2016 CAMU LONG-TERM GROUNDWATER MONITORING REPORT

BRC CORRECTIVE ACTION MANAGEMENT UNIT (CAMU) AREA CLARK COUNTY, NEVADA

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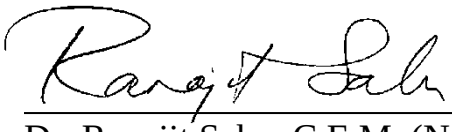
I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and to the best of my knowledge comply with all applicable federal, state and local statutes, regulations and ordinances. I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein.



January 5, 2016

Dr. Ranajit Sahu, C.E.M. (No. EM-1699, Exp. 10/07/2017) Date
BRC Project Manager

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ACRONYMS AND ABBREVIATIONS

µg/L	microgram per liter
amsl	above mean sea level
BCL	Basic Comparison Level
bgs	below ground surface
BRC	Basic Remediation Company
CAMU	Corrective Action Management Unit
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	chain of custody
DBS&A	Daniel B. Stephens & Associates, Inc.
DVSR	Data Validation Summary Report
EC	electrical conductivity
ERM	ERM-West, Inc.
FSSOP	Field Sampling and Standard Operating Procedures
ft/ft	foot per foot
MCL	Maximum Contaminant Level
mg/L	milligram per liter
NDEP	Nevada Division of Environmental Protection
NERT	Nevada Environmental Response Trust
Olin	Olin Chlor Alkali Products
Qal	Quaternary alluvium
QAPP	Quality Assurance Project Plan
QC	quality control
SOP	Standard Operating Procedure
TDS	total dissolved solids
UMCf	Upper Muddy Creek formation
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

Basic Remediation Company (BRC) has prepared this Groundwater Monitoring Report to summarize the data collected during the 2016 long-term groundwater sampling event at the BRC Corrective Action Management Unit (CAMU) in Clark County, Nevada, under the oversight of the Nevada Division of Environmental Protection (NDEP). This monitoring event was performed in accordance with the program specified in the *BRC Corrective Action Management Unit (CAMU) Long-Term Groundwater Monitoring Plan, BMI Complex, Henderson, Nevada (*BRC 2012), which was approved by the NDEP on November 7, 2012; and subsequent comment/response resolutions between the NDEP and BRC, as well as modifications to the analyte list as agreed by the NDEP in an email dated November 4, 2015.

The general purpose of the CAMU long-term groundwater monitoring program is to collect shallow-zone groundwater data for leak detection, with which the potential for impacts to groundwater quality due to CAMU operation can be assessed. This first section summarizes the site conditions and content of the report.

1.1 SITE LOCATION AND DESCRIPTION

The CAMU is located within the boundaries of property owned and operated by BRC, in an area formerly designated as the Clark County Industrial Plant Area (Figure 1-1). The northern CAMU boundary is approximately defined by the northern limit of the closed BMI Landfill. The CAMU is bordered by the following former and present industrial facilities of the BMI Industrial Complex:

- To the north and east – the Nevada Environmental Response Trust (NERT) site (formerly Tronox, successor to Kerr-McGee Chemical LLC); Montrose/Stauffer/Olin Chlor Alkali Products (Olin) and NERT operate off-site groundwater extraction, treatment, and re-injection systems to the north and to the east of the CAMU, respectively. The Montrose/Stauffer/Olin system is partially located on BRC property.

- To the south – by the former Pioneer Chlor-Alkali Company, Inc., facility, now owned by Olin.

- To the west – additional historical BRC property, recently sold to other entities (Parcel 5/6).

Historical features within the CAMU boundaries include the following:

- The closed BMI Landfill;
- The former Borrow Area (Borrow Pit);
- The former Western Ditch Area and Western Ditch Extension; and
- The former Slit Trench Area.

Chemical manufacturing, storage, handling, distribution, and waste disposal facilities have historically operated south (upgradient) of the CAMU (Figure 1-2). These operations are documented to have resulted in soil and groundwater impacts with volatile organic compounds, semivolatile organic compounds, polychlorinated biphenyls, dioxins/furans, organic acids, total dissolved solids (TDS), pesticides, perchlorate, and metals. Additional upgradient soil impacts may exist.

Groundwater beneath the CAMU has also been impacted with many of the chemicals detected in upgradient soils and/or groundwater, suggesting that chemicals from upgradient off-site locations have migrated northward and beneath the CAMU Site. However, chemical data associated with deep CAMU soils and groundwater suggest that there may also be some contribution of chemicals from the CAMU area to groundwater. The CAMU *Conceptual Site Model* report prepared in 2007 presents detailed information regarding historical site operations, the results of prior investigations, and site impacts (BRC and Daniel B. Stephens & Associates, Inc. [DBS&A] 2007).

To reduce the potential for chemical leachate in the CAMU area to migrate to and impact groundwater, BRC has recently covered and capped buried waste in the north and south landfill lobes, and surface liquids were removed from ditches. With NDEP-approval,[1] impacted materials within and around the Western Ditch, Western Ditch Extension, and Slit Trench Area and other unknown wastes in the area (i.e., within the northeast and northwest detention basins and an additional previously unknown ditch) were also excavated and removed to minimize potential impacts to groundwater quality.

[1] Documents describing the approved excavation and disposal operations include: *Corrective Action Plan* dated September 2006 (approved by NDEP September 25, 2006), *Record of Decision – Remediation of Soil in the Slit Trench Area of the BMI Common Areas* (NDEP issuance September 17, 2007), and *Permit for Hazardous Remediation Waste Management Activity* (issued by NDEP September 24, 2007).

1.2 SITE HYDROGEOLOGY

The CAMU is located on alluvial fan sediments, with a surface that slopes to the north-northeast at a gradient of approximately 0.02 foot per foot (ft/ft) towards the Las Vegas Wash. Regional drainage is generally to the east.

The uppermost strata beneath the CAMU consist of alluvial sands and gravels derived primarily from the volcanic source rocks in the McCullough Range, located to the southwest of the CAMU. These uppermost alluvial sediments were deposited within the last two million years and are of Quaternary age, and are thus mapped and referred to as the Quaternary alluvium (Qal; Carlsen *et al*. 1991). The Qal is typically on the order of 30 to 70 feet thick at the Site with variations due, in part, to the non-uniform contact between the Qal and the underlying Upper Muddy Creek Formation (UMCf). As described in the *Groundwater Monitoring Plan – Corrective Action Management Unit (CAMU) Area* (hereinafter "Baseline Monitoring Plan"; DBS&A 2008), three erosional paleochannels (two major channels and one minor channel) are interpreted as being incised into the UMCf surface in the CAMU area, and increase the local Qal thickness accordingly.

The UMCf underlies the Qal. The Muddy Creek formation, of which the UMCf is the uppermost part, is a lacustrine deposition from the Tertiary Age, and it underlies much of the Las Vegas Valley. It is more than 2,000 feet thick in places. The lithology of the UMCf underlying the CAMU is typically fine-grained (sandy silt and clayey silt), although layers with increased sand content are sporadically encountered. These UMCf materials have typically low permeability, with hydraulic conductivities on the order of 10^{-6} to 10^{-8} centimeters per second (Weston 1993). The UMCf in the CAMU area was encountered at depths ranging from 30 to 70 feet below ground surface (bgs), and extending to the maximum explored depth of 200 feet bgs.

Two distinct, laterally continuous water-bearing zones are present within the upper 400 feet of the Site subsurface:

(1) An upper, unconfined water-bearing zone (referred to as the Shallow Zone[2]). The Shallow Zone is typically encountered within the Qal at the CAMU; however, this zone is first encountered within the uppermost UMCf in the eastern portion of the CAMU area. The water surface in the Shallow Zone generally follows topography, with the water surface sloping towards the Las Vegas Wash.

[2] Note: hydrogeologic and lithologic nomenclature is based on NDEP (2009a).

(2) A deep, confined water-bearing zone that occurs in a sandier depth interval within the silts of the deeper UMCf (referred to as the Deep Zone).

Between these two distinct water-bearing zones, a series of saturated sand stringers were sporadically and unpredictably encountered during drilling (referred to as the Middle Zone).

As presented in the Baseline Monitoring Plan, structure contours of the UMCf contact have delineated two relatively major paleochannels (one west of the CAMU and one traversing the center of the CAMU) and one relatively minor paleochannel near the northeast corner of the CAMU (Figure 1-2). Although preferred groundwater flow and chemical transport might be expected to be associated with these paleochannels, the Baseline Monitoring Plan concluded that the Shallow Zone groundwater flow pattern for the area did not indicate that these paleochannels affected groundwater flow near the CAMU. However, the Baseline Monitoring Plan indicated that regional isoconcentration contour maps for various Site-related chemicals suggested that off-site sources are impacting the CAMU area from the south in a northerly flow direction consistent with the direction of the paleochannel thalweg (DBS&A 2008).

According to previous groundwater monitoring, the depth from the surface to first groundwater at the Site is approximately 30 to 50 feet bgs. Wells completed in the Shallow Zone are not highly productive, with sustainable flows typically less than 5 gallons per minute.

1.3 REPORT CONTENT AND ORGANIZATION

This report provides tabulated and graphical presentations of groundwater data collected during the 2016 long-term groundwater monitoring event conducted in the CAMU area. Following this introductory section, this report includes the following:

- Section 2 describes the activities during the 2016 CAMU long-term groundwater monitoring event, including inspection and depth to water measurements, sample collection, equipment decontamination, management of investigation-derived waste, the analytical procedures, and data review and validation procedures. In addition, groundwater data collected during the 2016 CAMU long-term groundwater monitoring event are presented in data tables; those tables also include historical results associated with the wells in the CAMU long-term monitoring program.

- Section 3 presents the results of the 2016 CAMU long-term groundwater monitoring event, as they pertain to groundwater occurrence and flow patterns.

- Section 4 summarizes chemical occurrence in groundwater in the shallow water-bearing zone.
- Section 5 provides recommendations for future CAMU groundwater monitoring activities.
- Section 6 provides a list of references used in the preparation of this report.

Figures and tables summarizing the monitoring well details, scope, and findings of the monitoring event follow the main text. Consistent with other program reports, Appendix A is a placeholder for potential NDEP comments on this report and BRC's responses to those comments. Appendix B contains an electronic version of the entire report, as well as original format files (MS Word and MS Excel) of all text and tables. Appendix B also provides the historical project database for the CAMU monitoring program (baseline and ongoing long-term monitoring data in separate database excerpts). Sampling forms and concentration trend graphs (selected constituents) for all the CAMU long-term monitoring wells are presented in Appendices C and D, respectively. In addition, Appendix E provides figures posting reported detections of selected constituents for the 2016 CAMU long-term groundwater monitoring event.

2.0 LONG-TERM GROUNDWATER MONITORING PROGRAM

Groundwater monitoring and sampling procedures were performed as specified in the BRC (2012) *CAMU Long-Term Groundwater Monitoring Plan*, augmented by additional specifications in NDEP's November 7, 2012, approval letter, subsequent comment/response resolutions, and in accordance with associated project-specific *Field Sampling and Standard Operating Procedures* (FSSOP; BRC, ERM and MWH 2009) and the *BRC Quality Assurance Project Plan* (QAPP; BRC and ERM 2009).

The following sections briefly describe the field procedures and analytical program implemented by BRC contractors during field activities associated with the 2016 CAMU long-term groundwater monitoring event.

2.1 CAMU MONITORING WELL NETWORK

Because the intent of this monitoring program is to assess for potential impacts due to CAMU operations, it is appropriate to focus on the uppermost water-bearing zone. If there are no impacts to that zone (the Shallow Zone) from CAMU operations, the threat to the underlying Middle and Deep Zones is negligible.

The BRC (2012) *CAMU Long-Term Groundwater Monitoring Plan* specified eight Shallow Zone wells for inclusion in the monitoring program for the 2016 CAMU long-term groundwater monitoring event, as summarized in Table 2-1 (Tables section) and depicted on Figure 2-1. Construction details for these CAMU area wells are provided in Table 2-2 (Tables section). Table 2-3 (Tables section) identifies the monitoring activities that are associated with each well.

2.2 FIELD MEASUREMENTS

Field measurements, including depth to water, thickness of free product (if present), and depth of well, were performed in accordance with procedures described in the project-specific Standard Operating Procedure (SOP) (*SOP-5 - Water Sampling and Field Measurements*). Equipment used and the various observations and measurements collected during well purging activities for the 2016 CAMU long-term groundwater monitoring event were recorded by the field crews on Monitoring Well Low-Flow Purge/Sampling Forms. Copies of these forms for the 2016 CAMU long-term groundwater monitoring event are provided in Appendix C.

Water level measurements provide a measure of water potential (hydraulic head) at specific geographic locations and depths beneath the CAMU. The primary purpose for measuring CAMU

area water levels in the monitoring wells is to determine horizontal groundwater flow directions and gradients. These measurements were converted to elevations relative to a standard datum (i.e., above mean sea level [amsl], which is used for the Site) and posted on a map, and were contoured to prepare potentiometric surface maps, which indicate the direction of groundwater flow. Horizontal gradients are calculated as the difference in groundwater elevations between wells screened in the same monitoring zone divided by the horizontal distance between the wells. The horizontal gradients indicate the horizontal direction of groundwater flow, from higher to lower elevations. The results of the water level measurements collected during the 2016 CAMU long-term groundwater monitoring event are discussed in Section 3.1.

2.3 SAMPLE COLLECTION

BRC used the micro-purge and sampling methodology for the 2016 CAMU long-term groundwater monitoring event, as established and implemented during monitoring events at the BMI Common Areas (Eastside) Site. Most of the BRC-owned wells sampled during the monitoring event were equipped with QED® Well Wizard (A-system) dedicated bladder pumps for the monitoring and sampling of wells at the Site. QED® MP10H high-pressure micro-purge controllers were used during the event. The Well Wizard A-system was installed in the Shallow Zone wells due to their relative shallow well design (less than 100-feet deep). Generally, pump (sample) intakes were installed approximately 1 to 3 feet from the bottom of the wells. Shallow Zone wells without dedicated pumps were monitored and sampled using a QED® brand SamplePro portable bladder pump system. Non-dedicated pumps were thoroughly decontaminated between wells. Well purging details and sampling summary data are presented in Appendix C for the 2016 CAMU long-term groundwater monitoring event.

Sampling and field measurement procedures were performed in accordance with the standard sampling and documentation procedures developed for performing water level measurements and monitoring well sampling, well maintenance, general field operations, and instrument calibration, as presented in the BRC FSSOP (BRC, ERM and MWH 2009). Adherence to these procedures promotes consistency in field procedures and comparability of data collected over time. Field quality control (QC) measures implemented during the 2016 CAMU long-term groundwater monitoring event were performed in a manner generally consistent with BRC QAPP requirements and BRC FSSOP.

2.4 DECONTAMINATION PROCEDURES

Equipment decontamination was performed to minimize the potential for cross contamination between wells or investigation and sampling locations. Decontamination procedures were used for all non-dedicated, non-disposable equipment. BRC SOPs were followed to ensure proper decontamination of sampling equipment.

Decontamination equipment was prepared at each well location for cleaning sampling equipment. Supplies included 5-gallon buckets, bottle brushes, potable water, distilled water, and non-phosphate cleaning solution (Liquinox™/Alconox™). Prior to and after use at each location, all groundwater sampling equipment was washed in a non-phosphate cleaning solution, rinsed with potable water, and then rinsed twice with distilled water.

Submersible pumps and downhole equipment were cleaned prior to and after use at each location during groundwater sampling activities as described above. Decontamination water was transferred into secured and properly labeled Department of Transportation-approved 55-gallon steel drums located on site at a centralized collection area.

2.5 MANAGEMENT OF INVESTIGATION-DERIVED WASTE

During the 2016 CAMU long-term groundwater monitoring event, all purge and decontamination water resulting from groundwater sampling was temporarily contained on site in 55-gallon drums. All drums were labeled by field personnel to identify contents, date, and source location. BRC has subsequently disposed of these sampling wastes. Information of this disposal has been provided separately to the NDEP.

2.6 ANALYTICAL PROGRAM

Analytical procedures for the 2016 CAMU long-term groundwater monitoring event were implemented according to the BRC QAPP. The list of chemicals and analytical methods for the CAMU monitoring events is provided in Table 2-4 (Tables section). The QAPP specifies the project-specific detection and quantitation limits, calibration and calibration verification, and QC procedures and specifications. The QAPP also requires that analyses be performed according to the method-specific SOPs, which have also been revised to be site-specific stand-alone documents. Analytical laboratories performing analyses for the Site have Nevada State certification for the methods performed.

The following sections summarize the groundwater analytical program conducted for the 2016 CAMU long-term groundwater monitoring event. Analytical methods used during the program were selected based on data requirements for investigating Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites and for conducting human health and ecological risk assessments, and to provide data to evaluate impacts to groundwater and surface water quality. The analytical methods used are primarily referenced United States Environmental Protection Agency (USEPA)-approved testing procedures. The sampling team followed method-prescribed requirements for sample containers, preservation, and holding times, as summarized in Table 2-5 (Tables section). Samples were packaged and shipped with proper chain of custody (COC) documentation to the analytical laboratories as described in the BRC FSSOP and QAPP.

Groundwater samples from eight monitoring wells were analyzed for a broad spectrum of chemical analytes and chemical classes during the 2016 CAMU long-term groundwater monitoring event. The samples were analyzed for general chemistry parameters, cations/anions, total metals, hexavalent chromium, and water quality parameters. Analyses were performed as specified in the BRC (2012) *CAMU Long-Term Groundwater Monitoring Plan* for the wells sampled by BRC, as modified in 2015 with the removal of analyses for organic compounds, agreed by the NDEP in an email dated November 4, 2015.

2.7 ANALYTICAL LABORATORIES

Nevada-certified laboratories were utilized during the 2016 CAMU long-term groundwater monitoring event as described in Table 2-6, below.

TABLE 2-6: LABORATORIES USED DURING THE 2016 CAMU LONG-TERM GROUNDWATER MONITORING EVENT

Laboratory Name	Location	Analyses Performed
TestAmerica Laboratories	Earth City, Missouri Irvine, California	General Chemistry, Cation/Anions, Ion Balance, Metals, Water Quality Parameters
ASSET Laboratories	Las Vegas, Nevada	Hexavalent Chromium

2.8 QUALITY ASSURANCE/QUALITY CONTROL

Measurement data were consistently assessed and documented to determine whether objectives were met. The review assesses data quality and identifies potential limitations on data use. The data quality review process provides information on overall method performance and data usability. Section A7 of the BRC QAPP defines the basis for assessing the elements of data quality. Laboratory data and data quality review reporting procedures and formats are also addressed in Section A7 of the BRC QAPP.

Quality assurance activities include performing technical systems audits, performance audits, and data validation at the frequency recommended in the BRC QAPP. Field audits are not required, but may be performed in the event significant discrepancies are identified that warrant evaluation of field practices. No field audits were performed during the 2016 CAMU long-term groundwater monitoring event.

As discussed in Section 2.3, various types of QC samples were collected to aid in evaluating the analytical data quality, including a field duplicate groundwater sample that was analyzed for the broad suite of analytes included in the CAMU monitoring program.

2.9 DATA REVIEW AND VALIDATION

The data generated during the 2016 CAMU long-term groundwater monitoring event were subjected to a data review in accordance with the QAPP, SOP-40 (*Data Review/Validation*; FSSOP), USEPA National Functional Guidelines (USEPA 2004, 2014), and the NDEP *Supplemental Guidance on Data Validation* (NDEP 2009b), *Additional Guidance on Completion of Quality Checks for Cation-Anion Balance* (NDEP 2007), *Cation-Anion Balance – Updated Guidance* (NDEP 2009c), and *Guidance on Qualifying Data due to Blank Contamination* (NDEP 2012). These guidance documents provided direction for the data review and validation activities conducted for data collected during these events.

All of the data were subjected to a Stage 2B review. Stage 2B data validation consisted of a manual review of all parameters related to sample analysis, including holding times, instrument performance check (as applicable), initial calibration, continuing calibration, blank contamination, laboratory control sample, matrix spike/matrix spike duplicate, surrogates and internal standards (as applicable), and compound identification. In addition to the Stage 2B review, 30 percent of all data collected during the course of the investigation were subject to full Stage 4 data validation. Stage 4 data validation consisted of review of all parameters reviewed as

part of the Stage 2B review with additional review of the raw data including chromatograms, log books, quantitation reports, and spectra. Data validation qualifiers and reason codes used during this process are summarized in Table 2-7 (Tables section). Laboratory Data Consultants, Inc., was subcontracted to conduct all the data validation. The *Data Validation Summary Report* (DVSR) for data collected by BRC during the 2016 CAMU long-term groundwater monitoring event has been prepared and submitted separately as a stand-alone report (ERM 2016). This DVSR was approved by NDEP on December 15, 2016.

As part of the data review process, BRC, in conjunction with the project laboratory, evaluated the data per NDEP's Cation-Anion Balance Guidance (NDEP 2009c) for cation-anion balances, TDS checks, and TDS and electrical conductivity (EC) checks for data generated during the 2016 CAMU long-term groundwater monitoring event. The results of these evaluations are presented in Table 2-8 (Tables section). As seen in this table, certain cation/anion results were rejected on the basis of this evaluation. Rejections were made if the sample failed both the cation-anion balance test and either the TDS check or TDS and EC check. Samples are regularly failing the TDS check and TDS and EC check. The EC values are taken from the field forms and many of the values have been suspect. Routinely, units have not been included on the field forms. When units were not reported, ERM has compared EC values to historical EC values for a particular well location. BRC has been working with the field staff to ensure proper reporting of units for this measurement. However, it is not fully understood why samples are repeatedly failing the TDS checks.

During sample collection, the pH of each sample was measured using field instrumentation and recorded on the field sampling forms. In the water samples collected and analyzed during the 2016 CAMU long-term groundwater monitoring event, pH measurements collected in the field ranged from 6.81 to 8.15. Based on this pH range of results, alkalinity was composed nearly entirely of bicarbonate; therefore, the bicarbonate results were used in the balance calculation rather than the hydroxide results.

Based on the evaluation of the dataset, the majority of the data obtained during the 2016 CAMU long-term groundwater monitoring event are valid (that is, not rejected) and acceptable for their intended use. All analyses were performed as requested on the COC. No assumptions of data quality were made based on information that was not provided. Some data were qualified based on the data review. All data results qualified with 'J', 'U', or 'UJ' are considered valid and acceptable for their intended use. All data results qualified with 'R' or 'R-CAB&TDS' are considered invalid and are rejected for use.

2.10 ANALYTICAL RESULTS

Groundwater analytical results for the 2016 CAMU long-term groundwater monitoring event and prior historical sampling events are presented by individual chemical class in Tables 2-9 through 2-11. These results are discussed in Section 4.

3.0 GROUNDWATER OCCURRENCE AND FLOW PATTERNS

General groundwater occurrence and flow patterns for the 2016 CAMU long-term groundwater monitoring event are summarized in this section. The monitoring wells included in these monitoring events are presented on Figure 2-1.

3.1 DEPTH TO GROUNDWATER

Groundwater level measurements were collected from eight wells across the Site during the 2016 CAMU long-term groundwater monitoring event. Well-specific measured depths to water and calculated groundwater elevations for historical monitoring events are presented in Table 3-1 (Tables section). Note that all wells were measured and sampled in April/May 2016.

Based on these data, the depth to water and groundwater elevations are highest in wells located upgradient of the CAMU and lowest in wells located downgradient. Well hydrographs summarizing historical water level data for the CAMU wells are presented on Figure 3-1.

3.2 GROUNDWATER FLOW DIRECTION

The Shallow Zone measurements are posted and contoured on Figure 3-2 for the 2016 CAMU long-term groundwater monitoring event. As seen on this figure, and consistent with past monitoring events, the general Shallow Zone groundwater flow direction in the CAMU area was to the north-northeast at an average gradient of 0.013 ft/ft.

4.0 CHEMICAL OCCURRENCE IN THE SHALLOW ZONE

A summary of the Shallow Zone groundwater analytical results from the 2016 CAMU long-term groundwater monitoring event is presented in Table 4-1[3] (Tables section). This table presents the compound-specific number of detections, ranges of reporting limits, ranges of concentrations, and number of detections exceeding USEPA maximum contaminant level (MCLs) and NDEP Basic Comparison Levels (BCLs: NDEP 2015). Groundwater analytical results for the 2016 CAMU long-term groundwater monitoring event and prior historical sampling events are presented by individual chemical class in Tables 2-9 through 2-11. These tables do not include the organic compounds monitored in previous events that were not included in the 2016 CAMU long-term groundwater monitoring event, as agreed by the NDEP in an email dated November 4, 2015.

In addition, representative constituents for the main chemical classes of interest in the CAMU area were selected for graphic presentation of historical trends in concentrations and chemical occurrence within the Shallow Zone. Specifically, graphical presentations are provided for the following:

- Metals (arsenic, beryllium, cadmium, iron, lead, lithium, magnesium, manganese, strontium, uranium);
- General chemistry (chlorine); and
- General water quality (TDS).

Concentration trend graphs for these constituents are presented in Appendix D. Maps with posted detections of these constituents in Shallow Zone wells are presented in Appendix E for the 2016 CAMU long-term groundwater monitoring event.

These 12 analytes were generally selected because they were detected at concentrations in excess of applicable screening levels in more than one monitoring well. As seen in Table 4-1, additional analytes in Shallow Zone samples (i.e., beyond those depicted graphically) exceeded screening levels during the 2016 CAMU long-term groundwater monitoring event.

[3] The total sample counts reflected in the summary Table 4-1 are not always consistent for all analytes. This is a result of rejected results, as discussed in the DVSR.

For reference, the following screening levels are included in Table 4-1, where established:

- USEPA MCLs; and
- The NDEP residential water BCL.

It should be noted that exceedances of these screening levels are generally observed in wells upgradient of the CAMU. An exceedance does not necessarily indicate that CAMU operations have impacted groundwater quality.

4.1 METALS

As seen in Tables 4-1 and 2-9, metals were detected in all of the samples collected from the Shallow Zone wells during the 2016 CAMU long-term groundwater monitoring event. Based on the Table 4-1 summary, the following metals were detected the most often:

- Arsenic (eight detects, maximum detection of 400 µg/L at upgradient monitoring well AA-MW-07);
- Barium (nine detects, maximum detection of 340 µg/L at downgradient monitoring well H-28);
- Calcium (six detects, maximum detection of 780 milligrams per liter [mg/L] at upgradient monitoring well AA-MW-07 and downgradient well H-28);
- Iron (six detects, maximum detection of 270,000 µg/L at downgradient monitoring well H-43);
- Lithium (nine detects, maximum detection of 730 µg/L at downgradient monitoring well AA-BW-05A);
- Magnesium (six detects, maximum detection of 770 mg/L at upgradient monitoring well AA-MW-07);
- Manganese (nine detects, maximum detection of 4,900 µg/L at upgradient monitoring well AA-BW-12A);
- Potassium (six detects, maximum detection of 52 mg/L at downgradient monitoring well AA-BW-04A);

- Sodium (six detects, maximum detection of 8,900 mg/L at upgradient monitoring well AA-BW-08A);

- Strontium (nine detects, maximum detection of 24,000 µg/L at upgradient monitoring well AA-MW-07);

Detections greater than the MCLs or BCLs are summarized in Table 4-3 below:

TABLE 4-2: METALS MCL AND BCL EXCEEDANCES

Chemical Name	MCL or BCL Exceedance?	Exceedances
Aluminum	BCL	1
Arsenic	MCL and BCL	8
Beryllium	MCL and BCL	1
Cadmium	MCL and BCL	1
Cobalt	BCL	2
Iron	BCL	6
Lead	MCL and BCL	1
Lithium	BCL	9
Magnesium	BCL	6
Manganese	BCL	9
Strontium	BCL	4
Uranium	MCL and BCL	1

As seen in Table 2-9 and in the occurrence maps presented in Appendix E, the highest detections for selected metals (i.e., arsenic, calcium, lithium, magnesium, manganese, potassium, sodium, strontium, and uranium) are routinely associated with AA-BW-08A and AA-BW-12A, located at the upgradient CAMU edge in the central paleochannel. One exception to this is iron, with highest detections associated with downgradient well H-43. Iron has also shown an increasing trend in this well over time. This trend will continue to be monitored in subsequent events. The lateral variability in metal concentrations suggests that their presence is due to a combination of naturally occurring conditions, as well as upgradient off-site influences.

4.2 GENERAL WATER QUALITY

General chemistry, alkalinity, hardness, TDS, and pH measurements are summarized in Tables 4-1, 2-10, and 2-11. TDS is generally high in groundwater samples collected from

throughout the CAMU area (6,800 to 26,000 mg/L during the 2016 CAMU long-term groundwater monitoring event). As seen in the TDS trend plots in Appendix D, TDS concentrations are relatively consistent through the current and historical monitoring events, except for an increase in concentrations in the 2015 CAMU long-term groundwater monitoring event in downgradient wells AA-BW-04A, AA-BW-05A, and H-43, but these concentrations dropped to previous historical levels in well AA-BW-04A (TDS data for wells AA-BW-05A and H-43 were rejected) during the 2016 CAMU long-term groundwater monitoring event. Therefore, this increase was likely due to issues with sampling and/or laboratory analysis.

5.0 RECOMMENDATIONS FOR FUTURE ACTIVITIES

This report represents the fourth groundwater monitoring event for the BRC's long-term monitoring program to assess for potential impacts due to CAMU operations. Specifically, the goal of the long-term monitoring is to solely allow for detection of leaks in the CAMU, and not to support a broader effort at sub-surface characterization. Because this is the fourth long-term groundwater monitoring event, data collected in the downgradient wells will be compared against the range of concentration data that have been collected in the baseline set of events (and other historic events) at a later, to be determined, long-term monitoring event. This will be done to determine if there are any statistically significant positive deviations (i.e., increases) against the baseline range.

The specifics of the approach to be used for identifying CAMU-related impacts to groundwater are better deferred until such time as impacts are suspected and the associated analytes have been identified. BRC expects that the approach would be consistent with statistical principles and methods described in USEPA's (2009) *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities—Unified Guidance*. Following that guidance, widely accepted statistical principles and tools would be systematically applied to:

- Visualize the data;
- Handle non-detected values;
- Establish baseline and upgradient reference levels; and
- Compare to standards, baseline, and/or upgradient reference.

In addition, BRC will continue to closely monitor the various sumps at the CAMU and to report monitoring observations to NDEP on a routine basis. Because CAMU monitoring for organic compounds is not likely to be conclusive given the occurrence of both Dense Non-Aqueous Phase Liquid and Light Non-Aqueous Phase Liquid immediately to the south of the Site, these compounds have been removed from the analyte list for this and subsequent groundwater monitoring events.

6.0 REFERENCES

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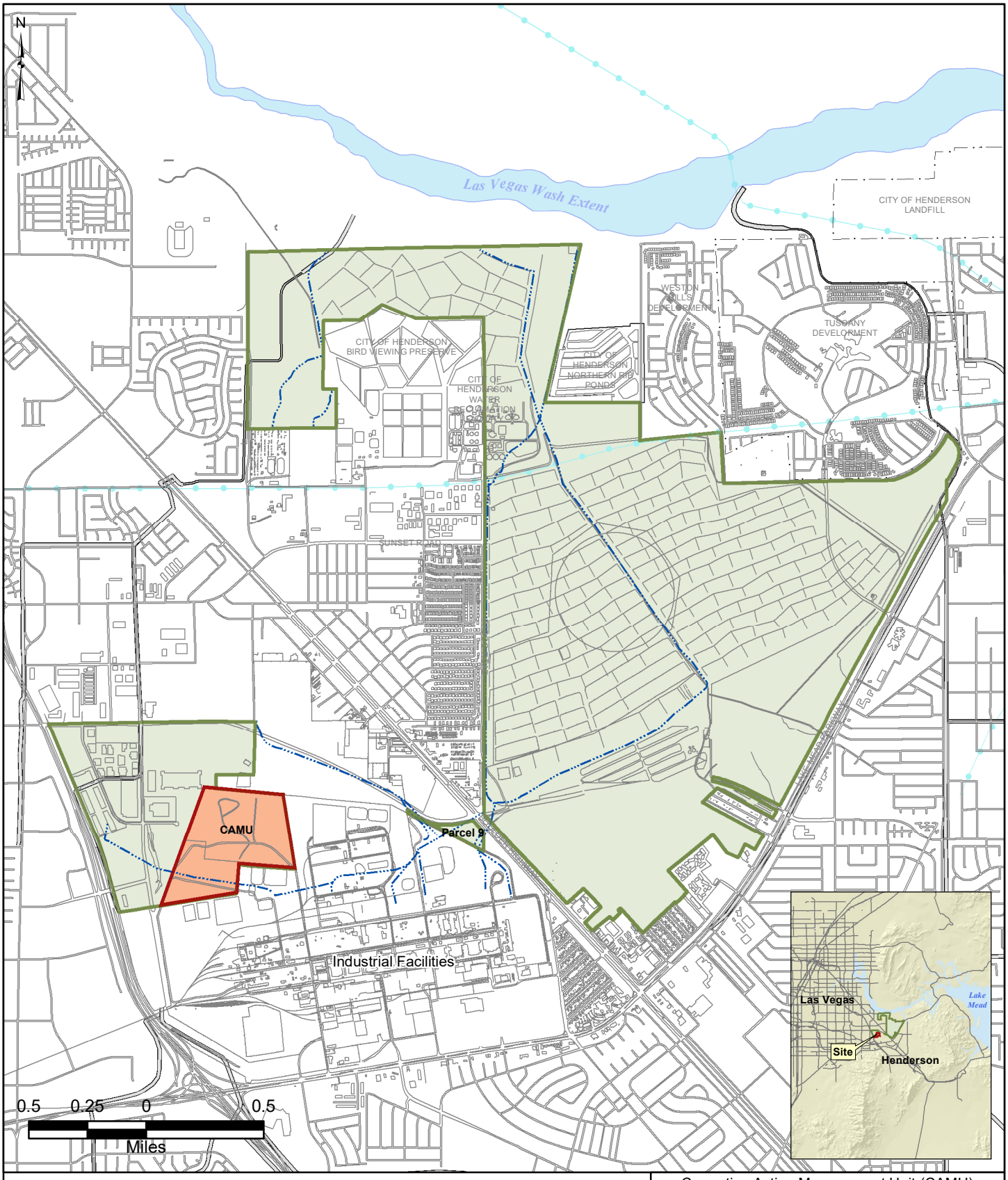
FIGURES



Site AOC3 Boundary

CAMU Site

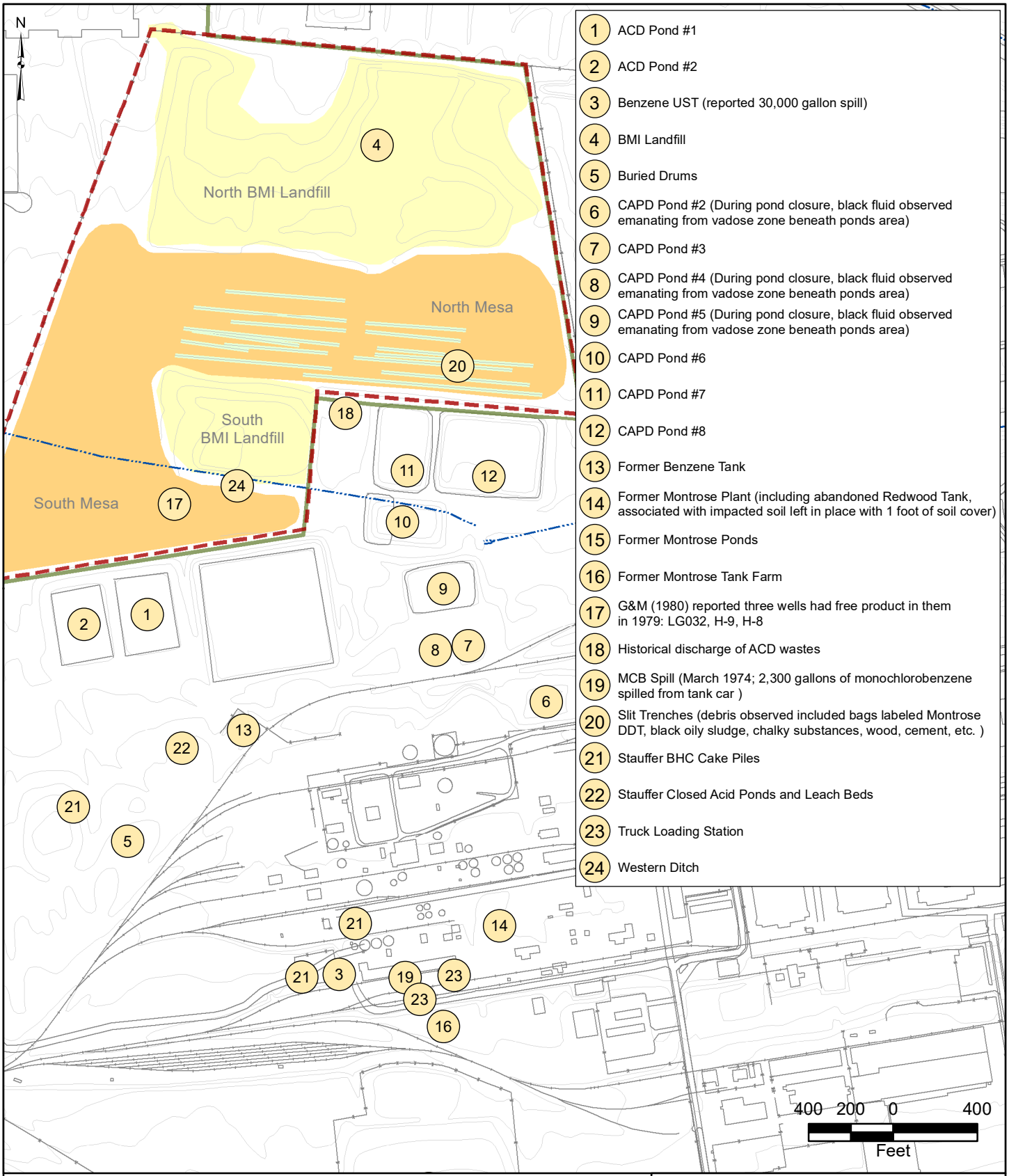
Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE 1-1

SITE LOCATION MAP

Basic Remediation Company

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/FIGURE_1-1.MXD
MKJ (ERM)	12/28/16	



CAMU Site

Site AOC3 Boundary

Former Slit Trenches

Paleochannels (solid where deeply incised, dashed where relatively shallow and/or inferred)

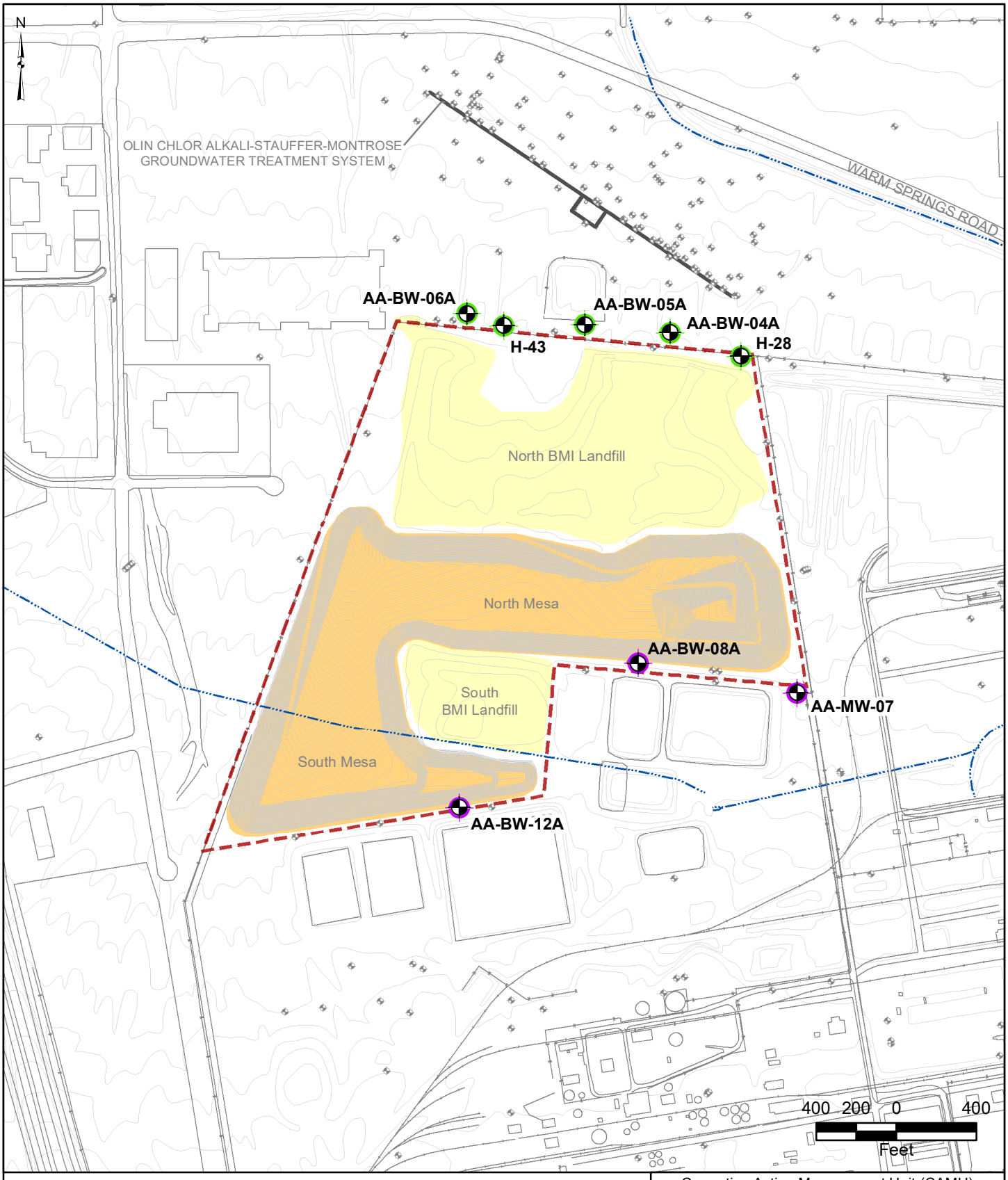
Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE 1-2

POTENTIAL UPGRADIENT SOURCE AREAS

Basic Remediation Company

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/FIGURE_1-2.MXD
MKJ (ERM)	12/28/16	



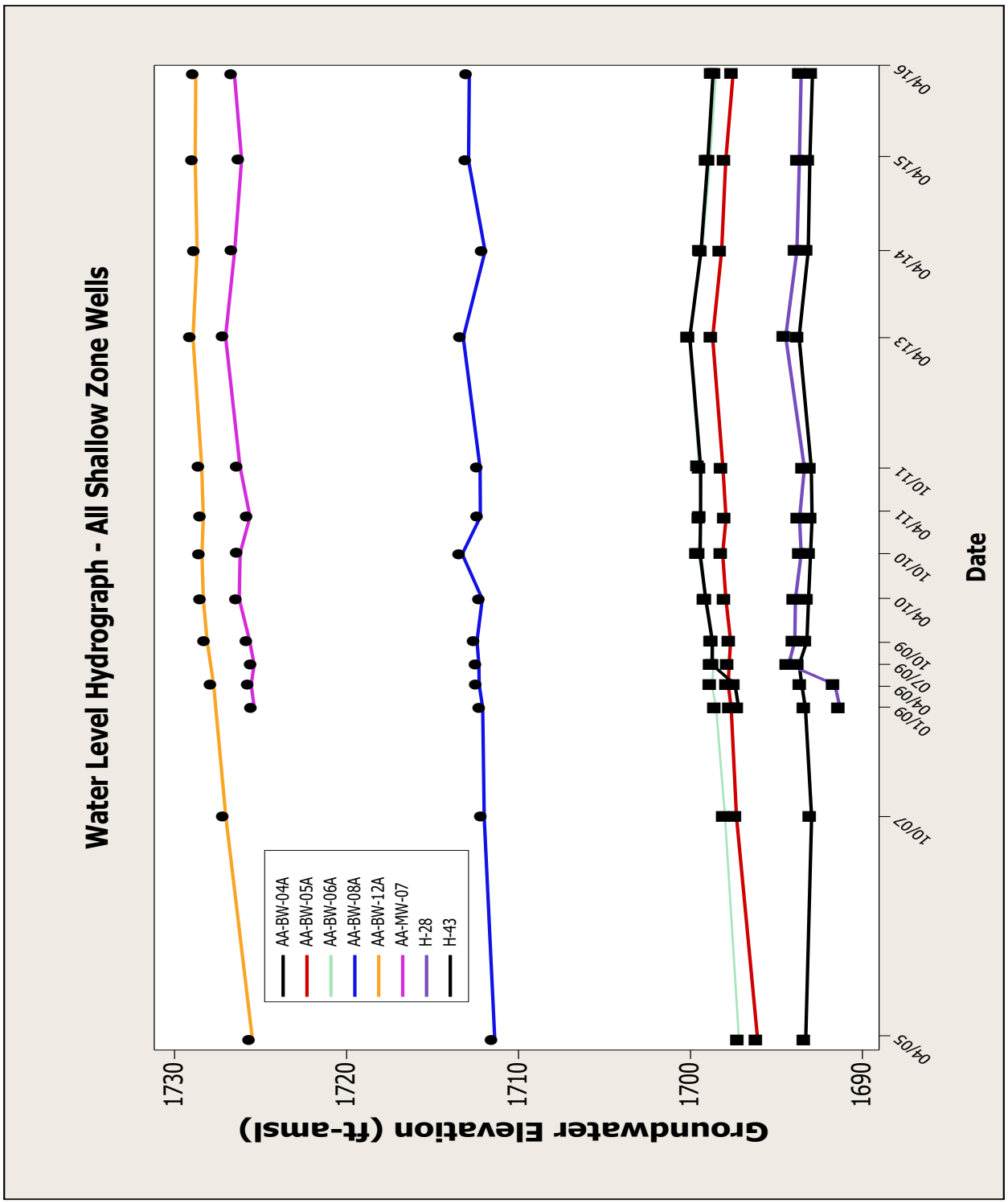
Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE 2-1

CAMU LONG-TERM GROUNDWATER MONITORING PROGRAM WELLS

Basic Remediation Company

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/FIGURE_2-1.MXD
MKJ (ERM)	12/28/16	



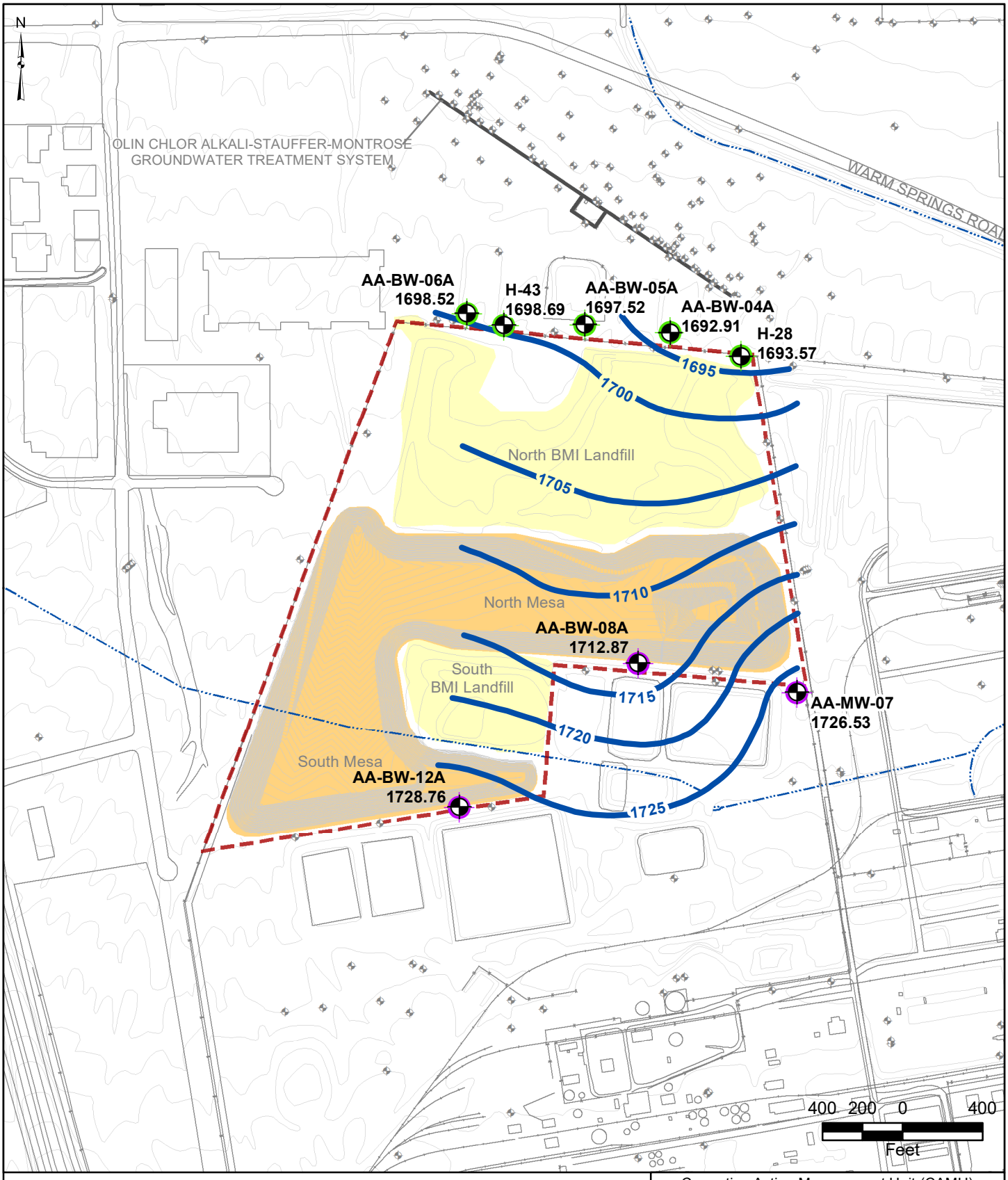
Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE 3-1

WELL HYDROGRAPHS

Basic Remediation COMPANY

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/FIGURE_3-1.MPJ
MKJ (ERM)	12/28/16	



CAMU Site

Other Monitoring Wells

Water Level Contour (dashed where interred)

Note: Measurements are in feet above mean sea level (ft msl). Contours based on CAMU long-term program wells only.

