DOE–EM/GJ1441–2007

Office of Environmental Management – Grand Junction

UMTRA Project

Fall 2006 Assessment of Matheson Wetlands Hydrogeology and Ground Water Chemistry

March 2007

U.S. Department of Energy

Office of Environmental Management

Work Performed Under DOE Contract No. DE–AC01–02GJ79491
for the U.S. Department of Energy Office of Environmental Management.
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Fall 2006 Assessment of Matheson Wetlands Hydrogeology and Ground Water Chemistry

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

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1.0 Introduction

This document presents an updated assessment of ground water conditions in the vicinity of the Scott M. Matheson Wetlands Preserve (Matheson Wetlands or wetlands preserve), located on the east side of the Colorado River in Moab Valley, Utah (shown as Moab Marsh in Figure 1). In addition to describing general ground water flow patterns southeast of the river, this study uses chemical data collected in 2005 and 2006 to determine whether wetlands ground water is related to contaminated ground water found beneath the Moab Uranium Mill Tailings Remedial Action (UMTRA) Project Site (Moab Site), located on the west bank of the river (Figure 1). Though an earlier investigation by University of Utah personnel (Gardner and Solomon 2003) and related papers (Gardner 2004, Pataki et al. 2005) have suggested that site-derived contamination previously migrated and continues to migrate under the river to the wetlands, multiple studies by the U.S. Department of Energy (DOE) have presented physicochemical evidence and analyses to the contrary. Information presented herein is intended to help shed light on this issue as well as provide a general, up-to-date assessment of ground water flow and chemistry on the river's southeast side.

The ground water contamination at the Moab Site was caused by local uranium milling operations between the 1950s and 1980s. Some of the contaminants were contributed by seepage from the Moab tailings pile, located about 700 to 750 feet (ft) west-northwest of the river (Figure 1). The most notable contaminant from tailings seepage was dissolved ammonia, which today occurs in ground water over a wide swath hydraulically downgradient of the pile and discharges to the river near its west bank, where it can affect the well being of endangered fish species. Dissolved uranium, another constituent of concern that resulted from milling operations, also migrates eastward toward and discharges to the west bank of the river. Both of these constituents have been observed in ground water southeast of the river but at concentrations that are much lower than those attributed to contamination associated with the tailings pile and milling operations.

Studies of the Moab Site over the past 5 years have shown that the local ground water chemistry has been and continues to be affected by a variety of hydrologic and geochemical processes, many of which are unique to Moab Valley. As a result of these processes, contamination associated with historical milling activities is found west of the river not only in shallow ground water that contributes the ammonia found in potential fish habitat but also in relatively deep ground water containing brine. The brine, which is caused mostly by natural phenomena, tends to mix with both contaminated ground water and relatively fresh water entering the site to the west and north of the tailings pile, which in turn causes shallow ground water discharging to the river to also be quite saline. This report discusses how brine occurring in ground water adjacent to the Colorado River and at the Matheson Wetlands is caused entirely by natural processes, and is not brine from ground water beneath the Moab Site. Though the chemical data used to arrive at this conclusion are similar to those used by Gardner and Solomon (2003), the interpretation of the data is noticeably different from the assessment presented by the University of Utah investigators.

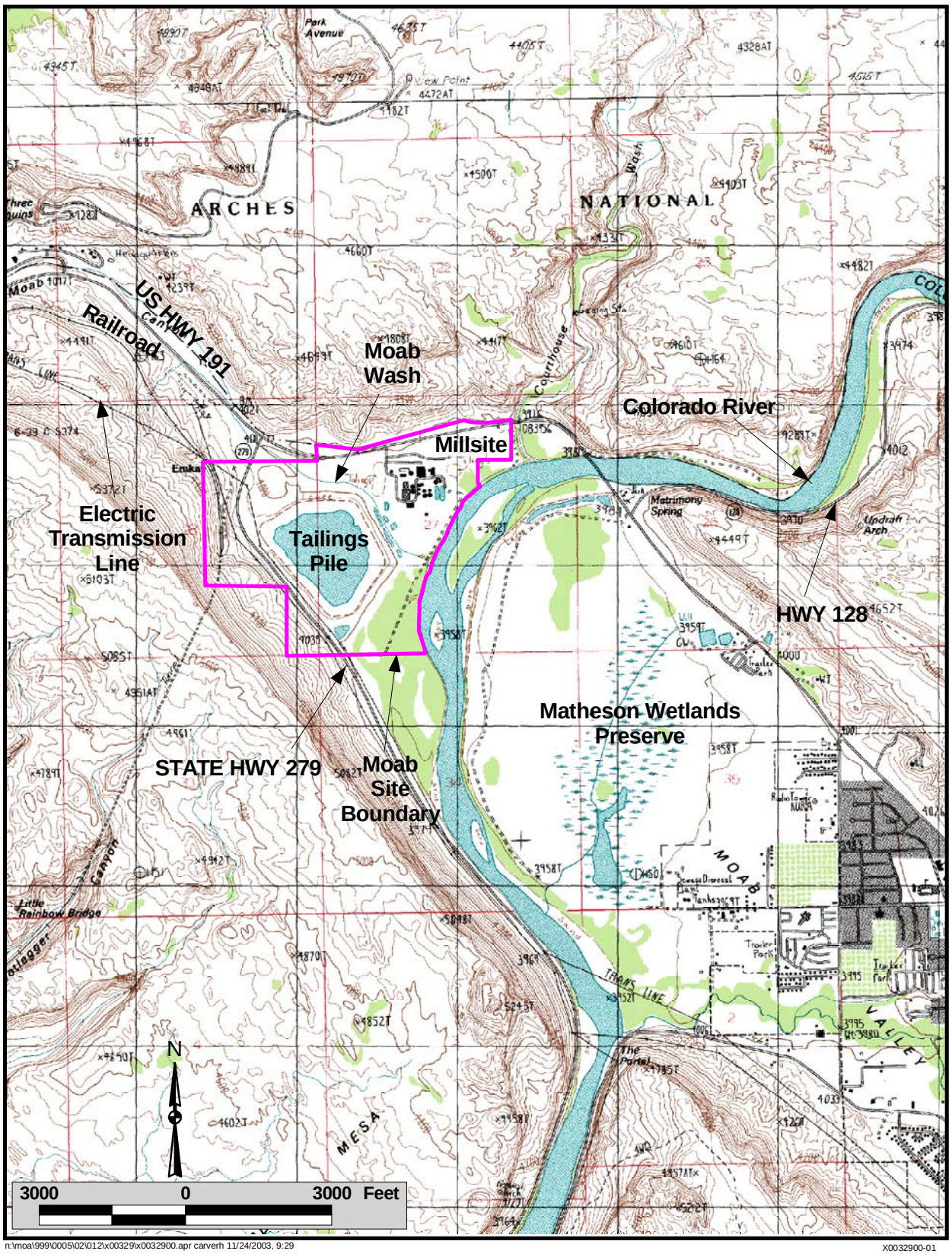

Figure 1. Map of the Northwest End of Moab Valley Including the Matheson Wetlands (Moab Marsh)

2.0 Study Scope

The primary objectives of this document are to (1) describe ground water flow processes in an area located immediately southeast of the Colorado River where it passes through the northwest end of Moab Valley (Figure 1), and (2) determine if dissolved constituents in Matheson Wetlands ground water are related to contamination at the Moab Site or reflect alternative sources, such as natural phenomena. These objectives are met through the analysis of various sources of information, including (a) previously published reports on regional and local hydrogeology; (b) measured water levels at several monitor wells and piezometers on the wetlands preserve; (c) concentration data for key ground water analytes (e.g., total dissolved solids [TDS], ammonia, and uranium), and (d) additional water chemistry parameters indicative of dissolved constituent distributions and chemical transport.

The opportunity was taken in this study to conduct a more comprehensive evaluation of water chemistry data from the wetlands preserve than heretofore performed by the DOE. This was made possible mostly by the collection of new data during 2005 and 2006 in the area southeast of the river using a list of water quality parameters that was expanded in comparison to previous studies by DOE. The additional data were collected partly to identify potential occurrences of contaminants other than ammonia or uranium and partly to develop feasible explanations for past observations of ammonia and uranium in the vicinity of the wetlands. Descriptions of chemical transport processes that appear to be occurring in local ground water prior to its discharge to the river result from analyses of the new data.

2.1 Sampling Locations

An aerial photograph showing the locations that were sampled by DOE in 2005 and 2006 on the southeast side of the Colorado River is presented in Figure 2. For this investigation, nine wells, 24 piezometers, and three surface water sites on the river were sampled. Some of these locations were previously sampled by DOE to support descriptions of regional and local hydrogeology presented in the Moab Site Observational Work Plan (SOWP) (DOE 2003c).

Only existing wells and piezometers were sampled for this study (i.e., no new wells were installed). Although numerous monitor wells have been installed at the Matheson Wetlands, many of them are difficult to find because they are often covered and obscured by thick vegetation. Eight of the nine wells that were sampled in 2005 and 2006 were in three monitoring clusters: BL1, BL2, and BL3 (Figure 2), data from which make it possible to discern changes in water chemistry with depth. The ninth well was W1-4.3, which is the shallowest monitoring location at a site consisting mostly of piezometers. Most of the piezometers were also installed as part of vertical sampling clusters.

Some explanation of the well-naming convention used for Matheson Wetland monitoring locations is helpful in understanding the types of wells that have been used to study local ground water. Wells at the BL1, BL2, and BL3 clusters are also assigned letters describing their relative depths, with S, M, and D indicating shallow, medium, and deep, respectively. With the exception of one well, W1-4.3, locations whose names begin with M, N, or W are piezometers with screen lengths of 0.5 ft. The number following the M, N, or W lead letter represents a distinct location within the wetlands preserve, and the number after the following hyphen represents the approximate depth in meters from the top of well casing (TOC) to the midpoint of the screen. Thus, N2-6.5 signifies a piezometer with a screen midpoint located about 6.5 meters below TOC.

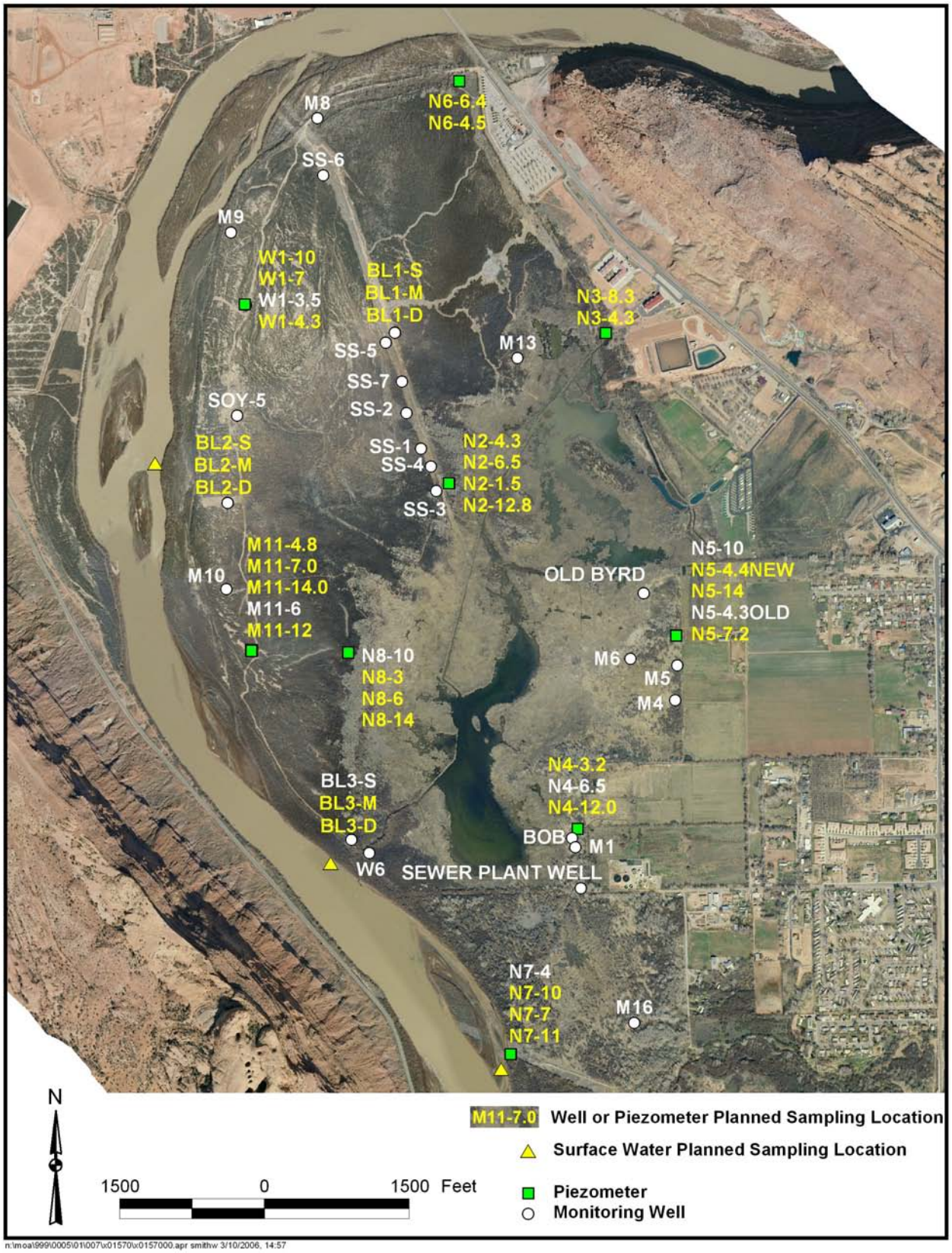

Figure 2. Wells and Piezometers at the Matheson Wetlands Used for Ground Water Sampling in 2005 and 2006

Relevant data regarding the construction of the wells and piezometers are presented in Table 1. As indicated in the table, the shallowest monitoring locations are typically screened at depths of about 5 to 20 ft below ground surface (bgs), or just below the local water table. The deepest wells are BL1-D, BL2-D, and BL3-D, which are screened at respective depths of about 138, 142, and 100 ft bgs, well below the water table. The wells in clusters BL1, BL2, and BL3 are relatively new and well constructed, and further information regarding them, including logs of the sedimentary deposits encountered when drilling the borehole for each cluster, is presented in Gardner and Solomon (2003).

It should be noted that some of the wells and piezometers shown in Figure 2 are not listed in Table 1 because they could not be accessed for water sampling during this investigation. In addition, not all of the monitoring sites sampled for this investigation were included in the Gardner and Solomon (2003) study, and vice versa.

2.2 Scope of Data Interpretation

The data analysis presented in this report was not intended to be an exhaustive description of hydrogeologic and geochemical processes occurring in Moab Valley and surrounding areas. Rather, the data interpretation included in following sections focuses on factors that may adversely affect water quality in the portion of the valley located just southeast of the Colorado River. Included in the list of possible problems with water quality are high salinity, which can be sufficiently large to indicate the presence of brine in some areas, and relatively high uranium concentrations that were noticed in previous studies of the wetlands preserve (DOE 2003c, Gardner and Solomon 2003). In addition, considerable attention is paid to occurrences of ammonia in ground water since this constituent has been identified as a potential threat to the well being of endangered fish species in the river.

Table 1. Construction Data for Matheson Wetlands Wells and Piezometers

Sampling Location	Well or Piezometer	Inside Diameter (inches)	Ground Elevation (ft amsl*)	Top of Casing Elevation (ft amsl)	Screen Length (ft)	Depth to Midpoint of Screen (ft bgs)	Elevation of Screen Midpoint (ft amsl)
BL1-S	well	2	3964.92	3966.91	2.0	52.6	3914.30
BL1-M	well	2	3964.92	3967.21	2.0	97.3	3869.90
BL1-D	well	2	3964.92	3967.33	2.0	138.3	3829.04
BL2-S	well	2	3965.70	3967.67	2.0	55.2	3912.44
BL2-M	well	2	3965.70	3967.78	2.0	101.1	3866.66
BL2-D	well	2	3965.70	3967.96	2.0	141.7	3826.22
BL3-M	well	2	3962.90	3964.93	2.0	47.7	3917.26
BL3-D	well	2	3962.90	3965.02	2.0	100.1	3864.94
M11-4.8	piezometer	0.5	3963.27	3964.61	0.5	12.1	3951.21
M11-7.0	piezometer	0.5	3963.19	3964.56	0.5	16.7	3946.50
M11-12	piezometer	0.5	3963.46	3964.16	0.5	39.4	3924.09
M11-14.0	piezometer	0.5	3963.17	3964.57	0.5	42.0	3921.18
N2-1.5	piezometer	0.5	3962.14	3962.54	0.5	5.0	3957.18
N2-4.3	piezometer	0.5	3962.14	3962.87	0.5	13.8	3948.39
N2-6.5	piezometer	0.5	3961.97	3963.01	0.5	20.4	3941.60
N2-12.8	piezometer	0.5	3962.00	3963.11	0.5	34.5	3927.50
N3-4.3	piezometer	0.5	3964.17	3964.71	0.5	14.0	3950.16
N3-8.3	piezometer	0.5	3964.09	3965.03	0.5	27.7	3936.41
N4-3.2	piezometer	0.5	3961.39	3962.35	0.5	9.8	3951.57
N4-12.0	piezometer	0.5	3961.44	3963.27	0.5	37.7	3923.75
N5-4.4NEW[a]	piezometer	0.5	3964.44	3965.43	0.5	13.0	3951.49
N5-7.2	piezometer	0.5	3964.56	3965.82	0.5	24.6	3939.98
N5-14	piezometer	0.5	3964.43	3965.59	0.5	47.6	3916.79
N6-6.4	piezometer	0.5	3960.72	3962.69	0.5	18.4	3942.27
N7-7	piezometer	0.5	3963.08	3964.37	0.5	20.4	3942.64
N7-10	piezometer	0.5	3962.84	3964.41	0.5	31.9	3930.96
N7-11	piezometer	0.5	3963.10	3963.84	0.5	35.1	3928.00
N8-3	piezometer	0.5	3963.44	3965.03	0.5	8.3	3955.11
N8-6	piezometer	0.5	3963.46	3964.79	0.5	20.5	3942.99
N8-14	piezometer	0.5	3963.48	3964.91	0.5	44.4	3919.06
W1-4.3	well	2	3964.18	3965.39	5	10.4	3953.77
W1-7	piezometer	0.5	3964.32	3965.43	0.5	22.1	3942.22
W1-10	piezometer	0.5	3964.36	3965.56	0.5	31.8	3932.51

[a]Depth to top of screen not found in database; value calculated from field measurements and screen length is assumed.
*ft amsl = feet above mean sea level

3.0 Area Hydrology and Ecology

3.1 Moab Valley Hydrogeology

The hydrogeology of the Moab Valley is relatively unique in that discharge of ground water to the Colorado River is affected by density-dependent flow induced by the presence of very saline to briny water. This report section uses a previously developed conceptual model of ground water flow in the vicinity of the Moab Site as a springboard for describing the spatial distribution of saline ground water on both sides of the river and discussing how high salinities affect ground water flow.

3.1.1 Alluvial Aquifer

Most of the ground water found in the Moab Valley originates as recharge from atmospheric precipitation on or surface water flow across bedrock areas located to the north, northeast and east of the Moab Site (Sumsion 1971, Blanchard 1990, Freethey and Cordy 1991, Eisinger and Lowe 1999, DOE 2003c). The majority of the recharge water enters the valley as discharge to alluvium that dominates unconsolidated deposits found in the interconnected Moab and Spanish valleys. As a consequence, local ground water movement occurs largely in an alluvial aquifer system. Flow in the shallow alluvium converges on the Colorado River from both the southeast (from near the City of Moab) and the northwest (the Moab Site) (Sumsion 1971, DOE 2003c, Gardner and Solomon 2003). Such flow convergence correlates with large-scale studies of hydrogeology in the Colorado River Basin that show the river acting as a site of regional discharge (e.g., Weir et al. 1983, Freethey and Cordy 1991, Robson and Banta 1995), including the reach of river passing through Moab Valley (DOE 2003c).

The uppermost 10 ft of alluvium at the Moab Site (west of the river) generally consists of sandy silt and silty sand deposits. These silt-bearing sediments are typically underlain by 6 ft of fine- to coarse-grained sand. Between depths of approximately 16 and 29 ft bgs, gravelly sands predominate, but thin clayey gravelly sand units are also occasionally encountered. From 29 ft bgs to depths approaching hundreds of feet, the alluvium appears to consist primarily of gravelly sands and sandy gravels. The top of the saturated ground water zone near the west bank of the river is located about 10 to 12 ft bgs; consequently, local ground water flow in the alluvial aquifer at the Moab Site occurs mostly within gravelly sand and sandy gravel materials with hydraulic conductivities larger than 100 ft per day (DOE 2003a, DOE 2003c). Stratification within the alluvial aquifer causes the aquifer to exhibit anisotropy, with the effective hydraulic conductivity in the vertical direction being perhaps 10 to 100 times smaller than the horizontal hydraulic conductivity (DOE 2003c).

The alluvial aquifer on the southeast side of the Colorado River appears to consist of similar materials to those on the west side. Borehole logs included in Gardner and Solomon (2003) for the vertical well clusters at BL1, BL2, and BL3 indicate that silty sands and sandy silts are predominant in the uppermost 17 to 18 ft bgs, with clean, coarse gravelly sands and sandy gravels occurring below this depth. The gravels are described as being well rounded and cobbles up to 7 inches in diameter are observed. These coarse materials are ascribed to ancestral channels of the Colorado River that, at times in the geologic past, were located farther east than currently observed. A figure in the Gardner and Solomon (2003) report indicates that river-derived gravels are observed as far as 0.5 miles to the east of the river. Coarse-grained, river-derived sediments are seen as deep as 150 and 160 ft bgs at the BL1 and BL2 clusters, but appear to grade into less permeable materials consisting of silts and rock fragments at the BL3 cluster near a depth of

about 40 ft bgs. Some organic matter is occasionally observed in the cluster boreholes and hydrogen sulfide smells are reported for cuttings taken from some vertical intervals (Gardner and Solomon 2003). The hydrogen sulfide smells are likely indicative of chemically reducing conditions, particularly at the BL3 location between depths of 40 and 103 ft bgs, where the silts are uniformly gray in color.

Depths to the top of the saturated zone on the southeast side of the river are generally shallower than the corresponding depths at the Moab Site. Depending on river flows and local topography, these depths can be as large as 5 to 12 ft bgs. However, characteristic of wetlands, depths on the order of 1 to 4 ft bgs are possible, as is the presence of standing water in some areas. This means that much of the shallow ground water flow at the Matheson Wetlands occurs in relatively fine-grained sediments consisting of sandy silts and silty sands.

3.1.2 Density-Dependent Ground Water Flow

Levels of salinity in ground water on both sides of and below the river can be described with respect to TDS concentrations in units of milligrams per liter (mg/L). Ground water is typically characterized as either mildly saline (TDS = 1,000 to 3,000 mg/L), moderately saline (TDS = 3,000 to 10,000 mg/L), very saline (TDS = 10,000 to 35,000 mg/L), or briny (TDS > 35,000 mg/L) (McCutcheon et al. 1993). These TDS concentrations are larger than the TDS levels commonly reported for river water (100 to 1,000 mg/L), which is referred to as fresh water in this report.

Salinity data collected from ground water in alluvium on both sides of the river show that TDS concentrations in both areas span a large range, typically from as low as 700 mg/L to as high as 110,000 mg/L or more (e.g., DOE 2003c, Gardner and Solomon 2003, DOE 2006a). Thus much of the ground water in these areas consists of very saline water and brine. General patterns are observed with respect to the spatial distribution of saline water. For example, TDS concentrations typically increase with depth below ground surface, and depth to the top of brine (brine surface) changes in a predictable way with proximity to the river. Under the Moab Site, the brine surface is deepest in the western portion of the site and becomes shallower in the direction of the river. Data collected at the Matheson Wetlands indicate a mirror image of brine distribution below the Moab Site, as depth to brine is greatest in wells located some distance southeast of the river and much smaller near the river's east bank. Such observations, when combined with studies showing the river acting as a site of regional ground water discharge, suggest that the larger TDS concentrations in shallow ground water at the river are due to saltwater upconing (e.g., McElwee 1985, Phillips et al. 2002), with the river acting much like a well that induces the upward migration of underlying brine when shallow ground water is pumped (Domenico and Schwartz 1998). More focused assessments of salinity distribution downgradient of the Moab tailings pile and near the river's west bank (i.e., at the Moab Site) show the brine surface occurring near 40 to 45 ft bgs at 300 ft from the west bank (DOE 2003c, DOE 2006a, DOE 2006b), and extrapolation of the brine surface in these areas shows it intersecting the river close to its west bank.

With such a large range of TDS concentrations on either side of the river, ground water flow toward the river from both the project site and the wetlands preserve is a density-dependent process, since water density increases with increasing salinity. The density-dependent hydraulics associated with this flow system are very similar to those presented by Konikow et al. (1997) as part of a study of deep-circulating ground water passing over a buried salt source, such as

sedimentary rock containing evaporite deposits, followed by upward water migration and discharge to the ground surface. Such a system is associated with ground water velocities that decrease with depth below the ground water surface, and velocities below the brine surface are extremely low (Konikow et al. 1997). In an analogous manner, ground water velocities in the shallow brine below and near the river in the northwest part of the Moab Valley, as caused by upconing of deep-circulating ground water from both sides of the river, are expected to be a very small fraction of those occurring in fresher water some distance from the river.

The occurrence of saltwater upconing at the Colorado River in Moab Valley is not surprising given that local geologic conditions are conducive to this phenomenon. In particular, a mechanism exists for creation of brine as local alluvial ground water flows over and dissolves underlying bedrock sediment in the Paradox Formation (Cooper and Severn 1994, DOE 2003c, DOE 2005b, DOE 2006a), a large and relatively deep evaporite unit that has been deformed to create a salt-cored anticline aligned within and underlying the Moab Valley (Doelling et al. 2002). In addition, the presence of a bedrock high where the river leaves the Moab Valley on its south side (DOE 2003c) obstructs ground water flow to the south through the Portal (Figure 1) and forces the brine upward and toward land surface and the river.

Mildly saline to very saline water occurring above the brine in the Moab Valley is caused by the mixing of inflowing freshwater with the deeper brine. However, natural causes do not explain all of the saline ground water close to the river near its west bank, as much of the salinity in this area is also attributed to historical seepage of high-TDS fluids from the base of the Moab tailings pile (DOE 2003c). The most significant contributions of dissolved salt from the tailings pile likely took place during and immediately after the years of milling operations at the Moab Site, and relatively minor contributions might still be occurring today.

Currently observed spatial variations in ground water salinity at the Moab Site reflect both historical density-dependent flow processes, which probably varied substantially over time during mill operation years (1956–1984), and relatively steady density-affected processes in recent years (DOE 2003c). However, none of the data collected by DOE indicate that high TDS concentrations observed in ground water southeast of the river were partly caused by milling operations, thus inferring that water chemistry in the Matheson Wetlands is the result of natural phenomena and possibly some anthropogenic influences between the City of Moab and the wetlands preserve.

3.2 Matheson Wetlands

The Matheson Wetlands encompasses 875 acres and is jointly owned and managed by the Nature Conservancy and the Utah Division of Wildlife Resources (NRC 1999). A variety of vegetation types are found in the wetlands preserve (Cooper and Severn 1994, Pataki et al. 2005), including willows, cottonwoods, bulrushes, and tamarisk. The Matheson Wetlands represent a riparian area for the Colorado River. As a consequence, many of the hydrologic and geochemical processes that are typically associated with riparian areas can be expected at the preserve.

In addition to natural processes that affect the wetlands preserve, anthropogenic influences include agricultural land use in the area and a sewage treatment plant. Parts of the preserve are grazed, primarily during the winter, by up to 50 head of cattle and 30 horses (DOE 2003c). In addition, some irrigation takes place on land lying immediately east of the Matheson Wetlands. The sewage treatment plant, located near the southeast corner of the preserve (Figure 2), serves

the City of Moab. It is unknown whether the sewage treatment plant contributes ammonia to wetlands surface water.

While assessing the ecology of the Matheson Wetlands in the early 1990s, Cooper and Severn (1994) found that the chemistry of shallow ground water in the area involved two different types. Calcium sulfate, or gypsum-dominated, water of relatively low salinity occurred in the southern half of the valley. In contrast, ground water in most of the northern half of the wetlands preserve was a sodium-chloride type of relatively high salinity. Within the northern half of the wetlands, measured electrical conductances at shallow wells within a few to several hundred feet east of the river approached values as large as 59,000 micromhos per centimeter, which in turn inferred TDS concentrations on the order of 35,000 mg/L or larger. Because Cooper and Severn (1994) attributed these shallow, high salinity numbers to dissolution of Paradox Formation sediments, their occurrence some distance east of the river suggested that saltwater upconing might be possible beneath a portion of the wetlands as well as at the river proper. For this to occur, a mechanism for transferring the salty water away from the area at the same rate at which is being contributed is necessary, such as ground water flow toward the river and subsequent conveyance downstream. Because density-dependent hydraulics indicate that ground water velocities below the brine surface would be very low (e.g., Konikow et al. 1997), the rate at which the brine must be transferred to the river does not need to be large.

The electrical conductances reflective of high-salinity ground water in the northern half of the wetlands preserve and near the east edge of the river were of interest to Cooper and Severn (1994) for the potentially detrimental influence they would have on vegetation health. A study by Pataki et al. (2005) of Matheson Wetlands plant ecology demonstrated that these high salinities did indeed deleteriously affect local vegetation, particularly native cottonwoods.

The riparian and ecological status of the Matheson Wetlands suggests that some of the chemical constituents in underlying shallow ground water are subject to considerable variability in space and time. For example, several biogeochemical processes are considered possible, including those mediated by heterotrophic microorganisms (Cooper and Severn 1994). Such heterotrophic activity would require influx of dissolved organic carbon (DOC) and nutrients in the form of nitrogen and phosphorous. Heterotroph respiration in shallow ground water could serve to not only reduce dissolved oxygen concentrations via consumption by aerobic bacteria, but also reduce dissolved nitrate concentrations by denitrifying bacteria (e.g., Hayashi and Rosenberry 2002). Moreover, if other microbes capable of using less favorable electron acceptors than either oxygen or nitrate are active, solid manganese- and iron-reducing bacteria, and possibly sulfate reducers, could eventually cause chemically reducing conditions in the ground water. This latter type of heterotrophic activity, which appears particularly feasible in deeper portions of the shallow ground water system, could also lead to chemical reduction of and subsequent precipitation of dissolved uranium into a solid form (Anderson and Lovley 2002).

The Matheson Wetlands is subject to periodic flooding by the Colorado River, albeit today at a smaller frequency than occurred in years prior to river flow control. Cooper and Severn (1994) determined that a river discharge of about 40,000 cubic feet per second (cfs) is sufficient to cause overbank flow into the wetlands preserve, and that this flow occurs on average about every 8 to 9 years. When such flooding occurs, it is probable that the influx of oxygenated river water causes changes in shallow ground water chemistry that will be repeated when flooding occurs again. Alternatively, infiltration of the oxygenated water in rainfall during major storm events and subsequent recharge of the upper few feet of the saturated zone could lead to cyclical changes in water chemistry.

4.0 Relevant Studies and Implications

Multiple studies have been conducted during the past few years that help shed light on hydrologic and chemical transport processes in alluvial ground water at the Matheson Wetlands. This chapter discusses some of the studies, mentions how findings from them pertain to ground water in the area, and highlights any significant implications they might have regarding ground water behavior in the future.

4.1 Site Observational Work Plan

The Moab SOWP (2003c) synthesized a large quantity of information regarding regional and local geology and ground water quality to develop a conceptual model for the hydrogeology of the area spanning the Colorado River within Moab Valley. The resulting conceptualization of ground water flow and chemical transport was incorporated into two numerical models of the area. One of the models accounted for three-dimensional, uniform-density (assumed) ground water flow above the brine surface, looking mostly at flow and transport processes on the west side of the river. The other model examined density-dependent flow and transport in a two-dimensional, vertical cross section that followed a ground water flow streamline originating near the canyon mouth of Moab Wash, passing through the Moab tailings pile and ultimately intercepting the river. The following sections describe distinct findings from the SOWP (DOE 2003c) that figured prominently in the development of the conceptual model and the numerical models.

4.1.1 Density-Dependent Flow West of the Colorado River

The conceptual model of ground water flow at the Moab Site, as presented in the SOWP (DOE 2003c), is shown schematically in Figure 3. As suggested earlier in Section 3.1.2, it includes a system of relatively shallow ground water in alluvium that mostly contains slightly saline to very saline water and flows southeastward toward the Colorado River over an extensive deeper zone containing brine. On the basis of a geologic subcrop map (DOE 2003c) and TDS concentration data collected at wells located both on and downgradient of the tailings pile, the source of the brine appears to be dissolution of Paradox Formation sediments located part of the way down a steep bedrock face situated just to the northwest of the pile. At the northwest edge of the pile, ground surface elevation is about 4,000 ft above mean sea level (ft amsl) and depth to the brine surface is about 230 ft bgs. As previously mentioned, depth to the brine surface decreases to about 40 to 45 ft bgs 300 ft west of the river, and extrapolation of TDS concentration data close to the river indicates that the brine surface intersects the river near its west bank. As a consequence, the vertical interval containing most ground water flow (i.e., between the brine surface and the top of the saturated zone) decreases with proximity to the river, causing progressively larger ground water velocities as the river is approached.

The primary source of the ground water flowing to the river at the Moab Site is discharge of water in bedrock aquifers (Figure 3) that subcrop beneath the alluvium northeast of the Moab Fault (DOE 2003c). Additional and relatively minor contributors of ground water include recharge of precipitation on the site and shallow subsurface flow from the Moab Canyon to the northwest (Figure 1). Under current conditions, a relatively insignificant portion of the ground water flow is ascribed to seepage from the base of the tailings, although tailings seepage during years of mill operation and for a few years thereafter appears to have had a very large influence on local ground water movement (DOE 2003c). In addition to discharge of ground water to the

Colorado River, a significant amount of system outflow is attributed to evapotranspiration from tamarisk vegetation, a large stand of which has historically grown in the area between the tailings pile and the river.

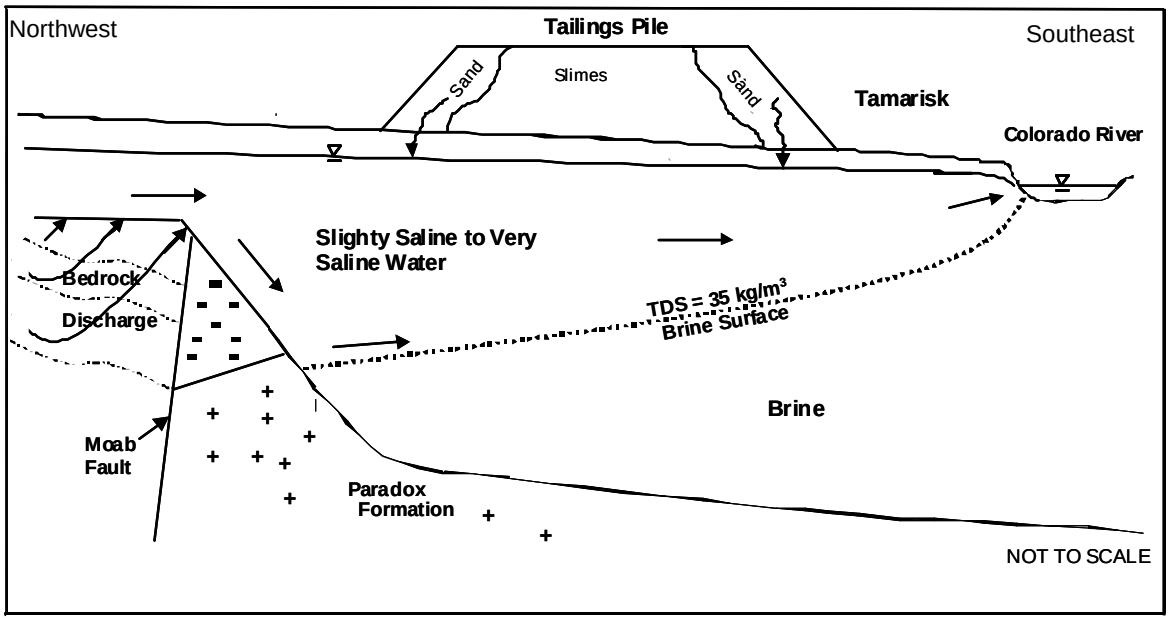

Figure 3. Conceptual Model of Density-Dependent Flow at the Moab Site

Density-dependent flow modeling was performed for the SOWP (2003c) to help quantify the processes shown in Figure 3. The model was designed to simulate two-dimensional ground-water flow and transport in a vertical cross section, the trace for which followed a streamline that originated in the northwest corner of the site on the northeast side of Moab Fault, then trended southeastward across the tailings pile, and terminated in the center of the Colorado River. A no-flow condition was applied at the vertical model boundary aligned with the river centerline to represent a line of convergence for surmised flow coming from both the southeast (from near the City of Moab) and the northwest (from the Moab Site). Although the SOWP (2003c) had mentioned the possibility that the location of this line might lie slightly farther to the southeast and closer to the river's east bank, its placement at the river center had very little effect on the flow and transport processes simulated.

As reported in the SOWP (2003c), drilling at the Moab Site and near the river has indicated that the local depth of the alluvium, and, therefore the depth to the Paradox Formation, is at least 400 ft bgs, but is still unknown. Doelling et al. (2002) discuss this observation and use borehole logs from other wells in the Moab Valley, beginning near the east boundary of the wetlands, to show that depth to the Paradox Formation is greatest near the Colorado River but decreases with distance to the southeast. With this information, the conceptual model shown in Figure 3 can be expanded to illustrate how density-dependent ground water flow occurs on both sides of the river, as shown in Figure 4. A distinctive feature of this latter conceptualization is that both the total distance and depth over which dissolution of Paradox Formation sediments occurs southeast of the river can be substantially different from equivalent values for the northwest side of the river. This in turn signifies that the profile of the brine surface in the vicinity of the river could be asymmetric. Additional factors potentially affecting the shape of the brine surface, both at the Moab Site and below the wetlands, are discussed in Section 4.3.1.

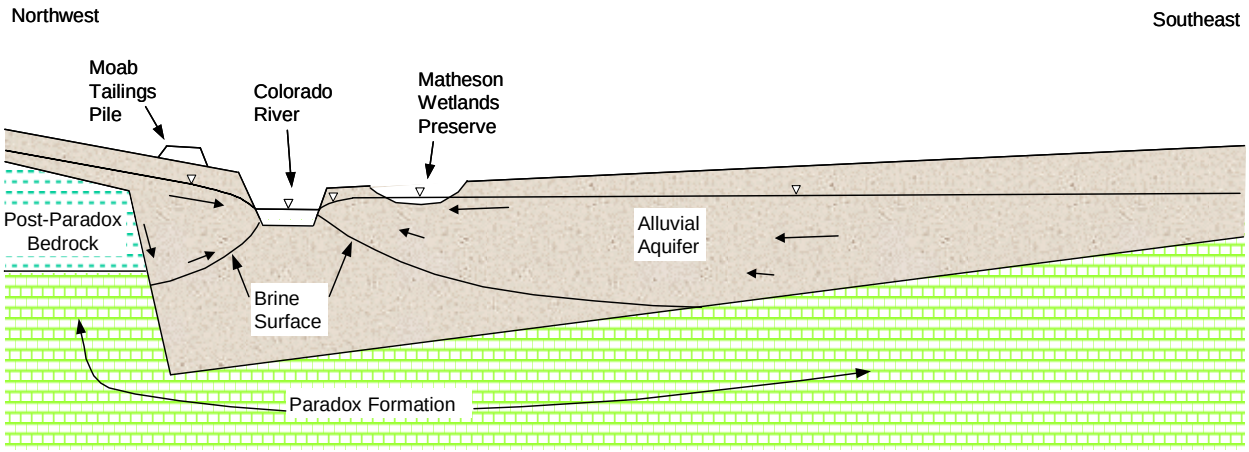

Figure 4. Conceptual Model of Density-Dependent Flow on Both Sides of the Colorado River (based partly on Figure 6 in Doelling et al. [2002])

The density-dependent flow processes depicted in Figure 3 and Figure 4 are considered representative of long-term, relatively steady conditions in the Moab Valley. Though short-term changes in the local hydrology (e.g., increased recharge from precipitation, high spring runoff) might cause limited-scale and temporary perturbations of brine surface elevation, such minor stresses are not expected to cause flow conditions that differ significantly from those shown in Figure 4. It should be noted, however, that moderate- to long-term stresses on the ground water system stand the potential to cause changes in the flow regime that last for several years or more. Such lasting influences were observed in the cross-sectional modeling included in the SOWP (DOE 2003c) as it suggested that remnant effects of large amounts of tailings water recharging the aquifer west of the river during mill operation years (1956–1984) are probably still present beneath the Moab Site today, but only in a minor fashion. This occurs largely because local flow processes do not completely return to pre-stressed conditions until salinities stabilize, thereby minimizing the effects of water density on flow patterns.

