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# ANNUAL REPORTS

(2)

# 2019 Annual Class III Well Report Salty Dog Brine Station

DP BW-8, API No. 30-025-26307 Lea County, New Mexico

**Prepared for** 

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

**April 15, 2020** 



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# 2019 Annual Class III Well Report Salty Dog Brine Station DP BW-8, API No. 30-025-26307 Lea County, New Mexico

#### 1. Introduction

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this annual Class III well 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 operation of a brine well (Brine Supply Well #1 [API No. 30-025-26307]) at the Salty Dog Brine Station (the site). The site is located in Lea County, New Mexico, approximately 11 miles west of Hobbs, New Mexico along U.S. Highway 62/180 (US 62/80) (Figure 1). This report summarizes operational and monitoring activities conducted at the site in 2019, and was prepared in accordance with the requirements of discharge permit (DP) BW-8, last renewed on May 17, 2019 (NMEMNRD, 2019). Submittal of this report meets Condition 2.J of the permit.

Appendix A provides an annual certification signed by Mr. Pieter Bergstein stating that continued salt solution mining will not cause cavern collapse, surface subsidence, property damage, or otherwise threaten public health and the environment based on geologic and engineering data.

Salty Dog is a brine water production and loading station, consisting of fresh water supply wells, a brine production well, and a concrete truck loading pad with two brine filling stations. Fresh water is stored in two 1,000-barrel (bbl) aboveground storage tanks (ASTs). Produced brine is pumped from the brine well to a bermed tank battery consisting of six 750-bbl ASTs, where the brine is stored for sale. The brine well is located approximately 0.5 mile southwest of the brine filling station (Figure 1). Figure 2 presents a June 2018 aerial photograph of the brine station showing the layout of the current facility infrastructure.



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Brine is produced from the in situ extraction of salt at the brine well, a UIC Class III well (Brine Supply Well #1 [API No. 30-025-26307]). The brine well is approximately 3,000 feet deep and has been in operation since the early 1980s. The Salty Dog brine well is configured for reverse circulation brine recovery, where fresh water is circulated down the casing annulus into the Salado Formation—a Permian Age sedimentary rock unit composed of halite (salt) and other evaporative beds. Fresh water dissolves the salt, and the brine is extracted through the center tubing of the well. Figure 3 provides a generalized schematic of the brine well showing its construction, current tubing depth, and the penetrated geologic units.

The physical location of the brine well is 1,980 feet from south line (FSL) and 1,980 feet from east line (FEL) (NW/4 SE/4, Unit Letter J) in Section 5, Township 19 South, Range 36 East, New Mexico Principal Meridian (NMPM). The brine well was installed in June 1979. The original discharge permit for the brine well (GWB-2) appears to have been issued on December 18, 1982 (OCD, 1994). The discharge permit was last renewed on May 17, 2019 (NMEMNRD, 2019).

Injection water used in brine production is obtained from the Ogallala Aquifer by pumping from two fresh water supply wells (FWS-1 and FWS-2) and groundwater remediation well RW-2. Well FWS-1 is the main fresh water supply well. Well FWS-2, located near the brine well, is used as an auxiliary fresh water well during periods of high brine demand. Well RW-2 is used to remove and provide hydraulic containment of chloride-impacted groundwater in the brine well area; groundwater extracted from this well is also used for brine production. Chloride-impacted groundwater in the former brine pond area is contained and removed by pumping from FWS-1. Depth to regional groundwater is approximately 60 feet below ground surface (bgs). Figure 4 shows the locations of the wells.

#### 2. Brine Well Operational Activities

The following subsections report fluid injection and brine production volumes and well maintenance activities.



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#### 2.1 Fluid Injection and Brine Production

Except for an approximately 2-year shutdown between 2011 and 2013 and temporary interruptions for routine maintenance and testing (e.g., February 2009 sonar survey [SOCON, 2009]), the brine well has been in continuous operation since 1980, producing an average of approximately 10,500 barrels per month (bbl/mo) of brine between 1980 and 2009. This production rate is based on 1987, 1996–1999, and 2009 brine production and sales records (Salty Dog, 1988, 1999, and Undated).

Both fluid injection and brine production volumes are metered, and daily volumes are recorded on monthly fresh and brine water report forms (Appendix B). Table 1 summarizes monthly injection and production volumes for the reporting period. Injection water for the brine well comes from two fresh water wells (FWS-1 and FWS-2) and a groundwater remediation well (RW-2) (Figure 4). In 2019, monthly ratios of injected water to produced brine ranged from 0.97 to 1.06.

Table 1. Monthly Water Injection and Brine Production Volumes, 2019

|              | Volu            | me (bbl)         | Ratio                  |
|--------------|-----------------|------------------|------------------------|
| Month        | Water Injection | Brine Production | (injection:production) |
| January      | 21,810          | 21,687           | 1.01                   |
| February     | 15,640          | 15,538           | 1.01                   |
| March        | 31,660          | 31,655           | 1.00                   |
| April        | 32,290          | 30,456           | 1.06                   |
| May          | 27,450          | 27,125           | 1.01                   |
| June         | 30,335          | 29,818           | 1.02                   |
| July         | 36,170          | 35,676           | 1.01                   |
| August       | 52,985          | 53,420           | 0.99                   |
| September    | 44,875          | 44,365           | 1.01                   |
| October      | 57,505          | 57,485           | 1.00                   |
| November     | 43,660          | 45,105           | 0.97                   |
| December     | 40,982          | 40,801           | 1.00                   |
| Annual total | 435,672         | 433,131          | _                      |

bbl = Barrels



Based on the data reported in Table 1 and previously reported production records (Salty Dog, 1988, 1999, and Undated; DBS&A, 2014), the estimated cumulative volume of brine production is 6,789,069 bbl.

In 2019, brine production activities at the site dissolved an estimated 65,216 bbl of Salado Formation. This estimate is based on the brine production data reported in Table 1, the average total dissolved solids (TDS) concentrations of the produced brine and injection water reported in Table 2, and an assumed density of the Salado Formation of 2.17 grams per cubic centimeter (g/cm³). Based on the historical and current brine production data, the total estimated size of the brine solution cavern is approximately 981,061 bbl. In 2012, OCD estimated a volume of 1,022,196 bbl for the Salty Dog solution cavern (NMEMNRD, 2012).

Table 2. Injection Water and Produced Brine Chemical and Physical Characteristics

|                             | Average Conce   | ntration (mg/L <sup>a</sup> ) |
|-----------------------------|-----------------|-------------------------------|
| Constituent                 | Injection Water | Produced Brine                |
| pH (s.u.)                   | 7.59            | 7.20                          |
| Specific gravity (unitless) | 0.997           | 1.203                         |
| Chloride                    | 285             | 195,000                       |
| Sodium                      | 200             | 79,000                        |
| TDS                         | 767             | 327,500                       |

<sup>&</sup>lt;sup>a</sup> Unless otherwise noted

mg/L = milligram per liter

NM = Not measured

s.u. = Standard units TDS = Total dissolved solids

#### 2.2 Injection Pressure

Pressure is monitored on the well tubing and on the annulus between the inner tubing and outer casing. These measurements are recorded on the monthly fresh and brine water report forms (Appendix B). In 2019, recorded daily tubing pressure ranged from 100 to 125 pounds per square inch (psi), while annulus pressure ranged from 325 to 375 psi.



#### 2.3 Chemical and Physical Analyses

Condition 2.A of DP BW-8 requires semiannual monitoring of the chemical and physical characteristics of the injection water and produced brine, including pH, density, and TDS and chloride concentrations. The permit also requires that the sodium concentration of the produced brine be analyzed.

Table 2 reports average constituent concentrations calculated from the 2019 semiannual monitoring data. Samples of the injection water and produced brine were collected in June and December 2019. Dissolution of the Salado Formation increases the constituent concentrations and specific gravity of the produced brine relative to the injection water. The average TDS concentration and average specific gravity of the injection water are 767 milligrams per liter (mg/L) and 0.997, respectively, while the same properties of the produced brine are 327,500 mg/L and 1.203, respectively. Appendix C provides the laboratory analytical reports associated with the semiannual monitoring events.

Historical water quality analyses show TDS concentrations of the fresh water and produced brine to be approximately 600 mg/L and 320,000 to 350,000 mg/L, respectively (Martin, 1982; Unichem, 1987).

#### 2.4 Deviations from Normal Operations

There were no deviations from normal operations in 2019.

#### 2.5 Leaks and Spills

There were no leaks or spills in 2019.

#### 2.6 Area of Review

Condition 3.G of DP BW-8 requires Salty Dog to report within 72 hours the discovery of any new wells, conduits, or other devices that are both within a 1-mile radius and may penetrate to the injection zone of the brine well.



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The brine station is located on private property in rural southeastern New Mexico, approximately 11 miles west of Hobbs. The majority of the area surrounding the site is undeveloped and owned by the State of New Mexico.

On April 13, 2020, DBS&A conducted an area of review evaluation using the OCD online oil and gas maps application. This application is accessible through the OCD website (http://www.emnrd.state.nm.us/OCD/ocdgis.html). Appendix D provides a map produced from the area of review evaluation. The map shows that there are two previously plugged and abandoned wells (API 30-025-03989 and API 30-025-42773) southwest of the Salty Dog brine well. However, no new brine wells or other penetrations that may penetrate into the injection zone of the Salty Dog brine well are present within a 1-mile radius of the brine well.

#### 2.7 Mechanical Integrity Test

A mechanical integrity test (MIT) was not conducted on the brine well in 2019. The last MIT was performed in 2018.

In December 2017, the brine well was damaged because anhydrite had collapsed the well tubing. The well was subsequently repaired and operational again in February 2018. On February 9, 2018, before placing the well back in operation, PAB conducted an MIT on the well; it passed the test. Gary Robinson of OCD was present during the MIT. A record of the MIT was provided in the 2017 annual Class III well report (DBS&A, 2018a).

Prior to the February 2018 MIT, the last MIT was performed on October 31, 2013, when Salty Dog conducted a Bradenhead test on the brine well. The test showed no problems with the integrity of the well casing. Results of this test were reported to OCD on November 15, 2013.

Pursuant to 20.6.2.5204 New Mexico Administrative Code (NMAC), PAB is required to demonstrate mechanical integrity of the brine well at least once every five years.



#### 3. Other Facility Activities

There were no other facility activities in 2019. Only normal operational activities were performed. In March 2018, PAB services contracted Peterson Drilling and Testing, Inc. and DBS&A to install five subsidence survey monitoring points at the site (DBS&A, 2018b). The five subsidence survey monitoring points include three points located approximately 200 feet from the brine well, one point located approximately 60 feet from the brine well, and one point that is a metal tab welded to the brine well casing (Figure 5). Construction and placement of the monitoring points were conducted in accordance with DBS&A (2014). The monitoring points are surveyed semiannually, and the results are reported in the annual Class III well reports.

#### 4. Subsidence Monitoring and Cavern Characterization

Condition 2.B.1 of DP BW-08 requires Salty Dog to monitor for potential land subsidence in the area of the brine well (OCD, 2019). In March 2018, five subsidence survey monitoring points were installed to meet this condition (Figure 5). Basin Surveys of Hobbs, New Mexico surveyed the monitoring points after their installation (Appendix E). The initial survey was conducted on March 23, 2018 using the nearest U.S. Geological Survey (USGS) benchmark referenced to NMSPCE (NAD 83).

In accordance with Condition 2.B.1 of DP BW-8, Salty Dog has each monitoring point surveyed semiannually to at least the nearest 0.10 foot (OCD, 2019). Basin Surveys conducted the 2019 semiannual surveys on June 10 and December 12, 2019. The survey data are reported in Table 3 and show no indication of land subsidence. The semiannually surveyed elevations are within ±0.02 foot of the initial survey. Appendix E provides the survey reports.



Table 3. Semiannual Surface Subsidence Monitoring, 2019

|                            |                      | Elevation (feet ma            | sl)                             |
|----------------------------|----------------------|-------------------------------|---------------------------------|
| Survey Monitoring<br>Point | Initial<br>3/23/2018 | First Semiannual<br>6/10/2019 | Second Semiannual<br>12/12/2019 |
| SMP-01                     | 3,810.11             | 3,810.10                      | 3,810.10                        |
| SMP-02                     | 3,809.01             | 3,809.00                      | 3,809.00                        |
| SMP-03                     | 3,808.80             | 3,808.81                      | 3,808.81                        |
| SMP-04                     | 3,806.32             | 3,806.32                      | 3,806.32                        |
| SMP-05 (brine well)        | 3,811.72             | 3,811.72                      | 3,811.72                        |

msl = Above mean sea level

Condition 2.B.2 of DP BW-08 requires solution cavern characterization using geophysical methods to estimate the size and shape of the solution cavern. During a December 9, 2016 phone call between DBS&A (on behalf of PAB) and OCD (Jim Griswold and Carl Chavez), it was agreed that solution cavern characterization using geophysical methods would be conducted only if surface subsidence was detected during semiannual surveying of the monitoring points. Section 2.1 of this report presents an estimated size for the solution cavern.

#### 5. Groundwater Conditions

Salty Dog is addressing groundwater impacts resulting from releases at the brine well and a former brine pond. A hole in the casing of the brine well at 250 feet bgs was discovered in 1999 (Salty Dog, 1999). The hole released brine, impacting groundwater, and was repaired in August 1999 by installing a casing liner (Salty Dog, 1999). In October 2008, the brine pond was removed and impacted soil was excavated and disposed of (DBS&A, 2008). The area of the former brine pond is shown in Figures 1 and 2.

Two chloride plumes currently exist at the site: one in the area of the brine station (i.e., the former brine pond area) and a second near the brine well. In 2009, PAB initiated groundwater extraction to remove and provide hydraulic containment of brine-impacted groundwater at the brine station and near the brine well (DBS&A, 2009). Groundwater abatement and monitoring activities are being conducted to satisfy an administrative compliance order issued by OCD



(ACO 2008-02) and settlement agreement and stipulated revised final order (NM-OCD 2008-2A) between OCD and Mr. Bergstein.

Groundwater monitoring and extraction data are reported and evaluated in reports submitted to OCD (DBS&A, 2020). The data include water levels and water quality at the site monitor wells. Site monitor wells are shown in Figure 4.

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SOCON Sonar Well Services, Inc. (SOCON). 2009. ECHO-LOG, Salty Dog, Inc. Brine well No: 1, Hobbs, New Mexico: First SOCON Sonar Well Services survey. February 5, 2009.

Unichem International (Unichem). 1987. Laboratory results for water samples collected on November 25, 1987. Prepared for Larry Squires. December 1, 1987.

**Figures** 

Figure 1

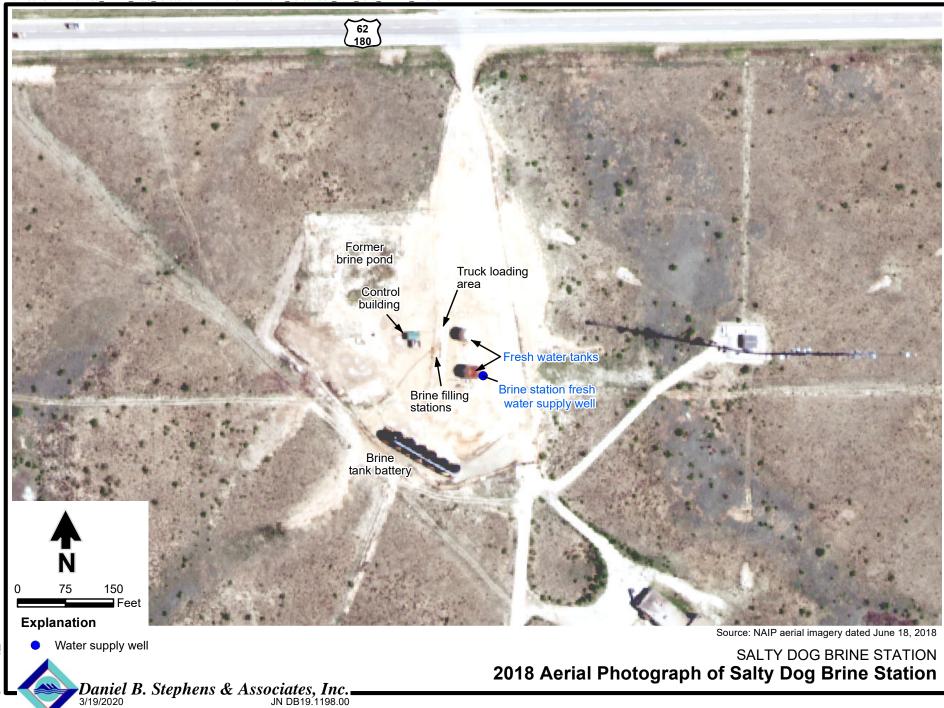


Figure :

#### Notes:

- 1. BOT = Bottom of tubing
- 2. Figure not to scale

#### Sources:

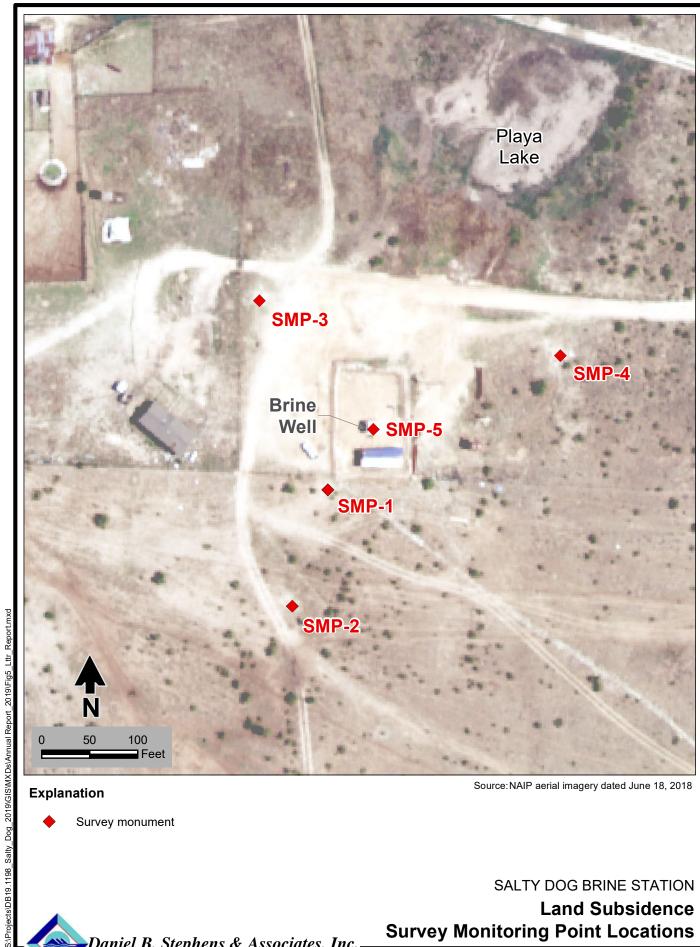
- 1. Completion data based on OCD well reports
- 2. Lithology from Salty Dog (1988)

SALTY DOG BRINE STATION

**Generalized Brine Well Schematic** 



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**Explanation** 

Survey monument

Source: NAIP aerial imagery dated June 18, 2018

SALTY DOG BRINE STATION

**Land Subsidence Survey Monitoring Point Locations** 

# Appendix A Annual Certification

#### **Annual Certification**

PAB Services, Inc. certifies that continued salt solution mining will not cause cavern collapse, surface subsidence, property damage, or otherwise threaten public health and the environment based on geologic and engineering data.

| Pieter Bergstein | President |
|------------------|-----------|
| Name             | Title     |
| 2                | 4/14/20   |
| Signature        | Date      |

Appendix B

2019 Monthly Fresh and Brine Water Report Forms

FACILITY/LOCATION SALTY Dog MONTH/YEAR SAN 19

|         | William The Mark Mark Mark Mark Mark Mark Mark Mark  | THE PERSON NAMED IN COLUMN TWO IS NOT THE PARTY OF THE PA | <b>经验证的</b>  | Children and Children and Children |         |
|---------|--|--|--|------------------------------------|---------|
|         | AMOUNT OF FRESH<br>WATER PUMPED<br>DOWN HOLE   |  | DAILY TUBING<br>PRESSURES                                | DAILY CASING<br>PRESSURES          | FRE     |
| Dat     | e BBLS   | BBLS SOLD  | PSI  | PSI                                | WAT     |
| 1       | 355  | 200 350  | 100  |                                    | SOL     |
| 2       | 1715   | 1701   | 100  | 375                                | _/      |
| 3       | 2130   | 2/23   | 100  | 325                                | -       |
| 4       | 705  | 695  | 100  | 325                                | -       |
| 5       | 870  | 865  | 100  | 325                                | 1       |
| 6       | 356  | 345  |  | 875                                | -       |
| 7       | 1345   | 1335   | 100  | 375                                |         |
| 8       | 675  | 640 665  | 100  | 375                                | -/      |
| 9       | 1275   | 1268 373   | 100  | 375                                | -       |
| 10      | 660  | 640  | 100  | 370                                | -/-     |
| 11      | 1190   | 1170 +00   |  | 376                                | -       |
| 12      | 210  | 195  | 100  | 375                                | 1       |
| 13      | 405  | 395  | 100  | 375                                | 1       |
| 14      | 546  | 520 00   | 100  | 375                                |         |
| 15      | 720  | 705  | 160  | 375                                |         |
| 16      | 725  | 715  | 100  | 375                                |         |
| 17      | 14,437 770   | 750  | 100  | 375                                |         |
| 18      | 715  | 700  | 106  | 375                                |         |
| 19      | 225  | 720  | 100  | 375                                |         |
| 20      | 320  | 310  | 100  | 3.25                               |         |
| 21      |  | 0  | 100  | 37.5                               |         |
| 22      | 1210   | 1100   | 100  | 375                                |         |
| 23      | 1195   | 1170 796   | 100  | 375                                | 211     |
| 24      | 615  | 605  | 100  | 375                                |         |
| 25      | 8  |  | 100  | 375                                |         |
| 26      | 110  | 190  | 100  | 375                                |         |
| 27      | -8   | 100  | 100  | 375                                |         |
| 28      | : 215  | 0/0  | 100  | 375                                |         |
| 29      | 310  | 210  | 100  | 375                                | 1       |
| 30      | 10857 935  | 300  | 100  | 375                                |         |
| 31      | 845  | 925  | 100  | 375                                |         |
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MONTH/YEAR FRE 2019

| Date        | AMOUNT OF FRESH<br>WATER PUMPED<br>DOWN HOLE<br>BBLS | BRINE WAT                      | ER DAILY TUBING LE PRESSURES | DAILY CASING<br>PRESSURES | FRESH         |
|-------------|--|--------------------------------|------------------------------|---------------------------|---------------|
| 1           | DBLS   | BBLS SOL                       | D PSI                        | PSI                       | SOLD          |
| 2           |  | 560                            | 100                          | 375                       |               |
| 3           | -0   | 1                              | 100                          | 325                       |               |
| 4           | 100  | 100                            | 100                          | 375                       |               |
| 5           | 285  | 280                            | ,00                          | 375                       |               |
| 6           | 445  | 440                            | 100                          | 375                       |               |
| 7           | 670  | 660                            | 100                          | 315                       |               |
| 8           | 340  | 333                            | 100                          | 375                       |               |
| 9           | 250  | 240                            | 100                          | 375                       |               |
| 10          | 225  | 220                            | 100                          | 375                       |               |
| 11          | H.C  | -0                             | 100                          | 375                       | 1             |
| 12          | 415  | 400                            | 100                          | 375                       | 1             |
| 13          | 775  | 260                            | 100                          | 375                       | T             |
| 14          | 490  | 490                            | 100                          | 375                       | -             |
| 15          | 470  | 440                            | 100                          | 375                       |               |
| 16          | 400  | 400                            | 100                          | 375                       |               |
| 17          | -0   | 185                            | 100                          | 375                       | -             |
| 18          | 575  | 560                            | 100                          | 375                       | $\rightarrow$ |
| 19          | 2010   | 1990                           | 100                          | 375                       | -             |
| 20          | 1350   | 1330 104                       | 100                          | 375                       |               |
| 21          | 485  | 420                            | 100                          | 375                       | -             |
| 22          | 275  | 260                            | 100                          | 375                       | _             |
| 23          | 11 70  | 1140                           | 100                          | 375                       |               |
| 24          | 0  | 9                              | 100                          | 375                       |               |
| 25          | -310   | 300                            | 100                          | 375                       |               |
| 26          | 325  | -310                           | 100                          | 325                       |               |
|             | 130  | 700                            | 100                          | 375                       | -             |
| 27          | 1640   | 1610                           | 100                          | 375                       |               |
|             | 1900   | 1870                           | 100                          | 375                       |               |
| 29          |  |                                | 14.                          | // >                      | -             |
| 30          |  |                                |                              |                           |               |
| 31<br>TAL C |  |                                |                              |                           |               |
| DTALS       |  | 15538                          |                              | 1                         |               |
| 10年 改五      | RE   | PAIRS AND/O                    | REXPENSES                    |                           |               |
| ate         | Company<br>Performing                                | Descritpion of<br>Work/Repairs | Estimated Cost               | Work Authorized           | by            |
|             |  |                                |                              | :                         |               |

| FACILITY/LOCATION  | SALTY                    | Dag  |
|--|--------------------------|--|
| MONTH/YEAR   | MARCH                    | 2019   |
| Mark and the second of the sec | LA MANAGEMENT AND STREET | AND ROUND AS A PROPERTY COUNTY SHAPE OF THE PROPERTY OF THE PR |

|      | The second section of the section of the second section of the section of the second section of the secti | TOTAL TO SUPPLIED BY CANADA    | (A) | <b>经验的</b> 是是国际的原则                    |       |
|------|--|--------------------------------|---|---------------------------------------|-------|
|      | AMOUNT OF FRESH<br>WATER PUMPED<br>DOWN HOLE   |                                | F DAILY TUBING                          |                                       |       |
| Date | BBLS   | BBLS SOLE                      |   | PSI                                   |       |
| 1    | 1300   | 1290                           | 100                                     | 375                                   | SOL   |
| 2    | 1490   | 1480                           | 100                                     | 375                                   |       |
| 3    | 905  | 900                            | 100                                     | 375                                   |       |
| 4    | 2150   | 2140                           | 100                                     |                                       |       |
| 5    | 780  | 770                            | 100                                     | 375                                   |       |
| 6    | 2/20   | 2160                           | 100                                     | 375                                   |       |
| 7    | 625  | 670 45                         |   | 375                                   |       |
| 8    | 1040   | 1035                           | 100                                     | 385                                   |       |
| 9    | 305  | 300                            | 100                                     | 375                                   |       |
| 10   | -6   | 0                              | 100                                     | 325                                   |       |
| 11   | 1820   | 1800                           |   | 375                                   |       |
| 12   | 930  | 820                            | 100                                     | 375                                   |       |
| 13   | 700  | 890                            | 100                                     | 375                                   |       |
| 14   | 2965   | 2950 15                        | 100                                     | 325                                   |       |
| 15   | 580  | 570 32                         | 70                                      | 375                                   |       |
| 16   | 205  | 200                            | /                                       | 375                                   |       |
| 17   | 205  | 200                            | 100                                     | 375                                   |       |
| 18   | 1840   |                                | 100                                     | 375                                   |       |
| 19   | 1175   | 1830                           | 100                                     | 375                                   |       |
| 20   | 455  | 450 450                        | 100                                     | 375                                   |       |
| 21   | 1490   | 1180 46                        | 20-1                                    | 315                                   |       |
| 22   | 6  |                                | 100                                     | 375                                   |       |
| 23   | 365  | 110                            | 100                                     | 375                                   |       |
| 24   | \$10   | 360                            | 100                                     | 375                                   |       |
| 25   | 815  | 800                            | 100                                     | 375                                   | 10    |
| 26   | 110  | 800                            | 100                                     | 375 70                                |       |
| 27   |  | 700                            | 100                                     | 375                                   |       |
| 28   | 1305 245   | 1960 1645                      | 100                                     | 375                                   |       |
| 29   | 1110   | 20701000                       | 100                                     | 375                                   |       |
| 30   | 3-30   | 1160 7                         | 100                                     | 375                                   | 7     |
| 1    | 330  | 320 320                        | 100                                     | 375                                   | 1     |
| TALS |  | 320                            | 180                                     | 375                                   |       |
|      |  | 39505                          |   |                                       |       |
|      | RE   | PAIRS AND/O                    | REXPENSES                               | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 11.12 |
| te   | Company Performing Work/Repairs  | Descritpion of<br>Work/Repairs | Estimated Cost                          | Work Authoria                         |       |
|      |  | 39505                          |   | Work Authorized                       | a by  |

| Date | Company<br>Performing<br>Work/Repairs | Descritpion of Work/Repairs | Estimated Co          | st Work Authorized by  |
|------|---------------------------------------|-----------------------------|-----------------------|--|
|      |                                       | 39505                       |                       | The state of the s |
|      |                                       | C:\Documents and Satti      | total limit and Casi: | ry Internet FilestOl K6AtMoothly Eld/ RM D   |

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|   | CILITY/LOCATION |
|---|-----------------|
| - | ONTH/YEAR       |
|   | ONTH/YEAR       |

|                | A STANDARD STANDARD AND A STANDARD STAN | 2000年上海1000年100日 | HE HOUSE TO COMMERCIAL        | Witness Edward Long Co. |      |
|----------------|--|------------------|-------------------------------|-------------------------|------|
|                | AMOUNT OF FRESH<br>WATER PUMPED<br>DOWN HOLE   |                  | F  <br>R   DAILY TUBIN        | G DAILY CASING          | FRES |
| Date           | BBLS   | BBLS SOLD        |                               | PSI                     | WATE |
| 1              | 910  | 800              | 100                           | 375                     | SOLE |
| 2              | 915  | 900              | 100                           | 375                     |      |
| 3              | 610  | 600 H            | 100                           |                         |      |
| 4              | 1720   | 1700             | 100                           | 375                     |      |
| 5              | 2680   | 1265             | 100                           | 375                     |      |
| 6              | 405  | 400              | 100                           | 375                     |      |
| 7              | 410  | 400              | 100                           |                         |      |
| 8              | 1190   | 11170 86         | 0 100                         | 375                     |      |
| 9              | 875  | 360              | 100                           | 375                     |      |
| 10             | 455  | 440              | 100                           | 375                     |      |
| 11             | 1370   | 1360             | 100                           | 375                     |      |
| 12             | 1785   | 1770             |                               | 375                     |      |
| 13             | 1275   | 1763             | 100                           | 375                     | 130  |
| 14             | 615  | 600              | 100                           | 375                     |      |
| 15             | 1090   | 1070             | 100                           | 375                     |      |
| 16             | 2745   | 2730435          | 100                           | 375                     |      |
| 17             | 11 40  | 1120 jobs        | iou .                         | 375                     |      |
| 18             | 770  | 740 750          |                               | 375                     |      |
| 19             | 620  | 110              | 100                           | 315                     | 240  |
| 20             | 440  | <u> </u>         | 100                           | 375                     |      |
| 21             | 0  | 420              | 100                           | 375                     |      |
| 22             | 1590   | -6               | 1.00                          | 375                     |      |
| 23             | 1585   | 1570 1070        | 100                           | 315                     |      |
| 24             | 15288 1445   | 1010             | 100                           | 375                     |      |
| 25             | 1040   | 1940             | 100                           | 375                     |      |
| 26             | 2265   | 1023 1           | 100                           | 375                     |      |
| 27             | 640  | 2258             | 100                           | 375 /                   |      |
| 28             |  | 620              | 100                           | 325                     |      |
| 29             | 1/10   | 100              | 100                           | 375                     |      |
| 30             | 1075   | 1060             | 100                           | 375                     |      |
| 31             | 120  | 115              | 100                           | 375                     |      |
| OTALS          |  |                  |                               |                         |      |
| MAL TO SERVICE |  | 30456            |                               |                         |      |
|                | RE   | PAIRS AND/OF     | EXPENSES                      |                         |      |
| ate            | Performing D   | escritpion of    | Estimated Cost Work Authorize |                         | d by |
|                | 2012   |                  |                               |                         |      |

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FACILITY/LOCATION SALTY Tog MONTH/YEAR MAY 2019

| #10<br>1625<br>410 | BBLS SOLE  |   | PRESSURES<br>PSI   | SOLD  |
|--------------------|--|---|--|-------|
| 410<br>1625<br>410 |  |   |  | 5011  |
| 1625               | 400  |   | 375  |       |
| 410                |  | 125   | 325  | 1     |
|                    | 1600   | 125   | 375  | P     |
|                    | 400  | 125   | 375  | -0    |
| 800                | 190  | 125   | 375  | 8     |
| 1475               | 1460   | 125   | 375  |       |
| 720                | 710  | 125   | 375  | 0     |
| 1140               | 1130   | 125   |  | - B   |
|                    | 1795 4   | ACC -   |  | 0     |
|                    | 930  | 4.3   |  | 0     |
|                    | 2  | 4.5   |  | A     |
| 2 42.5             | 1400   | 125   |  | 8     |
| 1520               | 1510 8   | 125   |  | 6     |
|                    | 880 €  | 125   |  |       |
|                    | 830  | 125   |  | 130   |
|                    | 1750   |   |  | -0    |
|                    | 490  | 125   |  | 4     |
|                    | 1625   | 125   |  | 30    |
|                    | 100  | 125   |  | 0     |
|                    |  | 125   |  | 16    |
|                    | 400  | 125   |  | 8     |
|                    | 790  | 125   | 375  | 75-   |
|                    | 1260   | 125   | 375  | 205   |
|                    | 640  | 125   |  | 75    |
|                    | -500   | 125   |  | 0     |
|                    | 520  | 125   |  | P     |
|                    | 720  | 125   |  | 0     |
|                    | 190  | 12.5  | 375  | Ø     |
|                    | 455  | 125   | 37.5   | A     |
|                    | 1580 100   | 125   |  | 8     |
|                    |  | 125   | 2 /  | 8     |
|                    |  |   |  |       |
| Performing         | escritpion of  | Estimated Cost  | Work Authorize   | ed by |
|                    | 1510<br>9 45<br>-6<br>1410<br>395<br>3 45<br>120<br>430<br>430<br>430<br>430<br>430<br>430<br>520<br>530<br>735<br>-6<br>410<br>1595<br>860<br>RECompany<br>Performing | 1910   1995   1995   1995   1996 | 1910   1795   12 | 1910  |

MONTH/YEAR JUNE 2019

|             | AMOUNT OF FRE  |  |  |                 | The state of the s |
|-------------|--|--|--|-----------------|--|
|             | WATER PUMPER<br>DOWN HOLE  |  | ER DAILY TUBING  |                 | FRES   |
| Dat         |  | BBLS SOLI                                      |  | PRESSURES       | WATE   |
| 1           | 955  | 940  | 101  | PSI             | SOLI   |
| 2           | 710  | 700  | 125  | 375             |  |
| 3           | 210  | 200  | 125  | 375             |  |
| 4           | 1760   | 1740 9   | 125  | 375             |  |
| 5           | 1765   |  | 123  | 375             |  |
| 6           | 750  |  | OPEN COMMENT   | 375             |  |
| 7           | 1295   |  | 0.   | 330             |  |
| 8           | 3230   | 320000   | 123  | 325             |  |
| 9           | 690  | 680  | 125  | 375             | 120  |
| 10          | 815  | 800 4  | 125  | 375             |  |
| 11          | 750  |  |  | 375             | 50   |
| 12          | 995  | 980  | 125  | 375             |  |
| 13          | 510  |  | 125  | 375             |  |
| 14          | 640  | 620  | 125  | 375             |  |
| 15          | 19-  | 020  | 125  | 37.5            |  |
| 16          | 16 535 1190  | 1125   | 125  | 375             |  |
| 17          | 855  |  | 125  | 375             |  |
| 18          | 1095   | 1080   | 125  | 375             | 60   |
| 19          | 615  | 600  | 123  | 37.5            | 210  |
| 20          | 2150   |  | 125  | 375             | 130  |
| 21          | 1325   | 200  |  | 375             |  |
| 22          | 615  | 1310000 500                                    | 125  | 325             | 30   |
| 23          | - 0  | 600  | 125  | 375             |  |
| 24          | 600  | 500 100  | 125  | 375             |  |
| 25          | 1830   | A 100  | 125  | 375             |  |
| 26          | 1235   | 1810 1030                                      |  | 375             | 90   |
| 27          | 27938 1275   | 1223 125                                       |  | 375             | 260  |
| 28          | 1025   | 1260   | 125  | 375             | 20   |
| 29          | 850  | 1010   | 125  | 375             |  |
| 30          | 100  | 820 100  | 125  | 375             |  |
| 31          | 100  | 100  | 125  | 375             | 2  |
| OTALS       | 79863  | 2 0 m  |  |                 |  |
| 10 A 12 A 1 | STATE OF THE PERSON OF THE PER | 29818  | (Annual Control of the Control of th | 4               |  |
| Date        | Company Performing Work/Repairs  | EPAIRS AND/O<br>Descritpion of<br>Work/Repairs | Estimated Cost   | Work Authorized | l hv   |
|             |  | 29,818   |  |                 |  |

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FACILITY/LOCATION SALLY Dog MONTH/YEAR

|              | TER DAILY TUBIN                           |                    | G FRES    |
|--------------|---|--------------------|-----------|
| OUT OF HO    |   | PRESSURE           |           |
| BBLS SOL     | .D PSI                                    | PSI                | SOLD      |
| 518          | 125                                       | 325                | 190       |
| 3270000      | 12.5                                      | 375                | 110       |
| 133 450      | 400 125                                   | 375                |           |
| 500          | 125                                       | 375                | A =       |
| 700          | 125                                       | 325                | •7        |
| 1110         | 12.5                                      | 375                |           |
| 100          | 125                                       | 395                |           |
| 2600         | 12.5                                      | 375                |           |
| 2130         |   | 375                |           |
| 1300         | 125                                       | 325                |           |
| 660          | 125                                       | 375                |           |
| -6           |   |                    |           |
| 0            |   |                    | 120       |
| 100          |   |                    |           |
| 100          | 125                                       | 375                |           |
| 500          | 125                                       | 375                | 130       |
| 2660 50      | 125                                       | 375                |           |
|              | 125                                       | 375                | 100       |
| 1600         | 125                                       | 375                |           |
| 1330 3       | 125                                       | 375                |           |
|              | 125                                       | 325 /              |           |
| 1100         |   | 375                |           |
| 880          | N. C. | 375                |           |
| 770          | 12.5                                      | 375                |           |
| 815          | 125                                       | 375                | 100       |
| 1:90+40      | 125                                       | 375                |           |
| 500          | 125                                       | 575                |           |
| 0 10         | 125                                       | 375                |           |
| 1900         | 125                                       | 375                |           |
| 1630 AB      | 1002                                      | 375                | 70        |
|              | 125                                       | 375                | =         |
| 5, 676       |   |                    |           |
| scritpion of | Estimated Cost                            | Work Authorized by |           |
|              | scritpion of<br>ork/Repairs               |                    | ork/Don-i |

