December 12, 2016

Mr. Jeff Gouveia
Bear Valley Water District
PO Box 5027
Bear Valley, California 95223

***RE: Bear Valley Water District – Third Tri-Annual 2016 Groundwater Monitoring Report, WDRs Order No. 5-01-208 and R5-2005-0139.***

Dear Mr. Gouveia:

Please find an electronic copy of the Third Tri-Annual 2016 Groundwater Monitoring Report as required by the revised Monitoring and Reporting Requirements of Order No. 5-01-208. Board staff have requested that all monitoring reports be submitted electronically and have a transmittal letter signed and dated by the discharger. Accordingly, please sign (and date) the attached form and re-attach to this report before emailing to the Regional Board by the **February 1st** deadline. The report should be emailed to centralvalleysacramento@waterboards.ca.gov.

Note that historical and third tri-annual 2016 groundwater monitoring data have been reviewed and analyzed in the preparation of this groundwater monitoring report.

Please contact me at your earliest convenience should you have any questions regarding the content of this report.

Sincerely,
STANTEC

Thomas W. Butler PG, CEG, CHG
Senior Hydrogeologist/Geochemist

Attachment – Third Tri-Annual 2016 Groundwater Monitoring Report (e-copy)

**Monitoring Report Submittal Transmittal Form**

Attn: Ms. Mary Boyd
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

| | |
|---|---|
| Discharger: | Bear Valley Water District |
| Name of Facility: | Bear Valley Wastewater Treatment and Disposal Facility |
| WDRs Order Number: | ***5-01-208*** |
| County: | Alpine County |
| Regulator Program: | Waste Discharge to Land (Non15) |
| Unit: | Compliance |
| CIWQS Place ID: | 209035 |

The Bear Valley Water District is hereby submitting to the Regional Water Quality Control Board ("RWQCB") the following information:

**Check all that apply**:

- ☐ Annual Monitoring Report for the year _____
- ☐ 1st / 2nd **(circle one)** Semi-annual Monitoring Report for the year _____
- ☐ 1st / 2nd / 3rd **(circle one)** Tri-Annual Monitoring Report for the year of 2016
- ☐ Monthly Monitoring Report for the month of _____

During the monitoring period, there were / were not **(circle one)** violations of the WDR'S

1. The violations were:
   **See Attached Report**

2. The actions to correct the violations were:
   **See Attached Report**

Certification Statement
"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Signature: _____ Phone: (209) 753-2112

Printed Name: Jeff Gouveia
BVWD General Manager

Date: December 12, 2016

# Bear Valley Water District – Third Tri-Annual 2016 Groundwater Monitoring Report


Prepared for:
Bear Valley Water District
PO Box 5027
Bear Valley, California 95223

Prepared by:
Stantec Consulting Services Inc.
1340 Treat Boulevard, Suite 300
Walnut Creek, California 94597

December 12, 2016

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# 1.0 Executive Summary

- Groundwater elevation monitoring during the third tri-annual monitoring event of 2016 indicates flow that was roughly perpendicular to site topography and generally towards to the west and northwest at a horizontal gradient ranging from 0.058 to 0.076;

- Groundwater quality monitoring indicates pH (MW-1, MW-2, MW-3, and MW-4), iron (MW-6), manganese (MW-1 and MW-6), and total coliform organisms (MW-1, MW-2, and MW-4) exceeded water quality goals for agricultural or potable use during the third tri-annual monitoring event. Note that the laboratory's field technician found that MW-5 could not be pumped during the third tri-annual monitoring event;

- Revised background statistics were computed and the site specific groundwater limitations updated. Of all the constituents assessed tri-annually in 2016, only manganese (MW-1 and MW-6) was present at concentrations that may be considered above background, at statistically significant levels. Conditions that naturally favor manganese mobilization are present in shallow groundwater in the area, including acidic soils and naturally low pH, thus these exceedances should not be considered as irrefutable proof that an impact has occurred;

- All of the other parameters statistically assessed, including salts such as sodium, chloride, TDS, EC, and nitrate, as well as total coliform, were in compliance with site specific groundwater limitations, indicating further compliance with State's Anti-Degradation Policy;

- It is important to note that as only one background well exists and thus computed background statistics cannot reasonably account for natural special variations in water chemistry common in shallow groundwater systems. Furthermore, surface water from a nearby stream may influence groundwater quality due to its close proximity to the shallow background monitoring well; and,

- Lack of a groundwater monitoring network that adequately accounts for spatial variations in background groundwater quality remains the most significant monitoring deficiency at the wastewater treatment and disposal facility.

# 2.0 Introduction and Background

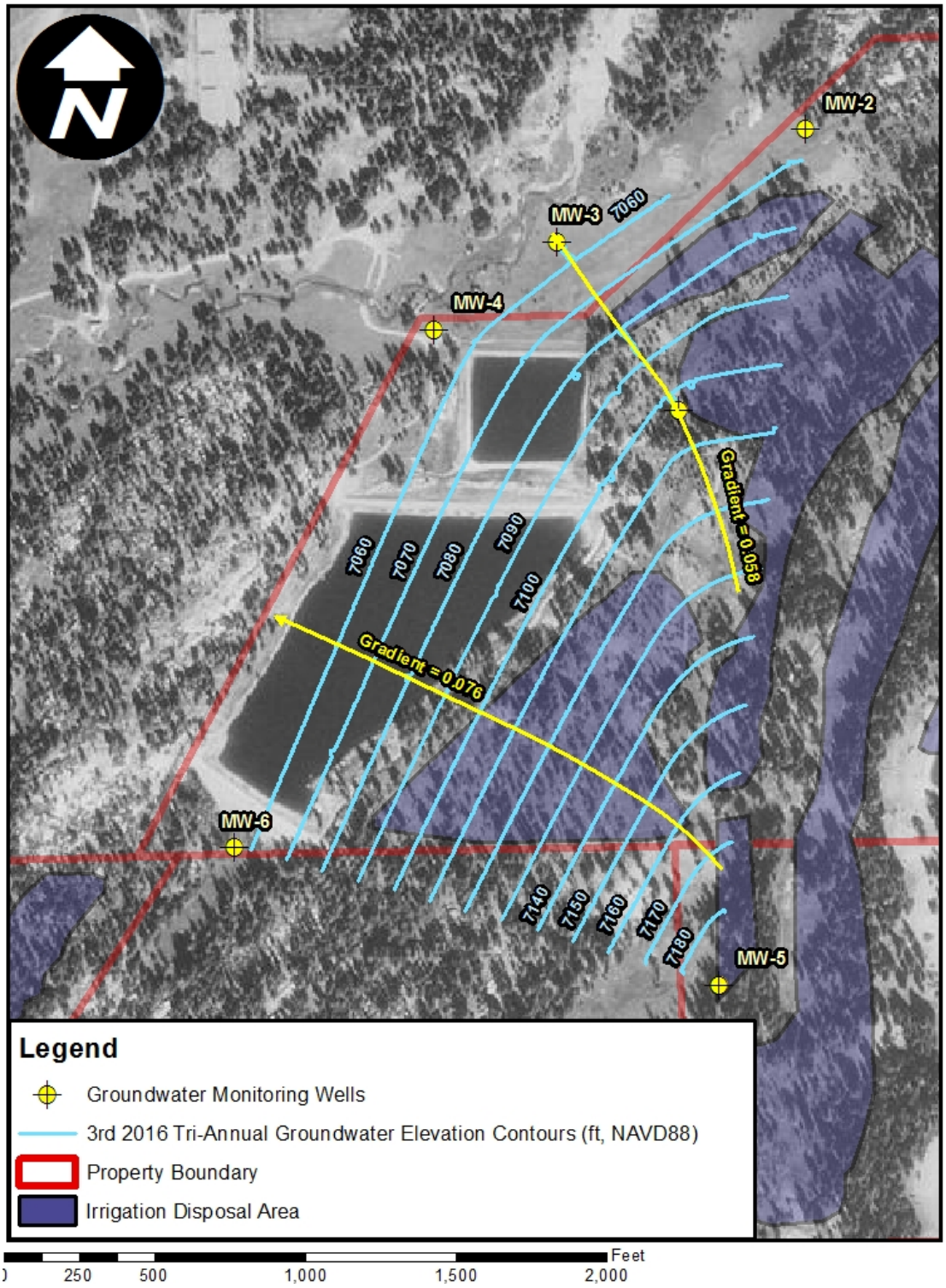
## 2.1 INTRODUCTION

The Bear Valley Water District (District) provides sanitary sewer collection, treatment and disposal for approximately 600 residential and commercial connections in the Alpine County community of Bear Valley, including the Lake Alpine basin area and the Mt. Reba Ski Area. The District's service area is primarily north of State Highway 4 serving the developed private lands in the Bear Valley village area and US Forest Service campgrounds and special use permitted areas. The District wastewater treatment and disposal facility (WWTF) is regulated by the Central Valley Regional Water Quality Control Board (Regional Board) and the Regional Board's Waste Discharge Requirements Order No. R5-2005-0139 and Order No. 5-01-208 (WDRs). The WWTF is located south of Highway 4 and is shown in Figure 1.

The District's WDRs contain monitoring and reporting requirements, which include tri-annual monitoring of groundwater. This report presents groundwater monitoring data obtained during the third tri-annual monitoring event, which was conducted on October 20, 2016 and satisfies the Tri-Annual Groundwater Monitoring Report reporting requirements as specified in the District's Revised Monitoring and Reporting Program for WDR Order No. R5-2005-0139 (MRP). The revised MRP states that groundwater monitoring reports shall be submitted "by the 1st day of February, July, and September of each year", corresponding to combined annual/third tri-annual, first tri-annual, and second tri-annual reporting periods, respectively. It should be noted that these reporting periods do not correspond to climate and related environmental conditions that prohibit site access and well sampling during certain times of the year and therefore the actual report submittal may vary from that which is stipulated in the MRP.

Regional Board staff's recognition of these climate controls was memorialized in the *July 31, 2012* email correspondence. In summary, that correspondence stated that Regional Board staff will not recommend enforcement to the Executive Officer so long as the 1st and 2nd tri-annual monitoring reports are submitted by September 1st and November 1st of each year, respectively, instead of the dates currently required in the MRP. The third tri-annual report remains due by February 1st. Although Regional Board staff have informally agreed to extend tri-annual monitoring report due dates by not seeking enforcement (provided the 1st and 2nd tri-annual reports are submitted by September 1st and November 1st, respectively), we further recommend that Regional Board staff formally memorialize these changes in the MRP at their earliest convenience, in order to assure further violations and potential related enforcement actions against the District do not occur.

## Figure 1 Third Tri-Annual 2016 Groundwater Elevation Contour Map



## 2.2 BACKGROUND

An average flow of 0.04 million gallons per day (MGD) entered the District WWTF during the 2014-2015 water year, which was then treated in a series of aerated treatment ponds where the biodegradable constituents are consumed and/or sequestered. Effluent from the aerated ponds was then stored in a 106 MG reservoir (effluent storage pond) or applied directly to land (summer months only). During the summer months, the stored effluent may be disposed of through spray irrigation to approximately 120 acres of permitted land, including approximately 80 acres of leased land and approximately 40 acres of land authorized by a Special Use Permit from the US Forest Service. Of the 120 gross acres of land, approximately 80 acres (40 from each disposal area) are currently suitable and/or used for effluent disposal purposes. The leased disposal area and permitted US Forest Service land have been in service before the installation of the groundwater monitoring wells (approximately 25 years for the leased land) at the site.

Effluent disposal via spray irrigation involves the disbursement of the effluent through low impact sprinklers upon soils and vegetation within the disposal area. The water is allowed to percolate into the soil and evapotranspirate into the atmosphere. The WDRs currently limit influent flow to 0.1 MGD (annual average basis) and limit application of wastewater to reasonable rates considering soil, climate and the irrigation management system.

## 2.3 GEOLOGY

The District's WWTF is located west of the Sierra crest along Bloods Creek, a tributary of the North Fork of the Stanislaus River. The elevations range from 7080 ft (msl) at the treatment pond to 7480 ft (msl) at the ballast pond on top of the ridge, east of the treatment and storage ponds. The geologic map for the Sacramento quadrangle (Wagner, Jennings, Bedrossian and Bortugno, 1981) indicates that Mesozoic granites underlie the area. This was confirmed by the presence of numerous granite outcrops in the meadows and at the base of the ridge. The map also shows traces of the Tertiary Mehrten Formation, described as an andesitic conglomerate, sandstone, and breccia. Although a competent outcrop of andesitic rock was not observed, the ridge does contain numerous andesitic fragments, produced by parent rock weathering. Just below the eastern side of the ridge crest are numerous large granite boulders, potentially representing glacial transport and deposition.

## 2.4 SOILS

The following soil descriptions are taken from the 1981 U.S. Forest Service soil survey of the Stanislaus National Forest. The descriptions are in agreement with field observations at the site and include the following:

### 2.4.1 Ridge Top

The soil along the southern end of the ridge top is classified as a lithic cryumbrept. This soil is described as a tan, moderately acid, loam about 5 inches thick, and containing no substantive

subsoil. Rock content can range up to 60 percent from the substratum of fractured hard andesitic tuff or tuff-breccia. The soil has excessive drainage with moderately rapid permeability and a very high maximum erosion hazard. The soil supports basin sagebrush, mule's ear, perennial grasses, and scattered lodgepole pine.

### 2.4.2 Ridge Side

The soil along the disposal area, on the west side of the ridge, is classified as a gerle family generally found on 5 to 35 percent slopes. The surface soil is described as a dark gray, slightly acid, sandy loam, about 10 inches thick. The subsoil is described as a moderately acid, light brownish gray, sandy loam. The substratum is extremely stony (rock content can exceed 35%) consisting of glacial debris derived from granitic parent rocks. Additionally, the soil has excessive drainage, rapid permeability, and a moderate to high maximum erosion hazard, typically supporting mixed conifer forests.

### 2.4.3 Valley Floor

The valley floor soil, north of and below the treatment pond, is classified as an entic cryumbrept and described as a brown, moderately acid loam, sandy loam, and loamy sand, about 40 inches in thickness. The substratum is recent alluvium from granitic rocks and is well drained with moderately rapid to rapid permeability. It supports annual grasses, perennial grasses or sedge, and brush.

### 2.4.4 Field Observations

There is a good correlation between the topography of the disposal area and soil development and thickness. Mass wasting and in place weathering/deposition created a soil continuum that one can easily recognize and follow from the ridge top to the valley floor. Starting at the top of the ridge the soil is thin and scarcely present. What soil exists is very shallow, poorly developed, poorly sorted, contains no appreciable organic matter, and has a large percentage of andesitic rock fragments. The thickness of the soil increases as one moves down slope with more organic content being observed, correlating well with increased vegetation. Although the soil is still poorly sorted, it increasingly becomes more uniform towards a sandy loam with granitics composing more of the parent material. On the valley floor the soil contains organic material and is at its maximum development and thickness within the disposal area. The alluvial substratum is well-sorted sand with the parent material consisting of mostly granitic rock, with only a minor andesitic contribution. The granitic origin is marked by numerous small mica flakes, found within the soil profile.

# 3.0 Groundwater Regulatory Requirements

Discharge at the Bear Valley Water District WWTF is subject to requirements contained in the wastewater permit (Waste Discharge Requirements, or WDRs), Standard Provisions and Reporting Requirements for Waste Discharge Requirements 1 March 1991, the Water Quality Control Plan for the California Regional Water Quality Control Board, Central Valley Region and associated documents (Basin Plan). These requirements and policies are discussed below as they relate to discharges to land and the groundwater limitations at the WWTF.

## 3.1 WATER QUALITY OBJECTIVES AND BASIN PLAN REQUIREMENTS

The Central Valley Basin Plan contains water quality objectives for groundwater. These water quality objectives apply to all groundwater in the San Joaquin River Basin, though they do not require improvement over naturally occurring background concentrations. The groundwater objectives are:

- Bacteria – total coliform organisms shall be less than 2.2 MPN/100ml over any seven-day period.
- Groundwater shall not contain chemical constituents that adversely affect beneficial uses.
- At a minimum, groundwater designated for municipal use shall not contain chemical constituents in concentrations greater than the maximum contaminant levels (MCLs) contained in Title 22 of the California Code of Regulations. To protect all beneficial uses, the Regional Board may apply limits more stringent than the MCLs.
- At a minimum, groundwater designated for municipal use shall not contain concentrations of radionuclides in excess of the MCLs contained in Title 22 of the California Code of Regulations.
- Groundwater shall not contain taste or odor constituents that cause nuisance or adversely affect beneficial uses.
- Groundwater shall be maintained free of toxic substances in concentrations that produce detrimental physiological response…

In conjunction with the Basin Plan groundwater objectives, the Regional Board has compiled water quality goals in the Regional Board staff report *A Compilation of Water Quality Goals,* updated in August of 2007. This report is intended to assist interpretation of the above narrative water quality objectives.

## 3.2 ANTIDEGRADATION POLICY

In 1968, the State Water Resources Control Board adopted Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California, or the State

Antidegradation Policy. The Antidegradation policy requires that whenever the quality of waters is better than the water quality standards or water quality objectives, and a discharge does or reasonably has the potential to degrade the high quality water, then such degradation must:

- Not unreasonably affect beneficial uses, i.e., cause the water to exceed water quality standards or water quality objectives; and
- Be consistent with the best practicable treatment and control technology such that the highest water quality is maintained consistent with the maximum benefit to the people of the State.

The Antidegradation Policy applies to surface water and groundwater.

## 3.3 BEAR VALLEY WATER DISTRICT WASTE DISCHARGE REQUIREMENTS

The current District WDRs (Order No. 5-01-208 section D) have groundwater limitations that state:

1. Release of waste constituents from any storage or treatment component associated with the WWTF shall not cause groundwater under and beyond the storage or treatment component, as determined by an approved monitoring network, to:

   a. Contain any of the constituents (identified in Table 1) in concentrations greater than as listed or greater than background quality, whichever is greater.

   b. Contain any constituent identified in Groundwater Limitation D.1.a in concentrations greater than background quality (whether chemical, physical, biological, bacteriological, radiological, or some other property of characteristic).

   c. Exhibit a pH of less than 6.5 or greater than 8.5 pH Units.

   d. Impart taste, odor, or color that creates nuisance or impairs any beneficial use.

2. a. Release of waste constituents from any land disposal area associated with the WWTF shall not cause groundwater under and beyond the land disposal area to contain waste constituents in concentrations statistically greater than background water quality, except for coliform bacteria. For coliform bacteria, increases shall not cause the most probable number of total coliform organisms to exceed 2.2 MPN/100ml of any 7-day period.

   b. If groundwater monitoring shows that waste constituents are present in concentrations greater than background, then upon the request of the Executive Officer, the Discharger shall complete the report described in Provision F.3.

## Table 1 Regional Board Interim Groundwater Limitations

| Parameter | Units | Interim Limitation* |
|---|---|---|
| pH | Std. units | 6.5 – 8.4** |
| Boron | mg/l | 0.6 |
| Chloride | mg/l | 142 |
| Iron | mg/l | 0.3 |
| Manganese | mg/l | 0.05 |
| Sodium | mg/l | 69 |
| Total Coliform Organisms | MPN/100ml | Non-Detect |
| Total Dissolved Solids | mg/l | 450 |
| Total Nitrogen | mg/l | 10 |
| Nitrite as N | mg/l | 1 |
| Nitrate as N | mg/l | 10 |
| Ammonia as N | mg/l | 0.5 |

* From Waste Discharge Requirements Order No. 5-01-208
**From a Compilation of Water Quality Goals, July 2008

# 4.0 Groundwater Monitoring Results

## 4.1 MONITORING SUMMARY

The third tri-annual groundwater monitoring event occurred on October 20, 2016 with sampling and analytical activities being performed by J.L. Analytical Services, Inc. The sampling procedure utilized in monitoring the District's wells is included as Appendix A of this report for reference. Field measurements of depth to groundwater, electrical conductivity (EC), pH, oxidation reduction potential (ORP), dissolved oxygen (DO), and groundwater temperature were conducted in addition to the laboratory analysis of the parameters identified in Table 2 and according to the revised Monitoring and Reporting Program (MRP) No. 5-01-208, dated June 20, 2002. Groundwater samples were also collected for expanded general mineral chemistry, the results of which are summarized in Table 3. The field logs and laboratory results for the third tri-annual sampling event are included as Appendix B of this report. Note that the field technicians indicated that water could not be pumped from MW-5, thus samples from this well were not obtained during the third tri-annual monitoring event.

**Table 2 Groundwater Monitoring Requirements**

| Parameter | Units | Frequency[1] |
|---|---|---|
| Total Dissolved Solids | mg/l | 3 times per year |
| Nitrate as Nitrogen | mg/l | 3 times per year |
| pH | pH units | 3 times per year |
| Total Coliform Organisms[2] | MPN/100ml | 3 times per year |
| Ammonia | mg/l | 3 times per year |
| Total Kjeldahl Nitrogen | mg/l | 3 times per year |
| General Minerals[3] | mg/l | 1 time per year |

1. Immediately after snowmelt, in the middle of the summer, and in the fall (shortly before wells become inaccessible due to snow cover.)
2. Method No. 9221E, using a minimum of three dilutions of 15 tubes.
3. General minerals include boron, chloride, iron, manganese, and sodium, collected during the fall.

**Table 3 Third Tri-Annual 2016 Groundwater Quality Summary**

| Parameter | MW-1 | MW-2 | MW-3 | MW-4 | MW-5 | MW-6 |
|---|---|---|---|---|---|---|
| Field pH | **6.4** | **5.8** | **5.8** | **6.1** | * | 6.9 |
| Field EC (µS/cm) | 172 | 65 | 88 | 169 | | 362 |
| Temp. (C) | 6.5 | 10.3 | 9.1 | 8.5 | | 7.3 |
| ORP (mV) | -- | -- | -- | -- | | -- |
| Dissolved Oxygen (mg/L) | -- | -- | -- | -- | | -- |
| Lab SC (µS/cm) | -- | -- | -- | -- | | -- |
| Cl (mg/L) | 2.1 | 2.2 | 9.9 | 5.5 | | 4.7 |
| NO3-N (mg/L) | <0.1 | 0.2 | <0.1 | 0.17 | | <0.1 |
| TKN (mg/L) | 0.31 | 0.35 | 0.35 | 0.31 | | 0.44 |
| Ammonia as N | 0.19 | 0.14 | <0.1 | <0.1 | | 0.11 |
| TDS (mg/L) | 140 | 54 | 71 | 120 | | 230 |
| B (mg/L) | <0.03 | <0.03 | <0.03 | <0.03 | | <0.03 |
| Ca (mg/L) | 20.5 | 6.9 | 7.4 | 18.4 | | 48.5 |
| Fe (mg/L) | 0.043 | <0.03 | <0.03 | <0.03 | | **0.812** |
| Mg (mg/L) | 5.1 | 2.1 | 2.0 | 5.9 | | 11.5 |
| Mn (mg/L) | **0.236** | <0.01 | <0.01 | <0.01 | | **2.090** |
| K (mg/L) | 3.6 | 1.1 | 1.5 | 3.4 | | 2.9 |
| Na (mg/L) | 5.8 | 3.2 | 6.1 | 7.3 | | 12.3 |
| $HCO_3$ as $CaCO_3$ (mg/L) | 81 | 28 | 27 | 75 | | 183 |
| $HCO_3$ as $HCO_3$ (mg/L) | 99 | 34 | 33 | 91 | | 223 |
| $CO_3$ as $CaCO_3$ (mg/L) | <10 | <10 | <10 | <10 | | <10 |
| OH as $CaCO_3$ (mg/L) | <10 | <10 | <10 | <10 | | <10 |
| Total Alkalinity as $CaCO_3$ (mg/L) | 81 | 28 | 27 | 75 | | 183 |
| Sulfate (mg/L) | 3.1 | <0.5 | 1.0 | 4.8 | | 1.8 |
| Total Coliform (MPN/100ml) | **230** | **170** | <1.8 | **230** | | <1.8 |
| Fecal Coliform (MPN/100ml) | 6.8 | 170 | <1.8 | 7.8 | | <1.8 |

**Bold** data indicates and simple exceedance of a water quality goal, not to be confused with a statistically significant exceedances. IVS – Insufficient volume of water available to sample.
*Field technician indicated that well could not be pumped.

## 4.2 GROUNDWATER ELEVATIONS, GRADIENTS, AND FLOW DIRECTION

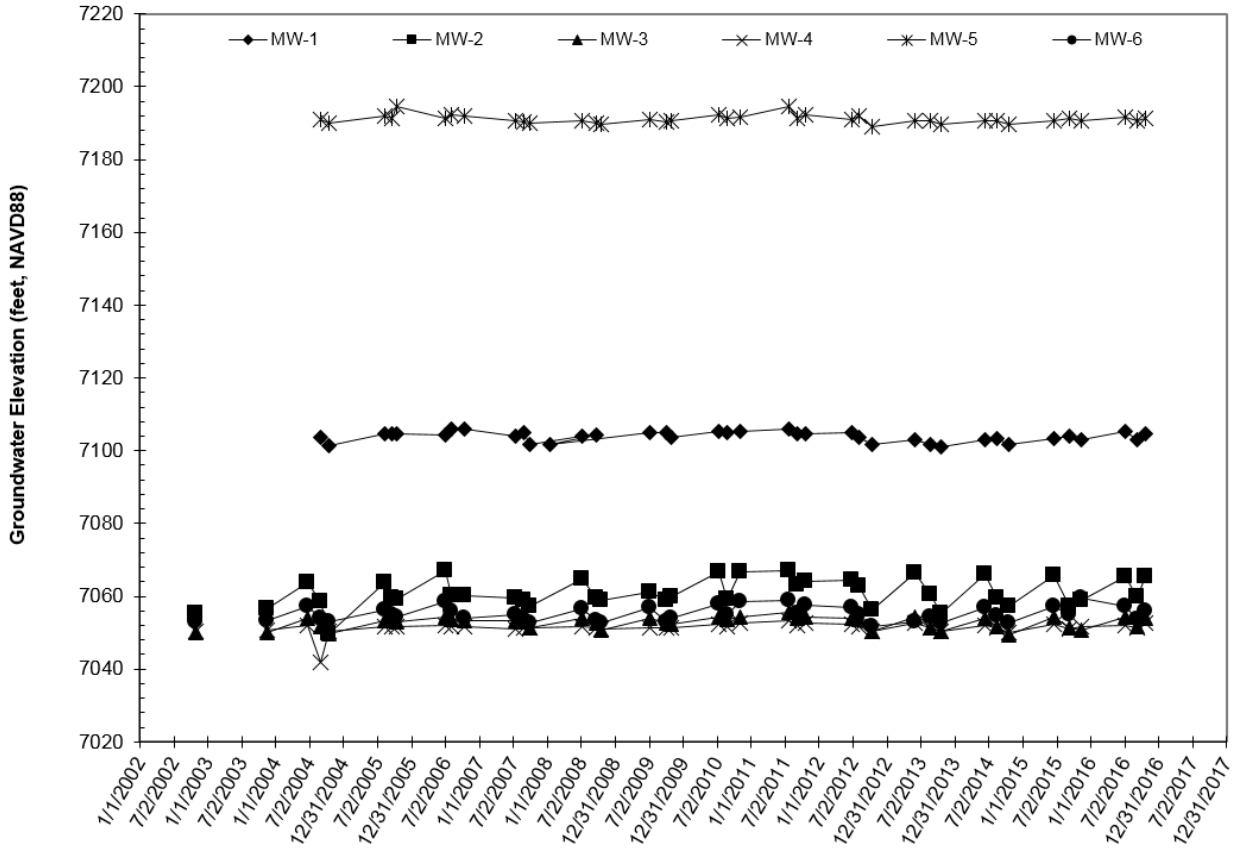
Depth to groundwater was measured on October 20, 2016 relative to the surveyed top north quadrant of the PVC well casing. Groundwater elevations were subsequently calculated for the third tri-annual monitoring event and summarized in Table 4 below. Table 4 also contains groundwater elevations from the three previous monitoring events and provides the computed

change in elevation at each well (in parentheses) relative to the previous monitoring event, illustrating recent temporal variability in groundwater elevation at the WWTF. Calculated groundwater elevations for the third tri-annual 2016 monitoring event were utilized to construct a contour map (Figure 1), which was subsequently used to estimate both groundwater flow direction and horizontal gradient. Interpreted groundwater flow direction during the third tri-annual monitoring was found to be roughly perpendicular to site topography and generally towards the northwest at a horizontal gradient ranging from 0.058 to 0.076 (Figure 1). Historical groundwater elevations are provided as Appendix C, while a time series plot for computed groundwater elevations is provided as Figure 2, for further reference.

**Table 4 Groundwater Elevation Summary**

| Monitoring Well | Reference Point Elevation (ft, NAVD88) | Groundwater Elevation (feet , NAVD88) | | | |
|---|---|---|---|---|---|
| | | 11/12/2015 | 7/7/2016 | 9/2/2016 | 10/20/2016 |
| MW-1 | 7114.08 | 7103.08 (-0.81) | 7105.19 (+2.11) | 7102.97 (-2.22) | 7104.60 (+1.63) |
| MW-2 | 7067.53 | 7058.72 (+1.50) | 7065.24 (+6.52) | 7059.90 (-5.34) | 7065.49 (+5.59) |
| MW-3 | 7056.37 | 7050.59 (-0.91) | 7054.29 (+3.70) | 7051.75 (-2.54) | 7054.00 (+2.25) |
| MW-4 | 7054.79 | 7051.63 (+0.56) | 7051.97 (+0.34) | 7051.21 (-0.76) | 7052.50 (+1.29) |
| MW-5 | 7203.78 | 7190.55 (-0.79) | 7191.73 (+1.18) | 7190.52 (-1.21) | 7191.22 (+0.70) |
| MW-6 | 7059.49 | 7059.49 (+4.50) | 7057.34 (-2.15) | 7053.65 (-3.69) | 7055.96 (+2.31) |

**Figure 2 Groundwater Elevation Time Series Chart**




## 4.3 GROUNDWATER QUALITY

Groundwater samples for the third tri-annual monitoring event were collected on October 20, 2016. A summary of the lab and field results for this monitoring event are provided above in Table 3, while historical groundwater quality data are provided in Appendix C for further reference. Historical and third tri-annual data were compiled in time series plots for TDS (Figure 3) and chloride (Figure 4) to illustrate temporal variations in groundwater salinity at the site.