4.1.2 Chemistry of Wetlands Ground Water in 2002 and 2003

The SOWP (DOE 2003c) presented the results of sampling at several locations in and near the Matheson Wetlands in late 2002 and early 2003. Locations M11-14, N7-10, and W1-7 (Figure 2) were sampled in December 2002 and locations M11-4.8, M11-7, M11-12, M11-14, N7-7, N7-10, N7-11, W1-4.3, W1-7, and W1-10 (Figure 2) were sampled in March 2003. A table in the SOWP summarizing the results of the sampling, included in this report as Table 2, showed the presence of very high TDS concentrations at locations close to the river. In accordance with the DOE site conceptual model, the TDS concentrations generally increased with increasing depth. Of some interest was the observation that the transition to TDS concentrations reflective of brine (>35,000 mg/L) appeared to occur abruptly in some cases. For example, TDS levels at the sampling interval located just above the first brine detection at clusters M11 and N7 were in the range of 2,000 to 5,000 mg/L. At the W1 cluster, located in the northern half of the wetlands preserve and within 800 ft of the river, a TDS concentration at about 50,000 mg/L was measured in the shallowest piezometer (W1-4.3, screened at a depth of 10.4 ft bgs). Such a high salinity value at a shallow depth was consistent with observations previously made by Cooper and

Severn (1994), which indicated that shallow ground water east of the river and in the northern half of the wetlands was strongly affected by saltwater upconing.

In addition to revealing TDS concentrations as high as 97,000 mg/L, the 2002 and 2003 sampling at the wetlands showed that concentrations of sodium, chloride, sulfate, and iron, were relatively high. Dissolved calcium, magnesium, and manganese at the W-1 cluster also appeared relatively high. The concentration of ammonia (as nitrogen [as N]) ranged from as low as 0.17 mg/L to as high as 3 mg/L (Table 2). Oxidation-reduction potential (ORP) values also varied between locations, ranging from -153 millivolts (mV) to +193 mV, with the largest value observed at the W1-4.3 location. This latter observation demonstrated that relatively shallow ground water at the W1 cluster is capable of being oxidized.

Dissolved uranium concentrations at the M11 and N7 clusters were all less than 0.010 mg/L, regardless of sampling depth. However, sampling of W1-7 and W1-10 showed that uranium levels as high as 0.023 mg/L were possible. This result has bearing on uranium concentrations measured in more recent years in the northern half of the wetlands preserve.

4.1.3 Chemistry of Paradox Formation Waters

The hypothesis that much of the very saline to briny ground water found in the vicinity of the Colorado River in the Moab Valley originated via dissolution of underlying evaporite sediments was addressed in the Moab SOWP (DOE 2003c) by looking at the chemistry of Paradox Formation brines. Chemical data presented in Mayhew and Heylman (1965) from three oil and gas exploration wells drilled into the formation near Moab were tabulated to show some of the more notable constituents found in Paradox brines. The data, reproduced here as Table 3, suggest that TDS concentrations as large 100,000 mg/L in upconing brine are feasible, as the TDS levels in brines within the Paradox Formation itself can be as large as 430,000 mg/L.

The locations of the three wells used to produce Table 1 provide some perspective as to the possible relationship between Paradox Formation brines beneath Moab Valley and those occurring elsewhere. Oil and gas well Delhi-Taylor No. 2 is located approximately 4 miles northwest of the Moab Site, Southern Natural Gas No. 1 Long Canyon is located approximately 7 miles southwest of the site, and King Oil No. 2 Big Flat is located approximately 11 miles southwest of the site. Results for two samples collected from different vertical intervals from the Paradox brine are reported for the Southern Natural Gas No. 1 well. Analyses were performed by the U.S. Geological Survey (USGS) and commercial laboratories.

The data presented in Table 3 indicate that some of the relatively high ground water concentrations mentioned in Section 4.1.2 for select constituents could result from the diffusion of Paradox Formation brines into deep-circulating ground water in alluvium. For example, concentrations of sodium, calcium, magnesium, and iron (as cations) in ground water (Table 2) could result from the mixing of deep ground water with formation brine containing these constituents at concentrations as large as 25,000, 65,000, 47,000, and 750 mg/L, respectively (Table 2). Similarly, brine concentrations for the anions chloride and sulfate of as much as 240,000 and 1,800 mg/L, respectively, could explain the relatively high concentrations of these constituents in alluvial ground water. In addition, with ammonia concentrations in Paradox Formation brine approaching 1,000 mg/L and larger, ammonia (as N) concentrations as large as 3 mg/L could feasibly result from dissolution of Paradox Formation sediments.

Table 2. Chemical Results from DOE Sampling in 2002 and 2003 at Piezometers in the Matheson Wetlands

Analyte	Units	M11-4.8	M11-7.0	M11-12	M11-14.0 [a]	N7-7	N7-10 [a]	N7-11	W1-4.3	W1-7 [a]	W1-10
Major											
Alkalinity, total as $CaCO_3$	mg/L	650	610	448	210	329	165		125	231	
Ammonia, total as N	mg/L	.46	.48	.35	1.55	1.27	1.52	3	.174	.257	3
Chloride	mg/L	1,620	1,320	2,550	23,300	905	28,300	52,400	29,700	28,700	23,000
Magnesium	mg/L								2,290		
Nitrate as NO_3	mg/L				.01		.075		.0153	.0379	
Potassium	mg/L								150		
Sodium	mg/L				16,300		18,000		12,700	12,000	
Sulfate	mg/L	1,440	995	614	2,500	336	2,460	5,270	2,940	3,010	2,360
Metal											
Aluminum	mg/L										
Antimony	mg/L								.00025		
Arsenic	mg/L				.0046		.00015		.0003	.0005	
Barium	mg/L										
Cadmium	mg/L				.00005		.00005		.0001	.00005	
Calcium	mg/L								2,370		
Chromium	mg/L								.0015		
Cobalt	mg/L										
Copper	mg/L								.007		
Iron	mg/L				17.9		5.17		6.96	22.3	
Lead	mg/L								.00054		
Lithium	mg/L				.105		.12			.335	
Manganese	mg/L				2.91		.369		38.5	19.1	
Mercury	mg/L								.0001		
Molybdenum	mg/L				.0045		.0045		.0045	.0045	
Nickel	mg/L								.002		
Selenium	mg/L				.00005		.00005		.00015	.009	
Silver	mg/L								.00005		
Strontium	mg/L				24.8		23.2		55.2	65	
Thallium	mg/L								.00007		
Uranium	mg/L	.0037	.0044	.001	.001	.001	.0033	.0007	.0021	.0231	.0159
Vanadium	mg/L				.001		.001		.00075	.0028	
Zinc	mg/L								.0261		
Other											
Boron	mg/L				1.33		1.11		.395	.552	
Dissolved Oxygen (unfiltered)	mg/L	.22	1.48	.08	.475	6.64	.2	.24	1.84	.28	1.51
Fluoride	mg/L				3.28		3.37			1.85	
Oxidation Reduction Potential	mV	-136	-101	-140	-121	-112	-153	-45	193	-67	-55
Silicon	mg/L										
Total Dissolved Solids	mg/L	5,490	4,230	5,510	41,700	2,250	50,400	97,000	50,500	52,300	40,900
pH (unfiltered)	s.u. [b]	6.98	7.03	7.44	7.05	6.88	7.11	5.7	6.64	6.53	6.27
Physical											
Density	g/cm^3	1	1	1	1.02	.999	1.03	1.06	1.04	1.04	1.03
Specific Conductance (unfiltered)	µmhos/cm	7,790	6,140	8,550	5,7300	3,380	69,000	111,000	68,600	67,100	59,200
Specific Gravity					1.04		1.04			1.04	
Temperature (unfiltered)	C	17.1	15.2	14	14.2	8.78	11.4	8.73	14.2	15.9	11.7
Turbidity (unfiltered)	NTU	9.28	2.19	17.7	4.99	105	8.54	95.6	48.3	2.03	373
RAD											
Gross Alpha	pCi/L				180		237			178	
Gross Beta	pCi/L				150		222			150	
Radium-226	pCi/L				.16		9.26			.145	
Radium-228	pCi/L				6.09		2.6			5.21	
Thorium-230	pCi/L								.8		

[a] Values shown for M11-14, N7-10, and W1-7 represent averages from the two sampling events in 2002 and 2003.
[b] s.u. = standard units

End of current text

Table 3. Chemical Analysis Results for Brine Samples Collected from the Paradox Formation in the Moab Region

Analyte	Concentration (mg/L)			
	Delhi-Taylor No. 2	King Oil No. 2 Big Flat	Southern Natural Gas No. 1 Long Canyon	Southern Natural Gas No.1 Long Canyon
Aluminum	66			
Ammonia	849	1,330		
Bicarbonate	1,010		1,600	1,400
Borate		2,922		
Boron	660		600	
Bromine	3,080	1,150	3,000	6,100
Calcium	52,700	40,742	34,000	65,800
Chloride	241,000	259,106	45,000	29,800
Copper	6			
Fluoride	25			
Iodine	42		300	
Iron	750			
Lithium		173		500
Magnesium		47,789	21,000	45,500
Nitrate				6
Phosphate			2,000	
Potassium		41,957		23,400
Rubidium				700
Sodium		25,966	13,000	9,800
Sulfate		754	1,800	80
TDS		421,889	388,000	439,000
pH			4.8 s.u.	6.0 s.u.

4.1.4 River-Aquifer Relationships

Both qualitative and quantitative relationships between ground water levels at the Moab Site and Colorado River stage were discussed in the Moab SOWP (2003c). In accordance with hydraulic theory (Domenico and Schwartz 1998), river flow increases and accompanying increases in river stage caused water levels in the alluvial aquifer to increase, and vice versa. A lag time on the order of as much as a day was typically observed between a river rise and a concomitant increase in ground water levels in wells located hundreds of feet from the river (DOE 2003b). Because alluvial sediments on the southeast side of the river are similar to those beneath the Moab Site, similar relationships between changes in river stage and ground water levels in the wetlands are expected. Obviously, during some of the larger river runoff events observed in spring months, the increase in river stage can be large enough to temporarily bring water levels above ground surface elevation in some parts of the wetlands.

The SOWP (DOE 2003c) also identified interesting relationships between changes in river surface elevation and brine surface elevation at the Moab Site. In particular, salinity data collected in wells between 2001 and 2003 indicated that the brine surface elevation generally increased during periods of peak flow in the river (typically in the spring) and subsequently declined upon passage of high runoff conditions. Consequently, the most notable effect that an increase in river level had on aquifer chemistry in each affected well during those years was an increase in the average TDS concentration within the screened interval of the well. Though an

opposite relationship between river stage and brine surface elevation was occasionally observed for periods of a few to several days in wells located within 50 to 100 ft of the river (DOE 2003c), indicating bank storage of river water a short distance into the alluvial aquifer, wells located farther from the river did clearly increase in salinity when the river reached peak flow conditions. Such observations suggested that, as the water table increased with increasing river stage, the vertical thickness of the water located above the brine surface essentially remained constant so that the net flow of ground water to the river was also constant.

The above-mentioned general increases in brine surface elevation in response to high spring runoff during the 2001–2003 period appeared to be largely the consequence of the relatively low peak river flows that were observed in each of those years, as this period was dominated by drought conditions in the southwest U.S., and flows in the river tended to reflect the pervasive dryness. As discussed in Section 4.3.4, the higher river stages observed during some years appear to disrupt this relationship such that extensive bank storage of river water during a passing flood stage on the river can cause brine surface elevations as much as a few hundred feet from the river to decline rather than increase.

Regardless of whether increases in river stage cause brine surface elevations to increase or decrease in areas on either side of the river, induced chemical changes in affected areas at the wetlands preserve will give the appearance of temporally variable water chemistry. It is important that such temporal changes be taken into account when attempting to characterize chemical transport processes in ground water at the wetlands.

4.2 University of Utah Study

The Gardner and Solomon (2003) study of the Matheson Wetlands produced conclusions that, in large part, conflicted with those associated with the DOE conceptual model. In particular, the University of Utah investigators concluded that contaminants associated with historical operation of the Moab Site migrated under the Colorado River toward the Matheson Wetlands during past years, and probably continue to do so under current conditions. The inferred repercussions of such phenomena included a potential hazard to public health and the environment. This view was based primarily on the interpretation of three types of information derived from a sampling event that they conducted during July and August 2003: (1) a ground water flow gradient map based on calculated hydraulic heads that account for the effects of salinity on flow potential, (2) measured uranium concentrations in ground water on both sides of the Colorado River, and (3) analysis of stable isotopes of dissolved oxygen and hydrogen in ground water.

4.2.1 Data Analysis

Gardner and Solomon (2003) used both tabular information and graphical plots of collected data to make their arguments regarding ground water flow direction in the vicinity of the wetlands preserve. The plots consisted of (1) maps containing posted water level and chemical data at wells in the study area, (2) posted constituent concentrations and other chemical parameters within two geologic cross sections based on their interpretation of drilling logs, and (3) scatter plots of chemical data. Though no work has been performed to determine the types of sediments underlying the 300-ft-wide expanse of the Colorado River in Moab Valley, their geologic cross sections (Sections A-A’ and B-B’) suggested that the generally finer-grained sediments found at shallow depths on both sides of the river (see Section 3.1.1) were spatially continuous below the river. In addition, the cross sections implied that the top of the Paradox Formation occurred

immediately below the total depths of boreholes drilled for well clusters BL1 and BL2 (150 ft and 160 ft, respectively) despite the fact that the geologic logs for these boreholes (presented in Gardner and Solomon [2003]) showed that only alluvial materials were encountered at the bottom of each borehole. Similarly, Section A-A' in the Gardner and Solomon report suggested that bedrock associated with the Paradox Formation was encountered at a depth of about 30 ft bgs at the BL3 cluster, which conflicted with the geologic log for this borehole and text in Appendix A of the report, both of which indicated a depth to Paradox Formation caprock of about 100 ft.

One of the maps used Gardner and Solomon (2003) portrayed contours of equivalent freshwater head (*EFH*) at a common elevation of 3,904 ft amsl, values for which were estimated by using water level and TDS concentration data at nine wells screened in brine at varying elevations below the Colorado River. With a contour interval of a half-meter (1.6 ft), the map indicated ground water movement to the south-southeast, from the project side of the river to the Matheson Wetlands. Gardner and Solomon concluded that this sub-riverbed flow occurs within highly permeable alluvial fill consisting of very coarse sands and gravels, which are commonly observed on both sides of the river at depths greater than 20 ft bgs.

Gardner and Solomon (2003) also used a map of posted uranium concentrations in ground water at five wells on the Moab Site side of the river and 14 wells southeast of the river to infer that uranium concentrations in wells along the river's east bank and in the Matheson Wetlands were derived from contaminated ground water on the Moab Site. The explanation given for this connection was that ground water flows below the riverbed from the Moab Site to the preserve in very coarse alluvial sediments found in both areas. The study also included two cross sections showing measured uranium levels in selected monitor wells on either side of the river as support for the projected transport of uranium from one area to the other.

Two cross sections by Gardner and Solomon (2003) containing measured oxygen isotope ($\delta^{18}O$) ratios did not conform to DOE's hypothesis that the Colorado River acts as a ground water sink. Such a divide would likely result in more negative $\delta^{18}O$ ratios (compared to standard mean ocean water ratios) with depth in the ground water system near the river. However, Gardner and Solomon (2003) suggested that less negative $\delta^{18}O$ ratios observed below more negative ratios in wells near the river provide evidence of ground water movement from the Moab Site to deeper ground water below the Matheson Wetlands.

Gardner and Solomon (2003) also examined dissolved ammonia concentrations in ground water on both sides of the Colorado River, but did not use these data to conclude that ammonia contamination migrates from the Moab Site to the east side of the river. The authors identified a distinct correlation between ammonia concentration and TDS in ground water at the wetlands preserve, with some ammonia (as nitrogen) concentrations as large as 4 mg/L being associated with TDS concentrations on the order of 100,000 mg/L. However, the occasional occurrence of a relatively low ammonia concentration with a high TDS level led them to conclude that the Paradox Formation was not a significant source of dissolved ammonia at the preserve.

4.2.2 Implications of the Study

Several implications can be drawn from the Gardner and Solomon (2003) study that are worthy of comment. For example, the apparent assumption of a continuous layer of fine-grained alluvium under the Colorado River in their cross sections infers that a barrier exists to the surface

discharge of ground water from deeper coarse-grained sediments consisting of sand and gravel. Without actual boring data that might shed light on the possible existence of such a continuous fine-grained alluvial layer below the riverbed, this assumption appears unfounded given that many studies of shallow, sub-riverbed sediments at a variety of locations (e.g., Conant 2000, Winter 2000, Cardenas and Zlotnik 2003, Cardenas and Wilson 2004, Salehin et al. 2004, Rubin et al. 2006) indicate that the sediments tend to be quite heterogeneous, varying from silts to coarse sand and gravel. Such heterogeneity is not surprising given that, in most river systems connected to alluvial aquifers, the sediments comprising the uppermost tens of feet below the river are fluvial in origin and, therefore, contain the full gamut of grain sizes typically carried in bed and suspended loads of river channels as well as the fine-grained loads of overbank flows on flood plains. For this reason, hydraulic conductivities of sub-riverbed sediments at a single site along a river's reach are sometimes reported as varying over three to four orders of magnitude.

If, in fact, the sediments beneath the bed of the Colorado River in Moab Valley contain significant quantities of coarse-grained sediment as well as finer grained materials, the potential exists for ground water migrating toward the river from both the east and the west to completely discharge to the river rather than migrating under the river from one bank to the other. Moreover, it is highly likely that all ground water in the Moab Valley above the Paradox Formation discharges to the river given that previously mentioned studies of hydrogeology in this part of the Colorado River basin (e.g., Weir et al. 1983, Freethey and Cordy 1991, Robson and Banta 1995) show regional ground water flow converging on the river, regardless of the composition of sub-riverbed sediments.

Additional concerns stem from Gardner and Solomon's (2003) cross sections that suggest the top of Paradox Formation bedrock in the Moab Valley near the river could be shallower than 200 ft bgs. In particular, this assumption contrasts with the conceptualization of local geologic conditions presented by Doelling et al. (2002) and the DOE (2003c), both of which are based on boreholes drilled in valley alluvium close to the river. One of these boreholes, a brine disposal well located on the east edge of the Matheson Wetlands, indicated that the local thickness of the alluvium was about 320 ft thick (Doelling et al. 2002). Another borehole referred to as Atlas Minerals ATP-1 and located just east of the Moab Site tailings pile penetrated at least 406 ft of alluvium and never encountered sedimentary material indicative of bedrock. This kind of evidence suggests that studies focused on the characterization of ground water flow and transport processes in Moab Valley alluvium in the vicinity of the Colorado River, including Gardner and Solomon (2003) and this investigation, should account for the likelihood that the alluvium in this area extends more than 200 ft bgs.

Some inferences can be drawn from Gardner and Solomon's (2003) map that shows contours of estimated *EFH* at a common elevation of 3,904 amsl. At best this map (Figure 7 in Gardner and Solomon) suggests that ground water at this elevation flows toward the south-southeast (following a path that roughly tracks Section A-A' in their study) and not southeastward toward the City of Moab. If contamination from the Moab Project Site were to migrate along this path from northeast of the tailings pile to the southern end of Section A-A' (i.e., to a point about 700 ft directly north of the Portal), it would pass through a relatively narrow strip (~1,000 ft wide) of alluvium near the east edge of the river that is dominated by brine (see Section 6.3.2). Accordingly, this does not signify a threat to human health since the water would not be used for drinking purposes. Moreover, if contaminated ground water originating as historical seepage from the tailings pile were to follow a parallel path to the west of Section A-A', it might remain

below the riverbed for some distance before discharging to surface water, but would not impact the wetlands preserve east of the river.

The map of estimated *EFH* contours also suggests that the thin strip of ground water east of the river that potentially receives inflow from the Moab Site would either continue flowing southward from alluvium into bedrock that forms the south border of the valley, which is counterintuitive, or discharge to the river. Such observations do little if any to support a hypothesis that contamination from the Moab Site threatens resources of the Matheson Wetlands, as might be inferred from Gardner and Solomon (2003), Gardner (2004) and Pataki et al. (2005).

By suggesting that sub-riverbed migration of ground water from the Moab Site threatens the Matheson Wetlands, Gardner and Solomon (2003) imply that a ground water sink is located on the wetlands side of the Colorado River. That is, some mechanism for removing ground water must be present on the river's east side to draw that ground water eastward. Such a sink has not been addressed by the University of Utah investigators, nor do the studies of local and regional ground water flow by the USGS (Sumsion 1971, Blanchard 1990, Freethey and Cordy 1991, Eisinger and Lowe 1999) show any evidence of a ground water sink at the wetlands preserve. These investigations do indicate that some pumping of ground water from the Moab Valley's alluvial aquifer occurs to the southeast of the City of Moab, in Spanish Valley, but none of the hydraulic head data reported for the Moab Valley thus far indicate that this pumping has reversed ground water flow from the prevailing northwest direction.

If significant contaminant mass from the Moab Site has migrated and continues to migrate beneath the river eastward toward the Matheson Wetlands, contaminant concentrations in wetlands ground water would be expected to increase over time. Though moderately elevated concentrations of ammonia and uranium have been observed in ground water at the wetlands preserve during earlier studies (DOE 2003c, Gardner and Solomon 2003), the data collected in this study suggest that those concentrations are due to natural causes, and that neither ammonia or uranium is experiencing concentrations increases that would result from sub-riverbed migration of contamination from the Moab Site.

4.3 Fall 2005 Performance Evaluation of Ground Water Extraction at the Moab Site

Ground water is pumped from several extraction wells at the Moab Site as part of a Ground Water Interim Action (IA) to reduce contaminant concentrations in a river side channel. As part of an evaluation of the IA's effectiveness during 2005 (DOE 2006a), several types of information were examined that helped shed light on ground water flow patterns and chemical transport processes occurring near the river. Features of that performance evaluation considered relevant to chemical transport in the wetlands are summarized in this section.

4.3.1 Factors Affecting Brine Surface Depth

Factors other than river stage and proximity to the river can affect the depth to the brine surface. One of these is the depth at which the brine is being contributed to deeply circulating ground water. This issue was briefly discussed in Section 4.1.1 when assessing the depth at which alluvial ground water is likely to first encounter Paradox Formation sediments on the project side of the river in comparison to the equivalent depth on the southeast side of the river. Because downwelling ground water at the former mill site likely starts entraining high salinity water

along the steep bedrock wall located just west of the tailings pile (Figure 3) and depth to the Paradox Formation is deeper below the river and the Matheson Wetlands, it stands to reason that brine surface elevations can be deeper to the southeast of the river (Figure 4) than they appear to be below the Moab Site.

Another factor affecting brine surface depth is the volumetric rate of flow toward the river. Along portions of the river where such flows tend to be relatively large, density-affected ground water hydraulics indicate that the brine will be found at a greater depth than at another location where the flow is less. Thus if one tracks conditions along a line paralleling the river at a given distance from either of its banks, gradual changes in brine depth should be observed in proportion to the increases or decreases in ground water flow that occur. An end-member of this continuum occurs at locations where flow to the river essentially reduces to zero. In such areas, brine should be observed at the water table since there is no fresh water available to suppress it. As pointed out in the performance evaluation of IA extraction wells during 2005 (DOE 2006a), the hydraulic and chemical transport processes that lead to shallow brine exhibiting TDS concentrations approaching 100,000 mg/L west of the river and just south of the Moab Site indicate that ground water discharges to the river in this area are very small. This phenomenon should also be taken into consideration when examining the occurrence of shallow brine east of the river, particularly in locales in the northern half of the Matheson Wetlands previously identified by Cooper and Severn (1994) as containing highly saline shallow ground water.

4.3.2 Identification of Salinity Sources

In much the same manner that Gardner and Solomon (2003) used analyses of water chemistry to help identify flow processes, the recent evaluation of ground water extraction performance at the Moab Site (DOE 2006a) used a geochemical fingerprinting technique to help distinguish saline water derived solely via dissolution of Paradox Formation sediments from other salinity sources. The technique applied is based on the ratio of simultaneously measured concentrations of dissolved chloride (Cl) and bromide (Br) in ground water. These ions are highly soluble and conservative (i.e., non-reactive) and can, therefore, be applied to study dissolution of salts and the mixing of waters from different sources (Hem 1985, Davis et al. 1998). Of the two ions, Br is more soluble.

The Cl/Br ratio is sensitive to mineral and chemical sources or provenance. It tends to be low in most natural systems like seawater (290), meteoric water (50–180), organic materials (20–200), and water circulating through igneous and metamorphic rocks (100–500) (Davis et al. 1998). Higher Cl/Br ratios are often associated with anthropogenic sources (e.g., road salt, sewage, industrial chemicals or waste, agriculture processes). However, some of the highest ratios are attributed to the natural dissolution of evaporite minerals, such as halite (sodium chloride). Cl/Br ratios between 1,000 and 10,000 are relatively common in ground water that has come in contact with halite (Davis et al. 1998). Some of the largest ratios tend to be observed near the downstream ends of alluvial basins that rivers pass through (Phillips et al. 2002), where bedrock highs, such as that occurring in the Moab Valley at the Portal, force deep ground water to the surface.

The very high Cl/Br ratios associated with evaporite bedrock result from the differential solubility between Br and Cl. When briny water evaporates, halite precipitates first and the more soluble Br tends to remain in solution. Thus if fresher waters of different origin subsequently contact halite-containing rocks millions of years after their origin, dissolution of the rock

produces higher Cl/Br ratios. The ratios can become increasingly larger if the rock is subjected to multiple cycles of evaporation followed by dissolution (Davis et al. 1998).

Application of the ratio technique showed that the shallow brine waters found just south of the Moab Site maintained Cl/Br ratios that were on the order of 3,000 and higher (DOE 2006). In contrast, shallow ground water near the river and hydraulically downgradient of the tailings pile typically exhibited ratios on the order of 300 to 1,000. These significantly different results indicated that the shallow briny water south of the site was derived solely from dissolution of Paradox Formation sediments, whereas shallow ground water farther to the north comprised a mixture of waters whose origins included dissolution of shallower sandstone sediments, tailings seepage, and possibly some local recharge from precipitation. The success of the Cl/Br fingerprinting suggested that the technique could be applied equally effectively at other locations in the Moab Valley.

In all of the samples for which Cl/Br ratios were calculated to evaluate Ground Water IA performance (DOE 2006a), both Cr and Br were measured at detectable concentrations. This observation has bearing on an analysis of Cl/Br ratios presented later in Section 6.3.3 of this report for Matheson Wetlands ground water, since most Br in samples collected during the 2005 and 2006 monitoring events occurred at levels below applicable detection limits.

4.3.3 Ground Water Discharge to the Colorado River

Evaluation of Ground Water IA performance in 2005 also closely examined the hydraulics of discharge of Moab Site ground water to the Colorado River. This analysis indicated that, as with all rivers that receive nearby ground water, most of the discharge likely occurs within a limited-width zone located close to the riverbank (e.g., Winter 2000, Haitjema et al. 2001, Rosenberry 2005). This was expected to be the case even if fine-grained sediments tend to impede upward flow of deeper ground water to the river, as has been suggested by Gardner and Solomon (2003) in cross sections spanning the river (Section 4.2.1), because volumetric seepage of ground water to surface water still decreases nonlinearly with distance away from the river shoreline (Winter 2000). Accordingly, the contamination contained within the discharge was expected to be most noticeable in a side channel along the river's west bank and virtually unnoticed in the river's main channel farther from shore. Application of these hydraulic principles to the opposite bank of the river suggested that discharge of dissolved constituents in shallow ground water from the southeast would only be noticeable in a similarly constrained zone located near the river's east shoreline.

Additional chemical data collected for the 2005 evaluation of Ground Water IA performance (DOE 2006a) provided evidence that ammonia contamination in shallow ground water as a result of tailings seepage is significantly attenuated in the hyporheic zone found beneath the riverbed. An apparent cause of the attenuation was ammonia degradation by autotrophic bacteria, which have the potential to thrive in sub-riverbed environments that facilitate the mixing of river water with ground water before it discharges to the river.

4.3.4 Bank Storage

Peak flow in the Colorado River in spring 2005 was about 40,000 cfs, the rate identified by Cooper and Severn (1994) as the threshold discharge for overtopping of the east bank of the river and flooding of the Matheson Wetlands. During passage of the spring runoff event that led to this peak flow, DOE (2006a) examined the effects of associated high river stages on the chemistry of

ground water at the Moab Site. The most notable effect was that the brine surface elevation in wells located up to several hundreds of feet from the river did not respond as smoothly to the change in river stage as they did during the much milder peak flows occurring from 2001–2003. More specifically, dissolved constituent concentrations, including those for TDS, declined considerably for several months in both near-river locations and at wells situated moderately far from the river, signifying that the brine surface elevation decreased. Such changes were attributed to the relatively rapid rate and quantity of bank storage that took place in 2005 in response to high river levels. In addition, the effects of the bank storage on concentrations of ammonia and uranium in ground water appeared to persist for several months upon the passing of the highest river flows. With such changes occurring on the project side of the river, it is logical to assume that equally significant changes were also occurring due to bank storage on the southeast side of the river. It can also be logically deduced that periodic high river flow events of similar magnitude to the one taking place in spring 2005 are likely to effect changes in the chemistry of Matheson Wetlands ground water for several weeks, if not months.

5.0 Water Sampling

The water sampling conducted in the Matheson Wetlands during 2005 and 2006 was designed to capture flow and chemistry conditions near the Colorado River that potentially vary in response to changes in river discharge. Sampling in December 2005 occurred at a time when river flows were relatively low, at the tail end of high seasonal runoff that occurred during the preceding spring and summer and a month or two prior to the new spring runoff in 2006. The sampling event in May 2006 was designed to coincide with a period of high seasonal runoff but prior to the peak river discharge for the year. Sampling during June 2006 occurred after the peak flow but nevertheless at a time when river runoff was still relatively high.

Table 4 contains a chronology of the Matheson Wetlands sampling events in 2005 and 2006. In addition to listing the sampling dates, the table shows the range of flows on the river that occurred during each event. As noted, sampling that took place at two piezometers in late January 2006 was considered part of the December 2005 event. The lists of locations that were successfully sampled during each event also identify locations where sampling was not possible due to piezometers either being dry or limited recovery of water levels after well purging.

Table 4. Chronology of Water Sampling in 2005 and 2006

Date	River Flow (Daily Mean cfs)	Activity	Monitoring Locations Sampled
Dec 12–16, 2005 Dec 20–21, 2005	Flows ranged from 2,660 to 3,400	DOE sampling event corresponding low flow conditions on the Colorado River	Wells BL1-S, BL1-M, BL1-D, BL2-S, BL2-M, BL2-D, BL3-M, BL3-D, Piezometers M11-4.8, M11-7, M11-12, M11-14, N2-4.3, N2-6.5, N2-12.8, N4-3.2, N4-12, N5-4.4, N5-7.2, N5-14, N6-6.4, N7-7, N7-10, N7-11, and W1-7, and surface water locations 271 and 273. Samples were not collected from the following locations: Piezometers N2-1.5 and W1-4.3 did not contain sufficient water to sample (less than 0.3 ft), W1-10 never recharged after purging, and N8-3, N8-6, N8-14 were dry.
Jan 25–26, 2006	Flows ranged from 2,670 to 2,830	DOE sampling event (continuation of Dec 2005 event)	Piezometers N3-4.3 and N3-8.3
May 15–18, 2006	Flows ranged from 11,200 to 14,500	DOE sampling event corresponding to increasing Colorado River flows in the spring but prior to peak runoff	Wells BL1-S, BL1-M, BL1-D, BL2-S, BL2-M, BL2-D, BL3-M, BL3-D, Piezometers M11-4.8, M11-7, M1-12, M11-14, N2-6.5, N2-12.8, N3-4.3, N3-8.3, N4-3.2, N4-12, N5-4.4, N5-7.2, N5-14, N6-6.4, N7-7, N7-10, N7-11, N8-6, N8-14, W1-4.3 and W1 -7, and surface water locations 271, 272, and 273. Samples were not collected from the following locations: Piezometers N2-1.5, N2-4.3, N8-3 and W1-10 did not recover after purging.

Table 4. Chronology of Water Sampling in 2005 and 2006 (continued)

Date	River Flow (Daily Mean cfs)	Activity	Monitoring Locations Sampled
June 22–29, 2006	Flows ranged from 5,130 to 7,170	DOE sampling event corresponding to decreasing Colorado River flows after the spring runoff peak	Wells BL1-S, BL1-M, BL1-D, BL2-S, BL2-M, BL2-D, BL3-M, BL3-D, Piezometers M11-4.8, M11-7, M11-12, M11-14, N2-4.3, N2-6.5, N2-12.8, N3-4.3, N3-8.3, N4-3.2, N4-12, N6-6.4, N7-7, N7-10, N7-11, N8-6, N8-14, W1-4.3 and W1-7, and surface water locations 271 and 273. Samples were not collected from the following locations: Piezometers N2-1.5, N2-4.3, N8-3 and W1-10 did not recover after purging.

6.0 Data Interpretation

Hydraulic head and water chemistry information collected in 2005 and 2006 are analyzed in this chapter to identify changes in ground water flow and chemical transport processes that might have occurred in the Matheson Wetlands in comparison to processes identified during earlier investigations. As discussed in following paragraphs, conditions do generally appear to be the same as those depicted in the study by Cooper and Severn (1994) and the Moab SOWP (DOE 2003c). Such conditions include the occurrence of high constituent concentrations, many of which exceed current water quality standards. Using data from the extended list of chemical parameters incorporated in the 2005 and 2006 monitoring, more refined explanations are presented in this chapter for the moderately high concentrations of ammonia and uranium in the wetlands preserve that were pointed out by Gardner and Solomon (2003).

6.1 Chemical Data

6.1.1 Summary

Appendix A contains a listing of all chemical data collected at wells and piezometers in the Matheson Wetlands during 2005 and 2006, and Table 5 presents a summary of chemical parameters drawn from the data. Some of the most notable features of the parameter summary, which includes both the arithmetic mean value for each parameter at multiple monitoring locations and the range of those values, are the large concentration ranges listed for several parameters. In many cases, these observations reflect the fact that TDS concentrations in the wetlands ground water range from those for fresh water (TDS < 1,000 mg/L) to those for brine (TDS > 35,000 mg/L), with TDS levels in the latter category being as large as 110,000 mg/L. Because more saline water contains greater masses of major anions and cations than does less saline water, a large range in concentrations for each of the constituents that typically comprise most of TDS is inevitable. However, not all large ranges in measured concentration can be attributed to variable salinity, as some of the maximum concentrations listed in Table 5 occur at wells with relatively low TDS concentrations. These latter cases tend to reflect either specific sources of ground water passing through the wetlands preserve or chemical reactions that potentially occur along ground water flow paths.

Because of the high TDS concentrations observed at the Matheson Wetlands, much of the ground water in the area is considered non-potable. As Table 5 shows, the mean TDS concentration measured during 2005 and 2006 was 41,521 mg/L, which is about 80 times larger than the secondary water standard of 500 mg/L established by the Environmental Protection Agency (EPA) for this analyte (EPA 2003). Chloride and sulfate concentrations southeast of the Colorado River also render much of the ground water in the wetlands preserve non-potable, as the mean measured concentrations for them during 2005 and 2006 were 22,230 mg/L and 2,208 mg/L, respectively, far above the secondary water standard of 250 mg/L for each constituent. Cooper and Severn (1994) also identified high sulfate and chloride concentrations in Matheson Wetlands ground water, particularly in wells located just east of the river. However, rather than speculating about the obstacle these anions presented to developing local ground water for drinking water purposes, they foresaw that these and other major ions would have deleterious effects on wetlands ecology, attributing such effects to surface water storage projects on the river during the twentieth century and concomitant decreases in flooding frequency at the Matheson Wetlands.

Table 5. Summary of Chemical Parameters from Matheson Wetlands Ground Water Sampling in 2005 and 2006

Analyte	Units	Frequency of Detection[a]	Mean[b]	Detected Range[b]		Well with Maximum Value
				Minimum	Maximum	
Major						
Alkalinity, Total (As $CaCO_3$)	mg/L	42/42	240	112	500	N6-6.4
Ammonia Total as Nitrogen	mg/L	68/88	1.64	0.11	11	N2-4.3
Calcium	mg/L	59/59	1005	4.3	2900	BL1-M
Chloride	mg/L	85/85	22,230	14	71,000	BL3-D
Magnesium	mg/L	59/59	395	1.9	2,500	W1-4.3
Nitrate + Nitrite as Nitrogen	mg/L	59/59	0.931	0.026	8.60	N6-6.4
Potassium	mg/L	59/59	335.5	3.70	1,500	BL3-D
Sodium	mg/L	59/59	10,538	23	33,000	BL3-D
Sulfate	mg/L	85/85	2,208	5.40	5,700	BL3-D
Metals						
Aluminum	mg/L	11/59	0.15	0.0071	0.30	BL2-S
Cobalt	mg/L	17/59	0.0103	0.0008	0.0450	BL1-D
Iron	mg/L	43/59	14.25	0.05	140	N7-7
Ferrous Iron [Fe(2)]	mg/L	11/16	5.71	0.40	30	BL2-S
Manganese	mg/L	59/59	2.48	0.0048	18.0	W1-7
Manganous Manganese [Mn(2)]	mg/L	13/16	3.75	0.200	14.0	BL2-S
Molybdenum	mg/L	59/59	0.009	0.00043	0.04	M11-7.0
Selenium	mg/L	50/59	0.001	0.00003	0.017	N3-4.3
Strontium	mg/L	77/77	19	0.12	68	W1-4.3
Uranium	mg/L	88/88	0.006	0.00005	0.054	N3-8.3
Others						
Boron	mg/L	59/59	1.04	0.042	4.7	BL3-D
Bromide	mg/L	7/85	19.86	10	42	BL1-S
Dissolved Organic Carbon	mg/L	2/22	2.15	2.10	2.20	N3-8.3
Dissolved Oxygen	mg/L	75/75	3.1	0.09	9.65	N8-6
Fluoride	mg/L	16/58	0.813	0.240	2.50	N7-10
Lithium	mg/L	58/59	0.11	0.0032	0.36	W1-4.3
Ortho-Phosphate as Phosphorus	mg/L	4/58	28.7	7.7	54	W1-4.3
Oxidation Reduction Potential	mV	76/76	-104	-309	243	W1-4.3
pH	s.u.	76/76	7.4	6.12	9.22	N8-6
Specific Conductance	umhos/cm	77/77	52,669	497	143,800	BL3-D
Temperature	°C	77/77	15.4	4.45	28.2	M11-4.8
Total Dissolved Solids	mg/L	86/86	41,521	79	120,000	BL3-D
Total Organic Carbon	mg/L	2/22	2.45	2.20	2.70	N5-14
Turbidity	NTU	74/74	102	0.75	>1000	W1-4.3, N7-11
Radionuclides						
Gross Alpha	pCi/L	3/22	123	3.39	338	BL2-D
Gross Beta	pCi/L	13/22	538	5.52	1,140	BL3-D
Radon-222	pCi/L	32/44	82.9	0.329	192	BL3-M
Uranium-234	pCi/L	20/22	2.40	0.118	22.5	N3-8.3
Uranium-235	pCi/L	11/22	0.181	0.072	0.785	N3-8.3
Uranium-238	pCi/L	19/22	1.63	0.314	14.2	N3-8.3

[a] number of detected concentrations/total number of samples
[b] Mean and range based only on concentrations above detection limits

Iron and manganese are additional analytes that tend to exceed EPA secondary standards for drinking water in much of the Matheson Wetlands ground water. The mean concentration for iron at wells sampled in the area during 2005 and 2006 was 14.25 mg/L (Table 5), which was about 50 times larger than the 0.3 mg/L standard for this constituent. Similarly, the mean concentration for manganese, 2.48 mg/L, was about 50 times larger than the manganese standard of 0.05 mg/L. Though many of the largest iron and manganese concentrations were observed in samples containing brine (see data in Appendix A), indicating natural sources for them, some concentrations for these analytes exceeded their respective standards at relatively shallow piezometers that had TDS concentrations in the mildly saline range (1,000 to 3,000 mg/L). This observation provided further evidence that the quality of ground water in the Matheson Wetlands likely prevents it from being used as a source of drinking water. Cooper and Severn (1994) also detected iron and manganese at significantly high concentrations and mentioned the tendency for dissolved iron to precipitate out of solution during ground water sampling at locations very close to the river in the northern half of the wetlands preserve, presumably as a result of water being rapidly oxidized upon exposure to the atmosphere.