Paleochannels (solid where deeply incised, dashed where relatively shallow and/or inferred)

CAMU Long-Term Monitoring Program Wells

Upgradient, Shallow Well

Downgradient, Shallow Well

Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE 3-2

POTENTIOMETRIC SURFACE MAP OF THE SHALLOW WATER-BEARING ZONE WELLS

Basic Remediation Company

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/FIGURE_3-2.MXD
MKJ (ERM)	12/28/16	

TABLES

TABLE 2-1
WELLS INCLUDED IN CAMU LONG-TERM MONITORING PROGRAM
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA

Well ID	Owner	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Hydro-geologic Zone	Rationale
AA-BW-04A	BRC	32	52	Shallow	Monitors impacts downgradient of northern CAMU and central axes of upgradient plants area plumes
AA-BW-05A	BRC	34	64	Shallow	Monitors impacts downgradient of northern CAMU and upgradient plants area plumes
AA-BW-06A	BRC	23	43	Shallow	Monitors impacts downgradient of northwestern CAMU
AA-BW-08A	BRC	37.5	57.5	Shallow	Monitors impacts upgradient at southeast CAMU
AA-BW-12A	BRC	49	69	Shallow	Monitors impacts upgradient of southwest CAMU
AA-MW-07	Companies	30.5	70.5	Shallow	Monitors impacts upgradient at southeast CAMU
H-28	Companies	37.4	50.5	Shallow	Monitors impacts at northeastern CAMU; defines northeastern boundary of offsite plants area plumes
H-43	Companies	29	44	Shallow	Monitors impacts downgradient of northern CAMU and upgradient plants area plumes

Notes:
ft bgs = feet below ground surface
-- = data not available

TABLE 2-2
CONSTRUCTION DETAILS FOR WELLS INCLUDED IN CAMU LONG-TERM MONITORING PROGRAM
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA

Well ID	Owner	Date Installed	TOC Elevation (ft amsl)	Grade Elevation (ft amsl)	Depth to Qal/UMCf Contact (ft bgs)	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Screen Length (ft)	Units Screened	Hydrogeologic Zone	Total Borehole Depth (ft bgs)	Contact Elevation (ft amsl)	Screen Top Elevation (ft amsl)	Screen Bottom Elevation (ft amsl)	Casing/Screen Type	Diameter (inches)	Screen Slot (inches)	Full Log available?
AA-BW-04A	BRC	02/24/05	1731.49	1729.47	51	32	52	20	Qal/UMCf 1'	Shallow	60	1678.47	1697.47	1677.47	Sch 80 PVC	4	0.01	Yes
AA-BW-05A	BRC	02/12/05	1731.40	1729.21	64	34	64	30	Qal	Shallow	200	1665.21	1695.21	1665.21	Sch 80 PVC	4	0.01	Yes
AA-BW-06A	BRC	03/10/05	1731.40	1729.28	42	23	43	20	Qal/UMCf 1'	Shallow	50	1687.28	1706.28	1686.28	Sch 80 PVC	4	0.01	Yes
AA-BW-08A	BRC	03/15/05	1763.18	1761.28	58	37.5	57.5	20	Qal	Shallow	75	1703.28	1723.78	1703.78	Sch 80 PVC	4	0.01	Yes
AA-BW-12A	BRC	02/15/05	1778.54	1776.54	60	49	69	20	Qal/UMCf 9'	Shallow	200	1716.54	1727.54	1707.54	Sch 80 PVC	4	0.01	Yes
AA-MW-07	Companies	09/12/06	1764.22	1761.91	70	30.5	70.5	40	Qal	Shallow	90	1691.91	1731.41	1691.41	Sch 40 PVC	4	0.02	Yes
H-28	Companies	02/18/80	1730.33	1729.13	44.5	37.4	50.5	13.1	Qal/UMCf 6.5'	Shallow	51	1684.63	1691.73	1678.63	Steel	6	--	Yes
H-43	Companies	08/17/81	1729.82	1728.20	45.5	29	44	15	Qal	Shallow	55	1682.70	1699.20	1684.20	Steel	5	--	Yes

ft bgs = Feet below ground surface.
ft amsl = Feet above mean sea level.
--- = Data not applicable or not available.

TABLE 2-3
ANALYTICAL PROGRAM FOR CAMU LONG-TERM MONITORING EVENTS
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA

			Field Sampling				Laboratory Analytical Suite		
Well ID	**Zone Monitored**	**Frequency**	**Water Level Measurement**	**NAPL Measurement**	**Dissolved Oxygen (field) per SOP5a**	**Water Quality Sampling**	**General Chemistry (Ions)**	**Metals**	**Water Quality Parameters (TDS, Hardness, Alkalinity)**
AA-BW-04A	Shallow	Semi-Annual	B	B	B	B	B	B	B
AA-BW-05A	Shallow	Semi-Annual	B	B	B	B	B	B	B
AA-BW-06A	Shallow	Semi-Annual	B	B	B	B	B	B	B
AA-BW-08A	Shallow	Semi-Annual	B	B	B	B	B	B	B
AA-BW-12A	Shallow	Semi-Annual	B	B	B	B	B	B	B
AA-MW-07	Shallow	Semi-Annual	B	B	B	B	B	B	B
H-28	Shallow	Semi-Annual	B	B	B	B	B	B	B
H-43	Shallow	Semi-Annual	B	B	B	B	B	B	B

Notes:
B = well sampled by BRC for the indicated parameter.
TDS = Total dissolved solid
--- = Well not sampled for indicated parameter.

TABLE 2-4
ANALYTES INCLUDED IN CAMU LONG-TERM MONITORING PROGRAM
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA

Parameter of Interest	Preparation Method	Analytical Method	Compound List	CAS Number	Laboratory Limits	
Ions	EPA 300.0	EPA 300.0	Bromide	24959-67-9	0.25	mg/L
			Bromine	7726-95-6	0.5	mg/L
			Chlorate	14866-68-3	0.5	mg/L
			Chloride	16887-00-6	0.2	mg/L
			Chlorine	7782-50-5	0.5	mg/L
			Fluoride	16984-48-8	0.1	mg/L
			Nitrate (as N)	14797-55-8	0.02	mg/L
			Nitrite (as N)	14797-65-0	0.02	mg/L
			Orthophosphate	14265-44-2	0.5	mg/L
			Sulfate	14808-79-8	0.5	mg/L
	EPA 300.1	E300.1	Chlorite	14998-27-7	0.02	mg/L
	SM1030F	SM1030F	Ion Balance Difference		NA	--
	EPA 314.0	EPA 314.0	Perchlorate	14797-73-0	1.0	mg/L
Metals	EPA 3010M	EPA 6020A/ 6010C	Aluminum	7429-90-5	30	µg/L
			Arsenic	7440-38-2	0.95	µg/L
			Barium	7440-39-3	2	µg/L
			Beryllium	7440-41-7	0.5	µg/L
			Cadmium	7440-43-9	0.5	µg/L
			Calcium	7440-70-2	100	µg/L
			Chromium	7440-47-3	10	µg/L
			Cobalt	7440-48-4	2	µg/L
			Copper	7440-50-8	1	µg/L
			Iron	7439-89-6	50	µg/L
			Lead	7439-92-1	3	µg/L
			Lithium	1313-13-9	50	µg/L
			Magnesium	7439-95-4	50	µg/L
			Manganese	7439-96-5	2	µg/L
			Nickel	7440-02-0	5	µg/L
			Potassium	7440-09-7	100	µg/L
			Silver	7440-22-4	2	µg/L
			Sodium	7440-23-5	50	µg/L
			Strontium	7440-24-6	5	µg/L
			Thallium	7440-28-0	2	µg/L
			Titanium	7440-32-6	2	µg/L
			Uranium	7440-61-1	1	µg/L
			Vanadium	7440-62-2	10	µg/L
			Zinc	7440-66-6	10	µg/L
	EPA 3060A	EPA 7196A	Chromium (VI)	18540-29-9	10	µg/L
Water Quality Parameters	EPA 6010C	EPA 6010C	Hardness, total	HARD	5	mg/L
	EPA 160.1	EPA 160.1	Total dissolved solids	10-33-3	5	mg/L
	EPA 310.1	EPA 310.1	Alkalinity, Total (as $CACO_3$)	ALKALINITY	5	mg/L
			Bicarbonate alkalinity	ALKB	5	mg/L
			Carbonate alkalinity	ALKC	5	mg/L
			Hydroxide alkalinity	OH-ALK	5	mg/L

Reporting Limits - Based on laboratory limits for primary laboratories (TestAmerica and GEL).
Laboratory limits are subject to matrix interferences and may not always be achieved in all samples.
µg/L = micrograms per liter
mg/L = milligrams per liter
NA = Not applicable

TABLE 2-5
SAMPLING REQUIREMENTS
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA

Method Class	Compound	Groundwater	
		Holding Time	Container/ Preservative
Ions	Bromide	28 days	250-mL poly (unpreserved)
	Bromine		
	Chlorate		
	Chloride		
	Chlorite		
	Fluoride		
	Nitrate	48 hours	
	Nitrite		
	Orthophosphate		
	Sulfate	28 days	
	Perchlorate		
	Ion Balance	NA	NA
Metals	See Table 2-4	180 days	500-mL poly (HNO_3)
	Hexavalent Chromium	24 hours	250 mL poly (unpreserved)
Water Quality Parameters	Hardness	6 months	1-L poly (HNO_3)
	Total Dissolved Solids	7 days	1-L poly (unpreserved)
	Alkalinity	14 days	
	Conductivity	Field Measurement	
	pH		

Note: A number of the methods require addition of $Na_2S_2O_3$ if residual chlorine is present. This may be unnecessary for groundwater but is noted here for completeness.

TABLE 2-7
DATA VALIDATION QUALIFIERS AND REASON CODES
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA

Laboratory Qualifier	Definition
U	Organic and inorganic analyses: the analyte was not detected above the level of the reported sample quantitation limit.
B	Inorganic analyses: the analyte was detected between the method detection limit and the sample quantitation limit.
	Organic analyses: the analyte was detected in the associated method blank.
J	Organic analyses: the analyte was detected between the method detection limit and the sample quantitation limit.
E	Organic and inorganic analyses: the sample concentration was greater than the calibration's upper limit and should be considered to be an estimated value.
*	Inorganic analyses: the analytical duplicate precision was not within control limits.
N	Inorganic analyses: the matrix spike was not within control limits.
D	Organic and inorganic analyses: the sample result was diluted.

Functional Guidelines Validation Qualifier	Definition
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
UJ	The nondetected analyte was qualified as estimated at the sample quantitation limit. The reported sample quantitation limit is approximate and may be inaccurate or imprecise.
R	The sample result is rejected and unusable due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
J+	The result is an estimated quantity, biased high. The associated numerical value is the approximate concentration of the analyte in the sample.
J-	The result is an estimated quantity, biased low. The associated numerical value is the approximate concentration of the analyte in the sample.

TABLE 2-7
DATA VALIDATION QUALIFIERS AND REASON CODES
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA

Project- Specific Validation Qualifier	Definition
X[##]	The analytical result is not used for reporting because a more accurate and precise result is reported in its place.
Z[##]	The associated data has not been subjected to the data review/validation process.
J-TDS	Inorganic analysis: the analytical result is estimated based on failure of Total Dissolved Solids (TDS) correctness check performed in accordance with Standard Methods (see Section 5.1)
J-CAB	Inorganic analysis: the analytical result is estimated based on failure of cation-anion balance correctness check performed in accordance with Standard Methods
R-TDS&CAB	Inorganic analysis: the analytical result is unreliable based on failure of cation-anion balance and TDS correctness checks performed in accordance with Standard Methods.

Validation Reason Code	Definition
0	The analyte was non-detected based on laboratory analyses and not due to any qualifications of the data.
1	The sample preparation and/or analytical holding time was exceeded.
2[#]	The analyte was detected below the report limit but above the method detection limit.
3	The analyte was detected in an associated laboratory blank sample.
4	The MS/MSD recovery was outside of control limits.
5	The LCS recovery was outside of control limits.
6[##]	The MS/MSD RPD was outside of control limits.
7[##]	The LCS RPD was outside of control limits.
8	The surrogate recovery was outside of control limits.
9[##]	Level IV data validation qualification.
10	The sample chromatogram did not resemble the standard hydrocarbon pattern.
11	The sample concentration was greater than the instrument's calibration range.
12	The calibration criterion of RRF, %D, and/or %RSD was not met.
13	The analyte was detected in field blank, rinsate blank, and/or trip blank sample.
14	The internal standards did not meet control criteria.
15	The serial dilution did not meet control criteria.
16	The difference between columns did not meet control criteria.
17	Field duplicates did not meet the 50% RPD control criterion.
18	Sample receipt temperature exceeded the acceptable range of from 4 to 6 degrees Celsius.

TABLE 2-7
DATA VALIDATION QUALIFIERS AND REASON CODES
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA

Validation Reason Code	Definition
19	Analytical duplicate precision did not meet control criteria.
20	Headspace in vials containing water samples to be analyzed for volatiles.
21	The tracer yields did not meet control criteria.
22	The ratio of the measured TDS value to the mathematically calculated TDS sum was outside the specified error range (the cation-anion balance was within the error limits specified in Standard Methods).
23	The cation-anion balance was outside the error limits specified in Standard Methods (the ratio of the measured TDS value to the mathematically calculated TDS sum was within the specified error range).
24	The cation-anion balance was outside the error limits specified in Standard Methods, and the ratio of the measured TDS value to the mathematically calculated TDS sum was outside the specified error range.
25	Other

[#] This reason code is applied to data entries with lab qualifiers J (organic) or B (inorganic), as defined

[##] These reason codes were used in the validation of historical data and will not be used in current and

[##] These reason codes were used in the validation of historical data and will not be used in current and
future site investigations.

TABLE 2-8
SUMMARY OF CATION-ANION BALANCE AND RELATED CALCULATIONS
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA
(Page 1 of 3)

Summary of Cation-Anion Balance and Related Calculations

			Major Ion Chemistry Data Input									TDS and EC Input	
Well	Zone	pH	Ca 2+ (mg/L)	Mg 2+ (mg/L)	Na 1+ (mg/L)	K 1+ (mg/L)	HCO_3 1- (mg/L)	SO_4 2- (mg/L)	Cl 1- (mg/L)	F 1- (mg/L)	NO_3 1- (mg/L)	TDS Measured (mg/L)	EC Measured (µmhos/cm)
AA-BW-04A	Shallow	7.62	610	610	5000	51	460	1900	9000	1.1	0.014 ND	17000	30400
AA-BW-04A(FD)	Shallow	7.62	620	620	5000	52	460	1800	9000	1.0	0.014 ND	17000	30400
AA-BW-05A	Shallow	8.15	540	690	7600	69	680	2700	8300	0.2 ND	0.014 ND	18000	31500
AA-BW-06A	Shallow	7.90	560	300	1400	33	250	1500	2700	2	0.014 ND	6800	12600
AA-BW-08A	Shallow	8.15	520	500	8900	47	350	2400	15000	0.2 ND	0.14 ND	26000	46300
AA-BW-12A	Shallow	7.69	580	460	1300	30	240	680	2500	0.5	0.014 ND	5600	9680
AA-MW-07	Shallow	7.66	780	770	4300	28	170	2700	8300	0.6	0.46	16000	28600
H-28	Shallow	7.34	780	740	1600	24	160	1400	5100	0.86	0.014 ND	9700	18500
H-43	Shallow	6.81	730	520	3800	62	600	2400	4000	1.8	0.014 ND	11000	18500

Notes:
FD - field duplicate
ND - not detected
NA - not applicable
meq/L - milliequivalents per liter
mg/meq - milligrams per milliequivalent
mg/L - milligrams per liter
µmhos/cm - micromhos per centimeter

Qualifiers:
J-TDS - the analytical result is estimated based on failure of Total Dissolved Solids (TDS) correctness check performed in accordance with Standard Methods.
R-CAB&TDS -the analytical result is rejected based on failure of Total Dissolved Solids (TDS) correctness check and cation-anion balance (CAB) performed in accordance with Standard Methods.

TABLE 2-8
SUMMARY OF CATION-ANION BALANCE AND RELATED CALCULATIONS
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA
(Page 2 of 3)

Summary of Cation-Anion Balance and Related Calculations

			meq/l Calculations								
			Ca	Mg	Na	K	HCO_3	SO_4	Cl	F	NO_3
			20.039	12.153	22.969	39.098	61.016	48.031	35.453	18.998	62.004
			(mg/meq)	(mg/meq)	(mg/meq)	(mg/meq)	(mg/meq)	(mg/meq)	(mg/meq)	(mg/meq)	(mg/meq)
Well	**Zone**	**pH**	(meq/L)	(meq/L)	(meq/L)	(meq/L)	(meq/L)	(meq/L)	(meq/L)	(meq/L)	(meq/L)
AA-BW-04A	Shallow	7.62	30	50	220	1.3	7.5	40	250	0.058	NA
AA-BW-04A(FD)	Shallow	7.62	31	51	220	1.3	7.5	37	250	0.053	NA
AA-BW-05A	Shallow	8.15	27	57	330	1.8	11	56	230	NA	NA
AA-BW-06A	Shallow	7.90	28	25	61	0.84	4.1	31	76	0.11	NA
AA-BW-08A	Shallow	8.15	26	41	390	1.2	5.7	50	420	NA	NA
AA-BW-12A	Shallow	7.69	29	38	57	0.77	3.9	14	71	0.028	NA
AA-MW-07	Shallow	7.66	39	63	190	0.72	2.8	56	230	0.03	0.0074
H-28	Shallow	7.34	39	61	70	0.61	2.6	29	140	0.045	NA
H-43	Shallow	6.81	36	43	170	1.6	9.8	50	110	0.095	NA

Notes:
FD - field duplicate
ND - not detected
NA - not applicable
meq/L - milliequivalents per liter
mg/meq - milligrams per milliequivalent
mg/L - milligrams per liter
µmhos/cm - micromhos per centimeter

Qualifiers:
J-TDS - the analytical result is estimated based on failure of Total Dissolved Solids (TDS) correctness check performed in accordance with Standard Methods.
R-CAB&TDS -the analytical result is rejected based on failure of Total Dissolved Solids (TDS) correctness check and cation-anion balance (CAB) performed in accordance with Standard Methods.

TABLE 2-8
SUMMARY OF CATION-ANION BALANCE AND RELATED CALCULATIONS
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA
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Summary of Cation-Anion Balance and Related Calculations

			Cation-Anion Balance Tests				TDS Checks			Lab TDS and EC		
Well	Zone	pH	Sum Cations (meq/L)	Sum Anions (meq/L)	(Cat-An)/(Cat+An) (%)	Acceptable Variance <5%	TDS Sum (mg/L)	Lab/Sum Ratio -	Acceptable Ratio 1.0 - 1.2	Lab TDS / EC Ratio -	Acceptable Range 0.54 - 0.96 0.54 - 1.7	Qualifier
AA-BW-04A	Shallow	7.62	300	300	0	PASS	17000	1.0	FAIL	0.56	PASS	J-TDS
AA-BW-04A(FD)	Shallow	7.62	300	300	0	PASS	17000	1.0	FAIL	0.56	PASS	J-TDS
AA-BW-05A	Shallow	8.15	420	300	17	FAIL	20000	0.9	FAIL	0.57	PASS	R-CAB&TDS
AA-BW-06A	Shallow	7.90	110	110	0	PASS	6600	1.0	FAIL	0.54	PASS	J-TDS
AA-BW-08A	Shallow	8.15	460	480	2.1	PASS	28000	0.9	FAIL	0.56	PASS	J-TDS
AA-BW-12A	Shallow	7.69	120	89	15	FAIL	5700	1.0	FAIL	0.58	PASS	R-CAB&TDS
AA-MW-07	Shallow	7.66	290	290	0	PASS	17000	0.9	FAIL	0.56	PASS	J-TDS
H-28	Shallow	7.34	170	180	2.9	PASS	9700	1.0	FAIL	0.52	FAIL	J-TDS
H-43	Shallow	6.81	250	170	19	FAIL	12000	0.9	FAIL	0.59	PASS	R-CAB&TDS

Notes:
FD - field duplicate
ND - not detected
NA - not applicable
meq/L - milliequivalents per liter
mg/meq - milligrams per milliequivalent
mg/L - milligrams per liter
µmhos/cm - micromhos per centimeter

Qualifiers:
J-TDS - the analytical result is estimated based on failure of Total Dissolved Solids (TDS) correctness check performed in accordance with Standard Methods.
R-CAB&TDS -the analytical result is rejected based on failure of Total Dissolved Solids (TDS) correctness check and cation-anion balance (CAB) performed in accordance with Standard Methods.

TABLE 2-9
TOTAL METALS RESULTS
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Aluminum	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Chromium (VI)	Cobalt
					Units	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L
					MCL	--	10	2000	4	5	--	100	100	--
					BCL	50	10	2000	4	5	--	100	100	10
Shallow	Upgradient	AA-BW-08A	30	N	04/15/05	< 851 U	153	7.7 J	1.9 J	< 0.53 U	227	< 6.9 U	< 10 U	< 1.1 U
Shallow	Upgradient	AA-BW-08A	49	N	10/25/07	< 248 U	125 J	30.4 J	< 13 U	< 1.1 U	293	< 50 U	< 2.5 UJ	< 6.1 U
Shallow	Upgradient	AA-BW-08A	55a	N	01/20/09	< 36 U	170	37.7	< 0.8 U	< 0.4 U	307 J-CAB	< 5 U	< 20 U	0.39 J
Shallow	Upgradient	AA-BW-08A	55b	N	04/28/09	349	175	34.2	< 0.8 U	< 0.4 U	R-CAB&TDS	< 5 U	18.5 J	0.46 J
Shallow	Upgradient	AA-BW-08A	55b	FD	04/28/09	< 36 U	173	35.8	< 0.8 U	< 0.4 U	345 J-TDS	< 5 U	18.5 J	0.43 J
Shallow	Upgradient	AA-BW-08A	55c	N	07/29/09	< 36.2 U	162	34.6	< 0.8 U	< 0.4 U	351	5 J	< 6 U	< 20 U
Shallow	Upgradient	AA-BW-08A	55d	N	10/29/09	< 36.2 U	178	36	< 0.8 U	< 0.4 U	366 J-TDS	< 5 U	< 0.75 U	0.72 J
Shallow	Upgradient	AA-BW-08A	55e	N	04/23/10	< 90 U	180 J	43 J	< 2 U	< 1 U	450 J-TDS	14 J	< 0.75 U	< 0.25 U
Shallow	Upgradient	AA-BW-08A	55f	N	10/25/10	< 150 U	120	47	< 0.08 U	< 0.5 U	R-CAB&TDS	1.3 J	< 0.7 U	< 2 U
Shallow	Upgradient	AA-BW-08A	55g	N	03/25/11	< 18 U	160	45	< 0.4 U	0.28 J	R-CAB&TDS	< 2.5 U	< 0.7 U	< 10 U
Shallow	Upgradient	AA-BW-08A	55h	N	10/21/11	10 J	93	44	< 0.08 U	< 0.04 U	390 J-TDS	< 0.5 U	1.25 J	0.076 J
Shallow	Upgradient	AA-BW-08A	74a	N	04/18/13	< 260 U	290 J+	150 J+	< 7 U	< 2 U	1100	< 65 U	< 0.35 U	< 4.3 U
Shallow	Upgradient	AA-BW-08A	74b	N	04/15/14	< 260 U	280	91	< 7 U	< 2 U	800	< 65 U	0.6 J	< 4.3 U
Shallow	Upgradient	AA-BW-08A	74c	N	04/28/15	100 J	120	47	< 1.8 U	< 0.5 U	R-CAB&TDS	< 5 U	< 0.075 U	< 1.1 U
Shallow	Upgradient	AA-BW-08A	74c	FD	04/29/15	< 87 U	120	42	< 1.8 U	< 0.5 U	R-CAB&TDS	< 5 U	--	< 1.1 U
Shallow	Upgradient	AA-BW-08A	74d	N	04/25/16	< 1700 U	190 J	51 J	< 35 U	< 10 U	520 J-TDS	< 100 U	3.2 J	< 22 U
Shallow	Upgradient	AA-BW-12A	49	N	10/23/07	4350	445	90.8	< 12.79 U	< 1.05 U	248	250 U	< 2.5 UJ	< 6.1 U
Shallow	Upgradient	AA-BW-12A	55d	N	10/13/09	928	258	55.8	< 0.4 U	< 0.2 U	270 J-TDS	4.5 J	< 0.15 U	1.8 J
Shallow	Upgradient	AA-BW-12A	55e	N	04/20/10	280 J	310	59	< 1.6 U	< 1 U	280 J-TDS	< 10 U	< 0.75 U	< 0.2 U
Shallow	Upgradient	AA-BW-12A	55f	N	10/25/10	< 150 U	260	48	< 0.08 U	< 0.5 U	320 J-TDS	< 0.5 U	< 0.14 U	< 2 U
Shallow	Upgradient	AA-BW-12A	55f	FD	10/25/10	< 150 U	340	47	< 0.08 U	< 0.5 U	R-CAB&TDS	0.5 J	< 0.14 U	< 2 U
Shallow	Upgradient	AA-BW-12A	55g	N	03/30/11	11 J	280	48	< 0.16 U	< 0.08 U	300 J-TDS	< 1 U	< 0.14 U	0.36 J
Shallow	Upgradient	AA-BW-12A	55g	FD	03/30/11	7.4 J	310	46	< 0.16 U	< 0.08 U	R-CAB&TDS	< 1 U	< 0.14 U	0.28 J
Shallow	Upgradient	AA-BW-12A	55h	N	10/27/11	200 J	310	46	< 0.08 U	< 0.04 UJ	330 J-TDS	0.95 J	< 0.35 U	0.39 J
Shallow	Upgradient	AA-BW-12A	55h	FD	10/27/11	31 J	320	45	< 0.08 U	< 0.04 UJ	320 J-TDS	0.56 J	< 0.07 U	0.15 J
Shallow	Upgradient	AA-BW-12A	74a	N	04/18/13	< 260 U	610 J+	67 J+	< 7 U	< 2 U	360	< 65 U	< 0.07 U	< 4.3 U
Shallow	Upgradient	AA-BW-12A	74b	N	04/15/14	< 260 U	600	68	< 7 U	< 2 U	380	< 65 U	0.292 J	< 4.3 U
Shallow	Upgradient	AA-BW-12A	74c	N	05/04/15	230	290	47	< 1.8 U	< 0.5 U	R-CAB&TDS	< 5 U	0.107 J	1.1 J

TABLE 2-9
TOTAL METALS RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Aluminum	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Chromium (VI)	Cobalt
					Units	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L
					MCL	--	10	2000	4	5	--	100	100	--
					BCL	50	10	2000	4	5	--	100	100	10
Shallow	Upgradient	AA-BW-12A	74d	N	04/25/16	< 170 U	340	61	< 3.5 U	< 1 U	R-TDS&CAB	< 10 U	2.32 J	< 2.2 U
Shallow	Upgradient	AA-MW-07	55a	N	01/22/09	94.4 J	360	49.9	< 0.8 U	< 0.4 U	818	< 5 U	< 50 U	0.67 J
Shallow	Upgradient	AA-MW-07	55b	N	04/24/09	< 18 U	343	46.5	< 0.4 U	< 0.2 U	835 J-TDS	< 2.5 U	< 15 U	0.64 J
Shallow	Upgradient	AA-MW-07	55c	N	07/27/09	< 300 U	342	45.3	< 0.8 U	< 0.4 U	736 J-TDS	< 5 U	--	< 20 U
Shallow	Upgradient	AA-MW-07	55d	N	10/22/09	< 36.2 U	364	48.4	< 0.8 U	< 0.4 U	778 J-TDS	< 5 U	< 0.75 U	< 0.1 U
Shallow	Upgradient	AA-MW-07	55e	N	05/12/10	< 180 U	720	88 J	< 4 U	< 1 U	800 J-TDS	27 J	< 0.75 U	< 0.5 U
Shallow	Upgradient	AA-MW-07	55f	N	10/29/10	< 18 U	360	47	< 0.08 U	0.17 J	820 J-TDS	1.4 J	< 0.7 U	< 2 U
Shallow	Upgradient	AA-MW-07	55g	N	03/31/11	< 36 U	380	45	< 0.8 U	< 0.4 U	700 J-TDS	< 5 U	< 0.7 U	0.72 J
Shallow	Upgradient	AA-MW-07	55h	N	10/27/11	< 9.2 U	320	39	< 0.08 U	< 0.04 UJ	790 J-TDS	0.83 J	< 0.35 U	0.29 J
Shallow	Upgradient	AA-MW-07	74a	N	04/22/13	< 260 U	350	38 J	< 7 U	< 2 U	R-CAB&TDS	< 65 U	< 0.07 U	< 4.3 U
Shallow	Upgradient	AA-MW-07	74b	N	04/17/14	< 260 U	330	37 J	< 7 U	< 2 U	980	< 65 U	< 0.35 U	< 4.3 U
Shallow	Upgradient	AA-MW-07	74c	N	04/28/15	< 430 U	370	37 J	< 8.8 U	< 2.5 U	900 J-TDS	< 25 U	< 0.075 U	< 5.4 U
Shallow	Upgradient	AA-MW-07	74d	N	04/25/16	< 870 U	400 J	53 J	24 J	17 J	780 J-TDS	< 50 U	< 0.33 U	14 J
Shallow	Downgradient	AA-BW-04A	30	N	04/19/05	< 851 U	161	< 3.1 U	< 0.57 U	< 0.53 U	272	< 6.9 U	< 10 U	< 1.1 U
Shallow	Downgradient	AA-BW-04A	49	N	10/23/07	< 248 U	92.1 J	46.2 J	< 13 U	< 1.1 U	368	< 50 U	< 2.5 U	< 6.1 U
Shallow	Downgradient	AA-BW-04A	55a	N	01/26/09	50	104	49	< 0.8 U	< 0.4 U	354	< 5 U	< 10 U	1.1
Shallow	Downgradient	AA-BW-04A	55a	FD	01/26/09	< 36 U	103	49.9	< 0.8 U	< 0.4 U	362	< 5 U	< 10 U	1
Shallow	Downgradient	AA-BW-04A	55b	N	04/20/09	530	106	51	< 0.8 U	< 0.4 U	357 J-TDS	< 5 U	< 3 U	< 0.1 U
Shallow	Downgradient	AA-BW-04A	55b	FD	04/20/09	343	108	52.8	< 0.8 U	< 0.4 U	359 J-TDS	< 5 U	< 3 U	< 0.1 U
Shallow	Downgradient	AA-BW-04A	55c	N	07/21/09	< 300 U	99.9 J	50.1	< 0.8 U	< 0.4 U	341	< 5 U	< 3 U	< 20 U
Shallow	Downgradient	AA-BW-04A	55d	N	10/21/09	< 36.2 U	104	52.4	< 0.8 U	< 0.4 U	R-CAB&TDS	9.3 J	< 0.75 U	1.6 J
Shallow	Downgradient	AA-BW-04A	55d	FD	10/21/09	< 36.2 U	104	51.6	< 0.8 U	< 0.4 U	R-CAB&TDS	8.1 J	< 0.75 U	1.5 J
Shallow	Downgradient	AA-BW-04A	55e	N	05/12/10	< 90 U	93 J	51	< 1.6 U	< 1 U	400 J-TDS	< 10 U	< 0.75 U	< 0.2 U
Shallow	Downgradient	AA-BW-04A	55f	N	10/28/10	< 18 U	85	52	< 0.08 U	0.042 J	390 J-TDS	0.61 J	< 0.7 U	< 2 U
Shallow	Downgradient	AA-BW-04A	55f	FD	10/28/10	< 18 U	88	54	< 0.08 U	0.1 J	390 J-TDS	0.68 J	< 0.7 U	< 2 U
Shallow	Downgradient	AA-BW-04A	55g	N	03/24/11	< 150 U	79	52	< 0.4 U	< 0.2 U	440 J-TDS	< 2.5 U	< 0.7 U	< 10 U
Shallow	Downgradient	AA-BW-04A	55g	FD	03/24/11	< 150 U	83	52	< 0.4 U	< 0.2 U	440 J-TDS	< 2.5 U	< 0.7 U	< 10 U
Shallow	Downgradient	AA-BW-04A	55h	N	10/20/11	21 J	77	51	< 0.08 U	< 0.04 U	470	0.56 J	< 0.7 U	0.98 J

TABLE 2-9
TOTAL METALS RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Aluminum	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Chromium (VI)	Cobalt
					Units	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L
					MCL	--	10	2000	4	5	--	100	100	--
					BCL	50	10	2000	4	5	--	100	100	10
Shallow	Downgradient	AA-BW-04A	55h	FD	10/20/11	15 J	78	52	< 0.08 U	< 0.04 U	460 J-TDS	0.54 J	< 0.7 U	1.1 J
Shallow	Downgradient	AA-BW-04A	74a	N	04/19/13	< 260 U	85 J	58	< 7 U	< 2 U	660	< 65 U	< 0.35 U	< 4.3 U
Shallow	Downgradient	AA-BW-04A	74a	FD	04/19/13	< 260 U	86 J	65	< 7 U	< 2 U	650	< 65 U	< 0.35 U	< 4.3 U
Shallow	Downgradient	AA-BW-04A	74b	N	04/16/14	< 260 U	89 J	57	< 7 U	< 2 U	690	< 65 U	< 0.35 U	< 4.3 U
Shallow	Downgradient	AA-BW-04A	74b	FD	04/16/14	< 260 U	84 J	57	< 7 U	< 2 U	710 J-TDS	< 65 U	< 0.35 U	< 4.3 U
Shallow	Downgradient	AA-BW-04A	74c	N	04/28/15	< 87 U	74	52	< 1.8 U	< 0.5 U	580 J; J-TDS	< 5 U	< 0.015 U	< 1.1 U
Shallow	Downgradient	AA-BW-04A	74d	N	05/10/16	< 87 U	96	63	< 1.8 U	< 0.5 U	610 J-TDS	< 5 U	< 0.33 U	1.4 J
Shallow	Downgradient	AA-BW-04A	74d	FD	05/10/16	< 87 U	99	65	< 1.8 U	< 0.5 U	620 J-TDS	< 5 U	< 0.33 U	1.3 J
Shallow	Downgradient	AA-BW-05A	30	N	04/19/05	< 425 U	177	57 J	< 0.57 U	< 0.53 U	209	< 6.9 U	< 10 U	< 0.57 U
Shallow	Downgradient	AA-BW-05A	49	N	10/23/07	< 248 U	55.6 J	34.9 J	< 13 U	< 1.1 U	353	< 50 U	< 2.5 U	< 6.1 U
Shallow	Downgradient	AA-BW-05A	55a	N	01/23/09	< 36 U	70.3 J	41.7	< 0.8 U	< 0.4 U	377	< 5 U	< 10 U	0.66 J
Shallow	Downgradient	AA-BW-05A	55b	N	04/21/09	548	113	47.2	< 0.8 U	< 0.4 U	377 J-TDS	< 5 U	< 6 U	< 0.1 U
Shallow	Downgradient	AA-BW-05A	55c	N	07/21/09	< 300 U	117	44.2	< 0.8 U	< 0.4 U	325	< 5 U	< 3 U	< 20 U
Shallow	Downgradient	AA-BW-05A	55d	N	10/20/09	< 36.2 U	85 J	38.2	< 0.8 U	< 0.4 U	R-CAB&TDS	9.3 J	< 0.6 U	1.6 J
Shallow	Downgradient	AA-BW-05A	55d	FD	10/20/09	< 36.2 U	81.4 J	38.5	< 0.8 U	< 0.4 U	R-CAB&TDS	8.6 J	< 0.6 U	1.4 J
Shallow	Downgradient	AA-BW-05A	55e	N	05/12/10	< 90 U	84 J	37 J	< 1.6 U	< 1 U	330 J-TDS	< 10 U	< 0.75 U	< 0.2 U
Shallow	Downgradient	AA-BW-05A	55f	N	10/27/10	< 150 U	130	39	< 0.08 U	< 0.5 U	R-CAB&TDS	1.5 J	< 0.7 U	< 2 U
Shallow	Downgradient	AA-BW-05A	55g	N	03/24/11	< 18 U	95	37	< 0.4 U	< 0.2 U	260 J-TDS	< 2.5 U	< 0.7 U	< 10 U
Shallow	Downgradient	AA-BW-05A	55h	N	10/20/11	< 9.2 U	95	35	< 0.08 U	< 0.04 U	230 J-TDS	< 0.5 U	< 0.7 U	0.88 J
Shallow	Downgradient	AA-BW-05A	74a	N	04/18/13	< 260 U	85 J+	44 J+	< 7 U	< 2 U	220	< 65 U	< 0.35 U	< 4.3 U
Shallow	Downgradient	AA-BW-05A	74b	N	04/15/14	< 260 U	49 J	50	< 7 U	< 2 U	370	< 65 U	< 0.35 U	< 4.3 U
Shallow	Downgradient	AA-BW-05A	74c	N	04/29/15	< 87 U	33 J	49	< 1.8 U	< 0.5 U	360 J; J-TDS	< 5 U	< 0.075 U	< 1.1 U
Shallow	Downgradient	AA-BW-05A	74d	N	04/27/16	< 870 U	< 59 U	79 J	< 18 U	< 5 U	R-TDS&CAB	< 50 U	< 0.33 U	< 11 U
Shallow	Downgradient	AA-BW-06A	30	N	04/19/05	< 85 U	81	46.6 J	< 0.57 U	< 0.53 U	133	< 6.9 U	< 10 U	< 0.11 U
Shallow	Downgradient	AA-BW-06A	49	N	10/23/07	< 198 U	120 J	32.6 J	< 2.6 U	< 0.84 U	209	< 40 U	< 2.5 U	< 2.9 U
Shallow	Downgradient	AA-BW-06A	55a	N	01/27/09	19.1	137	42.8	< 0.16 U	< 0.08 U	335	1.1	< 20 U	0.13
Shallow	Downgradient	AA-BW-06A	55b	N	04/22/09	< 7.2 U	144	41.7	< 0.16 U	< 0.08 U	299 J-TDS	< 1 U	< 6 U	0.078 J
Shallow	Downgradient	AA-BW-06A	55c	N	07/30/09	< 36.2 U	127	36.6	< 0.8 U	< 0.4 U	314 J-TDS	< 5 U	< 3 U	0.44 J