## Figure 3 TDS Time Series Chart

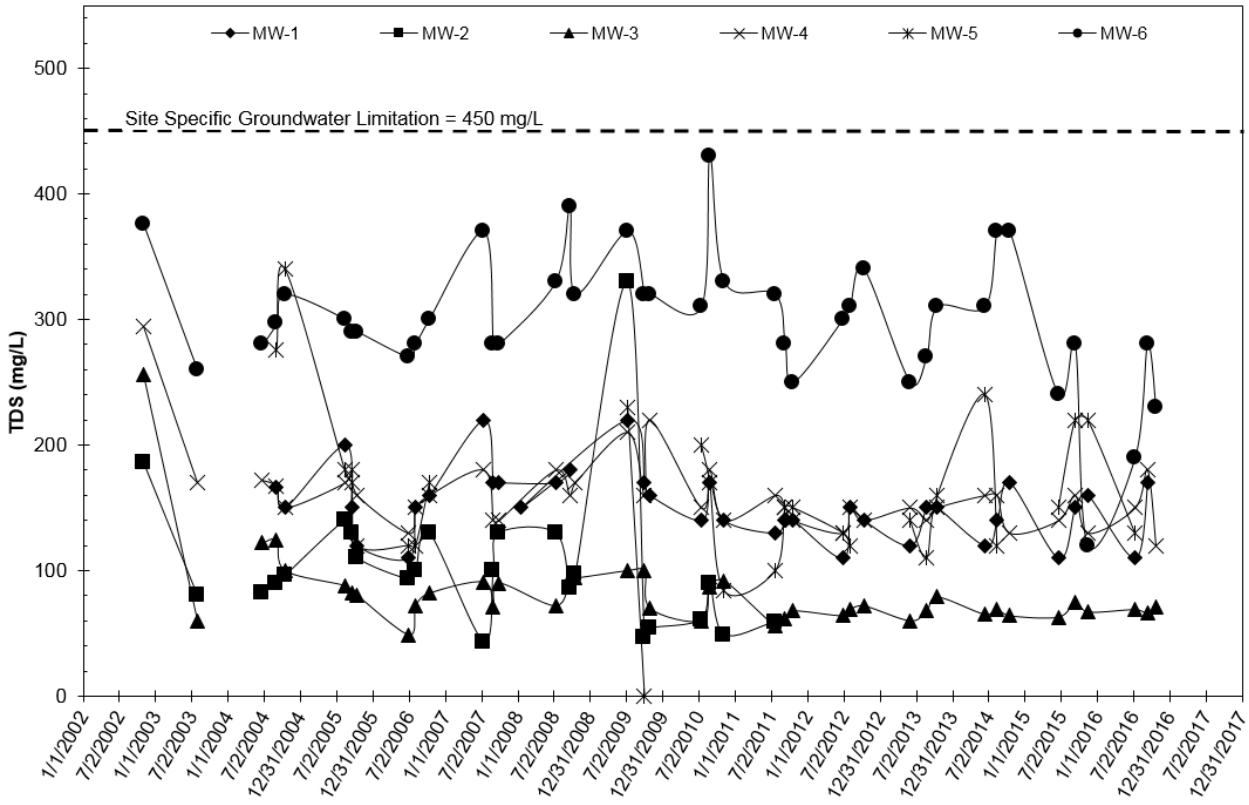
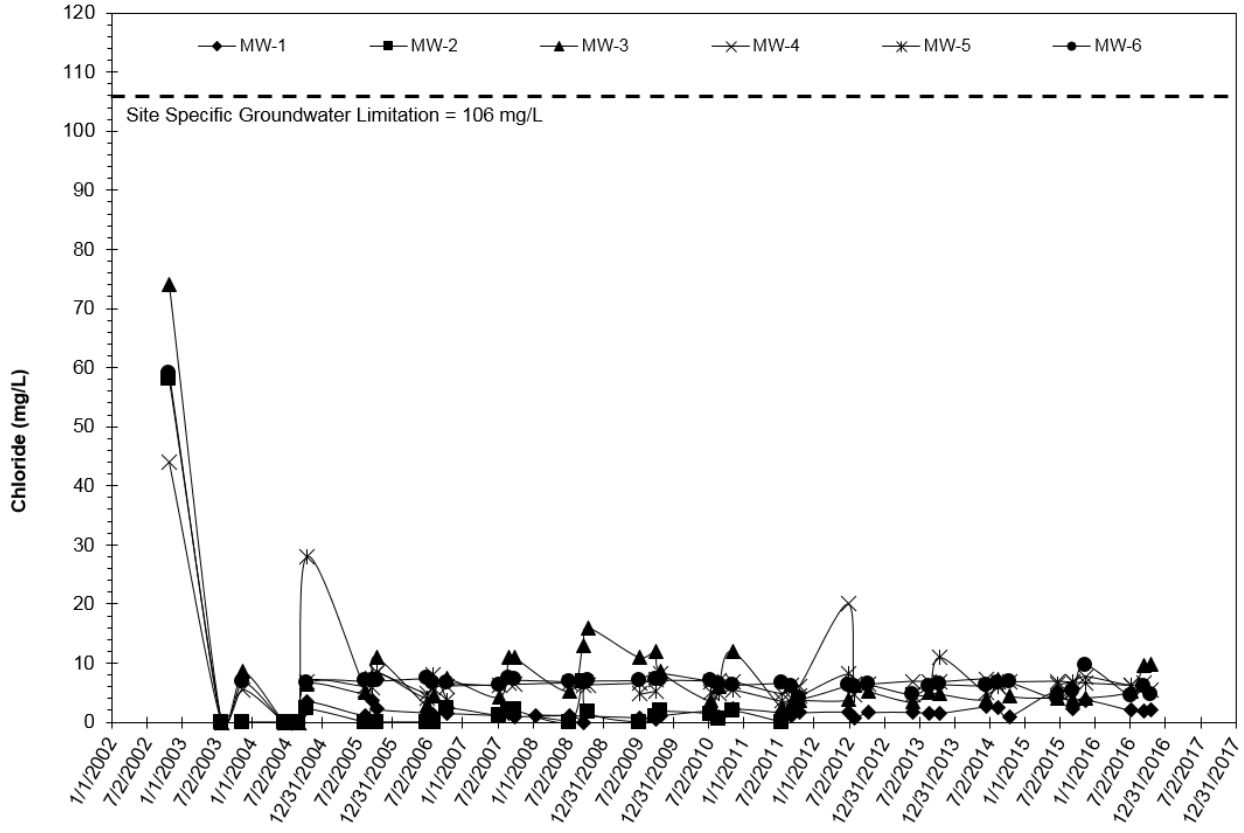


**Figure 4 Chloride Time Series Chart**




### 4.3.1 Compliance Monitoring Well MW-1

Monitoring well MW-1 is generally located hydrogeologically down gradient of wastewater disposal operations and hydrogeologically up gradient of the eastern portion of the treatment pond (Figure 1). Field pH, field EC, and laboratory determined TDS measured during the third tri-annual monitoring event were reported at values of 6.4, 172 µS/cm, and 140 mg/l, respectively. Nitrate as N was not detected above the laboratory reporting limit 0.1 mg/l,while ammonia was detected at a concentration of 0.19 mg/l. Furthermore, total coliform organisms were detected at a density of 230 MPN/100ml. The general minerals sodium, chloride, iron, and manganese were detected at concentrations of 5.8, 2.1, 0.043, and 0.236 mg/l, respectively, while boron was not detected above the laboratory reporting limit of 0.03 mg/l. Additional parameters monitored during the third tri-annual monitoring event of 2016 are summarized in Table 3 for reference.

### 4.3.2 Background Monitoring Well MW-2

Monitoring well MW-2 is located hydrogeologically up gradient of the disposal areas and serves as the background monitoring well for the WWTF (Figure 1). Field pH, field EC, and laboratory

determined TDS measured during the third tri-annual monitoring event were reported at values of 5.8, 65 µS/cm, and 54 mg/l, respectively. Nitrate as N and ammonia as N were detected at concentrations of 0.2 and 0.14 mg/l, respectively. Furthermore, total coliform organisms were detected at a density of 170 MPN/100ml. The general minerals sodium and chloride were reported at concentrations of 3.2 and 2.2 mg/l, respectively, while boron, iron, and manganese were not detected above their laboratory reporting limits. Additional parameters monitored during the third tri-annual monitoring event of 2016 are summarized in Table 3 for reference.

### 4.3.3 Compliance Monitoring Well MW-3

Monitoring well MW-3 is located hydrogeologically down gradient of wastewater disposal operations, near the northwestern portion of the WWTF property (Figure 1). Field pH, EC, and laboratory determined TDS measured during the third tri-annual monitoring event were reported at values of 5.8, 88 µS/cm, and 71 mg/l, respectively. Nitrate as N and ammonia as N were not detected above their respective laboratory reporting limits. Furthermore, total coliform organisms were not detected above the laboratory reporting limit of 1.8 MPN/100ml. The general minerals sodium and chloride were reported at concentrations of 6.1 and 9.9 mg/l respectively, while boron, iron, and manganese were not detected above their respective laboratory reporting limits. Additional parameters monitored during the third tri-annual monitoring event of 2016 are summarized in Table 3 for reference.

### 4.3.4 Compliance Monitoring Well MW-4

Monitoring well MW-4 is located hydrogeologically down gradient of wastewater disposal operations and the wastewater treatment pond, near the northwestern portion of the WWTF property (Figure 1). Field pH, EC, and laboratory determined TDS measured during the third tri-annual monitoring event were reported at values of 6.1, 169 µS/cm, and 120 mg/l, respectively. Nitrate as N was detected at a concentration of 0.17 mg/l, while ammonia as N was not detected above its laboratory reporting limit. Furthermore, total coliform organisms were detected at a density of 230 MPN/100ml. The general minerals sodium and chloride were detected at concentrations of 7.3 and 5.5 mg/l, respectively, while boron, iron, and manganese were not detected above their laboratory reporting limits. Additional parameters monitored during the third tri-annual monitoring event of 2016 are summarized in Table 3 for reference.

### 4.3.5 Compliance Monitoring Well MW-5

Monitoring well MW-5 is located hydrogeologically down gradient of wastewater disposal operations, near the south-central portion of the WWTF property (Figure 1). During the third tri-annual monitoring event, field staff reported that water could not be pumped from the well, indicating either a pump failure or that the well was not producing sufficient water to pump. Accordingly, samples were not collected for laboratory analysis from this well.

### 4.3.6 Compliance Monitoring Well MW-6

Monitoring well MW-6 is located hydrogeologically down to cross gradient of wastewater disposal operations and down gradient/adjacent to the effluent storage pond, near the southwestern portion of the WWTF property (Figure 1). Field pH, EC, and laboratory determined TDS measured during the third tri-annual monitoring event were reported at values of 6.9, 362 µS/cm, and 230 mg/l, respectively. Ammonia as N was detected at a concentration of 0.11 mg/l, while nitrate as N was not detected above its laboratory reporting limit. Furthermore, total coliform organisms were not detected above the laboratory reporting limit of 1.8 MPN/100ml. The general minerals sodium, chloride, iron, and manganese were detected at concentrations of 12.3, 4.7, 0.812, and 2.09 mg/l, respectively, while boron was not detected above its laboratory reporting limit. Additional parameters monitored during the third tri-annual monitoring event of 2016 are summarized in Table 3 for reference.

# 5.0 Background Groundwater Quality

## 5.1 STATISTICAL ANALYSIS INTRODUCTION

On behalf of the District, ECO:LOGIC Engineering (now Stantec) submitted a Groundwater Characterization Report (GCR), in *January 2005*. This report was submitted in accordance with the District's WDRs and the Regional Board's *July 8, 2004* Technical Report Review and Comments letter requesting a statistical determination of background groundwater quality, pursuant to Title 27, Section 20415(e)(10) of the California Code of Regulations. The report compared actual COPC concentration at each of the compliance wells to both the Regional Board's Interim Groundwater Limitations and calculated background COPC using the 95% Confidence Limit (CL). As part of the 2006 Annual Report, the statistical assessment was revised via an alternative methodology utilizing the 99% upper prediction limit (UPL) for parametrically distributed data, combined with alternative tests for non-parametric data. The background groundwater quality assessment has been updated annually since 2006. The analysis provided below represents the most current update to the statistical assessment of background groundwater quality, utilizing data collected through the third tri-annual monitoring event of 2016.

The following provides a summary of the assumptions used to compute the 99% UPL of background groundwater quality:

- Statistical analysis performed annually;
- Statistical test performed for the parameters TDS, nitrate, ammonia, pH, total coliform, boron, chloride, iron, sodium, and manganese;
- Data collected during the years of 2003 and earlier were not assessed due in part to several factors including the influence of well drilling activities and lack of filtration for metals. All data following 2003 were included in the statistical analysis;
- A pass 1 of 3 re-sampling strategy was employed.
- Maximum reported value, not reflective of an unreasonable anomaly, used to represent background groundwater quality for non-parametric data.

## 5.2 OUTLIER ANALYSIS

Prior to the evaluation of background groundwater quality, all background data (MW-2) were reviewed using Dixon's test (where n is between 3 and 25) or Rosner's test (for n > 25) for statistically significant outliers at the 99% confidence limit. The following provides a summary of the identified outliers and any actions taken.

**Field pH:** No outliers identified.

**TDS:** One statistical outlier was identified during the 7/7/09 monitoring event. The results are anomalously high and do not correspond with the reported EC values, suggesting a laboratory error. The reported outlier was subsequently removed.

**Nitrate as N:** One outlier was identified and during the 10/26/09 monitoring event. This outlier was reviewed, determined to be reasonable, and subsequently retained for further analysis.

**Ammonias as N:** Five outliers were identified and during the 9/1/04, 6/22/04, 9/15/05, 9/8/16, and 10/20/16. These outliers were reviewed, determined to be reasonable, and retained for further analysis.

**Total Coliform:** Three outliers were identified and during the 7/8/08, 10/26/09, and 11/4/10 monitoring events. Of these outliers, one was notably higher than all of the rest (10/26/09). For 10/26/09, no known cause of the outlier could be identified, however many of the other monitoring wells, that do not typically contain elevated coliform, also reported high values during this event, suggesting potential sampling or laboratory bias. Accordingly, this outlier was removed from further analysis. All other outliers were determined to be reasonable and retained for further analysis.

**Boron:** No outliers identified.

**Chloride:** Two statistical outlier were identified and during the 9/18/08 and 10/9/2012 monitoring events. These data were reviewed and no anthropogenic cause could be attributed to the anomalies. Accordingly, they were retained for further analysis.

**Iron:** No outliers identified.

**Sodium:** Two statistical outliers were identified and during 9/18/08 and 10/9/12 monitoring events. These outliers were reviewed and no anthropogenic cause could be attributed to the anomalies. Accordingly, they were retained for further analysis.

**Manganese:** Six statistical outliers were identified during the 10/13/04, 8/29/07, 7/21/11, 10/9/12, 8/21/13, and 10/14/14 monitoring events. These outliers were reviewed and no anthropogenic cause could be attributed to the anomalies. Accordingly, they were retained for further analysis.

## 5.3 NORMALITY TEST

Following the outlier analysis a normality test was performed using Shapiro-Wilks Test at the 99% level of confidence. If the background monitoring data were normally distributed, or could be made normal through an appropriate transformation, parametric tests were applied. Alternatively, if the data were found to be non-parametrically distributed, non-parametric statistical tests were used. Following the initial data review, as summarized above, 99% background UPLs were computed, based on inclusion of the most recent 2016 monitoring data the results of which are summarized in Table 5.

**Table 5 2016 Statistical Assessment of Background Groundwater Quality**

| COPC | Background 99% UPL | Data Distribution/Method | Data Points |
|---|---|---|---|
| TDS (mg/l) | 130 | Parametric UPL | 38 |
| Nitrate as N (mg/l) | 0.5 | Non-Parametric UPL | 39 |
| Ammonia as N (mg/l) | 1 | Non-Parametric UPL | 39 |
| pH | **5.7** – 7.2 | Parametric UPL | 39 |
| Total Coliform (MPN/100ml) | **500** | Non-Parametric UPL | 38 |
| Boron (mg/l) | 0.03 | Non-Parametric UPL | 37 |
| Chloride (mg/l) | 2.7 | Parametric UPL (Natural Log Transformed) | 37 |
| Iron (mg/l) | **1.54** | Non-Parametric UPL | 39 |
| Sodium (mg/l) | 8.6 | Non-Parametric UPL | 37 |
| Manganese (mg/l) | **0.22** | Non-Parametric UPL | 39 |

**Bold** data indicate an exceedance of the Regional Board's Interim Groundwater Limitations

## 5.4 SITE SPECIFIC GROUNDWATER LIMITATIONS

For COPC's where the background 99% UPL or non-parametric statistics are greater than the Regional Board's Interim Groundwater Limitation, the background statistic should be used for facility compliance. Of the COPCs analyzed, computed background (MW-2) statistics for iron, manganese, and total coliform exceeded the Regional Board's Interim Groundwater Limitations of 0.3 mg/l, 0.05 mg/l, and non-detect, respectively. Furthermore, background pH values were statistically lower than the lower limit of the groundwater goal of 6.5. Conversely, where an Interim Groundwater Limitation is greater than the background statistic, the Interim Groundwater Limitation should be used to assess facility compliance, as was the case for all the remaining parameters, provided the facility is implementing best practicable treatment and control measures for the constituent of potential concern. It should be noted however, that the WDR Interim Groundwater Limitations for boron and chloride are inconsistent with agricultural water quality goals and were revised accordingly. Table 6 presents the recommended site specific groundwater limitations for the facility.

### Table 6 2016 Recommended Site Specific Groundwater Limitations

| COPC | Site Specific Groundwater Limitation | Basis for Limitation | Compliance Assessment Methodology |
|---|---|---|---|
| TDS (mg/l) | 450 | Agricultural Water Quality Goal | 95% LCL |
| Nitrate as N (mg/l) | 10 | Primary Maximum Contaminant Level | Not to exceed |
| Ammonia as N (mg/l) | 1.5 | Taste and Odor Threshold | 95% LCL |
| pH | **5.7** – 8.4 | STAT Parametric UPL/Agricultural Water Quality Goal | Pass 1 of 3/ 95% LCL |
| Total Coliform (MPN/100ml) | **500** | STAT Non-Parametric UPL | Not to exceed |
| Boron (mg/l) | 0.7 | Agricultural Water Quality Goal | 95% LCL |
| Chloride (mg/l) | 106 | Agricultural Water Quality Goal | 95% LCL |
| Iron (mg/l) | **1.54** | STAT Non-Parametric UPL | Not to exceed |
| Sodium (mg/l) | 69 | Agricultural Water Quality Goal | 95% LCL |
| Manganese (mg/l) | **0.22** | STAT Non-Parametric UPL | Not to exceed |

**Bold** data indicate an exceedance of the Regional Board's Interim Groundwater Limitations

## 5.5 ANTI-DEGRADATION ASSESSMENT

In evaluating facility compliance, the UPL methodology is not appropriate for statistically assessing compliance with water quality goals based on MCLs or agricultural limitations (such as those used in determining Interim Groundwater Limitations) because many of these goals are based on long term averages of water quality. Accordingly the 95% lower confidence interval (LCL) about the mean is recommended (95% LCL for two-tailed test for pH) and is appropriate for assessing compliance with the parameters TDS, ammonia, upper pH, boron, chloride, and sodium, which were based on unrestricted agricultural use or taste and odor thresholds. However, where a parametric 99% UPL serves as the site specific groundwater limitation, the pass 1 of 3 re-sampling should be used to assess compliance (that is if one sample of the past three is less than the limitation, no statistically significant impact is noted). Alternatively, for non-parametric tests, a simple exceedance of the site specific groundwater limitation may indicate a statistically significant impact. Table 7 summarizes the results of the compliance assessment.

### Table 7 2016 Groundwater Monitoring Compliance Summary

| COPC | Site Specific Groundwater Limitation | Compliance Assessment Methodology | 2016 Statistically Significant Exceedance |
|---|---|---|---|
| TDS (mg/l) | 450 | 95% LCL | None |
| Nitrate as N (mg/l) | 10 | Not to Exceed | None |
| Ammonia as N (mg/l) | 1.5 | 95% LCL | None |
| pH | **5.7** – 8.4 | Pass 1 of 3/ 95% LCL | None |
| Total Coliform (MPN/100ml) | **500** | Not to Exceed | None |
| Boron (mg/l) | 0.7 | 95% LCL | None |
| Chloride (mg/l) | 106 | 95% LCL | None |
| Iron (mg/l) | **1.54** | Not to Exceed | None |
| Sodium (mg/l) | 69 | 95% LCL | None |
| Manganese (mg/l) | **0.22** | Not to Exceed | MW-1 and MW-6 |

Of the parameters assessed, manganese was detected in groundwater at levels that statistically exceed site specific groundwater limitations during 2016. The exceedances occurred at monitoring well MW-1 and MW-6. Manganese is an element that forms pH and redox sensitive minerals in the subsurface, which can become mobile under reducing conditions and in groundwater with low pH, both of which are not uncommon in alpine groundwater environments. For instance, the dilute nature and lack of buffering capacity of alpine groundwater (primarily snowmelt) and presences of acidic surface soils bode well for low pH groundwater, a condition that naturally favors manganese mobilization. Therefore, the presence of manganese in groundwater should not in of itself be considered irrefutable proof of wastewater impacts.

Caution should also be exercised when evaluating computed "background" groundwater values to that of down gradient monitoring locations as the computed background statistics only consider one datum (MW-2) and thus, does not account for natural spatial variations in groundwater quality in the area. Spatial variability of the quality of shallow groundwater is more the norm than the exception and can be attributed to a host of issues including, but not limited to, soil column thickness, soil composition, bedrock composition, grain size distribution, organic matter content, groundwater elevation, acidity/alkalinity, land use, and redox potential. As such quantitative interpretation or comparison of groundwater data collected at "down gradient" monitoring locations to only one background location for the purpose of assessing facility compliance is not recommended. The computed background statistics and site specific groundwater goals should thus be used only to identify areas which *may have* been impacted with current or historic wastewater disposal practices. If improved background statistics are required, additional monitoring wells should be installed at locations up and cross gradient of the waste discharge.

All of the parameters assessed, with the potential exception of manganese, were in compliance with the site specific groundwater limitations, indicating further compliance with regards to the State's Anti-Degradation Policy.

# 6.0 Summary and Conclusions

Groundwater was assessed during the third tri-annual monitoring event, pursuant to the District's WDRs and MRP, issued by the Regional Board. During the third tri-annual monitoring event, reported water quality values for pH (MW-1, MW-2, MW-3, and MW-4), iron (MW-6), manganese (MW-1 and MW-6), and total coliform organisms (MW-1, MW-2, and MW-4) exceeded a Regional Board interim groundwater quality goal, which consists of goals for agricultural or potable use. Of these parameters, a revised statistical analysis indicates statistically significant exceedances of site specific groundwater limitations occurred for only one parameter, manganese and at MW-1 and MW-6. Dissolved manganese is commonly spatially transient and can be influenced by variables other than the disposal of effluent. It should be noted that the current groundwater monitoring network contains only one background monitoring well (MW-2) making it impossible to incorporate potential spatial variations into the background statistics. Accordingly, a statistically significant impact should not be considered irrefutable proof that the impact originated as a result of the discharge. Regardless, a revised statistical assessment will be conducted as part of the 2017 Annual Report, which will also include a revised assessment of background groundwater quality.

# 7.0 Professional Seals and Certifications

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.


Thomas W. Butler, PG, CHG, CEG
Senior Hydrogeologist/Geochemist

# Appendix A Groundwater Monitoring Protocol

**Bear Valley Water District**
**Groundwater Monitoring Well Sampling Procedures**

1) The covers of the monitoring wells were opened and loose material cleared from the edged. A propane torch was used to briefly burn the frame of the cover and any debris inside the box and around the well casing (i.e., eliminating potential contamination of samples from ants). The wells are 2-in PVC approximately 13.5 to 23.5 feet deep with the lower 10 to 15 feet screened. The compression cap was removed and placed top down on the well cover.

2) Water surface depth was measured to within 0.01 feet by lowering an electronic tape into the well while passing it through a cloth soaked in hypochlorite solution (the tape was cleaned and disinfected in the lab prior to bringing it to the field). The water depth was measured relative the top of the north quadrant of the PVC well casing. More than three well volumes were purged from the wells until pH, EC and temperature stabilized. The volume to purge was calculated based on the well casing diameter (area) times the water column height (well depth from well logs minus depth to water surface times three. no annular space estimate was included).

3) Dedicated 12V submersible plastic pumps (ES 60) with a vinyl discharge hose were used for purging and sampling the wells. The pump, hose and cord were decontaminated prior to transport to the field in deionized (D.I.) water plus detergent, and then rinsed three times in D.I. water (running the pump during each to flush water through the impeller and hose) and finally the pump and appurtenances were placed in a dilute hypochlorite solution (running the pump to flush the solution through the impeller and hose). The pump and hose were removed from sealed bins and lowered into the well, avoiding pump or hose touching the cover frame, ground etc. The technician used rubber gloves during sampling and changed them each time anything "dirty" was touched. New gloves were rinsed in chlorine solution prior to handling equipment.

4) After priming and pumping a small amount of water through the hose (to remove and remaining liquid in the hose), the discharge rate was measured, by measuring the time to fill a one-gallon container. This time was them multiplied by the well purge volume as calculated in step 2) above. The time to purge three volumes was rounded up by approximately 5 minutes.

5) The pump was started and time recorded while it discharged. Approximately every three minutes a roughly 200 ml sample was collected in a glass container from the discharge pump hose and pH, EC and Temperature were measured with a multimeter. All wells stabilized with regards to pH EC, and Temperature.

6) Prelabled sample bottles, were introduced into the discharge stream of the pump after pumping 3-well volumes and stabilized pH, EC and Temperature. These were sealed and placed in an ice chest on ice for shipment to the lab.

7) The pump was shut off and all equipment was removed, the well cap was rinsed with dilute chlorine solution and replaced and the well cover replaced on the well.

8) After measurement, the measuring tape was rolled onto the reel while it was wiped.

# Appendix B Third Tri-Annual 2016 Analytical Results and Field Logs

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

December 1, 2016

Bear Valley Water District
Attn: Mr. Gouveia
P.O. Box 5027
Bear Valley, CA 95223

Dear Mr. Gouveia:

On October 20, 2016, technicians from IEH-JL Analytical tested the monitoring wells at the Bear Valley Water Treatment facility. The wells at this site are located adjacent to the water treatment plant.

The two-inch wells were sampled and purged with a SS Monsoon 12 volt DC Submersible pump. Purging volumes were measured using a calibrated and graduated five-gallon container. Before and after each sampling, the pump was sanitized and rinsed with DI water. All water level measurements were taken from the PVC pipe at the top of the well casing. The samples were immediately placed into a refrigerated ice chest for transport to the laboratory.

No major new issues were found during this sampling period, other than Well 5 was unable to be purged. All other wells had sufficient water for normal purges and sample collection.

Sincerely,

*Richard A. Jacobs, Ph.D.*

Richard Jacobs Ph.D.,

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

# GROUNDWATER MONITORING REPORT

## Bear Valley Water District
## Bear Valley, CA
## 3rd Monitoring Event of 2016

**Bear Valley Water District**
**P.O. Box 5027**
**Bear Valley, CA 95223**

Prepared for:
Bear Valley Water District
Attn: Mr. Gouveia
P.O. Box 5027
Bear Valley, CA 95223

Prepared by:
IEH-JL Analytical
217 Primo Way
Modesto, CA 95358
(209) 538-8111

October 2016

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

# Bear Valley Water District
# Bear Valley, CA
# 3rd Monitoring Event of 2016
# GROUNDWATER MONITORING REPORT

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October 2016

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

# Bear Valley Water District
# Bear Valley, CA
# 3rd Monitoring Event of 2016

# GROUNDWATER MONITORING REPORT

## Section 1

## Bear Valley Report Body

October 2016

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

December 1, 2016

Bear Valley Water District
Attn: Mr. Gouveia
P.O. Box 5027
Bear Valley, CA 95223

Dear Mr. Gouveia:

On October 20, 2016, technicians from IEH-JL Analytical sampled the six monitoring wells at Bear Valley Water District. The wells at this site are located around the wastewater treatment plant. The wells were sampled and purged with a SS Monsoon 12 volt DC Submersible pump. Purging volumes were measured using a calibrated and graduated five-gallon container. Before and after each sampling, the pump was cleaned and disinfected. All water level measurements were taken from the top of the well casing (PCV pipe), using a cleaned and disinfected water level meter. The wells were sampled according to accepted protocols. Specifically, they were purged a minimum of three volumes and the temperature, conductivity, and pH were allowed to stabilize. The samples were decanted into appropriate containers and immediately placed into a refrigerator for transport to the laboratory.

Well five wouldn't pump. All other wells had sufficient water for normal purges, site testing and for sample submission to the laboratory.

Five wells 1, 2, 3, 4 and 6 were tested for Total Coliform and Fecal Coliform bacteria. The most probable number of Coliform bacteria and Fecal Coliform bacteria in wells 3 and 6 was <1.8 bacteria per 100ml. In Well number 1, there were 230 Coliform bacteria per 100ml and 6.8 Fecal Coliform bacteria per 100ml detected. In Well number 2, there were 170 Coliform bacteria and 170 Fecal Coliform bacteria per 100ml detected. In Well number 4 there were 230 Coliform bacteria per 100ml and 7.8 Fecal Coliform bacteria per 100ml detected.

Well locks for Well numbers 1-6 were in acceptable condition and were locked prior to our departure.

Enclosed are the field notes and the analytical data, which represent this sampling event.

Sincerely,

Richard A. Jacobs, Ph.D.

*Richard A. Jacobs, Ph.D.*

IEH-JL Analytical

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

# Bear Valley Water District
# Bear Valley, CA
# 3rd Monitoring Event of 2016
# GROUNDWATER MONITORING REPORT

## Section 2

## Monitoring Well Field Data

Original Monitoring Well Work Sheets

October 2016

REVISED

Friday, December 09, 2016

Crystal McNabb
IEH-JL Analytical
217 Prime Way
Modesto, CA 95358

Re Lab Order: R101111 Collected By: CLIENT
Project ID: BEAR VLY / 389587 PO/Contract #: JLA20161021a

Dear Crystal McNabb:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, October 21, 2016. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

CC: Mike Wolf, IEH.JL

Enclosures

Project Manager: Melinda F. Kelley





1885 North Kelly Road • Napa, California 94558
(707) 258-4000 • Fax (707) 226-1001 • e-mail: info@caltestlabs.com

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## SAMPLE SUMMARY

Lab Order: R101111
Project ID: BEAR VLY / 389587

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| **R101111001** | **MW #1** | Water | 10/20/2016 09:24 | 10/21/2016 16:05 |
| **R101111002** | **MW #2** | Water | 10/20/2016 08:37 | 10/21/2016 16:05 |
| **R101111003** | **MW #3** | Water | 10/20/2016 08:59 | 10/21/2016 16:05 |
| **R101111004** | **MW #4** | Water | 10/20/2016 09:33 | 10/21/2016 16:05 |
| **R101111005** | **MW #6** | Water | 10/20/2016 10:41 | 10/21/2016 16:05 |





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## NARRATIVE

Lab Order: R101111
Project ID: BEAR VLY / 389587

### General Qualifiers and Notes

Caltest authorizes this report to be reproduced only in its entirety. Results are specific to the sample(s) as submitted and only to the parameter(s) reported.

Caltest certifies that all test results for wastewater and hazardous waste analyses meet all applicable NELAC requirements; all microbiology and drinking water testing meet applicable ELAP requirements, unless stated otherwise.

All analyses performed by EPA Methods or Standard Methods (SM) 20th Edition except where noted (SMOL=online edition).

Caltest collects samples in compliance with 40 CFR, EPA Methods, Cal. Title 22, and Standard Methods.

Dilution Factors (DF) reported greater than '1' have been used to adjust the result, Reporting Limit (RL), and Method Detection Limit (MDL).

All Solid, sludge, and/or biosolids data is reported in Wet Weight, unless otherwise specified.

Filtrations performed at Caltest for dissolved metals (excluding mercury) and/or pH analysis are not performed within the 15 minute holding time as specified by 40CFR 136.3 table II.

Results Qualifiers: Report fields may contain codes and non-numeric data correlating to one or more of the following definitions:

ND - Non Detect - indicates analytical result has not been detected.

RL - Reporting Limit is the quantitation limit at which the laboratory is able to detect an analyte. An analyte not detected at or above the RL is reported as ND unless otherwise noted or qualified. For analyses pertaining to the State Implementation Plan of the California Toxics Rule, the Caltest Reporting Limit (RL) is equivalent to the Minimum Level (ML). A standard is always run at or below the ML. Where Reporting Limits are elevated due to dilution, the ML calibration criteria has been met.

J - reflects estimated analytical result value detected below the Reporting Limit (RL) and above the Method Detection Limit (MDL). The 'J' flag is equivalent to the DNQ Estimated Concentration flag.

E - indicates an estimated analytical result value.

B - indicates the analyte has been detected in the blank associated with the sample.

NC - means not able to be calculated for RPD or Spike Recoveries.

SS - compound is a Surrogate Spike used per laboratory quality assurance manual.

NOTE: This document represents a complete Analytical Report for the samples referenced herein and should be retained as a permanent record thereof.