With high salinity levels in shallow ground water affecting wetland ecology and high concentrations of multiple analytes rendering most local ground water non-potable, it is important to emphasize that high constituent concentrations at the wetlands preserve appear to be caused by natural processes and other factors unrelated to the Moab Site. As pointed out by Cooper and Severn (1994) and discussed in DOE studies (DOE 2003c, DOE 2006a), multiple lines of evidence suggest that natural dissolution of Paradox Formation sediments are the largest contributors to high salinity as well as anomalously high concentrations for numerous ionic solutes. Moreover, Cooper and Severn (1994) attribute the apparent persistence of high concentrations of major anions and cations in shallow ground water just east of the Colorado River to the major surface water storage projects implemented upstream of Moab Valley in the mid twentieth century, which reduced the frequency of flooding of the Matheson Wetlands. Such a hypothesis correlates with other studies that identify frequent overbank flood events as the main hydrologic mechanism for replenishing ground water and soil in riparian areas (Westbrook et al. 2006). Accordingly, it is unlikely that historical and existing flow and transport processes at the Moab Site have any influence on ground water quality issues southeast of the river.

Concentration data for strontium in Table 5 suggest that this constituent occurs naturally in ground water at the wetlands preserve at relatively high concentrations of 10 mg/L or more, which appear to be naturally caused and related to the occurrence of high-saline water in the area. Concentrations of a similar magnitude were observed at the Moab Site in brine samples from background wells (DOE 2003c), and Hem (1985) reports that strontium concentrations in natural brines tend to be higher than those observed in less saline water. The maximum observed strontium concentration during 2005 and 2006 of 68 mg/L was observed at the near-river location W1-4.3, which, as discussed later in Section 6.3, had an average TDS concentration of about 60,000 mg/L during May and June 2006. Such observations indicate that strontium concentration can potentially be used as an indicator of water derived from the dissolution of Paradox Formation sediments.

6.1.2 Comparison with University of Utah Data

Of some interest is the fact that the 2005–2006 concentration data discussed above and summarized in Table 5 are similar in magnitude to the equivalent concentration data collected

and used by Gardner and Solomon (2003) to suggest that contaminated ground water at the Moab Site flows below the river to the wetlands preserve, thereby having the potential to deleteriously affect the wetlands' resources. As an example of how this study's data are similar to those employed in the University of Utah investigation, Table 6 and Table 7 compares several chemical parameters resulting from the June 2006 sampling event at Matheson Wetlands locations with equivalent values presented by Gardner and Solomon (2003). Following report sections highlight how updated interpretations of all pertinent information can lead to conclusions that significantly differ from those of Gardner and Solomon despite strong data similarities between the respective studies.

6.2 Shallow Ground Water Levels

A few different analyses of hydraulic head data were considered for this investigation. A primary objective was to develop potentiometric surface maps depicting shallow ground water flow at the times of all three sampling periods, partly for the purpose of deriving feasible explanations for some of the chemical data published by Gardner and Solomon (2003). Some consideration was also given to calculating *EFH* values at a common elevation near 3,900 ft amsl with the intent of identifying flow directions at that elevation. However, this type of analysis was not performed because it was determined that estimates of *EFH* based on interpolation of data from elevations other than a common one (e.g., Gardner and Solomon 2003) were too uncertain to provide reliable indicators of flow direction.

6.2.1 Potentiometric Surface

A limited number of monitoring locations were available for collecting hydraulic head data that could be used in developing shallow potentiometric surface maps. Only the shallowest sampling intervals at the well and piezometer nest locations shown in Figure 2 were considered for this analysis, and data from some of them were excluded from consideration either because they were screened too deep in the aquifer, their TDS concentrations were sufficiently high to indicate that density effects on the measured water elevation were significant, or the measured water elevation at a given time was radically different from those at other monitoring times (i.e., indicating a measurement error). In shallow wells at which (1) water levels appeared to be useful for identifying the potentiometric surface and (2) TDS concentrations fell in the range of 3,000 to 40,000 mg/L, the TDS concentration was used to calculate an *EFH*, which in turn was used to represent the local potentiometric surface.

Table 6. TDS, Chloride, and Sulfate Concentrations During the June 2006 DOE and the 2003 Gardner and Solomon Sampling Events

Matheson Location			TDS (mg/L)		Chloride (mg/L)		Sulfate (mg/L)	
Name	Type	Sample Depth[a] (ft bgs)	DOE	U of U[b]	DOE	U of U	DOE	U of U
			Jun-06	Jul-Aug 03	Jun-06	Jul-Aug 03	Jun-06	Jul-Aug 03
BL1-S	obs well	53	40,000	40,500	17,000	17,700	1,100	1,420
BL1-M	obs well	97	84,000	80,300	38,000	37,500	2,800	2,490
BL1-D	obs well	138	97,000	95,100	57,000	51,400	4,600	4,650
BL2-S	obs well	54	78,000	78,800**	38,000	40,300	3,600	3,710
BL2-M	obs well	98	95,000	105,000**	50,000	52,400	4,300	4,360
BL2-D	obs well	141	100,000	109,000**	50,000	54,200	4,500	4,430
BL3-M	obs well	44	91,000	66,000**	47,000	34,700	5,200	4,180
BL3-D	obs well	97	120,000	124,000**	61,000	62,400	5,500	5,340
M11-4.8	pz	13	3,800		1,200		940	
M11-7	pz	20	2,500	3,960**	670	1,170*	490	612*
M11-12	pz	38	16,000	10,500**	8,100	9,500*	1,200	766*
M11-14	pz	48	78,000	44,300**	41,000	39,300*	3,700	2,570*
N2-1.5[c]	pz	5	dry		dry		dry	
N2-4.3[c]	pz	14	dry		dry		dry	
N2-6.5	pz	20	2,200		120		1,100	
N2-12.8	pz	34	2,400		220		1,200	
N3-4.3	pz	13	1,800	3,870**	630	1,190*	160	328*
N3-8.3	pz	24	1,500	2,290**	350	591*	250	450*
N4-3.2	pz	9	350		14		21	
N4-12	pz	37	600	636**	27	98*	58	147*
N5-4.4[c]	pz	13	no sample		no sample		no sample	
N5-7.2	pz	24	no sample	1,090**	no sample	690*	no sample	582*
N5-14	pz	48	no sample	1,030**	no sample	54*	no sample	730*
N6-6.4	pz	12	1,600	3,170**	550	1,220*	240	340*
N7-7	pz	20	5,900	2,250**	2,600	907*	620	695*
N7-10	pz	31	100,000	108,000**	47,000	56,800*	4,700	4,640*
N7-11	pz	35	100,000		50,000		5,000	
N8-3[c]	pz	8	dry		dry		dry	
N8-6	pz	20	1,300		120		350	
N8-14	pz	48	3,400	1,650**	1,400	229*	520	386*
W1-4.3	pz	14	70,000	61,700**	32,000	34,800*	3,300	1,610*
W1-7	pz	19	66,000	59,400**	29,000	44,800*	3,100	1,570*
W1-10[c]	pz	19	no sample		no sample		no sample	

obs well = observation well
pz = piezometer
a Sample depth refers to discrete depth for obs wells, and total depth of pzs
b U of U = University of Utah
c Location did not recharge after initial purge; not able to collect sample
* Result obtained using Hach Colorimeter
** TDS result estimated based on Specific Conductance measurement
DOE sampling conducted using micro-purge technique
U of U sampling conducted by removing 3 casing volumes prior to sampling

Table 7. Ammonia and Uranium Concentrations During the June 2006 DOE and 2003 Gardner and Solomon Sampling Events

Matheson Location			Ammonia as N (mg/L)		Uranium (mg/L)	
Number	Type	Sample Depth[a] (ft bgs)	DOE	U of U[b]	DOE	U of U
			Jun-06	Jul-Aug 03	Jun-06	Jul-Aug 03
BL1-S	obs well	53	0.49	1.53	0.0078	0.0116
BL1-M	obs well	97	0.62	1.71	0.0023	0.0038
BL1-D	obs well	138	2.1	3.72	0.0010	0.0018
BL2-S	obs well	54	2	4.30	0.0030	0.0024
BL2-M	obs well	98	2.7	4.40	0.0031	0.0027
BL2-D	obs well	141	3	4.30	0.0029	0.0024
BL3-M	obs well	44	2.5	2.55	0.0002	0.0005
BL3-D	obs well	97	3.5	4.60	0.0002	<0.0003
M11-4.8	pz	13	0.44		0.0022	
M11-7	pz	20	0.24	0.28*	0.0030	0.0055
M11-12	pz	38	0.44	0.35*	0.0012	0.0018
M11-14	pz	48	2.2	1.13*	0.0011	0.0023
N2-1.5[c]	pz	5	dry		dry	
N2-4.3[c]	pz	14	dry		dry	
N2-6.5	pz	20	0.1		0.0002	
N2-12.8	pz	34	0.2		0.0003	
N3-4.3	pz	13	0.1	<0.1*	0.0320	0.023
N3-8.3	pz	24	0.1	0.3*	0.0540	0.0592
N4-3.2	pz	9	0.25		0.0002	
N4-12	pz	37	0.65	<0.1*	0.0024	0.002
N5-4.4	pz	13	no sample		no sample	
N5-7.2	pz	24	no sample	0.27*	no sample	
N5-14	pz	48	no sample	<0.1*	no sample	0.0031
N6-6.4	pz	12	0.1	<0.1*	0.0065	0.0069
N7-7	pz	20	1.2	0.87*	0.0004	0.0004
N7-10	pz	31	2.2	1.44*	0.0035	0.008
N7-11	pz	35	3.7		0.0002	
N8-3[c]	pz	8	dry		dry	
N8-6	pz	20	0.45		0.0009	
N8-14	pz	48	0.25	<0.1*	0.0002	0.0008
W1-4.3	pz	14	0.2	0.11*	0.0480	
W1-7	pz	19	0.42	0.25*	0.0250	0.0353
W1-10[c]	pz	19	no sample		no sample	

obs well = observation well
pz = piezometer
[a] Sample depth refers to discrete depth for obs wells, and total depth of pzs
[b] U of U = University of Utah
[c] Location did not recharge after initial purge; not able to collect sample
* Result obtained using Hach Colorimeter
** TDS result estimated based on Specific Conductance measurement
DOE sampling conducted using micro-purge technique
U of U sampling conducted by removing 3 casing volumes prior to sampling

EFH values were calculated with the formula (Guo and Langevin 2002)

$$EFH = \frac{\rho}{\rho_f} h - \frac{\rho - \rho_f}{\rho_f} Z \qquad \textbf{(1)}$$

where: EFH = equivalent freshwater head (ft amsl),
h = measured water elevation in the well (ft amsl),
ρ = density of water in the well (mass/volume),
ρ_f = density of freshwater (mass/volume), and
Z = elevation of the midpoint of the screened portion of the well (ft amsl).

The density of water in the well (ρ) was calculated with (Guo and Langevin 2002)

$$\rho = \rho_f + EC_{TDS} \qquad \textbf{(2)}$$

where: C_{TDS} = total dissolved solids concentration (mass/volume) at the midpoint of the screened interval, and
E = 0.7143, a dimensionless constant.

Figure 5 shows the potentiometric surface map resulting from this type of analysis using data from December 2005, when flow in the Colorado River was at a relatively low rate of approximately 2,600 to 3,400 cfs. Some general features of the shallow ground water surface can be discerned from this map. For example, the plotted contours indicate that flow beneath the wetlands preserve is generally from east to west, toward the river. In addition, deviation from this general flow direction is limited to a single area located just northeast of the wetlands, where apparent mounding of ground water occurs in the vicinity of the N3 piezometer nest. Though part of the flow from this mounded area is directed westward to the river, the remaining flow appears to be directed southward and southeastward before it eventually turns to the southwest and the river.

Additional potentiometric surface maps corresponding to the May 2006 and June 2006 sampling events are presented in Figure 6 and Figure 7, respectively. Though flow in the Colorado River was higher during these two months (see Table 4) than it was during December 2005, the associated increase in river stage is not apparent in these figures. The general east-to-west flow pattern observed in December 2005 is also present in May and June 2006, as is the presence of localized ground water mounding along the northeast edge of the wetlands preserve. Thus the three potentiometric surface maps prepared for the preserve suggest that shallow ground water levels can change between seasons and from month to month, but general flow patterns in the area remain the same.

The ground water level contour maps shown in Figure 5, Figure 6, and Figure 7 are similar to a comparable map that was produced by Gardner and Solomon (2003) for the wetlands preserve using measured hydraulic heads in summer 2003. At the time of their study, apparent ground water mounding northeast of the wetlands and in the vicinity of the N3 piezometer cluster was attributed to the discharge of springs from bedrock comprising the Glen Canyon Aquifer group (Gardner and Solomon 2003) along the northeast margin of the valley. Because this mounding continued to be present during the three sampling events conducted for this investigation, it appears likely that persistent and relatively steady flow processes, such as discharge from bedrock formations, are responsible for the larger ground water levels occurring in this area.

There is some question as to whether the shallow potentiometric surfaces presented in Figures 5, 6, and 7 and the equivalent surface computed by Gardner and Solomon (2003) are reliable indicators of the direction and magnitude of the hydraulic gradient in shallow ground water because of the effects that variable salinity can have on observed water levels. In particular, without knowing the vertical variations of TDS concentration, and therefore water density, in the columns of wells used to estimate the shallow potentiometric surface, it is possible that some of the head values used for this analysis are not truly representative of water levels in the top of the saturated zone. To correctly determine the shallow water table surface, it would be necessary to use wells (or piezometers) that only tap the uppermost 0.5 ft of the saturated zone. Short of having this type of information, however, the hydrogeologic investigation by Sumsion (1971) does at least support the observation that, in general, shallow ground water levels decrease steadily between the City of Moab and the Colorado River. Sumsion's study also suggests that shallow ground water flows in a more southward direction in the northern half of the wetlands preserve (i.e., in the vicinity of the ground water mound shown in Figures 5, 6, and 7), and in a west-southwestward direction in the southern half of the preserve.

6.2.2 Spatial Variations in Shallow Hydraulic Gradient

Additional similarities are seen among the three potentiometric surface maps in this report as well as between those maps and the ground water level map produced by Gardner and Solomon (2003). In particular, the magnitude of the east-to-west hydraulic gradient between the area of ground water mounding and the river (in the northern half of the wetlands preserve) is noticeably lower than the comparable hydraulic gradient toward the river in the southern half of the wetlands preserve. This observation can be interpreted two different ways. First, it is possible that the larger hydraulic gradient in the southern half of the preserve is reflective of a larger volume of ground water flowing toward the river in this area than flows toward the river in the northern half of the wetlands. If this is the case, it suggests that a large percentage of the northwestward-flowing ground water in the Moab Valley is diverted to a southwestward direction upon nearing the preserve, and might help explain why Cooper and Severn (1994) noted that the chemistry of ground water in the southern half of the wetlands was dominated by calcium-sulfate water and the northern half by sodium-chloride water. Though this hypothesis seems feasible, particularly if the apparent ground water mound in the northern part of the wetlands has the capacity to divert ground water southward, it also assumes that the sediments comprising the alluvial aquifer in the two respective parts of the preserve—and therefore their hydraulic conductivities—are largely the same.

It is also possible, under the second explanation, that the larger hydraulic gradient in the southern half of the wetlands is caused by the presence in this area of alluvial sediments that are more fine-grained than those in the northern half, which would tend to decrease the volume of flow moving to the river in the southern half. As discussed in Section 3.1.1, the borehole logs for well clusters BL1 and BL2, both in the northern half of the preserve, indicated that deeper alluvial sediments at these locations were dominated by coarse-grained, river-derived materials, whereas the borehole for the BL3 cluster, in the southern half, contained more fine-grained and presumably less permeable sediments. Additional studies of ground water flow, including drilling of deep boreholes into the alluvium underlying the southern half of the Matheson Wetlands would help to resolve these different interpretations of shallow water levels.

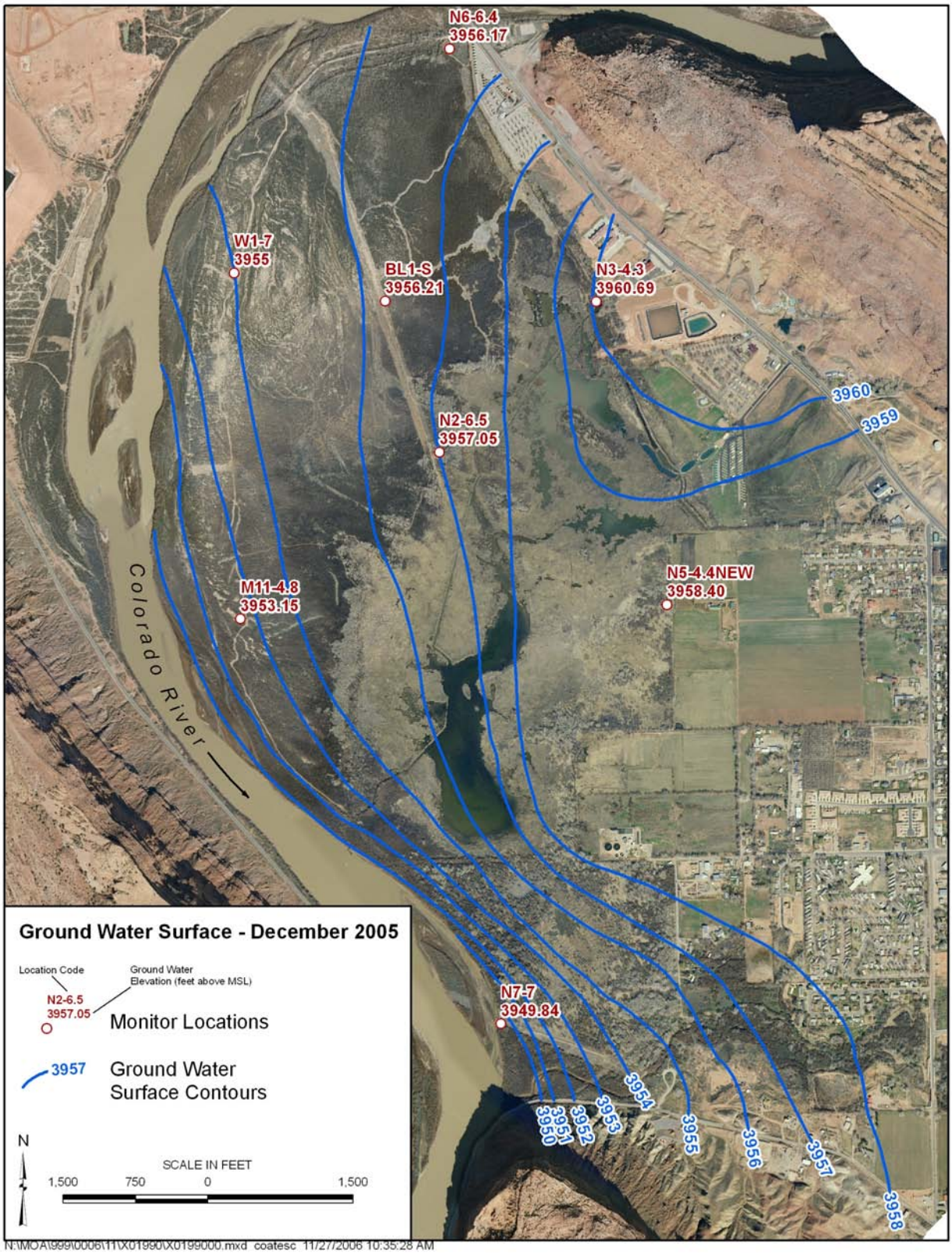

Figure 5. Map of Shallow Ground Water Levels in December 2005

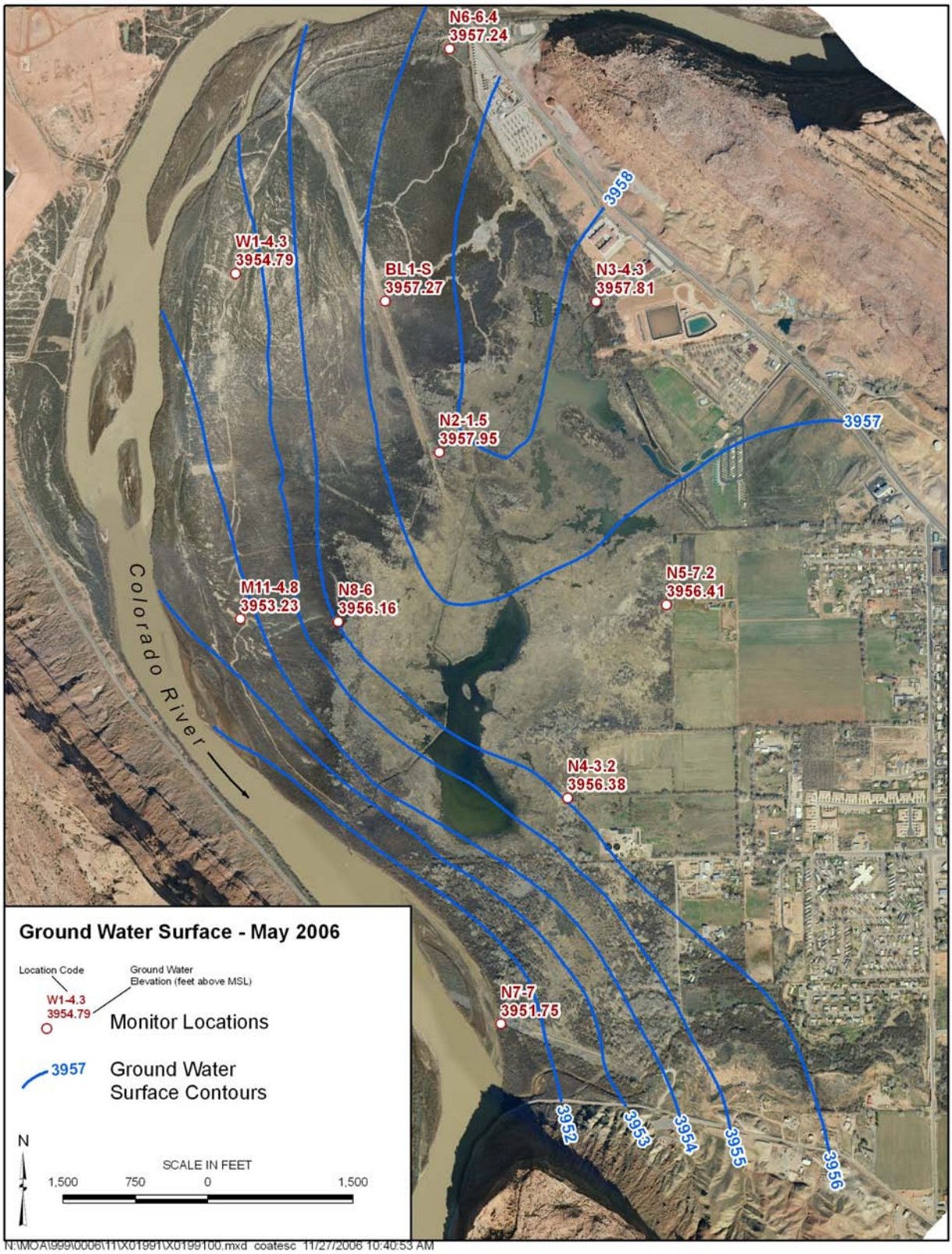

Figure 6. Map of Shallow Ground Water Levels in May 2006

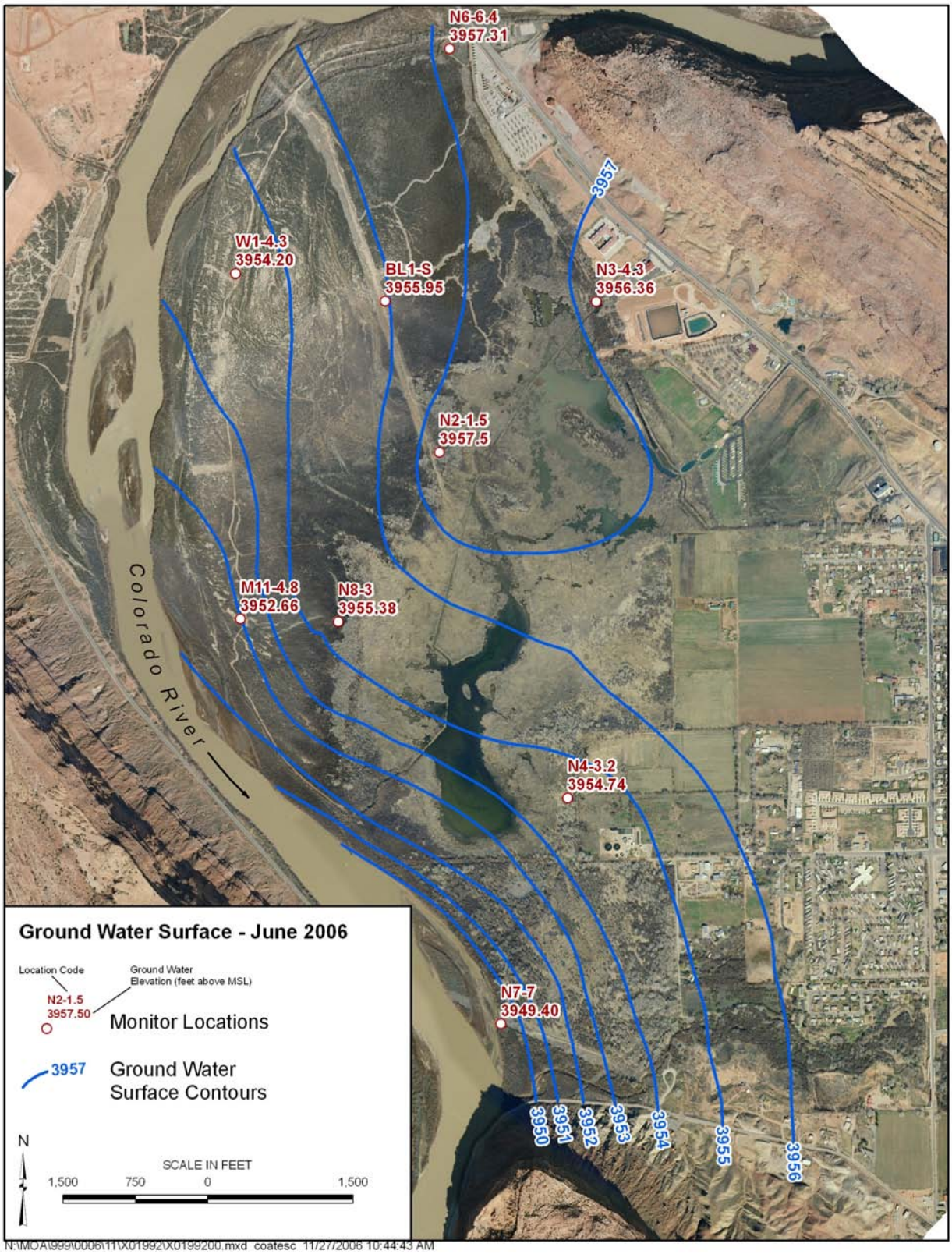

Figure 7. Map of Shallow Ground Water Levels in June 2006

6.3 Salinity

Inspection of TDS concentrations in samples collected from wells and piezometers in the Matheson Wetlands in 2005 and 2006 shows that spatial distributions of salinity generally follow the patterns associated with the conceptual model of density-dependent ground water flow discussed in Sections 3.1.2 and 4.1.1. That is, (1) salinity typically increases with depth within a given well or piezometer cluster, (2) TDS concentrations are greatest near the river and decrease with distance from the river, and (3) the brine surface elevation increases as the river is approached from the southeast. Further aspects of the salinity distribution in shallow ground water and changes in salinity with depth at the BL1, BL2, and BL3 clusters are discussed in this section. In addition, Cl/Br ratios at wells and piezometers are examined in an effort to discern the source of the more saline waters encountered at the Matheson Wetlands. For more detailed information regarding the TDS concentrations that were measured in support of this study, the reader is referred to chemistry data provided in Appendix A.

6.3.1 Salinity Distribution in Shallow Ground Water

The spatial distribution of salinity in shallow ground water southeast of the river was examined to discern if it revealed some of the chemical differences between the northern and southern parts of the wetlands preserve previously identified by Cooper and Severn (1994). To accomplish this, the average TDS concentration from the May and June 2006 sampling events at each of several shallow monitoring locations was posted on an aerial photograph of the area, as shown in Figure 8.

In addition to illustrating how salinity decreases with distance from the Colorado River, Figure 8 shows TDS concentrations as large as 4,000 to 59,000 mg/L occurring in shallow piezometers relatively close to the river. The average TDS level of 4,533 mg/L observed in piezometer N7-7 (at a depth of 13 ft bgs) is not surprising given that this monitoring location in the southern half of the preserve is situated close to the riverbank, in a locale where saltwater upconing in response to regional discharge of ground water is expected to produce brine concentrations. However, the average TDS concentrations of 3,733 and 59,933 mg/L observed at respective locations M11-14.8 (13 ft bgs) and W1-4.3 (13 ft bgs) indicate that shallow ground water in the northern half of the wetlands preserve and as much as 600 ft east of the river can be equally saline if not more. This latter observation suggests that moderately saline water to brine discharges to shallow ground water in the northern half of the preserve some distance to the east of the river as well as to the river itself, which correlates with findings by Cooper and Severn (1994) that the northern half of the preserve is more saline than the southern portion.

A possible explanation for more saline water in the northern half of the preserve is seen in the apparently smaller hydraulic gradient toward the river in this area than in the southern portion of the preserve (see Section 6.2). If this lower gradient is indicative of less volumetric ground water flow to the river, leaving most of the northwestward-moving ground water in Moab Valley to discharge to the river in the southern half of the wetlands, the brine surface can more easily penetrate shallow ground water east of the river (see factors affecting brine surface depth in Section 4.3.1).

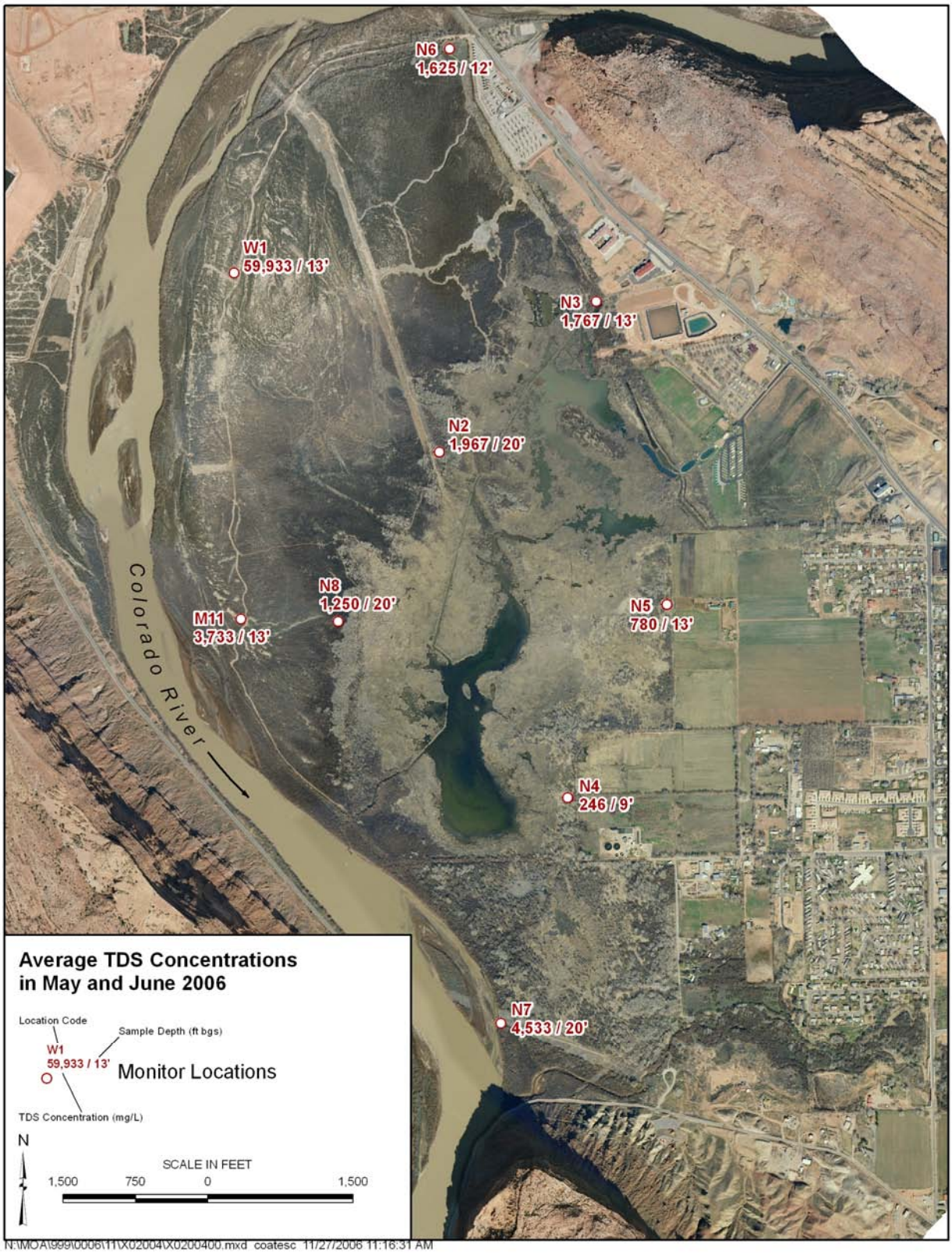

Figure 8. Average TDS Concentrations at Shallow Piezometers in the Matheson Wetlands During May and June 2006

6.3.2 Vertical Flow Potential in Brine

Though the large uncertainties associated with projecting *EFH* values at different elevations to a common elevation prevented the use of this approach to estimating hydraulic gradients at a common elevation (Section 6.2), estimation of vertical gradients of flow potential at well clusters BL1, BL2, and BL3 did prove to be valuable for assessing ground water flow in zones containing brine. In effect, this analysis showed that ground water velocities, particularly vertical velocities, were so small as to be indiscernible.

The method applied to estimate vertical gradient of flow potential made use of an equation presented by Guo and Langevin (2002) for quantifying vertical flow. In using this method, Equations (1) and (2) and the variables comprising these equations were applied. The resulting computations for various monitoring depth combinations at the three well clusters, shown in Table 8, produce vertical gradients of flow potential that are very small and indicate the presence of both upward and downward vertical flow.

Table 8. Vertical Hydraulic Gradient Calculations at Well Clusters

Cluster	Well	Date	TDS Concentration (mg/L)	Sample Depth (ft bgs)	Calculated Density - ρ (kg/m^3)[a]	Screen Mid Point Elevation (ft amsl)	Top of Casing (TOC) Elevation (ft amsl)	Depth to Water (ft below TOC)	Measured Groundwater Elevation - *h* (ft amsl)	*EFH* (ft amsl)	*EFH* Vertical Gradient	Density Adjustment $(\rho-\rho_f)/\rho_f$	Density-Adjusted Gradient[b]	Flow Direction
BL1	BL1-S	6/27/2006	40000	53	1.0286	3912.4	3966.91	12.17	3954.74	3955.95	-0.0476	0.0443	-0.0034	Upward
	BL1-M	6/27/2006	84000	97	1.0600	3867.4	3967.21	14.25	3952.96	3958.09				
	BL1-M	6/27/2006	84000	97	1.0600	3867.4	3967.21	14.25	3952.96	3958.09	-0.0626	0.0646	0.0021	Downward
	BL1-D	6/27/2006	97000	138	1.0693	3826.4	3967.33	15.37	3951.96	3960.66				
	BL1-S	6/27/2006	40000	53	1.0286	3912.4	3966.91	12.17	3954.74	3955.95	-0.0548	0.0489	-0.0058	Upward
	BL1-D	6/27/2006	97000	138	1.0693	3826.4	3967.33	15.37	3951.96	3960.66				
BL2	BL2-S	6/26/2006	78000	54	1.0557	3910.7	3967.67	14.85	3952.82	3955.17	-0.0576	0.0618	0.0042	Downward
	BL2-M	6/26/2006	95000	98	1.0679	3864.7	3967.78	15.88	3951.9	3957.82				
	BL2-M	6/26/2006	95000	98	1.0679	3864.7	3967.78	15.88	3951.9	3957.82	-0.0764	0.0696	-0.0068	Upward
	BL2-D	6/26/2006	100000	141	1.0714	3823.7	3967.96	16.16	3951.8	3960.95				
	BL2-S	6/26/2006	78000	54	1.0557	3910.7	3967.67	14.85	3952.82	3955.17	-0.0665	0.0636	-0.0029	Upward
	BL2-D	6/26/2006	100000	141	1.0714	3823.7	3967.96	16.16	3951.8	3960.95				
BL3	BL3-M	6/26/2006	91000	44	1.0650	3915.9	3964.93	12.25	3952.68	3955.07	-0.0694	0.0754	0.0059	Downward
	BL3-D	6/26/2006	120000	97	1.0857	3863.4	3965.02	13.83	3951.19	3958.72				

[a] kg/cm^3 = kilograms per cubic meter
[b] A negative value indicates an upward gradient and vice versa.

End of current text

These results are essentially representative of a system containing no discernible vertical flow, or a pressure field that can be effectively described as barotropic (e.g., Hickey 1989). Such a finding, which is expected below the brine surface in relatively stable variable density flow systems (e.g., Konikow 1997), lends further support to the conceptual model of density-dependent flow put forth in this report (Sections 3.1.2 and 4.1.1).

The method described above for assessing vertical gradients of flow potential makes use of both measured depths to water and densities estimated from TDS concentrations in samples collected from the wells. This approach appears to provide reasonable estimates the relative potential of upward or downward flow but it could be improved upon by using calibrated pressure transducers near the midpoint of each well's screen and the TDS concentration in the wellbore at the elevation of the screen. Though such data would be more expensive to acquire, they could help to refine estimates of vertical gradient such that a virtual barotropic system is easier to identify.

6.3.3 Chloride/Bromide Ratios

Analyses for dissolved Cl and Br were performed on numerous ground water samples collected at the Matheson Wetlands during the 2005 and 2006 monitoring events as part of an effort to identify Cl/Br ratios indicative of ground water originating with the dissolution of Paradox Formation sediments. Unfortunately, most of the Br concentrations were determined to be below detection limits. Nevertheless, a Cl/Br analysis was carried out using the detection limit values in lieu of actual concentrations, which produced considerable insight into the origins of high-salinity water in the area. With the exception of seven samples for which measured Br concentrations were achieved, the use of this approach meant that computed Cl/Br ratios were less than the actual ratios.

Table 9 presents a listing of the wells and samples used in this analysis, corresponding measured concentrations of Cl, Br, and TDS, and the computed Cl/Br ratios. The following three general observations are made regarding these data:

1) Most Cl/Br ratios greater than 2,000 occur in samples containing brine (TDS>35,000 mg/L).
2) Most Cl/Br ratios less than 1,000 occur in samples with TDS concentrations of 5,000 mg/L or less.
3) The lowest Cl/Br ratios (less than 300) tend to occur at locations with TDS concentrations less than 1,000 mg/L.

These general findings correlate well with the DOE study of Cl and Br concentrations on the Moab Site side of the river (DOE 2006a), which found that Cl/Br ratios in shallow brine south of the site were on the order of 3,000, and ratios in shallow ground water at the site itself fell in the range of 300 to 1,000.

An additional means of evaluating the data listed in Table 9 is presented in Figure 9, which comprises a scatter plot of computed Cl/Br ratios as a function of TDS concentration. Though this graph illustrates the above-mentioned general observations, it also shows that several Cl/Br ratios do not necessarily comply with those observations. For example, the potential does exist for Cl/Br ratios exceeding 1,000 to occur in samples with TDS concentrations less than 5,000 mg/L, and a few Cl/Br ratios greater than 2,000 are associated with TDS concentrations less than 20,000 mg/L. Furthermore, many relatively low Cl/Br ratios on the order of 2,000 or

less occur in samples containing brine. However, some of these latter instances may result from the use of a Br detection limit to calculate the Cl/Br ratio in lieu of the Br concentration itself.

