UIC - I - ___8-2___

EPA FALL-OFF TEST

DATE:

2016

2016 ANNUAL BOTTOM-HOLE PRESSURE SURVEY AND PRESSURE FALLOFF TEST REPORT

NAVAJO REFINING

CHUKKA WELL NO. 2

Artesia, New Mexico

December 2016

Parsons Brinckerhoff

Houston, TX

A Company of

Project No. 50904A

Prepared by Larry K. McDonald Reviewed by

TABLE OF CONTENTS

SECTION **PAGE**

TABLES

FIGURES

APPENDICES

EXECUTIVE SUMMARY

WSP | Parsons Brinckerhoff was contracted by Navajo Refining Company (Navajo) to perform a pressure falloff test and bottom-hole pressure survey on Navajo's Chukka Well No. 2. The test was performed according to New Mexico Oil Conservation Division (OCD) falloff test guidelines (*New Mexico Oil Conservation Division UIC Class I Well Fall-Off Test Guidance, December 3, 2007*).

The test provides the state regulatory agency with the necessary information to access the validity of requested or existing injection well permit conditions and satisfy the permitting objective of protecting the underground sources of drinking water (USDW). Specifically, 40 CFR Part 146 states "the Director shall require monitoring of the pressure buildup in the injection zone annually, including at a minimum, a shutdown of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve" (40 CFR§146.13 for Non-hazardous Class I Wells).

The falloff testing was conducted according to the testing plan submitted to and approved by the NM OCD. The testing plan stated that, all offset wells that inject into the injection interval would be shut-in for the duration of the test period. The testing consisted of a 105-hour injection period and a 39-hour falloff period. Bottom-hole pressure gauges were also placed in the offset wells Gaines Well No. 3 and Mewbourne Well No. 1. These wells are owned by Navajo and are used to inject plant waste into the same intervals as the Chukka Well No. 2.

As prescribed by the guidelines, the report discusses supporting and background information in Sections 1 through 9. The one mile area of review (updated since the 2015 falloff testing) is discussed in Section 10 and geology in Section 11. Information on the offset wells is discussed in Section 12, daily testing activities in Section 13, and point of shut-in, in Section 14. The pressure falloff testing and analysis results are discussed in Section 15. The OCD required record keeping statement is discussed in Section 16.

1. FACILITY INFORMATION

a. Name: Navajo Refining Company (subsidiary of the Holly Corporation)
b. Facility Location: Highway 82 East, Artesia, New Mexico 88211
c. Operator's OGRD Number: Section 1, Township 18 South, Range 27 East

2. WELL INFORMATION

a. OCD UIC Permit Number: UIC-CLI-008-2
b. Well Classification: Class I Non-hazardous
c. Well Name and Number: Chukka Well No. 2
d. API Number: 30-015-20894
e. Well Legal Location: 1980 FNL, 660 FWL

3. CURRENT WELLBORE SCHEMATIC

The Chukka Well No. 2 wellbore schematic is presented in Figure 1. The schematic has all data as requested by the guidelines and includes the following:

a. Tubing: 3 ½ inch, 9.2 pound per foot (lb/ft), steel construction, API grade J-55, with NUE 10 round connections.

b. Packer: Arrow X-1, 5 ½ inch by 2 ⅞ inch set in tension at 7528 feet.

c. Tubing Length: 7528 feet. There are no profile nipples in the tubing or the packer as this was not a requirement of the permit.

d. Size, Type, and Depth of Casing: There are two casing strings in the well. The information for these casing strings was obtained from OCD records on file with the state and geophysical logs. The casing strings are:

   i. 8 ⅝ inch, 32 lb/ft, steel construction, API grade J-55, with short thread connections (ST&C), set at a depth of 1995 feet. The casing was cemented to the surface with 800 sacks of cement. The casing was set in open hole with a diameter of 11 inches. This information was obtained from OCD records.

   ii. 5 ½ inch, 17 lb/ft, steel construction, API grade L-80 long thread connections (LT&C), set at a depth of 8869 feet. The casing was cemented to surface in two stages with 1570 sacks of cement. The casing was set in open hole with a diameter of 7 ⅞ inches. This information was obtained from OCD records.

   iii. A cement plug at 8770 feet isolates the lower section of the original borehole. This information was obtained from OCD records.

e. Top of cement: Determined from the cement bond log (CBL) run in the 8 ⅝ inch on May 9, 1999. The top of cement in the 8 ⅝ inch was found at the surface. Determined from the

CBL run in the 5-1/2-inch casing string on May 28, 1999. The top of cement in the 5 ½ inch casing was found at the surface.

f. The 5 ½ inch casing: Perforated on June 1, 1999. The casing was perforated with a 0.5-inch diameter hole, at 2 shots per foot, on a 120° phasing. The perforations are located between 7570 feet and 7736 feet and from 7826 feet to 8399 feet.

g. The total depth of the well is 10,372 feet with the plug back depth at 8770 feet. On July 22, 2016, the top of fill was tagged at 8362 feet.

4. ELECTRIC LOG ENCOMPASSING THE COMPLETED INTERVAL

The dual induction log is presented as Appendix A and encompasses the completed interval between 7570 feet and 8399 feet. The dual induction log was submitted to the OCD with the original permit. The original dual induction log was completed August 27, 1973 by Amoco Production Company. The log was resubmitted to the OCD when the well was re-permitted as a Class I injection well.

5. RELEVANT PORTIONS OF THE POROSITY LOG USED TO ESTIMATE FORMATION POROSITY

The neutron density log is presented as Appendix B and encompasses the completed interval between 7570 feet and 8399 feet. The neutron density log was submitted to the OCD with the original permit after the well was drilled by Amoco Production Company. The compensated neutron formation density log was completed on August 27, 1973. The log was resubmitted to the OCD when the well was re-permitted as a Class I injection well. The average porosity of the formation, 10%, and the reservoir thickness, 175 feet, were determined from this log. These values were used in the analysis of the pressure falloff data (Section 15). Additional information concerning the geology of the injection reservoir is discussed in Section 11.

6. PVT DATA OF THE FORMATION AND INJECTION FLUID

The Chukka Well No. 2 was recompleted in June 1999, prior to the issuance of the current well testing guidelines (December 3, 2007). At that time, no directives were in place to test formation fluids or derive formation characteristics from cores. However, reservoir fluid samples were obtained and the average specific gravity and average total dissolved solids (TDS) were measured at 1.03 g/l and 26,500 mg/l, respectively. The analytical results of the analysis of the formation fluid are summarized in Table I.

The viscosity of the formation fluid, formation water compressibility, and total system compressibility were estimated in reference to bottom-hole temperature using industry accepted correlations. These correlations are found in the Society of Petroleum Engineer's "Advances in Well Test Analysis, Monograph Volume 5" and "Pressure Buildup and Flow Tests in Wells, Monograph Volume 1".

a. Estimation of formation fluid and reservoir rock compressibility:

The fluid compressibility of the formation brine was estimated for a sodium chloride solution (26,500 mg/l) at the bottom-hole temperature of 127°F, using Appendix C (Figure D.16 SPE Monograph 5). This value was 2.9×10^{-6} psi^{-1}. The formation pore volume compressibility was estimated using Appendix D (Figure G.5 SPE Monograph 1). This value was 5.5×10^{-6} psi^{-1}. The total system compressibility is the sum of the fluid compressibility and the pore volume compressibility, 8.4×10^{-6} psi^{-1}. The temperature used with the correlations was recorded during the temperature survey conducted in the Chukka Well No. 2 on May 28, 1999 and June 5, 1999, and included in this report as Appendix E.

d. Formation Fluid Viscosity with Reference Temperature:

The formation fluid had an average TDS concentration of 26,500 mg/l. This equates to an approximate equivalent percentage of NaCl of 4.5%. The average viscosity of the formation fluid was estimated using Appendix F (Figure D.35 SPE Monograph 5). This value was 0.57 centipoise (cp) at 127°F.

e. Formation Fluid Specific Gravity/Density with Reference Temperature:

The average formation fluid specific gravity was measured at 1.03 g/l at 70°F (Table I).

d. Injection Fluid Specific Gravity, Viscosity and Compressibility with Reference Temperature:

The specific gravity of the refinery waste water was measured during the injection portion of the reservoir testing. The specific gravity was 1.01 (8.41 pounds per gallon). Using the same methodology described above, the viscosity of the injected fluid was 0.54 cp at 127°F. The compressibility of the injected plant waste was 2.9×10^{-6} psi^{-1} at 127°F.

7. DAILY RATE HISTORY DATA (MINIMUM OF ONE MONTH PRECEDING THE FALLOFF TEST)

The rate history used in the analysis of the pressure falloff data began on June 15, 2016 and ends when the well was shut in for the pressure falloff testing on July 25, 2016. The daily rate history is summarized in Appendix G.

8. CUMULATIVE INJECTION INTO THE FORMATION FROM TEST WELL AND OFFSET WELLS

The total volume of fluid injected into all three wells as of July 25, 2016, was 3,374,694,764 gallons. The volume of fluid injected into the Mewbourne Well No. 1 was 1,678,875,783 gallons. The volume of fluid injected into the Chukka Well No. 2 was 1,103,142,467 gallons. The volume of fluid injected into the Gaines Well No. 3 was 592,676,514 gallons. The volumes injected were obtained from plant records.

9. PRESSURE GAUGES

One (1) downhole pressure gauge (with two readings) was used for the Chukka Well No. 2 pressure buildup and falloff testing. The downhole pressure gauge was set at 7570 feet. Bottom-hole pressure gauges were also placed in each of the offset wells: Gaines Well No. 3 and Mewbourne Well No. 1. The pressure gauges were set at 7660 feet in the Gaines Well No. 3 and at 7820 feet in the Mewbourne Well No. 1.

a. Describe the type of downhole surface pressure readout gauge used including manufacture and type:

   In the Chukka Well No. 2, an MRO pressure gauge was used to record the bottom-hole pressure and temperature during the injection/falloff testing. The gauge was a sapphire crystal gauge with Serial No. DC-2050. The gauge is manufactured by DataCan Services.

   In the Mewbourne Well No. 1, an MRO pressure gauge was used to monitor the bottom-hole pressure and temperature during the testing of the testing of the Chukka Well No. 2. The gauge was a sapphire crystal gauge with Serial No. SP-21726. The gauge is manufactured by Spartek Systems.

   In the Gaines Well No. 3, an MRO pressure gauge was used to monitor the bottom-hole pressure and temperature during the testing of the Chukka Well No. 2. The gauge was a sapphire crystal gauge with Serial No. SP-21566. The gauge is manufactured by Spartek Systems.

b. List the full range, accuracy and resolution of the gauge:

In Chukka Well No. 2, the MRO pressure gauge, Serial No. DC-2050, has a full range of 14.73 psi to 15,000 psi, an accuracy of 0.020% of full scale, and a resolution of 0.01% of full scale.

In Mewbourne Well No. 1, the MRO pressure gauge, Serial No. SP-21726 has a full range of 13.14 psi to 16,000 psi, an accuracy of 0.030% of full scale, and a resolution of 0.01% of full scale. A surface pressure gauge was not installed during testing.

In Gaines Well No. 3, the MRO pressure gauge, Serial No. SP-21566, has a full range of 14.80 psi to 16,000 psi, an accuracy of 0.030% of full scale, and a resolution of 0.01% of full scale.

c. Provide the manufacturer's recommended frequency of calibration and a calibration certificate showing date the gauge was last calibrated:

The certificate of calibration for each of the pressure gauges used during the testing are included as Appendix H. The manufacturer's recommended calibration frequency is one year.

10. ONE MILE AREA OF REVIEW (AOR)

Federal Abstract Company was contracted by WSP | Parsons Brinckerhoff and instructed to undertake a review of well changes made within a one-mile area of review (AOR) of the Mewbourne Well No. 1, Chukka Well No. 2, and Gaines Well No. 3. In 2009, an update of the original AOR, submitted with the Discharge Application Permit 2003, was completed within the one-mile AOR for all three wells. The current update includes all existing wells within the one-mile AOR and any changes that have occurred to these wells since the 2015 update.

No new fresh water wells were reported within the search area since the submittal of the 2015 report. The discharge application lists the water wells located in the Area of Review.

a. Identify wells located within the one mile AOR:

Table II contains a listing of all wells within the one-mile AOR of Mewbourne Well No. 1, Chukka Well No. 2, and Gaines Well No. 3. Figure 6 is a Midland Map Company base map of the area containing the one mile AOR.

b. Ascertain the status of wells within the one mile AOR:

Table II contains a listing of all wells within the one-mile AOR, with their current status. Tables III through VII contain a list of all wells within the one-mile AOR that have had modifications to the current permit or have had new drilling and/or completion permits issued since the 2015 updated report.

Fifty-nine (59) wells were found in which the owner had changed. No new plugged and abandoned oil and gas wells were found. One (1) well was placed in temporarily abandoned status. No wells were found that were returned to production status. One (1) well was found that had been recompleted.

There were sixty-six (66) new drills and permits to drill, of which none penetrated the Wolfcamp interval. All plugged and abandoned wells were successfully plugged and isolated from the Mewbourne Well No. 1, Chukka Well No. 2, and Gaines Well No. 3 injection intervals according to current OCD records.

c. Provide details on any offset producers and injectors completed in the same interval:

Navajo has a total of three injection wells injecting into the same interval. Mewbourne Well No. 1 is listed as ID No. 59 in Table II and no changes have occurred to this well. Chukka Well No. 2 is listed as ID No. 120 in Table II and no changes have occurred to this well. The Gaines Well No. 3 is listed as ID No. 861 in Table II. The wellbore schematics for the Mewbourne Well No. 1 and the Gaines Well No. 3 are presented as Figure 2 and Figure 4, respectively.

11. GEOLOGY

The injection zones are porous carbonates of the lower portion of the Wolfcamp Formation, the Cisco Formation, and the Canyon Formation. These formations occur in the Mewbourne Well No. 1, the Chukka Well No. 2, and the Gaines Well No. 3 at the depths shown in the table below.

	Mewbourne Well No. 1 (KB = 3693 ft)		Chukka Well No. 2 (KB = 3623 ft)		Gaines Well No. 3 (KB = 3625 ft)	
Injection Zone Formation	MD below KB	SS Depth	MD below KB	SS Depth	MD below KB	SS Depth
Lower Wolfcamp	7450	-3757	7270	-3647	7303	-3678
Cisco	7816	-4123	7645	-4022	7650	-4025
Canyon	8475	-4782	8390	-4767	8390	-4765
Base of Injection Zone (base of Canyon)	9016	-5323	8894	-5271	8894	-5269

d. Description of the geological environment of the injection interval:

The lower portion of the Wolfcamp Formation (Lower Wolfcamp) is the shallowest porous unit in the injection interval. The Wolfcamp Formation (Permian-Wolf campaign age) consists of light brown to tan, fine to medium-grained, fossiliferous limestones with variegated shale interbeds (Meyer, 1966, page 69). The top of the Wolfcamp Formation was correlated for this study to be below the base of the massive, dense dolomites of the overlying Abo Formation. The base of the Wolfcamp coincides with the top of the Cisco Formation. The thickness of log porosity greater than 5% in the entire Wolfcamp Formation ranges from 0 feet to 295 feet in a band three miles wide that trends northeast-southwest across the study area.

The Cisco Formation (Pennsylvanian-Virgilian age) of the Northwest Shelf is described by Meyer (1966, page 59) as consisting of uniform, light colored, chalky, fossiliferous limestones interbedded with variegated shales. Meyer (1966, page 59) also describes the Cisco at the edge of the Permian basin as consisting of bio thermal (mound) reefs composed of thick, porous, coarse-grained dolomites. Locally, the Cisco consists of porous dolomite that is 745 feet thick in Chukka Well No. 2, 659 feet thick in Mewbourne Well No. 1, and 720 feet in Gaines Well No. 3. The total thickness of intervals with log porosity greater than 5% is approximately 310 feet in Mewbourne Well No. 1, 580 feet in Chukka Well No. 2, and 572 feet in Gaines Well No. 3. The total thickness with log porosity greater than 10% is approximately 100 feet in Mewbourne Well No. 1, 32 feet in Chukka Well No. 2, and 65 feet in Gaines Well No. 3. The thickness of the porous intervals in the Cisco ranges from 0 feet in the northwestern part of the study area to nearly 700 feet in a band three miles wide that trends northeast-southwest.

The Canyon Formation (Pennsylvanian-Missourian age) consists of white to tan to light brown fine grained, chalky, fossiliferous limestone with gray and red shale interbeds (Meyer, 1966, page 53). Locally, the Canyon occurs between the base of the Cisco dolomites and the top of the Strawn Formation (Pennsylvanian-Desmoinesian age). The total thickness of intervals with log porosity greater than 5% is 34 feet in Mewbourne Well No. 1, 30 feet in Chukka Well No. 2, and 10 feet in Gaines Well No. 3. No intervals appear to have log porosity greater than 10% in any of the three injection wells.

e. Discuss the presence of geological features, i.e., pinchouts, channels, and faults, if applicable:

From the geological study completed and submitted in the Discharge Plan Application and Application for Authorization to Inject, the reservoir appears to be continuous, with the possibility of anisotropic conditions extending to the west-southwest. The injection intervals that were studied are well confined by the Abo and Yeso low porosity carbonate beds, Tubbs shale, and Salado salt. The Cisco and Wolfcamp formations follow the Vacuum arch and have a southeasterly dip. No faults existed in the study area although, the study also shows that faulting occurs via the K-M fault located 6 miles northwest of Artesia and trends northeast-southwest. The distance to this fault line occurs no closer than 16 miles. No faults are known to exist in the confining zone within the AOR.

f. Provide a portion of relevant structure map, if necessary:

The structure map for Strawn is presented as Appendix I. The structure map for the Wolfcamp presented as Appendix J. The structure map for the Cisco is presented as Appendix K.

12. OFFSET WELLS

There are only four offset wells identified in the AOR that inject into the same interval: The Chalk Bluff Federal Com Well No. 3, Mewbourne Well No. 1, the Gaines Well No. 3 and the Chukka Well No. 2. The Mewbourne Well No. 1 and the Gaines Well No. 3 were shut-in during the buildup and falloff portions of the testing on the Chukka Well No. 2.

a. Identify the distance between the test well and any offset well completed in the same injection interval:

The Mewbourne Well No. 1 is approximately 10,860 feet from Chukka Well No. 2, the test well. The Gaines Well No. 3 is approximately 3,130 feet from the Chukka Well No. 2.

b. Report the status of the offset wells during both the injection and shut-in portions of the test:

Both the Gaines Well No. 3 and the Mewbourne Well No. 1 were shut-in during the buildup and falloff portions of the testing. Bottom-hole pressure gauges were lowered into each well approximately 72 hours before shutting in the Chukka Well No. 2. The bottom-hole pressure and temperature data are graphically depicted in Figure 5 for the Gaines Well No. 3 and Figure 3 for the Mewbourne Well No. 1

c. Describe the impact, if any, the offset wells had on the testing:

The offset wells were shut in prior to beginning the falloff testing on the Chukka Well No. 2.

13. CHRONOLOGICAL LISTING OF THE DAILY TESTING ACTIVITIES (OPERATIONS LOG)

Appendix L contains the formal Chronology of Field Activities. This chronology was developed from the field activity reports.

a. Date of the testing:

The buildup portion of the testing started at 7:32 a.m. on July 21, 2016 and continued until July 25, 2016, at 4:46 p.m., when the Chukka Well No. 2 was shut-in. The falloff test ended on July 27, 2016 at 7:56 a.m. The total depth of the well was tagged at 8362 feet and five-minute gradient stops were made while pulling the pressure gauges out of the wellbore. After the pressure gauges were pulled out of the well on July 27, 2016, the well was turned over to Navajo plant operations personnel.

b. Time of the injection period:

The buildup portion of the testing began on July 21, 2016 when the injection rate was set at an average injection rate of 110.77 gallons per minute (gpm). The injection rate was held constant for 105.23 hours.

c. Type of injection fluid:

The injected fluid was non-hazardous waste water from the plant. The density of the injection fluid was periodically measured and averaged 8.41 pounds per gallon during the 105.23-hour injection period.

d. Final injection pressure and temperature prior to shutting in the well:

The final flowing pressure (P_{wf}) and temperature (T_{wf}) were 4398.02 psia and 106.01°F, respectively.

e. Total shut-in time:

The Chukka Well No. 2 was shut-in for 39.09 hours.

f. Final static pressure and temperature at the end of the fall-off portion of the test:

The final static pressure at 7570 feet was 4263.52 psia. The final temperature was 109.62°F.

14. DESCRIBE THE LOCATION OF THE SHUT-IN VALVE USED TO CEASE FLOW TO THE WELL FOR THE SHUT-IN PORTION OF THE TEST

On the pipeline to the Chukka Well No. 2, there is one, 4-inch control valve (CV) installed on the incoming pipeline before the POD filter. Two 4-inch valves are installed between the POD filter and the wellhead. One motorized valve (MV) and injection pump is installed between the POD filter and the well. All valves were closed during the falloff portion of the testing. A diagram of the wellhead is shown in Figure 7 and a diagram of the valve locations are shown in Figure 8.

15. PRESSURE FALLOFF ANALYSIS

The following discussion of the analysis of the pressure data recorded during the falloff testing of the Mewbourne Well No. 1 satisfies Sections 15 through 19 of Section IX, Report Components, of the OCD's falloff test guidelines. Where appropriate, the specific guideline addressed is annotated. Specific parameters used in the equations and discussed previously in this report are also annotated. The plots included with this report are summarized in Table VIII. The inclusion of these plots in this report satisfies OCD Guideline Section IX.18.

The pressure data obtained during the falloff test were analyzed using the commercially available pressure transient analysis software program PanSystem©. Appendix M contains the output from this software program. Figure 9 shows the pressure data recorded by the bottom-hole pressure gauge from the time the tool was in place through the 39.09-hour shut-in period. Figure 10 shows the pressure and temperature data recorded by the bottom-hole pressure gauge from the time the tool was in place through the 39.09-hour shut-in period. Figure 11 is a Cartesian plot of the injection rates versus time for the injection period used in the pressure falloff analysis. The superposition time function was used to account for all rate changes during the injection period. Figure 12 is a plot of the historical injection rates and surface pressures versus calendar time.

Figure 13 is a log-log diagnostic plot of the falloff data, showing change in pressure and pressure derivative versus equivalent shut-in time. The different flow regimes, wellbore storage, radial flow and change in reservoir characteristics, are indicated on the log-log plot and the superposition Horner plot (OCD Guideline Section IX.18.c and IX.18.d)

Wellbore storage begins at 0.022 hours and continues to an elapsed shut in time of 0.085 hours. Radial flow begins at an elapsed shut in time of 2.48 hours and continues until 17.51 hours (OCD Guideline Section IX.15.b).

The reservoir permeability was determined from the radial flow region of the superposition semi-log plot, Figure 14. The radial flow regime begins at a Superposition time of 249 and continues until a Superposition time of 34 at which time the pressure data departs the semi-log straight-line. Figure 15 shows an expanded view of the radial flow regime. The slope of the radial flow period, as calculated by the analysis software, is 4.3447 psi/cycle (OCD Guideline Section IX.15.c). The injection rate just prior to shut in was 122.05 gpm which is equivalent to 4184.54 barrels per day (bbls/day).

An estimate of mobility-thickness (transmissibility, OCD Guideline Section IX.15.d), kh/μ, for the reservoir was determined to be 156,606 md-ft/cp using the following equation:

$$\frac{k\ h}{\mu} = 162.6\,\frac{q\ B}{m}$$

where,

kh/μ = formation mobility-thickness, millidarcy-feet/centipoise
q = rate prior to shut in, bpd

B = formation volume factor, reservoir volume/surface volume
m = slope of radial flow period, psi/cycle

$$\frac{k\ h}{\mu} = 162.6\,\frac{(4184.54)(1.0)}{4.3447}$$

$$= 156{,}606\ \text{md} - \text{ft}/\text{cp}$$

The permeability-thickness (flow capacity, OCD Guideline Section IX.15.i), kh, was determined to be 89,265 md-ft by multiplying the mobility-thickness, kh/μ, by the viscosity of the reservoir fluid (see Section 6), $\mu_{reservoir}$, of 0.57 centipoises:

$$kh = \left(\frac{kh}{\mu}\right)\mu_{reservoir}$$

$$= (156{,}606)(0.57)$$

$$= 89{,}265\,\text{md} - \text{ft}$$

The reservoir permeability (OCD Guideline Section IX.15.e) using the total thickness (see Section 5 and Section 11) of 175 feet was 510 md:

$$k = \frac{kh}{h}$$

$$= \frac{89{,}265}{175}$$

$$= 510\ \text{md}$$

To determine whether the proper viscosity was used in arriving at this permeability, the travel time for a pressure transient to pass beyond the waste front needs to be calculated (OCD Guideline Section VIII.5). The distance to the waste front is determined from the following equation:

$$r_{waste} = \left(\frac{0.13368\ V}{\pi h\ \phi}\right)^{1/2}$$

where,

r_{waste} = radius to waste front, feet
V = total volume injected into the injection interval, gallons
h = formation thickness, feet
ϕ = formation porosity, fraction
0.13368 = constant

A cumulative volume of approximately 1,103,142,467 gallons of waste has been injected into Chukka Well No. 2 (see Section 8). The formation has a porosity of 0.10 (see Section 5 and Section 11).

The distance to the waste front was determined to be 1638 feet:

$$r_{waste} = \sqrt{\frac{(0.13368)(1{,}103{,}142{,}467)}{(\pi)(175)(0.10)}}$$

$$= 1638 \text{ feet}$$

The time necessary for a pressure transient to traverse this distance is calculated from the following equation:

$$t_{waste} = 948 \frac{\phi \mu_{waste} c_t r^2_{waste}}{k}$$

where,

t_{waste} = time for pressure transient to reach waste front, hours
ϕ = formation porosity, fraction
μ_{waste} = viscosity of the waste at reservoir conditions, centipoise
r_{waste} = radius to waste front, feet
c_t = total compressibility of the formation and fluid, psi
k = formation permeability, millidarcies
948 = constant

The pore volume compressibility is 8.4×10^{-6} psi^{-1} (see Section 6). The time necessary for a pressure transient to traverse the distance from the wellbore to the leading edge of the waste front would be 2.26 hours:

$$t_{waste} = 948 \frac{(0.10)(0.54)(8.4 \times 10^{-6})(1638)^2}{510}$$

$$= 2.26 \text{ hours}$$

Since the time required to pass through the waste is less than the 2.48 hours required to reach the beginning of the radial flow period, the assumption that the pressure transient was traveling through reservoir fluid during the period of the semi-log straight line was correct.