30340

MONTHYEAR AUG 2019

| _    |            | AMOUNT OF FRE<br>WATER PUMPE<br>DOWN HOLE | D BRINE WAT                 | ER DAILY TUE  | 1            |          |
|------|------------|---|-----------------------------|---------------|--------------|----------|
| Da   |            | BBLS                                      | BBLS SOLI                   |               | PSI          |          |
| 1    |            | 2280                                      | 2250 PB                     | 125           | 375          | SOLD     |
| 2    |            | 1000                                      | 996 990                     |               | 375          | 260      |
| 3    |            | 1540                                      | 1525                        | 125           | 375          | 260      |
| 5    |            | 1315                                      | 1300 +                      | 125           | 375          |          |
| 6    | -          | 2865                                      | 2850                        | 125           | 325          |          |
| 7    | -          | 1925                                      | 1915 100                    | 125           | 375          |          |
| 8    | -          | 950                                       | 945                         | 125           | 37.5         |          |
| 9    |            | 2055                                      | 2045 15                     | 125           | 375          | 7.       |
| 10   |            | 1795                                      | 1786 158                    |               | 375          | 120 25   |
| 11   | -          | 1120                                      | 1100 10                     | 125           | 375          | 7-50 20  |
| 12   | -          | 1/20                                      | 1110 24                     | 1/00          | 375          |          |
| 13   | -          | 535                                       |                             | 125           | 375          | 120      |
| 14   |            | 1230                                      | 1215                        | 125           | 375          | 130      |
| 15   | -          | 9 30                                      | 965 75                      | 多 125         | 315          |          |
| 16   |            | 790                                       | 180 30                      | 125           | 375          | -        |
| 17   | 1          | 220                                       | 220                         | 125           | 375          | ~ 7      |
| 18   | 7          | 1630                                      | 600                         | 125           | 375          |          |
| 19   |            | 900                                       | 1300                        | 125           | 375          |          |
| 20   |            | 2090                                      | 390 20                      | 120           | 375          | 130      |
| 21   |            |   | 2075 126                    | 1.7.55.17     | 375          |          |
| 22   |            | 2975                                      | 2955 1655                   |               | 375          |          |
| 23   |            |   | 2510 1710                   |               | 375          | 70       |
| 24   |            | 915                                       | 900                         | 161           | 375          |          |
| 25   |            | 2160                                      | 2150 195                    |               | 37.5         | 245      |
| 26   |            | 1915                                      | 1800 1500                   | 123           | 375          |          |
| 27   | 45025      | 1935                                      | 3025 1275                   | 125           | 375          | 7        |
| 28   | 1          | 7.15                                      | 4900 2001200                | 125           | 375          |          |
| 20   |            | 2450                                      | 2435 1995                   | 125           | 375          |          |
| 30   | 1000       | 2250                                      | 2225 +4,00                  | 125           | 375          | 130      |
| 31   | -          | 2250                                      | 2235 世記                     | 125           | 375          | 215      |
| TALS | CHAPTER TO | 915                                       | 900 700                     | 125           | 375          | 190      |
|      | V 477      |   | 53420                       |               |              |          |
| ate  | P          | Company<br>erforming<br>ork/Repairs       | Descritpion of Work/Repairs | Estimated Cos | t Work Autho | rized by |
|      |            |   |                             |               |              |          |

3693

FACILITY/LOCATION SALLY Dog

| MONTH/YEAR   | July   | 201 | 0 |
|--|--------|-----|---|
| Wat Ares de la company de la c | July 1 | 00  |   |

|              | SESTIMATION ASSESSMENTS                     | 《数据》的《数据》(1)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年)<br>1000年) | 4,001           | <b>经国际的经济</b>  |        |
|--------------|---|--|-----------------|----------------|--------|
|              | AMOUNT OF FRES<br>WATER PUMPED<br>DOWN HOLE | H AMOUNT O   | OF DAILY TUBING | G DAILY CASING |        |
| Date         | BBLS  | BBLS SOLI  |                 | PRESSURES      | WATE   |
| 1            | 525   | 518  | 125             |                | SOLI   |
| 2            | 3300  | 3270000  | 12.5            | 325            | 190    |
| 3            | 3450 342                                    | 海野 梅歌  | 125             | 375            |        |
| 5            | 510   | 500  | 125             | 375            |        |
| 6            | 215   | 700  | 125             | 325            | :7     |
| 7            | 1/25  | 1111   | 125             | 325            |        |
| -8           | 720   | 700 %  | 125             | 325            |        |
| 9            | 2625  | 2600   | 12.5            | 375            |        |
| 10           | 2155  | 2130,480   | 125             | 325            |        |
| 11           | 670   | 1300   | 125             | 325            |        |
| 12           | 5   | 660  | 125             | 315            |        |
| 13           | 0   | - 6  |                 |                |        |
| 14           | 0   | -  |                 |                | 120    |
| 15           | 110   | 100  |                 |                |        |
| 16           | 510   | 1 <i>00</i><br>500   | 125             | 375            |        |
| 17           | 1875  |  | 125             | 375            | 130    |
| 18           | 2675  | 2660 500   | 125             | 375            |        |
| 19           | 1650 300                                    | 1630 24  | 123             | 375            | 100    |
| 20           | 1345  | 1380 500   | 123             | 375            |        |
| 21           | 915   | 900  | 125             | 375            |        |
| 22           | 1120  | 1100 100   | 125             | 325            |        |
| 23           | 895   | 1000   | 123             | 375            |        |
| 24           | 460   | 440  | 1~0             | 375            |        |
| 25           | 830   | 315  | 12.5            | 375            |        |
| 26           | 1310  | 1:90110  | 125             | 375            | 100    |
| 27           | 510   | 500  |                 | 375            |        |
| -            | 540   | 520 520  | 125             | 575            |        |
|              | 2826 1420                                   | 1400   |                 | 375            |        |
| 30           | 1650  | 1630   | 125             | 375            |        |
| 31           | 1240  | 1220 620   |                 | 375            | 70     |
| TALS         |   | 35.676   | 125             | 375            | - 10 L |
| THE PARTY OF | 。 25 10 10 11 11 11 11 11 11 11 11 11 11 11 | EPAIRS AND/O   | REXPENSES       |                | - 10 C |
| ate          | Performing                                  | Descritpion of<br>Work/Repairs   | Estimated Cost  | Work Authorize | d by   |

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MONTH/YEAR AUG 2019

| Date 1 2 3 4 | AMOUNT OF FRES<br>WATER PUMPED<br>DOWN HOLE<br>BBLS | SH AMOUNT                                |                |                | Single State of the State of th |
|--------------|---|--|----------------|----------------|--|
| 1 2 3        |   |  |                |                |  |
| 2 3          | 2280  | BBLS SOL                                 |                | TREGOUNDE      | WATE   |
| 3            |   |  | 0.2.2.         | PSI            | SOLD   |
|              | 1000  | 990 9                                    | 3.454          | 375            |  |
| 4            | 1540  | 1525                                     |                | 375            | 260  |
|              | 1315  |  | 125            | 375            |  |
| 5            | 2865  | 2850                                     | 125            | 375            |  |
| 6            | 1925  | 1915 150                                 | 125            | 375            |  |
| 7            | 950   | 945                                      |                | 375            |  |
| 8            | 2055  | 2045 13                                  | 125            | 37.5           |  |
| 9            | 1795  | 1786 153                                 | AP-            | 375            | 20   |
| 10           | 1/20  |  |                | 375            | 120 2  |
| 11           | 1120  | 1100                                     | 125            | 375            |  |
| 12           | 535   |  | - The          | 375            |  |
| 13           | 1230  | 1215                                     | 125            | 375            | 120  |
| 14           | 9 30  |  | 125            | 375            | 130  |
| 15           | 790   | 965 FF 3                                 | Saltine        | 315            |  |
| 16           | 220   | 100                                      | 125            | 375            |  |
| 17           | 1630  | 220                                      | 125            | 375            | 7  |
| 18           | 1320  | 1600                                     | 125            | 375            |  |
| 19           | 900   | 1300<br>990 xx                           | 13.5           | 375            |  |
| 20           | 2090  | 010                                      | 125            | 375            | 130  |
| 21           | 2975  | 2075                                     |                | 375            |  |
| 22           | 2525  | 2955 163                                 |                | 375            |  |
| 23           | 915   | 2510 1710                                |                | 375            | 70   |
| 24           | 2160  | 900                                      | 1 / /          | 375            |  |
| 25           |   | 2150 195                                 | € 125          | 37.5           | 245  |
| 26           | 1915  | 1300 1500                                | 125            | 375            |  |
| 27 4567      | 25 NO 25  | 3025 1375                                | 125            | 375            |  |
| 28 1         | 1740  | 4900 7001700                             | 125            | 375            |  |
| 29           | 2450  | 2435 1935                                | 125            | 375            |  |
| 30           | 2250  | 2225 +42                                 | 125            | 375            | 130  |
| 31           | 2250  | 2235 115                                 | 125            | 375            | 215  |
| TALS         | 915   | 900 700                                  | 12.5           | 325            | 190  |
| OV MAN       |   | 53420                                    | 199            | -              | 110  |
| ate V        | company   | EPAIRS AND/O Descritpion of Work/Repairs | Estimated Cost | Work Authorize | ed by  |

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|      | FA         | CILITY/LOCA                              |                         | Dog                            |              |           |  |
|------|------------|--|-------------------------|--------------------------------|--------------|-----------|--|
|      | MC         | ONTH/YEAR                                | ent 2019                |                                |              |           |  |
| Dat  |            | OUNT OF FREE VATER PUMPER DOWN HOLE BBLS | SH AMOUNT OF BRINE WATE | ER DAILY TUBIN<br>LE PRESSURES | IG DAILY CAS | ING FRES  |  |
| 1    | 1          | 1465                                     | BBLS SOLI               |                                | PSI          | SOLI      |  |
| 2    |            | 770                                      | 1450+250                |                                | 375          | 120       |  |
| 3    |            | 1320                                     | 760                     | 100                            | 375          | 160       |  |
| 4    |            | 2090                                     | 1310                    | 125                            | 375          |           |  |
| 5    |            | 2715                                     | 2705                    | 1.00                           | 375          |           |  |
| 6    |            | 965                                      | dish                    | 125                            | 375          |           |  |
| 7    |            | 0  | 955                     | 125                            | 37.5         | 40        |  |
| 8    |            | -8-                                      | SAF 22                  | 125                            | 375          | 130       |  |
| 9    |            | 1055                                     | 32                      | 14/                            | 325          |           |  |
| 10   |            | 2030                                     | 10.00                   | 125                            | 375          |           |  |
| 11   | A TOTAL    | 1835                                     | 1820 3                  | 125                            | 375          |           |  |
| 12   |            | 3470                                     | 102                     | 123                            | 325          |           |  |
| 13   |            | 2125                                     | 3460 H                  | 125                            | 375          | 95        |  |
| 14   |            | 1635                                     | 1620 20                 | Marie Control                  | 375          | 190       |  |
| 15   |            | 630                                      | 620 3                   | 125                            | 375          | 120       |  |
| 16   |            | 2965                                     | 295530                  | 125                            | 375          |           |  |
| 17   |            | 2010                                     | 11.4                    | 2                              | 375          |           |  |
| 18   |            | 2350                                     | 1010                    | 125                            | 375          |           |  |
| 19   | 32605      | 3375                                     | 3360 1154               |                                | 375          | 135       |  |
| 20   |            | 1920                                     |                         |                                | 375          | 280       |  |
| 21   |            | 1000                                     | 139-7-0                 | 125                            | 375          | 125       |  |
| 22   | 36215      | 1000                                     | 900 400                 | 123                            | 375          |           |  |
| 23   |            | 1895                                     |                         | 125                            | 375          | 125       |  |
| 24   |            | 1740                                     | 1775 400                | 125                            | 375          |           |  |
| 25   |            | 1395                                     | 1 4 15 2                |                                | 375          | 50        |  |
| 26   |            | 650                                      | 625 625                 | 125                            | 375          | 100       |  |
| 27   |            | 810                                      |                         | 125                            | 375          | 125       |  |
| 28   | 12730      | -0/                                      | 795 395170              | 125                            | 325          |           |  |
| 29   |            | 810                                      | 300 300                 | 125                            | 375          |           |  |
| 30   |            | 850                                      | 60.0                    |                                | 325          | 70        |  |
| 31   |            | -  | 835 310                 | 125                            | 375-         | 178       |  |
| TALS |            |  | 44,365                  | 9208                           | · 43         | 24.1      |  |
|      |            | A PARTIE R                               | EPAIRS AND/O            | 2 EVALUATION OF                | 2            |           |  |
| te   | Performing |  | Descritpion of          | Estimated Cost                 | Work Author  | orized by |  |
|      | 44         |  |                         |                                |              |           |  |

FACILITY/LOCATION SALTY Dog

| Date  | Per     | ompany<br>forming<br>d/Repairs | De  | scritpion of<br>ork/Repairs | <b>F</b> | nated Cost   | Work Authoriz |       |
|-------|---------|--------------------------------|-----|-----------------------------|----------|--------------|---------------|-------|
|       | C       | mpany                          | KEP | AIRS AND/O                  | REX      | PENSES       |               |       |
|       | · 至 可必要 |                                |     | 7,695                       |          |              |               |       |
| OTALS |         | 745                            |     | 730                         |          | 125          | 375           | 110   |
| 31    | \$7295  | 2225                           | 28  | 10 24 300                   |          | 125          | 375           | 710   |
| 30    | -       | 1980                           | - 1 | 970                         |          | 128          | 375           | 170   |
| 29    | -       | 1690                           |     | 70 海                        |          | 125          | 375           |       |
| 28    | 7       | 950                            |     | 930                         |          | 125          | 375           |       |
| 27    | 50515   | 915                            |     | 900                         |          | 125          | 375           |       |
| 26    |         | 1735                           | 1.  | 720                         | 7        | 125          | 375           |       |
| 25    | 1       | 2675                           |     | 660 1000                    |          | 125          | 375           | 106   |
| 24    |         | 3750                           |     | 735 45000                   |          | 125          | 375           | 7.53  |
| 23    | 44305   | 710                            |     | 690 420                     |          | 125          | 375           |       |
| 22    | 13.00   | 1835                           |     | 1825 1000                   |          | 125          | 315           |       |
| 21    | 39 880  | 690                            |     | 670                         |          | 125          | 375           | 360   |
| 20    | 1.073   | 19 95                          |     | 1980                        |          | 125          | 375           | 400   |
| 19    | 37355   | 10 35                          |     | 1025                        |          | 125          | 3 15          |       |
| 18    |         | 22 80                          |     | 2265                        | 4        | 125          | 375           |       |
| 17    | 5       | 3250                           | 3   | 235 63                      |          | 125          | 375           |       |
| 16    |         | 2315                           | -   | 295 4604                    |          | 125          | 375           | 95    |
| 15    |         | 2520                           | 12  | 4901290                     | 2        | 125          | 375           |       |
| 14    |         | 2025                           |     | 2010 60                     |          | 125          | 375           | 140   |
| 13    |         | 2620                           | -   | 2800 1200                   |          | 125          | 375           | 140   |
| 12    | 2205    | 815                            |     | 800 %                       |          | 123          | 375           |       |
| 11    |         | 1460                           |     | 1445 199                    | 字        | 125          | 375           | 12.5  |
| 10    |         | 2320                           | _   | 2300 2000                   |          | 125          | 375           |       |
| 9     |         | 2265                           | -   | 990                         | (30)     | 125          | 375           | 190 7 |
| 8     |         | 1850                           |     | 1840 4                      | 5        | 125          | 375           | 250   |
| 7     |         | 1055                           |     | 1040                        | 300      | 125          | 375           | 75    |
| 6     | _       | 1110                           |     | 1100                        | BOO      | 125          |               | 4 15  |
| 5     |         | 2020                           |     | 201019                      | 300      | 125          | 375           | 255   |
| 3     |         | 1980                           |     | 1970 3                      | 195      | 125          | 375           | 100   |
| 2     |         | 3445                           |     |                             | 20       | 125          | 375           | 125   |
| 1     |         | 1285                           |     | 1270                        | 130      | 125          | 5             | SOLD  |
|       | ite     | BBLS                           |     | BBLS SOL                    |          | PSI          | PSI           | VIAIL |
| De    |         | DOWN HOLE                      |     | OUT OF HO                   |          | PRESSURES    | PRESSURES     |       |
| 1 -   | - 1     | NATER PUMPI                    |     | BRINE WAT                   |          | DAILY TUBING | DAILY CASIN   | 10    |
|       |         | MOUNT OF FR                    |     | AMOUNT (                    | OF       |              |               |       |

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# MONTHLY FRESH & BRINE WATER REPORT

|            |           | FACILITY/LOCA                                     | ATION SACY                               | Dog                                | 2000               |          |
|------------|-----------|---|--|------------------------------------|--------------------|----------|
|            |           | MONTH/YEAR  | NOU 2                                    | 2019                               |                    |          |
| - Constant | ON SHADOW | Hard And State House                              | 以为1000000000000000000000000000000000000  | estimated and the second           | <b>全国联节、生理区域系统</b> |          |
| Da         |           | AMOUNT OF FRE<br>WATER PUMPE<br>DOWN HOLE<br>BBLS | ESH AMOUNT O<br>BRINE WATE<br>OUT OF HOL | F ER DAILY TUBIN E PRESSURES       | G DAILY CASI       | NG FRESI |
| 1          |           | 810   | BBLS SOLE                                | PSI                                | PSI                | SOLD     |
| 2          |           | 715   | 100 300 500                              |                                    | 315                | 310      |
| 3          |           |   | 700                                      | 125                                | 375                | 370      |
| 4          |           | 650   | 1000                                     | 125                                | 375                |          |
| 5          |           |   | 625                                      | 125                                | 375                |          |
| 6          |           | 2250  | 2220                                     | 125                                | 375                | 125      |
| 7          |           | 420   | 110                                      | 125                                | 375                | 123      |
| 8          |           | 200   | 110                                      | 90 125                             | 375                |          |
| 9          |           | 815   | 000                                      | 125                                | 325                |          |
| 10         |           | 1820  | 1805                                     | 125                                | 375                |          |
| 11         | -         | 1715  | SED 1700                                 | 125                                | 375                |          |
| 12         |           | 1290  | 1275 8786                                | 125                                | 37.5               |          |
| 13         | -         | 2680  | 3665 1465 TH                             | 125                                | 375                |          |
| 14         | -         | 1990  | 1975 1000                                | 125                                | 375                |          |
| 15         | +         | 1320  | 1300                                     | 125                                | 375                | ,        |
| 16         | -         | 1345  | 113543                                   | 5 125                              | 375                | 11.      |
| 17         | 220       | 1405  | 1390                                     | 125                                | 375                | 40       |
| 18         | -         | 2620  | 2600 400                                 | 125                                |                    |          |
| 19         |           | 1800  | 1785 100                                 |                                    | 325                |          |
|            | +         | 2140  | 2125 928                                 | 125                                | 375                |          |
| 20         | -         | 2460  | 2445 225 300                             | 125                                | 375                |          |
| 21         | -         | 1615  | 1600 m 1300                              |                                    | 375                | 120      |
| 22         | +         | 16/25   | 1410 4110 900                            | 125                                | 375                | 130      |
| 23         |           | 1230  | 1720                                     |                                    | 375                |          |
| 24         |           | 2510  | 2490                                     | 125                                | 375                | 185      |
| 25         |           | 25 212  | 2505 750                                 | 125                                | 375                |          |
| 26         | りかれる      | 1985  | 1970 in                                  | 125                                | 375                |          |
| 27         |           | 1425  | 1415 200                                 |                                    | 375                | 316      |
| 28         | 1         | 515   | 500                                      | 125                                | 375                | 12       |
| 29         |           | 1185  | 1170 310                                 | 125                                | 375                |          |
| 30         |           | 740   | 730 H                                    | 125                                | 375                | 120      |
| 31         |           |   | -(30.18                                  | 125                                | 375                |          |
| OTALS      |           |   | 43935                                    |                                    |                    | *        |
|            |           |   | REPAIRS AND/OF                           | DEVENOR                            |                    |          |
| ate        | P         | Company<br>erforming<br>ork/Repairs               | Descritpion of                           | Estimated Cost                     | Work Authori       | zed by   |
| -          |           | 131-  |  |                                    |                    |          |
|            |           |   |  |                                    |                    |          |
|            |           |   | 0.10                                     | Uim\Local Settings\Temporary Inter |                    |          |

# MONTHLY FRESH & BRINE WATER REPORT

FACILITY/LOCATION SALTY DOG MONTH/YEAR

| Da               | W        | OUNT OF FRESH<br>ATER PUMPED<br>DOWN HOLE<br>BBLS | AMOUNT OF<br>BRINE WATER<br>OUT OF HOLE | DAILY TUBING<br>PRESSURES  | DAILY CASING<br>PRESSURES               | 15000000  |
|------------------|----------|---|---|--|---|-----------|
| 1                |          |   | BBLS SOLD                               | PSI  | PSI                                     | SOLD      |
| 2                |          | 710   | 900                                     | 125  | 375                                     | 2417      |
| 3                |          | 2400  | 1640                                    | 125  | 375                                     | 40        |
| 4                |          | 2445  | 2390                                    | 125  | 375                                     | - 10      |
| 5                |          |   | 2530 1800                               | 125  | 375                                     | 37045 HOW |
| 6                |          | 10 80   | 1070 216                                | 125  | 375                                     | 312       |
| 7                |          | 1085  | 1015 GG104                              | 125  | 375                                     | 70        |
| 8                |          | 790   | 1070                                    | 125  | 375                                     | - 102     |
| 9                |          | 1240  | 780 200                                 | 125  | 375                                     |           |
| 10               | 7        |   | 1225                                    | 125  | 375                                     |           |
| 11               |          | 1265  | 1230700                                 | 125  | 375                                     |           |
| 12               |          | 1415  | 1400 100                                | 125  | 375                                     |           |
| 13               |          | 905   | 895 445                                 | 125  | 375                                     |           |
| 14               |          | 1205  | 1190 8900                               | 125  | 375                                     |           |
| 15               | 4399     | 1815  | 1800 500                                | 125  | 375                                     |           |
| 16               | 23486    | 1215  | 1200 300                                | 125  | 375                                     | -         |
| 17               | -        | 3 > 51  | 333/ 203/5                              | 125  | 325                                     | 120       |
| 18               |          | 1880  | 1866 1980                               | 125  | 375                                     |           |
| 19               |          | 1675  | 1665                                    | 125  | 375                                     |           |
| 20               |          | 2175  | 2160 1455700                            | 125  | 375                                     |           |
| ₹ <del>2</del> 1 |          | 870   | 860 300                                 | 125  | 375                                     |           |
| 22               |          | 1315  | 1300                                    | 125  | 375                                     |           |
| 23               |          | 1555  | 1540                                    | 125  | 375                                     |           |
| 24               |          | 1410  | 1400                                    | 125  | 375                                     |           |
| 25               |          | 1320  | 1300                                    | 125  | 375                                     |           |
| 26               | 37/22    | 205   | 200                                     | 125  | 375                                     |           |
| 27               |          | 1360  | 1345                                    | 125  | 375                                     |           |
| 28               | ,        | 630   | 625                                     | 125  | 375                                     | 120       |
| 29               |          | 800   | 770                                     | 125  | 375                                     | 120       |
| 30               |          | 205   | 200 200                                 | 125  | 375                                     |           |
| 31               | -        | 545   | 535                                     | 125  | 375                                     |           |
| TOTALS           |          | 1745 1  | 130 Her                                 | 135  | 325                                     | 120       |
| TOTALO           |          |   |   |  |   | 120       |
| Section 1        | 20.20日,为 | RE  | PAIRS AND/OR E                          | KPENSES  |   | O Company |
| 1                | Cal      | manu  |   | THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NA | 10 E |           |

Company Performing Descritpion of Work/Repairs Date Work/Repairs Estimated Cost Work Authorized by

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# MONTHLY FRESH & BRINE WATER REPORT

| FACILITY/LOCAT     | ION -52                | VIV D | <b>美国的</b> 企业产生 | <b>有限国际</b> |
|--------------------|------------------------|-------|-----------------|-------------|
| MONTH/YEAR         | 1 1 .                  | 2010  | 7               |             |
| <b>以一个人工作的,这位的</b> | STATION AND ASSESSMENT | 20 10 | Gallana         |             |

| MOUNT OF FRE WATER PUMPE DOWN HOLE  BBLS  4/0   200   4/5 200   2/70   2/70   2/70   2/70   3000   1740   3000   1740   2/20   2/20  | AMOUNT OF BRINE WATH OUT OF HOLD BBLS SOLI HOD 1/83 HOD 1/83 HOD 1/83 HOD 1/85 HOD 1  | ER DAILY TUBIN PRESSURE:  D PSI  125  125  125  125  125  125  125  12  | NG DAILY CASI   | NG FRES       |
|--|---|---|---|---------------|
| 410<br>1200<br>415 200<br>915<br>1590<br>2170<br>965<br>1440<br>620 20<br>1215<br>710<br>3000<br>1740<br>2015<br>3000<br>1740<br>2015<br>3000<br>1740  | #00<br>1/83<br>#00<br>900 +<br>1580 +   | PSI   125 | PSI 375 375 375 375 375 375 375 375 375 375   | IID  IID  IID |
| 1200<br>415 200<br>915<br>1590<br>2170<br>965<br>1655<br>1440<br>620 20<br>1215<br>710<br>3000<br>1740<br>2015<br>3000<br>1740<br>2015<br>3000<br>2015   | 1/83  HOO  1/83  HOO  900 H  1580 H  2155 H  950 MH  1425 \$  1695 H  1200 +  1   | 125<br>125<br>125<br>125<br>125<br>125<br>125<br>125  | 375<br>375<br>375<br>375<br>375<br>375<br>325<br>325<br>325<br>325<br>325<br>325<br>325<br>32               | 110<br>110    |
| 1200<br>415 200<br>915<br>1590<br>2170<br>965<br>1655<br>1440<br>620 20<br>1215<br>710<br>3000<br>1740<br>2015<br>3000<br>1740<br>2015<br>3000<br>2015   | 1/83<br>HOO<br>900 H<br>1580 H<br>2155 H<br>950 H<br>1645 H<br>1425 F<br>1600 H<br>1200 H<br>1200 H<br>1200 H<br>1200 H<br>2085<br>1725 FS  | 125<br>125<br>125<br>125<br>125<br>125<br>125<br>125  | 375<br>375<br>375<br>375<br>375<br>325<br>375<br>325<br>375<br>375<br>375<br>375<br>375<br>375<br>375<br>37 | 110           |
| 415 200<br>915<br>1590<br>2170<br>965<br>1655<br>1440<br>620 20<br>1215<br>710<br>3000<br>1740<br>8 2015<br>3000<br>200<br>200<br>200<br>200<br>200<br>200<br>20   | 1580 + 15  | 125<br>125<br>125<br>125<br>125<br>125<br>125<br>125  | 375<br>375<br>375<br>375<br>325<br>325<br>325<br>325<br>325<br>325<br>325<br>32                             | 110           |
| 915<br>1590<br>2170<br>965<br>1655<br>1440<br>1215<br>710<br>3000<br>1740<br>2015<br>3000<br>230<br>510  | 900 + 158  | 125<br>125<br>125<br>125<br>125<br>125<br>125<br>125  | 375<br>375<br>375<br>325<br>375<br>325<br>375<br>375<br>375<br>375<br>375<br>375<br>375                     | 110           |
| 1590<br>2170<br>965<br>1655<br>1440<br>620<br>1215<br>710<br>3000<br>1740<br>3000<br>1740<br>3000<br>1740<br>3000<br>1740<br>3000  | 1580 1<br>2155 + 1<br>950 2 1<br>1645 4 1<br>1425 3<br>1600 2 4<br>1200 2 4 | 125<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125  | 375<br>375<br>325<br>375<br>325<br>375<br>375<br>375<br>375<br>375<br>375<br>375                            | 70 /36        |
| 2170<br>965<br>1655<br>1440<br>620 <del>2</del><br>1215<br>710<br>3000<br>1740<br>8 2015<br>3000<br><b>230</b><br>510  | 2155 + 2 450 450 1645 4150 450 450 450 450 450 450 450 450 450 4  | 125<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125  | 375<br>375<br>325<br>375<br>325<br>375<br>375<br>375<br>375<br>375<br>375<br>375                            | 70 /30        |
| 965<br>1655<br>1440<br>620<br>1215<br>710<br>3000<br>1740<br>3000<br>1740<br>3000<br>2015<br>3000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>200 | 1645 AS<br>1425 S<br>1425 S<br>1600 AS<br>1200 AS<br>1200 AS<br>1725 SS<br>2410 4<br>2970 300 SOO<br>500 SOO  | 125<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125  | 32.5<br>37.5<br>32.5<br>32.5<br>37.5<br>37.5<br>32.5<br>32.5<br>32.5<br>32.5<br>32.5<br>32.5                | 70 /30        |
| 1655<br>1440<br>1215<br>710<br>3000<br>1740<br>3000<br>1740<br>3000<br>2015<br>3000<br>2000<br>2000  | 1645 ANS<br>1425 35<br>1600 40<br>1200 40<br>1000<br>2085<br>1825 353<br>2410 40<br>2970 340<br>2000 500  | 125<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125  | 375<br>325<br>325<br>325<br>325<br>325<br>325<br>325<br>325   | 70 /30        |
| 1440<br>1215<br>110<br>3000<br>1740<br>2015<br>3000<br>200<br>200  | 1425 3<br>1600 40<br>1200 40<br>100<br>2085<br>1125 505<br>2410 6<br>2970 300<br>500 500  | 125<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125  | 375<br>325<br>325<br>325<br>325<br>325<br>325<br>325<br>325   | 90            |
| 1215<br>710<br>3000<br>1740<br>2015<br>3000<br><b>230</b><br>510   | 1600 40<br>1200 40<br>100<br>2085<br>1725 45 20<br>2410 40<br>2970 340<br>220 100<br>500 500  | 125<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125  | 325<br>375<br>375<br>375<br>375<br>325<br>325<br>375<br>325   | 90            |
| 12/5<br>7/0<br>3000<br>1740<br>2015<br>3000<br><b>230</b>  | 1200 600<br>700<br>2085<br>1725 665<br>2410 60<br>2970 990<br>220 100<br>500 500  | 125<br>125<br>125<br>125<br>125<br>125<br>125<br>125<br>125   | 375<br>375<br>375<br>375<br>375<br>375<br>375   | 90            |
| 710<br>3000<br>1740<br>2015<br>3000<br><b>230</b><br>510   | 2075<br>1725 505 20<br>2410 6<br>2970 340<br>220 100<br>500 500   | 125<br>125<br>125<br>125<br>125<br>125<br>125<br>125  | 375<br>375<br>375<br>375<br>375<br>375  | /28           |
| 3000<br>1740<br>2015<br>3000<br><b>230</b>   | 2085<br>1825 55 20<br>2410 4<br>2970 300<br>220 100<br>500 500  | 125<br>125<br>125<br>125<br>125   | 375<br>375<br>375<br>375<br>375   | /28           |
| 1740<br>3000<br><b>230</b><br>510  | 2970 900 500<br>500 500   | 125   | 375<br>375<br>375<br>375  | 128           |
| 3000<br><b>230</b><br>510  | 2970 300 500<br>500 500   | 125   | 375<br>375<br>375   | /28           |
| 3000<br><b>230</b><br>510  | 2970 300<br>220 100<br>500 500  | 125   | 375   | 125           |
| <b>230</b> 510   | 500 500   | 125   | 375   |               |
| 510  | 500 500   | 125   |   | 210           |
|  | 500   |   | 3/5   |               |
| 227/   |   | 125   | 377   | 116           |
|  | 2200 400  | 125   | 375   | 110           |
| 2330   | 23/8 = 8 600  | 125   | 375   | 12.5          |
| 1470   | 14.5 5  | 125   | 375   | 2.5           |
| 635  | 625   | 125   | 375   | 120           |
| 3500   | 3476  | 175   | 378   | 85            |
| 2365   | 2253  | 125   | 375   | 120           |
| 1235   | 1020 200  | 7.13  | 375   |               |
| 1520   | 1500  | 125   | 375   | 185           |
| 12 60  | 1245-200  | 125   | 375   |               |
| 1645   | 1130730   |   |   |               |
| 655  | 145 100   |   |   | 565           |
| 1300   |   |   |   |               |
| 800  |   |   |   | 22-2-1        |
|  |   | 125   | 375   | #500          |
| R  | EPAIRS AND/OF   | EVALUE  |   |               |
| -fally   | Descritpion of  |   | Work Authoriz   |               |
|  | /645<br>/55<br>/300<br>800<br>ompany  | 1645  | 1645  | 1645          |

C:\Documents and Settings\Jim\Local Settings\Temporary Internet Files\OLK6AWonthly FW-BW Report - Original

**Appendix C** 

Laboratory Analytical Reports



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

September 24, 2019

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

RE: Salty Dog OrderNo.: 1906171

#### Dear John Ayarbe:

Hall Environmental Analysis Laboratory received 14 sample(s) on 6/5/2019 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 18, 2019.

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. 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. All samples are reported as received unless otherwise indicated.

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

Sincerely,

Andy Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

#### Lab Order **1906171**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/24/2019

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: PMW-1

 Project:
 Salty Dog
 Collection Date: 6/3/2019 5:20:00 PM

 Lab ID:
 1906171-001
 Matrix: GROUNDWA
 Received Date: 6/5/2019 10:05:00 AM

| Analyses                 | Result | RL Qua | al Units | DF Date Analyzed         | Batch    |
|--------------------------|--------|--------|----------|--------------------------|----------|
| EPA METHOD 300.0: ANIONS |        |        |          | Analy                    | st: MRA  |
| Chloride                 | 11000  | 5000 * | mg/L     | 1E+ 6/12/2019 11:28:50 A | M R60620 |

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

Page 1 of 22

#### Lab Order 1906171

Date Reported: 9/24/2019

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-1R

 Project:
 Salty Dog
 Collection Date: 6/3/2019 5:00:00 PM

 Lab ID:
 1906171-002
 Matrix: GROUNDWA
 Received Date: 6/5/2019 10:05:00 AM

| Analyses                 | Result | RL Q | ual Units | DF Date Analyzed       | Batch   |
|--------------------------|--------|------|-----------|------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |      |           | Analys                 | st: CJS |
| Chloride                 | 190    | 5.0  | mg/L      | 10 6/9/2019 6:14:37 PM | R60519  |

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

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#### Lab Order 1906171

Date Reported: 9/24/2019

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-2

 Project:
 Salty Dog
 Collection Date: 6/3/2019 3:50:00 PM

 Lab ID:
 1906171-003
 Matrix: GROUNDWA
 Received Date: 6/5/2019 10:05:00 AM

| Analyses                 | Result | RL Qu | ual Units | DF Date Analyzed       | Batch   |
|--------------------------|--------|-------|-----------|------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |       |           | Analys                 | st: CJS |
| Chloride                 | 42     | 5.0   | mg/L      | 10 6/9/2019 7:04:15 PM | R60519  |

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

- 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

Page 3 of 22

#### Lab Order 1906171

Date Reported: 9/24/2019

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-3

 Project:
 Salty Dog
 Collection Date: 6/3/2019 4:45:00 PM

 Lab ID:
 1906171-004
 Matrix: GROUNDWA
 Received Date: 6/5/2019 10:05:00 AM

| Analyses                 | Result | RL Q | ual Units | DF Date Analyzed       | Batch    |
|--------------------------|--------|------|-----------|------------------------|----------|
| EPA METHOD 300.0: ANIONS |        |      |           | Analy                  | /st: CJS |
| Chloride                 | 46     | 5.0  | mg/L      | 10 6/9/2019 9:08:22 PM | R60519   |

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

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#### Lab Order 1906171

Date Reported: 9/24/2019

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Daniel B. Stephens & Assoc. **Client Sample ID:** DBS-4

**Collection Date:** 6/3/2019 4:10:00 PM **Project:** Salty Dog 1906171-005 Received Date: 6/5/2019 10:05:00 AM Lab ID: Matrix: GROUNDWA

| Analyses                 | Result | RL Qu | ual Units | DF Date Analyzed       | Batch   |
|--------------------------|--------|-------|-----------|------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |       |           | Analys                 | st: CJS |
| Chloride                 | 30     | 5.0   | mg/L      | 10 6/9/2019 8:18:43 PM | R60519  |

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
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix

- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH Not In Range
- RL Reporting Limit

Page 5 of 22

#### Lab Order 1906171

Date Reported: 9/24/2019

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-5

 Project:
 Salty Dog
 Collection Date: 6/3/2019 4:30:00 PM

 Lab ID:
 1906171-006
 Matrix: GROUNDWA
 Received Date: 6/5/2019 10:05:00 AM

| Analyses                 | Result | RL Qua | l Units | DF Date Analyzed        | Batch   |
|--------------------------|--------|--------|---------|-------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |        |         | Analy                   | st: CJS |
| Chloride                 | 280    | 50 *   | mg/L    | 100 6/9/2019 8:55:57 PM | R60519  |

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

Page 6 of 22

#### Lab Order 1906171

Date Reported: 9/24/2019

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Daniel B. Stephens & Assoc. **Client Sample ID:** DBS-6

**Collection Date:** 6/3/2019 2:05:00 PM **Project:** Salty Dog 1906171-007 Received Date: 6/5/2019 10:05:00 AM Lab ID: Matrix: GROUNDWA

| Analyses                 | Result | RL Q | ual Units | DF Date Analyzed        | Batch   |
|--------------------------|--------|------|-----------|-------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |      |           | Analy                   | st: CJS |
| Chloride                 | 180    | 50   | mg/L      | 100 6/9/2019 8:06:18 PM | R60519  |

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
- % Recovery outside of range due to dilution or matrix

- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH Not In Range
- Reporting Limit

Page 7 of 22

#### Lab Order 1906171

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/24/2019

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-8

 Project:
 Salty Dog
 Collection Date: 6/3/2019 1:00:00 PM

 Lab ID:
 1906171-008
 Matrix: GROUNDWA
 Received Date: 6/5/2019 10:05:00 AM

| Analyses                 | Result | RL Qu | ual Units | DF Date Analyzed       | Batch   |
|--------------------------|--------|-------|-----------|------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |       |           | Analys                 | st: CJS |
| Chloride                 | 35     | 5.0   | mg/L      | 10 6/9/2019 9:33:10 PM | R60519  |

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

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#### Lab Order 1906171

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/24/2019

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-9

**Project:** Salty Dog
 Collection Date: 6/3/2019 12:32:00 PM

 **Lab ID:** 1906171-009
 Matrix: GROUNDWA
 Received Date: 6/5/2019 10:05:00 AM

| Analyses                 | Result | RL Qual Units DF Date Analyze |      | DF Date Analyzed        | Batch   |
|--------------------------|--------|-------------------------------|------|-------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |                               |      | Analys                  | st: CJS |
| Chloride                 | 160    | 5.0                           | mg/L | 10 6/9/2019 10:22:49 PM | R60519  |

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

- 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

orting Limit Page 9 of 22

#### Lab Order 1906171

Hall Environmental Analysis Laboratory, Inc. Date Reported: 9/24/2019

**CLIENT:** Daniel B. Stephens & Assoc. Client Sample ID: DBS-10

**Collection Date:** 6/3/2019 1:30:00 PM **Project:** Salty Dog 1906171-010 Received Date: 6/5/2019 10:05:00 AM Lab ID: Matrix: GROUNDWA

| Analyses                 | Result | RL Qual Units | DF Date Analyzed         | Batch   |
|--------------------------|--------|---------------|--------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |               | Analy                    | st: CJS |
| Chloride                 | 510    | 50 * mg/L     | 100 6/9/2019 11:00:02 PM | R60519  |

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
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix

- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH Not In Range
- RL Reporting Limit

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#### Lab Order 1906171

Date Reported: 9/24/2019

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Daniel B. Stephens & Assoc.

