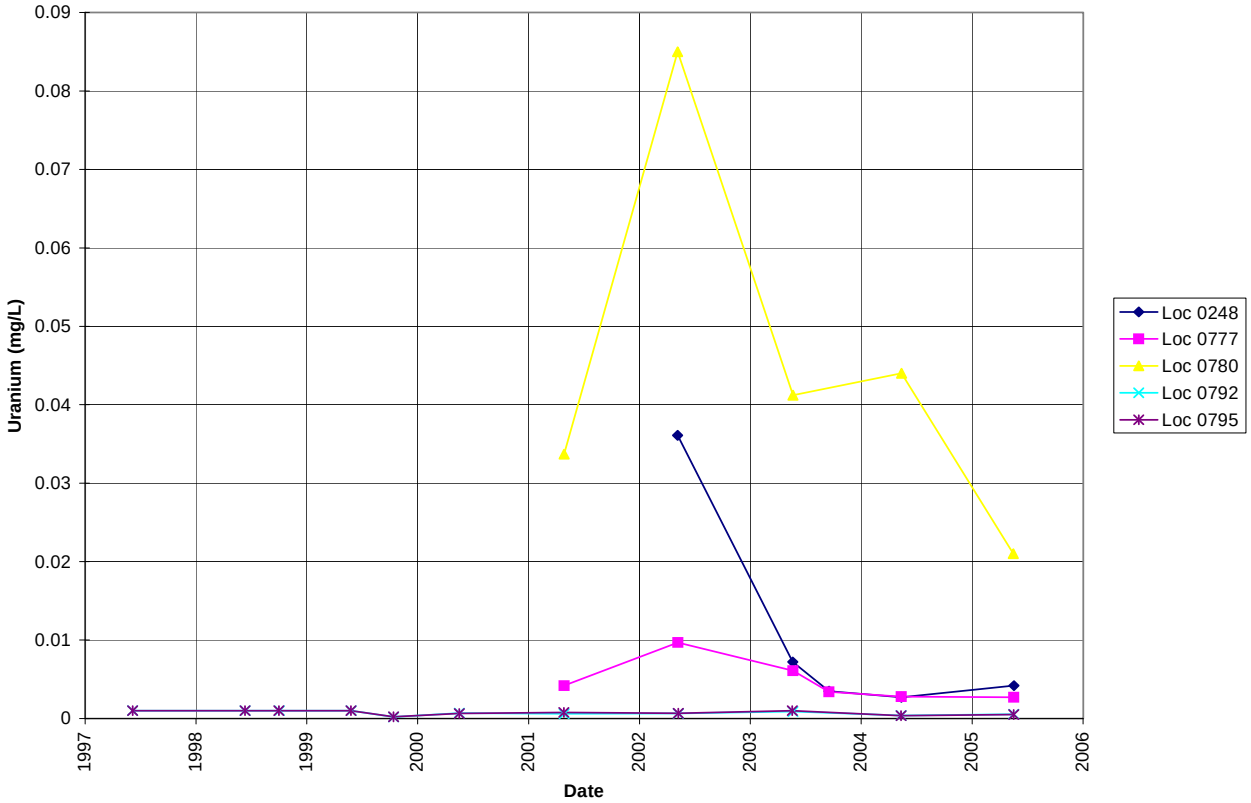

Figure 9. Uranium Concentrations in Surface Water at the Gunnison Site

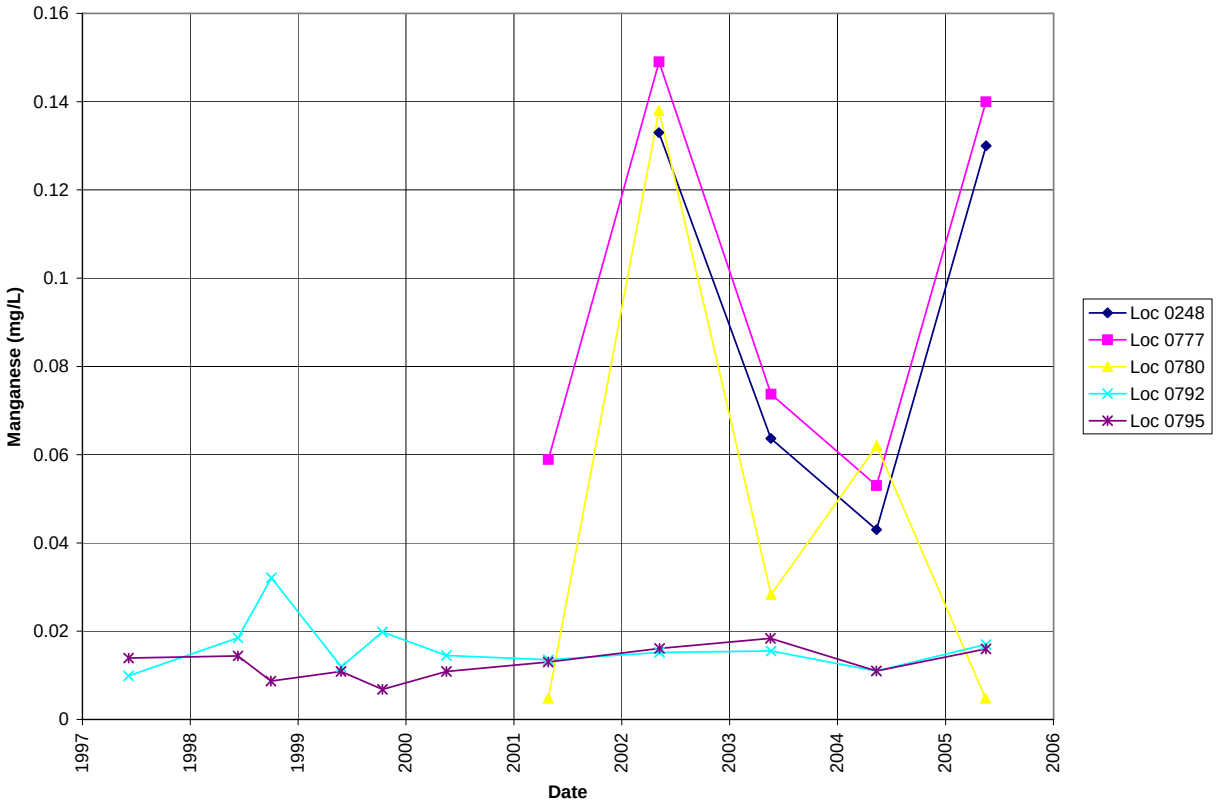

Figure 10. Manganese Concentrations in Surface Water at the Gunnison Site

Table 2. Summary of 2005 Uranium Distribution

Area	Zone	Wells	Uranium Concentration[a] (mg/L)
Upgradient	Shallow	0002	0.002
	Intermediate	0102	0.003
Onsite	Shallow	0006, 0012	0.555
	Intermediate	0105, 0106, 0112	0.013
Downgradient (Before Gunnison River)	Shallow	0013, 0125, 0135, 0181	0.011
	Intermediate	0062, 0065, 0066, 0113, 0126, 0136, 0186	0.026
	Deep	0063, 0064, 0127, 0183	0.031
Downgradient (Beyond Gunnison River)	Intermediate	0160, 0188	0.029
	Deep	0161, 0189	0.016

[a]Uranium concentrations from 2005 sampling event. If more than one well is listed, the concentration listed is the mean value.

2.2.2 Domestic Wells

Concentrations of uranium in ground water in the domestic buffer zone wells (northwest of the Gunnison River) downgradient from the site are well below the MCL of 0.044 mg/L and below the action level set by CDPHE of 0.020 mg/L (Figure 3 and Figure 7). The concentration of uranium (0.027 mg/L) in the sample collected from domestic well 0468 (southeast of the Gunnison River and not in the buffer zone) is below the CDPHE agricultural action level of 0.200 mg/L. This well was historically used for lawn irrigation but is no longer in use because the homeowner uses water out of the Gunnison River for irrigation. This residence is connected to the domestic water supply system.

Ground water has been sampled since 2002 in three new domestic wells (0080, 0081, and 0082) installed just southeast of Tomichi Creek in the new Tomichi Creek Preserve subdivision. The wells are approximately 44 ft deep and the open interval in the casing is unknown. Concentrations of uranium in ground water in the three wells during the past four years has ranged from 0.002 to 0.0155 mg/L, with the maximum below the CDPHE action level of 0.020 mg/L for domestic wells. Because uranium concentrations in ground water in well 0082 have been, at times, above the upper range of background (0.0085 mg/L) (DOE 1996), DOE installed monitor well 0067 adjacent to domestic well 0082 in order to obtain a representative sample in this portion of the aquifer from a well designed for collecting water quality samples. The uranium concentration in the sample collected from well 0067 (0.0078 mg/L) was within the upper range of background.

Wells 0081 and 0082 are not currently in use and are only pumped annually during sampling. Uranium concentrations in samples collected from these wells in 2005 were above background; however, the validity and consistency of results from these domestic wells may be questionable because of effects caused by degradation of steel well casing and stagnant water in the wells. Also, the construction of these wells is unknown and may have an impact on water quality results. DOE does not use results from domestic wells for characterization activities because of these uncertainties. In contrast to these wells, domestic well 0080 has been in use since 2003 and is continually pumped minimizing stagnant water and potential casing effects. Concentrations of uranium in samples collected from this well have been comparable to background and ranged from 0.0013 to 0.0045 mg/L.

Concentrations of manganese in ground water in the domestic wells are well below the DWEL of 1.6 mg/L (Figure 4 and Figure 8).

2.2.3 Surface Water

Concentrations of uranium in surface water in the Gunnison River during 2005 were very low (below 0.0006 mg/L) and indicative of runoff conditions from the melting of mountain snow pack. The concentration of uranium in surface water in the Valco, Inc. pond (0780) decreased to a historical low in 2005 (Figure 9); however, variable concentrations of uranium in surface water in the pit are expected because it is recharged by contaminated ground water and concentrations vary depending on the area and depth of pumping, the rate of discharge, and seasonal interactions between ground water and surface water. The concentration of uranium in the sample collected from Tomichi Creek approximately 1,500 ft downstream from the Valco, Inc. pond discharge point (0248) was elevated (0.0042 mg/L) compared to concentrations in the Gunnison River and may reflect discharge from the Valco, Inc., pond. The uranium

concentration in the sample collected farther downstream on Tomichi Creek (0777) was lower (0.0027 mg/L) as dilution occurs farther from the Valco Inc., discharge point.

Concentrations of manganese in surface water are well below the DWEL of 1.6 mg/L and comparable to background (Figure 4 and Figure 10).

3.0 Conclusions

Concentrations of uranium and manganese in ground water beneath the Gunnison site are still above their relevant MCL and DWEL, respectively, but are decreasing with time, indicating that natural flushing is occurring in the alluvial aquifer (Figure 5 and Figure 6). Concentrations of uranium in ground water downgradient from the site and deeper in the alluvial aquifer in some areas are still elevated, as expected, as the plume migrates downgradient. Results from new monitor wells were consistent with expectations based on the conceptual site model presented in the SOWP.

Concentrations of COPCs in ground water in the potable domestic wells are below the MCL and CDPHE action levels for uranium, and below the DWEL for manganese.

Concentrations of uranium in surface water of the Gunnison River are below 0.0006 mg/L, indicating no site-related contamination of the river. Concentrations of uranium in surface water in the Valco, Inc. pond are elevated, which is expected because the pit is recharged by contaminated ground water. Based on a risk assessment presented in the SOWP, there is no unacceptable risk to human health at these levels (DOE 2001). Concentrations of uranium in Tomichi Creek may be influenced by discharge from the Valco gravel pit pond, but concentrations are comparable to background concentrations in ground water. Concentrations of manganese in surface water are comparable to background.

Ground water flow and transport modeling predicts that uranium concentrations in ground water will decrease to below the UMTRA ground water standard within 100 years. An assessment of the accuracy of ground water model predictions is preliminary because of the limited timeframe of the actual results. Uranium concentrations in the most contaminated portion of the aquifer, on and just downgradient of the millsite, are declining as expected (Figure 5). Figure 11 compares uranium concentrations predicted by ground water flow and transport modeling in ground water just off the southwest corner of the site to actual concentrations determined by analysis of ground water samples from intermediate zone monitor well 0113. As shown in this figure, recent concentrations are significantly lower than concentrations predicted by the ground water model, which indicates that natural flushing processes have been effective to date.