TABLE 2-9
TOTAL METALS RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Aluminum	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Chromium (VI)	Cobalt
					Units	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L
					MCL	--	10	2000	4	5	--	100	100	--
					BCL	50	10	2000	4	5	--	100	100	10
Shallow	Downgradient	AA-BW-06A	55d	N	10/23/09	< 36.2 U	134	37.2	< 0.8 U	< 0.4 U	R-CAB&TDS	< 5 U	< 0.15 U	< 0.1 U
Shallow	Downgradient	AA-BW-06A	55e	N	05/12/10	< 90 U	130 J	34 J	< 2 U	< 1 U	260 J-TDS	13 J	< 0.15 U	< 0.25 U
Shallow	Downgradient	AA-BW-06A	55f	N	10/27/10	< 18 U	150	35	< 0.08 U	< 0.5 U	R-CAB&TDS	0.86 J	< 0.14 U	< 2 U
Shallow	Downgradient	AA-BW-06A	55g	N	03/30/11	< 7.2 U	140	34	< 0.16 U	< 0.08 U	250 J-TDS	< 1 U	< 0.14 U	0.17 J
Shallow	Downgradient	AA-BW-06A	55h	N	10/28/11	< 9.2 U	130	34	< 0.08 U	< 0.04 UJ	R-CAB&TDS	0.73 J	< 0.07 U	< 0.054 U
Shallow	Downgradient	AA-BW-06A	74a	N	04/18/13	< 260 U	190 J+	53 J+	< 7 U	< 2 U	310	< 65 U	< 0.07 U	< 4.3 U
Shallow	Downgradient	AA-BW-06A	74b	N	04/15/14	< 260 U	140 J	38 J	< 7 U	< 2 U	380 J-CAB	< 65 U	< 0.07 U	< 4.3 U
Shallow	Downgradient	AA-BW-06A	74c	N	04/29/15	< 87 U	150	40	< 1.8 U	< 0.5 U	450 J; J-TDS	< 5 U	< 0.015 U	< 1.1 U
Shallow	Downgradient	AA-BW-06A	74d	N	04/27/16	< 170 U	150	40	< 3.5 U	< 1 U	560 J-TDS	< 10 U	< 0.066 U	< 2.2 U
Shallow	Downgradient	H-28	55a	N	01/26/09	148	246	60.4	< 0.4 U	< 0.2 U	575	< 2.5 U	< 10 U	11.5
Shallow	Downgradient	H-28	55b	N	04/22/09	< 18 U	268	55.2	< 0.4 U	< 0.2 U	559 J-CAB	< 2.5 U	< 3 U	12.5
Shallow	Downgradient	H-28	55c	N	07/22/09	< 300 U	272	58	< 0.8 U	< 0.4 U	582 J-TDS	< 5 U	< 3 U	< 20 U
Shallow	Downgradient	H-28	55c	FD	07/22/09	< 300 U	267	55.8	< 0.8 U	< 0.4 U	584 J-TDS	< 5 U	< 3 U	< 20 U
Shallow	Downgradient	H-28	55d	N	10/20/09	109 J	306	61.7	< 0.4 U	0.24 J	643 J-TDS	4.4 J	< 0.15 U	15.6
Shallow	Downgradient	H-28	55e	N	04/21/10	180 J	280	72	< 1.6 U	< 1 U	640 J-TDS	< 10 U	< 0.15 U	< 0.2 U
Shallow	Downgradient	H-28	55f	N	10/26/10	200	260	67	< 0.08 U	< 0.5 U	580 J-TDS	0.67 J	< 0.14 U	15
Shallow	Downgradient	H-28	55g	N	03/24/11	< 150 U	260	66	< 0.4 U	< 0.2 U	640 J-TDS	< 2.5 U	< 0.7 U	15
Shallow	Downgradient	H-28	55h	N	10/20/11	2100	240	98	0.17 J	11	R-CAB&TDS	4.7 J	< 0.14 U	13
Shallow	Downgradient	H-28	74a	N	04/22/13	2000	260	89	< 7 U	2.4 J	R-CAB&TDS	< 65 U	< 0.07 U	14 J
Shallow	Downgradient	H-28	74b	N	04/17/14	1100	210	81	< 7 U	< 2 U	920 J-TDS	< 65 U	< 0.07 U	9.4 J
Shallow	Downgradient	H-28	74c	N	04/30/15	14000	210 J	230	< 8.8 U	< 2.5 U	740 J-TDS	< 25 U	< 0.015 U	13 J
Shallow	Downgradient	H-28	74d	N	05/10/16	13000 J+	230	340	1.8 J	2.6	780 J-TDS	22 J	< 0.33 U	20
Shallow	Downgradient	H-43	55a	N	01/27/09	< 7.2 U	71.3	36	< 0.16 U	< 0.08 U	223	1.5	< 250 U	0.5
Shallow	Downgradient	H-43	55b	N	04/21/09	< 7.2 U	76	41.8	< 0.16 U	< 0.08 U	233 J-TDS	< 1 U	< 300 U	< 0.02 U
Shallow	Downgradient	H-43	55c	N	07/30/09	< 36.2 U	78.5 J	30.4	< 0.8 U	< 0.4 U	246	< 5 U	< 3 U	0.45 J
Shallow	Downgradient	H-43	55d	N	10/23/09	< 36.2 U	72.9 J	31.5	< 0.8 U	< 0.4 U	243 J-TDS	< 5 U	< 0.15 U	< 0.1 U
Shallow	Downgradient	H-43	55e	N	05/11/10	< 90 U	84 J	33 J	< 2 U	< 1 U	250 J-TDS	12 J	< 1.5 U	< 0.25 U
Shallow	Downgradient	H-43	55f	N	10/26/10	< 18 U	67	38	< 0.08 U	< 0.5 U	260 J-TDS	< 0.5 U	< 0.7 U	< 2 U

TABLE 2-9
TOTAL METALS RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Aluminum	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Chromium (VI)	Cobalt
					Units	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L
					MCL	--	10	2000	4	5	--	100	100	--
					BCL	50	10	2000	4	5	--	100	100	10
Shallow	Downgradient	H-43	55g	N	03/24/11	< 18 U	100	33	< 0.4 U	< 0.2 U	290 J-TDS	< 2.5 U	< 0.14 U	< 10 U
Shallow	Downgradient	H-43	55h	N	10/20/11	< 9.2 U	71	32	< 0.08 U	0.078 J	300 J-TDS	0.65 J	< 0.7 U	0.4 J
Shallow	Downgradient	H-43	74a	N	04/19/13	< 260 U	40 J	29 J	< 7 U	< 2 U	360	< 65 U	11 J	< 4.3 U
Shallow	Downgradient	H-43	74b	N	04/16/14	< 260 U	60 J	35 J	< 7 U	< 2 U	700	< 65 U	4.94 J	< 4.3 U
Shallow	Downgradient	H-43	74c	N	04/28/15	< 87 U	32 J	30	< 1.8 U	< 0.5 U	510 J; J-TDS	< 5 U	0.94 J	3.1 J
Shallow	Downgradient	H-43	74d	N	04/27/16	< 870 U	260 J	43 J	< 18 U	< 5 U	R-TDS&CAB	< 50 U	< 0.33 U	< 11 U

Note: This table includes all data, regardless of date. Because of this, the total number of analyses does not always coincide with the total number of analyses reported in Table 4-1.

µg/L = micrograms per liter

mg/L = milligrams per liter

-- = no sample data.

TABLE 2-9
TOTAL METALS RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Nickel	Potassium	Silver
					Units	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L
					MCL	1300	--	15	--	--	--	--	--	--
					BCL	1300	300	15	66.7	189	20	667	--	100
Shallow	Upgradient	AA-BW-08A	30	N	04/15/05	< 19 U	< 796 U	49.6	733	64.8	36.7 J	< 6.3 U	6.77	< 2.2 U
Shallow	Upgradient	AA-BW-08A	49	N	10/25/07	< 12 U	< 190 U	< 12 U	398 J+	353	80.9	14.7 J	28.3	< 5.1 U
Shallow	Upgradient	AA-BW-08A	55a	N	01/20/09	< 5.6 U	494 J	< 1.8 U	< 26 U	376 J-CAB	87.8	< 3 U	31.9 J-CAB	< 1.6 U
Shallow	Upgradient	AA-BW-08A	55b	N	04/28/09	< 5.6 U	< 48 U	< 1.8 U	466 J	R-CAB&TDS	102	3.6 J	R-CAB&TDS	< 1.6 U
Shallow	Upgradient	AA-BW-08A	55b	FD	04/28/09	< 5.6 U	< 48 U	< 1.8 U	462 J	400 J-TDS	103	3.1 J	36.8 J-TDS	< 1.6 U
Shallow	Upgradient	AA-BW-08A	55c	N	07/29/09	< 5.6 U	1370	< 1.8 U	484	414	90.4	< 50 U	36.8	< 0.15 U
Shallow	Upgradient	AA-BW-08A	55d	N	10/29/09	< 5.6 U	1550	< 1.8 U	446	465 J-TDS	95.5	3 J	34.2 J+,J-TDS	< 0.15 U
Shallow	Upgradient	AA-BW-08A	55e	N	04/23/10	< 14 U	1500	< 4.5 U	500 J	470 J-TDS	580	< 7.5 U	59 J-TDS	< 0.38 U
Shallow	Upgradient	AA-BW-08A	55f	N	10/25/10	< 2.8 U	3500	< 3 U	450	R-CAB&TDS	620	5.3	R-CAB&TDS	< 2 U
Shallow	Upgradient	AA-BW-08A	55g	N	03/25/11	9.2	1800	< 0.9 U	550	R-CAB&TDS	560	8.4 J	R-CAB&TDS	< 0.075 U
Shallow	Upgradient	AA-BW-08A	55h	N	10/21/11	< 0.56 U	180	< 0.18 U	540	480 J-TDS	290	1.2 J	52 J-TDS	< 0.015 U
Shallow	Upgradient	AA-BW-08A	74a	N	04/18/13	< 9 U	1200 J+	< 3.5 U	750	960	2100 J+	< 8 U	87	4.1 J
Shallow	Upgradient	AA-BW-08A	74b	N	04/15/14	< 9 U	< 410 U	< 3.5 U	< 1500 U	560	1300	< 8 U	41 J	< 15 U
Shallow	Upgradient	AA-BW-08A	74c	N	04/28/15	< 3.4 U	440	< 0.87 U	550	R-CAB&TDS	760 J	< 4 U	R-CAB&TDS	< 4.1 U
Shallow	Upgradient	AA-BW-08A	74c	FD	04/29/15	< 3.4 U	200 J	< 0.87 U	530	R-CAB&TDS	400 J	< 4 U	R-CAB&TDS	< 4.1 U
Shallow	Upgradient	AA-BW-08A	74d	N	04/25/16	< 68 U	< 3300 U	< 17 U	540	500 J-TDS	620	< 80 U	47 J-TDS	< 82 U
Shallow	Upgradient	AA-BW-12A	49	N	10/23/07	15.4 J	3710	< 12.3 U	374 J+	271	1320	18.8 J	46.5	< 5.07 U
Shallow	Upgradient	AA-BW-12A	55d	N	10/13/09	< 2.8 U	5170	< 0.9 U	252	203 J-TDS	2050	6.7 J	24.3 J-TDS	< 0.075 U
Shallow	Upgradient	AA-BW-12A	55e	N	04/20/10	< 11 U	1800	< 3.6 U	270 J	200 J-TDS	2300	< 6 U	24 J-TDS	< 0.3 U
Shallow	Upgradient	AA-BW-12A	55f	N	10/25/10	0.83 J	3100	< 3 U	250	220 J-TDS	2900	4.5 J	22 J-TDS	< 2 U
Shallow	Upgradient	AA-BW-12A	55f	FD	10/25/10	< 2.8 U	2600	< 3 U	240	R-CAB&TDS	2600	4.6 J	R-CAB&TDS	< 0.015 U
Shallow	Upgradient	AA-BW-12A	55g	N	03/30/11	< 1.1 U	1700	< 0.36 U	240	230 J-TDS	2800	3.5 J	20 J-TDS	0.054 J
Shallow	Upgradient	AA-BW-12A	55g	FD	03/30/11	< 2 U	1400	< 0.36 U	240	R-CAB&TDS	2400	3.3 J	R-CAB&TDS	< 0.03 U
Shallow	Upgradient	AA-BW-12A	55h	N	10/27/11	< 0.56 UJ	1400	< 0.18 UJ	250	240 J-TDS	2900	1.7 J	20 J-TDS	< 0.015 UJ
Shallow	Upgradient	AA-BW-12A	55h	FD	10/27/11	< 0.56 UJ	910	< 0.18 UJ	240 J	230 J-TDS	2700	0.94 J	20 J-TDS	< 0.015 UJ
Shallow	Upgradient	AA-BW-12A	74a	N	04/18/13	< 9 U	1800 J+	< 3.5 U	260	250	4200 J+	< 8 U	22	< 1 U
Shallow	Upgradient	AA-BW-12A	74b	N	04/15/14	< 9 U	1600	< 3.5 U	290 J+	290	4300	< 8 U	24 J	< 15 U
Shallow	Upgradient	AA-BW-12A	74c	N	05/04/15	< 3.4 U	1700	< 0.87 U	290	R-CAB&TDS	3400	< 4 U	R-CAB&TDS	< 4.1 U

TABLE 2-9
TOTAL METALS RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Nickel	Potassium	Silver
					Units	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L
					MCL	1300	--	15	--	--	--	--	--	--
					BCL	1300	300	15	66.7	189	20	667	--	100
Shallow	Upgradient	AA-BW-12A	74d	N	04/25/16	< 6.8 U	1900	< 1.7 U	370	R-TDS&CAB	4900	< 8 U	R-TDS&CAB	< 8.2 U
Shallow	Upgradient	AA-MW-07	55a	N	01/22/09	< 5.6 U	1720	< 1.8 U	574	819	1250	6 J	32.1	< 1.6 U
Shallow	Upgradient	AA-MW-07	55b	N	04/24/09	< 2.8 U	1120	< 0.9 U	678	770 J-TDS	1220	3.8 J	36.6 J-TDS	< 0.8 U
Shallow	Upgradient	AA-MW-07	55c	N	07/27/09	71.1 J-	3540	< 1.8 U	666	754 J-TDS	1200	9.8 J	35.5 J-TDS	< 0.15 U
Shallow	Upgradient	AA-MW-07	55d	N	10/22/09	< 5.6 U	3830	< 1.8 U	620	827 J-TDS	1290	12.8 J	33.4 J-TDS	< 0.15 U
Shallow	Upgradient	AA-MW-07	55e	N	05/12/10	65 J+	4800	< 9 U	700 J	760 J-TDS	2500	< 15 U	51 J-TDS	< 0.75 U
Shallow	Upgradient	AA-MW-07	55f	N	10/29/10	< 2.8 U	5100	< 0.18 U	640	800 J-TDS	1500	14	33 J-TDS	< 2 U
Shallow	Upgradient	AA-MW-07	55g	N	03/31/11	< 10 U	2200	< 1.8 U	680	780 J-TDS	1300	10 J	38 J-TDS	< 0.15 U
Shallow	Upgradient	AA-MW-07	55h	N	10/27/11	< 0.56 UJ	560	< 0.18 UJ	600	810 J-TDS	1200	2.3 J	32 J-TDS	< 0.015 UJ
Shallow	Upgradient	AA-MW-07	74a	N	04/22/13	< 9 U	690 J	< 3.5 U	740	R-CAB&TDS	1200 J+	< 8 U	R-CAB&TDS	< 15 UJ
Shallow	Upgradient	AA-MW-07	74b	N	04/17/14	< 9 U	690 J	< 3.5 U	710 J	770	1100	< 8 U	35 J	< 15 U
Shallow	Upgradient	AA-MW-07	74c	N	04/28/15	27	920 J	< 4.3 U	560 J	790 J-TDS	1300	< 20 U	27 J-TDS	< 20 U
Shallow	Upgradient	AA-MW-07	74d	N	04/25/16	< 34 U	< 1600 U	24 J	630	770 J-TDS	1200	< 40 U	28 J-TDS	< 41 U
Shallow	Downgradient	AA-BW-04A	30	N	04/19/05	< 19 U	17 J	34.6	575	526	587 J	< 6.3 U	63.9	< 2.2 U
Shallow	Downgradient	AA-BW-04A	49	N	10/23/07	12.4 J	< 190 U	< 12 U	412 J+	395	519	19 J	43.4	< 5.1 U
Shallow	Downgradient	AA-BW-04A	55a	N	01/26/09	< 5.6 U	563	< 1.8 U	498	419	543	4.4	48.9	< 1.6 U
Shallow	Downgradient	AA-BW-04A	55a	FD	01/26/09	< 5.6 U	488	< 1.8 U	497	429	552	3	50.4	< 1.6 U
Shallow	Downgradient	AA-BW-04A	55b	N	04/20/09	< 5.6 U	350 J	< 1.8 U	518	412 J-TDS	645	4.7 J	45.4 J-TDS	< 1.6 U
Shallow	Downgradient	AA-BW-04A	55b	FD	04/20/09	< 5.6 U	347 J	< 1.8 U	517	415 J-TDS	675	4.9 J	44.9 J-TDS	< 1.6 U
Shallow	Downgradient	AA-BW-04A	55c	N	07/21/09	< 5.6 U	1330	< 1.8 U	483	378	621	7.3 J	49.9	< 0.15 U
Shallow	Downgradient	AA-BW-04A	55d	N	10/21/09	< 5.6 UJ	2540	< 1.8 U	468	R-CAB&TDS	651	13.8 J	R-CAB&TDS	< 0.15 U
Shallow	Downgradient	AA-BW-04A	55d	FD	10/21/09	< 5.6 UJ	2570	< 1.8 U	483	R-CAB&TDS	624	14.8 J	R-CAB&TDS	< 0.15 U
Shallow	Downgradient	AA-BW-04A	55e	N	05/12/10	< 11 U	740 J	< 3.6 U	500 J	460 J-TDS	620	7 J	54 J-TDS	< 0.3 U
Shallow	Downgradient	AA-BW-04A	55f	N	10/28/10	7.3	2300	< 0.18 U	440 J	420 J-TDS	710	6.3	45 J-TDS	< 2 U
Shallow	Downgradient	AA-BW-04A	55f	FD	10/28/10	3.6 J	2200	< 0.18 U	460 J	430 J-TDS	750	6.3	47 J-TDS	< 0.015 U
Shallow	Downgradient	AA-BW-04A	55g	N	03/24/11	4.7 J	1500	< 0.9 U	570	450 J-TDS	680	6.6 J	54 J-TDS	< 10 U
Shallow	Downgradient	AA-BW-04A	55g	FD	03/24/11	14 J	1500	< 0.9 U	560	450 J-TDS	700	7.4 J	56 J-TDS	< 0.075 U
Shallow	Downgradient	AA-BW-04A	55h	N	10/20/11	1	120	0.19 J	590	450	720	2.4 J	50	< 0.015 U

TABLE 2-9
TOTAL METALS RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Nickel	Potassium	Silver
					Units	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L
					MCL	1300	--	15	--	--	--	--	--	--
					BCL	1300	300	15	66.7	189	20	667	--	100
Shallow	Downgradient	AA-BW-04A	55h	FD	10/20/11	0.97 J	130	0.23 J	580	450 J-TDS	710	2.2 J	51 J-TDS	0.044 J
Shallow	Downgradient	AA-BW-04A	74a	N	04/19/13	< 9 U	< 410 U	< 3.5 U	640	640	800 J+	< 8 U	49 J	< 15 UJ
Shallow	Downgradient	AA-BW-04A	74a	FD	04/19/13	< 9 U	< 410 U	< 3.5 U	660	640	890 J+	< 8 U	52	< 15 UJ
Shallow	Downgradient	AA-BW-04A	74b	N	04/16/14	< 9 U	< 410 U	4.1 J	690 J	540	800	< 8 U	51 J	24 J
Shallow	Downgradient	AA-BW-04A	74b	FD	04/16/14	< 9 U	< 410 U	< 3.5 U	640 J	550 J-TDS	830	< 8 U	52 J-TDS	< 15 U
Shallow	Downgradient	AA-BW-04A	74c	N	04/28/15	< 3.4 U	240 J	< 0.87 U	540	540 J-TDS	750	< 4 U	42 J-TDS	< 4.1 U
Shallow	Downgradient	AA-BW-04A	74d	N	05/10/16	8.4	360	< 0.87 U	700	610 J-TDS	890	< 4 U	51 J-TDS	< 4.1 U
Shallow	Downgradient	AA-BW-04A	74d	FD	05/10/16	6.7	370	< 0.87 U	710	620 J-TDS	920	< 4 U	52 J-TDS	< 4.1 U
Shallow	Downgradient	AA-BW-05A	30	N	04/19/05	< 9.4 U	44.5 J	20	500	402	420 J	< 3.1 U	50	< 2.2 U
Shallow	Downgradient	AA-BW-05A	49	N	10/23/07	13.4 J	< 190 U	< 12 U	377 J+	367	355	17.6 J	51.3	< 5.1 U
Shallow	Downgradient	AA-BW-05A	55a	N	01/23/09	< 5.6 U	757	< 1.8 U	< 26 U	449	335	3.5 J	70.3	< 1.6 U
Shallow	Downgradient	AA-BW-05A	55b	N	04/21/09	< 5.6 U	611	< 1.8 U	556	428 J-TDS	400	4 J	77.8 J-TDS	< 1.6 U
Shallow	Downgradient	AA-BW-05A	55c	N	07/21/09	< 5.6 U	1840	< 1.8 U	503	376	383	6.6 J	82	< 20 U
Shallow	Downgradient	AA-BW-05A	55d	N	10/20/09	39.5 J-	2760	< 1.8 U	442	R-CAB&TDS	408	12.1 J	R-CAB&TDS	< 0.15 U
Shallow	Downgradient	AA-BW-05A	55d	FD	10/20/09	37 J-	2620	< 1.8 U	451	R-CAB&TDS	391	11.7 J	R-CAB&TDS	< 0.15 U
Shallow	Downgradient	AA-BW-05A	55e	N	05/12/10	< 11 U	930 J	< 3.6 U	510 J	390 J-TDS	410	< 6 U	81 J-TDS	< 0.3 U
Shallow	Downgradient	AA-BW-05A	55f	N	10/27/10	< 2.8 U	2100	< 3 U	420 J	R-CAB&TDS	760	6.1	R-CAB&TDS	< 0.015 U
Shallow	Downgradient	AA-BW-05A	55g	N	03/24/11	6.5	1300	< 0.9 U	510	320 J-TDS	570	5.1 J	69 J-TDS	< 0.075 U
Shallow	Downgradient	AA-BW-05A	55h	N	10/20/11	< 0.56 U	460	< 0.18 U	500	290 J-TDS	700	1.8 J	57 J-TDS	< 0.015 U
Shallow	Downgradient	AA-BW-05A	74a	N	04/18/13	< 9 U	770 J+	6.7 J+	480	310	790 J+	< 8 U	50	10 J
Shallow	Downgradient	AA-BW-05A	74b	N	04/15/14	< 9 U	950 J	< 3.5 U	< 740 U	490	1100	< 8 U	52 J	< 15 U
Shallow	Downgradient	AA-BW-05A	74c	N	04/29/15	< 3.4 U	790	< 0.87 U	470	420 J-TDS	1300	< 4 U	48 J-TDS	< 4.1 U
Shallow	Downgradient	AA-BW-05A	74d	N	04/27/16	< 34 U	< 1600 U	< 8.7 U	730	R-TDS&CAB	1900	< 40 U	R-TDS&CAB	< 41 U
Shallow	Downgradient	AA-BW-06A	30	N	04/19/05	< 1.9 U	77.1 J	3.4 J	266	147	344	< 0.63 U	22.8	< 2.2 U
Shallow	Downgradient	AA-BW-06A	49	N	10/23/07	5.8 J	< 152 U	< 9.8 U	219 J+	153	135	< 9.7 U	24.4	< 4.1 U
Shallow	Downgradient	AA-BW-06A	55a	N	01/27/09	< 1.1 U	774	< 0.36 U	306	213	195	1.6	33.6	< 0.32 U
Shallow	Downgradient	AA-BW-06A	55b	N	04/22/09	< 1.1 U	552	< 0.36 U	278	189 J-TDS	194	1.2 J	32 J-TDS	< 0.32 U
Shallow	Downgradient	AA-BW-06A	55c	N	07/30/09	< 5.6 U	1370	< 1.8 U	284	193 J-TDS	174	6.2 J	32.1 J-TDS	< 0.15 U

TABLE 2-9
TOTAL METALS RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Nickel	Potassium	Silver
					Units	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L
					MCL	1300	--	15	--	--	--	--	--	--
					BCL	1300	300	15	66.7	189	20	667	--	100
Shallow	Downgradient	AA-BW-06A	55d	N	10/23/09	< 5.6 U	1410	< 1.8 U	273	R-CAB&TDS	175	4.4 J	R-CAB&TDS	< 0.15 U
Shallow	Downgradient	AA-BW-06A	55e	N	05/12/10	< 14 U	820 J	< 4.5 U	260 J	150 J-TDS	170	< 7.5 U	30 J-TDS	< 0.38 U
Shallow	Downgradient	AA-BW-06A	55f	N	10/27/10	< 2.8 U	1700	< 3 U	140 J	R-CAB&TDS	180	5.4	R-CAB&TDS	< 0.015 U
Shallow	Downgradient	AA-BW-06A	55g	N	03/30/11	< 1.1 U	750	< 0.36 U	250	150 J-TDS	180	2.5 J	28 J-TDS	< 0.03 U
Shallow	Downgradient	AA-BW-06A	55h	N	10/28/11	< 0.56 UJ	230	< 0.18 UJ	250	R-CAB&TDS	190	< 0.3 U	R-CAB&TDS	< 0.015 UJ
Shallow	Downgradient	AA-BW-06A	74a	N	04/18/13	< 9 U	460 J+	< 3.5 U	280	160	380 J+	< 8 U	30	6.2 J
Shallow	Downgradient	AA-BW-06A	74b	N	04/15/14	< 9 U	< 410 U	< 3.5 U	310 J+	200 J-CAB	340	< 8 U	34 J-CAB	< 15 U
Shallow	Downgradient	AA-BW-06A	74c	N	04/29/15	< 3.4 U	440	< 0.87 U	310	230 J-TDS	540	< 4 U	31 J-TDS	< 4.1 U
Shallow	Downgradient	AA-BW-06A	74d	N	04/27/16	< 6.8 U	620	< 1.7 U	360	300 J-TDS	820	< 8 U	33 J-TDS	< 8.2 J-TDS
Shallow	Downgradient	H-28	55a	N	01/26/09	< 2.8 U	926	< 0.9 U	627	576	2060	6.1	20.2	< 0.8 U
Shallow	Downgradient	H-28	55b	N	04/22/09	< 2.8 U	506	< 0.9 U	605	548 J-CAB	2060	6.5 J	18.7 J-CAB	< 0.8 U
Shallow	Downgradient	H-28	55c	N	07/22/09	13.1	2090	< 1.8 U	647 J	560 J-TDS	2110	10.1 J	21.1 J-TDS	< 0.15 U
Shallow	Downgradient	H-28	55c	FD	07/22/09	< 5.6 U	2040	< 1.8 U	650 J	544 J-TDS	2040	10.9 J	20.4 J-TDS	< 0.15 U
Shallow	Downgradient	H-28	55d	N	10/20/09	< 2.8 UJ	4460	< 0.9 U	592	617 J-TDS	2200	23.5 J	18.1 J-TDS	< 0.075 U
Shallow	Downgradient	H-28	55e	N	04/21/10	< 11 U	1500	< 3.6 U	600 J	600 J-TDS	2100	9.4 J	23 J-TDS	< 0.3 U
Shallow	Downgradient	H-28	55f	N	10/26/10	< 2.8 U	4200	< 3 U	530	550 J-TDS	2300	14	17 J-TDS	< 2 U
Shallow	Downgradient	H-28	55g	N	03/24/11	4.3 J	2100	< 0.9 U	650	620 J-TDS	2200	12 J	22 J-TDS	< 0.075 U
Shallow	Downgradient	H-28	55h	N	10/20/11	3.4	1700	1 J	650	R-CAB&TDS	2100	5.9	R-CAB&TDS	< 0.015 U
Shallow	Downgradient	H-28	74a	N	04/22/13	< 9 U	1700	< 3.5 U	660	R-CAB&TDS	1900 J+	< 8 U	R-CAB&TDS	< 15 UJ
Shallow	Downgradient	H-28	74b	N	04/17/14	< 9 U	1300	< 3.5 U	780 J	670 J-TDS	2100	< 8 U	25 J-TDS	< 15 U
Shallow	Downgradient	H-28	74c	N	04/30/15	40	8900	8 J	540 J	640 J-TDS	2500	24 J	20 J-TDS	< 20 U
Shallow	Downgradient	H-28	74d	N	05/10/16	27	11000	9.8 J	680	740 J-TDS	2300	17 J	24 J-TDS	< 4.1 J-TDS
Shallow	Downgradient	H-43	55a	N	01/27/09	< 1.1 U	46700	0.45	319	188	342	3.3	25	< 0.32 U
Shallow	Downgradient	H-43	55b	N	04/21/09	< 1.1 U	16800	< 0.36 U	318	183 J-TDS	383	2.6 J	25.3 J-TDS	< 0.32 U
Shallow	Downgradient	H-43	55c	N	07/30/09	< 5.6 U	10400	< 1.8 U	315	193 J+	280	6.3 J	23.8	< 0.15 U
Shallow	Downgradient	H-43	55d	N	10/23/09	< 5.6 U	8650	< 1.8 U	313	198 J-TDS	308	4.1 J	24.7 J-TDS	< 0.15 U
Shallow	Downgradient	H-43	55e	N	05/11/10	21 J+	15000	< 4.5 U	310 J	180 J-TDS	380	< 7.5 U	28 J-TDS	< 0.38 U
Shallow	Downgradient	H-43	55f	N	10/26/10	< 2.8 U	31000	< 3 U	< 500 U	200 J-TDS	650	8.6	24 J-TDS	< 0.015 U

TABLE 2-9
TOTAL METALS RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Nickel	Potassium	Silver
					Units	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	mg/L	µg/L
					MCL	1300	--	15	--	--	--	--	--	--
					BCL	1300	300	15	66.7	189	20	667	--	100
Shallow	Downgradient	H-43	55g	N	03/24/11	< 2.8 U	23000	< 0.9 U	310	210 J-TDS	420	6.6 J	26 J-TDS	< 0.075 U
Shallow	Downgradient	H-43	55h	N	10/20/11	< 0.56 U	28000	< 0.18 U	310	210 J-TDS	650	1.9 J	25 J-TDS	< 0.015 U
Shallow	Downgradient	H-43	74a	N	04/19/13	< 9 U	36000	< 3.5 U	340 J	240	660 J+	< 8 U	27 J	< 15 UJ
Shallow	Downgradient	H-43	74b	N	04/16/14	< 9 U	67000	< 3.5 U	540 J	370	1200	< 8 U	44 J	< 15 U
Shallow	Downgradient	H-43	74c	N	04/28/15	< 3.4 U	130000	< 0.87 U	410	370 J-TDS	2500	8.9 J	41 J-TDS	< 4.1 U
Shallow	Downgradient	H-43	74d	N	04/27/16	< 34 U	270000	< 8.7 U	600	R-TDS&CAB	1500	< 40 U	R-TDS&CAB	< 41 U

Note: This table includes all data, regardless of date. Because of this, the total number of analyses does not always coincide with the total number of analyses reported in Table 4-1.

µg/L = micrograms per liter

mg/L = milligrams per liter

-- = no sample data.

TABLE 2-9
TOTAL METALS RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Sodium	Strontium	Thallium	Titanium	Uranium	Vanadium	Zinc
					Units	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
					MCL	--	--	2	--	30	--	--
					BCL	--	20000	2	133000	30	167	10000
Shallow	Upgradient	AA-BW-08A	30	N	04/15/05	12700	1880	< 2.7 U	< 16 U	3.2 J	76.4 J	66.2
Shallow	Upgradient	AA-BW-08A	49	N	10/25/07	6010	11700	< 15 U	< 30 U	9.9 J	< 52 U	< 75 UJ
Shallow	Upgradient	AA-BW-08A	55a	N	01/20/09	5810 J-CAB	13200	< 0.2 U	< 6 U	9.6 J	< 20 U	< 20 U
Shallow	Upgradient	AA-BW-08A	55b	N	04/28/09	R-CAB&TDS	16700	< 0.2 U	< 6 U	9.4 J	6.2 J	< 20 U
Shallow	Upgradient	AA-BW-08A	55b	FD	04/28/09	6800 J-TDS	16300	< 0.2 U	< 6 U	9.3 J	6.4 J	< 20 U
Shallow	Upgradient	AA-BW-08A	55c	N	07/29/09	6940	16500	< 20 U	< 10 U	8.7 J	4.3 J	< 20 U
Shallow	Upgradient	AA-BW-08A	55d	N	10/29/09	7150 J-TDS	16100	< 0.2 U	< 3 U	< 0.2 U	31.8 J	< 20 U
Shallow	Upgradient	AA-BW-08A	55e	N	04/23/10	8000 J-TDS	18000	< 0.5 U	< 3 U	< 0.5 U	9.2 J	< 50 U
Shallow	Upgradient	AA-BW-08A	55f	N	10/25/10	R-CAB&TDS	18000	< 0.02 U	< 0.6 U	7.8	54 J+	2.9 J
Shallow	Upgradient	AA-BW-08A	55g	N	03/25/11	R-CAB&TDS	19000	< 0.1 U	1.7 J	< 5 U	14 J	< 10 U
Shallow	Upgradient	AA-BW-08A	55h	N	10/21/11	8700 J-TDS	19000	< 0.02 U	0.67 J	5.7	26	< 2 U
Shallow	Upgradient	AA-BW-08A	74a	N	04/18/13	11000	48000	< 11 U	< 2.4 U	< 4.6 U	< 47 U	< 170 U
Shallow	Upgradient	AA-BW-08A	74b	N	04/15/14	9200	21000	< 11 U	< 25 U	5.2 J	< 47 U	< 170 U
Shallow	Upgradient	AA-BW-08A	74c	N	04/28/15	R-CAB&TDS	23000	< 2.8 U	19 J	7.7	36 J	< 47 U
Shallow	Upgradient	AA-BW-08A	74c	FD	04/29/15	R-CAB&TDS	19000	< 2.8 U	17 J	5.7	28 J	< 47 U
Shallow	Upgradient	AA-BW-08A	74d	N	04/25/16	8900 J-TDS	22000	< 55 U	< 210 U	< 23 U	< 240 U	< 930 U
Shallow	Upgradient	AA-BW-12A	49	N	10/23/07	< 3.5 U	7380	< 15 U	334	< 5.24 U	< 52.275 U	250 UJ
Shallow	Upgradient	AA-BW-12A	55d	N	10/13/09	1730 J,J-TDS	6940	0.12 J	43.9	0.92 J	14.2 J	< 10 U
Shallow	Upgradient	AA-BW-12A	55e	N	04/20/10	1400 J-TDS	7300	< 0.4 U	8.1 J	< 0.4 U	< 2.8 U	< 40 U
Shallow	Upgradient	AA-BW-12A	55f	N	10/25/10	810 J-TDS	7700	< 2 U	< 2 U	1.1	< 10 UJ	4.3 J
Shallow	Upgradient	AA-BW-12A	55f	FD	10/25/10	R-CAB&TDS	6900	< 0.02 U	< 2 U	< 1 U	< 10 UJ	2 J
Shallow	Upgradient	AA-BW-12A	55g	N	03/30/11	730 J-TDS	7700	< 4 U	2.7	< 2 U	< 0.28 U	< 4 U
Shallow	Upgradient	AA-BW-12A	55g	FD	03/30/11	R-CAB&TDS	7300	< 0.04 U	2.2	< 2 U	0.3 J	< 4 U
Shallow	Upgradient	AA-BW-12A	55h	N	10/27/11	830 J-TDS	8600	< 0.02 U	9.1 J	0.92 J	0.28 J	2.7 J
Shallow	Upgradient	AA-BW-12A	55h	FD	10/27/11	970 J-TDS	8400	< 0.02 U	3.3 J	0.81 J	< 0.14 U	< 2 U
Shallow	Upgradient	AA-BW-12A	74a	N	04/18/13	770	8800	< 11 U	< 2.4 U	< 4.6 U	< 47 U	< 170 U
Shallow	Upgradient	AA-BW-12A	74b	N	04/15/14	940	9400	< 11 U	< 25 U	< 4.6 U	< 47 U	< 170 U
Shallow	Upgradient	AA-BW-12A	74c	N	05/04/15	R-CAB&TDS	11000	< 2.8 U	19 J	< 1.2 U	< 12 U	< 47 U

TABLE 2-9
TOTAL METALS RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Sodium	Strontium	Thallium	Titanium	Uranium	Vanadium	Zinc
					Units	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
					MCL	--	--	2	--	30	--	--
					BCL	--	20000	2	133000	30	167	10000
Shallow	Upgradient	AA-BW-12A	74d	N	04/25/16	R-TDS&CAB	15000	< 5.5 U	28 J	< 2.3 U	< 24 U	< 93 U
Shallow	Upgradient	AA-MW-07	55a	N	01/22/09	4670	25200	< 0.2 U	< 3 U	14.2	< 20 U	< 20 U
Shallow	Upgradient	AA-MW-07	55b	N	04/24/09	4960 J-TDS	27200	< 0.1 U	4.6	13.6	< 0.7 U	< 10 U
Shallow	Upgradient	AA-MW-07	55c	N	07/27/09	4960 J-TDS	27400	< 0.2 U	7.9	12.9	< 1.4 U	< 20 UJ
Shallow	Upgradient	AA-MW-07	55d	N	10/22/09	4810 J-TDS	26500	< 0.2 U	< 3 U	13.7	< 1.4 U	< 20 U
Shallow	Upgradient	AA-MW-07	55e	N	05/12/10	5200 J-TDS	27000	< 1 U	< 3 U	< 1 U	< 7 U	< 100 U
Shallow	Upgradient	AA-MW-07	55f	N	10/29/10	4700 J-TDS	26000	< 0.02 U	< 6 U	10	0.33 J	< 2 U
Shallow	Upgradient	AA-MW-07	55g	N	03/31/11	4600 J-TDS	26000	< 0.2 U	2.8	12	< 1.4 U	< 20 U
Shallow	Upgradient	AA-MW-07	55h	N	10/27/11	4500 J-TDS	26000	< 0.02 U	2.2 J+	9.8	< 0.14 U	< 2 U
Shallow	Upgradient	AA-MW-07	74a	N	04/22/13	R-CAB&TDS	25000	< 11 U	100 J	10 J	< 47 U	< 170 U
Shallow	Upgradient	AA-MW-07	74b	N	04/17/14	4000	29000	< 11 U	< 64 U	9 J	< 47 U	< 170 U
Shallow	Upgradient	AA-MW-07	74c	N	04/28/15	3900 J-TDS	25000	< 14 U	< 64 U	9.1 J	< 59 U	< 230 U
Shallow	Upgradient	AA-MW-07	74d	N	04/25/16	4300 J-TDS	24000	< 28 U	< 110 U	25 J	< 120 U	< 470 U
Shallow	Downgradient	AA-BW-04A	30	N	04/19/05	9150	14200	< 2.7 U	< 16 U	55.3 J	531 J	267
Shallow	Downgradient	AA-BW-04A	49	N	10/23/07	7020	10200	< 15 U	< 30 U	32.8	< 52 U	< 75 UJ
Shallow	Downgradient	AA-BW-04A	55a	N	01/26/09	6270	11600	0.57	3.4	25.7	< 20 U	< 20 U
Shallow	Downgradient	AA-BW-04A	55a	FD	01/26/09	6420	11900	0.5	3.2	25.5	< 20 U	< 20 U
Shallow	Downgradient	AA-BW-04A	55b	N	04/20/09	5900 J-TDS	11000	< 0.2 U	8.6 J	25.7	12.5 J	< 20 U
Shallow	Downgradient	AA-BW-04A	55b	FD	04/20/09	5900 J-TDS	11100	< 0.2 U	6.5 J	27.2	10.1 J	< 20 U
Shallow	Downgradient	AA-BW-04A	55c	N	07/21/09	5420	11300	< 20 U	3.5	24.5	8.7 J	< 20 U
Shallow	Downgradient	AA-BW-04A	55d	N	10/21/09	R-CAB&TDS	12100	< 0.2 U	< 3 U	22.4	7.1 J	< 20 U
Shallow	Downgradient	AA-BW-04A	55d	FD	10/21/09	R-CAB&TDS	12500	< 0.2 U	< 3 U	21.2	6.8 J	< 20 U
Shallow	Downgradient	AA-BW-04A	55e	N	05/12/10	6300 J-TDS	13000	< 0.4 U	< 3 U	23	4.6 J	< 40 U
Shallow	Downgradient	AA-BW-04A	55f	N	10/28/10	6500 J-TDS	14000	< 2 U	< 0.6 U	17	4.5 J	< 2 U
Shallow	Downgradient	AA-BW-04A	55f	FD	10/28/10	6700 J-TDS	14000	< 2 U	< 0.6 U	17	5.7 J	< 2 U
Shallow	Downgradient	AA-BW-04A	55g	N	03/24/11	6700 J-TDS	16000	< 10 U	1.7 J	16	4.8 J	< 10 U
Shallow	Downgradient	AA-BW-04A	55g	FD	03/24/11	6800 J-TDS	16000	< 10 U	1.8 J	16	6 J	< 10 U
Shallow	Downgradient	AA-BW-04A	55h	N	10/20/11	6400	17000	0.35 J	1.2 J	15	4.1 J	< 2 U