### Workorder Notes

Report revised to include result of the TDS analyses recheck on R101111001 per client request. 12/9/16

### Qualifiers and Compound Notes

| | |
|---|---|
| 1 | The sample was reanalyzed past holdtime in triplicate. |





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## ANALYTICAL RESULTS

Lab Order: R101111
Project ID: BEAR VLY / 389587

**Lab ID** **R101111001** Date Collected 10/20/2016 09:24 Matrix Water
**Sample ID** **MW #1** Date Received 10/21/2016 16:05

| Parameters | Result | Units | R. L. | DF | Prepared | Batch | Analyzed | Batch | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **Nitrogen, Ammonia (as N),Dissolved** | **Analytical Method:** | | SM 4500-NH3 C-97 | | | | **Analyzed by:** | MN | |
| Ammonia (as N) | 0.19 | mg/L | 0.1 | 1 | | | 11/03/16 07:31 | WAT 4093 | |
| **Soluble Kjeldahl Nitrogen Analysis** | **Analytical Method:** | | SM4500-NH3 C-97 (Sol TKN) | | | | **Analyzed by:** | JDC | |
| Soluble Kjeldahl Nitrogen | 0.31 | mg/L | 0.1 | 1 | | | 11/03/16 19:01 | WAT 4095 | |
| **Total Dissolved Solids Analysis** | **Analytical Method:** | | SM 2540 C-97 | | | | **Analyzed by:** | JDC | |
| Total Dissolved Solids | 140 | mg/L | 10 | 1 | | | 12/07/16 15:32 | WGR 6330 | 1 |
| **Anions by Ion Chromatography** | **Analytical Method:** | | EPA 300.0 | | | | **Analyzed by:** | MYS | |
| Nitrogen, Nitrate (as N) | ND | mg/L | 0.1 | 1 | | | 10/21/16 22:58 | WIC 5585 | |
| Sulfate (as SO4) | 3.1 | mg/L | 0.5 | 1 | | | 10/21/16 22:58 | WIC 5585 | |
| Chloride | 2.1 | mg/L | 1 | 1 | | | 10/21/16 22:58 | WIC 5585 | |
| **Alkalinity, Total Analysis** | **Analytical Method:** | | SM 2320 B-97 | | | | **Analyzed by:** | CLM | |
| Bicarbonate (as CACO3) | 81 | mg/L | 10 | 1 | | | 10/26/16 22:05 | WTI 2840 | |
| Carbonate (as CACO3) | ND | mg/L | 10 | 1 | | | 10/26/16 22:05 | WTI 2840 | |
| Hydroxide (as CACO3) | ND | mg/L | 10 | 1 | | | 10/26/16 22:05 | WTI 2840 | |
| Alkalinity, Total (as CACO3) | 81 | mg/L | 10 | 1 | | | 10/26/16 22:05 | WTI 2840 | |

**Lab ID** **R101111002** Date Collected 10/20/2016 08:37 Matrix Water
**Sample ID** **MW #2** Date Received 10/21/2016 16:05

| Parameters | Result | Units | R. L. | DF | Prepared | Batch | Analyzed | Batch | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **Nitrogen, Ammonia (as N),Dissolved** | **Analytical Method:** | | SM 4500-NH3 C-97 | | | | **Analyzed by:** | MN | |
| Ammonia (as N) | 0.14 | mg/L | 0.1 | 1 | | | 11/03/16 07:31 | WAT 4093 | |
| **Soluble Kjeldahl Nitrogen Analysis** | **Analytical Method:** | | SM4500-NH3 C-97 (Sol TKN) | | | | **Analyzed by:** | JDC | |
| Soluble Kjeldahl Nitrogen | 0.35 | mg/L | 0.1 | 1 | | | 11/03/16 19:01 | WAT 4095 | |
| **Total Dissolved Solids Analysis** | **Analytical Method:** | | SM 2540 C-97 | | | | **Analyzed by:** | JDC | |
| Total Dissolved Solids | 54 | mg/L | 20 | 2 | | | 10/27/16 17:51 | WGR 6276 | |
| **Anions by Ion Chromatography** | **Analytical Method:** | | EPA 300.0 | | | | **Analyzed by:** | MYS | |
| Nitrogen, Nitrate (as N) | 0.20 | mg/L | 0.1 | 1 | | | 10/21/16 23:37 | WIC 5585 | |
| Chloride | 2.2 | mg/L | 1 | 1 | | | 10/21/16 23:37 | WIC 5585 | |
| Sulfate (as SO4) | ND | mg/L | 0.5 | 1 | | | 10/21/16 23:37 | WIC 5585 | |
| **Alkalinity, Total Analysis** | **Analytical Method:** | | SM 2320 B-97 | | | | **Analyzed by:** | CLM | |
| Bicarbonate (as CACO3) | 28 | mg/L | 10 | 1 | | | 10/26/16 22:12 | WTI 2840 | |
| Carbonate (as CACO3) | ND | mg/L | 10 | 1 | | | 10/26/16 22:12 | WTI 2840 | |
| Hydroxide (as CACO3) | ND | mg/L | 10 | 1 | | | 10/26/16 22:12 | WTI 2840 | |
| Alkalinity, Total (as CACO3) | 28 | mg/L | 10 | 1 | | | 10/26/16 22:12 | WTI 2840 | |





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## ANALYTICAL RESULTS

Lab Order: R101111
Project ID: BEAR VLY / 389587

**Lab ID** **R101111003** Date Collected 10/20/2016 08:59 Matrix Water
**Sample ID** **MW #3** Date Received 10/21/2016 16:05

| Parameters | Result | Units | R. L. | DF | Prepared | Batch | Analyzed | Batch | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **Nitrogen, Ammonia (as N),Dissolved** | **Analytical Method:** | | SM 4500-NH3 C-97 | | | | **Analyzed by:** | MN | |
| Ammonia (as N) | ND | mg/L | 0.1 | 1 | | | 11/03/16 07:31 | WAT 4093 | |
| **Soluble Kjeldahl Nitrogen Analysis** | **Analytical Method:** | | SM4500-NH3 C-97 (Sol TKN) | | | | **Analyzed by:** | JDC | |
| Soluble Kjeldahl Nitrogen | 0.35 | mg/L | 0.1 | 1 | | | 11/03/16 19:01 | WAT 4095 | |
| **Total Dissolved Solids Analysis** | **Analytical Method:** | | SM 2540 C-97 | | | | **Analyzed by:** | JDC | |
| Total Dissolved Solids | 71 | mg/L | 10 | 1 | | | 10/27/16 17:51 | WGR 6276 | |
| **Anions by Ion Chromatography** | **Analytical Method:** | | EPA 300.0 | | | | **Analyzed by:** | MYS | |
| Nitrogen, Nitrate (as N) | ND | mg/L | 0.1 | 1 | | | 10/22/16 00:15 | WIC 5585 | |
| Sulfate (as SO4) | 0.98 | mg/L | 0.5 | 1 | | | 10/22/16 00:15 | WIC 5585 | |
| Chloride | 9.9 | mg/L | 1 | 1 | | | 10/22/16 00:15 | WIC 5585 | |
| **Alkalinity, Total Analysis** | **Analytical Method:** | | SM 2320 B-97 | | | | **Analyzed by:** | CLM | |
| Bicarbonate (as CACO3) | 27 | mg/L | 10 | 1 | | | 10/26/16 22:19 | WTI 2840 | |
| Carbonate (as CACO3) | ND | mg/L | 10 | 1 | | | 10/26/16 22:19 | WTI 2840 | |
| Hydroxide (as CACO3) | ND | mg/L | 10 | 1 | | | 10/26/16 22:19 | WTI 2840 | |
| Alkalinity, Total (as CACO3) | 27 | mg/L | 10 | 1 | | | 10/26/16 22:19 | WTI 2840 | |

**Lab ID** **R101111004** Date Collected 10/20/2016 09:33 Matrix Water
**Sample ID** **MW #4** Date Received 10/21/2016 16:05

| Parameters | Result | Units | R. L. | DF | Prepared | Batch | Analyzed | Batch | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **Nitrogen, Ammonia (as N),Dissolved** | **Analytical Method:** | | SM 4500-NH3 C-97 | | | | **Analyzed by:** | MN | |
| Ammonia (as N) | ND | mg/L | 0.1 | 1 | | | 11/03/16 07:31 | WAT 4093 | |
| **Soluble Kjeldahl Nitrogen Analysis** | **Analytical Method:** | | SM4500-NH3 C-97 (Sol TKN) | | | | **Analyzed by:** | JDC | |
| Soluble Kjeldahl Nitrogen | 0.31 | mg/L | 0.1 | 1 | | | 11/03/16 19:01 | WAT 4095 | |
| **Total Dissolved Solids Analysis** | **Analytical Method:** | | SM 2540 C-97 | | | | **Analyzed by:** | JDC | |
| Total Dissolved Solids | 120 | mg/L | 10 | 1 | | | 10/27/16 17:51 | WGR 6276 | |
| **Anions by Ion Chromatography** | **Analytical Method:** | | EPA 300.0 | | | | **Analyzed by:** | MYS | |
| Nitrogen, Nitrate (as N) | 0.17 | mg/L | 0.1 | 1 | | | 10/22/16 00:54 | WIC 5585 | |
| Sulfate (as SO4) | 4.8 | mg/L | 0.5 | 1 | | | 10/22/16 00:54 | WIC 5585 | |
| Chloride | 5.5 | mg/L | 1 | 1 | | | 10/22/16 00:54 | WIC 5585 | |
| **Alkalinity, Total Analysis** | **Analytical Method:** | | SM 2320 B-97 | | | | **Analyzed by:** | CLM | |
| Bicarbonate (as CACO3) | 75 | mg/L | 10 | 1 | | | 10/26/16 22:27 | WTI 2840 | |
| Carbonate (as CACO3) | ND | mg/L | 10 | 1 | | | 10/26/16 22:27 | WTI 2840 | |
| Hydroxide (as CACO3) | ND | mg/L | 10 | 1 | | | 10/26/16 22:27 | WTI 2840 | |
| Alkalinity, Total (as CACO3) | 75 | mg/L | 10 | 1 | | | 10/26/16 22:27 | WTI 2840 | |





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## ANALYTICAL RESULTS

Lab Order: R101111
Project ID: BEAR VLY / 389587

**Lab ID** **R101111005** Date Collected 10/20/2016 10:41 Matrix Water
**Sample ID** **MW #6** Date Received 10/21/2016 16:05

| Parameters | Result | Units | R. L. | DF | Prepared | Batch | Analyzed | Batch | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **Nitrogen, Ammonia (as N),Dissolved** | **Analytical Method:** | | SM 4500-NH3 C-97 | | | | **Analyzed by:** | MN | |
| Ammonia (as N) | 0.11 | mg/L | 0.1 | 1 | | | 11/03/16 07:31 | WAT 4093 | |
| **Soluble Kjeldahl Nitrogen Analysis** | **Analytical Method:** | | SM4500-NH3 C-97 (Sol TKN) | | | | **Analyzed by:** | JDC | |
| Soluble Kjeldahl Nitrogen | 0.44 | mg/L | 0.1 | 1 | | | 11/03/16 19:01 | WAT 4095 | |
| **Total Dissolved Solids Analysis** | **Analytical Method:** | | SM 2540 C-97 | | | | **Analyzed by:** | JDC | |
| Total Dissolved Solids | 230 | mg/L | 20 | 2 | | | 10/27/16 17:51 | WGR 6276 | |
| **Anions by Ion Chromatography** | **Analytical Method:** | | EPA 300.0 | | | | **Analyzed by:** | MYS | |
| Nitrogen, Nitrate (as N) | ND | mg/L | 0.1 | 1 | | | 10/22/16 02:31 | WIC 5585 | |
| Chloride | 4.7 | mg/L | 1 | 1 | | | 10/22/16 02:31 | WIC 5585 | |
| Sulfate (as SO4) | 1.8 | mg/L | 0.5 | 1 | | | 10/22/16 02:31 | WIC 5585 | |
| **Alkalinity, Total Analysis** | **Analytical Method:** | | SM 2320 B-97 | | | | **Analyzed by:** | CLM | |
| Bicarbonate (as CACO3) | 183 | mg/L | 10 | 1 | | | 10/26/16 22:35 | WTI 2840 | |
| Carbonate (as CACO3) | ND | mg/L | 10 | 1 | | | 10/26/16 22:35 | WTI 2840 | |
| Hydroxide (as CACO3) | ND | mg/L | 10 | 1 | | | 10/26/16 22:35 | WTI 2840 | |
| Alkalinity, Total (as CACO3) | 183 | mg/L | 10 | 1 | | | 10/26/16 22:35 | WTI 2840 | |





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## QUALITY CONTROL DATA

Lab Order: R101111
Project ID: BEAR VLY / 389587

| | | | |
|---|---|---|---|
| **Analysis Description:** | Nitrogen, Ammonia (as N),Dissolved | **QC Batch:** | WAT/4093 |
| **Analysis Method:** | SM 4500-NH3 C-97 | **QC Batch Method:** | SM 4500-NH3 C-97 |

**METHOD BLANK:** 723736

| Parameter | Blank Result | Reporting Limit | Units | Qualifiers |
|---|---|---|---|---|
| Ammonia (as N) | ND | 0.1 | mg/L | |

**LABORATORY CONTROL SAMPLE:** 723737

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % REC Limits | Qualifier |
|---|---|---|---|---|---|---|
| Ammonia (as N) | mg/L | 5 | 4.93 | 99 | 90-110 | |

**MATRIX SPIKE & MATRIX SPIKE DUPLICATE:** 723738 723739

| Parameter | Units | R101106001 Result | Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limit | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ammonia (as N) | mg/L | 0.13 | 5 | 5 | 5.01 | 97 | 98 | 70-130 | 0.2 | 20 | |

| | | | |
|---|---|---|---|
| **Analysis Description:** | Soluble Kjeldahl Nitrogen Analysis | **QC Batch:** | WAT/4095 |
| **Analysis Method:** | SM4500-NH3 C-97 (Sol TKN) | **QC Batch Method:** | SM4500-NH3 C-97 (Sol TKN) |

**METHOD BLANK:** 724097

| Parameter | Blank Result | Reporting Limit | Units | Qualifiers |
|---|---|---|---|---|
| Soluble Kjeldahl Nitrogen | ND | 0.1 | mg/L | |

**LABORATORY CONTROL SAMPLE:** 724098

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % REC Limits | Qualifier |
|---|---|---|---|---|---|---|
| Soluble Kjeldahl Nitrogen | mg/L | 5 | 5.48 | 110 | 90-110 | |

**MATRIX SPIKE & MATRIX SPIKE DUPLICATE:** 724109 724110

| Parameter | Units | R101273004 Result | Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limit | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Soluble Kjeldahl Nitrogen | mg/L | 0.48 | 5 | 4.66 | 4.84 | 84 | 87 | 80-120 | 3.8 | 20 | |





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## QUALITY CONTROL DATA

Lab Order: R101111
Project ID: BEAR VLY / 389587

| | | | |
|---|---|---|---|
| **Analysis Description:** | Total Dissolved Solids Analysis | **QC Batch:** | WGR/6276 |
| **Analysis Method:** | SM 2540 C-97 | **QC Batch Method:** | SM 2540 C-97 |

**METHOD BLANK:** 722552

| Parameter | Blank Result | Reporting Limit | Units | Qualifiers |
|---|---|---|---|---|
| Total Dissolved Solids | ND | 10 | mg/L | |

**LABORATORY CONTROL SAMPLE:** 722553

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % REC Limits | Qualifier |
|---|---|---|---|---|---|---|
| Total Dissolved Solids | mg/L | 500 | 482 | 96 | 80-120 | |

**SAMPLE DUPLICATE:** 722738

| Parameter | Units | R101109001 Result | DUP Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Total Dissolved Solids | mg/L | 1300 | 1070 | 19 | 20 | |

**SAMPLE DUPLICATE:** 722737

| Parameter | Units | R101111002 Result | DUP Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Total Dissolved Solids | mg/L | 54 | 66 | 20 | 20 | |

| | | | |
|---|---|---|---|
| **Analysis Description:** | Total Dissolved Solids Analysis | **QC Batch:** | WGR/6330 |
| **Analysis Method:** | SM 2540 C-97 | **QC Batch Method:** | SM 2540 C-97 |

**METHOD BLANK:** 729287

| Parameter | Blank Result | Reporting Limit | Units | Qualifiers |
|---|---|---|---|---|
| Total Dissolved Solids | ND | 10 | mg/L | |

**LABORATORY CONTROL SAMPLE:** 729288

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % REC Limits | Qualifier |
|---|---|---|---|---|---|---|
| Total Dissolved Solids | mg/L | 500 | 486 | 97 | 80-120 | |





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## QUALITY CONTROL DATA

Lab Order: R101111
Project ID: BEAR VLY / 389587

| | | | |
|---|---|---|---|
| **Analysis Description:** | Anions by Ion Chromatography | **QC Batch:** | WIC/5585 |
| **Analysis Method:** | EPA 300.0 | **QC Batch Method:** | EPA 300.0 |

**METHOD BLANK:** 722066

| Parameter | Blank Result | Reporting Limit | Units | Qualifiers |
|---|---|---|---|---|
| Nitrogen, Nitrate (as N) | ND | 0.1 | mg/L | |
| Sulfate (as SO4) | ND | 0.5 | mg/L | |
| Chloride | ND | 1 | mg/L | |

**LABORATORY CONTROL SAMPLE:** 722067

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % REC Limits | Qualifier |
|---|---|---|---|---|---|---|
| Nitrogen, Nitrate (as N) | mg/L | 2.5 | 2.49 | 100 | 90-110 | |
| Sulfate (as SO4) | mg/L | 6.2 | 5.84 | 93 | 90-110 | |
| Chloride | mg/L | 6.2 | 6.3 | 101 | 90-110 | |

**MATRIX SPIKE & MATRIX SPIKE DUPLICATE:** 722069 722070

| Parameter | Units | R101105001 Result | Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limit | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrogen, Nitrate (as N) | mg/L | 3.2 | 4 | 7.16 | 7.13 | 99 | 98 | 80-120 | 0.4 | 20 | |
| Sulfate (as SO4) | mg/L | 18 | 10 | 27.7 | 27.6 | 97 | 96 | 80-120 | 0.4 | 20 | |

**MATRIX SPIKE & MATRIX SPIKE DUPLICATE:** 722069 722070

| Parameter | Units | R101105001 Result | Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limit | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | mg/L | 35 | 100 | 136 | 134 | 101 | 99 | 80-120 | 1.5 | 20 | |

| | | | |
|---|---|---|---|
| **Analysis Description:** | Alkalinity, Total Analysis | **QC Batch:** | WTI/2840 |
| **Analysis Method:** | SM 2320 B-97 | **QC Batch Method:** | SM 2320 B-97 |

**METHOD BLANK:** 722366

| Parameter | Blank Result | Reporting Limit | Units | Qualifiers |
|---|---|---|---|---|
| Bicarbonate (as CACO3) | ND | 10 | mg/L | |
| Carbonate (as CACO3) | ND | 10 | mg/L | |
| Hydroxide (as CACO3) | ND | 10 | mg/L | |
| Alkalinity, Total (as CACO3) | ND | 10 | mg/L | |





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## QUALITY CONTROL DATA

Lab Order: R101111
Project ID: BEAR VLY / 389587

| | | | |
|---|---|---|---|
| **Analysis Description:** | Alkalinity, Total Analysis | **QC Batch:** | WTI/2840 |
| **Analysis Method:** | SM 2320 B-97 | **QC Batch Method:** | SM 2320 B-97 |

**LABORATORY CONTROL SAMPLE:** 722367

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % REC Limits | Qualifier |
|---|---|---|---|---|---|---|
| Bicarbonate (as CACO3) | mg/L | 100 | 94.5 | 95 | 80-120 | |
| Alkalinity, Total (as CACO3) | mg/L | 100 | 94.5 | 95 | 80-120 | |

**SAMPLE DUPLICATE:** 722368

| Parameter | Units | R101105001 Result | DUP Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Bicarbonate (as CACO3) | mg/L | 197 | 189 | 4.1 | 20 | |
| Carbonate (as CACO3) | mg/L | 0 | 0 | 0 | 20 | |
| Hydroxide (as CACO3) | mg/L | 0 | 0 | 0 | 20 | |
| Alkalinity, Total (as CACO3) | mg/L | 197 | 189 | 4.1 | 20 | |





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## QUALITY CONTROL DATA QUALIFIERS

Lab Order: R101111
Project ID: BEAR VLY / 389587

### QUALITY CONTROL PARAMETER QUALIFIERS

Results Qualifiers: Report fields may contain codes and non-numeric data correlating to one or more of the following definitions:

NS - means not spiked and will not have recoveries reported for Analyte Spike Amounts

QC Codes Keys: These descriptors are used to help identify the specific QC samples and clarify the report.

MB - Method Blank

Method Blanks are reported to the same Method Detection Limits (MDLs) or Reporting Limits (RLs) as the analytical samples in the corresponding QC batch.

LCS/LCSD - Laboratory Control Spike / Laboratory Control Spike Duplicate

DUP - Duplicate of Original Sample Matrix

MS/MSD - Matrix Spike / Matrix Spike Duplicate

RPD - Relative Percent Difference

%Recovery - Spike Recovery stated as a percentage





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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab Order: R101111
Project ID: BEAR VLY / 389587

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **R101111001** | **MW #1** | SM 4500-NH3 C-97 | WAT/4093 | | |
| **R101111002** | **MW #2** | SM 4500-NH3 C-97 | WAT/4093 | | |
| **R101111003** | **MW #3** | SM 4500-NH3 C-97 | WAT/4093 | | |
| **R101111004** | **MW #4** | SM 4500-NH3 C-97 | WAT/4093 | | |
| **R101111005** | **MW #6** | SM 4500-NH3 C-97 | WAT/4093 | | |
| **R101111001** | **MW #1** | SM4500-NH3 C-97 (Sol | WAT/4095 | | |
| **R101111002** | **MW #2** | SM4500-NH3 C-97 (Sol | WAT/4095 | | |
| **R101111003** | **MW #3** | SM4500-NH3 C-97 (Sol | WAT/4095 | | |
| **R101111004** | **MW #4** | SM4500-NH3 C-97 (Sol | WAT/4095 | | |
| **R101111005** | **MW #6** | SM4500-NH3 C-97 (Sol | WAT/4095 | | |
| **R101111002** | **MW #2** | SM 2540 C-97 | WGR/6276 | | |
| **R101111003** | **MW #3** | SM 2540 C-97 | WGR/6276 | | |
| **R101111004** | **MW #4** | SM 2540 C-97 | WGR/6276 | | |
| **R101111005** | **MW #6** | SM 2540 C-97 | WGR/6276 | | |
| **R101111001** | **MW #1** | SM 2540 C-97 | WGR/6330 | | |
| **R101111001** | **MW #1** | EPA 300.0 | WIC/5585 | | |
| **R101111002** | **MW #2** | EPA 300.0 | WIC/5585 | | |
| **R101111003** | **MW #3** | EPA 300.0 | WIC/5585 | | |
| **R101111004** | **MW #4** | EPA 300.0 | WIC/5585 | | |
| **R101111005** | **MW #6** | EPA 300.0 | WIC/5585 | | |
| **R101111001** | **MW #1** | SM 2320 B-97 | WTI/2840 | | |
| **R101111002** | **MW #2** | SM 2320 B-97 | WTI/2840 | | |
| **R101111003** | **MW #3** | SM 2320 B-97 | WTI/2840 | | |
| **R101111004** | **MW #4** | SM 2320 B-97 | WTI/2840 | | |
| **R101111005** | **MW #6** | SM 2320 B-97 | WTI/2840 | | |





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# SAMPLE CHAIN OF CUSTODY

PROJECT NAME / PROJECT NUMBER: Bear Valley Water District / 389587
P.O. NUMBER: JLA20161021a
LAB ORDER #: R10111

CLIENT: IEH.JL Analytical
REPORT ATTN: Crystal McNabb/Mike Wolf
MAILING ADDRESS: 217 Prime Way Modesto
STATE: CA ZIP: 95358
BILLING ADDRESS: 15300 Bothell Way NE
ATTN: Elizabeth Mamo
PHONE NUMBER: 209/538-8111
FAX PHONE NUMBER:
SAMPLER (PRINT & SIGN NAME): CLIENT

TURN-AROUND TIME: [X] STANDARD [ ] RUSH
DUE DATE:

| CALTEST LAB # | DATE SAMPLED | TIME SAMPLED | SAMPLE MATRIX* | CONTAINER TYPE/ AMOUNT** | PRESERVATIVE | SAMPLE IDENTIFICATION / SITE | CLIENT LAB # | COMP. or GRAB | Alkalinity (Total, Bicarbonate, Carbonate, Hydroxide) | Chloride | Sulfate | TDS | Nitrate as Nitrogen | TKN | Ammonical-Nitrogen | | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10/20/2016 | 9:24 | AQ | 1 - QT | NONE | MW# 1 | -1 | Grab | | | | x | | | | | | | |
| -1 | 10/20/2016 | 9:24 | AQ | 1 - QT | NONE, Filtered | MW# 1 | -1 | Grab | x | x | x | | x | | | | | | |
| | 10/20/2016 | 9:24 | AQ | 1 - QT | H2SO4 | MW# 1 | -1 | Grab | | | | | | x | x | | | | |
| | 10/20/2016 | 8:37 | AQ | 1 - QT | NONE | MW# 2 | -2 | Grab | | | | x | | | | | | | |
| -2 | 10/20/2016 | 8:37 | AQ | 1 - QT | NONE, Filtered | MW# 2 | -2 | Grab | x | x | x | | x | | | | | | |
| | 10/20/2016 | 8:37 | AQ | 1 - QT | H2SO4 | MW# 2 | -2 | Grab | | | | | | x | x | | | | |
| -3 | 10/20/2016 | 8:59 | AQ | 1 - QT | NONE | MW# 3 | -3 | Grab | | | | x | | | | | | | |
| | 10/20/2016 | 8:59 | AQ | 1 - QT | NONE, Filtered | MW# 3 | -3 | Grab | x | x | x | | x | | | | | | |
| | 10/20/2016 | 8:59 | AQ | 1 - QT | H2SO4 | MW# 3 | -3 | Grab | | | | | | x | x | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

| RELINQUISHED BY | DATE/TIME | RECEIVED BY | RELINQUISHED BY | DATE/TIME | RECEIVED BY |
|---|---|---|---|---|---|
| | 10/21/16 1605 | | | | |
| | | | | | |

FOR LAB USE ONLY

Samples: WC ____ MICRO ____ BIO ____ AA ____ SV ____ VOA ____ pH? Y/N TEMP: SEALED: Y ___ N___ INTACT: Y_____ N_____
BD: BIO ____ WC ____ AA ____
CC: AA ____ SV ____ VOA ____
SIL: HP ____ PT ____ QT ____ VOA ____
W/$HNO_3$ ____ $H_2SO_4$ ____ NaOH ____
PIL: $HNO_3$ ____ $H_2SO_4$ ____ NaOH ____ HCL ____

COMMENTS:

*MATRIX: AQ = Aqueous Nondrinking Water, Digested Metals; FE = Low R.L.s, Aqueous Nondrinking Water, Digested Metals; DW = Drinking Water; SL = Soil Sludge, Solid ; FP = Free Product

**CONTAINER TYPES: AL = Amber Liter; AHL = 500 ml Amber; PT = Pint (Plastic); QT = Quart (Plastic); HG = Half Gallon (Plastic); SJ = Soil Jar; B4 = 4oz. BACT; BT = Brass Tube; VOA = 40mL VOA; OTC - Other Type Container

R ____ PR ____ M ____ F ____

10/21/16

WHITE - LABORATORY YELLOW - CLIENT COPY TO ACCOMPANY FINAL REPORT PINK - CLIENT COPY AS RECEIPT

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PAGE 2 OF 2

## SAMPLE CHAIN OF CUSTODY

LAB ORDER # R10112 10/21/16

R101111

PROJECT NAME / PROJECT NUMBER: Bear Valley Water District / 389587

P.O. NUMBER: JLA20161021a

CLIENT: IEH.JL Analytical

REPORT ATTN: Crystal McNabb/Mike Wolf

MAILING ADDRESS: 217 Prime Way Modesto

STATE: CA ZIP: 95358

BILLING ADDRESS: 15300 Bothell Way NE

ATTN: Elizabeth Mamo

PHONE NUMBER: 209/538-8111

FAX PHONE NUMBER:

SAMPLER (PRINT & SIGN NAME): CLIENT

TURN-AROUND TIME

[x] STANDARD

[ ] RUSH

DUE DATE:

| CALTEST LAB # | DATE SAMPLED | TIME SAMPLED | SAMPLE MATRIX* | CONTAINER TYPE/ AMOUNT** | PRESERVATIVE | SAMPLE IDENTIFICATION / SITE | CLIENT LAB # | COMP. or GRAB | Alkalinity (Total, Bicarbonate, Carbonate, Hydroxide) | Chloride | Sulfate | TDS | Nitrate as Nitrogen | TKN | Ammonical-Nitrogen | | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -4 | 10/20/2016 | 9:33 | AQ | 1 - QT | NONE | MW# 4 | -4 | Grab | | | | x | | | | | | | |
| -4 MW | 10/20/2016 | 9:33 | AQ | 1 - QT | NONE, Filtered | MW# 4 | -4 | Grab | x | x | x | | x | | | | | | |
| -5 | 10/20/2016 | 9:33 | AQ | 1 - QT | H2SO4 | MW# 4 | -4 | Grab | | | | | | x | x | | | | |
| -5 MW | 10/20/2016 | 10:41 | AQ | 1 - QT | NONE | MW# 6 | -5 | Grab | | | | x | | | | | | | |
| -5 -2 | 10/20/2016 | 10:41 | AQ | 1 - QT | NONE, Filtered | MW# 6 | -5 | Grab | x | x | x | | x | | | | | | |
| | 10/20/2016 | 10:41 | AQ | 1 - QT | H2SO4 | MW# 6 | -5 | Grab | | | | | | x | x | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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WHITE - LABORATORY YELLOW - CLIENT COPY TO ACCOMPANY FINAL REPORT PINK - CLIENT COPY AS RECEIPT

| RELINQUISHED BY | DATE/TIME | RECEIVED BY | RELINQUISHED BY | DATE/TIME | RECEIVED BY |
|---|---|---|---|---|---|
| | 10/21/16 1405 | | | | |
| | | | | | |

FOR LAB USE ONLY

Samples: WC ____ MICRO ____ BIO ____ AA ____ SV ____ VOA ____ pH? Y/N TEMP: SEALED: Y ___ N___ INTACT: Y_____ N_____

BD: BIO ____ WC ____ AA ____

CC: AA ____ SV ____ VOA ____

SIL: HP ____ PT ____ QT ____ VOA ____

W/$HNO_3$ ____ $H_2SO_4$ ____ NaOH ____

PIL: $HNO_3$ ____ $H_2SO_4$ ____ NaOH ____ HCL ____

COMMENTS:

***MATRIX:** AQ = Aqueous Nondrinking Water, Digested Metals; FE = Low R.L.s, Aqueous Nondrinking Water, Digested Metals; DW = Drinking Water; SL = Soil Sludge, Solid ; FP = Free Product

****CONTAINER TYPES:** AL = Amber Liter; AHL = 500 ml Amber; PT = Pint (Plastic); QT = Quart (Plastic); HG = Half Gallon (Plastic); SJ = Soil Jar; B4 = 4oz. BACT; BT = Brass Tube; VOA = 40mL VOA; OTC - Other Type Container

R ____ PR ____ M ____ F ____

10/21/16

# IEH - JL ANALYTICAL
## WATER SAMPLE – FIELD DATA SHEET

Forms/ MW Bear 12-06

Client: **BEAR VALLEY Water District – Bear Valley, CA** Site Description: **Monitoring Well # 1**

**Instrument Calibration Data:** Meter: **YSI 556 MPS** Date: 10-20-16 Time: 0745
**PH:** Primary calibration: pH4 pH7 pH10 **EC:** 100 200 250 1000 1413 2060 10,000
pH meter reading: 4 7 10 EC meter reading: 10,000 µs/cm
System purged with X DI Water (check appropriately)

**WELL INFORMATION:**

Well Depth (WD) (ft): 27.29 Ft.
Depth to Water (DTW) (ft): ( - ) 9.48 Ft.
**Water Column** (WD – DTW): ( =) 17.81 Linear Ft.
Final Depth to Water: 12.65 Ft. @ 0936 AM/PM

| Casing Diameter | Gal/Lin. Ft (GPLF) | Casing Diameter | Gal/Lin. Ft (GPLF) |
|---|---|---|---|
| X 2" → | 0.17 | ☐ 4.5" → | 0.83 |
| ☐ 3" → | 0.38 | ☐ 5" → | 1.02 |
| ☐ 4 → | 0.66 | ☐ 6 → | 1.50 |
| | | ☐ 8 → | 2.60 |

| Water Column | Gal per Linear Ft. | 1 purge volume (before rounding) | Adjusted Purge volume (round **up** to nearest **0.5**) | Number of Casing Volumes | Total Purge Volume, gal. |
|---|---|---|---|---|---|
| 17.81 | X 0.17 = | 3.0277 | 3.5 | X 3 = | 10.5 gal |

**PURGING DATA:** {record pH, EC, & Temp **before purging**} **then** [Express all data per purge volume]
Time purging started: 0858 Time Sampled: 0924 Date: 10-20-16

| Time | Purge Volume (gal) | pH | EC (µS/cm) | Temp (C.) | Color | Turbidity | Odor | Pumped Dry |
|---|---|---|---|---|---|---|---|---|
| 0858 | 0 | 7.12 | 191 | 6.56 | cloudy | Mod | None | NO |
| 0910 | 3.5 | 6.63 | 188 | 6.48 | cloudy | Mod | None | NO |
| 0917 | 7.0 | 6.49 | 180 | 6.47 | clear | Light | None | NO |
| 0923 | 10.5 | 6.39 | 172 | 6.49 | clear | Trace | None | NO |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| | Color | Turbidity | Odor | |
|---|---|---|---|---|
| | clear<br>cloudy<br>Yellow<br>Brown | Clear<br>Trace<br>Light<br>Moderate<br>Heavy | None<br>Faint<br>Moderate<br>Strong | Yes/No |

Other Notes: Well Depth 24.23 ft

**PURGING EQUIPMENT**
Submersible Pump X
Bailer (Teflon) (PVC) _____

**SAMPLING EQUIPMENT**
Submersible Pump X
Bailer (Teflon) (PVC) _____

**WEATHER** Good
Ambient Temperature: Very cold
Rain ____ Dust ____ Wind ____

**Well integrity:** ☒ Good ☐ Fair ☐ Poor QC Samples collected at this well: _____

| | | | | | |
|---|---|---|---|---|---|
| **Unfiltered Sample Bottles** | 1 BOD | ___ 300 ml DO | 2 Coliform | ___ 1L Nalgene Base | ___ 1L Amber Glass |
| **Field Filtered Bottles** | 2 BOD | 1 TKN | ___ Coliform | 1 1L Nalgene Base | ___ 1L Amber Glass |

Sampler(s): Josh Green Signature: _____ Date: 10-20-16

# IEH - JL ANALYTICAL
## WATER SAMPLE – FIELD DATA SHEET

Forms/ MW Bear 12-06

Client: **BEAR VALLEY Water District – Bear Valley, CA** Site Description: **Monitoring Well # 2**

**Instrument Calibration Data:** Meter: **YSI 556 MPS** Date: 10-20-16 Time: 0745
**PH:** Primary calibration: pH4 pH7 pH10 **EC:** 100 200 250 1000 1413 2060 10,000
pH meter reading: 4 7 10 EC meter reading: 10,000 µS/cm
System purged with X DI Water (check appropriately)

**WELL INFORMATION:**

Well Depth (WD) (ft): 17.90 Ft.
Depth to Water (DTW) (ft): ( - ) 2.04 Ft.
**Water Column** (WD – DTW): ( = ) 15.86 Linear Ft.
Final Depth to Water: 2.04 Ft. @ 1100 AM/PM

| Casing Diameter | Gal/Lin. Ft (GPLF) | Casing Diameter | Gal/Lin. Ft (GPLF) |
|---|---|---|---|
| X 2" → | 0.17 | ☐ 4.5" → | 0.83 |
| ☐ 3" → | 0.38 | ☐ 5" → | 1.02 |
| ☐ 4 → | 0.66 | ☐ 6 → | 1.50 |
| | | ☐ 8 → | 2.60 |

15.86 (Water Column) X 0.17 (Gal per Linear Ft.) = 2.6962 (1 purge volume before rounding) | 3.0 (Adjusted Purge volume round **up** to nearest **0.5**) X 3 (Number of Casing Volumes) = 9.0 gal (Total Purge Volume, gal.)