Verification monitoring of COPCs in ground water in the alluvial aquifer and surface water in the vicinity of the Gunnison site will continue on an annual basis to assess the progress of natural flushing. The next update to this report will be compiled after ground water and surface water monitoring in May 2006.

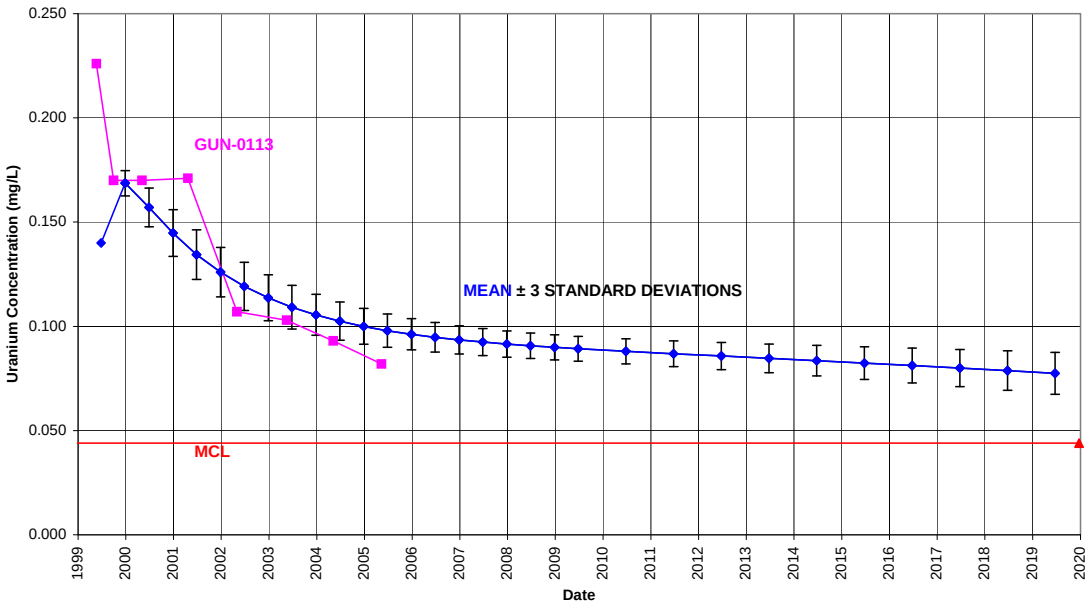

Figure 11. Uranium Concentration—Monitor Well 0113 at the Gunnison, Colorado Site (Predicted and Actual)