Client Sample ID: MW-5

 Project:
 Salty Dog
 Collection Date: 6/3/2019 2:45:00 PM

 Lab ID:
 1906171-011
 Matrix: GROUNDWA
 Received Date: 6/5/2019 10:05:00 AM

| Analyses                 | Result | RL Qua | l Units | DF Date Analyzed         | Batch   |
|--------------------------|--------|--------|---------|--------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |        |         | Analys                   | st: CJS |
| Chloride                 | 610    | 50 *   | mg/L    | 100 6/9/2019 11:24:52 PM | R60519  |

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

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#### Lab Order 1906171

Date Reported: 9/24/2019

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: MW-3

**Project:** Salty Dog
 Collection Date: 6/3/2019 3:20:00 PM

 **Lab ID:** 1906171-012
 Matrix: GROUNDWA
 Received Date: 6/5/2019 10:05:00 AM

| Analyses                            | Result | RL    | Qual | Units    | DF 1 | Date Analyzed         | Batch  |
|-------------------------------------|--------|-------|------|----------|------|-----------------------|--------|
| SPECIFIC GRAVITY                    |        |       |      |          |      | Analyst               | JRR    |
| Specific Gravity                    | 1.009  | 0     |      |          | 1    | 6/12/2019 11:09:00 AM | R60579 |
| EPA METHOD 300.0: ANIONS            |        |       |      |          |      | Analyst:              | CJS    |
| Fluoride                            | ND     | 10    |      | mg/L     | 100  | 6/9/2019 11:37:16 PM  | R60519 |
| Chloride                            | 8000   | 500   | *    | mg/L     | 1E+  | 6/9/2019 11:49:40 PM  | R60519 |
| Nitrogen, Nitrite (As N)            | ND     | 10    | Н    | mg/L     | 100  | 6/9/2019 11:37:16 PM  | R60519 |
| Bromide                             | ND     | 10    |      | mg/L     | 100  | 6/9/2019 11:37:16 PM  | R60519 |
| Nitrogen, Nitrate (As N)            | ND     | 0.50  | Н    | mg/L     | 5    | 6/13/2019 2:40:10 PM  | R60644 |
| Phosphorus, Orthophosphate (As P)   | ND     | 2.5   | Н    | mg/L     | 5    | 6/13/2019 2:40:10 PM  | R60644 |
| Sulfate                             | 440    | 50    | *    | mg/L     | 100  | 6/9/2019 11:37:16 PM  | R60519 |
| SM2510B: SPECIFIC CONDUCTANCE       |        |       |      |          |      | Analyst:              | JRR    |
| Conductivity                        | 26000  | 25    |      | µmhos/c  | 5    | 6/10/2019 5:44:12 PM  | R60535 |
| SM2320B: ALKALINITY                 |        |       |      |          |      | Analyst:              | JRR    |
| Bicarbonate (As CaCO3)              | 313.7  | 20.00 |      | mg/L Ca  | 1    | 6/10/2019 12:01:18 PM | R60535 |
| Carbonate (As CaCO3)                | ND     | 2.000 |      | mg/L Ca  | 1    | 6/10/2019 12:01:18 PM | R60535 |
| Total Alkalinity (as CaCO3)         | 313.7  | 20.00 |      | mg/L Ca  | 1    | 6/10/2019 12:01:18 PM | R60535 |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |       |      |          |      | Analyst:              | KS     |
| Total Dissolved Solids              | 16200  | 200   | *D   | mg/L     | 1    | 6/10/2019 4:44:00 PM  | 45439  |
| SM4500-H+B / 9040C: PH              |        |       |      |          |      | Analyst:              | JRR    |
| рН                                  | 7.21   |       | Н    | pH units | 1    | 6/10/2019 12:01:18 PM | R60535 |
| EPA 6010B: TOTAL RECOVERABLE METALS |        |       |      |          |      | Analyst:              | ELS    |
| Calcium                             | 1200   | 50    |      | mg/L     | 50   | 6/12/2019 11:16:51 AM | 45452  |
| Magnesium                           | 200    | 5.0   |      | mg/L     | 5    | 6/12/2019 9:42:30 AM  | 45452  |
| Potassium                           | 18     | 1.0   |      | mg/L     | 1    | 6/12/2019 9:40:30 AM  | 45452  |
| Sodium                              | 3700   | 50    |      | mg/L     | 50   | 6/12/2019 11:16:51 AM | 45452  |
|                                     |        |       |      |          |      |                       |        |

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

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#### Lab Order 1906171

Date Reported: 9/24/2019

Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Daniel B. Stephens & Assoc. Client Sample ID: Injection

**Project:** Salty Dog Collection Date: 6/3/2019 10:21:00 AM 1906171-013 Received Date: 6/5/2019 10:05:00 AM Lab ID: Matrix: GROUNDWA

| Analyses                            | Result | RL  | Qual | Units    | DF  | Date Analyzed         | Batch  |
|-------------------------------------|--------|-----|------|----------|-----|-----------------------|--------|
| SPECIFIC GRAVITY                    |        |     |      |          |     | Analyst               | : JRR  |
| Specific Gravity                    | 0.9991 | 0   |      |          | 1   | 6/12/2019 11:09:00 AM | R60579 |
| EPA METHOD 300.0: ANIONS            |        |     |      |          |     | Analyst               | : CJS  |
| Chloride                            | 370    | 50  | *    | mg/L     | 100 | 6/10/2019 12:14:30 AM | R60519 |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |     |      |          |     | Analyst               | : KS   |
| Total Dissolved Solids              | 915    | 100 | *D   | mg/L     | 1   | 6/10/2019 4:44:00 PM  | 45439  |
| SM4500-H+B / 9040C: PH              |        |     |      |          |     | Analyst               | : JRR  |
| рН                                  | 7.56   |     | Н    | pH units | 1   | 6/6/2019 12:00:11 PM  | R60464 |
| EPA 6010B: TOTAL RECOVERABLE METALS |        |     |      |          |     | Analyst               | ELS    |
| Sodium                              | 250    | 5.0 |      | mg/L     | 5   | 6/12/2019 11:18:32 AM | 45452  |

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
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix

- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH Not In Range
- RL Reporting Limit

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#### Lab Order **1906171**

Date Reported: 9/24/2019

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: Brine

**Project:** Salty Dog
 Collection Date: 6/3/2019 10:16:00 AM

 **Lab ID:** 1906171-014
 Matrix: GROUNDWA
 Received Date: 6/5/2019 10:05:00 AM

| Analyses                            | Result | RL    | Qual | Units    | DF  | Date Analyzed         | Batch  |
|-------------------------------------|--------|-------|------|----------|-----|-----------------------|--------|
| SPECIFIC GRAVITY                    |        |       |      |          |     | Analyst               | : JRR  |
| Specific Gravity                    | 1.206  | 0     |      |          | 1   | 6/12/2019 11:09:00 AM | R60579 |
| EPA METHOD 300.0: ANIONS            |        |       |      |          |     | Analyst               | MRA    |
| Chloride                            | 220000 | 10000 | *    | mg/L     | 2E+ | 6/12/2019 12:18:12 PM | R60620 |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |       |      |          |     | Analyst               | : KS   |
| Total Dissolved Solids              | 312000 | 2000  | *D   | mg/L     | 1   | 6/10/2019 4:44:00 PM  | 45439  |
| SM4500-H+B / 9040C: PH              |        |       |      |          |     | Analyst               | : JRR  |
| рН                                  | 7.09   |       | Н    | pH units | 1   | 6/6/2019 12:08:47 PM  | R60464 |
| EPA 6010B: TOTAL RECOVERABLE METALS |        |       |      |          |     | Analyst               | ELS    |
| Sodium                              | 67000  | 1000  |      | mg/L     | 1E+ | 6/12/2019 11:28:57 AM | 45452  |

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

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## 1906171-012C MW-3

Collected date/time: 06/03/19 15:20

# SAMPLE RESULTS - 01

#### ONE LAB. NATIONWIDE.

Wet Chemistry by Method 2580

|         | Result | Qualifier | Dilution | Analysis         | Batch     |
|---------|--------|-----------|----------|------------------|-----------|
| Analyte | mV     |           |          | date / time      |           |
| ORP     | 231    | <u>T8</u> | 1        | 06/15/2019 12:00 | WG1296217 |





















#### WG1296217

### QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 2580

L1106550-01

### L1106550-01 Original Sample (OS) • Duplicate (DUP)

| (OS) L1106550-01 | 06/15/19 12:00 | · (DUP) R3421337-2 | 06/15/19 12:00 |
|------------------|----------------|--------------------|----------------|
|------------------|----------------|--------------------|----------------|

|         | Original Result | DUP Result | Dilution | DUP RPD | DUP Qualifier | DUP RPD<br>Limits |
|---------|-----------------|------------|----------|---------|---------------|-------------------|
| Analyte | mV              | mV         |          | %       |               | %                 |
| ORP     | 231             | 228        | 1        | 1.31    |               | 20                |



### Laboratory Control Sample (LCS)

| (LCS) | R3421337-1 | 06/15/19 | 12:0 |
|-------|------------|----------|------|
| (LC3) | K3421337-1 | 00/15/19 | 12.1 |

|         | Spike Amount | LCS Result | LCS Rec. | Rec. Limits | LCS Qualifier |
|---------|--------------|------------|----------|-------------|---------------|
| Analyte | mV           | mV         | %        | %           | V             |
| ORP     | 228          | 229        | 100      | 95.7-104    |               |













### 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.



#### 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<br>(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<br>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<br>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.   |
|                                 | This was a second of the second |

| Sample Results (Sr) |
|---------------------|
|                     |
| Sample Summary (Ss) |

Description



Qualifier

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

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.

This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and

### Hall Environmental Analysis Laboratory, Inc.

WO#: **1906171** 

24-Sep-19

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID: MB SampType: mblk TestCode: EPA Method 300.0: Anions Client ID: PBW Batch ID: R60519 RunNo: 60519 Prep Date: Analysis Date: 6/9/2019 SeqNo: 2047402 Units: mg/L SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result PQL LowLimit HighLimit Qual Fluoride ND 0.10 Chloride ND 0.50 Nitrogen, Nitrite (As N) ND 0.10 Bromide ND 0.10 Sulfate ND 0.50

Sample ID: LCS SampType: Ics TestCode: EPA Method 300.0: Anions Client ID: LCSW Batch ID: R60519 RunNo: 60519 Prep Date: Analysis Date: 6/9/2019 SeqNo: 2047403 Units: mg/L Analyte PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual 0.54 0.5000 90 0.10 n 108 110 Fluoride Chloride 4.7 0.50 5.000 0 93.9 90 110 0 92.8 Nitrogen, Nitrite (As N) 0.93 0.10 1.000 90 110 93.9 Bromide 2.3 0.10 2.500 0 90 110 Sulfate 9.6 0.50 10.00 O 96.5 90 110

Sample ID: 1906171-002AMS SampType: ms TestCode: EPA Method 300.0: Anions Client ID: DBS-1R Batch ID: R60519 RunNo: 60519 Prep Date: Analysis Date: 6/9/2019 SeqNo: 2047407 Units: mg/L Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual 1.510 94.7 6.2 1.0 5.000 61.6 129 Fluoride 24 1.0 25.00 94.2 81.9 109 Bromide 0 Sulfate 180 98.1 84.2 122 5.0 100.0 80.86

Sample ID: 1906171-002AMSD TestCode: EPA Method 300.0: Anions SampType: msd DBS-1R Batch ID: R60519 RunNo: 60519 Client ID: Prep Date: Analysis Date: 6/9/2019 SeqNo: 2047408 Units: mg/L Result PQL SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Qual Analyte LowLimit Fluoride 6.2 1.0 5.000 1.510 94.4 61.6 129 0.257 20 Bromide 23 1.0 25.00 0 93.8 81.9 109 0.464 20 Sulfate 180 5.0 100.0 80.86 96.1 84.2 122 1.14 20

Sample ID: MB SampType: mblk TestCode: EPA Method 300.0: Anions Client ID: PBW Batch ID: R60620 RunNo: 60620 Prep Date: Analysis Date: 6/12/2019 SeqNo: 2051022 Units: mg/L PQL SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Analyte Result LowLimit Qual

#### 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

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### Hall Environmental Analysis Laboratory, Inc.

WO#: **1906171** 

24-Sep-19

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Chloride

Sample ID: MB SampType: mblk TestCode: EPA Method 300.0: Anions

Client ID: PBW Batch ID: R60620 RunNo: 60620

Prep Date: Analysis Date: 6/12/2019 SeqNo: 2051022 Units: mg/L

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

Chloride ND 0.50

Sample ID: LCS SampType: Ics TestCode: EPA Method 300.0: Anions

Client ID: LCSW Batch ID: R60620 RunNo: 60620

Prep Date: Analysis Date: 6/12/2019 SeqNo: 2051023 Units: mg/L

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

95.4

110

5.000

Sample ID: MB SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBW Batch ID: R60644 RunNo: 60644

0.50

4.8

Prep Date: Analysis Date: 6/13/2019 SeqNo: 2052029 Units: mg/L

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

Nitrogen, Nitrate (As N) ND 0.10 Phosphorus, Orthophosphate (As P ND 0.50

Sample ID: LCS SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSW Batch ID: R60644 RunNo: 60644

Prep Date: Analysis Date: 6/13/2019 SeqNo: 2052030 Units: mg/L

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

Nitrogen, Nitrate (As N) 2.5 0.10 2.500 0 101 90 110 Phosphorus, Orthophosphate (As P 4.9 0.50 5.000 0 97.0 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

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# Hall Environmental Analysis Laboratory, Inc.

WO#: **1906171** 

24-Sep-19

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID: Ics-1 99.0uS eC SampType: Ics TestCode: SM2510B: Specific Conductance

Client ID: LCSW Batch ID: R60535 RunNo: 60535

Prep Date: Analysis Date: 6/10/2019 SeqNo: 2048171 Units: µmhos/cm

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

Conductivity 98 5.0 99.00 0 99.4 85 115

Sample ID: 1906171-012a dup SampType: dup TestCode: SM2510B: Specific Conductance

Client ID: MW-3 Batch ID: R60535 RunNo: 60535

Prep Date: Analysis Date: 6/10/2019 SeqNo: 2048185 Units: µmhos/cm

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

Conductivity 26000 25 1.07 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

Page 17 of 22

# Hall Environmental Analysis Laboratory, Inc.

WO#: **1906171** 

24-Sep-19

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID: MB-45452 SampType: MBLK TestCode: EPA 6010B: Total Recoverable Metals

Client ID: **PBW** Batch ID: **45452** RunNo: **60581** 

Prep Date: 6/7/2019 Analysis Date: 6/12/2019 SeqNo: 2049712 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-45452 SampType: LCS TestCode: EPA 6010B: Total Recoverable Metals

Client ID: LCSW Batch ID: 45452 RunNo: 60581

Prep Date: 6/7/2019 Analysis Date: 6/12/2019 SeqNo: 2049713 Units: mg/L

| ,         | •      |     |           |             |      |          | _         |      |          |      |  |
|-----------|--------|-----|-----------|-------------|------|----------|-----------|------|----------|------|--|
| Analyte   | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |  |
| Calcium   | 48     | 1.0 | 50.00     | 0           | 95.7 | 80       | 120       |      |          |      |  |
| Magnesium | 48     | 1.0 | 50.00     | 0           | 95.9 | 80       | 120       |      |          |      |  |
| Potassium | 48     | 1.0 | 50.00     | 0           | 95.5 | 80       | 120       |      |          |      |  |
| Sodium    | 47     | 1.0 | 50.00     | 0           | 94.1 | 80       | 120       |      |          |      |  |
|           |        |     |           |             |      |          |           |      |          |      |  |

#### 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.

7.18

WO#: **1906171** 

Н

24-Sep-19

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

рΗ

Sample ID: 1906171-012a dup SampType: dup TestCode: SM4500-H+B / 9040C: pH

Client ID: MW-3 Batch ID: R60535 RunNo: 60535

Prep Date: Analysis Date: 6/10/2019 SeqNo: 2048231 Units: pH units

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

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

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### Hall Environmental Analysis Laboratory, Inc.

WO#: **1906171** 

24-Sep-19

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID: mb-1 alk SampType: mblk TestCode: SM2320B: Alkalinity

Client ID: PBW Batch ID: R60535 RunNo: 60535

Prep Date: Analysis Date: 6/10/2019 SeqNo: 2048188 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: Ics-1 alk SampType: Ics TestCode: SM2320B: Alkalinity

Client ID: LCSW Batch ID: R60535 RunNo: 60535

Prep Date: Analysis Date: 6/10/2019 SeqNo: 2048189 Units: mg/L CaCO3

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

Total Alkalinity (as CaCO3) 76.60 20.00 80.00 0 95.8 90 110

Sample ID: 1906171-012a dup SampType: dup TestCode: SM2320B: Alkalinity

Client ID: MW-3 Batch ID: R60535 RunNo: 60535

Prep Date: Analysis Date: 6/10/2019 SeqNo: 2048191 Units: mg/L CaCO3

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

Total Alkalinity (as CaCO3) 314.7 20.00 0.318 20

Sample ID: mb-2 alk SampType: mblk TestCode: SM2320B: Alkalinity

Client ID: PBW Batch ID: R60535 RunNo: 60535

Prep Date: Analysis Date: 6/10/2019 SeqNo: 2048211 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: Ics-2 alk SampType: Ics TestCode: SM2320B: Alkalinity

Client ID: LCSW Batch ID: R60535 RunNo: 60535

Prep Date: Analysis Date: 6/10/2019 SeqNo: 2048212 Units: mg/L CaCO3

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

Total Alkalinity (as CaCO3) 77.76 20.00 80.00 0 97.2 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

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# Hall Environmental Analysis Laboratory, Inc.

WO#: **1906171** 

24-Sep-19

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID: 1906171-012ADUP SampType: DUP TestCode: Specific Gravity

Client ID: MW-3 Batch ID: R60579 RunNo: 60579

Prep Date: Analysis Date: 6/12/2019 SeqNo: 2049587 Units:

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

Specific Gravity 1.011 0 0.238 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

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# Hall Environmental Analysis Laboratory, Inc.

WO#: **1906171** 

24-Sep-19

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID: MB-45439 SampType: MBLK TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: PBW Batch ID: 45439 RunNo: 60528

Prep Date: 6/7/2019 Analysis Date: 6/10/2019 SeqNo: 2047649 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-45439 SampType: LCS TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: LCSW Batch ID: 45439 RunNo: 60528

Prep Date: 6/7/2019 Analysis Date: 6/10/2019 SeqNo: 2047650 Units: mg/L

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

Total Dissolved Solids 1010 20.0 1000 0 101 80 120

#### 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 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

# Sample Log-In Check List

DBS Client Name: Work Order Number: 1906171 RcptNo: 1 una. Received By: Erin Melendrez 6/5/2019 10:05:00 AM INOX Completed By: Isaiah Ortiz 6/5/2019 12:34:49 PM Reviewed By: 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? No 🗌 NA 🗌 Yes 🗸 No 🗌 4. Were all samples received at a temperature of >0° C to 6.0°C NA 🗌 Yes 🗸 5. Sample(s) in proper container(s)? Yes 🗸 No 🗌 6. Sufficient sample volume for indicated test(s)? No 🗌 Yes 🗸 7. Are samples (except VOA and ONG) properly preserved? Yes 🗸 No Yes No V 8. Was preservative added to bottles? NA 🗍 9. VOA vials have zero headspace? Yes No No VOA Vials Yes 🗆 10. Were any sample containers received broken? No 🗸 # of preserved bottles checked No 🗌 11. Does paperwork match bottle labels? Yes 🗸 for pH: (<2 of >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No 🗌 12. Are matrices correctly identified on Chain of Custody? Yes 🗸 13. Is it clear what analyses were requested? Yes 🗸 No 🗌 Checked by: Thm 6-5-19 14. Were all holding times able to be met? Yes 🗸 No 🗌 (If no, notify customer for authorization.) Special Handling (if applicable) 15. Was client notified of all discrepancies with this order? Yes No NA V Person Notified: Date: By Whom: Via: eMail Phone Fax In Person Regarding: Client Instructions: 16. Additional remarks: 17. Cooler Information Temp °C Cooler No Condition Seal Intact Seal No Seal Date Signed By 15.3 Good Yes

| Chamiledi-Custouv Necolu     |                     | Turn-Around Time: |                             |                                     |                      | HALL ENVIRONMENTAL |   |               |                           |                    |               |                   |             |            |                           |     |         |      |  |
|------------------------------|---------------------|-------------------|-----------------------------|-------------------------------------|----------------------|--------------------|---|---------------|---------------------------|--------------------|---------------|-------------------|-------------|------------|---------------------------|-----|---------|------|--|
|                              |                     |                   | Standard   Rush             |                                     |                      |                    | ANALYSIS LABORATORY                     |               |                           |                    |               |                   |             |            |                           |     |         |      |  |
|                              |                     |                   |                             | ,                                   | Project Name:        |                    |   |               | www.hallenvironmental.com |                    |               |                   |             |            |                           |     |         |      |  |
| Mailing                      | Address             | :                 |                             | Sa                                  | Ity I                | 69                 | 4901 Hawkins NE - Albuquerque, NM 87109 |               |                           |                    |               |                   |             |            |                           |     |         |      |  |
| 602                          | O Ac                | adem              | 1 Rd NE 87109               | Project #:                          |                      |                    | Tel. 505-345-3975 Fax 505-345-4107      |               |                           |                    |               |                   |             |            |                           |     |         |      |  |
| Phone                        | #: 50:              | 5-82              | 12-9406                     | ES08                                | 5.0118.16            |                    |   |               |                           | The state of       | 1             | Anal              | ysis        | Req        | uest                      | į   |         |      |  |
| email o                      | r Fax#: /           | UZbo              | 07etyo Geo-109ic.           | Project Mana                        | iger:                |                    | =                                       | 6             |                           |                    | 1 27 160      | SO <sub>4</sub>   | 77 Aug. 1   | LIFE       | nt)                       | 0   | en this | 2.74 |  |
|                              | Package:            |                   |                             |                                     |                      |                    | (8021)                                  | / MRO)        | PCB's                     | Į g                | 2             |                   |             |            | pse                       | She |         |      |  |
| Star                         | ndard               |                   | ☐ Level 4 (Full Validation) | O. A                                | racbe                | red I              | S                                       | 0             |                           |                    | 5             | PO <sub>4</sub> , |             |            | nt/A                      | 10/ |         |      |  |
|                              |                     | □ Az Co           | mpliance                    |                                     | 7. 86102             | et                 | TMB                                     | N N           | Pesticides/8082           | 1.1)               |               | NO <sub>2</sub> , |             |            | Coliform (Present/Absent) | A   |         |      |  |
| □ NEL                        |                     | ☐ Other           |                             | On Ice:                             | Yes Yes              | □ No               |   | RO            | es/8                      | 507                | <u>s</u>      |                   |             | OA         | (P)                       | Q)  |         |      |  |
|                              | (Type) <sub>_</sub> |                   | T                           | # of Coolers:                       | Vineludine CEV: W.L. | 8+0.5(cr)=15.39    | m                                       | D(G           | ficid                     | hod<br>23.1        | Aeta          | NO <sub>3</sub> , | F           | (Semi-VOA) | form                      | S   |         |      |  |
|                              |                     | -                 |                             | Cooler Temp                         | (including CF). 19   | 0TU5(0F)=10.57     | ~                                       | 015           | 2es                       | Met                | 8             | Ŗ,                | (VOA)       | Ser        | Coli                      | 1   |         |      |  |
| Date                         | Time                | Matrix            | Sample Name                 | Container Type and #                | Preservative<br>Type | 190617 (           | BTEX                                    | TPH:8015D(GRO | 8081                      | EDB (Method 504.1) | RCRA 8 Metals | CI, J             | 8260 (      | 8270 (     | Total (                   | 105 |         |      |  |
| 6.3.19                       | 1720                | GW                | PMW-1                       | IPOLY                               | NA                   | -001               |   |               |                           |                    |               | T                 |             |            |                           | '   |         |      |  |
|                              | 1700                |                   | DBS-IR                      | 1                                   | 1                    | -007               |   |               |                           |                    |               |                   |             |            |                           |     |         |      |  |
|                              | 1550                |                   | DBS-2                       |                                     |                      | -003               |   |               |                           |                    |               | П                 |             | 1 "        |                           |     |         |      |  |
|                              | 1645                |                   | DBS-3                       |                                     |                      | -004               |   |               |                           |                    |               |                   |             | 1          |                           |     |         |      |  |
|                              | 1610                | ı                 | DBS-Y                       |                                     |                      | -005               |   |               |                           |                    |               |                   |             |            |                           |     |         |      |  |
|                              | 1630                |                   | DB5-5                       |                                     |                      | -006               |   |               |                           |                    |               | Ш                 |             |            |                           |     |         |      |  |
|                              | 1405                |                   | DBS-6                       |                                     |                      | -007               |   |               |                           |                    |               | Ш                 |             |            |                           | -   |         |      |  |
|                              | 1300                |                   | DB5-8                       |                                     |                      | -00%               |   |               |                           |                    |               |                   |             |            |                           |     |         |      |  |
|                              | 1232                |                   | DBS-9                       |                                     |                      | -009               |   |               |                           |                    |               |                   |             |            |                           | 4   |         |      |  |
|                              | 1330                |                   | DBS-10                      |                                     |                      | -0010              |   |               |                           |                    |               | Ш                 |             |            |                           |     |         |      |  |
| 0                            | 1445                |                   | MW-5                        |                                     |                      | -011               |   |               |                           |                    |               |                   |             |            |                           |     | -       |      |  |
|                              | 1520                | +                 | MW-3                        | 4 2014                              | H2304                | -017               |   |               |                           |                    |               | 1                 |             |            |                           | X   |         |      |  |
| Date:                        | 1005                | Relinquish        | ed by:                      | Received by: Via: Do Date Time 1005 |                      |                    | Remarks: Temp Approved-ENH 6/5/19       |               |                           |                    |               |                   |             |            |                           | 9   |         |      |  |
| Daye: Time: Relinquished by: |                     |                   | Received by:                | Via:                                | Date Time            |                    |   |               |                           |                    | - 10          |                   | H<br>H<br>H |            |                           |     |         | 1/2  |  |

| Cham-or-custody Record |                  | Turn-Around Time: |                             |   |                      | HALL ENVIRONMENTAL  |   |   |                      |                    |              |               |   |                             |                  |                                 |         |        |           |     |   |
|------------------------|------------------|-------------------|-----------------------------|---|----------------------|---------------------|---|---|----------------------|--------------------|--------------|---------------|---|-----------------------------|------------------|---------------------------------|---------|--------|-----------|-----|---|
| Client: DBSA           |                  |                   | □ Standard □ Rush           |   |                      |                     | ANALYSIS LABORATORY                     |   |                      |                    |              |               |   |                             |                  |                                 |         |        |           |     |   |
|                        |                  |                   |                             | Project Nam   |                      |                     | www.hallenvironmental.com               |   |                      |                    |              |               |   |                             |                  |                                 |         | _      |           |     |   |
| Mailing                | Address          | 602               | O Academy RdNE<br>1-9406    | Sal   | ty Dog               |                     | 4901 Hawkins NE - Albuquerque, NM 87109 |   |                      |                    |              |               |   |                             |                  |                                 |         |        |           |     |   |
| 8712                   | 3                |                   |                             | Project #:  |                      | - Ai +1<br>- 22 -   | 1                                       |   |                      | )5-34              |              |               |   | 350                         |                  |                                 | -410    |        |           |     |   |
| Phone                  | #: 505           | -822              | -9406                       | ESO8  | 0118.4               | 6                   |   |   |                      |                    |              | A             | CONTRACTOR OF THE PARTY OF THE | STATE OF THE PARTY NAMED IN | <b>FORMATION</b> | uest                            | -       |        |           |     |   |
| email o                | r Fax#: <i>[</i> | MZbro             | Zeko Geo-Logics             | Project Mana  | ager:                | \$ 101              | £                                       | (Q)   |                      |                    |              |               | SO <sub>4</sub>   | 17.15                       |                  | ent)                            | My 1130 | 120000 | 38711 341 |     |   |
|                        | Package:         |                   | •                           | 5   | 14-1-0               |                     | TMB's (8021)                            | / MF  | PCB's                |                    | 8270SIMS     |               | PO <sub>4</sub> , 9   |                             |                  | Abse                            |         |        |           |     |   |
| Star                   |                  | 100               | ☐ Level 4 (Full Validation) |   | Arache               |                     | B's                                     | RS  | 2 P(                 |                    | 70S          |               | 2, P(   |                             |                  | ent//                           | 1006    |        |           |     |   |
| Accred                 |                  |                   | ompliance                   | Sampler:  On Ice:   | 7 7beore             | LK □ No             | . ⊻                                     | O/D   | 808/                 | 1.1                |              |               | NO <sub>2</sub> ,   |                             | 7                | rese                            | 6       |        |           |     |   |
|                        | (Type)           | □ Othe            |                             | # of Coolers:   | / 3                  | LI NO               | 3E /                                    | GRC   | des                  | d 50               | 10 or        | tals          | NO <sub>3</sub> ,   |                             | 10/              | m (F                            | Spec    |        |           |     |   |
|                        |                  |                   |                             | THE RESERVE AND THE PROPERTY OF                                   |                      | 8+05(cp=15.3        | Йтве                                    | 15D(  | stici                | etho               | y 83         | Me.           | Br, N   | OA)                         | emi-             | olifor                          | # 4     |        |           |     |   |
| Date                   | Time             | Matrix            | Sample Name                 | Container Type and #  | Preservative<br>Type | HEAL No.<br>1966171 | BTEX /                                  | TPH:8015D(GRO / DRO / MRO)  | 8081 Pesticides/8082 | EDB (Method 504.1) | PAHs by 8310 | RCRA 8 Metals | ©,F, B  | 8260 (VOA)                  | 8270 (Semi-VOA)  | Total Coliform (Present/Absent) | Tos, p  |        |           |     |   |
| 6.03.19                | 1021             | GW                | Injection                   | 3 poly  | 1 AN 03              | -013                |   |   |                      |                    |              |               | X   |                             |                  |                                 | X       | ×      |           |     |   |
| 5.03.19                |                  | W                 | Bane                        | 2 Poly  | 14103                | -014                |   |   |                      |                    |              |               | X   |                             |                  |                                 | ×       | X      |           |     |   |
|                        |                  |                   | 3 4                         |   | 1 1 1 1 1            | D 1 = -             |   |   |                      |                    |              |               | 7   | 187                         |                  | la la                           |         |        |           |     |   |
|                        |                  |                   |                             |   |                      |                     |   |   |                      |                    |              |               |   |                             |                  | -                               |         |        |           |     |   |
|                        |                  |                   |                             |   | -                    | 700                 |   |   |                      |                    |              |               |   |                             |                  |                                 |         | 10.00  |           |     |   |
|                        |                  |                   |                             |   |                      |                     |   |   |                      |                    |              |               |   |                             |                  |                                 |         |        |           |     |   |
|                        |                  |                   |                             |   |                      | 4 1 2               |   |   |                      |                    |              |               | n I   |                             |                  |                                 | 177     | -      |           |     |   |
|                        |                  |                   |                             |   |                      | 5 HSS a             |   |   |                      |                    | #            |               |   | 12.0                        |                  | 11                              |         | 112    |           | (m) |   |
|                        |                  |                   |                             |   |                      |                     |   |   |                      |                    |              |               |   |                             |                  |                                 |         |        |           |     |   |
|                        | 10               |                   | i i                         |   |                      |                     |   |   |                      |                    |              |               | 11.1  |                             |                  | I                               | 1.00    | - 110  | 11 - 1    |     |   |
|                        |                  |                   |                             |   |                      | -2.                 |   |   |                      |                    |              |               | T   |                             |                  |                                 |         |        |           |     |   |
|                        |                  |                   |                             |   |                      |                     |   |   |                      |                    |              |               |   | :111                        |                  |                                 |         |        |           |     |   |
| 15/19/1005 Mall 7/1    |                  |                   |                             | Received by: Via: CDO Date Time 1005  Received by: Via: Date Time |                      |                     |   | Remarks: Brine CI analysis from tall unpreserved bottles Temp approved-ENH 6/5/F1 2/2 |                      |                    |              |               |   |                             |                  |                                 |         |        |           |     |   |
|                        |                  |                   | V                           |   |                      | 4 11                | LE                                      | m   | DO                   | D                  | Dr           | 10            | 100   | 1-6                         | M                | MI                              | 6/5     | J/1    | -         | 0/  | 2 |



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

January 14, 2020

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

RE: Salty Dog OrderNo.: 1912A30

#### Dear John Ayarbe:

Hall Environmental Analysis Laboratory received 14 sample(s) on 12/19/2019 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

andyl

4901 Hawkins NE

Albuquerque, NM 87109

#### Lab Order 1912A30

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/14/2020

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: Brine

 Project:
 Salty Dog
 Collection Date: 12/18/2019 7:00:00 AM

 Lab ID:
 1912A30-001
 Matrix: AQUEOUS
 Received Date: 12/19/2019 10:05:00 AM

| Analyses                            | Result | RL    | Qual | Units    | DF  | Date Analyzed          | Batch    |
|-------------------------------------|--------|-------|------|----------|-----|------------------------|----------|
| SPECIFIC GRAVITY                    |        |       |      |          |     | Analyst                | : JRR    |
| Specific Gravity                    | 1.199  | 0     |      |          | 1   | 12/30/2019 1:29:00 PM  | R65470   |
| EPA METHOD 300.0: ANIONS            |        |       |      |          |     | Analyst                | CAS      |
| Chloride                            | 170000 | 10000 | *    | mg/L     | 2E+ | 12/27/2019 2:17:27 PM  | R65460   |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |       |      |          |     | Analyst                | : KS     |
| Total Dissolved Solids              | 343000 | 2000  | *D   | mg/L     | 1   | 12/24/2019 7:03:00 PM  | 49489    |
| SM4500-H+B / 9040C: PH              |        |       |      |          |     | Analyst                | : JRR    |
| рН                                  | 7.30   |       | Н    | pH units | 1   | 12/20/2019 11:50:28 AM | M R65332 |
| EPA 6010B: TOTAL RECOVERABLE METALS |        |       |      |          |     | Analyst                | : ELS    |
| Sodium                              | 91000  | 2000  |      | mg/L     | 2E+ | 1/9/2020 10:13:26 AM   | 49581    |

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

pple pH Not In Range Page 1 of 21

#### Lab Order 1912A30

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/14/2020

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: Injection

 Project:
 Salty Dog
 Collection Date: 12/18/2019 12:20:00 PM

 Lab ID:
 1912A30-002
 Matrix: AQUEOUS
 Received Date: 12/19/2019 10:05:00 AM

| Analyses                            | Result | RL   | Qual | Units    | DF  | Date Analyzed          | Batch    |
|-------------------------------------|--------|------|------|----------|-----|------------------------|----------|
| SPECIFIC GRAVITY                    |        |      |      |          |     | Analyst                | : JRR    |
| Specific Gravity                    | 0.9956 | 0    |      |          | 1   | 12/30/2019 1:29:00 PM  | R65470   |
| EPA METHOD 300.0: ANIONS            |        |      |      |          |     | Analyst                | CAS      |
| Chloride                            | 200    | 50   |      | mg/L     | 100 | 12/27/2019 3:08:56 PM  | R65460   |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |      |      |          |     | Analyst                | : KS     |
| Total Dissolved Solids              | 618    | 40.0 | *D   | mg/L     | 1   | 12/24/2019 7:03:00 PM  | 49489    |
| SM4500-H+B / 9040C: PH              |        |      |      |          |     | Analyst                | : JRR    |
| рН                                  | 7.62   |      | Н    | pH units | 1   | 12/20/2019 11:54:55 Al | M R65332 |
| EPA 6010B: TOTAL RECOVERABLE METALS |        |      |      |          |     | Analyst                | ELS      |
| Sodium                              | 150    | 5.0  |      | mg/L     | 5   | 1/9/2020 10:01:50 AM   | 49581    |

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

- 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

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## Lab Order **1912A30**

Date Reported: 1/14/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-1R

 Project:
 Salty Dog
 Collection Date: 12/18/2019 9:12:00 AM

 Lab ID:
 1912A30-003
 Matrix: AQUEOUS
 Received Date: 12/19/2019 10:05:00 AM

| Analyses                 | Result | RL Q | ual Units | DF Date Analyzed         | Batch    |
|--------------------------|--------|------|-----------|--------------------------|----------|
| EPA METHOD 300.0: ANIONS |        |      |           | Analy                    | st: CAS  |
| Chloride                 | 210    | 50   | mg/L      | 100 12/27/2019 3:34:40 P | M R65460 |

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

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## Lab Order **1912A30**

Date Reported: 1/14/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-2

 Project:
 Salty Dog
 Collection Date: 12/17/2019 3:58:00 PM

 Lab ID:
 1912A30-004
 Matrix: AQUEOUS
 Received Date: 12/19/2019 10:05:00 AM

| Analyses                 | Result | RL Qu | ual Units | DF Date Analyzed         | Batch    |
|--------------------------|--------|-------|-----------|--------------------------|----------|
| EPA METHOD 300.0: ANIONS |        |       |           | Analys                   | st: CAS  |
| Chloride                 | 68     | 5.0   | mg/L      | 10 12/27/2019 3:47:32 PM | M R65460 |

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

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## Lab Order **1912A30**

Date Reported: 1/14/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-3

 Project:
 Salty Dog
 Collection Date: 12/17/2019 4:55:00 PM

 Lab ID:
 1912A30-005
 Matrix: AQUEOUS
 Received Date: 12/19/2019 10:05:00 AM

| Analyses                 | Result | RL Q | ual Units | DF Date Analyzed         | Batch    |
|--------------------------|--------|------|-----------|--------------------------|----------|
| EPA METHOD 300.0: ANIONS |        |      |           | Analys                   | st: CAS  |
| Chloride                 | 48     | 5.0  | mg/L      | 10 12/27/2019 4:13:16 PI | M R65460 |

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

- 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

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## Lab Order 1912A30

Hall Environmental Analysis Laboratory, Inc. Date Reported: 1/14/2020

**CLIENT:** Daniel B. Stephens & Assoc. **Client Sample ID:** DBS-4

**Collection Date:** 12/17/2019 3:15:00 PM **Project:** Salty Dog 1912A30-006 Matrix: AQUEOUS **Received Date:** 12/19/2019 10:05:00 AM Lab ID:

| Analyses                 | Result | RL Qu | ual Units | DF Date Analyzed         | Batch    |
|--------------------------|--------|-------|-----------|--------------------------|----------|
| EPA METHOD 300.0: ANIONS |        |       |           | Analys                   | t: CAS   |
| Chloride                 | 35     | 5.0   | mg/L      | 10 12/27/2019 4:38:59 PM | M R65460 |

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
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix

- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH Not In Range
- RL Reporting Limit

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## Lab Order 1912A30

Date Reported: 1/14/2020

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Daniel B. Stephens & Assoc.

