From:	Chavez, Carl J, EMNRD
To:	Ayarbe, John
Cc:	"Pieter Bergstein (pieter@bergsteinenterprises.com)"; "susan@bergsteinenterprises.com"; Zbrozek, Michael; Goetze, Phillip, EMNRD
Subject:	RE: [EXTERNAL] SUBMITTAL of First Semiannual 2021 GW Monitoring and O&M
Date:	Wednesday, December 22, 2021 1:29:00 PM

John, et al.,

OCD has completed its review of the above subject report and concur with the recommendations therein.

OCD recommends sampling the "Ranch Headquarters Supply Well" that was last sampled on 6/23/2008 to assess any noticeable impact to the water supply well.

OCD is processing the report via E-docs today.

Please contact me if you have questions.

Thank you.

Carl J. Chavez ● UIC Group
Engineering Bureau
EMNRD - Oil Conservation Division
5200 Oakland Avenue, N.E. Suite 100 | Albuquerque, NM 87113
505.660.7923
www.emnrd.nm.gov

From: Ayarbe, John <jayarbe@geo-logic.com>
Sent: Thursday, December 2, 2021 1:21 PM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Cc: 'Pieter Bergstein (pieter@bergsteinenterprises.com)' <pieter@bergsteinenterprises.com>; 'susan@bergsteinenterprises.com' <susan@bergsteinenterprises.com>; Zbrozek, Michael <mzbrozek@geo-logic.com>
Subject: [EXTERNAL] SUBMITTAL of First Semiannual 2021 GW Monitoring and O&M

Hi Carl,

Attached is the Semiannual Groundwater Monitoring and O&M Report for the Salty Dog Brine Station for the period January 1 through June 30, 2021. I'm submitting the report to you on behalf of PAB Services, Inc.

Please let me know if you have questions.

Sincerely,

John P. Ayarbe
Senior Hydrogeologist

Daniel B. Stephens & Associates, Inc.
a Geo-Logic Company
6020 Academy Road NE, Suite 100
Albuquerque, New Mexico 87109
Office: (505) 822-9400 | Direct: (505) 353-9137
Mobile: (505) 280-4339
jayarbe@dbstephens.com or jayarbe@geo-logic.com

www.dbstephens.com | www.geo-logic.com

December 1, 2021

Mr. Carl Chavez
New Mexico Oil Conservation Division
Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505-4225

Re: Semiannual Groundwater Monitoring and O&M Report
January 1 through June 30, 2021
Salty Dog Brine Station, Lea County, New Mexico

Dear Mr. Chavez:

On behalf of PAB Services, Inc., Daniel B. Stephens & Associates, Inc. (DBS&A) is submitting the enclosed groundwater monitoring and operation and maintenance (O&M) report for the Salty Dog brine station located in Lea County, New Mexico. Semiannual groundwater monitoring activities were completed at the site on June 2 and 3, 2021.

Please call us at (505) 822-9400 if you have any questions or require additional information.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

John Ayarbe, P.G.
Senior Hydrogeologist

Michael Zbrozek
Geologist

JA/rpf
Enclosure
cc: Pieter Bergstein, PAB Services, Inc.

First Semiannual 2021 Groundwater Monitoring and Operation and Maintenance Report

Salty Dog Brine Station
Lea County, New Mexico

Prepared for

New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division
Santa Fe, New Mexico

Prepared by

DBS&A
Daniel B. Stephens & Associates, Inc.
a Geo-Logic Company

6020 Academy NE, Suite 100
Albuquerque, New Mexico 87109
www.dbstephens.com
DB19.1198

December 1, 2021

Table of Contents

List of Figures

List of Tables

List of Appendices

1. Introduction

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this groundwater monitoring and operation and maintenance (O&M) report for submission to the New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (OCD) Environmental Bureau on behalf of PAB Services, Inc. (PAB) for the Salty Dog brine station (the site) located in Lea County, New Mexico (Figure 1). The report summarizes activities conducted at the site during the reporting period of January 1 through June 30, 2021. Groundwater monitoring and O&M during the reporting period was conducted in accordance with discharge permit BW-8 (DP-BW-8), which was last renewed on May 17, 2019 (NMEMNRD OCD, 2019).

The site consists of a northern portion, where the brine pond was located prior to closure in October 2008, and a southern portion, where the brine well is located. The brine pond area and the brine well area are separated by approximately 2,500 feet, joined by a dirt road (Figure 1). Injection water for the brine well comes from two fresh water supply wells (FWS-1 and FWS-2) and from remedial pumping at a recovery well in the brine well area (RW-2). FWS-2 is an auxiliary supply well that is used when FWS-1 and RW-2 are being serviced or when additional fresh water is needed.

Brine that is produced for sale is stored at a tank battery on the southern boundary of the former brine pond area. The tank battery consists of six 750-barrel aboveground storage tanks (ASTs) surrounded by a berm (Figure 1). A concrete truck loading pad with two brine filling stations is located north of the tank battery. An operations shed is located adjacent to the loading pad to the west.

The former brine pond area has 6 monitor wells (PMW-1, DBS-1R, and DBS-2 through DBS-5), 1 nested well (NW-1), 1 fresh water supply well (FWS-1), and a former recovery well (RW-1). The brine well area has 10 monitor wells (MW-2 through MW-6, DBS-6 through DBS-10), 1 nested well (NW-2), 1 fresh water supply well (FWS-2), and 1 recovery well (RW-2) (Figure 1).

In April 2012, DBS&A installed groundwater extraction systems at the site to provide hydraulic containment and removal of chloride-impacted groundwater in the former brine pond and brine well areas (DBS&A, 2009a and 2009b). The extraction systems consist of wells, submersible pumps, conveyance lines, electrical power, and controls to extract impacted groundwater. Extracted groundwater is conveyed to the on-site ASTs for reinjection at the brine well. Although groundwater extraction at well RW-1 was stopped in 2015, pumping at well FWS-1

provides hydraulic containment and removal of chloride-impacted groundwater in the former brine pond area; well FWS-1 is located approximately 50 feet southeast of RW-1. Extraction at RW-1 was stopped because the water level at the well had declined and was near the bottom of the well. Pumping at RW-2 provides hydraulic containment and removal of chloride-impacted groundwater in the brine well area.

2. Scope of Work

The scope of work for semiannual groundwater monitoring conducted in June 2021 consisted of (1) measuring groundwater levels in and collecting groundwater samples from 12 monitor wells and (2) performing maintenance on the groundwater extraction systems, as necessary. Groundwater samples were submitted to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico for chloride analysis using U.S. Environmental Protection Agency (EPA) method 300.0. Section 2A.1 of DP-BW-8 requires that PAB collect one groundwater sample to be analyzed for general chemistry and other inorganic constituents, in addition to chloride. In consultation with Carl Chavez (OCD), DBS&A selected monitor well MW-3 for these additional analyses. Appendices A and B provide the laboratory report and field notes, respectively.

The monitor wells included in the sampling program were selected in October 2010 in consultation with Jim Griswold, the OCD Project Manager for the site at that time. The sampled monitor wells are shown in Figures 2 through 5.

3. Monitoring Activities

The following subsections describe the groundwater monitoring activities conducted in June 2021. The laboratory report and chain of custody documentation are provided in Appendix A. Field notes recorded during groundwater monitoring activities are provided in Appendix B. Historical groundwater monitoring data are provided in Appendix C.

3.1 Fluid Level Measurement

On June 2, 2021, DBS&A measured water levels in monitor wells DBS-1R, DBS-2 through DBS 5, and PMW-1 in the former brine pond area (Figure 2) and in wells DBS-6, DBS-8 through DBS-10, MW-3, and MW-5 in the brine well area (Figure 3) using a properly decontaminated electronic

water level meter. Table 1 reports the water level measurements and groundwater elevations. Appendix C provides historical groundwater level data.

Table 1. Fluid Level Measurements, June 2, 2021

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation (feet msl)	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-1R	58.0–78.0	3,817.00	69.95	3,747.05
DBS-2	58.0–78.0	3,820.50	72.43	3,748.07
DBS-3	56.0–76.72	3,816.66	67.50	3,749.16
DBS-4	56.0–76.0	3,820.37	73.05	3,747.32
DBS-5	56.9–76.9	3,820.66	69.88	3,750.78
DBS-6	56.7–76.7	3,812.65	68.72	3,743.93
DBS-8	55.2–75.2	3,810.70	66.91	3,743.79
DBS-9	48.0–68.0	3,806.26	59.95	3,746.31
DBS-10	57.2–77.2	3,807.48	66.52	3,740.96
PMW-1	63–78	3,821.17	73.10	3,748.07
MW-3	NA	3,812.05	69.83	3,742.22
MW-5	112–132	3,808.96	66.70	3,742.26

bgs = Below ground surface
msl = Above mean sea level
btoc = Below top of casing
NA = Not available

During this monitoring event, the average depths to water beneath the former brine pond area and brine well area were 70.99 feet below ground surface (bgs) and 66.44 feet bgs, respectively. Water levels in the former brine pond area declined relative to those of the last monitoring event in November 2020, declining on average by 0.86 foot. Water levels in the brine well area also declined—by 0.68 foot on average.

Figures 2 and 3 present potentiometric surface maps for the former brine pond area and the brine well area, respectively. The direction of groundwater flow beneath the former brine pond area remains to the southeast; the hydraulic gradient was approximately 0.0047 foot per foot (ft/ft) this reporting period (Figure 2). The direction of groundwater flow beneath the brine well area also remains to the southeast; the hydraulic gradient in this area was approximately 0.0057 ft/ft this reporting period (Figure 3).

Both FWS-1 and RW-2 were pumping when groundwater levels were measured. On several occasions during this reporting period, well FWS-1 was taken offline for maintenance. PAB has attempted to remedy the frequency of disruption by installing various pumps so as not to exceed the production capacity of the well. Pumping at RW-2 was steady during this reporting period. Little groundwater was extracted from well FWS-2 this reporting period. FWS-2 was pumping during the June 2021 monitoring event.

3.2 Groundwater Sampling

On June 2 and 3, 2021, groundwater samples were collected from monitor wells DBS-1R, DBS-2 through DBS-6, DBS-8 through DBS-10, MW-3, MW-5, and PMW-1. The samples were collected following standard sampling procedures developed from EPA guidance. Before sampling, each well was purged of a minimum of three casing volumes using a dedicated bailer to ensure that a representative groundwater sample was collected. While purging, DBS&A measured water quality field parameters consisting of temperature, specific conductance, and pH. Sample containers were filled, labeled, and placed in an ice-filled cooler. Groundwater samples were submitted under chain of custody to HEAL for analysis.

Samples of the brine well injection water and the produced brine were also collected to meet requirements under DP-BW-8. Analytical results of these samples will be presented in the 2021 annual Class III well report.

4. Analytical Results

Table 2 reports the chloride analytical results for the groundwater samples. Figures 4 and 5 show the distribution of chloride in groundwater beneath the former brine pond area and the brine well area, respectively. The complete laboratory report and chain of custody documentation are provided in Appendix A. Field notes recorded during groundwater monitoring activities are provided in Appendix B. Historical groundwater quality data are provided in Appendix C.

Table 2. Chloride Groundwater Analytical Data

Monitor Well	Date	Chloride Concentration (mg/L)
	NMWQCC Standard	*250*
DBS-1R	6/2/2021	**2,200**
DBS-2	6/2/2021	85
DBS-3	6/3/2021	52
DBS-4	6/3/2021	39
DBS-5	6/3/2021	170
DBS-6	6/3/2021	**250**
DBS-8	6/3/2021	35
DBS-9	6/3/2021	**290**
DBS-10	6/3/2021	**560**
PMW-1	6/2/2021	**6,800**
MW-3	6/3/2021	**4,400**
MW-5	6/3/2021	**640**

Bold indicates that value equals or exceeds the applicable standard.
All samples analyzed using EPA method 300.0.
NMWQCC = New Mexico Water Quality Control Commission
mg/L = Milligrams per liter

4.1 Former Brine Pond Area Wells

Well PMW-1, located just upgradient of FWS-1, continues to exhibit chloride concentrations above the New Mexico Water Quality Control Commission (NMWQCC) standard of 250 milligrams per liter (mg/L) (Figure 4). The chloride concentration at PMW-1 fluctuates (likely in response to pumping conditions at FWS-1) and decreased from 8,200 mg/L in November 2020 to 6,800 mg/L in June 2021 (Appendix C).

Well DBS-1R is located downgradient of well PMW-1 and pumping well FWS-1. In November 2020, the chloride concentration at DBS-1R exceeded the NMWQCC standard for the first time since 2017 (Figure 4). The chloride concentration at DBS-1R increased from 530 mg/L in November 2020 to 2,200 mg/L in June 2021 (Appendix C).

The chloride concentration at upgradient monitor well DBS-5 was 170 mg/L.

The chloride plume in the former brine pond area remains bounded by the existing monitor well network (Figure 4). The chloride concentration at downgradient monitor well DBS-4 remains stable and below the NMWQCC standard, as do chloride concentrations at the two cross-gradient monitor wells, DBS-2 and DBS-3.