4.0 References

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Appendix A

Ground Water Quality Data by Parameter for DOE Monitor Wells

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CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 12:43 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0002	WL	05/19/2005	0001	AL	U	204		F	#	-	-
	mg/L	0006	WL	05/20/2005	0001	AL	O	231		FQ	#	-	-
	mg/L	0012	WL	05/17/2005	0001	AL	O	250		FQ	#	-	-
	mg/L	0013	WL	05/16/2005	0001	AL	D	214		FQ	#	-	-
	mg/L	0062	WL	05/18/2005	0001	AL	O	212		F	#	-	-
	mg/L	0063	WL	05/19/2005	0001	AL	O	200		F	#	-	-
	mg/L	0064	WL	05/19/2005	0001	AL	O	211		F	#	-	-
	mg/L	0065	WL	05/17/2005	0001	AL	O	221		FQ	#	-	-
	mg/L	0066	WL	05/17/2005	0001	AL	O	217		F	#	-	-
	mg/L	0067	WL	05/16/2005	0001	AL	O	242		F	#	-	-
	mg/L	0102	WL	05/19/2005	0001	AL	U	234		F	#	-	-
	mg/L	0105	WL	05/20/2005	0001	AL	O	193		F	#	-	-
	mg/L	0106	WL	05/20/2005	0001	AL	O	48		F	#	-	-
	mg/L	0112	WL	05/17/2005	0001	AL	O	89		F	#	-	-
	mg/L	0113	WL	05/16/2005	0001	AL	D	179		F	#	-	-
	mg/L	0125	WL	05/18/2005	0001	AL	D	209		F	#	-	-
	mg/L	0126	WL	05/18/2005	0001	AL	D	241		FQ	#	-	-
	mg/L	0127	WL	05/18/2005	0001	AL	D	246		F	#	-	-
	mg/L	0135	WL	05/18/2005	0001	AL	D	154		F	#	-	-
	mg/L	0136	WL	05/18/2005	0001	AL	D	931		FG	#	-	-
	mg/L	0160	WL	05/17/2005	0001	AL	D	260		F	#	-	-
	mg/L	0161	WL	05/17/2005	0001	AL	D	203		F	#	-	-
	mg/L	0181	WL	05/17/2005	0001	AL	D	210		F	#	-	-
	mg/L	0183	WL	05/17/2005	0001	AL	D	278		F	#	-	-
	mg/L	0186	WL	05/19/2005	0001	AL	D	234		F	#	-	-
	mg/L	0188	WL	05/19/2005	0001	AL	D	217		F	#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 12:43 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0189	WL	05/19/2005	0001	AL	D	951		F	#	-	-
Manganese	mg/L	0002	WL	05/19/2005	0001	AL	U	0.00053 U		F	#	0.00053	-
	mg/L	0006	WL	05/20/2005	0001	AL	O	0.00053 U		FQ	#	0.00053	-
	mg/L	0012	WL	05/17/2005	0001	AL	O	0.150		FQ	#	0.00053	-
	mg/L	0013	WL	05/16/2005	0001	AL	D	0.00053 U		FQ	#	0.00053	-
	mg/L	0062	WL	05/18/2005	0001	AL	O	0.083		F	#	0.00053	-
	mg/L	0063	WL	05/19/2005	0001	AL	O	0.120		F	#	0.00053	-
	mg/L	0063	WL	05/19/2005	0002	AL	O	0.120		F	#	0.00053	-
	mg/L	0064	WL	05/19/2005	0001	AL	O	0.560		F	#	0.00053	-
	mg/L	0065	WL	05/17/2005	0001	AL	O	0.620		FQ	#	0.00053	-
	mg/L	0066	WL	05/17/2005	0001	AL	O	0.190		F	#	0.00053	-
	mg/L	0067	WL	05/16/2005	0001	AL	O	0.048		F	#	0.00053	-
	mg/L	0102	WL	05/19/2005	0001	AL	U	0.00053 U		F	#	0.00053	-
	mg/L	0105	WL	05/20/2005	0001	AL	O	2.000		F	#	0.00053	-
	mg/L	0106	WL	05/20/2005	0001	AL	O	9.600		F	#	0.00053	-
	mg/L	0112	WL	05/17/2005	0001	AL	O	12.000		F	#	0.00053	-
	mg/L	0113	WL	05/16/2005	0001	AL	D	1.600		F	#	0.00053	-
	mg/L	0113	WL	05/16/2005	0002	AL	D	1.700		F	#	0.00053	-
	mg/L	0125	WL	05/18/2005	0001	AL	D	0.0046	B	F	#	0.00053	-
	mg/L	0126	WL	05/18/2005	0001	AL	D	0.00053 U		FQ	#	0.00053	-
	mg/L	0127	WL	05/18/2005	0001	AL	D	0.160		F	#	0.00053	-
	mg/L	0135	WL	05/18/2005	0001	AL	D	3.400		F	#	0.00053	-
	mg/L	0136	WL	05/18/2005	0001	AL	D	0.00053 U		FG	#	0.00053	-
	mg/L	0160	WL	05/17/2005	0001	AL	D	0.00053 U		F	#	0.00053	-
	mg/L	0161	WL	05/17/2005	0001	AL	D	0.0054		F	#	0.00053	-
	mg/L	0181	WL	05/17/2005	0001	AL	D	0.160		F	#	0.00053	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 12:43 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Manganese	mg/L	0183	WL	05/17/2005	0001	AL	D	0.0019	B	F	#	0.00053	-
	mg/L	0186	WL	05/19/2005	0001	AL	D	0.00053	U	F	#	0.00053	-
	mg/L	0188	WL	05/19/2005	0001	AL	D	0.00053	U	F	#	0.00053	-
	mg/L	0189	WL	05/19/2005	0001	AL	D	0.900		F	#	0.00053	-
Oxidation Reduction Potent	mV	0002	WL	05/19/2005	N001	AL	U	-58		F	#	-	-
	mV	0006	WL	05/20/2005	N001	AL	O	92		FQ	#	-	-
	mV	0012	WL	05/17/2005	N001	AL	O	170		FQ	#	-	-
	mV	0013	WL	05/16/2005	N001	AL	D	133		FQ	#	-	-
	mV	0062	WL	05/18/2005	N001	AL	O	-246		F	#	-	-
	mV	0063	WL	05/19/2005	N001	AL	O	-44		F	#	-	-
	mV	0064	WL	05/19/2005	N001	AL	O	-152		F	#	-	-
	mV	0065	WL	05/17/2005	N001	AL	O	-10		FQ	#	-	-