The near wellbore skin damage (OCD Guideline Section IX.15.f) was determined from the following equation:

$$s = 1.151\left[\frac{p_{wf} - p_{1hr}}{m_1} - \log\left(\frac{k}{\phi\,\mu\,c_t\,r_w^2}\right) + 3.23\right]$$

where,

s	=	formation skin damage, dimensionless
1.151	=	constant
p_{wf}	=	flowing pressure immediately prior to shut in, psi
p_{1hr}	=	pressure determined from extrapolating the first radial flow semi-log line to a Δt of one hour, psi
m_1	=	slope of the first radial flow semi-log line, psi/cycle
k	=	permeability of the formation, md
ϕ	=	porosity of the injection interval, fraction
μ	=	viscosity of the fluid the pressure transient is traveling through, cp
c_t	=	total compressibility of the formation plus fluid, psi^{-1}
r_w	=	radius of the wellbore, feet
3.23	=	constant

The final measured flowing pressure was 4398.02 psia. The pressure determined by extrapolating the radial flow semi-log line to a Δt of one hour, p_{1hr}, was 4271.52 psia (calculated from the analysis software). The wellbore radius, r_w, is 0.3646 feet (completion records). Using these values in addition to the previously discussed parameters results in a skin of 25.83:

$$s = 1.151\left[\frac{4398.02 - 4271.52}{4.3447} - \log\left(\frac{510}{(0.10)(0.57)(8.4\text{x}10^{-6})(0.3646)^2}\right) + 3.23\right]$$

$$= 25.83$$

The change in pressure, Δp_{skin}, in the wellbore associated with the skin factor (OCD Guideline Section IX.15.g) was calculated using the following equation:

$$\Delta p_{skin} = 0.869(m)(s)$$

where,

0.869	=	constant
m	=	slope from superposition plot of the well test, psi/cycle
s	=	skin factor calculated from the well test

The change in pressure, Δp_{skin}, using the previously calculated and defined values was determined to be 97.52 psi:

$$\Delta p_{skin} = 0.869(m)(s)$$

$$= 0.869(4.3447)(25.83)$$

$$= 97.52 \text{ psi}$$

The flow efficiency (E, OCD Guideline Section IX.15.h) was determined from the following equation:

$$E = \frac{p_{wf} - \Delta p_{skin} - p_{static}}{p_{wf} - p_{static}}$$

where,

E	=	flow efficiency, fraction
p_{wf}	=	flowing pressure prior to shutting in the well for the fall-off test,
p_{static}	=	final pressure from the pressure falloff test
Δp_{skin}	=	pressure change due to skin damage

Using the previously determined parameters, the flow efficiency was calculated to be 0.27:

$$E = \frac{4398.02 - 97.52 - 4263.52}{4398.02 - 4263.52}$$

$$= 0.27$$

The radius of investigation (OCD Guideline Section IX.15.a) was calculated using the following equation:

$$R_{inv} = 0.029\sqrt{\frac{k\,\Delta t_s}{\phi\,\mu\,C_t}}$$

where,

k	=	formation permeability, millidarcies
Δt_s	=	elapsed shut-in time, hours
ϕ	=	formation porosity, fraction
μ	=	viscosity of the fluid the pressure transient is traveling through, cp
c_t	=	total compressibility of the formation plus fluid, psi^{-1}
0.029	=	constant

The radius of investigation, r_{inv}, using the previously defined values was determined to be 5918 feet:

$$R_{inv} = 0.029\sqrt{\frac{(510)(39.09)}{(0.10)(0.57)(8.4 \times 10^{6})}}$$

$$R_{inv} = 5918 \text{ feet}$$

As indicated on Figure 13, the pressure data departs the radial flow region at an elapsed time from shut in of 17.51 hours. No pressure or temperature anomalies were noted that would cause this type of pressure response observed on the derivative log-log plot (OCD Guideline Section VIII.9). A review of the geology of the injection zones (see Section 11) indicates that all three of the formations in which the Chukka Well No. 2 injects into have varying thicknesses and porosities within the mapped area. Changes in formation thickness, porosity, and fluid viscosity can cause the slope changes seen on the derivative log-log plot. Because these changes occurred during the duration of the pressure falloff test, the reservoir analysis results are considered heterogeneous as opposed to homogeneous (OCD Guideline Section IX.17.b).

The Hall plot (OCD Guideline Section IX.18.h) is presented as Figure 16. No slope changes are seen in the plotted data.

A comparison of the current analysis results with previous analysis results as well as with the reservoir parameters submitted with the permit application is presented in Table IX (OCD Guideline Section IX.19).

On July 27, 2016, a static pressure gradient survey was conducted while pulling the pressure gauges out of the well. Static gradient stops were conducted at 7570 feet, 7000 feet, 6000

feet, 5000 feet, 4000 feet, 3000 feet, 2000 feet, 1000 feet and at the surface. The bottom-hole pressure and temperature, after 39.09 hours of shut-in at 7570 feet, were 4263.52 psia and 109.63°F, respectively. The gradient survey is summarized in Table X. The data are graphically depicted in Figure 17.

16. NEW MEXICO OIL CONSERVATION DIVISION THREE YEAR RECORDING KEEPING STATEMENT

Navajo will keep the raw test data, generated during the testing, on file for a minimum of three years. The raw test data will be made available to OCD upon request.

TABLES

FIGURES

APPENDICES

TABLE I

FORMATION WATER ANALYSIS SUMMARY

Chemical	Mewbourne Well No. 1	Chukka Well No. 2	Gaines Well No. 3	Average
Date	July 31, 1998	June 14, 1999	Nov 8, 2006	
Fluoride (mg/l)	2.6	9.7	Not Detected	6.15
Chloride (mg/L)	19,000	15,000	10,447	14,815.67
NO3-N (mg/L)	<10	<10	--	<10
SO4 (mg/L)	2,200	2000	1,908	2,036
CaCO3 (mg/L)	1000	1210	--	1105
Specific Gravity (g/L)	1.034	1.0249	--	1.0295
TDS (mg/L)	33,000	20,000	--	26,500
Specific Conductance (uMHOs/cm)	52,000	43,000	--	47,500
Potassium (mg/L)	213	235	85.5	177.83
Magnesium (mg/L)	143	128	155	142
Calcium (mg/L)	390	609	393	464
Sodium (mg/L)	12,770	8,074	6,080	8,974.67
pH (s.u.)	8.1	7.2	--	7.65

The data in the above table was referenced from "Discharge Plan Application and Application for Authorization to Inject per Oil Conservation Division Form C-108, into Class I Wells WDW-1 and Proposed WDW-2 and WDW-3" and the "Discharge Permit Approval Conditions", "Reentry and Completion Report Waste Disposal Well No. 2", and "Reentry and Completion Report Waste Disposal Well No. 3".

TABLE II TABULATION OF WELLS WITHIN 1 MILE OF THE INJECTION WELLS

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
1	30-015-00693	GEORGE A CHASE & C SERVICE	36 17S 27E A	528	T/A	8/30/1941
		DELHI #001	330N 330E		O	
2	30-015-00694	DELHI OIL CORP.	36 17S 27E A	1993	P&A	6/24/1948
		STATE #013	990N 990E		O	6/24/1948
3	30-015-00646	GEORGE A CHASE & C SERVICE	36 17S 27E A	540	T/A	4/21/1950
		DELHI #007	990N 330E		O	
4	30-015-00668	LEGACY RESERVES OPERATING, LP	36 17S 27E G	1736	SHUT IN	12/6/1947
		SOUTH RED LAKE GRAYBURG UNIT #010	1650N 2310E		O	
5	30-015-00690	GEORGE A CHASE & C SERVICE	36 17S 27E G	532	ACTIVE	3/6/1949
		CONKLIN #002	1830N 2205E		O	
6	30-015-00667	FAIRWAY RESOURCES OPERATING INC	36 17S 27E G	1733	ACTIVE	3/23/1949
		SOUTH RED LAKE GRAYBURG UNIT #011	2310N 2310E		I	
7	30-015-00666	GEORGE A CHASE & C SERVICE	36 17S 27E G	533	ACTIVE 1/12/10 P&A 9/10/07	1/10/1942
		CONKLIN #001	2310N 2310E		O	9/10/2007
8	30-015-00689	GEORGE A CHASE JR & C SERVICE	36 17S 27E H	557	ACTIVE	8/4/1950
		GATES STATE #001	1650N 330E		O	
9	30-015-00647	ASPEN OIL INC	36 17S 27E H	551	ACTIVE	10/21/2003
		GATES STATE #002	1650N 990E		O	10/21/2003
10	30-015-00669	GEORGE A CHASE JR & C SERVICE	36 17S 27E H	1804	P&A	5/6/2008
		HOMAN #001	2310N 330E		O	5/6/2008
11	30-015-00688	KERSEY & CO	36 17S 27E I	590	P&A	10/28/1941
		RAMAPO #001	2310S 330E		O	10/28/1941
12	30-015-00670	KERSEY & CO	36 17S 27E I	1857	P&A	1/3/1950
		RAMAPO #003	2970N 330E		O	1/3/1950
13	30-015-00687	KERSEY & CO	36 17S 27E I	1900	P&A	5/7/1948
		RAMAPO #002	2310S 990E		G	5/7/1948

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
14	30-015-00685	ARCO OIL & GAS	36 17S 27E I	5980	P&A	7/10/1989
		EMPIRE ABO UNIT G #020	1650S 330E		O	7/10/1989
15	30-015-00671	ROJO GRANDE COMPANY LLC	36 17S 27E J	591	ZONE ABAN	2/13/1942
		RAMAPO #003	2310S 2310E		O	1/24/2000
16	30-015-01221	MCQUADRANGLE, LC	36 17S 27E J	1790	ZONE ABAN	2/27/1948
		SOUTH RED LAKE GRAYBURG UNIT #023	2300S 2300E		O	8/13/2002
17		MARTIN YATES III	36 17S 27E J	5865		4/22/1961
		DOOLEY STATE #3				
18	30-015-05934	BP AMERICA PRODUCTION COMPANY	36 17S 27E J	5970	ACTIVE	2/26/1961
		EMPIRE ABO UNIT #019A	1650S 1650E		O	
19	30-015-01220	MCQUADRANGLE, LC	36 17S 27E K	1747	ZONE ABAN	2/3/1949
		SOUTH RED LAKE GRAYBURG UNIT #022	2310S 2330W		O	7/17/2002
20	30-015-00674	ROJO GRANDE COMPANY LLC	36 17S 27E K	514	ACTIVE	5/15/1947
		RAMAPO #002	2310S 2310W		O	
21	30-015-01219	MCQUADRANGLE, LC	36 17S 27E K	1710	ACTIVE	1/20/1948
		SOUTH RED LAKE GRAYBURG UNIT #021	2310S 1650W		I	
22	30-015-23913	MCQUADRANGLE, LC	36 17S 27E K	1785	ACTIVE	12/11/1981
		SOUTH RED LAKE GRAYBURG UNIT #043	1650S 1650W		O	
23		MARTIN YATES III	36 17S 27E K	5865	ACTIVE	4/19/1961
		DOOLEY STATE ABO #3			O	
24	30-015-00673	ROJO GRANDE COMPANY LLC	36 17S 27E K	510	ZONE ABAN	1/24/2000
		RAMAPO #001	1650S 2310W		O	1/24/2000
25	30-015-00682	ROJO GRANDE COMPANY LLC	36 17S 27E N	541	ZONE ABAN	1/24/2000
		RAMAPO #004	990S 1650W		O	1/24/2000
26	30-015-00683	FAIRWAY RESOURCES OPERATING INC	36 17S 27E N	1812	ACTIVE	4/16/1948
		SOUTH RED LAKE GRAYBURG UNIT #028	965S 1650W		I	
27	30-015-01218	BP AMERICA PRODUCTION COMPANY	36 17S 27E N	5925	P&A	3/11/2009
		EMPIRE ABO UNIT #018	330S 2310W		O	3/11/2009

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
28	30-015-00684	BURNHAM OIL COMPANY	36 17S 27E O	1500	P&A	5/13/1947
		STATE B-6961 NO. 1-A	990S 2310E		O	5/13/1947
29	30-015-01251	BP AMERICA PRODUCTION COMPANY	36 17S 27E O	6200	P&A	9/8/1959
		EMPIRE ABO UNIT #019	660S 1980E		O	4/27/2009
30			36 17S 27E I		MISPLOT OF 14	
31	30-015-00677	BP AMERICA PRODUCTION COMPANY	36 17S 27E P	6013	P&A	4/13/2009
		EMPIRE ABO UNIT #020	330S 990E		O	4/10/2009
32	30-015-01616	C F M OIL CO	30 17S 28E P	615	ACTIVE	3/7/1953
		BLAKE STATE #001	330S 990E		O	
33	30-015-01638	ALAMO PERMIAN RESOURCES LLC	31 17S 28E A	2004	ACTIVE	7/15/1952
		STATE NO. 1	330N 990E		O	7/15/1952
34	30-015-21594	FINNEY OIL COMPANY	31 17S 28E B	652	ACTIVE	11/15/1975
		POWCO STATE #001	330N 1650E		O	
35	30-015-01636	BEDINGFIELD, J E	31 17S 28E C	637	P&A	12/23/1952
		DELHI-STATE NO. 1	330N 2310E		O	12/23/1952
36	30-015-25621	FINNEY OIL COMPANY	31 17S 28E B	747	ACTIVE	7/15/1986
		POWCO STATE #002	980N 1620E		O	
37	30-015-01633	GEORGE A CHASE JR DBA G AND C SERVIC	31 17S 28E D	531	ACTIVE	6/23/1942
		ASTON & FAIR A #001	330N 330W		O	
38	30-015-01634	ASTON & FAIR	31 17S 28E D	525	NO COMPL	1/5/1946
		STATE 31 NO. 1X	350N 345W		O	
39	30-015-01645	MCLAUGHLIN, C T	31 17S 28E F	2307	P&A	2/16/1950
		BEDINGFIELD STATE 1 NO. 1	990N 990W		O	2/16/1950
40	30-015-02666	DORAL ENERGY CORP.	31 17S 28E E	1816	ACTIVE	5/29/1948
		HUDSON SAIKIN STATE #001	2310N 330W		O	
41	30-015-24887	DORAL ENERGY CORP.	31 17S 28E E	1950	ACTIVE	7/7/1984
		HUDSON SAIKIN STATE #002	2310N 990W		O	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
42	30-015-01643	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #022	31 17S 28E F 2310N 2260W	5971	P&A O	6/7/1960 7/10/2009
43	30-015-01635	GEORGE A CHASE JR DBA G AND C SERVIC ASTON & FAIR #001Y	31 17S 28E F 2310N 2310W	1926	ACTIVE O	5/8/1948
44	30-015-01637	GEORGE A CHASE JR DBA G AND C SERVIC MALCO STATE #001	31 17S 28E G 2310N 2310E	1852	ACTIVE O	10/12/1953
45	30-015-01652	KERSEY & CO BOLING #001	31 17S 28E G 2288N 1625E	6025	ACTIVE O	8/10/1960
46	30-015-10537	VANGUARD OPERATING LLC NORTHWEST ARTESIA UNIT #004	31 17S 28E H 2277N 330E	6180	ACTIVE O	9/23/1965
47	30-015-10833	VANGUARD OPERATING LLC NORTHWEST ARTESIA UNIT #010	31 17S 28E I 1980S 660E	1945	ACTIVE O	6/17/1966
48	30-015-01644	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #024A	31 17S 28E I 1650S 330E	6106	P&A O	4/29/1960 6/12/2009
49	30-015-01642	DORAL ENERGY CORP. STATE FW #001	31 17S 28E J 1650S 2310E	1937	ACTIVE O	12/23/1962
50	30-015-01650	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #023A	31 17S 28E J 1650S 1958E	6094	P&A O	9/17/2003 9/17/2003
51	30-015-01651	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #022B	31 17S 28E K 1650S 2387W	6046	P&A O	4/10/1960 10/22/2009
52	30-015-01640	DORAL ENERGY CORP. RAMPO #002	31 17S 28E L 2310S 330W	1996	ACTIVE O	7/16/1955
53	30-015-01648	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #021A	31 17S 28E L 1651S 1089E	5971	ZONE ABAN O	8/24/2002 8/24/2002
54	30-015-01639	DORAL ENERGY CORP. RAMPO #001	31 17S 28E M 990S 330W	1975	ACTIVE O	5/1/1948
55	30-015-01647	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #021	31 17S 28E M 660S 660W	6006	P&A O	1/31/1960 7/23/2005

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
56	30-015-01646	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #022A	31 17S 28E N 660S 2082W	6050	P&A O	1/22/1960
57	30-015-10118	DORAL ENERGY CORP. STATE FV #001	31 17S 28E N 766S 2188W	1938	ACTIVE O	3/1/1963
58	30-015-01653	OTIS A ROBERTS PARKER-STATE NO. 1	31 17S 28E O 990S 1650E	742	P&A O	1/18/1942 1/18/1942
59	30-015-27592	NAVAJO REFINING CO. PIPELINE DIVISION WDW #001	31 17S 28E 660S 2310E	10200	ACTIVE I	8/4/1998
60	30-015-01649	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #023	31 17S 28E O 660S 1939E	6094	P&A O	2/24/1960 8/14/2009
61	30-015-20042	VANGUARD OPERATING LLC NORTHWEST ARTESIA UNIT #011	31 17S 28E P 990S 660E	2012	ACTIVE O	5/8/1967
62	30-015-01641	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #024	31 17S 28E P 660S 660E	6122	ACTIVE O	3/12/1960
63	30-015-01654	BEDINGFIELD, J E ASTON-STATE NO. 1	32 17S 28E D 330N 330W	651	P&A O	5/12/1953 5/12/1953
64	30-015-01671	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #025B	32 17S 28E E 2280N 978W	6013	P&A O	9/13/1960 8/14/2008
65	30-015-01657	MARBOB ENERGY CORP AA STATE NO. 1	32 17S 28E F 2280N 1980W	6171	ACTIVE O	8/24/1960
66	30-015-10818	SDX RESOURCES INC NORTHWEST ARTESIA UNIT #008	32 17S 28E K 2310S 2105W	2003	P&A O	11/6/2006 11/6/2006
67	30-015-01661	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #026B	32 17S 28E K 1650S 2310W	6083	ACTIVE O	3/27/1960
68	30-015-10795	LIME ROCK RESOURCES A, LP NORTHWEST ARTESIA UNIT #009	32 17S 28E L 2310S 660W	1930	P&A O	5/15/1966 5/28/2008
69	30-015-01662	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #025A	32 17S 28E L 1650S 990W	6075	ACTIVE O	4/13/1960

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
70	30-015-20043	VANGUARD OPERATING LLC NORTHWEST ARTESIA UNIT #012	32 17S 28E M 990S 760W	1998	ACTIVE O	5/9/1967
71	30-015-01660	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #025	32 17S 28E M 660S 660W	6132	P&A O	3/5/1960 1/14/2009
72	30-015-10834	SDX RESOURCES INC NORTHWEST ARTESIA UNIT #013	32 17S 28E N 990S 2030W	1954	P&A O	9/15/2006 9/15/2006
73	30-015-01659	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #026A	32 17S 28E N 660S 1980W	6172	ACTIVE O	2/14/1960
74	30-015-21539	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #261	32 17S 28E N 150S 1400W	6220	ACTIVE O	7/25/1975
75	30-015-22009	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #272	32 17S 28E O 330S 2481E	6370	ACTIVE O	7/18/1977
76	30-015-02606	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #026E	5 18S 28E C 330N 1941W	6254	ACTIVE O	7/18/1960
77	30-015-22697	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #261A	5 18S 28E C 1080N 1914W	6350	P&A O	1/4/1979 6/16/2009
78	30-015-02607	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #025C	5 18S 28E D 660N 660W	6273	ACTIVE O	3/27/1960
79	30-015-22750	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #251	5 18S 28E D 660N 150W	6250	SHUT IN O	1/12/1979
80	30-015-02608	CONOCOPHILLIPS COMPANY STATE E AI #001	5 18S 28E E 1660N 330W	6265	P&A O	1/13/2006 1/13/2006
81	30-015-24485	CONOCOPHILLIPS COMPANY ILLINOIS CAMP A COM #001	5 18S 28E E 1980N 990W	10450	ACTIVE G	8/10/1983
82	30-015-02602	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #026D	5 18S 28E F 1650N 1650W	6265	ACTIVE O	12/30/1959
83	30-015-25522	I & W INC WALTER SOLT STATE #001	5 18S 28E L 2240S 400W	8500	ACTIVE S	8/12/1983

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
84	30-015-10244	MACK ENERGY CORP	5 18S 28E L	6365	ZONE ABAN	3/27/2001
		STATE AG #001	2310S 330W		O	3/27/2001
87	30-015-20019	LIME ROCK RESOURCES A, LP	6 18S 28E A	3280	ACTIVE	3/14/1967
		NORTHWEST ARTESIA UNIT #016	330N 330E		O	
88	30-015-02615	BP AMERICA PRODUCTION COMPANY	6 18S 28E A	6241	ACTIVE	2/29/1960
		EMPIRE ABO UNIT #024B	660N 660E		O	
89	30-015-02625	BP AMERICA PRODUCTION COMPANY	6 18S 28E B	6194	T/A	12/21/1959
		EMPIRE ABO UNIT #023C	470N 2170E		O	
90	30-015-21542	BP AMERICA PRODUCTION COMPANY	6 18S 28E B	6250	ACTIVE	11/1/1975
		EMPIRE ABO UNIT #231	1260N 1580E		O	
91	30-015-02621	BP AMERICA PRODUCTION COMPANY	6 18S 28E C	6033	ACTIVE	12/29/1959
		EMPIRE ABO UNIT #022E	660N 1980W		O	
92	30-015-21626	BP AMERICA PRODUCTION COMPANY	6 18S 28E G	6380	SHUT IN	10/22/1975
		EMPIRE ABO UNIT #231A	1361N 2531E		O	
93	30-015-02613	BP AMERICA PRODUCTION COMPANY	6 18S 28E D	6119	ACTIVE	12/30/1959
		EMPIRE ABO UNIT #021B	990N 660W		O	
94	30-015-23116	BP AMERICA PRODUCTION COMPANY	6 18S 28E E	6225	ACTIVE	6/2/1980
		EMPIRE ABO UNIT #213	2050N 100W		O	
95	30-015-02619	BP AMERICA PRODUCTION COMPANY	6 18S 28E E	6202	ACTIVE	10/30/1959
		EMPIRE ABO UNIT #021C	1990N 660W		O	
96	30-015-22637	BP AMERICA PRODUCTION COMPANY	6 18S 28E E	6267	ACTIVE	12/28/1978
		EMPIRE ABO UNIT #212	2450N 400W		O	
97	30-015-21395	BP AMERICA PRODUCTION COMPANY	6 18S 28E E	6200	ACTIVE	2/11/1975
		EMPIRE ABO UNIT #211	2630N 1300W		O	
98	30-015-22012	BP AMERICA PRODUCTION COMPANY	6 18S 28E F	6303	ACTIVE	3/13/1977
		EMPIRE ABO UNIT #222	1350N 1572W		O	
99	30-015-02626	SARKIN, DAVID C & OLIVER, HENRY F	6 18S 28E F	705	P&A	2/21/1942
		STATE NO. 1	1650N 1650W		O	2/21/1942

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
100	30-015-10107	DORAL ENERGY CORP STATE FX #001	6 18S 28E F 1874N 1874W	1985	ACTIVE O	8/8/1963
101	30-015-02620	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #022D	6 18S 28E F 1990N 2082W	6206	ACTIVE O	11/26/1959
102	30-015-22527	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #223	6 18S 28E F 2630N 1930W	6250	ACTIVE O	5/19/1978
103	30-015-21746	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #221	6 18S 28E F 2610N 2713W	6305	ACTIVE O	4/23/1976
104	30-015-22913	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #235	6 18S 28E G 1750N 1600E	6300	ACTIVE O	7/8/1979
105	30-015-22593	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #234	6 18S 28E G 1900N 2441E	6260	P&A O	8/27/1978 12/3/2008
106	30-015-02614	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #023B	6 18S 28E G 1980N 1980E	6242	ACTIVE O	1/26/1960
107	30-015-21737	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #232	6 18S 28E G 2253N 1576E	6345	P&A O	4/13/1976 5/7/2009
108			6 18S 28E H		MISPLOT OF 107	
109	30-015-22490	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #233	6 18S 28E G 2550N 2050E	6300	P&A O	6/5/1978 4/3/2009
110	30-015-02616	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #024C	6 18S 28E H 1650N 990E	6253	ACTIVE O	3/24/1960
111	30-015-23547	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #241	6 18S 28E H 1950N 660E	6386	P&A O	4/12/1981 9/19/2008
112	30-015-02617	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #024K	6 18S 28E I 2310S 990E	6350	P&A O	12/12/2002 12/12/2002
113	30-015-22528	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #232A	6 18S 28E J 2300S 1570E	6350	P&A O	2/5/1979 4/7/2009

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
114	30-015-02611	BARNEY COCKBURN STATE NO. 1	6 18S 28E J 2310S 2310E	2095	P&A O	8/15/1949 8/15/1949
115	30-015-02628	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #023D	6 18S 28E J 2260S 2270E	6310	ACTIVE O	5/23/1979
116	30-015-22491	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #231B	6 18S 28E J 1700S 2350E	6350	P&A O	8/13/1978 9/2/2009
117	30-015-02618	MILLER BROS OIL CO CAPITOL STATE NO. 1	6 18S 28E J 1647S 2076E	2396	P&A G	3/21/1955 3/21/1955
118	30-015-02623	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #022F	6 18S 28E K 2248S 2075W	6210	ACTIVE O	2/22/1960
119			6 18S 28E K		MISPLOT	
120		NAVAJO REFINING COMPANY WDW-2 (ORIGINAL LOCATION)	6 18S 28E L			
121	30-015-02622	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #021D	6 18S 28E L 2219S 660W	6194	ACTIVE O	1/23/1960
122	30-015-23548	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #211A	6 18S 28E L 1950S 1000W	6312	ACTIVE O	7/17/1980
123	30-015-02627	RUTH OIL CO, LLC STATE M-AI #002	6 18S 28E M 949S 990W	6225	ACTIVE O	10/21/1960
124	30-015-26943	MEWBOURNE OIL CO CHALK BLUFF 6 STATE #001	6 18S 28E M 990S 730W	10200	ACTIVE G	4/16/1992
125	30-015-02610	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #022C	6 18S 28E N 955S 1750W	6243	ACTIVE O	8/5/1960
126	30-015-02624	PAN AMERICAN PETROLEUM CO STATE CD NO. 1	6 18S 28E O 968S 2270E	6412	P&A O	5/1/1961 5/1/1961
127	30-015-25503	DICKSON PETROLEUM CO KIMBERLY STATE NO. 1	6 18S 28E P 660S 330E	1750	P&A O	12/30/1985 12/30/1985