4.2 Brine Well Area Wells

Monitor well MW-3 (the well closest to extraction well RW-2) and downgradient monitor wells MW-5 and DBS-10 continue to exhibit chloride concentrations above the NMWQCC standard. The highest chloride concentration is observed at MW-3, where the chloride concentration was 4,400 mg/L this reporting period, decreasing from 7,100 in November 2020 (Figure 5). The chloride concentrations at DBS-10 and MW-5 also decreased during this reporting period. The chloride concentration at DBS-10 decreased from 620 mg/L (November 2020) to 560 mg/L (June 2021), while the chloride concentration at MW-5 decreased from 710 mg/L (November 2020) to 640 mg/L (June 2021) (Appendix C).

The chloride concentration at cross-gradient monitor well DBS-6, which had met the NMWQCC standard since June 2017, exceeded the NMWQCC standard this reporting period (Appendix C). The chloride concentration was 250 mg/L (Table 2).

The chloride concentration at upgradient monitor well DBS-9 was 290 mg/L this reporting period, exceeding the NMWQCC standard. Chloride concentrations at DBS-9 fluctuate around the standard (Appendix C).

Section 2A.1 of DP-BW-8 requires that PAB collect one groundwater sample to be analyzed for general chemistry and several other groundwater constituents. Monitor well MW-3 was selected for this additional analysis because it is located downgradient of the location of the brine well. Groundwater at MW-3 has historically shown chloride impacts. Analytical results for the MW-3 sample are provided in Table 3.

Table 3. Groundwater Analytical Results, MW-3

Constituent	Concentration (mg/L [a])	
	NMWQCC Standard	MW-3 (6/3/2021)
Alkalinity, total	NS	226.3
Bicarbonate	NS	226.3
Calcium, total	NS	840
Carbonate	NS	<2.0
Bromide	NS	2.0
Chloride	250	**4,400**
Fluoride	1.6	<1.0
Magnesium, total	NS	130
Nitrate (as N)	1.0	<4.0
Nitrite (as N)	10.0	<4.0
Orthophosphate (as P)	NS	<5.0
pH (s.u.)	6–9	7.53
Potassium, total	NS	14
Sodium, total	NS	2,500
Sulfate	600	290
Total dissolved solids	1,000	**9,910**

Bold indicates that value exceeds New Mexico Water Quality Control Commission (NMWQCC) standard.
[a] Unless otherwise noted
NS = No standard
s.u. = Standard units

5. Groundwater Extraction System O&M

Groundwater extraction from fresh water supply well FWS-1 and recovery well RW-2 provides hydraulic containment and removal of chloride-impacted groundwater in the former brine pond area and brine well area, respectively. PAB began remedial groundwater extraction in April 2012 (Appendix C). Extracted groundwater is used as injection water at the brine well or sold as fresh water.

Table 4 shows the average groundwater extraction rates for the two wells during this reporting period. The rates were determined using fresh water production records, fresh water sales volumes, and/or totalizer flow meter readings.

Table 4. Average Groundwater Extraction Rates

Recovery Well	Date	Average Extraction Rate (gpm)
FWS-1	6/2/2021	5.7 [a]
RW-2	6/2/2021	11.5 [b]

[a] Average extraction rate based on December 2020 through June 2021 fresh water production records and RW-2 metering data.
[b] Average extraction rate based on totalizer flow meter readings on 11/21/2020 and 6/2/2021.
gpm = Gallons per minute

5.1 Former Brine Pond Area

The average pumping rate at well FWS-1 during this reporting period was 5.7 gallons per minute (gpm) (Table 4). DBS&A calculated this average pumping rate from fresh water production data and RW-2 metering data. Fresh water production data consists of daily water injection volumes at the brine well and monthly volumes of fresh water sold to consumers. PAB reset the totalizer meter at FWS-1 on April 14, 2021, so metering data at FWS-1 are unavailable for the first three months of the reporting period. Therefore, DBS&A used fresh water production and RW-2 metering data. The average pumping rate during the previous reporting period was 7.6 gpm, and historically has been greater than 20 gpm (Appendix C).

In the former brine pond area, monitor wells PMW-1 and DBS-1R are currently the only wells to exhibit chloride concentrations above the NMWQCC standard (Figure 4). Groundwater extraction at FWS-1 does prevent the downgradient migration of chloride-impacted groundwater; however, reductions in pumping recorded during this and the previous reporting period have resulted in an increase in chloride concentration at downgradient well DBS-1R (Appendix C). The chloride concentration at DBS-1R had been meeting the NMWQCC standard until November 2020. DBS&A recommends that PAB increase the pumping rate at FWS-1 to address the increasing chloride concentration at DBS-1R. A target pumping rate is 15 to 20 gpm. The chloride concentration at well DBS-4, located downgradient of well DBS-1R, remains stable and below the NMWQCC standard (Figure 4).

5.2 Brine Well Area

During this reporting period, the average pumping rate at well RW-2 was 11.5 gpm (Table 4). The average pumping rate during the previous reporting period was 3.9 gpm (Appendix C).

Pumping at well RW-2 is providing hydraulic containment and removal of chloride-impacted groundwater originating from the area upgradient of the recovery well. Groundwater extraction from this well is preventing further degradation of downgradient and cross-gradient water quality. Chloride concentrations at monitor wells MW-5 (downgradient) and DBS-6 (cross gradient) have decreased since PAB began remedial groundwater extraction at well RW-2 (Appendix C). Chloride concentrations at downgradient monitor wells DBS-10 and MW-5 decreased slightly this reporting period relative to the previous reporting period.

5.3 Facility and System Maintenance

In March 2021, DBS&A requested that PAB increase pumping at FWS-1 due to the increase in chloride concentration at downgradient monitor well DBS-1R. PAB has adjusted fresh water production at the facility in order to increase pumping at FWS-1.

A new pump was installed at auxiliary supply well FWS-2 on June 2, 2021. It was operating during the June 2021 monitoring event. DBS&A has requested that a totalizer flow meter be installed at the FWS-2 wellhead to record pumping volumes from the well.

On June 24, 2021, Basin Surveys surveyed the five surface subsidence monitoring points that were installed at the site in March 2018 (DBS&A, 2018). The survey was conducted in accordance with Condition 2.B.1 of DP-BW-8 (NMEMNRD OCD, 2019). Results of the survey were reported to Carl Chavez on August 10, 2021, and will be included in the 2021 annual Class III well report.

6. Recommendations

Based on the current groundwater monitoring results and site O&M activities, DBS&A offers the following recommendations:

- Continue groundwater extraction at FWS-1 to provide hydraulic containment and removal of the chloride plume in the former brine pond area.

- Continue groundwater extraction at RW-2 to provide hydraulic containment and removal of the chloride plume in the brine well area.
- To the extent practical, attempt to balance groundwater extraction between FWS-1 and RW-2.
- Continue to increase the pumping rate at FWS-1 to address the increasing chloride concentration at downgradient monitor well DBS-1R. A target pumping rate is 15 to 20 gpm, which is more comparable to the rate recorded during the June 2020 monitoring event, when chloride concentration at DBS-1R met the NMWQCC standard.

In addition, DBS&A and PAB will complete the following activities at the site in 2021 to meet the requirements of DP-BW-8:

- Continue to conduct semiannual groundwater monitoring and O&M of the extraction systems at the site.
- Conduct semiannual surveys of the surface subsidence survey monitoring points.
- Recalibrate or replace totalizer meters as needed.

References

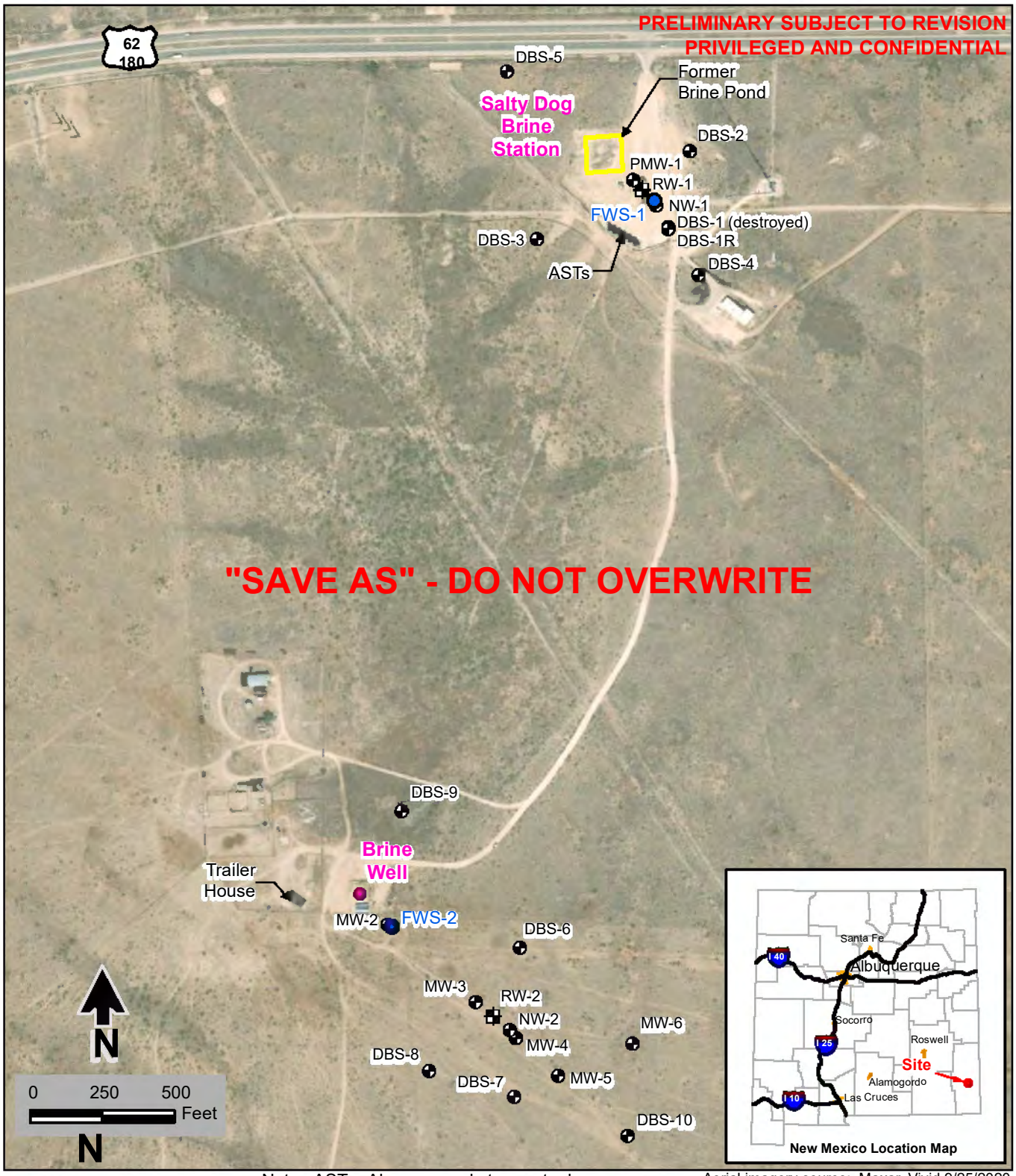
Daniel B. Stephens & Associates (DBS&A). 2009a. *Recovery well installation and pump test report, Salty Dog Brine Station, Lea County, New Mexico*. Prepared for New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division, Environmental Bureau. November 20, 2009.

DBS&A. 2009b. *Preliminary conceptual remedial design report, Salty Dog Brine Station, Lea County, New Mexico*. Prepared for New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division, Environmental Bureau. December 31, 2009.

DBS&A. 2018. Letter report from John Ayarbe and Michael D. McVey to Carl Chavez, New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division, Environmental Bureau, regarding Installation of a monitor well and subsidence survey monitoring points at the Salty Dog Brine Station (API No. 30-025-26307). June 25, 2018.

New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Department (NMEMNRD OCD). 2019. *Discharge Permit (BW-8), Standard Energy, UIC Class III Brine Well Brine Supply Well No.1 API No. 30-025-26307 UL: J Section 5 Township 19 South, Range 36 East, Lea County, New Mexico*. May 17, 2019.

Figures



Note: AST = Aboveground storage tank

Aerial imagery source: Maxar, Vivid 9/25/2020

Explanation

- Fresh water supply well
- Monitor well
- Recovery well
- Well destroyed

SALTY DOG BRINE STATION

Site Location Map

Figure 1

Daniel B. Stephens & Associates, Inc.