**Client Sample ID:** DBS-5

**Project:** Salty Dog Collection Date: 12/18/2019 8:32:00 AM Lab ID: 1912A30-007 Matrix: AQUEOUS Received Date: 12/19/2019 10:05:00 AM

**RL Oual Units Analyses** Result **DF** Date Analyzed

**Batch EPA METHOD 300.0: ANIONS** Analyst: CAS 10 12/27/2019 5:30:27 PM R65460 Chloride 160 5.0 mg/L

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
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix

- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH Not In Range
- Reporting Limit

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## Lab Order **1912A30**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/14/2020

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-6

**Project:** Salty Dog
 Collection Date: 12/17/2019 11:30:00 AM

 **Lab ID:** 1912A30-008
 Matrix: AQUEOUS
 Received Date: 12/19/2019 10:05:00 AM

| Analyses                 | Result | RL Qu | ual Units | DF Date Analyzed         | Batch    |
|--------------------------|--------|-------|-----------|--------------------------|----------|
| EPA METHOD 300.0: ANIONS |        |       |           | Analy                    | st: CAS  |
| Chloride                 | 220    | 50    | mg/L      | 100 12/27/2019 6:09:04 P | M R65460 |

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

Page 8 of 21

## Lab Order **1912A30**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/14/2020

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-8

 Project:
 Salty Dog
 Collection Date: 12/17/2019 1:15:00 PM

 Lab ID:
 1912A30-009
 Matrix: AQUEOUS
 Received Date: 12/19/2019 10:05:00 AM

| Analyses                 | Result | RL Q | ual Units | DF Date Analyzed         | Batch    |
|--------------------------|--------|------|-----------|--------------------------|----------|
| EPA METHOD 300.0: ANIONS |        |      |           | Analys                   | st: CAS  |
| Chloride                 | 30     | 5.0  | mg/L      | 10 12/27/2019 6:21:56 PI | M R65460 |

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

Page 9 of 21

## Lab Order **1912A30**

Date Reported: 1/14/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-9

 Project:
 Salty Dog
 Collection Date: 12/17/2019 2:05:00 PM

 Lab ID:
 1912A30-010
 Matrix: AQUEOUS
 Received Date: 12/19/2019 10:05:00 AM

| Analyses                 | Result | RL Qu | ual Units | DF Date Analyzed         | Batch    |
|--------------------------|--------|-------|-----------|--------------------------|----------|
| EPA METHOD 300.0: ANIONS |        |       |           | Analy                    | st: CAS  |
| Chloride                 | 220    | 50    | mg/L      | 100 12/27/2019 7:26:14 P | M R65460 |

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

porting Limit Page 10 of 21

## Lab Order **1912A30**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/14/2020

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-10

 Project:
 Salty Dog
 Collection Date: 12/17/2019 12:25:00 PM

 Lab ID:
 1912A30-011
 Matrix: AQUEOUS
 Received Date: 12/19/2019 10:05:00 AM

| Analyses                 | Result | RL Qual Units | DF Date Analyzed        | Batch       |
|--------------------------|--------|---------------|-------------------------|-------------|
| EPA METHOD 300.0: ANIONS |        |               | Anal                    | yst: CAS    |
| Chloride                 | 540    | 50 * mg/L     | 100 12/27/2019 11:17:56 | 6 PM R65460 |

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

- 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

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## Lab Order 1912A30

Hall Environmental Analysis Laboratory, Inc. Date Reported: 1/14/2020

**CLIENT:** Daniel B. Stephens & Assoc. Client Sample ID: PMW-1

**Collection Date:** 12/18/2019 12:10:00 PM **Project:** Salty Dog 1912A30-012 Matrix: AQUEOUS Received Date: 12/19/2019 10:05:00 AM Lab ID:

| Analyses                 | Result | RL Qual | Units | DF Date Analyzed        | Batch     |
|--------------------------|--------|---------|-------|-------------------------|-----------|
| EPA METHOD 300.0: ANIONS |        |         |       | Analy                   | st: CAS   |
| Chloride                 | 3400   | 500 *   | mg/L  | 1E+ 12/27/2019 11:30:48 | PM R65460 |

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
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix

- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits
- Sample pH Not In Range
- RL Reporting Limit

Page 12 of 21

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/14/2020

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: MW-3

**Project:** Salty Dog
 Collection Date: 12/18/2019 11:15:00 AM

 **Lab ID:** 1912A30-013
 Matrix: AQUEOUS
 Received Date: 12/19/2019 10:05:00 AM

| Analyses                            | Result | RL    | Qual | Units    | DF 1 | Date Analyzed          | Batch    |
|-------------------------------------|--------|-------|------|----------|------|------------------------|----------|
| SPECIFIC GRAVITY                    |        |       |      |          |      | Analyst:               | JRR      |
| Specific Gravity                    | 1.005  | 0     |      |          | 1    | 12/30/2019 1:29:00 PM  | R65470   |
| EPA METHOD 300.0: ANIONS            |        |       |      |          |      | Analyst:               | CAS      |
| Fluoride                            | ND     | 1.0   |      | mg/L     | 10   | 12/20/2019 12:51:44 AM | 1 A65303 |
| Chloride                            | 7400   | 250   | *    | mg/L     | 500  | 12/27/2019 11:56:31 PM | 1 A65303 |
| Nitrogen, Nitrite (As N)            | ND     | 10    |      | mg/L     | 100  | 12/20/2019 1:04:09 AM  | A65303   |
| Bromide                             | ND     | 1.0   |      | mg/L     | 10   | 12/20/2019 12:51:44 AM | 1 A65303 |
| Nitrogen, Nitrate (As N)            | ND     | 1.0   |      | mg/L     | 10   | 12/20/2019 12:51:44 AM | 1 A65303 |
| Phosphorus, Orthophosphate (As P)   | ND     | 5.0   |      | mg/L     | 10   | 12/20/2019 12:51:44 AM | 1 A65303 |
| Sulfate                             | 500    | 5.0   | *    | mg/L     | 10   | 12/20/2019 12:51:44 AM | 1 A65303 |
| SM2510B: SPECIFIC CONDUCTANCE       |        |       |      |          |      | Analyst:               | JRR      |
| Conductivity                        | 26000  | 25    |      | µmhos/c  | 5    | 12/20/2019 3:43:18 PM  | R65332   |
| SM2320B: ALKALINITY                 |        |       |      |          |      | Analyst:               | JRR      |
| Bicarbonate (As CaCO3)              | 326.4  | 20.00 |      | mg/L Ca  | 1    | 12/20/2019 11:58:57 AM | 1 R65332 |
| Carbonate (As CaCO3)                | ND     | 2.000 |      | mg/L Ca  | 1    | 12/20/2019 11:58:57 AM | 1 R65332 |
| Total Alkalinity (as CaCO3)         | 326.4  | 20.00 |      | mg/L Ca  | 1    | 12/20/2019 11:58:57 AM | 1 R65332 |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |       |      |          |      | Analyst:               | KS       |
| Total Dissolved Solids              | 15600  | 100   | *D   | mg/L     | 1    | 12/24/2019 7:03:00 PM  | 49489    |
| SM4500-H+B / 9040C: PH              |        |       |      |          |      | Analyst:               | JRR      |
| рН                                  | 7.12   |       | Н    | pH units | 1    | 12/20/2019 11:58:57 AM | 1 R65332 |
| EPA 6010B: TOTAL RECOVERABLE METALS |        |       |      |          |      | Analyst:               | ELS      |
| Calcium                             | 1200   | 20    |      | mg/L     | 20   | 1/9/2020 10:15:16 AM   | 49581    |
| Magnesium                           | 200    | 5.0   |      | mg/L     | 5    | 1/9/2020 10:06:53 AM   | 49581    |
| Potassium                           | 18     | 5.0   |      | mg/L     | 5    | 1/9/2020 10:06:53 AM   | 49581    |
| Sodium                              | 3600   | 100   |      | mg/L     | 100  | 1/9/2020 10:17:05 AM   | 49581    |

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

- 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

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## Lab Order 1912A30

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/14/2020

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: MW-5

 Project:
 Salty Dog
 Collection Date: 12/18/2019 10:32:00 AM

 Lab ID:
 1912A30-014
 Matrix: AQUEOUS
 Received Date: 12/19/2019 10:05:00 AM

| Analyses                 | Result | RL Qual | Units | DF Date Analyzed        | Batch     |
|--------------------------|--------|---------|-------|-------------------------|-----------|
| EPA METHOD 300.0: ANIONS |        |         |       | Analys                  | st: CAS   |
| Chloride                 | 550    | 50 *    | mg/L  | 100 12/28/2019 12:22:14 | AM R65460 |

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

- 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

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# ANALYTICAL REPORT

December 27, 2019

















## Hall Environmental Analysis Laboratory

Sample Delivery Group: L1173514

Samples Received: 12/21/2019

Project Number:

Description:

Report To:

4901 Hawkins NE

Albuquerque, NM 87109

Entire Report Reviewed By:

Drittine Boyd Brittnie L Boyd

Project Manager Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



| Cp: Cover Page                 | 1 |
|--------------------------------|---|
| Tc: Table of Contents          | 2 |
| Ss: Sample Summary             | 3 |
| Cn: Case Narrative             | 4 |
| Sr: Sample Results             | 5 |
| 1912A30-013C MW-3 L1173514-01  | 5 |
| Qc: Quality Control Summary    | 6 |
| Wet Chemistry by Method 2580   | 6 |
| GI: Glossary of Terms          | 7 |
| Al: Accreditations & Locations | 8 |
| Sc: Sample Chain of Custody    | 9 |





















Collected by Collected date/time Received date/time 12/21/19 10:30 12/18/19 11:15 1912A30-013C MW-3 L1173514-01 GW Method Batch Dilution Preparation Analysis Analyst Location date/time date/time Wet Chemistry by Method 2580 WG1402385 12/26/19 16:45 12/26/19 16:45 BAM Mt. Juliet, TN 1





















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.

<sup>2</sup>Tc

3 Ss













Brittnie L Boyd Project Manager

Brittine Boyd

L1173514

1912A30-013C MW-3 Collected date/time: 12/18/19 11:15

# SAMPLE RESULTS - 01

ONE LAB. NATIONWIDE.

\*

Wet Chemistry by Method 2580

|         | Result | Qualifier | Dilution | Analysis         | Batch     |  |
|---------|--------|-----------|----------|------------------|-----------|--|
| Analyte | mV     |           |          | date / time      |           |  |
| ORP     | 35.0   | T8        | 1        | 12/26/2019 16:45 | WG1402385 |  |



















## QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 2580

L1173514-01

## L1173514-01 Original Sample (OS) • Duplicate (DUP)

| (OS) L1173514-01 | 12/26/19 16:45 • (DUP) | R:  | 3486097-2   | 12/26/19 16: | 45  |    |
|------------------|------------------------|-----|-------------|--------------|-----|----|
|                  | Original Post          | ıl+ | DLID Bocult | Dilution     | ווח | ic |

|         | Original Result | DUP Result | Dilution | DUP Diff | DUP Qualifier | DUP Diff Limits |
|---------|-----------------|------------|----------|----------|---------------|-----------------|
| Analyte | mV              | mV         |          | mV       |               | mV              |
| ORP     | 35.0            | 34.0       | 1        | 2.90     |               | 20              |

# Ср





## Laboratory Control Sample (LCS)

| (LCS) R3486097-1 12/2 | 6/19 16:45 |
|-----------------------|------------|
|-----------------------|------------|

|         | Spike Amount | LCS Result | LCS Rec. | Rec. Limits | LCS Qualifier |
|---------|--------------|------------|----------|-------------|---------------|
| Analyte | mV           | mV         | %        | %           |               |
| ORP     | 105          | 104        | 99.0     | 86.0-105    |               |



<sup>†</sup>Cn











## **GLOSSARY OF TERMS**



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 resureported. 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<br>(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<br>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<br>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.













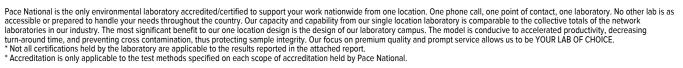






## **ACCREDITATIONS & LOCATIONS**





## State Accreditations

| Alabama               | 40660       |
|-----------------------|-------------|
| Alaska                | 17-026      |
| Arizona               | AZ0612      |
| Arkansas              | 88-0469     |
| California            | 2932        |
| Colorado              | TN00003     |
| Connecticut           | PH-0197     |
| Florida               | E87487      |
| Georgia               | NELAP       |
| Georgia <sup>1</sup>  | 923         |
| Idaho                 | TN00003     |
| Illinois              | 200008      |
| Indiana               | C-TN-01     |
| lowa                  | 364         |
| Kansas                | E-10277     |
| Kentucky 16           | 90010       |
| Kentucky <sup>2</sup> | 16          |
| Louisiana             | Al30792     |
| Louisiana 1           | LA180010    |
| Maine                 | TN0002      |
| Maryland              | 324         |
| Massachusetts         | M-TN003     |
| Michigan              | 9958        |
| Minnesota             | 047-999-395 |
| Mississippi           | TN00003     |
| Missouri              | 340         |
| Montana               | CERT0086    |
|                       |             |

| Nebraska                    | NE-OS-15-05      |
|-----------------------------|------------------|
| Nevada                      | TN-03-2002-34    |
| New Hampshire               | 2975             |
| New Jersey-NELAP            | TN002            |
| New Mexico <sup>1</sup>     | n/a              |
| New York                    | 11742            |
| North Carolina              | Env375           |
| North Carolina <sup>1</sup> | DW21704          |
| North Carolina <sup>3</sup> | 41               |
| North Dakota                | R-140            |
| Ohio-VAP                    | CL0069           |
| Oklahoma                    | 9915             |
| Oregon                      | TN200002         |
| Pennsylvania                | 68-02979         |
| Rhode Island                | LAO00356         |
| South Carolina              | 84004            |
| South Dakota                | n/a              |
| Tennessee 1 4               | 2006             |
| Texas                       | T104704245-18-15 |
| Texas <sup>5</sup>          | LAB0152          |
| Utah                        | TN00003          |
| Vermont                     | VT2006           |
| Virginia                    | 460132           |
| Washington                  | C847             |
| West Virginia               | 233              |
| Wisconsin                   | 9980939910       |
| Wyoming                     | A2LA             |
|                             |                  |

## Third Party Federal Accreditations

| A2LA – ISO 17025   | 1461.01 |
|--------------------|---------|
| A2LA - ISO 17025 5 | 1461.02 |
| Canada             | 1461.01 |
| EPA-Crypto         | TN00003 |

| AIHA-LAP,LLC EMLAP | 100789        |
|--------------------|---------------|
| DOD                | 1461.01       |
| USDA               | P330-15-00234 |

<sup>&</sup>lt;sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

#### Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



















## HALL ENVIRONMENTAL ANALYSIS LABORATORY

## CHAIN OF CUSTODY RECORD

| DACE. | OF. |  |
|-------|-----|--|
| 1     | 1   |  |

Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

| SUB CO  | ONTRATOR: ESC I   | PACE COMPANY     | ESC P     | ACE            | 8       | PHONE:                 | (800) 767-585 | 9 FAX:    | (615) 758-5859   |  |
|---------|-------------------|------------------|-----------|----------------|---------|------------------------|---------------|-----------|--|--|
| ADDRE   | 12065             | Lebanon Rd       |           |                |         | ACCOUNT #:             | 200           | EMAIL:    | The second secon | The same of the sa |
| CITY, S | TATE, ZIP: Mt. Ju | uliet, TN 37122  |           |                |         | # ()                   |               | 1. 6      |  |  |
|         | 10                |                  |           |                |         |                        | # CONT        | 6117      | 3514   | B029   |
| ITEM    | SAMPLE            | CLIENT SAMPLE ID | s = 1 3 3 | BOTTLE<br>TYPE | MATRIX  | COLLECTION<br>DATE     | AINERS        | ANALYTICA | AL COMMENTS  |  |
| 1       | 1912A30-013C      | MW-3             |           | 125HDP         | Aqueous | 12/18/2019 11:15:00 AM | 1 ORP         | 385       | -01  |  |

COCSI

RAD SCREEN: <0.5 mR/hr

| SPECIAL INSTRUCTIONS / COMMEN   | IS: Well         | lint          | 5714 6067 5045      | Contain | icos llec | reived 2   |  |  |  |  |  |
|---|------------------|---------------|---------------------|---------|-----------|--|--|--|--|--|--|
| 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   | Date: 12/19/2019 | Time: 3:44 PM | Received By:        | Date:   | Time:     | REPORT TRANSMITTAL DESIRED:  HARDCOPY (extra cost)               |  |  |  |  |  |
| Relinquished By:  | Date:            | Time:         | Received By:        | Date:   | Time:     | ☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE  FOR LAB USE ONLY |  |  |  |  |  |
| Relinquished By:  | Date:            | Time:         | Received By: Was 61 | 12/2//9 | Time: 30  | Temp of samples CA-3=C, SA, Attempt to Cool?                     |  |  |  |  |  |
| TAT: Stand  | ard              | RUSH          | Next BD 2nd BD      | 3rd BD  |           |  |  |  |  |  |  |
|   | <i>/</i>         |               |                     |         |           | Comments:  |  |  |  |  |  |
|   |                  |               | 5. July 18          |         |           |  |  |  |  |  |  |

| Pace Analytical National Center for Testing & Innov  | ation      |                   |
|--|------------|-------------------|
| Cooler Receipt Form                                  |            |                   |
| Client:  | 6117       | 3514              |
| Cooler Received/Opened On: 12/2/119 Temperature: 0.5 |            |                   |
| Received By: WILLIE TAYLOR /030                      |            |                   |
| Signature: William low low                           |            |                   |
|  |            |                   |
| Receipt Check List NP                                | Yes        | No                |
| COC Seal Present / Intact?                           |            |                   |
| COC Signed / Accurate?                               | V          | 型 建设计             |
| Bottles arrive intact?                               |            |                   |
| Correct bottles used?                                | V          | 66246             |
| Sufficient volume sent?                              | 1/         |                   |
| If Applicable  |            | 6,44,50           |
| VOA Zero headspace?                                  |            |                   |
| Preservation Correct / Checked?                      | <b>经验验</b> | STATE OF STATE OF |

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1912A30** 

14-Jan-20

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

| Sample ID: MB                    | SampT                     | ype: <b>m</b> k | olk       | Tes         | tCode: El | PA Method | 5           |      |          |      |  |  |
|----------------------------------|---------------------------|-----------------|-----------|-------------|-----------|-----------|-------------|------|----------|------|--|--|
| Client ID: PBW                   | Batch                     | n ID: <b>A6</b> | 5303      | F           | RunNo: 6  | 5303      |             |      |          |      |  |  |
| Prep Date:                       | Analysis Date: 12/19/2019 |                 |           | 5           | SeqNo: 2  | 243077    | 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            |           |             |           |           |             |      |          |      |  |  |
| Nitrogen, Nitrite (As N)         | ND                        | 0.10            |           |             |           |           |             |      |          |      |  |  |
| Bromide                          | ND                        | 0.10            |           |             |           |           |             |      |          |      |  |  |
| Nitrogen, Nitrate (As N)         | ND                        | 0.10            |           |             |           |           |             |      |          |      |  |  |
| Phosphorus, Orthophosphate (As P | ND                        | 0.50            |           |             |           |           |             |      |          |      |  |  |
| Sulfate                          | ND                        | 0.50            |           |             |           |           |             |      |          |      |  |  |

| Sample ID: LCS                   | Samp1      | Type: Ics       | •         | Tes         | tCode: <b>EF</b> | PA Method | 300.0: Anions | 6    |          |      |
|----------------------------------|------------|-----------------|-----------|-------------|------------------|-----------|---------------|------|----------|------|
| Client ID: LCSW                  | Batc       | h ID: <b>A6</b> | 5303      | F           | RunNo: 6         | 5303      |               |      |          |      |
| Prep Date:                       | Analysis D | Date: 12        | 2/19/2019 | 9           | SeqNo: 22        | 243078    | Units: mg/L   |      |          |      |
| Analyte                          | Result     | PQL             | SPK value | SPK Ref Val | %REC             | LowLimit  | HighLimit     | %RPD | RPDLimit | Qual |
| Fluoride                         | 0.55       | 0.10            | 0.5000    | 0           | 109              | 90        | 110           |      |          |      |
| Chloride                         | 4.8        | 0.50            | 5.000     | 0           | 96.2             | 90        | 110           |      |          |      |
| Nitrogen, Nitrite (As N)         | 0.95       | 0.10            | 1.000     | 0           | 94.9             | 90        | 110           |      |          |      |
| Bromide                          | 2.5        | 0.10            | 2.500     | 0           | 98.6             | 90        | 110           |      |          |      |
| Nitrogen, Nitrate (As N)         | 2.5        | 0.10            | 2.500     | 0           | 101              | 90        | 110           |      |          |      |
| Phosphorus, Orthophosphate (As P | 4.9        | 0.50            | 5.000     | 0           | 97.8             | 90        | 110           |      |          |      |
| Sulfate                          | 9.7        | 0.50            | 10.00     | 0           | 97.3             | 90        | 110           |      |          |      |

| Sample ID: MB  | ample ID: MB SampType: mblk         |               |           |             |          |          | 300.0: Anion | s    |          |      |
|----------------|-------------------------------------|---------------|-----------|-------------|----------|----------|--------------|------|----------|------|
| Client ID: PBW | Batch                               | ID: <b>R6</b> | 5460      | F           | RunNo: 6 | 5460     |              |      |          |      |
| Prep Date:     | e: Analysis Date: <b>12/27/2019</b> |               |           | 9           | SeqNo: 2 | 248796   | Units: mg/L  |      |          |      |
| Analyte        | Result                              | PQL           | SPK value | SPK Ref Val | %REC     | LowLimit | HighLimit    | %RPD | RPDLimit | Qual |
| Chloride       | ND                                  | 0.50          |           |             |          |          |              |      |          |      |

| Sample ID: LCS SampType: Ics |  |      |           |             | TestCode: EPA Method 300.0: Anions |          |             |      |          |      |  |
|------------------------------|--|------|-----------|-------------|------------------------------------|----------|-------------|------|----------|------|--|
| Client ID: LCSW              | ent ID: LCSW Batch ID: R65460 RunNo: 65460 |      |           |             |                                    |          |             |      |          |      |  |
| Prep Date:                   | rep Date: Analysis Date: 12/27/2019        |      |           | S           | SeqNo: 2                           | 248797   | Units: mg/L |      |          |      |  |
| Analyte                      | Result                                     | PQL  | SPK value | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |  |
| Chloride                     | 4.7  | 0.50 | 5.000     | 0           | 94.3                               | 90       | 110         |      |          |      |  |

## ${\bf Qualifiers:}$

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

Page 15 of 21

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1912A30** 

14-Jan-20

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID: Ics-1 99.9uS eC SampType: Ics TestCode: SM2510B: Specific Conductance

Client ID: LCSW Batch ID: R65332 RunNo: 65332

Prep Date: Analysis Date: 12/20/2019 SeqNo: 2244258 Units: µmhos/cm

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

Conductivity 98 5.0 99.90 0 98.6 85 115

Sample ID: 1912a30-013a dup SampType: dup TestCode: SM2510B: Specific Conductance

Client ID: MW-3 Batch ID: R65332 RunNo: 65332

Prep Date: Analysis Date: 12/20/2019 SeqNo: 2244266 Units: µmhos/cm

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

Conductivity 26000 25 2.39 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

Page 16 of 21

## Hall Environmental Analysis Laboratory, Inc.

SampType: MBLK

WO#: **1912A30** 

14-Jan-20

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID: MB-49581

Client ID: PBW Batch ID: 49581 RunNo: 65605 Prep Date: 12/31/2019 Analysis Date: 1/7/2020 SeqNo: 2253387 Units: mg/L PQL SPK value SPK Ref Val %REC LowLimit %RPD **RPDLimit** Analyte Result HighLimit Qual Calcium ND 1.0 Magnesium ND 1.0 ND Potassium 1.0 Sample ID: LCS-49581 TestCode: EPA 6010B: Total Recoverable Metals SampType: LCS Client ID: LCSW RunNo: 65605 Batch ID: 49581 Prep Date: 12/31/2019 Analysis Date: 1/7/2020 SeqNo: 2253389 Units: mg/L SPK value SPK Ref Val Analyte PQL %REC LowLimit HighLimit %RPD **RPDLimit** Qual 0 99.6 80 120 Calcium 50 1.0 50.00 Magnesium 49 1.0 50.00 0 98.1 80 120 0 49 1.0 50.00 97.3 80 120 Potassium

TestCode: EPA 6010B: Total Recoverable Metals

Sample ID: MB-49581 SampType: MBLK TestCode: EPA 6010B: Total Recoverable Metals Client ID: PBW Batch ID: 49581 RunNo: 65667 Prep Date: 12/31/2019 Analysis Date: 1/9/2020 SeqNo: 2255586 Units: mg/L SPK value SPK Ref Val %REC LowLimit **RPDLimit** Analyte Result PQL HighLimit %RPD Qual Sodium ND 1.0

Sample ID: LCS-49581 SampType: LCS TestCode: EPA 6010B: Total Recoverable Metals Client ID: LCSW Batch ID: 49581 RunNo: 65667 Prep Date: 12/31/2019 Analysis Date: 1/9/2020 SeqNo: 2255590 Units: mg/L Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Analyte Sodium 49 1.0 50.00 0 97.0 80 120

Sample ID: 1912A30-002BMS SampType: MS TestCode: EPA 6010B: Total Recoverable Metals Client ID: Injection Batch ID: 49581 RunNo: 65667 Prep Date: 12/31/2019 Analysis Date: 1/9/2020 SegNo: 2255604 Units: mg/L %RPD Analyte Result POL SPK value SPK Ref Val %REC LowLimit HighLimit **RPDLimit** Qual 5.0 50.00 145.3 75 Sodium 200 99.9 125

Sample ID: 1912A30-002BMSD SampType: MSD TestCode: EPA 6010B: Total Recoverable Metals Client ID: Injection Batch ID: 49581 RunNo: 65667 Prep Date: 12/31/2019 Analysis Date: 1/9/2020 SeqNo: 2255605 Units: mg/L Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual 190 5.0 50.00 145.3 98.4 75 125 0.378 20 Sodium

### 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

Page 17 of 21

## Hall Environmental Analysis Laboratory, Inc.

7.12

WO#: 1912A30

Н

14-Jan-20

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

рΗ

Sample ID: 1912a30-013a dup SampType: dup TestCode: SM4500-H+B / 9040C: pH

Client ID: MW-3 Batch ID: R65332 RunNo: 65332

Prep Date: Analysis Date: 12/20/2019 SeqNo: 2244279 Units: pH units

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

### 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

Page 18 of 21

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1912A30** 

14-Jan-20

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Total Alkalinity (as CaCO3)

Sample ID: mb-1 alk SampType: mblk TestCode: SM2320B: Alkalinity

Client ID: PBW Batch ID: R65332 RunNo: 65332

Prep Date: Analysis Date: 12/20/2019 SeqNo: 2244235 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: Ics-1 alk SampType: Ics TestCode: SM2320B: Alkalinity

Client ID: LCSW Batch ID: R65332 RunNo: 65332

79.24

Prep Date: Analysis Date: 12/20/2019 SeqNo: 2244236 Units: mg/L CaCO3

80.00

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

99.0

110

Sample ID: 1912a30-013a dup SampType: dup TestCode: SM2320B: Alkalinity

Client ID: MW-3 Batch ID: R65332 RunNo: 65332

20.00

Prep Date: Analysis Date: 12/20/2019 SeqNo: 2244238 Units: mg/L CaCO3

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

Total Alkalinity (as CaCO3) 327.2 20.00 0.220 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

Page 19 of 21

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1912A30** 

14-Jan-20

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID: 1912A30-001ADUP SampType: DUP TestCode: Specific Gravity

Client ID: Brine Batch ID: R65470 RunNo: 65470

Prep Date: Analysis Date: 12/30/2019 SeqNo: 2249072 Units:

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

Specific Gravity 1.197 0 0.159 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

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

Page 20 of 21

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1912A30

14-Jan-20

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID: MB-49489 SampType: MBLK TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: PBW Batch ID: 49489 RunNo: 65394

Prep Date: 12/23/2019 Analysis Date: 12/24/2019 SeqNo: 2246446 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-49489 SampType: LCS TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: LCSW Batch ID: 49489 RunNo: 65394

Prep Date: 12/23/2019 Analysis Date: 12/24/2019 SeqNo: 2246447 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

#### 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 4901 Hawkins NE Albuquerque, NM 87109

## Sample Log-In Check List

LABORATORY

TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Client Name: DBS

Work Order Number: 1912A30

| С         | lient Name:                          | DBS               |               | Work                           | Order Num  | ber: 1912A30 |  | RcptN  | o: 1                 |
|-----------|--------------------------------------|-------------------|---------------|--------------------------------|--|--------------|--|--|----------------------|
| Re        | eceived By:                          | Desiree Do        | minguez       | 12/19/2                        | 019 10:05:   | 00 AM        | TD   |  |                      |
| Co        | ompleted By:                         | Erin Melen        |               | , 12/19/2                      | 019 2:52:1   | 9 PM         | una  | ,  |                      |
| Re        | eviewed By:                          | OM                | 12/19         | (3)                            |  |              | , ,  |  |                      |
| <u>Ch</u> | ain of Cus                           | tody              |               |                                |  |              |  |  |                      |
| 1.        | Is Chain of Cu                       | ustody sufficie   | ntly complete | ∍?                             |  | Yes 🗸        | No 🗌   | Not Present  |                      |
| 2.        | How was the                          | sample delive     | red?          |                                |  | Client       |  |  |                      |
| <u>L</u>  | og In                                |                   |               |                                |  |              |  |  |                      |
| 3.        | Was an attem                         | pt made to co     | ol the sampl  | es?                            |  | Yes 🗸        | No 🗌   | NA 🗌   |                      |
| 4.        | Were all samp                        | les received a    | it a temperat | ure of >0° C                   | to 6.0°C   | Yes          | No 🗸   | NA 🗆   |                      |
| 5         | Sample(s) in p                       | ropor contain     | 0.5(0)2       |                                |  | Samples n    |  |  |                      |
| 0.        | Sample(S) iii ţ                      | oroper contain    | er(s)?        |                                |  | Yes 🗸        | No 📙   |  |                      |
| 6.        | Sufficient sam                       | ple volume for    | indicated te  | st(s)?                         |  | Yes 🗹        | No 🗌   |  |                      |
| 7.        | Are samples (e                       | except VOA a      | nd ONG) pro   | perly preserve                 | ed?  | Yes 🗸        | No 🗌   |  |                      |
| 8. \      | Was preservat                        | ive added to b    | oottles?      |                                |  | Yes          | No 🗸   | NA 🗌   |                      |
| 9. 1      | Received at le                       | ast 1 vial with   | headspace <   | <1/4" for AQ \                 | OA?  | Yes 🗌        | No 🗌   | NA 🗹   |                      |
| 10.       | Were any sam                         | ple container     | s received br | oken?                          |  | Yes          | No 🗸   | # of preserved   |                      |
| 11.1      | Does paperwo                         | rk match bottl    | e labels?     |                                |  | Yes 🗸        | No 🗆   | bottles checked for pH:  | 4                    |
|           | Note discrepa                        |                   |               |                                |  |              |  | (<2)   | or >12 unless noted) |
|           | Are matrices c                       |                   |               | *                              |  | Yes 🗸        | No 🗌   | Adjusted?  | 110                  |
|           | s it clear what                      |                   | 107           |                                |  | Yes 🗹        | No 🗌   |  | 46 12/19/K           |
|           | Nere all holdir<br>(If no, notify cu |                   |               |                                |  | Yes 🗸        | No 📙   | Checked by:  | 10 (0)1 11.          |
| Spe       | cial Handli                          | ng (if appl       | icable)       |                                |  |              |  |  |                      |
| 15.       | Was client not                       | tified of all dis | crepancies w  | ith this order?                | >  | Yes          | No 🗌   | NA 🗹   |                      |
|           | Person                               | Notified:         |               |                                | Date   |              | an and the state of the state o |  |                      |
|           | By Who                               | m: 「              |               |                                | Via:   | eMail        | ] Phone [ Fax  | ☐ In Person  |                      |
|           | Regardi                              | ng:               |               | THE RESIDENCE ASSOCIATE BURNEY | A CONTRACTOR OF THE STATE OF TH |              |  | CONTRACTOR OF THE STATE OF THE  |                      |
|           | Client In                            | structions:       |               | SKOLEV (C. UZDOLAZIO) A        |  | ****         |  |  |                      |
| 16.       | Additional ren                       | narks:            |               |                                |  |              |  |  | a account to         |
| 17.       | Cooler Inform                        | nation            |               |                                |  |              |  |  |                      |
|           | Cooler No                            | Temp °C           | Condition     | Seal Intact                    | Seal No  | Seal Date    | Signed By  | - Marine - M |                      |
|           | 1                                    | -0.1              | Good          |                                |  |              |  |  |                      |

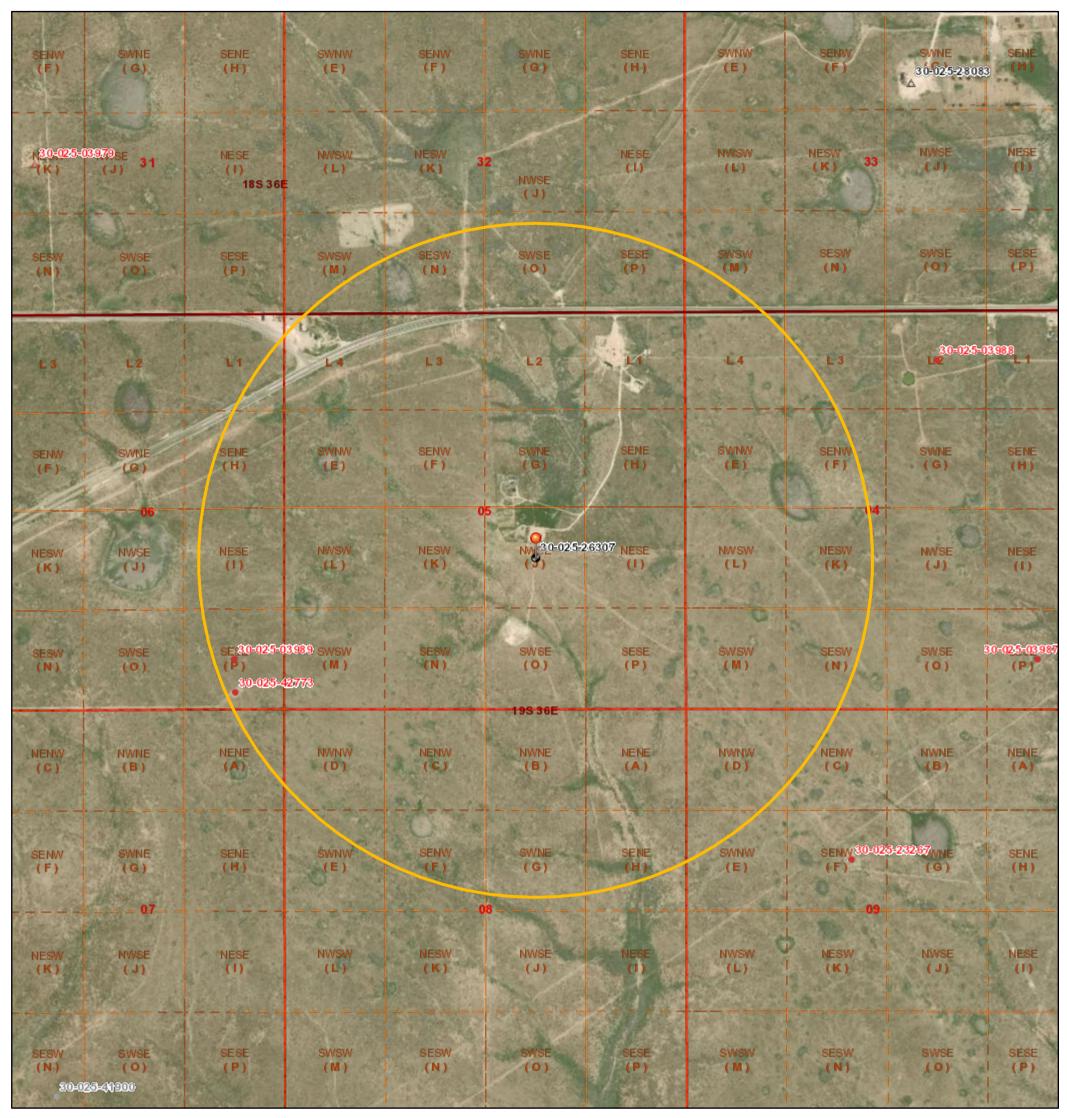
| <b>Chain-of-Custody Record</b>                             | Turn-Around Time:  |  |
|--|--|--|
| Client: Daniel B. Stephers                                 | Standard □ Rush  | HALL ENVIRONMENTAL ANALYSIS LABORATORY   |
|  | Project Name:  |  |
| Mailing Address: ASO OCCO                                  | Salty Dog  | www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109  |
| Phone #: 505-802 -9400                                     | Project #: DB19. 1193.00 MI TQ   | Tel. 505-345-3975 Fax 505-345-4107  Analysis Request   |
| email or Fax#: JA yorde Egeo-logic Com                     | Project Manager:   |  |
| QA/QC Package:  Standard                                   | John Ayorbe  | 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 RCR |
| Accreditation: □ Az Compliance                             | Sampler: Y. Marga  | 7 / DRO 8082 P 8082 P 8270S 8270S 8270S P 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7  |
| □ NELAC □ Other  | On Ice:   ✓ Yes □ No   | EX / MTBE / TMB H:8015D(GRO / DR H:8015D(GRO / DR H:80 8310 or 827 H:80 83 |
| □ EDD (Type)   | # of Coolers: \  | MTBE 55D(GR 55D(GR 64) Metals Metals OA) emi-VC olifform (Mifform  |
| the end to be provided to be a solution to                 | Cooler Temp(including CF):-0 .   -0.0 = -0 .   (°C)                          | 8015D Pestin (Meth (Meth (NOA (NOA (NOA (NOA (NOA (NOA (NOA (NOA   |
|  | Container Preservative HEAL No. Type and # Type                              | BTEX / MTBE / TMB TPH:8015D(GRO / DR 8081 Pesticides/8082 EDB (Method 504.1) PAHS by 8310 or 8270 RCRA 8 Metals RCRA 8 Metals RCRA 8 Metals RCRA 8 Metals 8260 (VOA) 8270 (Semi-VOA) 8270 (Semi-VOA) 7661/1/2 91241/5 Selfan 6010/6 CLI DA 1/4 388   |
| 12-18-19 0700 GW Brine 1                                   | 3 pay Varies -001  |  |
| " 130   Injection /  | 3 Poly Varies -NO7   |  |
| " 6912 DBS-1R V  | 1 ROY N/A -003   |  |
| W-17-19 1558 NRS-2   | 1-04   |  |
| " 1655   DR5-3   | -005   |  |
| 14 1515 185-4  | -006   |  |
| 12-18-190332 185-5   | -007   |  |
| 1217-19 11:30 NBS-6  | -008   |  |
| W 13:15 NB5-8  | 7, -009  |  |
| n 14:05 BS-9   | -010   |  |
| 1 13:05 \ DBS -10 V  | -011   |  |
| 12-18-10 V PMW-1 V   | J N/A -017   |  |
| Date: Time: Relinquished by:  Date: Time: Relinquished by: | Received by: Via: Date Time  CDO 12/19/19 10:05  Received by: Via: Date Time | Remarks: 1 of 2 NOT FROTEN   |
|  | Section 1 to 1                                 |  |

|   | Chain             | -of-C  | ustody Record  | Turn-Aroun                 | d Time:  |  |           |   |                      | -8006              | 100 BOS B          |         |                        |            |                 |                                 |         |                             |           |           |       |
|---|-------------------|--|--|----------------------------|--|--|-----------|---|----------------------|--------------------|--------------------|---------|------------------------|------------|-----------------|---------------------------------|---------|-----------------------------|-----------|-----------|-------|
| Client:                                 |                   | 5 + A  |  | Standar                    |  | is need dend of the sense of the control of the con | ] [       | 964   |                      |                    |                    |         |                        |            |                 |                                 |         |                             |           | TAI<br>OR |       |
| Mailing                                 | Address           | s: [A]   | 200  | Project Nam                | lty Dr   | 6  |           |   |                      |                    | www                |         |                        |            |                 |                                 |         |                             |           |           |       |
|   |                   | 196  | 2 OFFIG  | Project #:                 |  |  |           | 4901 Hawkins NE - Albuquerque, NM 87109  Tel. 505-345-3975 Fax 505-345-4107 |                      |                    |                    |         |                        |            |                 |                                 |         |                             |           |           |       |
| Phone                                   | #:                | 505-   | 822 -9400  | DB19.                      | 1198.0   | O. AM 72   |           |   | el. 50               | J5-34              | 15-39              |         |                        |            | 505-<br>Req     |                                 |         | 7                           | A THE     | 子         |       |
| email o                                 | or Fax#:          |  | undang in  | Project Man                |  | www.com  | _         | <u> </u>  |                      | - Ste              | THE REAL PROPERTY. |         | 04                     | 0000       | am ai           |                                 | STALLS. | W.                          |           | K         |       |
| QA/QC<br>Star                           | Package:<br>ndard | Service of the servic | □ Level 4 (Full Validation)  | 5                          | sha A  | gasbe  | 's (8021) | O/MRO)  | PCB's                |                    | 8270SIMS           | 91      | PO <sub>4</sub> , S    | 0          |                 | Total Coliform (Present/Absent) | P       | O to A<br>to C is<br>on a c | a Parce   | 1202      | Goloß |
|   | litation:         |  | ompliance  | Sampler:                   |  | personal Committee Committ | TMB's     | / DR  | 082                  | <del>-</del>       | 8270               | 1       | NO <sub>2</sub> ,      | K          |                 | esen                            | 1000    | ×                           | 12        | borch     | Z     |
| □ NEL                                   | AC<br>(Type)      | □ Othe   |  | On Ice:                    | ✓ Yes  | □ No   | -         | RO  | es/8                 | 504                | 0 or               | - 81    | 0.00                   | U          | OA)             | Pri                             | 300.    | 1/2/                        | Coid      | 3         | I     |
|   | (туре)            |  |  | # of Coolers<br>Cooler Tem |  | .1-0.0=0.1 (°C)  | MTBE      | 15D(G   | esticid              | /lethod            | y 831              | 8       | Br, NO <sub>3</sub> ,  | (AO)       | Semi-V          | oliform                         | chro    | 1                           | 1         | 1         | 7     |
| Date                                    | Time              | Matrix   | Sample Name  | Container Type and #       | Preservative<br>Type   | HEAL NO.   | BTEX,     | TPH:8015D(GRO / DRO   | 8081 Pesticides/8082 | EDB (Method 504.1) | PAHs by 8310 or    | RA<br>B | Cl, F,                 | 8260 (VOA) | 8270 (Semi-VOA) | Total C                         | CLO     | Spei                        | Speck     | Sicarbone | 202   |
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Appendix D