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
128	30-015-02612	D & H OIL CO	6 18S 28E P	2246	P&A	5/13/1952
		STATE NO. 1	330S 330E		O	5/13/1952
129	30-015-01215	BP AMERICA PRODUCTION COMPANY	1 18S 27E A	6118	ACTIVE	11/5/1959
		EMPIRE ABO UNIT #020D	667N 666E		O	
130	30-015-00708	BP AMERICA PRODUCTION COMPANY	1 18S 27E B	6078	ACTIVE	7/7/1959
		EMPIRE ABO UNIT #019B	660N 1980E		O	
131		MALCO REFINERIES	1 18S 27E C	1840	P&A	5/10/1948
		HILL #4				5/10/1948
132			1 18S 27E C		MISPLOT	
133	30-015-00710	MARBOB ENERGY CORP	1 18S 27E C	6173	ACTIVE	7/21/2004
		AAO FEDERAL No. 013	660N 1980W		O	
134	30-015-26741	MEWBOURNE OIL CO	1 18S 27E F	10140	ACTIVE	8/24/1991
		CHALK BLUFF FEDERAL COM #002	1650N 1350W		G	
135	30-015-00706	BP AMERICA PRODUCTION COMPANY	1 18S 27E F	6087	ACTIVE	5/31/1959
		EMPIRE ABO UNIT #018A	2310N 1980W		O	
136	30-015-00709	BP AMERICA PRODUCTION COMPANY	1 18S 27E G	6205	ACTIVE	8/2/1959
		EMPIRE ABO UNIT #019C	1980N 1980E		O	
137			1 18S 27E G		MISPLOT	
138	30-015-21552	BP AMERICA PRODUCTION COMPANY	1 18S 27E G	6259	ACTIVE	9/7/1975
		EMPIRE ABO UNIT #191	2500N 2500E		O	
139	30-015-00711	BP AMERICA PRODUCTION COMPANY	1 18S 27E H	6218	ACTIVE	10/13/1959
		EMPIRE ABO UNIT #020C	1980N 660E		O	
140	30-015-21783	BP AMERICA PRODUCTION COMPANY	1 18S 27E H	6296	ACTIVE	5/13/1976
		EMPIRE ABO UNIT #202	2490N 1299E		O	
141	30-015-22656	BP AMERICA PRODUCTION COMPANY	1 18S 27E H	6225	ACTIVE	10/10/1978
		EMPIRE ABO UNIT #203	2400N 700E		O	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
142		MANHATTAN OIL CRONIN #1	1 18S 27E H	2900	P&A	7/1/1927 7/1/2027
143	30-015-21553	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #201	1 18S 27E H 2501N 20E	6225	ACTIVE O	7/19/1975
144	30-015-27163	MEWBOURNE OIL CO CHALK BLUFF FEDERAL COM #003	1 18S 27E I 1980S 990E	10150	ACTIVE G	1/16/1993
145	30-015-00697	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #020K	1 18S 27E I 1980S 660E	6185	P&A O	1/5/2003 1/5/2003
146	30-015-22657	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #193	1 18S 27E J 2490S 2200E	6225	ACTIVE O	10/26/1978
147	30-015-00696	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #019Q	1 18S 27E J 1980S 1980E	6180	ACTIVE O	8/20/1959
148	30-015-22560	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #192	1 18S 27E J 220S 1390E	6250	ACTIVE O	6/25/1978
149	30-015-21873	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #191A	1 18S 27E J 1526S 1470E	6350	ACTIVE O	9/23/1976
150	30-015-22658	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #194	1 18S 27E J 1500S 2130E	6325	ACTIVE O	11/14/1978
151	30-015-22559	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #184	1 18S 27E K 2290S 2445W	6200	SHUT IN O	7/25/1978
152	30-015-22096	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #183	1 18S 27E K 2370S 1510W	6210	ACTIVE O	7/24/1977
153	30-015-21554	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #181	1 18S 27E K 1367S 1440W	6203	P&A O	4/17/2003 4/17/2003
154	30-015-00707	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #018B	1 18S 27E K 1980S 1980W	6163	ACTIVE O	5/22/1959
155	30-015-21792	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #182	1 18S 27E K 1533S 2370W	6369	ACTIVE O	6/1/1976

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
156	30-015-00713	BP AMERICA PRODUCTION COMPANY	1 18S 27E N	6174	P&A	9/27/2003
		EMPIRE ABO UNIT #018D	995S 1644W		O	9/27/2003
157	30-015-26575	NAVAJO REFINING COMPANY	1 18S 27E N	10120	ACTIVE	3/7/1991
		WDW-3	790S 2250W		I	
158	30-015-20394	HUMBLE OIL & REFINING CO	1 18S 27E O	6300	P&A	4/9/1971
		EMPIRE ABO FEDERAL NO. 5	953S 2197E		O	4/9/1971
159	30-015-00698	BP AMERICA PRODUCTION COMPANY	1 18S 27E O	6365	ACTIVE	11/8/1959
		EMPIRE ABO UNIT #191	660S 1980E		S	
160	30-015-00699	BP AMERICA PRODUCTION COMPANY	1 18S 27E P	6250	ACTIVE	12/2/1961
		EMPIRE ABO UNIT #020B	940S 330E		O	
161	30-015-26404	DEVON ENERGY PRODUCTION COMPANY L	12 18S 27E A	10141	ACTIVE	9/13/1990
		FEDERAL T #001	660N 990E		I	
162	30-015-25099	HARLOW ENTERPRISES LLC	12 18S 27E H	1652	ACTIVE	9/11/1985
		COMSTOCK FEDERAL #006	1809N 990E		O	
165	30-015-25997	EASTLAND OIL CO	7 18S 28E C	1690	ACTIVE	2/23/1987
		LAUREL STATE #001	940N 1757W		O	
166	30-015-25675	EASTLAND OIL CO	7 18S 28E E	1690	ACTIVE	11/10/1988
		LAUREL STATE #002	940N 1757W		O	
167	30-015-25236	MOREXCO INC	7 18S 28E F	10400	ACTIVE	6/10/1985
		STATE BY #001	1980N 1980W		O	
168	30-015-22636	DYAD PE	7 18S 28E J		ABAN LOCATION	
		PRE-ONGUARD WELL #213	1950N 1300W		O	
169	30-015-22635	DYAD PE	8 18S 28E J		ABAN LOCATION	
		PRE-ONGUARD WELL #212	1900N 100W		O	
170	30-015-24372	DYAD PE	8 18S 28E J		ABAN LOCATION	
		PRE-ONGUARD WELL #001	1980S 990E		O	
171	30-015-27636	PHILLIPS PETROLEUM	7 18S 28E H		ABAN LOCATION	
		CHALK BLUFF 6 STATE #002	2310N 810E		O	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
353	30-015-27286	MEWBOURNE OIL CO	36 17S 27E M	10060	ACTIVE	3/30/1993
		CHALK BLUFF 36 STATE #001	660S 990W		O	
354	30-015-24612	PRONGHORN MANAGEMENT CORP	36 17S 27E M	1451	P&A	10/11/1983
		STATE M #001	790S 990W		O	4/21/2009
355	30-015-00676	BP AMERICA PRODUCTION COMPANY	36 17S 27E M	5797	ACTIVE	
		EMPIRE ABO UNIT #017	330N 990W		O	
356	30-015-10184	ASPEN OIL INC	36 17S 27E M	1343	ACTIVE	
		STATE #006	330S 920W		O	
358	30-015-21623	GEORGE A CHASE JR & C SERVICE	36 17S 27E M	1366	ACTIVE	
		STATE #007	360S 455W		O	
359	30-015-00662	ACREY, B L & F D	36 17S 27E M	592	P&A	10/15/1942
		STATE NO. 2	330S 330W		O	10/15/1942
595	30-015-02605	BP AMERICA PRODUCTION UNIT	5 18S 28E B	6261	P&A	3/30/1960
		EMPIRE ABO UNIT NO. 27 E	930N 2271E		O	6/12/2009
748	30-015-00701	FAIRWAY RESOURCES OPERATING LLC	1 18S 27E D	1835	ACTIVE	
		SOUTH RED LAKE GRAYBURG UNIT 37 WIW	330N 330W		O	
748	30-015-00715	MCQUADRANGLE, LC	1 18S 27E D	1835	ACTIVE	
		SOUTH RED LAKE GRAYBURG UNIT #037	330N 330W		I	
749	30-015-00712	ARCO OIL & GAS	1 18S 27E D	5900	P&A	1/24/1987
		EMPIRE ABO UNIT I NO. 17	647N 667W		O	1/24/1987
750		JONES	1 18S 27E E	481	P&A	5/10/1939
		BRAINARD	1650N 330W		O	5/10/1939
751	30-015-00704	ARCO OIL & GAS	1 18S 27E E	5960	P&A	3/26/1959
		EMPIRE ABO UNIT J NO. 17	1980N 660W		O	3/26/1959
752	30-015-00703	BP AMERICA PRODUCTION COMPANY	1 18S 27E L	6091	P&A	5/22/1995
		EMPIRE ABO UNIT #017A	1980S 660W		O	3/27/2009
753	30-015-22815	BP AMERICA PRODUCTION COMPANY	1 18S 27E M	6300	ACTIVE	5/22/1979
		EMPIRE ABO UNIT #171	670S 330W		O	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
754			1 18S 27E M		MISPLOT OF 756	
755	30-015-00714	VALLEY REFINING CO	1 18S 27E N	2404	P&A	12/20/1943
		HILL #1				12/20/1943
756	30-015-00705	BP AMERICA PRODUCTION COMPANY	1 18S 27E M	6150	P&A	6/25/1959
		EMPIRE ABO UNIT #017B	990S 660W		O	7/21/2004
757		BRAINARD & GUY	2 18S 27E A	530	NO COMPL	1/31/1942
		STATE 2	330N 610E			1/31/1942
758	30-015-00721	FAIRWAY RESOURCES OPERATING LLC	2 18S 27E A	1705	SHUT IN	11/6/1947
		SOUTH RED LAKE GRAYBURG UNIT #036	330N 990E		O	
765	30-015-00724	BP AMERICA PRODUCTION COMPANY	2 18S 27E A	5920	ACTIVE	
		EMPIRE ABO UNIT #016B	990N 330E		O	
766	30-015-00737	FAIRWAY RESOURCES OPERATING LLC	2 18S 27E B	1722	ACTIVE	5/23/1948
		SOUTH RED LAKE GRAYBURG UNIT #038	905N 1601E		O	
772	30-015-00745	MACK ENERGY CORPORATION	2 18S 27E H	6140	P&A	3/7/2008
		STATE H #001	1980N 660E		O	3/7/2008
773	30-015-00742	S&J OPERATING COMPANY	2 18S 27E H	1742	P&A	2/8/1991
		SOUTH RED LAKE GRAYBURG UNIT 39 WIW	1650N 990E		O	2/8/1991
774	30-015-00740	MCQUADRANGLE, LC	2 18S 27E G	1707	P&A	7/10/2002
		SOUTH RED LAKE GRAYBURG UNIT #040	1650N 2197E		I	7/10/2002
778		RUTTER & WILBANKS	2 18S 27E G			1/1/1957
		HUDSON #2	2310N 1650E		O	
779	30-015-00741	BP AMERICA PRODUCTION COMPANY	2 18S 27E G	5880	ACTIVE	6/6/1959
		EMPIRE ABO UNIT #015B	2310N 1980E		O	
781		MALCO REFINING CO	2 18S 27E J	4164	P&A	1/1/1947
		STATE B-2	2310S 2310E		O	1/1/1947
785	30-015-00717	BP AMERICA PRODUCTION COMPANY	2 18S 27E I	6114	ACTIVE	2/6/1995
		EMPIRE ABO UNIT #016	1980S 660E		O	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
786	30-015-00716	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #015	2 18S 27E J 1980S 1830E	6100	ACTIVE O	3/23/1959
789	30-015-22896	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #143A	2 18S 27E K 1820S 2550W	6108	ACTIVE O	5/13/1979
791	30-015-22914	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #161	2 18S 27E I 1310S 590E	6225	ACTIVE O	9/13/1979
792			2 18S 27E O		MISPLOT OF 814	
793	30-015-22609	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #143	2 18S 27E N 1200S 1900W	6093	ACTIVE O	12/20/1978
795			2 18S 27E P		MISPLOT OF 765	
796	30-015-21544	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #151	2 18S 27E O 1110S 1322E	6285	T/A O	11/4/1975
797	30-015-22885	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #155	2 18S 27E O 1040S 2025E	6202	T/A O	5/1/1979
799	30-015-00722	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #016A	2 18S 27E P 660S 660E	6115	P&A O	1/20/1959 2/24/2009
800	30-015-22808	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #156	2 18S 27E O 600S 1330E	6225	P&A O	4/12/1979 2/5/2009
801	30-015-00731	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #015A	2 18S 27E O 660S 1980E	6220	P&A O	11/19/1958 2/11/2009
802	30-015-22669	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #154	2 18S 27E O 800S 2500E	6200	P&A O	12/4/1978 1/27/2009
805	30-015-22013	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #153	2 18S 27E O 90S 1456E	6303	P&A O	4/20/1977 10/30/2008
806	30-015-21825	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #152	2 18S 27E O 320S 2602E	6335	T/A O	6/17/1976

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
807	30-015-22608	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #142	2 18S 27E N 100S 1950W	6200	P&A (No Info on dates) O	
808	30-015-21807	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #132	2 18S 27E M 275S 1243W	6200	ACTIVE O	7/1/1976
812	30-015-00730	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #014	2 18S 27E N 660S 1980W	6112	ACTIVE O	10/21/1958
813	30-015-00720	BP AMERICA PRODUCTION COMPANY RIVERWOLF UNIT #004	2 18S 27E A 990N 1650E	5881	P&A O	10/21/1959 12/12/2008
814	30-015-22051	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #141A	2 18S 27E K 1370S 2445W	6203	ACTIVE O	5/17/1977
836	30-015-00869	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #016C	11 18S 27E A 330N 653E	6211	P&A O	10/25/2004 10/25/2004
837	30-015-22568	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #151B	11 18S 27E B 400N 1450E	6310	P&A O	8/16/2006 8/16/2006
838	30-015-22838	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #153B	11 18S 27E B 200N 1925E	6252	P&A O	5/6/1979 1/4/2009
839	30-015-00868	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #015C	11 18S 27E B 660N 1980E	6260	P&A O	7/16/2004 7/16/2004
840	30-015-22569	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #152B	11 18S 27E B 560N 2588E	6300	P&A O	8/23/1978 9/24/2008
841	30-015-22834	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #141B	11 18S 27E C 225N 2280W	6225	ACTIVE O	5/21/1979
842	30-015-00864	ARCO OIL & GAS EMPIRE ABO UNIT M NO. 14	11 18S 27E C 660N 1980W	6315	P&A O	9/5/1957 9/5/1957
843	30-015-22833	BP AMERICA PRODUCTION COMPANY EMPIRE ABO UNIT #133B	11 18S 27E D 450N 1175W	6225	ACTIVE O	5/23/1979
844	30-015-00867	ARCO OIL & GAS EMPIRE ABO UNIT M NO. 13	11 18S 27E D 660N 660W	6114	P&A O	4/26/1958 4/26/1958

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
846	30-015-22556	ARCO OIL & GAS	11 18S 27E D	6325	P&A	7/10/1978
		EMPIRE ABO UNIT M NO. 131	1100N 1200W		O	7/10/1978
848	30-015-20510	AMOCO PRODUCTION CO	11 18S 27E F	10168	P&A	10/16/1971
		MALCO S NO. 1	1650N 1653W		O	10/16/1971
849	30-015-00865	ARCO OIL & GAS	11 18S 27E F	6208	P&A	2/3/1961
		EMPIRE ABO UNIT N NO. 14	1650N 1980W		O	2/3/1961
850	30-015-00866	ARCO OIL & GAS	11 18S 27E E	6120	P&A	3/27/1958
		EMPIRE ABO UNIT N NO. 131	1980N 660W		O	3/27/1958
851	30-015-00870	AMOCO PRODUCTION CO	11 18S 27E J	7270	P&A	9/1/1956
		SMITH-MCPHERSON NO. 1	1980S 1980E		O	9/1/1956
852	30-015-01201	OSCAR HOWARD	11 18S 27E N	1828	P&A	
		AN ETZ #3				4/15/2027
853	30-015-01202	OSCAR HOWARD	11 18S 27E O	1827	P&A	
		AN ETZ #2				2/4/2027
854	30.015-00863	B.R. POLK, JR.	11 18S 27E N	1794	P&A	10/14/1949
		VICKERS #1				10/14/1949
855	30-015-24857	CHESAPEAKE OPERATING INC	11 18S 27E M	11915	ACTIVE	5/18/1984
		FEDERAL DH GAS COM #001	700S 990W		G	
856	30-015-20535	ROBERT G COX	12 18S 27E D	6248	P&A	8/7/1973
		FEDERAL EA 2	330N 455W		O	8/7/1973
857	30-015-00871	RHONDA OPERATING CO	12 18S 27E D	6253	P&A	4/12/1994
		FEDERAL EA #001	330N 330W		O	4/12/1994
858	30-015-23115	RHONDA OPERATING CO	12 18S 27E D	6295	D&A	3/16/1980
		FEDERAL EA NO. 3	330N 380W		O	3/16/1980
859	30-015-25738	HARLOW ENTERPRISES LLC	12 18S 27E G	1586	ACTIVE	4/25/1987
		COMSTOCK FEDERAL #009	2310N 2310E		O	
860	30-015-25270	BILL MILLER	12 18S 27E F	1600	ACTIVE	4/23/1985
		CHUKKA FEDERAL #001	2310N 2310W		O	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
861	30-015-20894	NAVAJO REFINING COMPANY	12 18S 27E E	10372	ACTIVE	7/18/1973
		WDW #002	1980N 660W		I	
862	30-015-00874	HARLOW ENTERPRISES LLC	12 18S 27E J	3664	ACTIVE	6/29/1948
		COMSTOCK FEDERAL #007	2310S 2355E		O	
863	30-015-00872	MCKEE-JONES	12 18S 27E L	594	D&A	
		MAGRUDER NO. 1	310S 990W		O	2/18/1943
864	30-015-25201	HARLOW ENTERPRISES LLC	12 18S 27E K	1600	ACTIVE	3/16/1985
		COMSTOCK FEDERAL #002	1650S 1770W		O	
865	30-015-25649	FRED POOL DRILLING CO	12 18S 27E L	2000	D&A	
		COMSTOCK FEDERAL NO. 8	1650S 990W		O	10/10/1986
866	30-015-25545	HARLOW ENTERPRISES LLC	12 18S 27E M	1530	ACTIVE	5/19/1986
		COMSTOCK FEDERAL #003	990S 990W		O	
867	30.015-00873	R.E. McKEE ET AL	12 18S 27E M	2510	P&A	2/27/1945
		MAGRUDER #2				2/27/1945
868	30-015-26017	EASTLAND OIL CO	12 18S 27E N	2040	P&A	1/23/2003
		COMSTOCK FEDERAL #010	990S 1650W		O	1/23/2003
869	30-015-25100	HARLOW ENTERPRISES LLC	12 18S 27E N	2400	ACTIVE	12/10/1984
		COMSTOCK FEDERAL #001	330S 1650W		O	
870	30-015-25202	HARLOW ENTERPRISES LLC	12 18S 27E O	1625	ACTIVE	4/19/1985
		COMSTOCK FEDERAL #005	330S 2310E		O	
871	30-015-06171	PILCHER OIL & GAS	12 18S 27E I	2200	P&A	
		MICHAEL CRONIN NO. 3	1069S 251E		O	5/20/2026
872		PILCHER OIL & GAS	12 18S 27E P	2002	P&A	2/15/1932
		MICHAEL CRONIN #1				2/15/1932
873	30-015-00875	CITIES SERVICE OIL CO	12 18S 27E P	2000	P&A	7/30/1952
		MAGRUDER NO. B-4	330S 330E		O	7/30/1952
874	30-015-00876	ROBERT E MCKEE	12 18S 27E P	1994	P&A	2/8/1954
		MAGRUDER NO. 5	100S 500E		O	2/8/1954

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
875	30-015-06170	PILCHER OIL & GAS	12 18S 27E P	2004	P&A	
		MICHAEL CRONIN NO. 2	200S 200E		O	2/22/2026
876	30-015-01200	HASSENFUSH-DONNELLY	13 18S 27E A	2030	P&A	
		STATE NO. 1	0 0		O	1/1/2026
877	30-015-06137	EASTLAND OIL CO	13 18S 27E A	2696	D&A	
		STATE NO. 2	250N 990E		O	1/1/2026
878	30-015-25394	BILL MILLER	13 18S 27E C	1613	ACTIVE	9/28/1985
		ARTESIA STATE #002	330N 2310W		O	
879	30-015-25241	BILL MILLER	13 18S 27E C	1575	ACTIVE	4/13/1985
		ARTESIA STATE #001	330N 1650W		O	
880	30-015-00884	DALE RESLER	13 18S 27E C	2047	P&A	1/29/1945
		STATE NO. 3	990N 1650W		O	1/29/1945
881	30-015-25370	CBS OPERATING CORP	13 18S 27E D	1608	ACTIVE	8/27/1985
		ARTESIA STATE UNIT #002A	480N 940W		O	
882	30-015-00883	CBS OPERATING CORP	13 18S 27E D	1950	ACTIVE	12/11/1944
		ARTESIA STATE UNIT #001	990N 990W		O	
883	30-015-00880	DALE RESLER - JONES	13 18S 27E E	2353	P&A	1/26/1945
		STATE NO. 1	1650N 990W		O	1/26/1945
884	30-015-24881	DAVID G HAMMOND	13 18S 27E F	3020	ACTIVE	6/18/1984
		ANADARKO 13 FEDERAL #001	1880N 1830W		O	
885	30-015-00888	RALPH NIX & JERRY CURTIS	13 18S 27E F	2000	P&A	11/28/1954
		PAGE NO. 1	1980N 1650W		O	11/28/1954
886	30-015-00879	DALE RESLER	13 18S 27E F	2000	D&A	3/14/1945
		JONES-GOVT NO. 1	2310N 1650W		O	3/14/1945
888	30-015-25078	DICKSON PETROLEUM, INC	13 18S 27E G	2150	D&A	12/30/1984
		ANADARKO 13 FEDERAL NO. 1	1724N 2279E		O	12/30/1984
895	30-015-00891	ANADARKO PETROLEUM CORP	14 18S 27E A	2060	P&A	6/30/1944
		ARTESIA STATE UNIT TRACT 4 NO. 1	990N 330E		O	6/30/1944