8/25/2021

JN DB19.1198.00

S:\PROJECTS\DB19.1198_SALTY_DOG_2019\GIS\MXDS\REPORT\2021_1\SALTEMPLATE_UPTATE\FIG01_SITE_LOCATION_MAP.MXD

PRELIMINARY SUBJECT TO REVISION
PRIVILEGED AND CONFIDENTIAL

Aerial imagery source: Maxar, Vivid 9/25/2020

Explanation

DBS-1R Well designation
3,747.05 Groundwater elevation, ft msl

- Monitor well
- Recovery well
- Fresh water supply well
- Potentiometric surface elevation contour (ft msl), dashed where inferred
- Groundwater flow direction

SALTY DOG BRINE STATION

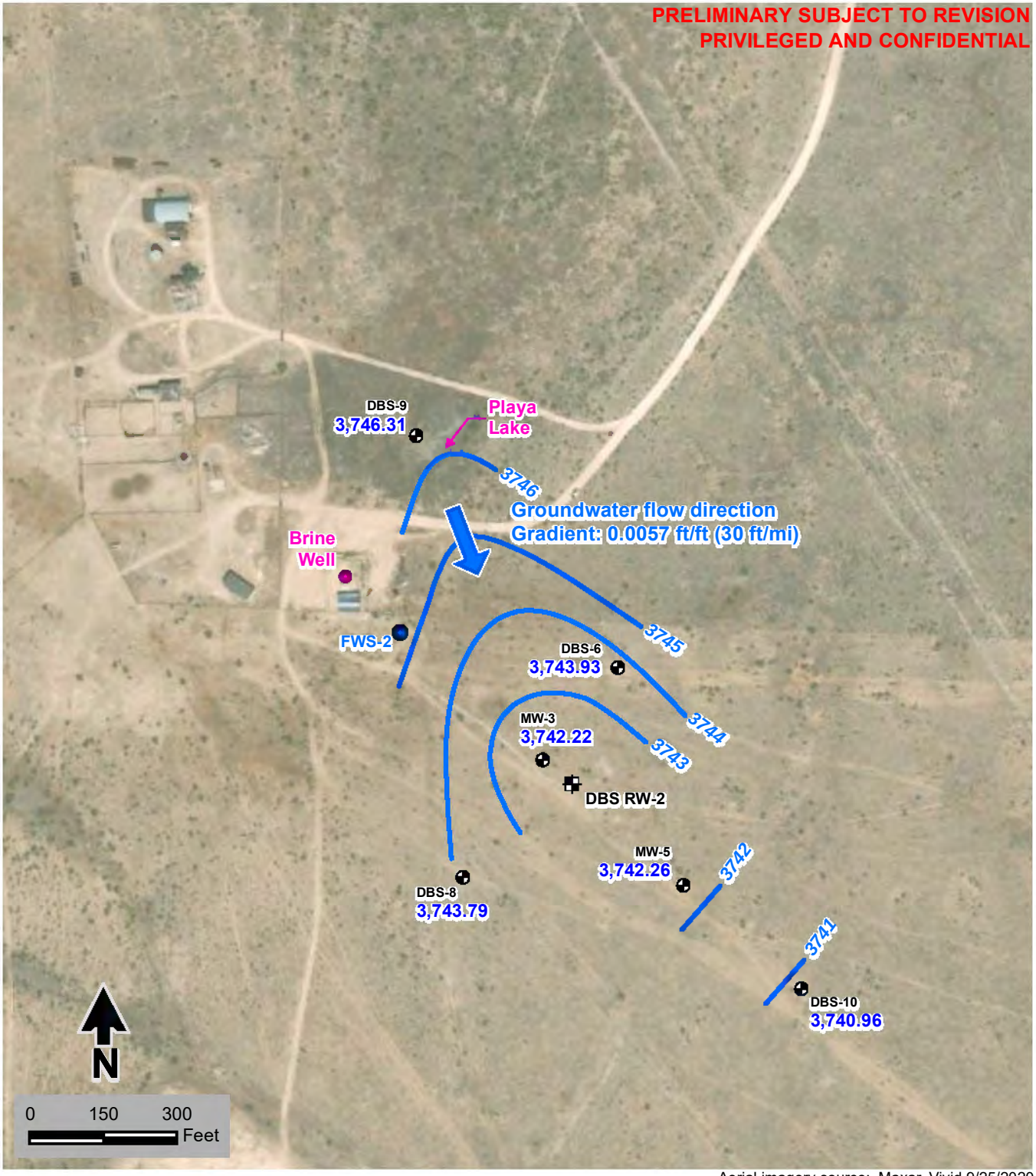
Former Brine Pond Area Potentiometric Surface Elevations June 2021

DBS&A
Daniel B. Stephens & Associates, Inc.
9/3/2021 JN DB19.1198.00

Figure 2

S:\PROJECTS\DB19.1198_SALTY_DOG_2019\GIS\MXDS\REPORT\2021_1SA\TEMPLATE_UPTATE\FIG02_GWE_202006_BRINE_STATION.MXD

PRELIMINARY SUBJECT TO REVISION
PRIVILEGED AND CONFIDENTIAL



Aerial imagery source: Maxar, Vivid 9/25/2020

Explanation

MW-3 Well designation

3,742.22 Groundwater elevation, ft msl

- Monitor well
- Recovery well
- Fresh water supply well
- Potentiometric surface elevation contour (ft msl), dashed where inferred
- Groundwater flow direction

SALTY DOG BRINE STATION

Playa Lake and Brine Well Area Potentiometric Surface Elevations June 2021

DBS&A
Daniel B. Stephens & Associates, Inc.
9/3/2021 JN DB19.1198.00

Figure 3

S:\PROJECTS\DB19.1198_SALTY_DOG_2019\GIS\MXDS\REPORT\2021_1SA\TEMPLATE_UPTATE\FIG03_GWE_202006_BRINE_WELL.MXD

PRELIMINARY SUBJECT TO REVISION
PRIVILEGED AND CONFIDENTIAL

Aerial imagery source: Maxar, Vivid 9/25/2020

Explanation

DBS-2 Well designation
85 Chloride concentration (mg/L)
Monitor well
Recovery well
Fresh water supply well

Red indicates concentration equal to or greater than the NMWQCC standard.

SALTY DOG BRINE STATION

Former Brine Pond Area
Chloride Concentrations in Groundwater
June 2021

Daniel B. Stephens & Associates, Inc.
8/25/2021 JN DB19.1198.00

Figure 4

S:\PROJECTS\DB19.1198 SALTY DOG 2019\GIS\MXDS\REPORT\2021_1SA\TEMPLATE UPTATE\FIG04_CL_GW_202006_BRINE_STATION.MXD

PRELIMINARY SUBJECT TO REVISION
PRIVILEGED AND CONFIDENTIAL

Aerial imagery source: Maxar, Vivid 9/25/2020

Explanation

DBS-8 Well designation

35 Chloride concentration (mg/L)

Monitor well

Recovery well

Fresh water supply well

Red indicates concentration equal to or greater than the NMWQCC standard.

SALTY DOG BRINE STATION

Playa Lake and Brine Well Area
Chloride Concentrations in Groundwater
June 2021

Daniel B. Stephens & Associates, Inc.

8/25/2021 JN DB19.1198.00

Figure 5

S:\PROJECTS\DB19.1198 SALTY DOG 2019\GIS\MXDS\REPORT\2021_1SA\TEMPLATE_UPTATE\FIG05_CL_GW_202006_BRINE_WELL.MXD

Appendix A

Laboratory Analytical Report

DBS&A
Daniel B. Stephens & Associates, Inc.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

June 21, 2021

Mike Zbrozek

Daniel B. Stephens & Assoc.
6020 Academy NE Suite 100
Albuquerque, NM 87109
TEL:
FAX

RE: Salty Dog OrderNo.: 2106279

Dear Mike Zbrozek:

Hall Environmental Analysis Laboratory received 14 sample(s) on 6/4/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2106279**
Date Reported: **6/21/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-1R
Project: Salty Dog
Collection Date: 6/2/2021 4:15:00 PM
Lab ID: 2106279-001 **Matrix:** AQUEOUS **Received Date:** 6/4/2021 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	2200	100	*	mg/L	200	6/11/2021 1:07:14 AM	A79019

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-2
Project: Salty Dog
Collection Date: 6/2/2021 4:45:00 PM
Lab ID: 2106279-002 **Matrix:** AQUEOUS **Received Date:** 6/4/2021 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	85	5.0		mg/L	10	6/7/2021 12:07:27 PM	R78920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: PMW-1
Project: Salty Dog
Collection Date: 6/2/2021 3:50:00 PM
Lab ID: 2106279-003
Matrix: AQUEOUS
Received Date: 6/4/2021 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	6800	250	*	mg/L	500	6/11/2021 1:19:34 AM	A79019

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-4
Project: Salty Dog
Collection Date: 6/3/2021 9:30:00 AM
Lab ID: 2106279-004 **Matrix:** AQUEOUS **Received Date:** 6/4/2021 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	39	5.0		mg/L	10	6/7/2021 1:24:48 PM	R78920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-5
Project: Salty Dog
Collection Date: 6/3/2021 10:00:00 AM
Lab ID: 2106279-005 **Matrix:** AQUEOUS **Received Date:** 6/4/2021 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	170	50		mg/L	100	6/7/2021 2:03:26 PM	R78920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-3
Project: Salty Dog
Collection Date: 6/3/2021 10:35:00 AM
Lab ID: 2106279-006 **Matrix:** AQUEOUS **Received Date:** 6/4/2021 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	52	5.0		mg/L	10	6/7/2021 2:16:19 PM	R78920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-9
Project: Salty Dog
Collection Date: 6/3/2021 11:15:00 AM
Lab ID: 2106279-007
Matrix: AQUEOUS
Received Date: 6/4/2021 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	290	50	*	mg/L	100	6/7/2021 2:54:58 PM	R78920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-8
Project: Salty Dog
Collection Date: 6/3/2021 11:35:00 AM
Lab ID: 2106279-008 **Matrix:** AQUEOUS **Received Date:** 6/4/2021 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	35	5.0		mg/L	10	6/7/2021 3:33:38 PM	R78920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-10
Project: Salty Dog
Collection Date: 6/3/2021 12:15:00 PM
Lab ID: 2106279-009 **Matrix:** AQUEOUS **Received Date:** 6/4/2021 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	560	50	*	mg/L	100	6/7/2021 4:12:16 PM	R78920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: DBS-6
Project: Salty Dog
Collection Date: 6/3/2021 3:15:00 PM
Lab ID: 2106279-010 **Matrix:** AQUEOUS **Received Date:** 6/4/2021 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	250	50		mg/L	100	6/7/2021 4:38:01 PM	R78920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: MW-5
Project: Salty Dog
Collection Date: 6/3/2021 1:30:00 PM
Lab ID: 2106279-011 **Matrix:** AQUEOUS **Received Date:** 6/4/2021 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	640	50	*	mg/L	100	6/7/2021 5:03:46 PM	R78920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** MW-3
Project: Salty Dog **Collection Date:** 6/3/2021 2:55:00 PM
Lab ID: 2106279-012 **Matrix:** AQUEOUS **Received Date:** 6/4/2021 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SPECIFIC GRAVITY						Analyst: **CAS**	
Specific Gravity	0.9991	0			1	6/9/2021 4:37:00 PM	R79010
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Fluoride	ND	1.0		mg/L	10	6/11/2021 1:44:14 AM	A79019
Chloride	4400	250	*	mg/L	500	6/11/2021 1:31:54 AM	A79019
Bromide	2.0	1.0		mg/L	10	6/7/2021 5:16:40 PM	R78920
Phosphorus, Orthophosphate (As P)	ND	5.0	H	mg/L	10	6/11/2021 1:44:14 AM	A79019
Sulfate	290	5.0	*	mg/L	10	6/7/2021 5:16:40 PM	R78920
Nitrate+Nitrite as N	ND	4.0		mg/L	20	6/17/2021 10:34:18 PM	R79167
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **CAS**	
Conductivity	19000	100		µmhos/c	10	6/15/2021 1:22:09 PM	R79103
SM2320B: ALKALINITY						Analyst: **CAS**	
Bicarbonate (As CaCO3)	226.3	20.00		mg/L Ca	1	6/8/2021 6:18:24 PM	R78958
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	6/8/2021 6:18:24 PM	R78958
Total Alkalinity (as CaCO3)	226.3	20.00		mg/L Ca	1	6/8/2021 6:18:24 PM	R78958
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	9910	200	*D	mg/L	1	6/11/2021 2:15:00 PM	60550
SM4500-H+B / 9040C: PH						Analyst: **CAS**	
pH	7.53		H	pH units	1	6/8/2021 6:18:24 PM	R78958
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **ags**	
Calcium	840	10		mg/L	10	6/11/2021 6:49:30 PM	60475
Magnesium	130	10		mg/L	10	6/11/2021 6:49:30 PM	60475
Potassium	14	10		mg/L	10	6/11/2021 6:49:30 PM	60475
Sodium	2500	50		mg/L	50	6/11/2021 6:52:30 PM	60475

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: Brine
Project: Salty Dog
Collection Date: 6/3/2021 3:30:00 PM
Lab ID: 2106279-013 **Matrix:** AQUEOUS **Received Date:** 6/4/2021 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SPECIFIC GRAVITY						Analyst: **CAS**	
Specific Gravity	1.200	0			1	6/9/2021 4:37:00 PM	R79010
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	170000	10000	*	mg/L	2E+	6/11/2021 2:21:17 AM	A79019
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	315000	2000	*D	mg/L	1	6/11/2021 2:15:00 PM	60550
SM4500-H+B / 9040C: PH						Analyst: **CAS**	
pH	7.21		H	pH units	1	6/8/2021 12:59:09 PM	R78958
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **ags**	
Sodium	71000	2000		mg/L	2E+	6/11/2021 6:55:28 PM	60475

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: Injection
Project: Salty Dog
Collection Date: 6/3/2021 3:45:00 PM
Lab ID: 2106279-014 **Matrix:** AQUEOUS **Received Date:** 6/4/2021 11:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SPECIFIC GRAVITY						Analyst: **CAS**	
Specific Gravity	0.9995	0			1	6/9/2021 4:37:00 PM	R79010
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	520	50	*	mg/L	100	6/7/2021 6:46:51 PM	R78920
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1210	40.0	*D	mg/L	1	6/11/2021 2:15:00 PM	60550
SM4500-H+B / 9040C: PH						Analyst: **CAS**	
pH	7.78		H	pH units	1	6/8/2021 1:03:43 PM	R78958
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **ags**	
Sodium	310	20		mg/L	20	6/11/2021 6:12:09 PM	60475