Area of Review Evaluation

## **OCD Well Locations**



## 4/13/2020, 11:07:26 AM

Wells - Large Scale

? undefined

Miscellaneous

\* CO2, Active

\* CO2, Cancelled

\* CO2, New

★ CO2, Plugged

CO2, Flugged

\* CO2, Temporarily Abandoned

Gas, Temporarily Abandoned

Active

Gas, Cancelled

Gas, New

Gas, Plugged

✓ Injection, Active

Injection, Cancelled

Injection, New

Injection, Plugged

✓ Injection, Temporarily Abandoned

Oil, Active

Oil, Cancelled

Oil, New

• 01 5

Oil, Plugged

Oil, Temporarily Abandoned

△ Salt Water Injection, Active

Salt Water Injection, Cancelled

Salt Water Injection, New

Salt Water Injection, Plugged

Salt Water Injection, Temporarily Abandoned

Water, Active

Water, Cancelled

Water, New

Water, Plugged

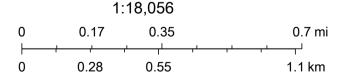
Water, Temporarily Abandoned

OCD District Offices

PLSS First Division

PLSS Second Division

☐ PLSS Townships



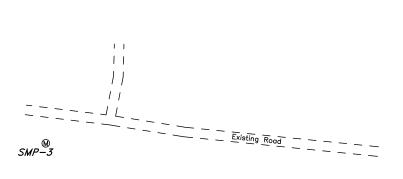
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS,

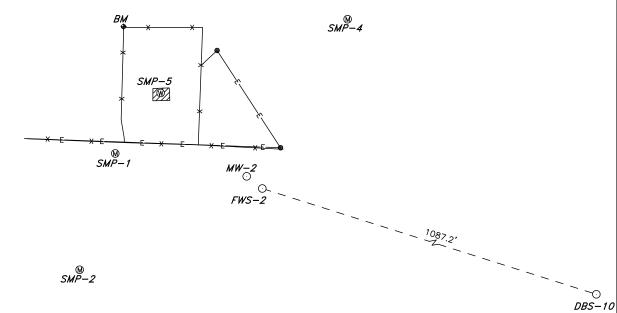
# **Appendix E**

2019 Survey Data for Land Surface Subsidence Monitoring

# SECTION 5, TOWNSHIP 19 SOUTH, RANGE 36 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

*DBS−9* ⊙





ALL COORDINATES ARE BASED ON NMSPCE (NAD83)

| NAME       | SECTION CALLS         | NORTHING   | EASTING    | LA TITUDE      | LONGITUDE       | ELEVATION<br>TOP CASING | ELEVATION<br>CONCRETE |
|------------|-----------------------|------------|------------|----------------|-----------------|-------------------------|-----------------------|
| SMP-1      | 2153' FSL & 2020' FEL | 615475.977 | 836301.437 | N32°41'17.960" | W103°22'28.520" | 3810.10'                | 3810.38'              |
| SMP-2      | 2032' FSL & 2058' FEL | 615354.850 | 836264.338 | N32°41'16.795" | W103°22'28.966" | <i>3809.00</i> ′        | 3809.41'              |
| SMP-3      | 2350' FSL & 2089' FEL | 615673.004 | 836230.083 | N32°41′19.945″ | W103°22′29.334″ | 3808.81                 | 3809.18'              |
| SMP-4      | 2291' FSL & 1776' FEL | 615615.830 | 836543.487 | N32°41'19.352" | W103°22'25.673" | 3806.32'                | 3806.72'              |
| SMP-5      | 2216' FSL & 1972' FEL | 615539.029 | 836348.733 | N32°41'18.609" | W103°22'27.960" | 3811.72'                |                       |
| DBS-9      | 2520' FSL & 1831' FEL | 615844.539 | 836485.906 | N32°41'21.593" | W103°22′26.317" |                         |                       |
| DBS-10     | 1389' FSL & 1060' FEL | 614720.368 | 837270.028 | N32°41′10.428″ | W103°22′17.269" | 3807.48'                | 3805.44               |
| BENCH MARK |                       | 615608.14  | 836310.07  | N32°41'19.27"  | W103°22'28.40"  | 3808.62'                |                       |



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## DANIEL B. STEPHENS & ASSOCIATES, INC

REF: SALTY DOG BRINE FACILITY

MONITOR WELLS AND SUSTENANCE MONITORING POINTS

LOCATED IN SECTION 5, TOWNSHIP 19 SOUTH, RANGE 36 EAST,

N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: 34616 | Drawn By: K. GOAD | Date: 06-12-2019 | Survey Date: 06-10-2019 | Sheet 1 of 1 Sheets

## SECTION 5, TOWNSHIP 19 SOUTH, RANGE 36 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.



#### ALL COORDINATES ARE BASED ON NMSPCE (NAD83)

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P.O. Box 1786 (575) 393-7316 - Office 1120 N. West County Rd. (575) 392-2206 - Fax Hobbs, New Mexico 88241 basinsurveys.com 200 0 200 400 FEET

#### DANIEL B. STEPHENS & ASSOCIATES, INC

REF: SALTY DOG BRINE FACILITY

MONITOR WELLS AND SUSTENANCE MONITORING POINTS

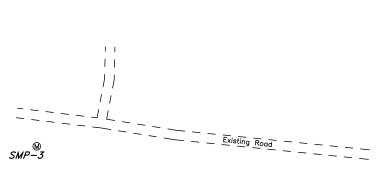
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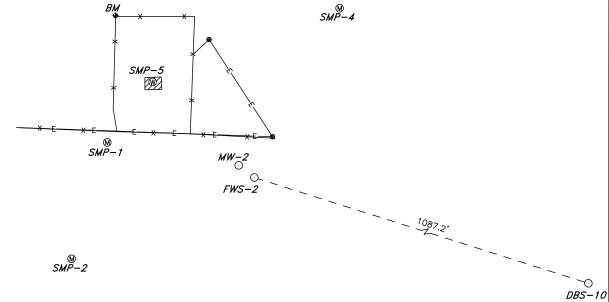
N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: 34616 | Drawn By: **K. GOAD** | Date: 06-12-2019 | Survey Date: 06-10-2019 | Sheet 1 of 1 Sheets

## SECTION 5, TOWNSHIP 19 SOUTH, RANGE 36 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

*DBS−9* ⊙





ALL COORDINATES ARE BASED ON NMSPCE (NAD83)

|            | ( )                   |            |            |                |                 |                         |                       |
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LOCATED IN SECTION 5, TOWNSHIP 19 SOUTH, RANGE 36 EAST,

N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: 34986 | Drawn By: **K. GOAD** | Date: 12-16-2019 | Survey Date: 12-12-2019 | Sheet 1 of 1 Sheets

#### Chavez, Carl J, EMNRD

**From:** Ayarbe, John <jayarbe@geo-logic.com>

**Sent:** Friday, May 3, 2019 12:13 PM

**To:** Chavez, Carl J, EMNRD

**Cc:** 'Pieter Bergstein (pieter@bergsteinenterprises.com)'; 'susan@thestandardenergy.com';

Zbrozek, Michael

**Subject:** [EXT] 2018 Annual Class III Well Report - Salty Dog Brine Station

Attachments: Salty Dog 2018 Annual Report\_5-03-2019.pdf

Hi Carl,

Attached is an electronic copy of the 2018 Annual Class III Well Report for the Salty Dog brine station. The report was prepared in accordance with the requirements of discharge permit (DP) BW-8.

Please let me know if you have questions.

Thanks,

#### 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

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jayarbe@dbstephens.com or jayarbe@geo-logic.com

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

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# 2018 Annual Class III Well Report Salty Dog Brine Station

DP BW-8, API No. 30-025-26307 Lea County, New Mexico

**Prepared for** 

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

May 3, 2019



Daniel B. Stephens & Associates, Inc.

6020 Academy NE, Suite 100 • Albuquerque, New Mexico 87109



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| 2. | Brine Well Operational Activities  2.1 Fluid Injection and Brine Production  2.2 Injection Pressure  2.3 Chemical and Physical Analyses  2.4 Deviations from Normal Operations  2.5 Leaks and Spills  2.6 Area of Review  2.7 Mechanical Integrity Test |      |
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- 2 2017 Aerial Photograph of Salty Dog Brine Station
- 3 Generalized Brine Well Schematic
- 4 Monitor and Extraction Well Locations
- 5 Land Subsidence Survey Monitoring Point Locations



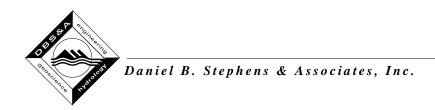
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| 3     | Semiannual Surface Subsidence Monitoring, 2018                           | 8   |

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#### **Appendix**

- A Annual Certification
- B 2018 Monthly Fresh and Brine Water Report Forms
- C Laboratory Analytical Reports
- D Area of Review Evaluation
- E 2018 Survey Data for Land Surface Subsidence Monitoring



# 2018 Annual Class III Well Report Salty Dog Brine Station DP BW-8, API No. 30-025-26307 Lea County, New Mexico

#### 1. Introduction

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this annual Class III well 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 operation of a brine well (Brine Supply Well #1 [API No. 30-025-26307]) at the Salty Dog Brine Station (the site). The site is located in Lea County, New Mexico, approximately 11 miles west of Hobbs, New Mexico along U.S. Highway 62/180 (US 62/80) (Figure 1). This report summarizes operational and monitoring activities conducted at the site in 2018, and was prepared in accordance with the requirements of discharge permit (DP) BW-8, last renewed on November 8, 2013 (NMEMNRD, 2013). The submittal of this report meets Condition 2.J of the permit.

Appendix A provides an annual certification signed by Mr. Pieter Bergstein stating that continued salt solution mining will not cause cavern collapse, surface subsidence, property damage, or otherwise threaten public health and the environment based on geologic and engineering data.

Salty Dog is a brine water production and loading station, consisting of fresh water supply wells, a brine production well, and a concrete truck loading pad with two brine filling stations. Fresh water is stored in two 1,000-barrel (bbl) aboveground storage tanks (ASTs). Produced brine is pumped from the brine well to a bermed tank battery consisting of six 750-bbl ASTs, where the brine is stored for sale. The brine well is located approximately 0.5 mile southwest of the brine filling station (Figure 1). Figure 2 presents a November 2017 aerial photograph of the brine station showing the layout of the current facility infrastructure.



Daniel B. Stephens & Associates, Inc.

Brine is produced from the in situ extraction of salt at the brine well, a UIC Class III well (Brine Supply Well #1 [API No. 30-025-26307]). The brine well is approximately 3,000 feet deep and has been in operation since the early 1980s. The Salty Dog brine well is configured for reverse circulation brine recovery, where fresh water is circulated down the casing annulus into the Salado Formation—a Permian Age sedimentary rock unit composed of halite (salt) and other evaporative beds. Fresh water dissolves the salt, and the brine is extracted through the center tubing of the well. Figure 3 provides a generalized schematic of the brine well showing its construction, current tubing depth, and the penetrated geologic units.

The physical location of the brine well is 1,980 feet from south line (FSL) and 1,980 feet from east line (FEL) (NW/4 SE/4, Unit Letter J) in Section 5, Township 19 South, Range 36 East, New Mexico Principal Meridian (NMPM). The brine well was installed in June 1979. The original discharge permit for the brine well (GWB-2) appears to have been issued on December 18, 1982 (OCD, 1994). The discharge permit was last renewed on November 8, 2013 (NMEMNRD, 2013). A permit renewal application was submitted to OCD in July 2018 (DBS&A, 2018c). OCD deemed the application administrative complete on October 11, 2018 (OCD, 2018).

Injection water used in brine production is obtained from the Ogallala Aquifer by pumping from two fresh water supply wells (FWS-1 and FWS-2) and groundwater remediation well RW-2. Well FWS-1 is the main fresh water supply well. Well FWS-2, located near the brine well, is used as an auxiliary fresh water well during periods of high brine demand. Well RW-2 is used to remove and provide hydraulic containment of chloride-impacted groundwater in the brine well area; groundwater extracted from this well is used for brine production. Chloride-impacted groundwater in the former brine pond area is contained and removed by pumping from FWS-1. Depth to regional groundwater is approximately 60 feet below ground surface (bgs). Figure 4 shows the locations of the wells.

#### 2. Brine Well Operational Activities

The following subsections report fluid injection and brine production volumes and well maintenance activities.



Daniel B. Stephens & Associates, Inc.

#### 2.1 Fluid Injection and Brine Production

Except for an approximately 2-year shutdown between 2011 and 2013 and temporary interruptions for routine maintenance and testing (e.g., February 2009 sonar survey [SOCON, 2009]), the brine well has been in continuous operation since 1980, producing an average of approximately 10,500 barrels per month (bbl/mo) of brine between 1980 and 2009. This production rate is based on 1987, 1996–1999, and 2009 brine production and sales records (Salty Dog, 1988, 1999, and Undated).

Both fluid injection and brine production volumes are metered, and daily volumes are recorded on monthly fresh and brine water report forms (Appendix B). Table 1 summarizes monthly injection and production volumes for the reporting period. Injection water for the brine well comes from two fresh water wells (FWS-1 and FWS-2) and a groundwater remediation well (RW-2) (Figure 4). In 2018, monthly ratios of injected water to produced brine ranged from 0.93 to 1.30.

Table 1. Monthly Water Injection and Brine Production Volumes, 2018

|              | Volu            | Ratio            |                        |
|--------------|-----------------|------------------|------------------------|
| Month        | Water Injection | Brine Production | (injection:production) |
| January      | _               | _                | _                      |
| February     | 15,753          | 12,125           | 1.30                   |
| March        | 36,001          | 35,715           | 1.01                   |
| April        | 15,840          | 16,120           | 0.98                   |
| May          | 16,765          | 15,925           | 1.05                   |
| June         | 22,045          | 21,555           | 1.02                   |
| July         | _               | 28,520           | _                      |
| August       | 37,310          | 36,805           | 1.01                   |
| September    | 20,300          | 20,025           | 1.01                   |
| October      | 16,769          | 17,192           | 0.98                   |
| November     | 24,745          | 26,605           | 0.93                   |
| December     | 28,082          | 28,556           | 0.98                   |
| Annual total | 233,610         | 259,143          | _                      |

bbl = Barrels



Based on the data reported in Table 1 and previously reported production records (Salty Dog, 1988, 1999, and Undated; DBS&A, 2014), the estimated cumulative volume of brine production is 6,355,938 bbl.

In 2018, brine production activities at the site dissolved an estimated 32,541 bbl of Salado Formation. This estimate is based on the brine production data reported in Table 1, the average total dissolved solids (TDS) concentrations of the produced brine and injection water reported in Table 2, and an assumed density of the Salado Formation of 2.17 grams per cubic centimeter (g/cm³). Based on the historical and current brine production data, the total estimated size of the brine solution cavern is approximately 915,845 bbl. In 2012, OCD estimated a volume of 1,022,196 bbl for the Salty Dog solution cavern (NMEMNRD, 2012).

Table 2. Injection Water and Produced Brine Chemical and Physical Characteristics

|                             | Average Concentration (mg/L <sup>a</sup> ) |                |  |
|-----------------------------|--|----------------|--|
| Constituent                 | Injection Water                            | Produced Brine |  |
| pH (s.u.)                   | 7.86                                       | 7.11           |  |
| Specific gravity (unitless) | 0.9972                                     | 1.179          |  |
| Chloride                    | 415  | 190,000        |  |
| Sodium                      | NM   | 71,500         |  |
| TDS                         | 1,011                                      | 273,500        |  |

a Unless otherwise noted mg/L = milligram per liter

NM = Not measured

s.u. = Standard units

TDS = Total dissolved solids

#### 2.2 Injection Pressure

Pressure is monitored on the well tubing and on the annulus between the inner tubing and outer casing. These measurements are recorded on the monthly fresh and brine water report forms (Appendix B). In 2018, recorded daily tubing pressure was 100 pounds per square inch (psi), while annulus pressure ranged from 325 to 375 psi.



#### 2.3 Chemical and Physical Analyses

Condition 2.A of DP BW-8 requires quarterly monitoring of the chemical and physical characteristics of the injection water and produced brine, including pH, density, and TDS and chloride concentrations. The permit also requires that the sodium concentration of the produced brine be analyzed. Since DP BW-8 was issued, PAB requested that the monitoring frequency be reduced from quarterly to semiannually. In consultation with OCD, PAB initiated semiannual monitoring in 2017.

Table 2 reports average constituent concentrations calculated from the 2018 semiannual monitoring data. Samples of the injection water and produced brine were collected in June and November 2018. Dissolution of the Salado Formation increases the constituent concentrations and specific gravity of the produced brine relative to the injection water. The average TDS concentration and average specific gravity of the injection water are 1,011 milligrams per liter (mg/L) and 0.9972, respectively, while the same properties of the produced brine are 273,500 mg/L and 1.179, respectively. Appendix C provides the laboratory analytical reports associated with the semiannual monitoring events.

Historical water quality analyses show TDS concentrations of the fresh water and produced brine to be approximately 600 mg/L and 320,000 to 350,000 mg/L, respectively (Martin, 1982; Unichem, 1987).

#### 2.4 Deviations from Normal Operations

In December 2017, the brine well was damaged because anhydrite had collapsed the well tubing, stopping brine production (Sayre, 2017). Between December 2017 and February 2018, PAB had the well repaired. The existing well, which was originally drilled to 2,958 feet bgs, was redrilled and cleaned out to 2,791 feet bgs. New tubing was then installed to a depth of 2,610 feet bgs. The tubing was perforated with 0.20-inch-diameter holes from 2,590 to 2,592 feet bgs (Figure 3). A drilling and repair log and C-103 forms were submitted to OCD (DBS&A, 2018a). The brine well was operational again in February 2018.



In October 2018, PAB stopped pumping fresh water from wells FWS-2 and RW-2, as they replaced the pumps at the two wells. During this period, fresh water for injection was supplied by pumping from FWS-1 exclusively.

#### 2.5 Leaks and Spills

There were no leaks or spills in 2018.

#### 2.6 Area of Review

Condition 3.L of DP BW-8 requires Salty Dog to report within 72 hours the discovery of any new wells, conduits, or other devices that are both within a 1-mile radius and may penetrate to the injection zone of the brine well.

The brine station is located on private property in rural southeastern New Mexico, approximately 11 miles west of Hobbs. The majority of the area surrounding the site is undeveloped and owned by the State of New Mexico.

On February 28, 2019, DBS&A conducted an area of review evaluation using the OCD online oil and gas maps application. This application is accessible through the OCD website (http://www.emnrd.state.nm.us/OCD/ocdgis.html). Appendix D provides a map produced from the area of review evaluation. The map shows that there are no new brine wells or other penetrations within a 1-mile radius of the site that may penetrate into the injection zone of the Salty Dog brine well.

#### 2.7 Mechanical Integrity Test

In December 2017, the brine well was damaged because anhydrite had collapsed the well tubing. The well was subsequently repaired and operational again in February 2018 (see Section 2.4). On February 9, 2018, before placing the well back in operation, PAB conducted a mechanical integrity test (MIT) on the well; it passed the test. Gary Robinson of OCD was present during the MIT. A record of the MIT was provided in the 2017 annual Class III well report (DBS&A, 2018a).



Daniel B. Stephens & Associates, Inc.

Prior to the February 2018 MIT, the last MIT was performed on October 31, 2013, when Salty Dog conducted a Bradenhead test on the brine well. The test showed no problems with the integrity of the well casing. Results of this test were reported to OCD on November 15, 2013.

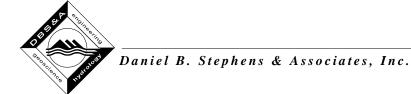
Pursuant to 20.6.2.5204 New Mexico Administrative Code (NMAC), PAB is required to demonstrate mechanical integrity of the brine well at least once every five years.

#### 3. Other Facility Activities

In March 2018, PAB services contracted Peterson Drilling and Testing, Inc. and DBS&A to install a new monitor well and five subsidence survey monitoring points at the site (DBS&A, 2018b). As requested by OCD, the new monitor well, designated DBS-10, was installed in the brine well area, approximately 300 feet downgradient of existing monitor well MW-5. In accordance with the existing groundwater monitoring program, DBS-10 is monitored semiannually, and the monitoring reported in the semiannual groundwater monitoring and operation and maintenance (O&M) reports. The five subsidence survey monitoring points include three points located approximately 200 feet from the brine well, one point located approximately 60 feet from the brine well, and one point that is a metal tab welded to the brine well casing (Figure 5). Construction and placement of the monitoring points were conducted in accordance with DBS&A (2014). The monitoring points are surveyed semiannually, and the results are reported in the annual Class III well reports.

During the second semiannual groundwater monitoring event in November 2018, DBS&A discovered that the totalizer flow meter at well FWS-1 was broken. PAB replaced the flow meter in December 2018.

PAB has had difficulty maintaining pumping in the brine well area. In October 2018, the 3-horsepower pump at RW-2 burned out and was subsequently replaced with a bladder pump. PAB installed a bladder pump in an effort to prevent pump burnout.



#### 4. Subsidence Monitoring and Cavern Characterization

Condition 2.B.1 of DP BW-08 requires Salty Dog to monitor for potential land subsidence in the area of the brine well (OCD, 2013). In March 2018, five subsidence survey monitoring points were installed to meet this condition (Figure 5). Basin Surveys of Hobbs, New Mexico surveyed the monitoring points after their installation (Appendix E). The initial survey was conducted on March 23, 2018 using the nearest U.S. Geological Survey (USGS) benchmark referenced to NMSPCE (NAD 83).

In accordance with Condition 2.B.1 of DP BW-8, Salty Dog has each monitoring point surveyed semiannually to at least the nearest 0.10 foot (OCD, 2013). Basin Surveys conducted the 2018 semiannual surveys on June 19 and December 15, 2018. The survey data are reported in Table 3 and show no indication of land subsidence. The semiannually surveyed elevations are within ±0.02 foot of the initial survey. Appendix E provides the survey reports.

Table 3. Semiannual Surface Subsidence Monitoring, 2018

|                            | Elevation (feet msl) |                               |                                 |  |  |
|----------------------------|----------------------|-------------------------------|---------------------------------|--|--|
| Survey Monitoring<br>Point | Initial<br>3/23/2018 | First Semiannual<br>6/19/2018 | Second Semiannual<br>12/15/2018 |  |  |
| SMP-01                     | 3,810.11             | 3,810.10                      | 3,810.10                        |  |  |
| SMP-02                     | 3,809.01             | 3,809.02                      | 3,809.00                        |  |  |
| SMP-03                     | 3,808.80             | 3,808.82                      | 3,808.81                        |  |  |
| SMP-04                     | 3,806.32             | 3,806.33                      | 3,806.32                        |  |  |
| SMP-05 (brine well)        | 3,811.72             | 3,811.71                      | 3,811.72                        |  |  |

msl = Above mean sea level

Condition 2.B.2 of DP BW-08 requires solution cavern characterization using geophysical methods to estimate the size and shape of the solution cavern. During a December 9, 2016 phone call between DBS&A (on behalf of PAB) and OCD (Jim Griswold and Carl Chavez), it was agreed that solution cavern characterization using geophysical methods would be conducted only if surface subsidence was detected during semiannual surveying of the monitoring points. Section 2.1 of this report presents an estimated size for the solution cavern.



#### 5. Groundwater Conditions

Salty Dog is addressing groundwater impacts resulting from releases at the brine well and a former brine pond. A hole in the casing of the brine well at 250 feet bgs was discovered in 1999 (Salty Dog, 1999). The hole released brine, impacting groundwater, and was repaired in August 1999 by installing a casing liner (Salty Dog, 1999). In October 2008, the brine pond was removed and impacted soil was excavated and disposed of (DBS&A, 2008). The area of the former brine pond is shown in Figures 1 and 2.

Two chloride plumes currently exist at the site: one in the area of the brine station (i.e., the former brine pond area) and a second near the brine well. In 2009, PAB initiated groundwater extraction to remove and provide hydraulic containment of brine-impacted groundwater at the brine station and near the brine well (DBS&A, 2009). Groundwater abatement and monitoring activities are being conducted to satisfy an administrative compliance order issued by OCD (ACO 2008-02) and settlement agreement and stipulated revised final order (NM-OCD 2008-2A) between OCD and Mr. Bergstein.

Groundwater monitoring and extraction data are reported and evaluated in reports submitted to OCD (DBS&A, 2019). The data include water levels and water quality at the site monitor wells. Site monitor wells are shown in Figure 4.

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- Oil Conservation Division, New Mexico Energy, Minerals and Natural Resources Department (OCD). 1994. Letter from Roger C. Anderson to Larry Squires, Salty Dog, regarding Discharge plan BW-08 renewal, Salty Dog Inc. water station, Lea County, New Mexico. March 4, 1994.
- Salty Dog, Inc. (Salty Dog). 1988. Letter report outlining facility data for quarter ending September 1987. February 25, 1988.
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- Unichem International (Unichem). 1987. Laboratory results for water samples collected on November 25, 1987. Prepared for Larry Squires. December 1, 1987.

**Figures** 

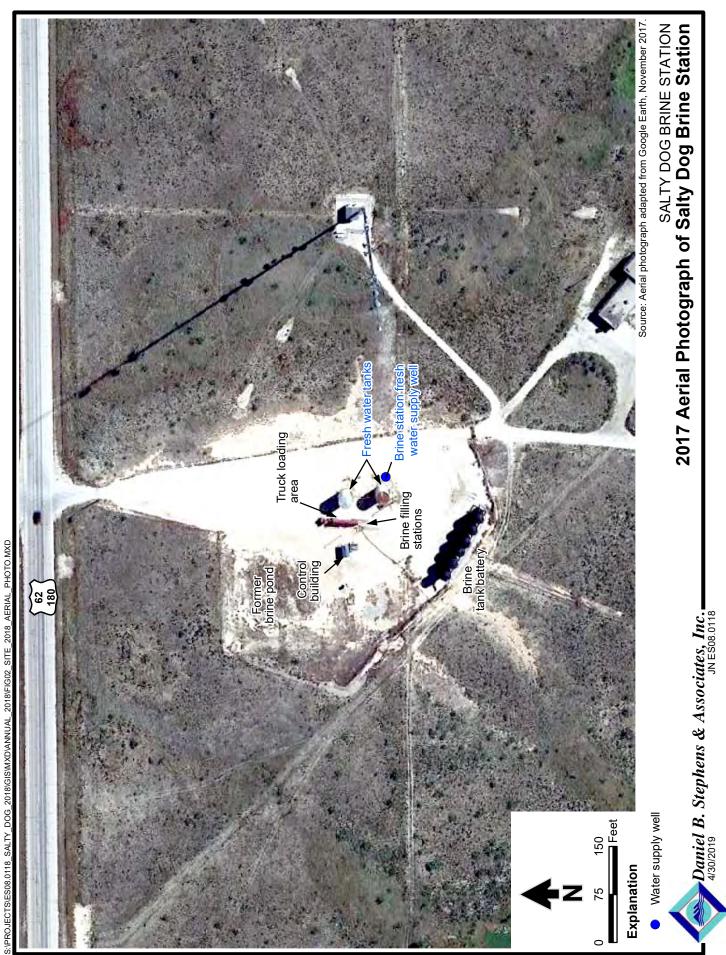
#### **Explanation**

- Water supply well
- Brine well
- Fresh water tank

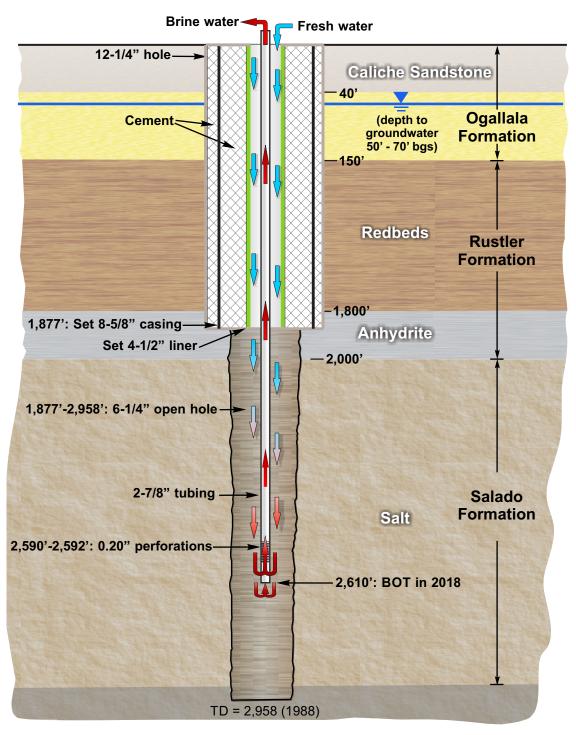
SALTY DOG BRINE STATION

Site Location and Facilities

Daniel B. Stephens & Associates, Inc. JN ES08.0118



#### Salty Dog Brine Well



#### Notes:

- 1. BOT = Bottom of tubing
- 2. Figure not to scale

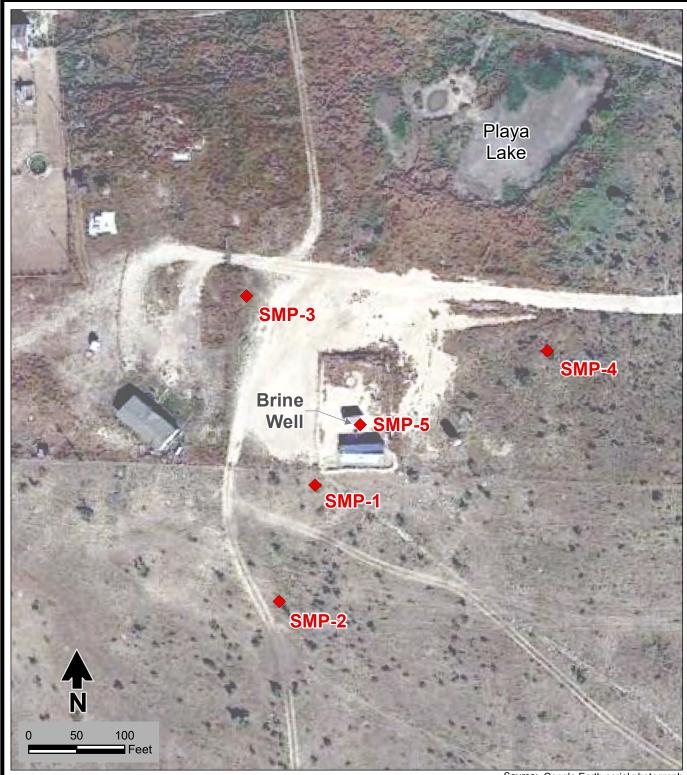
#### Sources:

- 1. Completion data based on OCD well reports
- 2. Lithology from Salty Dog (1988)

SALTY DOG BRINE STATION

**Generalized Brine Well Schematic** 

Figure 4



**Explanation** 

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Survey monument

Source: Google Earth aerial photograph dated November 2017

SALTY DOG BRINE STATION

**Land Subsidence Survey Monitoring Point Locations** 



Daniel B. Stephens & Associates, Inc. JN ES08.0118

# Appendix A Annual Certification

#### **Annual Certification**

PAB Services, Inc. certifies that continued salt solution mining will not cause cavern collapse, surface subsidence, property damage, or otherwise threaten public health and the environment based on geologic and engineering data.

Name Playedent

Title

Signature

Date

4/2/19

Appendix B

2018 Monthly Fresh and Brine Water Report Forms

#### **Terry Payton**

From: Patsy Hunt <patsy@thestandardenergy.com>

Sent: Wednesday, February 14, 2018 3:24 PM

To: terry@thestandardenergy.com

Subject: RE: MONTHLY SWD REPORTS 2-8-18

I asked Jim about this and he said no that there was nothing to report. It was down all month long.

NO JANZO18 REPORT

From: Terry Payton [mailto:terry@thestandardenergy.com]

Sent: Wednesday, February 14, 2018 12:00 PM To: patsy@thestandardenergy.com; Jim Sayre Subject: RE: MONTHLY SWD REPORTS 2-8-18

Did you do a report for Salty Dog for January? Daniel B Stephens needs copies of these monthly reports for Salty Dog, and I haven't seen one for January.

#### Thanks!

Terry Payton Financial Officer Bergstein Enterprises, Ltd. PO Box 191 Lubbock, TX 79408

Office: 806-741-1080 Fax: 806-741-1301

## "Standard Energy Services is a Platinum Safety Award winning company."

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From: Patsy Hunt [mailto:patsy@thestandardenergy.com]

Sent: Thursday, February 8, 2018 10:06 AM

To: terry@thestandardenergy.com
Subject: MONTHLY SWD REPORTS 2-8-18

Patsy Hunt
patsy@thestandardenergy.com
Billing Clerk - Hobbs Yard
Standard Energy Services
PO Box 513
Hobbs, NM 88241
Ph. 575-393-8352
Fax 575-393-8353

<sup>&</sup>quot;Standard Energy Services is a Platinum Safety Award winning company."