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
896	30-015-00893	RESLER	14 18S 27E G	2375	D&A	1/1/1900
		STATE NO. 1	1650N 1650E		O	1/1/1900
897	30-015-00895	CBS OPERATING CORP	14 18S 27E H	1888	ACTIVE	2/8/1945
		ARTESIA STATE UNIT #001B	1650N 330E		O	
901	30-015-00695	WILLIAM & EDWARD HUDSON	1 18S 27E L	1763	D&A	6/18/1948
		HILL NO. 1	1650S 330W		O	6/18/1948
910	30-015-00744	COMPTON-SMITH	2 18S 27E J	1080	P&A	
		STATE 1	2310S 1640E		O	
911	30-015-31123	LIME ROCK RESOURCES A, LP	36 17S 27E H	10050	ACTIVE	
		NO BLUFF 36 STATE COM #002	1980N 760E		G	
912	30-015-31036	GEORGE A CHASE JR & C SERVICE	36 17S 27E H	614	ACTIVE	
		GATES STATE #003	2310N 990E		O	
916	30-015-31592	ROJO GRANDE COMPANY LLC	36 17S 27E N	612	P&A	12/21/2001
		RAMAPO #007	330S 2310E		O	12/21/2001
917	30-015-30784	VANGUARD OPERATING LLC	31 17S 28E A	3300	ACTIVE	
		NW STATE #012	330N 480E		O	
918	30-015-30893	VANGUARD OPERATING LLC	31 17S 28E A	2808	ACTIVE	
		NW STATE #028	973N 959E		O	
919	30-015-32162	VANGUARD OPERATING LLC	31 17S 28E D	3460	ACTIVE	4/3/2003
		ENRON STATE #004	460N 990W		O	
920	30-015-30783	VANGUARD OPERATING LLC	31 17S 28E H	3205	ACTIVE	
		NW STATE #011	1650N 330E		O	
921	30-015-30849	VANGUARD OPERATING LLC	31 17S 28E I	3195	ACTIVE	
		NW STATE #009	2310S 270E		O	
922	30-015-30760	VANGUARD OPERATING LLC	31 17S 28E P	3210	ACTIVE	
		NW STATE #010	735S 330E		O	
923	30-015-31920	VANGUARD OPERATING LLC	32 17S 28E D	4030	ACTIVE	
		ENRON STATE #002	990N 990W		O	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
924	30-015-30781	LIME ROCK RESOURCES A, LP NW STATE #005	32 17S 28E K 1900S 2146W	3190	ACTIVE I	
925	30-015-30777	VANGUARD OPERATING LLC NW STATE #006	32 17S 28E L 2310S 990W	3204	ACTIVE O	
926	30-015-30685	VANGUARD OPERATING LLC NW STATE #007	32 17S 28E M 990S 990W	3220	ACTIVE O	
927	30-015-30815	VANGUARD OPERATING LLC NW STATE #008	32 17S 28E N 1090S 2126W	3310	ACTIVE I	
928	30-015-32310	MARBOB ENERGY CORP AAO FEDERAL #004	1 18S 27E A 990N 990E	4000	ACTIVE O	5/4/2004
929	30-015-32309	MARBOB ENERGY CORP AAO FEDERAL #003	1 18S 27E B 330N 1690E	4125	ACTIVE O	4/10/2003
930	30-015-32308	MARBOB ENERGY CORP AAO FEDERAL #002	1 18S 27E C 430N 2310W	4150	ACTIVE O	9/19/2002
931	30-015-32307	MARBOB ENERGY CORP AAO FEDERAL #001	1 18S 27E D 330N 990W	3851	ACTIVE O	12/10/2002
932	30-015-22816	ARCO OIL & GAS EMPIRE ABO UNIT L #192	1 18S 27E O 1120S 1440E	6350	ABAN LOCATION O	6/28/1980 6/23/1980
933	30-015-20388	ARCO OIL & GAS EMPIRE ABO #5	1 18S 27E N 990S 2297E	6300	SAME AS 158 O	12/31/9999
934	30-015-27719	MEWBOURNE OIL CO CHALK BLUFF 12 FED #001	12 18S 27E 1650S 990E		ABAN LOCATION G	
935	30-015-27437	YATES PETROLEUM CORPORATION BEAUREGARD ANP STATE COM #001	14 18S 27E B 660N 1980E	0	ABAN LOCATION G	
936	30-015-31086	MARBOB ENERGY CORP LP STATE #001	5 18S 28E E 1650N 990W	4503	P&A O	3/11/2008 3/11/2008
937	30-015-31109	MARBOB ENERGY CORP LP STATE #002	5 18S 28E E 2301N 230W	0	PROPOSED O	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
938	30-015-30785	LIME ROCK RESOURCES A, LP NW STATE #015	6 18S 28E A 430N 330E	3225	ACTIVE O	
939	30-015-00264	BARNEY COCKBURN CAPITAL STATE NO. 1	6 18S 28E J 2310S 2310E	2095	SAME AS 114 O	5/23/1979
940	30-015-31087	MARBOB ENERGY CORP LP STATE #003	6 18S 28E M 990S 330W	4466	P&A O	7/15/2000 3/17/2008
941	30-015-31088	MARBOB ENERGY CORP LP STATE #004	6 18S 28E M 330S 990W	0	PROPOSED O	
942	30-015-06250	BP AMERICA PRODUCTION COMPANY	6 18S 28E O 470S 2170E	0	SAME AS 89 O	
943	30-015-31319	EASTLAND OIL CO LAUREL STATE #003	7 18S 28E E 2310N 330W	1630	ACTIVE O	1/31/2001
944	30-015-26575	NAVAJO REFINING COMPANY WDW-3 (ORIGINAL LOC.)	6 18S 28E D 778N 995W		ACTIVE I	
945	30-015-32959	MARBOB ENERGY CORP AAO FEDERAL #005	1 18S 27E E 1650N 875W	3900	ACTIVE O	10/12/2004
946	30-015-33473	MARBOB ENERGY CORP AAO FEDERAL #007	1 18S 27E G 1750N 1650S	4100	ACTIVE O	4/4/2005
947	30-015-33784	MARBOB ENERGY CORP AAO FEDERAL #008	1 18S 27E H 1650N 330W	4310	ACTIVE O	2/25/2005
948	30-015-34071	MARBOB ENERGY CORP AAO FEDERAL #006	1 18S 27E F 2169N 1963W	4000	ACTIVE O	8/5/2005
949	30-015-34387	MARBOB ENERGY CORP AAO FEDERAL #009	1 18S 27E L 1980S 630W	3950	ACTIVE O	1/17/2006
950	30-015-34555	MARBOB ENERGY CORP AAO FEDERAL #011	1 18S 27E M 890S 660W	4100	ACTIVE O	3/9/2006
951	30-015-34576	MARBOB ENERGY CORP AAO FEDERAL #010	1 18S 27E K 2060S 2160W	4000	ACTIVE O	10/26/2006

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
952	30-015-34998	MARBOB ENERGY CORP AAO FEDERAL #012	1 18S 27E N 890S 1650W	4075	ACTIVE O	9/21/2006
953	30-015-34028	BP AMERICA PRODUCTION COMPANY SLIDER 6 STATE NO. 001	6 18S 28E G 2285N 1366E	10433	P&A O	12/17/2006 12/17/2006
954	30-015-35050	VANGUARD OPERATING LLC ENRON STATE NO 012	32 17S 28E D 330N 500W	3810	ACTIVE O	12/21/2006
955	30-015-36939	YATES PETROLEUM CORP VIOLET BIV STATE COM #1	14 18S 27E A 660N 990E	10500	EXT PERMIT TO DRILL O	2/20/2009
956	30-015-33994	EDGE PETROLEUM OPERATING COMPANY, RED LAKE 36 A STATE #2	36 17S 27E A 915N 420E	3650	ACTIVE O	4/20/2005
957	30-015-36116	LEGACY RESERVES OPERATING LP SOUTH RED LAKE UNIT II #57	36 17S 27E G 2305N 1650E	2100	ACTIVE O	6/6/2008
958	30-015-32946	MARBOB ENERGY CORPORATION SCBP STATE #1	2 18S 27E J 2210S 1650E	3880	ACTIVE O	4/26/2005
959	30-015-35814	MACK ENERGY CORPORATION STATE H NO 2	2 18S 27E H 2063N 441E	7545	ACTIVE O	1/11/2008
960	30-015-36343	GEORGE A CHASE JR DBA G AND C SERVIC MALCO STATE NO. 002	31 17S 28E G 1650N 2310E	633	ACTIVE O	7/9/2008
961	30-015-36978	VANGUARD OPERATING LLC ENRON STATE NO. 015	31 17S 28E D 990N 330W	3700	ACTIVE O	7/3/2009
962	30-015-36554	VANGUARD OPERATING LLC NW STATE NO. 029	32 17S 28E L 1770S 550W	3450	ACTIVE O	1/30/2009
963	30-015-36989	VANGUARD OPERATING LLC NW STATE NO. 030	32 17S 28E K 1630S 1710W	3405	ACTIVE O	7/14/2009
964	30-015-37057	VANGUARD OPERATING LLC NW STATE NO. 031	32 17S 28E N 330S 1750W	3500	ACTIVE O	7/28/2009
965	30-015-37058	VANGUARD OPERATING LLC NW STATE NO. 032	32 17S 28E M 330S 330W	3425	ACTIVE O	8/23/2009

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
966	30-015-37428	G&C SERVICE MALCO STATE NO. 3	31 17S 28E G 1980N 1980E	650	ACTIVE O	2/10/2010
967	30-015-38203	COG OPERATING LLC MAPLE STATE 008	30 17S 28E N 330S 990W	4750	PERMIT TO DRILL O	
968	30-015-39029	G AND C SERVICE CONKLIN STATE NO. 1-Y	36 17S 27E G 2210N 2310E	4850	NEW DRILL	
969	30-015-39321	COG OPERATING LLC BIG BOY STATE NO. 1	36 17S 27E M 990S 890W		PERMIT TO DRILL	
970	30-015-39322	COG OPERATING LLC BIG BOY STATE NO. 3	36 17S 27E M 840S 425W		PERMIT TO DRILL	
971	30-015-39323	COG OPERATING LLC BIG BOY STATE NO. 5	36 17S 27E O 870S 1560E		PERMIT TO DRILL	
972	30-015-39324	COG OPERATING LLC BIG BOY STATE NO. 6	36 17S 27E O 480S 2210E		PERMIT TO DRILL	
973	30-015-39325	COG OPERATING LLC BIG BOY STATE NO. 7	36 17S 27E O 990S 2210E		PERMIT TO DRILL	
974	30-015-39326	COG OPERATING LLC BIG BOY STATE NO. 8	36 17S 27E O 275S 1560E		PERMIT TO DRILL	
975	30-015-39401	APACHE CORP EMPIRE ABO UNIT NO. 417	36 17S 27E P 1110S 630E		PERMIT TO DRILL	
976	30-015-39009	APACHE CORP EMPIRE ABO UNIT NO. 415	2 18S 27E G 1650N 2430E		PERMIT TO DRILL	
977	30-015-39066	APACHE CORP EMPIRE ABO UNIT NO. 416	2 18S 27E L 2551S 1170W		PERMIT TO DRILL	
978	30-015-38234	VANGUARD OPERATING LLC ANTHONY NO. 2	30 17S 28E P 430S 800E	4823	ACTIVE	
979	30-015-39299	COG OPERATING LLC MAPLE STATE NO. 5	30 17S 28E M 990S 990W		PERMIT TO DRILL	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
980	30-015-39300	COG OPERATING LLC MAPLE STATE NO. 6	30 17S 28E M 330S 330W		PERMIT TO DRILL	
981	30-015-38512	LIME ROCK RESOURCES ENRON STATE NO. 16	30 17S 28E D 990N 940W	3658	ACTIVE	
982	30-015-39004	APACHE CORP EMPIRE ABO UNIT NO. 401	31 17S 28E P 150S 1300E		PERMIT TO DRILL	
983	30-015-39011	APACHE CORP EMPIRE ABO UNIT NO. 419	31 17S 28E O 1190S 1320E		PERMIT TO DRILL	
984	30-015-39020	APACHE CORP EMPIRE ABO UNIT NO. 408	31 17S 28E O 140S 2560E		T&A	
985	30-015-38513	VANGUARD OPERATING LLC JEFFERS 32 STATE NO. 3	32 17S 28E J 2310S 2032E	5093	ACTIVE	
986	30-015-39006	APACHE CORP EMPIRE ABO UNIT NO. 407	32 17S 28E J 2400S 2450E		PERMIT TO DRILL	
987	30-015-39007	APACHE CORP EMPIRE ABO UNIT NO. 409	32 17S 28E M 70S 100W		PERMIT TO DRILL	
988	30-015-39064	APACHE CORP EMPIRE ABO UNIT NO. 403	32 17S 28E O 1175S 1310E		PERMIT TO DRILL	
989	30-015-39008	APACHE CORP EMPIRE ABO UNIT NO. 410	6 18S 28E D 160N 1300W		PERMIT TO DRILL	
990	30-015-39021	APACHE CORP EMPIRE ABO UNIT NO. 411	6 18S 28E D 40N 145W		PERMIT TO DRILL	
991	30-015-32946	APACHE CORP SCBP STATE NO. 001	2 18S 27E J 2210S 1650E	3880	ACTIVE	
992	30-015-00715	LEGACY RESERVES OPERATING LP SOUTH RED LAKE UNIT NO. 37	1 18S 27E D 330N 330W		ACTIVE	
993	30-015-32307	APACHE CORP AAO FEDERAL NO. 1	1 18S 27E 4 330N 990W		ACTIVE	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
994	30-015-32959	APACHE CORP AAO FEDERAL NO. 5	1 18S 27E E 1650N 875W		ACTIVE	
995	30-015-33473	APACHE CORP AAO FEDERAL NO. 7	1 18S 27E G 1750N 1650E		ACTIVE	
996	30-015-33784	APACHE CORP AAO FEDERAL NO. 8	1 18S 27E H 1650N 330E		ACTIVE	
997	30-015-34071	APACHE CORP AAO FEDERAL NO. 6	1 18S 27E F 2169N 1963W		ACTIVE	
998	30-015-34555	APACHE CORP AAO FEDERAL NO. 11	1 18S 27E M 890S 660W		ACTIVE	
999	30-015-34576	APACHE CORP AAO FEDERAL NO. 10	1 18S 27E K 2060S 2160W		ACTIVE	
1005	30-015-40428	LRE OPERATING LLC BIG BOY STATE NO 2	36 17S 28E M 200S 485W	4934	ACTIVE	
1023	30-015-39927	LRE OPERATING LLC AB STATE 647	32 17S 28E K 1750S 1765W	5016	ACTIVE	
1024	30-015-40339	VANGUARD OPERATING LLC ENRON STATE 18	32 17S 28E D 990N 330W	4250	ACTIVE	
1025	30-015-00643	LEGACY RESERVES OPERATING LLC SOUTH RED LAKE GRAYBURG UNIT NO 26	35 17S 27E O 990S 2310E		ACTIVE	
1026	30-015-37783	TARCO ENERGY LC RUSSELL C 003	35 17S 27E O 990S 2225E		ACTIVE	
1027	30-015-00644	LEGACY RESERVES OPERATING LP SOUTH RED LAKE GRABURG UNIT 31	35 17S 27E N 330S 2310W		ACTIVE	
1028	30-015-20104	LEGACY RESERVES OPERATING LP SOUTH RED LAKE GRAYBURG UNIT 41	35 17S 27E P 990S 990E		ACTIVE	
1029	30-015-34626	LRE OPERATING LLC JEFFERS 36 STATE #4t	36 17S 27E M 935N 2260E	4000	ACTIVE	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
1030	30-015-41829	LRE OPERATING LLC ENRON FEDERAL NO 18	25 17S 27E O 985S 2310E	3157	ACTIVE	
1031	30-015-41890	VANGUARD OPERATING LLC WILLIAMS A FEDERAL NO 12	29 17S 28E N 330S 2200N	3700	ACTIVE	
1032	30-015-40807	LIME ROCK RESOURCES A, LP LOGAN B "35" N FEDERAL #18	35 17S 27E N 330N 2310W	4000	ACTIVE	
1033	30-015-40808	LRE OPERATING LLC LOGAN 35 P FEDERAL #19	35 17S 27E P 970S 990E	4000	ACTIVE	
1034	30-015-41435	LIME ROCK RESOURCES A LP LOGAN 35 FEDERAL 10	35 17S 27E O 720S 1770E	4000	ACTIVE	
1035	30-015-42003	APACHE CORPORATION SB STATE 004	2 18S 27E E 2515N 800W	4114	ACTIVE	
1036	30-015-42002	APACHE COPORATION SB STATE 002	2 18S 27E E 1900N 990W	4115	ACTIVE	
1037	30-015-36979	VANGUARD OPERATING LLC ENRON STATE NO 14	32 17S 28E C 990N 2035W	4205	ACTIVE	
1038	30-015-41833	VANGUARD OPERATING LLC ENRON STATE 19	32 17S 28E C 990N 1700W	4206	ACTIVE	
1039	30-015-39996	VANGUARD OPERATING LLC ENRON STATE 17	32 17S 28E C 230N 2420W	4215	ACTIVE	
1040	30-015-41511	APACHE CORP AB State 647 016	32 17S 28E N 330S 2365W	4297	ACTIVE	
1041	30-015-41498	APACHE CORP Ab State 647 014	32 17S 28E M 330S 1090W	4300	ACTIVE	
1042	30-015-41493	APACHE CORP Ab State 647 009	32 17S 28E N 1080S 2535W	4300	ACTIVE	
1043	30-015-41491	APACHE CORP Ab State 647 007	32 17S 28E L 1650S 950W	4300	ACTIVE	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
1044	30-015-41492	APACHE CORP Ab State 647 008	32 17S 28E K 1375S 2320W	4323	ACTIVE	
1045	30-015-40783	LIME ROCK RESOURCES A LP LOGAN 2c STATE NO. 4	2 18S 27E C 990N 1500W	4776	ACTIVE	
1046	30-015-38420	COG OPERATING LLC KIOWA STATE	36 17S 27E G 1460N 1539E	4873	ACTIVE	
1048	30-015-41500	APACHE CORP Ab State 647 002	32 17S 28E K 2355S 2600W	5013	ACTIVE	
1049	30-015-41501	APACHE CORP Ab State 647 003	32 17S 28E K 2370S 1650W	5027	ACTIVE	
1050	30-015-41505	APACHE CORP Ab State 647 004	32 17S 28E L 2250S 1185W	5046	ACTIVE	
1051	30-015-41502	APACHE CORP Ab State 647 005	32 17S 28E L 2310S 330W	5060	ACTIVE	
1052	30-015-41504	APACHE CORP Ab State 647 15	32 17S 28E N 330S 1650W	5063	ACTIVE	
1053	30-015-41497	APACHE CORP Ab State 647 013	32 17S 28E M 220S 350W	5065	ACTIVE	
1054	30-015-41503	APACHE CORP Ab State 647 006	32 17S 28E L 1730S 430W	5065	ACTIVE	
1055	30-015-41495	APACHE CORP Ab State 647 011	32 17S 28E M 920S 960W	5070	ACTIVE	
1056	30-015-41494	APACHE CORP Ab State 647 010	32 17S 28E N 1140S 1650W	5076	ACTIVE	
1057	30-015-41496	APACHE CORP Ab State 647 012	32 17S 28E M 910S 930W	5080	ACTIVE	
1058	30-015-40679	LIME ROCK RESOURCES A LP BLAKE STATE NO. 4	2 18S 27E B 968N 2300E	530	ACTIVE	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
1059	30-015-40621	TARCO ENERGY LC BRAD STATE NO. 4	2 18S 27E C 968N 1650W	550	ACTIVE	
1060	30-015-31530	VANGUARD OPERATING LLC ENRON STATE NO. 1	32 17S 28E C 530N 1650W	4000	ACTIVE	
1061	30-015-00681	LEGACY RESERVES OPERATING LP SOUTH RED LAKE GRAYBURG UNIT 027	36 17S 27E M 990S 330W	1200	PLUGGED	
1062	30-015-22526	DEVON ENERGY LOGAN 2c STATE #3	2 18S 27E I 530N 2310W		ACTIVE	
1063	30-015-22536	APACHE CORP EMPIRE ABO UNIT "I" 272a	5 18S 28E B 1300N 2345E		T/A	
1064	30-015-32070	APACHE CORP Bb State Com #1	2 18S 27E I 660S 990W		T/A	
1065	30-015-32899	APACHE CORP Bm State #1	2 18S 27E I 2310S 2310W		T/A	
1066	30-015-32900	APACHE CORP Tdf State #2	2 18S 27E I 1650N 2305W		T/A	
1068	30-015-36513	VANGUARD OPERATING LLC WILLIAMS A FEDERAL NO. 8	29 17S 28E N 1090S 1550W	3150	ACTIVE	
1069	30-015-33232	VANGUARD OPERATING LLC WILLIAMS A FEDERAL NO. 5	29 17S 28E M 690S 530W	3250	RECOMPLETED	
1070	30-015-40480	VANGUARD OPERATING LLC WILLIAMS A FEDERAL NO 10	29 17S 28E M 600S 645W	3800	ACTIVE	
1071	30-015-40677	TARCO ENERGY LC BLAKE STATE NO 1	2 18S 27E B 380N 1650E		PERMIT TO DRILL	
1072	30-015-40678	TARCO ENERGY LC BLAKE STATE NO 2	2 18S 27E B 330N 2300E		PERMIT TO DRILL	
1073	30-015-41766	APACHE CORP LIBBY STATE No. 001	5 18S 28E F 1910N 1505W		PERMIT TO DRILL	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
1074	30-015-41767	APACHE CORP LIBBY STATE NO. 002	5 18S 28E F 1570N 2245W		PERMIT TO DRILL	
1075	30-015-41768	APACHE CORP LIBBY STATE NO. 003	5 18S 28E F 1570N 2245W		PERMIT TO DRILL	
1076	30-015-41770	APACHE CORP T REX STATE 001	31 17S 28E B 330N 2270E		PERMIT TO DRILL	
1077	30-015-41771	APACHE CORP T REX STATE 002	31 17S 28E B 575N 1650E		PERMIT TO DRILL	
1078	30-015-41772	APACHE CORP T REX STATE 003	31 17S 28E B 875N 2430E		PERMIT TO DRILL	
1079	30-015-41774	APACHE CORP T REX STATE 004	31 17S 28E B 890N 1750E		PERMIT TO DRILL	
1080	30-015-41892	VANGUARD OPERATING LLC WILLIAMS A FEDERAL 15	29 17S 28E M 330S 975W		ACTIVE	
1081	30-015-41959	APACHE CORP BM State 002	2 18S 27E K 2310S 1750W		PERMIT TO DRILL	
1082	30-015-42024	APACHE CORP AAO FEDERAL #14	1 18S 27E 1 126N 141E		PERMIT TO DRILL	
1083	30-015-42025	APACHE CORP AAO FEDERAL #15	1 18S 27E 1 1130N 2408E		PERMIT TO DRILL	
1084	30-015-42026	APACHE CORP AAO FEDERAL #16	1 18S 27E 1 1305N 2455W		PERMIT TO DRILL	
1085	30-015-42029	APACHE CORP AAO FEDERAL #17	1 18S 27E 1 1650N 865E		PERMIT TO DRILL	
1086	30-015-42035	APACHE CORP AAO FEDERAL #18	1 18S 27E 1 2310N 1650E		PERMIT TO DRILL	
1087	30-015-42036	APACHE CORP AAO FEDERAL #20	1 18S 27E 1 2188N 909W		PERMIT TO DRILL	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
1088	30-015-42051	APACHE CORP AAO FEDERAL #19	1 18S 27E 1 2310N 2310W		PERMIT TO DRILL	
1089	30-015-42116	VANGUARD OPERATING LLC WILLIAMS A FEDERAL 16	29 17S 28E M 990S 2160W		ACTIVE	
1090	30-015-42121	TARCO ENERGY LLC BRADE STATE NO. 5	2 18S 27E C 658N 1984W		PERMIT TO DRILL	
1091	30-015-42156	VANGUARD OPERATING LLC ENRON STATE 21	32 17S 28E D 385N 900W		ACTIVE	
1092	30-015-42334	APACHE CORP AAO FEDERAL #21	1 18S 27E 1 1005N 1630W		PERMIT TO DRILL	
1093	30-015-42335	APACHE CORP AAO FEDERAL #22	1 18S 27E 1 790N 330W		PERMIT TO DRILL	
1094	30-015-42336	APACHE CORP AAO FEDERAL #23	1 18S 27E 1 2265N 330E		PERMIT TO DRILL	
1095	30-015-42337	APACHE CORP AAO FEDERAL #24	1 18S 27E 1 984N 243E		PERMIT TO DRILL	
1096	30-015-42338	APACHE CORP AAO FEDERAL #26	1 18S 27E 1 2270S 1650W		PERMIT TO DRILL	
1097	30-015-42339	APACHE CORP AAO FEDERAL #29	1 18S 27E 1 360S 990W		PERMIT TO DRILL	
1098	30-015-42358	APACHE CORP AAO FEDERAL #28	1 18S 27E 1 183S 2497W		PERMIT TO DRILL	
1099	30-015-42359	APACHE CORP AAO FEDERAL #27	1 18S 27E 1 1960S 2063W		PERMIT TO DRILL	
1100	30-015-42360	APACHE CORP AAO FEDERAL #30	1 18S 27E 1 1261S 281W		PERMIT TO DRILL	
1101	30-015-42361	APACHE CORP AAO FEDERAL #25	1 18S 27E 1 2000S 1022W		PERMIT TO DRILL	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
1102	30-015-42372	VANGUARD OPERATING LLC ENRON STATE #20	31 17S 28E D 330N 430W		ACTIVE	
1103	30-015-42555	APACHE CORP OUTLAW STATE #005	29 17S 28E O 330S 2310E		ACTIVE	
1104	30-015-42863	APACHE CORP JACKRABBIT STATE #004	32 17S 28E B 330S 2310E		PERMIT TO DRILL	
1105	30-015-42864	APACHE CORP JACKRABBIT STATE #005	32 17S 28E B 1010N 2540E		PERMIT TO DRILL	
1106	30-015-42985	APACHE CORP JACKRABBIT STATE #012	32 17S 28E G 1470N 2405E		PERMIT TO DRILL	
1107	30-015-42986	APACHE CORP JACKRABBIT STATE #013	32 17S 28E G 2460N 2280E		PERMIT TO DRILL	
1108	30-015-42726	VANGUARD OPERATING LLC STALEY STATE #029	30 17S 28E O 505S 2140E		ACTIVE	
1109	30-015-40983	VANGUARD OPERATING LLC STALEY STATE #020	30 17S 28E O 330S 1650E		ACTIVE	
1110	30-015-42597	APACHE CORP RANGER STATE #001	31 17S 28E A 570N 250E		PERMIT TO DRILL	
1111	30-015-42598	APACHE CORP RANGER STATE #002	31 17S 28E A 445N 1090E		PERMIT TO DRILL	
1113	30-015-42599	APACHE CORP RANGER STATE #001	31 17S 28E B 905N 1385E		PERMIT TO DRILL	
1114	30-015-42600	APACHE CORP RANGER STATE #004	31 17S 28E A 645N 250E		PERMIT TO DRILL	
1115	30-015-42673	APACHE CORP RANGER STATE #006	31 17S 28E H 1650N 990E		PERMIT TO DRILL	
1117	30-015-42674	APACHE CORP RANGER STATE #007	31 17S 28E H 2310N 990E		PERMIT TO DRILL	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
1118	30-015-42675	APACHE CORP RANGER STATE #008	31 17S 28E H 1875N 110E		PERMIT TO DRILL	
1119	30-015-42677	APACHE CORP RANGER STATE #010	31 17S 28E I 2310S 1130E		PERMIT TO DRILL	
1120	30-015-42676	APACHE CORP RANGER STATE #009	31 17S 28E H 2520N 195E		PERMIT TO DRILL	
1121	30-015-42678	APACHE CORP RANGER STATE #011	31 17S 28E I 1535S 760E		PERMIT TO DRILL	
1122	30-015-42679	APACHE CORP RANGER STATE #012	31 17S 28E I 1760S 245E		PERMIT TO DRILL	
1123	30-015-42680	APACHE CORP RANGER STATE #013	31 17S 28E I 1710S 245E		PERMIT TO DRILL	
1124	30-015-42681	APACHE CORP RANGER STATE #014	16 17S 28E P 225S 1300E		PERMIT TO DRILL	
1125	30-015-42806	APACHE CORP RANGER STATE #016	31 17S 28E P 245S 90E		NEW	
1126	30-015-42682	APACHE CORP RANGER STATE #015	31 17S 28E P 260S 1250E		PERMIT TO DRILL	
1127	30-015-42602	LRE OPERATING LLC JEFFERS 36 STATE #005	36 17S 27E B 330N 2210E		PERMIT TO DRILL	
1128	30-015-42899	LRE OPERATING LLC JEFFERS 36 STATE #006	36 17S 27E B 890N 1655E		PERMIT TO DRILL	
1129	30-015-42027	APACHE CORP AAO FEDERAL #017	1 18S 27E H 1650N 865E		PERMIT TO DRILL	
1130	30-015-42549	APACHE CORP AAO FEDERAL SWD #001	1 18S 27E G 2470N 2380E		PERMIT TO DRILL	
1131	30-015-25270	BILL L MILLER CHUKKA FEDERAL #001	12 18S 27E F 2310N 2310W		PERMIT TO DRILL	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
1132	30-015-36252	VANGUARD OPERATING LLC Staley State #004	30 17S 28E N 990S 1980W		ACTIVE	
1133	30-015-37691	VANGUARD OPERATING LLC Anthoney #1	30 17S 28E P 1050S 330E		ACTIVE	
1134	30-015-40028	LRE Operating LLC Anthoney State #4	30 17S 28E P 540S 837E		RECOMPLETE	
1135	30-015-40338	VANGUARD OPERTING LLC Staley State #016	30 17S 28E O 990S 2310E		ACTIVE	
1136	30-015-41065	LRE Operating LLC Staley State #24	30 17S 28E N 990S 2335W		RECOMPLETE	
1137	30-015-40723	Lime Rock Resources II-A LP Logan 2C State #4	30 18S 28E C 990N 1500W		COMPLETED	
1138	30-015-43066	Lime Rock Resources II-A LP Logan B 35 N Federal 24	30 17S 27E N 870S 1640W		PERMIT TO DRILL	
1139	30-015-43252	Lime Rock Resources II-A LP Logan 35 O Federal 22	30 17S 27E O 720S 1670E		PERMIT TO DRILL	
1140	30-015-42556	Apache Corporation The Outlaw State #006	30 17S 28E O 990S 1650E		COMPLETED	
1141	30-015-42557	Apache Corporation The Outlaw State #007	30 17S 28E O 330S 1650E		COMPLETED	
1142	30-015-42558	Apache Corporation The Outlaw State #008	30 17S 28E O 990S 2310E		COMPLETED	
1143	30-015-42725	VANGUARD OPERATING LLC STALEY STATE #28	30 17S 28E O 685S 1630E		ACTIVE	
1144	30-015-42727	VANGUARD OPERATING LLC STALEY STATE #30	30 17S 28E O 850S 1680W		ACTIVE	
1145	30-015-42601	APACE CORPORATION RANGER STATE #005	30 17S 28E H 1825N 110E		PERMIT TO DRILL	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
1146	30-015-42984	APACHE CORPORATION JACK RABBIT STATE #11	30 17S 28E G 1535N 1680E		PERMIT TO DRILL	
1147	30-015-32554	VANGUARD OPERATING LLC WILLIAMS A FEDERAL #001Z	29 17S 28E N 590S 2185W		ACTIVE	
1148	30-015-42556	APACHE CORPORATION OUTLAW STATE #006	29 17S 28E O 990S 1650E		ACTIVE	
1149	30-015-42557	APACHE CORPORATION OUTLAW STATE #007	29 17S 28E O 330S 1650E		ACTIVE	
1150	30-015-42558	APACHE CORPORATION OUTLAW STATE #008	29 17S 28E O 990S 2310E		ACTIVE	
1151	30-015-31285	VANGUARD OPERATING LLC STALEY STATE #002	30 17S 28E O 890S 1650E		ACTIVE	
1152	30-015-36564	VANGUARD OPERATING LLC STALEY STATE #009	30 17S 28E O 330S 2210E		ACTIVE	
1153	30-015-37673	VANGUARD OPERATING LLC STALEY STATE #012	30 17S 28E N 330S 1650W		ACTIVE	
1154	30-015-39638	VANGUARD OPERATING LLC ANTHONEY STATE #003	30 17S 28E P 412S 679E		ACTIVE	
1155	30-015-40026	VANGUARD OPERATING LLC STALEY STATE #017	30 17S 28E N 330S 2410W		ACTIVE	
1156	30-015-38512	VANGUARD OPERATING LLC ENRON STATE #016	31 17S 28E P 990N 940W		ACTIVE	
1157	30-015-01665	VANGUARD OPERATING LLC NORTHWEST ARTESIA UNIT #014	32 17S 28E O 940S 1650E		ACTIVE	
1158	30-015-02312	VANGUARD OPERATING LLC NORTHWEST ARTESIA UNIT #005	32 17S 28E G 1980N 1650E		ACTIVE	
1159	30-015-10109	VANGUARD OPERATING LLC NORTHWEST ARTESIA UNIT #003	32 17S 28E B 990N 1650E		ACTIVE	