TABLE 2-9
TOTAL METALS RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Sodium	Strontium	Thallium	Titanium	Uranium	Vanadium	Zinc
					Units	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
					MCL	--	--	2	--	30	--	--
					BCL	--	20000	2	133000	30	167	10000
Shallow	Downgradient	AA-BW-04A	55h	FD	10/20/11	6400 J-TDS	17000	0.36 J	0.89 J	15	4.3 J	< 2 U
Shallow	Downgradient	AA-BW-04A	74a	N	04/19/13	6500	22000	< 11 U	< 24 U	17 J	< 47 U	< 170 U
Shallow	Downgradient	AA-BW-04A	74a	FD	04/19/13	6500	22000	< 11 U	< 24 U	19 J	< 47 U	< 170 U
Shallow	Downgradient	AA-BW-04A	74b	N	04/16/14	6200	24000	< 11 U	< 64 U	19 J	< 47 U	< 170 U
Shallow	Downgradient	AA-BW-04A	74b	FD	04/16/14	6300 J-TDS	24000	< 11 U	< 64 U	16 J	< 47 U	< 170 U
Shallow	Downgradient	AA-BW-04A	74c	N	04/28/15	5800 J-TDS	17000	< 2.8 U	17 J	11	< 12 U	< 47 U
Shallow	Downgradient	AA-BW-04A	74d	N	05/10/16	5000 J-TDS	16000	< 2.8 U	< 11 U	15	< 12 U	< 47 U
Shallow	Downgradient	AA-BW-04A	74d	FD	05/10/16	5000 J-TDS	16000	< 2.8 U	< 11 U	15	< 12 U	< 47 U
Shallow	Downgradient	AA-BW-05A	30	N	04/19/05	4250	7810	< 2.7 U	< 7.9 U	10.6 J	328 J	65.2
Shallow	Downgradient	AA-BW-05A	49	N	10/23/07	7510	14600	< 15 U	< 30 U	13.2 J	< 52 U	< 75 UJ
Shallow	Downgradient	AA-BW-05A	55a	N	01/23/09	8880	20100	< 0.2 U	< 6 U	17	136	< 20 U
Shallow	Downgradient	AA-BW-05A	55b	N	04/21/09	8500 J-TDS	20900	< 0.2 U	< 6 U	25.3	227	< 20 U
Shallow	Downgradient	AA-BW-05A	55c	N	07/21/09	7600	19400	< 20 U	3.9	26.1	178	< 20 U
Shallow	Downgradient	AA-BW-05A	55d	N	10/20/09	R-CAB&TDS	18000	< 0.2 U	< 3 U	17.2	53.2 J	< 20 U
Shallow	Downgradient	AA-BW-05A	55d	FD	10/20/09	R-CAB&TDS	17900	< 0.2 U	< 3 U	16.2	52.5 J	< 20 U
Shallow	Downgradient	AA-BW-05A	55e	N	05/12/10	8500 J-TDS	17000	< 0.4 U	< 3 U	< 0.4 U	27 J	< 40 U
Shallow	Downgradient	AA-BW-05A	55f	N	10/27/10	R-CAB&TDS	13000	< 2 U	< 0.6 U	22	30	4.7 J
Shallow	Downgradient	AA-BW-05A	55g	N	03/24/11	6800 J-TDS	13000	< 0.1 U	1.2 J	16	13 J	< 10 U
Shallow	Downgradient	AA-BW-05A	55h	N	10/20/11	5300 J-TDS	12000	0.073 J	< 0.6 U	15	7.2 J	2.4 J
Shallow	Downgradient	AA-BW-05A	74a	N	04/18/13	4000	11000	< 11 U	< 2.4 U	15 J+	< 47 U	< 170 U
Shallow	Downgradient	AA-BW-05A	74b	N	04/15/14	5300	15000	< 11 U	< 25 U	9.7 J	< 47 U	< 170 U
Shallow	Downgradient	AA-BW-05A	74c	N	04/29/15	4400 J-TDS	14000	< 2.8 U	13 J	7.8	< 12 U	< 47 U
Shallow	Downgradient	AA-BW-05A	74d	N	04/27/16	R-TDS&CAB	22000	< 28 U	< 110 U	< 12 U	< 120 U	< 470 U
Shallow	Downgradient	AA-BW-06A	30	N	04/19/05	988	3310	< 2.7 U	7.7 J	9.7 J	183	244
Shallow	Downgradient	AA-BW-06A	49	N	10/23/07	958	3700	< 12 U	< 6 U	< 4.2 U	< 42 U	< 60 UJ
Shallow	Downgradient	AA-BW-06A	55a	N	01/27/09	1230	6600	< 0.04 U	4.3	1.3	< 4 U	< 4 U
Shallow	Downgradient	AA-BW-06A	55b	N	04/22/09	1190 J-TDS	5960	R	2.1	1.4 J	0.96 J	< 4 U
Shallow	Downgradient	AA-BW-06A	55c	N	07/30/09	1230 J-TDS	6300	< 0.2 U	5.9 J	1.3 J	< 1.4 U	< 20 UJ

TABLE 2-9
TOTAL METALS RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Sodium	Strontium	Thallium	Titanium	Uranium	Vanadium	Zinc
					Units	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
					MCL	--	--	2	--	30	--	--
					BCL	--	20000	2	133000	30	167	10000
Shallow	Downgradient	AA-BW-06A	55d	N	10/23/09	R-CAB&TDS	6050	< 0.2 U	< 3 U	< 0.2 U	< 1.4 U	< 20 U
Shallow	Downgradient	AA-BW-06A	55e	N	05/12/10	1100 J-TDS	5300	< 0.5 U	< 3 U	< 0.5 U	8.4 J	< 50 U
Shallow	Downgradient	AA-BW-06A	55f	N	10/27/10	R-CAB&TDS	4800	< 0.02 U	< 0.6 U	1.3	20	2.5 J
Shallow	Downgradient	AA-BW-06A	55g	N	03/30/11	1000 J-TDS	5300	< 0.04 U	2.2	< 2 U	8.9 J	< 4 U
Shallow	Downgradient	AA-BW-06A	55h	N	10/28/11	R-CAB&TDS	6400	< 0.02 U	1.1 J	1.3	6.9 J	< 2 U
Shallow	Downgradient	AA-BW-06A	74a	N	04/18/13	1100	6600	< 11 U	< 2.4 U	< 4.6 U	< 47 U	< 170 U
Shallow	Downgradient	AA-BW-06A	74b	N	04/15/14	1200 J-CAB	8000	< 11 U	< 25 U	< 4.6 U	< 47 U	< 170 U
Shallow	Downgradient	AA-BW-06A	74c	N	04/29/15	1200 J-TDS	9800	< 2.8 U	12 J	1.4 J	< 12 U	< 47 U
Shallow	Downgradient	AA-BW-06A	74d	N	04/27/16	1400 J-TDS	13000	< 5.5 U	< 21 U	2.8 J	< 24 U	< 93 U
Shallow	Downgradient	H-28	55a	N	01/26/09	1480	18900	0.31	5.6	74.9	19.2	< 10 U
Shallow	Downgradient	H-28	55b	N	04/22/09	1470 J-CAB	17700	0.24 J-	4.6	74.6	18.5 J	< 10 U
Shallow	Downgradient	H-28	55c	N	07/22/09	1390 J-TDS	19100	< 20 U	8.7	74.6	17.1 J	< 20 U
Shallow	Downgradient	H-28	55c	FD	07/22/09	1410 J-TDS	19100	< 20 U	8.5	72.2	15.9 J	< 20 U
Shallow	Downgradient	H-28	55d	N	10/20/09	1550 J-TDS	19500	< 0.1 U	5.4 J	72.3	20.5 J	< 10 U
Shallow	Downgradient	H-28	55e	N	04/21/10	1600 J-TDS	20000	< 0.4 U	< 3 U	72	7.4 J	< 40 U
Shallow	Downgradient	H-28	55f	N	10/26/10	1600 J-TDS	18000	< 2 U	4.1	60	11 J+	2.9 J
Shallow	Downgradient	H-28	55g	N	03/24/11	1700 J-TDS	21000	< 10 U	8.3	63	10 J	< 10 U
Shallow	Downgradient	H-28	55h	N	10/20/11	R-CAB&TDS	21000	0.27 J	66	65	17	6.9 J
Shallow	Downgradient	H-28	74a	N	04/22/13	R-CAB&TDS	27000	< 11 U	< 24 U	62	< 47 U	< 170 U
Shallow	Downgradient	H-28	74b	N	04/17/14	1600 J-TDS	26000	< 11 U	95 J	55	< 47 U	< 170 U
Shallow	Downgradient	H-28	74c	N	04/30/15	1400 J-TDS	20000	< 14 U	370 J	57	< 59 U	< 230 U
Shallow	Downgradient	H-28	74d	N	05/10/16	1600 J-TDS	23000	< 2.8 U	590	73	100	53 J
Shallow	Downgradient	H-43	55a	N	01/27/09	1110	5490	< 0.04 U	< 0.6 U	0.51	< 4 U	168
Shallow	Downgradient	H-43	55b	N	04/21/09	1120 J-TDS	5560	< 0.04 U	1.9 J	0.62 J	0.32 J	23.5
Shallow	Downgradient	H-43	55c	N	07/30/09	1110	5830	< 20 U	4.7 J	0.87 J	< 1.4 U	45.1 J-
Shallow	Downgradient	H-43	55d	N	10/23/09	1080 J-TDS	5770	< 0.2 U	< 3 U	< 0.2 U	< 1.4 U	< 20 U
Shallow	Downgradient	H-43	55e	N	05/11/10	1100 J-TDS	5700	< 0.5 U	< 3 U	< 0.5 U	< 3.5 U	51 J
Shallow	Downgradient	H-43	55f	N	10/26/10	1100 J-TDS	5500	< 0.02 U	< 0.6 U	< 1 U	< 10 UJ	60

TABLE 2-9
TOTAL METALS RESULTS
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Sodium	Strontium	Thallium	Titanium	Uranium	Vanadium	Zinc
					Units	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
					MCL	--	--	2	--	30	--	--
					BCL	--	20000	2	133000	30	167	10000
Shallow	Downgradient	H-43	55g	N	03/24/11	1100 J-TDS	6500	< 0.1 U	1.4 J	< 5 U	< 0.7 U	52
Shallow	Downgradient	H-43	55h	N	10/20/11	1000 J-TDS	6200	< 0.02 U	0.7 J	0.42 J	0.22 J	24
Shallow	Downgradient	H-43	74a	N	04/19/13	1100	7600	< 11 U	< 24 U	< 4.6 U	< 47 U	170 J
Shallow	Downgradient	H-43	74b	N	04/16/14	1600	14000	< 11 U	< 64 U	< 4.6 U	< 47 U	< 170 U
Shallow	Downgradient	H-43	74c	N	04/28/15	2000 J-TDS	13000	< 2.8 U	13 J	< 1.2 U	< 12 U	60
Shallow	Downgradient	H-43	74d	N	04/27/16	R-TDS&CAB	20000	< 28 U	< 110 U	< 12 U	< 120 U	510 J

Note: This table includes all data, regardless of date. Because of this, the total number of analyses does not always coincide with the total number of analyses reported in Table 4-1.

µg/L = micrograms per liter

mg/L = milligrams per liter

-- = no sample data.

TABLE 2-10
GENERAL CHEMISTRY RESULTS
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Bromide	Bromine	Chlorate	Chloride	Chlorine	Chlorite	Fluoride
					Units	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L
					MCL	--	--	--	--	4	1000	4000
					BCL	11300	--	1000	--	3.34	--	4000
Shallow	Upgradient	AA-BW-08A	30	N	04/15/05	< 2000 U	--	71900	8240	--	--	< 1000 U
Shallow	Upgradient	AA-BW-08A	49	N	10/25/07	< 6200 U	< 50000 U	< 1000 U	9200	18400	< 1000 U	< 250 U
Shallow	Upgradient	AA-BW-08A	55a	N	01/20/09	< 260 U	< 5000 U	< 470 U	10700 J-CAB	21400	--	410 J
Shallow	Upgradient	AA-BW-08A	55b	N	04/28/09	720 J	1400 J	< 470 U	R-CAB&TDS	18700	--	R-CAB&TDS
Shallow	Upgradient	AA-BW-08A	55b	FD	04/28/09	< 260 U	< 5000 U	< 470 U	9650 J-TDS	19300	< 2000 U	1000 J-TDS
Shallow	Upgradient	AA-BW-08A	55c	N	07/29/09	390 J	780 J	< 470 U	9960	19900	< 400 U	350 J
Shallow	Upgradient	AA-BW-08A	55d	N	10/29/09	490 J	990 J	< 470 U	10600 J-TDS	21100 J-TDS	< 400 U	560 J,J-TDS
Shallow	Upgradient	AA-BW-08A	55e	N	04/23/10	< 250 U	< 5000 U	< 360 U	11300 J-TDS	22600 J-TDS	< 400 U	440 J,J-TDS
Shallow	Upgradient	AA-BW-08A	55f	N	10/25/10	< 120 U	< 2500 U	< 180 U	R-CAB&TDS	R-CAB&TDS	< 400 U	R-CAB&TDS
Shallow	Upgradient	AA-BW-08A	55g	N	03/25/11	< 120 U	< 2.5 U	< 180 U	R-CAB&TDS	R-CAB&TDS	< 200 U	R-CAB&TDS
Shallow	Upgradient	AA-BW-08A	55h	N	10/21/11	< 500 U	< 10000 U	< 180 U	14000 J-TDS	25200	< 80 U	870 J,J-TDS
Shallow	Upgradient	AA-BW-08A	74a	N	04/18/13	< 1300 U	< 50 U	< 250 U	20000	40000	< 400 U	< 50 U
Shallow	Upgradient	AA-BW-08A	74b	N	04/15/14	< 500 U	< 50 U	< 250 U	16000	32000	< 400 U	< 200 U
Shallow	Upgradient	AA-BW-08A	74c	N	04/28/15	< 250 U	< 50 U	< 500 U	R-CAB&TDS	28000	< 100 U	R-CAB&TDS
Shallow	Upgradient	AA-BW-08A	74c	FD	04/29/15	< 250 U	< 50 U	< 500 U	R-CAB&TDS	26000	< 100 U	R-CAB&TDS
Shallow	Upgradient	AA-BW-08A	74d	N	04/25/16	< 500 U	< 50 U	< 100 U	15000 J-TDS	30000 J-TDS	< 100 U	< 200 J-TDS
Shallow	Upgradient	AA-BW-12A	49	N	10/23/07	< 6200 U	< 50000 U	--	7470	14900	< 4000 U	< 250 U
Shallow	Upgradient	AA-BW-12A	55d	N	10/13/09	1300	2500	2900	2620 J-TDS	5240 J-TDS	< 400 U	< 10 U
Shallow	Upgradient	AA-BW-12A	55e	N	04/20/10	690	1400	< 36 U	2360 J-TDS	4720 J-TDS	< 400 U	12 J,J-TDS
Shallow	Upgradient	AA-BW-12A	55f	N	10/25/10	750	1500	1600	1820 J-TDS	3630 J-TDS	< 2000 U	410 J, J-TDS
Shallow	Upgradient	AA-BW-12A	55f	FD	10/25/10	760	1500	1800	R-CAB&TDS	R-CAB&TDS	< 2000 U	R-CAB&TDS
Shallow	Upgradient	AA-BW-12A	55g	N	03/30/11	640 J	1300 J	1500	1900 J-TDS	4250 J-TDS	< 200 U	570 J-TDS
Shallow	Upgradient	AA-BW-12A	55g	FD	03/30/11	640 J	1300 J	1800	R-CAB&TDS	R-CAB&TDS	< 200 U	R-CAB&TDS
Shallow	Upgradient	AA-BW-12A	55h	N	10/27/11	540 J	1100 J	2400	1900 J-TDS	3990	6100	510 J,J-TDS
Shallow	Upgradient	AA-BW-12A	55h	FD	10/27/11	550	1100	2400	1900 J-TDS	4080	6200	500 J,J-TDS
Shallow	Upgradient	AA-BW-12A	74a	N	04/18/13	430	860	2300	2000	4000	< 800 U	140
Shallow	Upgradient	AA-BW-12A	74b	N	04/15/14	500	1000	< 250 U	2400	4800	< 400 U	< 10 U
Shallow	Upgradient	AA-BW-12A	74c	N	05/04/15	< 130 U	< 50 U	3600	R-CAB&TDS	5000	< 500 U	R-CAB&TDS

TABLE 2-10
GENERAL CHEMISTRY RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Bromide	Bromine	Chlorate	Chloride	Chlorine	Chlorite	Fluoride
					Units	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L
					MCL	--	--	--	--	4	1000	4000
					BCL	11300	--	1000	--	3.34	--	4000
Shallow	Upgradient	AA-BW-12A	74d	N	04/25/16	4700 J	9400	< 100 U	R-TDS&CAB	R-TDS&CAB	7700	R-TDS&CAB
Shallow	Upgradient	AA-MW-07	55a	N	01/22/09	< 260 U	< 5000 U	< 47 U	9790	19600	--	1500
Shallow	Upgradient	AA-MW-07	55b	N	04/24/09	< 2600 U	< 50000 U	< 470 U	9000 J-TDS	18000	R	1500 J-TDS
Shallow	Upgradient	AA-MW-07	55c	N	07/27/09	650 J	1300 J	< 470 U	9580 J-TDS	19200 J-TDS	< 80 U	1500 J-TDS
Shallow	Upgradient	AA-MW-07	55d	N	10/22/09	< 1300 U	< 25000 U	< 94 U	10100 J-TDS	20100 J-TDS	< 400 U	< 20 U
Shallow	Upgradient	AA-MW-07	55e	N	05/12/10	< 250 U	< 5000 U	< 360 U	9850 J-TDS	19700 J-TDS	< 400 U	1300 J-TDS
Shallow	Upgradient	AA-MW-07	55f	N	10/29/10	420 J	830 J	< 180 U	8360 J-TDS	16700 J-TDS	< 80 U	< 50 U
Shallow	Upgradient	AA-MW-07	55g	N	03/31/11	< 500 U	< 10 U	< 180 U	9000 J-TDS	18000 J-TDS	< 40 U	2000 U,J-TDS
Shallow	Upgradient	AA-MW-07	55h	N	10/27/11	360 J	710 J	< 180 U	9100 J-TDS	18500	< 80 U	1300 J,J-TDS
Shallow	Upgradient	AA-MW-07	74a	N	04/22/13	< 500 U	< 50 U	< 100 U	R-CAB&TDS	17000	< 160 U	R-CAB&TDS
Shallow	Upgradient	AA-MW-07	74b	N	04/17/14	< 250 U	< 50 U	< 500 U	7700	15000	< 400 U	< 100 U
Shallow	Upgradient	AA-MW-07	74c	N	04/28/15	< 130 UJ	< 50 UJ	< 250 U	7600 J-TDS	15000	< 100 UJ	750 J-TDS
Shallow	Upgradient	AA-MW-07	74d	N	04/25/16	< 500 U	< 50 U	< 100 U	8300 J-TDS	17000 J-TDS	< 100 U	570 J-TDS
Shallow	Downgradient	AA-BW-04A	30	N	04/19/05	270	--	< 100 U	1380	--	--	640 J-
Shallow	Downgradient	AA-BW-04A	49	N	10/23/07	19400 J+	38900 J+	< 1000 U	10100	20200	< 1000 U	< 250 U
Shallow	Downgradient	AA-BW-04A	55a	N	01/26/09	< 2600 U	< 50000 U	< 470 U	9010	18000	< 400 U	1100
Shallow	Downgradient	AA-BW-04A	55a	FD	01/26/09	< 2600 U	< 50000 U	< 470 U	9440	18900	< 400 U	1100
Shallow	Downgradient	AA-BW-04A	55b	N	04/20/09	< 2600 U	< 50000 U	< 470 U	9710 J-TDS	19400	< 400 U	580 J-TDS
Shallow	Downgradient	AA-BW-04A	55b	FD	04/20/09	< 2600 U	< 50000 U	< 470 U	9510 J-TDS	19000	< 400 U	930 J-TDS
Shallow	Downgradient	AA-BW-04A	55c	N	07/21/09	800 J	1600 J	< 470 UJ	9000	1800 J	< 2000 U	690 J
Shallow	Downgradient	AA-BW-04A	55d	N	10/21/09	< 1300 U	1800 J	< 94 U	R-CAB&TDS	R-CAB&TDS	< 400 U	R-CAB&TDS
Shallow	Downgradient	AA-BW-04A	55d	FD	10/21/09	< 1300 U	1500 J	< 94 U	R-CAB&TDS	R-CAB&TDS	< 400 U	R-CAB&TDS
Shallow	Downgradient	AA-BW-04A	55e	N	05/12/10	440 J	870 J	< 360 U	9810 J-TDS	19600 J-TDS	< 200 U	900 J,J-TDS
Shallow	Downgradient	AA-BW-04A	55f	N	10/28/10	< 2500 U	< 50000 U	< 72 U	10800 J-TDS	21600 J-TDS	< 40 U	< 20 UJ
Shallow	Downgradient	AA-BW-04A	55f	FD	10/28/10	< 2500 U	< 50000 U	< 72 U	9320 J-TDS	18600 J-TDS	< 40 U	< 20 UJ
Shallow	Downgradient	AA-BW-04A	55g	N	03/24/11	410 J	810 J	< 360 U	9770 J-TDS	19500 J-TDS	< 80 U	520 J,J-TDS
Shallow	Downgradient	AA-BW-04A	55g	FD	03/24/11	420 J	840 J	< 360 U	9810 J-TDS	19600 J-TDS	< 80 U	420 J,J-TDS
Shallow	Downgradient	AA-BW-04A	55h	N	10/20/11	370 J	740 J	< 180 U	10000	20600	< 40 U	1100 J

TABLE 2-10
GENERAL CHEMISTRY RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Bromide	Bromine	Chlorate	Chloride	Chlorine	Chlorite	Fluoride
					Units	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L
					MCL	--	--	--	--	4	1000	4000
					BCL	11300	--	1000	--	3.34	--	4000
Shallow	Downgradient	AA-BW-04A	55h	FD	10/20/11	420 J	850 J	< 180 U	9800 J-TDS	20700	< 40 U	1200 J,J-TDS
Shallow	Downgradient	AA-BW-04A	74a	N	04/19/13	< 130 U	< 50 U	< 250 U	10000	20000	< 800 U	< 50 U
Shallow	Downgradient	AA-BW-04A	74a	FD	04/19/13	< 130 U	< 50 U	< 250 U	10000	20000	< 800 U	< 50 U
Shallow	Downgradient	AA-BW-04A	74b	N	04/16/14	< 2500 U	< 50 U	< 250 U	10000	20000	R	< 50 UJ
Shallow	Downgradient	AA-BW-04A	74b	FD	04/16/14	< 2500 U	< 50 U	< 250 U	12000	24000 J-TDS	R	< 50 UJ
Shallow	Downgradient	AA-BW-04A	74c	N	04/28/15	< 250 U	< 50 U	< 500 U	9500 J-TDS	19000	< 200 U	750 J; J-TDS
Shallow	Downgradient	AA-BW-04A	74d	N	05/10/16	< 500 U	< 50 U	< 50 U	9000 J-TDS	18000 J-TDS	< 200 U	1100 J-TDS
Shallow	Downgradient	AA-BW-04A	74d	FD	05/10/16	< 500 U	< 50 U	< 50 U	9000 J-TDS	18000 J-TDS	< 200 U	1000 J-TDS
Shallow	Downgradient	AA-BW-05A	30	N	04/19/05	150 J	--	240	727	--	--	160
Shallow	Downgradient	AA-BW-05A	49	N	10/23/07	< 6200 U	< 50000 U	< 1000 U	9110	18200	< 1000 U	750 J
Shallow	Downgradient	AA-BW-05A	55a	N	01/23/09	< 260 U	< 5000 U	< 470 U	12100	24300	--	1100
Shallow	Downgradient	AA-BW-05A	55b	N	04/21/09	< 5200 U	< 100000 U	< 470 U	11000 J-TDS	22000	< 400 U	780 J-TDS
Shallow	Downgradient	AA-BW-05A	55c	N	07/21/09	1800 J	3500 J	< 470 UJ	10900	21800	< 2000 U	780 J
Shallow	Downgradient	AA-BW-05A	55d	N	10/20/09	1100 J	2200 J	< 940 U	R-CAB&TDS	R-CAB&TDS	< 400 U	R-CAB&TDS
Shallow	Downgradient	AA-BW-05A	55d	FD	10/20/09	1100 J	2200 J	< 940 U	R-CAB&TDS	R-CAB&TDS	< 400 U	R-CAB&TDS
Shallow	Downgradient	AA-BW-05A	55e	N	05/12/10	750 J	1500 J	< 360 U	11800 J-TDS	23600 J-TDS	< 400 U	880 J,J-TDS
Shallow	Downgradient	AA-BW-05A	55f	N	10/27/10	< 5000 U	< 100000 U	< 72 U	R-CAB&TDS	R-CAB&TDS	< 200 U	< 20 UJ
Shallow	Downgradient	AA-BW-05A	55g	N	03/24/11	810 J	1600 J	< 360 U	8320 J-TDS	16600 J-TDS	< 800 U	590 J,J-TDS
Shallow	Downgradient	AA-BW-05A	55h	N	10/20/11	< 50 U	< 1000 U	< 72 U	7600 J-TDS	14100	2200	1000 J,J-TDS
Shallow	Downgradient	AA-BW-05A	74a	N	04/18/13	820 J	1600	< 100 U	5700	11000	< 800 U	190 J
Shallow	Downgradient	AA-BW-05A	74b	N	04/15/14	< 500 U	< 50 U	< 250 U	8000	16000	< 400 U	390 J
Shallow	Downgradient	AA-BW-05A	74c	N	04/29/15	< 250 U	< 50 U	< 500 U	6800 J-TDS	14000	< 500 U	680 J; J-TDS
Shallow	Downgradient	AA-BW-05A	74d	N	04/27/16	< 500 U	< 50 U	< 50 U	R-TDS&CAB	R-TDS&CAB	1200	R-TDS&CAB
Shallow	Downgradient	AA-BW-06A	30	N	04/19/05	61 J	--	< 100 U	204	--	--	250
Shallow	Downgradient	AA-BW-06A	49	N	10/23/07	< 620 U	< 5000 U	< 1000 U	1460	2930	< 400 U	2800
Shallow	Downgradient	AA-BW-06A	55a	N	01/27/09	1400	2900	< 47 U	2580	5160	< 80 U	2500
Shallow	Downgradient	AA-BW-06A	55b	N	04/22/09	< 260 U	< 5000 U	< 47 U	2160 J-TDS	4310	< 400 U	2500 J-TDS
Shallow	Downgradient	AA-BW-06A	55c	N	07/30/09	1200	2300	< 47 U	2080	4160	< 400 U	2600

TABLE 2-10
GENERAL CHEMISTRY RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Bromide	Bromine	Chlorate	Chloride	Chlorine	Chlorite	Fluoride
					Units	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L
					MCL	--	--	--	--	4	1000	4000
					BCL	11300	--	1000	--	3.34	--	4000
Shallow	Downgradient	AA-BW-06A	55d	N	10/23/09	930	1900	< 47 U	R-CAB&TDS	R-CAB&TDS	< 40 U	R-CAB&TDS
Shallow	Downgradient	AA-BW-06A	55e	N	05/12/10	910	1800	< 36 U	1860 J-TDS	3730 J-TDS	< 80 U	2200 J-TDS
Shallow	Downgradient	AA-BW-06A	55f	N	10/27/10	990	2000	< 36 U	R-CAB&TDS	R-CAB&TDS	< 80 U	< 10 UJ
Shallow	Downgradient	AA-BW-06A	55g	N	03/30/11	870	1700	< 36 U	1600 J-TDS	3610 J-TDS	< 20 U	2700 J-TDS
Shallow	Downgradient	AA-BW-06A	55h	N	10/28/11	810	1600	< 36 U	R-CAB&TDS	3390	< 20 U	R-CAB&TDS
Shallow	Downgradient	AA-BW-06A	74a	N	04/18/13	640	1300	< 50 U	1700	3400	< 80 U	1600
Shallow	Downgradient	AA-BW-06A	74b	N	04/15/14	720	1400	< 250 U	1800	3600 J-CAB	< 400 U	< 10 U
Shallow	Downgradient	AA-BW-06A	74c	N	04/29/15	< 130 U	< 50 U	< 250 U	2300 J-TDS	4600	< 100 U	1900 J-TDS
Shallow	Downgradient	AA-BW-06A	74d	N	04/27/16	710	1400	< 50 U	2700 J-TDS	5400 J-TDS	330 J	2000 J-TDS
Shallow	Downgradient	H-28	55a	N	01/26/09	660	1300	< 47 U	3910	7810	< 200 U	1000
Shallow	Downgradient	H-28	55b	N	04/22/09	< 260 U	< 5000 U	< 47 U	4460 J-CAB	8920	< 400 U	920 J-CAB
Shallow	Downgradient	H-28	55c	N	07/22/09	< 520 U	< 10000 U	< 47 U	3920 J-TDS	7850 J-TDS	< 200 U	1200 J-TDS
Shallow	Downgradient	H-28	55c	FD	07/22/09	< 520 U	< 10000 U	< 47 U	3930 J-TDS	7850 J-TDS	< 200 U	1100 J-TDS
Shallow	Downgradient	H-28	55d	N	10/20/09	620 J	1200 J	< 240 U	3900 J-TDS	7800 J-TDS	< 80 U	800 J-TDS
Shallow	Downgradient	H-28	55e	N	04/21/10	< 500 U	< 10000 U	< 36 U	4270 J-TDS	8550 J-TDS	< 200 U	880 J,J-TDS
Shallow	Downgradient	H-28	55f	N	10/26/10	800	1600	< 72 U	3820 J-TDS	7650 J-TDS	< 20 U	730 J-TDS
Shallow	Downgradient	H-28	55g	N	03/24/11	640 J	1300 J	< 180 U	4540 J-TDS	9090 J-TDS	< 20 U	610 J-TDS
Shallow	Downgradient	H-28	55h	N	10/20/11	1700 J	3500 J	760 J	R-CAB&TDS	8680	< 40 U	R-CAB&TDS
Shallow	Downgradient	H-28	74a	N	04/22/13	260 J	520	< 100 U	R-CAB&TDS	9200&TDS	< 80 U	R-CAB&TDS
Shallow	Downgradient	H-28	74b	N	04/17/14	< 250 U	< 50 U	< 500 U	4700	9400 J-TDS	< 400 U	290 J-TDS
Shallow	Downgradient	H-28	74c	N	04/30/15	< 130 UJ	< 50 UJ	< 250 U	4600 J-TDS	9200	< 200 UJ	450 J-TDS
Shallow	Downgradient	H-28	74d	N	05/10/16	< 500 U	< 50 U	< 50 U	5100 J-TDS	10000 J-TDS	< 200 U	860 J-TDS
Shallow	Downgradient	H-43	55a	N	01/27/09	700	1400	< 47 U	1850	3710	< 80 U	2000
Shallow	Downgradient	H-43	55b	N	04/21/09	560	1100	< 47 U	1720 J-TDS	3430	< 400 U	1900 J-TDS
Shallow	Downgradient	H-43	55c	N	07/30/09	680	1400	< 47 U	1740 J-TDS	3480 J-TDS	< 80 U	2100 J-TDS
Shallow	Downgradient	H-43	55d	N	10/23/09	610	1200	< 47 U	1940 J-TDS	3870 J-TDS	< 40 U	1700 J-TDS
Shallow	Downgradient	H-43	55e	N	05/11/10	650	1300	< 36 U	1850 J-TDS	3710 J-TDS	< 400 U	2000 J-TDS
Shallow	Downgradient	H-43	55f	N	10/26/10	970	1900	< 36 U	1860 J-TDS	3730 J-TDS	< 40 U	1800 J-TDS

TABLE 2-10
GENERAL CHEMISTRY RESULTS
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CAMU AREA, CLARK COUNTY, NEVADA

Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Bromide	Bromine	Chlorate	Chloride	Chlorine	Chlorite	Fluoride
					Units	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L
					MCL	--	--	--	--	4	1000	4000
					BCL	11300	--	1000	--	3.34	--	4000
Shallow	Downgradient	H-43	55g	N	03/24/11	710	1400	< 36 U	1960 J-TDS	3910 J-TDS	< 20 U	1200 J-TDS
Shallow	Downgradient	H-43	55h	N	10/20/11	740	1500	< 36 U	1900 J-TDS	3770	< 20 U	2700 J-TDS
Shallow	Downgradient	H-43	74a	N	04/19/13	570	1100	< 50 U	2000	4000	< 160 U	1400
Shallow	Downgradient	H-43	74b	N	04/16/14	< 2500 U	< 50 U	< 250 U	3700	7400	R	1200 J-
Shallow	Downgradient	H-43	74c	N	04/28/15	< 130 U	< 50 U	< 250 U	3700 J-TDS	7400	< 200 U	920 J-TDS
Shallow	Downgradient	H-43	74d	N	04/27/16	470 J	940	< 50 U	R-TDS&CAB	R-TDS&CAB	2000	R-TDS&CAB

Note: This table includes all data, regardless of date. Because of this, the total number of analyses does not always coincide with the total number of analyses reported in Table 4-1.

µg/L = micrograms per liter

mg/L = milligrams per liter

-- = no sample data.

TABLE 2-10
GENERAL CHEMISTRY RESULTS
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Ion Balance Difference	Nitrate	Nitrite	Orthophosphate	Perchlorate	Sulfate
					Units	percent	µg/L	µg/L	µg/L	µg/L	mg/L
					MCL	--	10000	1000	--	6	--
					BCL	--	10000	1000	--	18	--
Shallow	Upgradient	AA-BW-08A	30	N	04/15/05	--	< 400 U	< 400 U	< 5000 UJ-		3770
Shallow	Upgradient	AA-BW-08A	49	N	10/25/07	0.69	< 86 UJ	R	< 1600 UJ		2100
Shallow	Upgradient	AA-BW-08A	55a	N	01/20/09	7.3	< 50 U	< 6000 U	< 500 U		2170 J-CAB
Shallow	Upgradient	AA-BW-08A	55b	N	04/28/09	6.2	< 50 U	< 300 U	< 500 U		R-CAB&TDS
Shallow	Upgradient	AA-BW-08A	55b	FD	04/28/09	3.7	< 50 UJ	< 300 UJ	< 500 UJ		2160 J-TDS
Shallow	Upgradient	AA-BW-08A	55c	N	07/29/09	3.2	120 J	< 600 U	< 500 U		2230
Shallow	Upgradient	AA-BW-08A	55d	N	10/29/09	2.5	< 50 U	< 600 U	< 500 U		2250 J-TDS
Shallow	Upgradient	AA-BW-08A	55e	N	04/23/10	4.1	< 40 U	< 6000 U	< 540 U		2630 J-TDS
Shallow	Upgradient	AA-BW-08A	55f	N	10/25/10	6.5	< 840 U	< 980 U	< 3700 U		R-CAB&TDS
Shallow	Upgradient	AA-BW-08A	55g	N	03/25/11	4.7	R-CAB&TDS	< 980 U	< 3700 U		R-CAB&TDS
Shallow	Upgradient	AA-BW-08A	55h	N	10/21/11	-2.9	< 840 U,J-TDS	< 980 U	< 3700 UJ		2900 J-TDS
Shallow	Upgradient	AA-BW-08A	74a	N	04/18/13	1.6	< 200 U	< 1500 UJ	< 270 UJ		3200
Shallow	Upgradient	AA-BW-08A	74b	N	04/15/14	-1.9	< 80 U	R	< 1600 U		2400
Shallow	Upgradient	AA-BW-08A	74c	N	04/28/15	-10	< 40 UJ	< 3000 UJ	< 780 UJ	< 20 U	R-CAB&TDS
Shallow	Upgradient	AA-BW-08A	74c	FD	04/29/15	-16	< 40 UJ	< 3000 UJ	< 780 UJ	< 20 U	R-CAB&TDS
Shallow	Upgradient	AA-BW-08A	74d	N	04/25/16	-2.6	< 140 J-TDS	< 14000 UJ	< 5300 UJ	< 80 U	2400 J-TDS
Shallow	Upgradient	AA-BW-12A	49	N	10/23/07	2.5	< 86 U	< 500 U	87700 J+		3500
Shallow	Upgradient	AA-BW-12A	55d	N	10/13/09	3.1	< 5 U	< 60 U	10200 J		940 J-TDS
Shallow	Upgradient	AA-BW-12A	55e	N	04/20/10	1.4	< 4 U	< 600 U	6700		834 J-TDS
Shallow	Upgradient	AA-BW-12A	55f	N	10/25/10	3.2	330 J	< 240 U	< 940 U		446
Shallow	Upgradient	AA-BW-12A	55f	FD	10/25/10	3	R-CAB&TDS	< 240 U	< 940 U		R-CAB&TDS
Shallow	Upgradient	AA-BW-12A	55g	N	03/30/11	-1.3	300 J,J-TDS	< 240 U	< 940 U		445 J, J-TDS
Shallow	Upgradient	AA-BW-12A	55g	FD	03/30/11	-4.6	R-CAB&TDS	< 240 U	< 940 U		R-CAB&TDS
Shallow	Upgradient	AA-BW-12A	55h	N	10/27/11	0.18	330 J,J-TDS	< 250 U	< 940 U		650 J-TDS
Shallow	Upgradient	AA-BW-12A	55h	FD	10/27/11	1.4	370 J,J-TDS	< 250 U	< 940 U		740 J-TDS
Shallow	Upgradient	AA-BW-12A	74a	N	04/18/13	1.7	220	< 300 UJ	270 J		530
Shallow	Upgradient	AA-BW-12A	74b	N	04/15/14	0.44	560	R	< 78 U		560
Shallow	Upgradient	AA-BW-12A	74c	N	05/04/15	-16	< 20 U	< 150 U	< 390 U	< 20 U	R-CAB&TDS

TABLE 2-10
GENERAL CHEMISTRY RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Ion Balance Difference	Nitrate	Nitrite	Orthophosphate	Perchlorate	Sulfate
					Units	percent	µg/L	µg/L	µg/L	µg/L	mg/L
					MCL	--	10000	1000	--	6	--
					BCL	--	10000	1000	--	18	--
Shallow	Upgradient	AA-BW-12A	74d	N	04/25/16	16	R-TDS&CAB	< 14000 UJ	1900 J-	< 200 U	R-TDS&CAB
Shallow	Upgradient	AA-MW-07	55a	N	01/22/09	1.5	< 50 U	< 300 U	< 500 UJ		2220
Shallow	Upgradient	AA-MW-07	55b	N	04/24/09	1.3	< 50 U	< 300 U	< 500 U		2740 J-TDS
Shallow	Upgradient	AA-MW-07	55c	N	07/27/09	1	< 50 U	< 600 U	< 5000 U		2420 J-TDS
Shallow	Upgradient	AA-MW-07	55d	N	10/22/09	4	< 10 U	< 150 U	160 J		2730 J-TDS
Shallow	Upgradient	AA-MW-07	55e	N	05/12/10	0.5	< 40 U	< 6000 U	< 540 U		2560 J-TDS
Shallow	Upgradient	AA-MW-07	55f	N	10/29/10	4	< 420 U	< 490 U	< 1900 U		2270 J-TDS
Shallow	Upgradient	AA-MW-07	55g	N	03/31/11	-1.2	< 840 U,J-TDS	< 980 U	< 3700 U		2340 J-TDS
Shallow	Upgradient	AA-MW-07	55h	N	10/27/11	-4.2	< 420 U,J-TDS	< 490 U	< 1900 U		3200 J-TDS
Shallow	Upgradient	AA-MW-07	74a	N	04/22/13	25	R-CAB&TDS	< 600 UJ	670 J		R-CAB&TDS
Shallow	Upgradient	AA-MW-07	74b	N	04/17/14	3	< 40 U	< 3000 U	< 780 U		2400
Shallow	Upgradient	AA-MW-07	74c	N	04/28/15	12	< 20 U	< 1500 UJ	1200 J	< 20 U	2400 J-TDS
Shallow	Upgradient	AA-MW-07	74d	N	04/25/16	-0.64	460 J-TDS	< 14000 UJ	< 5300 UJ	< 200 U	2700 J-TDS
Shallow	Downgradient	AA-BW-04A	30	N	04/19/05	--	< 10 U	< 6.1 U	160 J		395
Shallow	Downgradient	AA-BW-04A	49	N	10/23/07	1.7	< 86 UJ	< 500 UJ	< 1600 UJ		2470
Shallow	Downgradient	AA-BW-04A	55a	N	01/26/09	4	< 50 U	< 3000 U	410		2250
Shallow	Downgradient	AA-BW-04A	55a	FD	01/26/09	3.4	< 50 U	< 3000 U	390		2210
Shallow	Downgradient	AA-BW-04A	55b	N	04/20/09	4	< 50 U	< 1500 U	< 500 U		2540 J-TDS
Shallow	Downgradient	AA-BW-04A	55b	FD	04/20/09	2.7	< 50 U	< 1500 U	< 500 U		2530 J-TDS
Shallow	Downgradient	AA-BW-04A	55c	N	07/21/09	4	< 50 U	< 600 U	< 5000 U		2230
Shallow	Downgradient	AA-BW-04A	55d	N	10/21/09	7	R-CAB&TDS	< 150 U	210 J		R-CAB&TDS
Shallow	Downgradient	AA-BW-04A	55d	FD	10/21/09	8.6	R-CAB&TDS	< 150 U	140 J		R-CAB&TDS
Shallow	Downgradient	AA-BW-04A	55e	N	05/12/10	0.7	75 J,J-TDS	< 600 U	< 540 UJ		2570 J-TDS
Shallow	Downgradient	AA-BW-04A	55f	N	10/28/10	4	< 420 U	< 490 UJ	< 1900 U		2420 J-TDS
Shallow	Downgradient	AA-BW-04A	55f	FD	10/28/10	1.4	< 420 U	< 490 UJ	< 1900 U		2410 J-TDS
Shallow	Downgradient	AA-BW-04A	55g	N	03/24/11	2.8	< 840 U,J-TDS	< 980 U	< 3700 U		2150 J-TDS
Shallow	Downgradient	AA-BW-04A	55g	FD	03/24/11	2.5	< 840 U,J-TDS	< 980 U	< 3700 U		2190 J-TDS
Shallow	Downgradient	AA-BW-04A	55h	N	10/20/11	0.091	< 840 U	< 980 U	< 3700 U		2200

TABLE 2-10
GENERAL CHEMISTRY RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Ion Balance Difference	Nitrate	Nitrite	Orthophosphate	Perchlorate	Sulfate
					Units	percent	µg/L	µg/L	µg/L	µg/L	mg/L
					MCL	--	10000	1000	--	6	--
					BCL	--	10000	1000	--	18	--
Shallow	Downgradient	AA-BW-04A	55h	FD	10/20/11	1.2	< 840 U,J-TDS	< 980 U	< 3700 U		2100 J-TDS
Shallow	Downgradient	AA-BW-04A	74a	N	04/19/13	4.6	< 20 UJ	< 1500 UJ	< 270 UJ		2300
Shallow	Downgradient	AA-BW-04A	74a	FD	04/19/13	4.6	< 20 UJ	< 1500 UJ	1300 J		2300
Shallow	Downgradient	AA-BW-04A	74b	N	04/16/14	3.1	< 20 UJ	< 3000 UJ	390 J		1800
Shallow	Downgradient	AA-BW-04A	74b	FD	04/16/14	-4.2	< 20 UJ	< 3000 UJ	< 390 UJ		1900 J-TDS
Shallow	Downgradient	AA-BW-04A	74c	N	04/28/15	1.9	< 40 UJ	< 3000 UJ	940 J	< 20 U	1800 J-TDS
Shallow	Downgradient	AA-BW-04A	74d	N	05/10/16	-0.54	< 14 UJ; J-TDS	< 14000 UJ	R	< 200 UJ	1900 J-TDS
Shallow	Downgradient	AA-BW-04A	74d	FD	05/10/16	0.033	< 14 UJ; J-TDS	< 14000 UJ	R	< 200 UJ	1800 J-TDS
Shallow	Downgradient	AA-BW-05A	30	N	04/19/05	--	< 10 U	< 6.1 U	130 J		237
Shallow	Downgradient	AA-BW-05A	49	N	10/23/07	4.7	< 86 UJ	< 5000 UJ	< 1600 UJ		3420
Shallow	Downgradient	AA-BW-05A	55a	N	01/23/09	1.5	< 50 U	< 6000 U	710 J		4320
Shallow	Downgradient	AA-BW-05A	55b	N	04/21/09	1.5	< 50 U	< 1500 U	< 500 U		4360 J-TDS
Shallow	Downgradient	AA-BW-05A	55c	N	07/21/09	1.8	< 50 U	< 600 U	< 5000 U		3830
Shallow	Downgradient	AA-BW-05A	55d	N	10/20/09	7.7	R-CAB&TDS	< 600 U	< 1000 U		R-CAB&TDS
Shallow	Downgradient	AA-BW-05A	55d	FD	10/20/09	8.3	R-CAB&TDS	< 600 U	< 1000 U		R-CAB&TDS
Shallow	Downgradient	AA-BW-05A	55e	N	05/12/10	1.8	< 40 U	< 600 U	< 540 UJ		4410 J-TDS
Shallow	Downgradient	AA-BW-05A	55f	N	10/27/10	4.7	< 420 U	< 490 U	< 1900 U		R-CAB&TDS
Shallow	Downgradient	AA-BW-05A	55g	N	03/24/11	3.8	< 420 U,J-TDS	630 J	< 1900 U		2970 J-TDS
Shallow	Downgradient	AA-BW-05A	55h	N	10/20/11	-3.8	< 420 U,J-TDS	< 490 U	< 1900 U		2800 J-TDS
Shallow	Downgradient	AA-BW-05A	74a	N	04/18/13	0.92	< 8 U	< 600 UJ	660 J		1700
Shallow	Downgradient	AA-BW-05A	74b	N	04/15/14	-1.4	< 80 U	R	130 J		2800
Shallow	Downgradient	AA-BW-05A	74c	N	04/29/15	-0.82	< 40 U	< 3000 U	5300	< 20 U	2000 J-TDS
Shallow	Downgradient	AA-BW-05A	74d	N	04/27/16	15	R-TDS&CAB	R	7900 J+	< 200 U	R-TDS&CAB
Shallow	Downgradient	AA-BW-06A	30	N	04/19/05	--	< 10 U	< 6.1 U	150 J		91.3
Shallow	Downgradient	AA-BW-06A	49	N	10/23/07	1.2	< 86 UJ	< 500 UJ	< 1600 UJ		837
Shallow	Downgradient	AA-BW-06A	55a	N	01/27/09	3.2	< 5 U	< 300 U	< 50 U		1070
Shallow	Downgradient	AA-BW-06A	55b	N	04/22/09	2.6	< 5 U	< 600 U	620		1110 J-TDS
Shallow	Downgradient	AA-BW-06A	55c	N	07/30/09	1.1	< 5 U	< 60 U	< 500 U		1060