**PURGING DATA:** {record pH, EC, & Temp **before purging**} **then** [Express all data per purge volume]
Time purging started: 0826 Time Sampled: 0837 Date: 10-20-16

| Time | Purge Volume (gal) | pH | EC (µS/cm) | Temperature (C.) | Color | Turbidity | Odor | Pumped Dry |
|---|---|---|---|---|---|---|---|---|
| 0826 | Ø | 6.50 | 68.73 | 9.3 | cloudy | Light | None | NO |
| 0830 | 3.0 | 6.10 | 64.83 | 9.6 | cloudy | Light | None | NO |
| 0833 | 6.0 | 5.80 | 65.18 | 10.3 | cloudy | Light | None | NO |
| 0836 | 9.0 | 5.80 | 64.53 | 10.3 | cloudy | Light | None | NO |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| | | | |
|---|---|---|---|
| clear<br>cloudy<br>Yellow<br>Brown | Clear<br>Trace<br>Light<br>Moderate<br>Heavy | None<br>Faint<br>Moderate<br>Strong | Yes/No |

Other Notes: Well Depth 17.88 ft

**PURGING EQUIPMENT**
Submersible Pump X
Bailer (Teflon) (PVC) _____

**SAMPLING EQUIPMENT**
Submersible Pump X
Bailer (Teflon) (PVC) _____

**WEATHER** Good
Ambient Temperature: Very cold
Rain ____ Dust ____ Wind ____

**Well integrity:** ☒ Good ☐ Fair ☐ Poor QC Samples collected at this well: _____

| | | | | | |
|---|---|---|---|---|---|
| **Unfiltered Sample Bottles** | 1 BOD | ___ 300 ml DO | 2 Coliform | ___ 1L Nalgene Base | ___ 1L Amber Glass |
| **Field Filtered Bottles** | 2 BOD | 1 TKN | ___ Coliform | 1 1L Nalgene Base | ___ 1L Amber Glass |

Sampler(s): Mike Tsurumaki Signature: _____ Reviewed by: _____ Date: _____

# IEH - JL ANALYTICAL
## WATER SAMPLE – FIELD DATA SHEET

Forms/ MW Bear 12-06

Client: **BEAR VALLEY Water District – Bear Valley, CA** Site Description: **Monitoring Well # 3**

**Instrument Calibration Data:** Meter: **YSI 556 MPS** Date: 10-20-16 Time: 0745
**PH:** Primary calibration: pH4 pH7 pH10 **EC:** 100 200 250 1000 1413 2060 10,000
pH meter reading: 4 7 10 EC meter reading: 10,000 µS/cm
System purged with X DI Water (check appropriately)

**WELL INFORMATION:**

Well Depth (WD) (ft): 13.56 Ft.
Depth to Water (DTW) (ft): ( - ) 2.37 Ft.
**Water Column** (WD – DTW): ( =) 11.19 Linear Ft.
Final Depth to Water: 2.37 Ft. @ 1106 AM/PM

| Casing Diameter | Gal/Lin. Ft (GPLF) | Casing Diameter | Gal/Lin. Ft (GPLF) |
|---|---|---|---|
| X 2" → | 0.17 | ☐ 4.5" → | 0.83 |
| ☐ 3" → | 0.38 | ☐ 5" → | 1.02 |
| ☐ 4 → | 0.66 | ☐ 6 → | 1.50 |
| | | ☐ 8 → | 2.60 |

11.19 (Water Column) X 0.17 (Gal per Linear Ft.) = 1.9023 (1 purge volume before rounding) | 2.0 (Adjusted Purge volume round **up** to nearest **0.5**) X 3 (Number of Casing Volumes) = 6.0 gal (Total Purge Volume, gal.)

**PURGING DATA:** {record pH, EC, & Temp **before purging**} **then** [Express all data per purge volume]
Time purging started: 0852 Time Sampled: 0859 Date: 10-20-16

| Time | Purge Volume (gal) | pH | EC (µS/cm) | Temperature (C.) | Color | Turbidity | Odor | Pumped Dry |
|---|---|---|---|---|---|---|---|---|
| 0852 | Ø | 7.20 | 91.73 | 8.6 | clear | clear | None | NO |
| 0854 | 2.0 | 6.70 | 89.40 | 9.1 | clear | clear | None | NO |
| 0856 | 4.0 | 6.10 | 87.42 | 8.9 | clear | clear | None | NO |
| 0858 | 6.0 | 5.80 | 88.45 | 9.1 | clear | clear | None | NO |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | clear cloudy Yellow Brown | Clear Trace Light Moderate Heavy | None Faint Moderate Strong | Yes/No |

Other Notes: Well Depth 13.45 ft

**PURGING EQUIPMENT**
Submersible Pump X
Bailer (Teflon) (PVC) _____

**SAMPLING EQUIPMENT**
Submersible Pump X
Bailer (Teflon) (PVC) _____

**WEATHER** Good
Ambient Temperature: Very Cold
Rain ____ Dust ____ Wind ____

**Well integrity:** ☒ Good ☐ Fair ☐ Poor QC Samples collected at this well: _____

| | | | | | |
|---|---|---|---|---|---|
| **Unfiltered Sample Bottles** | 1 BOD | ___ 300 ml DO | 2 Coliform | ___ 1L Nalgene Base | ___ 1L Amber Glass |
| **Field Filtered Bottles** | 2 BOD | 1 TKN | ___ Coliform | ___ 1L Nalgene Base | ___ 1L Amber Glass |

Sampler(s): Mike Tsurumaki Signature: [signature] Date: 10-20-16

# IEH - JL ANALYTICAL
## WATER SAMPLE – FIELD DATA SHEET

Forms/ MW Bear 12-06

Client: **BEAR VALLEY Water District – Bear Valley, CA** Site Description: **Monitoring Well # 4**

**Instrument Calibration Data:** Meter: **YSI 556 MPS** Date: 10-20-16 Time: 0745
**PH:** Primary calibration: pH4 pH7 pH10 **EC:** 100 200 250 1000 1413 2060 10,000
pH meter reading: 4 7 10 EC meter reading: 10,000 µS/cm
System purged with X DI Water (check appropriately)

**WELL INFORMATION:**

Well Depth (WD) (ft): 17.10 Ft.
Depth to Water (DTW) (ft): ( - ) 2.29 Ft.
**Water Column** (WD – DTW): ( =) 14.81 Linear Ft.
Final Depth to Water: 2.29 Ft. @ 1110 AM/PM

| Casing Diameter | Gal/Lin. Ft (GPLF) | Casing Diameter | Gal/Lin. Ft (GPLF) |
|---|---|---|---|
| X 2" → | 0.17 | ☐ 4.5" → | 0.83 |
| ☐ 3" → | 0.38 | ☐ 5" → | 1.02 |
| ☐ 4 → | 0.66 | ☐ 6 → | 1.50 |
| | | ☐ 8 → | 2.60 |

| Water Column | Gal per Linear Ft. | 1 purge volume (before rounding) | Adjusted Purge volume (round **up** to nearest **0.5**) | Number of Casing Volumes | Total Purge Volume, gal. |
|---|---|---|---|---|---|
| 14.81 | X 0.17 = | 2.5177 | 3.0 | X 3 = | 9.0 gal |

**PURGING DATA:** {record pH, EC, & Temp **before purging**} **then** [Express all data per purge volume]
Time purging started: 0921 Time Sampled: 0933 Date: 10-20-16

| Time | Purge Volume (gal) | pH | EC (µS/cm) | Temperature (C.) | Color | Turbidity | Odor | Pumped Dry |
|---|---|---|---|---|---|---|---|---|
| 0921 | Ø | 6.40 | 161.9 | 8.7 | Yellow | Light | None | NO |
| 0925 | 3.0 | 6.30 | 156.9 | 8.5 | cloudy | Trace | None | NO |
| 0929 | 6.0 | 6.30 | 166.1 | 8.5 | cloudy | Trace | None | NO |
| 0932 | 9.0 | 6.10 | 168.5 | 8.5 | clear | clear | None | NO |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | clear cloudy Yellow Brown | Clear Trace Light Moderate Heavy | None Faint Moderate Strong | Yes/No |

Other Notes: Well Depth 17.01 ft

**PURGING EQUIPMENT**
Submersible Pump X
Bailer (Teflon) (PVC) _____

**SAMPLING EQUIPMENT**
Submersible Pump X
Bailer (Teflon) (PVC) _____

**WEATHER** Good
Ambient Temperature: Very cold
Rain ____ Dust ____ Wind ____

**Well Integrity:** ☒ Good ☐ Fair ☐ Poor QC Samples collected at this well: _____

| | | | | | |
|---|---|---|---|---|---|
| **Unfiltered Sample Bottles** | 1 BOD | ___ 300 ml DO | 2 Coliform | ___ 1L Nalgene Base | ___ 1L Amber Glass |
| **Field Filtered Bottles** | 2 BOD | 1 TKN | ___ Coliform | ___ 1L Nalgene Base | ___ 1L Amber Glass |

Sampler(s): Mike Tsurumaki Signature: [signature] Date: 10-20-16

# IEH - JL ANALYTICAL
## WATER SAMPLE – FIELD DATA SHEET

Client: **Bear Valley Water District – Bear Valley, CA** Site Description: **Monitoring Well # 5**

**Instrument Calibration Data:** Meter: **YSI 556 MPS** Date: 10-20-16 Time: 0745
**PH:** Primary calibration: pH4 pH7 pH10 **EC:** 100 200 250 1000 1413 2060 10,000
pH meter reading: 4 7 10 EC meter reading: 10,000 µS/cm
System purged with X DI Water (check appropriately)

**WELL INFORMATION:**

Well Depth (WD) (ft): 20.19 Ft.
Depth to Water (DTW) (ft): ( - ) 12.56 Ft.
**Water Column** (WD – DTW): ( =) 7.63 Linear Ft.
Final Depth to Water: 12.95 Ft. @ 0833 (AM)/PM

| Casing Diameter | Gal/Lin. Ft (GPLF) | Casing Diameter | Gal/Lin. Ft (GPLF) |
|---|---|---|---|
| X 2" → | 0.17 | ☐ 4.5" → | 0.83 |
| ☐ 3" → | 0.38 | ☐ 5" → | 1.02 |
| ☐ 4 → | 0.66 | ☐ 6 → | 1.50 |
| | | ☐ 8 → | 2.60 |

7.63 (Water Column) X 0.17 (Gal per Linear Ft.) = 1.2971 (1 purge volume (before rounding)) → 1.5 (Adjusted Purge volume (round **up** to nearest **0.5**)) X 3 (Number of Casing Volumes) = 4.5 gal (Total Purge Volume, gal.)

**PURGING DATA:** {record pH, EC, & Temp **before purging**} **then** [Express all data per purge volume]
Time purging started: _____ Time Sampled: _____ Date: _____

| Time | Purge Volume (gal) | pH | EC (µS/cm) | Temperature (C.) | Color | Turbidity | Odor | Pumped Dry |
|---|---|---|---|---|---|---|---|---|
| 0824 | Ø | | | | | | | |
| | 1.5 | | | | | | | |
| | 3.0 | | | | | | | |
| | 4.5 | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

* Well Wouldnt pump

clear cloudy Yellow Brown | Clear Trace Light Moderate Heavy | None Faint Moderate Strong | Yes/No

Other Notes: Well Depth 20.04 Ft

**PURGING EQUIPMENT**
Submersible Pump X
Bailer (Teflon) (PVC) _____

**SAMPLING EQUIPMENT**
Submersible Pump X
Bailer (Teflon) (PVC) _____

**WEATHER** Good
Ambient Temperature: Very Cold
Rain ____ Dust ____ Wind ____

**Well integrity:** ☑ Good ☐ Fair ☐ Poor QC Samples collected at this well: _____

| | | | | | |
|---|---|---|---|---|---|
| **Unfiltered Sample Bottles** | 1 BOD | ___ 300 ml DO | 2 Coliform | ___ 1L Nalgene Base | ___ 1L Amber Glass |
| **Field Filtered Bottles** | 2 BOD | 1 TKN | ___ Coliform | ___ 1L Nalgene Base | ___ 1L Amber Glass |

Sampler(s): Josh Green Signature: _____ Date: 10-20-16

# IEH - JL ANALYTICAL
## WATER SAMPLE – FIELD DATA SHEET

Forms/ MW Bear 12-06

Client: **BEAR VALLEY Water District – Bear Valley, CA** Site Description: **Monitoring Well # 6**

**Instrument Calibration Data:** Meter: **YSI 556 MPS** Date: 10-20-16 Time: 0745

**PH:** Primary calibration: pH4 pH7 pH10 **EC:** 100 200 250 1000 1413 2060 10,000

pH meter reading: 4 7 10 EC meter reading: 10,000 µS/cm

System purged with X DI Water (check appropriately)

**WELL INFORMATION:**

Well Depth (WD) (ft): 22.59 Ft.

Depth to Water (DTW) (ft): ( - ) 3.53 Ft.

**Water Column** (WD – DTW): ( =) 19.06 Linear Ft.

Final Depth to Water: 3.81 Ft. @ 1046 (AM/PM)

| Casing Diameter | Gal/Lin. Ft (GPLF) | Casing Diameter | Gal/Lin. Ft (GPLF) |
|---|---|---|---|
| X 2" → | 0.17 | ☐ 4.5" → | 0.83 |
| ☐ 3" → | 0.38 | ☐ 5" → | 1.02 |
| ☐ 4 → | 0.66 | ☐ 6 → | 1.50 |
| | | ☐ 8 → | 2.60 |

| Water Column | Gal per Linear Ft. | 1 purge volume (before rounding) | Adjusted Purge volume (round **up** to nearest **0.5**) | Number of Casing Volumes | Total Purge Volume, gal. |
|---|---|---|---|---|---|
| 19.06 | X 0.17 = 3.2402 | | 3.5 | X 3 = | 10.5 gal |

**PURGING DATA:** {record pH, EC, & Temp **before purging**} **then** [Express all data per purge volume]

Time purging started: 1028 Time Sampled: 1041 Date: 10-20-16

| Time | Purge Volume (gal) | pH | EC (µS/cm) | Temperature (C.) | Color | Turbidity | Odor | Pumped Dry |
|---|---|---|---|---|---|---|---|---|
| 1028 | 0 | 7.10 | 348 | 7.23 | Yellow | Heavy | Faint | NO |
| 1032 | 3.5 | 7.00 | 356 | 7.24 | Yellow | Heavy | Faint | NO |
| 1036 | 7.0 | 6.94 | 360 | 7.26 | Yellow | Heavy | Faint | NO |
| 1040 | 10.5 | 6.91 | 362 | 7.26 | Yellow | Light | Faint | NO |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | clear cloudy Yellow Brown | Clear Trace Light Moderate Heavy | None Faint Moderate Strong | Yes/No |

Other Notes: Well Depth 22.09 ft

**PURGING EQUIPMENT**
Submersible Pump X
Bailer (Teflon) (PVC) _____

**SAMPLING EQUIPMENT**
Submersible Pump X
Bailer (Teflon) (PVC) _____

**WEATHER** Good
Ambient Temperature: very cold
Rain ____ Dust ____ Wind ____

**Well integrity:** ☒ Good ☐ Fair ☐ Poor QC Samples collected at this well: _____

| | | | | | |
|---|---|---|---|---|---|
| **Unfiltered Sample Bottles** | 1 BOD | ___ 300 ml DO | 2 Coliform | ___1L Nalgene Base | ___1L Amber Glass |
| **Field Filtered Bottles** | 2 BOD | 1 TKN | ___Coliform | ___1L Nalgene Base | ___1L Amber Glass |

Sampler(s): Josh Green Signature: _____ Date: 10-20-16

# IEH - JL ANALYTICAL
## WATER SAMPLE – FIELD DATA SHEET

### Monitoring Well -- Lock Report

Client: **BEAR VALLEY WD Bear Valley, CA** Date: 10-20-16

| Well Number | Is there a lock? | Condition of the lock? | Does it Work? | Was it Locked upon arrival? | Was it locked upon departure? |
|---|---|---|---|---|---|
| | Yes / No | Acceptable / Bad | Yes / No | Yes / No | Yes / No |
| 1 | Yes | Acceptable | Yes | Yes | Yes |
| 2 | Yes | Acceptable | Yes | Yes | Yes |
| 3 | Yes | Acceptable | Yes | Yes | Yes |
| 4 | Yes | Acceptable | Yes | Yes | Yes |
| 5 | Yes | Acceptable | Yes | Yes | Yes |
| 6 | Yes | Acceptable | Yes | Yes | Yes |
| | | | | | |
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Comments:

Sampler: Josh Green

Form: Lock Report 4-04

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

# Bear Valley Water District
# Bear Valley, CA
# 3rd Monitoring Event of 2016
# GROUNDWATER MONITORING REPORT

## Section 3

## Monitoring Well Field Data

**Table 1 Bear Valley Monitoring Well Purge Data**

**Table 2 Bear Valley Monitoring Field Data**

October 2016

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

# TABLE 1

## Bear Valley Water District
## Monitoring Well Purge Data

October 20, 2016

| Well Number | Initial Well Depth | Depth to Ground Water | Linear Feet of Water | Final Depth to Water | Measured Well Depth | Casing Diameter | Adjusted Purge Volume | Total Required Purge volume | Total Actual Purge volume |
|---|---|---|---|---|---|---|---|---|---|
| | (Ft) | (Ft) | (Ft) | (Ft) | (Ft) | (In) | (Gal) | (Gal) | (Gal) |
| | ( b ) | ( c ) | (b - c) | | | | | | |
| 1 | 27.29 | 9.48 | 17.81 | 12.65 | 24.23 | 2 | 3.5 | 10.5 | 10.5 |
| 2 | 17.90 | 2.04 | 15.86 | 2.04 | 17.88 | 2 | 3.0 | 9.0 | 9.0 |
| 3 | 13.56 | 2.37 | 11.19 | 2.37 | 13.45 | 2 | 2.0 | 6.0 | 6.0 |
| 4 | 17.10 | 2.29 | 14.81 | 2.29 | 17.01 | 2 | 3.0 | 9.0 | 9.0 |
| 5 | 20.19 | 12.56 | 7.63 | 12.95 | 20.04 | 2 | 1.5 | 4.5 | <1.5 |
| 6 | 22.59 | 3.53 | 19.06 | 3.81 | 22.09 | 2 | 3.5 | 10.5 | 10.5 |

For 2” Casing - Casing Volume (gal) = Height of Water Column X 0.17 Gallons per linear foot

Well No. 5 would not pump

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

# TABLE 2
# FIELD DATA
# BEAR VALLEY WATER DISTRICT
# Monitoring Well - Field Data Summary

**October 20, 2016**

| Well Number | Sampling Date | Time | Purge Volume (Gal) | pH (pH units) | EC (µS/cm) | Temp (C) | Color | Turbidity | Odor |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 10/20/2016 | 9:10 | 3.5 | 6.6 | 190 | 6.5 | Cloudy | Moderate | None |
| | | 9:17 | 7.0 | 6.5 | 180 | 6.5 | Clear | Light | None |
| | | 9:23 | 10.5 | 6.4 | 170 | 6.5 | Clear | Trace | None |
| 2 | 10/20/2016 | 8:30 | 3.0 | 6.1 | 65 | 9.6 | Cloudy | Light | None |
| | | 8:33 | 6.0 | 5.8 | 65 | 10.3 | Cloudy | Light | None |
| | | 8:36 | 9.0 | 5.8 | 65 | 10.3 | Cloudy | Light | None |
| 3 | 10/20/2016 | 8:54 | 2.0 | 6.7 | 89 | 9.1 | Clear | Clear | None |
| | | 8:56 | 4.0 | 6.1 | 87 | 8.9 | Clear | Clear | None |
| | | 8:58 | 6.0 | 5.8 | 88 | 9.1 | Clear | Clear | None |
| 4 | 10/20/2016 | 9:25 | 3.0 | 6.3 | 160 | 8.5 | Cloudy | Trace | None |
| | | 9:29 | 6.0 | 6.3 | 170 | 8.5 | Cloudy | Trace | None |
| | | 9:32 | 9.0 | 6.1 | 170 | 8.5 | Clear | Clear | None |
| 5 | 10/20/2016 | | Well wouldn't pump | | | | | | |
| 6 | 10/20/2016 | 10:32 | 3.5 | 7.0 | 360 | 7.2 | Yellow | Heavy | Faint |
| | | 10:36 | 7.0 | 6.9 | 360 | 7.3 | Yellow | Heavy | Faint |
| | | 10:40 | 10.5 | 6.9 | 360 | 7.3 | Yellow | Light | Faint |

**No Data**

IEH - JL ANALYTICAL
217 Primo Way • Modesto, California 95358 • Office (209) 538-8111 • FAX (209) 538-3966

# Bear Valley Water District
# Bear Valley, CA
# 3rd Monitoring Event of 2016
# GROUNDWATER MONITORING REPORT

## Section 4

## Certificate of Analysis
## (Analytical Reports)

## Microbiological Report

## Metals Report

October 2016

November 2, 2016

**J L Analytical Services, Inc.**
Attn: Crystal E. McNabb
217 Primo Way
Modesto, CA 95358

STK1653332:1-5 **COLIFORM BACTERIA ANALYSIS**
Customer ID : 3-15338

System Number :
Project Name : Bear Valley-PO#JLA20161020Z

## Sample Handling Information

| ID | Sample Number | Sample Description | Sample Type/Reason | Sampled By | Employed By | Sampled | Started | Finished |
|---|---|---|---|---|---|---|---|---|
| 1 | STK1653332-001 | MW-1 (389587-01) | Source-Other | M.Tsurumaki/J. Green | J L Analytical Servi | 10/20/2016 09:24 | 10/20/2016 13:58 CTH | 10/23/2016 CTH |
| 2 | STK1653332-002 | MW-2 (389587-02) | Source-Other | M.Tsurumaki/J. Green | J L Analytical Servi | 10/20/2016 08:37 | 10/20/2016 13:58 KJB | 10/22/2016 KJB |
| 3 | STK1653332-003 | MW-3 (389587-03) | Source-Other | M.Tsurumaki/J. Green | J L Analytical Servi | 10/20/2016 08:59 | 10/20/2016 14:02 CTH | 10/22/2016 CTH |
| 4 | STK1653332-004 | MW-4 (389587-04) | Source-Other | M.Tsurumaki/J. Green | J L Analytical Servi | 10/20/2016 09:33 | 10/20/2016 14:04 KJB | 10/23/2016 KJB |
| 5 | STK1653332-005 | MW-6 (389587-05) | Source-Other | M.Tsurumaki/J. Green | J L Analytical Servi | 10/20/2016 10:41 | 10/20/2016 14:08 CTH | 10/22/2016 CTH |

## Analytical Results

| ID | Sample Description | Chlorine Total/Free | Temp °C | Method | Units | Total | Fecal | E. Coli | Person Notified ‡ | Date ‡ Notified | Time ‡ Notified | Foot Note |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-1 (389587-01) | --- | --- | SM 9221B | MPN/100ml | 230 | 6.8 | --- | N/R | | | |
| 2 | MW-2 (389587-02) | --- | --- | SM 9221B | MPN/100ml | 170 | 170 | --- | N/R | | | |
| 3 | MW-3 (389587-03) | --- | --- | SM 9221B | MPN/100ml | <1.8 | <1.8 | --- | N/R | | | |
| 4 | MW-4 (389587-04) | --- | --- | SM 9221B | MPN/100ml | 230 | 7.8 | --- | N/R | | | |
| 5 | MW-6 (389587-05) | --- | --- | SM 9221B | MPN/100ml | <1.8 | <1.8 | --- | N/R | | | |

N/R Not Required. MPN Most Probable Number A/P Absence/Presence ‡ Client Notification details.

Analyses were performed using Standard Methods 22nd edition. If you have any questions regarding your results, please call.

RRH:GMA
cc:Please email reports and invoices.

Reviewed and Approved By **Raquel R. Harvey**
Digitally signed by Raquel R. Harvey
Title: Tech Director Microbiology
Date: 2016-11-02



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# IEH ANALYTICAL LABORATORIES

**LABORATORY & CONSULTING SERVICES**

**3927 AURORA AVENUE NORTH, SEATTLE, WA 98103**

**PHONE: (206) 632-2715 FAX: (206) 632-2417**


**CASE FILE NUMBER:** JLA062-37 **PAGE 1**

**REPORT DATE:** 11/30/16

**DATE SAMPLED:** 10/20/16 **DATE RECEIVED:** 10/25/16

**FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM JL ANALYTICAL / BEAR VALLEY WATER DISTRICT**

## CASE NARRATIVE

Five water samples were received by the laboratory in good condition and analyzed according to the chain of custody. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on the subsequent page.

## SAMPLE DATA

| | | DISSOLVED METALS | | | | | | |
|---|---|---|---|---|---|---|---|---|
| SAMPLE DESCRIPTION | LAB ID | BORON (mg/L) | CALCIUM (mg/L) | IRON (mg/L) | POTASSIUM (mg/L) | MAGNESIUM (mg/L) | MANGANESE (mg/L) | SODIUM (mg/L) |
| MW #1 | 389587-01 | <0.030 | 20.5 | 0.043 | 3.58 | 5.06 | 0.236 | 5.83 |
| MW #2 | 389587-02 | <0.030 | 6.86 | <0.030 | 1.10 | 2.13 | <0.010 | 3.20 |
| MW #3 | 389587-03 | <0.030 | 7.44 | <0.030 | 1.48 | 1.97 | <0.010 | 6.13 |
| MW #4 | 389587-04 | <0.030 | 18.4 | <0.030 | 3.41 | 5.94 | <0.010 | 7.34 |
| MW #6 | 389587-05 | <0.030 | 48.5 | 0.812 | 2.93 | 11.5 | 2.09 | 12.3 |

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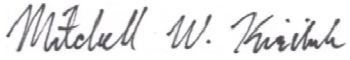
**CASE FILE NUMBER:** JLA062-37 **PAGE 2**
**REPORT DATE:** 11/30/16
**DATE SAMPLED:** 10/20/16 **DATE RECEIVED:** 10/25/16
**FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM JL ANALYTICAL / BEAR VALLEY WATER DISTRICT**

**QA/QC DATA**

| | DISSOLVED METALS | | | | | | |
|---|---|---|---|---|---|---|---|
| QC PARAMETER | BORON (mg/L) | CALCIUM (mg/L) | IRON (mg/L) | POTASSIUM (mg/L) | MAGNESIUM (mg/L) | MANGANESE (mg/L) | SODIUM (mg/L) |
| METHOD | EPA 200.7 | EPA 200.7 | EPA 200.7 | EPA 200.7 | EPA 200.7 | EPA 200.7 | EPA 200.7 |
| DATE ANALYZED | 10/31/16 | 10/31/16 | 10/31/16 | 10/31/16 | 10/31/16 | 10/31/16 | 10/31/16 |
| REPORTING LIMIT | 0.030 | 0.500 | 0.030 | 0.500 | 0.500 | 0.010 | 0.500 |
| DUPLICATE | | | | | | | |
| SAMPLE ID | BATCH | BATCH | BATCH | BATCH | BATCH | BATCH | BATCH |
| ORIGINAL | <0.030 | 21.2 | <0.030 | 0.707 | 21.7 | <0.010 | 56.3 |
| DUPLICATE | <0.030 | 21.3 | <0.030 | 0.701 | 21.7 | <0.010 | 56.8 |
| RPD | NC | 0.52% | NC | 0.77% | 0.18% | NC | 0.90% |
| SPIKE SAMPLE | | | | | | | |
| SAMPLE ID | BATCH | BATCH | BATCH | BATCH | BATCH | BATCH | BATCH |
| ORIGINAL | <0.030 | 21.2 | <0.030 | 0.707 | 21.7 | <0.010 | 56.3 |
| SPIKED SAMPLE | 0.425 | 31.2 | 4.00 | 11.1 | 31.3 | 0.408 | 64.8 |
| SPIKE ADDED | 0.500 | 10.0 | 5.00 | 10.0 | 10.0 | 0.500 | 10.0 |
| % RECOVERY | 85.06% | 99.50% | 80.00% | 104.13% | 96.60% | 81.50% | 85.00% |
| QC CHECK | | | | | | | |
| FOUND | 0.505 | 10.4 | 0.514 | 9.87 | 10.3 | 0.505 | 10.1 |
| TRUE | 0.500 | 10.0 | 0.500 | 10.0 | 10.0 | 0.500 | 10.0 |
| % RECOVERY | 100.94% | 104.10% | 102.72% | 98.72% | 103.10% | 101.08% | 100.40% |
| BLANK | <0.030 | <0.500 | <0.030 | <0.500 | <0.500 | <0.010 | <0.500 |

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:



Mitchell W Kiriluk
Project Manager

# Appendix C Historical Groundwater Elevations and Quality

**Bear Valley Water District**
Historic Groundwater Quality

| Well | Date | Depth To GW (ft) | GW Elev. (ft, NAVD88) | Field pH | Field EC (µS/cm) | Temp. (C) | ORP (mV) | Dissolved Oxygen (mg/L) | Lab SC (µS/cm) | Cl (mg/L) | NO3-N (mg/L) | TKN (mg/L) | Ammonia as N | TDS (mg/L) | B (mg/L) | Ca (mg/L) | Fe (mg/L) | Mg (mg/L) | Mn (mg/L) | K (mg/L) | Na (mg/L) | HCO3 as CaCO3 (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 9/1/2004 | 10.29 | 7103.79 | 6.7 | 221 | 4.8 | | | | NR[3] | <0.050 | <1.0 | | 166 | NR[3] | | **0.940** | | **0.370** | | NR[3] | |
| MW-1 | 10/13/2004 | 12.73 | 7101.35 | 6.9 | 180 | 6.2 | | | | 3.4 | <0.1 | 1 | <1 | 150 | 0.05 | | <0.02 | | **0.350** | | 7.0 | |
| MW-1 | 8/11/2005 | 9.32 | 7104.76 | 6.5 | 150 | 6.4 | 71 | 5.5 | 160 | 1.2 | <0.1 | 2 | <1 | 200 | <0.03 | 19.0 | 0.210 | 5.2 | **0.280** | 2.0 | 6.0 | 71 |
| MW-1 | 9/15/2005 | 9.54 | 7104.54 | 7.0 | 150 | 6.4 | 56 | 7.9 | 160 | 3.6 | <0.1 | <1 | <1 | 150 | <0.03 | 20.0 | **0.730** | 5.3 | **0.300** | 4.0 | 6.0 | 76 |
| MW-1 | 10/13/2005 | 9.50 | 7104.58 | 6.6 | 1482 | 7.1 | 138 | 7.5 | 170 | 2.2 | <0.1 | <1 | <1 | 120 | 0.03 | 18.0 | 0.150 | 4.8 | **0.260** | 3.0 | 6.0 | 61 |
| MW-1 | 6/29/2006 | 9.60 | 7104.48 | 6.9 | 125 | 5.1 | 103 | 1.7 | 140 | 1.6 | <0.1 | <1 | <1 | 110 | <0.03 | 14.0 | 0.060 | 3.9 | **0.140** | <1 | 5.0 | 55 |
| MW-1 | 8/2/2006 | 8.25 | 7105.83 | 7.7 | 156 | 6.9 | 65 | 4.3 | 170 | 1.4 | <0.1 | <1 | <1 | 150 | <0.03 | 20.0 | <0.02 | 5.0 | **0.280** | 4.0 | 7.0 | 75 |
| MW-1 | 10/10/2006 | 8.08 | 7106.00 | 6.8 | 171 | 5.9 | 70 | 2.7 | 180 | 1.5 | <0.1 | <1 | <1 | 160 | <0.03 | 22.0 | 0.130 | 5.7 | **0.360** | 2.0 | 7.0 | 70 |
| MW-1 | 7/12/2007 | 10.10 | 7103.98 | 7.0 | 173 | 7.0 | 110 | 6.7 | 180 | 1.2 | <0.1 | <1 | <1 | 220 | <0.03 | 23.0 | 0.130 | 5.8 | **0.370** | 5.0 | 6.0 | 87.8 |
| MW-1 | 8/29/2007 | 9.00 | 7105.08 | 7.1 | 180 | 7.7 | -2 | 4.9 | 200 | 1.5 | <0.1 | <1 | <1 | 170 | 0.037 | 25.0 | **0.340** | 5.8 | **0.430** | 4.4 | 6.0 | 96 |
| MW-1 | 9/26/2007 | 12.30 | 7101.78 | 7.2 | 189 | 7.4 | -121 | 4.7 | 200 | 1.0 | <0.1 | <1 | <1 | 170 | <0.03 | 23.0 | 0.140 | 6.0 | **0.380** | 4.0 | 6.7 | 100 |
| MW-1 | 7/8/2008 | 10.25 | 7103.83 | 7.2 | 168 | 7.4 | 141 | 1.9 | 180 | 1.1 | <0.1 | <1 | <1 | 170 | <0.03 | 21.0 | 0.060 | 6.0 | **0.270** | 4.0 | 6.0 | 65 |
| MW-1 | 9/18/2008 | 9.70 | 7104.38 | 7.3 | 189 | 6.9 | 156 | 7.4 | 200 | <1.0 | <0.1 | <1 | <1 | 180 | <0.03 | 22.0 | 0.060 | 5.1 | **0.330** | 4.0 | 7.0 | 95 |
| MW-1 | 1/16/2008 | 12.30 | 7101.78 | 7.6 | 180 | 6.4 | 78 | 7.1 | 190 | 1.2 | <0.1 | <0.1 | <1 | 150 | <0.03 | 26.0 | 0.180 | 7.7 | **0.360** | 4.0 | 11.0 | 90 |
| MW-1 | 7/7/2009 | 8.95 | 7105.13 | 7.2 | 168 | 6.8 | 469 | 6.2 | 180 | 0.8 | <0.1 | <1 | <1 | 220 | <0.03 | 23.0 | 0.140 | 5.8 | **0.260** | 4.0 | 7.0 | 75 |
| MW-1 | 9/30/2009 | 9.00 | 7105.08 | 6.2 | 194 | 6.8 | 52 | 1.9 | 190 | 0.6 | <0.1 | <1 | <1 | 170 | <0.03 | 25.0 | 0.120 | 5.5 | **0.420** | 5.0 | 7.0 | 110 |
| MW-1 | 10/26/2009 | 10.30 | 7103.78 | 2.7 | 142 | 6.3 | 281 | 1.0 | 190 | 1.1 | 0.3 | 1 | <1 | 160 | <0.03 | 23.0 | 0.110 | 6.2 | **0.280** | 4.0 | 9.0 | 100 |
| MW-1 | 7/13/2010 | 8.80 | 7105.28 | 6.4 | 150 | 6.0 | 402 | 1.7 | 150 | 1.9 | <0.1 | <1 | <1 | 140 | <0.03 | 19.0 | 0.040 | 4.7 | **0.220** | 3.0 | 6.0 | 65 |
| MW-1 | 8/24/2010 | 9.03 | 7105.05 | 7.0 | 185 | 6.1 | 43 | 0.9 | 190 | 0.9 | <0.1 | <1 | <1 | 170 | <0.03 | 20.0 | <0.02 | 5.4 | **0.300** | 3.0 | 7.0 | 78 |
| MW-1 | 11/4/2010 | 8.80 | 7105.28 | 5.9 | 173 | 6.3 | 132 | 2.0 | 170 | 2.2 | <0.1 | 6 | <1 | 140 | <0.03 | 18.0 | <0.02 | 4.3 | **0.310** | 3.0 | 6.0 | 76 |
| MW-1 | 7/21/2011 | 8.10 | 7105.98 | 5.6 | 148 | 5.7 | 101 | 1.1 | 150 | 1.6 | <0.1 | <1 | <1 | 130 | <0.03 | 14.7 | 0.017 | 4.1 | **0.200** | 2.9 | 4.6 | 76 |
| MW-1 | 9/8/2011 | 9.54 | 7104.54 | 7.0 | 177 | 6.2 | 38 | 1.3 | 180 | 1.1 | <0.1 | 2 | <1 | 140 | <0.03 | 17.2 | 0.040 | 5.1 | **0.272** | 3.1 | 5.7 | 76 |
| MW-1 | 10/20/2011 | 9.44 | 7104.64 | 6.6 | 167 | 5.7 | 61 | 1.5 | 170 | 1.6 | <0.1 | 2 | <1 | 140 | <0.03 | 17.3 | 0.060 | 4.3 | **0.280** | 3.3 | 5.4 | 87 |
| MW-1 | 6/26/2012 | 9.00 | 7105.08 | 6.7 | 93 | 5.4 | 63 | 2.1 | 93 | 1.7 | 0.2 | <1 | <1 | 110 | <0.03 | 15.9 | <0.02 | 4.1 | **0.190** | 2.5 | 5.6 | 54 |
| MW-1 | 7/31/2012 | 10.30 | 7103.78 | 7.0 | 197 | 8.5 | 103 | 0.1 | 200 | 0.7 | <0.1 | 1 | <1 | 150 | <0.03 | 23.9 | 0.081 | 5.8 | **0.263** | 3.6 | 6.6 | 99 |
| MW-1 | 10/9/2012 | 12.40 | 7101.68 | 6.5 | 184 | 5.8 | 87 | 1.5 | 180 | 1.6 | <0.2 | 2 | <1 | 140 | <0.03 | 20.4 | 0.105 | 5.0 | **0.322** | 3.5 | 6.5 | 85 |
| MW-1 | 5/30/2013 | 11.00 | 7103.08 | 6.4 | 153 | 6.1 | 198 | -- | 150 | 1.7 | <0.2 | <1 | <1 | 120 | <0.03 | 16.7 | <0.02 | 4.5 | **0.143** | 3.1 | 5.3 | 80 |
| MW-1 | 8/21/2013 | 12.39 | 7101.69 | 6.6 | 177 | 8.1 | 276 | 2.3 | 180 | 1.5 | <0.1 | <1 | <1 | 150 | <0.03 | 18.6 | 0.080 | 4.6 | **0.280** | 3.3 | 5.3 | 85 |
| MW-1 | 10/15/2013 | 12.95 | 7101.13 | 6.4 | 193 | 7.1 | 514 | 1.3 | 190 | 1.5 | <0.2 | <1 | <1 | 150 | <0.03 | 25.7 | 0.093 | 5.9 | **0.300** | 4.7 | 6.8 | 100 |
| MW-1 | 6/12/2014 | 11.04 | 7103.04 | 6.2 | 130 | 6.4 | 266 | 2.9 | 130 | 2.6 | <0.2 | <1 | <1 | 120 | <0.03 | 14.4 | <0.02 | 4.1 | **0.052** | 2.5 | 5.0 | 58 |
| MW-1 | 8/12/2014 | 10.67 | 7103.41 | 7.4 | 157 | 6.7 | 258 | 2.3 | 160 | 2.4 | <0.2 | <1 | <1 | 140 | <0.03 | 18.9 | <0.02 | 4.6 | **0.206** | 3.6 | 5.6 | 86 |
| MW-1 | 10/14/2014 | 12.39 | 7101.69 | 7.2 | 189 | 6.7 | 264 | 0.3 | 190 | 1.0 | <0.2 | <1 | <1 | 170 | <0.03 | 21.8 | <0.02 | 5.6 | **0.299** | 3.7 | 6.2 | 86 |
| MW-1 | 6/17/2015 | 10.72 | 7103.36 | 7.2 | 138 | 6.8 | 306 | 1.8 | 140 | 5.2 | <0.2 | <1 | <1 | 110 | <0.03 | 12.5 | <0.02 | 3.7 | 0.046 | 2.0 | 4.6 | 42 |
| MW-1 | 9/9/2015 | 10.19 | 7103.89 | 6.6 | 165 | 6.7 | 241 | 2.7 | 170 | 2.2 | <0.2 | <1 | <1 | 150 | 0.034 | 19.4 | <0.03 | 5.0 | **0.203** | 3.7 | 5.9 | 80 |
| MW-1 | 11/12/2015 | 11.00 | 7103.08 | 6.5 | 161 | 8.3 | 270 | -- | 160 | 3.7 | <0.2 | <1 | <1 | 160 | <0.03 | 17.3 | <0.03 | 4.6 | **0.205** | 3.0 | 5.1 | 68 |
| MW-1 | 7/7/2016 | 8.89 | 7105.19 | 6.1 | 154 | 8.6 | -- | -- | 150 | 2.0 | <0.2 | <1 | <1 | 110 | <0.03 | 17.7 | <0.03 | 4.6 | **0.108** | 2.9 | 5.4 | 86 |
| MW-1 | 9/8/2016 | 11.11 | 7102.97 | 6.4 | 168 | 6.9 | -- | -- | -- | 1.9 | <0.1 | 0.62 | <0.1 | 170 | <0.03 | 19.1 | <0.03 | 4.8 | **0.196** | 3.2 | 5.5 | 80 |
| MW-1 | 10/20/2016 | 9.48 | 7104.60 | 6.4 | 172 | 6.5 | -- | -- | -- | 2.1 | <0.1 | 0.31 | 0.19 | 140 | <0.03 | 20.5 | 0.043 | 5.1 | **0.236** | 3.6 | 5.8 | 81 |
| MW-2 | 10/30/2002 | 12.25 | 7055.28 | 6.7 | | | | | | 58.0 | <0.050 | NR[1] | <0.4 | 186 | <0.10[T] | | **79[T]** | | **1.13[T]** | | 19.8[T] | |
| MW-2 | 7/29/2003 | | | 7.1 | 112 | 9.2 | | | | NR[3] | <0.1 | 1 | <0.2 | 80 | NR[3] | | NR[3] | | NR[3] | | NR[3] | |
| MW-2 | 11/13/2003 | 10.95 | 7056.58 | 7.7 | | | | | | <1.0 | <0.050* | NR[1] | <0.4 | | <0.10[T] | | **37[T]** | | **0.82[T]** | | 5.7[T] | |
| MW-2 | 6/22/2004 | 3.76 | 7063.77 | 6.7 | 70 | 4.8 | | | | NR[3] | <0.050 | 2 | <0.4 | 82 | NR[3] | | **0.920** | | <0.02 | | NR[3] | |
| MW-2 | 9/1/2004 | 8.86 | 7058.67 | 6.9 | 68 | 7.2 | | | | NR[3] | <0.050 | 1 | <0.4 | 90 | NR[3] | | **0.590** | | <0.02 | | NR[3] | |
| MW-2 | 10/13/2004 | 17.80 | 7049.73 | 6.5 | 63 | 11.4 | | | | 2.2 | <0.1 | 10 | <1 | 96 | 0.03 | | 0.020 | | **0.110** | | 3.0 | |

**Bear Valley Water District**
Historic Groundwater Quality

| Well | Date | Depth To GW (ft) | GW Elev. (ft, NAVD88) | Field pH | Field EC (µS/cm) | Temp. (C) | ORP (mV) | Dissolved Oxygen (mg/L) | Lab SC (µS/cm) | Cl (mg/L) | NO3-N (mg/L) | TKN (mg/L) | Ammonia as N | TDS (mg/L) | B (mg/L) | Ca (mg/L) | Fe (mg/L) | Mg (mg/L) | Mn (mg/L) | K (mg/L) | Na (mg/L) | HCO3 as CaCO3 (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-2 | 8/11/2005 | 3.82 | 7063.71 | 6.2 | 50 | 11.9 | 11 | 1.1 | 54 | <1 | <0.1 | 2 | <1 | 140 | <0.03 | 5.5 | **0.310** | 1.8 | 0.040 | 1.0 | 2.0 | 25 |
| MW-2 | 9/15/2005 | 8.00 | 7059.53 | 7.1 | 51 | 12.3 | 99 | NS | 56 | <1 | 0.1 | 2 | 0.5 | 130 | <0.03 | 6.1 | **0.680** | 2.1 | 0.010 | 2.0 | 3.0 | 30 |
| MW-2 | 10/13/2005 | 8.35 | 7059.18 | 6.8 | 59 | 10.0 | 1 | 9.4 | 67 | <1 | <0.1 | <1 | <1 | 110 | <0.03 | 6.4 | 0.280 | 2.2 | 0.010 | 2.0 | 3.0 | 25 |
| MW-2 | 6/29/2006 | 0.50 | 7067.03 | 7.9 | 45 | 12.5 | 133 | 0.6 | 48 | <1 | <0.1 | <1 | <1 | 93 | <0.03 | 4.6 | 0.100 | 1.5 | <0.01 | <1 | 2.0 | 20 |
| MW-2 | 8/2/2006 | 7.24 | 7060.29 | 7.8 | 45 | 13.1 | 37 | 1.8 | 53 | <1 | <0.1 | <1 | <1 | 100 | <0.03 | 5.0 | 0.070 | 1.7 | **0.060** | 2.0 | 4.0 | 20 |
| MW-2 | 10/10/2006 | 7.30 | 7060.23 | 6.8 | 66 | 7.9 | 160 | 7.6 | 75 | 2.3 | <0.1 | <1 | <1 | 130 | <0.03 | 8.0 | **0.440** | 2.8 | 0.020 | <1 | 4.0 | 25 |
| MW-2 | 7/12/2007 | 8.10 | 7059.43 | 6.8 | 41 | 15.9 | 229 | 8.5 | 49 | 1.1 | <0.1 | 0.7 | <1 | 43 | <0.03 | 5.5 | **1.200** | 1.7 | 0.049 | 2.0 | 3.0 | 25 |
| MW-2 | 8/29/2007 | 8.70 | 7058.83 | 7.3 | 67 | 16.0 | 150 | 6.4 | 75 | 1.9 | 0.1 | <1 | <1 | 100 | <0.03 | 7.8 | **0.970** | 2.2 | **0.100** | 2.2 | 3.0 | 35 |
| MW-2 | 9/26/2007 | 10.30 | 7057.23 | 6.7 | 54 | 11.0 | -121 | 12.0 | 65 | 2.0 | 0.1 | <1 | <1 | 130 | <0.03 | 5.2 | 0.023 | 1.7 | 0.015 | 2.0 | 3.0 | 30 |
| MW-2 | 7/8/2008 | 2.90 | 7064.63 | 6.6 | 45 | 13.8 | 137 | 4.1 | 49 | <1 | <0.1 | <1 | <1 | 130 | <0.03 | 5.0 | **0.450** | 2.0 | 0.020 | 1.0 | 2.0 | 25 |
| MW-2 | 9/18/2008 | 7.95 | 7059.58 | 6.7 | 115 | 13.1 | 764 | 13.1 | 99 | 6.8 | 0.2 | 3 | <1 | 86 | <0.03 | 5.2 | **0.510** | 1.7 | 0.010 | 2.0 | 7.0 | 25 |
| MW-2 | 10/16/2008 | 8.78 | 7058.75 | 7.5 | 52 | 18.3 | 214 | 7.6 | 56 | 1.6 | 0.2 | <0.1 | <1 | 97 | <0.03 | 5.7 | 0.220 | 1.7 | 0.010 | 1.0 | 3.0 | 25 |
| MW-2 | 7/7/2009 | 6.30 | 7061.23 | 6.9 | 44 | 9.4 | 363 | 8.5 | 48 | <0.2 | <0.1 | <1 | <1 | 330 | <0.03 | 6.1 | **0.910** | 1.8 | 0.020 | 1.0 | 3.0 | 25 |
| MW-2 | 9/30/2009 | 8.70 | 7058.83 | 6.0 | 59 | 8.4 | 85 | 0.0 | 61 | 0.9 | <0.1 | <1 | <1 | 47 | <0.03 | 6.9 | **0.620** | 1.6 | 0.020 | 2.0 | 3.0 | 30 |
| MW-2 | 10/26/2009 | 7.85 | 7059.68 | 6.1 | 47 | 9.0 | 480 | 4.2 | 61 | 1.8 | 0.5 | <1 | <1 | 54 | <0.03 | 6.8 | **0.520** | 1.9 | 0.040 | 2.0 | 3.0 | 25 |
| MW-2 | 7/13/2010 | 0.80 | 7066.73 | 6.1 | 43 | 9.3 | 134 | 0.3 | 43 | 1.4 | <0.1 | <1 | <1 | 61 | <0.03 | 4.7 | 0.200 | 1.5 | <0.01 | <1 | 2.0 | 20 |
| MW-2 | 8/24/2010 | 8.34 | 7059.19 | 6.3 | 47 | 9.8 | 136 | 7.9 | 47 | 0.5 | <0.1 | <1 | <1 | 90 | <0.03 | 4.7 | <0.02 | 1.5 | <0.01 | <1 | 2.0 | 22 |
| MW-2 | 11/4/2010 | 0.70 | 7066.83 | 5.8 | 57 | 9.5 | 201 | 4.0 | 57 | 1.9 | <0.1 | 3 | <1 | 49 | <0.03 | 6.4 | 0.080 | 1.8 | 0.010 | <1 | 3.0 | 25 |
| MW-2 | 7/21/2011 | 0.40 | 7067.13 | 6.2 | 42 | 7.2 | 179 | 0.4 | 42 | <0.2 | <0.1 | <1 | <1 | 59 | <0.03 | 4.5 | 0.116 | 1.4 | **0.200** | 0.8 | 1.8 | 22 |
| MW-2 | 9/8/2011 | 4.40 | 7063.13 | 6.4 | 56 | 10.2 | 77 | 1.7 | 56 | 0.6 | <0.1 | 2 | <1 | 70 | <0.03 | 5.3 | **1.540** | 2.1 | 0.014 | 1.0 | 2.6 | 27 |
| MW-2 | 10/20/2011 | 3.30 | 7064.23 | 6.1 | 67 | 10.8 | 121 | 2.1 | 67 | 1.0 | <0.1 | 1 | <1 | 60 | <0.03 | 6.5 | 0.034 | 2.0 | <0.01 | 1.0 | 2.5 | 33 |
| MW-2 | 6/26/2012 | 2.95 | 7064.58 | 6.2 | 40 | 9.9 | 70 | 0.7 | 40 | 0.3 | <0.1 | 2 | <1 | 53 | <0.03 | 6.0 | <0.02 | 1.9 | <0.01 | 0.9 | 2.5 | 30 |
| MW-2 | 7/31/2012 | 4.75 | 7062.78 | 6.3 | 74 | 9.7 | 139 | 0.9 | 74 | 0.8 | <0.2 | <1 | <1 | 67 | <0.03 | 8.4 | 0.054 | 2.7 | <0.01 | 1.0 | 3.7 | 35 |
| MW-2 | 10/9/2012 | 11.24 | 7056.29 | 5.9 | 100 | 9.0 | 691 | 2.6 | 100 | 8.7 | <0.2 | <1 | <1 | 81 | <0.03 | 7.0 | 0.029 | 2.1 | **0.220** | 1.4 | 8.6 | 30 |
| MW-2 | 5/30/2013 | 1.00 | 7066.53 | 6.1 | 43 | 8.3 | 150 | -- | 43 | 0.4 | <0.2 | <1 | <1 | 53 | <0.03 | 4.3 | <0.02 | 1.4 | <0.01 | 0.8 | 2.1 | 18 |
| MW-2 | 8/21/2013 | 7.00 | 7060.53 | 5.2 | 50 | 11.8 | 231 | 2.2 | 50 | 0.8 | <0.2 | <1 | <1 | 160 | <0.03 | 5.8 | 0.197 | 1.8 | **0.168** | 1.4 | 3.0 | 28 |
| MW-2 | 10/15/2013 | 12.41 | 7055.12 | 5.6 | 56 | 9.6 | 571 | 3.1 | 56 | 0.7 | <0.2 | <1 | <1 | 87 | <0.03 | 4.9 | 0.044 | 1.4 | 0.023 | 1.4 | 3.2 | 22 |
| MW-2 | 6/12/2014 | 1.54 | 7065.99 | 5.9 | 47 | 7.7 | 83 | 4.1 | 47 | 0.3 | <0.2 | <1 | <1 | 65 | <0.03 | 4.5 | <0.02 | 1.2 | <0.01 | 0.9 | 2.3 | 18 |
| MW-2 | 8/12/2014 | 7.94 | 7059.59 | 6.7 | 54 | 11.4 | 155 | 4.1 | 54 | 0.3 | <0.2 | <1 | <1 | 85 | <0.03 | 5.5 | <0.02 | 1.7 | 0.023 | 5.8 | 2.6 | 28 |
| MW-2 | 10/14/2014 | 10.28 | 7057.25 | 5.9 | 55 | 10.1 | 616 | 2.6 | 55 | 0.7 | <0.2 | <1 | <1 | 120 | <0.03 | 7.1 | 0.101 | 2.1 | 0.115 | 1.1 | 3.2 | 24 |
| MW-2 | 6/17/2015 | 1.94 | 7065.59 | 7.7 | 47 | 9.2 | 78 | 0.4 | 47 | 0.3 | <0.2 | <1 | <1 | 45 | <0.03 | 4.8 | <0.02 | 1.5 | <0.01 | 1.0 | 2.4 | 30 |
| MW-2 | 9/9/2015 | 10.31 | 7057.22 | 6.9 | 50 | 11.6 | 201 | 2.7 | 50 | 0.6 | <0.2 | <1 | <1 | 70 | <0.03 | 5.1 | <0.03 | 1.6 | 0.042 | 1.6 | 2.8 | 40 |
| MW-2 | 11/13/2015 | 8.81 | 7058.72 | 6.1 | 60 | 12.1 | 349 | -- | 60 | 0.9 | <0.2 | <1 | <1 | 90 | <0.03 | 5.9 | <0.03 | 1.9 | 0.023 | 1.0 | 2.4 | 26 |
| MW-2 | 7/7/2016 | 2.29 | 7065.24 | 5.7 | 49 | 11.2 | -- | -- | 49 | 0.3 | <0.2 | <1 | <1 | 54 | <0.03 | 5.9 | <0.03 | 1.5 | <0.01 | 0.9 | 2.3 | 30 |
| MW-2 | 9/8/2016 | 7.63 | 7059.90 | 6.3 | 70 | 10.6 | -- | -- | -- | 1.3 | <0.1 | 0.40 | <0.1 | 180 | <0.03 | 7.1 | <0.03 | 2.2 | <0.01 | 1.1 | 2.7 | 34 |
| MW-2 | 10/20/2016 | 2.04 | 7065.49 | 5.8 | 64.5 | 10.3 | -- | -- | -- | 2.2 | 0.2 | 0.35 | 0.14 | 54 | <0.03 | 6.9 | <0.03 | 2.1 | <0.01 | 1.1 | 3.2 | 28 |
| MW-3 | 10/30/2002 | 6.38 | 7049.99 | 6.3 | | | | | | 74.0 | <0.050 | NR[1] | | 256 | <0.10[T] | | **63[T]** | | **0.92[T]** | | 32[T] | |
| MW-3 | 7/29/2003 | | | 6.4 | 98 | 6.9 | | | | NR[3] | 0.3 | 1 | | 60 | NR[3] | | NR[3] | | NR[3] | | NR[3] | |
| MW-3 | 11/13/2003 | 6.30 | 7050.07 | 6.3 | | | | | | 8.6 | 0.06* | NR[1] | | | <0.10[T] | | **46[T]** | | **0.73[T]** | | 10.7[T] | |
| MW-3 | 6/22/2004 | 2.45 | 7053.92 | 6.1 | 94 | 4.2 | | | | NR[3] | 0.52 | 2 | | 122 | NR[3] | | **0.650** | | <0.02 | | NR[3] | |

**Bear Valley Water District**
Historic Groundwater Quality

| Well | Date | Depth To GW (ft) | GW Elev. (ft, NAVD88) | Field pH | Field EC (µS/cm) | Temp. (C) | ORP (mV) | Dissolved Oxygen (mg/L) | Lab SC (µS/cm) | Cl (mg/L) | NO3-N (mg/L) | TKN (mg/L) | Ammonia as N | TDS (mg/L) | B (mg/L) | Ca (mg/L) | Fe (mg/L) | Mg (mg/L) | Mn (mg/L) | K (mg/L) | Na (mg/L) | HCO3 as CaCO3 (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-3 | 9/1/2004 | 4.75 | 7051.62 | 6.6 | 100 | 7.2 | | | | NR[3] | 0.63 | <1.0 | | 124 | NR[3] | | **0.380** | | <0.02 | | NR[3] | |
| MW-3 | 10/13/2004 | 6.59 | 7049.78 | 6.1 | 85 | 8.9 | | | | 6.5 | 0.3 | <1 | <1 | 100 | 0.04 | | <0.02 | | <0.01 | | 7.0 | |
| MW-3 | 8/11/2005 | 3.12 | 7053.25 | 6.3 | 70 | 7.5 | 59 | 4.4 | 75 | 5.0 | 0.5 | <1 | <1 | 88 | <0.03 | 6.2 | 0.040 | 1.7 | <0.01 | <1 | 6.0 | 20 |
| MW-3 | 9/15/2005 | 2.97 | 7053.40 | 6.1 | 78 | 10.8 | 100 | 9.1 | 70 | 7.7 | <0.1 | <1 | <1 | 82 | <0.03 | 5.9 | 0.070 | 1.5 | <0.02 | 2.0 | 6.0 | 25 |
| MW-3 | 10/13/2005 | 3.48 | 7052.89 | 6.8 | NM | 10.1 | 84 | 4.4 | 92 | 11 | 0.4 | 2 | <1 | 80 | <0.03 | 7.3 | 0.030 | 2.2 | 0.040 | 2.0 | 7.0 | 20 |
| MW-3 | 6/29/2006 | 2.02 | 7054.35 | 7.6 | 50 | 6.3 | 180 | 2.7 | 56 | 3 | <0.1 | <1 | <1 | 49 | <0.03 | 4.3 | 0.030 | 1.2 | <0.01 | <1 | 4.0 | 20 |
| MW-3 | 8/2/2006 | 2.75 | 7053.62 | 7.7 | 88 | 7.9 | 70 | 3.6 | 68 | 5 | 0.2 | <1 | <1 | 72 | <0.03 | 5.4 | <0.02 | 1.5 | <0.01 | 2.0 | 6.0 | 20 |
| MW-3 | 10/10/2006 | 3.15 | 7053.22 | 6.4 | 76 | 8.7 | 169 | 2.6 | 82 | 7.4 | <0.1 | 2 | <1 | 82 | <0.03 | 6.6 | <0.02 | 2.0 | <0.01 | <1 | 6.0 | 20 |
| MW-3 | 7/12/2007 | 3.17 | 7053.20 | 6.2 | 59 | 10.4 | 249 | 4.2 | 66 | 4.3 | 0.2 | <1 | <1 | 91 | <0.03 | 5.9 | 0.053 | 1.6 | <0.01 | 2.0 | 8.0 | 28 |
| MW-3 | 8/29/2007 | 3.40 | 7052.97 | 6.4 | 89 | 13.6 | 176 | 4.5 | 97 | 11.0 | <0.1 | <1 | <1 | 71 | <0.03 | 7.5 | 0.024 | 1.8 | <0.01 | 1.7 | 6.0 | 25 |
| MW-3 | 9/26/2007 | 5.00 | 7051.37 | 5.8 | 89 | 10.9 | -109 | 7.8 | 96 | 11.0 | 0.1 | <1 | <1 | 90 | <0.03 | 7.5 | <0.02 | 2.1 | <0.01 | 2.0 | 7.0 | 30 |
| MW-3 | 7/8/2008 | 2.50 | 7053.87 | 6.4 | 47 | 8.8 | 218 | 2.5 | 66 | 5.3 | 0.1 | <1 | <1 | 72 | <0.03 | 5.0 | 0.210 | 2.0 | <0.01 | 1.0 | 6.0 | 35 |
| MW-3 | 9/18/2008 | 3.85 | 7052.52 | 6.0 | 93 | 12.8 | 681 | 3.9 | 97 | 13.0 | <0.1 | <1 | <1 | 94 | <0.03 | 6.8 | <0.02 | 1.9 | <0.01 | 2.0 | 7.0 | 20 |
| MW-3 | 10/16/2008 | 5.54 | 7050.83 | 7.0 | 101 | 11.6 | 109 | 5.1 | 110 | 16.0 | <0.1 | 0.15 | <1 | 94 | <0.03 | 10.0 | <0.02 | 2.7 | <0.01 | 2.0 | 7.0 | 30 |
| MW-3 | 7/7/2009 | 2.40 | 7053.97 | 6.1 | 77 | 6.0 | 680 | 1.4 | 81 | 11.0 | 0.5 | <1 | <1 | 100 | <0.03 | 7.1 | 0.060 | 1.9 | <0.01 | 1.0 | 6.0 | 20 |
| MW-3 | 9/30/2009 | 3.65 | 7052.72 | 5.5 | 106 | 12.4 | 211 | 1.7 | 110 | 12.0 | <0.1 | <1 | <1 | 100 | <0.03 | 9.3 | 0.060 | 2.0 | <0.01 | 3.0 | 8.0 | 40 |
| MW-3 | 10/26/2009 | 4.10 | 7052.27 | 5.7 | 61 | 10.5 | 239 | 6.1 | 77 | 8.6 | 0.9 | <1 | <1 | 70 | <0.03 | 4.9 | 0.100 | 1.4 | <0.01 | 2.0 | 6.0 | 15 |
| MW-3 | 7/13/2010 | 2.10 | 7054.27 | 6.1 | 58 | 3.8 | 116 | 1.8 | 58 | 3.6 | <0.1 | <1 | <1 | 60 | <0.03 | 3.8 | 0.030 | 0.6 | <0.01 | <1 | 5.0 | 20 |
| MW-3 | 8/24/2010 | 2.65 | 7053.72 | 5.8 | 79 | 11.8 | 153 | 0.8 | 79 | 6.1 | <0.1 | <1 | <1 | 87 | <0.03 | 6.3 | <0.02 | 1.8 | <0.01 | <1 | 7.0 | 27 |
| MW-3 | 11/4/2010 | 2.10 | 7054.27 | 5.6 | 105 | 9.8 | 157 | 0.7 | 110 | 12.0 | <0.1 | 3.00 | <1 | 92 | <0.03 | 8.5 | 0.020 | 2.2 | <0.01 | <1 | 8.0 | 25 |
| MW-3 | 7/21/2011 | 0.90 | 7055.47 | 6.2 | 52 | 3.6 | 113 | 2.3 | 52 | 2.4 | <0.1 | <1 | <1 | 56 | <0.03 | 3.9 | <0.02 | 1.0 | <0.01 | 0.9 | 3.8 | 16 |
| MW-3 | 9/8/2011 | 2.45 | 7053.92 | 6.1 | 71 | 9.5 | 122 | 0.5 | 71 | 3.1 | <0.1 | 2.00 | <1 | 62 | <0.03 | 5.1 | <0.02 | 1.6 | <0.01 | 1.1 | 5.3 | 22 |
| MW-3 | 10/20/2011 | 2.14 | 7054.23 | 6.1 | 76 | 8.2 | 123 | 0.9 | 76 | 3.7 | <0.1 | 1.00 | <1 | 68 | <0.03 | 5.7 | 0.032 | 1.5 | <0.01 | 1.2 | 5.5 | 27 |
| MW-3 | 6/26/2012 | 2.35 | 7054.02 | 6.0 | 48 | 6.3 | 84 | 0.4 | 48 | 3.8 | <0.1 | <1 | <1 | 64 | <0.03 | 6.1 | <0.02 | 1.7 | <0.01 | 1.3 | 6.4 | 30 |
| MW-3 | 7/31/2012 | 2.86 | 7053.51 | 6.0 | 89 | 12.1 | 157 | 0.0 | 89 | 6.3 | <0.2 | <1 | <1 | 69 | <0.03 | 7.7 | **0.330** | 2.0 | 0.029 | 1.4 | 6.1 | 35 |
| MW-3 | 10/9/2012 | 5.98 | 7050.39 | 5.7 | 85 | 9.4 | 436 | 1.2 | 85 | 5.3 | <0.2 | <1 | <1 | 72 | <0.03 | 6.5 | 0.067 | 1.8 | 0.017 | 1.3 | 6.2 | 35 |
| MW-3 | 5/30/2013 | 2.20 | 7054.17 | 5.9 | 54 | 7.0 | 147 | -- | 54 | 3.4 | <0.2 | <1 | <1 | 60 | <0.03 | 4.3 | 0.039 | 1.2 | 0.031 | 0.9 | 4.7 | 20 |
| MW-3 | 8/21/2013 | 4.90 | 7051.47 | 4.2 | 73 | 9.3 | 359 | 1.6 | 73 | 5.0 | <0.2 | <1 | <1 | 68 | <0.03 | 5.2 | 0.042 | 1.4 | 0.017 | 1.1 | 5.3 | 18 |
| MW-3 | 10/15/2013 | 6.11 | 7050.26 | 5.4 | 76 | 9.4 | 588 | 2.2 | 76 | 4.8 | <0.2 | <1 | <1 | 79 | <0.03 | 6.2 | <0.02 | 1.5 | <0.01 | 1.5 | 6.1 | 32 |
| MW-3 | 6/12/2014 | 2.33 | 7054.04 | 5.7 | 61 | 5.2 | 66 | 0.6 | 61 | 3.9 | <0.2 | <1 | <1 | 65 | <0.03 | 4.5 | <0.02 | 1.0 | <0.01 | 1.1 | 5.3 | 20 |
| MW-3 | 8/12/2014 | 4.62 | 7051.75 | 5.6 | 62 | 10.5 | 224 | 2.8 | 62 | 7.3 | 0.3 | <1 | <1 | 69 | <0.03 | 5.5 | 0.072 | 1.4 | 0.033 | 4.6 | 5.8 | 20 |
| MW-3 | 10/14/2014 | 7.12 | 7049.25 | 5.5 | 70 | 9.1 | 187 | 0.1 | 70 | 4.5 | <0.2 | <1 | <1 | 64 | <0.03 | 5.7 | 0.052 | 1.5 | 0.011 | 1.2 | 6.4 | 22 |
| MW-3 | 6/17/2015 | 1.98 | 7054.39 | 7.8 | 68 | 6.7 | 197 | 4.6 | 68 | 4.1 | 0.3 | <1 | <1 | 63 | <0.03 | 5.5 | <0.02 | 1.4 | <0.01 | 1.3 | 5.2 | 28 |
| MW-3 | 9/9/2015 | 4.87 | 7051.50 | 7.4 | 67 | 9.0 | 164 | 3.3 | 67 | 3.8 | <0.2 | <1 | <1 | 75 | <0.03 | 5.1 | <0.03 | 1.4 | <0.01 | 1.6 | 5.5 | 42 |
| MW-3 | 11/13/2015 | 5.78 | 7050.59 | 6.0 | 68 | 10.6 | 243 | -- | 68 | 4.1 | <0.2 | <1 | <1 | 67 | <0.03 | 5.3 | <0.03 | 1.5 | <0.01 | 1.1 | 5.1 | 24 |
| MW-3 | 7/7/2016 | 2.08 | 7054.29 | 5.7 | 68 | 5.7 | -- | -- | 68 | 5.3 | <0.2 | <1 | <1 | 69 | <0.03 | 6.1 | <0.03 | 1.5 | 0.022 | 1.1 | 4.9 | 30 |
| MW-3 | 9/8/2016 | 4.62 | 7051.75 | 5.5 | 87 | 12.7 | -- | -- | -- | 9.6 | <0.1 | 0.35 | <0.1 | 66 | <0.03 | 7.4 | <0.03 | 1.9 | 0.041 | 1.4 | 5.4 | 26 |
| MW-3 | 10/20/2016 | 2.37 | 7054.00 | 5.8 | 88 | 9.1 | -- | -- | -- | 9.9 | <0.1 | 0.35 | <0.1 | 71 | <0.03 | 7.4 | <0.03 | 2.0 | <0.01 | 1.5 | 6.1 | 27 |
| MW-4 | 10/30/2002 | 4.30 | 7050.49 | 7.0 | | | | | | 44.0 | <0.050 | NR[1] | | 294 | <0.10[T] | | **370[T]** | | **14.8[T]** | | 42[T] | |
| MW-4 | 7/29/2003 | | | 7.2 | 231 | 6.0 | | | | NR[3] | <0.1 | <0.5 | | 170 | NR[3] | | NR[3] | | NR[3] | | NR[3] | |
| MW-4 | 11/13/2003 | 3.96 | 7050.83 | 7.2 | | | | | | 5.5 | 0.05* | NR[1] | | | <0.10[T] | | **49[T]** | | **2.06[T]** | | 10.5[T] | |
| MW-4 | 6/22/2004 | 2.88 | 7051.91 | 6.8 | 254 | 4.7 | | | | NR[3] | 0.05 | <1.0 | | 172 | NR[3] | | 0.110 | | **0.080** | | NR[3] | |
| MW-4 | 9/1/2004 | 12.95 | 7041.84 | 6.4 | 278 | 7.3 | | | | NR[3] | <0.050 | <1.0 | | 167 | NR[3] | | 0.170 | | **0.190** | | NR[3] | |
| MW-4 | 10/13/2004 | 4.38 | 7050.41 | 6.8 | 230 | 8.8 | | | | 6.9 | <0.1 | <1 | <1 | 150 | 0.03 | | <0.02 | | **0.580** | | 9.0 | |