Table 9. Concentration Data for Chloride and Bromide Ions and Cl/Br Ratios

Monitoring Location	Date	Chloride Concentration (mg/L)	Bromide Concentration[a] (mg/L)	Cl/Br Ratio	TDS Concentration (mg/L)
BL1-D	12/21/2005	59,000	20	2,950	80,000
BL1-D	5/16/2006	45,000	20	2,250	95,000
BL1-D	6/27/2006	57,000	20	2,850	97,000
BL1-M	12/20/2005	49,000	20	2,450	77,000
BL1-M	5/16/2006	39,000	20	1,950	78,000
BL1-M	6/27/2006	38,000	20	1,900	84,000
BL1-S	12/20/2005	21,000	42*	500	33,000
BL1-S	5/16/2006	17,000	10	1,700	35,000
BL1-S	6/27/2006	17,000	12*	1,417	40,000
BL2-D	12/21/2005	62,000	20	3,100	98,000
BL2-D	5/17/2006	46,000	20	2,300	98,000
BL2-D	6/26/2006	50,000	21*	2,381	100,000
BL2-M	12/16/2005	58,000	40	1,450	96,000
BL2-M	5/17/2006	41,000	20	2,050	95,000
BL2-M	6/26/2006	50,000	20	2,500	95,000
BL2-S	12/15/2005	47,000	40	1,175	80,000
BL2-S	5/16/2006	40,000	20	2,000	81,000
BL2-S	6/26/2006	38,000	20	1,900	78,000
BL3-D	12/21/2005	71,000	20	3,550	120,000
BL3-D	5/17/2006	57,000	20	2,850	110,000
BL3-D	6/26/2006	61,000	23*	2,652	120,000
BL3-M	12/21/2005	49,000	20	2,450	82,000
BL3-M	5/17/2006	41,000	20	2,050	84,000
BL3-M	6/26/2006	47,000	20	2,350	91,000
M11-12	12/13/2005	8,000	4	2,000	14,000
M11-12	5/18/2006	8,200	4	2,050	16,000
M11-12	6/23/2006	8,100	4	2,025	16,000
M11-14.0	12/12/2005	52,000	40	1,300	75,000
M11-14.0	12/13/2005	45,000	20	2,250	77,000
M11-14.0	5/17/2006	35,000	20	1,750	67,000
M11-14.0	6/27/2006	41,000	20	2,050	78,000
M11-4.8	12/15/2005	1,200	2	600	3,900
M11-4.8	5/18/2006	1,100	1	1,100	3,500
M11-4.8	6/27/2006	1,200	2	600	3,800
M11-7.0	12/14/2005	710	1	710	2,500
M11-7.0	5/17/2006	640	0.4	1,600	2,300
M11-7.0	6/27/2006	670	1	670	2,500
N2-12.8	12/16/2005	220	1	220	2,200
N2-12.8	5/17/2006	250	0.4	625	2,200
N2-12.8	6/28/2006	220	1	220	2,400
N2-6.5	12/15/2005	120	0.4	300	1,800
N2-6.5	5/17/2006	110	0.4	275	1,900
N2-6.5	6/28/2006	120	1	120	2,200
N3-4.3	1/25/2006	770	1	770	1,900
N3-4.3	5/18/2006	670	1	670	1,600
N3-4.3	6/29/2006	630	1	630	1,800

Table 9. Concentration Data for Chloride and Bromide Ions and Cl/Br Ratios (continued)

Monitoring Location	Date	Chloride Concentration (mg/L)	Bromide Concentration[a] (mg/L)	Cl/Br Ratio	TDS Concentration (mg/L)
N3-8.3	1/25/2006	480	1	480	1,600
N3-8.3	5/18/2006	390	0.4	975	1,400
N3-8.3	6/28/2006	350	1	350	1,500
N4-12.0	12/16/2005	14	0.2	70	560
N4-12.0	5/19/2006	59	0.2	295	590
N4-12.0	6/28/2006	27	0.2	135	600
N4-3.2	12/16/2005	30	0.2	150	310
N4-3.2	5/19/2006	17	0.2	85	79
N4-3.2	6/29/2006	14	0.2	70	350
N5-14	12/14/2005	17	0.4	43	960
N5-14	5/18/2006	17	0.2	85	980
N5-7.2	12/15/2005	22	0.2	110	890
N5-7.2	5/18/2006	22	0.2	110	880
N6-6.4	12/12/2005	790	1	790	1,700
N6-6.4	5/15/2006	610	0.4	1,525	1,600
N6-6.4	6/23/2006	550	1	550	1,600
N7-10	12/15/2005	40,000	20	2,000	67,000
N7-10	5/17/2006	30,000	10	3,000	56,000
N7-10	6/23/2006	47,000	40	1,175	100,000
N7-11	12/16/2005	60,000	40	1,500	99,000
N7-11	5/18/2006	55,000	20	2,750	99,000
N7-11	6/28/2006	50,000	20*	2,500	100,000
N7-7	12/16/2005	1,700	1	1,700	3,400
N7-7	5/18/2006	2,100	2	1,050	4,300
N7-7	6/28/2006	2,600	2	1,300	5,900
N8-14	5/18/2006	650	1	650	1,900
N8-14	6/28/2006	1,400	1	1,400	3,400
N8-6	5/17/2006	81	0.4	203	1,200
N8-6	6/28/2006	120	0.4	300	1,300
W1-4.3	5/17/2006	30,000	20	1,500	62,000
W1-4.3	6/27/2006	32,000	11*	2,909	70,000
W1-7	12/13/2005	37,000	10	3,700	56,000
W1-7	5/17/2006	27,000	20	1,350	57,000
W1-7	6/27/2006	29,000	10*	2,900	66,000

[a]All bromide concentrations represent detection limit values unless noted otherwise by an asterisk.
*Bromide concentration is a measured value.

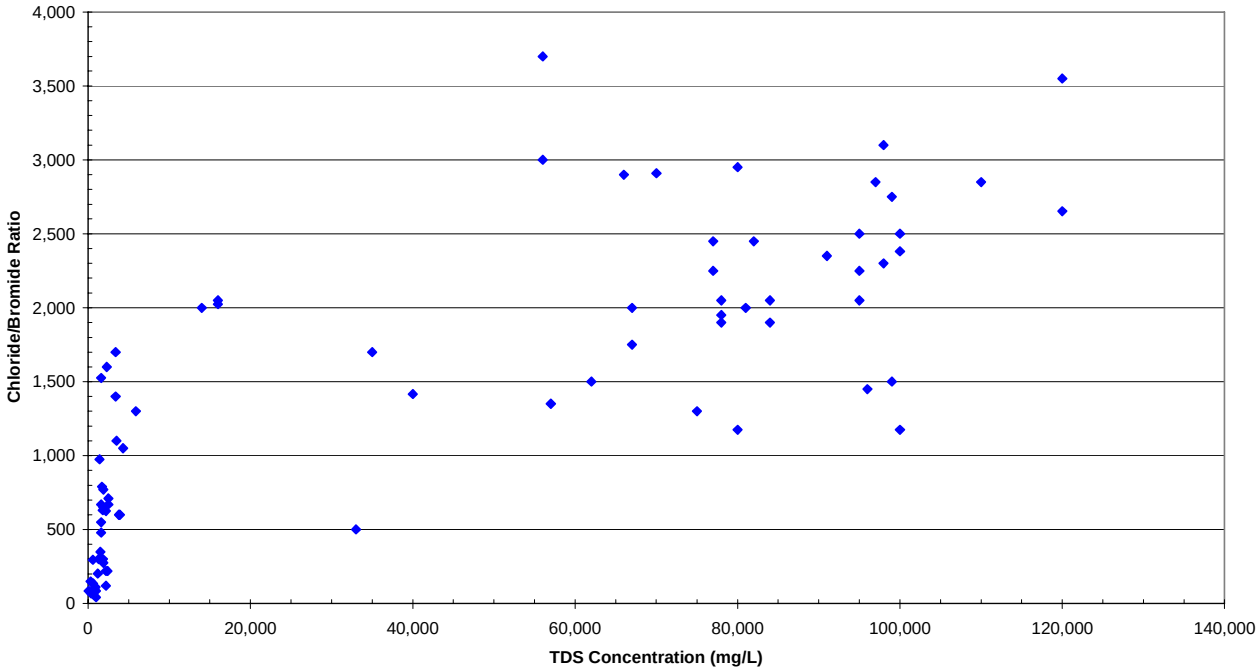

Figure 9. Chloride/Bromide Ratios as a Function of TDS Concentration at Matheson Wetlands Locations in 2005 and 2006.

The Cl/Br ratios greater than 1,000 for samples with TDS concentrations less than 7,000 mg/L (Figure 9) are of interest because of the monitoring locations at which they occur. With the exception of one location (N8-14), all of these data points are associated with samples collected at the M11, N6, and N7 clusters, each of which is located close to the river where saltwater upconing is expected to produce brine. This observation suggests that upconing of Paradox-derived brine in the vicinity of the river has resulted in relatively large Cl/Br ratios that tend to persist even when the brine is temporarily replaced by mildly saline to moderately saline water.

6.4 Ammonia

As indicated in Table 5, ammonia (as N) was detected in Matheson Wetlands ground water during 2005 and 2006 at concentrations that ranged from 0.11 to 11 mg/L and averaged 1.64 mg/L. With the exception of the two largest concentrations (6.6 and 11 mg/L as N), the ammonia concentrations observed during the study fell into the same ranges observed for this constituent in the SOWP (DOE 2003c) and Gardner and Solomon (2003). It should be noted, however, that the ammonia concentrations observed at the wetlands preserve were as much as two orders of magnitude smaller than the largest concentrations that have been observed for this constituent at the Moab Site (1,200 to 2,300 mg/L as N) as a result of contamination derived from tailings seepage (DOE 2003c, DOE 2006a). This in turn suggests that ammonia contamination at the site is not migrating to the east side of the river.

Figure 10 is a graph showing how 2005 and 2006 ammonia concentrations measured in Matheson Wetlands ground water vary with respect to TDS concentration. Because a TDS concentration was not measured in the sample that contained the maximum observed ammonia concentration of 11 mg/L (as N), the largest ammonia concentration shown in this scatter plot is 6.6 mg/L (as N). The data included in the plot shows that not all briny water beneath the preserve contains ammonia (as N) at concentrations of 1 mg/L and above, and that the highest ammonia concentrations tend to be associated with brines exhibiting TDS levels of 70,000 mg/L or more. Again, because these high-TDS waters originate with the dissolution of Paradox Formation sediments, it stands to reason that most of the ammonia occurring in ground water on the southeast side of the Colorado River can be attributed to natural ammonia sources in those sediments (see Section 4.1.3).

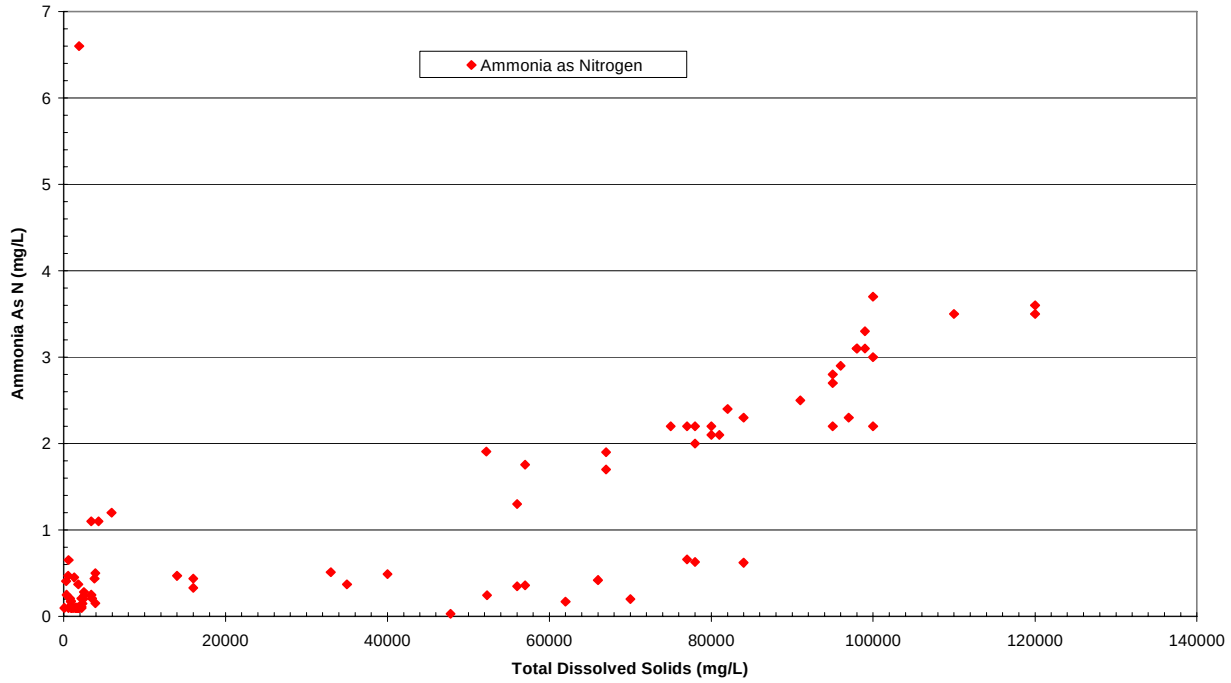

Figure 10. Ammonia (as Nitrogen) Concentration as a Function of Total Dissolved Solids Concentration at Matheson Wetlands Wells

As indicated in Appendix A, the ammonia concentration of 6.6 mg/L (as N) was observed at monitoring location N3–4.3 (14 ft bgs) during the December 2005 sampling event, and the 11 mg/L concentration was observed at location N2-4.3 (14 ft bgs) during the same event. The accuracy of these concentrations is questionable given that reported ammonia levels at the N3 and N2 monitoring clusters typically range between the detection limit (< 0.1 mg/L as N) and 0.3 mg/L (as N) (see Appendix A and Gardner and Solomon [2003]). The fact that the next largest ammonia concentration in wetlands ground water during 2005 and 2006 was 3.7 mg/L (as N) also calls into question the two largest concentrations.

If the 6.6 mg/L and 11 mg/L values are accurate, they are unlikely to be related to ammonia contamination at the Moab Site. Location N3-4.3 is about 4,000 ft east of the Colorado River (Figure 1), near the base of the bedrock forming the northeast border of the Moab Valley and near the area affected by shallow ground water mounding. Since shallow ground water in this area appears to either flow directly to the west and toward the river (see Figure 5), or initially to

the south and then to the southwest (Figure 6 and Figure 7), the source for the high ammonia concentration at the N3 cluster during the December 2005 event, if it is real, would likely be on the east side of the preserve. Similarly, location N2-4.3 is about 2,800 ft east of the river, in the middle of the Matheson Wetlands and within a shallow ground water flow path that extends west-southwestward from the area of mounding toward the river (see potentiometric surfaces in Figure 5, Figure 6, and Figure 7).

6.5 Uranium

6.5.1 Mass-per-Unit-Volume Concentrations

Mass-per-unit-volume concentrations of uranium in ground water at the Matheson Wetlands during the 2005 and 2006 sampling events ranged from 0.00005 to 0.054 mg/L, and the mean concentration was 0.006 mg/L (Table 5). Some perspective can be given to these concentrations by mentioning that the current EPA maximum contaminant level (MCL) for this constituent is 0.030 mg/L, and the Moab Site UMTRA standard is 0.044 mg/L. Thus sampling results suggests that most uranium levels in ground water east of the river tend not to be a problem, but occasional occurrences of uranium at some locations do result in exceedances of the MCL. If those exceedances tend to occur at the same monitoring locations during multiple sampling events, it is likely that the highest uranium concentrations are associated with distinct sources for this constituent within the northwest end of the Moab Valley.

Inspection of mass-per-unit-volume concentration data for uranium during 2005 and 2006 (in Appendix A) shows that the concentrations that either approached or exceeded the EPA MCL (i.e., concentrations > 0.02 mg/L) occurred at only two piezometer clusters, and only at relatively shallow depths. The maximum uranium level during 2005 and 2006, 0.054 mg/L (Table 5), was observed during June 2006 at monitoring location N3-8.3 (at a depth of 24 ft bgs), in the area of ground water mounding near the northeast edge of the preserve. Additional uranium concentrations at this location during 2005 and 2006 were 0.045 and 0.048 mg/L, and uranium levels in the shallowest piezometer at this cluster (N3-4.3 at a depth of 13 ft bgs) ranged from 0.018 to 0.032 mg/L. Given that the N3 cluster is located about 4,000 ft east of the Colorado River, it seems unlikely that the relatively high uranium concentrations observed here could be related to uranium contamination at the Moab Site.

The other cluster experiencing uranium concentrations that approached or exceeded the EPA MCL in 2005 and 2006 was W1, located about 600 ft east of the river (Figure 2). At W1-4.3 (at a depth of 14 ft bgs), measured uranium levels ranged from 0.0269 to 0.050 mg/L, and the comparable range at W1-7 (at a depth of 19 ft bgs) was 0.017 to 0.025 mg/L.

The highest uranium concentrations measured at Matheson Wetlands locations in 2005 and 2006 were similar in magnitude to elevated uranium concentrations of 0.035 to 0.111 mg/L identified by Gardner and Solomon (2003) in their report as being possible indicators of sub-riverbed transport of Moab Site contamination to the wetlands preserve. However, it should be pointed out that all of these “elevated” concentrations on the east side of the river are generally about one to two orders of magnitude less than comparable values associated with Moab Site-related contamination. Uranium concentrations in shallow ground water immediately downgradient of the Moab tailings pile generally fall in the range of 0.5 to 3 mg/L (DOE 2006a) and concentrations in ground water northeast of the tailings pile, in the former mill area, approach values greater than 10 mg/L (DOE 2003c). These latter concentrations are distinctly different

from uranium concentrations of 0.0007 to 0.06 mg/L identified in the SOWP as being representative of "background" uranium levels in ground water at the Moab Site (DOE 2003c). On the basis of these data, it would appear more likely that the range of uranium concentrations observed at Matheson Wetlands wells, including the relatively high values approaching 0.05 to 0.1 mg/L, are the result of natural processes, such as dissolution of solid-phase uranium in sediments by ground water that first migrates through bedrock and eventually discharges to alluvium.

To determine whether the relatively high uranium concentrations at the N3 and W1 monitoring clusters are indicative of a distinct source for this constituent, concentrations of uranium during May 2006 at several shallow monitoring locations have been posted on an aerial photograph of the Matheson Wetlands. This graphic, shown in Figure 11, does suggest that occurrences of the highest uranium concentrations southeast of the river are limited to the northern half of the preserve. Moreover, because shallow ground water near the N3 and W1 clusters shows a hydraulic gradient toward the river (see Figure 5, Figure 6, and Figure 7), it further suggests that the source of the higher levels of uranium is near the northeast edge of the preserve. This source may consist of ground water discharge from the bedrock formations forming the northeast border of the valley (see Section 6.2). The combination of hydraulic head data in shallow ground water and the uranium concentration distribution shown in Figure 11 indicates that uranium in the wetlands preserve is unrelated to dissolved uranium in ground water at the Moab Site.

Of some interest is the observation that well BL1-S, located about midway between the N3 and W1 clusters, had a uranium concentration of only 0.0062 mg/L in May 2006 (Figure 11), well below the uranium levels measured at the N3 and W1 clusters. Though this result might, at first glance, suggest that uranium does not migrate from the ground water mounding area toward the river, such an assessment would fail to take into account the likely change in oxidation-reduction conditions that occur between the N3 cluster and the BL1 wells. Well BL1-S is screened at a depth of 53 ft bgs, in a vertical interval at which chemically reducing conditions can be expected (DOE 2006b). As described in Section 3.2, such reducing conditions can be associated with the chemical reduction and precipitation of uranium (Anderson and Lovley 2002). In contrast, shallow ground water at the N3 and W1 clusters can occasionally become oxidized by recharge of oxygenated water in precipitation. In addition, shallow ground water at the W1 cluster may be affected by the influx of oxygenated water via riverbank storage or occasional flooding of the preserve by the river. Consequently, the occurrence of relatively high uranium concentrations in shallow ground water at the N3 and W1 clusters can be explained by a uranium source in the vicinity of N3 cluster.

6.5.2 Uranium Activity Ratios

Potential sources for uranium detected in ground water southeast of the Colorado River were further analyzed using uranium isotope data. In particular, the ratio of measured activity concentrations of uranium-234 and uranium-238 (U-234/U-238) were examined to determine whether the Matheson Wetlands showed a distinct uranium signature in comparison to those at the Moab Site. To carry out this comparison, uranium activity concentration data from samples collected at Moab Site wells in 2002 were used. It is important to note that the Moab Site data were based only on samples affected by uranium contamination, either from mill tailings leachate or contamination beneath the former uranium mill. Uranium isotope data from non-contaminated wells at the Moab Site were expected to produce uranium activity ratios that were

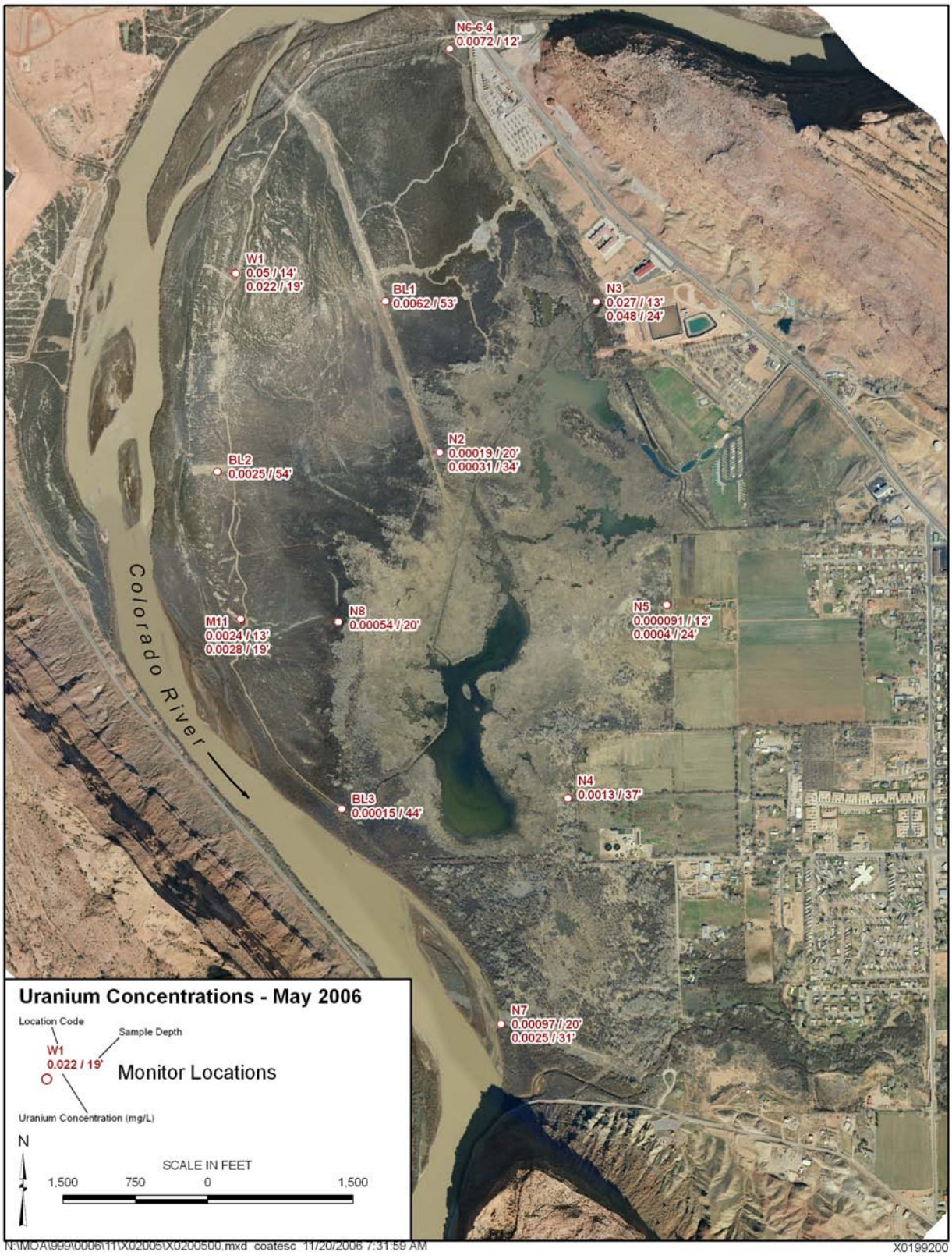

Figure 11. Measured Uranium Concentrations in Matheson Wetlands Ground Water in June 2006

similar in magnitude to those from Matheson Wetlands ground water because the origins of both types of water appear to be similar (see discussion in Section 6.5.1 regarding background uranium concentrations).

The data included in this analysis and resulting uranium activity ratios (UARs or U-234/U-238 ratios) are listed in Table 10, and Figure 12 shows a scatter plot of the computed ratios as a function of mass-per-unit-volume concentrations of uranium. A clear distinction between the isotopic signatures occurring in the two areas is shown in both cases, with UARs at the Moab Site typically falling in the range of 0.8 to 1.0 and comparable ratios in the Matheson Wetlands mostly falling in the range of 1.1 to 2.2. One possible explanation for this significant difference is that the ground water at the preserve mostly originated as recharge in bedrock formations located to the north and east of Moab Valley, whereas ground water affected by contamination at the Moab Site largely resulted from tailings seepage during the period of site operation and following years. Under such circumstances, most wetlands ground water has experienced relatively long contact times with sediments comprising both bedrock and Moab Valley alluvium, and is expected to produce UARs larger than 1.0 (Verstraeten et al. 2001). In contrast, the relatively short contact times between tailings-derived seepage and alluvial sediments at the Moab Site (approximately 20 to 50 years) are expected to result in uranium activity ratios closer to 1.0 (Zielinski et al. 1997). Regardless of the explanation for the differences in UARs between the two areas, the data plotted in Figure 12 provide strong evidence that ground water in the Matheson Wetlands is not related to Moab Site ground water.

Table 10. Uranium Isotopic Concentrations in Ground Water at the Moab Site and the Matheson Wetlands and Computed U-234/U-238 Ratios

Monitoring Location	Date	Uranium-234 Concentration (pCi/L)	Uranium-238 Concentration (pCi/L)	U-234/U-238 Ratio	Total Uranium Concentration (mg/L)
Moab Site Locations[a]					
0412	5/23/2002	4,170	4,600	0.91	12.800
0412	9/17/2002	3,880	4,210	0.92	12.400
0413	5/23/2002	555	585	0.95	1.730
0413	9/18/2002	500	557	0.90	1.600
0414	5/23/2002	1,050	1,180	0.89	3.360
0414	9/18/2002	920	1,040	0.88	3.000
0437	9/26/2002	931	1,010	0.92	2.760
0438	8/21/2002	424	483	0.88	1.330
0438	9/17/2002	556	617	0.90	1.680
0439	9/17/2002	304	323	0.94	0.856
0442	9/25/2002	3,060	3,760	0.81	10.600
AMM-2	5/29/2002	911	896	1.02	2.710
AMM-2	8/13/2002	862	912	0.95	2.600
AMM-3	5/29/2002	1,020	1,090	0.94	2.900
AMM-3	8/13/2002	480	501	0.96	1.870
ATP-2-S	5/29/2002	973	1,040	0.94	2.870
ATP-2-S	8/14/2002	923	1,050	0.88	2.980
SMI-PZ3D2	5/31/2002	974	1,090	0.89	3.010
SMI-PZ3D2	8/15/2002	800	990	0.81	2.600

Table 10. Uranium Isotopic Concentrations in Ground Water at the Moab Site and the Matheson Wetlands and Computed U-234/U-238 Ratios (continued)

Monitoring Location	Date	Uranium-234 Concentration (pCi/L)	Uranium-238 Concentration (pCi/L)	U-234/U-238 Ratio	Total Uranium Concentration (mg/L)
SMI-PZ3M	5/30/2002	278	317	0.88	0.801
SMI-PZ3M	8/15/2002	235	290	0.81	0.811
SMI-PZ3S	5/30/2002	516	518	1.00	1.520
SMI-PZ3S	8/15/2002	576	720	0.80	2.040
TP-02	5/22/2002	6,570	6,390	1.03	17.600
TP-02	8/14/2002	5,310	5,830	0.91	16.800
TP-07	5/29/2002	954	962	0.99	2.680
TP-07	8/13/2002	902	976	0.92	2.730
TP-08	5/29/2002	900	928	0.97	2.630
TP-08	8/13/2002	869	962	0.90	2.690
TP-09	5/29/2002	1,380	1,450	0.95	4.070
TP-09	8/13/2002	1,130	1,320	0.86	3.750
Average U-234/U-238 Ratio =				**0.91**	
Matheson Wetlands Locations					
BL1-D	5/16/2006	0.771	0.343	2.25	0.0012
BL1-D	6/27/2006	0.615	0.474	1.30	0.0011
BL1-M	5/16/2006	1.1	1.04	1.06	0.0024
BL1-M	6/27/2006	1.2	0.743	1.62	0.0023
BL1-S	5/16/2006	3.74	2.13	1.76	0.0062
BL1-S	6/27/2006	2.96	1.93	1.53	0.0078
BL2-D	5/17/2006	1.85	1.1	1.68	0.0029
BL2-D	6/26/2006	1.33	0.93	1.43	0.0029
BL2-M	5/17/2006	1.31	0.979	1.34	0.003
BL2-M	6/26/2006	1.8	1.02	1.76	0.0031
BL2-S	5/16/2006	1.7	1.29	1.32	0.0032
BL2-S	5/16/2006	1.44	0.911	1.58	0.003
BL2-S	6/26/2006	1.36	1.13	1.20	0.003
BL3-D	5/17/2006	0.32	0.195	1.64	0.0001
BL3-D	6/26/2006	0.118	0.075	1.57	0.00015
BL3-M	5/17/2006	0.397	0.405	0.98	0.00015
BL3-M	6/26/2006	0.188	0.0974	1.93	0.00023
M11-14.0	5/17/2006	0.794	0.558	1.42	0.001
M11-14.0	6/27/2006	0.691	0.409	1.69	0.0011
N3-8.3	6/28/2006	22.5	14.2	1.58	0.054
N5-14	5/18/2006	2.07	0.983	2.11	0.0029
Average U-234/U-238 Ratio =				**1.56**	

[a]All Moab Site locations included in the analysis are in areas of uranium contamination.

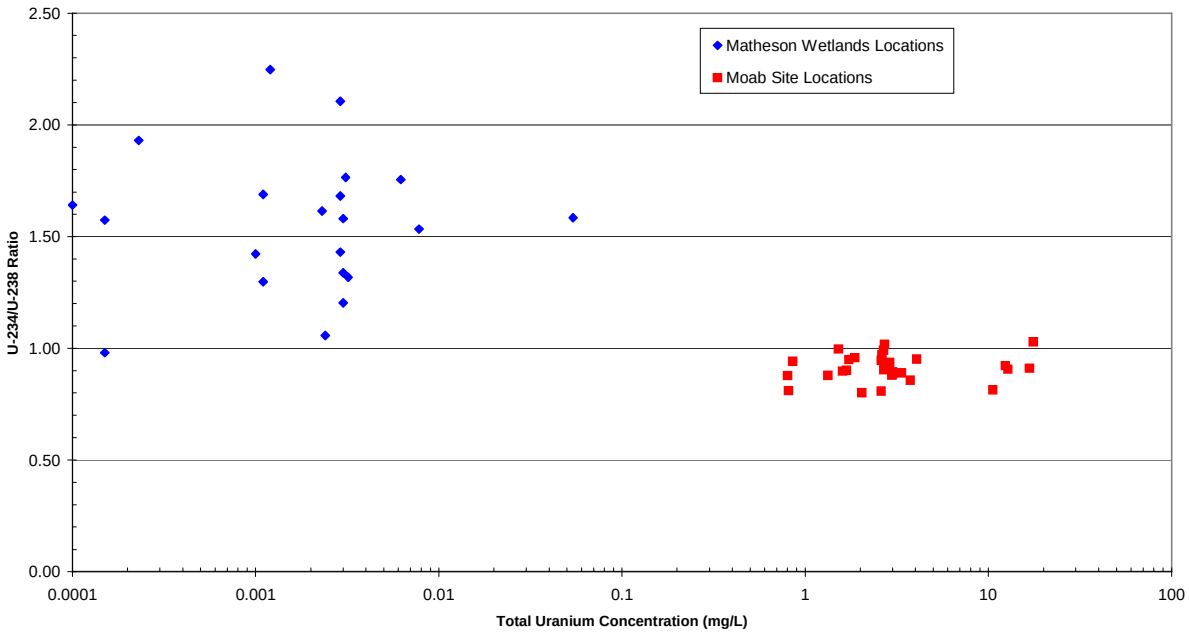

Figure 12. Uranium Activity Ratios at Moab Site Wells and Matheson Wetlands Monitoring Locations as a Function of Total Uranium Concentration

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7.0 Summary and Conclusions

This report comprises an updated assessment of the flow processes and chemistry in ground water in the vicinity of the wetlands preserve, located between the City of Moab and the Colorado River in Moab Valley, Utah. The assessment makes use of data collected at wells and piezometers southeast of the river during three sampling events between December 2005 and June 2006. Analysis of shallow ground water level data collected during this period suggests that flow patterns in the area previously identified by Gardner and Solomon (2003) continue to be present in recent years, which in turn have significant influence on the distribution of chemical constituents dissolved in the ground water. As with multiple previous studies addressing the Matheson Wetlands, chemical data reported in this study indicate that local ground water contains notably high concentrations of TDS, ammonia, and uranium, as well as several other constituents that appear to be largely the result of the high salinity observed in much of the ground water southeast of the river. Using a combination of findings from previous investigations and relatively detailed evaluation of the chemical data collected in 2005 and 2006, this report provides logical explanations for observed spatial and temporal distributions of high concentrations for TDS, ammonia and uranium. These logical explanations center mostly on natural flow and transport processes that appear to have been occurring in the northwest end of the Moab Valley for thousands of years. A major finding stemming from the analysis of transport processes occurring in the Matheson Wetlands is that ground water on the southeast side of the river is unrelated to contaminated ground water beneath the Moab Site, located on the opposite (west) side of the river. This finding contradicts those of Gardner and Solomon (2003), who surmised that contaminated ground water from the Moab Site flows south-southeast beneath the river and reaches the wetlands preserve. It is noteworthy that these two differing conclusions result from the interpretation of chemical data that are quite similar.

Significant conclusions drawn from this study are:

- Ground water flow processes in the alluvial aquifer in northwest end of the Moab Valley are strongly affected by variations in water density as governed by spatial variations in water salinity. TDS concentrations in ground water on both sides of the Colorado River range from as little as 500 mg/L to those reflective of brine (> 35,000 mg/L), and can be as large as 120,000 mg/L near the river in the Matheson Wetlands.
- The primary source of the high-salinity water is dissolution of evaporite sediments in the underlying Paradox Formation and subsequent entrainment of brine by deep-circulating ground water.
- The highest TDS concentrations in shallow ground water occur close to and underlying the river because discharge from both regional and local ground water flow systems to the river causes saltwater upconing.
- A contour map produced by Gardner and Solomon (2003) showing estimated equivalent freshwater heads at a common elevation indicates that sub-riverbed flow is toward the south-southeast and nearly parallel to the Colorado River. As a consequence, ground water affected by flow from the Moab Site, if any, would be limited to a narrow strip of aquifer located near the east shoreline of the river, at elevations containing brine. Thus Gardner and Solomon's analysis does not provide convincing evidence that the Moab Site contamination impacts the Matheson Wetlands.

- Maps of the estimated potentiometric surface of shallow ground water in the Matheson Wetlands indicate a general east-to-west hydraulic gradient, which is altered locally by a ground water mound on the northeast side of the wetlands preserve. Some ground water in the mounded area appears to flow southward and southeastward, and the remaining flow is westward toward the river. Though these maps are uncertain and subject to misinterpretation because of limited knowledge regarding the effects of vertical variations in TDS concentration on depths to water in monitor wells, the general flow trends indicated by the maps are similar to those produced in a previous study of the shallow ground water flow system in the Moab Valley that was not influenced by TDS concentrations.
- The water mound on the northeast edge of the wetlands preserve appears to result from the discharge of ground water to valley alluvial fill from nearby bedrock formations that form the northeast border of the Moab Valley. The chemistry of this bedrock-derived water appears to differ in some aspects from the chemistry of ground water migrating northwestward in the valley from the vicinity of the City of Moab.
- The hydraulic gradient associated with westward-migrating, shallow ground water from the water-mounding locale in the northern part of the wetlands preserve appears to be smaller than the hydraulic gradient of southwestward-migrating ground water in the southern half of the preserve. It is possible that this observation and apparently different chemistries of ground water in the northern and southern halves of the wetlands preserve are the result of more alluvial ground water discharging to the river in the southern half than in the northern half. Alternatively, the larger gradient in the southern half of the wetlands could be attributed to the presence of less-permeable sediments in this area.
- The spatial distribution of TDS concentrations measured during 2005 and 2006 in ground water at the Matheson Wetlands conforms to the conceptual model of local density-dependent flow developed earlier by DOE (2003c) and expanded upon in this report. Under this model, TDS concentrations in ground water at a given location generally increase with depth, and TDS concentrations in shallow ground water are largest near the river and decrease with distance from the river.
- Assessment of vertical flow potential in brine at three well clusters (BL1, BL2, and BL3) in the Matheson Wetlands indicates that vertical gradients in brine are very small, with some computed gradients indicating upward flow and others indicating downward flow. These results also conform to the DOE conceptual model of density-dependent ground water flow, which infers that water velocities below the brine surface are so small as to be virtually indiscernible.
- Computed ratios of chloride and bromide concentrations (Cl/Br ratios) in ground water samples from the Matheson Wetlands support the hypothesis that high-salinity water east of the Colorado River is caused by upconing of brines stemming from dissolution of Paradox Formation sediments, and is not related to contamination in ground water at the Moab Site.
- Ammonia (as nitrogen) concentrations in ground water at the Matheson Wetlands, most of which range between non-detect and 4 mg/L, are indicative of natural ammonia sources related to dissolution of Paradox Formation sediments and upconing of brine in the vicinity of the Colorado River. Ammonia in ground water southeast of the river does not appear to be related to ground water contamination at the Moab Site on the west side of the river.
- Relatively high concentrations of uranium (as high as 0.05 mg/L) measured in shallow ground water at two monitoring clusters in the northwest half of the Matheson Wetlands

appear to be caused by discharge of bedrock ground water near the northeast edge of the wetlands preserve and subsequent westward migration toward the river. These occurrences of uranium do not appear to be related to contamination in ground water at the Moab Site on the west side of the river.

- Uranium activity ratios computed using concentrations of uranium-234 and uranium-238 in contaminated ground water from the Moab Site generally range from 0.8 to 1, whereas comparable ratios in ground water from the Matheson Wetlands tend to range from 1.2 to 2.2. The difference in activity ratios is potentially explained by different sources of dissolved uranium for the two areas, and provides strong evidence that uranium in ground water southeast of Colorado River is unrelated to ground water contamination at the Moab Site on the west side of the river.