TABLE 2-10
GENERAL CHEMISTRY RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Ion Balance Difference	Nitrate	Nitrite	Orthophosphate	Perchlorate	Sulfate
					Units	percent	µg/L	µg/L	µg/L	µg/L	mg/L
					MCL	--	10000	1000	--	6	--
					BCL	--	10000	1000	--	18	--
Shallow	Downgradient	AA-BW-06A	55d	N	10/23/09	4.9	R-CAB&TDS	< 60 U	220 J		R-CAB&TDS
Shallow	Downgradient	AA-BW-06A	55e	N	05/12/10	2.4	< 4 U	< 1500 U	< 54 U		1050 J-TDS
Shallow	Downgradient	AA-BW-06A	55f	N	10/27/10	7	< 210 U	< 240 U	< 940 U		R-CAB&TDS
Shallow	Downgradient	AA-BW-06A	55g	N	03/30/11	-4	< 210 U,J-TDS	< 240 U	< 940 U		1200 J-TDS
Shallow	Downgradient	AA-BW-06A	55h	N	10/28/11	0.91	R-CAB&TDS	< 98 U	< 370 U		R-CAB&TDS
Shallow	Downgradient	AA-BW-06A	74a	N	04/18/13	1.7	< 4 U	< 300 UJ	170 J		1100
Shallow	Downgradient	AA-BW-06A	74b	N	04/15/14	6.3	< 4 U	R	< 78 U		1100 J-CAB
Shallow	Downgradient	AA-BW-06A	74c	N	04/29/15	1.3	< 20 U	< 1500 U	< 390 U	< 10 U	1100 J-TDS
Shallow	Downgradient	AA-BW-06A	74d	N	04/27/16	0.83	< 14 J-TDS	R	< 5300 U	< 80 U	1500 J-TDS
Shallow	Downgradient	H-28	55a	N	01/26/09	1.6	< 50 U	< 300 U	< 50 U		1300
Shallow	Downgradient	H-28	55b	N	04/22/09	6.1	< 5 U	< 600 U	< 50 U		1280 J-CAB
Shallow	Downgradient	H-28	55c	N	07/22/09	0.98	< 100 U	< 60 U	< 50 U		1270 J-TDS
Shallow	Downgradient	H-28	55c	FD	07/22/09	1.2	< 100 U	< 60 U	< 50 U		1270 J-TDS
Shallow	Downgradient	H-28	55d	N	10/20/09	4.3	93 J, J-TDS	< 300 U	< 250 U		1280 J-TDS
Shallow	Downgradient	H-28	55e	N	04/21/10	1	< 4 U	< 1500 U	< 54 U		1220 J-TDS
Shallow	Downgradient	H-28	55f	N	10/26/10	1.3	< 210 U	< 240 U	< 940 U		1360 J-TDS
Shallow	Downgradient	H-28	55g	N	03/24/11	1.4	< 210 U,J-TDS	< 240 U	< 940 U		1220 J-TDS
Shallow	Downgradient	H-28	55h	N	10/20/11	-4.4	R-CAB&TDS	< 490 U	< 1900 U		R-CAB&TDS
Shallow	Downgradient	H-28	74a	N	04/22/13	30	R-CAB&TDS	< 600 UJ	200 J		R-CAB&TDS
Shallow	Downgradient	H-28	74b	N	04/17/14	1.3	< 40 U	< 3000 U	< 780 U		1400 J-TDS
Shallow	Downgradient	H-28	74c	N	04/30/15	-1.9	< 20 U	< 1500 UJ	420 J	< 20 U	1300 J-TDS
Shallow	Downgradient	H-28	74d	N	05/10/16	-1.8	< 14 UJ; J-TDS	< 14000 UJ	R	< 200 UJ	1400 J-TDS
Shallow	Downgradient	H-43	55a	N	01/27/09	2.4	18	< 300 U	< 50 U		965
Shallow	Downgradient	H-43	55b	N	04/21/09	1.8	< 5 U	< 600 U	< 50 U		972 J-TDS
Shallow	Downgradient	H-43	55c	N	07/30/09	2.3	< 5 U	< 60 U	< 50 U		983 J-TDS
Shallow	Downgradient	H-43	55d	N	10/23/09	3	< 5 U	< 60 U	< 50 U		1060 J-TDS
Shallow	Downgradient	H-43	55e	N	05/11/10	2.1	1900 J-TDS	< 1500 U	< 1100 U		1090 J-TDS
Shallow	Downgradient	H-43	55f	N	10/26/10	2.2	< 210 U	< 240 U	< 940 U		1120 J-TDS

TABLE 2-10
GENERAL CHEMISTRY RESULTS
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Ion Balance Difference	Nitrate	Nitrite	Orthophosphate	Perchlorate	Sulfate
					Units	percent	µg/L	µg/L	µg/L	µg/L	mg/L
					MCL	--	10000	1000	--	6	--
					BCL	--	10000	1000	--	18	--
Shallow	Downgradient	H-43	55g	N	03/24/11	-3	< 210 U,J-TDS	< 240 U	< 940 U		1080 J-TDS
Shallow	Downgradient	H-43	55h	N	10/20/11	-5	< 210 U,J-TDS	< 250 U	< 940 U		1200 J-TDS
Shallow	Downgradient	H-43	74a	N	04/19/13	3	< 4 UJ	< 300 UJ	85 J		1100
Shallow	Downgradient	H-43	74b	N	04/16/14	-4.2	< 20 UJ	< 3000 UJ	< 390 UJ		1800
Shallow	Downgradient	H-43	74c	N	04/28/15	-0.44	< 20 UJ	< 1500 UJ	< 390 UJ	< 10 U	1700 J-TDS
Shallow	Downgradient	H-43	74d	N	04/27/16	17	R-TDS&CAB	R	< 5300 U	< 200 U	R-TDS&CAB

Note: This table includes all data, regardless of date. Because of this, the total number of analyses does not always coincide with the total number of analyses reported in Table 4-1.

µg/L = micrograms per liter

mg/L = milligrams per liter

-- = no sample data.

TABLE 2-11
GENERAL WATER QUALITY RESULTS
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Bicarbonate alkalinity	Carbonate alkalinity	Conductivity[1]	Hardness, Total	Hydroxide alkalinity	pH[1]	Total Alkalinity	Total Dissolved Solids
					Units	mg/L	mg/L	µmhos/cm	mg/L	mg/L	--	mg/L	mg/L
					MCL	--	--	--	--	--	6.5 - 8.5	--	500
					BCL	--	--	--	--	--	--	--	--
Shallow	Upgradient	AA-BW-08A	30	N	04/15/05	542	< 1.8 U	--	292	< 1.2 U	--	542	38200
Shallow	Upgradient	AA-BW-08A	49	N	10/25/07	327	< 0.85 U	--	1880	< 0.85 U	--	327	22800 J-
Shallow	Upgradient	AA-BW-08A	55a	N	01/20/09	--	--	--	2310	--	8.20	--	17800 J-
Shallow	Upgradient	AA-BW-08A	55b	N	04/28/09	R-CAB&TDS	< 0.31 U	--	2560	< 0.31 U	6.83	R-CAB&TDS	R-CAB&TDS
Shallow	Upgradient	AA-BW-08A	55b	FD	04/28/09	331 J-TDS	< 0.31 U	--	861	< 0.31 U	6.83	331 J-TDS	15400 J-TDS
Shallow	Upgradient	AA-BW-08A	55c	N	07/29/09	338	< 0.31 U	--	876	< 0.31 U	6.93	338	21200
Shallow	Upgradient	AA-BW-08A	55d	N	10/29/09	329 J-TDS	< 0.31 U	--	914	< 0.31 U	6.93	329 J-TDS	16600 J-TDS
Shallow	Upgradient	AA-BW-08A	55e	N	04/23/10	332 J-TDS	< 0.54 U	--	3100	< 0.54 U	7.03	332 J-TDS	19000 J-TDS
Shallow	Upgradient	AA-BW-08A	55f	N	10/25/10	R-CAB&TDS	< 1.1 U	--	3200	< 1.1 U	6.91	R-CAB&TDS	R-CAB&TDS
Shallow	Upgradient	AA-BW-08A	55g	N	03/25/11	R-CAB&TDS	R-CAB&TDS	--	3000	< 1.1 U	7.20	R-CAB&TDS	R-CAB&TDS
Shallow	Upgradient	AA-BW-08A	55h	N	10/21/11	360 J-TDS	< 1.1 U,J-TDS	--	2900	< 1.1 U	7.31	360 J-TDS	26000 J-TDS
Shallow	Upgradient	AA-BW-08A	74a	N	04/18/13	250	< 0.54 U	--	3600	< 0.54 U	7.15	250	37000
Shallow	Upgradient	AA-BW-08A	74b	N	04/15/14	250	< 0.54 U	--	4300	< 0.54 U	6.78	250	30000
Shallow	Upgradient	AA-BW-08A	74c	N	04/28/15	R-CAB&TDS	< 0.54 U	61000	3400	< 0.54 U	7.58	R-CAB&TDS	R-CAB&TDS
Shallow	Upgradient	AA-BW-08A	74c	FD	04/29/15	R-CAB&TDS	< 0.54 U	61000	2800	< 0.54 U	7.58	R-CAB&TDS	R-CAB&TDS
Shallow	Upgradient	AA-BW-08A	74d	N	04/25/16	350 J-TDS	< 0.54 U	46300	3400	< 0.54 U	8.15	350 J-TDS	26000 J-TDS
Shallow	Upgradient	AA-BW-12A	49	N	10/23/07	04/17/08	< 8.5 U	--	1720	< 8.5 U	--	3030	23400 J-
Shallow	Upgradient	AA-BW-12A	55d	N	10/13/09	416 J-TDS	< 0.31 U	--	1510	< 0.31 U	--	416 J+,J-TDS	5500 J-TDS
Shallow	Upgradient	AA-BW-12A	55e	N	04/20/10	360 J-TDS	< 0.54 U	--	1500	< 0.54 U	6.69	360 J-TDS	6160 J-TDS
Shallow	Upgradient	AA-BW-12A	55f	N	10/25/10	190 J-TDS	< 1.1 U	--	1700	< 1.1 U	6.50	190 J-TDS	3800 J, J-TDS
Shallow	Upgradient	AA-BW-12A	55f	FD	10/25/10	R-CAB&TDS	< 1.1 U	--	1500	< 1.1 U	6.50	R-CAB&TDS	R-CAB&TDS
Shallow	Upgradient	AA-BW-12A	55g	N	03/30/11	200 J-TDS	< 1.1 U,J-TDS	--	1700	< 1.1 U	6.85	200 J-TDS	4100 J-TDS
Shallow	Upgradient	AA-BW-12A	55g	FD	03/30/11	R-CAB&TDS	R-CAB&TDS	--	1600	< 1.1 U	--	R-CAB&TDS	R-CAB&TDS
Shallow	Upgradient	AA-BW-12A	55h	N	10/27/11	200 J-TDS	< 1.1 U,J-TDS	--	1800	< 1.1 U	6.94	200 J-TDS	4100 J-TDS
Shallow	Upgradient	AA-BW-12A	55h	FD	10/27/11	270 J-TDS	< 1.1 U,J-TDS	--	1700	< 1.1 U	--	270 J-TDS	4200 J-TDS
Shallow	Upgradient	AA-BW-12A	74a	N	04/18/13	190	< 0.54 U	--	970	< 0.54 U	6.99	190	4700
Shallow	Upgradient	AA-BW-12A	74b	N	04/15/14	210	< 0.54 U	--	2100	< 0.54 U	6.55	210	5700
Shallow	Upgradient	AA-BW-12A	74c	N	05/04/15	R-CAB&TDS	< 0.54 U	9900	2200	< 0.54 U	7.50	R-CAB&TDS	R-CAB&TDS

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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Bicarbonate alkalinity	Carbonate alkalinity	Conductivity[1]	Hardness, Total	Hydroxide alkalinity	pH[1]	Total Alkalinity	Total Dissolved Solids
					Units	mg/L	mg/L	µmhos/cm	mg/L	mg/L	--	mg/L	mg/L
					MCL	--	--	--	--	--	6.5 - 8.5	--	500
					BCL	--	--	--	--	--	--	--	--
Shallow	Upgradient	AA-BW-12A	74d	N	04/25/16	R-TDS&CAB	< 0.54 U	9680	3300	< 0.54 U	7.69	R-TDS&CAB	R-TDS&CAB
Shallow	Upgradient	AA-MW-07	55a	N	01/22/09	--	--	--	5420	--	7.97	--	18600
Shallow	Upgradient	AA-MW-07	55b	N	04/24/09	181 J-TDS	< 0.31 U	--	5260	< 0.31 U	6.64	181 J-TDS	14400 J-TDS
Shallow	Upgradient	AA-MW-07	55c	N	07/27/09	151	< 0.31 U	--	4940	< 0.31 U	6.75	151 J-TDS	23400 J-TDS
Shallow	Upgradient	AA-MW-07	55d	N	10/22/09	166 J-TDS	< 0.31 U	--	1940	< 0.31 U	6.50	166 J-TDS	17300 J-TDS
Shallow	Upgradient	AA-MW-07	55e	N	05/12/10	176 J-TDS	< 0.54 U	--	5100	< 0.54 U	6.44	176 J-TDS	17100 J-TDS
Shallow	Upgradient	AA-MW-07	55f	N	10/29/10	180 J-TDS	< 1.1 U	--	5300	< 1.1 U	6.98	180 J-TDS	16000 J-TDS
Shallow	Upgradient	AA-MW-07	55g	N	03/31/11	180 J-TDS	< 1.1 U,J-TDS	--	4900	< 1.1 U	6.95	180 J-TDS	17000 J-TDS
Shallow	Upgradient	AA-MW-07	55h	N	10/27/11	180 J-TDS	< 1.1 U,J-TDS	--	5300	< 1.1 U	7.03	180 J-TDS	16000 J-TDS
Shallow	Upgradient	AA-MW-07	74a	N	04/22/13	R-CAB&TDS	R-CAB&TDS	--	2700	< 0.54 U	6.75	R-CAB&TDS	R-CAB&TDS
Shallow	Upgradient	AA-MW-07	74b	N	04/17/14	170	< 0.54 U	--	5600	< 0.54 U	5.23	170	19000
Shallow	Upgradient	AA-MW-07	74c	N	04/28/15	160 J-TDS	< 0.54 U	32000	5500	< 0.54 U	5.77	160 J-TDS	15000 J-TDS
Shallow	Upgradient	AA-MW-07	74d	N	04/25/16	170 J-TDS	< 0.54 U	28600	5100	< 0.54 U	7.66	170 J-TDS	16000 J-TDS
Shallow	Downgradient	AA-BW-04A	30	N	04/19/05	492	< 1.8 U	--	308	< 1.2 U	--	492	29600
Shallow	Downgradient	AA-BW-04A	49	N	10/23/07	484	< 1.7 U	--	2120	< 1.7 U	--	484	22900 J-
Shallow	Downgradient	AA-BW-04A	55a	N	01/26/09	--	--	--	2610	--	8.36	--	13200
Shallow	Downgradient	AA-BW-04A	55a	FD	01/26/09	--	--	--	2670	--	8.36	--	13400
Shallow	Downgradient	AA-BW-04A	55b	N	04/20/09	545 J-TDS	< 1.5 U	--	2590	< 0.31 U	7.45	545 J-TDS	15900 J-TDS
Shallow	Downgradient	AA-BW-04A	55b	FD	04/20/09	412 J-TDS	< 0.61 U	--	2610	< 0.31 U	7.45	412 J-TDS	15800 J-TDS
Shallow	Downgradient	AA-BW-04A	55c	N	07/21/09	06/28/01	< 0.31 U	--	851	< 0.31 U	7.03	545	19600
Shallow	Downgradient	AA-BW-04A	55d	N	10/21/09	R-CAB&TDS	R-CAB&TDS	--	2730	< 0.61 U	7.07	R-CAB&TDS	R-CAB&TDS
Shallow	Downgradient	AA-BW-04A	55d	FD	10/21/09	R-CAB&TDS	R-CAB&TDS	--	2820	< 0.61 U	7.07	R-CAB&TDS	R-CAB&TDS
Shallow	Downgradient	AA-BW-04A	55e	N	05/12/10	502 J-TDS	< 0.54 U	--	2900	< 0.54 U	6.92	502 J-TDS	20900 J-TDS
Shallow	Downgradient	AA-BW-04A	55f	N	10/28/10	490 J-TDS	< 1.1 U	--	2700	< 1.1 U	6.93	490 J-TDS	17000 J-TDS
Shallow	Downgradient	AA-BW-04A	55f	FD	10/28/10	490 J-TDS	< 1.1 U	--	2700	< 1.1 U	6.93	490 J-TDS	15000 J-TDS
Shallow	Downgradient	AA-BW-04A	55g	N	03/24/11	490 J-TDS	< 1.1 U,J-TDS	--	3000	< 1.1 U	7.05	490 J-TDS	17000 J-TDS
Shallow	Downgradient	AA-BW-04A	55g	FD	03/24/11	480 J-TDS	< 1.1 U,J-TDS	--	3000	< 1.1 U	--	480 J-TDS	16000 J-TDS
Shallow	Downgradient	AA-BW-04A	55h	N	10/20/11	480	< 1.1 U	--	3000	< 1.1 U	7.17	480	22000

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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Bicarbonate alkalinity	Carbonate alkalinity	Conductivity[1]	Hardness, Total	Hydroxide alkalinity	pH[1]	Total Alkalinity	Total Dissolved Solids
					Units	mg/L	mg/L	µmhos/cm	mg/L	mg/L	--	mg/L	mg/L
					MCL	--	--	--	--	--	6.5 - 8.5	--	500
					BCL	--	--	--	--	--	--	--	--
Shallow	Downgradient	AA-BW-04A	55h	FD	10/20/11	480 J-TDS	< 1.1 U,J-TDS	--	3000	< 1.1 U	--	480 J-TDS	18000 J-TDS
Shallow	Downgradient	AA-BW-04A	74a	N	04/19/13	470	< 0.54 U	--	2000	< 0.54 U	6.98	470 J-	21000
Shallow	Downgradient	AA-BW-04A	74a	FD	04/19/13	450	< 0.54 U	--	2000	< 0.54 U	6.97	450 J-	22000
Shallow	Downgradient	AA-BW-04A	74b	N	04/16/14	470	< 0.54 U	--	4000	< 0.54 U	6.69	470	21000
Shallow	Downgradient	AA-BW-04A	74b	FD	04/16/14	480 J-TDS	< 0.54 U	--	4000	< 0.54 U	--	480 J-TDS	21000 J-TDS
Shallow	Downgradient	AA-BW-04A	74c	N	04/28/15	440 J-TDS	< 0.54 U	38000	3700	< 0.54 U	7.74	440 J-TDS	390000 J-TDS
Shallow	Downgradient	AA-BW-04A	74d	N	05/10/16	460 J-TDS	< 0.54 U	32200	4100	< 0.54 U	7.81	460 J-TDS	17000 J-TDS
Shallow	Downgradient	AA-BW-04A	74d	FD	05/10/16	460 J-TDS	< 0.54 U	--	4100	< 0.54 U	--	460 J-TDS	17000 J-TDS
Shallow	Downgradient	AA-BW-05A	30	N	04/19/05	442	< 1.8 U	--	208	< 1.2 U	--	442	14800
Shallow	Downgradient	AA-BW-05A	49	N	10/23/07	02/26/02	< 1.7 U	--	2050	< 1.7 U	--	788	25100 J-
Shallow	Downgradient	AA-BW-05A	55a	N	01/23/09	--	--	--	2790	--	8.05	--	20100
Shallow	Downgradient	AA-BW-05A	55b	N	04/21/09	750 J-TDS	< 1.5 U	--	2700	< 0.31 U	6.67	750 J-TDS	21500 J-TDS
Shallow	Downgradient	AA-BW-05A	55c	N	07/21/09	455	< 0.31 U	--	2360	< 0.31 U	6.93	455	23300
Shallow	Downgradient	AA-BW-05A	55d	N	10/20/09	R-CAB&TDS	R-CAB&TDS	--	2510	< 0.31 U	7.11	R-CAB&TDS	R-CAB&TDS
Shallow	Downgradient	AA-BW-05A	55d	FD	10/20/09	R-CAB&TDS	R-CAB&TDS	--	2510	< 0.61 U	7.11	R-CAB&TDS	R-CAB&TDS
Shallow	Downgradient	AA-BW-05A	55e	N	05/12/10	725 J-TDS	< 0.54 U	--	2400	< 0.54 U	7.03	725 J-TDS	26400 J-TDS
Shallow	Downgradient	AA-BW-05A	55f	N	10/27/10	R-CAB&TDS	< 1.1 U	--	1900	< 1.1 U	7.10	R-CAB&TDS	R-CAB&TDS
Shallow	Downgradient	AA-BW-05A	55g	N	03/24/11	750 J-TDS	< 1.1 U,J-TDS	--	2000	< 1.1 U	7.19	750 J-TDS	15000 J-TDS
Shallow	Downgradient	AA-BW-05A	55h	N	10/20/11	750 J-TDS	< 1.1 U,J-TDS	--	1800	< 1.1 U	7.31	750 J-TDS	15000 J-TDS
Shallow	Downgradient	AA-BW-05A	74a	N	04/18/13	01/29/02	< 0.54 U	--	950	< 0.54 U	7.23	760	13000
Shallow	Downgradient	AA-BW-05A	74b	N	04/15/14	760	< 0.54 U	--	3000	< 0.54 U	6.71	760	18000
Shallow	Downgradient	AA-BW-05A	74c	N	04/29/15	760 J-TDS	< 0.54 U	31000	2600	< 0.54 U	7.76	760 J-TDS	300000 J-TDS
Shallow	Downgradient	AA-BW-05A	74d	N	04/27/16	R-TDS&CAB	< 0.54 U	31500	4200	< 0.54 U	8.15	R-TDS&CAB	R-TDS&CAB
Shallow	Downgradient	AA-BW-06A	30	N	04/19/05	382	< 1.8 U	--	840	< 1.2 U	--	382	3990
Shallow	Downgradient	AA-BW-06A	49	N	10/23/07	233	< 0.85 U	--	1020	< 0.85 U	--	233	4700 J-
Shallow	Downgradient	AA-BW-06A	55a	N	01/27/09	--	--	--	1710	--	8.36	--	3600
Shallow	Downgradient	AA-BW-06A	55b	N	04/22/09	240 J-TDS	< 0.31 U	--	747	< 0.31 U	7.23	240 J-TDS	4870 J-TDS
Shallow	Downgradient	AA-BW-06A	55c	N	07/30/09	210	< 0.31 U	--	1580	< 0.31 U	7.14	210	5300

TABLE 2-11
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Bicarbonate alkalinity	Carbonate alkalinity	Conductivity[1]	Hardness, Total	Hydroxide alkalinity	pH[1]	Total Alkalinity	Total Dissolved Solids
					Units	mg/L	mg/L	µmhos/cm	mg/L	mg/L	--	mg/L	mg/L
					MCL	--	--	--	--	--	6.5 - 8.5	--	500
					BCL	--	--	--	--	--	--	--	--
Shallow	Downgradient	AA-BW-06A	55d	N	10/23/09	R-CAB&TDS	R-CAB&TDS	--	1520	< 0.31 U	7.16	R-CAB&TDS	R-CAB&TDS
Shallow	Downgradient	AA-BW-06A	55e	N	05/12/10	226 J-TDS	< 0.54 U	--	1200	< 0.54 U	7.03	226 J-TDS	3860 J-TDS
Shallow	Downgradient	AA-BW-06A	55f	N	10/27/10	R-CAB&TDS	< 1.1 U	--	1200	< 1.1 U	7.30	R-CAB&TDS	R-CAB&TDS
Shallow	Downgradient	AA-BW-06A	55g	N	03/30/11	240 J-TDS	< 1.1 U,J-TDS	--	1200	< 1.1 U	7.33	240 J-TDS	4400 J-TDS
Shallow	Downgradient	AA-BW-06A	55h	N	10/28/11	R-CAB&TDS	R-CAB&TDS	--	1400	< 1.1 U	7.47	R-CAB&TDS	R-CAB&TDS
Shallow	Downgradient	AA-BW-06A	74a	N	04/18/13	260	< 0.54 U	--	750	< 0.54 U	7.48	260	5000
Shallow	Downgradient	AA-BW-06A	74b	N	04/15/14	220 J-CAB	< 0.54 U	--	1800	< 0.54 U	6.99	220 J-CAB	5500
Shallow	Downgradient	AA-BW-06A	74c	N	04/29/15	200 J-TDS	< 0.54 U	13000	2000	< 0.54 U	8.02	200 J-TDS	31000 J-TDS
Shallow	Downgradient	AA-BW-06A	74d	N	04/27/16	250 J-TDS	< 0.54 U	12600	2600	< 0.54 U	7.90	250 J-TDS	6800 J-TDS
Shallow	Downgradient	H-28	55a	N	01/26/09	--	--	--	3810	--	7.84	--	4900
Shallow	Downgradient	H-28	55b	N	04/22/09	220 J-CAB	< 0.31 U	--	3650	< 0.31 U	7.01	220 J-CAB	8850 J-CAB
Shallow	Downgradient	H-28	55c	N	07/22/09	153	< 0.31 U	--	3760	< 0.31 U	6.63	153 J-TDS	5600 J-TDS
Shallow	Downgradient	H-28	55c	FD	07/22/09	150	< 0.31 U	--	3700	< 0.31 U	6.63	150 J-TDS	3300 J-TDS
Shallow	Downgradient	H-28	55d	N	10/20/09	148 J-TDS	< 0.31 U	--	4150	< 0.31 U	6.79	148 J-TDS	8800 J-TDS
Shallow	Downgradient	H-28	55e	N	04/21/10	195 J-TDS	< 0.54 U	--	4100	< 0.54 U	5.70	195 J-TDS	11400 J-TDS
Shallow	Downgradient	H-28	55f	N	10/26/10	150 J-TDS	< 1.1 U	--	3700	< 1.1 U	6.96	150 J-TDS	7400 J-TDS
Shallow	Downgradient	H-28	55g	N	03/24/11	150 J-TDS	< 1.1 U,J-TDS	--	4100	< 1.1 U	6.65	150 J-TDS	7500 J-TDS
Shallow	Downgradient	H-28	55h	N	10/20/11	R-CAB&TDS	R-CAB&TDS	--	4200	< 1.1 U	6.84	R-CAB&TDS	R-CAB&TDS
Shallow	Downgradient	H-28	74a	N	04/22/13	R-CAB&TDS	R-CAB&TDS	--	2500	< 0.54 U	6.80	R-CAB&TDS	R-CAB&TDS
Shallow	Downgradient	H-28	74b	N	04/17/14	260 J-TDS	< 0.54 U	--	5000	< 0.54 U	5.30	260 J-TDS	13000 J-TDS
Shallow	Downgradient	H-28	74c	N	04/30/15	260 J-TDS	< 0.54 U	20000	4200	< 0.54 U	5.85	260 J-TDS	12000 J-TDS
Shallow	Downgradient	H-28	74d	N	05/10/16	160 J-TDS	< 0.54 U	19000	5000	< 0.54 U	7.42	160 J-TDS	9700 J-TDS
Shallow	Downgradient	H-43	55a	N	01/27/09	--	--	--	1330	--	8.36	--	2800
Shallow	Downgradient	H-43	55b	N	04/21/09	314 J-TDS	< 0.31 U	--	1340	< 0.31 U	5.59	314 J-TDS	4090 J-TDS
Shallow	Downgradient	H-43	55c	N	07/30/09	10/03/00	< 0.31 U	--	1410	< 0.31 U	7.29	277 J-TDS	5600 J-TDS
Shallow	Downgradient	H-43	55d	N	10/23/09	260 J-TDS	< 0.31 U	--	1420	< 0.31 U	7.21	260 J-TDS	5300 J-TDS
Shallow	Downgradient	H-43	55e	N	05/11/10	278 J-TDS	< 0.54 U	--	1400	< 0.54 U	7.03	278 J-TDS	5000 J-TDS
Shallow	Downgradient	H-43	55f	N	10/26/10	220 J-TDS	< 1.1 U	--	1400	< 1.1 U	7.35	220 J-TDS	4400 J-TDS

TABLE 2-11
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Water-Bearing Zone	Location	Well ID	DVSR	Sample Type	Sample Date	Bicarbonate alkalinity	Carbonate alkalinity	Conductivity(1)	Hardness, Total	Hydroxide alkalinity	pH(1)	Total Alkalinity	Total Dissolved Solids
					Units	mg/L	mg/L	µmhos/cm	mg/L	mg/L	--	mg/L	mg/L
					MCL	--	--	--	--	--	6.5 - 8.5	--	500
					BCL	--	--	--	--	--	--	--	--
Shallow	Downgradient	H-43	55g	N	03/24/11	260 J-TDS	< 1.1 U,J-TDS	--	1600	< 1.1 U	7.44	260 J-TDS	4100 J-TDS
Shallow	Downgradient	H-43	55h	N	10/20/11	210 J-TDS	< 1.1 U,J-TDS	--	1600	< 1.1 U	7.41	210 J-TDS	5100 J-TDS
Shallow	Downgradient	H-43	74a	N	04/19/13	140	< 0.54 U	--	920	< 0.54 U	7.36	140 J-	5100
Shallow	Downgradient	H-43	74b	N	04/16/14	300	< 0.54 U	--	3300	< 0.54 U	5.70	300	8900
Shallow	Downgradient	H-43	74c	N	04/28/15	270 J-TDS	< 0.54 U	18000	2800	< 0.54 U	6.65	270 J-TDS	89000 J-TDS
Shallow	Downgradient	H-43	74d	N	04/27/16	R-TDS&CAB	< 0.54 U	18500	4000	< 0.54 U	6.81	R-TDS&CAB	R-TDS&CAB

Note: This table includes all data, regardless of date. Because of this, the total number of analyses does not always coincide with the total number of analyses reported in Table 4-1.

mg/L = milligrams per liter

-- = no sample data.

(1) Note that conductivity and pH values are from field measurements taken at the time of sample collection, as reported on the field sampling forms.

TABLE 3-1
CURRENT AND HISTORICAL GROUNDWATER ELEVATION DATA
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
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Well ID	Well Installation Date	Surface Elevation (ft.-amsl)	Northing	Easting	Top of Casing Elevation (ft.-amsl)	Date Measured	Depth to Water (ft.-btoc)	Groundwater Elevation (ft.-amsl)
AA-BW-04A	02/24/05	1729.47	26721142.81	825492.25	1731.49	4/1/2005	38.18	1693.31
						10/22/2007	38.53	1692.96
						1/26/2009	38.17	1693.32
						4/20/2009	37.95	1693.54
						7/21/2009	37.81	1693.68
						10/21/2009	38.25	1693.24
						4/21/2010	38.35	1693.14
						10/28/2010	38.47	1693.02
						3/24/2011	38.42	1693.07
						10/20/2011	38.51	1692.98
						4/19/2013	37.80	1693.69
						5/14/2013	37.80	1693.69
						4/16/2014	38.33	1693.16
						4/28/2015	38.42	1693.07
						4/30/2015	38.42	1693.07
						4/28/2016	38.58	1692.91
						5/10/2016	38.54	1692.95
AA-BW-05A	02/12/05	1729.21	26721183.83	825065.41	1731.40	4/1/2005	35.31	1696.09
						10/22/2007	34.08	1697.32
						1/23/2009	33.77	1697.63
						4/21/2009	33.60	1697.80
						7/21/2009	33.65	1697.75
						10/20/2009	33.73	1697.67
						4/22/2010	33.46	1697.94
						10/27/2010	33.27	1698.13
						3/24/2011	33.27	1698.13
						10/20/2011	33.29	1698.11
						4/18/2013	32.69	1698.71
						4/15/2014	33.21	1698.19
						4/29/2015	33.45	1697.95
						4/27/2016	33.88	1697.52
AA-BW-06A	03/10/05	1729.28	26721238.26	824476.16	1731.40	4/1/2005	34.22	1697.18
						10/22/2007	33.40	1698.00
						1/27/2009	32.89	1698.51
						4/22/2009	32.63	1698.77
						7/30/2009	32.76	1698.64
						10/23/2009	32.72	1698.68
						4/23/2010	32.34	1699.06
						10/27/2010	31.85	1699.55
						3/30/2011	31.98	1699.42
						10/28/2011	31.90	1699.50
						4/18/2013	31.33	1700.07
						4/15/2014	32.08	1699.32
						4/29/2015	32.53	1698.87
						4/27/2016	32.88	1698.52

TABLE 3-1
CURRENT AND HISTORICAL GROUNDWATER ELEVATION DATA
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA

Well ID	Well Installation Date	Surface Elevation (ft.-amsl)	Northing	Easting	Top of Casing Elevation (ft.-amsl)	Date Measured	Depth to Water (ft.-btoc)	Groundwater Elevation (ft.-amsl)
AA-BW-08A	03/15/05	1761.28	26719492.77	825332.70	1763.18	4/1/2005	51.80	1711.38
						10/22/2007	51.18	1712.00
						1/20/2009	51.09	1712.09
						4/16/2009	50.92	1712.26
						4/28/2009	50.89	1712.29
						7/29/2009	50.87	1712.31
						10/29/2009	50.76	1712.42
						4/23/2010	51.07	1712.11
						10/25/2010	49.91	1713.27
						3/25/2011	50.90	1712.28
						10/21/2011	50.94	1712.24
						4/18/2013	49.97	1713.21
						4/15/2014	51.23	1711.95
						4/28/2015	50.27	1712.91
						4/30/2015	50.27	1712.91
						4/25/2016	50.31	1712.87
AA-BW-12A	02/15/05	1776.54	26718772.36	824440.21	1778.54	4/1/2005	53.07	1725.47
						10/22/2007	51.53	1727.01
						4/16/2009	50.81	1727.73
						11/13/2009	50.44	1728.10
						4/20/2010	50.21	1728.33
						10/25/2010	50.14	1728.40
						3/30/2011	50.16	1728.38
						10/27/2011	50.12	1728.42
						4/18/2013	49.61	1728.93
						4/15/2014	49.85	1728.69
						4/29/2015	49.74	1728.80
						4/25/2016	49.78	1728.76
AA-MW-07	9/12/06	1761.91	26719344.40	826126.54	1764.22	1/22/2009	38.85	1725.37
						4/15/2009	38.71	1725.51
						4/24/2009	38.67	1725.55
						7/27/2009	38.84	1725.38
						10/22/2009	38.59	1725.63
						4/23/2010	37.98	1726.24
						10/29/2010	38.03	1726.19
						3/31/2011	38.27	1725.95
						10/27/2011	38.02	1726.20
						4/22/2013	37.19	1727.03
						4/17/2014	37.71	1726.51
						5/4/2015	38.11	1726.11
						4/25/2016	37.69	1726.53

TABLE 3-1
CURRENT AND HISTORICAL GROUNDWATER ELEVATION DATA
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA

Well ID	Well Installation Date	Surface Elevation (ft.-amsl)	Northing	Easting	Top of Casing Elevation (ft.-amsl)	Date Measured	Depth to Water (ft.-btoc)	Groundwater Elevation (ft.-amsl)
H-28	2/18/80	1729.10	26721024.80	825845.21	1732.90	1/24/2009	39.03	1693.87
						1/28/2009	39.05	1693.85
						4/13/2009	38.75	1694.15
						4/22/2009	38.73	1694.17
						7/22/2009	38.60	1694.30
						10/20/2009	38.96	1693.94
						4/21/2010	39.00	1693.90
						10/26/2010	39.33	1693.57
						3/24/2011	39.25	1693.65
						10/20/2011	39.52	1693.38
						4/22/2013	38.43	1694.47
						4/17/2014	39.08	1693.82
						4/30/2015	39.23	1693.67
						4/28/2016	39.33	1693.57
						5/10/2016	39.28	1693.62
H-43	2/28/80	1728.20	26721179.60	824660.68	1731.22	1/27/2009	32.62	1698.60
						4/13/2009	32.40	1698.82
						4/21/2009	32.41	1698.81
						7/30/2009	32.47	1698.75
						10/28/2009	32.49	1698.73
						4/23/2010	32.10	1699.12
						10/26/2010	31.78	1699.44
						3/24/2011	31.81	1699.41
						10/20/2011	31.82	1699.40
						4/19/2013	31.18	1700.04
						5/14/2013	31.22	1700.00
						4/16/2014	31.83	1699.39
						4/28/2015	32.22	1699.00
						4/30/2015	32.22	1699.00
						4/27/2016	32.53	1698.69

Notes:
amsl - Above mean sea level
btoc = Below top of casing
ft - feet
WNL - Well Not Located
WNM - Well Not Measured

TABLE 4-1
GROUNDWATER SUMMARY OF SAMPLE RESULTS – SHALLOW ZONE
CAMU 2016 LONG-TERM GROUNDWATER MONITORING REPORT
CAMU AREA, CLARK COUNTY, NEVADA
(Page 1 of 1)

Parameter of Interest	Compound List	Units	Total Count	Detect Freq.	Censored (Non-Detect) Data							Detected Data[a]							MCL	Count of Detects > MCL	Water BCL	Count of Detects > BCL
					Count	Min	Q1	Median	Mean	Q3	Max	Count	Min	Q1	Median	Mean	Q3	Max				
General Chemistry	Bromide	µg/L	9	33%	6	500	500	500	500	500	500	3	470	470	710	2000	4700	4700	--	--	11300	0
	Bromine	µg/L	9	33%	6	50	50	50	50	50	50	3	940	940	1400	3900	9400	9400	--	--	--	--
	Chlorate	µg/L	9	0%	9	50	50	50	67	100	100	0	--	--	--	--	--	--	--	--	1000	--
	Chloride	mg/L	6	100%	0	--	--	--	--	--	--	6	2700	4500	8700	8200	11000	15000	--	--	--	--
	Chlorine	mg/L	6	100%	0	--	--	--	--	--	--	6	5400	8900	18000	16000	21000	30000	4	6	3.34	6
	Chlorite	µg/L	9	44%	5	100	100	200	160	200	200	4	330	550	1600	2800	6300	7700	1000	3	--	--
	Fluoride	µg/L	6	83%	1	200	--	200	200	--	200	5	570	720	1000	1100	1600	2000	4000	0	4000	0
	Ion Balance Difference	percent	9	--	--	--	--	--	--	--	--	9	-2.6	-1.2	0.033	4.8	16	17	--	--	--	--
	Nitrate	µg/L	6	17%	5	14	14	14	39	77	140	1	460	--	460	460	--	460	10000	0	10000	0
	Nitrite	µg/L	6	0%	6	14000	14000	14000	14000	14000	14000	0	--	--	--	--	--	--	1000	--	1000	--
	Orthophosphate as P	µg/L	6	33%	4	5300	5300	5300	5300	5300	5300	2	1900	--	4900	4900	--	7900	--	--	--	--
	Perchlorate	µg/L	9	0%	9	80	140	200	170	200	200	0	--	--	--	--	--	--	--	--	18	--
	Sulfate	mg/L	6	100%	0	--	--	--	--	--	--	6	1400	1500	1900	2000	2500	2700	--	--	--	--
Metals	Aluminum	µg/L	9	11%	8	87	110	520	600	870	1700	1	13000	--	13000	13000	--	13000	--	--	50	1
	Arsenic	µg/L	9	89%	1	59	--	59	59	--	59	8	96	110	210	220	320	400	10	8	10	8
	Barium	µg/L	9	100%	0	--	--	--	--	--	--	9	40	47	61	88	72	340	2000	0	2000	0
	Beryllium	µg/L	9	22%	7	1.8	1.8	3.5	12	18	35	2	1.8	--	13	13	--	24	4	1	4	1
	Cadmium	µg/L	9	22%	7	0.5	0.5	1	3.3	5	10	2	2.6	--	9.8	9.8	--	17	5	1	5	1
	Calcium	mg/L	6	100%	0	--	--	--	--	--	--	6	520	550	620	650	780	780	--	--	--	--
	Chromium	µg/L	9	11%	8	5	6.3	30	35	50	100	1	22	--	22	22	--	22	100	0	100	0
	Chromium (VI)	µg/L	9	22%	7	0.066	0.33	0.33	0.29	0.33	0.33	2	2.32	--	2.8	2.8	--	3.2	100	0	100	0
	Cobalt	µg/L	9	44%	5	2.2	2.2	11	9.7	17	22	4	1.3	1.3	7.7	9.2	19	20	--	--	10	2
	Copper	µg/L	9	33%	6	6.8	6.8	34	31	43	68	3	6.7	6.7	8.4	14	27	27	1300	0	1300	0
	Iron	µg/L	9	67%	3	1600	1600	1600	2200	3300	3300	6	360	370	1300	47000	76000	270000	--	--	300	6
	Lead	µg/L	9	22%	7	0.87	0.87	1.7	5.6	8.7	17	2	9.8	--	17	17	--	24	15	1	15	1
	Lithium	µg/L	9	100%	0	--	--	--	--	--	--	9	360	460	630	590	710	730	--	--	66.7	9
	Magnesium	mg/L	6	100%	0	--	--	--	--	--	--	6	300	450	620	590	750	770	--	--	189	6
	Manganese	µg/L	9	100%	0	--	--	--	--	--	--	9	620	860	1200	1700	2100	4900	--	--	20	9
	Nickel	µg/L	9	11%	8	4	5	24	28	40	80	1	17	--	17	17	--	17	--	--	667	0
	Potassium	mg/L	6	100%	0	--	--	--	--	--	--	6	24	27	40	39	51	52	--	--	--	--
	Silver	µg/L	9	0%	9	4.1	4.1	8.2	26	41	82	0	--	--	--	--	--	--	--	--	100	--
	Sodium	mg/L	6	100%	0	--	--	--	--	--	--	6	1400	1600	4700	4400	6000	8900	--	--	--	--
	Strontium	µg/L	9	100%	0	--	--	--	--	--	--	9	13000	16000	20000	19000	23000	24000	--	--	20000	4
	Thallium	µg/L	9	0%	9	2.8	2.8	5.5	18	28	55	0	--	--	--	--	--	--	2	--	2	--
	Titanium	µg/L	9	22%	7	11	11	110	83	110	210	2	28	--	310	310	--	590	--	--	133000	0
	Uranium	µg/L	9	56%	4	2.3	4.7	12	12	20	23	5	2.8	8.9	15	26	49	73	30	1	30	1
	Vanadium	µg/L	9	11%	8	12	15	72	84	120	240	1	100	--	100	100	--	100	--	--	167	0
	Zinc	µg/L	9	22%	7	47	47	93	310	470	930	2	53	--	280	280	--	510	--	--	10000	0
Water Quality Parameters	Bicarbonate Alkalinity	mg/L	6	100%	0	--	--	--	--	--	--	6	160	170	300	310	460	460	--	--	--	--
	Carbonate Alkalinity	mg/L	9	0%	9	0.54	0.54	0.54	0.54	0.54	0.54	0	--	--	--	--	--	--	--	--	--	--
	Conductivity [b]	µmhos/cm	8	--	0	--	--	--	--	--	--	8	9680	14000	24000	25000	32000	46300	--	--	--	--
	Hardness, Total	mg/L	9	100%	0	--	--	--	--	--	--	9	2600	3400	4100	4000	4600	5100	--	--	--	--
	Hydroxide alkalinity	mg/L	9	0%	9	0.54	0.54	0.54	0.54	0.54	0.54	0	--	--	--	--	--	--	--	--	--	--
	pH [b]	--	8	--	0	--	--	--	--	--	--	8	6.81	7.5	7.8	7.7	8.1	8.15	6.5 - 8.5	0	--	--
	Total Alkalinity	mg/L	6	100%	0	--	--	--	--	--	--	6	160	170	300	310	460	460	--	--	--	--
	Total Dissolved Solids (TDS)	mg/L	6	100%	0	--	--	--	--	--	--	6	6800	9000	17000	15000	19000	26000	500	6	--	--

Notes:
BCL = Basic Comparison Levels (BCLs) from NDEP 2015.
Max = Maximum
Min = Minimum
Q1 = 1st quartile (25th percentile)
Q3 = 3rd quartile (75th percentile)
Values for Q1, median, mean, and Q3 are rounded to 2 significant figures. BCLs are rounded to 3 significant figures.
Note that sample counts less than 9 are due to the exclusion of rejected results, as discussed in the DVSR.
a - Range of detections include estimated values of detect results between the detection limit and reporting limit. As such some minimum detected concentrations may be below the minimum reporting limit. In these cases the respective sample results are flagged in the dataset.
b - Note that conductivity and pH values are from field measurements taken at the time of sample collection, as reported on the field sampling forms.
µg/L = micrograms per liter
mg/L = milligrams per liter
-- = Not applicable or no value has been established.