	mV	0066	WL	05/17/2005	N001	AL	O	134		F	#	-	-
	mV	0067	WL	05/16/2005	N001	AL	O	94		F	#	-	-
	mV	0102	WL	05/19/2005	N001	AL	U	-46		F	#	-	-
	mV	0105	WL	05/20/2005	N001	AL	O	-99		F	#	-	-
	mV	0106	WL	05/20/2005	N001	AL	O	-45		F	#	-	-
	mV	0112	WL	05/17/2005	N001	AL	O	146		F	#	-	-
	mV	0113	WL	05/16/2005	N001	AL	D	133		F	#	-	-
	mV	0125	WL	05/18/2005	N001	AL	D	-231		F	#	-	-
	mV	0126	WL	05/18/2005	N001	AL	D	-67		FQ	#	-	-
	mV	0127	WL	05/18/2005	N001	AL	D	-251		F	#	-	-
	mV	0135	WL	05/18/2005	N001	AL	D	-259		F	#	-	-
	mV	0136	WL	05/18/2005	N001	AL	D	-346		FG	#	-	-
	mV	0160	WL	05/17/2005	N001	AL	D	121		F	#	-	-
	mV	0161	WL	05/17/2005	N001	AL	D	67		F	#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 12:43 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	0181	WL	05/17/2005	N001	AL	D	91.5		F	#	-	-
	mV	0183	WL	05/17/2005	N001	AL	D	78		F	#	-	-
	mV	0186	WL	05/19/2005	N001	AL	D	-17		F	#	-	-
	mV	0188	WL	05/19/2005	N001	AL	D	27		F	#	-	-
	mV	0189	WL	05/19/2005	N001	AL	D	-113		F	#	-	-
pH	s.u.	0002	WL	05/19/2005	N001	AL	U	7.41		F	#	-	-
	s.u.	0006	WL	05/20/2005	N001	AL	O	7.18		FQ	#	-	-
	s.u.	0012	WL	05/17/2005	N001	AL	O	7.08		FQ	#	-	-
	s.u.	0013	WL	05/16/2005	N001	AL	D	7.12		FQ	#	-	-
	s.u.	0062	WL	05/18/2005	N001	AL	O	7.47		F	#	-	-
	s.u.	0063	WL	05/19/2005	N001	AL	O	7.50		F	#	-	-
	s.u.	0064	WL	05/19/2005	N001	AL	O	7.33		F	#	-	-
	s.u.	0065	WL	05/17/2005	N001	AL	O	7.25		FQ	#	-	-
	s.u.	0066	WL	05/17/2005	N001	AL	O	7.23		F	#	-	-
	s.u.	0067	WL	05/16/2005	N001	AL	O	6.64		F	#	-	-
	s.u.	0102	WL	05/19/2005	N001	AL	U	7.46		F	#	-	-
	s.u.	0105	WL	05/20/2005	N001	AL	O	7.00		F	#	-	-
	s.u.	0106	WL	05/20/2005	N001	AL	O	5.73		F	#	-	-
	s.u.	0112	WL	05/17/2005	N001	AL	O	6.07		F	#	-	-
	s.u.	0113	WL	05/16/2005	N001	AL	D	6.52		F	#	-	-
	s.u.	0125	WL	05/18/2005	N001	AL	D	7.22		F	#	-	-
	s.u.	0126	WL	05/18/2005	N001	AL	D	7.10		FQ	#	-	-
	s.u.	0127	WL	05/18/2005	N001	AL	D	7.35		F	#	-	-
	s.u.	0135	WL	05/18/2005	N001	AL	D	7.13		F	#	-	-
	s.u.	0136	WL	05/18/2005	N001	AL	D	12.45		FG	#	-	-
	s.u.	0160	WL	05/17/2005	N001	AL	D	6.58		F	#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 12:43 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	0161	WL	05/17/2005	N001	AL	D	6.63		F	#	-	-
	s.u.	0181	WL	05/17/2005	N001	AL	D	6.77		F	#	-	-
	s.u.	0183	WL	05/17/2005	N001	AL	D	6.40		F	#	-	-
	s.u.	0186	WL	05/19/2005	N001	AL	D	7.54		F	#	-	-
	s.u.	0188	WL	05/19/2005	N001	AL	D	7.21		F	#	-	-
	s.u.	0189	WL	05/19/2005	N001	AL	D	6.46		F	#	-	-
Specific Conductance	umhos/cm	0002	WL	05/19/2005	N001	AL	U	582		F	#	-	-
	umhos/cm	0006	WL	05/20/2005	N001	AL	O	2274		FQ	#	-	-
	umhos/cm	0012	WL	05/17/2005	N001	AL	O	580		FQ	#	-	-
	umhos/cm	0013	WL	05/16/2005	N001	AL	D	496		FQ	#	-	-
	umhos/cm	0062	WL	05/18/2005	N001	AL	O	514		F	#	-	-
	umhos/cm	0063	WL	05/19/2005	N001	AL	O	522		F	#	-	-
	umhos/cm	0064	WL	05/19/2005	N001	AL	O	560		F	#	-	-
	umhos/cm	0065	WL	05/17/2005	N001	AL	O	761		FQ	#	-	-
	umhos/cm	0066	WL	05/17/2005	N001	AL	O	712		F	#	-	-
	umhos/cm	0067	WL	05/16/2005	N001	AL	O	450		F	#	-	-
	umhos/cm	0102	WL	05/19/2005	N001	AL	U	546		F	#	-	-
	umhos/cm	0105	WL	05/20/2005	N001	AL	O	488		F	#	-	-
	umhos/cm	0106	WL	05/20/2005	N001	AL	O	1941		F	#	-	-
	umhos/cm	0112	WL	05/17/2005	N001	AL	O	1137		F	#	-	-
	umhos/cm	0113	WL	05/16/2005	N001	AL	D	510		F	#	-	-
	umhos/cm	0125	WL	05/18/2005	N001	AL	D	485		F	#	-	-
	umhos/cm	0126	WL	05/18/2005	N001	AL	D	505		FQ	#	-	-
	umhos/cm	0127	WL	05/18/2005	N001	AL	D	1103		F	#	-	-
	umhos/cm	0135	WL	05/18/2005	N001	AL	D	393		F	#	-	-
	umhos/cm	0136	WL	05/18/2005	N001	AL	D	4272		FG	#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 12:43 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Specific Conductance	umhos/cm	0160	WL	05/17/2005	N001	AL	D	7.98		F	#	-	-
	umhos/cm	0161	WL	05/17/2005	N001	AL	D	784		F	#	-	-
	umhos/cm	0181	WL	05/17/2005	N001	AL	D	580		F	#	-	-
	umhos/cm	0183	WL	05/17/2005	N001	AL	D	1113		F	#	-	-
	umhos/cm	0186	WL	05/19/2005	N001	AL	D	793		F	#	-	-