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## **MONTHLY FRESH & BRINE WATER REPORT**

MONTH/YEAR Feb 2018

|             | AMOUNT OF FRESH<br>WATER PUMPED<br>DOWN HOLE | AMOUNT OF<br>BRINE WATER<br>OUT OF HOLE | DAILY TUBING<br>PRESSURES | DAILY CASING<br>PRESSURES | FRESH |
|-------------|--|---|---------------------------|---------------------------|-------|
| Date        | BBLS   | BBLS SOLD                               | PSI                       | PSI                       | SOLD  |
| 1           | 0  | 0                                       |                           |                           |       |
| 2           | D  | 0                                       |                           |                           |       |
| 3           | A A  | 0                                       |                           |                           |       |
| 4           | 2  | 2                                       |                           | -                         |       |
| 5           | 4  | U O                                     |                           |                           |       |
| 7           | U  | 0                                       |                           |                           |       |
| 8           | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \        | 8                                       |                           |                           |       |
| 9           | 3  | 8                                       |                           |                           |       |
| 10          | 0  | 0                                       |                           |                           |       |
| 11          | 590  | 570                                     | 100                       | 350                       |       |
| 12          | 620  | 590                                     | 100                       | 356                       |       |
| 13          | 440  | 400                                     | 100                       | 356                       |       |
| 14          | 1010   | 990                                     | 100                       | 356                       |       |
| 15          | 410  | 380                                     | 100                       | 350                       | -     |
| 16          | 300  | 250                                     | 100                       | 350                       |       |
| 17          | 0  | 0                                       | 100                       | 350                       |       |
| 18          | 320  | 295                                     | 100                       | 350                       |       |
| 19          | 50   | 20                                      | 100                       | 356                       | 7     |
| 20          | 220  | 690                                     | 100                       | 350                       |       |
| 21          | 320  | 290                                     | 100                       | 350                       |       |
| 22          | 230  | 200                                     | 100                       | 350                       |       |
| 23          | 1800   | 1725                                    | 100                       | 350                       |       |
| 24          | 1275   | 1200                                    | 100                       | 350                       |       |
| 25          |  |   |                           |                           |       |
| 26          | 23 80  | 2345                                    | 100                       | 365                       |       |
| 27          |  | 680                                     | 100                       | 365                       |       |
| 28          | 1560   | 1500 200                                | 100                       | 365                       |       |
| 29          |  |   |                           |                           |       |
| 30          |  |   |                           |                           |       |
| 31<br>OTALS |  | 10 1 1 1                                |                           |                           |       |
| UTALS       |  | 12,145                                  | DEVOCATOR                 | The bottle and the second |       |
| Date        | Company<br>Performing<br>Work/Repairs        | Descritpion of Work/Repairs             | Estimated Cost            | Work Authoriz             | ed by |

| FACILITY/LOCA | TION | SALTY | , Dog |
|---------------|------|-------|-------|
| MONTH/YEAR    | MI   | 10/1  | 1014  |

|        | AMOUNT OF FRESH<br>WATER PUMPED<br>DOWN HOLE | AMOUNT OF<br>BRINE WATER<br>OUT OF HOLE |                | DAILY CASING<br>PRESSURES | FRESH<br>WATER |
|--------|--|---|----------------|---------------------------|----------------|
| Date   | BBLS   | BBLS SOLD                               | PSI            | PSI                       | SOLD           |
| 11     | 3375   | 3300                                    | 100            | 358                       |                |
| F2     | 950  | 926                                     | 100            | 350                       |                |
| 5 3    | 840  | 820                                     | 100            | 356                       |                |
| 5 4    | 1000   | 980                                     | 100            | 350                       |                |
| M 5    | 4590   | 4545                                    | 100            | 356                       |                |
| T 6    | 1445   | 1400                                    | 100            | 350                       |                |
| W7     | 750  | 720                                     | 100            | 375                       |                |
| T 8    | 520  | 500                                     | 100            | 375                       |                |
| F9     | 1626   | 1700                                    | 100            | 375                       |                |
| 5 10   | 695  | 680                                     | 100            | 375                       |                |
| 5 11   | 200  | 190                                     | 106            | 350                       |                |
| my 12  | 390  | 380                                     | 100            | 356                       |                |
| 113    | 450  | 468                                     | 100            | 356                       |                |
| W 14   | 600  | 590                                     | 100            | 358                       |                |
| T15    | 3400   | 3436                                    | 100            | 350                       |                |
| F16    | 1560   | 1550                                    | 100            | 375                       |                |
| 5 17   | 510  | 506                                     | 100            | 375                       |                |
| 518    | 256  | 220                                     | 100            | 375                       |                |
| M 19   | 310  | 366                                     | 100            | 350                       | /              |
| 720    | 870  | 863                                     | 100            | 350                       |                |
| W 21   | 1200   | 1180                                    | 100            | 350                       |                |
| 722    | 620  | 610 610                                 | 100            | 350                       |                |
| W23    | 100  | 100 100                                 | 100            | 350                       |                |
| 5 24   | -  | P                                       | 100            | 350                       |                |
| 5 25   | 310  | 300 300                                 | 100            | 375                       |                |
| M26    | 1040   | 1030                                    | 100            | 375                       |                |
| 727    | 1475   | 1467                                    | 100            | 375                       |                |
| W 28   | : 2175                                       | 2170                                    | 100            | 375                       |                |
| T29    | 785  | _ 780                                   | 100            | 375                       |                |
| F30    | 2450   | 2440                                    | 100            | 375                       | 1              |
| 531    | 1515   | 1510                                    | 100            | 375                       |                |
| TOTALS |  | 35,709                                  | 700            |                           |                |
|        |  | REPAIRS AND/O                           | REXPENSES      |                           |                |
| Date   | Company<br>Performing<br>Work/Repairs        | Descritpion of Work/Repairs             | Estimated Cost | Work Authoriz             | zed by         |
|        |  |   |                |                           |                |

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| FACILITY/LOCA | TION SALTY | Dog |
|---------------|------------|-----|
| MONTH/YEAR    | April 1    | 8   |

|        | AMOUNT OF FRESH<br>WATER PUMPED<br>DOWN HOLE | AMOUNT OF<br>BRINE WATER<br>OUT OF HOLE | DAILY TUBING<br>PRESSURES | DAILY CASING<br>PRESSURES | FRESH<br>WATER                        |
|--------|--|---|---------------------------|---------------------------|---------------------------------------|
| Date   | BBLS   | BBLS SOLD                               | PSI                       | PSI                       | SOLD                                  |
| 1      | 0  | 0                                       | 100                       | 375                       |                                       |
| 2      | 450  | 440                                     | 100                       | 375                       |                                       |
| 3      | D  | 200                                     | 100                       | 375                       |                                       |
| 4      | 0  | 30                                      | 100                       | 375                       |                                       |
| 5      | 265  | 250                                     | 100                       | 375                       |                                       |
| 6      | 285  | 280                                     | 100                       | 375                       |                                       |
| 7      | 1455   | 1445                                    | 100                       | 375                       |                                       |
| 8      | -0   | 53 38                                   | 100                       | 375                       |                                       |
| 9      | 780  | 710                                     | 100                       | 375                       |                                       |
| 10     | 1046   | 1030                                    | 100                       | 375                       |                                       |
| 11     | 1260   | 1250                                    | 100                       | 375                       |                                       |
| 12     | 110  | 100                                     | 100                       | 375                       |                                       |
| 13     | 170  | 160                                     | 100                       | 375                       |                                       |
| 14     | 920  | 910                                     | 100                       | 375                       |                                       |
| 15     | 680  | 670                                     | 100                       | 375                       |                                       |
| 16     | 290  | 280                                     | 100                       | 375                       |                                       |
| 17     | 700  | 690                                     | 100                       | 375                       |                                       |
| 18     | 400  | 380 380                                 | 100                       | 375                       |                                       |
| 19     | 555  | 550                                     | 100                       | 375                       |                                       |
| 20     | 895  | 890                                     | (00                       | 375                       |                                       |
| 21     | D  | 120                                     | 100                       | 375                       |                                       |
| 22     | 0  | 100                                     | 100                       | 375                       |                                       |
| 23     | 1390   | 1320                                    | 100                       | 375                       |                                       |
| 24     | 190  | 180                                     | 100                       | 375                       |                                       |
| 25     | 700  | 680                                     | 100                       | 375                       |                                       |
| 26     | 1330   | 1310                                    | 100                       | 375                       |                                       |
| 27     | 950  | 920                                     | 100                       | 375                       |                                       |
| 28     | : 565  | 550 HHD                                 | 100                       | 375                       |                                       |
| 29     | -0   | 120                                     | 100                       | 375                       |                                       |
| 30     | 460  | 430                                     | 100                       | 375                       | 1                                     |
| 31     |  |   | 1                         |                           |                                       |
| TOTALS | 15840  | 4                                       |                           |                           |                                       |
|        |  | REPAIRS AND/O                           | REXPENSES                 |                           | 1000000000000000000000000000000000000 |
| Date   | Company<br>Performing<br>Work/Repairs        | Descritpion of<br>Work/Repairs          | Estimated Cost            | Work Authoriz             | zed by                                |

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| FACILITY/LOCAT                         | ION SALA           | y Dog              |  |                  |
|--|--------------------|--------------------|--|------------------|
| MONTH/YEAR                             | MAY                | 2018               |  |                  |
| The second of the second of the second | 485E 14 10 15 24 5 | ASSESSMENT REPORTS | Market Committee | <b>PARTITION</b> |

|       |  | The Second Second Association of the Second |                        | The facility of the second state of the second | 3.40.004 |
|-------|--|---|------------------------|--|----------|
|       | AMOUNT OF FRESH<br>WATER PUMPED<br>DOWN HOLE   | AMOUNT OF<br>BRINE WATER<br>OUT OF HOLE   | DAILY TUBING PRESSURES | DAILY CASING<br>PRESSURES                      | FRESH    |
| Date  | BBLS   | BBLS SOLD   | PSI                    | PSI  | SOLD     |
| 1     | 340  | 330   | 100                    | 375  | 1        |
| 2     | 8  | 120   | 100                    | 375  |          |
| 3     | 8  | 100   | 100                    | 375  |          |
| 4     | 370  | 360   | 100                    | 375  | _        |
| 5     | 410  | 400   | 100                    | 375  | -        |
| 6     | 205  | 200   | 100                    | 325  |          |
| 7     | 375  | 365   | 100                    | 375  |          |
| 8     | 245  | 240   | 100                    | 375  |          |
| 9     | 775  | 770   | 100                    | 375  |          |
| 10    | 3/0  | 300   | 100                    | 375  |          |
| 11    | 600  | 300   | 100                    | 375  |          |
| 12    | 1090   | 1070  | 100                    | 375  |          |
| 13    | 90   | 80  | 100                    | 375  |          |
| 14    | 400  | 390   | 100                    | 375  |          |
| 15    | -0   | 140   | 100                    | 375  |          |
| 16    | 345  | 340   | 100                    | 37.5   |          |
| 17    | 820  | 810   | 100                    | 37.5   |          |
| 18    | 915  | 900   | 100                    | 37.5   |          |
| 19    | 390  | 380   | 100                    | 375  |          |
| 20    | 650  | 640   | 100                    | 375  |          |
| 21    | 245  | 240   | 100                    | 375  | -        |
| 22    | 670  | :650  | 100                    | 325  |          |
| 23    | 1020   | 1005  | 100                    | 375  |          |
| 24    | 1200   | 1190  | 100                    | 325  |          |
| 25    | 1225   | 1200  | 100                    | 325  |          |
| 26    | 1085   | 1080  | 100                    | 375  |          |
| 27    | -0   | 0   | 100                    | 375  |          |
| 28    | 210  | 200   | 100                    | 375  |          |
| 29    | 2000   | 1090  | 100                    | 375  |          |
| 30    | 550  | 540 100   | 100                    | 325  |          |
| 31    | 230  | 210   | 100                    | 375  |          |
| OTALS |  |   |                        |  |          |
| 786   | A CONTRACTOR OF THE STATE OF TH | REPAIRS AND/O   | REXPENSES              |  |          |
| Date  | Company<br>Performing<br>Work/Repairs  | Descritpion of Work/Repairs   | Estimated Cost         | Work Authoriz                                  | zed by   |

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MONTH/YEAR JUNE 2018

|         | AMOUNT OF FRESH<br>WATER PUMPED<br>DOWN HOLE | AMOUNT OF<br>BRINE WATER<br>OUT OF HOLE | DAILY TUBING<br>PRESSURES | DAILY CASING<br>PRESSURES | FRES<br>WATE |
|---------|--|---|---------------------------|---------------------------|--------------|
| Date    | BBLS   | BBLS SOLD                               | PSI                       | PSI                       | SOLE         |
| 1       | 470  | 460                                     | 100                       | 375                       |              |
| 2       | 8  | 0                                       | 100                       | 375                       |              |
| 3       | 490  | 470                                     | 100                       | 375                       |              |
| 4       | 630  | 625                                     | 100                       | 375                       |              |
| 5       | 1170   | 1155                                    | 100                       | 375                       |              |
| 6       | 430  | 420                                     | 100                       | 375                       |              |
| 7       | 900  | 890                                     | 100                       | 375                       |              |
| 8       | 635  | 620                                     | 100                       | 375                       |              |
| 9       | 325  | 310                                     | 100                       | 375                       |              |
| 10      | -0   | 6                                       | 100                       | 375                       |              |
| 11      | 8  | 4                                       | 100                       | 375                       |              |
| 12      | 150  | 145 145                                 | 100                       | 375                       |              |
| 13      | 215  | 200                                     | 100                       | 375                       |              |
| 14      | 160  | 150                                     | 100                       | 375                       |              |
| 15      | cb   | 45                                      | 100                       | 375                       |              |
| 16      | 0  | 0                                       | 100                       | 375                       |              |
| 17      | 225  | 210                                     | 100                       | 375                       |              |
| 18      | 1285   | 1255                                    | 100                       | 375                       |              |
| 19      | 1420   | 1455                                    | 100                       | 375                       | 11           |
| 20      | 455  | 440                                     | 100                       | 375                       |              |
| 21      | 685  | 675                                     | 100                       | 375                       |              |
| 22      | 2900   | 2880                                    | 100                       | 37.5                      |              |
| 23      | 965  | 950                                     | 100                       | 375                       | 1            |
| 24      | 515  | 510                                     | 100                       | 375                       |              |
| 25      | 970  | 935 470                                 | 100                       | 375                       |              |
| 26      | 935  | 900                                     | 100                       | 375                       |              |
| 27      | 1795 400                                     | 1765                                    | 100                       | 375                       |              |
| 28      | 2170   | 2120 00                                 | 100                       | 350                       |              |
| 29      | 1300   | 1270                                    | 100                       | 350                       |              |
| 30      | 200  | 100                                     | 100                       | 375                       |              |
| 31      |  |   |                           | -10                       |              |
| TALS    | 22045  | 21,555                                  |                           |                           |              |
| # = # + |  | REPAIRS AND/O                           | R EXPENSES -              |                           |              |
| ate     | Company<br>Performing<br>Work/Repairs        | Descritpion of Work/Repairs             | Estimated Cost            | Work Authorized by        |              |
|         |  |   |                           |                           |              |

FACILITY/LOCATION SALTY Dog MONTH/YEAR JULY 2018

| NUMERO 100 | A read of the Mark News Service But          | St. S. Shirthallanda et e               | The second second second | Santa Country Service Street | STEE OWNERS OF |
|------------|--|---|--------------------------|------------------------------|----------------|
|            | AMOUNT OF FRESH<br>WATER PUMPED<br>DOWN HOLE | AMOUNT OF<br>BRINE WATER<br>OUT OF HOLE | DAILY TUBING PRESSURES   | DAILY CASING<br>PRESSURES    | FRES<br>WATE   |
| Date       | BBLS   | BBLS SOLD                               | PSI                      | PSI                          | SOLE           |
| 1          |  | 200                                     | 100                      | 350                          |                |
| 2          |  | 870                                     | 100                      | 350                          |                |
| 3          |  | 900                                     | 106                      | 350                          |                |
| 4          |  | 1145                                    | 100                      | 350                          |                |
| 5          |  | 270                                     | 100                      | 350                          |                |
| 6          |  | 335                                     | (00                      | 350                          |                |
| 7          |  | 250                                     | 100                      | 350                          |                |
| 8          |  | 300                                     | 100                      | 350                          |                |
| 9          |  | 590                                     | 100                      | 350                          |                |
| 10         |  | 790 330                                 | 100                      | 350                          |                |
| 11         |  | 1570                                    | 100                      | 350                          | 175            |
| 12         |  | 380                                     | 100                      | 350                          |                |
| 13         |  |   |                          | 5                            |                |
| 14         |  | 1,360                                   | 100                      | 350                          |                |
| 15         |  | 1510                                    | 100                      | 350                          |                |
| 16         |  | 560                                     | 100                      | 350                          |                |
| 17         |  | 1960                                    | 100                      | 350                          | 120            |
| 18         |  | 1120                                    | 100                      | 350                          | 280            |
| 19         |  | 2140                                    | 100                      | 350                          | 90             |
| 20         |  | 1745                                    | 100                      | 350                          | 120            |
| 21         |  | 740                                     | 100                      | 350                          |                |
| 22         |  | 100                                     | 100                      | 350                          |                |
| 23         |  | 1370                                    | 100                      | 350                          |                |
| 24         |  | 13.85                                   | 100                      | 350                          |                |
| 25         |  | 800                                     | 100                      | 3.50                         |                |
| 26         |  | 2190                                    | 100                      | 350                          | 140            |
| 27         |  | 1100 #                                  | 100                      | 350                          | 120            |
| 28         | 1  | 660 660                                 |                          | 500                          | 250            |
| 29         |  | 950 100                                 |                          |                              | 130            |
| 30         |  | 1920                                    |                          |                              | 140            |
| 31         |  | 120                                     |                          |                              | 120            |
| TOTALS     |  | 28,330                                  |                          |                              |                |
|            |  | REPAIRS AND/O                           | REXPENSES                |                              |                |
| Date       | Company<br>Performing<br>Work/Repairs        | Descritpion of<br>Work/Repairs          | Estimated Cost           | Work Authori                 | zed by         |

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|       |                                | FACILITY/LOCATIO   |   |                        |  |  |
|-------|--------------------------------|--|---|------------------------|--|--|
|       | THE RESIDENCE OF THE PARTY AND | MONTH/YEAR   | lug                                     |                        |  |  |
|       |                                |  | e selection and selections              |                        | A STATE OF THE PERSON OF THE P | SORIO SERVICIO                           |
|       |                                | AMOUNT OF FRESH<br>WATER PUMPED<br>DOWN HOLE   | AMOUNT OF<br>BRINE WATER<br>OUT OF HOLE | DAILY TUBING PRESSURES | DAILY CASING<br>PRESSURES  | FRESH                                    |
|       | Date                           | BBLS   | BBLS SOLD                               | PSI                    | PSI  | SOLD                                     |
|       | 1                              | 1.590  | 1560                                    | 100                    | 350  |  |
|       | 2                              | 2290   | 2260                                    | 100                    | 350  | 240                                      |
|       | 3                              | 2120   | 2090                                    | 100                    | 350  |  |
| 3     | 4                              | 1085   | 1050                                    | 100                    | 356  |  |
| 950   | 5                              | 1050   | 1020                                    | 100                    | 350  |  |
| 700   | 6                              | 350  | 330                                     | 100                    | 350  | 130                                      |
|       | 7                              | 880  | 810                                     | 100                    | 350  | 130                                      |
| i     | 8                              | 740  | 730                                     | 100                    | :350   |  |
|       | 9                              | 720  | 700                                     | 100                    | 350  | 100                                      |
|       | 10                             | 700  | 1,95                                    | 100                    | 550  | 2  |
|       | 11                             | 990  | 910                                     | 100                    | 350  |  |
|       | 12                             | 820  | 800                                     | 100                    | 350  |  |
| 1     | 13                             | 600  | 5.90                                    | 100                    | 350  | 240                                      |
| 1     | 14                             | 1700   | 1690                                    | 1,00                   | 350  | 25                                       |
| Ī     | 15                             | 1520   | 1510                                    | 1100                   | 350  |  |
| Ī     | 16                             | 540  | 520                                     | 100                    | 350  |  |
|       | 17                             | 1250   | 1240                                    |                        | 350  |  |
| 0     | 18                             | 2030   | 2020                                    | 100                    | 350  |  |
| -     | 19                             | 1120   | 1100                                    | 100                    | 350  | -  |
|       | 20                             | 210  |   | 100                    | the same of the sa | 011                                      |
|       | 21                             | 470  | 200 ·                                   |                        | 350  | 190                                      |
| T     | 22                             | 2010   | 1000                                    | 100                    | 350  | 110                                      |
| F     | 23                             | 1865   | 1855                                    |                        | 356  | -  |
|       | 24                             | 955  | 945                                     | 100                    | 350  | 110                                      |
| -     | 25                             | The state of the s |   | 100                    | 350  | 160                                      |
|       | 26                             | 650  | 640                                     | 100                    | 350  | Liver Liver                              |
| 0 855 | 27                             | 1675   | 1665                                    | 100                    | 350  |  |
| -     | 28                             | The state of the s | 1350                                    | 100                    | 350  |  |
|       | 29                             | 2320   | 2295 150                                | 100                    | 350  | 110                                      |
| -     | 30                             |  |   | 100                    | 350  |  |
| -     | 31                             | 1730   | 1700                                    | 100                    | 350  |  |
|       | TOTALS                         | 700  | 37105                                   | 100                    | 350  |  |
|       |                                |  | REPAIRS AND/O                           | D-EVDENCES             | The State of the S | 10 10 10 10 10 10 10 10 10 10 10 10 10 1 |
|       | Date                           | Company<br>Performing<br>Work/Repairs  | Descritpion of Work/Repairs             | Estimated Cost         | Work Authoriz  | ed by                                    |
| -     |                                |  | 37105                                   | NE                     | The same and   |  |

| FACILITY/LOCA | TION SA | 44  | Dog |
|---------------|---------|-----|-----|
| MONTH/YEAR    | SPD     | 201 | 6/  |

| Company Performing Descritpion of  | 1<br>2<br>3<br>4<br>5 | 440<br>0   | 430  |  | PSI  |        |
|--|-----------------------|--|--|--|--|--------|
| 2  | 2<br>3<br>4<br>5      | 0  | 0  | 100  |  | SOLD   |
| 3  | 3<br>4<br>5           | 0  |  | 100  |  |        |
| S  | 4 5                   |  | 0  | 100  |  |        |
| 5  | 5                     | 0  | 0  | 100  | 375  |        |
| 6  |                       |  | 0  | 100  | 375  |        |
| T  | 6                     | 0  | 0  | 100  | 375  |        |
| 8  |                       | D  | 0  |  | 375  |        |
| 9  | 7                     | 0  | 0  | 100  | 375  | 120    |
| 9  | 8                     | 0  |  | 100  | 375  |        |
| 10   | 9                     | D  | 0  |  | 375  |        |
| 11   | 10                    | 140  | 135  |  |  |        |
| 12 740 730 100 350 130  13 1235 1220 100 350 75  14 570 560 100 350  15 670 650 100 350  16 350 320 100 350  17 350 330 100 350  18 965 940 100 350  19 1605 1590 100 350 25  20 1540 1520 100 350 310  21 2770 2755 100 350  22 950 980 90 100 350  23 2 7 100 350  24 330 320 320 320 350  25 615 610 100 350  27 1010 1000 350  28 1315 1300 100 350  31 1001ALS  Company Performing Descritpion of                                   | 11                    | 1190   | 1175   | 100  |  |        |
| 13   | 12                    |  |  |  | Name and Address of the Owner, where the Party of the Par | 130    |
| 14   | 13                    |  | The second secon | 100  | The second liverage and the se | 75     |
| 15   | 14                    |  |  |  | THE RESERVE THE PERSON NAMED IN  |        |
| 16  350  320  100  350  18  965  940  100  350  40  19  1605  1590  100  350  370  25  20  1590  1520  100  350  370  370  21  2770  2755  100  325  11  22  950  920  100  350  370  23  24  330  320  320  320  350  25  25  26  1990  1980  100  350  25  25  26  1990  1980  100  350  27  100  100  100  350  28  1315  1300  100  350  29  1990  1170  100  350  31  100  350  31  100  350  31  31  31  31  31  31  31  31  31  3 | 15                    |  |  |  |  |        |
| 17 350 330 100 350 40  18 965 940 100 350 40  19 1605 1590 100 350 350  20 1540 1520 100 350 3/0  21 2770 2755 100 325 1/  22 950 920 100 350  23 2 7 100 350  26 1490 1980 100 350  27 1010 1000 100 350  28 1315 1300 100 350  30 935 910 100 350  31 POTALS  Company Performing Descritpion of  | 16                    |  |  |  | The second secon | E      |
| 18   | 17                    |  |  | Name and Address of the Owner, where the Park of the Owner, where the Owner, which is the Owner, which | CONTRACTOR OF THE PROPERTY AND ADDRESS OF THE PERSON OF TH |        |
| 19   | 18                    | 965  |  |  |  | 40     |
| 20   | 19                    | 1605   |  | Name and Address of the Owner, where the Owner, which is the Owner, which the Owner, which is  | Control of the Contro | 25     |
| 21   | 20                    |  |  |  |  |        |
| 22 950 950 100 350 23 2 0 100 350 24 330 320 5 <sup>10</sup> 100 350 25 6/5 6/1 100 350 26 1490 1980 100 350 27 1010 1000 100 350 28 1315 1300 100 350 29 1/90 1/70 100 350 30 835 810 100 350 31 COTALS  Company Performing Descritpion of  | 21                    |  | 2755   |  |  |        |
| 23   | 22                    |  | A-4-2/4  |  |  |        |
| 24 330 320 5 <sup>10</sup> 100 350  25 615 100 350  26 1490 1980 100 350  27 1010 1000 100 350  28 1315 1300 100 350  29 1190 1170 100 350  30 935 910 100 350  TOTALS 19965  Company Performing Descritpion of  | 23                    | 2  |  | 100  | International Control of the Control |        |
| 25 6/5 61 100 350 26 1490 1980 100 350 27 1010 1000 100 350 28 1315 1300 100 350 29 1/90 1/70 100 350 30 935 910 100 350 31 POTALS 19965  Company Performing Descritpion of  | 24                    |  |  |  |  |        |
| 26   | 25                    |  | 020  |  | NAME AND ADDRESS OF THE OWNER, AND ADDRESS OF THE OWNER, ADDRESS O |        |
| 27   |                       |  |  |  |  |        |
| 28   |                       | 1010   | 1000   |  | THE RESIDENCE AND ADDRESS OF THE PERSON NAMED IN   | 1      |
| 29   |                       | Control of the Contro |  |  |  |        |
| 30 935 810 100 350 31 19965  REPAIRS AND/OR EXPENSES  Company Performing Descritpion of  |                       |  |  |  |  |        |
| TOTALS  19 965  REPAIRS AND/OR EXPENSES  Company Performing Descritpion of   |                       |  |  |  |  |        |
| Company Performing Descritpion of  |                       |  | 0,0  | 1  |  |        |
| Company Performing Descritpion of  | TOTALS                |  | 19965  |  |  |        |
| Company Performing Descritpion of  |                       | THE RESERVE OF THE RE |  | REXPENSES  |  |        |
|  | Date                  | Company<br>Performing  | Descritpion of   |  | Work Authoriz  | zed by |

#### 19965

## MONTHLY FRESH & BRINE WATER REPORT

MONTH/YEAR Det ZO18

|        | MATER PUMPED<br>DOWN HOLE             | AMOUNT OF<br>BRINE WATER<br>OUT OF HOLE | DAILY TUBING<br>PRESSURES | DAILY CASING<br>PRESSURES | FRESH<br>WATER |  |
|--------|---------------------------------------|---|---------------------------|---------------------------|----------------|--|
| Date   | BBLS                                  | BBLS SOLD                               | PSI                       | PSI                       | SOLD           |  |
| 1      | 1090                                  | 1070                                    | 100                       | 358                       | 0              |  |
| 2      | 870                                   | 850                                     | 100                       | 350                       | 0              |  |
| 3      | 410                                   | 400                                     | 100                       | 356                       | 0              |  |
| 4      | 615                                   | 600                                     | 100                       | 356                       | 0              |  |
| 5      | 210                                   | 200                                     | 100                       | 356                       | 0              |  |
| 6      | -0                                    | 0                                       | 100                       | 350                       | 0              |  |
| 7      | 100                                   | 100                                     | 100                       | 350                       | 0              |  |
| 8      | 110                                   | 110 110                                 | 100                       | 350                       | 25             |  |
| 9      | 133                                   | 130                                     | 100                       | 350                       | 143            |  |
| 10     | 300                                   | 295                                     | 100                       | 350                       |                |  |
| 11     | 360                                   | 360                                     | 100                       | 350                       |                |  |
| 12     | 325                                   | 920                                     | 106                       | 350                       | 120            |  |
| 13     | 0                                     | 0                                       | 100                       | 350                       |                |  |
| 14     | 100                                   | 100                                     | 100                       | 350                       |                |  |
| 15     | 351                                   | 350                                     | 100                       | 350                       | 195            |  |
| 16     | 910                                   | 905                                     | 100                       | 350                       | 110            |  |
| 17     | 105                                   | 105                                     | 100                       | 350                       |                |  |
| 18     | 185                                   | 180                                     | 100                       | 350                       |                |  |
| 19     | 635                                   | 630                                     | 100                       | 350                       |                |  |
| 20     | 275                                   | 270                                     | 100                       | 350                       | 180            |  |
| 21     | 365                                   | 360                                     | 100                       | 350                       |                |  |
| 22     | 850                                   | 845 100                                 | 100                       | 350                       |                |  |
| 23     | 340                                   | 330                                     | 100                       | 350                       |                |  |
| 24     | 280                                   | 275                                     | 100                       | 350                       |                |  |
| 25     | 1055                                  | 1050                                    | 100                       | 325                       |                |  |
| 26     | 1660                                  | 1650                                    | 100                       | 325                       |                |  |
| 27     | 1025                                  | 1020                                    | 100                       | 325                       |                |  |
| 28     | 465                                   | 460                                     | 100                       | 325                       |                |  |
| 29     | 1085                                  | 1080                                    | 100                       | 325                       | 155            |  |
| 30     | 1780                                  | 1777                                    | 100                       | 325                       |                |  |
| 31     | 780                                   | 770                                     | 100                       | 325                       |                |  |
| TOTALS |                                       | 13,192                                  |                           |                           |                |  |
|        | THE RESERVE OF THE R                  | REPAIRS AND/O                           | REXPENSES                 |                           |                |  |
| Date   | Company<br>Performing<br>Work/Repairs | Descritpion of<br>Work/Repairs          | Estimated Cost            | Work Authoriz             | rized by       |  |

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## MONTHLY FRESH & BRINE WATER REPORT

| FACILITY/LOCATION | SALTY Dog |    |  |
|-------------------|-----------|----|--|
| MONTH/YEAR        | NOU       | 18 |  |

|        | MONTH/YEAR                                   | NOU                                     | 18                        |                           |        |
|--------|--|---|---------------------------|---------------------------|--------|
|        | AMOUNT OF FRESH<br>WATER PUMPED<br>DOWN HOLE | AMOUNT OF<br>BRINE WATER<br>OUT OF HOLE | DAILY TUBING<br>PRESSURES | DAILY CASING<br>PRESSURES | FRESH  |
| Date   | BBLS   | BBLS SOLD                               | PSI                       | PSI                       | SOLD   |
| 1      | 280  | 213                                     | 100                       | 325                       | 60     |
| 2      | 600  | 590                                     | 100                       | 325                       | 5      |
| 3      | 205  | 200                                     | 100                       | 325                       |        |
| 4      | 335  | 330                                     | 100                       | 325                       | 10     |
| 5      | 895  | 885                                     | 100                       | 325                       | 25     |
| 6      | 880  | 865                                     | 100                       | 325                       | 130    |
| 7      | 202.00                                       | 2010                                    | 100                       | 325                       |        |
| 8      | 615  | 600                                     | 100                       | 325                       | 40     |
| 9      | 965  | 850                                     | ,00                       | 325                       | 250    |
| 10     | 1395   | 1385                                    | 100                       | 325                       |        |
| 11     | 2120   | 2110                                    | ,00                       | 325                       | 1      |
| 12     | 3210   | 3/95                                    | 100                       | 325                       | 40     |
| 13     | 1700   | 1695                                    | 100                       | 325                       |        |
| 14     | / 1720                                       | 1710                                    | 106                       | 325                       | 260    |
| 15     | 1365   | 1350 1350                               | 100                       | 325                       | 300    |
| 16 /   | 1810   | 1797                                    | 100                       | 325                       |        |
| 17     | 875  | 855 =58                                 | 100                       | 325                       | 130    |
| 18     | 8  | 100                                     | 100                       | 325                       |        |
| 19     | 950  | 93080                                   | 100                       | 325                       | 1      |
| 20     | 375  | 360                                     | 100                       | 325                       | 40     |
| 21     | D  | 180                                     | 100                       | 325                       |        |
| 22     | 0  | 100                                     | 100                       | 325                       |        |
| 23     | 370  | 360                                     | 100                       | 325                       |        |
| 24     | 8  | 0                                       | 100                       | 325                       |        |
| 25     | 510  | 500                                     | 100                       | 325                       |        |
| 26     | 805  | 790                                     | 100                       | 325                       |        |
| 27     | 510  | 500                                     | 100                       | 325                       |        |
| 28     | : 630  | 615                                     | 100                       | 325                       |        |
| 29     | 80   | 70 70                                   | 100                       | 325                       | /30    |
| 30     | 1425   | 1410                                    | 100                       | 325                       | F      |
| 31     | 112  | 1710                                    | 100                       | 0/2                       | and I  |
| TOTALS |  | 25740                                   |                           |                           |        |
|        |  | REPAIRS AND/O                           | REXPENSES                 |                           |        |
| Date   | Company<br>Performing<br>Work/Repairs        | Descritpion of Work/Repairs             | Estimated Cost            | Work Authori              | zed by |
|        |  |   |                           |                           |        |
|        |  |   |                           |                           |        |

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# MONTHLY FRESH & BRINE WATER REPORT

MONTH/YEAR DECEMBER 2018

|        | WATER PUMPED DOWN HOLE OUT OF HOLE PRESSURES |                                | DAILY CASING<br>PRESSURES | FRESH<br>WATER   |        |
|--------|--|--------------------------------|---------------------------|------------------|--------|
| Date   | BBLS   | BBLS SOLD                      | PSI                       | PSI              | SOLD   |
| 1      | 3650   | 3600                           | 100                       | 325              |        |
| 2      | 1700   | 16 80 878                      | 100                       | 325              | 5      |
| 3      | 1320   | 1370                           | 100 325                   |                  | 1      |
| 4      | 2420   | 24000 138                      |                           |                  |        |
| 5      | 190  | 190                            | 100                       | 325              | 1      |
| 6      | xcop   | 1085855                        | 100                       | 325              | 1      |
| 7      | 442  | 440 410                        | 100                       | 325              |        |
| 8      | 0  | *                              | 100                       | 325              |        |
| 9      | e  | 100                            | 100                       | 325              |        |
| 10     | 8  | 110                            | 100                       | 325              |        |
| 11     | 680  | 660                            | 100                       | 325              |        |
| 12     | 1020   | 1010                           | 100                       | 325              |        |
| 13     | 1040   | 1034                           | 100                       | 325              |        |
| 14     | 1035   | 1030                           | 100                       | 325              |        |
| 15     | 0  | 0                              | 100                       | 325              |        |
| 16     | 285  | 280                            | 100 325                   |                  |        |
| 17     | 755  | 742                            | 100 325                   |                  |        |
| 18     | 2900   | 2870                           | 100 325                   |                  |        |
| 19     | 1000   | 996 990                        | 100 350                   |                  |        |
| 20     | 830  | 800 5                          | 100                       | 356              | - 10   |
| 21     | 1450   | 1620                           | 100                       | 350              |        |
| 22     | 310  | 320                            | 100                       | 3.50             |        |
| 23     | 1740   | 1720                           | 100                       | 350              |        |
| 24     | 8  | 0 445 B                        | 100                       | 356              |        |
| 25     | 210  | \$ 200                         | 100                       | 356              | 7379   |
| 26     | 760  | 755 425                        | 100                       | 350              |        |
| 27     | 1040   | 1020 90                        | 100                       | 356              |        |
| 28     | : 1920                                       | 1900                           | 100                       | 350              |        |
| 29     | 0  | b                              | 100                       | 350              |        |
| 30     | 215  | 700                            | 100                       | 350              |        |
| 31     | 8  | 8                              | 100                       | 350              |        |
| TOTALS |  |                                | 1.00                      |                  |        |
|        |  | REPAIRS AND/O                  | REXPENSES                 | <b>阿尼斯·马克斯</b> 克 |        |
| Date   | Company<br>Performing<br>Work/Repairs        | Descritpion of<br>Work/Repairs | Estimated Cost            | Work Authori     | zed by |

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**Appendix C** 

Laboratory Analytical Reports



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

July 05, 2018

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

RE: Salty Dog OrderNo.: 1806C36

#### Dear John Ayarbe:

Hall Environmental Analysis Laboratory received 14 sample(s) on 6/20/2018 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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

Lab Order **1806C36**Date Reported: **7/5/2018** 

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-5

**Project:** Salty Dog
 Collection Date: 6/18/2018 5:00:00 PM

 **Lab ID:** 1806C36-001
 Matrix: AQUEOUS
 Received Date: 6/20/2018 11:26:00 AM

| Analyses                 | Result | PQL Qu | al Units | DF Date Analyzed        | Batch   |
|--------------------------|--------|--------|----------|-------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |        |          | Analys                  | st: MRA |
| Chloride                 | 180    | 5.0    | mg/L     | 10 6/26/2018 2:07:17 PM | R52265  |

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## Lab Order **1806C36**Date Reported: **7/5/2018**

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-3

**Project:** Salty Dog
 Collection Date: 6/18/2018 5:20:00 PM

 **Lab ID:** 1806C36-002
 Matrix: AQUEOUS
 Received Date: 6/20/2018 11:26:00 AM

| Analyses                 | Result | PQL Qu | ial Units | DF Date Analyzed        | Batch   |
|--------------------------|--------|--------|-----------|-------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |        |           | Analys                  | st: MRA |
| Chloride                 | 47     | 5.0    | mg/L      | 10 6/26/2018 3:24:25 PM | R52265  |

| Qualifiers: | *   | Value exceeds Maximum Contaminant Level.              | В  | Analyte detected in the associated Method Blank           |
|-------------|-----|---|----|---|
|             | D   | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|             | Н   | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits Page 2 of 18   |
|             | ND  | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|             | PQL | Practical Quanitative Limit                           | RL | Reporting Detection Limit                                 |
|             | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|             |     |   |    |   |

## Lab Order **1806C36**Date Reported: **7/5/2018**

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-2

**Project:** Salty Dog
 Collection Date: 6/18/2018 5:45:00 PM

 **Lab ID:** 1806C36-003
 Matrix: AQUEOUS
 Received Date: 6/20/2018 11:26:00 AM

| Analyses                 | Result | PQL Qu | al Units | DF Date Analyzed        | Batch   |
|--------------------------|--------|--------|----------|-------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |        |          | Analys                  | st: MRA |
| Chloride                 | 47     | 5.0    | mg/L     | 10 6/26/2018 3:50:09 PM | R52265  |

| Qualifiers: | *   | Value exceeds Maximum Contaminant Level.              | В  | Analyte detected in the associated Method Blank           |
|-------------|-----|---|----|---|
|             | D   | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|             | Н   | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits Page 3 of 18   |
|             | ND  | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|             | PQL | Practical Quanitative Limit                           | RL | Reporting Detection Limit                                 |
|             | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |
|             |     |   |    |   |

Lab Order **1806C36**Date Reported: **7/5/2018** 

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-4

**Project:** Salty Dog
 Collection Date: 6/19/2018 9:40:00 AM

 **Lab ID:** 1806C36-004
 Matrix: AQUEOUS
 Received Date: 6/20/2018 11:26:00 AM

| Analyses                 | Result | PQL Qu | al Units | DF Date Analyzed        | Batch   |
|--------------------------|--------|--------|----------|-------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |        |          | Analys                  | st: MRA |
| Chloride                 | 39     | 5.0    | mg/L     | 10 6/26/2018 4:15:52 PM | R52265  |

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Lab Order **1806C36**Date Reported: **7/5/2018** 

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Daniel B. Stephens & Assoc. Client Sample ID: DBS-9

**Project:** Salty Dog
 Collection Date: 6/19/2018 10:05:00 AM

 **Lab ID:** 1806C36-005
 Matrix: AQUEOUS
 Received Date: 6/20/2018 11:26:00 AM

| Analyses                 | Result | PQL Qual Units | DF Date Analyzed         | Batch   |
|--------------------------|--------|----------------|--------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |                | Analys                   | st: MRA |
| Chloride                 | 260    | 50 * mg/L      | 100 6/26/2018 4:54:26 PM | R52265  |

| Qualifiers: | *   | Value exceeds Maximum Contaminant Level.   | В  | Analyte detected in the associated Method Blank           |
|-------------|-----|--|----|---|
|             | D   | Sample Diluted Due to Matrix   | E  | Value above quantitation range                            |
|             | Н   | H Holding times for preparation or analysis exceeded J Analyte detected below quantitation l |    | Analyte detected below quantitation limits Page 5 of 18   |
|             | ND  | Not Detected at the Reporting Limit  | P  | Sample pH Not In Range                                    |
|             | PQL | Practical Quanitative Limit  | RL | Reporting Detection Limit                                 |
|             | S   | % Recovery outside of range due to dilution or matrix  | W  | Sample container temperature is out of limit as specified |
|             |     |  |    |   |

Lab Order **1806C36**Date Reported: **7/5/2018** 

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-8

**Project:** Salty Dog
 Collection Date: 6/19/2018 10:45:00 AM

 **Lab ID:** 1806C36-006
 Matrix: AQUEOUS
 Received Date: 6/20/2018 11:26:00 AM

| Analyses                 | Result | PQL Qu | ual Units | DF Date Analyzed        | Batch   |
|--------------------------|--------|--------|-----------|-------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |        |           | Analys                  | st: MRA |
| Chloride                 | 33     | 5.0    | mg/L      | 10 6/26/2018 5:33:01 PM | R52265  |

| Qualifiers: | *  | Value exceeds Maximum Contaminant Level.              | В   | 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 quantita |   | Analyte detected below quantitation limits Page 6 of 18 |   |
|             | ND   | Not Detected at the Reporting Limit                   | P   | Sample pH Not In Range                                    |
|             | PQL Practical Quanitative Limit  |   | RL  | Reporting Detection Limit                                 |
|             | S  | % Recovery outside of range due to dilution or matrix | W   | Sample container temperature is out of limit as specified |
|             |  |   |   |   |

Lab Order **1806C36**Date Reported: **7/5/2018** 

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-10

**Project:** Salty Dog
 Collection Date: 6/19/2018 11:15:00 AM

 **Lab ID:** 1806C36-007
 Matrix: AQUEOUS
 Received Date: 6/20/2018 11:26:00 AM

| Analyses                 | Result | PQL Qual Units | DF Date Analyzed         | Batch    |
|--------------------------|--------|----------------|--------------------------|----------|
| EPA METHOD 300.0: ANIONS |        |                | Analy                    | st: MRA  |
| Chloride                 | 690    | 50 * mg/L      | 100 6/26/2018 6:11:36 PM | 1 R52265 |

| Qualifiers: | *   | Value exceeds Maximum Contaminant Level.   | В  | Analyte detected in the associated Method Blank           |
|-------------|-----|--|----|---|
|             | D   | Sample Diluted Due to Matrix   | E  | Value above quantitation range                            |
|             | Н   | Holding times for preparation or analysis exceeded J Analyte detected below quantitation lin |    | Analyte detected below quantitation limits Page 7 of 18   |
|             | ND  | Not Detected at the Reporting Limit  | P  | Sample pH Not In Range                                    |
|             | PQL | Practical Quanitative Limit  | RL | Reporting Detection Limit                                 |
|             | S   | % Recovery outside of range due to dilution or matrix  | W  | Sample container temperature is out of limit as specified |
|             |     |  |    |   |