**Bear Valley Water District**
Historic Groundwater Quality

| Well | Date | Depth To GW (ft) | GW Elev. (ft, NAVD88) | Field pH | Field EC (µS/cm) | Temp. (C) | ORP (mV) | Dissolved Oxygen (mg/L) | Lab SC (µS/cm) | Cl (mg/L) | NO3-N (mg/L) | TKN (mg/L) | Ammonia as N | TDS (mg/L) | B (mg/L) | Ca (mg/L) | Fe (mg/L) | Mg (mg/L) | Mn (mg/L) | K (mg/L) | Na (mg/L) | HCO3 as CaCO3 (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-4 | 8/11/2005 | 3.22 | 7051.57 | 6.7 | 210 | 7.0 | 34 | 1.3 | 220 | 6.1 | <0.1 | <1 | <1 | 170 | <0.03 | 25.0 | 0.110 | 8.6 | 0.050 | 3.0 | 9.0 | 96 |
| MW-4 | 9/15/2005 | 3.10 | 7051.69 | 6.7 | 230 | 7.0 | 112 | 1.1 | 240 | 7.5 | 0.1 | <1 | <1 | 180 | <0.03 | 26.0 | <0.02 | 8.8 | **0.390** | 5.0 | 10.0 | 100 |
| MW-4 | 10/13/2005 | 3.20 | 7051.59 | 7.3 | 25 | 7.5 | 8 | 9.6 | 260 | 8.4 | 0.2 | 1 | <1 | 160 | <0.03 | 28.0 | **0.760** | 9.2 | **1.300** | 4.0 | 10.0 | 110 |
| MW-4 | 6/29/2006 | 2.65 | 7052.14 | 7.2 | 193 | 5.0 | 165 | 1.5 | 200 | 4.8 | 0.1 | <1 | <1 | 130 | <0.03 | 22.0 | 0.020 | 7.4 | 0.030 | 2.0 | 8.0 | 90 |
| MW-4 | 8/2/2006 | 3.08 | 7051.71 | 8.3 | 186 | 8.2 | 94 | 0.7 | 200 | 5.9 | <0.1 | <1 | <1 | 150 | <0.03 | 22.0 | <0.02 | 7.4 | 0.030 | 5.0 | 9.0 | 85 |
| MW-4 | 10/10/2006 | 3.00 | 7051.79 | 6.9 | 205 | 6.9 | 101 | 1.5 | 210 | 6.1 | <0.1 | 1 | <1 | 160 | <0.03 | 24.0 | <0.02 | 7.9 | 0.050 | <1 | 10.0 | 85 |
| MW-4 | 7/12/2007 | 3.70 | 7051.09 | 7.2 | 180 | 10.0 | 213 | 1.6 | 200 | 6.3 | <0.1 | 0.1 | <1 | 180 | <0.03 | 24.0 | 0.031 | 7.5 | **0.059** | 4.0 | 10.0 | 87 |
| MW-4 | 8/29/2007 | 3.30 | 7051.49 | 7.0 | 187 | 10.1 | 127 | 6.6 | 200 | 6.7 | <0.1 | <1 | <1 | 140 | <0.03 | 22.0 | 0.160 | 7.3 | **0.073** | 4.1 | 8.0 | 91 |
| MW-4 | 9/26/2007 | 3.60 | 7051.19 | 6.8 | 191 | 9.5 | -106 | 9.4 | 210 | 6.4 | <0.1 | <1 | <1 | 140 | <0.03 | 21.0 | 0.067 | 7.0 | **0.067** | 4.0 | 9.0 | 86 |
| MW-4 | 7/8/2008 | 3.00 | 7051.79 | 6.9 | 203 | 8.2 | 216 | 1.1 | 220 | 6.6 | <0.1 | <1 | <1 | 180 | <0.03 | 24.0 | 0.060 | 8.0 | 0.030 | 4.0 | 8.0 | 86 |
| MW-4 | 9/18/2008 | 3.49 | 7051.30 | 7.0 | 196 | 9.5 | 476 | 2.4 | 210 | 6.3 | <0.1 | <1 | <1 | 160 | <0.03 | 20.0 | <0.02 | 6.5 | <0.01 | 4.0 | 9.0 | 85 |
| MW-4 | 10/16/2008 | 3.75 | 7051.04 | 7.7 | 191 | 9.5 | 133 | 6.2 | 210 | 6.3 | <0.1 | <0.1 | <1 | 170 | <0.03 | 22.0 | 0.020 | 7.2 | <0.01 | 4.0 | 9.0 | 90 |
| MW-4 | 7/7/2009 | 3.35 | 7051.44 | 7.0 | 207 | 7.3 | 476 | 5.6 | 220 | 6.6 | 0.4 | 2 | <1 | 210 | <0.03 | 25.0 | 0.040 | 8.2 | 0.040 | 4.0 | 9.0 | 95 |
| MW-4 | 9/30/2009 | 3.30 | 7051.49 | 4.5 | 199 | 8.1 | 243 | 3.9 | 200 | 7.2 | <0.1 | <1 | <1 | 160 | <0.03 | 23.0 | 0.080 | 7.0 | <0.01 | 4.0 | 9.0 | 80 |
| MW-4 | 10/26/2009 | 3.35 | 7051.44 | 6.2 | 188 | 8.6 | 300 | 4.7 | 240 | 8.2 | 0.3 | <1 | <1 | 220 | <0.03 | 25.0 | 0.030 | 7.5 | 0.260 | 3.0 | 9.0 | 90 |
| MW-4 | 7/13/2010 | 2.50 | 7052.29 | 6.6 | 227 | 5.5 | 105 | 0.6 | 230 | 6.9 | <0.1 | <1 | <1 | 150 | <0.03 | 25.0 | 0.030 | 8.3 | <0.01 | 4.0 | 9.0 | 100 |
| MW-4 | 8/24/2010 | 3.03 | 7051.76 | 6.4 | 228 | 6.9 | 83 | 0.2 | 230 | 7.1 | <0.1 | <1 | <1 | 180 | <0.03 | 23.0 | <0.02 | 7.6 | 0.040 | 3.0 | 9.0 | 82 |
| MW-4 | 11/4/2010 | 2.15 | 7052.64 | 6.5 | 194 | 7.8 | 172 | 0.1 | 190 | 6.9 | <0.1 | <1 | <1 | 140 | <0.03 | 21.0 | <0.02 | 6.5 | 0.040 | 3.0 | 8.0 | 75 |
| MW-4 | 7/21/2011 | 1.60 | 7053.19 | 6.9 | 208 | 5.3 | 104 | 0.4 | 210 | 4.8 | <0.1 | <1 | <1 | 160 | <0.03 | 21.0 | <0.02 | 7.1 | <0.01 | 3.7 | 7.4 | 92 |
| MW-4 | 9/8/2011 | 2.85 | 7051.94 | 6.9 | 215 | 6.6 | 84 | 0.2 | 220 | 6.2 | <0.1 | 1 | <1 | 150 | <0.03 | 18.4 | <0.02 | 7.2 | 0.019 | 3.1 | 7.8 | 87 |
| MW-4 | 10/20/2011 | 2.30 | 7052.49 | 7.0 | 191 | 7.3 | 88 | 0.2 | 190 | 6.1 | <0.1 | <1 | <1 | 140 | <0.03 | 17.4 | <0.02 | 5.8 | **0.079** | 3.2 | 7.4 | 70 |
| MW-4 | 6/26/2012 | 2.55 | 7052.24 | 8.0 | 125 | 6.4 | 94 | 0.4 | 130 | 20.0 | <0.1 | <1 | <1 | 130 | <0.03 | 22.2 | <0.02 | 7.5 | 0.022 | 3.4 | 9.5 | 89 |
| MW-4 | 7/31/2012 | 3.00 | 7051.79 | 6.6 | 204 | 6.9 | 86 | 0.1 | 200 | 6.4 | <0.2 | 2 | <1 | 150 | <0.03 | 22.4 | <0.02 | 7.0 | 0.012 | 3.4 | 8.6 | 84 |
| MW-4 | 10/9/2012 | 4.30 | 7050.49 | 5.8 | 191 | 8.1 | 357 | 1.0 | 190 | 6.4 | <0.2 | <1 | <1 | 140 | <0.03 | 18.2 | 0.020 | 5.9 | 0.046 | 3.2 | 8.3 | 75 |
| MW-4 | 5/30/2013 | 2.30 | 7052.49 | 6.4 | 210 | 6.1 | 109 | -- | 210 | 6.9 | <0.2 | <1 | <1 | 150 | <0.03 | 20.8 | <0.02 | 7.2 | 0.027 | 3.5 | 7.7 | 86 |
| MW-4 | 8/21/2013 | 3.30 | 7051.49 | 6.5 | 200 | 8.2 | 448 | 0.4 | 200 | 6.8 | <0.2 | <1 | <1 | 140 | <0.03 | 18.8 | <0.02 | 6.3 | 0.030 | 3.4 | 7.5 | 89 |
| MW-4 | 10/15/2013 | 4.31 | 7050.48 | 6.6 | 200 | 8.9 | 553 | 0.5 | 200 | 6.8 | <0.2 | <1 | <1 | 150 | <0.03 | 21.8 | <0.02 | 6.5 | 0.014 | 4.0 | 8.2 | 91 |
| MW-4 | 6/12/2014 | 2.66 | 7052.13 | 5.6 | 227 | 6.1 | 129 | 0.3 | 230 | 7.3 | <0.2 | <1 | <1 | 160 | <0.03 | 23.1 | <0.02 | 8.2 | <0.01 | 4.1 | 8.5 | 89 |
| MW-4 | 8/12/2014 | 3.57 | 7051.22 | 6.9 | 208 | 7.9 | 213 | 0.1 | 210 | 6.8 | <0.2 | <1 | <1 | 160 | <0.03 | 21.8 | 0.026 | 6.9 | **0.068** | 4.0 | 8.5 | 92 |
| MW-4 | 10/14/2014 | 4.69 | 7050.10 | 6.7 | 201 | 9.0 | 574 | 0.1 | 200 | 6.8 | <0.2 | <1 | <1 | 130 | <0.03 | 18.9 | <0.02 | 6.8 | 0.009 | 3.2 | 7.7 | 78 |
| MW-4 | 6/17/2015 | 2.41 | 7052.38 | 7.1 | 217 | 7.1 | -7 | 0.1 | 220 | 6.9 | <0.2 | <1 | <1 | 140 | <0.03 | 20.7 | <0.02 | 7.0 | <0.01 | 3.4 | 7.7 | 86 |
| MW-4 | 9/9/2015 | 3.72 | 7051.07 | 6.7 | 203 | 9.1 | 109 | 0.2 | 200 | 6.8 | <0.2 | <1 | <1 | 160 | 0.034 | 20.1 | <0.03 | 6.6 | 0.024 | 3.9 | 8.2 | 110 |
| MW-4 | 11/13/2015 | 3.16 | 7051.63 | 6.8 | 189 | 8.9 | 253 | -- | 190 | 7.7 | <0.2 | <1 | <1 | 130 | <0.03 | 18.4 | <0.03 | 5.7 | <0.01 | 11.4 | 8.2 | 78 |
| MW-4 | 7/7/2016 | 2.82 | 7051.97 | 6.1 | 215 | 9.0 | -- | -- | 220 | 6.2 | <0.2 | <1 | <1 | 150 | <0.03 | 22.6 | <0.03 | 7.2 | 0.014 | 3.6 | 8.1 | 22 |
| MW-4 | 9/8/2016 | 3.58 | 7051.21 | 5.4 | 201 | 8.8 | -- | -- | -- | 6.7 | <0.1 | 0.66 | <0.1 | 180 | <0.03 | 20.9 | <0.03 | 6.7 | 0.037 | 3.4 | 8.2 | 92 |
| MW-4 | 10/20/2016 | 2.29 | 7052.50 | 6.1 | 169 | 8.5 | -- | -- | -- | 5.5 | 0.17 | 0.31 | <0.1 | 120 | <0.03 | 18.4 | <0.03 | 5.9 | <0.01 | 3.4 | 7.3 | 75 |
| MW-5 | 9/1/2004 | 12.95 | 7190.83 | 6.6 | 307 | 6.4 | | | | NR[3] | 0.064 | <1.0 | | 276 | NR[3] | | **1.280** | | **0.200** | | NR[3] | |
| MW-5 | 10/13/2004 | 13.74 | 7190.04 | 6.2 | 230 | 8.9 | | | | 28.0 | <0.1 | 2 | <1 | 340 | 0.08 | | <0.02 | | **0.230** | | 18.0 | |
| MW-5 | 8/11/2005 | 11.74 | 7192.04 | 6.3 | 110 | 15.7 | 51 | 4.2 | 120 | 5.5 | <0.1 | 2 | <1 | 180 | <0.03 | 1.0 | **0.620** | 4.4 | 0.060 | 1.0 | 6.0 | 45 |
| MW-5 | 9/15/2005 | 12.50 | 7191.28 | 7.0 | 170 | 11.2 | 41 | NS | 120 | 5.8 | 0.1 | <1 | <1 | 170 | <0.03 | 12.0 | **0.750** | 4.6 | **0.130** | 3.0 | 7.0 | 51 |
| MW-5 | 10/13/2005 | 9.27 | 7194.51 | 6.5 | 103 | 8.8 | 133 | 8.5 | 110 | 8.5 | 0.2 | <1 | <1 | 120 | <0.03 | 8.9 | 0.210 | 3.9 | 0.040 | 3.0 | 6.0 | 35 |
| MW-5 | 6/29/2006 | 12.50 | 7191.28 | 7.6 | 71 | 14.7 | 159 | 6.5 | 81 | 4.1 | <0.1 | <1 | <1 | 120 | <0.03 | 5.8 | 0.280 | 2.5 | 0.050 | 2.0 | 4.0 | 25 |
| MW-5 | 8/2/2006 | 11.49 | 7192.29 | 8.4 | 34 | 19.8 | 98 | 5.0 | 98 | 8.0 | <0.1 | <1 | <1 | 120 | <0.03 | 6.4 | 0.090 | 2.5 | 0.040 | 3.0 | 8.0 | 35 |
| MW-5 | 10/11/2006 | 11.89 | 7191.89 | 5.8 | 93 | 8.4 | 186 | 5.7 | 110 | 3.6 | <0.1 | 1 | <1 | 170 | <0.03 | 12.0 | **0.540** | 4.6 | **0.060** | <1 | 6.0 | 45 |
| MW-5 | 7/12/2007 | 13.10 | 7190.68 | 6.1 | 142 | 13.9 | 226 | NS | | | | | | | | | | | | | | |
| MW-5 | 8/29/2007 | 13.50 | 7190.28 | Well pumped dry before sampling | | | | | | | | | | | | | | | | | | |

**Bear Valley Water District**
Historic Groundwater Quality

| Well | Date | Depth To GW (ft) | GW Elev. (ft, NAVD88) | Field pH | Field EC (µS/cm) | Temp. (C) | ORP (mV) | Dissolved Oxygen (mg/L) | Lab SC (µS/cm) | Cl (mg/L) | NO3-N (mg/L) | TKN (mg/L) | Ammonia as N | TDS (mg/L) | B (mg/L) | Ca (mg/L) | Fe (mg/L) | Mg (mg/L) | Mn (mg/L) | K (mg/L) | Na (mg/L) | HCO3 as CaCO3 (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-5 | 9/26/2007 | 13.70 | 7190.08 | 6.7 | 88 | 11.6 | -87 | 8.9 | | | | | | | | | | | | | | |
| MW-5 | 7/8/2008 | 13.00 | 7190.78 | 7.3 | 104 | 15.1 | 136 | NS | | | | | | | | | | | | | | |
| MW-5 | 9/18/2008 | 13.80 | 7189.98 | Well pumped dry before sampling | | | | | | | | | | | | | | | | | | |
| MW-5 | 10/16/2008 | 13.95 | 7189.83 | Well pumped dry before sampling | | | | | | | | | | | | | | | | | | |
| MW-5 | 7/7/2009 | 12.80 | 7190.98 | 6.7 | 214 | 11.0 | 818 | 8.1 | 130 | 4.8 | 0.3 | <1 | <1 | 230 | <0.03 | 11.0 | **0.430** | 3.8 | **0.100** | 2.0 | 10.0 | 45 |
| MW-5 | 9/30/2009 | 13.30 | 7190.48 | 6.3 | 109 | 8.6 | 141 | 4.6 | 130 | 5.3 | 0.4 | NS | NS | NS | 0.23 | 9.9 | <0.02 | 3.4 | 0.050 | 2.0 | 22.0 | NS |
| MW-5 | 10/26/2009 | 13.25 | 7190.53 | Well pumped dry before sampling | | | | | | | | | | | | | | | | | | |
| MW-5 | 7/13/2010 | 11.50 | 7192.28 | 6.0 | 94 | 8.0 | 158 | 2.5 | 94 | 5.1 | <0.1 | <1 | <1 | 200 | <0.03 | 8.0 | 0.270 | 2.7 | **0.060** | 3.0 | 5.0 | 35 |
| MW-5 | 8/24/2010 | 12.52 | 7191.26 | 6.7 | 95 | 11.0 | 129 | 7.1 | 95 | 4.8 | <0.1 | <1 | <1 | 170 | <0.03 | 7.9 | <0.02 | 3.3 | 0.020 | 1.0 | 5.0 | 37 |
| MW-5 | 11/4/2010 | 12.15 | 7191.63 | 6.1 | 98 | 7.4 | 209 | 6.5 | 98 | 5.5 | <0.1 | <1 | <1 | 84 | 0.06 | 7.5 | <0.02 | 3.0 | 0.020 | 2.0 | 6.0 | 41 |
| MW-5 | 7/21/2011 | 9.15 | 7194.63 | 4.9 | 74 | 5.7 | 115 | 4.4 | 74 | 3.6 | <0.1 | <1 | <1 | 100 | <0.03 | 5.9 | 0.121 | 2.3 | **0.072** | 1.9 | 4.1 | 27 |
| MW-5 | 9/8/2011 | 12.50 | 7191.28 | 6.5 | 101 | 8.0 | 102 | 5.7 | 100 | 4.0 | <0.1 | 1 | <1 | 150 | <0.03 | 8.2 | **2.400** | 4.0 | **0.056** | 2.2 | 5.1 | 43 |
| MW-5 | 10/20/2011 | 11.58 | 7192.20 | 6.0 | 95 | 7.0 | 157 | 4.5 | 95 | 4.5 | <0.1 | <1 | <1 | 150 | <0.03 | 8.1 | 0.216 | 3.0 | 0.012 | 2.2 | 4.1 | 38 |
| MW-5 | 6/26/2012 | 12.70 | 7191.08 | 6.9 | 26 | 7.1 | 58 | 15.3 | 120 | 8.2 | 0.1 | <1 | <1 | 130 | 0.074 | 9.5 | 0.039 | 3.9 | **0.054** | 4.6 | 6.9 | 39 |
| MW-5 | 7/31/2012 | 11.87 | 7191.91 | 6.3 | 106 | 9.7 | 231 | 5.3 | 110 | 4.7 | <0.2 | <1 | <1 | 120 | <0.03 | 10.2 | <0.02 | 3.7 | 0.037 | 2.4 | 4.8 | 39 |
| MW-5 | 10/9/2012 | 14.64 | 7189.14 | Well pumped dry before sampling | | | | | | | | | | | | | | | | | | |
| MW-5 | 5/30/2013 | 13.20 | 7190.58 | 6.0 | 85 | 9.9 | 390 | -- | 85 | 4.7 | <0.2 | <1 | <1 | 140 | <0.03 | 6.6 | 0.151 | 2.7 | 0.049 | 1.5 | 4.8 | 38 |
| MW-5 | 8/21/2013 | 12.99 | 7190.79 | 6.0 | 40 | 21.8 | 702 | 6.2 | 40 | 5.1 | <0.2 | <1 | <1 | 110 | <0.03 | 6.2 | 0.074 | 2.3 | 0.016 | 1.7 | 3.9 | 26 |
| MW-5 | 10/15/2013 | 14.06 | 7189.72 | 8.1 | 91 | 10.2 | 694 | 11.6 | 91 | 11.0 | <0.2 | <1 | <1 | 160 | <0.03 | 6.8 | <0.02 | 2.6 | <0.01 | 2.4 | 10.1 | 33 |
| MW-5 | 6/12/2014 | 13.11 | 7190.67 | 5.8 | 80 | 11.3 | 692 | 7.8 | 80 | 5.1 | <0.2 | <1 | <1 | 240 | <0.03 | 6.9 | 0.046 | 3.0 | <0.01 | 2.4 | 4.3 | 36 |
| MW-5 | 8/12/2014 | 13.01 | 7190.77 | 5.6 | 111 | 3.3 | 279 | 3.3 | 110 | 6.0 | <0.2 | <1 | <1 | 120 | <0.03 | 10.1 | 0.284 | 3.9 | **0.063** | 3.2 | 5.4 | 46 |
| MW-5 | 10/14/2014 | 14.23 | 7189.55 | Well pumped dry before sampling | | | | | | | | | | | | | | | | | | |
| MW-5 | 6/17/2015 | 13.19 | 7190.59 | 4.5 | 106 | 11.7 | 418.2 | 6.9 | 110 | 6.4 | <0.2 | <1 | <1 | 150 | 0.041 | 8.7 | <0.02 | 3.5 | **0.137** | 2.6 | 4.8 | 42 |
| MW-5 | 9/9/2015 | 12.44 | 7191.34 | 7.0 | 108 | 11.8 | 675.4 | 5.4 | 110 | 6.8 | <0.2 | <1 | <1 | 220 | <0.03 | 9.6 | <0.03 | 3.9 | **0.078** | 3.3 | 5.5 | 46 |
| MW-5 | 11/12/2015 | 13.23 | 7190.55 | 6.6 | 108 | 7.7 | 200.1 | -- | 110 | 6.7 | <0.2 | <1 | <1 | 220 | <0.03 | 9.5 | <0.03 | 3.7 | **0.071** | 1.4 | 4.2 | 42 |
| MW-5 | 7/7/2016 | 12.05 | 7191.73 | 5.6 | 110 | 9.3 | -- | -- | 110 | 6.3 | <0.2 | <1 | <1 | 130 | <0.03 | 15.5 | <0.03 | 5.1 | **0.034** | 3.2 | 6.5 | 46 |
| MW-5 | 9/8/2016 | 13.26 | 7190.52 | 7.0 | 121 | 11.3 | -- | -- | IVS | | | | | | | | | | | | | |
| MW-5 | 10/20/2016 | 12.56 | 7191.22 | Well would not pump | | | | | | | | | | | | | | | | | | |
| MW-6 | 10/30/2002 | 6.45 | 7053.04 | 6.6 | | | | | | 59.0 | <0.050 | NR[1] | | 376 | <0.10[T] | | **335[T]** | | **6.89[T]** | | 36[T] | |
| MW-6 | 7/29/2003 | | | 7.1 | 457 | 7.5 | | | | NR[3] | <0.1 | <0.5 | | 260 | NR[3] | | NR[3] | | NR[3] | | NR[3] | |
| MW-6 | 11/13/2003 | 6.17 | 7053.32 | 7.0 | | | | | | 6.9 | <0.050* | NR[1] | | | <0.10[T] | | **132[T]** | | **4.78[T]** | | 18.5[T] | |
| MW-6 | 6/22/2004 | 2.14 | 7057.35 | 7.1 | 508 | 4.5 | | | | NR[3] | <0.05 | <1.0 | | 280 | NR[3] | | 0.210 | | **1.760** | | NR[3] | |
| MW-6 | 9/1/2004 | 5.43 | 7054.06 | 6.8 | 479 | 6.5 | | | | NR[3] | <0.050 | <1.0 | | 297 | NR[3] | | **0.390** | | **2.190** | | NR[3] | |
| MW-6 | 10/13/2004 | 6.39 | 7053.10 | 7.1 | 470 | 7.5 | | | | 6.6 | <0.1 | <1 | <1 | 320 | 0.03 | | <0.02 | | **2.100** | | 16.0 | |
| MW-6 | 8/11/2005 | 3.21 | 7056.28 | 6.9 | 470 | 6.9 | 14 | 1.5 | 500 | 7.0 | <0.1 | <1 | <1 | 300 | <0.03 | 71.0 | **0.650** | 16.0 | **2.400** | 5.0 | 17.0 | 250 |
| MW-6 | 9/15/2005 | 4.71 | 7054.78 | 6.7 | 440 | 7.0 | 41 | <0.2 | 460 | 7.1 | 0.2 | 1 | <1 | 290 | <0.03 | 66.0 | **0.340** | 15.0 | **2.200** | 4.0 | 17.0 | 240 |
| MW-6 | 10/13/2005 | 5.15 | 7054.34 | 7.1 | 450 | 7.3 | 10 | 8.8 | 470 | 7.0 | 0.2 | <1 | <1 | 290 | <0.03 | 62.0 | **0.530** | 14.0 | **2.200** | 4.0 | 16.0 | 240 |
| MW-6 | 6/29/2006 | 1.11 | 7058.38 | 7.5 | 431 | 7.6 | 25 | 0.6 | 450 | 7.4 | <0.1 | <1 | <1 | 270 | <0.03 | 62.0 | 0.290 | 14.0 | **2.100** | <1 | 15.0 | 230 |
| MW-6 | 8/2/2006 | 3.63 | 7055.86 | 7.6 | 417 | 8.6 | -38 | 0.5 | 460 | 6.7 | <0.1 | <1 | <1 | 280 | <0.03 | 62.0 | 0.300 | 14.0 | **2.100** | 3.0 | 16.0 | 230 |
| MW-6 | 10/10/2006 | 5.60 | 7053.89 | 7.3 | 476 | 7.1 | -12 | 2.5 | 500 | 6.7 | <0.1 | <1 | <1 | 300 | <0.03 | 70.0 | **0.310** | 15.0 | **2.400** | <1 | 17.0 | 250 |
| MW-6 | 7/12/2007 | 4.40 | 7055.09 | 7.1 | 434 | 8.0 | 52 | 2.3 | 460 | 6.3 | <0.1 | <1 | <1 | 370 | <0.03 | 68.0 | **0.300** | 15.0 | **2.400** | 6.0 | 17.0 | 233 |
| MW-6 | 8/29/2007 | 5.90 | 7053.59 | 7.1 | 461 | 8.8 | 45 | 4.5 | 490 | 7.4 | <0.1 | <1 | <1 | 280 | <0.03 | 69.0 | **0.430** | 15.0 | **2.600** | 4.3 | 17.0 | 260 |
| MW-6 | 9/26/2007 | 6.70 | 7052.79 | 6.9 | 473 | 8.4 | -123 | 9.9 | 500 | 7.2 | <0.1 | <1 | <1 | 280 | <0.03 | 65.0 | **0.520** | 15.0 | **2.500** | 5.0 | 16.0 | 260 |
| MW-6 | 7/8/2008 | 3.00 | 7056.49 | 7.0 | 473 | 8.1 | 21 | 3.1 | 500 | 6.9 | <0.1 | <1 | <1 | 330 | <0.03 | 67.0 | **0.450** | 16.0 | **2.300** | 4.0 | 15.0 | 236 |
| MW-6 | 9/18/2008 | 6.13 | 7053.36 | 7.1 | 490 | 8.1 | 78 | 2.7 | 510 | 6.7 | <0.1 | <1 | <1 | 390 | <0.03 | 69.0 | 0.220 | 16.0 | **2.400** | 4.0 | 17.0 | 270 |