	umhos/cm	0188	WL	05/19/2005	N001	AL	D	832		F	#	-	-
	umhos/cm	0189	WL	05/19/2005	N001	AL	D	2080		F	#	-	-
Temperature	C	0002	WL	05/19/2005	N001	AL	U	9.06		F	#	-	-
	C	0006	WL	05/20/2005	N001	AL	O	8.44		FQ	#	-	-
	C	0012	WL	05/17/2005	N001	AL	O	13.55		FQ	#	-	-
	C	0013	WL	05/16/2005	N001	AL	D	13.37		FQ	#	-	-
	C	0062	WL	05/18/2005	N001	AL	O	10.21		F	#	-	-
	C	0063	WL	05/19/2005	N001	AL	O	9.21		F	#	-	-
	C	0064	WL	05/19/2005	N001	AL	O	9.37		F	#	-	-
	C	0065	WL	05/17/2005	N001	AL	O	9.20		FQ	#	-	-
	C	0066	WL	05/17/2005	N001	AL	O	8.32		F	#	-	-
	C	0067	WL	05/16/2005	N001	AL	O	9.52		F	#	-	-
	C	0102	WL	05/19/2005	N001	AL	U	10.84		F	#	-	-
	C	0105	WL	05/20/2005	N001	AL	O	11.24		F	#	-	-
	C	0106	WL	05/20/2005	N001	AL	O	9.39		F	#	-	-
	C	0112	WL	05/17/2005	N001	AL	O	11.78		F	#	-	-
	C	0113	WL	05/16/2005	N001	AL	D	13.32		F	#	-	-
	C	0125	WL	05/18/2005	N001	AL	D	7.10		F	#	-	-
	C	0126	WL	05/18/2005	N001	AL	D	8.00		FQ	#	-	-
	C	0127	WL	05/18/2005	N001	AL	D	9.90		F	#	-	-
	C	0135	WL	05/18/2005	N001	AL	D	6.62		F	#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 12:43 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	0136	WL	05/18/2005	N001	AL	D	14.68		FG	#	-	-
	C	0160	WL	05/17/2005	N001	AL	D	7.97		F	#	-	-
	C	0161	WL	05/17/2005	N001	AL	D	7.88		F	#	-	-
	C	0181	WL	05/17/2005	N001	AL	D	7.16		F	#	-	-
	C	0183	WL	05/17/2005	N001	AL	D	8.74		F	#	-	-
	C	0186	WL	05/19/2005	N001	AL	D	10.20		F	#	-	-
	C	0188	WL	05/19/2005	N001	AL	D	8.98		F	#	-	-
	C	0189	WL	05/19/2005	N001	AL	D	10.59		F	#	-	-
Turbidity	NTU	0002	WL	05/19/2005	N001	AL	U	1.50		F	#	-	-
	NTU	0006	WL	05/20/2005	N001	AL	O	14.9		FQ	#	-	-
	NTU	0012	WL	05/17/2005	N001	AL	O	5.11		FQ	#	-	-
	NTU	0013	WL	05/16/2005	N001	AL	D	1.83		FQ	#	-	-
	NTU	0062	WL	05/18/2005	N001	AL	O	8.78		F	#	-	-
	NTU	0063	WL	05/19/2005	N001	AL	O	3.89		F	#	-	-
	NTU	0064	WL	05/19/2005	N001	AL	O	4.45		F	#	-	-
	NTU	0065	WL	05/17/2005	N001	AL	O	7.92		FQ	#	-	-
	NTU	0066	WL	05/17/2005	N001	AL	O	6.32		F	#	-	-
	NTU	0067	WL	05/16/2005	N001	AL	O	3.65		F	#	-	-
	NTU	0102	WL	05/19/2005	N001	AL	U	1.22		F	#	-	-
	NTU	0105	WL	05/20/2005	N001	AL	O	2.96		F	#	-	-
	NTU	0106	WL	05/20/2005	N001	AL	O	3.88		F	#	-	-
	NTU	0112	WL	05/17/2005	N001	AL	O	2.28		F	#	-	-
	NTU	0113	WL	05/16/2005	N001	AL	D	1.01		F	#	-	-
	NTU	0125	WL	05/18/2005	N001	AL	D	1.12		F	#	-	-
	NTU	0126	WL	05/18/2005	N001	AL	D	5.35		FQ	#	-	-
	NTU	0127	WL	05/18/2005	N001	AL	D	8.79		F	#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 12:43 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	0135	WL	05/18/2005	N001	AL	D	2.93		F	#	-	-
	NTU	0136	WL	05/18/2005	N001	AL	D	25.2		FG	#	-	-
	NTU	0160	WL	05/17/2005	N001	AL	D	0.75		F	#	-	-
	NTU	0161	WL	05/17/2005	N001	AL	D	2.15		F	#	-	-
	NTU	0181	WL	05/17/2005	N001	AL	D	8.02		F	#	-	-
	NTU	0183	WL	05/17/2005	N001	AL	D	0.71		F	#	-	-
	NTU	0186	WL	05/19/2005	N001	AL	D	0.75		F	#	-	-
	NTU	0188	WL	05/19/2005	N001	AL	D	0.44		F	#	-	-
	NTU	0189	WL	05/19/2005	N001	AL	D	2.97		F	#	-	-
Uranium	mg/L	0002	WL	05/19/2005	0001	AL	U	0.0022		F	#	2.2E-06	-
	mg/L	0006	WL	05/20/2005	0001	AL	O	0.730		FQ	#	2.2E-05	-
	mg/L	0012	WL	05/17/2005	0001	AL	O	0.380		FQ	#	2.2E-05	-
	mg/L	0013	WL	05/16/2005	0001	AL	D	0.022		FQ	#	2.2E-06	-
	mg/L	0062	WL	05/18/2005	0001	AL	O	0.007		F	#	2.2E-06	-
	mg/L	0063	WL	05/19/2005	0001	AL	O	0.014		F	#	2.2E-06	-
	mg/L	0063	WL	05/19/2005	0002	AL	O	0.014		F	#	2.2E-06	-
	mg/L	0064	WL	05/19/2005	0001	AL	O	0.019		F	#	2.2E-06	-
	mg/L	0065	WL	05/17/2005	0001	AL	O	0.030		FQ	#	2.2E-06	-
	mg/L	0066	WL	05/17/2005	0001	AL	O	0.024		F	#	2.2E-06	-
	mg/L	0067	WL	05/16/2005	0001	AL	O	0.0078		F	#	2.2E-06	-
	mg/L	0102	WL	05/19/2005	0001	AL	U	0.0034		F	#	2.2E-06	-
	mg/L	0105	WL	05/20/2005	0001	AL	O	0.017		F	#	2.2E-06	-
	mg/L	0106	WL	05/20/2005	0001	AL	O	0.0014		F	#	2.2E-06	-
	mg/L	0112	WL	05/17/2005	0001	AL	O	0.021		F	#	2.2E-06	-
	mg/L	0113	WL	05/16/2005	0001	AL	D	0.082		F	#	2.2E-06	-
	mg/L	0113	WL	05/16/2005	0002	AL	D	0.081		F	#	2.2E-06	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 12:43 pm