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8.0 References

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Appendix A

Water Chemistry Data

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	0271	SL, RIV	12/16/2005	0001	0.00 - 0.00	176			#	-	-
	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	178			#	-	-
	mg/L	0271	SL, RIV	06/22/2006	0001		150			#	-	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	130			#	-	-
	mg/L	0273	SL, RIV	12/15/2005	0001	0.00 - 0.00	180			#	-	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	120			#	-	-
	mg/L	0273	SL, RIV	06/22/2006	0001		320			#	-	-
	mg/L	BL1-D	WL	12/21/2005	0001	138.00 - 138.00	116			#	-	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	156			#	-	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	126		F	#	-	-
	mg/L	BL1-M	WL	12/20/2005	0001	97.00 - 97.00	300			#	-	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	184			#	-	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	170		F	#	-	-
	mg/L	BL1-S	WL	12/20/2005	0001	53.00 - 53.00	188			#	-	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	198			#	-	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	250		F	#	-	-
	mg/L	BL2-D	WL	12/21/2005	0001	141.00 - 141.00	114			#	-	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	216			#	-	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	112		F	#	-	-
	mg/L	BL2-M	WL	12/16/2005	0001	98.00 - 98.00	172			#	-	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	126			#	-	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	125		F	#	-	-
	mg/L	BL2-S	WL	12/15/2005	0001	54.00 - 54.00	190			#	-	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	200			#	-	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	206		F	#	-	-
	mg/L	BL3-D	WL	12/21/2005	0001	97.00 - 97.00	192			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	314			#	-	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	208		F	#	-	-
	mg/L	BL3-M	WL	12/21/2005	0001	44.00 - 44.00	214			#	-	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	270			#	-	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	250		F	#	-	-
	mg/L	M11-12	WL, PZ	12/13/2005	0001	38.00 - 38.00	400			#	-	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	440		F	#	-	-
	mg/L	M11-14.0	WL, PZ	12/12/2005	0001	48.00 - 48.00	200			#	-	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	132			#	-	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	174		F	#	-	-
	mg/L	N3-8.3	WL, PZ	01/25/2006	0001	24.00 - 24.00	404		F	#	-	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	460			#	-	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	242		FQ	#	-	-
	mg/L	N5-14	WL, PZ	12/14/2005	0001	48.00 - 48.00	400			#	-	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	360			#	-	-
	mg/L	N6-6.4	WL, PZ	12/12/2005	0001	12.00 - 12.00	500			#	-	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	280			#	-	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	258		F	#	-	-
	mg/L	N7-10	WL, PZ	12/15/2005	0001	31.00 - 31.00	360			#	-	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	170			#	-	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	170		F	#	-	-
	mg/L	W1-7	WL, PZ	12/13/2005	0001	19.00 - 19.00	300			#	-	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	236		F	#	-	-
Aluminum	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.011	B	U	#	0.0068	-
	mg/L	0271	SL, RIV	06/22/2006	0001		0.0068	U		#	0.0068	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.010	B	U	#	0.0068	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Aluminum	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.0099	B	U	#	0.0068	-
	mg/L	0273	SL, RIV	06/22/2006	0001		0.0068	U		#	0.0068	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	0.200	B	U	#	0.14	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	0.140	U	F	#	0.14	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	0.140	U	F	#	0.14	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	0.190	B	U	#	0.14	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	0.140	U	F	#	0.14	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	0.300	B	U	#	0.14	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	0.068	U	F	#	0.068	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	0.170	B	U	#	0.14	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	0.140	U	F	#	0.14	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	0.170	B	U	#	0.14	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	0.140	U	F	#	0.14	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	0.140	U		#	0.14	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	0.300	B	U	#	0.14	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	0.140	U	F	#	0.14	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	0.140	U		#	0.14	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	0.140	U	F	#	0.14	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	0.170	B	U	#	0.14	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	0.140	U	F	#	0.14	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	0.068	U	Q	#	0.068	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	0.034	U	F	#	0.034	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	0.150	B	U	#	0.14	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	0.140	U	F	#	0.14	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.020	U	Q	#	0.02	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	0.020	U	FQ	#	0.02	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Aluminum	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.011	B	UQ	#	0.0068	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	0.014	U	FQ	#	0.014	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	0.0068	U	Q	#	0.0068	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	0.0068	U	FQ	#	0.0068	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.0068	U	Q	#	0.0068	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.0068	U	FQ	#	0.0068	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.014	U	Q	#	0.014	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	0.0068	U	FQ	#	0.0068	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.0068	U		#	0.0068	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.0068	U	FQ	#	0.0068	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	0.0068	U	Q	#	0.0068	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	0.0068	U	FQ	#	0.0068	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	0.0068	U	Q	#	0.0068	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	0.0068	U	FQ	#	0.0068	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.0097	B	U	#	0.0068	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	0.0068	U		#	0.0068	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	0.0068	U	Q	#	0.0068	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.0068	U	Q	#	0.0068	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	0.0068	U		#	0.0068	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	0.0068	U	F	#	0.0068	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	0.0068	U	F	#	0.0068	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	0.140	U		#	0.14	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	0.140	U	F	#	0.14	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	0.140	U	Q	#	0.14	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	0.140	U	FQ	#	0.14	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	0.020	U	Q	#	0.02	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Aluminum	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.020	U	FQ	#	0.02	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.014	U	Q	#	0.014	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	0.014	U	FQ	#	0.014	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.0071	B	U	#	0.0068	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.0068	U	FQ	#	0.0068	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	0.140	U	Q	#	0.14	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	0.140	U	FQ	#	0.14	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	0.140	U	Q	#	0.14	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	0.140	U	F	#	0.14	-
Ammonia Total as N	mg/L	0271	SL, RIV	12/16/2005	0001	0.00 - 0.00	0.1	U		#	0.1	-
	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.1	U		#	0.1	-
	mg/L	0271	SL, RIV	06/22/2006	0001		0.1	U		#	0.1	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.1	U		#	0.1	-
	mg/L	0273	SL, RIV	12/15/2005	0001	0.00 - 0.00	0.32			#	0.1	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.15			#	0.1	-
	mg/L	0273	SL, RIV	06/22/2006	0001		0.25			#	0.1	-
	mg/L	BL1-D	WL	12/21/2005	0001	138.00 - 138.00	2.2			#	0.1	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	2.2			#	0.1	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	2.1		F	#	0.1	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	2.3		F	#	0.1	-
	mg/L	BL1-M	WL	12/20/2005	0001	97.00 - 97.00	0.66			#	0.1	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	0.63			#	0.1	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	0.62		F	#	0.1	-
	mg/L	BL1-S	WL	12/20/2005	0001	53.00 - 53.00	0.51			#	0.1	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	0.37			#	0.1	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	0.49		F	#	0.1	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	BL2-D	WL	12/21/2005	0001	141.00 - 141.00	3.1			#	0.1	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	3.1			#	0.1	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	3		F	#	0.1	-
	mg/L	BL2-M	WL	12/16/2005	0001	98.00 - 98.00	2.9			#	0.1	-
	mg/L	BL2-M	WL	12/16/2005	0002	98.00 - 98.00	2.8			#	0.1	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	2.8			#	0.1	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	2.7		F	#	0.1	-
	mg/L	BL2-S	WL	12/15/2005	0001	54.00 - 54.00	2.1			#	0.1	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	2.1			#	0.1	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	2.1			#	0.1	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	2		F	#	0.1	-
	mg/L	BL3-D	WL	12/21/2005	0001	97.00 - 97.00	3.6			#	0.1	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	3.5			#	0.1	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	3.5		F	#	0.1	-
	mg/L	BL3-M	WL	12/21/2005	0001	44.00 - 44.00	2.4			#	0.1	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	2.3			#	0.1	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	2.5		F	#	0.1	-
	mg/L	M11-12	WL, PZ	12/13/2005	0001	38.00 - 38.00	0.47			#	0.1	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	0.33		Q	#	0.1	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	0.44		F	#	0.1	-
	mg/L	M11-14.0	WL, PZ	12/12/2005	0001	48.00 - 48.00	2.2			#	0.1	-
	mg/L	M11-14.0	WL, PZ	12/13/2005	0002	48.00 - 48.00	2.2			#	0.1	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	1.9			#	0.1	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	2.2		F	#	0.1	-
	mg/L	M11-4.8	WL, PZ	12/15/2005	0001	13.00 - 13.00	0.5			#	0.1	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.21		Q	#	0.1	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	0.44		FQ	#	0.1	-
	mg/L	M11-7.0	WL, PZ	12/14/2005	0001	20.00 - 20.00	0.28			#	0.1	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.15		Q	#	0.1	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	0.24		FQ	#	0.1	-
	mg/L	N2-12.8	WL, PZ	12/16/2005	0001	34.00 - 34.00	0.21			#	0.1	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	0.11		Q	#	0.1	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	0.2		FQ	#	0.1	-
	mg/L	N2-4.3	WL, PZ	12/15/2005	0001	14.00 - 14.00	11			#	0.5	-
	mg/L	N2-6.5	WL, PZ	12/15/2005	0001	20.00 - 20.00	0.37			#	0.1	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.1	U	Q	#	0.1	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.1	U	FQ	#	0.1	-
	mg/L	N3-4.3	WL, PZ	01/25/2006	0001	13.00 - 13.00	6.6		F	#	0.5	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.1	U	Q	#	0.1	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	0.1	U	FQ	#	0.1	-
	mg/L	N3-8.3	WL, PZ	01/25/2006	0001	24.00 - 24.00	0.1	U	F	#	0.1	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.1	U		#	0.1	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.1	U	FQ	#	0.1	-
	mg/L	N4-12.0	WL, PZ	12/16/2005	0001	37.00 - 37.00	0.47			#	0.1	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	0.1	U	Q	#	0.1	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	0.65		FQ	#	0.1	-
	mg/L	N4-3.2	WL, PZ	12/16/2005	0001	9.00 - 9.00	0.41			#	0.1	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	0.1	U	Q	#	0.1	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	0.25		FQ	#	0.1	-
	mg/L	N5-14	WL, PZ	12/14/2005	0001	48.00 - 48.00	0.1	U		#	0.1	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.1	U		#	0.1	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	0.1	U		#	0.1	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia Total as N	mg/L	N5-4.4NEW	WL, PZ	12/15/2005	0001	13.00 - 13.00	0.21			#	0.1	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	0.1	U	Q	#	0.1	-
	mg/L	N5-7.2	WL, PZ	12/15/2005	0001	24.00 - 24.00	0.18			#	0.1	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.17		Q	#	0.1	-
	mg/L	N6-6.4	WL, PZ	12/12/2005	0001	12.00 - 12.00	0.1	U		#	0.1	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	0.1	U		#	0.1	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	0.1	U	F	#	0.1	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	0.1	U	F	#	0.1	-
	mg/L	N7-10	WL, PZ	12/15/2005	0001	31.00 - 31.00	1.7			#	0.1	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	1.3			#	0.1	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	2.2		F	#	0.1	-
	mg/L	N7-11	WL, PZ	12/16/2005	0001	35.00 - 35.00	3.3			#	0.1	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	3.1		Q	#	0.1	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	3.7		FQ	#	0.1	-
	mg/L	N7-7	WL, PZ	12/16/2005	0001	20.00 - 20.00	1.1			#	0.1	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	1.1		Q	#	0.1	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	1.2		FQ	#	0.1	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.1	U	Q	#	0.1	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	0.25		FQ	#	0.1	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.1	U		#	0.1	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.45		FQ	#	0.1	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	0.17		Q	#	0.1	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	0.2	U	FQ	#	0.2	-
	mg/L	W1-7	WL, PZ	12/13/2005	0001	19.00 - 19.00	0.35			#	0.1	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	0.36		Q	#	0.1	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	0.42		F	#	0.1	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Boron	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.034			#	0.0012	-
	mg/L	0271	SL, RIV	06/22/2006	0001		0.040			#	0.0012	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.033			#	0.0012	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.034			#	0.0012	-
	mg/L	0273	SL, RIV	06/22/2006	0001		0.043			#	0.0012	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	2.400			#	0.023	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	2.400		F	#	0.023	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	2.400		F	#	0.023	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	0.170	B		#	0.023	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	0.067	B	UF	#	0.023	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	0.130	B		#	0.023	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	0.042	B	UF	#	0.012	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	3.900			#	0.023	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	3.600		F	#	0.023	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	3.700			#	0.023	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	3.200		F	#	0.023	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	1.400			#	0.023	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	1.500			#	0.023	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	1.000		F	#	0.023	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	4.700			#	0.023	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	4.300		F	#	0.023	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	2.500			#	0.023	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	2.300		F	#	0.023	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	0.610		Q	#	0.012	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	0.590		F	#	0.0058	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	2.100			#	0.023	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Boron	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	2.200		F	#	0.023	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.330		Q	#	0.0034	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	0.320		FQ	#	0.0034	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.260		Q	#	0.0012	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	0.260		FQ	#	0.0023	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	0.110		Q	#	0.0012	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	0.110		FQ	#	0.0012	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.120		Q	#	0.0012	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.120		FQ	#	0.0012	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.190		Q	#	0.0023	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	0.190		FQ	#	0.0012	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.150			#	0.0012	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.160		FQ	#	0.0012	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	0.110		Q	#	0.0012	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	0.100	E	FQ	#	0.0012	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	0.130		Q	#	0.0012	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	0.170		FQ	#	0.0012	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.130			#	0.0012	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	0.130			#	0.0012	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	0.140		Q	#	0.0012	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.130		Q	#	0.0012	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	0.072			#	0.0012	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	0.072		F	#	0.0012	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	0.073		F	#	0.0012	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	1.700			#	0.023	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	2.400		F	#	0.023	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Boron	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	2.600		Q	#	0.023	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	2.900		FQ	#	0.023	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	0.096		Q	#	0.0034	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.140		FQ	#	0.0034	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.200		Q	#	0.0023	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	0.220		FQ	#	0.0023	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.190			#	0.0012	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.210		FQ	#	0.0012	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	0.560	B	Q	#	0.023	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	0.470	B	FQ	#	0.023	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	0.560	B	Q	#	0.023	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	0.480	B	F	#	0.023	-
Bromide	mg/L	0271	SL, RIV	12/16/2005	0001	0.00 - 0.00	0.4	U		#	0.4	-
	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.2	U		#	0.2	-
	mg/L	0271	SL, RIV	06/22/2006	0001		0.2	U		#	0.2	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.2	U		#	0.2	-
	mg/L	0273	SL, RIV	12/15/2005	0001	0.00 - 0.00	0.4	U		#	0.4	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.2	U		#	0.2	-
	mg/L	0273	SL, RIV	06/22/2006	0001		0.2	U		#	0.2	-
	mg/L	BL1-D	WL	12/21/2005	0001	138.00 - 138.00	20	U		#	20	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	20	U		#	20	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	20	U	F	#	20	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	20	U	F	#	20	-
	mg/L	BL1-M	WL	12/20/2005	0001	97.00 - 97.00	20	U		#	20	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	20	U		#	20	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	20	U	F	#	20	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Bromide	mg/L	BL1-S	WL	12/20/2005	0001	53.00 - 53.00	42			#	10	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	10	U		#	10	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	12		F	#	10	-
	mg/L	BL2-D	WL	12/21/2005	0001	141.00 - 141.00	20	U		#	20	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	20	U		#	20	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	21		F	#	20	-
	mg/L	BL2-M	WL	12/16/2005	0001	98.00 - 98.00	40	U		#	40	-
	mg/L	BL2-M	WL	12/16/2005	0002	98.00 - 98.00	40	U		#	40	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	20	U		#	20	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	20	U	F	#	20	-
	mg/L	BL2-S	WL	12/15/2005	0001	54.00 - 54.00	40	U		#	40	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	20	U		#	20	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	20	U		#	20	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	20	U	F	#	20	-
	mg/L	BL3-D	WL	12/21/2005	0001	97.00 - 97.00	20	U		#	20	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	20	U		#	20	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	23		F	#	20	-
	mg/L	BL3-M	WL	12/21/2005	0001	44.00 - 44.00	20	U		#	20	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	20	U		#	20	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	20	U	F	#	20	-
	mg/L	M11-12	WL, PZ	12/13/2005	0001	38.00 - 38.00	4	U		#	4	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	4	U	Q	#	4	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	4	U	F	#	4	-
	mg/L	M11-14.0	WL, PZ	12/12/2005	0001	48.00 - 48.00	40	U		#	40	-
	mg/L	M11-14.0	WL, PZ	12/13/2005	0002	48.00 - 48.00	20	U		#	20	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	20	U		#	20	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Bromide	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	20	U	F	#	20	-
	mg/L	M11-4.8	WL, PZ	12/15/2005	0001	13.00 - 13.00	2	U		#	2	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	1	U	Q	#	1	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	2	U	FQ	#	2	-
	mg/L	M11-7.0	WL, PZ	12/14/2005	0001	20.00 - 20.00	1	U		#	1	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.4	U	Q	#	0.4	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	1	U	FQ	#	1	-
	mg/L	N2-12.8	WL, PZ	12/16/2005	0001	34.00 - 34.00	1	U		#	1	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	0.4	U	Q	#	0.4	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	1	U	FQ	#	1	-
	mg/L	N2-6.5	WL, PZ	12/15/2005	0001	20.00 - 20.00	0.4	U		#	0.4	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.4	U	Q	#	0.4	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	1	U	FQ	#	1	-
	mg/L	N3-4.3	WL, PZ	01/25/2006	0001	13.00 - 13.00	1	U	F	#	1	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	1	U	Q	#	1	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	1	U	FQ	#	1	-
	mg/L	N3-8.3	WL, PZ	01/25/2006	0001	24.00 - 24.00	1	U	F	#	1	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.4	U		#	0.4	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	1	U	FQ	#	1	-
	mg/L	N4-12.0	WL, PZ	12/16/2005	0001	37.00 - 37.00	0.2	U		#	0.2	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	0.2	U	Q	#	0.2	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	0.2	U	FQ	#	0.2	-
	mg/L	N4-3.2	WL, PZ	12/16/2005	0001	9.00 - 9.00	0.2	U		#	0.2	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	0.2	U	Q	#	0.2	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	0.2	U	FQ	#	0.2	-
	mg/L	N5-14	WL, PZ	12/14/2005	0001	48.00 - 48.00	0.4	U		#	0.4	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Bromide	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.2	U		#	0.2	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	0.2	U		#	0.2	-
	mg/L	N5-7.2	WL, PZ	12/15/2005	0001	24.00 - 24.00	0.2	U		#	0.2	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.2	U	Q	#	0.2	-
	mg/L	N6-6.4	WL, PZ	12/12/2005	0001	12.00 - 12.00	1	U		#	1	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	0.4	U		#	0.4	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	1	U	F	#	1	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	1	U	F	#	1	-
	mg/L	N7-10	WL, PZ	12/15/2005	0001	31.00 - 31.00	20	U		#	20	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	10	U		#	10	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	40	U	F	#	40	-
	mg/L	N7-11	WL, PZ	12/16/2005	0001	35.00 - 35.00	40	U		#	40	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	20	U	Q	#	20	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	20		FQ	#	20	-
	mg/L	N7-7	WL, PZ	12/16/2005	0001	20.00 - 20.00	1	U		#	1	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	2	U	Q	#	2	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	2	U	FQ	#	2	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	1	U	Q	#	1	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	1	U	FQ	#	1	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.4	U		#	0.4	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.4	U	FQ	#	0.4	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	20	U	Q	#	20	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	11		FQ	#	10	-
	mg/L	W1-7	WL, PZ	12/13/2005	0001	19.00 - 19.00	10	U		#	10	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	20	U	Q	#	20	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	10		F	#	10	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Calcium	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	51.000			#	0.0056	-
	mg/L	0271	SL, RIV	06/22/2006	0001		69.000			#	0.0056	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	48.000			#	0.0056	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	49.000			#	0.0056	-
	mg/L	0273	SL, RIV	06/22/2006	0001		69.000			#	0.0056	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	1500.000			#	0.11	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	1500.000		F	#	0.11	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	1500.000		F	#	0.11	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	2900.000			#	0.11	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	2600.000		F	#	0.11	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	2200.000			#	0.11	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	2200.000		F	#	0.056	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	1400.000			#	0.11	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	1300.000		F	#	0.11	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	1500.000			#	0.11	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	1300.000		F	#	0.11	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	2300.000			#	0.11	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	2100.000			#	0.11	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	2200.000		F	#	0.11	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	2000.000			#	0.11	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	1700.000		F	#	0.11	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	1900.000			#	0.11	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	1600.000		F	#	0.11	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	370.000		Q	#	0.056	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	370.000		F	#	0.028	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	1500.000			#	0.11	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Calcium	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	1400.000		F	#	0.11	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	95.000		Q	#	0.017	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	88.000		FQ	#	0.017	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	94.000		Q	#	0.0056	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	120.000		FQ	#	0.011	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	480.000		Q	#	0.0056	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	470.000		FQ	#	0.0056	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	370.000		Q	#	0.0056	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	430.000		FQ	#	0.0056	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	6.400		Q	#	0.011	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	4.500		FQ	#	0.0056	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	4.900			#	0.0056	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	4.300		FQ	#	0.0056	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	69.000		Q	#	0.0056	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	120.000		FQ	#	0.0056	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	27.000		Q	#	0.0056	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	29.000		FQ	#	0.0056	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	210.000			#	0.0056	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	220.000			#	0.0056	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	79.000		Q	#	0.0056	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	170.000		Q	#	0.0056	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	110.000			#	0.0056	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	110.000		F	#	0.0056	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	110.000		F	#	0.0056	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	1300.000			#	0.11	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	1900.000		F	#	0.11	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Calcium	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	1700.000		Q	#	0.11	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	1700.000		FQ	#	0.11	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	400.000		Q	#	0.017	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	390.000		FQ	#	0.017	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	55.000		Q	#	0.011	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	130.000		FQ	#	0.011	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	79.000			#	0.0056	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	96.000		FQ	#	0.0056	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	2700.000		Q	#	0.11	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	2600.000		FQ	#	0.11	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	2800.000		Q	#	0.11	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	2700.000		F	#	0.11	-
Chloride	mg/L	0271	SL, RIV	12/16/2005	0001	0.00 - 0.00	180			#	4	-
	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	34			#	1	-
	mg/L	0271	SL, RIV	06/22/2006	0001		48			#	2	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	32			#	1	-
	mg/L	0273	SL, RIV	12/15/2005	0001	0.00 - 0.00	180			#	4	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	33			#	1	-
	mg/L	0273	SL, RIV	06/22/2006	0001		48			#	2	-
	mg/L	BL1-D	WL	12/21/2005	0001	138.00 - 138.00	59000			#	1000	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	45000			#	1000	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	57000		F	#	1000	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	50000		F	#	1000	-
	mg/L	BL1-M	WL	12/20/2005	0001	97.00 - 97.00	49000			#	1000	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	39000			#	400	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	38000		F	#	1000	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Chloride	mg/L	BL1-S	WL	12/20/2005	0001	53.00 - 53.00	21000			#	400	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	17000			#	400	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	17000		F	#	400	-
	mg/L	BL2-D	WL	12/21/2005	0001	141.00 - 141.00	62000			#	1000	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	46000			#	1000	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	50000		F	#	1000	-
	mg/L	BL2-M	WL	12/16/2005	0001	98.00 - 98.00	58000			#	2000	-
	mg/L	BL2-M	WL	12/16/2005	0002	98.00 - 98.00	57000			#	2000	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	41000			#	1000	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	50000		F	#	1000	-
	mg/L	BL2-S	WL	12/15/2005	0001	54.00 - 54.00	47000			#	2000	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	40000			#	1000	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	27000			#	1000	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	38000		F	#	1000	-
	mg/L	BL3-D	WL	12/21/2005	0001	97.00 - 97.00	71000			#	1000	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	57000			#	1000	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	61000		F	#	1000	-
	mg/L	BL3-M	WL	12/21/2005	0001	44.00 - 44.00	49000			#	1000	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	41000			#	1000	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	47000		F	#	1000	-
	mg/L	M11-12	WL, PZ	12/13/2005	0001	38.00 - 38.00	8000			#	100	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	8200		Q	#	100	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	8100		F	#	100	-
	mg/L	M11-14.0	WL, PZ	12/12/2005	0001	48.00 - 48.00	52000			#	2000	-
	mg/L	M11-14.0	WL, PZ	12/13/2005	0002	48.00 - 48.00	45000			#	1000	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	35000			#	1000	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Chloride	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	41000		F	#	1000	-
	mg/L	M11-4.8	WL, PZ	12/15/2005	0001	13.00 - 13.00	1200			#	20	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	1100		Q	#	20	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	1200		FQ	#	20	-
	mg/L	M11-7.0	WL, PZ	12/14/2005	0001	20.00 - 20.00	710			#	10	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	640		Q	#	20	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	670		FQ	#	10	-
	mg/L	N2-12.8	WL, PZ	12/16/2005	0001	34.00 - 34.00	220			#	10	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	250		Q	#	4	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	220		FQ	#	10	-
	mg/L	N2-6.5	WL, PZ	12/15/2005	0001	20.00 - 20.00	120			#	10	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	110		Q	#	4	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	120		FQ	#	10	-
	mg/L	N3-4.3	WL, PZ	01/25/2006	0001	13.00 - 13.00	770		F	#	10	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	670		Q	#	10	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	630		FQ	#	10	-
	mg/L	N3-8.3	WL, PZ	01/25/2006	0001	24.00 - 24.00	480		F	#	10	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	390			#	10	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	350		FQ	#	10	-
	mg/L	N4-12.0	WL, PZ	12/16/2005	0001	37.00 - 37.00	14			#	0.2	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	59		Q	#	2	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	27		FQ	#	2	-
	mg/L	N4-3.2	WL, PZ	12/16/2005	0001	9.00 - 9.00	30			#	2	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	17		Q	#	0.2	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	14		FQ	#	0.2	-
	mg/L	N5-14	WL, PZ	12/14/2005	0001	48.00 - 48.00	17			#	0.4	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Chloride	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	17			#	0.2	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	17			#	0.2	-
	mg/L	N5-7.2	WL, PZ	12/15/2005	0001	24.00 - 24.00	22			#	4	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	22		Q	#	4	-
	mg/L	N6-6.4	WL, PZ	12/12/2005	0001	12.00 - 12.00	790			#	10	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	610			#	20	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	550		F	#	10	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	550		F	#	10	-
	mg/L	N7-10	WL, PZ	12/15/2005	0001	31.00 - 31.00	40000			#	2000	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	30000			#	400	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	47000		F	#	2000	-
	mg/L	N7-11	WL, PZ	12/16/2005	0001	35.00 - 35.00	60000			#	2000	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	55000		Q	#	1000	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	50000		FQ	#	1000	-
	mg/L	N7-7	WL, PZ	12/16/2005	0001	20.00 - 20.00	1700			#	20	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	2100		Q	#	40	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	2600		FQ	#	40	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	650		Q	#	10	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	1400		FQ	#	20	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	81			#	4	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	120		FQ	#	4	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	30000		Q	#	1000	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	32000		FQ	#	1000	-
	mg/L	W1-7	WL, PZ	12/13/2005	0001	19.00 - 19.00	37000			#	1000	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	27000		Q	#	1000	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	29000		F	#	1000	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Cobalt	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.00075	U		#	0.00075	-
	mg/L	0271	SL, RIV	06/22/2006	0001		0.00075	U		#	0.00075	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.00075	U		#	0.00075	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.00075	U		#	0.00075	-
	mg/L	0273	SL, RIV	06/22/2006	0001		0.00075	U		#	0.00075	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	0.045	B		#	0.015	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	0.031	B	F	#	0.015	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	0.041	B	F	#	0.015	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	0.015	U		#	0.015	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	0.015	U	F	#	0.015	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	0.015	U		#	0.015	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	0.0075	U	F	#	0.0075	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	0.015	U		#	0.015	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	0.015	U	F	#	0.015	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	0.015	U		#	0.015	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	0.015	U	F	#	0.015	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	0.015	U		#	0.015	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	0.015	U		#	0.015	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	0.015	U	F	#	0.015	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	0.015	U		#	0.015	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	0.015	U	F	#	0.015	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	0.015	U		#	0.015	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	0.015	U	F	#	0.015	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	0.0075	U	Q	#	0.0075	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	0.0054	B	F	#	0.0037	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	0.015	U		#	0.015	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Cobalt	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	0.015	U	F	#	0.015	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.0022	U	Q	#	0.0022	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	0.0023	B	FQ	#	0.0022	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.00075	U	Q	#	0.00075	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	0.0015	U	FQ	#	0.0015	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	0.00075	U	Q	#	0.00075	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	0.00075	U	FQ	#	0.00075	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.00075	U	Q	#	0.00075	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.00075	U	FQ	#	0.00075	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.0023	B	Q	#	0.0015	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	0.00075	B	FQ	#	0.00075	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.00075	U		#	0.00075	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.00078	B	FQ	#	0.00075	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	0.00075	U	Q	#	0.00075	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	0.00075	U	FQ	#	0.00075	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	0.00088	B	Q	#	0.00075	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	0.00075	U	FQ	#	0.00075	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.00075	U		#	0.00075	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	0.0011	B		#	0.00075	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	0.0011	B	Q	#	0.00075	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.00075	U	Q	#	0.00075	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	0.00075	U		#	0.00075	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	0.00075	U	F	#	0.00075	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	0.0014	B	F	#	0.00075	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	0.015	U		#	0.015	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	0.015	U	F	#	0.015	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Cobalt	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	0.015	U	Q	#	0.015	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	0.021	B	FQ	#	0.015	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	0.0033	B	Q	#	0.0022	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.0022	U	FQ	#	0.0022	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.0015	U	Q	#	0.0015	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	0.0015	B	FQ	#	0.0015	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.00075	U		#	0.00075	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.00085	B	FQ	#	0.00075	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	0.016	B	Q	#	0.015	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	0.015	U	FQ	#	0.015	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	0.015	U	Q	#	0.015	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	0.015	U	F	#	0.015	-
Dissolved Organic Carbon	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	3.9			#	1	-
	mg/L	0271	SL, RIV	06/22/2006	0001		2.5			#	1	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	4.3			#	1	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	4			#	1	-
	mg/L	0273	SL, RIV	06/22/2006	0001		7.9			#	1	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	1	U		#	1	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	1	U	F	#	1	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	1	U	F	#	1	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	1	U		#	1	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	1	U	F	#	1	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	1	U		#	1	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	1	U	F	#	1	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	1	U		#	1	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	1	U	F	#	1	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Dissolved Organic Carbon	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	1	U		#	1	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	1	U	F	#	1	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	1	U		#	1	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	1	U		#	1	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	1	U	F	#	1	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	1	U		#	1	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	1	U	F	#	1	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	1	U		#	1	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	1	U	F	#	1	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	1	U		#	1	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	1	U	F	#	1	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	2.2		FQ	#	1	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	2.1			#	1	-
Dissolved Oxygen	mg/L	0271	SL, RIV	12/16/2005	N001	0.00 - 0.00	13.51			#	-	-
	mg/L	0271	SL, RIV	05/17/2006	N001	-1.00 - -1.00	8.21			#	-	-
	mg/L	0271	SL, RIV	06/22/2006	N001		6.41			#	-	-
	mg/L	0272	SL, RIV	05/17/2006	N001	-2.00 - -2.00	8.64			#	-	-
	mg/L	0273	SL, RIV	12/15/2005	N001	0.00 - 0.00	15.33			#	-	-
	mg/L	0273	SL, RIV	05/17/2006	N001	-1.00 - -1.00	8.76			#	-	-
	mg/L	0273	SL, RIV	06/22/2006	N001		6.25			#	-	-
	mg/L	BL1-D	WL	12/21/2005	N001	138.00 - 138.00	0.74			#	-	-
	mg/L	BL1-D	WL	05/16/2006	N001	138.00 - 138.00	1.02			#	-	-
	mg/L	BL1-D	WL	06/27/2006	N001	138.00 - 138.00	0.77		F	#	-	-
	mg/L	BL1-M	WL	12/20/2005	N001	97.00 - 97.00	1.37			#	-	-
	mg/L	BL1-M	WL	05/16/2006	N001	97.00 - 97.00	0.87			#	-	-
	mg/L	BL1-M	WL	06/27/2006	N001	97.00 - 97.00	0.69		F	#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Dissolved Oxygen	mg/L	BL1-S	WL	12/20/2005	N001	53.00 - 53.00	1.93			#	-	-
	mg/L	BL1-S	WL	05/16/2006	N001	53.00 - 53.00	0.91			#	-	-
	mg/L	BL1-S	WL	06/27/2006	N001	53.00 - 53.00	1.06		F	#	-	-
	mg/L	BL2-D	WL	12/21/2005	N001	141.00 - 141.00	0.88			#	-	-
	mg/L	BL2-D	WL	05/17/2006	N001	141.00 - 141.00	1.05			#	-	-
	mg/L	BL2-D	WL	06/26/2006	N001	141.00 - 141.00	0.97		F	#	-	-
	mg/L	BL2-M	WL	12/16/2005	N001	98.00 - 98.00	0.94			#	-	-
	mg/L	BL2-M	WL	05/17/2006	N001	98.00 - 98.00	0.75			#	-	-
	mg/L	BL2-M	WL	06/26/2006	N001	98.00 - 98.00	0.44		F	#	-	-
	mg/L	BL2-S	WL	12/15/2005	N001	54.00 - 54.00	1.16			#	-	-
	mg/L	BL2-S	WL	05/16/2006	N001	54.00 - 54.00	0.71			#	-	-
	mg/L	BL2-S	WL	06/26/2006	N001	54.00 - 54.00	1.08		F	#	-	-
	mg/L	BL3-D	WL	12/21/2005	N001	97.00 - 97.00	1.12			#	-	-
	mg/L	BL3-D	WL	05/17/2006	N001	97.00 - 97.00	-0.48			#	-	-
	mg/L	BL3-D	WL	06/26/2006	N001	97.00 - 97.00	-0.07		F	#	-	-
	mg/L	BL3-M	WL	12/21/2005	N001	44.00 - 44.00	0.80			#	-	-
	mg/L	BL3-M	WL	05/17/2006	N001	44.00 - 44.00	0.58			#	-	-
	mg/L	BL3-M	WL	06/26/2006	N001	44.00 - 44.00	1.28		F	#	-	-
	mg/L	M11-12	WL, PZ	12/13/2005	N001	38.00 - 38.00	0.72			#	-	-
	mg/L	M11-12	WL, PZ	05/18/2006	N001	38.00 - 38.00	5.10		Q	#	-	-
	mg/L	M11-12	WL, PZ	06/23/2006	N001	38.00 - 38.00	2.46		F	#	-	-
	mg/L	M11-14.0	WL, PZ	12/12/2005	N001	48.00 - 48.00	0.64			#	-	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	N001	48.00 - 48.00	1.11			#	-	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	N001	48.00 - 48.00	0.61		F	#	-	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	N001	13.00 - 13.00	4.55		Q	#	-	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	N001	13.00 - 13.00	5.02		FQ	#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Dissolved Oxygen	mg/L	M11-7.0	WL, PZ	12/14/2005	N001	20.00 - 20.00	6.58			#	-	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	N001	20.00 - 20.00	4.25		Q	#	-	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	N001	20.00 - 20.00	3.53		FQ	#	-	-
	mg/L	N2-12.8	WL, PZ	12/16/2005	N001	34.00 - 34.00	4.75			#	-	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	N001	34.00 - 34.00	4.90		Q	#	-	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	N001	34.00 - 34.00	7.96		FQ	#	-	-
	mg/L	N2-6.5	WL, PZ	12/15/2005	N001	20.00 - 20.00	2.65			#	-	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	N001	20.00 - 20.00	5.30		Q	#	-	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	N001	20.00 - 20.00	5.70		FQ	#	-	-
	mg/L	N3-4.3	WL, PZ	01/25/2006	N001	13.00 - 13.00	0.90		F	#	-	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	N001	13.00 - 13.00	2.82		Q	#	-	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	N001	13.00 - 13.00	5.29		FQ	#	-	-
	mg/L	N3-8.3	WL, PZ	01/25/2006	N001	24.00 - 24.00	0.20		F	#	-	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	N001	24.00 - 24.00	0.09			#	-	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	N001	24.00 - 24.00	2.01		FQ	#	-	-
	mg/L	N4-12.0	WL, PZ	12/16/2005	N001	37.00 - 37.00	7.22			#	-	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	N001	37.00 - 37.00	3.92		Q	#	-	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	N001	37.00 - 37.00	7.67		FQ	#	-	-
	mg/L	N4-3.2	WL, PZ	12/16/2005	N001	9.00 - 9.00	5.74			#	-	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	N001	9.00 - 9.00	4.56		Q	#	-	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	N001	9.00 - 9.00	8.72		FQ	#	-	-
	mg/L	N5-14	WL, PZ	12/14/2005	N001	48.00 - 48.00	1.81			#	-	-
	mg/L	N5-14	WL, PZ	05/18/2006	N001	48.00 - 48.00	0.60			#	-	-
	mg/L	N5-7.2	WL, PZ	12/15/2005	N001	24.00 - 24.00	4.41			#	-	-
	mg/L	N6-6.4	WL, PZ	12/12/2005	N001	12.00 - 12.00	1.00			#	-	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	N001	12.00 - 12.00	2.53			#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Dissolved Oxygen	mg/L	N6-6.4	WL, PZ	06/23/2006	N001	12.00 - 12.00	1.04		F	#	-	-
	mg/L	N7-10	WL, PZ	12/15/2005	N001	31.00 - 31.00	1.11			#	-	-
	mg/L	N7-10	WL, PZ	05/17/2006	N001	31.00 - 31.00	1.37			#	-	-
	mg/L	N7-10	WL, PZ	06/23/2006	N001	31.00 - 31.00	1.39		F	#	-	-
	mg/L	N7-11	WL, PZ	12/16/2005	N001	35.00 - 35.00	4.88			#	-	-
	mg/L	N7-11	WL, PZ	05/18/2006	N001	35.00 - 35.00	1.29		Q	#	-	-
	mg/L	N7-11	WL, PZ	06/28/2006	N001	35.00 - 35.00	1.98		FQ	#	-	-
	mg/L	N7-7	WL, PZ	12/16/2005	N001	20.00 - 20.00	9.63			#	-	-
	mg/L	N7-7	WL, PZ	05/18/2006	N001	20.00 - 20.00	7.83		Q	#	-	-
	mg/L	N7-7	WL, PZ	06/28/2006	N001	20.00 - 20.00	5.63		FQ	#	-	-
	mg/L	N8-14	WL, PZ	05/18/2006	N001	48.00 - 48.00	4.01		Q	#	-	-
	mg/L	N8-14	WL, PZ	06/28/2006	N001	48.00 - 48.00	4.42		FQ	#	-	-
	mg/L	N8-6	WL, PZ	05/17/2006	N001	20.00 - 20.00	9.65			#	-	-
	mg/L	N8-6	WL, PZ	06/28/2006	N001	20.00 - 20.00	8.26		FQ	#	-	-
	mg/L	W1-4.3	WL	05/17/2006	N001	14.00 - 14.00	7.20		Q	#	-	-
	mg/L	W1-4.3	WL	06/27/2006	N001	14.00 - 14.00	1.76		FQ	#	-	-
	mg/L	W1-7	WL, PZ	12/13/2005	N001	19.00 - 19.00	1.42			#	-	-
	mg/L	W1-7	WL, PZ	05/17/2006	N001	19.00 - 19.00	6.09		Q	#	-	-
	mg/L	W1-7	WL, PZ	06/27/2006	N001	19.00 - 19.00	4.29		F	#	-	-
Fluoride	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.18			#	0.1	-
	mg/L	0271	SL, RIV	06/22/2006	0001		0.23			#	0.1	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.17			#	0.1	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.18			#	0.1	-
	mg/L	0273	SL, RIV	06/22/2006	0001		0.25			#	0.1	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	10	U		#	10	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	10	U	F	#	10	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Fluoride	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	10	U	F	#	10	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	10	U		#	10	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	10	U	F	#	10	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	5	U		#	5	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	5	U	F	#	5	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	10	U		#	10	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	10	U	F	#	10	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	10	U		#	10	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	10	U	F	#	10	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	10	U		#	10	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	10	U		#	10	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	10	U	F	#	10	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	10	U		#	10	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	10	U	F	#	10	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	10	U		#	10	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	10	U	F	#	10	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	2	U	Q	#	2	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	2	U	F	#	2	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	10	U		#	10	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	10	U	F	#	10	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.73		Q	#	0.5	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	1	U	FQ	#	1	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.6		Q	#	0.2	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	0.61		FQ	#	0.5	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	0.31		Q	#	0.2	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	0.5	U	FQ	#	0.5	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Fluoride	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.26		Q	#	0.2	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.5	U	FQ	#	0.5	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	1.6		Q	#	0.5	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	1.4		FQ	#	0.5	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	2.5			#	0.2	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	2.5		FQ	#	0.5	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	0.1	U	Q	#	0.1	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	0.1	U	FQ	#	0.1	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	0.1	U	Q	#	0.1	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	0.24		FQ	#	0.1	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.33			#	0.1	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	0.47			#	0.1	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.25		Q	#	0.1	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	0.31			#	0.2	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	0.5	U	F	#	0.5	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	0.5	U	F	#	0.5	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	5	U		#	5	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	20	U	F	#	20	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	10	U	Q	#	10	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	10	U	FQ	#	10	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	1	U	Q	#	1	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	1	U	FQ	#	1	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.5		Q	#	0.5	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	0.5	U	FQ	#	0.5	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.39			#	0.2	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.2	U	FQ	#	0.2	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Fluoride	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	10	U	Q	#	10	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	5	U	FQ	#	5	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	10	U	Q	#	10	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	5	U	F	#	5	-
Gross Alpha	pCi/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	1.78		J	#	0.722	± 0.61
	pCi/L	0271	SL, RIV	06/22/2006	0001		1.94		J	#	0.649	± 0.60
	pCi/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	1.71			#	0.539	± 0.51
	pCi/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	1.94		J	#	0.695	± 0.60
	pCi/L	0273	SL, RIV	06/22/2006	0001		3.1			#	0.803	± 0.89
	pCi/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	231	U		#	231	± 139.
	pCi/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	200	U	F	#	200	± 111.
	pCi/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	194	U	F	#	194	± 106.
	pCi/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	127	U		#	127	± 69.0
	pCi/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	109	U	F	#	109	± 63.8
	pCi/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	68.3	U		#	68.3	± 38.5
	pCi/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	46.2	U	F	#	46.2	± 30.7
	pCi/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	338		J	#	257	± 181.
	pCi/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	206	U	F	#	206	± 112.
	pCi/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	237	U		#	237	± 144.
	pCi/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	182	U	F	#	182	± 100.
	pCi/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	245	U		#	245	± 137.
	pCi/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	229	U		#	229	± 132.
	pCi/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	116	U	F	#	116	± 64.6
	pCi/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	276	U		#	276	± 158.
	pCi/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	189	U	F	#	189	± 119.
	pCi/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	271	U		#	271	± 166.