APPENDIX A

NDEP COMMENTS AND BRC'S RESPONSE TO COMMENTS [PLACEHOLDER]

APPENDIX B

ELECTRONIC DATABASE AND ELECTRONIC COPY OF THE REPORT

APPENDIX C

WELL SAMPLING FORMS

Monitoring Well Low-Flow Purge/Sampling Form

Project: _BRC/CAMU/2016 Annual

Well ID:	AA-BW-04A	Screened Interval (ft)	34-54	Well Diameter (in):	4
Date:	4/28/2016	Pump Intake Depth (ft)	44	Static Water Level (ft):	38.52
Sample ID	AA-BW-04A	Purging/ Sample Device:	Sample Pro Portable	Total Well depth (ft):	54.85
Time:	0910	PID Reading at TOC:	N/A	Water Column Length:	16.33
Dup ID:	N/A	Water Level Instrument :	Solinst	Minimum Purge Volume:	
Rinsate ID:	N/A	WLI Serial #:	46699	Samplers Name:	Keith Houk
MS/MSD ID:	N/A	Water Quality Meter:	Horiba U-22	Optimal Pump Setting: PSI	60 CPM 3 ID: 9
Analysis:	Various	Water Quality Meter Serial #:	76008	Low-Flow or Net Purge:	Low-Flow
		WQM Calibrated Date & Time:	4/28/16:0715		

Time	Volume Purged	Flow Rate	Water Level (feet - BTOC)	Specific Conductance ( )	pH	Temp.	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity	TDS
0847	**Liters**	**ml/min**	**± 0.1 ft**	**3%**	**± 0.1**	**± 0.2**	**± 10%**	**± 10%**	**± 10%**	**%**	**g/L**
0850	1.5	500	38.59	32.4	7.61	25.6	2.7	-185	680.0	2.0	20
0853	3.0	500	38.59	32.2	7.69	26.0	1.8	-203	664.0	2.0	20
0856	4.5	500	38.58	32.1	7.73	26.0	1.5	-216	665.0	2.0	20
0859	6.0	500	38.58	32.1	7.77	25.9	1.4	-222	666.0	2.0	20
0902	7.5	500	38.58	32.2	7.78	25.9	1.3	-224	667.0	2.0	20
0905	9.0	500	38.58	32.1	7.80	26.0	1.3	-226	660.0	2.0	20
0908	10.5	500	38.58	32.2	7.81	26.0	1.3	-227	665.0	2.0	20
0910	Started collecting AA-BW-04A										
0915	Finished collecting AA-BW-04A										
0915	Started collecting AA-BW-04A(FD)										
0920	Finished collecting AA-BW-04A(FD)										

Comments:

Maximum permissable drawdown = __1.37__ ft BTOC, water level not to draw down below __39.89__ ft BTOC

Optimal drawdown for low-flow micropurge sampling is less than 0.3 ft at a flow rate of 0.1 to 1.0 L/min.

If drawdown exceeds 0.3 ft at a flow rate of 0.1 L/min....then attempt to achieve drawdown less than or equal to 25% of the available screen interval at flow rate equal to 0.1 to 1.0 L/min.

This is performed by subtracting pump intake and top of screen for fully submerged screens then multiplying by 25%, or subtracting the distance between pump intake and static water level and multiplying by 25% for water table wells with partly submerged screens.

Monitoring Well Low-Flow Purge/Sampling Form

Project: _BRC/CAMU/2016 Annual

Well ID:	AA-BW-05A	Screened Interval (ft)	34-64	Well Diameter (in):	4
Date:	4/27/2016	Pump Intake Depth (ft)	49	Static Water Level (ft):	33.63
Sample ID	AA-BW-08A	Purging/ Sample Device:	Sample Pro Portable	Total Well depth (ft):	67.43
Time:	0935	PID Reading at TOC:	N/A	Water Column Length:	33.8
Dup ID:	N/A	Water Level Instrument :	Solinst	Minimum Purge Volume:	
Rinsate ID:	N/A	WLI Serial #:	46699	Samplers Name:	Keith Houk
MS/MSD ID:	N/A	Water Quality Meter:	Horiba U-22	Optimal Pump Setting: PSI	60 CPM 3 ID: 9
Analysis:	Various	Water Quality Meter Serial #:	76008	Low-Flow or Net Purge:	Low-Flow
		WQM Calibrated Date & Time:	4/27/16:0630		

Time	Volume Purged	Flow Rate	Water Level (feet - BTOC)	Specific Conductance ( )	pH	Temp.	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity	TDS
0913	**Liters**	**ml/min**	**± 0.1 ft**	**3%**	**± 0.1**	**± 0.2**	**± 10%**	**± 10%**	**± 10%**	**%**	**g/L**
0916	0.9	300	33.86	31.5	7.81	26.4	1.6	-278	57.7	2.0	19
0919	1.8	300	33.88	31.5	7.88	26.5	1.4	-296	56.0	2.0	19
0922	2.7	300	33.88	31.5	8.06	26.6	1.4	-313	54.1	2.0	19
0925	3.6	300	33.88	31.5	8.14	26.5	1.3	-322	54.2	2.0	19
0928	4.5	300	33.88	31.5	8.13	26.5	1.3	-327	53.9	2.0	19
0931	5.4	300	33.88	31.5	8.15	26.4	1.3	-330	53.8	2.0	19
0934	6.3	300	33.88	31.5	8.15	26.4	1.3	-332	53.8	2.0	19
0935	Started collecting AA-BW-05A										
0940	Finished collecting AA-BW-05A										

Comments: _____

Maximum permissable drawdown = __3.75__ ft BTOC, water level not to draw down below __37.38__ ft BTOC

Optimal drawdown for low-flow micropurge sampling is less than 0.3 ft at a flow rate of 0.1 to 1.0 L/min.

If drawdown exceeds 0.3 ft at a flow rate of 0.1 L/min....then attempt to achieve drawdown less than or equal to 25% of the available screen interval at flow rate equal to 0.1 to 1.0 L/min.

This is performed by subtracting pump intake and top of screen for fully submerged screens then multiplying by 25%, or subtracting the distance between pump intake and static water level and multiplying by 25% for water table wells with partly submerged screens.

Monitoring Well Low-Flow Purge/Sampling Form

Project: _BRC/CAMU/2016 Annual

Well ID:	AA-BW-06A	Screened Interval (ft)	23-43	Well Diameter (in):	4
Date:	4/24/2016	Pump Intake Depth (ft)	38	Static Water Level (ft):	32.88
Sample ID	AA-BW-06A	Purging/ Sample Device:	Sample Pro Portable	Total Well depth (ft):	45.64
Time:	0735	PID Reading at TOC:	N/A	Water Column Length:	12.76
Dup ID:	N/A	Water Level Instrument :	Solinst	Minimum Purge Volume:	
Rinsate ID:	N/A	WLI Serial #:	46699	Samplers Name:	Keith Houk
MS/MSD ID:	N/A	Water Quality Meter:	Horiba U-22	Optimal Pump Setting: PSI	60 CPM 2 ID: 47
Analysis:	Various	Water Quality Meter Serial #:	76008	Low-Flow or Net Purge:	Low-Flow
		WQM Calibrated Date & Time:	4/27/16:0630		

Time	Volume Purged	Flow Rate	Water Level (feet - BTOC)	Specific Conductance ( )	pH	Temp.	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity	TDS
0712	**Liters**	**ml/min**	**± 0.1 ft**	**3%**	**± 0.1**	**± 0.2**	**± 10%**	**± 10%**	**± 10%**	**%**	**g/L**
0715	0.6	200	32.88	12.0	7.33	24.1	3.2	-114	0.00	0.7	8
0718	1.2	200	32.88	12.6	7.61	24.7	1.8	-181	0.00	0.7	8
0721	1.8	200	32.88	12.6	7.77	24.8	1.5	-208	0.00	0.7	8
0724	2.4	200	32.88	12.6	7.82	24.9	1.4	-222	0.00	0.7	8
0727	3	200	32.88	12.6	7.92	24.9	1.3	-234	0.00	0.7	8
0730	3.6	200	32.88	12.6	7.91	24.9	1.3	-238	0.00	0.7	8
0733	4.2	200	32.88	12.6	7.9	24.9	1.3	-241	0.00	0.7	8
0735	Started collecting AA-BW-06A										
0743	Finished collecting AA-BW-06A										
0743	Started collecting AA-BW-06A(MS/MSD)										
0752	Finished collecting AA-BW-06A(MS/MSD)										

Comments: _____

Maximum permissable drawdown = _1.28___ ft BTOC, water level not to draw down below _34.16___ ft BTOC

Optimal drawdown for low-flow micropurge sampling is less than 0.3 ft at a flow rate of 0.1 to 1.0 L/min.

If drawdown exceeds 0.3 ft at a flow rate of 0.1 L/min....then attempt to achieve drawdown less than or equal to 25% of the available screen interval at flow rate equal to 0.1 to 1.0 L/min.

This is performed by subtracting pump intake and top of screen for fully submerged screens then multiplying by 25%, or subtracting the distance between pump intake and static water level and multiplying by 25% for water table wells with partly submerged screens.

Monitoring Well Low-Flow Purge/Sampling Form

Project: BRC/CAMU/2016 Annual

Well ID:	AA-BW-08A	Screened Interval (ft)	37.5-57.5	Well Diameter (in):	4
Date:	4/25/2016	Pump Intake Depth (ft)	55	Static Water Level (ft):	50.25
Sample ID	AA-BW-08A	Purging/ Sample Device:	Sample Pro Portable	Total Well depth (ft):	65.60
Time:	1030	PID Reading at TOC:	N/A	Water Column Length:	15.35
Dup ID:	N/A	Water Level Instrument :	Solinst	Minimum Purge Volume:	
Rinsate ID:	N/A	WLI Serial #:	46699	Samplers Name:	Keith Houk
MS/MSD ID:	N/A	Water Quality Meter:	Horiba U-22	Optimal Pump Setting: PSI 60 CPM 3 ID: 9	
Analysis:	Various	Water Quality Meter Serial #:		Low-Flow or Net Purge:	Low-Flow
		WQM Calibrated Date & Time:	4/25/16 0610		

Time	Volume Purged	Flow Rate	Water Level (feet - BTOC)	Specific Conductance ( )	pH	Temp.	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity	TDS
0958	**Liters**	**ml/min**	**± 0.1 ft**	**3%**	**± 0.1**	**± 0.2**	**± 10%**	**± 10%**	**± 10%**	**%**	**g/L**
1001	1.05	350	50.31	56.3	7.40	25.90	2.10	-316	0.00	3.7	34
1004	2.1	350	50.31	52.8	7.67	25.70	1.50	-323	0.00	3.5	31
1007	3.15	350	50.31	49.2	7.97	25.80	1.40	-326	0.00	3.2	30
1010	4.2	350	50.31	47.2	8.12	25.90	1.30	-320	0.00	3.1	29
1013	5.25	350	50.31	47.0	8.19	25.90	1.30	-321	0.00	3.1	28
1016	6.3	350	50.31	46.6	8.13	25.90	1.30	-323	0.00	3.0	28
1019	7.35	350	50.31	46.3	8.15	25.9	1.3	-326	0.00	3.0	28
1020	Started collecting AA-BW-08A										
1030	Finished collecting AA-BW-08A										

Comments:

Maximum permissable drawdown = 1.19 ft BTOC, water level not to draw down below 51.44 ft BTOC

Optimal drawdown for low-flow micropurge sampling is less than 0.3 ft at a flow rate of 0.1 to 1.0 L/min.

If drawdown exceeds 0.3 ft at a flow rate of 0.1 L/min....then attempt to achieve drawdown less than or equal to 25% of the available screen interval at flow rate equal to 0.1 to 1.0 L/min.

This is performed by subtracting pump intake and top of screen for fully submerged screens then multiplying by 25%, or subtracting the distance between pump intake and static water level and multiplying by 25% for water table wells with partly submerged screens.

Monitoring Well Low-Flow Purge/Sampling Form

Project: _BRC/CAMU/2016 Annual

Well ID:	AA-BW-12A	Screened Interval (ft)	49-69	Well Diameter (in):	4
Date:	4/25/2016	Pump Intake Depth (ft)	59	Static Water Level (ft):	49.73
Sample ID	AA-BW-12A	Purging/ Sample Device:	Sample Pro Portable	Total Well depth (ft):	71.27
Time:	0940	PID Reading at TOC:	N/A	Water Column Length:	21.54
Dup ID:	N/A	Water Level Instrument :	Solinst	Minimum Purge Volume:	
Rinsate ID:	N/A	WLI Serial #:	46699	Samplers Name:	Keith Houk
MS/MSD ID:	N/A	Water Quality Meter:	Horiba U-22	Optimal Pump Setting: PSI 60 CPM 3 ID: 9	
Analysis:	Various	Water Quality Meter Serial #:		Low-Flow or Net Purge:	Low-Flow
		WQM Calibrated Date & Time:	4/25/16 0610		

Time	Volume Purged	Flow Rate	Water Level (feet - BTOC)	Specific Conductance ( )	pH	Temp.	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity	TDS
0905	**Liters**	**ml/min**	**± 0.1 ft**	**3%**	**± 0.1**	**± 0.2**	**± 10%**	**± 10%**	**± 10%**	**%**	**g/L**
0908	1.05	350	49.78	9.77	7.35	24.90	2.90	-261	11.80	0.50	6.2
0912	2.10	350	49.78	9.60	7.53	25.70	1.40	-291	0.60	0.50	6
0915	3.15	350	49.78	9.59	7.58	25.80	1.40	-296	0.00	0.50	6
0918	4.20	350	49.78	9.60	7.63	25.70	1.40	-300	0.00	0.50	6
0921	5.25	350	49.78	9.63	7.66	25.90	1.30	-302	0.00	0.50	6
0924	6.30	350	49.78	9.64	7.67	25.80	1.30	-304	0.00	0.50	6.1
0927	7.35	350	49.78	9.68	7.69	25.3	1.3	-306	0.00	0.50	6.1
0930	Started collecting AA-BW-12A										
0940	Finished collecting AA-BW-12A										

Comments: _____

Maximum permissable drawdown = _2.32_ ft BTOC, water level not to draw down below _52.05_ ft BTOC

Optimal drawdown for low-flow micropurge sampling is less than 0.3 ft at a flow rate of 0.1 to 1.0 L/min.

If drawdown exceeds 0.3 ft at a flow rate of 0.1 L/min....then attempt to achieve drawdown less than or equal to 25% of the available screen interval at flow rate equal to 0.1 to 1.0 L/min.

This is performed by subtracting pump intake and top of screen for fully submerged screens then multiplying by 25%, or subtracting the distance between pump intake and static water level and multiplying by 25% for water table wells with partly submerged screens.

Monitoring Well Low-Flow Purge/Sampling Form

Project: BRC/CAMU/2016 Annual

Well ID:	AA-MW-07	Screened Interval (ft)	30.5-70.5	Well Diameter (in):	4
Date:	4/25/2016	Pump Intake Depth (ft)	50.5	Static Water Level (ft):	37.66
Sample ID	AA-MW-07	Purging/ Sample Device:	Sample Pro Portable	Total Well depth (ft):	70.53
Time:	0820	PID Reading at TOC:	N/A	Water Column Length:	39.87
Dup ID:	N/A	Water Level Instrument :	Solinst	Minimum Purge Volume:	
Rinsate ID:	N/A	WLI Serial #:	46699	Samplers Name:	Keith Houk
MS/MSD ID:	N/A	Water Quality Meter:	Horiba U-22	Optimal Pump Setting: PSI 50 CPM 1 ID: 10	
Analysis:	Various	Water Quality Meter Serial #:		Low-Flow or Net Purge:	Low-Flow
		WQM Calibrated Date & Time:	4/25/16 0610		

Time	Volume Purged	Flow Rate	Water Level (feet - BTOC)	Specific Conductance ( )	pH	Temp.	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity	TDS
0728	**Liters**	**ml/min**	**± 0.1 ft**	**3%**	**± 0.1**	**± 0.2**	**± 10%**	**± 10%**	**± 10%**	**%**	**g/L**
0733	0.5	100	37.69	28.5	7.28	22.10	2.20	-162	0.00	1.8	18
0736	0.8	100	37.69	28.6	7.46	22.30	1.80	-182	0.00	1.8	18
0739	1.1	100	37.69	28.5	7.55	22.50	1.60	-196	0.00	1.8	18
0742	1.4	100	37.69	28.7	7.61	22.60	1.40	-204	0.00	1.8	18
0745	1.7	100	37.69	28.7	7.65	22.70	1.30	-211	0.00	1.8	18
0748	2	100	37.69	28.6	7.66	22.70	1.30	-215	0.00	1.8	18
0750	Started collecting AA-MW-07										
0820	Finished collecting AA-MW-07										

Comments:

Maximum permissable drawdown = 3.21 ft BTOC, water level not to draw down below 40.87 ft BTOC

Optimal drawdown for low-flow micropurge sampling is less than 0.3 ft at a flow rate of 0.1 to 1.0 L/min.

If drawdown exceeds 0.3 ft at a flow rate of 0.1 L/min....then attempt to achieve drawdown less than or equal to 25% of the available screen interval at flow rate equal to 0.1 to 1.0 L/min.

This is performed by subtracting pump intake and top of screen for fully submerged screens then multiplying by 25%, or subtracting the distance between pump intake and static water level and multiplying by 25% for water table wells with partly submerged screens.

Monitoring Well Low-Flow Purge/Sampling Form

Project: BRC/CAMU/2016 Annual

Well ID:	H-28	Screened Interval (ft)	37.5-50.5	Well Diameter (in):	4
Date:	4/28/2016	Pump Intake Depth (ft)	43.5	Static Water Level (ft):	39.33
Sample ID	H-28	Purging/ Sample Device:	Sample Pro Portable	Total Well depth (ft):	47.73
Time:	0820	PID Reading at TOC:	N/A	Water Column Length:	8.4
Dup ID:	N/A	Water Level Instrument :	Solinst	Minimum Purge Volume:	
Rinsate ID:	N/A	WLI Serial #:	46699	Samplers Name:	Keith Houk
MS/MSD ID:	N/A	Water Quality Meter:	Horiba U-22	Optimal Pump Setting: PSI	65 CPM 2 ID: 46
Analysis:	Various	Water Quality Meter Serial #:	76008	Low-Flow or Net Purge:	Low-Flow
		WQM Calibrated Date & Time:	4/28/16:0715		

Time	Volume Purged	Flow Rate	Water Level (feet - BTOC)	Specific Conductance ( )	pH	Temp.	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity	TDS
0756	**Liters**	**ml/min**	**± 0.1 ft**	**3%**	**± 0.1**	**± 0.2**	**± 10%**	**± 10%**	**± 10%**	**%**	**g/L**
0759	0.6	200	39.33	18.7	7.03	22.9	2.5	-151	5.0	1.1	12
0802	1.2	200	39.33	18.9	7.23	23.3	1.6	-165	5.0	1.1	12
0805	1.8	200	39.33	18.9	7.34	23.5	1.5	-173	5.0	1.1	12
0808	2.4	200	39.33	19.0	7.41	23.9	1.6	-175	5.0	1.1	12
0811	3	200	39.33	19.0	7.44	23.7	1.6	-174	5.0	1.1	12
0814	3.6	200	39.33	19.0	7.41	23.9	1.5	-171	5.0	1.1	12
0817	4.2	200	39.33	19.0	7.41	24.0	1.4	-169	5.0	1.1	12
0820	Started collecting H-28										
0830	Finished collecting H-28										

Comments:

Maximum permissable drawdown = __1.04__ ft BTOC, water level not to draw down below __40.37__ ft BTOC

Optimal drawdown for low-flow micropurge sampling is less than 0.3 ft at a flow rate of 0.1 to 1.0 L/min.

If drawdown exceeds 0.3 ft at a flow rate of 0.1 L/min....then attempt to achieve drawdown less than or equal to 25% of the available screen interval at flow rate equal to 0.1 to 1.0 L/min.

This is performed by subtracting pump intake and top of screen for fully submerged screens then multiplying by 25%, or subtracting the distance between pump intake and static water level and multiplying by 25% for water table wells with partly submerged screens.

Monitoring Well Low-Flow Purge/Sampling Form

Project: BRC/CAMU/2016 Annual

Well ID:	H-43	Screened Interval (ft)	29-43	Well Diameter (in):	4
Date:	4/27/2016	Pump Intake Depth (ft)	34.5	Static Water Level (ft):	32.51
Sample ID	H-43	Purging/ Sample Device:	Sample Pro Portable	Total Well depth (ft):	36.75
Time:	0835	PID Reading at TOC:	N/A	Water Column Length:	4.24
Dup ID:	N/A	Water Level Instrument :	Solinst	Minimum Purge Volume:	
Rinsate ID:	N/A	WLI Serial #:	46699	Samplers Name:	Keith Houk
MS/MSD ID:	N/A	Water Quality Meter:	Horiba U-22	Optimal Pump Setting: PSI	40 CPM 2 ID: 45
Analysis:	Various	Water Quality Meter Serial #:	76008	Low-Flow or Net Purge:	Low-Flow
		WQM Calibrated Date & Time:	4/27/16:0630		

Time	Volume Purged	Flow Rate	Water Level (feet - BTOC)	Specific Conductance ( )	pH	Temp.	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity	TDS
0810	**Liters**	**ml/min**	**± 0.1 ft**	**3%**	**± 0.1**	**± 0.2**	**± 10%**	**± 10%**	**± 10%**	**%**	**g/L**
0813	0.6	200	32.53	6.12	8.20	24.1	2.3	-264	5.0	1.1	11
0816	1.2	200	32.53	18.4	7.34	24.6	1.5	-211	5.0	1.1	11
0819	1.8	200	32.53	18.4	7.09	24.8	3.5	-189	5.0	1.1	11
0822	2.4	200	32.53	18.5	6.94	24.8	7.2	-186	5.0	1.1	11
0825	3.0	200	32.53	18.5	6.89	24.8	11.6	-183	5.0	1.1	11
0828	3.6	200	32.53	18.5	6.89	24.7	15.0	-184	5.0	1.1	11
0831	4.2	200	32.53	18.5	6.84	24.6	15.4	-184	5.0	1.1	11
0834	4.8	200	32.53	18.5	6.81	24.7	15.6	-185	5.0	1.1	11
0835	Started collecting H-43										
0845	Finished collecting H-43										

Comments:

Maximum permissable drawdown = 0.50 ft BTOC, water level not to draw down below 33.01 ft BTOC

Optimal drawdown for low-flow micropurge sampling is less than 0.3 ft at a flow rate of 0.1 to 1.0 L/min.

If drawdown exceeds 0.3 ft at a flow rate of 0.1 L/min....then attempt to achieve drawdown less than or equal to 25% of the available screen interval at flow rate equal to 0.1 to 1.0 L/min.

This is performed by subtracting pump intake and top of screen for fully submerged screens then multiplying by 25%, or subtracting the distance between pump intake and static water level and multiplying by 25% for water table wells with partly submerged screens.

Monitoring Well Low-Flow Purge/Sampling Form

Project: _BRC/CAMU/2016 Annual

Well ID:	AA-BW-04A	Screened Interval (ft)	34-54	Well Diameter (in):	4
Date:	5/10/2016	Pump Intake Depth (ft)	44	Static Water Level (ft):	38.46
Sample ID	AA-BW-04A	Purging/ Sample Device:	Sample Pro Portable	Total Well depth (ft):	54.85
Time:	1153	PID Reading at TOC:	N/A	Water Column Length:	16.39
Dup ID:	N/A	Water Level Instrument :	Solinst	Minimum Purge Volume:	
Rinsate ID:	N/A	WLI Serial #:	46699	Samplers Name:	Keith Houk
MS/MSD ID:	N/A	Water Quality Meter:	Horiba U-22	Optimal Pump Setting: PSI	60 CPM 3 ID: 9
Analysis:	Various	Water Quality Meter Serial #:	76008	Low-Flow or Net Purge:	Low-Flow
		WQM Calibrated Date & Time:	05/10/16:1010		

Time	Volume Purged	Flow Rate	Water Level (feet - BTOC)	Specific Conductance ( )	pH	Temp.	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity	TDS
1153	**Liters**	**ml/min**	**± 0.1 ft**	**3%**	**± 0.1**	**± 0.2**	**± 10%**	**± 10%**	**± 10%**	**%**	**g/L**
1156	1.5	500	38.54	30.6	7.40	26.5	1.0	-187	0.0	1.9	19
1159	3.0	500	38.54	30.4	7.49	26.5	0.7	-203	0.0	1.9	19
1202	4.5	500	38.54	30.2	7.52	26.5	0.6	-212	0.0	1.9	19
1205	6.0	500	38.54	30.4	7.58	26.4	0.6	-219	0.0	1.9	19
1208	7.5	500	38.54	30.4	7.58	26.4	0.6	-224	0.0	1.9	19
1211	9.0	500	38.54	30.4	7.62	26.5	0.6	-228	0.0	1.9	19
1214	10.5	500	38.54	30.4	7.62	26.4	0.6	-228	0.0	1.9	19
1215	Started collecting AA-BW-04A										
1220	Finished collecting AA-BW-04A										
1220	Started collecting AA-BW-04A(FD)										
1225	Finished collecting AA-BW-04A(FD)										

Comments: _____

Maximum permissable drawdown = __1.39__ ft BTOC, water level not to draw down below __39.85__ ft BTOC

Optimal drawdown for low-flow micropurge sampling is less than 0.3 ft at a flow rate of 0.1 to 1.0 L/min.

If drawdown exceeds 0.3 ft at a flow rate of 0.1 L/min....then attempt to achieve drawdown less than or equal to 25% of the available screen interval at flow rate equal to 0.1 to 1.0 L/min.

This is performed by subtracting pump intake and top of screen for fully submerged screens then multiplying by 25%, or subtracting the distance between pump intake and static water level and multiplying by 25% for water table wells with partly submerged screens.

Monitoring Well Low-Flow Purge/Sampling Form

Project: _BRC/CAMU/2016 Annual

Well ID:	H-28	Screened Interval (ft)	37.5-50.5	Well Diameter (in):	4
Date:	5/10/2016	Pump Intake Depth (ft)	43.5	Static Water Level (ft):	39.28
Sample ID	H-28	Purging/ Sample Device:	Sample Pro Portable	Total Well depth (ft):	47.73
Time:	1050	PID Reading at TOC:	N/A	Water Column Length:	8.45
Dup ID:	N/A	Water Level Instrument :	Solinst	Minimum Purge Volume:	
Rinsate ID:	N/A	WLI Serial #:	46699	Samplers Name:	Keith Houk
MS/MSD ID:	N/A	Water Quality Meter:	Horiba U-22	Optimal Pump Setting: PSI	65 CPM 2 ID: 46
Analysis:	Various	Water Quality Meter Serial #:	76008	Low-Flow or Net Purge:	Low-Flow
		WQM Calibrated Date & Time:	5/10/16:1010		

Time	Volume Purged	Flow Rate	Water Level (feet - BTOC)	Specific Conductance ( )	pH	Temp.	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Salinity	TDS
1025	**Liters**	**ml/min**	**± 0.1 ft**	**3%**	**± 0.1**	**± 0.2**	**± 10%**	**± 10%**	**± 10%**	**%**	**g/L**
1028	0.6	200	39.28	17.9	7.25	25.6	0.9	-184	5.0	1.1	11
1031	1.2	200	39.28	17.9	7.29	25.5	0.8	-185	5.0	1.1	11
1034	1.8	200	39.28	17.9	7.30	25.2	0.8	-183	5.0	1.1	11
1037	2.4	200	39.28	18.1	7.36	25.4	1.1	-172	5.0	1.1	11
1040	3	200	39.28	18.4	7.37	25.3	1.3	-162	5.0	1.1	11
1043	3.6	200	39.28	18.4	7.37	25.3	1.3	-160	5.0	1.1	11
1046	4.2	200	39.28	18.5	7.34	25.2	1.2	-158	5.0	1.1	11
1050	Started collecting H-28										
1105	Finished collecting H-28										

Comments: _____

Maximum permissable drawdown = __1.06__ ft BTOC, water level not to draw down below __40.34__ ft BTOC

Optimal drawdown for low-flow micropurge sampling is less than 0.3 ft at a flow rate of 0.1 to 1.0 L/min.

If drawdown exceeds 0.3 ft at a flow rate of 0.1 L/min....then attempt to achieve drawdown less than or equal to 25% of the available screen interval at flow rate equal to 0.1 to 1.0 L/min.

This is performed by subtracting pump intake and top of screen for fully submerged screens then multiplying by 25%, or subtracting the distance between pump intake and static water level and multiplying by 25% for water table wells with partly submerged screens.

BRC/CAMU/2016 Annual Monitoring Event

Test America - St. Louis
Contact: Rhonda Rideahower
13715 Rider Trail North
Earth City, MO 63045

CONVERSE CONSULTANTS
3095 East Patrick Lane, Suite 12
Las Vegas, Nevada 89120
(702) 269-8336 • Fax (702) 269-8353

CHAIN OF CUSTODY FORM

Client Name/Address: BRC/CAMU/2016 Annual

Project/PO Number: 16-43104-01

Project Manager: R. Eegenheimer

Phone Number: 702-249-5208

Sampler: K. Houk

Fax Number:

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservatives	Metals	Hardness	Alkalinity	TDS	Anion Cation Balance (Ca, Mg, Na, K)	Chlorate	Perchlorate			Special Instructions
AA-MW-07	AQ	Various	7	4/25/16 0930	Multiple	X	X	X	X	X	X	X			
AA-BW-12A	↓	↓	↓	4/25/16 0920	↓	X	X	X	X	X	X	X			
AA-BW-08A	↓	↓	↓	4/25/16 1040	↓	X	X	X	X	X	X	X			

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	4/25/16	[signature]	4/25/16 1600
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

Turnaround Time: (Check)

- ☐ Same day
- ☐ 24 hours
- ☐ 48 hours
- ☐ 72 hours
- ☐ 5 days
- ☒ Normal

Sample Integrity: (Check)

- ☐ Intact
- ☒ On ice

Note: By relinquishing samples to Converse Consultants, client agrees to pay for the services requested on this chain of custody form and any additional analysis performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

BRC/CAMU/2016 Annual Monitoring Event

ATL
Contact: Marlon
cell# 702-439-0421
office# 702-307-2659

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CHAIN OF CUSTODY FORM

Page 1 of 1

Client Name/Address: BRC/CAMU/2016 Annual	Project/PO Number: 16-43104-01
Project Manager: R. Goyenechea	Phone Number: 702-249-5208
Sampler: K. Hoyk	Fax Number:

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservatives	Analysis Required: Hexavalent Chromium	Special Instructions
AA-MW-07	AQ	250-ml Poly	1	4/25/16 0750	ICE	X	
AA-BW-12A	AQ	↓	↓	4/25/16 0930	↓	X	
AA-BW-08A	AQ	↓	↓	4/25/16 1020	↓	X	

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	[signature]		
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

Turnaround Time: (Check)
- ☐ Same day
- ☐ 24 hours
- ☐ 48 hours
- ☐ 72 hours
- ☐ 5 days
- ☒ Normal

Sample Integrity: (Check)
- ☐ Intact
- ☒ On ice

Note: By relinquishing samples to Converse Consultants, client agrees to pay for the services requested on this chain of custody form and any additional analysis performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

BRC/CAMU/Annual Monitoring Event

Test America - St. Louis
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Las Vegas, Nevada 89120
(702) 269-8336 • Fax (702) 269-8353

CHAIN OF CUSTODY FORM

Page 1 of 1

Client Name/Address:	Project/PO Number:
BRC/CAMU/2016 Annual	16-43104-01
Project Manager: R. Geyenheimer	**Phone Number:** 702-249-5208
Sampler: K. Hank	**Fax Number:**

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservatives	Analysis Required: Metals	Hardness	Alkalinity	TDS	Anions (Cl, F, SO4) by EPA 300.0	Chloride	Perchlorate			Special Instructions
AA-BW-06A	AQ	Various	7	4/27/16 0735	Multiple	X	X	X	X	X	X	X			
AA-BW-06A (MS/MSD)	"	"	"	4/27/16 0743	"	X	X	X	X	X	X	X			
H-43	"	"	"	4/27/16 0835	"	X	X	X	X	X	X	X			
AA-BW-05A	"	"	"	4/27/16 0935	"	X	X	X	X	X	X	X			

Relinquished By:	Date/Time:	Received By:	Date/Time:
K. Hank	4/27/16 1:30	[signature]	4/27/16 1:30
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

Turnaround Time: (Check)
- ☐ Same day
- ☐ 24 hours
- ☐ 48 hours
- ☐ 72 hours
- ☐ 5 days
- ☒ Normal

Sample integrity: (Check)
- ☐ Intact
- ☒ On ice

Note: By relinquishing samples to Converse Consultants, client agrees to pay for the services requested on this chain of custody form and any additional analysis performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

P-2 TMV

BRC/CAMU/2016 Annual Monitoring Event

ATL
Contact: Marlon
Cell # 702 439-0421
office # 702-307-2659

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3095 East Patrick Lane, Suite 12
Las Vegas, Nevada 89120
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CHAIN OF CUSTODY FORM

Page 1 of 1

Client Name/Address: BRC/CAMU/2016 Annual

Project/PO Number: 16-43104-01

Project Manager: R. Seyfarth

Phone Number: 702-249-5208

Sampler: K. Hank

Fax Number:

Analysis Required

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservatives	Total Uranium (Quantitative)	Special Instructions
AA-BW-06A	AQ	250 ml Poly	1	4/27/16 0745	ICE	X	
AA-BW-06A (MS/MSD)			1	4/27/16 0745		X	
H-43			1	4/27/16 0855		X	
AA-BW-05A			1	4/27/16 0935		X	

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	4/27/16		
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

Turnaround Time: (Check)
- ☐ Same day
- ☐ 24 hours
- ☐ 48 hours
- ☐ 72 hours
- ☐ 5 days
- ☒ Normal

Sample Integrity: (Check)
- ☐ Intact
- ☒ On ice

Note: By relinquishing samples to Converse Consultants, client agrees to pay for the services requested on this chain of custody form and any additional analysis performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

BRC/CAMU/Annual Monitoring Event

Test America-St. Louis
Contact: Rhonda R. Rahemeyer
13715 Rider Trail North
Earth City, MO 63045

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3095 East Patrick Lane, Suite 12
Las Vegas, Nevada 89120
(702) 269-8336 • Fax (702) 269-8353

CHAIN OF CUSTODY FORM

Page 1 of 1

Client Name/Address:	Project/PO Number:
BRC/CAMU/2016 Annual	16-43104-01
Project Manager: R. Gregenheimer	**Phone Number:** 702-249-5208
Sampler: K Houk	**Fax Number:**

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservatives	Analysis Required: Metals	Hardness	Alkalinity	TDS	Anion/Cation Balance Eq	Chloride	Perchlorate			Special Instructions
H-28	AQ	Various	7	4/12/16 0930	M+Hi-pH	X	X	X	X	X	X	X			
AA-BW-04A				4/13/16 0910		X	X	X	X	X	X	X			
AA-BW-04A (FD)				4/13/16 0915		X	X	X	X	X	X	X			
EB-20162804				4/13/16 1010		X	X	X	X	X	X	X			

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	4/14/16 1100	[signature]	4/20/16 1050
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

Turnaround Time: (Check)
- ☐ Same day
- ☐ 24 hours
- ☐ 48 hours
- ☐ 72 hours
- ☐ 5 days
- ☒ Normal

Sample Integrity: (Check)
- ☐ Intact
- ☒ On ice

Note: By relinquishing samples to Converse Consultants, client agrees to pay for the services requested on this chain of custody form and any additional analysis performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

4.2 TAL

BRC/CAMU/2016 Annual Monitoring Event

ATL
Contact: Marlon
Cell # 702-439-0421
office # 702-307-2659

CONVERSE CONSULTANTS
3095 East Patrick Lane, Suite 12
Las Vegas, Nevada 89120
(702) 269-8336 • Fax (702) 269-8353

CHAIN OF CUSTODY FORM

Page 1 of 1

Client Name/Address: BRC/CAMU/2016 Annual

Project/PO Number: 16-43104-01

Project Manager: R. Geyenheimer

Phone Number: 702-249-5208

Sampler: K. Honk

Fax Number:

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservatives	Analysis Required: Hexavalent Chromium	Special Instructions
H-28	AQ	250-mL Poly	1	4/28/16 0920	Ice	X	
AA-BW-04A	"	"	"	4/28/16 0910	"	X	
AA-BW-04A(FD)	"	"	"	4/28/16 0915	"	X	
EB-20162804	"	"	"	4/28/16 1010	"	X	

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	4/28/16		
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

Turnaround Time: (Check)
- ☐ Same day
- ☐ 24 hours
- ☐ 48 hours
- ☐ 72 hours
- ☐ 5 days
- ☒ Normal

Sample Integrity: (Check)
- ☐ Intact
- ☒ On ice

*Note By relinquishing samples to Converse Consultants, client agrees to pay for the services requested on this chain of custody form and any additional analysis performed on this project. **Payment for** services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.*

BRE/CA Annual Monitoring Events

Test America - St. Louis
Contact: Rhonda Lichtenberg
13715 Rider Trail North
Earth City, MO 63045

CONVERSE CONSULTANTS
3095 East Patrick Lane, Suite 12
Las Vegas, Nevada 89120
(702) 269-8336 • Fax (702) 269-8353

CHAIN OF CUSTODY FORM

Page 1 of 1

Client Name/Address:	Project/PO Number:
BRE/Converse Annual	46-43104-01
Project Manager: K. Loynachan	**Phone Number:** (702) 269-5205
Sampler: K. Hack	**Fax Number:**

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservatives	Analysis Required: Metals	Analysis Required: VOCs	Analysis Required: Alkalinity, Anions, TDS	Analysis Required: Sulfide, Sulfate, Chloride	Analysis Required: Total Metals	Analysis Required	Analysis Required	Analysis Required	Special Instructions
MW-32	AQ	Vials	7	1010	HCl	X	X	X	X	X	X			
MW-209	1	1	1	1215	1	1	1	1	1	1				
MW-214(FD)	1	1	1	1220	1	1	1	1	1	1				
EB-20160805	1	1	1	1245	1	1	1	1	1	1				

Relinquished By:	Date/Time:	Received By:	Date/Time:
Rachel Shultz	8/10/16 1310		8/10/16 1310
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

Turnaround Time: (Check)

- ☐ Same day
- ☐ 24 hours
- ☐ 48 hours
- ☐ 72 hours
- ☐ 5 days
- ☒ Normal

Sample Integrity: (Check)

- ☐ Intact
- ☒ On ice

Note: By relinquishing samples to Converse Consultants, client agrees to pay for the services requested on this chain of custody form and any additional analysis performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

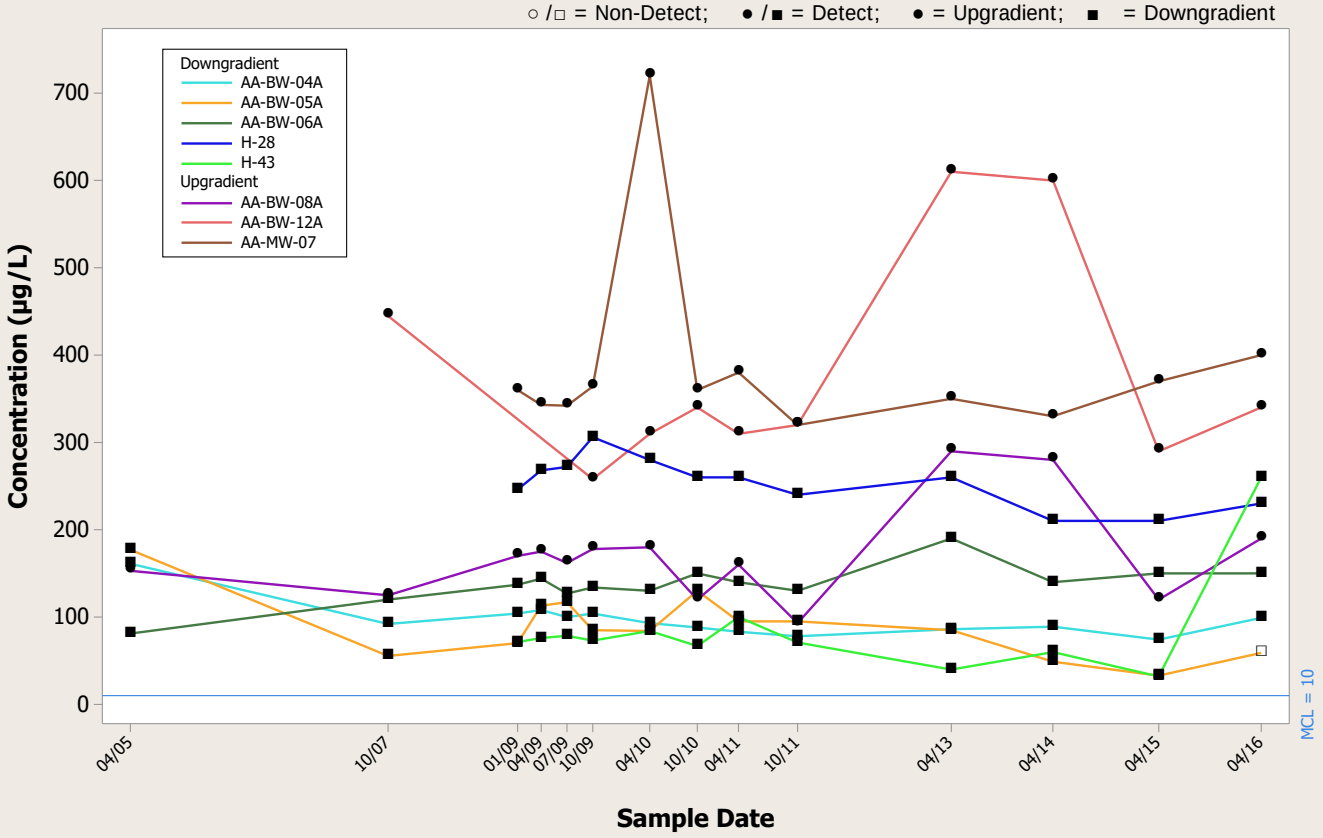
APPENDIX D

CONCENTRATION TREND GRAPHS

Concentration Trend Graph - All Shallow Zone Wells

Analyte = Arsenic

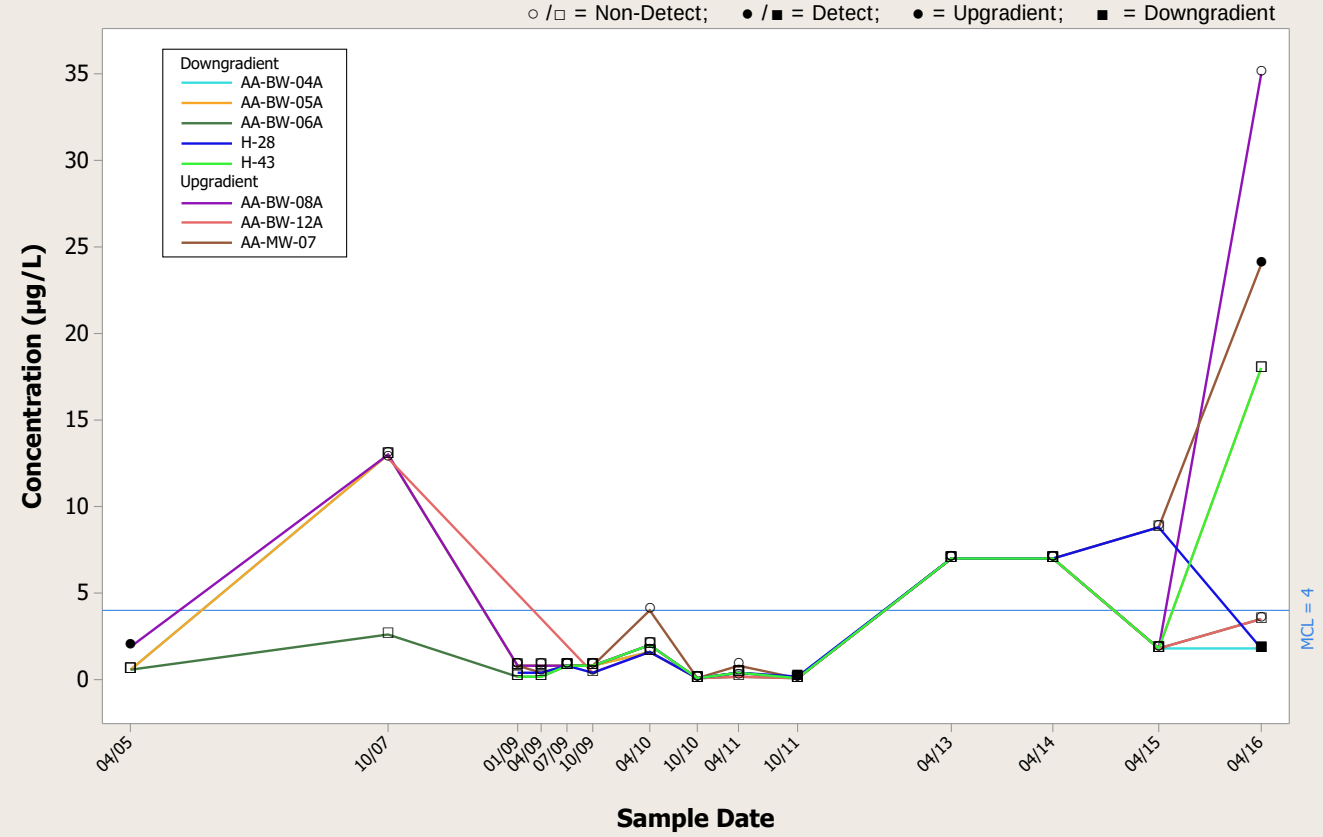
○ /□ = Non-Detect; ● /■ = Detect; ● = Upgradient; ■ = Downgradient