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0125	WL	05/18/2005	0001	AL	D	0.009	E	F	#	2.2E-06	-
	mg/L	0126	WL	05/18/2005	0001	AL	D	0.014		FQ	#	2.2E-06	-
	mg/L	0127	WL	05/18/2005	0001	AL	D	0.032		F	#	2.2E-06	-
	mg/L	0135	WL	05/18/2005	0001	AL	D	0.00059		F	#	2.2E-06	-
	mg/L	0136	WL	05/18/2005	0001	AL	D	0.00008	B	UFG	#	2.2E-06	-
	mg/L	0160	WL	05/17/2005	0001	AL	D	0.022		F	#	2.2E-06	-
	mg/L	0161	WL	05/17/2005	0001	AL	D	0.016		F	#	2.2E-06	-
	mg/L	0181	WL	05/17/2005	0001	AL	D	0.012		F	#	2.2E-06	-
	mg/L	0183	WL	05/17/2005	0001	AL	D	0.058		F	#	2.2E-06	-
	mg/L	0186	WL	05/19/2005	0001	AL	D	0.024		F	#	2.2E-06	-
	mg/L	0188	WL	05/19/2005	0001	AL	D	0.035		F	#	2.2E-06	-
	mg/L	0189	WL	05/19/2005	0001	AL	D	0.016		F	#	2.2E-06	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 12:43 pm

PARAMETER	UNITS	LOCATION ID	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='GUN01' AND location_code in('0062','0063','0064','0065','0066','0067','0002','0102','0103','0105','0006','0012','0106','0112','0013','0113','0125','0126','0127','0135','0136','0181','0183','0186','0188','0189','0160','0161') AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #5/1/2005# and #5/30/2005#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LOCATION TYPES: WL WELL

ZONES OF COMPLETION:

AL ALLUVIUM

FLOW CODES: D DOWN GRADIENT O ON-SITE U UPGRADIENT

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: 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 Arochlor 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.	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.