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
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PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Gross Alpha	pCi/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	153	U	F	#	153	± 92.3
	pCi/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	186	U		#	186	± 110.
	pCi/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	108	U	F	#	108	± 60.2
	pCi/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	27.4		FQ	#	2.83	± 5.49
	pCi/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	3.39		J	#	1.77	± 1.37
Gross Beta	pCi/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	2.24		J	#	1.41	± 0.95
	pCi/L	0271	SL, RIV	06/22/2006	0001		3.5		J	#	1.25	± 0.98
	pCi/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	1.99		J	#	1.12	± 0.77
	pCi/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	2.34		J	#	1.16	± 0.83
	pCi/L	0273	SL, RIV	06/22/2006	0001		3.05		J	#	1.53	± 1.00
	pCi/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	451	U		#	451	± 279.
	pCi/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	381	U	F	#	381	± 241.
	pCi/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	631		FJ	#	385	± 262.
	pCi/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	217	U		#	217	± 135.
	pCi/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	193	U	F	#	193	± 119.
	pCi/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	113	U		#	113	± 69.6
	pCi/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	115		FJ	#	95.4	± 62.1
	pCi/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	922		J	#	451	± 321.
	pCi/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	490		FJ	#	395	± 258.
	pCi/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	579		J	#	481	± 312.
	pCi/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	771		FJ	#	383	± 273.
	pCi/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	457	U		#	457	± 281.
	pCi/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	447	U		#	447	± 268.
	pCi/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	346		FJ	#	194	± 134.
	pCi/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	1140		J	#	479	± 355.
	pCi/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	1010		FJ	#	416	± 311.

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
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PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Gross Beta	pCi/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	601		J	#	462	± 303.
	pCi/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	450	U	F	#	450	± 286.
	pCi/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	422	U		#	422	± 263.
	pCi/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	369		FJ	#	193	± 136.
	pCi/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	20.9		FQJ	#	7.04	± 5.66
	pCi/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	5.52		J	#	3.21	± 2.20
Iron	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.014	U		#	0.014	-
	mg/L	0271	SL, RIV	06/22/2006	0001		0.014	U		#	0.014	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.014	U		#	0.014	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.014	U		#	0.014	-
	mg/L	0273	SL, RIV	06/22/2006	0001		0.014	U		#	0.014	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	9.100			#	0.27	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	7.500		F	#	0.27	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	7.400		F	#	0.27	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	23.000			#	0.27	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	22.000		F	#	0.27	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	1.200			#	0.27	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	1.900		F	#	0.14	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	4.200			#	0.27	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	4.400		F	#	0.27	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	6.600			#	0.27	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	5.000		F	#	0.27	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	22.000			#	0.27	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	21.000			#	0.27	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	22.000		F	#	0.27	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	0.270	U		#	0.27	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Iron	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	0.270	U	F	#	0.27	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	0.270	U		#	0.27	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	0.270	U	F	#	0.27	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	6.300		Q	#	0.14	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	22.000		F	#	0.068	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	20.000			#	0.27	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	20.000		F	#	0.27	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	17.000		Q	#	0.041	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	40.000		FQ	#	0.041	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.670		Q	#	0.014	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	0.870		FQ	#	0.027	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	13.000		Q	#	0.014	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	12.000		FQ	#	0.014	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	4.700		Q	#	0.014	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	7.400		FQ	#	0.014	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.027	U	Q	#	0.027	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	0.022	B	UFQ	#	0.014	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.065			#	0.014	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.100		FQ	#	0.014	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	0.014	U	Q	#	0.014	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	0.200		FQ	#	0.014	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	0.860		Q	#	0.014	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	0.120		FQ	#	0.014	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.710			#	0.014	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	0.760			#	0.014	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	0.014	U	Q	#	0.014	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Iron	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.054		Q	#	0.014	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	0.014	U		#	0.014	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	0.014	U	F	#	0.014	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	0.014	U	F	#	0.014	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	16.000			#	0.27	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	20.000		F	#	0.27	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	0.270	U	Q	#	0.27	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	2.200		FQ	#	0.27	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	20.000		Q	#	0.041	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	140.000		FQ	#	0.041	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.290		Q	#	0.027	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	0.120		FQ	#	0.027	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.014	U		#	0.014	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.014	U	FQ	#	0.014	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	0.270	U	Q	#	0.27	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	0.270	B	UFQ	#	0.27	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	34.000		Q	#	0.27	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	56.000		F	#	0.27	-
Iron (II)	mg/L	0271	SL, RIV	05/17/2006	0001	0.00 - 0.00	1.2	M	J	#	0.1	-
	mg/L	0271	SL, RIV	06/22/2006	0001		1.0	U		#	0.1	-
	mg/L	0273	SL, RIV	06/22/2006	0001		1.0	U		#	0.1	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	2.0		F	#	0.1	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	2.0		F	#	0.1	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	6.2		F	#	0.1	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	0.8	J	F	#	0.1	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	1.3	M	J	#	0.1	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Iron (II)	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	2.2	M	FJ	#	0.1	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	1.0	UM	J	#	0.1	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	1.2	M	FJ	#	0.1	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	30.0	M	FJ	#	0.4	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	1.0	UM	J	#	0.1	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	1.0	UM	FJ	#	0.1	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	1.0	UM	J	#	0.1	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	1.0	UM	FJ	#	0.1	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	11.0	M	J	#	0.1	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	5.7		F	#	0.1	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.4	J	F	#	0.1	-
Lithium	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.0095	B		#	0.0021	-
	mg/L	0271	SL, RIV	06/22/2006	0001		0.019			#	0.0021	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.0082	B		#	0.0021	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.007	B		#	0.0021	-
	mg/L	0273	SL, RIV	06/22/2006	0001		0.014			#	0.0021	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	0.300			#	0.042	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	0.360		F	#	0.042	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	0.023		F	#	0.0021	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	0.061	B		#	0.042	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	0.220		F	#	0.042	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	0.077	B		#	0.042	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	0.140		F	#	0.021	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	0.330			#	0.042	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	0.260		F	#	0.042	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	0.280			#	0.042	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Lithium	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	0.280		F	#	0.042	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	0.160	B		#	0.042	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	0.120	B		#	0.042	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	0.042	U	F	#	0.042	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	0.110	B		#	0.042	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	0.140	B	F	#	0.042	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	0.360			#	0.042	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	0.200	B	F	#	0.042	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	0.038	B	Q	#	0.021	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	0.097		F	#	0.011	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	0.210			#	0.042	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	0.170	B	F	#	0.042	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.025		Q	#	0.0042	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	0.039		FQ	#	0.0042	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.017		Q	#	0.0021	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	0.022		FQ	#	0.0042	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	0.043		Q	#	0.0021	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	0.077		FQ	#	0.0021	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.041		Q	#	0.0021	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.065		FQ	#	0.0021	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.0092	B	Q	#	0.0042	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	0.0021	U	FQ	#	0.0021	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.0046	B		#	0.0021	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.0083	B	FQ	#	0.0021	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	0.0047	B	Q	#	0.0021	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	0.005	B	FQ	#	0.0021	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Lithium	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	0.0032	B	Q	#	0.0021	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	0.0062	B	FQ	#	0.0021	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.0094	B		#	0.0021	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	0.014			#	0.0021	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	0.020		Q	#	0.0021	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.010		Q	#	0.0021	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	0.017			#	0.0021	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	0.017		F	#	0.0021	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	0.022		F	#	0.0021	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	0.240			#	0.042	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	0.110		F	#	0.0021	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	0.220		Q	#	0.042	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	0.350		FQ	#	0.042	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	0.023		Q	#	0.0042	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.020	B	FQ	#	0.0042	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.014	B	Q	#	0.0042	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	0.026		FQ	#	0.0042	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.0081	B		#	0.0021	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.0089	B	FQ	#	0.0021	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	0.320		Q	#	0.042	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	0.360		FQ	#	0.042	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	0.290		Q	#	0.042	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	0.026		F	#	0.0021	-
Magnesium	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	13.000			#	0.0068	-
	mg/L	0271	SL, RIV	06/22/2006	0001		17.000			#	0.0068	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	13.000			#	0.0068	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Magnesium	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	13.000			#	0.0068	-
	mg/L	0273	SL, RIV	06/22/2006	0001		17.000			#	0.0068	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	480.000			#	0.14	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	470.000		F	#	0.14	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	480.000		F	#	0.14	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	650.000			#	0.14	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	600.000		F	#	0.14	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	420.000			#	0.14	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	410.000		F	#	0.068	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	490.000			#	0.14	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	470.000		F	#	0.14	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	510.000			#	0.14	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	450.000		F	#	0.14	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	510.000			#	0.14	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	480.000			#	0.14	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	470.000		F	#	0.14	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	590.000			#	0.14	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	530.000		F	#	0.14	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	480.000			#	0.14	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	430.000		F	#	0.14	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	130.000		Q	#	0.068	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	120.000		F	#	0.034	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	420.000			#	0.14	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	400.000		F	#	0.14	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	79.000		Q	#	0.02	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	76.000		FQ	#	0.02	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Magnesium	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	76.000		Q	#	0.0068	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	86.000		FQ	#	0.014	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	110.000		Q	#	0.0068	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	110.000		FQ	#	0.0068	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	120.000		Q	#	0.0068	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	120.000		FQ	#	0.0068	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	4.000		Q	#	0.014	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	2.600		FQ	#	0.0068	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	2.000			#	0.0068	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	1.900		FQ	#	0.0068	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	51.000		Q	#	0.0068	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	48.000		FQ	#	0.0068	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	43.000		Q	#	0.0068	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	38.000		FQ	#	0.0068	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	54.000			#	0.0068	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	56.000			#	0.0068	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	73.000		Q	#	0.0068	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	56.000		Q	#	0.0068	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	34.000			#	0.0068	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	35.000		F	#	0.0068	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	34.000		F	#	0.0068	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	420.000			#	0.14	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	540.000		F	#	0.14	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	500.000		Q	#	0.14	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	490.000		FQ	#	0.14	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	180.000		Q	#	0.02	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Magnesium	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	160.000		FQ	#	0.02	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	100.000		Q	#	0.014	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	110.000		FQ	#	0.014	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	47.000			#	0.0068	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	59.000		FQ	#	0.0068	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	2500.000		Q	#	0.14	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	2500.000		FQ	#	0.14	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	2200.000		Q	#	0.14	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	2200.000		F	#	0.14	-
Manganese	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.0037	B		#	0.00023	-
	mg/L	0271	SL, RIV	06/22/2006	0001		0.0054			#	0.00023	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.0044	B		#	0.00023	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.0039	B		#	0.00023	-
	mg/L	0273	SL, RIV	06/22/2006	0001		0.0063			#	0.00023	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	4.400			#	0.0046	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	4.500		F	#	0.0046	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	4.300		F	#	0.0046	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	6.300			#	0.0046	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	5.900		F	#	0.0046	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	10.000			#	0.0046	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	10.000		F	#	0.0023	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	2.200			#	0.0046	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	2.100		F	#	0.0046	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	4.600			#	0.0046	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	4.300		F	#	0.0046	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	10.000			#	0.0046	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Manganese	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	9.900			#	0.0046	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	10.000		F	#	0.0046	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	0.048	B		#	0.0046	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	0.042	B	F	#	0.0046	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	0.430			#	0.0046	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	0.430		F	#	0.0046	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	0.640		Q	#	0.0023	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	0.710		F	#	0.0012	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	3.700			#	0.0046	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	3.500		F	#	0.0046	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.610		Q	#	0.00069	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	0.790		FQ	#	0.00069	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.290		Q	#	0.00023	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	0.350		FQ	#	0.00046	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	1.000		Q	#	0.00023	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	0.950		FQ	#	0.00023	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.450		Q	#	0.00023	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.660		FQ	#	0.00023	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.017		Q	#	0.00046	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	0.011		FQ	#	0.00023	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.025			#	0.00023	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.034		FQ	#	0.00023	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	0.062		Q	#	0.00023	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	0.092		FQ	#	0.00023	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	0.120		Q	#	0.00023	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	0.066		FQ	#	0.00023	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Manganese	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.086			#	0.00023	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	0.088			#	0.00023	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	0.0048	B	Q	#	0.00023	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.077		Q	#	0.00023	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	0.0073			#	0.00023	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	0.0058		F	#	0.00023	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	0.0057		F	#	0.00023	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	0.380			#	0.0046	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	0.830		F	#	0.0046	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	0.079	B	Q	#	0.0046	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	0.160		FQ	#	0.0046	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	1.300		Q	#	0.00069	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	1.800		FQ	#	0.00069	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.058		Q	#	0.00046	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	0.077		FQ	#	0.00046	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.095			#	0.00023	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.110		FQ	#	0.00023	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	0.950		Q	#	0.0046	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	0.570		FQ	#	0.0046	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	18.000		Q	#	0.0046	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	18.000		F	#	0.0046	-
Manganese (II)	mg/L	0271	SL, RIV	05/17/2006	0001	0.00 - 0.00	0.2	JM	J	#	0.1	-
	mg/L	0271	SL, RIV	06/22/2006	0001		1.0	U		#	0.1	-
	mg/L	0273	SL, RIV	06/22/2006	0001		1.0	U		#	0.1	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	6.5		F	#	0.1	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	1.2		F	#	0.1	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Manganese (II)	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	7.0		F	#	0.1	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	0.9	J	F	#	0.1	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	1.0	UM	J	#	0.1	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	3.0	M	FJ	#	0.1	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	0.4	JM	J	#	0.1	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	1.1	M	FJ	#	0.1	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	14.0	M	FJ	#	0.6	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	1.0	UM	J	#	0.1	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	0.2	JM	FJ	#	0.1	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	1.0	UM	J	#	0.1	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	0.2	JM	FJ	#	0.1	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	11.0	M	J	#	0.1	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	3.0		F	#	0.1	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.2	J	F	#	0.1	-
Molybdenum	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.0024		J	#	0.00021	-
	mg/L	0271	SL, RIV	06/22/2006	0001		0.0038			#	0.00021	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.0024		J	#	0.00021	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.003		J	#	0.00021	-
	mg/L	0273	SL, RIV	06/22/2006	0001		0.0041			#	0.00021	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	0.0082		J	#	0.00042	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	0.0032		F	#	0.00042	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	0.0041		F	#	0.00042	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	0.0074		J	#	0.00042	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	0.0048		F	#	0.00042	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	0.011		J	#	0.0021	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	0.0041		F	#	0.00021	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	0.0036		J	#	0.00021	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	0.0027		F	#	0.00042	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	0.006	B	J	#	0.0021	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	0.0036		F	#	0.00042	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	0.0028		J	#	0.00021	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	0.012		J	#	0.0021	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	0.0022		F	#	0.00042	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	0.0015		J	#	0.00021	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	0.00058	B	F	#	0.00042	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	0.0008	B	J	#	0.00021	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	0.00043	B	F	#	0.00042	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	0.017		Q	#	0.00042	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	0.017		F	#	0.00021	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	0.0082			#	0.00021	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	0.0058		F	#	0.00042	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.035		Q	#	0.00021	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	0.031		FQ	#	0.00021	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.037		Q	#	0.00021	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	0.040		FQ	#	0.00021	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	0.0041		QJ	#	0.00021	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	0.0043		FQ	#	0.00021	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.0026		QJ	#	0.00021	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.0029		FQ	#	0.00021	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.024		Q	#	0.00021	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	0.022		FQ	#	0.00021	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.018			#	0.00021	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.018		FQ	#	0.00021	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	0.0034		QJ	#	0.00021	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	0.0047		FQ	#	0.00021	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	0.0025		QJ	#	0.00021	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	0.0026		FQ	#	0.00021	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.012			#	0.00021	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	0.013			#	0.00021	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	0.0015		QJ	#	0.00021	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.0022		QJ	#	0.00021	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	0.013			#	0.00021	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	0.014		F	#	0.00021	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	0.013		F	#	0.00021	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	0.0022		J	#	0.00021	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	0.0037	B	F	#	0.001	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	0.0024		QJ	#	0.00021	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	0.00045	B	FQ	#	0.00042	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	0.0018	B	QJ	#	0.001	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.00087	B	FQ	#	0.00021	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.010		Q	#	0.00021	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	0.0039		FQ	#	0.00021	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.011			#	0.00021	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.0093		FQ	#	0.00021	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	0.019		QJ	#	0.0021	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	0.0099		FQ	#	0.00042	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	0.0086		Q	#	0.00021	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	0.0076		F	#	0.00042	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Nitrate + Nitrite as Nitrogen	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.84			#	0.01	-
	mg/L	0271	SL, RIV	06/22/2006	0001		0.21			#	0.01	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	1.2			#	0.01	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.37			#	0.01	-
	mg/L	0273	SL, RIV	06/22/2006	0001		0.58			#	0.01	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	0.061			#	0.01	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	0.83		F	#	0.01	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	0.057		F	#	0.05	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	0.9			#	0.01	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	0.47		F	#	0.01	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	0.17			#	0.01	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	0.36		F	#	0.01	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	0.087			#	0.01	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	0.11		F	#	0.01	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	0.055			#	0.01	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	0.05		F	#	0.05	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	0.061			#	0.01	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	0.06			#	0.01	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	0.21		F	#	0.01	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	0.77			#	0.01	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	0.15		F	#	0.05	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	2.8			#	0.02	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	0.18		F	#	0.01	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	0.089		Q	#	0.01	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	0.2		F	#	0.01	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	0.046			#	0.01	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Nitrate + Nitrite as Nitrogen	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	0.046		F	#	0.01	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.22		Q	#	0.01	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	0.33		FQ	#	0.01	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.61		Q	#	0.01	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	0.55		FQ	#	0.01	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	0.71		Q	#	0.01	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	0.067		FQ	#	0.01	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	1.1		Q	#	0.01	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.07		FQ	#	0.01	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	3.4		Q	#	0.02	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	3.3		FQ	#	0.02	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.62			#	0.01	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.27		FQ	#	0.01	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	0.66		Q	#	0.01	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	0.027		FQ	#	0.01	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	1.2		Q	#	0.01	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	0.12		FQ	#	0.01	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.48			#	0.01	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	0.026			#	0.01	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	2.3		Q	#	0.02	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.027		Q	#	0.01	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	7.5			#	0.05	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	8.6		F	#	0.05	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	7.7		F	#	0.05	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	0.38			#	0.01	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	0.058		F	#	0.02	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Nitrate + Nitrite as Nitrogen	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	2.1		Q	#	0.02	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	0.44		FQ	#	0.01	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	0.039		Q	#	0.01	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.053		FQ	#	0.01	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.032		Q	#	0.01	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	0.19		FQ	#	0.01	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.86			#	0.01	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.079		FQ	#	0.01	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	1.3		Q	#	0.01	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	0.36		FQ	#	0.01	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	1.3		Q	#	0.01	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	0.062		F	#	0.02	-
ortho-Phosphate as Phosp	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.2	U		#	0.2	-
	mg/L	0271	SL, RIV	06/22/2006	0001		0.2	U		#	0.2	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.2	U		#	0.2	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.2	U		#	0.2	-
	mg/L	0273	SL, RIV	06/22/2006	0001		0.2	U		#	0.2	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	20	U		#	20	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	20	UN	F	#	20	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	20	U	F	#	20	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	20	U		#	20	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	34		FJ	#	20	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	10	U		#	10	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	10	U	F	#	10	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	20	U		#	20	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	20	U	F	#	20	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
ortho-Phosphate as Phosp	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	20	U		#	20	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	20	U	F	#	20	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	20	U		#	20	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	20	UN		#	20	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	20	U	F	#	20	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	20	U		#	20	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	20	U	F	#	20	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	20	U		#	20	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	20	U	F	#	20	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	4	U	Q	#	4	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	7.7		FJ	#	4	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	20	U		#	20	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	20	U	F	#	20	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	1	U	Q	#	1	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	2	U	FQ	#	2	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.4	U	Q	#	0.4	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	1	U	FQ	#	1	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	0.4	U	Q	#	0.4	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	1	U	FQ	#	1	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.4	U	Q	#	0.4	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	1	U	FQ	#	1	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	1	U	Q	#	1	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	1	U	FQ	#	1	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.4	U		#	0.4	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	1	U	FQ	#	1	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	0.2	U	Q	#	0.2	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
ortho-Phosphate as Phosp	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	0.2	U	FQ	#	0.2	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	0.2	U	Q	#	0.2	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	0.2	U	FQ	#	0.2	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.2	U		#	0.2	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	0.2	U		#	0.2	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.2	U	Q	#	0.2	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	0.4	U		#	0.4	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	1	U	F	#	1	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	1	UN	F	#	1	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	10	U		#	10	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	40	U	F	#	40	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	20	U	Q	#	20	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	20	U	FQ	#	20	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	2	U	Q	#	2	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	2	U	FQ	#	2	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	1	U	Q	#	1	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	1	U	FQ	#	1	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.4	U		#	0.4	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.4	U	FQ	#	0.4	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	54		UQ	#	20	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	10	UN	FQ	#	10	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	20	UN	Q	#	20	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	19		FJ	#	10	-
Oxidation Reduction Potent	mV	0271	SL, RIV	12/16/2005	N001	0.00 - 0.00	-44			#	-	-
	mV	0271	SL, RIV	05/17/2006	N001	-1.00 - -1.00	-5			#	-	-
	mV	0271	SL, RIV	06/22/2006	N001		21			#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	0272	SL, RIV	05/17/2006	N001	-2.00 - -2.00	18.4			#	-	-
	mV	0273	SL, RIV	12/15/2005	N001	0.00 - 0.00	-76			#	-	-
	mV	0273	SL, RIV	05/17/2006	N001	-1.00 - -1.00	29.5			#	-	-
	mV	0273	SL, RIV	06/22/2006	N001		-27			#	-	-
	mV	BL1-D	WL	12/21/2005	N001	138.00 - 138.00	-112.3			#	-	-
	mV	BL1-D	WL	05/16/2006	N001	138.00 - 138.00	-113			#	-	-
	mV	BL1-D	WL	06/27/2006	N001	138.00 - 138.00	-87		F	#	-	-
	mV	BL1-M	WL	12/20/2005	N001	97.00 - 97.00	-40.3			#	-	-
	mV	BL1-M	WL	05/16/2006	N001	97.00 - 97.00	-51.1			#	-	-
	mV	BL1-M	WL	06/27/2006	N001	97.00 - 97.00	-41		F	#	-	-
	mV	BL1-S	WL	12/20/2005	N001	53.00 - 53.00	27.3			#	-	-
	mV	BL1-S	WL	05/16/2006	N001	53.00 - 53.00	45.7			#	-	-
	mV	BL1-S	WL	06/27/2006	N001	53.00 - 53.00	9		F	#	-	-
	mV	BL2-D	WL	12/21/2005	N001	141.00 - 141.00	-25.3			#	-	-
	mV	BL2-D	WL	05/17/2006	N001	141.00 - 141.00	-68.2			#	-	-
	mV	BL2-D	WL	06/26/2006	N001	141.00 - 141.00	-161		F	#	-	-
	mV	BL2-M	WL	12/16/2005	N001	98.00 - 98.00	-83			#	-	-
	mV	BL2-M	WL	05/17/2006	N001	98.00 - 98.00	-80.1			#	-	-
	mV	BL2-M	WL	06/26/2006	N001	98.00 - 98.00	-155		F	#	-	-
	mV	BL2-S	WL	12/15/2005	N001	54.00 - 54.00	8.4			#	-	-
	mV	BL2-S	WL	05/16/2006	N001	54.00 - 54.00	-41			#	-	-
	mV	BL2-S	WL	06/26/2006	N001	54.00 - 54.00	-61		F	#	-	-
	mV	BL3-D	WL	12/21/2005	N001	97.00 - 97.00	-270.0			#	-	-
	mV	BL3-D	WL	05/17/2006	N001	97.00 - 97.00	-308.7			#	-	-
	mV	BL3-D	WL	06/26/2006	N001	97.00 - 97.00	-283		F	#	-	-
	mV	BL3-M	WL	12/21/2005	N001	44.00 - 44.00	-267.6			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	BL3-M	WL	05/17/2006	N001	44.00 - 44.00	-306.9			#	-	-
	mV	BL3-M	WL	06/26/2006	N001	44.00 - 44.00	-273		F	#	-	-
	mV	M11-12	WL, PZ	12/13/2005	N001	38.00 - 38.00	-124.7			#	-	-
	mV	M11-12	WL, PZ	05/18/2006	N001	38.00 - 38.00	-127		Q	#	-	-
	mV	M11-12	WL, PZ	06/23/2006	N001	38.00 - 38.00	-85		F	#	-	-
	mV	M11-14.0	WL, PZ	12/12/2005	N001	48.00 - 48.00	-110.7			#	-	-
	mV	M11-14.0	WL, PZ	05/17/2006	N001	48.00 - 48.00	-166			#	-	-
	mV	M11-14.0	WL, PZ	06/27/2006	N001	48.00 - 48.00	-168		F	#	-	-
	mV	M11-4.8	WL, PZ	05/18/2006	N001	13.00 - 13.00	-161		Q	#	-	-
	mV	M11-4.8	WL, PZ	06/27/2006	N001	13.00 - 13.00	-101		FQ	#	-	-
	mV	M11-7.0	WL, PZ	12/14/2005	N001	20.00 - 20.00	-194.4			#	-	-
	mV	M11-7.0	WL, PZ	05/17/2006	N001	20.00 - 20.00	-287		Q	#	-	-
	mV	M11-7.0	WL, PZ	06/27/2006	N001	20.00 - 20.00	-215		FQ	#	-	-
	mV	N2-12.8	WL, PZ	12/16/2005	N001	34.00 - 34.00	-141			#	-	-
	mV	N2-12.8	WL, PZ	05/17/2006	N001	34.00 - 34.00	38		Q	#	-	-
	mV	N2-12.8	WL, PZ	06/28/2006	N001	34.00 - 34.00	-73		FQ	#	-	-
	mV	N2-6.5	WL, PZ	12/15/2005	N001	20.00 - 20.00	-189.6			#	-	-
	mV	N2-6.5	WL, PZ	05/17/2006	N001	20.00 - 20.00	-66		Q	#	-	-
	mV	N2-6.5	WL, PZ	06/28/2006	N001	20.00 - 20.00	-102		FQ	#	-	-
	mV	N3-4.3	WL, PZ	01/25/2006	N001	13.00 - 13.00	-103.9		F	#	-	-
	mV	N3-4.3	WL, PZ	05/18/2006	N001	13.00 - 13.00	-199		Q	#	-	-
	mV	N3-4.3	WL, PZ	06/29/2006	N001	13.00 - 13.00	-147.7		FQ	#	-	-
	mV	N3-8.3	WL, PZ	01/25/2006	N001	24.00 - 24.00	-132.8		F	#	-	-
	mV	N3-8.3	WL, PZ	05/18/2006	N001	24.00 - 24.00	-173.2			#	-	-
	mV	N3-8.3	WL, PZ	06/28/2006	N001	24.00 - 24.00	-140		FQ	#	-	-
	mV	N4-12.0	WL, PZ	12/16/2005	N001	37.00 - 37.00	-207			#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	N4-12.0	WL, PZ	05/19/2006	N001	37.00 - 37.00	-224		Q	#	-	-
	mV	N4-12.0	WL, PZ	06/28/2006	N001	37.00 - 37.00	-136		FQ	#	-	-
	mV	N4-3.2	WL, PZ	12/16/2005	N001	9.00 - 9.00	-120			#	-	-
	mV	N4-3.2	WL, PZ	05/19/2006	N001	9.00 - 9.00	-160		Q	#	-	-
	mV	N4-3.2	WL, PZ	06/29/2006	N001	9.00 - 9.00	-81		FQ	#	-	-
	mV	N5-14	WL, PZ	12/14/2005	N001	48.00 - 48.00	-127.3			#	-	-
	mV	N5-14	WL, PZ	05/18/2006	N001	48.00 - 48.00	-192.6			#	-	-
	mV	N5-7.2	WL, PZ	12/15/2005	N001	24.00 - 24.00	-88			#	-	-
	mV	N6-6.4	WL, PZ	12/12/2005	N001	12.00 - 12.00	-59.3			#	-	-
	mV	N6-6.4	WL, PZ	05/15/2006	N001	12.00 - 12.00	146			#	-	-
	mV	N6-6.4	WL, PZ	06/23/2006	N001	12.00 - 12.00	-19		F	#	-	-
	mV	N7-10	WL, PZ	12/15/2005	N001	31.00 - 31.00	-158			#	-	-
	mV	N7-10	WL, PZ	05/17/2006	N001	31.00 - 31.00	-160			#	-	-
	mV	N7-10	WL, PZ	06/23/2006	N001	31.00 - 31.00	-54		F	#	-	-
	mV	N7-11	WL, PZ	12/16/2005	N001	35.00 - 35.00	-203			#	-	-
	mV	N7-11	WL, PZ	05/18/2006	N001	35.00 - 35.00	-231		Q	#	-	-
	mV	N7-11	WL, PZ	06/28/2006	N001	35.00 - 35.00	91		FQ	#	-	-
	mV	N7-7	WL, PZ	12/16/2005	N001	20.00 - 20.00	-115			#	-	-
	mV	N7-7	WL, PZ	05/18/2006	N001	20.00 - 20.00	-56		Q	#	-	-
	mV	N7-7	WL, PZ	06/28/2006	N001	20.00 - 20.00	-0.4		FQ	#	-	-
	mV	N8-14	WL, PZ	05/18/2006	N001	48.00 - 48.00	-186		Q	#	-	-
	mV	N8-14	WL, PZ	06/28/2006	N001	48.00 - 48.00	-51		FQ	#	-	-
	mV	N8-6	WL, PZ	05/17/2006	N001	20.00 - 20.00	-19			#	-	-
	mV	N8-6	WL, PZ	06/28/2006	N001	20.00 - 20.00	-54		FQ	#	-	-
	mV	W1-4.3	WL	05/17/2006	N001	14.00 - 14.00	242.8		Q	#	-	-
	mV	W1-4.3	WL	06/27/2006	N001	14.00 - 14.00	65		FQ	#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Oxidation Reduction Potent	mV	W1-7	WL, PZ	12/13/2005	N001	19.00 - 19.00	122.9			#	-	-
	mV	W1-7	WL, PZ	05/17/2006	N001	19.00 - 19.00	7.0		Q	#	-	-
	mV	W1-7	WL, PZ	06/27/2006	N001	19.00 - 19.00	-61		F	#	-	-
pH	s.u.	0271	SL, RIV	12/16/2005	N001	0.00 - 0.00	8.12			#	-	-
	s.u.	0271	SL, RIV	05/17/2006	N001	-1.00 - -1.00	7.91			#	-	-
	s.u.	0271	SL, RIV	06/22/2006	N001		8.31			#	-	-
	s.u.	0272	SL, RIV	05/17/2006	N001	-2.00 - -2.00	7.96			#	-	-
	s.u.	0273	SL, RIV	12/15/2005	N001	0.00 - 0.00	8.27			#	-	-
	s.u.	0273	SL, RIV	05/17/2006	N001	-1.00 - -1.00	7.97			#	-	-
	s.u.	0273	SL, RIV	06/22/2006	N001		8.22			#	-	-
	s.u.	BL1-D	WL	12/21/2005	N001	138.00 - 138.00	7.18			#	-	-
	s.u.	BL1-D	WL	05/16/2006	N001	138.00 - 138.00	7.29			#	-	-
	s.u.	BL1-D	WL	06/27/2006	N001	138.00 - 138.00	7.02		F	#	-	-
	s.u.	BL1-M	WL	12/20/2005	N001	97.00 - 97.00	6.66			#	-	-
	s.u.	BL1-M	WL	05/16/2006	N001	97.00 - 97.00	6.77			#	-	-
	s.u.	BL1-M	WL	06/27/2006	N001	97.00 - 97.00	6.48		F	#	-	-
	s.u.	BL1-S	WL	12/20/2005	N001	53.00 - 53.00	6.58			#	-	-
	s.u.	BL1-S	WL	05/16/2006	N001	53.00 - 53.00	6.70			#	-	-
	s.u.	BL1-S	WL	06/27/2006	N001	53.00 - 53.00	6.45		F	#	-	-
	s.u.	BL2-D	WL	12/21/2005	N001	141.00 - 141.00	6.87			#	-	-
	s.u.	BL2-D	WL	05/17/2006	N001	141.00 - 141.00	6.63			#	-	-
	s.u.	BL2-D	WL	06/26/2006	N001	141.00 - 141.00	6.97		F	#	-	-
	s.u.	BL2-M	WL	12/16/2005	N001	98.00 - 98.00	7.02			#	-	-
	s.u.	BL2-M	WL	05/17/2006	N001	98.00 - 98.00	6.58			#	-	-
	s.u.	BL2-M	WL	06/26/2006	N001	98.00 - 98.00	6.93		F	#	-	-
	s.u.	BL2-S	WL	12/15/2005	N001	54.00 - 54.00	6.50			#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	BL2-S	WL	05/16/2006	N001	54.00 - 54.00	6.56			#	-	-
	s.u.	BL2-S	WL	06/26/2006	N001	54.00 - 54.00	6.37		F	#	-	-
	s.u.	BL3-D	WL	12/21/2005	N001	97.00 - 97.00	6.51			#	-	-
	s.u.	BL3-D	WL	05/17/2006	N001	97.00 - 97.00	6.12			#	-	-
	s.u.	BL3-D	WL	06/26/2006	N001	97.00 - 97.00	6.38		F	#	-	-
	s.u.	BL3-M	WL	12/21/2005	N001	44.00 - 44.00	6.77			#	-	-
	s.u.	BL3-M	WL	05/17/2006	N001	44.00 - 44.00	6.41			#	-	-
	s.u.	BL3-M	WL	06/26/2006	N001	44.00 - 44.00	6.63		F	#	-	-
	s.u.	M11-12	WL, PZ	12/13/2005	N001	38.00 - 38.00	7.07			#	-	-
	s.u.	M11-12	WL, PZ	05/18/2006	N001	38.00 - 38.00	7.16		Q	#	-	-
	s.u.	M11-12	WL, PZ	06/23/2006	N001	38.00 - 38.00	6.93		F	#	-	-
	s.u.	M11-14.0	WL, PZ	12/12/2005	N001	48.00 - 48.00	6.69			#	-	-
	s.u.	M11-14.0	WL, PZ	05/17/2006	N001	48.00 - 48.00	6.96			#	-	-
	s.u.	M11-14.0	WL, PZ	06/27/2006	N001	48.00 - 48.00	6.69		F	#	-	-
	s.u.	M11-4.8	WL, PZ	05/18/2006	N001	13.00 - 13.00	8.92		Q	#	-	-
	s.u.	M11-4.8	WL, PZ	06/27/2006	N001	13.00 - 13.00	8.32		FQ	#	-	-
	s.u.	M11-7.0	WL, PZ	12/14/2005	N001	20.00 - 20.00	8.83			#	-	-
	s.u.	M11-7.0	WL, PZ	05/17/2006	N001	20.00 - 20.00	8.90		Q	#	-	-
	s.u.	M11-7.0	WL, PZ	06/27/2006	N001	20.00 - 20.00	7.84		FQ	#	-	-
	s.u.	N2-12.8	WL, PZ	12/16/2005	N001	34.00 - 34.00	7.51			#	-	-
	s.u.	N2-12.8	WL, PZ	05/17/2006	N001	34.00 - 34.00	7.29		Q	#	-	-
	s.u.	N2-12.8	WL, PZ	06/28/2006	N001	34.00 - 34.00	7.81		FQ	#	-	-
	s.u.	N2-6.5	WL, PZ	12/15/2005	N001	20.00 - 20.00	8.76			#	-	-
	s.u.	N2-6.5	WL, PZ	05/17/2006	N001	20.00 - 20.00	7.65		Q	#	-	-
	s.u.	N2-6.5	WL, PZ	06/28/2006	N001	20.00 - 20.00	8.34		FQ	#	-	-
	s.u.	N3-4.3	WL, PZ	01/25/2006	N001	13.00 - 13.00	8.24		F	#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	N3-4.3	WL, PZ	05/18/2006	N001	13.00 - 13.00	8.61		Q	#	-	-
	s.u.	N3-4.3	WL, PZ	06/29/2006	N001	13.00 - 13.00	8.76		FQ	#	-	-
	s.u.	N3-8.3	WL, PZ	01/25/2006	N001	24.00 - 24.00	8.44		F	#	-	-
	s.u.	N3-8.3	WL, PZ	05/18/2006	N001	24.00 - 24.00	8.33			#	-	-
	s.u.	N3-8.3	WL, PZ	06/28/2006	N001	24.00 - 24.00	8.44		FQ	#	-	-
	s.u.	N4-12.0	WL, PZ	12/16/2005	N001	37.00 - 37.00	8.50			#	-	-
	s.u.	N4-12.0	WL, PZ	05/19/2006	N001	37.00 - 37.00	8.27		Q	#	-	-
	s.u.	N4-12.0	WL, PZ	06/28/2006	N001	37.00 - 37.00	8.08		FQ	#	-	-
	s.u.	N4-3.2	WL, PZ	12/16/2005	N001	9.00 - 9.00	8.72			#	-	-
	s.u.	N4-3.2	WL, PZ	05/19/2006	N001	9.00 - 9.00	8.55		Q	#	-	-
	s.u.	N4-3.2	WL, PZ	06/29/2006	N001	9.00 - 9.00	8.61		FQ	#	-	-
	s.u.	N5-14	WL, PZ	12/14/2005	N001	48.00 - 48.00	7.36			#	-	-
	s.u.	N5-14	WL, PZ	05/18/2006	N001	48.00 - 48.00	7.42			#	-	-
	s.u.	N5-7.2	WL, PZ	12/15/2005	N001	24.00 - 24.00	8.17			#	-	-
	s.u.	N6-6.4	WL, PZ	12/12/2005	N001	12.00 - 12.00	7.38			#	-	-
	s.u.	N6-6.4	WL, PZ	05/15/2006	N001	12.00 - 12.00	7.15			#	-	-
	s.u.	N6-6.4	WL, PZ	06/23/2006	N001	12.00 - 12.00	7.32		F	#	-	-
	s.u.	N7-10	WL, PZ	12/15/2005	N001	31.00 - 31.00	7.09			#	-	-
	s.u.	N7-10	WL, PZ	05/17/2006	N001	31.00 - 31.00	7.04			#	-	-
	s.u.	N7-10	WL, PZ	06/23/2006	N001	31.00 - 31.00	6.75		F	#	-	-
	s.u.	N7-11	WL, PZ	12/16/2005	N001	35.00 - 35.00	7.96			#	-	-
	s.u.	N7-11	WL, PZ	05/18/2006	N001	35.00 - 35.00	7.87		Q	#	-	-
	s.u.	N7-11	WL, PZ	06/28/2006	N001	35.00 - 35.00	6.93		FQ	#	-	-
	s.u.	N7-7	WL, PZ	12/16/2005	N001	20.00 - 20.00	7.76			#	-	-
	s.u.	N7-7	WL, PZ	05/18/2006	N001	20.00 - 20.00	7.63		Q	#	-	-
	s.u.	N7-7	WL, PZ	06/28/2006	N001	20.00 - 20.00	6.70		FQ	#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	N8-14	WL, PZ	05/18/2006	N001	48.00 - 48.00	8.58		Q	#	-	-
	s.u.	N8-14	WL, PZ	06/28/2006	N001	48.00 - 48.00	7.81		FQ	#	-	-
	s.u.	N8-6	WL, PZ	05/17/2006	N001	20.00 - 20.00	9.22			#	-	-
	s.u.	N8-6	WL, PZ	06/28/2006	N001	20.00 - 20.00	7.96		FQ	#	-	-
	s.u.	W1-4.3	WL	05/17/2006	N001	14.00 - 14.00	6.64		Q	#	-	-
	s.u.	W1-4.3	WL	06/27/2006	N001	14.00 - 14.00	6.76		FQ	#	-	-
	s.u.	W1-7	WL, PZ	12/13/2005	N001	19.00 - 19.00	7.06			#	-	-
	s.u.	W1-7	WL, PZ	05/17/2006	N001	19.00 - 19.00	6.69		Q	#	-	-
	s.u.	W1-7	WL, PZ	06/27/2006	N001	19.00 - 19.00	6.79		F	#	-	-
Potassium	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	2.700			#	0.074	-
	mg/L	0271	SL, RIV	06/22/2006	0001		3.300			#	0.074	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	2.600			#	0.074	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	2.700			#	0.074	-
	mg/L	0273	SL, RIV	06/22/2006	0001		3.500			#	0.074	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	810.000			#	1.5	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	810.000		F	#	1.5	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	770.000		F	#	1.5	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	220.000			#	1.5	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	200.000		F	#	1.5	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	150.000			#	1.5	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	150.000		F	#	0.74	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	1100.000			#	1.5	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	1100.000		F	#	1.5	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	1000.000			#	1.5	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	930.000		F	#	1.5	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	410.000			#	1.5	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Potassium	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	420.000			#	1.5	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	310.000		F	#	1.5	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	1500.000			#	1.5	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	1400.000		F	#	1.5	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	950.000			#	1.5	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	930.000		F	#	1.5	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	120.000		Q	#	0.74	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	110.000		F	#	0.37	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	470.000			#	1.5	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	530.000		F	#	1.5	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	17.000		Q	#	0.22	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	16.000		FQ	#	0.22	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	19.000		Q	#	0.074	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	15.000		FQ	#	0.15	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	12.000		Q	#	0.074	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	12.000		FQ	#	0.074	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	9.300		Q	#	0.074	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	9.700		FQ	#	0.074	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	41.000		Q	#	0.15	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	38.000		FQ	#	0.074	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	11.000			#	0.074	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	10.000		FQ	#	0.074	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	9.400		Q	#	0.074	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	5.100		FQ	#	0.074	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	3.700		Q	#	0.074	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	3.800		FQ	#	0.074	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Potassium	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	4.500			#	0.074	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	4.700	E		#	0.074	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	6.800		Q	#	0.074	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	5.100		Q	#	0.074	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	11.000			#	0.074	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	10.000		F	#	0.074	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	10.000		F	#	0.074	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	620.000			#	1.5	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	970.000		F	#	1.5	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	1100.000		Q	#	1.5	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	1100.000		FQ	#	1.5	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	40.000		Q	#	0.22	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	57.000		FQ	#	0.22	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	14.000		Q	#	0.15	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	16.000		FQ	#	0.15	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	9.700			#	0.074	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	14.000		FQ	#	0.074	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	320.000		Q	#	1.5	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	300.000		FQ	#	1.5	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	290.000		Q	#	1.5	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	270.000		F	#	1.5	-
Radium-226	pCi/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.421	U		#	0.421	± 0.21
	pCi/L	0271	SL, RIV	06/22/2006	0001		0.907	U		#	0.907	± 0.56
	pCi/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.226	U		#	0.226	± 0.10
	pCi/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.402	U		#	0.402	± 0.20
	pCi/L	0273	SL, RIV	06/22/2006	0001		0.478	U		#	0.478	± 0.24