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

ANALYTICAL REPORT

June 17, 2021

Hall Environmental Analysis Laboratory

Sample Delivery Group:	L1363019
Samples Received:	06/08/2021
Project Number:	
Description:	

Report To: Jackie Bolte
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

[Preliminary Report]

John Hawkins
Project Manager

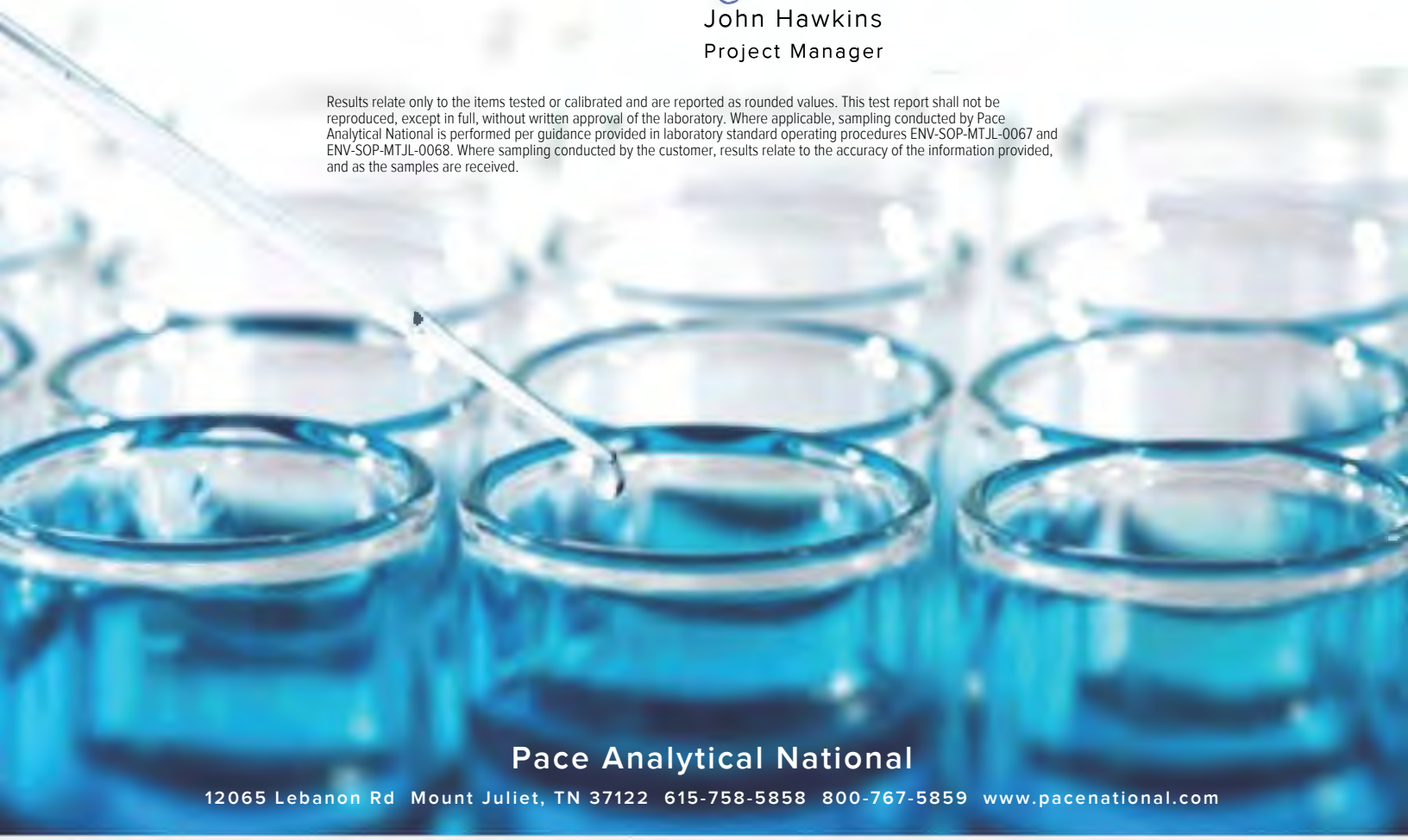


TABLE OF CONTENTS

SAMPLE SUMMARY

2106279-012C MW-3 L1363019-01 GW

Collected by	Collected date/time	Received date/time
	06/03/21 14:55	06/08/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2580	WG1688858	1	06/15/21 21:06	06/15/21 21:06	AMH	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

[Preliminary Report]

John Hawkins
Project Manager

Wet Chemistry by Method 2580

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	mV			date / time	
ORP	194	T8	1	06/15/2021 21:06	WG1688858

L1363019-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1363019-01 06/15/21 21:06 • (DUP) R3667688-3 06/15/21 21:06

Analyte	Original Result mV	DUP Result mV	Dilution	DUP Diff mV	DUP Qualifier	DUP Diff Limits mV
ORP	194	187	1	6.40		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3667688-1 06/15/21 21:06 • (LCSD) R3667688-2 06/15/21 21:06

Analyte	Spike Amount mV	LCS Result mV	LCSD Result mV	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	Diff mV	Diff Limits mV
ORP	106	106	106	100	100	86.0-105			0.000	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
T8	Sample(s) received past/too close to holding time expiration.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: clients.hallenvironmental.com

SUB CONTRATOR:	Pace TN	COMPANY: PACE TN	PHONE: (800) 767-5859	FAX:	(615) 758-5859
ADDRESS:	12065 Lebanon Rd		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				

A134

L1363019

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2106279-012C	MW-3	125HDP	Aqueous	6/3/2021 2:55:00 PM	1	ORP -01

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By: SEL	Date: 6/4/2021	Time: 11:50 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 06/8/21	Time: 0900

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 2.7-1-2.6 °C Attempt to Cool? _____

Comments: _____

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2106279**

21-Jun-21

Client: Daniel B. Stephens & Assoc.

Project: Salty Dog

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R78920**	RunNo: **78920**
Prep Date:	Analysis Date: **6/7/2021**	SeqNo: **2768606** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Bromide	ND	0.10								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R78920**	RunNo: **78920**
Prep Date:	Analysis Date: **6/7/2021**	SeqNo: **2768609** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.6	0.50	5.000	0	92.0	90	110			
Bromide	2.4	0.10	2.500	0	95.6	90	110			
Sulfate	9.4	0.50	10.00	0	94.5	90	110			

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **A79019**	RunNo: **79019**
Prep Date:	Analysis Date: **6/10/2021**	SeqNo: **2772142** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Phosphorus, Orthophosphate (As P	ND	0.50								

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **A79019**	RunNo: **79019**
Prep Date:	Analysis Date: **6/10/2021**	SeqNo: **2772143** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	108	90	110			
Chloride	4.7	0.50	5.000	0	94.3	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.4	90	110			

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R79167**	RunNo: **79167**
Prep Date:	Analysis Date: **6/17/2021**	SeqNo: **2778673** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106279**
21-Jun-21

Client: Daniel B. Stephens & Assoc.
Project: Salty Dog

Sample ID: **LCS**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R79167**	RunNo: **79167**							
Prep Date:	Analysis Date: **6/17/2021**	SeqNo: **2778679**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	98.3	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106279**
21-Jun-21

Client: Daniel B. Stephens & Assoc.
Project: Salty Dog

Sample ID: **LCS-1 100.1US EC**	SampType: **lcs**	TestCode: **SM2510B: Specific Conductance**
Client ID: **LCSW**	Batch ID: **R79103**	RunNo: **79103**
Prep Date:	Analysis Date: **6/15/2021**	SeqNo: **2776630** Units: **µmhos/cm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	100	10	100.1	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2106279**

21-Jun-21

Client: Daniel B. Stephens & Assoc.

Project: Salty Dog

Sample ID: **MB-60475**	SampType: **MBLK**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **PBW**	Batch ID: **60475**	RunNo: **79050**
Prep Date: **6/7/2021**	Analysis Date: **6/11/2021**	SeqNo: **2773736** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID: **LCS-60475**	SampType: **LCS**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **LCSW**	Batch ID: **60475**	RunNo: **79050**
Prep Date: **6/7/2021**	Analysis Date: **6/11/2021**	SeqNo: **2773738** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	52	1.0	50.00	0	104	80	120			
Magnesium	51	1.0	50.00	0	102	80	120			
Potassium	50	1.0	50.00	0	99.6	80	120			
Sodium	51	1.0	50.00	0	103	80	120			

Sample ID: **LCSD-60475**	SampType: **LCSD**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **LCSS02**	Batch ID: **60475**	RunNo: **79050**
Prep Date: **6/7/2021**	Analysis Date: **6/11/2021**	SeqNo: **2773739** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	52	1.0	50.00	0	103	80	120	0.534	20	
Magnesium	51	1.0	50.00	0	101	80	120	0.497	20	
Potassium	50	1.0	50.00	0	99.0	80	120	0.612	20	
Sodium	50	1.0	50.00	0	101	80	120	2.03	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106279**
21-Jun-21

Client: Daniel B. Stephens & Assoc.
Project: Salty Dog

Sample ID: **2106279-012A dup**	SampType: **dup**	TestCode: **SM4500-H+B / 9040C: pH**
Client ID: **MW-3**	Batch ID: **R78958**	RunNo: **78958**
Prep Date:	Analysis Date: **6/8/2021**	SeqNo: **2770026** Units: **pH units**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.53									H

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2106279**

21-Jun-21

Client: Daniel B. Stephens & Assoc.

Project: Salty Dog

Sample ID: **mb-1 alk**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R78958**	RunNo: **78958**							
Prep Date:	Analysis Date: **6/8/2021**	SeqNo: **2769902**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: **lcs-1 alk**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R78958**	RunNo: **78958**							
Prep Date:	Analysis Date: **6/8/2021**	SeqNo: **2769903**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	73.44	20.00	80.00	0	91.8	90	110			

Sample ID: **lcsd alk**	SampType: **lcsd**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSS02**	Batch ID: **R78958**	RunNo: **78958**							
Prep Date:	Analysis Date: **6/8/2021**	SeqNo: **2769904**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	74.72	20.00	80.00	0	93.4	90	110	1.73	20	

Sample ID: **mb-2 alk**	SampType: **mblk**	TestCode: **SM2320B: Alkalinity**							
Client ID: **PBW**	Batch ID: **R78958**	RunNo: **78958**							
Prep Date:	Analysis Date: **6/8/2021**	SeqNo: **2769926**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID: **lcs-2 alk**	SampType: **lcs**	TestCode: **SM2320B: Alkalinity**							
Client ID: **LCSW**	Batch ID: **R78958**	RunNo: **78958**							
Prep Date:	Analysis Date: **6/8/2021**	SeqNo: **2769927**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	74.36	20.00	80.00	0	93.0	90	110			

Sample ID: **2106279-012A dup**	SampType: **dup**	TestCode: **SM2320B: Alkalinity**							
Client ID: **MW-3**	Batch ID: **R78958**	RunNo: **78958**							
Prep Date:	Analysis Date: **6/8/2021**	SeqNo: **2769929**	Units: **mg/L CaCO3**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	227.1	20.00						0.353	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2106279**

21-Jun-21

Client: Daniel B. Stephens & Assoc.

Project: Salty Dog

Sample ID: **MB-60550**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **60550**	RunNo: **79026**
Prep Date: **6/10/2021**	Analysis Date: **6/11/2021**	SeqNo: **2772439** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: **LCS-60550**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **60550**	RunNo: **79026**
Prep Date: **6/10/2021**	Analysis Date: **6/11/2021**	SeqNo: **2772440** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1030	20.0	1000	0	103	80	120			

Sample ID: **2106279-014ADUP**	SampType: **DUP**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **Injection**	Batch ID: **60550**	RunNo: **79026**
Prep Date: **6/10/2021**	Analysis Date: **6/11/2021**	SeqNo: **2772462** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1220	40.0						0.495	10	*D

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Daniel B. Stephens & Assoc. Work Order Number: 2106279 RcptNo: 1

Received By: Desiree Dominguez 6/4/2021 11:00:00 AM DD

Completed By: Sean Livingston 6/4/2021 11:35:56 AM Sean Livingston

Reviewed By: JO 06-04-21

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 4 (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? NO
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: JR 6/4/21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks: Poured off 125ml from sample 012A for ORP analysis. JR 6/4/21

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.8	Good				

Chain-of-Custody Record

Client: Daniel B Stephens

Mailing Address: ABQ OFFICE

Phone #: 505-822-9400

email or Fax#: MZbrozek@Geo-Logic.com

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: Salty Dog

Project #: DB19.1198.00

Project Manager: M. Zbrozek

Sampler: M. Zbrozek

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 5.6+0.2=5.8 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2106279	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Cl only 300					
6/3/21	1615	GW	DBS-1R	1 poly	NA	001											X					
	1645		DBS-2			002											X					
	1550		PMW-1			003											X					
6/3/21	0930		DBS-4			004											X					
	1000		DBS-5			005											X					
	1035		DBS-3			006											X					
	1115		DBS-9			007											X					
	1135		DBS-8			008											X					
	1215		DBS-10			009											X					
	1515		DBS-6			010											X					
	1330		MW-5			011											X					

Date:	Time:	Relinquished by:	Received by:	Via:	Date Time
6/4/21	1050			CDO	6.4.21 11:00
Date:	Time:	Relinquished by:	Received by:	Via:	Date Time

Remarks:

Chain-of-Custody Record

Client: DBSA

Mailing Address: ABQ Office

Phone #: 505-822-9400

email or Fax#: MZbrozek@Geo-Logic.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Salty Dog

Project #: DB19.1198.00

Project Manager: M. Zbrozek

Sampler: M. Z.