Lab Order **1806C36**Date Reported: **7/5/2018** 

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-6

**Project:** Salty Dog
 Collection Date: 6/19/2018 11:45:00 AM

 **Lab ID:** 1806C36-008
 Matrix: AQUEOUS
 Received Date: 6/20/2018 11:26:00 AM

| Analyses                 | Result | PQL Qu | al Units | DF Date Analyzed         | Batch    |
|--------------------------|--------|--------|----------|--------------------------|----------|
| EPA METHOD 300.0: ANIONS |        |        |          | Analy                    | st: MRA  |
| Chloride                 | 210    | 50     | mg/L     | 100 6/26/2018 6:37:19 PM | / R52265 |

| Qualifiers: | *   | Value exceeds Maximum Contaminant Level.              | В   | Analyte detected in the associated Method Blank           |
|-------------|---|---|---|---|
|             | D   | Sample Diluted Due to Matrix                          | Е   | Value above quantitation range                            |
|             | H Holding times for preparation or analysis exceeded J Analyte detected below quantitat |   | Analyte detected below quantitation limits Page 8 of 18 |   |
|             | ND  | Not Detected at the Reporting Limit                   | P   | Sample pH Not In Range                                    |
|             | PQL   | Practical Quanitative Limit                           | RL  | Reporting Detection Limit                                 |
|             | S   | % Recovery outside of range due to dilution or matrix | W   | Sample container temperature is out of limit as specified |
|             |   |   |   |   |

Lab Order **1806C36**Date Reported: **7/5/2018** 

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: MW-5

 Project:
 Salty Dog
 Collection Date: 6/19/2018 1:25:00 PM

 Lab ID:
 1806C36-009
 Matrix: AQUEOUS
 Received Date: 6/20/2018 11:26:00 AM

| Analyses                 | Result | PQL Qual Units | DF Date Analyzed         | Batch   |
|--------------------------|--------|----------------|--------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |                | Analys                   | st: MRA |
| Chloride                 | 840    | 50 * mg/L      | 100 6/26/2018 7:03:02 PM | R52265  |

| Qualifiers: | *   | Value exceeds Maximum Contaminant Level.  | В  | Analyte detected in the associated Method Blank           |
|-------------|-----|---|----|---|
|             | D   | Sample Diluted Due to Matrix  | Е  | Value above quantitation range                            |
|             | Н   | H Holding times for preparation or analysis exceeded J Analyte detected below quantitation li |    | Analyte detected below quantitation limits Page 9 of 18   |
|             | ND  | Not Detected at the Reporting Limit   | P  | Sample pH Not In Range                                    |
|             | PQL | Practical Quanitative Limit   | RL | Reporting Detection Limit                                 |
|             | S   | % Recovery outside of range due to dilution or matrix   | W  | Sample container temperature is out of limit as specified |
|             |     |   |    |   |

Lab Order **1806C36**Date Reported: **7/5/2018** 

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Daniel B. Stephens & Assoc. Client Sample ID: MW-3

**Project:** Salty Dog
 Collection Date: 6/19/2018 2:05:00 PM

 **Lab ID:** 1806C36-010
 Matrix: AQUEOUS
 Received Date: 6/20/2018 11:26:00 AM

| Analyses                 | Result | PQL Qual Units | DF Date Analyzed        | Batch   |
|--------------------------|--------|----------------|-------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |                | Analys                  | st: MRA |
| Chloride                 | 7300   | 500 * mg/L     | 1E 7/2/2018 10:41:16 PM | R52405  |

| Qualifiers: | *   | Value exceeds Maximum Contaminant Level.              | В  | 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 detect |   | Analyte detected below quantitation limits Page 10 of 18 |   |
|             | ND  | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|             | PQL   | Practical Quanitative Limit                           | RL   | Reporting Detection Limit                                 |
|             | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

Lab Order **1806C36**Date Reported: **7/5/2018** 

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: DBS-1R

**Project:** Salty Dog
 Collection Date: 6/19/2018 2:35:00 PM

 **Lab ID:** 1806C36-011
 Matrix: AQUEOUS
 Received Date: 6/20/2018 11:26:00 AM

| Analyses                 | Result | PQL Qı | ual Units | DF Date Analyzed         | Batch   |
|--------------------------|--------|--------|-----------|--------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |        |           | Analys                   | st: MRA |
| Chloride                 | 190    | 50     | mg/L      | 100 6/26/2018 8:20:12 PM | R52265  |

| Qualifiers: | *   | Value exceeds Maximum Contaminant Level.              | В  | Analyte detected in the associated Method Blank           |
|-------------|-----|---|----|---|
|             | D   | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|             | Н   | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limit Page 11 of 18   |
|             | ND  | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|             | PQL | Practical Quanitative Limit                           | RL | Reporting Detection Limit                                 |
|             | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

Lab Order **1806C36**Date Reported: **7/5/2018** 

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Daniel B. Stephens & Assoc. Client Sample ID: PMW-1

**Project:** Salty Dog
 Collection Date: 6/19/2018 3:20:00 PM

 **Lab ID:** 1806C36-012
 Matrix: AQUEOUS
 Received Date: 6/20/2018 11:26:00 AM

| Analyses                 | Result | PQL Qual Units | DF Date Analyzed        | Batch   |
|--------------------------|--------|----------------|-------------------------|---------|
| EPA METHOD 300.0: ANIONS |        |                | Analys                  | st: MRA |
| Chloride                 | 9600   | 500 * mg/L     | 1E 7/2/2018 10:53:41 PM | R52405  |

| *   | Value exceeds Maximum Contaminant Level.              | В   | Analyte detected in the associated Method Blank   |
|-----|---|---|---|
| D   | Sample Diluted Due to Matrix                          | E   | Value above quantitation range  |
| Н   | Holding times for preparation or analysis exceeded    | J   | Analyte detected below quantitation limits Page 12 of 18  |
| ND  | Not Detected at the Reporting Limit                   | P   | Sample pH Not In Range  |
| PQL | Practical Quanitative Limit                           | RL  | Reporting Detection Limit   |
| S   | % Recovery outside of range due to dilution or matrix | W   | Sample container temperature is out of limit as specified   |
|     | D<br>H<br>ND  | <ul> <li>D Sample Diluted Due to Matrix</li> <li>H Holding times for preparation or analysis exceeded</li> <li>ND Not Detected at the Reporting Limit</li> <li>PQL Practical Quanitative Limit</li> </ul> | D     Sample Diluted Due to Matrix     E       H     Holding times for preparation or analysis exceeded     J       ND     Not Detected at the Reporting Limit     P       PQL     Practical Quanitative Limit     RL |

Lab Order **1806C36**Date Reported: **7/5/2018** 

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: Brine

**Project:** Salty Dog
 Collection Date: 6/19/2018 2:40:00 PM

 **Lab ID:** 1806C36-013
 Matrix: AQUEOUS
 Received Date: 6/20/2018 11:26:00 AM

| Analyses                            | Result | PQL  | Qual | Units    | DF | Date Analyzed         | Batch  |
|-------------------------------------|--------|------|------|----------|----|-----------------------|--------|
| SPECIFIC GRAVITY                    |        |      |      |          |    | Analyst               | : JRR  |
| Specific Gravity                    | 1.163  | 0    |      |          | 1  | 6/26/2018 11:53:00 AM | R52241 |
| EPA METHOD 300.0: ANIONS            |        |      |      |          |    | Analyst               | : MRA  |
| Chloride                            | 170000 | 5000 | *    | mg/L     | 1E | 6/26/2018 9:11:39 PM  | R52265 |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |      |      |          |    | Analyst               | : KS   |
| Total Dissolved Solids              | 238000 | 2000 | *D   | mg/L     | 1  | 6/26/2018 7:58:00 PM  | 38867  |
| SM4500-H+B / 9040C: PH              |        |      |      |          |    | Analyst               | : JRR  |
| рН                                  | 6.76   |      | Н    | pH units | 1  | 6/21/2018 12:10:03 PM | R52161 |
| EPA 6010B: TOTAL RECOVERABLE METALS |        |      |      |          |    | Analyst               | : MED  |
| Sodium                              | 61000  | 1000 |      | mg/L     | 1E | 6/29/2018 6:03:12 PM  | 38878  |

| Qualifiers: | *   | Value exceeds Maximum Contaminant Level.              | В  | Analyte detected in the associated Method Blank           |
|-------------|-----|---|----|---|
|             | D   | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|             | Н   | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits Page 13 of 18  |
|             | ND  | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|             | PQL | Practical Quanitative Limit                           | RL | Reporting Detection Limit                                 |
|             | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

## Lab Order **1806C36**Date Reported: **7/5/2018**

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. Client Sample ID: Injection

**Project:** Salty Dog
 Collection Date: 6/19/2018 2:55:00 PM

 **Lab ID:** 1806C36-014
 Matrix: AQUEOUS
 Received Date: 6/20/2018 11:26:00 AM

| Analyses                            | Result | PQL  | Qual | Units    | DF  | Date Analyzed         | Batch  |
|-------------------------------------|--------|------|------|----------|-----|-----------------------|--------|
| SPECIFIC GRAVITY                    |        |      |      |          |     | Analyst               | JRR    |
| Specific Gravity                    | 0.9954 | 0    |      |          | 1   | 6/26/2018 11:53:00 AM | R52241 |
| EPA METHOD 300.0: ANIONS            |        |      |      |          |     | Analyst               | : MRA  |
| Chloride                            | 460    | 50   | *    | mg/L     | 100 | 6/26/2018 10:03:05 PM | R52265 |
| SM2540C MOD: TOTAL DISSOLVED SOLIDS |        |      |      |          |     | Analyst               | : KS   |
| Total Dissolved Solids              | 1040   | 20.0 | *    | mg/L     | 1   | 6/26/2018 7:58:00 PM  | 38867  |
| SM4500-H+B / 9040C: PH              |        |      |      |          |     | Analyst               | : JRR  |
| рН                                  | 7.96   |      | Н    | pH units | 1   | 6/21/2018 12:14:20 PM | R52161 |

| Qualifiers: | *   | Value exceeds Maximum Contaminant Level.              | В  | Analyte detected in the associated Method Blank           |
|-------------|-----|---|----|---|
|             | D   | Sample Diluted Due to Matrix                          | E  | Value above quantitation range                            |
|             | Н   | Holding times for preparation or analysis exceeded    | J  | Analyte detected below quantitation limits Page 14 of 18  |
|             | ND  | Not Detected at the Reporting Limit                   | P  | Sample pH Not In Range                                    |
|             | PQL | Practical Quanitative Limit                           | RL | Reporting Detection Limit                                 |
|             | S   | % Recovery outside of range due to dilution or matrix | W  | Sample container temperature is out of limit as specified |

#### Hall Environmental Analysis Laboratory, Inc.

WO#: 1806C36

05-Jul-18

**Client:** Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID MB SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: **PBW** Batch ID: **R52265** RunNo: 52265

Prep Date: Analysis Date: 6/26/2018 SeqNo: 1712501 Units: mg/L

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Chloride ND 0.50

Sample ID LCS SampType: LCS TestCode: EPA Method 300.0: Anions Client ID: LCSW Batch ID: **R52265** RunNo: 52265

Units: mg/L Prep Date: Analysis Date: 6/26/2018 SeqNo: 1712502

SPK value SPK Ref Val %REC LowLimit %RPD **RPDLimit** Analyte Result **PQL** HighLimit Qual Chloride 0.50 5.000 0 103 110

Sample ID MB SampType: mblk TestCode: EPA Method 300.0: Anions Client ID: **PBW** Batch ID: **R52405** RunNo: 52405 Prep Date: Analysis Date: 7/2/2018 SeqNo: 1719515 Units: mg/L Result SPK value SPK Ref Val %REC LowLimit Analyte **PQL** HighLimit %RPD **RPDLimit** Qual

Sample ID LCS SampType: Ics TestCode: EPA Method 300.0: Anions

Client ID: LCSW Batch ID: **R52405** RunNo: 52405

0.50

ND

Prep Date: Analysis Date: 7/2/2018 SeqNo: 1719516 Units: mg/L

Analyte Result **PQL** SPK value SPK Ref Val %REC I owl imit HighLimit %RPD **RPDLimit** Qual

0.50 Chloride 4.7 5.000 0 94.4 90 110

#### Qualifiers:

Chloride

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

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P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

#### Hall Environmental Analysis Laboratory, Inc.

WO#: 1806C36

05-Jul-18

**Client:** Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID MB-38878 SampType: MBLK TestCode: EPA 6010B: Total Recoverable Metals

Client ID: PBW Batch ID: 38878 RunNo: 52388

Prep Date: 6/25/2018 Analysis Date: 6/29/2018 SeqNo: 1716681 Units: mg/L

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Sodium ND 1.0

Sample ID LCS-38878 SampType: LCS TestCode: EPA 6010B: Total Recoverable Metals

Client ID: LCSW Batch ID: 38878 RunNo: 52388

Prep Date: 6/25/2018 Analysis Date: 6/29/2018 SeqNo: 1716683 Units: mg/L

**RPDLimit** Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD Analyte Qual

Sodium 51 1.0 50.00 0 101 120

#### Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

Sample container temperature is out of limit as specified

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#### Hall Environmental Analysis Laboratory, Inc.

WO#: **1806C36** 

05-Jul-18

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID 1806C36-013ADUP SampType: DUP TestCode: Specific Gravity

Client ID: Brine Batch ID: R52241 RunNo: 52241

Prep Date: Analysis Date: 6/26/2018 SeqNo: 1711825 Units:

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

Specific Gravity 1.160 0 0.207 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

D C 1 HN I D

P Sample pH Not In Range

RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

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#### Hall Environmental Analysis Laboratory, Inc.

WO#: **1806C36** 

05-Jul-18

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID MB-38867 SampType: MBLK TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: PBW Batch ID: 38867 RunNo: 52256

Prep Date: 6/25/2018 Analysis Date: 6/26/2018 SeqNo: 1712029 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-38867 SampType: LCS TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: LCSW Batch ID: 38867 RunNo: 52256

Prep Date: 6/25/2018 Analysis Date: 6/26/2018 SeqNo: 1712030 Units: mg/L

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

Total Dissolved Solids 1010 20.0 1000 0 101 80 120

#### 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

yte detected below quantitation limits

Page 18 of 18

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107

## Sample Log-In Check List

Website: www.hallenvironmental.com

| Client Name:                            | DBS                 | Work Order N   | umber: 1806C36 |   | RcptNo:   | 1                |        |
|---|---------------------|--|----------------|---|---|------------------|--------|
| Received By:                            | Michelle Gar        | rcia 6/20/2018 11:26   | :00 AM         | Miral Go                                | nue)  |                  |        |
| Completed By:                           | Ashley Galle        | gos 6/20/2018 1:19:  | 28 PM          | A 3                                     |   |                  | 1 1.   |
| Reviewed By:                            | 70                  | 6/20/18  | Lai            | oele                                    | mi<br>1 by: _=  | 5AB 06           | 120/18 |
| Chain of Cus                            | stody               |  |                |   |   |                  |        |
| 1. Is Chain of C                        | ustody complete     | e?   | Yes 🗹          | No $\square$                            | Not Present   |                  |        |
| 2. How was the                          | sample delivere     | ed?  | Client         |   |   |                  |        |
| Log In  3. Was an attern                | npt made to coo     | I the samples?   | Yes <b>⊻</b>   | No 🗆                                    | na 🗆  |                  |        |
|   |                     |  |                |   |   |                  |        |
| 4. Were all samp                        | ples received at    | a temperature of >0° C to 6.0°C  | Yes 🗹          | No 🗌                                    | NA 🗀  |                  |        |
| 5. Sample(s) in                         | proper containe     | r(s)?  | Yes 🗸          | No 🗌                                    |   |                  |        |
| 6. Sufficient sam                       | nple volume for i   | ndicated test(s)?  | Yes 🗸          | No 🗌                                    |   |                  |        |
| 7. Are samples (                        | except VOA and      | d ONG) properly preserved?   | Yes 🗹          | No 🗌                                    |   |                  |        |
| 8. Was preserva                         | tive added to bo    | ottles?  | Yes            | No 🗹                                    | NA $\square$  |                  |        |
| 9. VOA vials hav                        | e zero headspa      | ce?  | Yes 🗌          | No 🗌                                    | No VOA Vials  |                  |        |
| 10. Were any san                        | nple containers     | received broken?   | Yes            | No 🗹                                    | # of preserved  |                  | 7      |
| 11. Does paperwo                        |                     |  | Yes 🗸          | No 🗆                                    | bottles checked<br>for pH:  | 1                |        |
|   | ancies on chain     | or custody)<br>ed on Chain of Custody?                                   | Yes 🗸          | No 🗆                                    | Adjusted?   | 12 unless noted) |        |
| 13. Is it clear what                    |                     | -  | Yes ☑          | No 🗆                                    | · · · · · · · · · · · · · · · · · · ·   | Tu               |        |
| 14. Were all holding                    |                     |  | Yes 🗹          | No 🗆                                    | Checked by:   | <u> </u>         |        |
| (If no, notify cu                       | ustomer for auth    | orization.)  |                | Ŀ                                       |   |                  | _      |
| Special Handl                           | ing (if applic      | cable)   |                |   |   |                  |        |
| 15. Was client no                       | tified of all discr | epancies with this order?  | Yes            | No 🗌                                    | NA 🗹  |                  |        |
| Person                                  | Notified:           | Da   | te             | *************************************** |   |                  |        |
| By Who                                  | om:                 | Vi   | a: ☐ eMail ☐ P | hone 🗌 Fax                              | ☐ In Person   |                  |        |
| Regardi                                 | ing:                |  |                |   | S. Sent State of the Control of the |                  |        |
| Client Ir                               | nstructions:        |  |                |   | 1 6 1 0 10 z  | 1                | - Λ    |
| 16. Additional rer                      |                     | or 3005 analysis   | : 4996g        | abbiax.                                 | MUS INUS  | to 0131          | 13 lot |
| 17. <u>Cooler Information</u> Cooler No | Temp ºC(            | One Ferned p.H. Held for<br>Condition   Seal Intact   Seal No<br>of Good | Seal Date      | Signed By                               | o analysis  |                  |        |

|                         | RONMENTAL<br>LABORATORY      |               |  |              |                       |   |                           |                             | (N            | , OI               | vir Bubbles (/                          | 1           |          |              |             |          |          |        |              |      |         |      |                      |                         |                   |  |
|-------------------------|------------------------------|---------------|--|--------------|-----------------------|---|---------------------------|-----------------------------|---------------|--------------------|---|-------------|----------|--------------|-------------|----------|----------|--------|--------------|------|---------|------|----------------------|-------------------------|-------------------|--|
|                         | ENVIRONMENT<br>YSIS LABORATO | <br>          | elivilorimental.com<br>Albuquerque NM 87109    | 505-345-4107 | 101                   |   |                           |                             | (             | (AO                | V-iməS) 0728                            | 3           |          |              |             |          |          |        |              |      |         |      |                      |                         | ÷                 | 100 14 1000 - 14   |
| :                       | N N                          | 4             |  | 5-345        | Reduest               | _                                       |                           |                             | 7000          |                    | (AOV) 800S                              | _           | -        |              | <u>.</u>    |          |          |        |              | _    |         |      | _                    | ]                       |                   | 1  |
|                         | ב<br>בי                      | 200           | www.naireirvii.com<br>ns NE - Albuquerdiie NM. | Eav 50       |                       |   |                           |                             |               |                    | Anions (F <b>/Cf)</b><br>18081 Pesticid |             | <br>  `× |              |             |          |          |        |              | _    | <br>  × |      | $\frac{1}{\sqrt{2}}$ |                         |                   | lands of the second  |
|                         | Z E                          | i, ide        |  |              | nalysis               |   |                           |                             |               |                    | SCRA 8 Meta                             | <del></del> |          | <u> </u>     | X           | <u>\</u> | <u>\</u> | X      | X            | >    | Ĥ       |      | D                    |                         |                   |  |
| 1                       | HALL ENV]<br>ANALYSIS        | 4             | NE 'S  |              |                       |   | (5                        | SWI                         |               |                    | 01£8) a'HAG                             |             |          |              |             |          |          |        |              |      |         |      |                      |                         |                   |  |
| 1                       | IA                           | 14/14/        | ww.<br>Kins                                    | 505-345-3975 |                       | <u> </u>                                |                           |                             | •             |                    | EDB (Method                             |             | _        | _            |             |          |          |        |              |      |         |      |                      |                         |                   |  |
|                         |                              |               | 4901 Hawkins NE                                | 505          |                       | (O                                      | NR                        | / O                         |               |                    | ) 88158 H9T<br>                         |             |          | <del> </del> |             |          |          |        |              |      |         | _    | _                    |                         |                   |  |
|                         |                              |               | 490  | <u>a</u>     |                       |   |                           |                             |               |                    | BTM + X3T8                              | 1           |          |              |             |          |          |        |              |      | <br>    |      |                      | arks:                   | •                 |  |
|                         |                              |               |  | <b>—</b> ·   | i                     |   | (120                      | 8) s                        | BMT           | + 3                | 8TM + X3T8                              |             | -        |              |             |          |          |        |              |      |         |      |                      | Remarks:                | <b>~</b>          | 11   |
|                         |                              |               | Ď  |              | 90                    |   |                           |                             |               | 7 N                | HEAL NO.                                | 100-        | -002     | -003         | <i>700-</i> | -005     | 700-     | L00-   | 8 <i>00-</i> | 600- | 0/0_    | 110- | -012                 | Date Time               | Date Time         |  |
| Time:                   | Rush                         | <br>          | HY DO  |              | 8110                  | ider:                                   | 3, C. D. C. J.            | )                           | 1. Ep 107e    | oeraltire.         | Preservative<br>Type                    | A S         | ÷        |              |             |          |          |        |              |      |         |      |                      | <i>H</i> 11             |                   |  |
| Turn-Around Time:       | (Candard                     | Project Name: | 1500<br>1500                                   | Project #:   | 16508.0119            | Project Manager                         | J. Arac                   | -                           | Sampler M.    | Sample Temperature | Container<br>Type and #                 | 1201        | , ,      |              |             |          |          |        |              |      |         |      | 1                    | Received by:            | Received by:      |  |
| Chain-of-Custody Record | JBS & A                      |               | Mailing Address: 6020 A codemy Rd NE           | •            | Phone #: 505-822-9400 | email or Fax#. Jararbeco Gco-10910. com | meorotex og coilogic, com | ☐ Level 4 (Full Validation) | □ Other       |                    | Matrix Sample Request ID                | 5-5517 B    |          | L-580        | DBS-4       | 085-9    |          | DBS-10 | 035-6        | MW-5 | _       |      |                      | Relinquished by:        | Relinquiented by: | The second of th |
| Chair                   | 14                           |               | ng Addres                                      | ABa          | e#: 50                | or Fax#:                                | ge                        | Sandard                     | Accreditation | □ EDD (Type)       | Time                                    | 3 1700      | Azo      | Shti         | 19.18 0940  | 1005     | 1045     | 1115   | 1145         | 1325 | 1405    | 1435 | 1520                 | Date: Time: 25/75/1/2 ( | Time:             |  |
|                         | Client:                      |               | Maili  | Ì            | Phon                  | email                                   | QA/Q                      | K.                          | Accre         |                    | Date                                    | 18.18       |          |              | .19.        |          |          |        |              |      |         |      | _                    | Date:<br>ンタイペ           | Date:             |  |

| ,                       | _ ≿                                       | 3                         |                                       |              |                           | -                                  |  | (N 1                            | <u>୦ 시</u> )       | səlddu8 riA              |          |           |               |   |         |          |        |           |             |   |   | į  | -              |  |
|-------------------------|---|---------------------------|---------------------------------------|--------------|---------------------------|------------------------------------|--|---------------------------------|--------------------|--------------------------|----------|-----------|---------------|---|---------|----------|--------|-----------|-------------|---|---|--|----------------|--|
|                         | HALL ENVIRONMENTAL<br>ANALYSTS LABORATODY |                           |                                       |              |                           |                                    | 0)A)   | 23d C                           | <u> </u>           | 19-201                   |          |           | <del></del> - | _ |         |          |        |           |             |   |   | /<br>[   |                | port.  |
| ĺ                       | IEN<br>Zaj                                | 5                         | 60                                    |              |                           | _                                  |  |                                 |                    | 10N                      | ×        | X         |               |   |         |          |        |           |             |   |   |  |                | lytical re   |
| <br>                    | <u></u>                                   | ٤                         | Albuquerque, NM 87109                 | 4107         |                           |                                    |  | ()                              | /O/                | -imə2) 0728              |          |           |               |   |         |          |        |           |             |   |   |  |                | the ana  |
|                         | <u>Ş</u> ₩                                |                           | e, S                                  | 505-345-4107 | Request                   |                                    |  |                                 | (\                 | 4OV) 809S8               |          |           |               |   |         |          |        |           |             | 7 |   |  |                | led on t   |
| ļ                       | Ī   | ) [                       | lerqu                                 | 505          |                           |                                    |  |                                 |                    | 8081 Pestici             |          |           |               |   |         |          |        |           |             |   |   |  |                | ly notal   |
| 1                       | Z J                                       |                           | handr                                 | Fax          | Analysis                  | (†C                                | S,₄O9  | , <sub>s</sub> ON, <sub>e</sub> |                    | <b>⊋</b> ,∃) anoinA      | ×        | Ŋ         |               |   |         |          |        |           |             |   |   |  |                | e clear  |
|                         | <u>" &gt;</u>                             | www.hallenvironmental.com | ₹ .                                   |              | Ana                       |                                    | (CIAII   | 0.0170                          |                    | PAH's (8310<br>RCRA 8 Me |          |           |               |   |         |          |        |           | $\parallel$ |   |   |  |                | ta will b  |
| •                       | MALL                                      | 4,444                     | S NE                                  | 505-345-3975 |                           |                                    | (2NAI  |                                 |                    | EDB (Metho               |          |           |               |   |         |          |        |           | -           |   |   |  |                | ted dar  |
| •                       | I   | 3                         | wkin                                  | -345         |                           |                                    |  |                                 |                    | orteM) H9T               |          |           |               |   |         |          |        |           | _           |   |   |  |                | contrac  |
|                         |   |                           | 4901 Hawkins NE -                     | . 505        |                           | (O)                                | M / O  |                                 |                    | 83108 H9T                | _        | i         |               |   |         |          |        | $\forall$ |             |   |   |  |                | -dus γι  |
|                         |   |                           | 490                                   | <u>e</u>     |                           | (ʎju                               | Gas o  | Нат -                           | BE +               | TM + X3T8                |          |           |               |   |         |          |        |           |             |   |   | Remarks:   |                | ility. A   |
|                         |   |                           | ,                                     |              |                           | (1                                 | 208) s   | 'AMT -                          | - 38               | ITM + X3T8               |          |           |               |   |         |          |        |           |             |   |   | Rem  |                | dissod   |
|                         |   |                           |                                       |              |                           |                                    |  |                                 |                    | 1 5                      | ,        |           |               |   |         |          |        | /         |             |   |   | 126  |                | of this  |
|                         |   |                           |                                       | •            | 9                         |                                    | 0)   | 58.56                           |                    | S S                      | 0        | 4         | •             |   | ,       |          | $\int$ | ı,l       |             |   |   | Time   | Time           | s notice   |
|                         |   |                           | , 6                                   |              | Ó                         |                                    | 2  |                                 |                    | HEAL NO.                 | 0        | Q         |               |   |         |          | A      | <b></b>   |             |   |   | . 27<br>27<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10 | <u></u>        | ırves aı   |
|                         |   |                           | DOG                                   | ,            | Q                         |                                    | 7  | ع إن                            | 12 N               |                          | ١        | , ,       |               |   |         |          |        | 7         |             |   |   | Date Of  |                | This se  |
|                         | Rush                                      |                           | <b>A</b>                              | ,            | ۰] ار د                   |                                    | 7  |                                 |                    | 0.83                     |          |           |               | · |         | $\dashv$ |        | `         |             |   |   |  |                | tories.  |
|                         | _<br>~                                    |                           | LTY                                   |              | ESOB. 0118.06             |                                    | J. Arache  | PEOSOF                          | ıre:               | Preservative<br>Type     | H703     | a         |               |   |         |          |        |           |             |   |   |  |                | labora   |
| Time                    |   | .,                        | 7                                     |              | R                         | ger:                               | 12   | 3                               | eratu              | Pres                     | <i>I</i> | X         |               |   |         |          |        |           |             |   |   |  |                | redited  |
| Turn-Around Time:       | dard                                      | Project Name:             | 54L                                   | (            | $\langle \hat{N} \rangle$ | . ட <b>்சிசு</b> pject Manager:    |  |                                 | Sample Temperature | her<br>Id#               |          | 2         | ,             |   |         |          |        |           |             |   |   | × - ×  | ÷              | her acc  |
| n-Arc                   | 2 Standard                                | ect V                     | ر `                                   | Project #:   | Ť                         | ect N                              |  | Sampler:<br>On Ice:             | nple               | Container<br>Type and #  | 3700     | 2017      |               |   |         |          |        |           |             |   |   | Received by:   | Received       | ed to ot   |
| Ē                       | A   | Pro                       | <del>. \</del> 0                      | Pro          |                           | 200                                | <u> </u>   | San                             | San                | ος<br>Τγτ                | W<br>T   | N         |               |   | $\perp$ |          |        |           |             |   |   |  | Rece           | ontracte   |
|                         |   | E                         | 7                                     |              |                           | 3                                  | on)  |                                 |                    | Q                        |          |           |               |   |         |          |        |           |             |   |   |  |                | e subc   |
| ord                     |   |                           | X                                     |              |                           | 29                                 | <b>7,</b> 7,≀c<br>alidati  |                                 |                    | ıest                     |          | Ž         |               |   | /       |          |        |           |             |   | ļ |  |                | l may b  |
| Ö                       |   |                           | 7                                     | •            |                           | 1-0                                | teh のなっ-10g ic. <<br>□ Level 4 (Full Validation)                               |                                 |                    | Sample Request ID        |          | Insection |               |   |         |          |        |           |             |   |   | 1  |                | ımenta   |
| ×                       |   |                           | 18,7                                  | i            | ١                         | 360                                | <i>b</i> 2∕4<br>2 ⊞  |                                 |                    | ple F                    | 9        | 9         |               |   |         |          |        |           |             |   |   |  |                | Enviror  |
| po                      |   |                           | 8                                     |              | 5                         | 9                                  | Ø - Ø  |                                 |                    | samı                     | Brine    | 3         | )             |   |         |          |        |           |             |   |   |  | M              | to Hall  |
| ust                     |   |                           | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ |              | 6                         | Ţ                                  | کار<br>□   | <br> <br>                       |                    |                          | المحرا   | 7         | •             |   |         |          |        |           |             |   |   | ed by  | Ag be          | mitted   |
| Chain-of-Custody Record |   |                           | Mailing Address: 6020 A codemy RD NG  |              | Phone #: 505-822-9400     | email or Fax#: JAYarche @geo-logie | OA/QC Package: MTbroten のなの-10g たっての<br>□ Standard □ Level 4 (Full Validation) | □ Other                         | $\  \ $            | Matrix                   | 65       | 30        |               | / |         |          |        | i         |             |   |   | Relinquished by:   | Melinanshed by | If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report |
| р<br>С                  | SA  |                           | 3.sse                                 |              | S-8                       | 5                                  | је: <b>Ж</b>   |                                 | (e)                |                          |          |           | $-\!\!\!/$    | _ |         |          |        |           |             |   |   |  | <b>%</b>       | ıry, sarr  |
| hai                     | Client: DBSA                              |                           | Addre                                 |              | 4.50                      | r Fax                              | Packa(<br>dard   | Accreditation                   | □ EDD (Type)       | Time                     | 1940     | 55\$1     |               |   |         |          |        |           |             |   |   |  | Time:          | necessa  |
| O                       | ient:                                     |                           | ailing                                |              | ione ‡                    | iail oi                            | QA/QC Packa  | Accreditati<br>□ NELAP          |                    | Date                     | .19,18   | 19.18     | $\prod$       |   |         |          |        |           |             |   |   | <i>50</i>  |                | #  |
|                         | [다  |                           | ĬΞ̈́                                  |              | [ 호                       | [급                                 | ð 🗆  | ४ □                             |                    |                          | 6        | 2         | $  \cdot  $   | İ |         |          |        |           |             |   |   | Date:<br>    22   1  | Date:          |  |



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

OrderNo.: 1811579

November 27, 2018

John Ayarbe

Daniel B. Stephens & Assoc. 6020 Academy NE Suite 100

Albuquerque, NM 87109 TEL: (505) 822-9400

FAX (505) 822-8877

Dear John Ayarbe:

RE: Salty Dog

Hall Environmental Analysis Laboratory received 13 sample(s) on 11/9/2018 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order: 1811579

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 11/27/2018

**CLIENT:** Daniel B. Stephens & Assoc. Lab Order: 1811579 **Project:** Salty Dog Lab ID: 1811579-001 **Collection Date:** 11/8/2018 10:00:00 AM Client Sample ID: DBS-8 Matrix: AQUEOUS PQL Qual Units DF Date Analyzed **Analyses** Result **Batch ID EPA METHOD 300.0: ANIONS** Analyst: smb Chloride 30 5.0 11/13/2018 12:34:44 PM R55635 mg/L Lab ID: 1811579-002 Collection Date: 11/8/2018 10:30:00 AM Client Sample ID: DBS-10 Matrix: AQUEOUS PQL Qual Units DF Date Analyzed Analyses Result **Batch ID EPA METHOD 300.0: ANIONS** Analyst: smb Chloride 590 50 mg/L 100 11/13/2018 1:13:18 PM R55635 Lab ID: 1811579-003 **Collection Date:** 11/8/2018 11:10:00 AM Matrix: AQUEOUS Client Sample ID: DBS-6 Result PQL Qual Units DF Date Analyzed Analyses **Batch ID EPA METHOD 300.0: ANIONS** Analyst: smb Chloride 190 50 mg/L 100 11/13/2018 1:39:01 PM R55635 **Collection Date:** 11/8/2018 11:40:00 AM Lab ID: 1811579-004 Matrix: AQUEOUS Client Sample ID: MW-5 Result **POL Qual Units** DF Date Analyzed **Batch ID** Analyses **EPA METHOD 300.0: ANIONS** Analyst: smb Chloride 680 100 11/13/2018 2:04:45 PM R55635 50 mg/L Lab ID: 1811579-005 **Collection Date:** 11/8/2018 12:30:00 PM Client Sample ID: MW-3 Matrix: AQUEOUS **Analyses** Result PQL Qual Units DF Date Analyzed **Batch ID EPA METHOD 300.0: ANIONS** Analyst: smb Chloride 8000 500 1E 11/19/2018 2:05:58 PM R55763 mg/L

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

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
  - Page 1 of 8
- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order: 1811579

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 11/27/2018

|                            | Daniel B. Stephens & Assoc.<br>Balty Dog |        |     |          | L       | ab C | Order: 1       | 811579    |          |
|----------------------------|--|--------|-----|----------|---------|------|----------------|-----------|----------|
| Lab ID:                    | 1811579-006                              |        | C   | Collecti | on Date | : 11 | /8/2018 1:10:0 | 00 PM     |          |
| Client Sample ID:          | DBS-3                                    |        |     |          | Matrix  | : A( | QUEOUS         |           |          |
| Analyses                   |  | Result | PQL | Qual     | Units   | DF   | Date Analyz    | zed B     | atch ID  |
| EPA METHOD 300             | 0.0: ANIONS                              |        |     |          |         |      |                | Analyst   | t: smb   |
| Chloride                   |  | 46     | 5.0 |          | mg/L    | 10   | 11/13/2018 3   | :09:03 PM | 1 R55635 |
| Lab ID:                    | 1811579-007                              |        | C   | Collecti | on Date | : 11 | /8/2018 1:45:0 | 00 PM     |          |
| <b>Client Sample ID:</b>   | DBS-4                                    |        |     |          | Matrix  | : A( | QUEOUS         |           |          |
| Analyses                   |  | Result | PQL | Qual     | Units   | DF   | Date Analyz    | zed B     | atch ID  |
| EPA METHOD 300<br>Chloride | 0.0: ANIONS                              | 35     | 5.0 |          | mg/L    | 10   | 11/13/2018 4   | Analyst   |          |
| Lab ID:                    | 1811579-008                              |        | C   | ollecti  | on Date | : 11 | /8/2018 1:55:0 | 00 PM     |          |
| Client Sample ID:          | DBS-2                                    |        |     |          | Matrix  | : A( | QUEOUS         |           |          |
| Analyses                   |  | Result | PQL | Qual     | Units   | DF   | Date Analyz    | ed B      | atch ID  |
| EPA METHOD 300<br>Chloride | 0.0: ANIONS                              | 47     | 5.0 |          | mg/L    | 10   | 11/13/2018 4   | Analyst   |          |
| Lab ID:                    | 1811579-009                              |        | C   | Collecti | on Date | : 11 | /8/2018 2:15:0 | 00 PM     |          |
| Client Sample ID:          | DBS-5                                    |        |     |          | Matrix  | : A( | QUEOUS         |           |          |
| Analyses                   |  | Result | PQL | Qual     | Units   | DF   | Date Analyz    | ed B      | atch ID  |
| EPA METHOD 300<br>Chloride | 0.0: ANIONS                              | 170    | 5.0 |          | mg/L    | 10   | 11/13/2018 5   | Analyst   |          |
| Lab ID:                    | 1811579-010                              |        | C   | Collecti | on Date | : 11 | /8/2018 2:35:0 | 00 PM     |          |
| <b>Client Sample ID:</b>   | DBS-1R                                   |        |     |          | Matrix  | : A( | QUEOUS         |           |          |
| Analyses                   |  | Result | PQL | Qual     | Units   | DF   | Date Analyz    | zed B     | atch ID  |
| EPA METHOD 300<br>Chloride | 0.0: ANIONS                              | 180    | 5.0 |          | mg/L    | 10   | 11/13/2018 6   | Analyst   |          |

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

B Analyte detected in the associated Method Blank

Page 2 of 8

- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

Lab Order: 1811579

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 11/27/2018

**CLIENT:** Daniel B. Stephens & Assoc. Lab Order: 1811579 **Project:** Salty Dog Lab ID: 1811579-011 **Collection Date:** 11/8/2018 2:50:00 PM Client Sample ID: Injection Matrix: AQUEOUS PQL Qual Units DF Date Analyzed **Analyses** Result **Batch ID SPECIFIC GRAVITY** Analyst: JRR Specific Gravity 0.9989 0 11/16/2018 1:26:00 PM R55711 **EPA METHOD 300.0: ANIONS** Analyst: smb 100 11/13/2018 6:47:41 PM R55635 Chloride 370 50 mg/L **SM2540C MOD: TOTAL DISSOLVED SOLIDS** Analyst: KS **Total Dissolved Solids** 20.0 11/19/2018 4:51:00 PM 41562 981 mq/L SM4500-H+B / 9040C: PH Analyst: JRR рΗ 7.75 Н pH units 1 11/15/2018 11:52:16 AM R55698 **Collection Date:** 11/8/2018 3:30:00 PM Lab ID: 1811579-012 Client Sample ID: PMW-1 Matrix: AQUEOUS **Analyses** Result POL Qual Units DF Date Analyzed **Batch ID EPA METHOD 300.0: ANIONS** Analyst: smb Chloride 10000 500 mg/L 1E 11/13/2018 7:13:23 PM R55635 Lab ID: 1811579-013 **Collection Date:** 11/8/2018 4:10:00 PM Client Sample ID: Brine Matrix: AQUEOUS **Analyses** Result PQL Qual Units DF Date Analyzed **Batch ID** SPECIFIC GRAVITY Analyst: **JRR** Specific Gravity 1.195 0 11/16/2018 1:26:00 PM R55711 **EPA METHOD 300.0: ANIONS** Analyst: MRA Chloride 210000 10000 mg/L 11/14/2018 6:22:42 PM R55641 **SM2540C MOD: TOTAL DISSOLVED SOLIDS** Analyst: KS 11/19/2018 4:51:00 PM 41562 **Total Dissolved Solids** 309000 2000 \*D mg/L SM4500-H+B / 9040C: PH Analyst: JRR рΗ 7.46 pH units 1 11/15/2018 11:56:49 AM R55698 **EPA METHOD 200.7: METALS** Analyst: pmf 1000 Sodium 82000 mg/L 1E 11/19/2018 4:03:44 PM 41554

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

B Analyte detected in the associated Method Blank

Page 3 of 8

- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

#### Hall Environmental Analysis Laboratory, Inc.

WO#: **1811579** 

27-Nov-18

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID MB-41554 SampType: MBLK TestCode: EPA Method 200.7: Metals

Client ID: PBW Batch ID: 41554 RunNo: 55720

Prep Date: 11/15/2018 Analysis Date: 11/16/2018 SeqNo: 1856689 Units: mg/L

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

Sodium ND 1.0

Sample ID LLLCS-41554 SampType: LCSLL TestCode: EPA Method 200.7: Metals

Client ID: BatchQC Batch ID: 41554 RunNo: 55720

Prep Date: 11/15/2018 Analysis Date: 11/16/2018 SeqNo: 1856690 Units: mg/L

SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result PQL LowLimit HighLimit Qual Sodium ND 1.0 0.5000 0 150 150

Sample ID LCS-41554 SampType: LCS TestCode: EPA Method 200.7: Metals

Client ID: LCSW Batch ID: 41554 RunNo: 55720

Prep Date: 11/15/2018 Analysis Date: 11/16/2018 SeqNo: 1856691 Units: mg/L

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

Sodium 51 1.0 50.00 0 103 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 Detection Limit

W Sample container temperature is out of limit as specified

Page 4 of 8

#### Hall Environmental Analysis Laboratory, Inc.

WO#: **1811579** 

27-Nov-18

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID 1811579-006AMS SampType: MS TestCode: EPA Method 300.0: Anions

Client ID: **DBS-3** Batch ID: **R55635** RunNo: **55635** 

Prep Date: Analysis Date: 11/13/2018 SeqNo: 1853450 Units: mg/L

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

Chloride 95 5.0 50.00 45.70 99.0 77.5 116

Sample ID 1811579-006AMSD SampType: MSD TestCode: EPA Method 300.0: Anions

Client ID: **DBS-3** Batch ID: **R55635** RunNo: **55635** 

Prep Date: Analysis Date: 11/13/2018 SeqNo: 1853451 Units: mg/L

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

Chloride 93 5.0 50.00 45.70 94.7 77.5 116 2.30 20

Sample ID MB SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBW Batch ID: R55635 RunNo: 55635

Prep Date: Analysis Date: 11/13/2018 SeqNo: 1853461 Units: mg/L

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

Chloride ND 0.50

Sample ID LCS SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSW Batch ID: R55635 RunNo: 55635

Prep Date: Analysis Date: 11/13/2018 SeqNo: 1853462 Units: mg/L

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

Chloride 4.9 0.50 5.000 0 97.6 90 110

Sample ID MB SampType: mblk TestCode: EPA Method 300.0: Anions

Client ID: PBW Batch ID: R55641 RunNo: 55641

Prep Date: Analysis Date: 11/14/2018 SeqNo: 1853987 Units: mg/L

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

Chloride ND 0.50

Sample ID LCS SampType: Ics TestCode: EPA Method 300.0: Anions

Client ID: LCSW Batch ID: R55641 RunNo: 55641

Prep Date: Analysis Date: 11/14/2018 SeqNo: 1853988 Units: mg/L

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

Chloride 4.8 0.50 5.000 0 96.6 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 Detection Limit

W Sample container temperature is out of limit as specified

Page 5 of 8

#### Hall Environmental Analysis Laboratory, Inc.

WO#: **1811579** 

27-Nov-18

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID MB SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBW Batch ID: R55763 RunNo: 55763

Prep Date: Analysis Date: 11/19/2018 SeqNo: 1858894 Units: mg/L

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

Chloride ND 0.50

Sample ID LCS SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSW Batch ID: R55763 RunNo: 55763

Prep Date: Analysis Date: 11/19/2018 SeqNo: 1858896 Units: mg/L

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

Chloride 4.7 0.50 5.000 0 93.6 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 Detection Limit

W Sample container temperature is out of limit as specified

Page 6 of 8

#### Hall Environmental Analysis Laboratory, Inc.

WO#: 1811579

27-Nov-18

**Client:** Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID 1811579-011ADUP SampType: DUP TestCode: Specific Gravity

Client ID: Injection Batch ID: **R55711** RunNo: 55711

SeqNo: 1856564 Prep Date: Analysis Date: 11/16/2018 Units:

Analyte SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Specific Gravity 0.9950 0.391 0 20

#### Qualifiers:

Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix D

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

**PQL** Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Reporting Detection Limit

Sample pH Not In Range

RL

Sample container temperature is out of limit as specified

Page 7 of 8

#### Hall Environmental Analysis Laboratory, Inc.

WO#: **1811579** 

27-Nov-18

Client: Daniel B. Stephens & Assoc.