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
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PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Radium-226	pCi/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	0.329		UJ	#	0.274	± 0.22
	pCi/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	1.06	U	F	#	1.06	± 0.58
	pCi/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	2.08	U	F	#	2.08	± 1.09
	pCi/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	0.565	U		#	0.565	± 0.27
	pCi/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	3.47	U	F	#	3.47	± 1.91
	pCi/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	0.308	U		#	0.308	± 0.20
	pCi/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	0.867	U	F	#	0.867	± 0.46
	pCi/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	0.972			#	0.391	± 0.41
	pCi/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	0.91		F	#	0.228	± 0.37
	pCi/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	0.803			#	0.275	± 0.36
	pCi/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	0.617		FJ	#	0.415	± 0.35
	pCi/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	0.542		J	#	0.271	± 0.29
	pCi/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	0.627		J	#	0.329	± 0.33
	pCi/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	0.526	U	F	#	0.526	± 0.31
	pCi/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	20.9			#	0.313	± 5.29
	pCi/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	21.8		F	#	1.43	± 5.74
	pCi/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	8.78			#	0.385	± 2.32
	pCi/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	8.46		F	#	0.498	± 2.38
	pCi/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	0.489	U		#	0.489	± 0.32
	pCi/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	0.649	U	F	#	0.649	± 0.36
	pCi/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.952	U	FQ	#	0.952	± 0.50
	pCi/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.265	U		#	0.265	± 0.14
Radon-222	pCi/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	30.8	U		#	30.8	± 17.7
	pCi/L	0271	SL, RIV	06/22/2006	0001		43.6	U		#	43.6	± 24.7
	pCi/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	37.3	U		#	37.3	± 21.4
	pCi/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	36.3	U		#	36.3	± 20.9

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Radon-222	pCi/L	0273	SL, RIV	06/22/2006	0001		43.2	U		#	43.2	± 24.5
	pCi/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	84.1		J	#	38.9	± 27.7
	pCi/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	101		FJ	#	36	± 27.3
	pCi/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	83.5		FJ	#	35.5	± 25.7
	pCi/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	80.1		J	#	38.2	± 27.0
	pCi/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	108		FJ	#	35.8	± 27.7
	pCi/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	167			#	37.7	± 33.8
	pCi/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	181		FJ	#	36.4	± 34.3
	pCi/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	120		J	#	36.2	± 28.5
	pCi/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	142		FJ	#	38.5	± 31.8
	pCi/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	146			#	37.3	± 31.3
	pCi/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	131		FJ	#	38.8	± 31.1
	pCi/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	76.5		J	#	40	± 27.8
	pCi/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	103		J	#	39.4	± 29.4
	pCi/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	51.5		FJ	#	39.1	± 25.6
	pCi/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	159			#	37.2	± 32.3
	pCi/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	125		FJ	#	40.7	± 31.6
	pCi/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	117			#	34	± 27.0
	pCi/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	192		FJ	#	40.7	± 37.4
	pCi/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	142			#	27.5	± 26.0
	pCi/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	129		FJ	#	36.3	± 29.7
	pCi/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	54.7	U	FQ	#	54.7	± 33.8
	pCi/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	148			#	33.5	± 29.5
Selenium	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.0011			#	0.00002	-
	mg/L	0271	SL, RIV	06/22/2006	0001		0.0016			#	0.00002	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.001			#	0.00002	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.00097			#	0.00002	-
	mg/L	0273	SL, RIV	06/22/2006	0001		0.0016			#	0.00002	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	0.0004	B		#	0.0001	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	0.00055	B	F	#	0.0002	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	0.00042	B	UF	#	0.0002	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	0.00033	B		#	0.0001	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	0.00041	B	UF	#	0.0002	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	0.00024	B		#	0.0001	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	0.00032	B	UF	#	0.0002	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	0.00033	B		#	0.0001	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	0.00039	B	UF	#	0.0002	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	0.00036	B		#	0.0001	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	0.00036	B	UF	#	0.0002	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	0.00026	B		#	0.0001	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	0.00048	B		#	0.0001	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	0.00035	B	UF	#	0.0002	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	0.00063			#	0.0001	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	0.0018		F	#	0.0002	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	0.00043	B		#	0.0001	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	0.0012		F	#	0.0002	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	0.00015	B	UQ	#	0.0001	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	0.00007	B	F	#	0.00004	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	0.00025	B		#	0.0001	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	0.00041	B	UF	#	0.0002	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.00002	B	UQ	#	0.00002	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	0.0001		FQ	#	0.00002	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.00009	B	UQ	#	0.00002	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	0.00009	B	UFQ	#	0.00002	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	0.00002	U	Q	#	0.00002	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	0.00004	B	UFQ	#	0.00002	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.00002	U	Q	#	0.00002	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.00002	B	UFQ	#	0.00002	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.0093		Q	#	0.00002	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	0.017		FQ	#	0.0001	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.0043			#	0.00002	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.00056		FQ	#	0.00002	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	0.00041	B	Q	#	0.0001	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	0.00032		FQ	#	0.00002	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	0.00002	U	Q	#	0.00002	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	0.00012		FQ	#	0.00002	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.00002	U		#	0.00002	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	0.00002	U		#	0.00002	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	0.00002	U	Q	#	0.00002	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.00002	U	Q	#	0.00002	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	0.0046			#	0.00002	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	0.005		F	#	0.00002	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	0.0051		F	#	0.00002	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	0.00017	B	U	#	0.0001	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	0.00051	B	UF	#	0.0002	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	0.00042	B	Q	#	0.0001	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	0.00057	B	UFQ	#	0.0002	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	0.00002	U	Q	#	0.00002	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.00006	B	UFQ	#	0.00002	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.00013		Q	#	0.00002	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	0.00037		FQ	#	0.00002	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.00002	U		#	0.00002	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.00018		FQ	#	0.00002	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	0.0013		Q	#	0.0001	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	0.0011		FQ	#	0.0002	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	0.00032	B	Q	#	0.0001	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	0.00073	B	UF	#	0.0002	-
Sodium	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	31.000			#	0.0035	-
	mg/L	0271	SL, RIV	06/22/2006	0001		43.000			#	0.0035	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	29.000			#	0.0035	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	29.000			#	0.0035	-
	mg/L	0273	SL, RIV	06/22/2006	0001		43.000			#	0.0035	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	27000.000			#	1.8	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	27000.000		F	#	3.5	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	27000.000		F	#	3.5	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	19000.000			#	1.8	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	18000.000		F	#	3.5	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	6600.000			#	1.8	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	6500.000		F	#	1.8	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	28000.000			#	1.8	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	27000.000		F	#	3.5	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	27000.000			#	1.8	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	26000.000		F	#	3.5	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	22000.000			#	1.8	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sodium	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	22000.000			#	1.8	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	19000.000		F	#	3.5	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	33000.000			#	1.8	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	31000.000		F	#	3.5	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	24000.000			#	1.8	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	24000.000		F	#	3.5	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	4400.000		Q	#	0.18	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	4300.000		F	#	0.35	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	19000.000			#	1.8	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	21000.000		F	#	3.5	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	960.000		Q	#	0.18	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	950.000		FQ	#	0.18	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	500.000		Q	#	0.18	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	520.000		FQ	#	0.18	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	98.000		Q	#	0.035	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	110.000		FQ	#	0.035	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	69.000		Q	#	0.0035	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	82.000		FQ	#	0.0035	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	530.000		Q	#	0.18	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	560.000		FQ	#	0.18	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	440.000			#	0.035	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	440.000		FQ	#	0.18	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	100.000		Q	#	0.018	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	30.000		FQ	#	0.0035	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	23.000		Q	#	0.0035	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	27.000		FQ	#	0.0035	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sodium	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	23.000			#	0.0035	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	23.000			#	0.0035	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	28.000		Q	#	0.0035	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	24.000		Q	#	0.0035	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	330.000			#	0.18	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	330.000		F	#	0.035	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	330.000		F	#	0.035	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	16000.000			#	1.8	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	28000.000		F	#	3.5	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	30000.000		Q	#	1.8	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	28000.000		FQ	#	3.5	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	760.000		Q	#	0.18	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	1300.000		FQ	#	0.18	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	310.000		Q	#	0.18	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	580.000		FQ	#	0.18	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	200.000			#	0.18	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	240.000		FQ	#	0.035	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	12000.000		Q	#	1.8	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	12000.000		FQ	#	3.5	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	12000.000		Q	#	1.8	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	11000.000		F	#	3.5	-
Specific Conductance	umhos/cm	0271	SL, RIV	12/16/2005	N001	0.00 - 0.00	1472			#	-	-
	umhos/cm	0271	SL, RIV	05/17/2006	N001	-1.00 - -1.00	515			#	-	-
	umhos/cm	0271	SL, RIV	06/22/2006	N001		685			#	-	-
	umhos/cm	0272	SL, RIV	05/17/2006	N001	-2.00 - -2.00	488			#	-	-
	umhos/cm	0273	SL, RIV	12/15/2005	N001	0.00 - 0.00	1534			#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Specific Conductance	umhos/cm	0273	SL, RIV	05/17/2006	N001	-1.00 - -1.00	483			#	-	-
	umhos/cm	0273	SL, RIV	06/22/2006	N001		689			#	-	-
	umhos/cm	BL1-D	WL	12/21/2005	N001	138.00 - 138.00	124500			#	-	-
	umhos/cm	BL1-D	WL	05/16/2006	N001	138.00 - 138.00	125300			#	-	-
	umhos/cm	BL1-D	WL	06/27/2006	N001	138.00 - 138.00	124100		F	#	-	-
	umhos/cm	BL1-M	WL	12/20/2005	N001	97.00 - 97.00	85280			#	-	-
	umhos/cm	BL1-M	WL	05/16/2006	N001	97.00 - 97.00	101500			#	-	-
	umhos/cm	BL1-M	WL	06/27/2006	N001	97.00 - 97.00	101900		F	#	-	-
	umhos/cm	BL1-S	WL	12/20/2005	N001	53.00 - 53.00	40630			#	-	-
	umhos/cm	BL1-S	WL	05/16/2006	N001	53.00 - 53.00	46270			#	-	-
	umhos/cm	BL1-S	WL	06/27/2006	N001	53.00 - 53.00	47900		F	#	-	-
	umhos/cm	BL2-D	WL	12/21/2005	N001	141.00 - 141.00	129100			#	-	-
	umhos/cm	BL2-D	WL	05/17/2006	N001	141.00 - 141.00	125600			#	-	-
	umhos/cm	BL2-D	WL	06/26/2006	N001	141.00 - 141.00	126800		F	#	-	-
	umhos/cm	BL2-M	WL	12/16/2005	N001	98.00 - 98.00	124000			#	-	-
	umhos/cm	BL2-M	WL	05/17/2006	N001	98.00 - 98.00	125200			#	-	-
	umhos/cm	BL2-M	WL	06/26/2006	N001	98.00 - 98.00	122200		F	#	-	-
	umhos/cm	BL2-S	WL	12/15/2005	N001	54.00 - 54.00	104100			#	-	-
	umhos/cm	BL2-S	WL	05/16/2006	N001	54.00 - 54.00	107200			#	-	-
	umhos/cm	BL2-S	WL	06/26/2006	N001	54.00 - 54.00	96700		F	#	-	-
	umhos/cm	BL3-D	WL	12/21/2005	N001	97.00 - 97.00	143800			#	-	-
	umhos/cm	BL3-D	WL	05/17/2006	N001	97.00 - 97.00	143800			#	-	-
	umhos/cm	BL3-D	WL	06/26/2006	N001	97.00 - 97.00	142100		F	#	-	-
	umhos/cm	BL3-M	WL	12/21/2005	N001	44.00 - 44.00	109100			#	-	-
	umhos/cm	BL3-M	WL	05/17/2006	N001	44.00 - 44.00	112200			#	-	-
	umhos/cm	BL3-M	WL	06/26/2006	N001	44.00 - 44.00	115500		F	#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Specific Conductance	umhos/cm	M11-12	WL, PZ	12/13/2005	N001	38.00 - 38.00	23860			#	-	-
	umhos/cm	M11-12	WL, PZ	05/18/2006	N001	38.00 - 38.00	24090		Q	#	-	-
	umhos/cm	M11-12	WL, PZ	06/23/2006	N001	38.00 - 38.00	25660		F	#	-	-
	umhos/cm	M11-14.0	WL, PZ	12/12/2005	N001	48.00 - 48.00	10470			#	-	-
	umhos/cm	M11-14.0	WL, PZ	05/17/2006	N001	48.00 - 48.00	90550			#	-	-
	umhos/cm	M11-14.0	WL, PZ	06/27/2006	N001	48.00 - 48.00	101700		F	#	-	-
	umhos/cm	M11-4.8	WL, PZ	05/18/2006	N001	13.00 - 13.00	6081		Q	#	-	-
	umhos/cm	M11-4.8	WL, PZ	06/27/2006	N001	13.00 - 13.00	6722		FQ	#	-	-
	umhos/cm	M11-7.0	WL, PZ	12/14/2005	N001	20.00 - 20.00	3991			#	-	-
	umhos/cm	M11-7.0	WL, PZ	05/17/2006	N001	20.00 - 20.00	3711		Q	#	-	-
	umhos/cm	M11-7.0	WL, PZ	06/27/2006	N001	20.00 - 20.00	13520		FQ	#	-	-
	umhos/cm	N2-12.8	WL, PZ	12/16/2005	N001	34.00 - 34.00	2983			#	-	-
	umhos/cm	N2-12.8	WL, PZ	05/17/2006	N001	34.00 - 34.00	2765		Q	#	-	-
	umhos/cm	N2-12.8	WL, PZ	06/28/2006	N001	34.00 - 34.00	1745		FQ	#	-	-
	umhos/cm	N2-6.5	WL, PZ	12/15/2005	N001	20.00 - 20.00	3385			#	-	-
	umhos/cm	N2-6.5	WL, PZ	05/17/2006	N001	20.00 - 20.00	2224		Q	#	-	-
	umhos/cm	N2-6.5	WL, PZ	06/28/2006	N001	20.00 - 20.00	3405		FQ	#	-	-
	umhos/cm	N3-4.3	WL, PZ	01/25/2006	N001	13.00 - 13.00	3501		F	#	-	-
	umhos/cm	N3-4.3	WL, PZ	05/18/2006	N001	13.00 - 13.00	3512		Q	#	-	-
	umhos/cm	N3-4.3	WL, PZ	06/29/2006	N001	13.00 - 13.00	4146		FQ	#	-	-
	umhos/cm	N3-8.3	WL, PZ	01/25/2006	N001	24.00 - 24.00	2619		F	#	-	-
	umhos/cm	N3-8.3	WL, PZ	05/18/2006	N001	24.00 - 24.00	2415			#	-	-
	umhos/cm	N3-8.3	WL, PZ	06/28/2006	N001	24.00 - 24.00	2544		FQ	#	-	-
	umhos/cm	N4-12.0	WL, PZ	12/16/2005	N001	37.00 - 37.00	842			#	-	-
	umhos/cm	N4-12.0	WL, PZ	05/19/2006	N001	37.00 - 37.00	610		Q	#	-	-
	umhos/cm	N4-12.0	WL, PZ	06/28/2006	N001	37.00 - 37.00	1027		FQ	#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Specific Conductance	umhos/cm	N4-3.2	WL, PZ	12/16/2005	N001	9.00 - 9.00	1753			#	-	-
	umhos/cm	N4-3.2	WL, PZ	05/19/2006	N001	9.00 - 9.00	497		Q	#	-	-
	umhos/cm	N4-3.2	WL, PZ	06/29/2006	N001	9.00 - 9.00	691		FQ	#	-	-
	umhos/cm	N5-14	WL, PZ	12/14/2005	N001	48.00 - 48.00	1281			#	-	-
	umhos/cm	N5-14	WL, PZ	05/18/2006	N001	48.00 - 48.00	1240			#	-	-
	umhos/cm	N5-7.2	WL, PZ	12/15/2005	N001	24.00 - 24.00	1056			#	-	-
	umhos/cm	N6-6.4	WL, PZ	12/12/2005	N001	12.00 - 12.00	2970			#	-	-
	umhos/cm	N6-6.4	WL, PZ	05/15/2006	N001	12.00 - 12.00	2820			#	-	-
	umhos/cm	N6-6.4	WL, PZ	06/23/2006	N001	12.00 - 12.00	2808		F	#	-	-
	umhos/cm	N7-10	WL, PZ	12/15/2005	N001	31.00 - 31.00	97820			#	-	-
	umhos/cm	N7-10	WL, PZ	05/17/2006	N001	31.00 - 31.00	80600			#	-	-
	umhos/cm	N7-10	WL, PZ	06/23/2006	N001	31.00 - 31.00	126200		F	#	-	-
	umhos/cm	N7-11	WL, PZ	12/16/2005	N001	35.00 - 35.00	100400			#	-	-
	umhos/cm	N7-11	WL, PZ	05/18/2006	N001	35.00 - 35.00	125100		Q	#	-	-
	umhos/cm	N7-11	WL, PZ	06/28/2006	N001	35.00 - 35.00	124900		FQ	#	-	-
	umhos/cm	N7-7	WL, PZ	12/16/2005	N001	20.00 - 20.00	7663			#	-	-
	umhos/cm	N7-7	WL, PZ	05/18/2006	N001	20.00 - 20.00	5767		Q	#	-	-
	umhos/cm	N7-7	WL, PZ	06/28/2006	N001	20.00 - 20.00	7389		FQ	#	-	-
	umhos/cm	N8-14	WL, PZ	05/18/2006	N001	48.00 - 48.00	2256		Q	#	-	-
	umhos/cm	N8-14	WL, PZ	06/28/2006	N001	48.00 - 48.00	3444		FQ	#	-	-
	umhos/cm	N8-6	WL, PZ	05/17/2006	N001	20.00 - 20.00	1857			#	-	-
	umhos/cm	N8-6	WL, PZ	06/28/2006	N001	20.00 - 20.00	1899		FQ	#	-	-
	umhos/cm	W1-4.3	WL	05/17/2006	N001	14.00 - 14.00	81410		Q	#	-	-
	umhos/cm	W1-4.3	WL	06/27/2006	N001	14.00 - 14.00	78880		FQ	#	-	-
	umhos/cm	W1-7	WL, PZ	12/13/2005	N001	19.00 - 19.00	73120			#	-	-
	umhos/cm	W1-7	WL, PZ	05/17/2006	N001	19.00 - 19.00	74390		Q	#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Specific Conductance	umhos/cm	W1-7	WL, PZ	06/27/2006	N001	19.00 - 19.00	74430		F	#	-	-
Strontium	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.430			#	7.3E-05	-
	mg/L	0271	SL, RIV	06/22/2006	0001		0.580			#	7.3E-05	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.410			#	7.3E-05	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.410			#	7.3E-05	-
	mg/L	0273	SL, RIV	06/22/2006	0001		0.580			#	7.3E-05	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	31.000			#	0.0015	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	32.000		F	#	0.0015	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	30.000		F	#	0.0015	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	47.000			#	0.0015	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	44.000		F	#	0.0015	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	42.000			#	0.0015	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	41.000		F	#	0.00073	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	28.000			#	0.0015	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	27.000		F	#	0.0015	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	31.000			#	0.0015	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	29.000		F	#	0.0015	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	35.000			#	0.0015	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	36.000			#	0.0015	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	34.000		F	#	0.0015	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	32.000			#	0.0015	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	30.000		F	#	0.0015	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	29.000			#	0.0015	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	27.000		F	#	0.0015	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	7.800		Q	#	0.00073	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	7.500		F	#	0.00036	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Strontium	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	30.000			#	0.0015	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	29.000		F	#	0.0015	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	2.600		Q	#	0.00022	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	2.500		FQ	#	0.00022	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	2.800		Q	#	7.3E-05	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	3.100		FQ	#	0.00015	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	3.100		Q	#	7.3E-05	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	2.900		FQ	#	7.3E-05	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	2.900		Q	#	7.3E-05	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	3.000		FQ	#	7.3E-05	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.190		Q	#	0.00015	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	0.160		FQ	#	7.3E-05	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.120			#	7.3E-05	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.120		FQ	#	7.3E-05	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	2.200		Q	#	7.3E-05	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	2.600		FQ	#	7.3E-05	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	1.100		Q	#	7.3E-05	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	1.400		FQ	#	7.3E-05	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	4.400			#	7.3E-05	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	4.400			#	7.3E-05	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	5.400		Q	#	7.3E-05	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	4.300		Q	#	7.3E-05	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	2.600			#	7.3E-05	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	2.500		F	#	7.3E-05	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	2.500		F	#	7.3E-05	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	22.000			#	0.0015	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Strontium	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	33.000		F	#	0.0015	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	29.000		Q	#	0.0015	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	29.000		FQ	#	0.0015	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	5.900		Q	#	0.00022	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	6.000		FQ	#	0.00022	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	3.500		Q	#	0.00015	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	5.600		FQ	#	0.00015	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	2.300			#	7.3E-05	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	2.800		FQ	#	7.3E-05	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	68.000		Q	#	0.0015	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	65.000		FQ	#	0.0015	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	62.000		Q	#	0.0015	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	60.000		F	#	0.0015	-
Sulfate	mg/L	0271	SL, RIV	12/16/2005	0001	0.00 - 0.00	300			#	10	-
	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	97			#	0.5	-
	mg/L	0271	SL, RIV	06/22/2006	0001		140			#	5	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	90			#	0.5	-
	mg/L	0273	SL, RIV	12/15/2005	0001	0.00 - 0.00	300			#	10	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	89			#	0.5	-
	mg/L	0273	SL, RIV	06/22/2006	0001		140			#	5	-
	mg/L	BL1-D	WL	12/21/2005	0001	138.00 - 138.00	4800			#	50	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	4300			#	50	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	4600	N	F	#	50	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	4700		F	#	50	-
	mg/L	BL1-M	WL	12/20/2005	0001	97.00 - 97.00	3000			#	50	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	2600			#	50	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	2800		F	#	50	-
	mg/L	BL1-S	WL	12/20/2005	0001	53.00 - 53.00	1300			#	25	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	1000			#	25	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	1100		F	#	25	-
	mg/L	BL2-D	WL	12/21/2005	0001	141.00 - 141.00	4600			#	50	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	4200			#	50	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	4500		F	#	50	-
	mg/L	BL2-M	WL	12/16/2005	0001	98.00 - 98.00	4600			#	100	-
	mg/L	BL2-M	WL	12/16/2005	0002	98.00 - 98.00	4600			#	100	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	4200			#	50	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	4300		F	#	50	-
	mg/L	BL2-S	WL	12/15/2005	0001	54.00 - 54.00	4000			#	100	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	3800			#	50	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	3800			#	50	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	3600		F	#	50	-
	mg/L	BL3-D	WL	12/21/2005	0001	97.00 - 97.00	5700			#	50	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	5400			#	50	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	5500		F	#	50	-
	mg/L	BL3-M	WL	12/21/2005	0001	44.00 - 44.00	5200			#	50	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	4400			#	50	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	5200		F	#	50	-
	mg/L	M11-12	WL, PZ	12/13/2005	0001	38.00 - 38.00	1200			#	10	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	1100		Q	#	10	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	1200		F	#	10	-
	mg/L	M11-14.0	WL, PZ	12/12/2005	0001	48.00 - 48.00	3900			#	100	-
	mg/L	M11-14.0	WL, PZ	12/13/2005	0002	48.00 - 48.00	4100			#	50	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	3400			#	50	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	3700		F	#	50	-
	mg/L	M11-4.8	WL, PZ	12/15/2005	0001	13.00 - 13.00	960			#	5	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	910		Q	#	50	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	940		FQ	#	5	-
	mg/L	M11-7.0	WL, PZ	12/14/2005	0001	20.00 - 20.00	560			#	25	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	480		Q	#	10	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	490		FQ	#	25	-
	mg/L	N2-12.8	WL, PZ	12/16/2005	0001	34.00 - 34.00	1200			#	25	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	1200		Q	#	10	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	1200		FQ	#	25	-
	mg/L	N2-6.5	WL, PZ	12/15/2005	0001	20.00 - 20.00	1100			#	25	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	1100		Q	#	10	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	1100		FQ	#	25	-
	mg/L	N3-4.3	WL, PZ	01/25/2006	0001	13.00 - 13.00	130		F	#	2.5	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	150		Q	#	2.5	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	160		FQ	#	2.5	-
	mg/L	N3-8.3	WL, PZ	01/25/2006	0001	24.00 - 24.00	240		F	#	2.5	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	240			#	25	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	250		FQ	#	2.5	-
	mg/L	N4-12.0	WL, PZ	12/16/2005	0001	37.00 - 37.00	62			#	0.5	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	53		Q	#	0.5	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	58		FQ	#	0.5	-
	mg/L	N4-3.2	WL, PZ	12/16/2005	0001	9.00 - 9.00	5.4			#	0.5	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	7.6		Q	#	0.5	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	21		FQ	#	0.5	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	N5-14	WL, PZ	12/14/2005	0001	48.00 - 48.00	420			#	10	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	420			#	5	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	410			#	10	-
	mg/L	N5-7.2	WL, PZ	12/15/2005	0001	24.00 - 24.00	410			#	10	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	400		Q	#	10	-
	mg/L	N6-6.4	WL, PZ	12/12/2005	0001	12.00 - 12.00	250			#	2.5	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	240			#	10	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	240		F	#	2.5	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	240		F	#	2.5	-
	mg/L	N7-10	WL, PZ	12/15/2005	0001	31.00 - 31.00	3800			#	50	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	3200			#	25	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	4700		F	#	100	-
	mg/L	N7-11	WL, PZ	12/16/2005	0001	35.00 - 35.00	5000			#	100	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	4900		Q	#	50	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	5000		FQ	#	50	-
	mg/L	N7-7	WL, PZ	12/16/2005	0001	20.00 - 20.00	590			#	50	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	560		Q	#	5	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	620		FQ	#	5	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	440		Q	#	2.5	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	520		FQ	#	25	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	330			#	10	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	350		FQ	#	10	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	3100		Q	#	50	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	3300		FQ	#	25	-
	mg/L	W1-7	WL, PZ	12/13/2005	0001	19.00 - 19.00	3200			#	25	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	2900		Q	#	50	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	3100		F	#	25	-
Temperature	C	0271	SL, RIV	12/16/2005	N001	0.00 - 0.00	1.1			#	-	-
	C	0271	SL, RIV	05/17/2006	N001	-1.00 - -1.00	17.99			#	-	-
	C	0271	SL, RIV	06/22/2006	N001		23.03			#	-	-
	C	0272	SL, RIV	05/17/2006	N001	-2.00 - -2.00	19.16			#	-	-
	C	0273	SL, RIV	12/15/2005	N001	0.00 - 0.00	0.14			#	-	-
	C	0273	SL, RIV	05/17/2006	N001	-1.00 - -1.00	19.18			#	-	-
	C	0273	SL, RIV	06/22/2006	N001		24.43			#	-	-
	C	BL1-D	WL	12/21/2005	N001	138.00 - 138.00	11.63			#	-	-
	C	BL1-D	WL	05/16/2006	N001	138.00 - 138.00	17.35			#	-	-
	C	BL1-D	WL	06/27/2006	N001	138.00 - 138.00	15.51		F	#	-	-
	C	BL1-M	WL	12/20/2005	N001	97.00 - 97.00	12.33			#	-	-
	C	BL1-M	WL	05/16/2006	N001	97.00 - 97.00	15.96			#	-	-
	C	BL1-M	WL	06/27/2006	N001	97.00 - 97.00	16.95		F	#	-	-
	C	BL1-S	WL	12/20/2005	N001	53.00 - 53.00	13.12			#	-	-
	C	BL1-S	WL	05/16/2006	N001	53.00 - 53.00	15.17			#	-	-
	C	BL1-S	WL	06/27/2006	N001	53.00 - 53.00	15.93		F	#	-	-
	C	BL2-D	WL	12/21/2005	N001	141.00 - 141.00	14.00			#	-	-
	C	BL2-D	WL	05/17/2006	N001	141.00 - 141.00	18.28			#	-	-
	C	BL2-D	WL	06/26/2006	N001	141.00 - 141.00	19.32		F	#	-	-
	C	BL2-M	WL	12/16/2005	N001	98.00 - 98.00	13.21			#	-	-
	C	BL2-M	WL	05/17/2006	N001	98.00 - 98.00	15.82			#	-	-
	C	BL2-M	WL	06/26/2006	N001	98.00 - 98.00	18.87		F	#	-	-
	C	BL2-S	WL	12/15/2005	N001	54.00 - 54.00	11.20			#	-	-
	C	BL2-S	WL	05/16/2006	N001	54.00 - 54.00	21.02			#	-	-
	C	BL2-S	WL	06/26/2006	N001	54.00 - 54.00	18.22		F	#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	BL3-D	WL	12/21/2005	N001	97.00 - 97.00	11.27			#	-	-
	C	BL3-D	WL	05/17/2006	N001	97.00 - 97.00	15.12			#	-	-
	C	BL3-D	WL	06/26/2006	N001	97.00 - 97.00	14.31		F	#	-	-
	C	BL3-M	WL	12/21/2005	N001	44.00 - 44.00	10.22			#	-	-
	C	BL3-M	WL	05/17/2006	N001	44.00 - 44.00	15.02			#	-	-
	C	BL3-M	WL	06/26/2006	N001	44.00 - 44.00	14.34		F	#	-	-
	C	M11-12	WL, PZ	12/13/2005	N001	38.00 - 38.00	12.88			#	-	-
	C	M11-12	WL, PZ	05/18/2006	N001	38.00 - 38.00	15.99		Q	#	-	-
	C	M11-12	WL, PZ	06/23/2006	N001	38.00 - 38.00	20.63		F	#	-	-
	C	M11-14.0	WL, PZ	12/12/2005	N001	48.00 - 48.00	12.97			#	-	-
	C	M11-14.0	WL, PZ	05/17/2006	N001	48.00 - 48.00	14.43			#	-	-
	C	M11-14.0	WL, PZ	06/27/2006	N001	48.00 - 48.00	16.45		F	#	-	-
	C	M11-4.8	WL, PZ	05/18/2006	N001	13.00 - 13.00	23.07		Q	#	-	-
	C	M11-4.8	WL, PZ	06/27/2006	N001	13.00 - 13.00	28.21		FQ	#	-	-
	C	M11-7.0	WL, PZ	12/14/2005	N001	20.00 - 20.00	10.40			#	-	-
	C	M11-7.0	WL, PZ	05/17/2006	N001	20.00 - 20.00	19.98		Q	#	-	-
	C	M11-7.0	WL, PZ	06/27/2006	N001	20.00 - 20.00	27.16		FQ	#	-	-
	C	N2-12.8	WL, PZ	12/16/2005	N001	34.00 - 34.00	10.61			#	-	-
	C	N2-12.8	WL, PZ	05/17/2006	N001	34.00 - 34.00	14.63		Q	#	-	-
	C	N2-12.8	WL, PZ	06/28/2006	N001	34.00 - 34.00	16.98		FQ	#	-	-
	C	N2-6.5	WL, PZ	12/15/2005	N001	20.00 - 20.00	9.36			#	-	-
	C	N2-6.5	WL, PZ	05/17/2006	N001	20.00 - 20.00	13.55		Q	#	-	-
	C	N2-6.5	WL, PZ	06/28/2006	N001	20.00 - 20.00	20.65		FQ	#	-	-
	C	N3-4.3	WL, PZ	01/25/2006	N001	13.00 - 13.00	9.45		F	#	-	-
	C	N3-4.3	WL, PZ	05/18/2006	N001	13.00 - 13.00	17.99		Q	#	-	-
	C	N3-4.3	WL, PZ	06/29/2006	N001	13.00 - 13.00	24.58		FQ	#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	N3-8.3	WL, PZ	01/25/2006	N001	24.00 - 24.00	13.89		F	#	-	-
	C	N3-8.3	WL, PZ	05/18/2006	N001	24.00 - 24.00	17.80			#	-	-
	C	N3-8.3	WL, PZ	06/28/2006	N001	24.00 - 24.00	16.86		FQ	#	-	-
	C	N4-12.0	WL, PZ	12/16/2005	N001	37.00 - 37.00	8.15			#	-	-
	C	N4-12.0	WL, PZ	05/19/2006	N001	37.00 - 37.00	13.15		Q	#	-	-
	C	N4-12.0	WL, PZ	06/28/2006	N001	37.00 - 37.00	16.24		FQ	#	-	-
	C	N4-3.2	WL, PZ	12/16/2005	N001	9.00 - 9.00	4.45			#	-	-
	C	N4-3.2	WL, PZ	05/19/2006	N001	9.00 - 9.00	12.70		Q	#	-	-
	C	N4-3.2	WL, PZ	06/29/2006	N001	9.00 - 9.00	16.82		FQ	#	-	-
	C	N5-14	WL, PZ	12/14/2005	N001	48.00 - 48.00	12.64			#	-	-
	C	N5-14	WL, PZ	05/18/2006	N001	48.00 - 48.00	15.83			#	-	-
	C	N5-7.2	WL, PZ	12/15/2005	N001	24.00 - 24.00	10.6			#	-	-
	C	N6-6.4	WL, PZ	12/12/2005	N001	12.00 - 12.00	15.18			#	-	-
	C	N6-6.4	WL, PZ	05/15/2006	N001	12.00 - 12.00	14.96			#	-	-
	C	N6-6.4	WL, PZ	06/23/2006	N001	12.00 - 12.00	14.95		F	#	-	-
	C	N7-10	WL, PZ	12/15/2005	N001	31.00 - 31.00	10.63			#	-	-
	C	N7-10	WL, PZ	05/17/2006	N001	31.00 - 31.00	13.17			#	-	-
	C	N7-10	WL, PZ	06/23/2006	N001	31.00 - 31.00	14.10		F	#	-	-
	C	N7-11	WL, PZ	12/16/2005	N001	35.00 - 35.00	9.13			#	-	-
	C	N7-11	WL, PZ	05/18/2006	N001	35.00 - 35.00	14.75		Q	#	-	-
	C	N7-11	WL, PZ	06/28/2006	N001	35.00 - 35.00	22.02		FQ	#	-	-
	C	N7-7	WL, PZ	12/16/2005	N001	20.00 - 20.00	9.13			#	-	-
	C	N7-7	WL, PZ	05/18/2006	N001	20.00 - 20.00	14.12		Q	#	-	-
	C	N7-7	WL, PZ	06/28/2006	N001	20.00 - 20.00	19.81		FQ	#	-	-
	C	N8-14	WL, PZ	05/18/2006	N001	48.00 - 48.00	16.03		Q	#	-	-
	C	N8-14	WL, PZ	06/28/2006	N001	48.00 - 48.00	20.11		FQ	#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Temperature	C	N8-6	WL, PZ	05/17/2006	N001	20.00 - 20.00	15.03			#	-	-
	C	N8-6	WL, PZ	06/28/2006	N001	20.00 - 20.00	16.94		FQ	#	-	-
	C	W1-4.3	WL	05/17/2006	N001	14.00 - 14.00	15.58		Q	#	-	-
	C	W1-4.3	WL	06/27/2006	N001	14.00 - 14.00	18.75		FQ	#	-	-
	C	W1-7	WL, PZ	12/13/2005	N001	19.00 - 19.00	12.10			#	-	-
	C	W1-7	WL, PZ	05/17/2006	N001	19.00 - 19.00	18.43		Q	#	-	-
	C	W1-7	WL, PZ	06/27/2006	N001	19.00 - 19.00	17.88		F	#	-	-
Total Dissolved Solids	mg/L	0271	SL, RIV	12/16/2005	0001	0.00 - 0.00	900			#	40	-
	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	300			#	20	-
	mg/L	0271	SL, RIV	06/22/2006	0001		410			#	20	-
	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	280			#	20	-
	mg/L	0273	SL, RIV	12/15/2005	0001	0.00 - 0.00	900			#	40	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	290			#	20	-
	mg/L	0273	SL, RIV	06/22/2006	0001		420			#	20	-
	mg/L	BL1-D	WL	12/21/2005	0001	138.00 - 138.00	80000			#	2000	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	95000			#	2000	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	97000		F	#	2000	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	97000		F	#	2000	-
	mg/L	BL1-M	WL	12/20/2005	0001	97.00 - 97.00	77000			#	2000	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	78000			#	2000	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	84000		F	#	2000	-
	mg/L	BL1-S	WL	12/20/2005	0001	53.00 - 53.00	33000			#	1000	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	35000			#	1000	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	40000		F	#	1000	-
	mg/L	BL2-D	WL	12/21/2005	0001	141.00 - 141.00	98000			#	2000	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	98000			#	2000	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Total Dissolved Solids	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	100000		F	#	2000	-
	mg/L	BL2-M	WL	12/16/2005	0001	98.00 - 98.00	94000			#	4000	-
	mg/L	BL2-M	WL	12/16/2005	0002	98.00 - 98.00	96000			#	2000	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	95000			#	2000	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	95000		F	#	2000	-
	mg/L	BL2-S	WL	12/15/2005	0001	54.00 - 54.00	80000			#	2000	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	81000			#	2000	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	81000			#	2000	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	78000		F	#	2000	-
	mg/L	BL3-D	WL	12/21/2005	0001	97.00 - 97.00	120000			#	2000	-
	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	110000			#	2000	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	120000		F	#	2000	-
	mg/L	BL3-M	WL	12/21/2005	0001	44.00 - 44.00	82000			#	2000	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	84000			#	2000	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	91000		F	#	2000	-
	mg/L	M11-12	WL, PZ	12/13/2005	0001	38.00 - 38.00	14000			#	400	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	16000		Q	#	400	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	16000		F	#	400	-
	mg/L	M11-14.0	WL, PZ	12/12/2005	0001	48.00 - 48.00	75000			#	4000	-
	mg/L	M11-14.0	WL, PZ	12/13/2005	0002	48.00 - 48.00	77000			#	2000	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	67000			#	2000	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	78000		F	#	2000	-
	mg/L	M11-4.8	WL, PZ	12/15/2005	0001	13.00 - 13.00	3900			#	200	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	3500		Q	#	80	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	3800		FQ	#	200	-
	mg/L	M11-7.0	WL, PZ	12/14/2005	0001	20.00 - 20.00	2500			#	80	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Total Dissolved Solids	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	2300		Q	#	40	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	2500		FQ	#	80	-
	mg/L	N2-12.8	WL, PZ	12/16/2005	0001	34.00 - 34.00	2200			#	40	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	2200		Q	#	40	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	2400		FQ	#	40	-
	mg/L	N2-6.5	WL, PZ	12/15/2005	0001	20.00 - 20.00	1800			#	40	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	1900		Q	#	40	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	2200		FQ	#	40	-
	mg/L	N3-4.3	WL, PZ	01/25/2006	0001	13.00 - 13.00	1900		F	#	80	-
	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	1600		Q	#	80	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	1800		FQ	#	40	-
	mg/L	N3-8.3	WL, PZ	01/25/2006	0001	24.00 - 24.00	1600		F	#	80	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	1400			#	40	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	1500		FQ	#	40	-
	mg/L	N4-12.0	WL, PZ	12/16/2005	0001	37.00 - 37.00	560			#	20	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	590		Q	#	20	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	600		FQ	#	20	-
	mg/L	N4-3.2	WL, PZ	12/16/2005	0001	9.00 - 9.00	310			#	40	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	79		Q	#	20	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	350		FQ	#	40	-
	mg/L	N5-14	WL, PZ	12/14/2005	0001	48.00 - 48.00	960			#	20	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	960			#	20	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	980			#	20	-
	mg/L	N5-4.4NEW	WL, PZ	12/15/2005	0001	13.00 - 13.00	780			#	80	-
	mg/L	N5-7.2	WL, PZ	12/15/2005	0001	24.00 - 24.00	890			#	20	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	880		Q	#	20	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Total Dissolved Solids	mg/L	N6-6.4	WL, PZ	12/12/2005	0001	12.00 - 12.00	1700			#	80	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	1600			#	40	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	1600		F	#	40	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	1600		F	#	80	-
	mg/L	N7-10	WL, PZ	12/15/2005	0001	31.00 - 31.00	67000			#	2000	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	56000			#	2000	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	100000		F	#	2000	-
	mg/L	N7-11	WL, PZ	12/16/2005	0001	35.00 - 35.00	99000			#	2000	-
	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	99000		Q	#	2000	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	100000		FQ	#	2000	-
	mg/L	N7-7	WL, PZ	12/16/2005	0001	20.00 - 20.00	3400			#	200	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	4300		Q	#	80	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	5900		FQ	#	200	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	1900		Q	#	80	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	3400		FQ	#	80	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	1200			#	40	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	1300		FQ	#	40	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	62000		Q	#	2000	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	70000		FQ	#	2000	-
	mg/L	W1-7	WL, PZ	12/13/2005	0001	19.00 - 19.00	56000			#	2000	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	57000		Q	#	2000	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	66000		F	#	2000	-
Total Organic Carbon	mg/L	0271	SL, RIV	06/22/2006	N001		2.6			#	1	-
	mg/L	0272	SL, RIV	05/17/2006	N001	-2.00 - -2.00	4.8			#	1	-
	mg/L	0273	SL, RIV	05/17/2006	N001	-1.00 - -1.00	4.6			#	1	-
	mg/L	0273	SL, RIV	06/22/2006	N001		2.9			#	1	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Total Organic Carbon	mg/L	BL1-D	WL	05/16/2006	N001	138.00 - 138.00	1	U		#	1	-
	mg/L	BL1-D	WL	06/27/2006	N001	138.00 - 138.00	1	U	F	#	1	-
	mg/L	BL1-D	WL	06/27/2006	N002	138.00 - 138.00	1	U	F	#	1	-
	mg/L	BL1-M	WL	05/16/2006	N001	97.00 - 97.00	1	U		#	1	-
	mg/L	BL1-M	WL	06/27/2006	N001	97.00 - 97.00	1	U	F	#	1	-
	mg/L	BL1-S	WL	05/16/2006	N001	53.00 - 53.00	1	U		#	1	-
	mg/L	BL1-S	WL	06/27/2006	N001	53.00 - 53.00	1	U	F	#	1	-
	mg/L	BL2-D	WL	05/17/2006	N001	141.00 - 141.00	1	U		#	1	-
	mg/L	BL2-D	WL	06/26/2006	N001	141.00 - 141.00	1	U	F	#	1	-
	mg/L	BL2-M	WL	05/17/2006	N001	98.00 - 98.00	1	U		#	1	-
	mg/L	BL2-M	WL	06/26/2006	N001	98.00 - 98.00	1	U	F	#	1	-
	mg/L	BL2-S	WL	05/16/2006	N001	54.00 - 54.00	1	U		#	1	-
	mg/L	BL2-S	WL	05/16/2006	N002	54.00 - 54.00	1	U		#	1	-
	mg/L	BL2-S	WL	06/26/2006	N001	54.00 - 54.00	1	U	F	#	1	-
	mg/L	BL3-D	WL	05/17/2006	N001	97.00 - 97.00	1	U		#	1	-
	mg/L	BL3-D	WL	06/26/2006	N001	97.00 - 97.00	1	U	F	#	1	-
	mg/L	BL3-M	WL	05/17/2006	N001	44.00 - 44.00	1	U		#	1	-
	mg/L	BL3-M	WL	06/26/2006	N001	44.00 - 44.00	1	U	F	#	1	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	N001	48.00 - 48.00	1	U		#	1	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	N001	48.00 - 48.00	1	U	F	#	1	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	N001	24.00 - 24.00	2.2		FQ	#	1	-
	mg/L	N5-14	WL, PZ	05/18/2006	N001	48.00 - 48.00	2.7			#	1	-
Turbidity	NTU	0271	SL, RIV	12/16/2005	N001	0.00 - 0.00	46			#	-	-
	NTU	0271	SL, RIV	06/22/2006	N001		19.8			#	-	-
	NTU	0273	SL, RIV	12/15/2005	N001	0.00 - 0.00	126			#	-	-
	NTU	0273	SL, RIV	05/17/2006	N001	-1.00 - -1.00	411			#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	0273	SL, RIV	06/22/2006	N001		17.3			#	-	-
	NTU	BL1-D	WL	12/21/2005	N001	138.00 - 138.00	9.51			#	-	-
	NTU	BL1-D	WL	05/16/2006	N001	138.00 - 138.00	1.40			#	-	-
	NTU	BL1-D	WL	06/27/2006	N001	138.00 - 138.00	8.83		F	#	-	-
	NTU	BL1-M	WL	12/20/2005	N001	97.00 - 97.00	3.94			#	-	-
	NTU	BL1-M	WL	05/16/2006	N001	97.00 - 97.00	9.77			#	-	-
	NTU	BL1-M	WL	06/27/2006	N001	97.00 - 97.00	7.12		F	#	-	-
	NTU	BL1-S	WL	12/20/2005	N001	53.00 - 53.00	8.61			#	-	-
	NTU	BL1-S	WL	05/16/2006	N001	53.00 - 53.00	8.99			#	-	-
	NTU	BL1-S	WL	06/27/2006	N001	53.00 - 53.00	10.0		F	#	-	-
	NTU	BL2-D	WL	12/21/2005	N001	141.00 - 141.00	7.14			#	-	-
	NTU	BL2-D	WL	05/17/2006	N001	141.00 - 141.00	6.09			#	-	-
	NTU	BL2-D	WL	06/26/2006	N001	141.00 - 141.00	8.70		F	#	-	-
	NTU	BL2-M	WL	12/16/2005	N001	98.00 - 98.00	15.8			#	-	-
	NTU	BL2-M	WL	05/17/2006	N001	98.00 - 98.00	8.00			#	-	-
	NTU	BL2-M	WL	06/26/2006	N001	98.00 - 98.00	9.90		F	#	-	-
	NTU	BL2-S	WL	12/15/2005	N001	54.00 - 54.00	38.8			#	-	-
	NTU	BL2-S	WL	05/16/2006	N001	54.00 - 54.00	10.0			#	-	-
	NTU	BL2-S	WL	06/26/2006	N001	54.00 - 54.00	9.41		F	#	-	-
	NTU	BL3-D	WL	12/21/2005	N001	97.00 - 97.00	5.68			#	-	-
	NTU	BL3-D	WL	05/17/2006	N001	97.00 - 97.00	5.45			#	-	-
	NTU	BL3-D	WL	06/26/2006	N001	97.00 - 97.00	1.49		F	#	-	-
	NTU	BL3-M	WL	12/21/2005	N001	44.00 - 44.00	9.53			#	-	-
	NTU	BL3-M	WL	05/17/2006	N001	44.00 - 44.00	7.12			#	-	-
	NTU	BL3-M	WL	06/26/2006	N001	44.00 - 44.00	370		F	#	-	-
	NTU	M11-12	WL, PZ	12/13/2005	N001	38.00 - 38.00	4.42			#	-	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	M11-12	WL, PZ	05/18/2006	N001	38.00 - 38.00	92		Q	#	-	-
	NTU	M11-12	WL, PZ	06/23/2006	N001	38.00 - 38.00	17.5		F	#	-	-
	NTU	M11-14.0	WL, PZ	12/12/2005	N001	48.00 - 48.00	9.45			#	-	-
	NTU	M11-14.0	WL, PZ	05/17/2006	N001	48.00 - 48.00	10.6			#	-	-
	NTU	M11-14.0	WL, PZ	06/27/2006	N001	48.00 - 48.00	15.8		F	#	-	-
	NTU	M11-4.8	WL, PZ	05/18/2006	N001	13.00 - 13.00	65.1		Q	#	-	-
	NTU	M11-4.8	WL, PZ	06/27/2006	N001	13.00 - 13.00	120		FQ	#	-	-
	NTU	M11-7.0	WL, PZ	12/14/2005	N001	20.00 - 20.00	61.6			#	-	-
	NTU	M11-7.0	WL, PZ	05/17/2006	N001	20.00 - 20.00	45.3		Q	#	-	-
	NTU	M11-7.0	WL, PZ	06/27/2006	N001	20.00 - 20.00	7.70		FQ	#	-	-
	NTU	N2-12.8	WL, PZ	12/16/2005	N001	34.00 - 34.00	48.3			#	-	-
	NTU	N2-12.8	WL, PZ	05/17/2006	N001	34.00 - 34.00	60.4		Q	#	-	-
	NTU	N2-12.8	WL, PZ	06/28/2006	N001	34.00 - 34.00	51.6		FQ	#	-	-
	NTU	N2-6.5	WL, PZ	05/17/2006	N001	20.00 - 20.00	42.7		Q	#	-	-
	NTU	N2-6.5	WL, PZ	06/28/2006	N001	20.00 - 20.00	16.4		FQ	#	-	-
	NTU	N3-4.3	WL, PZ	05/18/2006	N001	13.00 - 13.00	2.5		Q	#	-	-
	NTU	N3-4.3	WL, PZ	06/29/2006	N001	13.00 - 13.00	333		FQ	#	-	-
	NTU	N3-8.3	WL, PZ	01/25/2006	N001	24.00 - 24.00	3.64		F	#	-	-
	NTU	N3-8.3	WL, PZ	05/18/2006	N001	24.00 - 24.00	4.03			#	-	-
	NTU	N3-8.3	WL, PZ	06/28/2006	N001	24.00 - 24.00	11.3		FQ	#	-	-
	NTU	N4-12.0	WL, PZ	12/16/2005	N001	37.00 - 37.00	147			#	-	-
	NTU	N4-12.0	WL, PZ	05/19/2006	N001	37.00 - 37.00	28.9		Q	#	-	-
	NTU	N4-12.0	WL, PZ	06/28/2006	N001	37.00 - 37.00	18.9		FQ	#	-	-
	NTU	N4-3.2	WL, PZ	12/16/2005	N001	9.00 - 9.00	103			#	-	-
	NTU	N4-3.2	WL, PZ	05/19/2006	N001	9.00 - 9.00	12.7		Q	#	-	-
	NTU	N4-3.2	WL, PZ	06/29/2006	N001	9.00 - 9.00	28.8		FQ	#	-	-