Concentration Trend Graph - All Shallow Zone Wells

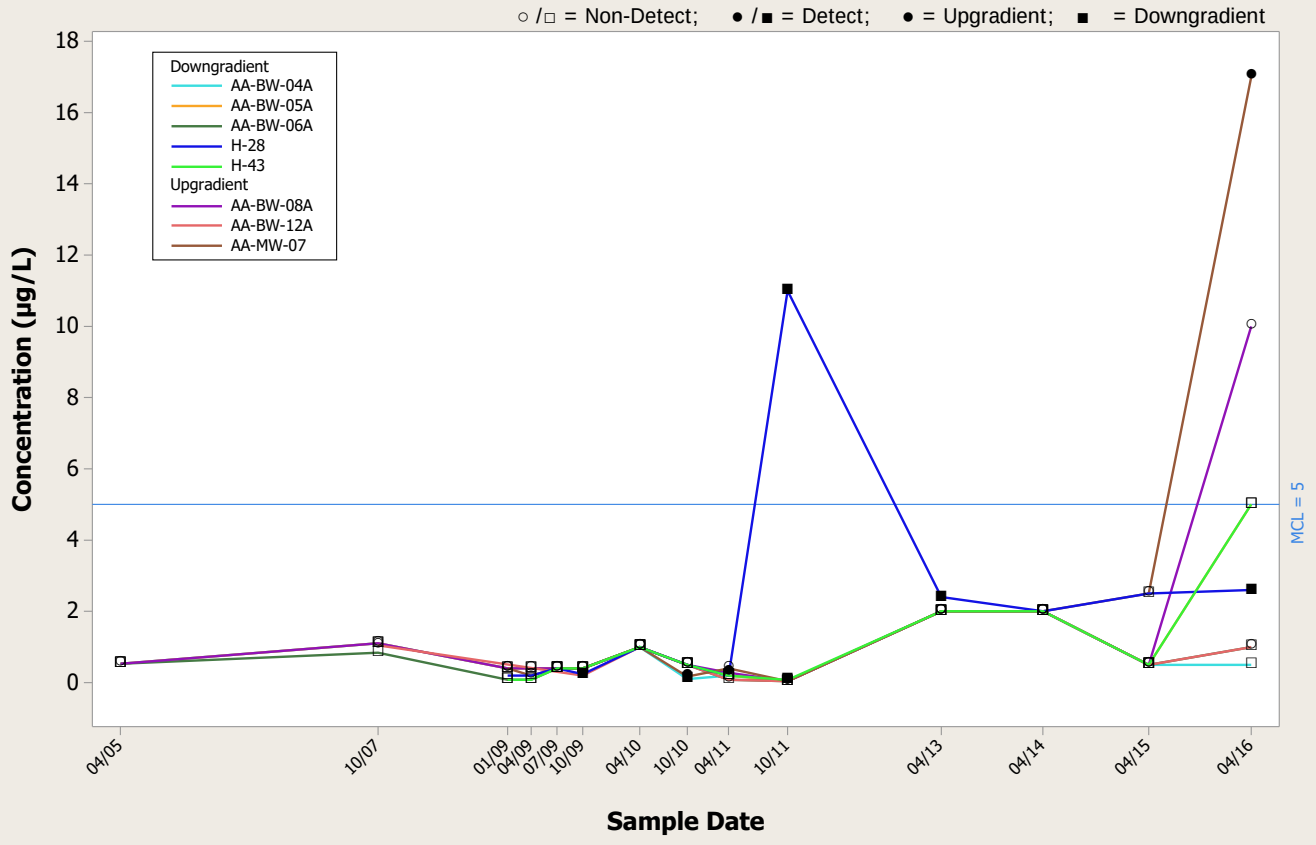
Analyte = Beryllium

○ /□ = Non-Detect; ● /■ = Detect; ● = Upgradient; ■ = Downgradient



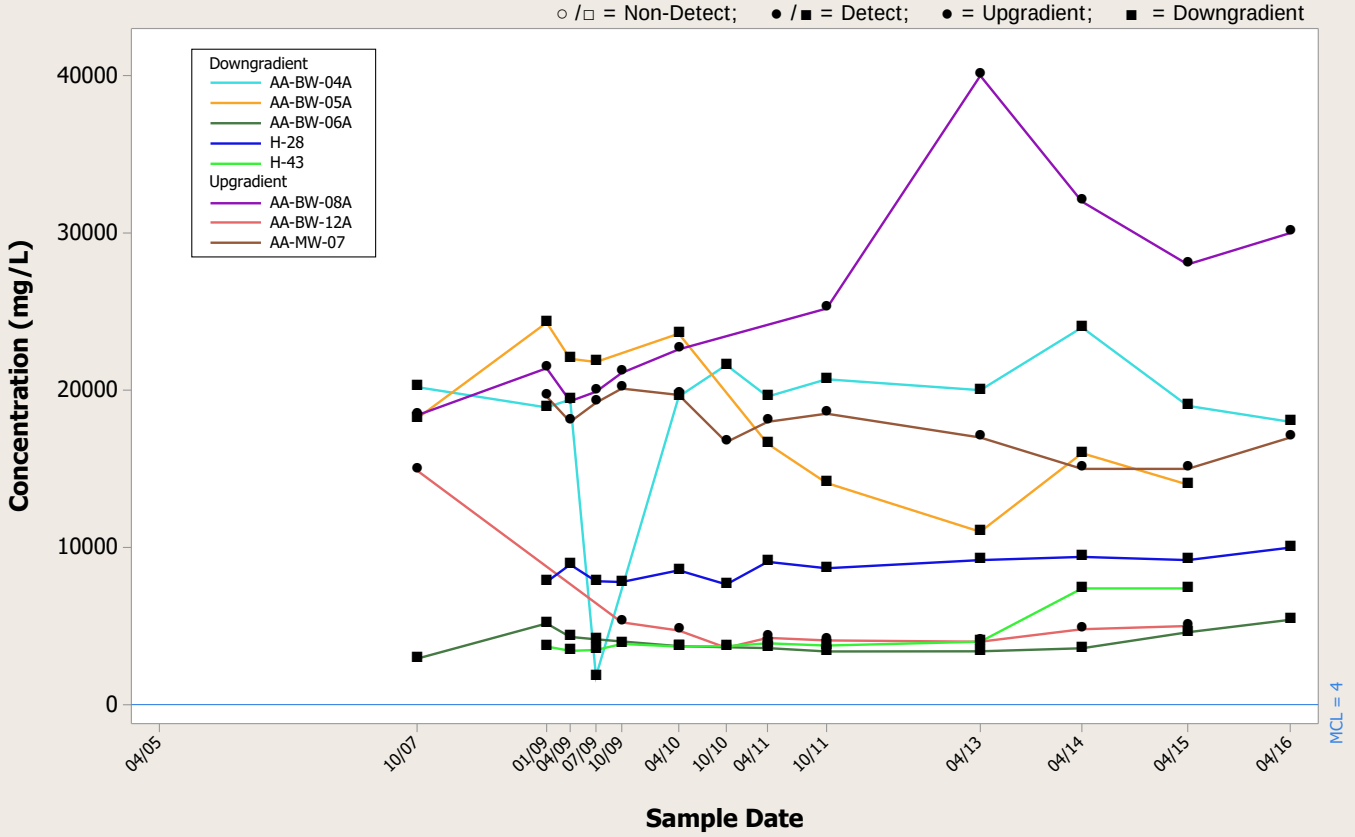
Concentration Trend Graph - All Shallow Zone Wells

Analyte = Cadmium



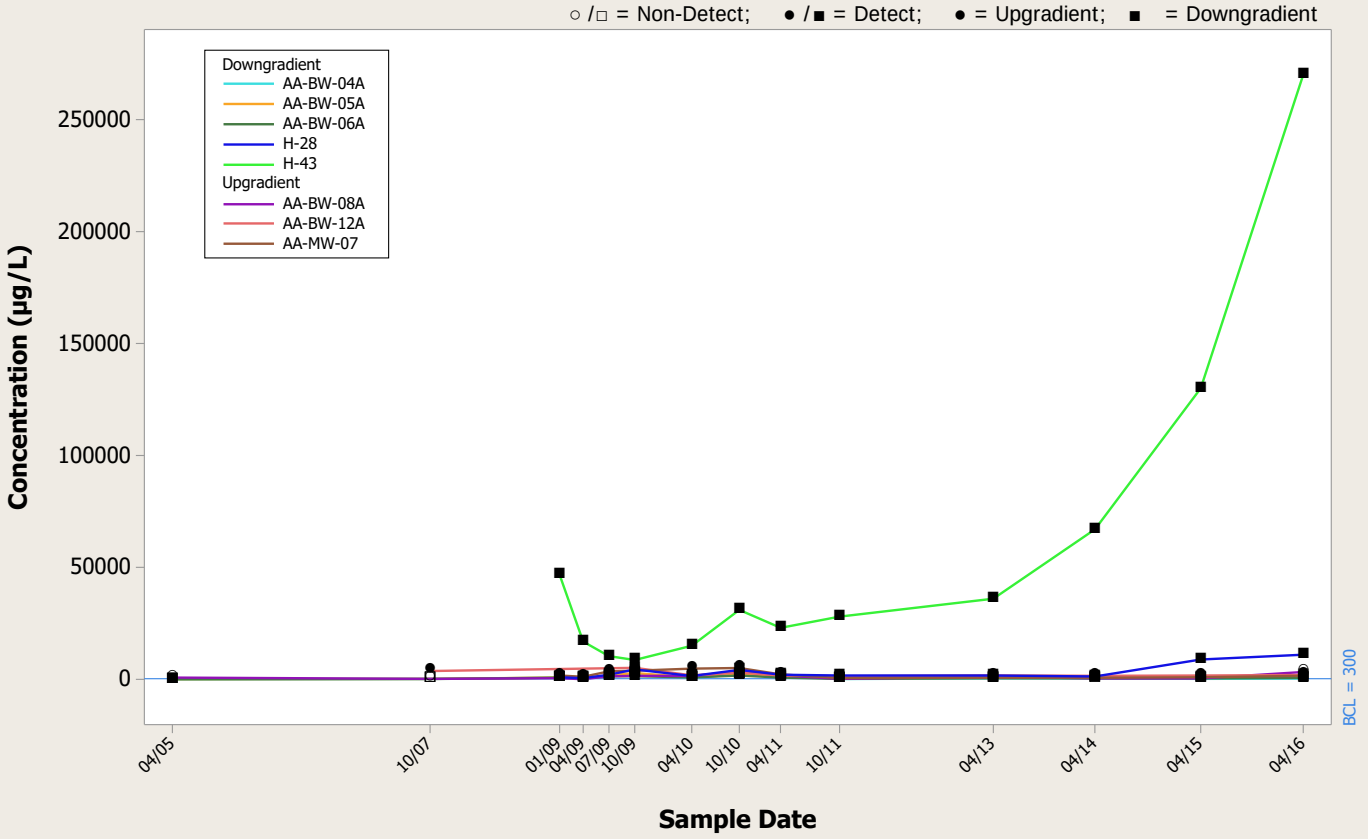
Concentration Trend Graph - All Shallow Zone Wells

Analyte = Chlorine



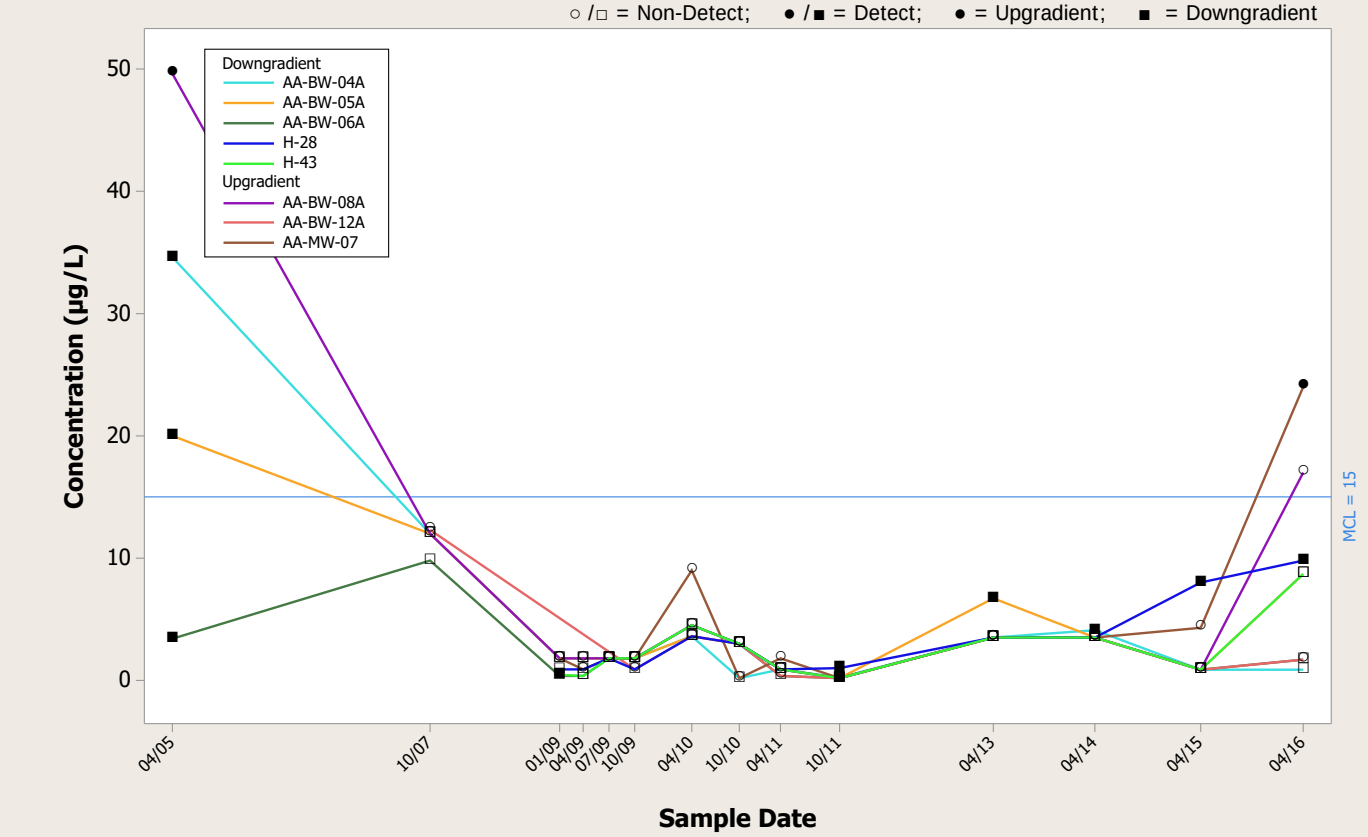
Concentration Trend Graph - All Shallow Zone Wells

Analyte = Iron



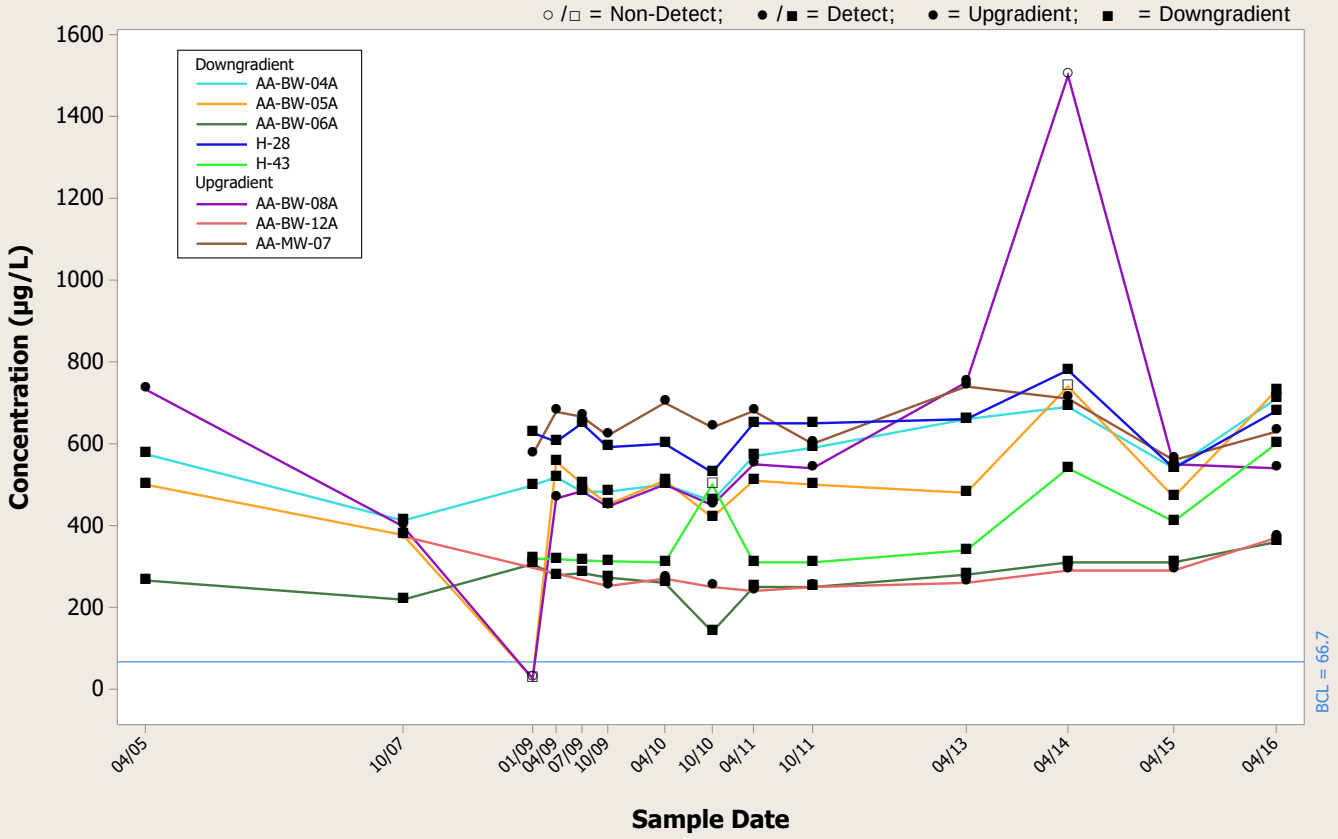
Concentration Trend Graph - All Shallow Zone Wells

Analyte = Lead



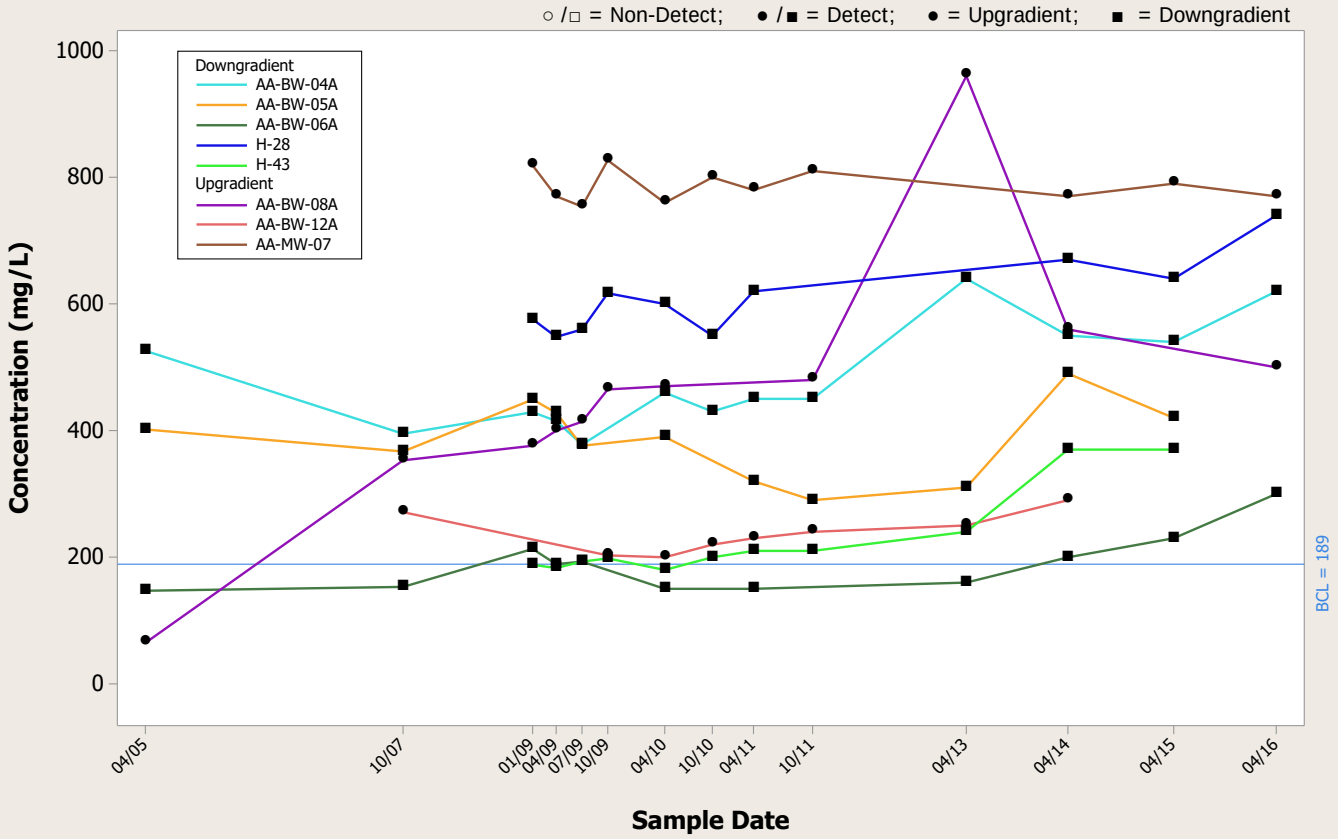
Concentration Trend Graph - All Shallow Zone Wells

Analyte = Lithium



Concentration Trend Graph - All Shallow Zone Wells

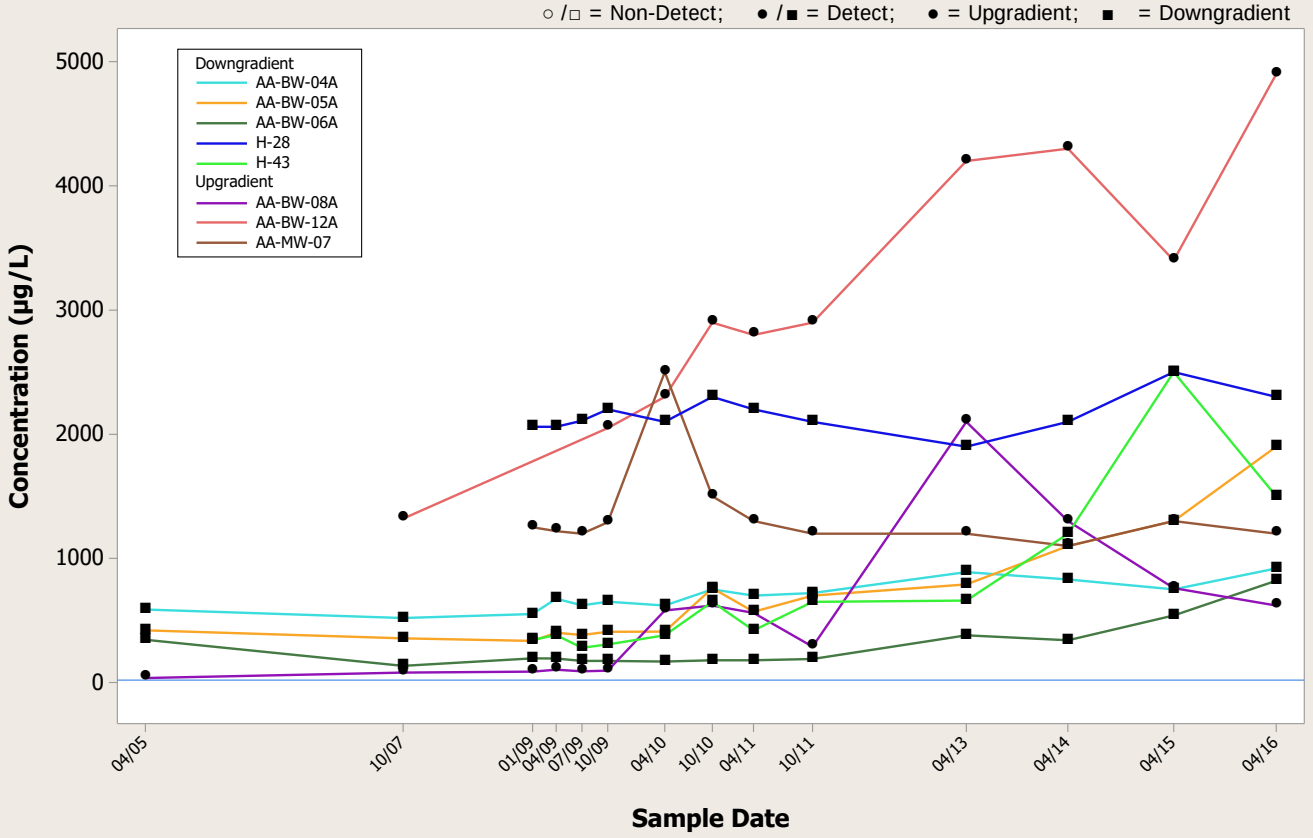
Analyte = Magnesium



Concentration Trend Graph - All Shallow Zone Wells

Analyte = Manganese

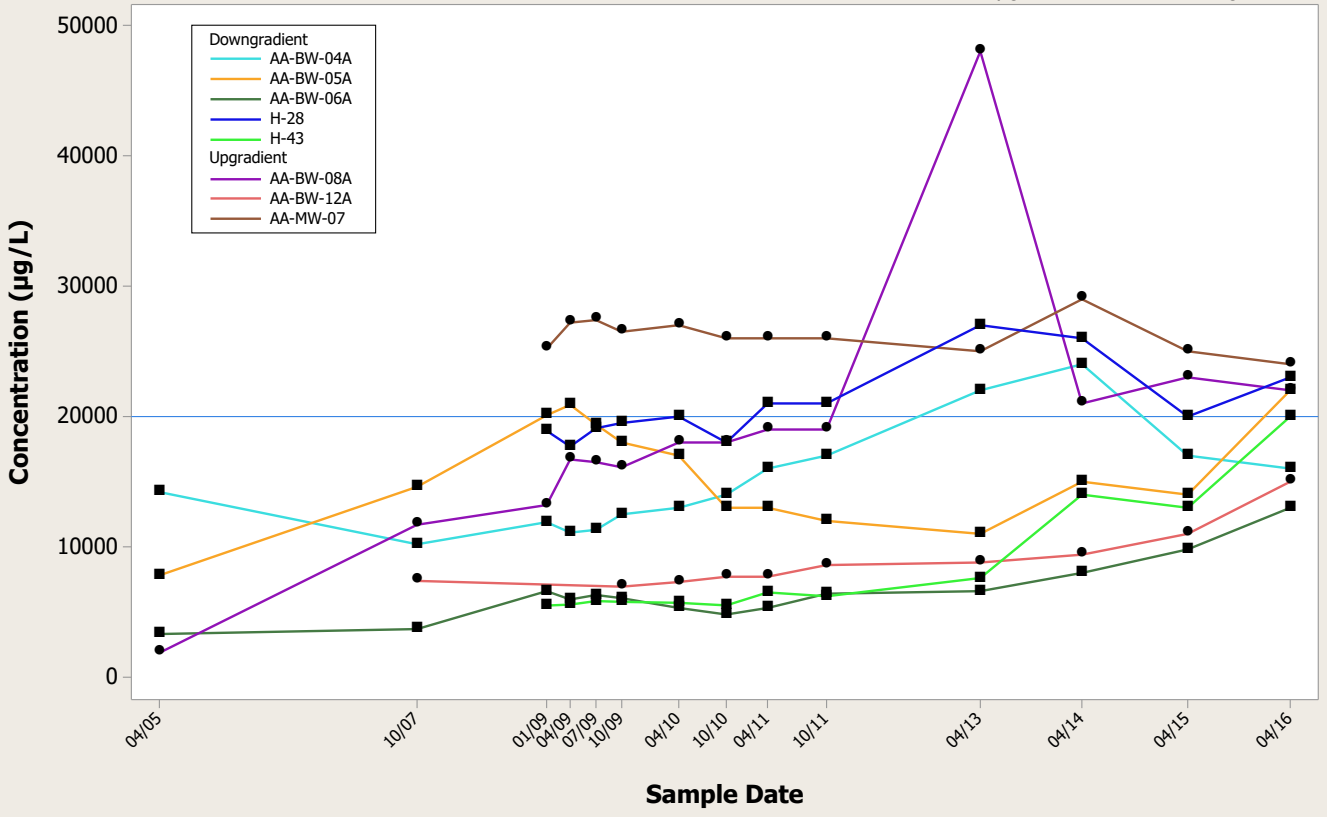
○ /□ = Non-Detect; ● /■ = Detect; ● = Upgradient; ■ = Downgradient



Concentration Trend Graph - All Shallow Zone Wells

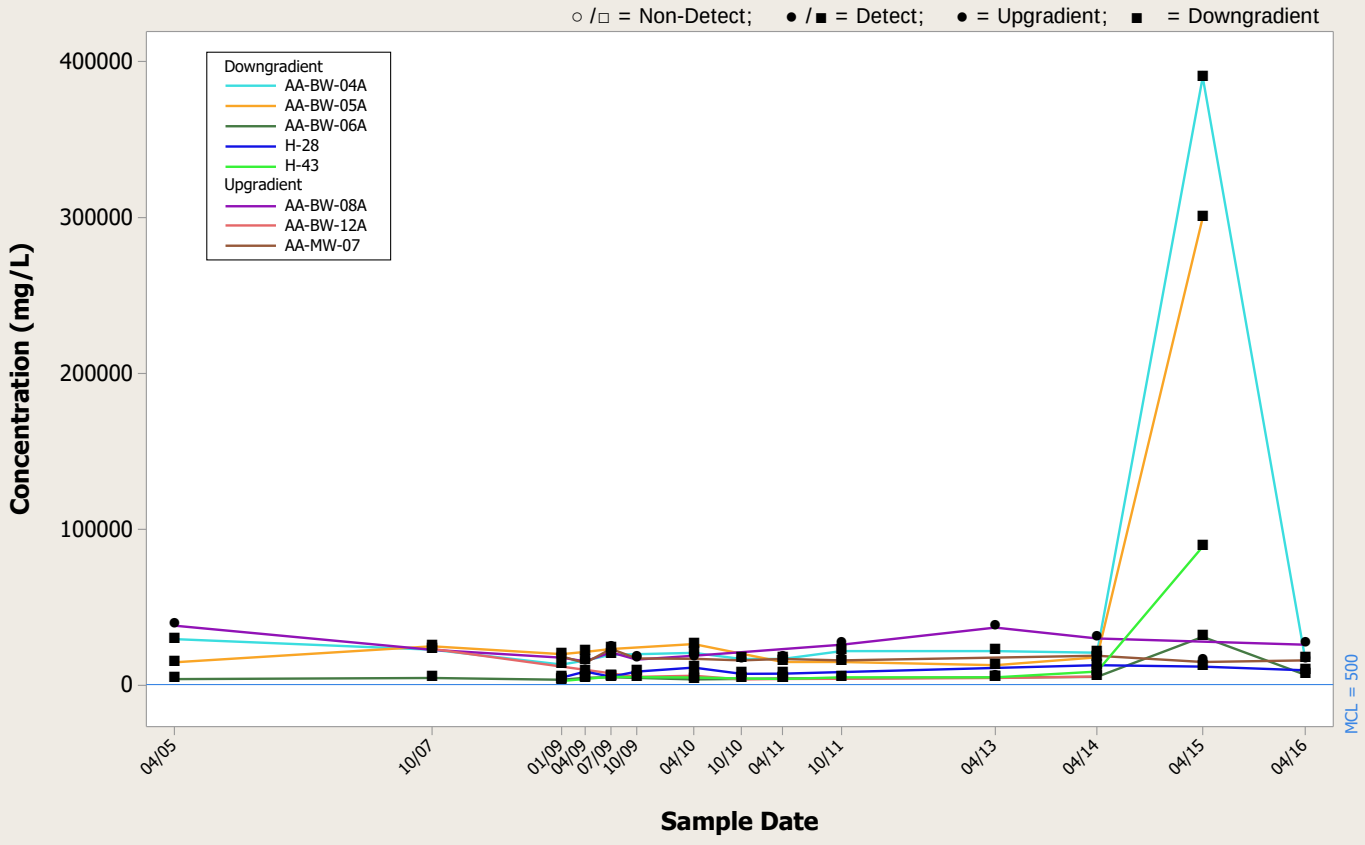
Analyte = Strontium

○ /□ = Non-Detect; ● /■ = Detect; ● = Upgradient; ■ = Downgradient



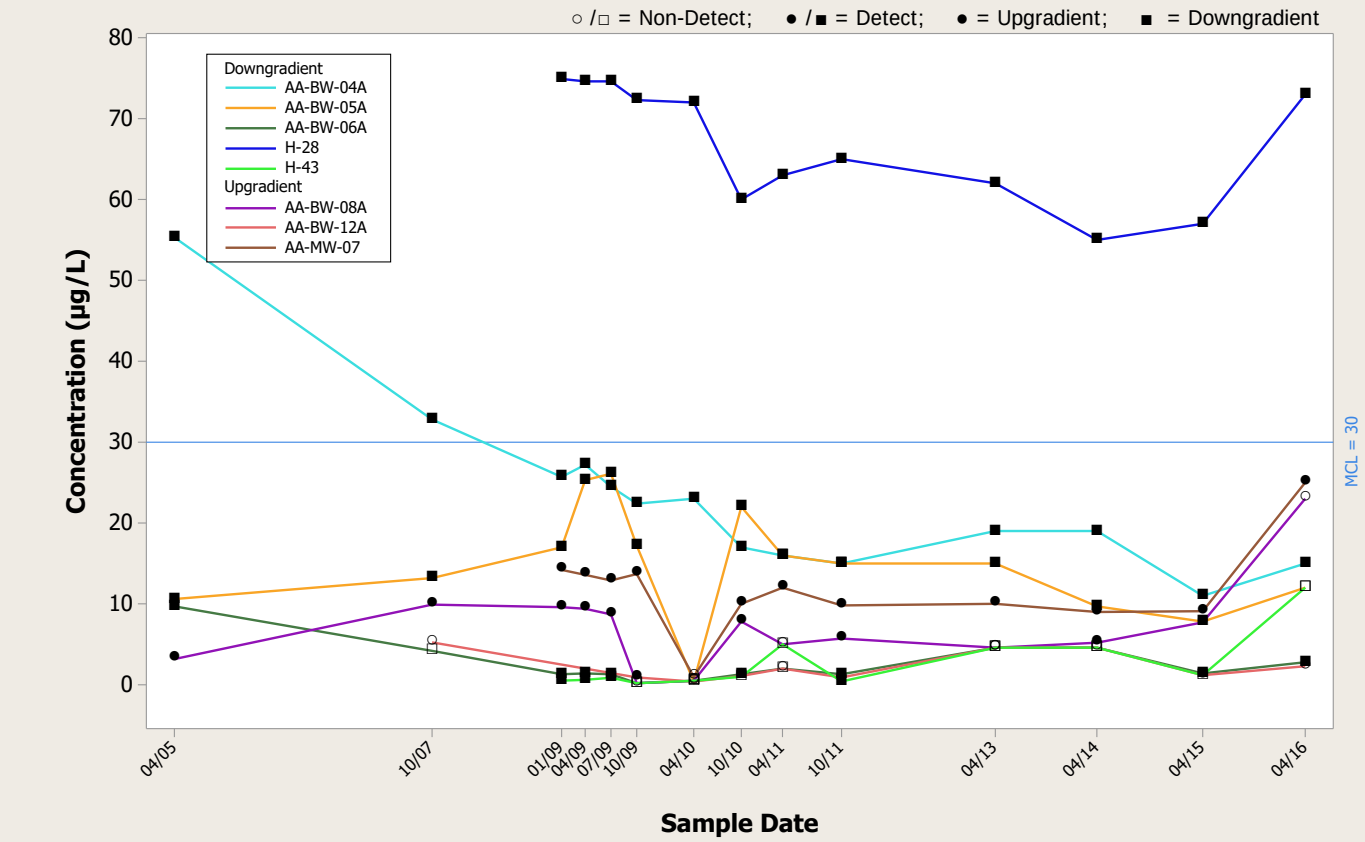
Concentration Trend Graph - All Shallow Zone Wells

Analyte = Total Dissolved Solids (TDS)



Concentration Trend Graph - All Shallow Zone Wells

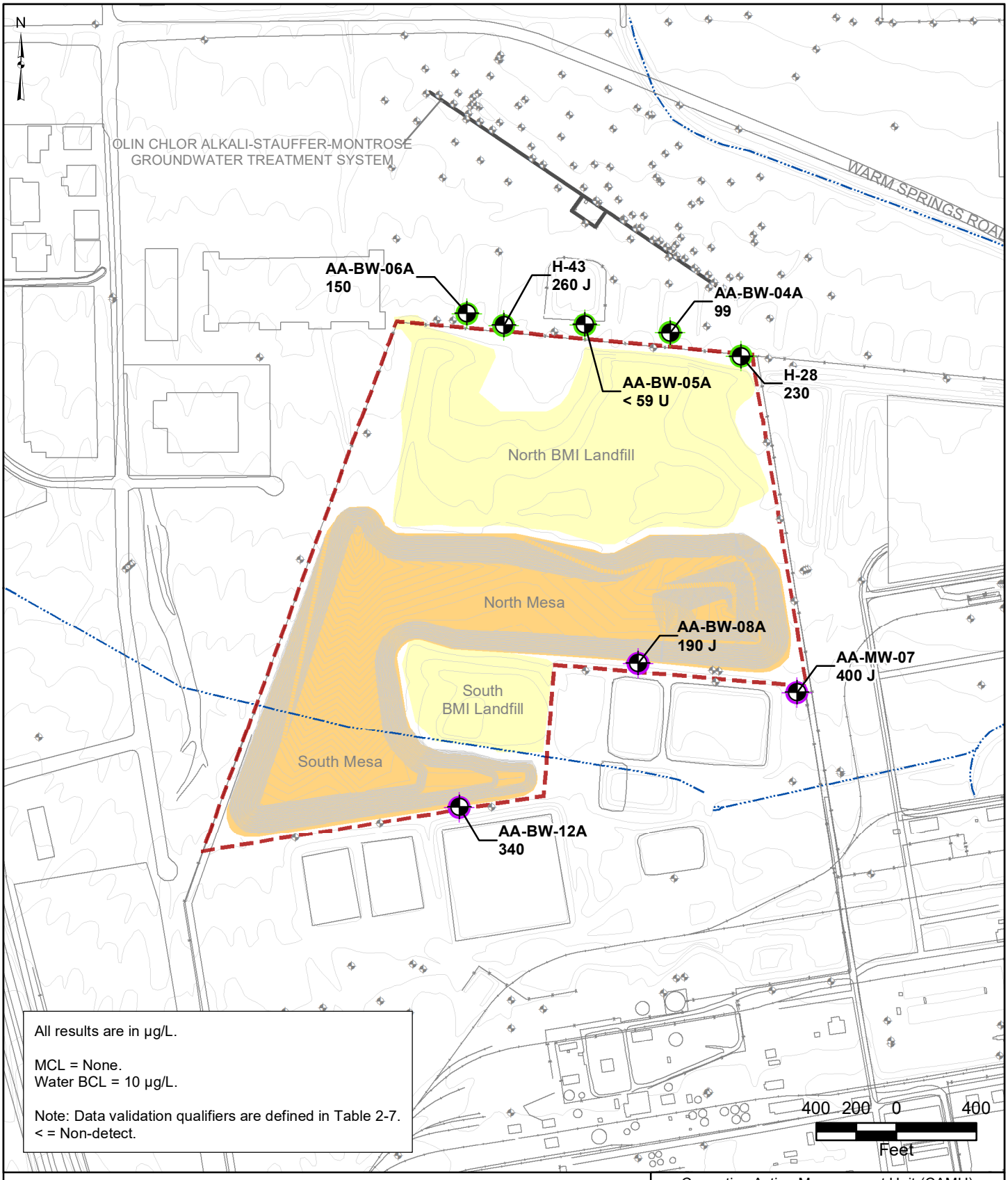
Analyte = Uranium



APPENDIX E

CHEMICAL OCCURRENCE MAPS
SHALLOW WATER-BEARING ZONE

LIST OF FIGURES (APPENDIX E)



CAMU Site

Other Monitoring Wells

BRC CAMU

Former BMI Landfill

Paleochannels (solid where deeply incised, dashed where relatively shallow and/or inferred)