ID NO	API	OPERATOR, WELL NAME, NUMBER	SEC, TWP, RGE, UL	DEPTH	STATUS TYPE	COMP. DATE PLUG DATE
1160	30-015-30684	VANGUARD OPERATING LLC NW STATE #003	32 17S 28E G 1650N 1650E		ACTIVE	
1161	30-015-30734	VANGUARD OPERATING LLC NW STATE #004	32 17S 28E B 1140N 2277E		ACTIVE	
1162	30-015-30887	VANGUARD OPERATING LLC JEFFERS 32 STATE #001	32 17S 28E J 2141S 1665E		ACTIVE	
1163	30-015-30890	VANGUARD OPERATING LLC NW STATE #016	32 17S 28E B 330N 1650E		ACTIVE	
1164	30-015-31934	VANGUARD OPERATING LLC NW STATE #018	32 17S 28E G 2272N 2273E		ACTIVE	
1165	30-015-34148	VANGUARD OPERATING LLC ASPEN 32 STATE COM #001	32 17S 28E J 1370S 1609E		ACTIVE	
1166	30-015-37045	VANGUARD OPERATING LLC JEFFERS 32 STATE #002	32 17S 28E J 1563S 2207E		ACTIVE	
1167	30-015-39927	APACHE CORPORATION AB STATE 647 #001	32 17S 28E K 1750S 1765W		ACTIVE	

TABLE III

Well Changes in the Combined One Mile Area of Review Since the 2015 PFO TEST for Navajo's WDW-1, WDW-2, and WDW-3

ID	API No.			Unit	Sect	Town	Range	Footages	Well Name	Operator	Changes
33	30	15	32554	29	N	17S	28E	590S 2185W	WILLIAMS A FEDERAL #001Z	VANGUARD OPERATING LLC	NEW OPERATOR
46	30	15	33232	29	M	17S	28E	690S 530W	WILLIAMS A FEDERAL #005	VANGUARD OPERATING LLC	NEW OPERATOR AND RECOMPLETED
47	30	15	36513	29	N	17S	28E	1090S 1550W	WILLIAMS A FEDERAL #008	VANGUARD OPERATING LLC	NEW OPERATOR
61	30	15	40480	29	M	17S	28E	600S 645W	WILLIAMS A FEDERAL #010	VANGUARD OPERATING LLC	NEW OPERATOR
70	30	15	41890	29	N	17S	28E	330S 2200N	WILLIAMS A FEDERAL #012	VANGUARD OPERATING LLC	NEW OPERATOR
917	30	15	41892	29	M	17S	28E	330S 975W	WILLIAMS A FEDERAL #015	VANGUARD OPERATING LLC	NEW OPERATOR
918	30	15	42116	29	M	17S	28E	990S 2160W	WILLIAMS A FEDERAL #016	VANGUARD OPERATING LLC	NEW OPERATOR
919	30	15	42555	29	O	17S	28E	330S 2310E	OUTLAW STATE #005	APACHE CORPORATION	NOW ACTIVE
920	30	15	42556	29	O	17S	28E	990S 1650E	OUTLAW STATE #006	APACHE CORPORATION	NEW
921	30	15	42557	29	O	17S	28E	330S 1650E	OUTLAW STATE #007	APACHE CORPORATION	NEW
922	30	15	42558	29	O	17S	28E	990S 2310E	OUTLAW STATE #008	APACHE CORPORATION	NEW
923	30	15	31285	30	O	17S	28E	890S 1650E	STALEY STATE #002	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
925	30	15	36252	30	N	17S	28E	990S 1980W	STALEY STATE #004	VANGUARD OPERATING LLC	NEW OPERATOR
926	30	15	36564	30	O	17S	28E	330S 2210E	STALEY STATE #009	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
927	30	15	37673	30	N	17S	28E	330S 1650W	STALEY STATE #012	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
954	30	15	37691	30	P	17S	28E	1050S 330E	ANTHONEY #001	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
961	30	15	38234	30	P	17S	28E	430S 800E	ANTHONEY #002	VANGUARD OPERATING LLC	NEW OPERATOR
962	30	15	39638	30	P	17S	28E	412S 679E	ANTHONEY STATE #003	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
963	30	15	40026	30	N	17S	28E	330S 2410W	STALEY STATE #017	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
964	30	15	40338	30	O	17S	28E	990S 2310E	STALEY STATE #016	VANGUARD OPERATING LLC	NEW OPERATOR
965	30	15	40983	30	O	17S	28E	330S 1650E	STALEY STATE #020	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
978	30	15	42725	30	O	17S	28E	685S 1630E	STALEY STATE #028	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
984	30	15	42726	30	O	17S	28E	505S 2140E	STALEY STATE #029	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
985	30	15	42727	30	O	17S	28E	850S 1680W	STALEY STATE #030	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
1024	30	15	1638	31	A	17S	28E	330N 990E	STATE FW #001	ALAMO PERMIAN RESOURCES LLC	NOW ACTIVE AND NEW OPERATOR
1031	30	15	10537	31	H	17S	28E	2277N 330E	NORTHWEST ARTESIA UNIT #004	VANGUARD OPERATING LLC	NEW OPERATOR
1037	30	15	10833	31	I	17S	28E	1980S 660E	NORTHWEST ARTESIA UNIT #010	VANGUARD OPERATING LLC	NEW OPERATOR
1038	30	15	20042	31	P	17S	28E	990S 660E	NORTHWEST ARTESIA UNIT #011	VANGUARD OPERATING LLC	NEW OPERATOR
1039	30	15	30760	31	P	17S	28E	735S 330E	NW STATE #010	VANGUARD OPERATING LLC	NEW OPERATOR
1060	30	15	30783	31	H	17S	28E	1650N 330E	NW STATE #011	VANGUARD OPERATING LLC	NEW OPERATOR
1068	30	15	30784	31	A	17S	28E	330N 480E	NW STATE #012	VANGUARD OPERATING LLC	NEW OPERATOR
1069	30	15	30849	31	I	17S	28E	2310S 270E	NW STATE #009	VANGUARD OPERATING LLC	NEW OPERATOR
1070	30	15	30893	31	A	17S	28E	973N 959E	NW STATE #028	VANGUARD OPERATING LLC	NEW OPERATOR
1080	30	15	32162	31	D	17S	28E	460N 990W	ENRON STATE #004	VANGUARD OPERATING LLC	NEW OPERATOR
1089	30	15	36978	31	D	17S	28E	990N 330W	ENRON STATE#015	VANGUARD OPERATING LLC	NEW OPERATOR
1091	30	15	38512	31	P	17S	28E	990N 940W	ERNORN STATE #016	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1102	30	15	39020	31	O	17S	28E	140S 2560E	EMPIRE ABO UNIT #408	APACHE CORPORATION	TEMPORARILY PLUGGED AND AG ABANDONED
1103	30	15	42372	31	D	17S	28E	330N 430W	ENRON STATE #20	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
1108	30	15	42806	31	P	17S	28E	245S 90E	RANGER STATE #016	APACHE CORPORATION	NEW
1109	30	15	1665	32	O	17S	28E	940S 1650E	NORTHWEST ARTESIA UNIT #014	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1125	30	15	2312	32	G	17S	28E	1980N 1650E	NORTHWEST ARTESIA UNIT #005	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1132	30	15	10109	32	B	17S	28E	990N 1650E	NORTHWEST ARTESIA UNIT #003	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1133	30	15	20043	32	M	17S	28E	990S 760W	NORTHWEST ARTESIA UNIT #12	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
1135	30	15	30684	32	G	17S	28E	1650N 1650E	NW STATE #003	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1143	30	15	30685	32	M	17S	28E	990S 990W	NW STATE #007	VANGUARD OPERATING LLC	NEW OPERATOR
1144	30	15	30734	32	B	17S	28E	1140N 2277E	NW STATE #004	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1147	30	15	30777	32	L	17S	28E	2310S 990W	NW STATE#006	VANGUARD OPERATING LLC	NEW OPERATOR
1148	30	15	30815	32	N	17S	28E	1090S 2126W	NW STATE #008	VANGUARD OPERATING LLC	NEW OPERATOR
1149	30	15	30887	32	J	17S	28E	2141S 1665E	JEFFERS 32 STATE #001	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1150	30	15	30890	32	B	17S	28E	330N 1650E	NW STATE #016	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR

1151	30	15	31530	32	C	17S	28E	530N 1650W	ENRON STATE #001	VANGUARD OPERATING LLC	NEW OPERATOR
1152	30	15	31920	32	D	17S	28E	990N 990W	ENRON STATE #002	VANGUARD OPERATING LLC	NEW OPERATOR
1153	30	15	31934	32	G	17S	28E	2272N 2273E	NW STATE #018	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1154	30	15	35050	32	D	17S	28E	330N 500W	ENRON STATE #012	VANGUARD OPERATING LLC	NEW OPERATOR
1155	30	15	36554	32	L	17S	28E	1770S 550W	NW STATE #029	VANGUARD OPERATING LLC	NEW OPERATOR
1156	30	15	36979	32	C	17S	28E	990N 2035W	ENRON STATE #014	VANGUARD OPERATING LLC	NEW OPERATOR
1157	30	15	36989	32	K	17S	28E	1630S 1710W	NW STATE #030	VANGUARD OPERATING LLC	NEW OPERATOR
1158	30	15	37045	32	J	17S	28E	1563S 2207E	JEFFERS 32 STATE #002	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1159	30	15	37057	32	N	17S	28E	330S 1750W	NW STATE #031	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
1160	30	15	37058	32	M	17S	28E	330S 330W	NW STATE #032	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
1161	30	15	38513	32	J	17S	28E	2310S 2032E	JEFFERS 32 STATE #003	VANGUARD OPERATING LLC	NEW OPERATOR
1162	30	15	39927	32	K	17S	28E	1750S 1765W	AB STATE 647 #001	APACHE CORPORATION	NEW
1163	30	15	39996	32	C	17S	28E	230N 2420W	ENRON STATE #017	VANGUARD OPERATING LLC	NEW OPERATOR
1164	30	15	40339	32	D	17S	28E	990N 330W	ENRON STATE #018	VANGUARD OPERATING LLC	NEW OPERATOR
1166	30	15	42156	32	D	17S	28E	385N 900W	ENRON STATE #021	VANGUARD OPERATING LLC	NEW OPERATOR
1167	30	15	41833	32	C	17S	28E	990N 1700W	ENRON STATE #019	VANGUARD OPERATING LLC	NEW OPERATOR

TABLE IV
Wells that have been Plugged and Abandoned since the 2015 PFO REPORT
Well Changes in the Combined One Mile Area of Review for Navajo's WDW-1, WDW-2, and WDW-3

ID	API No.	Unit	Sect	Town	Range	Footages	Well Name	Operator	Changes

TABLE V

Wells that have been Temporally Abandoned since the 2015 PFO REPORT

Well Changes in the Combined One Mile Area of Review for Navajo's WDW-1, WDW-2, and WDW-3

ID	API No.			Unit	Sect	Town	Range	Footages	Well Name	Operator	Changes
984	30	15	39020	31	O	17S	28E	140S 2560E	EMPIRE ABO UNIT #408	APACHE CORPORATION	TEMPORARILY PLUGGED AND AG ABANDONED

TABLE VI

Wells that have been Recompleted in Upper Zones since the 2015 PFO REPORT

Well Changes in the Combined One Mile Area of Review for Navajo's WDW-1, WDW-2, and WDW-3

ID	API No.			Unit	Sect	Town	Range	Footages	Well Name	Operator	Changes
1069	30	15	33232	29	M	17S	28E	690S 530W	WILLIAMS A FEDERAL #005	VANGUARD OPERATING LLC	NEW OPERATOR AND RECOMPLETED

TABLE VII

Newly Drilled Wells in the Area of Review since the 2015 PFO REPORT

Well Changes in the Combined One Mile Area of Review for Navajo's WDW-1, WDW-2, and WDW-3

ID	API No.			Unit	Sect	Town	Range	Footages	Well Name	Operator	Changes
33	30	15	32554	29	N	17S	28E	590S 2185W	WILLIAMS A FEDERAL #001Z	VANGUARD OPERATING LLC	NEW OPERATOR
46	30	15	33232	29	M	17S	28E	690S 530W	WILLIAMS A FEDERAL #005	VANGUARD OPERATING LLC	NEW OPERATOR AND RECOMPLETED
47	30	15	36513	29	N	17S	28E	1090S 1550W	WILLIAMS A FEDERAL #008	VANGUARD OPERATING LLC	NEW OPERATOR
61	30	15	40480	29	M	17S	28E	600S 645W	WILLIAMS A FEDERAL #010	VANGUARD OPERATING LLC	NEW OPERATOR
70	30	15	41890	29	N	17S	28E	330S 2200N	WILLIAMS A FEDERAL #012	VANGUARD OPERATING LLC	NEW OPERATOR
917	30	15	41892	29	M	17S	28E	330S 975W	WILLIAMS A FEDERAL #015	VANGUARD OPERATING LLC	NEW OPERATOR
918	30	15	42116	29	M	17S	28E	990S 2160W	WILLIAMS A FEDERAL #016	VANGUARD OPERATING LLC	NEW OPERATOR
919	30	15	42555	29	O	17S	28E	330S 2310E	OUTLAW STATE #005	APACHE CORPORATION	NOW ACTIVE
920	30	15	42556	29	O	17S	28E	990S 1650E	OUTLAW STATE #006	APACHE CORPORATION	NEW
921	30	15	42557	29	O	17S	28E	330S 1650E	OUTLAW STATE #007	APACHE CORPORATION	NEW
922	30	15	42558	29	O	17S	28E	990S 2310E	OUTLAW STATE #008	APACHE CORPORATION	NEW
923	30	15	31285	30	O	17S	28E	890S 1650E	STALEY STATE #002	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
925	30	15	36252	30	N	17S	28E	990S 1980W	STALEY STATE #004	VANGUARD OPERATING LLC	NEW OPERATOR
926	30	15	36564	30	O	17S	28E	330S 2210E	STALEY STATE #009	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
927	30	15	37673	30	N	17S	28E	330S 1650W	STALEY STATE #012	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
954	30	15	37691	30	P	17S	28E	1050S 330E	ANTHONEY #001	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
961	30	15	38234	30	P	17S	28E	430S 800E	ANTHONY #002	VANGUARD OPERATING LLC	NEW OPERATOR
962	30	15	39638	30	P	17S	28E	412S 679E	ANTHONEY STATE #003	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
963	30	15	40026	30	N	17S	28E	330S 2410W	STALEY STATE #017	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
964	30	15	40338	30	O	17S	28E	990S 2310E	STALEY STATE #016	VANGUARD OPERATING LLC	NEW OPERATOR
965	30	15	40983	30	O	17S	28E	330S 1650E	STALEY STATE #020	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
978	30	15	42725	30	O	17S	28E	685S 1630E	STALEY STATE #028	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
984	30	15	42726	30	O	17S	28E	505S 2140E	STALEY STATE #029	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
985	30	15	42727	30	O	17S	28E	850S 1680W	STALEY STATE #030	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
1024	30	15	1638	31	A	17S	28E	330N 990E	STATE FW #001	ALAMO PERMIAN RESOURCES LLC	NOW ACTIVE AND NEW OPERATOR
1031	30	15	10537	31	H	17S	28E	2277N 330E	NORTHWEST ARTESIA UNIT #004	VANGUARD OPERATING LLC	NEW OPERATOR
1037	30	15	10833	31	I	17S	28E	1980S 660E	NORTHWEST ARTESIA UNIT #010	VANGUARD OPERATING LLC	NEW OPERATOR
1038	30	15	20042	31	P	17S	28E	990S 660E	NORTHWEST ARTESIA UNIT #011	VANGUARD OPERATING LLC	NEW OPERATOR
1039	30	15	30760	31	P	17S	28E	735S 330E	NW STATE #010	VANGUARD OPERATING LLC	NEW OPERATOR
1060	30	15	30783	31	H	17S	28E	1650N 330E	NW STATE #011	VANGUARD OPERATING LLC	NEW OPERATOR
1068	30	15	30784	31	A	17S	28E	330N 480E	NW STATE #012	VANGUARD OPERATING LLC	NEW OPERATOR
1069	30	15	30849	31	I	17S	28E	2310S 270E	NW STATE #009	VANGUARD OPERATING LLC	NEW OPERATOR
1070	30	15	30893	31	A	17S	28E	973N 959E	NW STATE #028	VANGUARD OPERATING LLC	NEW OPERATOR
1080	30	15	32162	31	D	17S	28E	460N 990W	ENRON STATE #004	VANGUARD OPERATING LLC	NEW OPERATOR
1089	30	15	36978	31	D	17S	28E	990N 330W	ENRON STATE#015	VANGUARD OPERATING LLC	NEW OPERATOR
1091	30	15	38512	31	P	17S	28E	990N 940W	ERNORN STATE #016	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1102	30	15	39020	31	O	17S	28E	140S 2560E	EMPIRE ABO UNIT #408	APACHE CORPORATION	TEMPORARILY PLUGGED AND AG ABANDONED
1103	30	15	42372	31	D	17S	28E	330N 430W	ENRON STATE #20	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
1108	30	15	42806	31	P	17S	28E	245S 90E	RANGER STATE #016	APACHE CORPORATION	NEW
1109	30	15	1665	31	O	17S	28E	940S 1650E	NORTHWEST ARTESIA UNIT #014	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1125	30	15	2312	32	G	17S	28E	1980N 1650E	NORTHWEST ARTESIA UNIT #005	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1132	30	15	10109	32	B	17S	28E	990N 1650E	NORTHWEST ARTESIA UNIT #003	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1133	30	15	20043	32	M	17S	28E	990S 760W	NORTHWEST ARTESIA UNIT #12	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
1135	30	15	30684	32	G	17S	28E	1650N 1650E	NW STATE #003	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1143	30	15	30685	32	M	17S	28E	990S 990W	NW STATE #007	VANGUARD OPERATING LLC	NEW OPERATOR
1144	30	15	30734	32	B	17S	28E	1140N 2277E	NW STATE #004	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1147	30	15	30777	32	L	17S	28E	2310S 990W	NW STATE#006	VANGUARD OPERATING LLC	NEW OPERATOR
1148	30	15	30815	32	N	17S	28E	1090S 2126W	NW STATE #008	VANGUARD OPERATING LLC	NEW OPERATOR
1149	30	15	30887	32	J	17S	28E	2141S 1665E	JEFFERS 32 STATE #001	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1150	30	15	30890	32	B	17S	28E	330N 1650E	NW STATE #016	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR

1151	30	15	31530	32	C	17S	28E	530N 1650W	ENRON STATE #001	VANGUARD OPERATING LLC	NEW OPERATOR
1152	30	15	31920	32	D	17S	28E	990N 990W	ENRON STATE #002	VANGUARD OPERATING LLC	NEW OPERATOR
1153	30	15	31934	32	G	17S	28E	2272N 2273E	NW STATE #018	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1154	30	15	35050	32	D	17S	28E	330N 500W	ENRON STATE #012	VANGUARD OPERATING LLC	NEW OPERATOR
1155	30	15	36554	32	L	17S	28E	1770S 550W	NW STATE #029	VANGUARD OPERATING LLC	NEW OPERATOR
1156	30	15	36979	32	C	17S	28E	990N 2035W	ENRON STATE #014	VANGUARD OPERATING LLC	NEW OPERATOR
1157	30	15	36989	32	K	17S	28E	1630S 1710W	NW STATE #030	VANGUARD OPERATING LLC	NEW OPERATOR
1158	30	15	37045	32	J	17S	28E	1563S 2207E	JEFFERS 32 STATE #002	VANGUARD OPERATING LLC	NEW AND NEW OPERATOR
1159	30	15	37057	32	N	17S	28E	330S 1750W	NW STATE #031	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
1160	30	15	37058	32	M	17S	28E	330S 330W	NW STATE #032	VANGUARD OPERATING LLC	NOW ACTIVE AND NEW OPERATOR
1161	30	15	38513	32	J	17S	28E	2310S 2032E	JEFFERS 32 STATE #003	VANGUARD OPERATING LLC	NEW OPERATOR
1162	30	15	39927	32	K	17S	28E	1750S 1765W	AB STATE 647 #001	APACHE CORPORATION	NEW
1163	30	15	39996	32	C	17S	28E	230N 2420W	ENRON STATE #017	VANGUARD OPERATING LLC	NEW OPERATOR
1164	30	15	40339	32	D	17S	28E	990N 330W	ENRON STATE #018	VANGUARD OPERATING LLC	NEW OPERATOR
1166	30	15	42156	32	D	17S	28E	385N 900W	ENRON STATE #021	VANGUARD OPERATING LLC	NEW OPERATOR
1167	30	15	41833	32	C	17S	28E	990N 1700W	ENRON STATE #019	VANGUARD OPERATING LLC	NEW OPERATOR

TABLE VIII

FIGURES INCLUDED IN THE REPORT

Figure	Description	OCD Reference
1	Chukka Well #2 Schematic	Section VI.1 and IX.3
2	Mewbourne Well #1 Schematic	n/a
3	Plot of Bottom Hole Pressure and Temperature Data Mewbourne Well #1	n/a
4	Gaines Well #3 Schematic	n/a
5	Plot of Bottom Hole Pressure and Temperature Data Gaines Well #3	n/a
6	Midland Map of One Mile Area of Review	n/a
7	Chukka Well #2 Wellhead Schematic	Section IX.14
8	Diagram of Valve Locations for Shut-in on Chukka Well #2	Section IX.14
9	Chukka Well #2 Test Overview	Section IX.18.f
10	Chukka Well #2 Cartesian Plot of Bottom-Hole Pressure and Temperature vs. Time	Section IX.18.a
11	Chukka Well #2 Cartesian Plot of Injection Rate vs. Time	Section IX.18.b
12	Historical Surface Pressure and Injection Rates vs. Calendar Time	Section IX.18.g

TABLE VIII (cont.)