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 5.6+0.2 = 5.8 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2106279	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals 300.0	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA) ORP	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Spec Grav, TDS, pH	Chloride 300	Sodium 6010B	Sp Conductivity	Total Alk, Bicarb, Carb	Ca, Mg, K, Na 6010B
6/3/21	1455	GW	MW-3	3 poly	Varies	012							X	X			X			X	X	X
↓	1530	↓	Brine	2 poly	↓	013											X	X	X			
↓	1545	↓	Injection	2 poly	↓	014											X	X	X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
6/4/21	1050			CDO	6.4.21	11:00

Remarks:

Page 2 of 2

Appendix B

Field Notes

DBS&A
Daniel B. Stephens & Associates, Inc.

Daniel B Stephens & Associates, Inc

GROUNDWATER ELEVATION DATA SHEET

Project Name. Salty Dog Sampler: MT

Project #: DB19.1198 Sample Date. 6/2/21

Project Manager: John Ayarbe Sheet # 1 of 1

Well ID	previous (11/20)	Depth to Water	Total Depth	Comments: (well dia., sampled, condition)
DBS-1R	68.94	69.95	74.42	1615 6/2
DBS-2	71.57	72.43	75.35	1645 6/2
DBS-3	66.67	67.50	74.76	1035 6/3
DBS-4	72.33	73.05	78.81	0930 6/3
DBS-5	69.08	69.88	75.38	1000 6/3
DBS-6	68.38	68.72 68.77	76.02	1515 6/3
DBS-7	67.01	67.40		WL only
DBS-8	66.55	66.91	69.91	1135 6/3
DBS-9	59.64	59.95	67.55	1115 6/3
DBS-10	66.23	66.52	78.11	1215 6/3
MW-2	66.31	70.75	--	1645 6/2
MW-3	67.73	69.93	147.13	1455 6/3
MW-4	67.74	69.58		WL only
MW-5	66.00	66.70	128.78	1330 6/3
MW-6	66.77	69.17		WL only
PMW-1	72.19	73.10	77.73	6/2 1550

Comments. Nov - Totalizer RW-2 288745.5
FWS-1 3096683

FWS ? Pumping, new pump 6/2/21, no flow meter

RW-2 - 364870.4 - Pumping on 6/2/21
829.3 BBL/Day

FWS-1 305900
running 6/2/21
149 BBL Day

S:\Projects\ES08.0118.06_Salty_Dog_2016\Field Forms\SD GW Elevation.docx

Brine @ 1530 Inject at 1545

Daniel B. Stephens & Associates, Inc.

GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog Sampler: MC

Project #: DB19.1198.00 Sample Date: 6/2/21

Project Manager: John Ayarbe Sample Time: 1550

Well #: PMW-1

Well Diameter: 2" (inches) Height of Water Column 4.63 (feet)

Depth to NAPL: --- (feet btoc) Casing Volume 0.74 (gal)

Depth to Water: 73.10 (feet btoc) Purge Volume 2.22 (gal)

Total Depth of Well: 77.73 (feet) Purge Method Grab

Note:
One casing volume (SCH 40 PVC): 2.0" ID casing = 0.16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	pH	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D.O. (mg/L)	Turbidity (NTU)
Initial	7.20	20.4	21815	239.7	7.9	
1	7.28	20.0	19131	233.2	7.2	
2	7.31	19.70	~~19231~~ 18731	229.4	7.5	
3	7.33	19.40	20125	221.6	6.8	

Sample Description 1 poly

Physical Observations

Analytical Method(s) Chloride

Daniel B. Stephens & Associates, Inc.

GROUNDWATER MONITORING DATA SHEET

Project Name: Salty Dog
Sampler: MM
Project #: DB19.1198.00
Sample Date: 6/2/21
Project Manager: John Ayarbe
Sample Time: 1615

Well #: DBS-1R

Well Diameter: 2" (inches) Height of Water Column: 4.47 (feet)
Depth to NAPL: --- (feet btoc) Casing Volume: 0.71 (gal)
Depth to Water: 69.95 (feet btoc) Purge Volume: 2.14 (gal)
Total Depth of Well: 74.42 (feet) Purge Method: Grab

Note:
One casing volume (SCH 40 PVC): 2.0" ID casing = 0.16 gal/ft; 4 0" = 0.65 gal/ft; 6.0" = 1 47 gal/ft

Groundwater Parameters:

Casing Volume	pH	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.40	19.6	6546	145.8	7.9	
1	7 39	19.3	6230	173.6	7.6	
2	7.29	19.2	6997	187.2	7.7	
3	7.46	19.2	6747	193.4	8.1	

Sample Description: 1 poly

Physical Observations:

Analytical Method(s): Chloride

Daniel B. Stephens & Associates, Inc.

GROUNDWATER MONITORING DATA SHEET

Project Name: Salty Dog
Sampler: MT
Project #: DB19.1198.00
Sample Date: 6/2/21
Project Manager: John Ayarbe
Sample Time: 1645

Well #: DBS-2

Well Diameter: 2" (inches) Height of Water Column: 2.92 (feet)
Depth to NAPL: --- (feet btoc) Casing Volume: 0.47 (gal)
Depth to Water: 72.43 (feet btoc) Purge Volume: 1.41 (gal)
Total Depth of Well: 75.35 (feet) Purge Method: Grab

Note:
One casing volume (SCH 40 PVC): 2 0" ID casing = 0.16 gal/ft; 4 0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	pH	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.56	20.7	796	153.3	5.9	
1	7.50	20.0	533	170.8	6.6	
2	7.46	19.4	772	177.3	6.7	
3	7.51	19.2	771	179.9	6.9	

Sample Description: 1 poly

Physical Observations.

Analytical Method(s): Chloride

Daniel B. Stephens & Associates, Inc.

GROUNDWATER MONITORING DATA SHEET

Project Name: Salty Dog
Sampler: MZ
Project #: DB19.1198.00
Sample Date: 6/3/21
Project Manager: John Ayarbe
Sample Time: 0930

Well #: DBS-4

Well Diameter: 2" (inches) Height of Water Column: 5.76 (feet)
Depth to NAPL: --- (feet btoc) Casing Volume: 0.92 (gal)
Depth to Water: (feet btoc) Purge Volume: 2.76 (gal)
Total Depth of Well: 78.81 (feet) Purge Method: Grab

Note:
One casing volume (SCH 40 PVC): 2 0" ID casing = 0.16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	pH	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.69	18.9	567	226.8	7.4	
1	7.67	19.3	570	226.0	8.0	
2	7.70	19.4	570	223.8	7.4	
3						

Sample Description: 1 poly

Physical Observations:

Analytical Method(s): Chloride

Daniel B. Stephens & Associates, Inc.

GROUNDWATER MONITORING DATA SHEET

Project Name: Salty Dog
Sampler: MZ
Project #: DB19.1198.00
Sample Date: 6/3
Project Manager: John Ayarbe
Sample Time: 1000

Well #: DBS-5

Well Diameter: 2" (inches) Height of Water Column: 5.5 (feet)
Depth to NAPL: --- (feet btoc) Casing Volume: 0.88 (gal)
Depth to Water: 69.88 (feet btoc) Purge Volume: 2.64 (gal)
Total Depth of Well: 75.38 (feet) Purge Method: Grab

Note:
One casing volume (SCH 40 PVC). 2 0" ID casing = 0.16 gal/ft; 4 0" = 0.65 gal/ft; 6.0" = 1 47 gal/ft

Groundwater Parameters:

Casing Volume	pH	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.13	20.3	1307	201.5	7 0	
1	7.14	19.8	1301	214.1	6.7	
2	7.19	19.9	1307	214.1	6.5	
3	7.31	20.3	1314	210.7	6.3	

Sample Description: 1 poly

Physical Observations:

Analytical Method(s): Chloride

Daniel B. Stephens & Associates, Inc.

GROUNDWATER MONITORING DATA SHEET

Project Name: Salty Dog Sampler: MT

Project #: DB19.1198.00 Sample Date: 6/3/21

Project Manager: John Ayarbe Sample Time: 1035

Well #: DBS-3

Well Diameter: 2" (inches) Height of Water Column: 7.26 (feet)

Depth to NAPL: --- (feet btoc) Casing Volume: 1.16 (gal)

Depth to Water: 67.50 (feet btoc) Purge Volume: 3.48 (gal)

Total Depth of Well: 74.76 (feet) Purge Method: Grab

Note:
One casing volume (SCH 40 PVC) 2.0" ID casing = 0.16 gal/ft; 4.0" = 0 65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	pH	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.63	20.1	611	194.0	7.6	
1	7.68	19.8	608	183.4	7.0	
2	7.76	19.6	609	181.3	7.5	
3	7.83	19.9	611	171.0	7.3	

Sample Description: 1 poly

Physical Observations:

Analytical Method(s): Chloride

Daniel B. Stephens & Associates, Inc.

GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog Sampler: MZ

Project #: DB19.1198.00 Sample Date: 6/3

Project Manager: John Ayarbe Sample Time: 1115

Well #: DBS-9

Well Diameter: 2" (inches) Height of Water Column 7.6 (feet)

Depth to NAPL: --- (feet btoc) Casing Volume: 1.22 (gal)

Depth to Water: 59.95 (feet btoc) Purge Volume 3.66 (gal)

Total Depth of Well: 67.55 (feet) Purge Method Grab

Note:
One casing volume (SCH 40 PVC). 2 0" ID casing = 0.16 gal/ft; 4 0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	pH	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.16	19.4	2864	188.8	7.2	
1	7.33	19.2	2456	185.5	7.4	
2	~~7.59~~ 7.59	19.0	1886	171.5	7.2	
3	7.64	19.3	1819	165.7	7.1	

Sample Description 1 poly

Physical Observations

Analytical Method(s) Chloride

Daniel B. Stephens & Associates, Inc.

GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog Sampler MZ

Project #: DB19.1198.00 Sample Date: 6/3

Project Manager: John Ayarbe Sample Time: 1135

Well #: DBS-8

Well Diameter: 2" (inches) Height of Water Column: 3 (feet)

Depth to NAPL --- (feet btoc) Casing Volume: 0.48 (gal)

Depth to Water: 66.91 (feet btoc) Purge Volume: 1.44 (gal)

Total Depth of Well: 69.91 (feet) Purge Method: Grab

Note:
One casing volume (SCH 40 PVC): 2.0" ID casing = 0.16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1 47 gal/ft

Groundwater Parameters:

Casing Volume	pH	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.65	20.1	628	153.2	7.0	
1	7.65	19.9	623	157.9	7.3	
2	7.64	19.7	620	162.7	7.1	
3	7.64	20.0	619	170.7	6.5	

Sample Description 1 poly

Physical Observations.

Analytical Method(s) Chloride

Daniel B. Stephens & Associates, Inc.

GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog Sampler: MZ

Project #: DB19.1198.00 Sample Date: 6/3

Project Manager: John Ayarbe Sample Time: 1215

Well #: DBS-10

Well Diameter: 2" (inches) Height of Water Column 11.59 (feet)

Depth to NAPL: --- (feet btoc) Casing Volume 1.85 (gal)

Depth to Water: 66.52 (feet btoc) Purge Volume. 5.56 (gal)

Total Depth of Well: 78.11 (feet) Purge Method Grab

Note:
One casing volume (SCH 40 PVC): 2.0" ID casing = 0.16 gal/ft; 4 0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	pH	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.23	20.0	2244	201.1	5 6	
1	7.35	19.8	2295	164.2	6 2	
2	7.19	19.6	2338	186 5	5.7	
3	7.22	19.7	2338	192.6	5.8	

Sample Description 1 poly

Physical Observations

Analytical Method(s) Chloride

Daniel B. Stephens & Associates, Inc.

GROUNDWATER MONITORING DATA SHEET

Project Name: Salty Dog
Project #: DB19.1198.00
Project Manager: John Ayarbe
Sampler: MZ
Sample Date: 6/3
Sample Time: 1330

Well #: MW-5
Well Diameter: 2" (inches)
Depth to NAPL: --- (feet btoc)
Depth to Water: 66.70 (feet btoc)
Total Depth of Well: 128.78 (feet)
Height of Water Column: 62.08 (feet)
Casing Volume: 9.93 (gal)
Purge Volume: 29.80 (gal)
Purge Method: Grab

Note:
One casing volume (SCH 40 PVC): 2 0" ID casing = 0.16 gal/ft; 4 0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	pH	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.25	19.8	2010	199.4	5.1	
1	7.16	20.4	2474	210.5	4.9	
2	7.14	@19.8	2550	209.8	4.5	
3	7.17	19.7	2549	175.5	4.7	

Sample Description: 1 poly

Physical Observations:

Analytical Method(s): Chloride

Daniel B. Stephens & Associates, Inc.

GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog Sampler MZ

Project #: DB19.1198.00 Sample Date: 6/3

Project Manager: John Ayarbe Sample Time: 1455

Well #: MW-3

Well Diameter: 2" (inches) Height of Water Column 77.3 (feet)

Depth to NAPL --- (feet btoc) Casing Volume 12.34 (gal)

Depth to Water: 69.83 (feet btoc) Purge Volume 37.02 (gal)

Total Depth of Well 147.13 (feet) Purge Method: Grab

Note:
One casing volume (SCH 40 PVC). 2.0" ID casing = 0.16 gal/ft; 4.0" = 0.65 gal/ft; 6.0" = 1 47 gal/ft

Groundwater Parameters:

Casing Volume	pH	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.38	20.3	2860	194.7	3.4	
1	7.30	19.8	2971	202.4	4.5	
2	7.23	19.8	13152	210.6	3.5	
3	7.32	20.4	14734	201.8	4.1	

Sample Description 1 poly (unpreserved Chloride), Water Quality Suite

Physical Observations

Analytical Method(s) Chloride

Daniel B. Stephens & Associates, Inc.

GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog Sampler MZ

Project #: DB19.1198.00 Sample Date: 6/3

Project Manager: John Ayarbe Sample Time: 1515

Well #: DBS-6

Well Diameter: 2" (inches) Height of Water Column 7.3 (feet)

Depth to NAPL: --- (feet btoc) Casing Volume 1.17 (gal)

Depth to Water: 68.72 (feet btoc) Purge Volume 3.50 (gal)

Total Depth of Well: 76.02 (feet) Purge Method Grab

Note:
One casing volume (SCH 40 PVC): 2.0" ID casing = 0.16 gal/ft; 4 0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	pH	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7 36	20.3	1388	173.1	6.5	
1	7.30	19.8	1383	185.3	7.4	
2	7.33	19.7	1388	187.8	7.3	
3	7.33	19 4	1397	187.0	7.2	

Sample Description 1 poly

Physical Observations

Analytical Method(s). Chloride

Daniel B. Stephens & Associates, Inc.

GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog Sampler: MZ

Project #: DB19.1198.00 Sample Date: 6/3

Project Manager: John Ayarbe Sample Time: 1530

Well #: ~~Injection~~ Brine

Well Diameter: 2" (inches) Height of Water Column _____ (feet)

Depth to NAPL. --- (feet btoc) Casing Volume. _____ (gal)

Depth to Water: _____ (feet btoc) Purge Volume _____ (gal)

Total Depth of Well _____ (feet) Purge Method Grab

Note:
One casing volume (SCH 40 PVC): 2 0" ID casing = 0.16 gal/ft; 4 0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	pH	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.28	26.9	31087	91.2	1.0	
1						
2						
3						

Brine

Sample Description 3 poly

Brine

Physical Observations From well head

Analytical Method(s) Chloride, TDS, Spec Gravity, pH, and Na

Daniel B. Stephens & Associates, Inc.

GROUNDWATER MONITORING DATA SHEET

Project Name Salty Dog Sampler: MZ

Project #: DB19.1198.00 Sample Date: 6/3

Project Manager: John Ayarbe Sample Time: ~~1530~~ 1545

Well #: ~~Brine~~ Inject.

Well Diameter: 2" (inches) Height of Water Column _____ (feet)

Depth to NAPL: --- (feet btoc) Casing Volume: _____ (gal)

Depth to Water: _____ (feet btoc) Purge Volume. _____ (gal)

Total Depth of Well: _____ (feet) Purge Method Grab

Note:
One casing volume (SCH 40 PVC): 2.0" ID casing = 0.16 gal/ft; 4 0" = 0.65 gal/ft; 6.0" = 1.47 gal/ft

Groundwater Parameters:

Casing Volume	pH	Temp (°F)	Conductivity (µS/cm)	ORP (mv)	D O (mg/L)	Turbidity (NTU)
Initial	7.87	34.1	2589	-59.6	2.9	
1						
2						
3						

Sample Description 3 poly

Physical Observations _____

Analytical Method(s) Sodium, Chloride, TDS, Spec Gravity, pH

Appendix C

Historical Data

DBS&A
Daniel B. Stephens & Associates, Inc.

Table C-1. Historical Fluid Level Measurements
Page 1 of 13

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation [a] (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-1	56.0–76.0	3,817.09	4/08/2009	62.38	3,754.71
			5/11/2011	64.70	3,752.39
			10/04/2011	Well destroyed	
DBS-1R	58.0–78.0	3,817.00 [b]	4/30/2012	63.60	3,753.40
			9/10/2012	65.65	3,751.35
			6/23/2013	64.40	3,752.60
			1/09/2014	67.23	3,749.77
			4/07/2014	66.36	3,750.64
			3/20/2015	67.17	3,749.83
			7/01/2015	67.92	3,749.08
			9/29/2015	67.07	3,749.93
			12/16/2015	67.54	3,749.46
			3/22/2016	66.61	3,750.39
			6/08/2016	66.23	3,750.77
			9/13/2016	67.43	3,749.57
			12/01/2016	67.31	3,749.69
			6/20/2017	69.60	3,747.40
			12/19/2017	67.80	3,749.20
			6/18/2018	67.45	3,749.55
			11/07/2018	68.71	3,748.29
			6/03/2019	68.25	3,748.75
			12/17/2019	70.41	3,746.59
			6/23/2020	68.66	3,748.34
			11/21/2020	68.94	3,748.06
			6/02/2021	69.95	3,747.05

[a] Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.
[b] Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

bgs = Below ground surface
btoc = Below top of casing
msl = Above mean sea level
NA = Not available

Table C-1. Historical Fluid Level Measurements
Page 2 of 13

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation [a] (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-2	58.0–78.0	3,820.50	4/08/2009	65.45	3,755.05
			5/11/2011	66.80	3,753.70
			10/04/2011	65.87	3,754.63
			2/08/2012	65.96	3,754.54
			4/30/2012	66.26	3,754.24
			9/10/2012	67.45	3,753.05
			6/23/2013	67.03	3,753.47
			1/09/2014	69.08	3,751.42
			4/07/2014	68.67	3,751.83
			3/20/2015	69.32	3,751.18
			6/30/2015	69.29	3,751.21
			9/29/2015	69.41	3,751.09
			12/16/2015	69.71	3,750.79
			3/22/2016	69.13	3,751.37
			6/08/2016	68.91	3,751.59
			9/13/2016	69.76	3,750.74
			12/01/2016	69.73	3,750.77
			6/20/2017	71.33	3,749.17
			12/19/2017	70.42	3,750.08
			6/18/2018	70.25	3,750.25
			11/07/2018	71.07	3,749.43
			6/03/2019	70.94	3,749.56
			12/17/2019	72.43	3,748.07
			6/23/2020	71.54	3,748.96

[a] Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.
[b] Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.
bgs = Below ground surface
btoc = Below top of casing
msl = Above mean sea level
NA = Not available

Table C-1. Historical Fluid Level Measurements
Page 3 of 13

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation [a] (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-2 (cont.)	58.0–78.0	3,820.50	11/21/2020	71.57	3,748.93
			6/02/2021	72.43	3,748.07
DBS-3	56.0–76.72	3,816.66	4/08/2009	60.67	3,755.99
			5/11/2011	61.25	3,755.41
			10/04/2011	61.25	3,755.41
			2/08/2012	61.11	3,755.55
			4/30/2012	61.41	3,755.25
			9/10/2012	61.81	3,754.85
			6/23/2013	62.08	3,754.58
			1/09/2014	63.30	3,753.36
			4/07/2014	63.43	3,753.23
			3/20/2015	63.93	3,752.73
			6/30/2015	63.99	3,752.67
			9/29/2015	64.17	3,752.49
			12/16/2015	64.41	3,752.25
			3/22/2016	63.88	3,752.78
			6/08/2016	63.92	3,752.74
			9/13/2016	64.56	3,752.10
			12/01/2016	64.59	3,752.07
			6/20/2017	65.52	3,751.14
			12/19/2017	65.54	3,751.12
			6/18/2018	65.60	3,751.06
			11/07/2018	66.11	3,750.55
			6/03/2019	66.10	3,750.56
			12/17/2019	66.96	3,749.70

[a] Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.
[b] Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.
bgs = Below ground surface
btoc = Below top of casing
msl = Above mean sea level
NA = Not available

Table C-1. Historical Fluid Level Measurements
Page 4 of 13

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation [a] (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-3 (cont.)	56.0–76.72	3,816.66	6/23/2020	66.81	3,749.85
			11/21/2020	66.67	3,749.99
			6/02/2021	67.50	3,749.16
DBS-4	56.0–76.0	3,820.37	4/08/2009	66.27	3,754.10
			5/11/2011	67.23	3,753.14
			10/04/2011	66.67	3,753.70
			2/08/2012	66.76	3,753.61
			4/30/2012	67.02	3,753.35
			9/10/2012	67.78	3,752.59
			6/23/2013	67.70	3,752.67
			1/09/2014	69.37	3,751.00
			4/07/2014	69.23	3,751.14
			3/20/2015	69.81	3,750.56
			6/30/2015	69.85	3,750.52
			9/29/2015	70.00	3,750.37
			12/16/2015	70.25	3,750.12
			3/22/2016	69.74	3,750.63
			6/08/2016	69.62	3,750.75
			9/13/2016	70.35	3,750.02
			12/01/2016	70.38	3,749.99
			6/20/2017	71.67	3,748.70
			12/19/2017	71.08	3,749.29
			6/18/2018	70.98	3,749.39
			11/07/2018	71.61	3,748.76
			6/03/2019	71.66	3,748.71

[a] Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.
[b] Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

bgs = Below ground surface
btoc = Below top of casing
msl = Above mean sea level
NA = Not available

Table C-1. Historical Fluid Level Measurements
Page 5 of 13

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation [a] (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-4 (cont.)	56.0–76.0	3,820.37	12/17/2019	72.90	3,747.47
			6/23/2020	72.36	3,748.01
			11/21/2020	72.33	3,748.04
			6/02/2021	73.05	3,747.32
DBS-5	56.9–76.9	3,820.66	4/08/2009	62.99	3,757.67
			5/11/2011	63.45	3,757.21
			10/04/2011	63.41	3,757.25
			2/08/2012	63.46	3,757.20
			4/30/2012	63.70	3,756.96
			9/10/2012	63.92	3,756.74
			6/23/2013	64.30	3,756.36
			1/09/2014	65.28	3,755.38
			4/07/2014	65.48	3,755.18
			3/20/2015	65.90	3,754.76
			7/01/2015	66.18	3,754.48
			9/29/2015	66.25	3,754.41
			12/16/2015	66.47	3,754.19
			3/22/2016	66.08	3,754.58
			6/08/2016	66.16	3,754.50
			9/13/2016	66.64	3,754.02
			12/01/2016	66.72	3,753.94
			6/20/2017	67.60	3,753.06
			12/19/2017	67.88	3,752.78
			6/18/2018	68.04	3,752.62
			11/07/2018	68.47	3,752.19

[a] Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.
[b] Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.
bgs = Below ground surface
btoc = Below top of casing
msl = Above mean sea level
NA = Not available

Table C-1. Historical Fluid Level Measurements
Page 6 of 13

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation [a] (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-5 (cont.)	56.9–76.9	3,820.66	6/03/2019	68.44	3,752.22
			12/17/2019	69.13	3,751.53
			6/23/2020	66.26	3,754.40
			11/21/2020	69.08	3,751.58
			6/02/2021	69.88	3,750.78
DBS-6	56.7–76.7	3,812.65	4/07/2009	62.75	3,749.90
			5/11/2011	63.11	3,749.54
			10/04/2011	63.16	3,749.49
			2/08/2012	63.20	3,749.45
			4/30/2012	63.43	3,749.22
			9/10/2012	63.60	3,749.05
			6/23/2013	63.74	3,748.91
			1/09/2014	64.00	3,748.65
			4/07/2014	64.22	3,748.43
			3/19/2015	64.78	3,747.87
			7/01/2015	64.81	3,747.84
			9/29/2015	65.48	3,747.17
			12/16/2015	65.26	3,747.39
			3/22/2016	65.38	3,747.27
			6/08/2016	65.37	3,747.28
			9/13/2016	65.51	3,747.14
			12/01/2016	65.51	3,747.14
			6/20/2017	65.81	3,746.84
			12/19/2017	66.29	3,746.36
			6/18/2018	66.45	3,746.20

[a] Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.
[b] Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

bgs = Below ground surface
btoc = Below top of casing
msl = Above mean sea level
NA = Not available

Table C-1. Historical Fluid Level Measurements
Page 7 of 13

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation [a] (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-6 (cont.)	56.7–76.7	3,812.65	11/07/2018	66.62	3,746.03
			6/03/2019	67.24	3,745.41
			12/17/2019	67.95	3,744.70
			6/23/2020	68.29	3,744.36
			11/21/2020	68.38	3,743.27
			6/02/2021	68.72	3,743.93
DBS-7	55.1–75.1	3,810.21	4/07/2009	61.74	3,748.47
DBS-8	55.2–75.2	3,810.70	4/07/2009	61.20	3,749.50
			5/11/2011	61.67	3,749.03
			10/04/2011	61.71	3,748.99
			2/08/2012	61.77	3,748.93
			4/30/2012	62.00	3,748.70
			9/10/2012	62.15	3,748.55
			6/23/2013	62.28	3,748.42
			1/09/2014	62.47	3,748.23
			4/07/2014	62.67	3,748.03
			3/19/2015	63.19	3,747.51
			6/30/2015	63.25	3,747.45
			9/29/2015	63.82	3,746.88
			12/16/2015	63.58	3,747.12
			3/22/2016	63.76	3,746.94
			6/08/2016	63.72	3,746.98
			9/13/2016	63.83	3,746.87
			12/01/2016	63.79	3,746.91
			6/20/2017	64.09	3,746.61