Appendix B

Ground Water Quality Data by Parameter for Domestic Wells

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CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 11:30 am

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0080	WL	05/16/2005	N001	AL		221			#	-	-
	mg/L	0081	WL	05/18/2005	N001	AL		122			#	-	-
	mg/L	0082	WL	05/16/2005	N001	AL		197			#	-	-
	mg/L	0468	WL	05/19/2005	N001	AL	D	239			#	-	-
	mg/L	0469	WL	05/17/2005	N001	AL	D	111			#	-	-
	mg/L	0665	WL	05/19/2005	N001	AL	C	136			#	-	-
	mg/L	0667	WL	05/19/2005	N001	AL	N	87			#	-	-
	mg/L	0683	WL	05/19/2005	N001	AL	N	98			#	-	-
	mg/L	0685	WL	05/19/2005	N001	AL	N	97			#	-	-
Manganese	mg/L	0080	WL	05/16/2005	N001	AL		0.160			#	0.00053	-
	mg/L	0081	WL	05/18/2005	N001	AL		0.058			#	0.00053	-
	mg/L	0082	WL	05/16/2005	N001	AL		0.260			#	0.00053	-
	mg/L	0468	WL	05/19/2005	N001	AL	D	0.550			#	0.00053	-
	mg/L	0469	WL	05/17/2005	N001	AL	D	0.012			#	0.00053	-
	mg/L	0665	WL	05/19/2005	N001	AL	C	0.031			#	0.00053	-
	mg/L	0667	WL	05/19/2005	N001	AL	N	0.001	B	U	#	0.00053	-
	mg/L	0683	WL	05/19/2005	N001	AL	N	0.0014	B	U	#	0.00053	-
	mg/L	0683	WL	05/19/2005	N002	AL	N	0.0018	B	U	#	0.00053	-
	mg/L	0685	WL	05/19/2005	N001	AL	N	0.0076			#	0.00053	-
Oxidation Reduction Potent	mV	0080	WL	05/16/2005	N001	AL		-14			#	-	-
	mV	0081	WL	05/18/2005	N001	AL		-20			#	-	-
	mV	0082	WL	05/16/2005	N001	AL		-17			#	-	-
	mV	0468	WL	05/19/2005	N001	AL	D	-160			#	-	-
	mV	0469	WL	05/17/2005	N001	AL	D	92			#	-	-
	mV	0665	WL	05/19/2005	N001	AL	C	18.4			#	-	-
	mV	0667	WL	05/19/2005	N001	AL	N	51.7			#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 11:30 am

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	0683	WL	05/19/2005	N001	AL	N	39.0			#	-	-
	mV	0685	WL	05/19/2005	N001	AL	N	19.1			#	-	-
pH	s.u.	0080	WL	05/16/2005	N001	AL		6.64			#	-	-
	s.u.	0081	WL	05/18/2005	N001	AL		7.09			#	-	-
	s.u.	0082	WL	05/16/2005	N001	AL		6.67			#	-	-
	s.u.	0468	WL	05/19/2005	N001	AL	D	7.18			#	-	-
	s.u.	0469	WL	05/17/2005	N001	AL	D	6.85			#	-	-
	s.u.	0665	WL	05/19/2005	N001	AL	C	7.17			#	-	-
	s.u.	0667	WL	05/19/2005	N001	AL	N	7.11			#	-	-
	s.u.	0683	WL	05/19/2005	N001	AL	N	7.71			#	-	-
	s.u.	0685	WL	05/19/2005	N001	AL	N	7.38			#	-	-
Specific Conductance	umhos/cm	0080	WL	05/16/2005	N001	AL		470			#	-	-
	umhos/cm	0081	WL	05/18/2005	N001	AL		473			#	-	-
	umhos/cm	0082	WL	05/16/2005	N001	AL		470			#	-	-
	umhos/cm	0468	WL	05/19/2005	N001	AL	D	874			#	-	-
	umhos/cm	0469	WL	05/17/2005	N001	AL	D	275			#	-	-
	umhos/cm	0665	WL	05/19/2005	N001	AL	C	309			#	-	-
	umhos/cm	0667	WL	05/19/2005	N001	AL	N	228			#	-	-
	umhos/cm	0683	WL	05/19/2005	N001	AL	N	265			#	-	-
	umhos/cm	0685	WL	05/19/2005	N001	AL	N	268			#	-	-
Temperature	C	0080	WL	05/16/2005	N001	AL		10.48			#	-	-
	C	0081	WL	05/18/2005	N001	AL		8.42			#	-	-
	C	0082	WL	05/16/2005	N001	AL		8.68			#	-	-
	C	0468	WL	05/19/2005	N001	AL	D	7.85			#	-	-
	C	0469	WL	05/17/2005	N001	AL	D	9.40			#	-	-
	C	0665	WL	05/19/2005	N001	AL	C	8.37			#	-	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 11:30 am