Figure	Description	OCD Reference
13	Chukka Well #2 Derivative Log-Log Plot	Section IX.18.c
14	Chukka Well #2 Superposition Horner (Semi-Log) Plot	Section IX.18.d
15	Chukka Well #2 Expanded Superposition Horner (Semi-Log) Plot	Section IX.18.d
16	Chukka Well #2 Hall Plot	Section IX.18.h
17	Chukka Well #2 Static Pressure Gradient Survey	n/a

TABLE IX

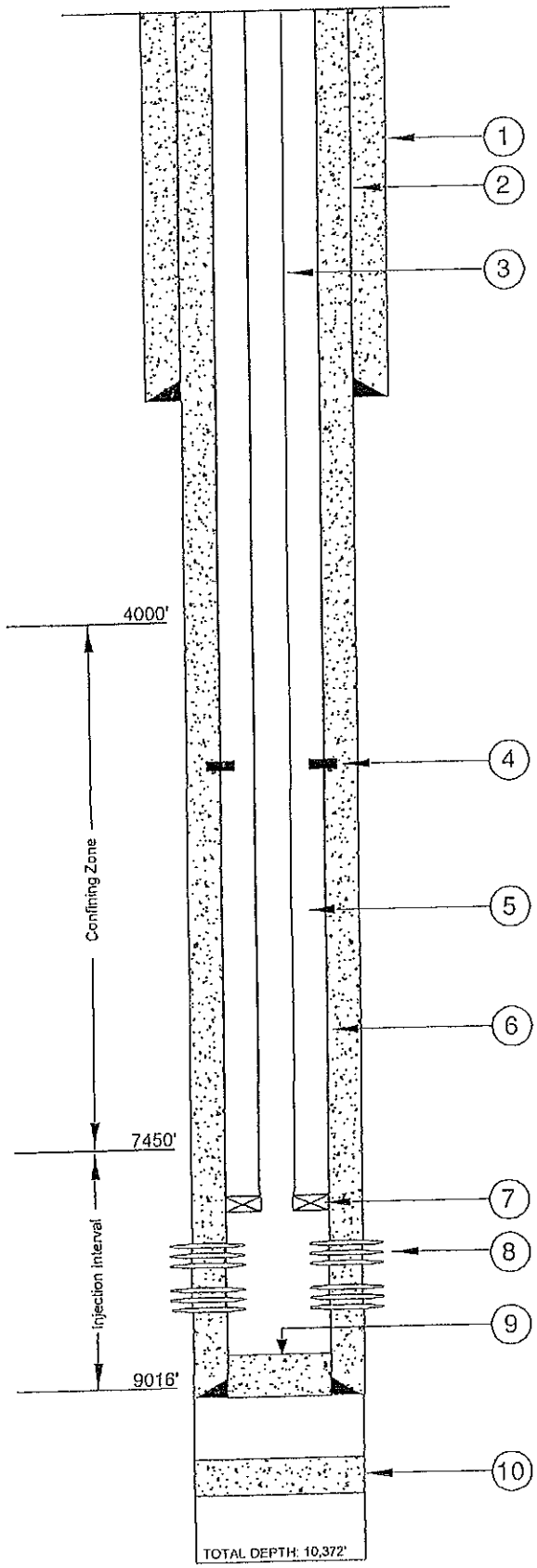
Chukka Well No. 2
Comparison of Permeability, Mobility-Thickness, Skin, False Extrapolated Pressure and Fill Depth

Date of Test	Permeability (k)	Mobility-Thickness (kh/u)	Skin (s)	False Extrapolated Pressure (p*)	Fill Depth
July 22, 2016 to July 27, 2016	510	156,606 md-ft/cp	25.83	4259.41 psia	8362 feet
June 30, 2014 to July 2, 2014	1080 md	320,328 md-ft/cp	38.57	4,285.19 psia	8773 feet
November 2-3, 2012	1848 md	548,069 md-ft/cp	25.99	3898.55 psia	8775 feet
October 17-22, 2011	1451 md	430,405 md-ft/cp	29.41	3697.29 psia	8335 feet
September 28-October1, 2010	820 md	243,351 md-ft/cp	86.50	3576.58 psia	8,775 feet
October 1-4, 2009	856 md	253,821 md-ft/cp	39.74	3445.89 psia	8775 feet
April 1-4, 2008	1,091 md	265,300 md-ft/cp	155	3393.47 psia	N/A
April 3-6, 2006	2184 md	707,629 md-ft/cp	81.55	3393.63 psia	N/A
April 2005	2496 md	808,946 md-ft/cp	23.45	3347.95 psia	N/A
April 2001	2211 md	716,551 md-ft/cp	54.07	3236.42 psia	N/A
April 1999	4712 md	1,527,060 md-ft/cp	59.71	2844.45	N/A
Permit Parameters	250 md	40,094 md-ft-cp	N/A	N/A	N/A

TABLE X

STATIC PRESSURE GRADIENT DATA
CHUKKA WELL No. 2

Gradient Data			
Depth (feet)	Pressure (psia)	Gradient (psi/ft)	Temperature (ºF)
0	979.90	-	92.73
1000	1,413.98	0.434	84.86
2000	1847.34	0.433	90.21
3000	2281.05	0.434	93.03
4000	2714.69	0.434	96.79
5000	3148.92	0.434	101.21
6000	3582.77	0.434	107.66
7000	4017.38	0.435	113.29
7570	4263.80	0.432	109.64



BELOW GROUND DETAILS

All depths are referenced to the Kelly bushing elevation of 13' above ground level. Ground level elevation is 3610' above mean sea level.

1. Base of the USDW at 473'.
2. Surface Casing: 8 5/8", 32 lb/ft, set at 1995' in an 11" hole. Cemented to surface with 800 sacks of cement.
3. Injection Tubing: 3 ½", 9.2 lb/ft, J-55, smls, NUE 10 rd, set at 7528'.
4. DV Tool: at 5,785'.
5. Annulus Fluid: 8.7 lb/gal brine water mixed w/UniChem Techni-Hib 370 corrosion inhibitor.
6. Protection Casing: 5 ½", 17 lb/ft, L-80, LT&C; 8869' to the surface and set in a 7 7/8" hole. Casing cemented in two stages as follows:

   First Stage - 575 sacks of modified Class "H" with 0.4 % CFR-3, 5 lb/sk Gilsonite, 0.5 % Halad-344, and 3 lb/sk salt. Mixed at 13.0 ppg. Opened DV tool at 5785 and circulated 20 sacks to surface.

   Second Stage - Lead Slurry: 300 sacks of Interfill "C" (35:65:6) mixed at 11.7 ppg. Tail slurry: 695 sacks modified Class "H" with 0.4% CFR-3, 5 lb/sk Gilsonite, 0.5 % Halad-344 and 3 lb/sk salt mixed at 13.0 ppg. Circulated 150 sacks to surface. Topped out with 10 yards of Redi-mix.
7. Packer: 5 ½" x 2 7/8" Weatherford Completion Tools (Arrow) Model X-1 retrievable packer set at 7528'. Minimum ID is 2.4375". Wireline re-entry guide is on bottom. To release: turn ¼ turn to the right and pick up.
8. Perforations (2 SPF):

   Zone 1: 7570-7620', 7676-7736'

   Zone 2: 7826-7834', 7858-7880', 7886-7904', 7916-7936', 7944-7964', 7990-8042', 8096-8116', 8191-8201', 8304-8319',8395-8399'.
9. PBTD: 8770'
10. Cement Plug: 45 sacks from 9675' to 9775'.

SUBSURFACE

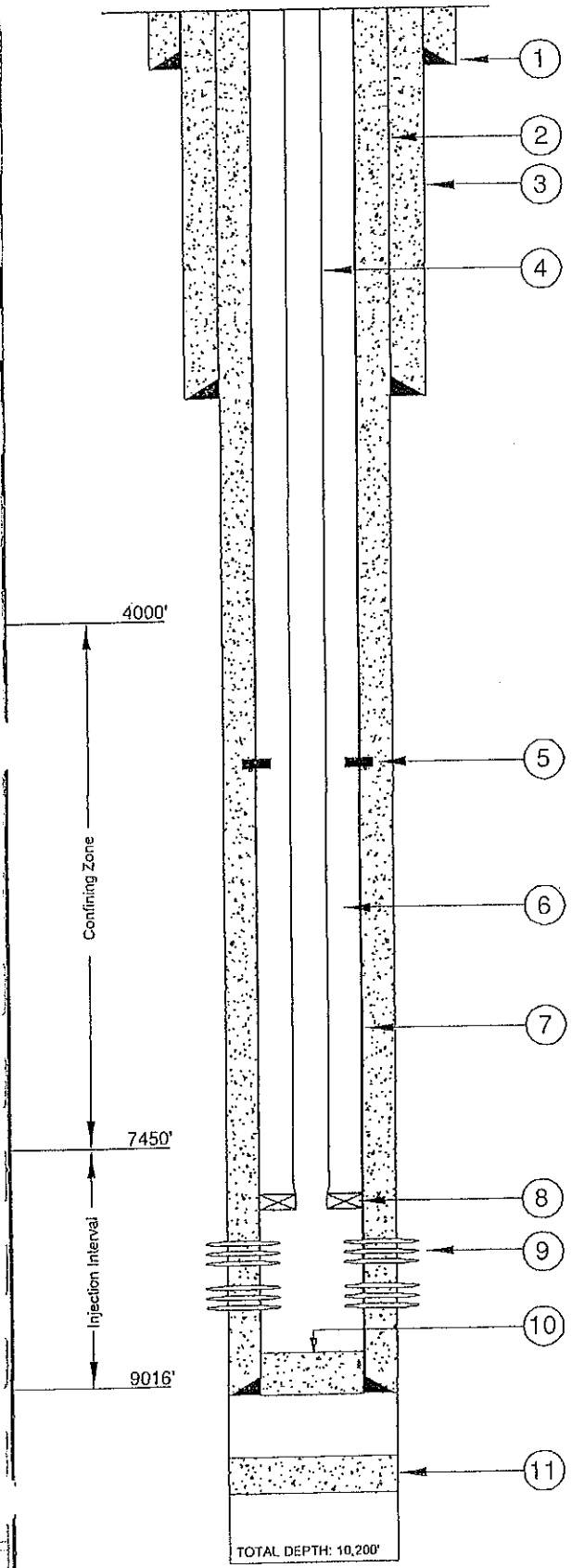
HOUSTON, TX.
SOUTH BEND, IN.
BATON ROUGE, LA.

NAVAJO REFINING COMPANY
ARTESIA, NEW MEXICO

BELOW GROUND DETAILS
WASTE DISPOSAL WELL NO. 2

DATE: 07/13/01	CHECKED BY:	JOB NO: 7005256
DRAWN BY: WDL	APPROVED BY:	DWG. NO:

FIGURE 1



BELOW GROUND DETAILS

All depths are referenced to the Kelly bushing elevation of 12.5' above ground level. Ground level elevation is 3,678' above mean sea level.

1. Surface Casing: 13 ⅜", 48 lb/ft, J-55, ST&C set at 390' in a 17 ½" hole. Cemented with 150 sx Class C with 3 % calcium chloride, 375 sx Class C Litewate w/3 % calcium chloride and ½ lb/sx flocele. Circulated 86 sx to surface.

2. Intermediate Casing: 9 ⅝", 36 lb/ft, J-55, ST&C set at 2,555' in a 12 ¼ " hole. Cemented w/800 sx of Class C Lite w/ ½ lb/sx flocele and 2 lb/sx Gilsonite and 12 % salt. Followed by 200 sx of Class C w/2 % calcium chloride. Circulated 133 sx to surface.

3. Base of the USDW at 493'.

4. Injection Tubing: 4 ½", 11.6 lb/ft, N-80, SMLS, R3, LT&C set at 7,879'.

5. DV Tool: at 5,498'.

6. Annulus Fluid: 8.7 lb/gal brine water mixed w/UniChem Techni-Hib 370 corrosion inhibitor.

7. Protection Casing: 7", 29 lb/ft, N-80, LT&C: 9094' to 7031'. 7", 29 lb/ft, P-110, LT&C: 7031' to 5845'. 7", 26 lb/ft, P-110, LT&C; 5845' to surface. Casing cemented in two stages as follows:

   First Stage - 600 sx modified Class H w/0.4 % CFR-3, 5 lb/sx Gilsonite, 0.5% Halad-344, and 1 lb/sx salt mixed at 13.0 ppg. Opened DV tool at 5498' and circulated 142 sx to surface.

   Second Stage - Lead Slurry: 220 sx Interfill "C" (35:65:6) mixed at 11.7 ppg. Tail Slurry: 550 sx modified Class H w/0.4 % CFR-3, 5 lb/sx, Gilsonite, 0.5 % Halad-344, 0.1% HR-7, and 1 lb/sx mixed at 13.0 ppg. Circulated 75 sx to surface. Top out w/20 sx permium plus 3 % calcium chloride.

8. Packer: 7" x 3.5" EVI Oil Tools (Arrow), Model X-1 retrievable packer set at 7879'. Minimum I.D. is 3.0". Wireline re-entry guide on bottom. To release: turn ¼ turn to the right and pick up.

9. Perforations (2 SPF):

   Upper Zone - 7924-7942', 7974-8030', 8050-8056', 8066-8080', 8118-8127', 8132-8140', 8160-8164', 8170-8188'.

   Lower Zone - 8220-8254', 8260-8270', 8280-8302', 8360-8366', 8370-8378', 8400-8410', 8419-8423', 8430-8446', 8460-8464', 8470-8476'.

10. PBTD: 9004'.

11. Cement Plug: 45 sx Class H from 9624' to 9734'.

SUBSURFACE

HOUSTON, TX.
SOUTH BEND, IN.
BATON ROUGE, LA.

NAVAJO REFINING COMPANY
ARTESIA, NEW MEXICO

BELOW GROUND DETAILS
WASTE DISPOSAL WELL NO. 1

DATE: 07/13/01	CHECKED BY:	JOB NO: 70D5256
DRAWN BY: WDL	APPROVED BY:	DWG. NO:

FIGURE 2

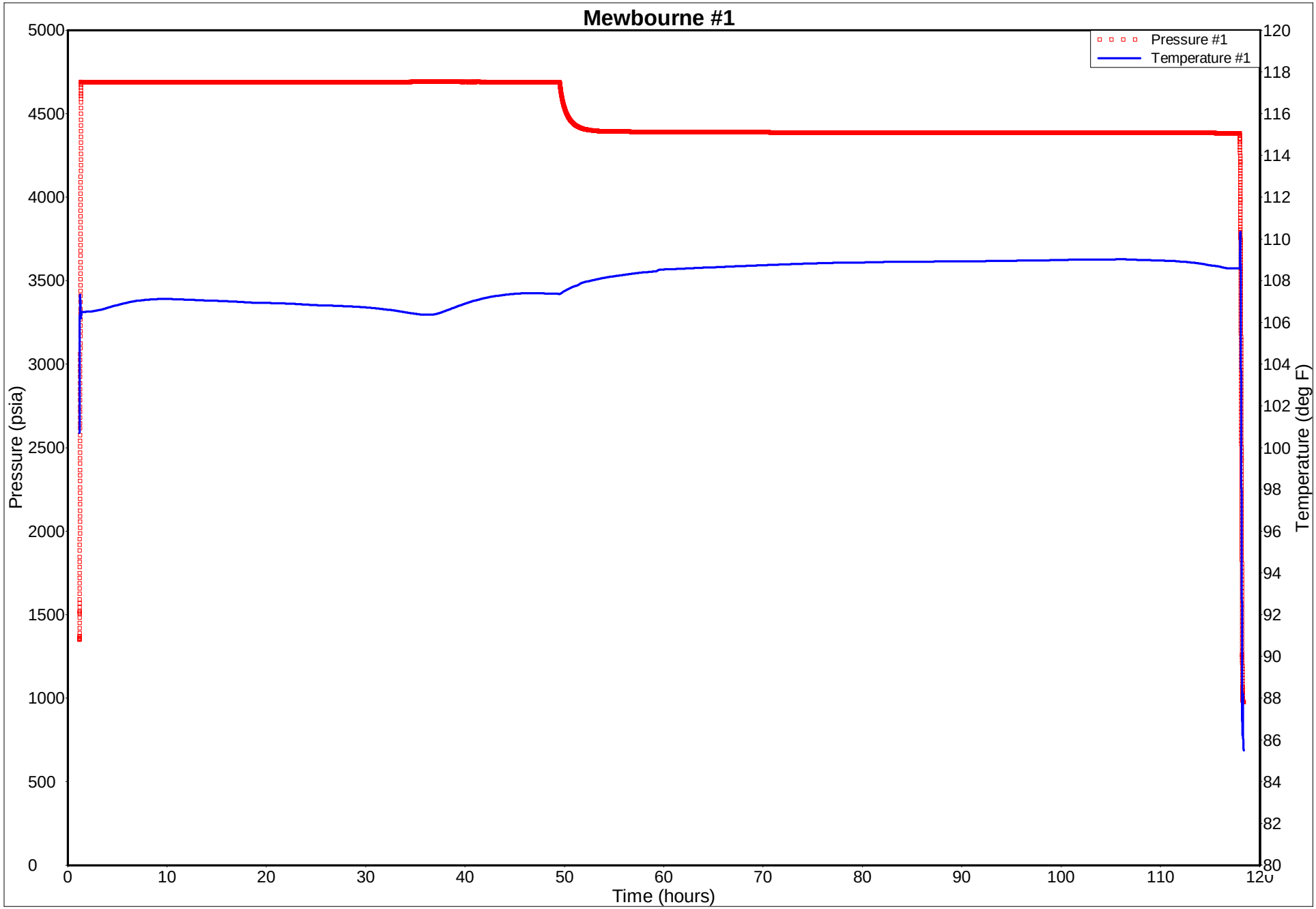

Mewbourne #1
Pressure #1
Temperature #1
Pressure (psia)
Temperature (deg F)
Time (hours)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
80
82
84
86
88
90
92
94
96
98
100
102
104
106
108
110
112
114
116
118
120
0
10
20
30
40
50
60
70
80
90
100
110
120

Figure 3

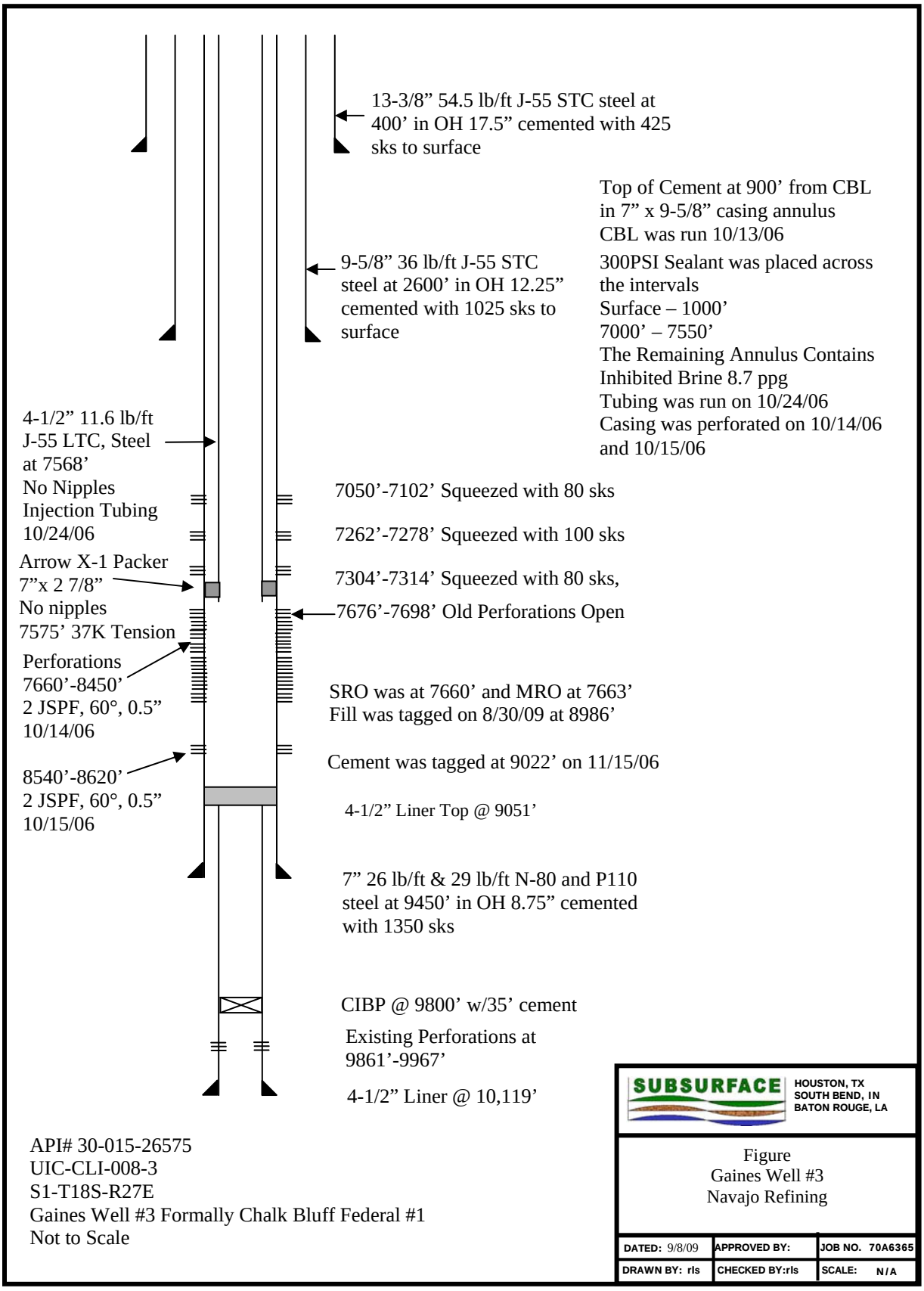

13-3/8" 54.5 lb/ft J-55 STC steel at 400' in OH 17.5" cemented with 425 sks to surface
Top of Cement at 900' from CBL in 7" x 9-5/8" casing annulus CBL was run 10/13/06
9-5/8" 36 lb/ft J-55 STC steel at 2600' in OH 12.25" cemented with 1025 sks to surface
300PSI Sealant was placed across the intervals
Surface – 1000'
7000' – 7550'
The Remaining Annulus Contains Inhibited Brine 8.7 ppg
Tubing was run on 10/24/06
Casing was perforated on 10/14/06 and 10/15/06
4-1/2" 11.6 lb/ft J-55 LTC, Steel at 7568'
No Nipples
Injection Tubing 10/24/06
7050'-7102' Squeezed with 80 sks
7262'-7278' Squeezed with 100 sks
Arrow X-1 Packer 7"x 2 7/8"
No nipples
7575' 37K Tension
7304'-7314' Squeezed with 80 sks,
7676'-7698' Old Perforations Open
Perforations 7660'-8450' 2 JSPF, 60°, 0.5" 10/14/06
SRO was at 7660' and MRO at 7663'
Fill was tagged on 8/30/09 at 8986'
Cement was tagged at 9022' on 11/15/06
8540'-8620' 2 JSPF, 60°, 0.5" 10/15/06
4-1/2" Liner Top @ 9051'
7" 26 lb/ft & 29 lb/ft N-80 and P110 steel at 9450' in OH 8.75" cemented with 1350 sks
CIBP @ 9800' w/35' cement
Existing Perforations at 9861'-9967'
4-1/2" Liner @ 10,119'
API# 30-015-26575
UIC-CLI-008-3
S1-T18S-R27E
Gaines Well #3 Formally Chalk Bluff Federal #1
Not to Scale
SUBSURFACE
HOUSTON, TX
SOUTH BEND, IN
BATON ROUGE, LA
Figure
Gaines Well #3
Navajo Refining
DATED: 9/8/09
APPROVED BY:
JOB NO. 70A6365
DRAWN BY: rls
CHECKED BY:rls
SCALE: N/A