[a] Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.
[b] Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

bgs = Below ground surface
msl = Above mean sea level
btoc = Below top of casing
NA = Not available

Table C-1. Historical Fluid Level Measurements
Page 8 of 13

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation [a] (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-8 (cont.)	55.2–75.2	3,810.70	12/19/2017	64.53	3,746.17
			6/18/2018	64.70	3,746.00
			11/07/2018	64.82	3,745.88
			6/03/2019	65.52	3,745.18
			12/17/2019	66.12	3,744.58
			6/23/2020	66.42	3,744.28
			11/21/2020	66.55	3,744.15
			6/02/2021	66.91	3,743.79
DBS-9	48.0–68.0	3,806.26	4/08/2009	53.93	3,752.33
			5/11/2011	54.39	3,751.87
			10/04/2011	54.59	3,751.67
			2/08/2012	54.53	3,751.73
			4/30/2012	54.68	3,751.58
			9/10/2012	54.77	3,751.49
			6/23/2013	55.04	3,751.22
			1/09/2014	55.27	3,750.99
			4/07/2014	55.56	3,750.70
			3/19/2015	55.95	3,750.31
			7/01/2015	56.14	3,750.12
			9/29/2015	56.49	3,749.77
			12/16/2015	56.52	3,749.74
			3/22/2016	56.51	3,749.75
			6/08/2016	56.64	3,749.62
			9/13/2016	56.81	3,749.45
			12/01/2016	56.88	3,749.38

[a] Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.
[b] Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.
bgs = Below ground surface
btoc = Below top of casing
msl = Above mean sea level
NA = Not available

Table C-1. Historical Fluid Level Measurements
Page 9 of 13

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation [a] (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
DBS-9 (cont.)	48.0–68.0	3,806.26	6/20/2017	57.28	3,748.98
			12/19/2017	57.67	3,748.59
			6/18/2018	57.98	3,748.28
			11/07/2018	58.22	3,748.04
			6/03/2019	58.53	3,747.73
			12/17/2019	59.25	3,747.01
			6/23/2020	59.55	3,746.71
			11/21/2020	59.64	3,746.62
			6/02/2021	59.95	3,746.31
DBS-10	57.2–77.2	3,807.48	6/18/2018	64.46	3,743.02
			11/07/2018	64.66	3,742.82
			6/03/2019	65.11	3,742.37
			12/17/2019	65.80	3,741.68
			6/23/2020	66.03	3,807.48
			11/21/2020	66.23	3,741.25
			6/02/2021	66.52	3,740.96
NW-1s	52.95–72.95	3,817.33	4/08/2009	62.35	3,754.98
NW-1m	99.31–119.31	3,817.35	4/08/2009	62.25	3,755.10
NW-1d	149.45–169.45	3,817.35	4/08/2009	62.04	3,755.31
NW-2s	53.35–73.35	3,812.50	4/08/2009	63.08	3,749.42
NW-2m	93.72–113.72	3,812.45	4/08/2009	63.27	3,749.18
NW-2d	126.87–146.87	3,812.46	4/08/2009	66.41	3,746.05
PMW-1	63–78	3,821.17	6/23/2008	67.51	3,753.66
			4/08/2009	65.97	3,755.20
			5/11/2011	68.70	3,752.47

[a] Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.
[b] Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.
bgs = Below ground surface
btoc = Below top of casing
msl = Above mean sea level
NA = Not available

Table C-1. Historical Fluid Level Measurements
Page 10 of 13

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation [a] (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
PMW-1 (cont.)	63–78	3,821.17	10/04/2011	66.95	3,754.22
			2/08/2012	66.69	3,754.48
			4/30/2012	67.27	3,753.90
			9/10/2012	69.77	3,751.40
			6/23/2013	68.40	3,752.77
			1/09/2014	71.24	3,749.93
			4/07/2014	69.97	3,751.20
			3/20/2015	70.78	3,750.39
			7/01/2015	71.41	3,749.76
			9/29/2015	70.76	3,750.41
			12/16/2015	71.03	3,750.14
			3/22/2016	70.30	3,750.87
			6/08/2016	69.65	3,751.52
			9/13/2016	71.08	3,750.09
			12/01/2016	70.97	3,750.20
			6/20/2017	73.06	3,748.11
			12/19/2017	71.19	3,749.98
			6/18/2018	70.97	3,750.20
			11/07/2018	72.52	3,748.65
			6/03/2019	71.76	3,749.41
			12/17/2019	76.25	3,744.92
			6/23/2020	72.03	3,749.14
			11/21/2020	72.19	3,748.98
			6/02/2021	73.10	3,748.07

[a] Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.
[b] Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.
bgs = Below ground surface
btoc = Below top of casing
msl = Above mean sea level
NA = Not available

Table C-1. Historical Fluid Level Measurements
Page 11 of 13

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation [a] (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
MW-1	120–140	NA	6/23/2008	59.90	NA
MW-2	127–147	3,812.68	6/23/2008	61.42	3,751.26
			4/07/2009	61.65	3,751.03
MW-3	NA	3,812.05	6/23/2008	62.06	3,749.99
			4/07/2009	62.02	3,750.03
			5/11/2011	62.91	3,749.14
			10/04/2011	62.91	3,749.14
			2/08/2012	62.95	3,749.10
			4/30/2012	63.39	3,748.66
			9/10/2012	63.50	3,748.55
			6/23/2013	63.36	3,748.69
			1/09/2014	63.55	3,748.50
			4/07/2014	63.88	3,748.17
			3/19/2015	64.27	3,747.78
			7/01/2015	64.34	3,747.71
			9/29/2015	67.94	3,744.11
			12/16/2015	64.75	3,747.30
			3/22/2016	64.84	3,747.21
			6/08/2016	64.89	3,747.16
			9/13/2016	66.33	3,745.72
			12/01/2016	66.66	3,745.39
			6/20/2017	65.56	3,746.49
			12/19/2017	65.70	3,746.35
			6/18/2018	66.52	3,745.53
			11/07/2018	66.09	3,745.96

[a] Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.
[b] Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.

bgs = Below ground surface
btoc = Below top of casing
msl = Above mean sea level
NA = Not available

Table C-1. Historical Fluid Level Measurements
Page 12 of 13

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation [a] (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
MW-3 (cont.)	NA	3,812.05	6/03/2019	68.18	3,743.87
			12/17/2019	67.38	3,744.67
			6/23/2020	69.16	3,742.89
			11/21/2020	67.73	3,744.32
			6/02/2021	69.83	3,742.22
MW-4	111–131	3,811.33	6/23/2008	62.12	3,749.21
			4/07/2009	62.51	3,748.82
MW-5	112–132	3,808.96	6/23/2008	60.60	3,748.36
			4/07/2009	60.79	3,748.17
			5/11/2011	61.17	3,747.79
			10/04/2011	61.72	3,747.24
			2/08/2012	61.23	3,747.73
			4/30/2012	61.50	3,747.46
			9/10/2012	61.65	3,747.31
			6/23/2013	61.75	3,747.21
			1/09/2014	61.90	3,747.06
			4/07/2014	62.18	3,746.78
			3/19/2015	62.96	3,746.00
			6/30/2015	62.71	3,746.25
			9/29/2015	63.92	3,745.04
			12/16/2015	63.02	3,745.94
			3/22/2016	63.14	3,745.82
			6/08/2016	63.47	3,745.49
			9/13/2016	63.66	3,745.30
			12/01/2016	63.70	3,745.26

[a] Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.
[b] Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.
bgs = Below ground surface
btoc = Below top of casing
msl = Above mean sea level
NA = Not available

Table C-1. Historical Fluid Level Measurements
Page 13 of 13

Monitor Well	Screen Interval (feet bgs)	Top of Casing Elevation [a] (feet msl)	Date Measured	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)
MW-5 (cont.)	112–132	3,808.96	6/21/2017	63.62	3,745.34
			12/19/2017	65.02	3,743.94
			6/18/2018	64.32	3,744.64
			11/07/2018	64.34	3,744.62
			06/03/2019	65.30	3,743.66
			12/17/2019	65.57	3,743.39
			6/23/2020	66.26	3,742.70
			11/21/2020	66.00	3,742.96
			6/02/2021	66.70	3,742.26
MW-6	NA	3,810.17	6/23/2008	62.17	3,748.00
			4/07/2009	62.41	3,747.76

[a] Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.
[b] Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.
bgs = Below ground surface
btoc = Below top of casing
msl = Above mean sea level
NA = Not available

[a] Top of casing elevations surveyed by Pettigrew & Assoc. on May 28, 2009.
[b] Top of casing elevation surveyed by Pettigrew & Assoc. on June 13, 2012.
bgs = Below ground surface
btoc = Below top of casing
msl = Above mean sea level
NA = Not available

Table C-2. Historical Chloride Groundwater Analytical Data
Page 1 of 13

Monitor Well	Date	Chloride Concentration (mg/L) [a]
	NMWQCC Standard	*250*
DBS-1	4/08/2009	**320**
	5/12/2011	**940**
	10/04/2011	Well destroyed
DBS-1R	5/01/2012	**3,000**
	9/11/2012	**3,200**
	6/25/2013	**3,300**
	1/10/2014	**1,000**
	4/08/2014	**1,700**
	3/20/2015	**1,200**
	7/01/2015	**860**
	9/30/2015	**670**
	12/17/2015	**760**
	3/23/2016	**560**
	6/09/2016	**570**
	09/14/2016	**360**
	12/01/2016	**360**
	6/20/2017	**320**
	12/20/2017	190
	6/19/2018	190
	11/08/2018	180
	6/03/2019	190
	12/18/2019	210
	6/23/2020	220
	11/21/2020	**530**
	6/02/2021	**2,200**
DBS-2	4/08/2009	14
	5/12/2011	25

Bold indicates that value exceeds the applicable standard.

[a] All samples analyzed using EPA method 300.0, unless otherwise noted.

[b] Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter

Table C-2. Historical Chloride Groundwater Analytical Data
Page 2 of 13

Monitor Well	Date	Chloride Concentration (mg/L) [a]
	NMWQCC Standard	*250*
DBS-2 (cont.)	10/05/2011	18
	2/09/2012	22
	5/01/2012	24
	9/11/2012	44
	6/25/2013	36
	1/10/2014	45
	4/08/2014	22
	3/20/2015	29
	6/30/2015	28
	9/30/2015	40
	12/17/2015	35
	3/23/2016	46
	6/09/2016	41
	9/14/2016	41
	12/02/2016	53
	6/20/2017	59
	12/20/2017	37
	6/18/2018	47
	11/08/2018	47
	6/03/2019	42
	12/17/2019	68
	6/24/2020	66
	11/21/2020	81
	6/02/2021	85
DBS-3	4/08/2009	36
	5/12/2011	35
	10/05/2011	34

Bold indicates that value exceeds the applicable standard.

[a] All samples analyzed using EPA method 300.0, unless otherwise noted.

[b] Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter

Table C-2. Historical Chloride Groundwater Analytical Data
Page 3 of 13

Monitor Well	Date	Chloride Concentration (mg/L) [a]
	NMWQCC Standard	*250*
DBS-3 (cont.)	2/09/2012	34
	5/01/2012	33
	9/11/2012	34
	6/24/2013	32
	1/10/2014	34
	4/08/2014	32
	3/20/2015	35
	6/30/2015	35
	9/30/2015	34
	12/17/2015	34
	3/23/2016	36
	6/09/2016	35
	9/14/2016	37
	12/02/2016	37
	6/20/2017	39
	12/20/2017	42
	6/18/2018	47
	11/08/2018	46
	6/03/2019	46
	12/17/2019	48
	6/24/2020	50
	11/21/2020	49
	6/03/2021	52
DBS-4	4/08/2009	38
	5/12/2011	33
	10/05/2011	32
	2/09/2012	32

Bold indicates that value exceeds the applicable standard.

[a] All samples analyzed using EPA method 300.0, unless otherwise noted.

[b] Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter

Table C-2. Historical Chloride Groundwater Analytical Data
Page 4 of 13

Monitor Well	Date	Chloride Concentration (mg/L) [a]
	NMWQCC Standard	*250*
DBS-4 (cont.)	5/01/2012	31
	9/11/2012	32
	6/25/2013	31
	1/10/2014	32
	4/08/2014	30
	3/20/2015	33
	6/30/2015	31
	9/30/2015	33
	12/17/2015	35
	3/23/2016	38
	6/09/2016	35
	9/14/2016	37
	12/02/2016	41
	6/20/2017	35
	12/20/2017	32
	6/19/2018	39
	11/08/2018	35
	6/03/2019	30
	12/17/2019	35
	6/23/2020	35
	11/21/2020	37
	6/03/2021	39
DBS-5	4/08/2009	65
	5/12/2011	140
	10/05/2011	140
	2/09/2012	140
	4/30/2012	150

Bold indicates that value exceeds the applicable standard.

[a] All samples analyzed using EPA method 300.0, unless otherwise noted.