CAMU Long-Term Monitoring Program Wells

Upgradient, Shallow Well

Downgradient, Shallow Well

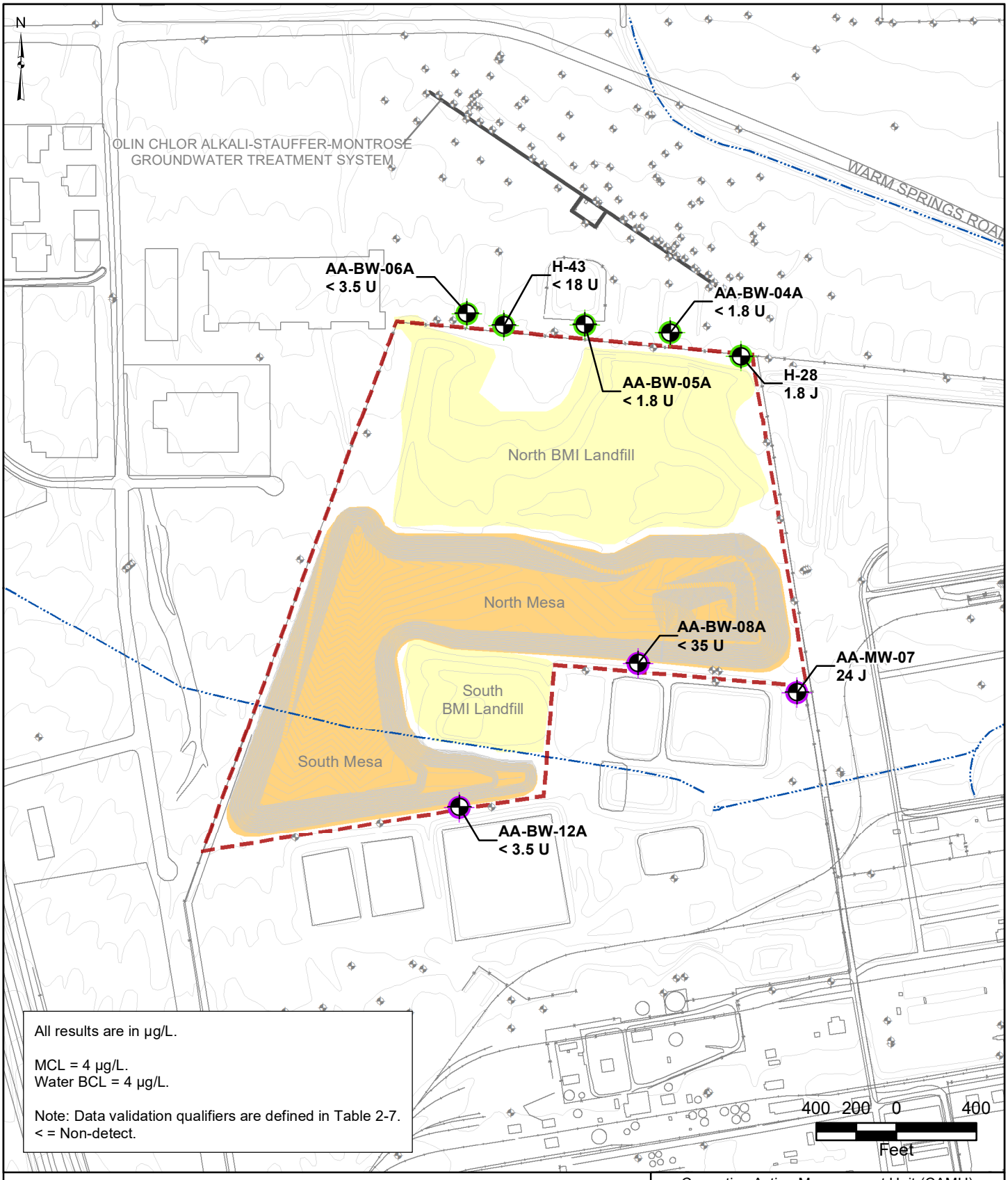
Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE E-1

ARSENIC
IN SHALLOW WATER-
BEARING ZONE WELLS

Basic Remediation COMPANY

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/APPENDIX_E.MXD
MKJ (ERM)	12/28/16	



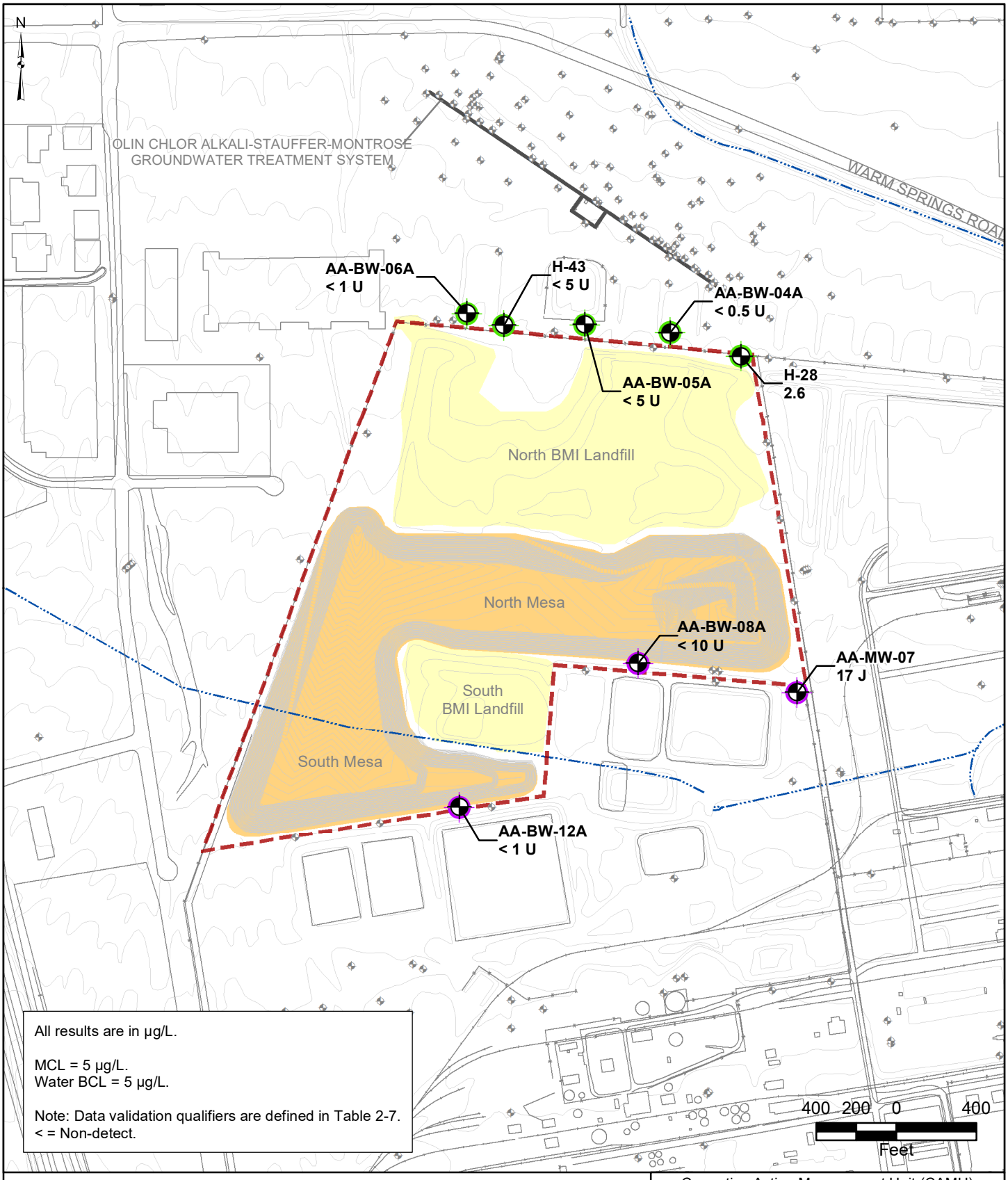
Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE E-2

BERYLLIUM
IN SHALLOW WATER-
BEARING ZONE WELLS

Basic Remediation COMPANY

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/APPENDIX_E.MXD
MKJ (ERM)	12/28/16	



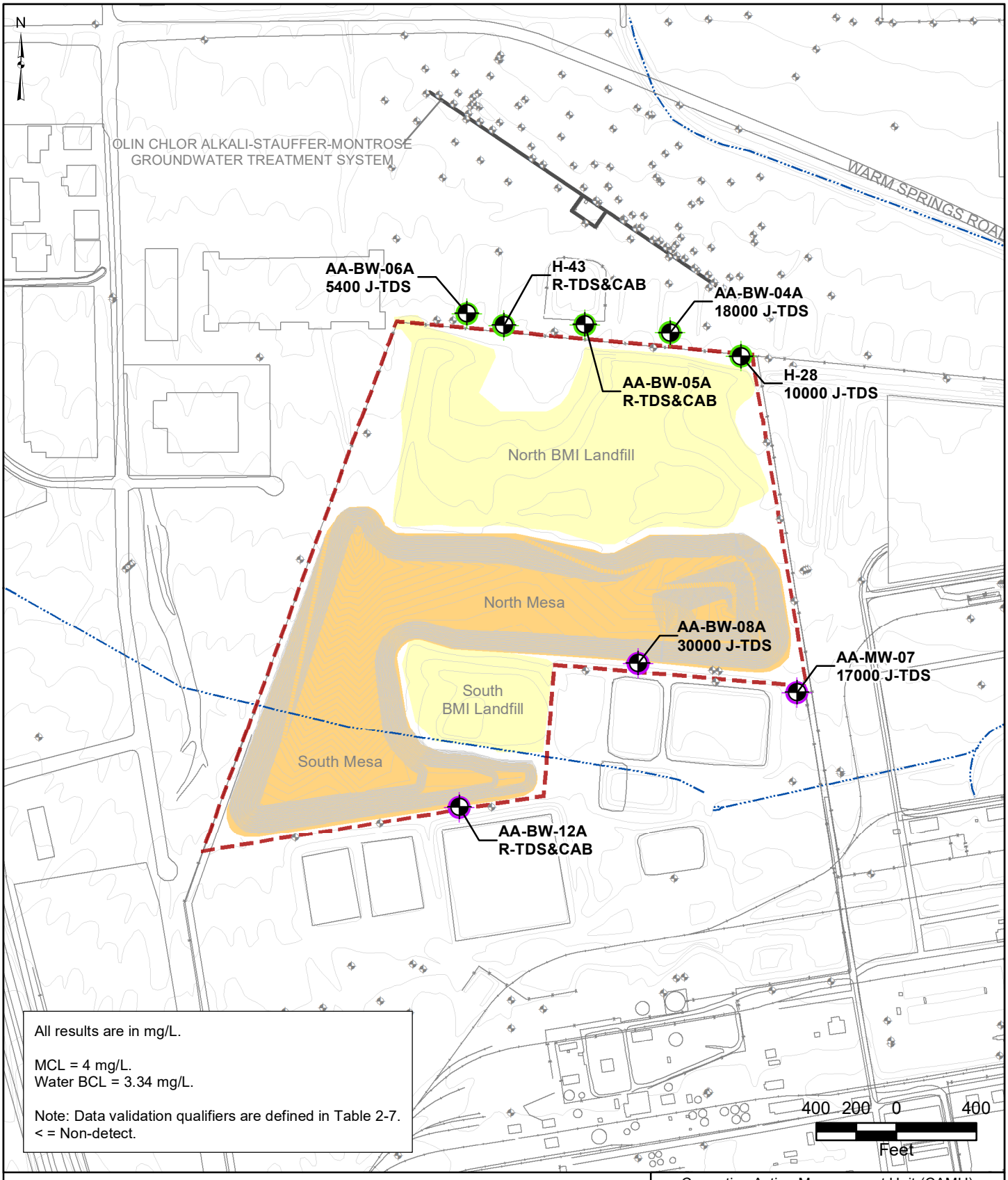
Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE E-3

CADMIUM
IN SHALLOW WATER-
BEARING ZONE WELLS

Basic Remediation COMPANY

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/APPENDIX_E.MXD
MKJ (ERM)	12/28/16	



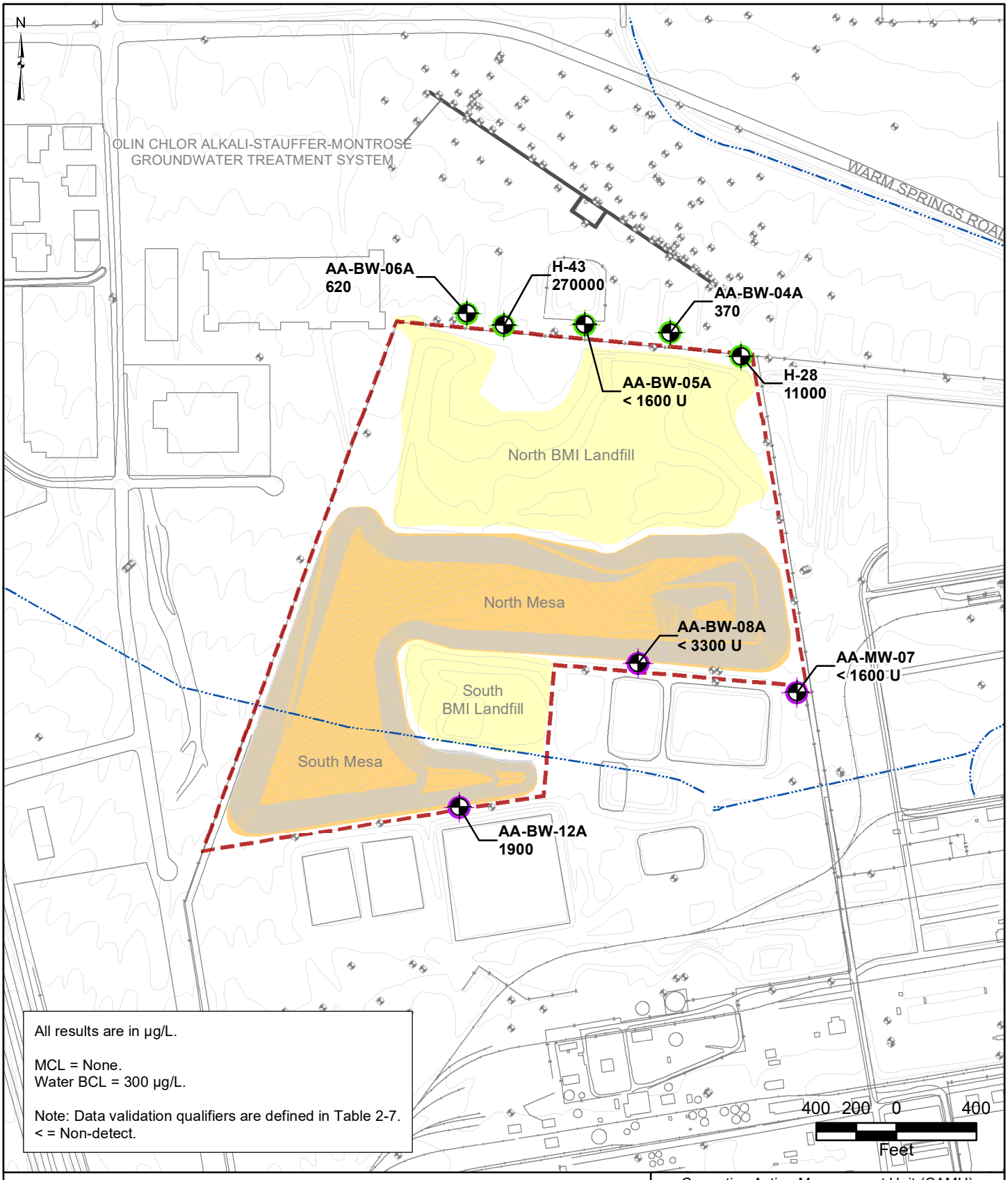
Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE E-4

CHLORINE
IN SHALLOW WATER-
BEARING ZONE WELLS

Basic Remediation COMPANY

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/APPENDIX_E.MXD
MKJ (ERM)	12/28/16	



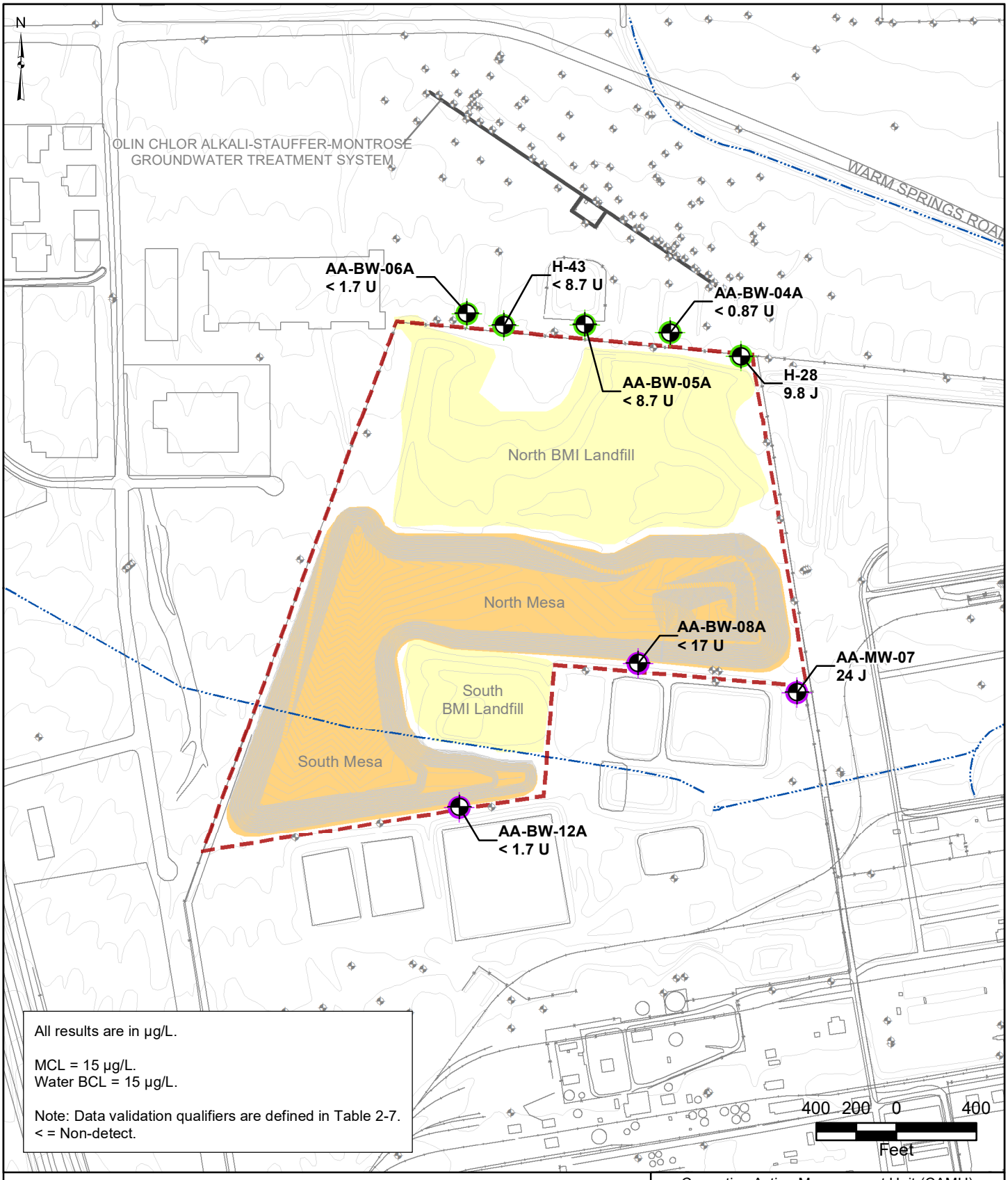
Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE E-5

IRON
IN SHALLOW WATER-BEARING ZONE WELLS

Basic Remediation COMPANY

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/APPENDIX_E.MXD
MKJ (ERM)	12/28/16	



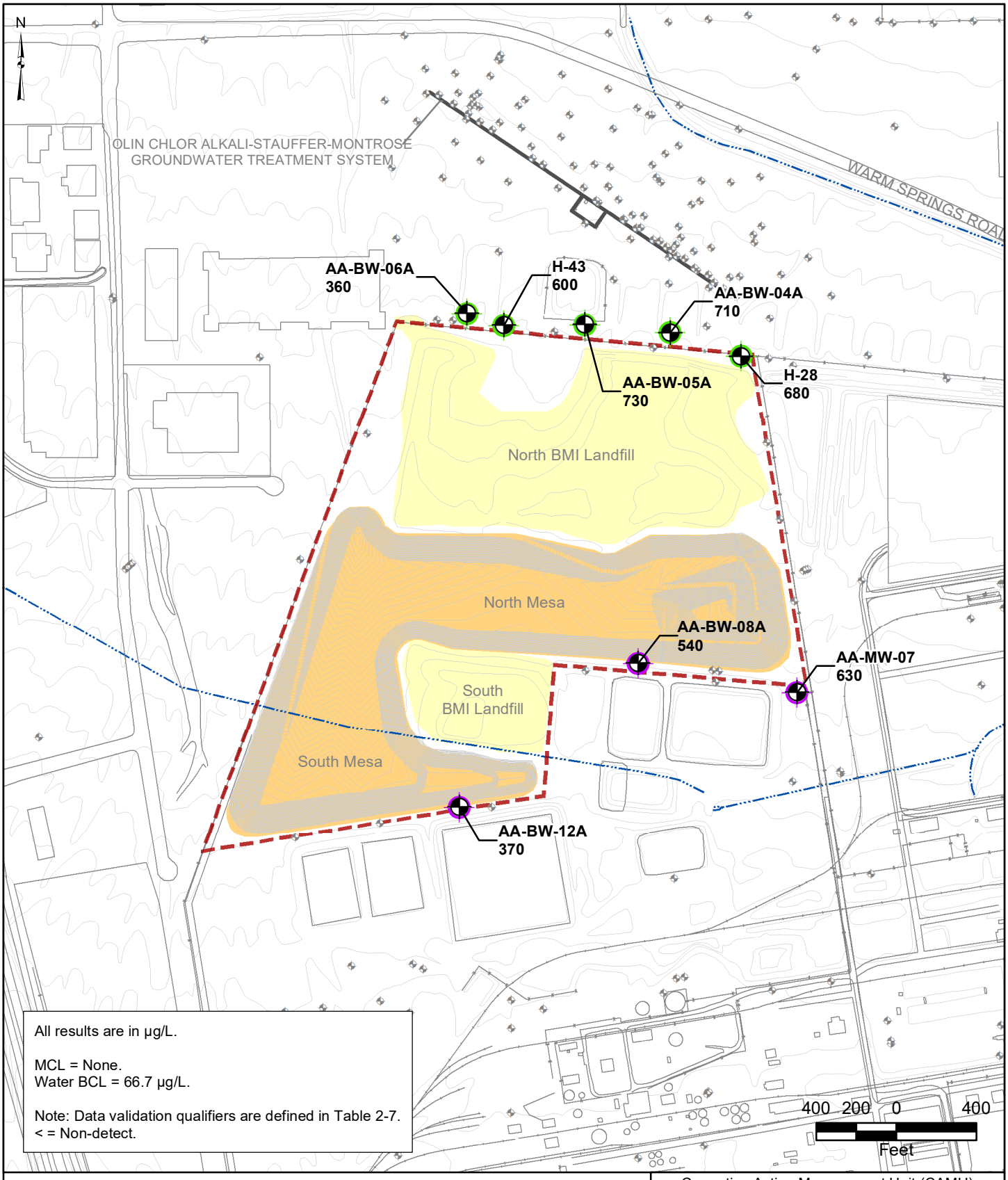
Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE E-6

LEAD
IN SHALLOW WATER-
BEARING ZONE WELLS

Basic Remediation COMPANY

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/APPENDIX_E.MXD
MKJ (ERM)	12/28/16	



CAMU Site

Other Monitoring Wells

BRC CAMU

Former BMI Landfill

Paleochannels (solid where deeply incised, dashed where relatively shallow and/or inferred)

CAMU Long-Term Monitoring Program Wells

Upgradient, Shallow Well

Downgradient, Shallow Well

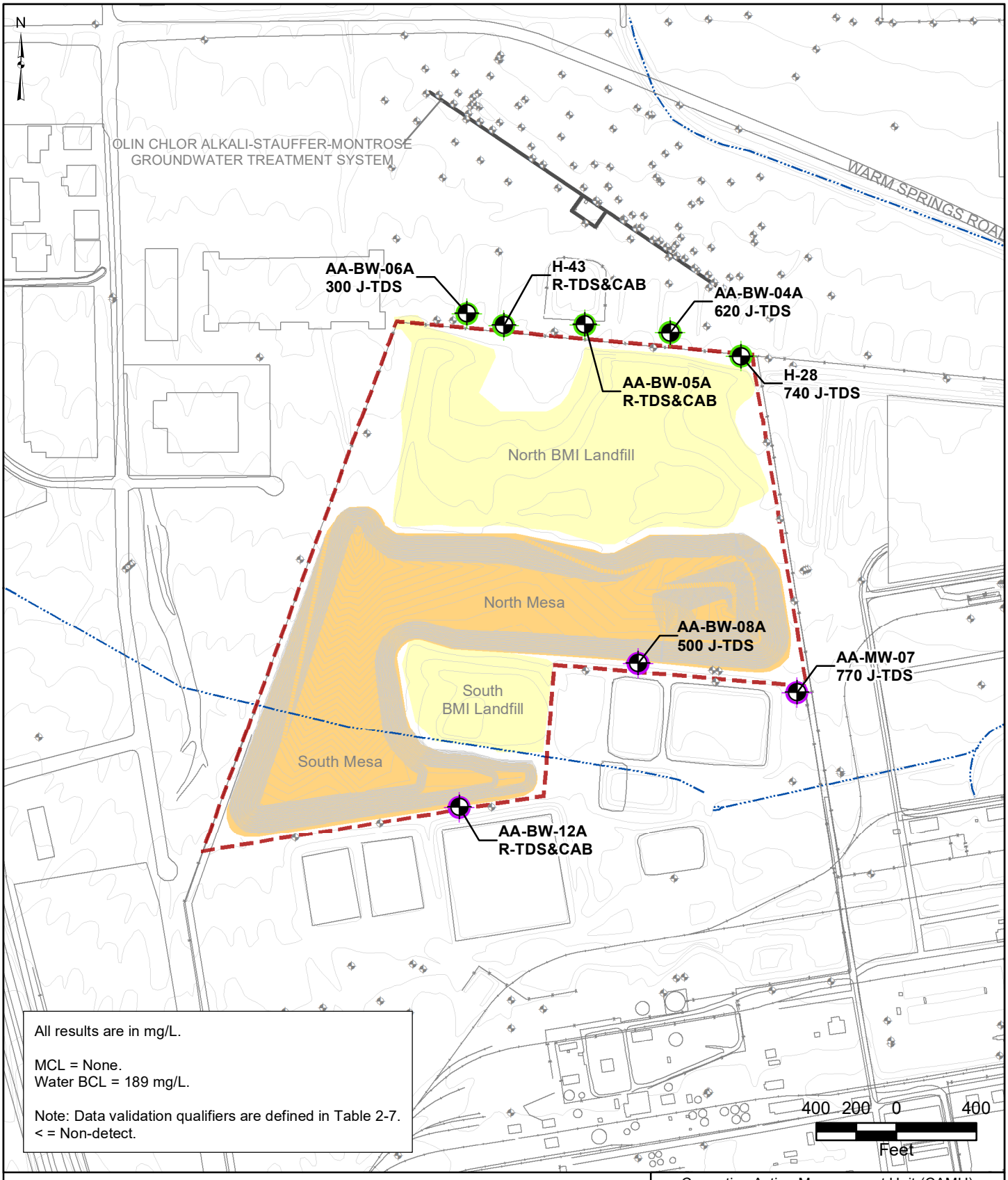
Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE E-7

LITHIUM
IN SHALLOW WATER-BEARING ZONE WELLS

Basic Remediation Company

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/APPENDIX_E.MXD
MKJ (ERM)	12/28/16	



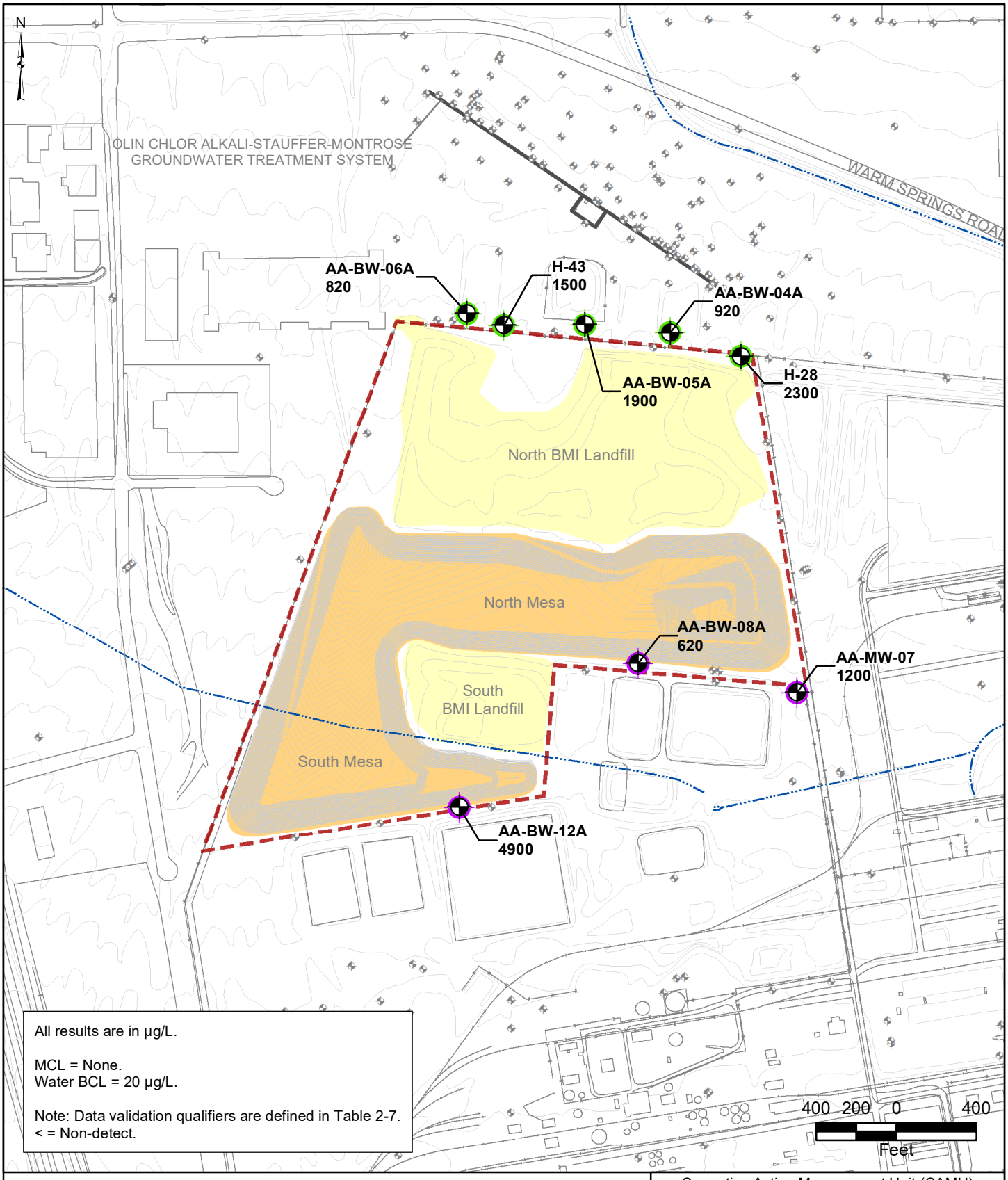
Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE E-8

MAGNESIUM
IN SHALLOW WATER-
BEARING ZONE WELLS

Basic Remediation COMPANY

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/APPENDIX_E.MXD
MKJ (ERM)	12/28/16	



CAMU Site

Other Monitoring Wells

BRC CAMU

Former BMI Landfill

Paleochannels (solid where deeply incised, dashed where relatively shallow and/or inferred)

CAMU Long-Term Monitoring Program Wells

Upgradient, Shallow Well

Downgradient, Shallow Well

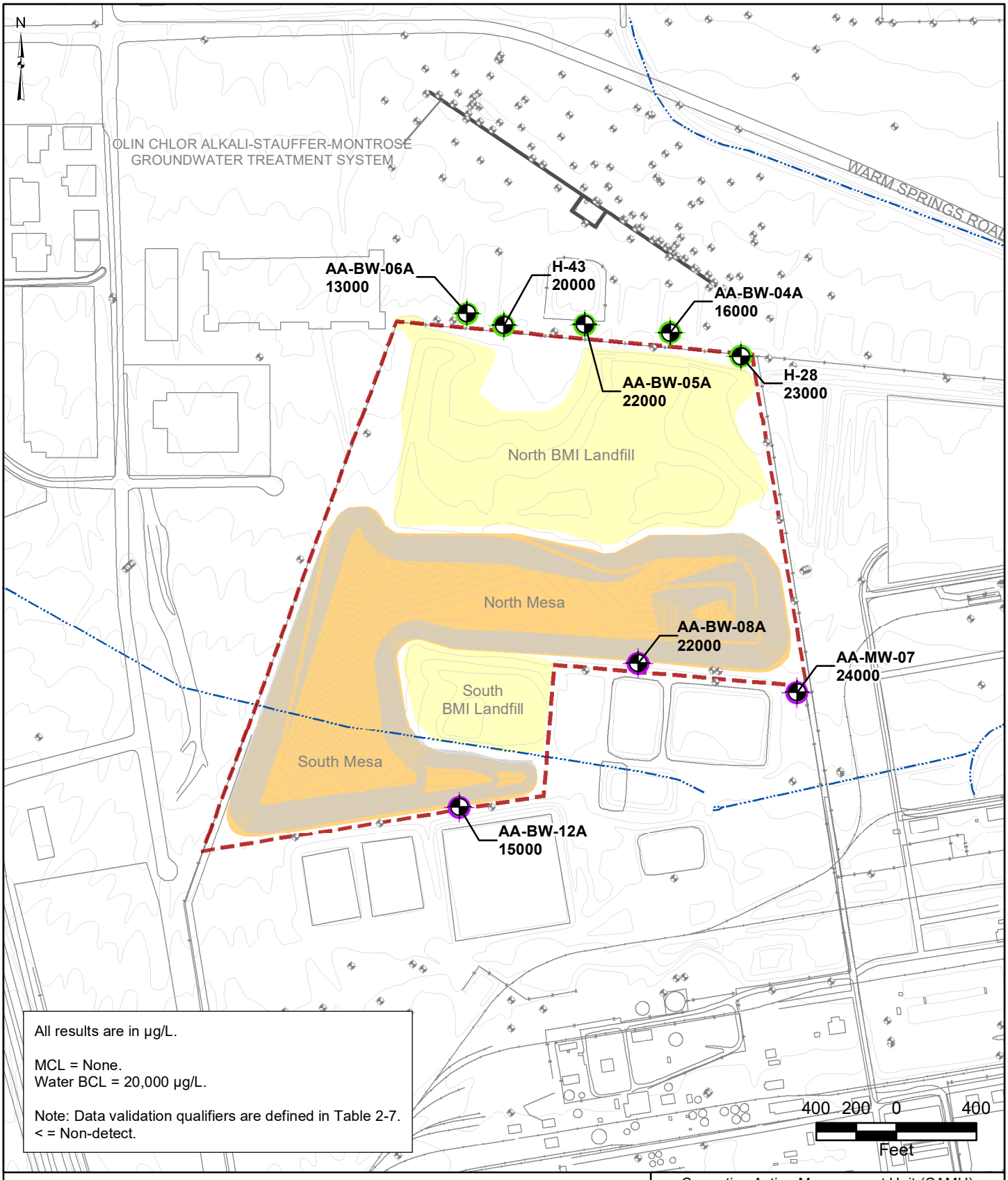
Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE E-9

MANGANESE
IN SHALLOW WATER-
BEARING ZONE WELLS

Basic Remediation Company

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/APPENDIX_E.MXD
MKJ (ERM)	12/28/16	



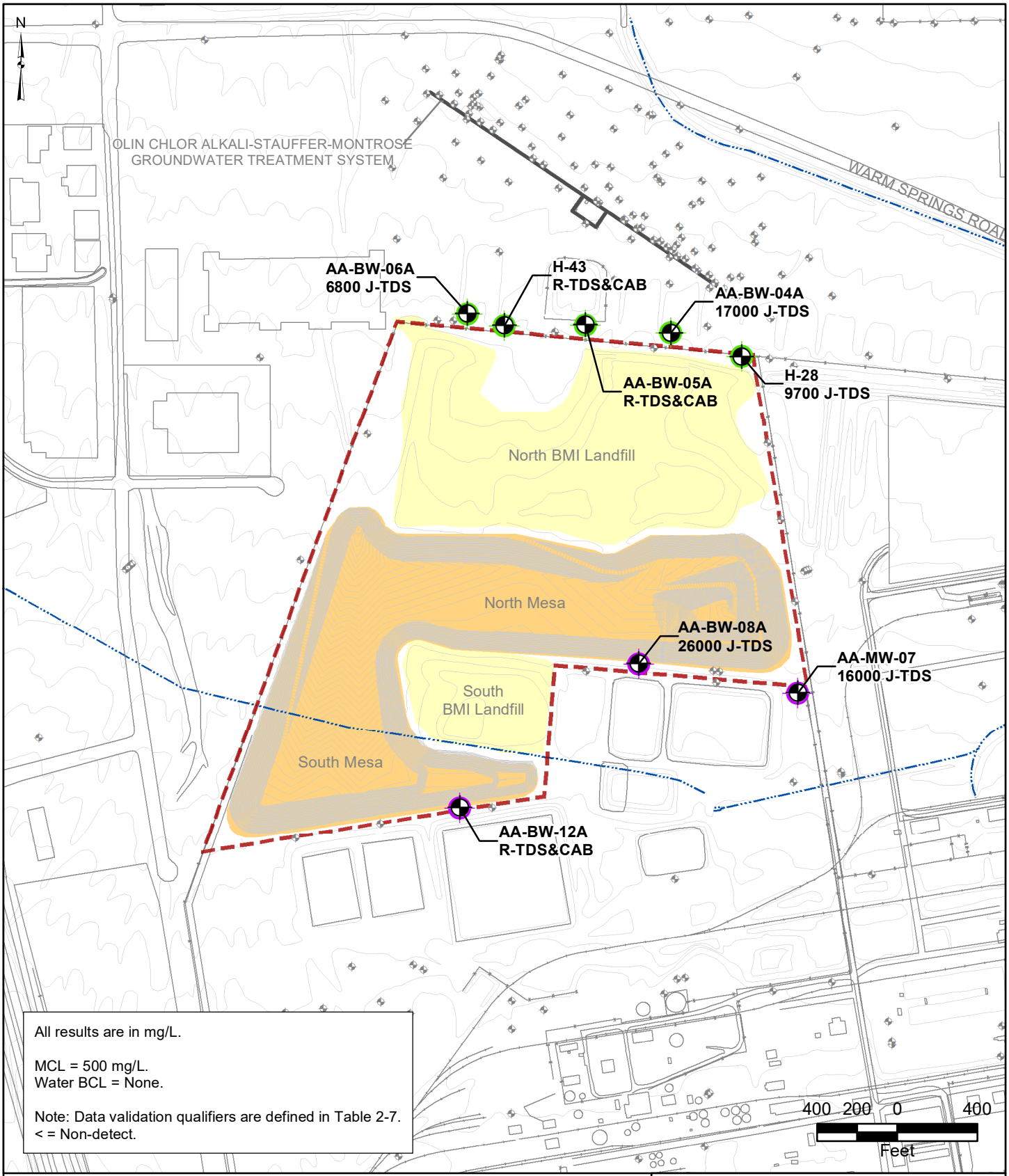
Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE E-10

STRONTIUM
IN SHALLOW WATER-
BEARING ZONE WELLS

Basic Remediation COMPANY

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/APPENDIX_E.MXD
MKJ (ERM)	12/28/16	



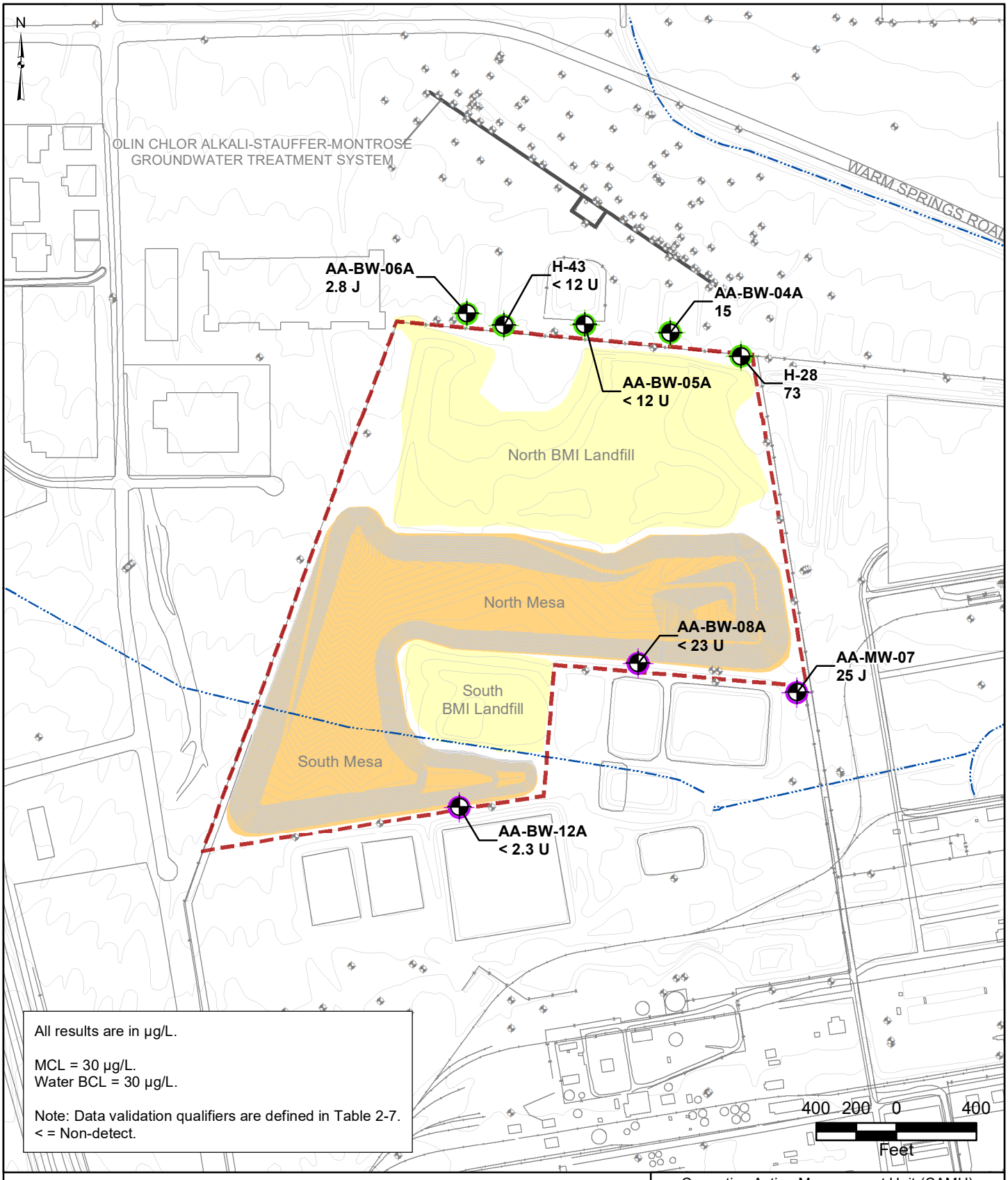
Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE E-11

TOTAL DISSOLVED SOLIDS IN SHALLOW WATER-BEARING ZONE WELLS

Basic Remediation COMPANY

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/APPENDIX_E.MXD
MKJ (ERM)	12/28/16	



Corrective Action Management Unit (CAMU)
BMI Complex, Henderson, Nevada

FIGURE E-12

URANIUM
IN SHALLOW WATER-
BEARING ZONE WELLS

Basic Remediation COMPANY

Prepared by	Date	FILE: GIS/BRC/CAMU_GWMR/APPENDIX_E.MXD
MKJ (ERM)	12/28/16	