FIGURE 4

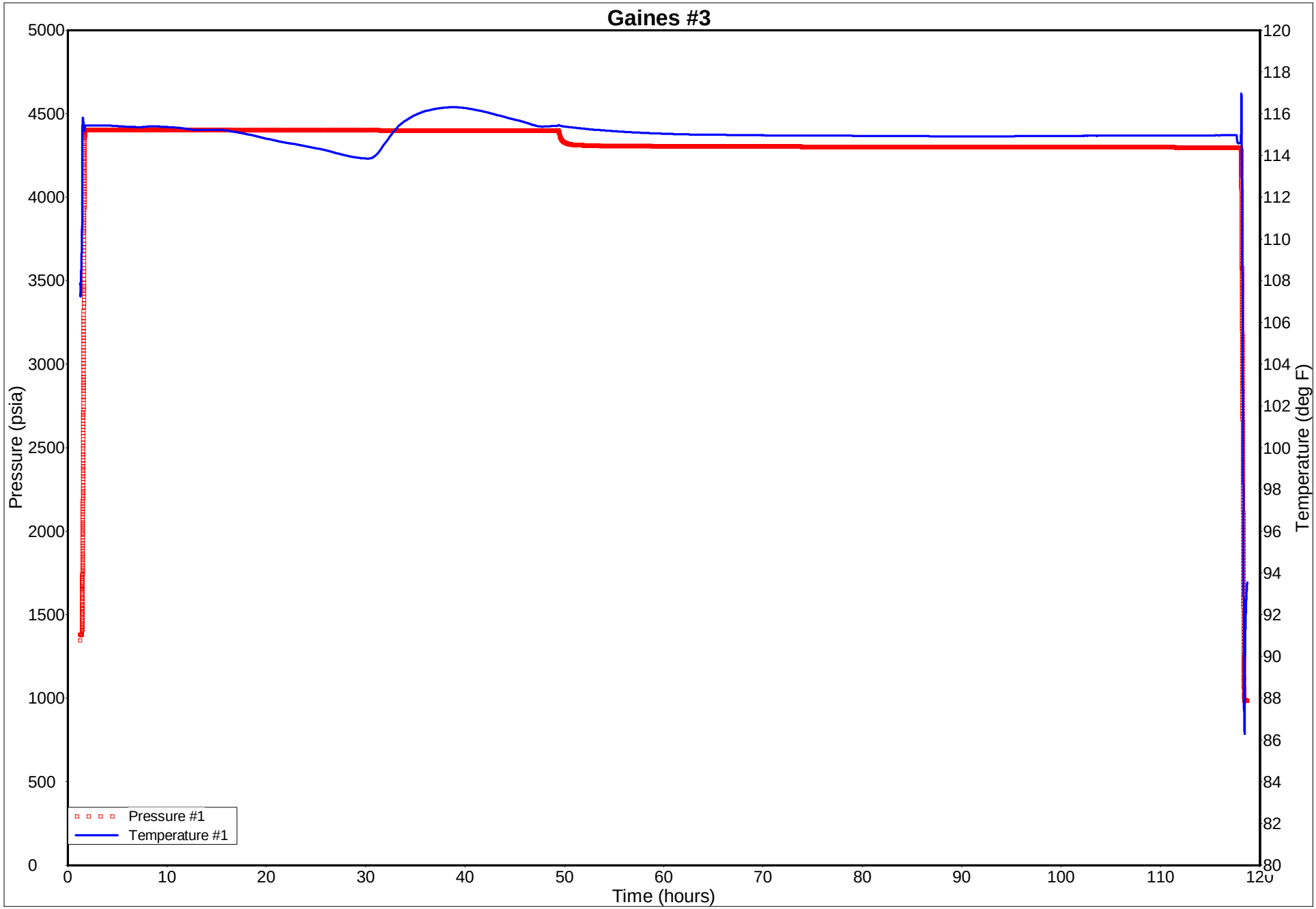
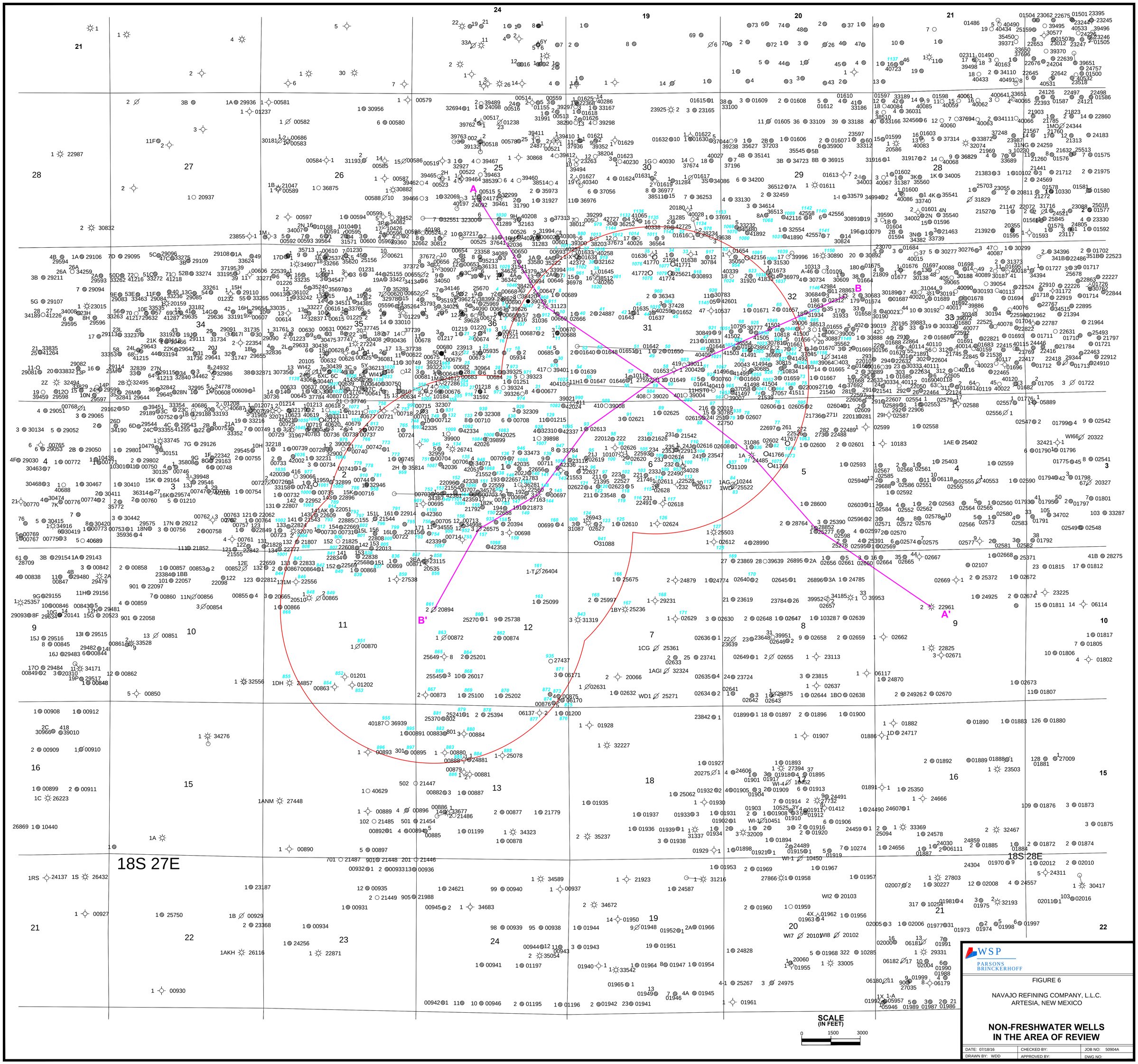

Gaines #3
Pressure (psia)
Temperature (deg F)
Time (hours)
Pressure #1
Temperature #1
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
80
82
84
86
88
90
92
94
96
98
100
102
104
106
108
110
112
114
116
118
120
0
10
20
30
40
50
60
70
80
90
100
110
120

Figure 5



WSP
PARSONS BRINCKERHOFF

FIGURE 6

NAVAJO REFINING COMPANY, L.L.C.
ARTESIA, NEW MEXICO

NON-FRESHWATER WELLS IN THE AREA OF REVIEW

DATE: 07/18/16	CHECKED BY:	JOB NO: 50904A
DRAWN BY: WDD	APPROVED BY:	DWG NO:

SUBSURFACE TECHNOLOGY FIGURE 7

WELL: NAVAJO REFINING WDW #2

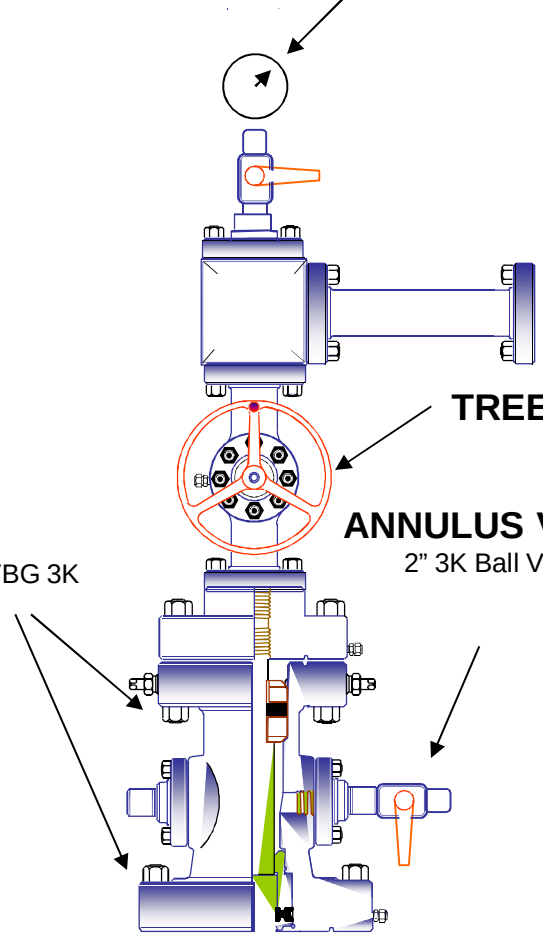
TOP CONNECTION
2-3/8” 8rd x 4-1/16” 3K
2” x 2-3/8” Ball Valve
2-3/8” Bull Plug 1/2” NPT
5000 LB Pressure Guage

UPPER TREE ASSEMBLY
A5PP,4-1/2” 3K X 4-1/16” 3K

TREE GATE VALVE
4-1/16” 3K

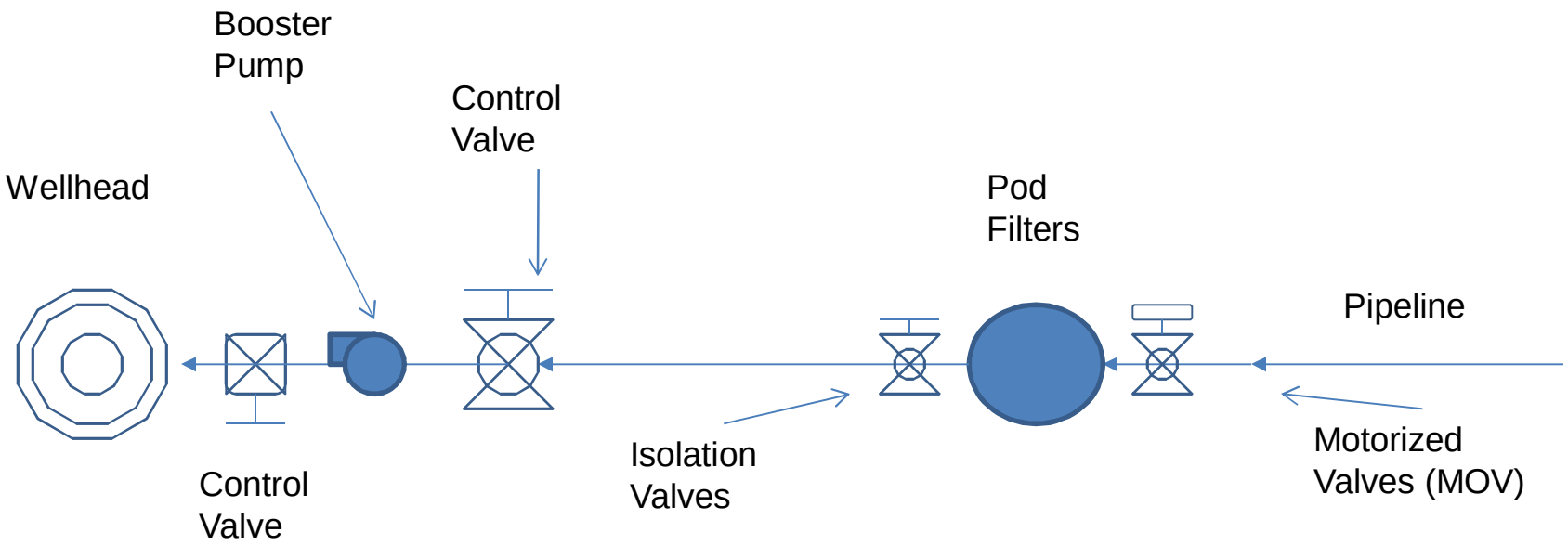
FLANGE
7-1/16”, 3-1/2” 3K X 4-1/16” UPTBG 3K

ANNULUS VALVE
2” 3K Ball Valve



SUPERIOR WELLHEAD

FIGURE 8
Chukka Well No. 2
Diagram of Shut-in Valve Control



At Shut-in
- Close MOV
- Close Control Valve
- Close Isolation Valves
- Close Control Valve
- Drain POD Filters

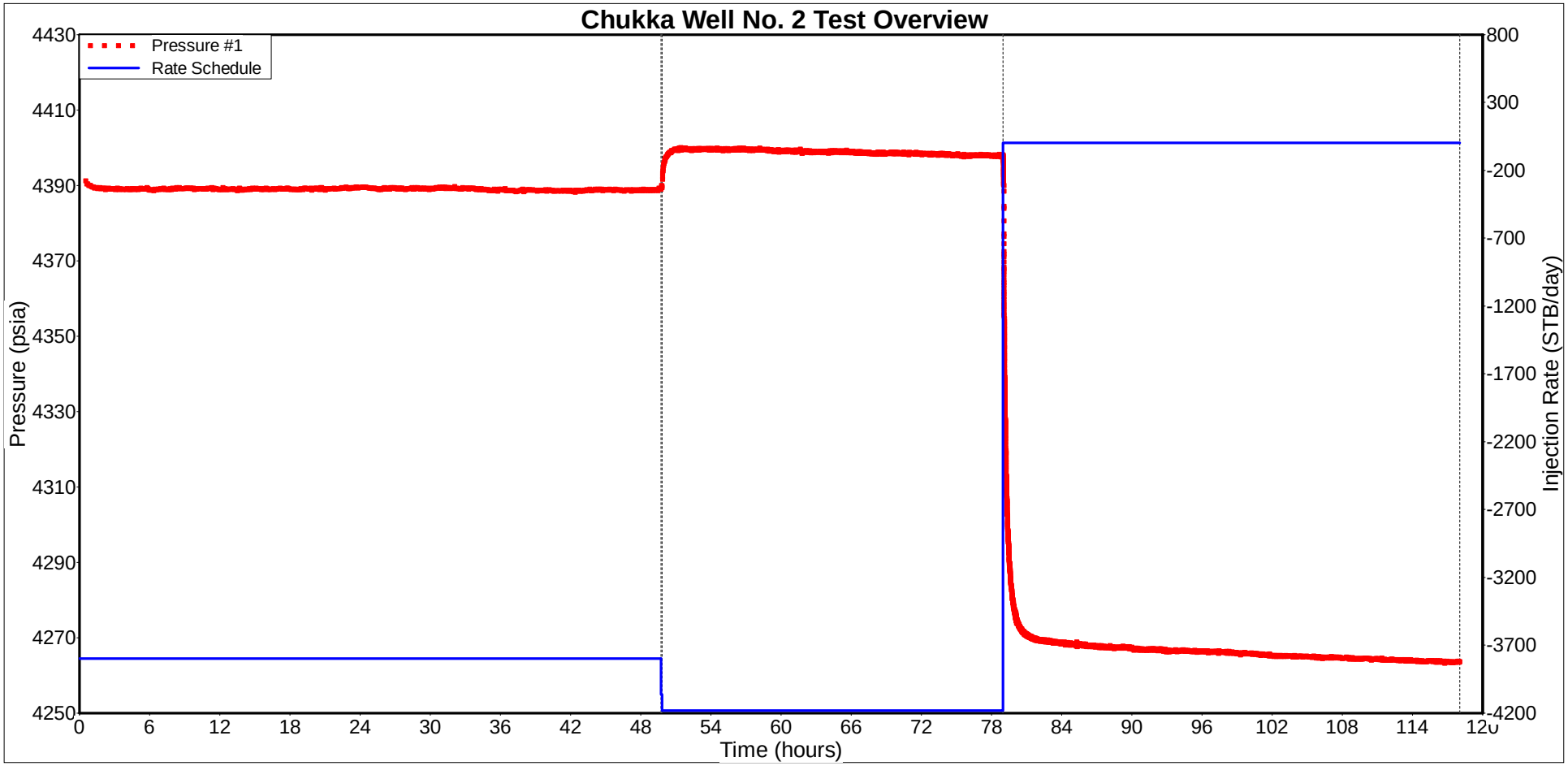

Chukka Well No. 2 Test Overview
Pressure #1
Rate Schedule
Pressure (psia)
Injection Rate (STB/day)
Time (hours)
4430
4410
4390
4370
4350
4330
4310
4290
4270
4250
800
300
-200
-700
-1200
-1700
-2200
-2700
-3200
-3700
-4200
0
6
12
18
24
30
36
42
48
54
60
66
72
78
84
90
96
102
108
114
120

FIGURE 9

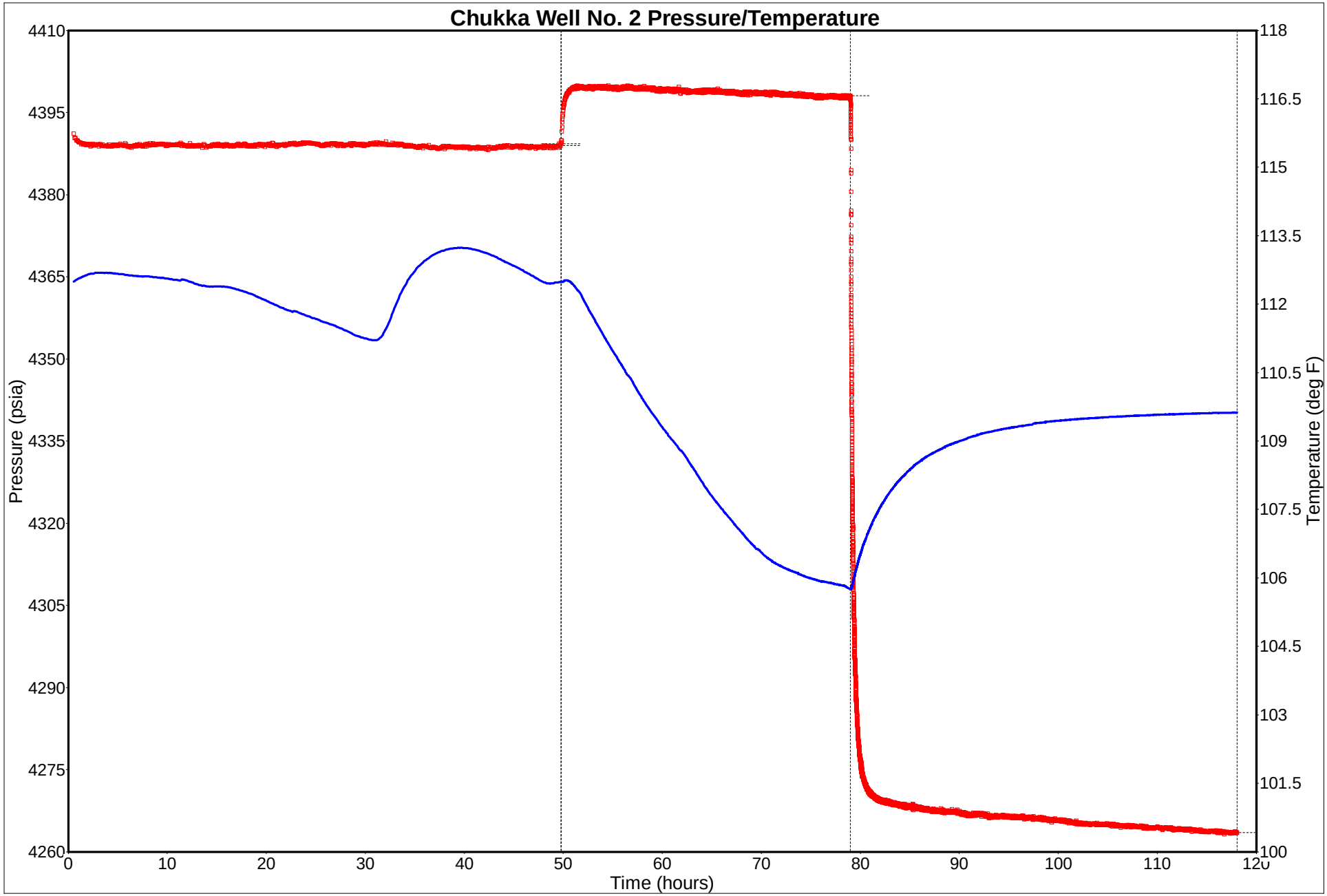

Chukka Well No. 2 Pressure/Temperature
Pressure (psia)
Temperature (deg F)
Time (hours)
4410
4395
4380
4365
4350
4335
4320
4305
4290
4275
4260
118
116.5
115
113.5
112
110.5
109
107.5
106
104.5
103
101.5
100
0
10
20
30
40
50
60
70
80
90
100
110
120

Figure 10

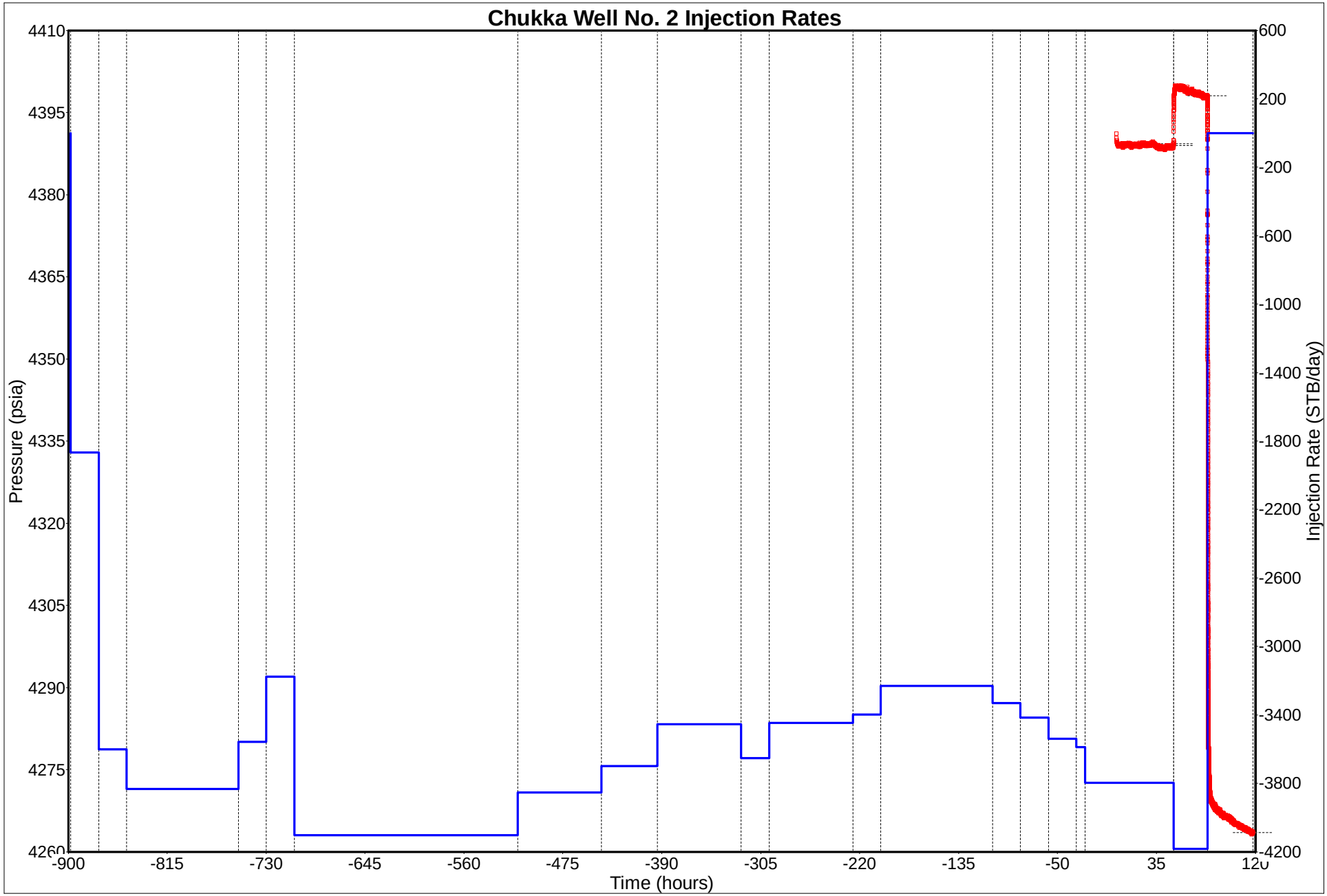

Chukka Well No. 2 Injection Rates
Pressure (psia)
Injection Rate (STB/day)
Time (hours)
4410
4395
4380
4365
4350
4335
4320
4305
4290
4275
4260
600
200
-200
-600
-1000
-1400
-1800
-2200
-2600
-3000
-3400
-3800
-4200
-900
-815
-730
-645
-560
-475
-390
-305
-220
-135
-50
35
120

Figure 11

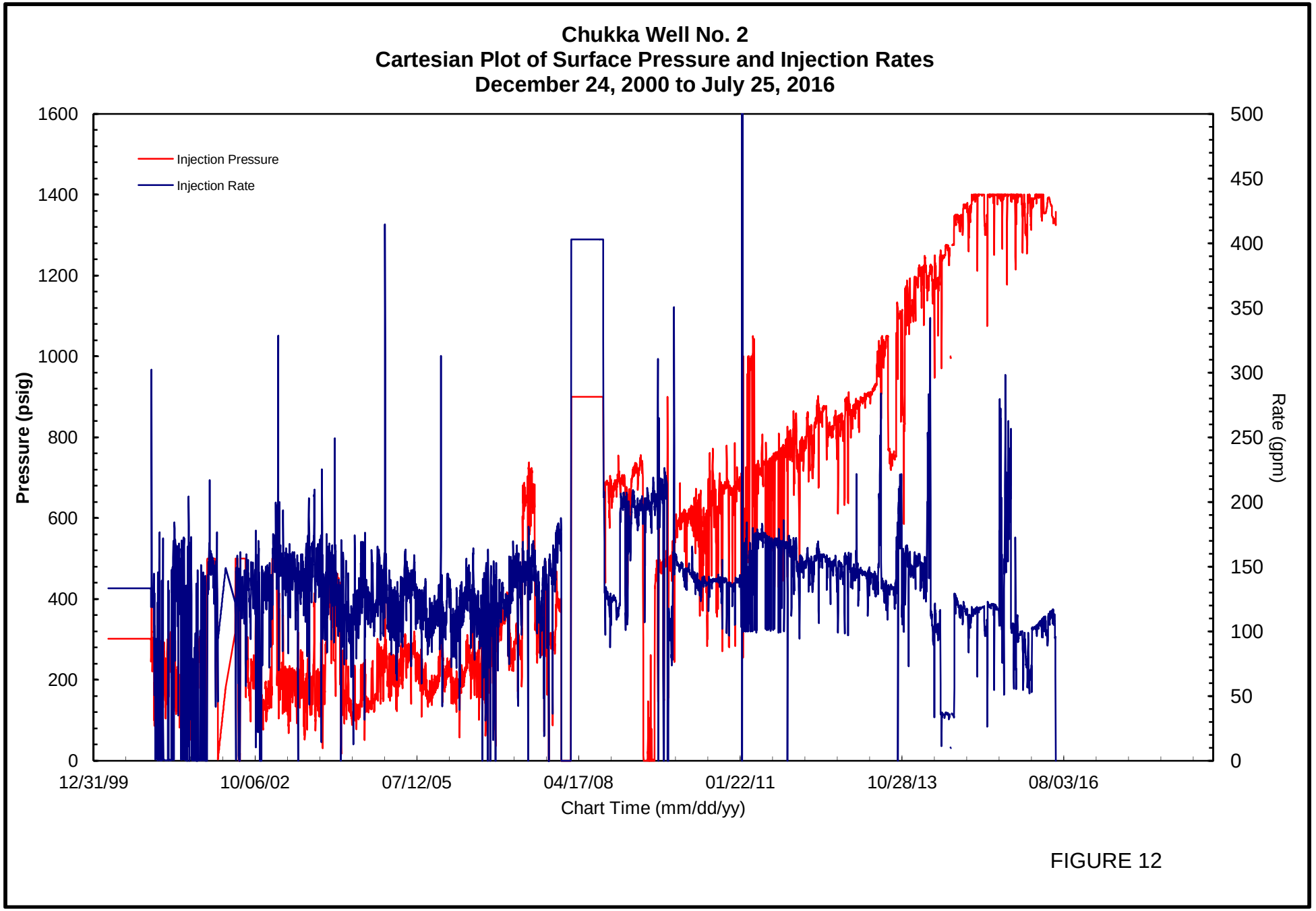

Chukka Well No. 2
Cartesian Plot of Surface Pressure and Injection Rates
December 24, 2000 to July 25, 2016
Injection Pressure
Injection Rate
Pressure (psig)
Rate (gpm)
1600
1400
1200
1000
800
600
400
200
0
500
450
400
350
300
250
200
150
100
50
0
12/31/99
10/06/02
07/12/05
04/17/08
01/22/11
10/28/13
08/03/16
Chart Time (mm/dd/yy)