**Bear Valley Water District**
Historic Groundwater Quality

| Well | Date | Depth To GW (ft) | GW Elev. (ft, NAVD88) | Field pH | Field EC (µS/cm) | Temp. (C) | ORP (mV) | Dissolved Oxygen (mg/L) | Lab SC (µS/cm) | Cl (mg/L) | NO3-N (mg/L) | TKN (mg/L) | Ammonia as N | TDS (mg/L) | B (mg/L) | Ca (mg/L) | Fe (mg/L) | Mg (mg/L) | Mn (mg/L) | K (mg/L) | Na (mg/L) | HCO3 as CaCO3 (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-6 | 10/16/2008 | 6.85 | 7052.64 | 7.3 | 481 | 7.1 | 18 | 8.3 | 510 | 7.0 | <0.1 | <0.1 | <1 | 320 | <0.03 | 70.0 | **0.580** | 16.0 | **2.700** | 4.0 | 16.0 | 270 |
| MW-6 | 7/7/2009 | 2.70 | 7056.79 | 7.2 | 490 | 7.3 | 232 | 2.0 | 500 | 7.1 | <0.1 | <1 | <1 | 370 | <0.03 | 71.0 | **0.900** | 16.0 | **2.800** | 4.0 | 16.0 | 260 |
| MW-6 | 9/30/2009 | 6.50 | 7052.99 | 6.8 | 464 | 7.3 | -32 | 1.8 | 510 | 7.3 | <0.1 | <1 | <1 | 320 | <0.03 | 71.0 | **0.630** | 15.0 | **2.900** | 5.0 | 16.0 | 260 |
| MW-6 | 10/26/2009 | 5.40 | 7054.09 | 6.7 | 389 | 7.1 | 24 | 0.3 | 520 | 7.2 | <0.1 | <1 | <1 | 320 | <0.03 | 68.0 | **1.000** | 15.0 | **2.700** | 4.0 | 16.0 | 250 |
| MW-6 | 7/13/2010 | 1.70 | 7057.79 | 6.8 | 485 | 5.5 | -98 | 0.5 | 490 | 7.0 | <0.1 | <1 | <1 | 310 | <0.03 | 66.0 | **0.620** | 15.0 | **2.600** | 4.0 | 16.0 | 250 |
| MW-6 | 8/24/2010 | 4.66 | 7054.83 | 6.7 | 497 | 6.3 | -25 | 0.3 | 500 | 6.4 | <0.1 | <1 | <1 | 430 | <0.03 | 64.0 | <0.02 | 15.0 | **2.700** | 3.0 | 19.0 | 230 |
| MW-6 | 11/4/2010 | 1.05 | 7058.44 | 6.5 | 479 | 6.9 | -22 | 0.4 | 480 | 6.3 | <0.1 | <1 | <1 | 330 | <0.03 | 63.0 | **0.710** | 14.0 | **3.100** | 2.0 | 15.0 | 230 |
| MW-6 | 7/21/2011 | 0.70 | 7058.79 | 7.0 | 492 | 5.5 | 43 | 0.3 | 490 | 6.6 | <0.1 | <1 | <1 | 320 | <0.03 | 55.1 | **0.582** | 14.0 | **2.160** | 4.3 | 15.7 | 270 |
| MW-6 | 9/8/2011 | 4.33 | 7055.16 | 7.0 | 507 | 6.3 | -38 | 0.4 | 510 | 6.1 | <0.1 | <1 | <1 | 280 | <0.03 | 57.3 | **0.616** | 15.8 | **2.530** | 3.5 | 13.6 | 270 |
| MW-6 | 10/20/2011 | 1.86 | 7057.63 | 6.6 | 416 | 6.5 | 17 | 0.7 | 420 | 4.0 | <0.1 | <1 | <1 | 250 | <0.03 | 43.8 | **0.793** | 11.9 | **2.380** | 3.7 | 13.5 | 190 |
| MW-6 | 6/26/2012 | 2.60 | 7056.89 | 6.8 | 310 | 5.2 | 62 | 1.1 | 310 | 6.2 | <0.1 | <1 | <1 | 300 | <0.03 | 66.8 | **0.724** | 16.8 | **4.090** | 3.7 | 15.6 | 230 |
| MW-6 | 7/31/2012 | 4.65 | 7054.84 | 6.8 | 516 | 6.4 | 29 | 0.1 | 520 | 6.1 | <0.2 | <1 | <1 | 310 | <0.03 | 65.1 | **0.493** | 15.2 | **2.920** | 3.8 | 15.1 | 260 |
| MW-6 | 10/9/2012 | 7.80 | 7051.69 | 6.7 | 525 | 6.7 | 28 | 1.3 | 530 | 6.4 | <0.2 | <1 | <1 | 340 | <0.03 | 60.9 | **0.812** | 15.3 | **2.280** | 4.1 | 15.0 | 290 |
| MW-6 | 5/30/2013 | 6.48 | 7053.01 | 6.5 | 375 | 6.2 | -3 | -- | 380 | 4.7 | <0.2 | <1 | <1 | 250 | <0.03 | 44.0 | 0.107 | 10.6 | **2.070** | 3.3 | 12.3 | 190 |
| MW-6 | 8/21/2013 | 5.10 | 7054.39 | 6.5 | 469 | 8.5 | 18 | 0.5 | 470 | 6.1 | <0.2 | <1 | <1 | 270 | <0.03 | 54.2 | **0.644** | 13.4 | **2.700** | 3.9 | 13.9 | 250 |
| MW-6 | 10/15/2013 | 6.71 | 7052.78 | 6.3 | 523 | 7.5 | 52 | 0.8 | 520 | 6.4 | <0.2 | <1 | <1 | 310 | <0.03 | 76.4 | **0.698** | 16.2 | **2.700** | 4.4 | 16.2 | 270 |
| MW-6 | 6/12/2014 | 2.60 | 7056.89 | 5.9 | 455 | 5.9 | 7 | 0.4 | 490 | 6.2 | <0.2 | <1 | <1 | 310 | <0.03 | 62.1 | **0.521** | 15.4 | **2.780** | 4.6 | 14.7 | 260 |
| MW-6 | 8/12/2014 | 4.90 | 7054.59 | 5.7 | 529 | 7.4 | 42 | 0.1 | 530 | 6.6 | <0.2 | 2 | <1 | 370 | <0.03 | 72.7 | **0.747** | 16.0 | **2.870** | 4.9 | 15.7 | 310 |
| MW-6 | 10/14/2014 | 6.96 | 7052.53 | 6.5 | 549 | 7.5 | 48 | 0.5 | 550 | 6.8 | <0.2 | <1 | <1 | 370 | <0.03 | 67.6 | **0.736** | 17.5 | **2.910** | 4.3 | 14.9 | 280 |
| MW-6 | 6/17/2015 | 2.12 | 7057.37 | 7.4 | 342 | 6.6 | 49 | 0.1 | 340 | 4.0 | 0.3 | <1 | <1 | 240 | 0.03 | 39.3 | <0.02 | 9.5 | **1.850** | 2.4 | 10.5 | 190 |
| MW-6 | 9/9/2015 | 4.50 | 7054.99 | 6.5 | 457 | 8.4 | 96 | 0.8 | 460 | 5.2 | <0.2 | <1 | <1 | 280 | 0.045 | 57.2 | **0.656** | 13.7 | **2.710** | 3.3 | 14.2 | 250 |
| MW-6 | 11/12/2015 | 0.00 | 7059.49 | 6.2 | 209 | 8.1 | 93 | -- | 210 | 9.7 | <0.2 | <1 | <1 | 120 | <0.03 | 23.8 | **0.176** | 6.0 | **0.815** | 1.4 | 7.5 | 90 |
| MW-6 | 7/7/2016 | 2.15 | 7057.34 | 6.3 | 325 | 7.1 | -- | -- | 330 | 4.5 | <0.2 | <1 | <1 | 190 | <0.03 | 40.6 | **0.800** | 9.5 | **1.840** | 2.6 | 11.0 | 170 |
| MW-6 | 9/8/2016 | 5.84 | 7053.65 | 6.2 | 451 | 7.8 | -- | -- | -- | 6.0 | <0.1 | 0.31 | 0.1 | 280 | <0.03 | 59.4 | **0.838** | 13.9 | **2.840** | 3.3 | 14.5 | 226 |
| MW-6 | 10/20/2016 | 3.53 | 7055.96 | 6.9 | 362 | 7.3 | -- | -- | -- | 4.7 | <0.1 | 0.44 | 0.11 | 230 | <0.03 | 48.5 | **0.812** | 11.5 | **2.090** | 2.9 | 12.3 | 183 |
| Discharge Pump | 8/11/2005 | | | | | | | | 190 | 13.0 | <0.1 | 12 | 8.5 | 120 | <0.03 | 6.8 | **0.630** | 1.3 | **0.200** | 3.0 | 14.0 | 40 |
| Discharge Pump | 9/15/2005 | | | | | | | 0.3 | 250 | 17.0 | 1.1 | 8 | 6.4 | 140 | 0.06 | 7.5 | **1.000** | 1.8 | 0.050 | 5.0 | 23.0 | 61 |
| Discharge Pump | 10/13/2005 | | | | | | | | 290 | 20.0 | 1.7 | 13 | 11.0 | 150 | 0.06 | 6.8 | **0.840** | 1.7 | 0.040 | 6.0 | 24.0 | 76 |
| Discharge Pump | 6/29/2006 | | | | | | | | 180 | 13.0 | <0.1 | 8 | 7.0 | 100 | 0.04 | 6.8 | **2.600** | 1.4 | **0.500** | 7.0 | 13.0 | 55 |
| Discharge Pump | 8/2/2006 | | | | | | | | 230 | 17.0 | 0.1 | 12 | 9.0 | 120 | 0.05 | 7.1 | **0.940** | 4.5 | **0.060** | 6.0 | 18.0 | 70 |
| Discharge Pump | 10/11/2006 | | | | | | | | 150 | 16.0 | 0.7 | 12 | 10.0 | 100 | 0.06 | 8.1 | **0.400** | 2.0 | 0.050 | <1 | 23.0 | 70 |
| Discharge Pump | 7/12/2007 | | | | | | | | 170 | 12.0 | <0.1 | 7 | 4.3 | 210 | <0.03 | 7.2 | **2.700** | 1.5 | **0.400** | 6.0 | 17.0 | 52.8 |
| Discharge Pump | 7/8/2008 | | | 7.3 | 225 | 20.0 | 98 | 3.1 | 240 | 15.0 | <0.1 | <1 | <1 | 140 | 0.05 | 13.0 | **1.800** | 3.0 | **0.460** | 6.0 | 18.0 | 75 |
| Discharge Pump | 9/18/2008 | | | 8.3 | 143 | 18.6 | 219 | 8.8 | 230 | 22.0 | <0.1 | <1 | <1 | 230 | 0.07 | 3.2 | **3.000** | 0.6 | **0.150** | 5.0 | 25.0 | 28 |
| Discharge Pump | 10/16/2008 | | | | | | | | 320 | 21.0 | 0.5 | 4.97 | <1 | 250 | 0.08 | 16.0 | **1.300** | 3.4 | **0.120** | 7.0 | 34.0 | 15 |
| Discharge Pump | 7/7/2009 | | | | | | | | 300 | 19.0 | <0.1 | 14.00 | <1 | 180 | 0.05 | 12.0 | **1.500** | 2.1 | **0.290** | 6.0 | 23.0 | 95 |
| Treatment Pond | 8/11/2005 | | | | | | | | 76 | 3.1 | <0.1 | 14 | 9.6 | 120 | 0.04 | 7.3 | 0.170 | 1.7 | 0.020 | 5.0 | 20.0 | 30 |
| Treatment Pond | 9/15/2005 | | | | | | | 2.8 | 260 | 17.0 | 2.1 | 10 | 8.1 | 130 | 0.07 | 8.5 | 0.120 | 1.8 | 0.030 | 6.0 | 24.0 | 66 |
| Treatment Pond | 10/13/2005 | | | | | | | | 290 | 20.0 | 1.7 | 15 | 11.0 | 150 | 0.05 | 9.8 | 0.210 | 2.4 | **0.090** | 6.0 | 22.0 | 76 |
| Treatment Pond | 6/29/2006 | | | | | | | | 180 | 10.0 | 0.1 | 9 | 8.0 | 91 | 0.03 | 6.1 | 0.290 | 1.3 | 0.040 | 5.0 | 22.0 | 55 |
| Treatment Pond | 8/2/2006 | | | | | | | | 230 | 13.0 | 0.1 | 13 | 9.0 | 130 | <0.03 | <0.03 | **0.580** | 4.6 | 0.040 | 5.0 | 18.0 | 75 |
| Treatment Pond | 10/11/2006 | | | | | | | | 340 | 17.0 | 1.1 | 19 | 16.0 | 150 | 0.09 | 10.0 | **0.620** | 2.2 | 0.030 | <1 | 30.0 | 110 |
| Treatment Pond | 7/12/2007 | | | | | | | | 270 | 16.0 | 0.2 | 18 | 11.6 | 240 | 0.042 | 9.7 | **0.550** | 1.9 | 0.070 | 8.0 | 25.0 | 90.8 |
| Treatment Pond | 7/8/2008 | | | 7.8 | 281 | 26.2 | 102 | 3.0 | 300 | 16.0 | 0.4 | 14 | <1 | 180 | 0.06 | 9.0 | **0.470** | 2.0 | 0.040 | 7.0 | 25.0 | 50 |
| Treatment Pond | 9/18/2008 | | | 7.3 | 401 | 16.0 | 213 | 7.8 | 420 | 20.0 | 0.7 | 22 | 16.0 | 240 | 0.08 | 11.0 | **0.520** | 2.0 | 0.060 | 10.0 | 35.0 | 190 |

**Bear Valley Water District**
Historic Groundwater Quality

| Well | Date | Depth To GW (ft) | GW Elev. (ft, NAVD88) | Field pH | Field EC (µS/cm) | Temp. (C) | ORP (mV) | Dissolved Oxygen (mg/L) | Lab SC (µS/cm) | Cl (mg/L) | NO3-N (mg/L) | TKN (mg/L) | Ammonia as N | TDS (mg/L) | B (mg/L) | Ca (mg/L) | Fe (mg/L) | Mg (mg/L) | Mn (mg/L) | K (mg/L) | Na (mg/L) | HCO3 as CaCO3 (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Treatment Pond | 10/16/2008 | | | | | | | | 400 | 21.0 | 1.4 | 23 | <1 | 200 | 0.08 | 12.0 | **0.340** | 2.3 | 0.020 | 10.0 | 36.0 | 130 |
| Treatment Pond | 7/7/2009 | | | | | | | | 250 | 14.0 | 1 | 12 | <1 | 200 | 0.04 | 9.9 | **0.310** | 1.8 | 0.050 | 6.0 | 20.0 | 75 |
| Bloods Creek Upstream | 8/11/2005 | | | | | | | | 67 | 2.0 | <0.1 | 2 | <1 | 86 | <0.03 | 6.5 | 0.360 | 1.6 | 0.020 | <1 | 5.0 | 30 |
| Bloods Creek Upstream | 6/20/2006 | | | | | | | | 34 | 1.2 | <0.1 | <1 | <1 | 46 | <0.03 | 3.1 | <0.02 | 0.7 | <0.01 | <1 | 1.0 | 10 |
| Bloods Creek Upstream | 7/12/2007 | | | | | | | | 57 | 1.1 | <0.1 | <1 | <1 | 69 | <0.03 | 6.5 | 0.210 | 1.3 | 0.060 | 2.0 | 5.0 | 25.6 |
| Bloods Creek Upstream | 7/8/2008 | | | 7.2 | 66 | 24.6 | 204 | 5.8 | 51 | 1.8 | <0.1 | <1 | <1 | 64 | <0.03 | 5.0 | 0.170 | 1.0 | 0.020 | 2.0 | 5.0 | 24 |
| Bloods Creek Upstream | 7/7/2009 | | | | | | | | 56 | 2.2 | <0.1 | <1 | <1 | 100 | <0.03 | 5.9 | 0.280 | 1.3 | 0.040 | 1.0 | 4.0 | 15 |
| Bloods Creek Downstream | 8/11/2005 | | | | | | | | 76 | 3.2 | <0.1 | 2 | <1 | 100 | 0.05 | 7.3 | 0.160 | 1.7 | 0.020 | 6.0 | 20.0 | 81 |
| Bloods Creek Downstream | 6/20/2006 | | | | | | | | 40 | 1.4 | <0.1 | <1 | <1 | 84 | <0.03 | 3.7 | 0.050 | 0.9 | <0.01 | <1 | 1.0 | 15 |
| Bloods Creek Downstream | 7/12/2007 | | | | | | | | 71 | 2.6 | <0.1 | <1 | <1 | 110 | <0.03 | 7.7 | **0.340** | 2.1 | 0.020 | 6.0 | 5.0 | 30 |
| Bloods Creek Downstream | 7/8/2008 | | | 7.3 | 61 | 25.0 | 178 | 6.7 | 65 | 2.8 | <0.1 | <1 | <1 | 98 | <0.03 | 6.0 | 0.220 | 2.0 | <0.01 | 1.0 | 3.0 | 25 |
| Bloods Creek Downstream | 7/7/2009 | | | | | | | | 64 | 2.9 | <0.1 | <1 | <1 | 110 | <0.03 | 6.8 | 0.290 | 1.6 | <0.01 | 1.0 | 4.0 | 30 |

**Bear Valley Water District**
Historic Groundwater Quality

| Well | Date | HCO3 as HCO3 (mg/L) | CO3 as CaCO3 (mg/L) | OH as CaCO3 (mg/L) | Total Alkalinity as CaCO3 (mg/L) | Sulfate (mg/L) | Total Coliform (MPN/100ml) | Fecal Coliform (MPN/100ml) | Hardness as CaCO3 (mg/l) | NO2-N (mg/L) | ***Total Nitrogen (mg/L) | Lab pH (std units) | Ammonia as NH3 (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 9/1/2004 | | | | | | 28 | 2 | | NR[2] | NR[2] | 6.9 | <0.50 |
| MW-1 | 10/13/2004 | | | | | | <2 | <2 | | NR[2] | 1.0 | 7.3 | |
| MW-1 | 8/11/2005 | 87 | <1 | <1 | 71 | 3.7 | <2 | <2 | | <0.1 | 2.0 | 7.2 | |
| MW-1 | 9/15/2005 | 93 | <1 | <1 | 76 | 3.9 | <2 | <2 | | <0.1 | <1 | 6.7 | |
| MW-1 | 10/13/2005 | 74 | <1 | <1 | 61 | 3.0 | 2 | <2 | | <0.1 | <1 | 6.8 | |
| MW-1 | 6/29/2006 | 67 | <1 | <1 | 55 | 0.6 | <2 | <2 | | <0.1 | <1 | 5.9 | |
| MW-1 | 8/2/2006 | 91 | <1 | <1 | 75 | 3.7 | **21** | 8 | | <0.1 | <1 | 6.8 | |
| MW-1 | 10/10/2006 | 85 | <1 | <1 | 70 | 3.6 | <2 | <2 | | <0.1 | <1 | 6.6 | |
| MW-1 | 7/12/2007 | 107 | <1 | <1 | 88 | 3.7 | 2 | <2 | | <0.1 | <1 | 7.2 | |
| MW-1 | 8/29/2007 | 117 | <1 | <1 | 96 | 4.5 | 14 | 2 | | <0.1 | <1 | 7.4 | |
| MW-1 | 9/26/2007 | 122 | <1 | <1 | 100 | 4.3 | <2 | <2 | | <0.1 | <1 | 7.3 | |
| MW-1 | 7/8/2008 | 79 | <1 | <1 | 65 | 4.0 | **4** | <2 | | <0.1 | <1 | 7.0 | |
| MW-1 | 9/18/2008 | 116 | <1 | <1 | 95 | 4.3 | **230** | 30 | | <0.1 | <1 | 7.3 | |
| MW-1 | 1/16/2008 | 109 | <1 | <1 | 90 | 4.5 | **11** | 4 | | <0.1 | <1 | 7.2 | |
| MW-1 | 7/7/2009 | 91 | <1 | <1 | 75 | 5.6 | 2 | <2 | | <0.2 | <1 | 7.3 | |
| MW-1 | 9/30/2009 | 134 | <1 | <1 | 110 | 4.5 | **8** | 4 | | <0.1 | <1 | 7.0 | |
| MW-1 | 10/26/2009 | 122 | <1 | <1 | 100 | 5.1 | **80** | 11 | | <0.1 | 1.3 | 7.5 | |
| MW-1 | 7/13/2010 | 79 | <1 | <1 | 65 | 4.4 | <2 | <2 | | <0.1 | <1 | 6.4 | |
| MW-1 | 8/24/2010 | 95 | <1 | <1 | 78 | 4.7 | 2 | <2 | | <0.1 | <1 | 7.0 | |
| MW-1 | 11/4/2010 | 93 | <1 | <1 | 76 | 3.3 | **17** | 2 | | <0.1 | 6.0 | 5.9 | |
| MW-1 | 7/21/2011 | 93 | <1 | <1 | 76 | 3.6 | <2 | <2 | | <0.1 | <1 | 5.6 | |
| MW-1 | 9/8/2011 | 93 | <1 | <1 | 76 | 4.7 | <2 | <2 | | <0.1 | 2.0 | 7.0 | |
| MW-1 | 10/20/2011 | 106 | <1 | <1 | 87 | 4.6 | **4.5** | <2 | | <0.1 | 2.0 | 6.6 | |
| MW-1 | 6/26/2012 | 66 | <1 | <1 | 54 | 3.1 | <1.8 | <1.8 | 56.4 | <0.1 | 0.2 | 6.7 | |
| MW-1 | 7/31/2012 | 121 | <1 | <1 | 99 | 3.9 | 2 | <1.8 | | <0.1 | 1.0 | 7.0 | |
| MW-1 | 10/9/2012 | 104 | <1 | <1 | 85 | 4.4 | <1.8 | <1.8 | | <0.2 | 2.0 | 6.5 | |
| MW-1 | 5/30/2013 | 98 | <1 | <1 | 80 | 4.3 | <1.8 | <1.8 | 60.2 | <0.2 | <1 | 6.4 | |
| MW-1 | 8/21/2013 | 104 | <1 | <1 | 85 | 4.4 | <1.8 | <1.8 | 65.4 | <0.2 | <1 | 6.6 | |
| MW-1 | 10/15/2013 | 122 | <1 | <1 | 100 | 4.3 | <1.8 | <1.8 | 88.6 | <0.2 | <1 | 6.4 | |
| MW-1 | 6/12/2014 | 71 | <1 | <1 | 58 | 4.6 | <1.8 | <1.8 | 52.7 | | | 6.2 | |
| MW-1 | 8/12/2014 | 105 | <1 | <1 | 86 | 4.4 | <1.8 | <1.8 | 66.0 | | | 7.4 | |
| MW-1 | 10/14/2014 | 105 | <1 | <1 | 86 | 4.0 | <1.8 | <1.8 | 77.6 | | | 7.2 | |
| MW-1 | 6/17/2015 | 51 | <1 | <1 | 42 | 3.6 | <1.8 | <1.8 | | | | | |
| MW-1 | 9/9/2015 | 98 | <1 | <1 | 80 | 4.2 | <1.8 | <1.8 | 69.2 | | | 6.6 | |
| MW-1 | 11/12/2015 | 83 | <1 | <1 | 68 | 4.2 | **17** | <1.8 | 62.0 | | | 6.5 | |
| MW-1 | 7/7/2016 | 105 | <1 | <1 | 86 | 3.6 | <1.8 | <1.8 | 63.4 | | | | |
| MW-1 | 9/8/2016 | 98 | <10 | <10 | 80 | 3.5 | <1.8 | <1.8 | -- | | | | |
| MW-1 | 10/20/2016 | 99 | <10 | <10 | 81 | 3.1 | **230** | 6.8 | -- | | | | |
| MW-2 | 10/30/2002 | | | | | | **>2400** | NR[2] | | <0.020 | NR[2] | | <0.50 |
| MW-2 | 7/29/2003 | | | | | | **6** | 4 | | NR[2] | NR[2] | 6.7 | <0.2 |
| MW-2 | 11/13/2003 | | | | | | 2 | NR[2] | | <0.050* | NR[2] | 6.7 | <0.50 |
| MW-2 | 6/22/2004 | | | | | | 2 | <2 | | NR[2] | NR[2] | 6.5 | <0.50 |
| MW-2 | 9/1/2004 | | | | | | <2 | <2 | | NR[2] | NR[2] | 6.5 | <0.50 |
| MW-2 | 10/13/2004 | | | | | | **4** | <2 | | NR[2] | 10.0 | 7.1 | |

**Bear Valley Water District**
Historic Groundwater Quality

| Well | Date | HCO3 as HCO3 (mg/L) | CO3 as CaCO3 (mg/L) | OH as CaCO3 (mg/L) | Total Alkalinity as CaCO3 (mg/L) | Sulfate (mg/L) | Total Coliform (MPN/100ml) | Fecal Coliform (MPN/100ml) | Hardness as CaCO3 (mg/l) | NO2-N (mg/L) | ***Total Nitrogen (mg/L) | Lab pH (std units) | Ammonia as NH3 (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-2 | 8/11/2005 | 30 | <1 | <1 | 25 | <0.5 | <2 | <2 | | <0.1 | 2.0 | 6.9 | |
| MW-2 | 9/15/2005 | 37 | <1 | <1 | 30 | 0.6 | <2 | <2 | | <0.1 | 2.1 | 6.5 | |
| MW-2 | 10/13/2005 | 30 | <1 | <1 | 25 | <0.5 | **30** | <2 | | <0.1 | <1 | 6.5 | |
| MW-2 | 6/29/2006 | 24 | <1 | <1 | 20 | <0.5 | <2 | <2 | | <0.1 | <1 | 5.6 | |
| MW-2 | 8/2/2006 | 24 | <1 | <1 | 20 | <0.5 | <2 | <2 | | <0.1 | <1 | 6.1 | |
| MW-2 | 10/10/2006 | 30 | <1 | <1 | 25 | <0.5 | <2 | <2 | | <0.1 | <1 | 6.0 | |
| MW-2 | 7/12/2007 | 30 | <1 | <1 | 25 | <0.5 | 2 | 2 | | <0.1 | 0.7 | 6.8 | |
| MW-2 | 8/29/2007 | 43 | <1 | <1 | 35 | 1.6 | <2 | <2 | | <0.1 | <1 | 7.0 | |
| MW-2 | 9/26/2007 | 37 | <1 | <1 | 30 | 1.4 | 2 | <2 | | <0.1 | <1 | 6.7 | |
| MW-2 | 7/8/2008 | 30 | <1 | <1 | 25 | <0.5 | **220** | <2 | | <0.1 | <1 | 6.5 | |
| MW-2 | 9/18/2008 | 30 | <1 | <1 | 25 | 0.6 | <2 | <2 | | <0.1 | 3.2 | 6.9 | |
| MW-2 | 10/16/2008 | 30 | <1 | <1 | 25 | 0.6 | 2 | <2 | | <0.1 | <1 | 7.0 | |
| MW-2 | 7/7/2009 | 30 | <1 | <1 | 25 | 0.5 | 2 | <2 | | <0.2 | <1 | 7.0 | |
| MW-2 | 9/30/2009 | 37 | <1 | <1 | 30 | <0.5 | **8** | <2 | | <0.1 | <1 | 6.8 | |
| MW-2 | 10/26/2009 | 30 | <1 | <1 | 25 | <0.5 | **2200** | 800 | | <0.1 | 0.5 | 6.7 | |
| MW-2 | 7/13/2010 | 24 | <1 | <1 | 20 | <0.5 | **11** | <2 | | <0.1 | <1 | 6.1 | |
| MW-2 | 8/24/2010 | 27 | <1 | <1 | 22 | <0.5 | **23** | <2 | | <0.1 | <1 | 6.3 | |
| MW-2 | 11/4/2010 | 30 | <1 | <1 | 25 | <0.5 | **500** | 4 | | <0.1 | 3.0 | 5.8 | |
| MW-2 | 7/21/2011 | 27 | <1 | <1 | 22 | <0.5 | **13** | <2 | | <0.1 | <1 | 6.2 | |
| MW-2 | 9/8/2011 | 33 | <1 | <1 | 27 | <0.5 | 2 | <2 | | <0.1 | 2.0 | 6.4 | |
| MW-2 | 10/20/2011 | 40 | <1 | <1 | 33 | <0.5 | **79** | <2 | | <0.1 | 1.0 | 6.1 | |
| MW-2 | 6/26/2012 | 37 | <1 | <1 | 30 | <0.5 | <1.8 | <1.8 | 22.7 | <0.1 | 2.0 | 6.2 | |
| MW-2 | 7/31/2012 | 43 | <1 | <1 | 35 | <0.5 | **23** | 11 | | <0.2 | <1 | 6.3 | |
| MW-2 | 10/9/2012 | 37 | <1 | <1 | 30 | 0.8 | <1.8 | <1.8 | | <0.2 | <1 | 5.9 | |
| MW-2 | 5/30/2013 | 22 | <1 | <1 | 18 | 0.5 | **4.5** | <1.8 | 16.5 | <0.2 | <1 | 6.1 | |
| MW-2 | 8/21/2013 | 34 | <1 | <1 | 28 | 0.6 | **4.5** | <1.8 | 21.8 | <0.2 | <1 | 5.2 | |
| MW-2 | 10/15/2013 | 27 | <1 | <1 | 22 | 0.6 | **4** | <1.8 | 17.8 | <0.2 | <1 | 5.6 | |
| MW-2 | 6/12/2014 | 22 | <1 | <1 | 18 | 0.5 | **4.5** | <1.8 | 16.3 | | | 5.9 | |
| MW-2 | 8/12/2014 | 34 | <1 | <1 | 28 | 0.6 | **21** | <1.8 | 20.9 | | | 6.7 | |
| MW-2 | 10/14/2014 | 29 | <1 | <1 | 24 | 0.6 | **<1.8** | <1.8 | 26.5 | | | 5.9 | |
| MW-2 | 6/17/2015 | 36 | <1 | <1 | 30 | <0.5 | <1.8 | <1.8 | | | | | |
| MW-2 | 9/9/2015 | 49 | <1 | <1 | 40 | 0.8 | <1.8 | <1.8 | 19.5 | | | 6.9 | |
| MW-2 | 11/13/2015 | 32 | <1 | <1 | 26 | <0.5 | **6.8** | 2 | 22.5 | | | 6.1 | |
| MW-2 | 7/7/2016 | 37 | <1 | <1 | 30 | <0.5 | <1.8 | <1.8 | 19.2 | | | | |
| MW-2 | 9/8/2016 | 41 | <10 | <10 | 34 | <0.5 | <1.8 | <1.8 | -- | | | | |
| MW-2 | 10/20/2016 | 34 | <10 | <10 | 28 | <0.5 | **170** | 170 | -- | | | | |
| MW-3 | 10/30/2002 | | | | | | **>2400** | NR[2] | | <0.020 | NR[2] | | <0.50 |
| MW-3 | 7/29/2003 | | | | | | **1600** | 80 | | NR[2] | NR[2] | 6.6 | <0.2 |
| MW-3 | 11/13/2003 | | | | | | **9** | NR[2] | | 0.06* | NR[2] | 6.0 | ** |
| MW-3 | 6/22/2004 | | | | | | **9** | <2 | | NR[2] | NR[2] | 6.0 | <0.50 |