[b] Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter

Table C-2. Historical Chloride Groundwater Analytical Data
Page 5 of 13

Monitor Well	Date	Chloride Concentration (mg/L) [a]
	NMWQCC Standard	*250*
DBS-5 (cont.)	9/11/2012	160
	6/24/2013	160
	1/10/2014	180
	4/08/2014	160
	3/20/2015	140
	7/01/2015	140
	9/30/2015	150
	12/17/2015	160
	3/23/2016	150
	6/09/2016	150
	9/14/2016	170
	12/02/2016	170
	6/20/2017	170
	12/20/2017	170
	6/18/2018	180
	11/08/2018	170
	6/03/2019	**280**
	12/18/2019	160
	6/24/2020	190
	11/21/2020	190
	6/03/2021	170
DBS-6	4/07/2009	**380**
	5/12/2011	**410**
	10/05/2011	**400**
	2/09/2012	**380**
	4/30/2012	**400**
	9/11/2012	**390**

Bold indicates that value exceeds the applicable standard.

[a] All samples analyzed using EPA method 300.0, unless otherwise noted.

[b] Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter

Table C-2. Historical Chloride Groundwater Analytical Data
Page 6 of 13

Monitor Well	Date	Chloride Concentration (mg/L) [a]
	NMWQCC Standard	*250*
DBS-6 (cont.)	6/24/2013	**340**
	1/10/2014	**390**
	4/07/2014	**400**
	3/19/2015	**370**
	7/01/2015	**360**
	9/30/2015	**370**
	12/17/2015	**380**
	3/23/2016	**310**
	6/09/2016	**300**
	9/14/2016	**290**
	12/02/2016	**300**
	6/21/2017	240
	12/19/2017	200
	6/19/2018	210
	11/08/2018	190
	6/03/2019	180
	12/17/2019	220
	6/24/2020	230
	11/21/2020	230
	6/03/2021	**250**
DBS-7	4/07/2008	**570**
DBS-8	4/07/2009	58
	5/12/2011	36
	10/05/2011	140
	2/09/2012	41
	4/30/2012	41
	9/10/2012	42

Bold indicates that value exceeds the applicable standard.

[a] All samples analyzed using EPA method 300.0, unless otherwise noted.

[b] Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter

Table C-2. Historical Chloride Groundwater Analytical Data
Page 7 of 13

Monitor Well	Date	Chloride Concentration (mg/L) [a]
	NMWQCC Standard	*250*
DBS-8 (cont.)	6/24/2013	45
	1/09/2014	38
	4/07/2014	36
	3/19/2015	36
	7/01/2015	34
	9/30/2015	35
	12/17/2015	33
	3/23/2016	35
	6/09/2016	34
	9/14/2016	34
	12/02/2016	33
	6/21/2017	33
	12/19/2017	28
	6/19/2018	33
	11/08/2018	30
	6/03/2019	35
	12/17/2019	30
	6/24/2020	34
	11/21/2020	34
	6/03/2021	35
DBS-9	4/08/2009	210
	5/12/2011	**600**
	10/05/2011	**440**
	2/09/2012	**290**
	4/30/2012	**330**
	9/11/2012	**320**
	6/24/2013	200

Bold indicates that value exceeds the applicable standard.

[a] All samples analyzed using EPA method 300.0, unless otherwise noted.

[b] Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter

Table C-2. Historical Chloride Groundwater Analytical Data
Page 8 of 13

Monitor Well	Date	Chloride Concentration (mg/L) [a]
	NMWQCC Standard	*250*
DBS-9 (cont.)	1/10/2014	170
	4/07/2014	220
	3/19/2015	**260**
	7/01/2015	210
	9/30/2015	**260**
	12/17/2015	230
	3/23/2016	200
	6/09/2016	190
	9/14/2016	190
	12/02/2016	180
	6/21/2017	200
	12/20/2017	230
	6/19/2018	**260**
	6/03/2019	160
	12/17/2019	220
	6/24/2020	**360**
	11/21/2020	**280**
	6/03/2021	**290**
DBS-10	6/19/2018	**690**
	11/08/2018	**590**
	6/03/2019	**510**
	12/17/2019	**540**
	6/24/2020	**560**
	11/21/2020	**620**
	6/03/2021	**560**
NW-1s	4/08/2009	**630**
NW-1m	4/08/2009	57

Bold indicates that value exceeds the applicable standard.

[a] All samples analyzed using EPA method 300.0, unless otherwise noted.

[b] Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter

Table C-2. Historical Chloride Groundwater Analytical Data
Page 9 of 13

Monitor Well	Date	Chloride Concentration (mg/L) [a]
	NMWQCC Standard	*250*
NW-1d	4/08/2009	38
NW-2s	4/08/2009	**410**
NW-2m	4/08/2009	**570**
NW-2d	4/08/2009	**4,700**
PMW-1	2/27/2008	**9,500** [b]
	5/30/2008	**8,600** [b]
	6/23/2008	**12,700**
	4/08/2009	**11,000**
	5/12/2011	**13,000**
	10/05/2011	**12,000**
	2/09/2012	**12,000**
	5/01/2012	**12,000**
	9/11/2012	**14,000**
	6/25/2013	**14,000**
	1/10/2014	**11,000**
	4/08/2014	**12,000**
	3/20/2015	**8,500**
	7/01/2015	**8,600**
	9/30/2015	**9,700**
	12/17/2015	**9,800**
	3/23/2016	**8,200**
	6/09/2016	**8,500**
	9/14/2016	**9,300**
	12/01/2016	**8,300**
	6/20/2017	**13,000**
	12/20/2017	**12,000**
	6/19/2018	**9,600**

Bold indicates that value exceeds the applicable standard.

[a] All samples analyzed using EPA method 300.0, unless otherwise noted.

[b] Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter

Table C-2. Historical Chloride Groundwater Analytical Data
Page 10 of 13

Monitor Well	Date	Chloride Concentration (mg/L) [a]
	NMWQCC Standard	*250*
PMW-1 (cont.)	11/08/2018	**10,000**
	6/03/2019	**11,000**
	12/18/2019	**3,400**
	6/23/2020	**11,000**
	11/21/2020	**8,200**
	6/02/2021	**6,800**
MW-1	5/30/2008	75 [b]
	6/23/2008	243
MW-2	2/27/2008	120 [b]
	5/30/2008	80 [b]
	6/23/2008	**1,480**
	4/07/2009	**1,200**
	6/19/2018	**390**
MW-3	2/27/2008	**348** [b]
	5/30/2008	**360** [b]
	6/23/2008	**1,090**
	4/07/2009	**17,000**
	5/12/2011	**16,000**
	10/05/2011	**14,000**
	2/09/2012	**15,000**
	4/30/2012	**14,000**
	9/10/2012	**16,000**
	6/24/2013	**12,000**
	1/10/2014	**10,000**
	4/07/2014	**12,000**
	3/19/2015	**9,700**
	7/01/2015	**10,000**

Bold indicates that value exceeds the applicable standard.

[a] All samples analyzed using EPA method 300.0, unless otherwise noted.

[b] Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter

Table C-2. Historical Chloride Groundwater Analytical Data
Page 11 of 13

Monitor Well	Date	Chloride Concentration (mg/L) [a]
	NMWQCC Standard	*250*
MW-3 (cont.)	9/30/2015	**9,600**
	12/17/2015	**5,100**
	3/23/2016	**8,200**
	6/09/2016	**9,400**
	9/14/2016	**9,100**
	12/02/2016	**11,000**
	6/21/2017	**10,000**
	12/20/2017	**8,300**
	6/19/2018	**7,300**
	11/08/2018	**8,000**
	6/03/2019	**8,000**
	12/18/2019	**7,400**
	6/24/2020	**6,400**
	11/21/2020	**7,100**
	6/03/2021	**4,400**
MW-4	2/27/2008	**476** [b]
	5/30/2008	**512** [b]
	6/23/2008	**5,730**
	4/07/2009	**6,600**
MW-5	2/27/2008	**1,280** [b]
	5/30/2008	**1,220** [b]
	6/23/2008	**1,260**
	4/07/2009	**1,300**
	5/12/2011	**1,500**
	10/05/2011	**1,500**
	2/09/2012	**1,500**
	4/30/2012	**1,400**

Bold indicates that value exceeds the applicable standard.

[a] All samples analyzed using EPA method 300.0, unless otherwise noted.

[b] Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter

Table C-2. Historical Chloride Groundwater Analytical Data
Page 12 of 13

Monitor Well	Date	Chloride Concentration (mg/L) [a]
	NMWQCC Standard	*250*
MW-5 (cont.)	9/10/2012	**1,500**
	6/24/2013	**1,300**
	1/10/2014	**1,300**
	4/07/2014	**1,300**
	3/19/2015	**1,200**
	7/01/2015	**1,200**
	9/30/2015	**1,000**
	12/17/2015	**1,000**
	3/23/2016	**980**
	6/09/2016	**970**
	9/14/2016	**1,000**
	12/02/2016	**710**
	6/21/2017	**870**
	12/19/2017	**850**
	6/19/2018	**840**
	11/08/2018	**680**
	6/03/2019	**610**
	12/18/2019	**550**
	6/24/2020	**660**
	11/21/2020	**710**
	6/03/2021	**640**
MW-6	2/27/2008	32 [b]
	5/30/2008	36 [b]
	6/23/2008	31.4
	4/07/2009	25
Ranch Headquarters Supply Well	6/23/2008	35.4

Bold indicates that value exceeds the applicable standard.

[a] All samples analyzed using EPA method 300.0, unless otherwise noted.

[b] Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter

Table C-2. Historical Chloride Groundwater Analytical Data
Page 13 of 13

Monitor Well	Date	Chloride Concentration (mg/L) [a]
	NMWQCC Standard	*250*
Brine Station Fresh Water Supply Well	2/27/2008	**630** [b]
	5/30/2008	**590** [b]
	6/23/2008	**650**

Bold indicates that value exceeds the applicable standard.

[a] All samples analyzed using EPA method 300.0, unless otherwise noted.

[b] Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter

Bold indicates that value exceeds the applicable standard.

[a] All samples analyzed using EPA method 300.0, unless otherwise noted.

[b] Samples analyzed using Standard Method 4500-Cl B.

mg/L = Milligrams per liter

Table C-3. Historical Average Groundwater Extraction Rates
Page 1 of 2

Recovery Well	Date	Average Extraction Rate [a] (gpm)
RW-1	4/07/2012	Groundwater extraction started
	5/01/2012	2.1
	9/11/2012	2.9
	6/25/2013	4.1
	11/15/2013	3.6
	3/20/2015 [b]	2.4
	6/30/2015	—
FWS-1	12/17/2015	—
	3/22/2016	12.8
	6/08/2016	33.9
	9/13/2016	5.4
	12/02/2016	39.7
	6/20/2017	32.7
	12/19/2017	37.3
	6/18/2018	15.4
	11/08/2018	22.4
	6/03/2019 [c]	23.9
	12/18/2019	27.7
	6/23/2020	21.2
	11/21/2020	7.6
	6/02/2021	5.7
RW-2	4/06/2012	Groundwater extraction started
	5/01/2012	2.5

[a] Average extraction rates based on totalizer flow meter readings and/or fresh water production records.

[b] Pumping at RW-1 stopped because pumping of FWS-1 lowered groundwater levels at RW-1, precluding groundwater extraction at RW-1. Pumping at FWS-1 provides hydraulic containment and removal of chloride-impacted groundwater in the former brine pond area.

[c] New meter on December 3, 2019; well stopped pumping on May 11, 2019.

[d] New pump installed in RW-2 and started on June 25, 2013.

[e] Meter and pump were removed from RW-2 on approximately September 21, 2013 by facility manager to install a new, larger-capacity pump.

[f] Meter was inoperable because it was damaged. Meter was replaced in November 2017.

[g] Meter read on November 8, 2018, but well had not been pumped since October 10, 2018; average extraction rate between June 18 and October 10, 2018 is reported.

gpm = Gallons per minute

Table C-3. Historical Average Groundwater Extraction Rates
Page 2 of 2

Recovery Well	Date	Average Extraction Rate [a] (gpm)
RW-2 (cont.)	9/11/2012	4.3
	12/14/2012	3.9
	6/25/2013 [d]	—
	9/21/2013 [e]	2.9
	9/30/2015	68
	12/17/2015	44
	3/22/2016	32
	6/08/2016	9.0
	9/13/2016	5.7
	12/01/2016 [f]	—
	6/20/2017 [f]	—
	12/19/2017	12.4
	6/19/2018	5.2
	10/10/2018 [g]	3.4
	6/03/2019	7.0
	12/18/2019	14.9
	6/23/2020	16.7
	11/21/2020	3.9
	6/02/2021	11.5

[a] Average extraction rates based on totalizer flow meter readings and/or fresh water production records.

[b] Pumping at RW-1 stopped because pumping of FWS-1 lowered groundwater levels at RW-1, precluding groundwater extraction at RW-1. Pumping at FWS-1 provides hydraulic containment and removal of chloride-impacted groundwater in the former brine pond area.

[c] New meter on December 3, 2019; well stopped pumping on May 11, 2019.

[d] New pump installed in RW-2 and started on June 25, 2013.

[e] Meter and pump were removed from RW-2 on approximately September 21, 2013 by facility manager to install a new, larger-capacity pump.

[f] Meter was inoperable because it was damaged. Meter was replaced in November 2017.

[g] Meter read on November 8, 2018, but well had not been pumped since October 10, 2018; average extraction rate between June 18 and October 10, 2018 is reported.

gpm = Gallons per minute