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:06 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	N5-14	WL, PZ	12/14/2005	N001	48.00 - 48.00	3.32			#	-	-
	NTU	N5-14	WL, PZ	05/18/2006	N001	48.00 - 48.00	0.75			#	-	-
	NTU	N6-6.4	WL, PZ	12/12/2005	N001	12.00 - 12.00	590			#	-	-
	NTU	N6-6.4	WL, PZ	05/15/2006	N001	12.00 - 12.00	6.31			#	-	-
	NTU	N6-6.4	WL, PZ	06/23/2006	N001	12.00 - 12.00	2.52		F	#	-	-
	NTU	N7-10	WL, PZ	12/15/2005	N001	31.00 - 31.00	653			#	-	-
	NTU	N7-10	WL, PZ	05/17/2006	N001	31.00 - 31.00	224			#	-	-
	NTU	N7-10	WL, PZ	06/23/2006	N001	31.00 - 31.00	105		F	#	-	-
	NTU	N7-11	WL, PZ	12/16/2005	N001	35.00 - 35.00	60.9			#	-	-
	NTU	N7-11	WL, PZ	05/18/2006	N001	35.00 - 35.00	1000	>	Q	#	-	-
	NTU	N7-11	WL, PZ	06/28/2006	N001	35.00 - 35.00	127		FQ	#	-	-
	NTU	N7-7	WL, PZ	12/16/2005	N001	20.00 - 20.00	382			#	-	-
	NTU	N7-7	WL, PZ	05/18/2006	N001	20.00 - 20.00	263		Q	#	-	-
	NTU	N7-7	WL, PZ	06/28/2006	N001	20.00 - 20.00	127		FQ	#	-	-
	NTU	N8-14	WL, PZ	05/18/2006	N001	48.00 - 48.00	71.2		Q	#	-	-
	NTU	N8-14	WL, PZ	06/28/2006	N001	48.00 - 48.00	600		FQ	#	-	-
	NTU	N8-6	WL, PZ	05/17/2006	N001	20.00 - 20.00	48.3			#	-	-
	NTU	N8-6	WL, PZ	06/28/2006	N001	20.00 - 20.00	40.7		FQ	#	-	-
	NTU	W1-4.3	WL	05/17/2006	N001	14.00 - 14.00	1000	>	Q	#	-	-
	NTU	W1-4.3	WL	06/27/2006	N001	14.00 - 14.00	5.53		FQ	#	-	-
	NTU	W1-7	WL, PZ	12/13/2005	N001	19.00 - 19.00	187			#	-	-
	NTU	W1-7	WL, PZ	05/17/2006	N001	19.00 - 19.00	88.2		Q	#	-	-
	NTU	W1-7	WL, PZ	06/27/2006	N001	19.00 - 19.00	2.45		F	#	-	-
Uranium	mg/L	0271	SL, RIV	12/16/2005	0001	0.00 - 0.00	0.0061			#	4.8E-06	-
	mg/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.0019			#	3.4E-06	-
	mg/L	0271	SL, RIV	06/22/2006	0001		0.0026	E		#	3.4E-06	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.0018			#	3.4E-06	-
	mg/L	0273	SL, RIV	12/15/2005	0001	0.00 - 0.00	0.0062			#	4.8E-06	-
	mg/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.0018			#	3.4E-06	-
	mg/L	0273	SL, RIV	06/22/2006	0001		0.0026	E		#	3.4E-06	-
	mg/L	BL1-D	WL	12/21/2005	0001	138.00 - 138.00	0.0011			#	4.8E-06	-
	mg/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	0.0012			#	6.8E-06	-
	mg/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	0.00098		F	#	6.8E-06	-
	mg/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	0.0011		F	#	6.8E-06	-
	mg/L	BL1-M	WL	12/20/2005	0001	97.00 - 97.00	0.002			#	4.8E-06	-
	mg/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	0.0024			#	6.8E-06	-
	mg/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	0.0023		F	#	6.8E-06	-
	mg/L	BL1-S	WL	12/20/2005	0001	53.00 - 53.00	0.007			#	4.8E-06	-
	mg/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	0.0062			#	3.4E-05	-
	mg/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	0.0078		F	#	3.4E-06	-
	mg/L	BL2-D	WL	12/21/2005	0001	141.00 - 141.00	0.0028			#	4.8E-06	-
	mg/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	0.0029			#	3.4E-06	-
	mg/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	0.0029		F	#	6.8E-06	-
	mg/L	BL2-M	WL	12/16/2005	0001	98.00 - 98.00	0.003			#	4.8E-06	-
	mg/L	BL2-M	WL	12/16/2005	0002	98.00 - 98.00	0.0025			#	2.4E-05	-
	mg/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	0.003			#	3.4E-05	-
	mg/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	0.0031		F	#	6.8E-06	-
	mg/L	BL2-S	WL	12/15/2005	0001	54.00 - 54.00	0.0027			#	4.8E-06	-
	mg/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	0.0025			#	3.4E-06	-
	mg/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	0.0032			#	3.4E-05	-
	mg/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	0.003		F	#	6.8E-06	-
	mg/L	BL3-D	WL	12/21/2005	0001	97.00 - 97.00	0.00005	B	U	#	4.8E-06	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	0.00006	B	U	#	3.4E-06	-
	mg/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	0.00015	B	UF	#	6.8E-06	-
	mg/L	BL3-M	WL	12/21/2005	0001	44.00 - 44.00	0.00016			#	4.8E-06	-
	mg/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	0.00015			#	3.4E-06	-
	mg/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	0.00023		F	#	6.8E-06	-
	mg/L	M11-12	WL, PZ	12/13/2005	0001	38.00 - 38.00	0.0012			#	4.8E-06	-
	mg/L	M11-12	WL, PZ	05/18/2006	0001	38.00 - 38.00	0.0016		Q	#	6.8E-06	-
	mg/L	M11-12	WL, PZ	06/23/2006	0001	38.00 - 38.00	0.0012		F	#	3.4E-06	-
	mg/L	M11-14.0	WL, PZ	12/12/2005	0001	48.00 - 48.00	0.00088			#	4.8E-06	-
	mg/L	M11-14.0	WL, PZ	12/13/2005	0002	48.00 - 48.00	0.00083			#	4.8E-06	-
	mg/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	0.001			#	3.4E-06	-
	mg/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	0.0011		F	#	6.8E-06	-
	mg/L	M11-4.8	WL, PZ	12/15/2005	0001	13.00 - 13.00	0.003			#	4.8E-06	-
	mg/L	M11-4.8	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.0024		Q	#	3.4E-06	-
	mg/L	M11-4.8	WL, PZ	06/27/2006	0001	13.00 - 13.00	0.0022		FQ	#	3.4E-06	-
	mg/L	M11-7.0	WL, PZ	12/14/2005	0001	20.00 - 20.00	0.0028			#	4.8E-06	-
	mg/L	M11-7.0	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.0028		Q	#	3.4E-06	-
	mg/L	M11-7.0	WL, PZ	06/27/2006	0001	20.00 - 20.00	0.003		FQ	#	3.4E-06	-
	mg/L	N2-12.8	WL, PZ	12/16/2005	0001	34.00 - 34.00	0.0002			#	4.8E-06	-
	mg/L	N2-12.8	WL, PZ	05/17/2006	0001	34.00 - 34.00	0.00031		Q	#	3.4E-06	-
	mg/L	N2-12.8	WL, PZ	06/28/2006	0001	34.00 - 34.00	0.00026		FQ	#	3.4E-06	-
	mg/L	N2-4.3	WL, PZ	12/15/2005	0001	14.00 - 14.00	0.00015			#	4.8E-06	-
	mg/L	N2-6.5	WL, PZ	12/15/2005	0001	20.00 - 20.00	0.00007	B	U	#	4.8E-06	-
	mg/L	N2-6.5	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.00019		Q	#	3.4E-06	-
	mg/L	N2-6.5	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.00017		FQ	#	3.4E-06	-
	mg/L	N3-4.3	WL, PZ	01/25/2006	0001	13.00 - 13.00	0.018		F	#	2.4E-06	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	N3-4.3	WL, PZ	05/18/2006	0001	13.00 - 13.00	0.027		Q	#	3.4E-06	-
	mg/L	N3-4.3	WL, PZ	06/29/2006	0001	13.00 - 13.00	0.032		FQ	#	3.4E-06	-
	mg/L	N3-8.3	WL, PZ	01/25/2006	0001	24.00 - 24.00	0.045		F	#	2.4E-06	-
	mg/L	N3-8.3	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.048			#	3.4E-06	-
	mg/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.054		FQ	#	3.4E-06	-
	mg/L	N4-12.0	WL, PZ	12/16/2005	0001	37.00 - 37.00	0.0019			#	4.8E-06	-
	mg/L	N4-12.0	WL, PZ	05/19/2006	0001	37.00 - 37.00	0.0013		Q	#	3.4E-06	-
	mg/L	N4-12.0	WL, PZ	06/28/2006	0001	37.00 - 37.00	0.0024		FQ	#	3.4E-06	-
	mg/L	N4-3.2	WL, PZ	12/16/2005	0001	9.00 - 9.00	0.00006	B	U	#	4.8E-06	-
	mg/L	N4-3.2	WL, PZ	05/19/2006	0001	9.00 - 9.00	0.00008	B	UQ	#	3.4E-06	-
	mg/L	N4-3.2	WL, PZ	06/29/2006	0001	9.00 - 9.00	0.00024		UFQ	#	3.4E-06	-
	mg/L	N5-14	WL, PZ	12/14/2005	0001	48.00 - 48.00	0.0026			#	4.8E-06	-
	mg/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.0028			#	3.4E-06	-
	mg/L	N5-14	WL, PZ	05/18/2006	0002	48.00 - 48.00	0.0029			#	3.4E-06	-
	mg/L	N5-4.4NEW	WL, PZ	12/15/2005	0001	13.00 - 13.00	0.00019			#	4.8E-06	-
	mg/L	N5-4.4NEW	WL, PZ	05/18/2006	0001	12.00 - 12.00	0.00009	B	UQ	#	3.4E-06	-
	mg/L	N5-7.2	WL, PZ	12/15/2005	0001	24.00 - 24.00	0.00034			#	4.8E-06	-
	mg/L	N5-7.2	WL, PZ	05/18/2006	0001	24.00 - 24.00	0.0004		Q	#	3.4E-06	-
	mg/L	N6-6.4	WL, PZ	12/12/2005	0001	12.00 - 12.00	0.0066			#	4.8E-06	-
	mg/L	N6-6.4	WL, PZ	05/15/2006	0001	12.00 - 12.00	0.0072			#	3.4E-06	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0001	12.00 - 12.00	0.0065		F	#	3.4E-06	-
	mg/L	N6-6.4	WL, PZ	06/23/2006	0002	12.00 - 12.00	0.0065		F	#	3.4E-06	-
	mg/L	N7-10	WL, PZ	12/15/2005	0001	31.00 - 31.00	0.0024			#	4.8E-06	-
	mg/L	N7-10	WL, PZ	05/17/2006	0001	31.00 - 31.00	0.0025			#	3.4E-06	-
	mg/L	N7-10	WL, PZ	06/23/2006	0001	31.00 - 31.00	0.0035		F	#	1.7E-05	-
	mg/L	N7-11	WL, PZ	12/16/2005	0001	35.00 - 35.00	0.00004	B	U	#	4.8E-06	-

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	N7-11	WL, PZ	05/18/2006	0001	35.00 - 35.00	0.00049		Q	#	3.4E-06	-
	mg/L	N7-11	WL, PZ	06/28/2006	0001	35.00 - 35.00	0.00015	B	UFQ	#	6.8E-06	-
	mg/L	N7-7	WL, PZ	12/16/2005	0001	20.00 - 20.00	0.00023			#	4.8E-06	-
	mg/L	N7-7	WL, PZ	05/18/2006	0001	20.00 - 20.00	0.00097		Q	#	1.7E-05	-
	mg/L	N7-7	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.00042		FQ	#	3.4E-06	-
	mg/L	N8-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.00029		Q	#	3.4E-06	-
	mg/L	N8-14	WL, PZ	06/28/2006	0001	48.00 - 48.00	0.00023		UFQ	#	3.4E-06	-
	mg/L	N8-6	WL, PZ	05/17/2006	0001	20.00 - 20.00	0.00054			#	3.4E-06	-
	mg/L	N8-6	WL, PZ	06/28/2006	0001	20.00 - 20.00	0.00087		FQ	#	3.4E-06	-
	mg/L	W1-4.3	WL	05/17/2006	0001	14.00 - 14.00	0.050		Q	#	3.4E-05	-
	mg/L	W1-4.3	WL	06/27/2006	0001	14.00 - 14.00	0.048		FQ	#	6.8E-06	-
	mg/L	W1-7	WL, PZ	12/13/2005	0001	19.00 - 19.00	0.017			#	2.4E-05	-
	mg/L	W1-7	WL, PZ	05/17/2006	0001	19.00 - 19.00	0.022		Q	#	3.4E-06	-
	mg/L	W1-7	WL, PZ	06/27/2006	0001	19.00 - 19.00	0.025		F	#	6.8E-06	-
Uranium-234	pCi/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	1.17			#	0.166	± 0.38
	pCi/L	0271	SL, RIV	06/22/2006	0001		1.57			#	0.0968	± 0.38
	pCi/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	1.24			#	0.152	± 0.40
	pCi/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	1.22			#	0.156	± 0.40
	pCi/L	0273	SL, RIV	06/22/2006	0001		1.69			#	0.0877	± 0.38
	pCi/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	0.771			#	0.195	± 0.31
	pCi/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	0.573		F	#	0.0976	± 0.20
	pCi/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	0.615		F	#	0.0857	± 0.20
	pCi/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	1.1			#	0.388	± 0.42
	pCi/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	1.2		F	#	0.0954	± 0.31
	pCi/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	3.74			#	0.163	± 0.88
	pCi/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	2.96		F	#	0.0917	± 0.60

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium-234	pCi/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	1.85			#	0.25	± 0.56
	pCi/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	1.33		F	#	0.0943	± 0.34
	pCi/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	1.31			#	0.161	± 0.43
	pCi/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	1.8		F	#	0.081	± 0.43
	pCi/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	1.7			#	0.261	± 0.50
	pCi/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	1.29			#	0.196	± 0.41
	pCi/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	1.36		F	#	0.118	± 0.35
	pCi/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	0.32	U		#	0.32	± 0.20
	pCi/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	0.118		UF	#	0.112	± 0.09
	pCi/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	0.397	U		#	0.397	± 0.24
	pCi/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	0.188		F	#	0.138	± 0.12
	pCi/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	0.794			#	0.221	± 0.31
	pCi/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	0.691		F	#	0.181	± 0.23
	pCi/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	22.5		FQ	#	0.0285	± 3.76
	pCi/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	2.07			#	0.13	± 0.57
Uranium-235	pCi/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.195	U		#	0.195	± 0.13
	pCi/L	0271	SL, RIV	06/22/2006	0001		0.0767	U		#	0.0767	± 0.06
	pCi/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.149	U		#	0.149	± 0.10
	pCi/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.0789	U		#	0.0789	± 0.11
	pCi/L	0273	SL, RIV	06/22/2006	0001		0.108		UJ	#	0.0958	± 0.08
	pCi/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	0.0883		UJ	#	0.0798	± 0.11
	pCi/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	0.0929	U	F	#	0.0929	± 0.05
	pCi/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	0.085		UFJ	#	0.0384	± 0.07
	pCi/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	0.159		UJ	#	0.086	± 0.14
	pCi/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	0.0719		UFJ	#	0.039	± 0.07
	pCi/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	0.216	U		#	0.216	± 0.15

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium-235	pCi/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	0.121		UFJ	#	0.081	± 0.08
	pCi/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	0.187		UJ	#	0.173	± 0.17
	pCi/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	0.0853		UFJ	#	0.0385	± 0.07
	pCi/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	0.201		UJ	#	0.158	± 0.16
	pCi/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	0.0953	U	F	#	0.0953	± 0.07
	pCi/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	0.203	U		#	0.203	± 0.17
	pCi/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	0.11		UJ	#	0.0743	± 0.11
	pCi/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	0.0938		UFJ	#	0.0925	± 0.08
	pCi/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	0.284	U		#	0.284	± 0.13
	pCi/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	0.0882	U	F	#	0.0882	± 0.05
	pCi/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	0.182	U		#	0.182	± 0.10
	pCi/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	0.129	U	F	#	0.129	± 0.08
	pCi/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	0.196	U		#	0.196	± 0.12
	pCi/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	0.101	U	F	#	0.101	± 0.05
	pCi/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	0.785		FQ	#	0.0782	± 0.24
	pCi/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.153	U		#	0.153	± 0.12
Uranium-238	pCi/L	0271	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.65		J	#	0.22	± 0.28
	pCi/L	0271	SL, RIV	06/22/2006	0001		1.02			#	0.0884	± 0.28
	pCi/L	0272	SL, RIV	05/17/2006	0001	-2.00 - -2.00	0.698			#	0.0653	± 0.28
	pCi/L	0273	SL, RIV	05/17/2006	0001	-1.00 - -1.00	0.742			#	0.0671	± 0.30
	pCi/L	0273	SL, RIV	06/22/2006	0001		0.966			#	0.0877	± 0.26
	pCi/L	BL1-D	WL	05/16/2006	0001	138.00 - 138.00	0.343		J	#	0.132	± 0.20
	pCi/L	BL1-D	WL	06/27/2006	0001	138.00 - 138.00	0.314		F	#	0.0891	± 0.14
	pCi/L	BL1-D	WL	06/27/2006	0002	138.00 - 138.00	0.474		F	#	0.076	± 0.17
	pCi/L	BL1-M	WL	05/16/2006	0001	97.00 - 97.00	1.04			#	0.227	± 0.38
	pCi/L	BL1-M	WL	06/27/2006	0001	97.00 - 97.00	0.743		F	#	0.0954	± 0.23

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium-238	pCi/L	BL1-S	WL	05/16/2006	0001	53.00 - 53.00	2.13			#	0.135	± 0.59
	pCi/L	BL1-S	WL	06/27/2006	0001	53.00 - 53.00	1.93		F	#	0.103	± 0.43
	pCi/L	BL2-D	WL	05/17/2006	0001	141.00 - 141.00	1.1			#	0.235	± 0.40
	pCi/L	BL2-D	WL	06/26/2006	0001	141.00 - 141.00	0.93		F	#	0.114	± 0.26
	pCi/L	BL2-M	WL	05/17/2006	0001	98.00 - 98.00	0.979			#	0.161	± 0.36
	pCi/L	BL2-M	WL	06/26/2006	0001	98.00 - 98.00	1.02		F	#	0.081	± 0.28
	pCi/L	BL2-S	WL	05/16/2006	0001	54.00 - 54.00	1.44			#	0.153	± 0.45
	pCi/L	BL2-S	WL	05/16/2006	0002	54.00 - 54.00	0.911			#	0.166	± 0.33
	pCi/L	BL2-S	WL	06/26/2006	0001	54.00 - 54.00	1.13		F	#	0.118	± 0.30
	pCi/L	BL3-D	WL	05/17/2006	0001	97.00 - 97.00	0.195	U		#	0.195	± 0.11
	pCi/L	BL3-D	WL	06/26/2006	0001	97.00 - 97.00	0.075	U	F	#	0.075	± 0.04
	pCi/L	BL3-M	WL	05/17/2006	0001	44.00 - 44.00	0.405		J	#	0.206	± 0.22
	pCi/L	BL3-M	WL	06/26/2006	0001	44.00 - 44.00	0.0974	U	F	#	0.0974	± 0.07
	pCi/L	M11-14.0	WL, PZ	05/17/2006	0001	48.00 - 48.00	0.558			#	0.183	± 0.25
	pCi/L	M11-14.0	WL, PZ	06/27/2006	0001	48.00 - 48.00	0.409		F	#	0.0945	± 0.16
	pCi/L	N3-8.3	WL, PZ	06/28/2006	0001	24.00 - 24.00	14.2		FQ	#	0.0553	± 2.42
	pCi/L	N5-14	WL, PZ	05/18/2006	0001	48.00 - 48.00	0.983			#	0.13	± 0.35

GENERAL WATER QUALITY DATA BY PARAMETER (USEE205) FOR SITE MOA01, Moab Site
REPORT DATE: 11/28/2006 12:07 pm

PARAMETER	UNITS	LOCATION ID	LOC TYPE, SUBTYPE	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE200 WHERE site_code='MOA01' AND location_code in('0271','0272','0273','BL1-D','BL1-M','BL1-S','BL2-D','BL2-M','BL2-S','BL3-D','BL3-M','M11-4.8','M11-7.0','M11-12','M11-14.0','N2-1.5','N2-12.8','N2-4.3','N2-6.5','N3-4.3','N3-8.3','N4-12.0','N4-3.2','N5-4.4NEW','N5-7.2','N5-14','N6-6.4','N7-10','N7-11','N7-7','N8-3','N8-6','N8-14','W1-4.3','W1-7','W1-10') AND quality_assurance = TRUE AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%N%' AND data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED >= #1/1/2005#

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

LOCATION TYPES: SL SURFACE LOCATION WL WELL

LOCATION SUBTYPES: PZ Piezometer RIV River

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 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.	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.

Appendix B

Water Elevation Data

STATIC WATER LEVELS (USEE700) FOR SITE MOA01, Moab Site
REPORT DATE: 11/21/2006 2:52 pm

LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT)	MEASUREMENT		DEPTH FROM TOP OF CASING (FT)	WATER ELEVATION (FT)	WATER LEVEL FLAG
			DATE	TIME			
BL1-D		3967.33	12/21/2005	08:55	15.16	3952.17	
		3967.33	05/16/2006	10:34	14.31	3953.02	
		3967.33	06/27/2006	07:58	15.37	3951.96	
BL1-M		3967.21	12/20/2005	16:10	13.64	3953.57	
		3967.21	05/16/2006	09:26	12.83	3954.38	
		3967.21	06/27/2006	10:08	14.25	3952.96	
BL1-S		3966.91	12/20/2005	15:27	11.71	3955.20	
		3966.91	05/16/2006	08:18	10.73	3956.18	
		3966.91	06/27/2006	09:25	12.17	3954.74	
BL2-D		3967.96	12/21/2005	12:12	16.31	3951.65	
		3967.96	05/17/2006	09:14	15.00	3952.96	
		3967.96	06/26/2006	10:38	16.16	3951.80	
BL2-M		3967.78	12/16/2005	09:48	16.08	3951.70	
		3967.78	05/17/2006	08:05	14.69	3953.09	
		3967.78	06/26/2006	11:05	15.88	3951.90	
BL2-S		3967.67	12/15/2005	10:30	15.22	3952.45	
		3967.67	05/16/2006	11:55	13.90	3953.77	
		3967.67	06/26/2006	11:28	14.85	3952.82	
BL3-D		3965.02	12/21/2005	10:25	14.68	3950.34	
		3965.02	05/17/2006	11:39	11.89	3953.13	
		3965.02	06/26/2006	07:50	13.83	3951.19	
BL3-M		3964.93	12/21/2005	11:05	12.81	3952.12	
		3964.93	05/17/2006	10:52	10.17	3954.76	
		3964.93	06/26/2006	08:55	12.25	3952.68	
M11-12	C	3964.16	12/13/2005	09:53	10.86	3953.30	
		3964.16	05/17/2006	08:00	11.24	3952.92	
		3964.16	06/23/2006	10:47	10.97	3953.19	
M11-14.0	C	3964.57	12/13/2005	09:22	10.05	3954.52	
		3964.57	05/17/2006	08:24	9.63	3954.94	
		3964.57	06/26/2006	15:58	2.24	3962.33	
M11-4.8	C	3964.61	12/13/2005	09:05	11.46	3953.15	
		3964.61	05/16/2006	15:28	11.38	3953.23	
		3964.61	06/26/2006	16:20	11.95	3952.66	
M11-7.0	C	3964.56	12/13/2005	09:10	11.41	3953.15	
		3964.56	05/16/2006	15:37	12.25	3952.31	

STATIC WATER LEVELS (USEE700) FOR SITE MOA01, Moab Site
REPORT DATE: 11/21/2006 2:52 pm

LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT)	MEASUREMENT		DEPTH FROM TOP OF CASING (FT)	WATER ELEVATION (FT)	WATER LEVEL FLAG
			DATE	TIME			
M11-7.0	C	3964.56	06/26/2006	16:09	13.85	3950.71	
N2-1.5	C	3962.54	12/14/2005	13:30	4.97	3957.57	
		3962.54	05/15/2006	15:57	4.59	3957.95	
		3962.54	06/27/2006	17:30		-	
N2-12.8	C	3963.11	12/14/2005	13:55	6.24	3956.87	
		3963.11	05/15/2006	15:30	13.22	3949.89	
		3963.11	06/27/2006	16:53	14.53	3948.58	
N2-4.3	C	3962.87	12/14/2005	13:38	5.32	3957.55	
		3962.87	05/15/2006	15:48	11.42	3951.45	
		3962.87	06/27/2006	16:41		-	
N2-6.5	C	3963.01	12/14/2005	13:45	5.98	3957.03	
		3963.01	05/15/2006	15:40	9.81	3953.20	
		3963.01	06/27/2006	16:50	11.34	3951.67	
N3-4.3	C	3964.71	01/25/2006	10:05	4.03	3960.68	
		3964.71	05/17/2006	15:59	6.91	3957.80	
		3964.71	06/27/2006	15:02	8.36	3956.35	
N3-8.3	C	3965.03	01/25/2006	10:10	4.37	3960.66	
		3965.03	05/18/2006	13:06	6.37	3958.66	
		3965.03	06/27/2006	15:08	7.35	3957.68	
N4-12.0	C	3963.27	12/15/2005	16:28	3.19	3960.08	
		3963.27	05/18/2006	09:03	13.88	3949.39	
		3963.27	06/28/2006	08:46	15.21	3948.06	
N4-3.2	C	3962.35	12/15/2005	16:23	2.84	3959.51	
		3962.35	05/18/2006	09:09	5.97	3956.38	
		3962.35	06/28/2006	09:00	7.61	3954.74	
N5-14	C	3965.59	12/14/2005	15:50	3.41	3962.18	
		3965.59	05/18/2006	10:36	3.83	3961.76	
N5-4.4NEW	C	3965.43	12/14/2005	16:10	7.04	3958.39	
		3965.43	05/18/2006	11:15	9.23	3956.20	
N5-7.2	C	3965.82	12/14/2005	15:30	3.28	3962.54	
		3965.82	05/18/2006	11:00	9.47	3956.35	
N6-6.4	C	3962.69	12/12/2005	14:40	6.54	3956.15	
		3962.69	05/15/2006	14:40	5.47	3957.22	
		3962.69	06/23/2006	13:48	5.40	3957.29	

STATIC WATER LEVELS (USEE700) FOR SITE MOA01, Moab Site
REPORT DATE: 11/21/2006 2:52 pm

LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT)	MEASUREMENT		DEPTH FROM TOP OF CASING (FT)	WATER ELEVATION (FT)	WATER LEVEL FLAG
			DATE	TIME			
N7-10	C	3964.41	12/15/2005	14:50	14.64	3949.77	
		3964.41	05/17/2006	18:34	13.27	3951.14	
		3964.41	06/23/2006	08:45	13.10	3951.31	
N7-11	C	3963.84	12/15/2005	14:23	14.10	3949.74	
		3963.84	05/17/2006	18:56	10.55	3953.29	
		3963.84	06/28/2006	08:14	7.31	3956.53	
N7-7	C	3964.37	12/15/2005	15:11	14.55	3949.82	
		3964.37	05/17/2006	18:24	12.65	3951.72	
		3964.37	06/28/2006	08:06	15.00	3949.37	
N8-14	C	3964.91	12/13/2005	14:20		-	D
		3964.91	05/17/2006	09:55	8.48	3956.43	
		3964.91	06/26/2006	16:38	21.42	3943.49	
N8-3	C	3965.03	12/13/2005	14:00		-	D
		3965.03	05/16/2006	15:00	9.34	3955.69	
		3965.03	06/26/2006	16:50		-	D
N8-6	C	3964.79	12/13/2005	14:10		-	D
		3964.79	05/16/2006	15:10	8.64	3956.15	
		3964.79	06/26/2006	16:45	9.34	3955.45	
W1-10	C	3965.56	12/12/2005	15:35	12.18	3953.38	
		3965.56	01/25/2006		20.21	3945.35	
		3965.56	05/15/2006	16:21	7.15	3958.41	
		3965.56	06/27/2006	15:41	7.13	3958.43	
W1-4.3	C	3965.39	12/12/2005	16:10	11.85	3953.54	
		3965.39	05/15/2006	16:35	10.64	3954.75	
		3965.39	06/27/2006	16:08	11.21	3954.18	
W1-7	C	3965.43	12/12/2005	15:50	10.91	3954.52	
		3965.43	05/15/2006	16:25	7.18	3958.25	
		3965.43	06/27/2006	15:49	11.60	3953.83	

RECORDS: SELECTED FROM USEE700 WHERE site_code='MOA01' AND location_code in('N2-4.3','N2-12.8','N2-1.5','N2-6.5','N3-4.3','N3-8.3','N4-12.0','N4-3.2','N5-4.4NEW','N5-7.2','N5-14','N6-6.4','N7-10','N7-11','N7-7','N8-14','N8-3','N8-6','M11-7.0','M11-4.8','M11-12','M11-14.0','BL1-D','BL1-M','BL1-S','BL2-D','BL2-M','BL2-S','BL3-D','BL3-M','W1-4.3','W1-7','W1-10','0271','0272','0273') AND LOG_DATE between #1/1/2005# and #12/31/2006#

FLOW CODES: C CROSS GRADIENT

WATER LEVEL FLAGS:
D Dry