**Bear Valley Water District**
Historic Groundwater Quality

| Well | Date | HCO3 as HCO3 (mg/L) | CO3 as CaCO3 (mg/L) | OH as CaCO3 (mg/L) | Total Alkalinity as CaCO3 (mg/L) | Sulfate (mg/L) | Total Coliform (MPN/100ml) | Fecal Coliform (MPN/100ml) | Hardness as CaCO3 (mg/l) | NO2-N (mg/L) | ***Total Nitrogen (mg/L) | Lab pH (std units) | Ammonia as NH3 (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-3 | 9/1/2004 | | | | | | <2 | <2 | | NR[2] | NR[2] | 6.2 | <0.50 |
| MW-3 | 10/13/2004 | | | | | | <2 | <2 | | NR[2] | 0.3 | 6.7 | |
| MW-3 | 8/11/2005 | 24 | <1 | <1 | 20 | 1.9 | 2 | <2 | | <0.1 | <1 | 6.2 | |
| MW-3 | 9/15/2005 | 30 | <1 | <1 | 25 | 1.4 | **30** | 8 | | <0.1 | <1 | 5.9 | |
| MW-3 | 10/13/2005 | 24 | <1 | <1 | 20 | 1.8 | **9** | <2 | | <0.1 | 2.4 | 6.1 | |
| MW-3 | 6/29/2006 | 24 | <1 | <1 | 20 | 1.3 | 2 | <2 | | <0.1 | <1 | 5.5 | |
| MW-3 | 8/2/2006 | 24 | <1 | <1 | 20 | 1.3 | <2 | <2 | | <0.1 | 0.2 | 5.7 | |
| MW-3 | 10/10/2006 | 24 | <1 | <1 | 20 | 1.5 | **13** | <2 | | <0.1 | 2.0 | 5.4 | |
| MW-3 | 7/12/2007 | 34 | <1 | <1 | 28 | 1.1 | <2 | <2 | | <0.1 | 0.2 | 6.5 | |
| MW-3 | 8/29/2007 | 30 | <1 | <1 | 25 | 1.6 | **800** | 4 | | <0.1 | <1 | 6.3 | |
| MW-3 | 9/26/2007 | 37 | <1 | <1 | 30 | 0.5 | **80** | 2 | | <0.1 | <1 | 6.3 | |
| MW-3 | 7/8/2008 | 43 | <1 | <1 | 35 | 1.2 | 2 | <2 | | <0.1 | <1 | 6.3 | |
| MW-3 | 9/18/2008 | 24 | <1 | <1 | 20 | 2.0 | <2 | <2 | | <0.1 | <1 | 6.2 | |
| MW-3 | 10/16/2008 | 37 | <1 | <1 | 30 | 2.1 | 2 | <2 | | <0.1 | 0.15 | 6.2 | |
| MW-3 | 7/7/2009 | 24 | <1 | <1 | 20 | 3.5 | **4** | <2 | | <0.2 | <1 | 6.5 | |
| MW-3 | 9/30/2009 | 49 | <1 | <1 | 40 | 3.2 | **4** | <2 | | <0.1 | <1 | 6.0 | |
| MW-3 | 10/26/2009 | 18 | <1 | <1 | 15 | 3.3 | **22** | 4 | | <0.1 | 0.90 | 6.4 | |
| MW-3 | 7/13/2010 | 24 | <1 | <1 | 20 | <0.5 | **8** | <2 | | <0.1 | <1 | 6.1 | |
| MW-3 | 8/24/2010 | 33 | <1 | <1 | 27 | <0.5 | 2 | <2 | | <0.1 | <1 | 5.8 | |
| MW-3 | 11/4/2010 | 30 | <1 | <1 | 25 | <0.5 | **800** | 26 | | <0.1 | 3.00 | 5.6 | |
| MW-3 | 7/21/2011 | 20 | <1 | <1 | 16 | <0.5 | **34** | <2 | | <0.1 | <1 | 6.2 | |
| MW-3 | 9/8/2011 | 27 | <1 | <1 | 22 | <0.5 | 2 | <2 | | <0.1 | 2.00 | 6.1 | |
| MW-3 | 10/20/2011 | 33 | <1 | <1 | 27 | <0.5 | **130** | 11 | | <0.1 | 1.00 | 6.1 | |
| MW-3 | 6/26/2012 | 37 | <1 | <1 | 30 | 1.3 | <1.8 | <1.8 | 22.1 | <0.1 | <1 | 6.0 | |
| MW-3 | 7/31/2012 | 43 | <1 | <1 | 35 | 1.2 | <1.8 | <1.8 | | <0.2 | <1 | 6.0 | |
| MW-3 | 10/9/2012 | 43 | <1 | <1 | 35 | 1.5 | <1.8 | <1.8 | | <0.2 | <1 | 5.7 | |
| MW-3 | 5/30/2013 | 24 | <1 | <1 | 20 | 2.3 | **6.8** | <1.8 | 15.7 | <0.2 | <1 | 5.9 | |
| MW-3 | 8/21/2013 | 22 | <1 | <1 | 18 | 1.3 | <1.8 | <1.8 | 18.7 | <0.2 | <1 | 4.2 | |
| MW-3 | 10/15/2013 | 39 | <1 | <1 | 32 | 1.4 | <1.8 | <1.8 | 21.8 | <0.2 | <1 | 5.4 | |
| MW-3 | 6/12/2014 | 24 | <1 | <1 | 20 | 1.3 | **6.8** | <1.8 | 15.3 | | | 5.7 | |
| MW-3 | 8/12/2014 | 24 | <1 | <1 | 20 | 1.2 | **9.3** | <1.8 | 19.4 | | | 5.6 | |
| MW-3 | 10/14/2014 | 27 | <1 | <1 | 22 | 1.3 | <1.8 | <1.8 | 20.5 | | | 5.5 | |
| MW-3 | 6/17/2015 | 34 | <1 | <1 | 28 | 1.3 | <1.8 | <1.8 | | | | | |
| MW-3 | 9/9/2015 | 51 | <1 | <1 | 42 | 1.4 | **7.8** | 7.8 | 18.7 | | | 7.4 | |
| MW-3 | 11/13/2015 | 29 | <1 | <1 | 24 | 1.3 | <1.8 | <1.8 | 19.1 | | | | |
| MW-3 | 7/7/2016 | 37 | <1 | <1 | 30 | 1.1 | <1.8 | <1.8 | 21.7 | | | | |
| MW-3 | 9/8/2016 | 32 | <10 | <10 | 26 | 1.2 | **230** | 49 | -- | | | | |
| MW-3 | 10/20/2016 | 33 | <10 | <10 | 27 | 1.0 | <1.8 | <1.8 | -- | | | | |
| MW-4 | 10/30/2002 | | | | | | **900** | NR[2] | | <0.020 | NR[2] | | <0.50 |
| MW-4 | 7/29/2003 | | | | | | **240** | <2 | | NR[2] | NR[2] | 6.5 | <0.2 |
| MW-4 | 11/13/2003 | | | | | | <2 | NR[2] | | 0.05* | NR[2] | 6.9 | ** |
| MW-4 | 6/22/2004 | | | | | | <2 | <2 | | NR[2] | NR[2] | 6.8 | <0.50 |
| MW-4 | 9/1/2004 | | | | | | <2 | <2 | | NR[2] | NR[2] | 6.9 | <0.50 |
| MW-4 | 10/13/2004 | | | | | | <2 | <2 | | NR[2] | <1.1 | 7.1 | |

**Bear Valley Water District**
Historic Groundwater Quality

| Well | Date | HCO3 as HCO3 (mg/L) | CO3 as CaCO3 (mg/L) | OH as CaCO3 (mg/L) | Total Alkalinity as CaCO3 (mg/L) | Sulfate (mg/L) | Total Coliform (MPN/100ml) | Fecal Coliform (MPN/100ml) | Hardness as CaCO3 (mg/l) | NO2-N (mg/L) | ***Total Nitrogen (mg/L) | Lab pH (std units) | Ammonia as NH3 (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-4 | 8/11/2005 | 117 | <1 | <1 | 96 | 5.7 | <2 | <2 | | <0.1 | <1 | 6.9 | |
| MW-4 | 9/15/2005 | 122 | <1 | <1 | 100 | 5.8 | <2 | <2 | | <0.1 | 0.1 | 6.6 | |
| MW-4 | 10/13/2005 | 134 | <1 | <1 | 110 | 5.1 | <2 | <2 | | <0.1 | 1.2 | 6.8 | |
| MW-4 | 6/29/2006 | 110 | <1 | <1 | 90 | 4.1 | <2 | <2 | | <0.1 | 0.1 | 6.2 | |
| MW-4 | 8/2/2006 | 102 | <1 | <1 | 85 | 6.2 | <2 | <2 | | <0.1 | <1 | 6.7 | |
| MW-4 | 10/10/2006 | 104 | <1 | <1 | 85 | 6.0 | 2 | <2 | | <0.1 | 1.0 | 6.8 | |
| MW-4 | 7/12/2007 | 106 | <1 | <1 | 87 | 6.7 | <2 | <2 | | <0.1 | 0.1 | 6.8 | |
| MW-4 | 8/29/2007 | 111 | <1 | <1 | 91 | 6.9 | <2 | <2 | | <0.1 | <1 | 7.2 | |
| MW-4 | 9/26/2007 | 105 | <1 | <1 | 86 | 10.0 | <2 | <2 | | <0.1 | <1 | 7.0 | |
| MW-4 | 7/8/2008 | 105 | <1 | <1 | 86 | 5.8 | <2 | <2 | | <0.1 | <1 | 7.0 | |
| MW-4 | 9/18/2008 | 104 | <1 | <1 | 85 | 6.2 | <2 | <2 | | <0.1 | <1 | 6.9 | |
| MW-4 | 10/16/2008 | 109 | <1 | <1 | 90 | 5.9 | 2 | <2 | | <0.1 | <0.1 | 6.9 | |
| MW-4 | 7/7/2009 | 116 | <1 | <1 | 95 | 7.0 | <2 | <2 | | <0.2 | 2.4 | 7.1 | |
| MW-4 | 9/30/2009 | 98 | <1 | < | 80 | 6.3 | <2 | <2 | | <0.1 | <1 | 6.8 | |
| MW-4 | 10/26/2009 | 110 | <1 | <1 | 90 | 5.4 | **1300** | 13 | | <0.1 | 0.3 | 7.1 | |
| MW-4 | 7/13/2010 | 122 | <1 | <1 | 100 | 5.2 | 2 | <2 | | <0.1 | <1 | 6.6 | |
| MW-4 | 8/24/2010 | 100 | <1 | <1 | 82 | 5.6 | <2 | <2 | | <0.1 | <1 | 6.4 | |
| MW-4 | 11/4/2010 | 91 | <1 | <1 | 75 | 6.8 | **50** | 13 | | <0.1 | <1 | 6.5 | |
| MW-4 | 7/21/2011 | 112 | <1 | <1 | 92 | 4.1 | <2 | <2 | | <0.1 | <1 | 6.9 | |
| MW-4 | 9/8/2011 | 106 | <1 | <1 | 87 | 5.0 | <2 | <2 | | <0.1 | 1.0 | 6.9 | |
| MW-4 | 10/20/2011 | 85 | <1 | <1 | 70 | 7.3 | 2 | <2 | | <0.1 | <1 | 7.0 | |
| MW-4 | 6/26/2012 | 108 | <1 | <1 | 89 | 7.0 | <1.8 | <1.8 | 86.4 | <0.1 | <1 | 8.0 | |
| MW-4 | 7/31/2012 | 102 | <1 | <1 | 84 | 6.6 | **6.8** | <1.8 | | <0.2 | 2.0 | 6.6 | |
| MW-4 | 10/9/2012 | 91 | <1 | <1 | 75 | 6.8 | <1.8 | <1.8 | | <0.2 | <1 | 5.8 | |
| MW-4 | 5/30/2013 | 105 | <1 | <1 | 86 | 6.1 | <1.8 | <1.8 | 81.7 | <0.2 | <1 | 6.4 | |
| MW-4 | 8/21/2013 | 109 | <1 | <1 | 89 | 6.7 | <1.8 | <1.8 | 72.9 | <0.2 | <1 | 6.5 | |
| MW-4 | 10/15/2013 | 111 | <1 | <1 | 91 | 6.7 | <1.8 | <1.8 | 81.2 | <0.2 | <1 | 6.6 | |
| MW-4 | 6/12/2014 | 109 | <1 | <1 | 89 | 5.9 | <1.8 | <1.8 | 91.2 | | | 5.6 | |
| MW-4 | 8/12/2014 | 112 | <1 | <1 | 92 | 6.0 | <1.8 | <1.8 | 82.8 | | | 6.9 | |
| MW-4 | 10/14/2014 | 95 | <1 | <1 | 78 | 6.5 | <1.8 | <1.8 | 75.2 | | | 6.7 | |
| MW-4 | 6/17/2015 | 105 | <1 | <1 | 86 | 6.0 | <1.8 | <1.8 | | | | | |
| MW-4 | 9/9/2015 | 134 | <1 | <1 | 110 | 6.3 | 2 | <1.8 | 77.4 | | | 6.7 | |
| MW-4 | 11/13/2015 | 95 | <1 | <1 | 78 | 5.3 | <1.8 | <1.8 | 69.5 | | | 6.8 | |
| MW-4 | 7/7/2016 | 27 | <1 | <1 | 22 | 4.8 | <1.8 | <1.8 | 85.9 | | | | |
| MW-4 | 9/8/2016 | 112 | <10 | <10 | 92 | 5.4 | <1.8 | <1.8 | -- | | | | |
| MW-4 | 10/20/2016 | 91 | <10 | <10 | 75 | 4.8 | **230** | 7.8 | -- | | | | |
| MW-5 | 9/1/2004 | | | | | | **80** | 17 | | NR[2] | NR[2] | 6.6 | <0.50 |
| MW-5 | 10/13/2004 | | | | | | **500** | 2 | | NR[2] | 2.0 | 6.8 | |
| MW-5 | 8/11/2005 | 55 | <1 | <1 | 45 | 1.8 | 2 | <2 | | <0.1 | 2.0 | 6.2 | |
| MW-5 | 9/15/2005 | 62 | <1 | <1 | 51 | 2.0 | <2 | <2 | | <0.1 | 0.1 | 7.6 | |
| MW-5 | 10/13/2005 | 43 | <1 | <1 | 35 | 1.3 | **11** | <2 | | <0.1 | 0.2 | 6.1 | |
| MW-5 | 6/29/2006 | 30 | <1 | <1 | 25 | 0.7 | <2 | <2 | | <0.1 | <1 | 5.4 | |
| MW-5 | 8/2/2006 | 42 | <1 | <1 | 35 | 1.0 | <2 | <2 | | <0.1 | <1 | 6.1 | |
| MW-5 | 10/11/2006 | 55 | <1 | <1 | 45 | 1.7 | 2 | <2 | | <0.1 | 1.0 | 6.0 | |
| MW-5 | 7/12/2007 | | | | | | | | | | | Well pumped dry | |
| MW-5 | 8/29/2007 | | | | | | | | | | | | |

**Bear Valley Water District**
Historic Groundwater Quality

| Well | Date | HCO3 as HCO3 (mg/L) | CO3 as CaCO3 (mg/L) | OH as CaCO3 (mg/L) | Total Alkalinity as CaCO3 (mg/L) | Sulfate (mg/L) | Total Coliform (MPN/100ml) | Fecal Coliform (MPN/100ml) | Hardness as CaCO3 (mg/l) | NO2-N (mg/L) | ***Total Nitrogen (mg/L) | Lab pH (std units) | Ammonia as NH3 (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-5 | 9/26/2007 | | | | | | | | | | | Well pumped dry | |
| MW-5 | 7/8/2008 | | | | | | | | | | | Well pumped dry | |
| MW-5 | 9/18/2008 | | | | | | | | | | | | |
| MW-5 | 10/16/2008 | | | | | | | | | | | | |
| MW-5 | 7/7/2009 | 55 | <1 | <1 | 45 | 2.7 | <2 | <2 | | <0.2 | <1 | 6.5 | |
| MW-5 | 9/30/2009 | NS | NS | NS | NS | 2.5 | NS | NS | | 0.2 | NS | 7.5 | well pur |
| MW-5 | 10/26/2009 | | | | | | | | | | | | |
| MW-5 | 7/13/2010 | 43 | <1 | <1 | 35 | <0.5 | 2 | <2 | | <0.1 | <1 | 6.0 | |
| MW-5 | 8/24/2010 | 45 | <1 | <1 | 37 | <0.5 | 2 | <2 | | <0.1 | <1 | 6.7 | |
| MW-5 | 11/4/2010 | 50 | <1 | <1 | 41 | <0.5 | **23** | <2 | | <0.1 | <1 | 6.1 | |
| MW-5 | 7/21/2011 | 33 | <1 | <1 | 27 | <0.5 | **4** | <2 | | <0.1 | <1 | 4.9 | |
| MW-5 | 9/8/2011 | 52 | <1 | <1 | 43 | <0.5 | <2 | <2 | | <0.1 | 1.0 | 6.5 | |
| MW-5 | 10/20/2011 | 46 | <1 | <1 | 38 | 1.7 | **4.5** | <2 | | <0.1 | <1 | 6.0 | |
| MW-5 | 6/26/2012 | 48 | <1 | <1 | 39 | 1.0 | IVS | IVS | 39.8 | <0.1 | 0.1 | 6.9 | |
| MW-5 | 7/31/2012 | 48 | <1 | <1 | 39 | 2.1 | <1.8 | <1.8 | | <0.2 | <1 | 6.3 | |
| MW-5 | 10/9/2012 | | | | | | | | | | | | |
| MW-5 | 5/30/2013 | 46 | <1 | <1 | 38 | 0.9 | IVS | IVS | 27.6 | <0.2 | <1 | 6.0 | well pur |
| MW-5 | 8/21/2013 | 32 | <1 | <1 | 26 | 0.8 | <1.8 | <1.8 | 25.2 | <0.2 | <1 | 6.0 | |
| MW-5 | 10/15/2013 | 40 | <1 | <1 | 33 | 2.7 | <1.8 | <1.8 | 27.3 | <0.2 | <1 | 8.1 | |
| MW-5 | 6/12/2014 | 44 | <1 | <1 | 36 | 1.0 | <1.8 | <1.8 | 29.8 | | | 5.8 | |
| MW-5 | 8/12/2014 | 56 | <1 | <1 | 46 | 1.2 | 14 | <1.8 | 41.1 | | | 5.6 | |
| MW-5 | 10/14/2014 | | | | | | | | | | | | |
| MW-5 | 6/17/2015 | 51 | <1 | <1 | 42 | 1.1 | <1.8 | <1.8 | | | | | |
| MW-5 | 9/9/2015 | 56 | <1 | <1 | 46 | 1.2 | IVS | IVS | 39.9 | | | 7.0 | |
| MW-5 | 11/12/2015 | 51 | <1 | <1 | 42 | 1.0 | IVS | IVS | 39.1 | | | | |
| MW-5 | 7/7/2016 | 56 | <1 | <1 | 46 | 1.0 | <1.8 | <1.8 | 59.5 | | | | |
| MW-5 | 9/8/2016 | | | | | | | | | | | | |
| MW-5 | 10/20/2016 | | | | | | | | | | | | |
| MW-6 | 10/30/2002 | | | | | | **240** | NR[2] | | <0.020 | NR[2] | | <0.50 |
| MW-6 | 7/29/2003 | | | | | | <2 | <2 | | NR[2] | NR[2] | 6.5 | <0.2 |
| MW-6 | 11/13/2003 | | | | | | <2 | NR[2] | | <0.050* | NR[2] | 6.7 | ** |
| MW-6 | 6/22/2004 | | | | | | <2 | <2 | | NR[2] | NR[2] | 7.0 | <0.50 |
| MW-6 | 9/1/2004 | | | | | | <2 | <2 | | NR[2] | NR[2] | 7.0 | <0.50 |
| MW-6 | 10/13/2004 | | | | | | <2 | <2 | | NR[2] | <1.1 | 7.6 | |
| MW-6 | 8/11/2005 | 305 | <1 | <1 | 250 | 1.8 | <2 | <2 | | <0.1 | <1 | 7.3 | |
| MW-6 | 9/15/2005 | 293 | <1 | <1 | 240 | 1.9 | <2 | <2 | | <0.1 | 1.2 | 7.0 | |
| MW-6 | 10/13/2005 | 292 | <1 | <1 | 240 | 1.8 | 2 | <2 | | <0.1 | 0.2 | 7.3 | |
| MW-6 | 6/29/2006 | 280 | <1 | <1 | 230 | 1.8 | <2 | <2 | | <0.1 | <1 | 6.8 | |
| MW-6 | 8/2/2006 | 280 | <1 | <1 | 230 | 1.6 | <2 | <2 | | <0.1 | <1 | 6.8 | <1 |
| MW-6 | 10/10/2006 | 304 | <1 | <1 | 250 | 1.9 | <2 | <2 | | <0.1 | <1 | 7.0 | |
| MW-6 | 7/12/2007 | 284 | <1 | <1 | 233 | 1.9 | <2 | <2 | | <0.1 | <1 | 7.1 | |
| MW-6 | 8/29/2007 | 317 | <1 | <1 | 260 | 2.1 | **50** | 7 | | <0.1 | <1 | 7.3 | |
| MW-6 | 9/26/2007 | 317 | <1 | <1 | 260 | 1.7 | **4** | <2 | | <0.1 | <1 | 7.3 | |
| MW-6 | 7/8/2008 | 288 | <1 | <1 | 236 | 1.9 | <2 | <2 | | <0.1 | <1 | 7.2 | |
| MW-6 | 9/18/2008 | 329 | <1 | <1 | 270 | 2.1 | <2 | <2 | | <0.1 | <1 | 7.1 | |

**Bear Valley Water District**
Historic Groundwater Quality

| Well | Date | HCO3 as HCO3 (mg/L) | CO3 as CaCO3 (mg/L) | OH as CaCO3 (mg/L) | Total Alkalinity as CaCO3 (mg/L) | Sulfate (mg/L) | Total Coliform (MPN/100ml) | Fecal Coliform (MPN/100ml) | Hardness as CaCO3 (mg/l) | NO2-N (mg/L) | ***Total Nitrogen (mg/L) | Lab pH (std units) | Ammonia as NH3 (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-6 | 10/16/2008 | 329 | <1 | <1 | 270 | 1.9 | <2 | <2 | | <0.1 | <0.1 | 7.7 | |
| MW-6 | 7/7/2009 | 317 | <1 | <1 | 260 | 3.2 | <2 | <2 | | <0.2 | <1 | 7.2 | |
| MW-6 | 9/30/2009 | 317 | <1 | <1 | 260 | 2.6 | <2 | <2 | | <0.1 | <1 | 7.0 | |
| MW-6 | 10/26/2009 | 305 | <1 | <1 | 250 | 3.2 | <2 | <2 | | <0.1 | <1 | 7.6 | |
| MW-6 | 7/13/2010 | 305 | <1 | <1 | 250 | <0.5 | 2 | <2 | | <0.1 | <1 | 6.8 | |
| MW-6 | 8/24/2010 | 280 | <1 | <1 | 230 | <0.5 | <2 | <2 | | <0.1 | <1 | 6.7 | |
| MW-6 | 11/4/2010 | 281 | <1 | <1 | 230 | 2.9 | <2 | <2 | | <0.1 | <1 | 6.5 | |
| MW-6 | 7/21/2011 | 329 | <1 | <1 | 270 | 2.3 | <2 | <2 | | <0.1 | <1 | 7.0 | |
| MW-6 | 9/8/2011 | 329 | <1 | <1 | 270 | <0.5 | <2 | <2 | | <0.1 | <1 | 7.0 | |
| MW-6 | 10/20/2011 | 232 | <1 | <1 | 190 | <0.5 | **6.8** | <2 | | <0.1 | <1 | 6.6 | |
| MW-6 | 6/26/2012 | 280 | <1 | <1 | 230 | 1.9 | <1.8 | <1.8 | 236 | <0.1 | <1 | 6.8 | |
| MW-6 | 7/31/2012 | 317 | <1 | <1 | 260 | 3.0 | **4.5** | <1.8 | | <0.2 | <1 | 6.8 | |
| MW-6 | 10/9/2012 | 354 | <1 | <1 | 290 | 2.0 | <1.8 | <1.8 | | <0.2 | <1 | 6.7 | |
| MW-6 | 5/30/2013 | 232 | <1 | <1 | 190 | 2.8 | <1.8 | <1.8 | 154 | <0.2 | <1 | 6.5 | |
| MW-6 | 8/21/2013 | 305 | <1 | <1 | 250 | 2.0 | <1.8 | <1.8 | 191 | <0.2 | <1 | 6.5 | |
| MW-6 | 10/15/2013 | 329 | <1 | <1 | 270 | 3.1 | 2 | <1.8 | 257 | <0.2 | <1 | 6.3 | |
| MW-6 | 6/12/2014 | 317 | <1 | <1 | 260 | 3.0 | <1.8 | <1.8 | 218 | | | 5.9 | |
| MW-6 | 8/12/2014 | 378 | <1 | <1 | 310 | 3.1 | <1.8 | <1.8 | 248 | | | 5.7 | |
| MW-6 | 10/14/2014 | 341 | <1 | <1 | 280 | 2.0 | <1.8 | <1.8 | 241 | | | 6.5 | |
| MW-6 | 6/17/2015 | 231 | <1 | <1 | 190 | 1.6 | <1.8 | <1.8 | | | | | |
| MW-6 | 9/9/2015 | 305 | <1 | <1 | 250 | 1.8 | <1.8 | <1.8 | 199 | | | 6.5 | |
| MW-6 | 11/12/2015 | 110 | <1 | <1 | 90 | 0.8 | <1.8 | <1.8 | 84 | | | 6.2 | |
| MW-6 | 7/7/2016 | 207 | <1 | <1 | 170 | 1.2 | <1.8 | <1.8 | 140 | | | | |
| MW-6 | 9/8/2016 | 276 | <10 | <10 | 226 | 1.7 | <1.8 | <1.8 | -- | | | | |
| MW-6 | 10/20/2016 | 223 | <10 | <10 | 183 | 1.8 | <1.8 | <1.8 | -- | | | | |
| Discharge Pump | 8/11/2005 | 49 | <1 | <1 | 40 | 3.6 | **23** | <2 | | <0.1 | 12.0 | 6.7 | |
| Discharge Pump | 9/15/2005 | 74 | <1 | <1 | 61 | 6.1 | **>16000** | 1700 | | 0.8 | 9.9 | 6.9 | |
| Discharge Pump | 10/13/2005 | 93 | <1 | <1 | 76 | 7.2 | **800** | 22 | | 0.3 | 15.0 | 7.2 | |
| Discharge Pump | 6/29/2006 | 67 | <1 | <1 | 55 | 3.4 | **8** | <2 | | <0.1 | 8.0 | 6.4 | |
| Discharge Pump | 8/2/2006 | 85 | <1 | <1 | 70 | 4.2 | <2 | <2 | | <0.1 | 12.1 | 6.9 | |
| Discharge Pump | 10/11/2006 | 85 | <1 | <1 | 70 | 5.6 | **23** | 4 | | 0.1 | 12.8 | 7.1 | |
| Discharge Pump | 7/12/2007 | 64 | <1 | <1 | 52.8 | 3.6 | **500** | 2 | | <0.1 | 6.5 | 7.2 | |
| Discharge Pump | 7/8/2008 | 91 | <1 | <1 | 75 | 4.9 | **22** | 6 | | <0.1 | <1 | 7.3 | |
| Discharge Pump | 9/18/2008 | 34 | <1 | <1 | 28 | 6.7 | **230** | 30 | | <0.1 | <1 | 8.9 | |
| Discharge Pump | 10/16/2008 | 18 | <1 | <1 | 15 | 85.0 | **1300** | 13 | | <0.1 | 5.5 | 7.9 | |
| Discharge Pump | 7/7/2009 | 116 | <1 | <1 | 95 | 7.3 | **50** | 11 | | <0.2 | 14.0 | 7.2 | |
| Treatment Pond | 8/11/2005 | 37 | <1 | <1 | 30 | 1.0 | **>3000** | 1300 | | <0.1 | 14.0 | 8.5 | |
| Treatment Pond | 9/15/2005 | 81 | <1 | <1 | 66 | 6.1 | **>16000** | >3000 | | 0.8 | 12.9 | 7.1 | |
| Treatment Pond | 10/13/2005 | 93 | <1 | <1 | 76 | 7.2 | **2400** | 1300 | | 0.3 | 17.0 | 7.3 | |
| Treatment Pond | 6/29/2006 | 67 | <1 | <1 | 55 | 3.7 | **170** | 17 | | <0.1 | 9.1 | 6.9 | |
| Treatment Pond | 8/2/2006 | 91 | <1 | <1 | 75 | 4.2 | **>16000** | 700 | | 0.1 | 13.2 | 7.2 | |
| Treatment Pond | 10/11/2006 | 134 | <1 | <1 | 110 | 6.7 | **16000** | 2800 | | 0.2 | 20.3 | 7.3 | |
| Treatment Pond | 7/12/2007 | 111 | <1 | <1 | 90.8 | 4.4 | **16000** | 1100 | | 0.1 | 18.4 | 7.6 | |
| Treatment Pond | 7/8/2008 | 61 | <1 | <1 | 50 | 5.4 | **5000** | 30 | | 0.2 | 14.6 | 7.8 | |
| Treatment Pond | 9/18/2008 | 231 | <1 | <1 | 190 | 6.8 | **16000** | 16000 | | 0.4 | 23.1 | 8.0 | |

**Bear Valley Water District**
Historic Groundwater Quality

| Well | Date | HCO3 as HCO3 (mg/L) | CO3 as CaCO3 (mg/L) | OH as CaCO3 (mg/L) | Total Alkalinity as CaCO3 (mg/L) | Sulfate (mg/L) | Total Coliform (MPN/100ml) | Fecal Coliform (MPN/100ml) | Hardness as CaCO3 (mg/l) | NO2-N (mg/L) | ***Total Nitrogen (mg/L) | Lab pH (std units) | Ammonia as NH3 (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Treatment Pond | 10/16/2008 | 159 | <1 | <1 | 130 | 7.7 | **9000** | 2400 | | 0.1 | 24.5 | 7.6 | |
| Treatment Pond | 7/7/2009 | 91 | <1 | <1 | 75 | 6.8 | **9000** | 700 | | 0.7 | 13.7 | 7.9 | |
| Bloods Creek Upstream | 8/11/2005 | 37 | <1 | <1 | 30 | 0.5 | 170 | 80 | | <0.1 | 2.0 | 7.0 | |
| Bloods Creek Upstream | 6/20/2006 | 12 | <1 | <1 | 10 | <0.5 | <2 | <2 | | <0.1 | <1 | 6.3 | |
| Bloods Creek Upstream | 7/12/2007 | 31 | <1 | <1 | 25.6 | 0.5 | 14 | 8 | | <0.1 | <1 | 7.0 | |
| Bloods Creek Upstream | 7/8/2008 | 29 | <1 | <1 | 24 | <0.5 | 130 | 13 | | <0.1 | <1 | 7.1 | |
| Bloods Creek Upstream | 7/7/2009 | 18 | <1 | <1 | 15 | 2.1 | 500 | 50 | | <0.2 | <1 | 6.8 | |
| Bloods Creek Downstream | 8/11/2005 | 99 | <1 | <1 | 81 | 1.0 | >16000 | 130 | | <0.1 | 2.0 | 6.8 | |
| Bloods Creek Downstream | 6/20/2006 | 18 | <1 | <1 | 15 | <0.5 | 17 | 2 | | <0.1 | <1 | 6.3 | |
| Bloods Creek Downstream | 7/12/2007 | 37 | <1 | <1 | 30 | 0.7 | >16000 | 50 | | <0.1 | <1 | 6.9 | |
| Bloods Creek Downstream | 7/8/2008 | 30 | <1 | <1 | 25 | 0.6 | 500 | 130 | | <0.1 | <1 | 7.1 | |
| Bloods Creek Downstream | 7/7/2009 | 37 | <1 | <1 | 30 | 2.2 | 170 | 13 | | <0.2 | <1 | 7.2 | |