PARAMETER	UNITS	LOCATION ID	LOCATION TYPE	SAMPLE: DATE	ID	ZONE COMPL	FLOW REL.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	0667	WL	05/19/2005	N001	AL	N	9.05			#	-	-
	C	0683	WL	05/19/2005	N001	AL	N	9.90			#	-	-
	C	0685	WL	05/19/2005	N001	AL	N	15.55			#	-	-
Turbidity	NTU	0080	WL	05/16/2005	N001	AL		7.18			#	-	-
	NTU	0081	WL	05/18/2005	N001	AL		9.75			#	-	-
	NTU	0082	WL	05/16/2005	N001	AL		9.08			#	-	-
	NTU	0468	WL	05/19/2005	N001	AL	D	197			#	-	-
	NTU	0469	WL	05/17/2005	N001	AL	D	8.55			#	-	-
	NTU	0665	WL	05/19/2005	N001	AL	C	1.51			#	-	-
	NTU	0667	WL	05/19/2005	N001	AL	N	6.75			#	-	-
	NTU	0683	WL	05/19/2005	N001	AL	N	6.61			#	-	-
	NTU	0685	WL	05/19/2005	N001	AL	N	1.13			#	-	-
Uranium	mg/L	0080	WL	05/16/2005	N001	AL		0.0042			#	2.2E-06	-
	mg/L	0081	WL	05/18/2005	N001	AL		0.013			#	2.2E-06	-
	mg/L	0082	WL	05/16/2005	N001	AL		0.0088			#	2.2E-06	-
	mg/L	0468	WL	05/19/2005	N001	AL	D	0.027			#	2.2E-06	-
	mg/L	0469	WL	05/17/2005	N001	AL	D	0.0016			#	2.2E-06	-
	mg/L	0665	WL	05/19/2005	N001	AL	C	0.0026	E		#	2.2E-06	-
	mg/L	0667	WL	05/19/2005	N001	AL	N	0.00087			#	2.2E-06	-
	mg/L	0683	WL	05/19/2005	N001	AL	N	0.0008			#	2.2E-06	-
	mg/L	0683	WL	05/19/2005	N002	AL	N	0.00075			#	2.2E-06	-
	mg/L	0685	WL	05/19/2005	N001	AL	N	0.0029			#	2.2E-06	-

CLASSIC GROUND WATER QUALITY DATA BY PARAMETER WITH ZONE (USEE201) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 11:30 am

PARAMETER	UNITS	LOCATION ID	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='GUN01' AND location_code in('0080','0081','0082','0468','0469','0665','0667','0683','0685') AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #5/1/2005# and #5/30/2005#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LOCATION TYPES: WL WELL

ZONES OF COMPLETION:

AL ALLUVIUM

FLOW CODES: C CROSS GRADIENT D DOWN GRADIENT N UNKNOWN

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: 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 Arochlor 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.	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.

Appendix C

Surface Water Quality Data by Parameter

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SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 11:32 am

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0248	05/18/2005	0001	135			#	-	-
	mg/L	0777	05/17/2005	0001	126			#	-	-
	mg/L	0780	05/16/2005	0001	158			#	-	-
	mg/L	0792	05/17/2005	0001	80			#	-	-
	mg/L	0795	05/17/2005	0001	75			#	-	-
Manganese	mg/L	0248	05/18/2005	0001	0.130			#	0.00053	-
	mg/L	0777	05/17/2005	0001	0.140			#	0.00053	-
	mg/L	0780	05/16/2005	0001	0.0048 B			#	0.00053	-
	mg/L	0792	05/17/2005	0001	0.017			#	0.00053	-
	mg/L	0795	05/17/2005	0001	0.016			#	0.00053	-
Oxidation Reduction Potent	mV	0248	05/18/2005	N001	-18.6			#	-	-
	mV	0777	05/17/2005	N001	88.7			#	-	-
	mV	0780	05/16/2005	N001	103			#	-	-
	mV	0792	05/17/2005	N001	181			#	-	-
	mV	0795	05/17/2005	N001	66			#	-	-
pH	s.u.	0248	05/18/2005	N001	7.95			#	-	-
	s.u.	0777	05/17/2005	N001	8.16			#	-	-
	s.u.	0780	05/16/2005	N001	7.72			#	-	-
	s.u.	0792	05/17/2005	N001	8.27			#	-	-
	s.u.	0795	05/17/2005	N001	8.13			#	-	-
Specific Conductance	umhos/cm	0248	05/18/2005	N001	346			#	-	-
	umhos/cm	0777	05/17/2005	N001	308			#	-	-
	umhos/cm	0780	05/16/2005	N001	559			#	-	-
	umhos/cm	0792	05/17/2005	N001	194			#	-	-
	umhos/cm	0795	05/17/2005	N001	195			#	-	-
Temperature	C	0248	05/18/2005	N001	8.99			#	-	-
	C	0777	05/17/2005	N001	14.19			#	-	-
	C	0780	05/16/2005	N001	13.78			#	-	-
	C	0792	05/17/2005	N001	13.07			#	-	-
	C	0795	05/17/2005	N001	8.48			#	-	-
Turbidity	NTU	0248	05/18/2005	N001	9.95			#	-	-
	NTU	0777	05/17/2005	N001	10.2			#	-	-
	NTU	0780	05/16/2005	N001	9.52			#	-	-
	NTU	0792	05/17/2005	N001	28.7			#	-	-
	NTU	0795	05/17/2005	N001	47.1			#	-	-
Uranium	mg/L	0248	05/18/2005	0001	0.0042			#	2.2E-06	-
	mg/L	0777	05/17/2005	0001	0.0027			#	2.2E-06	-

SURFACE WATER QUALITY DATA BY PARAMETER (USEE800) FOR SITE GUN01, Gunnison Processing Site
REPORT DATE: 8/17/2005 11:32 am

PARAMETER	UNITS	LOCATION ID	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0780	05/16/2005	0001	0.021			#	2.2E-06	-
	mg/L	0792	05/17/2005	0001	0.0005			#	2.2E-06	-
	mg/L	0795	05/17/2005	0001	0.0004			#	2.2E-06	-

RECORDS: SELECTED FROM USEE800 WHERE site_code='GUN01' AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #5/1/2005# and #5/30/2005#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

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- + 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: Analyte also found in method blank.
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- 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 Arochlor 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.
- J Estimated value.
- Q Qualitative result due to sampling technique
- U Parameter analyzed for but was not detected.
- G Possible grout contamination, pH > 9.
- L Less than 3 bore volumes purged prior to sampling.
- R Unusable result.
- X Location is undefined.

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