**Project:** Salty Dog

Sample ID MB-41562 SampType: MBLK TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: **PBW** Batch ID: **41562** RunNo: **55750** 

Prep Date: 11/15/2018 Analysis Date: 11/19/2018 SeqNo: 1857855 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-41562 SampType: LCS TestCode: SM2540C MOD: Total Dissolved Solids

Client ID: LCSW Batch ID: 41562 RunNo: 55750

Prep Date: 11/15/2018 Analysis Date: 11/19/2018 SeqNo: 1857856 Units: mg/L

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

Total Dissolved Solids 1020 20.0 1000 0 102 80 120

#### 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 Detection Limit

W Sample container temperature is out of limit as specified

Page 8 of 8



Hall Environmental Analysis Laboratory 1901 Hawkins NE Minguerque, NA 87109

TEL: 203-345-3975 FAX: 505-345-4107 Website, www.hallenvironmental.com

## Sample Log-In Check List

| Client Name: DBS  | Work Order Nun   | nber 1811579      |                 | ReptNo: 1                         |
|---|--|-------------------|-----------------|-----------------------------------|
| Received By Ashley Gallege  | os 11/9/2018 8:48:00   | AM                | - A-3           |                                   |
| Completed By Ashley Gallege   | os 11/12/2018 9:49:3   | 2 AM              | A               |                                   |
| Reviewed By FLIL  | 11/12/18   |                   | 0               |                                   |
| 12  | 1 1  |                   |                 |                                   |
| Chain of Custody  | 12/08  |                   |                 |                                   |
| 1. Is Chain of Custody complete?  |  | Yes 🗸             | No 🗆            | Not Present                       |
| 2. How was the sample delivered   | >  | Client            | 30 13           | 3317/33010                        |
| Land.   |  |                   |                 |                                   |
| Log In  3. Was an attempt made to cool to                                   | ha demakent  | v-= [3]           | 16 E            | W [7]                             |
| was an attempt made to cool to  | ne samplesy  | Yes 🗸             | No 🗆            | NA L                              |
| 4. Were all samples received at a   | temperature of >0° C to 6 0°C  | Yes 🗌             | No 🗸            | NA.                               |
| V 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.                                       | CONTROL TO STATE OF THE PER  | Approved by       | v client.       | 141.                              |
| <ol><li>Sample(s) in proper container(s</li></ol>                           | )7   | Yes 🗹             | No 🗍            |                                   |
| 6. Sufficient sample volume for Ind   | icated test(s)?  | Yes 🗸             | No 🛘            |                                   |
| 7 Are samples (except VOA and C   | ING) properly preserved?   | Yes 🛂             | No 🖂            |                                   |
| 8. Was preservative added to bottl  | es?  | Yes _             | No 🗷            | NA 🗀                              |
| 9 VOA vials have zero neadspace   | 7  | Yes               | No 🗌            | No VOA Vials V                    |
| 10. Were any sample containers re-  | ceived broken?   | Yes 🗀             | No V            |                                   |
|   |  | 4/-3/             |                 | # of preserved<br>bottles checked |
| 11. Does paperwork match bottle la  |  | Yes 🗸             | No [            | for pH                            |
| (Note discrepancies on chain of   |  |                   | -               | (2) or >12 unless noted)          |
| 12 Ard matrices correctly identified  | THE RESERVE THE PROPERTY OF THE PARTY OF THE | Yes 💆             | No 🗆            | Adjusted? (3c)                    |
| 13. Is it clear what analyses were re                                       |  | Yes 🔽             | No L            | ** - 1 L                          |
| 14. Were all holding times able to be<br>(If no, notify customer for author |  | Yes V             | No              | Checked by JO 1/12/18             |
| Special Handling (if applica  | ble)   |                   |                 |                                   |
| 15. Was client notified of all discrep                                      | ancies with this order?  | Yes 🗹             | No 🗌            | NA 🗆                              |
| Person Notified: Mike   | Z Date   | 4                 | 11/12/2018      |                                   |
| By Whom: Ashle  | y Gallogos/Iseiah Orti Via:  | eMail V F         | hone Fax        | ▼ In Person                       |
| Regarding High  | temp. No sample for DBS-11 reco  | ewed sample DBS   | 6 not listed on | chain.                            |
| Client Instructions: Proce  | ed with analysis. Chage sample   | DBS-11 to read DB | BS-6            |                                   |
| 16 Additional remarks:  | Change   |                   |                 |                                   |
| 17. 7. 1. 1. 1  | to while   |                   |                 |                                   |
| <ol> <li>Cooler Information</li> <li>Cooler No   Temp °C   Co</li> </ol>    | ndition   Seal Intact   Seal No  | Casi Data         | Cinnad Co.      |                                   |
| 1 7.8 Goo   |  | Seal Date         | Signed By       |                                   |

|              | Chain            | of-C            | Chain-of-Custody Record  | Turn-Around             | nd Time:             |             |          | M      | 100          | į                         | -      | 1                  |  | 17   |
|--------------|------------------|-----------------|--|-------------------------|----------------------|-------------|----------|--------|--------------|---------------------------|--------|--------------------|--|------|
| Client       | Client DBSA      | 4               |  | Constandard Control     | Rush                 |             | 1        | 7.     | 4 5 4        | 7                         | 7      | 2 3                | ANALYSIS LABORATORY  | AL S |
|              |                  |                 |  | Project Name            |                      |             | 1        | B      |              |                           | 2      | 3                  | SUKATO   | Y    |
| Mailin       | Mailing Acdress: | š               |  | 541                     | TYDO                 | 9           | 49       | 01 Haw | KINS NE      | www namer vironmental com | ndnerd | antal.co           | www namerivironmental.com<br>4901 Hawkins NE - Albuquerque, NM 87109 |      |
|              |                  |                 |  | Project #;              |                      |             | 100      | 505-   | 505-345-3975 | 55                        | Fax 50 | 505-345-4107       | 4107   |      |
| Phone        | # SoS            | 5-82            | Phone # 505-822-9400   | 6508                    | ES08,0118,18         | 8           |          |        |              | \na                       | sis Re | Request            |  |      |
| email        | or Fax#:         | MZLOR           | email or Fax#. M76102eN 900-1091c. comProject Manager.   | Project Man             | ager                 |             | -        |        |              | °O:                       |        | (ĵu                | 1  |      |
| OA'O         | OAVOC Package:   |                 | Level 4 (Full Validation)  | 10                      | Arache               |             | 208) s'  | SCB,2  | SWISC        | PO.                       |        | əsdA\tr            | <del>/</del> / <b>/</b> /^e>   |      |
| Accre        | Accreditation:   | □ Az C          | ☐ Az Compliance  | Sampler. P              | M. Thate             | 7           | _        | _      | _            | 10 <sup>5</sup> '         |        | iose               | 9  |      |
| ☐ NELAC      | LAC              | □ Other         |  | 1                       | y Yes                | ON D        |          |        | 10           | _                         | 100    |                    | 29   |      |
| D ED         | □ EDD (Type)     |                 |  | # of Coolers:           | 106                  | 0-1+        |          |        | 018          |                           |        |                    | ds   |      |
|              |                  |                 |  | Cooler Tempineums on:   | Offinced and CF1.    | 7.8         |          |        | 58 YC        | _                         |        |                    | 'H-  |      |
| Date         | Time Matrix      | Matrix          | Sample Name  | Container<br>Type and # | Preservative<br>Type | (SII) 19    |          | 8081 P | sHAq         | СРР.<br>СРР.              | 0228   | 8270 (S<br>Total C | l'squ  |      |
| 81.87/       |                  | 1000 GW         | 705-8  | 1001                    |                      | 100-        |          |        |              | ×                         |        |                    |  |      |
| _            | 1050             |                 | 0  |                         |                      | -002        |          |        |              | ×                         |        |                    |  |      |
|              | 0111             |                 | DBS-NG TOTALS  |                         |                      | 2003        |          |        |              | ×                         |        |                    |  |      |
|              | 1140             |                 | MW-S   |                         |                      | 1001        |          | Ť      |              | ×                         | H      | Į,                 |  |      |
|              | 1230             |                 | MW-3   |                         |                      | -88         |          |        |              | X                         | Ť      |                    |  |      |
|              | 1310             |                 | DB5-3  |                         |                      | 900-        |          |        |              | X                         | =      |                    |  |      |
|              | 1345             | 1               | 735-4  |                         |                      | -00-        |          |        |              | 8                         |        |                    |  |      |
|              | 1355             |                 | D85-2  |                         |                      | -008        |          |        |              | X                         |        |                    |  |      |
|              | 1415             |                 | 085-5  |                         |                      | 800Q_       | -        |        |              | ×                         |        |                    |  |      |
|              | 1435             |                 | DR5-18   |                         |                      | 0/0         |          |        | Ī            | ×                         |        |                    |  |      |
|              | 15/85 1450       | (05/4)          | Indestion  |                         |                      | 110         | 1        |        |              | ×                         | Ŧ      |                    | ×  |      |
| -            | 1530             | /               | PMW/   | 1                       |                      | -019        | 1        |        |              | ×                         |        |                    |  |      |
| Date: /9. F3 |                  | Relinguished by | Not by Market by | Received by:            | 0000                 | 1109  % 08  | Remarks: | 14:    | 10           | JUN                       | 3 0    | do                 | approved   |      |
| Date         | Time             | Réfinquehant by | of fig.  | Received by:            | *                    | Date / Time |          |        | 1            | De                        |        |                    |  |      |
|              |                  |                 |  |                         | >                    |             |          |        |              |                           |        |                    |  | 7    |

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-polarisated data will be clearly notitied an the analytical report

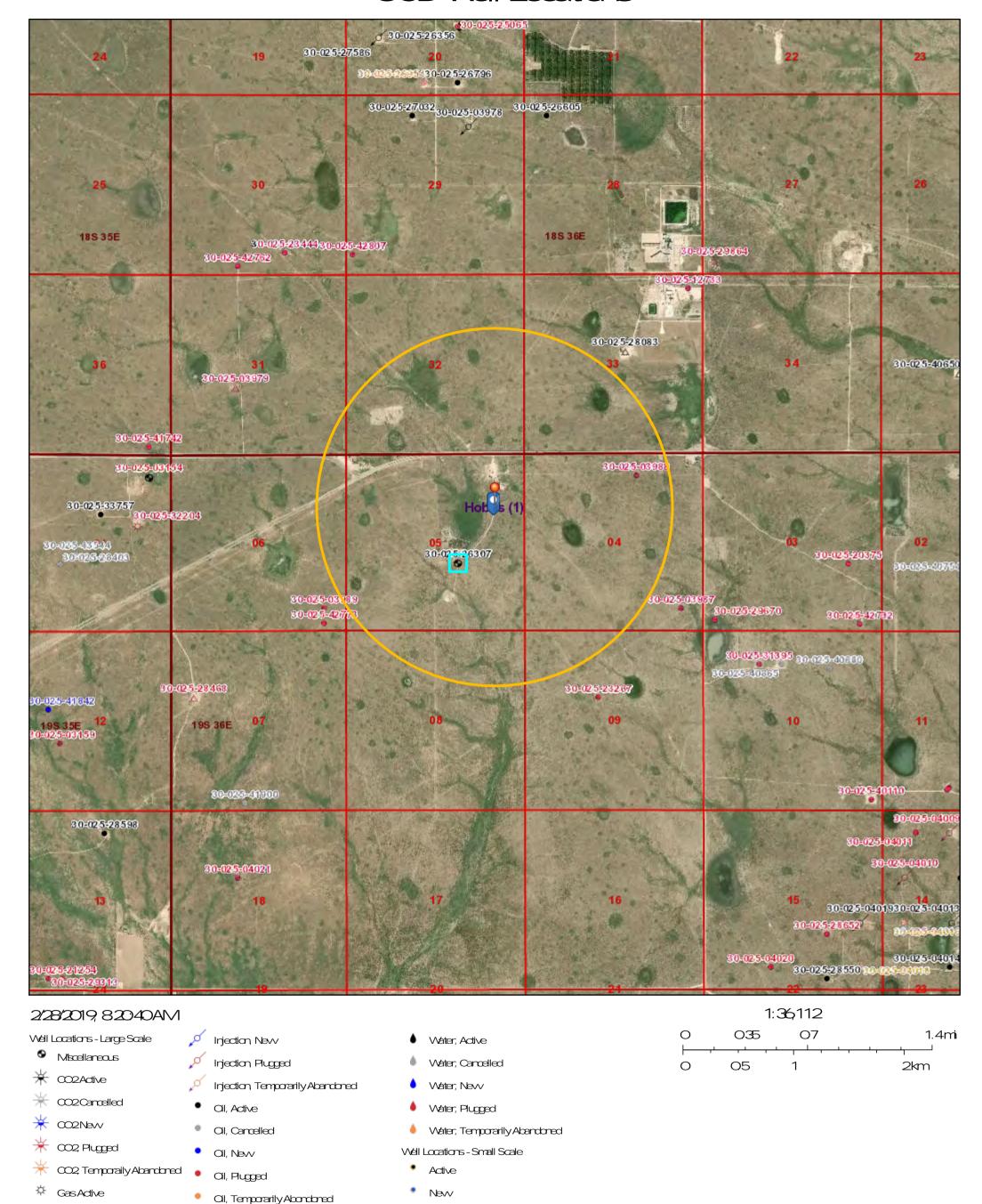
| Chain                    | J-ot-C         | Chain-of-Custody Record   | Turn-Around Time:         | d Time:              |              |                |   | - 3          | 1                         | i        | 1         |              |       | 972                |
|--------------------------|----------------|---|---------------------------|----------------------|--------------|----------------|---|--------------|---------------------------|----------|-----------|--------------|-------|--------------------|
| Client D.B5A             | TY.            |   | Standard                  | d Rush               |              | Л              | U   | Ì            | 12                        | EN       | AIR<br>C. | o a          | 2 8   | HALL ENVIRONMENTAL |
|                          |                |   | Project Name:             |                      |              |                | H   |              | 1                         |          | 0         | 2            | 5     | A CONT             |
| Mailing Address:         | .s             |   | SA                        | ALTY DOG             | 4            | 4              | www.nallenvironmental.com<br>4901 Hawkins NE - Abucueraue, NM 87109 | wkins        | www.nailenvironmental.com | Albuce   | inemi     | N N          | 18710 |                    |
|                          |                |   | Project #:                |                      |              |                | Tel. 50   | 505-345-3975 | 975                       | Fax      | 505       | 505-345-4107 | 1107  |                    |
| Phone #: SoS - 822-91100 | -822           | -quip-  | 63                        | ESO8,0118.18         | 31:3         |                |   |              | Ā                         | Analysis |           | nest         |       |                    |
| email or Fax#:           | W2201          | Bmail or Fax#: M 2 10 70 10 10 10 10 10 10 10 10 10 10 10 10 10 | Project Man               | ager:                |              |                | _   |              |                           | *05      |           | (jus         | H     |                    |
| OA/OC Package:           | 9              | D Level 4 (Full Validation)                                     | J.                        | Araibe               |              |                |   | SWISC        |                           | 5 '*Od   |           | esdAlf       | He    |                    |
| Accreditation:           |                | ☐ Az Compliance   | Sampler 🎵                 | m. Zlistet           | eh           |                | -1-1-1  | _            |                           | 1051     |           | Jese         | . /   |                    |
| I NELAC                  | □ Other        | in in   | On ice:                   | N-Yes                | □ No         |                |   | _            | S                         | V 19     | (AC       | na)          |       |                    |
| T EDD (Type)             |                |   | # of Coolers:             | 5 1 V                | 011 = 3      |                |   | _            | lete                      | -        |           | ) Luu        | 9 7   |                    |
|                          |                |   | Cooler Temp(novaling CF); | D(including CF);     | 5.1.         |                |   |              | M 8                       |          |           | olifo        | 3 23  |                    |
| Date Time                | Matrix         | Sample Name   | Container<br>Type and #   | Preservative<br>Type | HEAL No.     | X3T8<br>08:H9T | q 1808  | EDB (M       | RCRA                      | 3260 (V  | S) 07S8   | Total C      | No.+  | 72                 |
| 11819 11                 | /              | 12:00   | 75                        |                      | 5            |                |   | -            |                           | -        | -         | -            | 1     |                    |
| 0/0/0/4                  |                | Comp  | 1.02                      | HWO3                 | -(015)       |                |   | -            |                           | X        |           |              | <     |                    |
|                          |                |   |                           |                      |              |                |   | +            |                           | 4        |           |              | -     |                    |
|                          |                |   |                           |                      |              |                |   | +            |                           |          |           |              | +     |                    |
|                          |                |   |                           |                      |              |                |   | +            |                           |          |           | $^{\dagger}$ | +     |                    |
|                          |                |   |                           |                      |              |                |   | Н            |                           |          |           |              | H     |                    |
|                          |                |   |                           |                      |              |                |   | +            |                           |          |           |              |       |                    |
|                          |                | ,   |                           |                      |              |                |   | $\vdash$     |                           |          |           | $\vdash$     | H     |                    |
|                          |                | 1   | 17                        |                      |              |                |   | 4            |                           | -        |           |              | H     |                    |
| 19.18 846                |                | Mas Sur                     | Receivedov                | 8                    | 11/09/15 DS4 | Remarks:       | . E   | 2            | D                         | approved | 20        | 2            |       |                    |
| Date Time:               | Refragished to | hold wife   | Received by:              | S S                  | Date Time    | 4              | *   | To           |                           |          |           |              |       |                    |
|                          |                |   |                           |                      |              |                |   |              | I                         | I        |           |              |       |                    |

Il necessary, samples submitted to Hall Environmental may be succentrated to the accredited laboratories. This serves as notice of this possibility. Any sub-confected data will be dearly notated on the analytical report.

Appendix D

Area of Review Evaluation

## CCD Well Locations



Plugged

Cancelled

COD Districts

Temporarily Abandoned

Gas, Cancelled, Never Drilled

Gas, Temporarily Abandoned 🛕

Gas, Nevv

Gas, Plugged

Injection, Active

Injection, Cancelled

Salt Water Injection, Active

Salt Water Injection, New

Salt Water Injection, Plugged

Salt Water InjectionTemporarily Abandoned

Salt Water Injection, Cancelled

NVOCD Oil and Gas Map. http://mmemmrd.maps.aragis.com/apps/vebappvieven/. Nev/Nevico Oil Conservation Division

Community, BLM

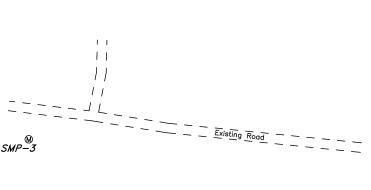
OOD, Source: Esti, DigitalGlobe, GeoEye, Earthstan Geographics,

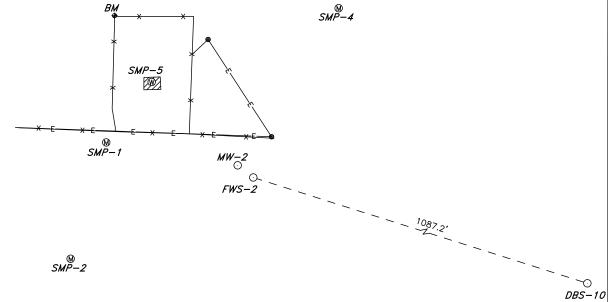
CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User

## **Appendix E**

2018 Survey Data for Land Surface Subsidence Monitoring

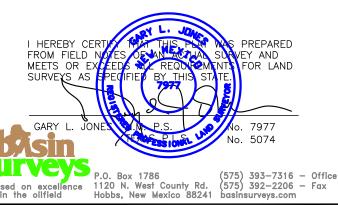
*DBS−9* ⊙





ALL COORDINATES ARE BASED ON NMSPCE (NAD83)

| NAME       | SECTION CALLS         | NORTHING   | EASTING    | LA TITUDE      | LONGITUDE       | ELEVATION<br>TOP CASING | ELEVATION<br>CONCRETE |
|------------|-----------------------|------------|------------|----------------|-----------------|-------------------------|-----------------------|
| SMP-1      | 2153' FSL & 2020' FEL | 615475.977 | 836301.437 | N32°41'17.960" | W103°22'28.520" | 3810.11'                | 3810.37'              |
| SMP-2      | 2032' FSL & 2058' FEL | 615354.850 | 836264.338 | N32°41′16.795″ | W103°22'28.966" | 3809.01                 | 3809.39               |
| SMP-3      | 2350' FSL & 2089' FEL | 615673.004 | 836230.083 | N32°41'19.945" | W103°22'29.334" | 3808.80'                | 3809.17'              |
| SMP-4      | 2291' FSL & 1776' FEL | 615615.830 | 836543.487 | N32°41'19.352" | W103°22'25.673" | 3806.32                 | 3806.73'              |
| SMP-5      | 2216' FSL & 1972' FEL | 615539.029 | 836348.733 | N32°41'18.609" | W103°22'27.960" | 3811.72'                |                       |
| DBS-9      | 2520' FSL & 1831' FEL | 615844.539 | 836485.906 | N32°41'21.593" | W103°22'26.317" |                         |                       |
| DBS-10     | 1389' FSL & 1060' FEL | 614720.368 | 837270.028 | N32°41'10.428" | W103°22'17.269" | 3807.48'                | 3805.44               |
| BENCH MARK |                       | 615608.14  | 836310.07  | N32°41′19.27″  | W103°22′28.40″  |                         |                       |



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#### DANIEL B. STEPHENS & ASSOCIATES, INC

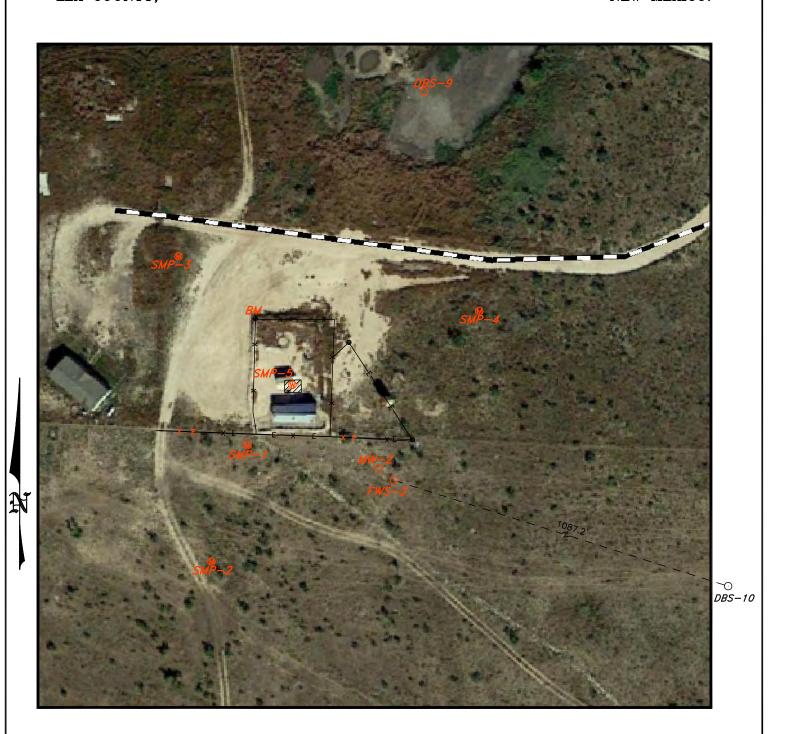
REF: SALTY DOG BRINE FACILITY

MONITOR WELLS AND SUSTENANCE MONITORING POINTS

LOCATED IN SECTION 5, TOWNSHIP 19 SOUTH, RANGE 36 EAST,

N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: 33610 | Drawn By: **K. GOAD** | Date: 03-29-2018 | Survey Date: 03-23-2018 | Sheet 1 of 1 Sheets



#### ALL COORDINATES ARE BASED ON NMSPCE (NAD83)

| NAME       | SECTION CALLS         | NORTHING   | EASTING    | LA TITUDE      | LONGITUDE       | ELEVATION<br>TOP CASING | ELEVATION<br>CONCRETE |
|------------|-----------------------|------------|------------|----------------|-----------------|-------------------------|-----------------------|
| SMP-1      | 2153' FSL & 2020' FEL | 615475.977 | 836301.437 | N32°41'17.960" | W103°22'28.520" | 3810.11'                | 3810.37'              |
| SMP-2      | 2032' FSL & 2058' FEL | 615354.850 | 836264.338 | N32°41′16.795″ | W103°22'28.966" | 3809.01                 | 3809.39               |
| SMP-3      | 2350' FSL & 2089' FEL | 615673.004 | 836230.083 | N32°41'19.945" | W103°22'29.334" | 3808.80'                | 3809.17'              |
| SMP-4      | 2291' FSL & 1776' FEL | 615615.830 | 836543.487 | N32°41'19.352" | W103°22'25.673" | 3806.32                 | 3806.73'              |
| SMP-5      | 2216' FSL & 1972' FEL | 615539.029 | 836348.733 | N32°41'18.609" | W103°22'27.960" | 3811.72'                |                       |
| DBS-9      | 2520' FSL & 1831' FEL | 615844.539 | 836485.906 | N32°41'21.593" | W103°22'26.317" |                         |                       |
| DBS-10     | 1389' FSL & 1060' FEL | 614720.368 | 837270.028 | N32°41'10.428" | W103°22'17.269" | 3807.48'                | 3805.44               |
| BENCH MARK |                       | 615608.14  | 836310.07  | N32°41′19.27″  | W103°22′28.40″  |                         |                       |



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#### DANIEL B. STEPHENS & ASSOCIATES, INC

REF: SALTY DOG BRINE FACILITY

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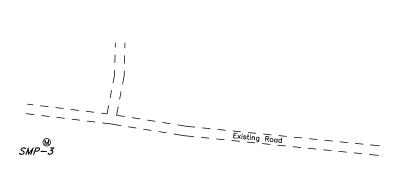
MONITOR WELLS AND SUSTENANCE MONITORING POINTS

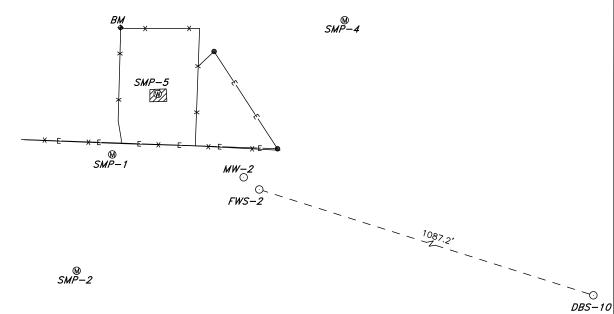
LOCATED IN SECTION 5, TOWNSHIP 19 SOUTH, RANGE 36 EAST,

N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: 33610 | Drawn By: **K. GOAD** | Date: 03-29-2018 | Survey Date: 03-23-2018 | Sheet 1 of 1 Sheets

*DBS−9* ⊙





ALL COORDINATES ARE BASED ON NMSPCE (NAD83)

| NAME       | SECTION CALLS         | NORTHING   | EASTING    | LA TITUDE      | LONGITUDE       | ELEVATION<br>TOP CASING | ELEVATION<br>CONCRETE |
|------------|-----------------------|------------|------------|----------------|-----------------|-------------------------|-----------------------|
| SMP-1      | 2153' FSL & 2020' FEL | 615475.977 | 836301.437 | N32°41′17.960″ | W103°22′28.520″ | 3810.10'                | 3810.37'              |
| SMP-2      | 2032' FSL & 2058' FEL | 615354.850 | 836264.338 | N32°41'16.795" | W103°22'28.966" | 3809.02'                | <i>3809.39</i> '      |
| SMP-3      | 2350' FSL & 2089' FEL | 615673.004 | 836230.083 | N32°41′19.945″ | W103°22'29.334" | 3808.82                 | 3809.17               |
| SMP-4      | 2291' FSL & 1776' FEL | 615615.830 | 836543.487 | N32°41′19.352″ | W103°22'25.673" | 3806.33'                | <i>3806.73</i> '      |
| SMP-5      | 2216' FSL & 1972' FEL | 615539.029 | 836348.733 | N32°41′18.609″ | W103°22'27.960" | 3811.71'                |                       |
| DBS-9      | 2520' FSL & 1831' FEL | 615844.539 | 836485.906 | N32°41'21.593" | W103°22′26.317" |                         |                       |
| DBS-10     | 1389' FSL & 1060' FEL | 614720.368 | 837270.028 | N32°41'10.428" | W103°22′17.269″ | 3807.48'                | 3805.44               |
| BENCH MARK |                       | 615608.14  | 836310.07  | N32°41'19.27"  | W103°22'28.40"  |                         |                       |



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#### DANIEL B. STEPHENS & ASSOCIATES, INC

REF: SALTY DOG BRINE FACILITY

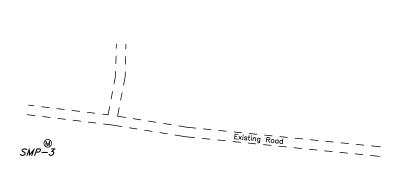
MONITOR WELLS AND SUSTENANCE MONITORING POINTS

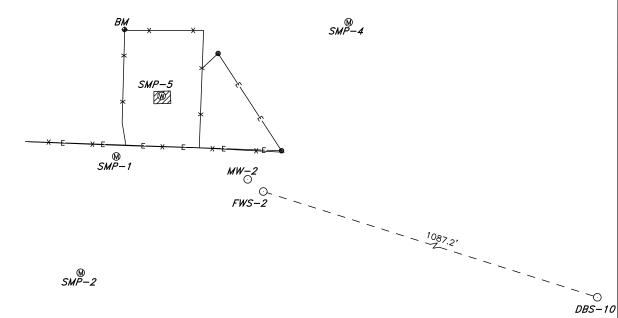
LOCATED IN SECTION 5, TOWNSHIP 19 SOUTH, RANGE 36 EAST,

N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: 33811 | Drawn By: **K. GOAD** | Date: 06-19-2018 | Survey Date: 06-15-2018 | Sheet 1 of 1 Sheets

*DBS−9* ⊙





ALL COORDINATES ARE BASED ON NMSPCE (NAD83)

| NAME       | SECTION CALLS         | NORTHING   | EASTING    | LA TITUDE      | LONGITUDE       | ELEVATION<br>TOP CASING | ELEVATION<br>CONCRETE |
|------------|-----------------------|------------|------------|----------------|-----------------|-------------------------|-----------------------|
| SMP-1      | 2153' FSL & 2020' FEL | 615475.977 | 836301.437 | N32°41′17.960" | W103°22′28.520″ | 3810.10'                | 3810.38'              |
| SMP-2      | 2032' FSL & 2058' FEL | 615354.850 | 836264.338 | N32°41′16.795″ | W103°22'28.966" | 3809.00°                | 3809.41               |
| SMP-3      | 2350' FSL & 2089' FEL | 615673.004 | 836230.083 | N32°41′19.945″ | W103°22'29.334" | 3808.81                 | 3809.18               |
| SMP-4      | 2291' FSL & 1776' FEL | 615615.830 | 836543.487 | N32°41′19.352″ | W103°22'25.673" | 3806.32'                | <i>3806.72</i> '      |
| SMP-5      | 2216' FSL & 1972' FEL | 615539.029 | 836348.733 | N32°41′18.609″ | W103°22'27.960" | 3811.72'                |                       |
| DBS-9      | 2520' FSL & 1831' FEL | 615844.539 | 836485.906 | N32°41'21.593" | W103°22′26.317" |                         |                       |
| DBS-10     | 1389' FSL & 1060' FEL | 614720.368 | 837270.028 | N32°41'10.428" | W103°22′17.269″ | 3807.48'                | 3805.44               |
| BENCH MARK |                       | 615608.14  | 836310.07  | N32°41'19.27"  | W103°22'28.40"  | 3808.62                 |                       |



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#### DANIEL B. STEPHENS & ASSOCIATES, INC

REF: SALTY DOG BRINE FACILITY

MONITOR WELLS AND SUSTENANCE MONITORING POINTS

LOCATED IN SECTION 5, TOWNSHIP 19 SOUTH, RANGE 36 EAST,

N.M.P.M., LEA COUNTY, NEW MEXICO.

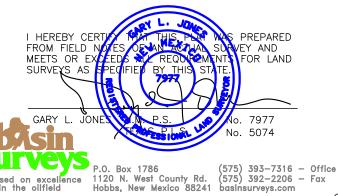
W.O. Number: 34246 | Drawn By: **K. GOAD** | Date: 12-24-2018 | Survey Date: 12-15-2018 | Sheet 1 of 1 Sheets



#### ALL COORDINATES ARE BASED ON NMSPCE (NAD83)

| NAME       | SECTION CALLS         | NORTHING   | EASTING    | LA TITUDE      | LONGITUDE       | ELEVATION<br>TOP CASING | ELEVATION<br>CONCRETE |
|------------|-----------------------|------------|------------|----------------|-----------------|-------------------------|-----------------------|
| SMP-1      | 2153' FSL & 2020' FEL | 615475.977 | 836301.437 | N32°41′17.960" | W103°22'28.520" | 3810.10'                | 3810.38'              |
| SMP-2      | 2032' FSL & 2058' FEL | 615354.850 | 836264.338 | N32°41′16.795″ | W103°22'28.966" | 3809.00'                | 3809.41'              |
| SMP-3      | 2350' FSL & 2089' FEL | 615673.004 | 836230.083 | N32°41'19.945" | W103°22'29.334" | 3808.81                 | 3809.18'              |
| SMP-4      | 2291' FSL & 1776' FEL | 615615.830 | 836543.487 | N32°41'19.352" | W103°22'25.673" | 3806.32                 | 3806.72'              |
| SMP-5      | 2216' FSL & 1972' FEL | 615539.029 | 836348.733 | N32°41′18.609" | W103°22'27.960" | 3811.72'                |                       |
| DBS-9      | 2520' FSL & 1831' FEL | 615844.539 | 836485.906 | N32°41'21.593" | W103°22'26.317" |                         |                       |
| DBS-10     | 1389' FSL & 1060' FEL | 614720.368 | 837270.028 | N32°41′10.428″ | W103°22′17.269" | 3807.48'                | 3805.44               |
| BENCH MARK |                       | 615608.14  | 836310.07  | N32°41′19.27"  | W103°22'28.40"  | 3808.62'                |                       |

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REF: SALTY DOG BRINE FACILITY

MONITOR WELLS AND SUSTENANCE MONITORING POINTS

LOCATED IN SECTION 5, TOWNSHIP 19 SOUTH, RANGE 36 EAST,

N.M.P.M., LEA COUNTY, NEW MEXICO.

DANIEL B. STEPHENS & ASSOCIATES, INC

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W.O. Number: 34246 Drawn By: **K. GOAD** Date: 12-24-2018 Survey Date: 12-15-2018 Sheet 1 of 1 Sheets