FIGURE 12

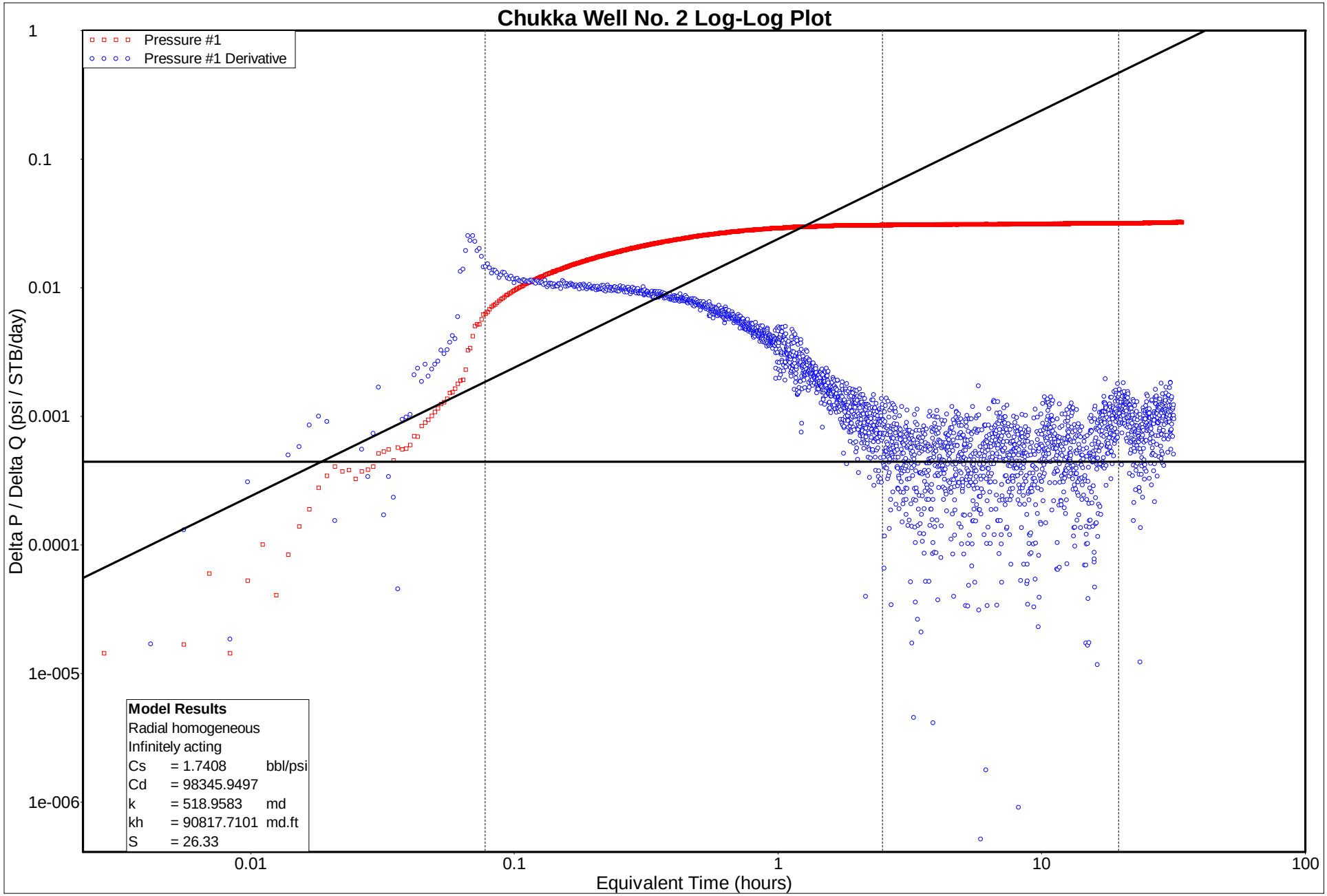

Chukka Well No. 2 Log-Log Plot
Pressure #1
Pressure #1 Derivative
Delta P / Delta Q (psi / STB/day)
1
0.1
0.01
0.001
0.0001
1e-005
1e-006
0.01
0.1
1
10
100
Equivalent Time (hours)
Model Results
Radial homogeneous
Infinitely acting
Cs = 1.7408 bbl/psi
Cd = 98345.9497
k = 518.9583 md
kh = 90817.7101 md.ft
S = 26.33

FIGURE 13

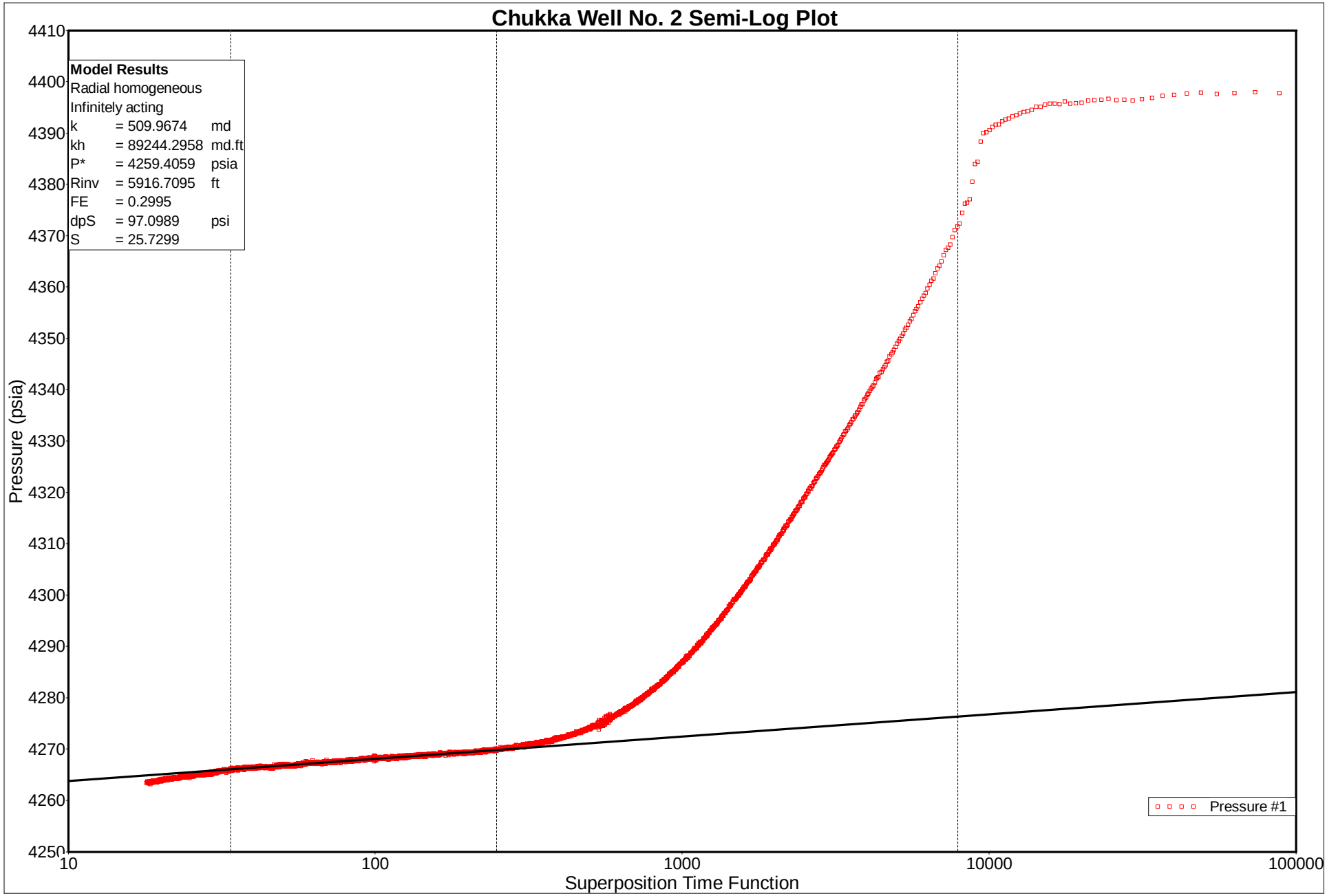

Chukka Well No. 2 Semi-Log Plot
Model Results
Radial homogeneous
Infinitely acting
k = 509.9674 md
kh = 89244.2958 md.ft
P* = 4259.4059 psia
Rinv = 5916.7095 ft
FE = 0.2995
dpS = 97.0989 psi
S = 25.7299
Pressure (psia)
4410
4400
4390
4380
4370
4360
4350
4340
4330
4320
4310
4300
4290
4280
4270
4260
4250
10
100
1000
10000
100000
Superposition Time Function
Pressure #1

FIGURE 14

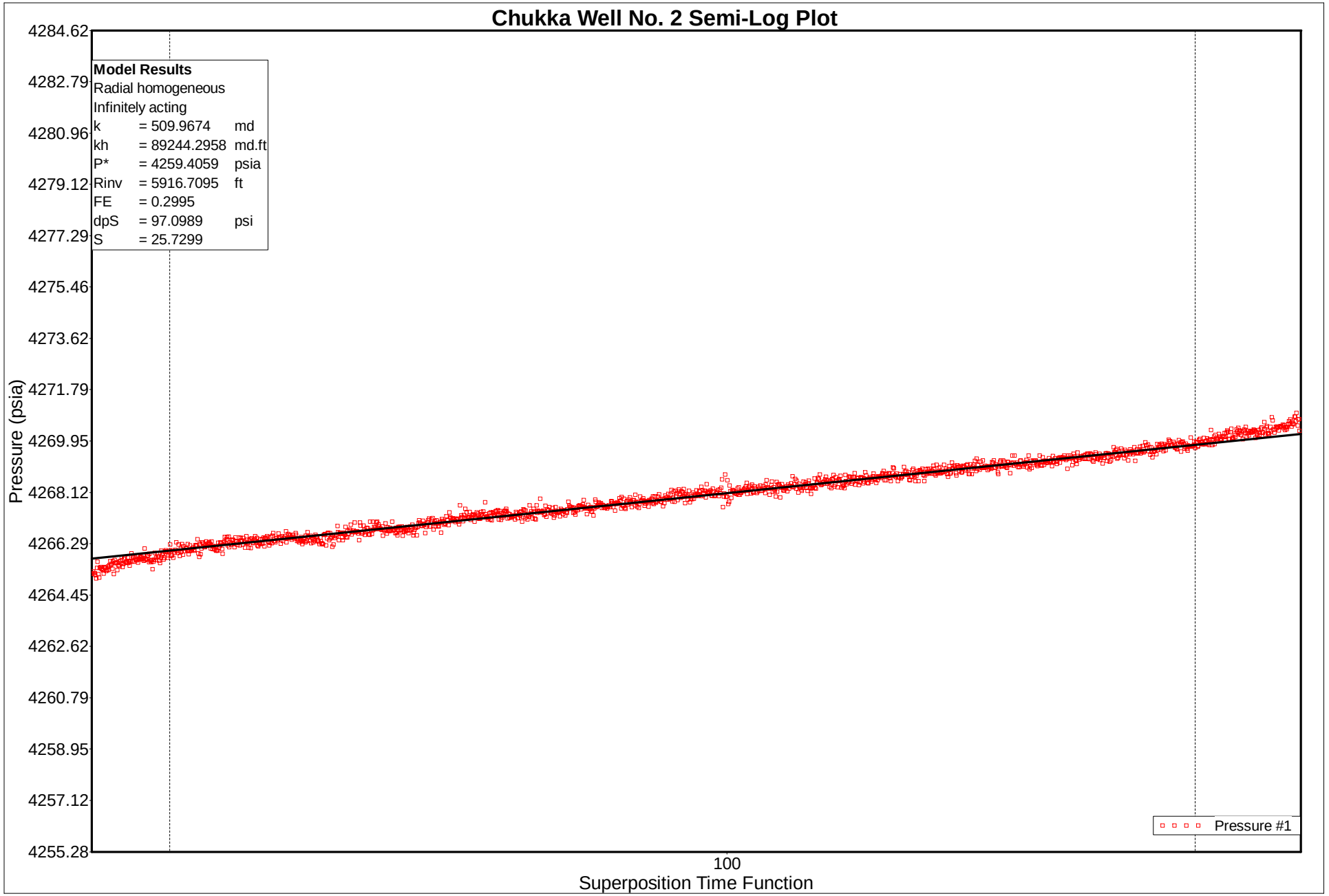

Chukka Well No. 2 Semi-Log Plot
Model Results
Radial homogeneous
Infinitely acting
k = 509.9674 md
kh = 89244.2958 md.ft
P* = 4259.4059 psia
Rinv = 5916.7095 ft
FE = 0.2995
dpS = 97.0989 psi
S = 25.7299
4284.62
4282.79
4280.96
4279.12
4277.29
4275.46
4273.62
4271.79
4269.95
4268.12
4266.29
4264.45
4262.62
4260.79
4258.95
4257.12
4255.28
Pressure (psia)
100
Superposition Time Function
Pressure #1

FIGURE 15

Chukka Well No. 2
Hall Plot
June 15, 2016 to July 25, 2016

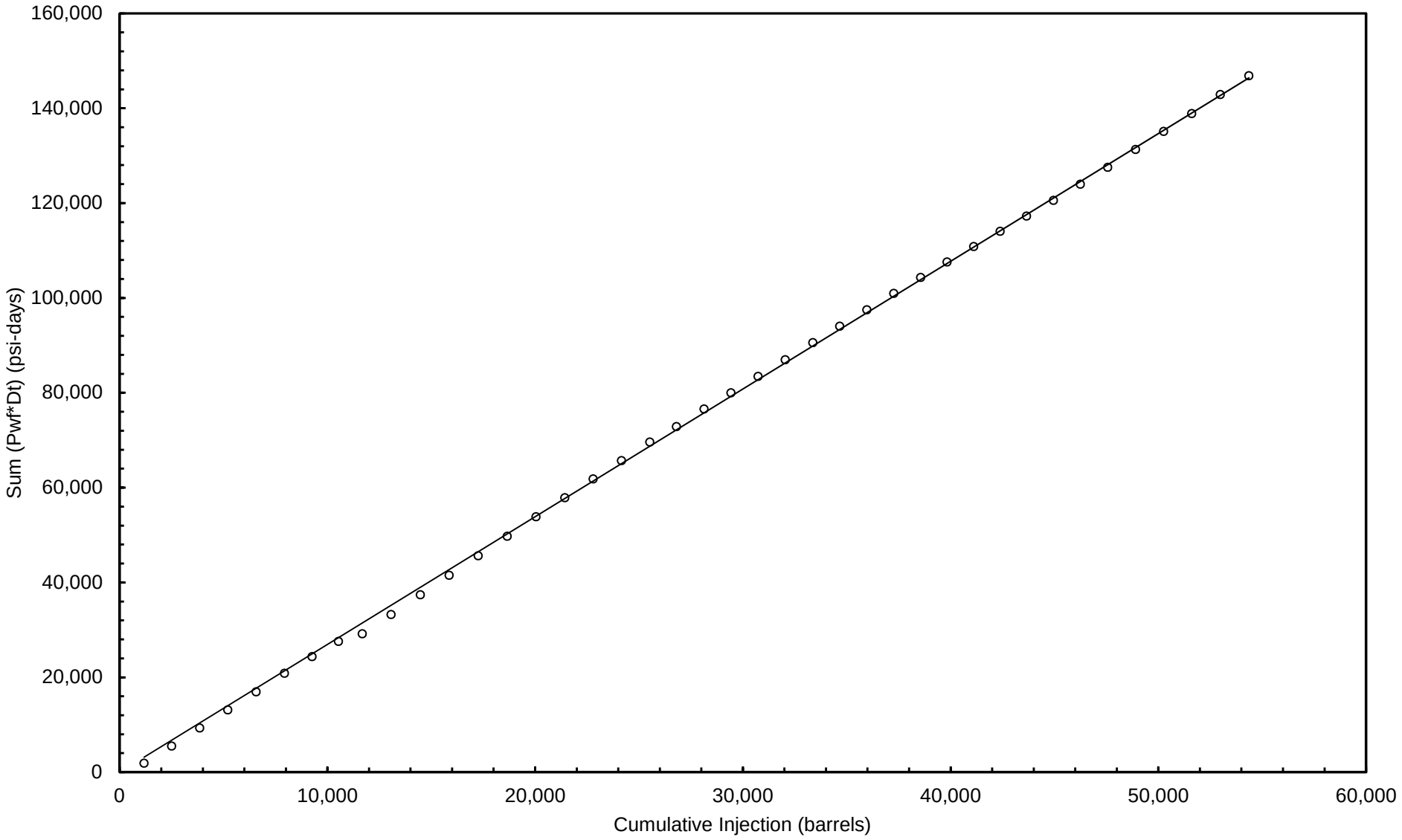


FIGURE 17

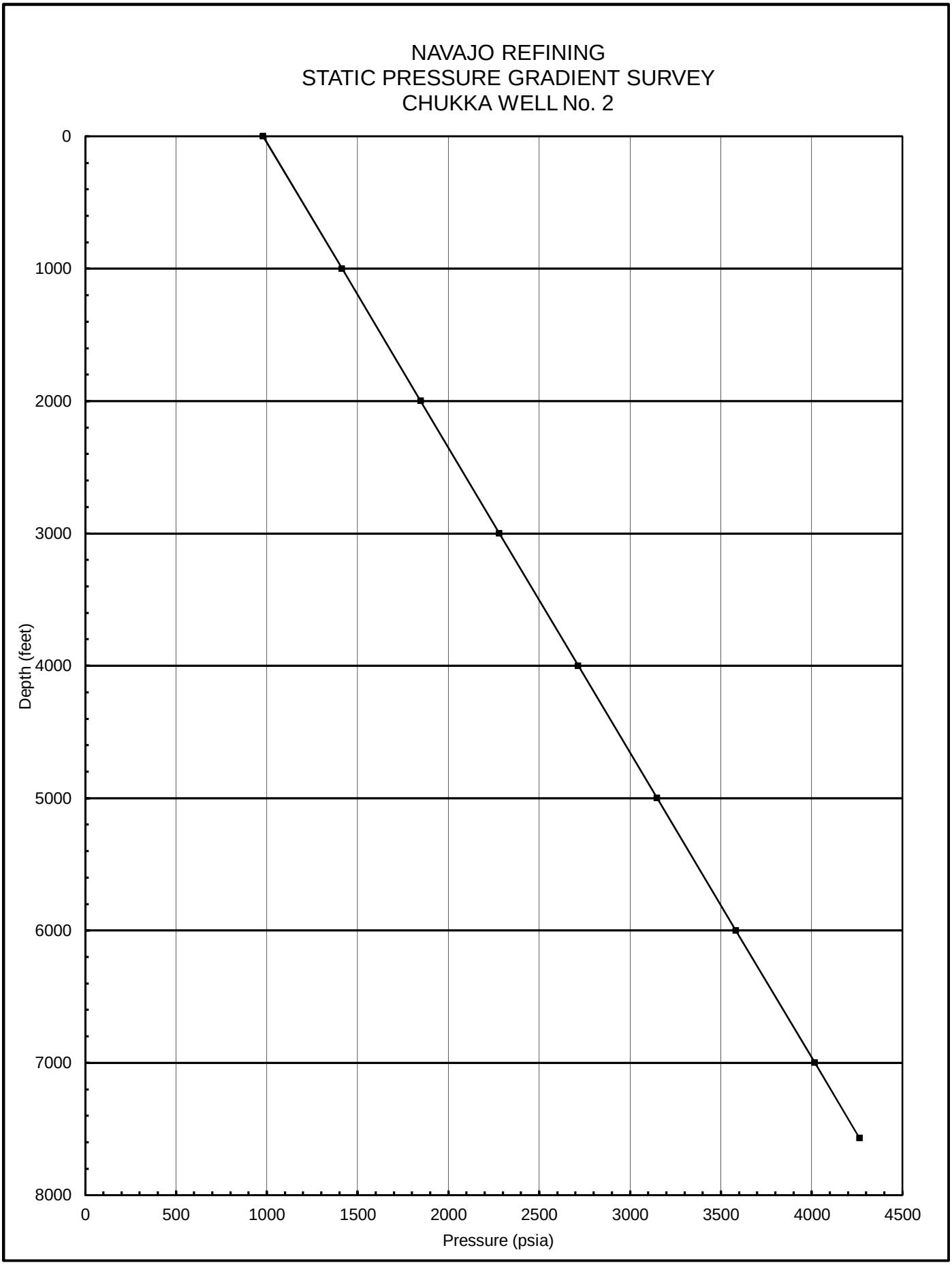


Figure 17 Static Gradient Pressure Survey.xlsx

FIGURE 17

APPENDIX A

DUAL INDUCTION LOG SECTIONS FROM 7924 FEET TO 8476 FEET

APPENDIX B

NEUTRON DENSITY LOG SECTIONS FROM 7924 FEET TO 8476 FEET

APPENDIX C

COMPRESSIBILITY OF FLUID

APPENDIX C

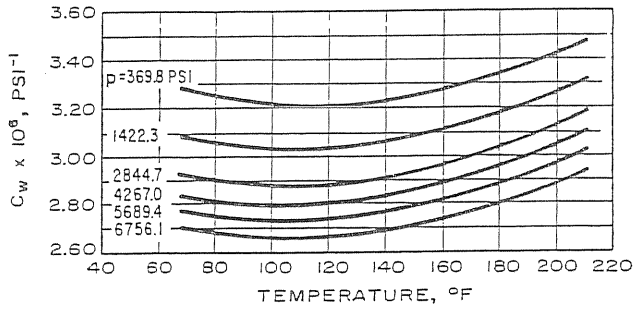


Fig. D.16 Average compressibility of distilled water. After Long and Chierici.[13]

Source: Earlougher, 1977, Advances in Well Test Analysis

COMPRESSIBILITY OF PORE VOLUME AND DISTILLED WATER

APPENDIX D

COMPRESSIBILITY OF PORE VOLUME

APPENDIX D

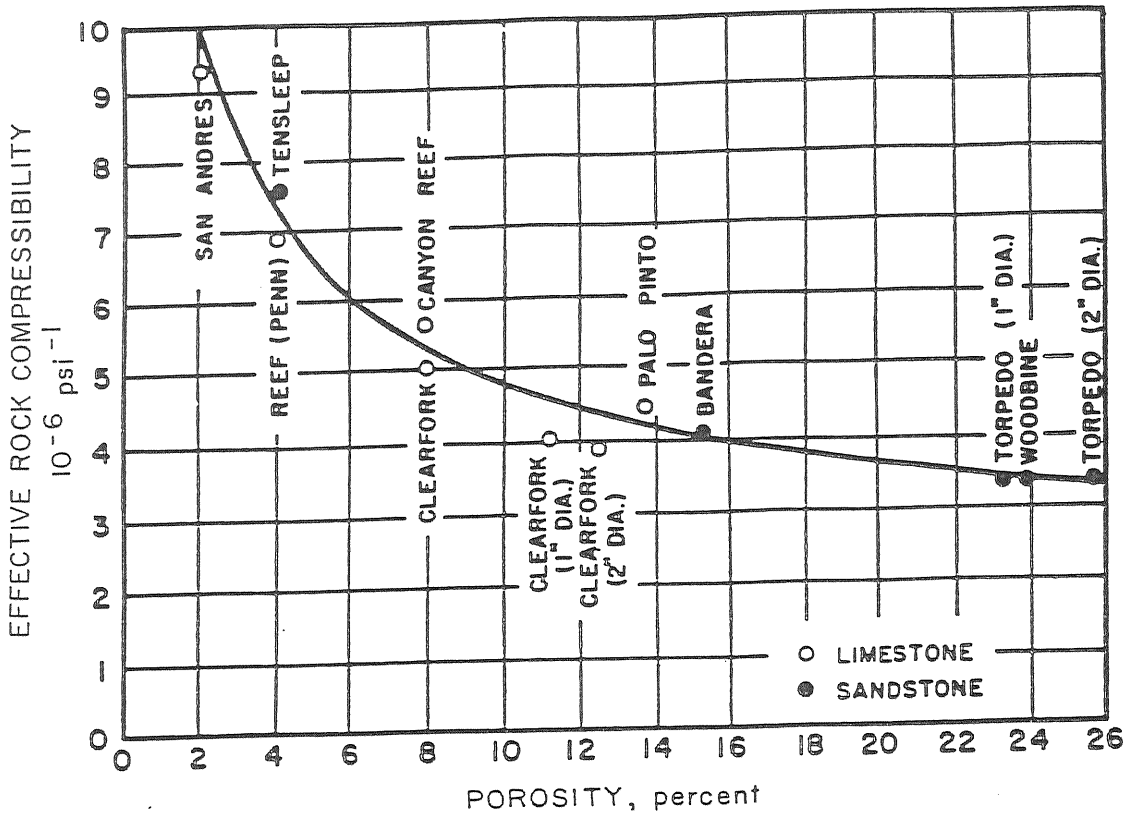


Fig. G.5 Effective formation (rock) compressibility. From Hall, *Trans.*, AIME (1953) 198, 309.

Source: Matthews and Russell, 1967, Pressure Buildup and Flow Tests in Wells

APPENDIX E

MEWBOURNE WELL NO. 1, JULY 23, 1998, TEMPERATURE LOG

APPENDIX F

WATER VOSCOSITIES AT VARIOUS SALINTIES AND TEMPERATURES

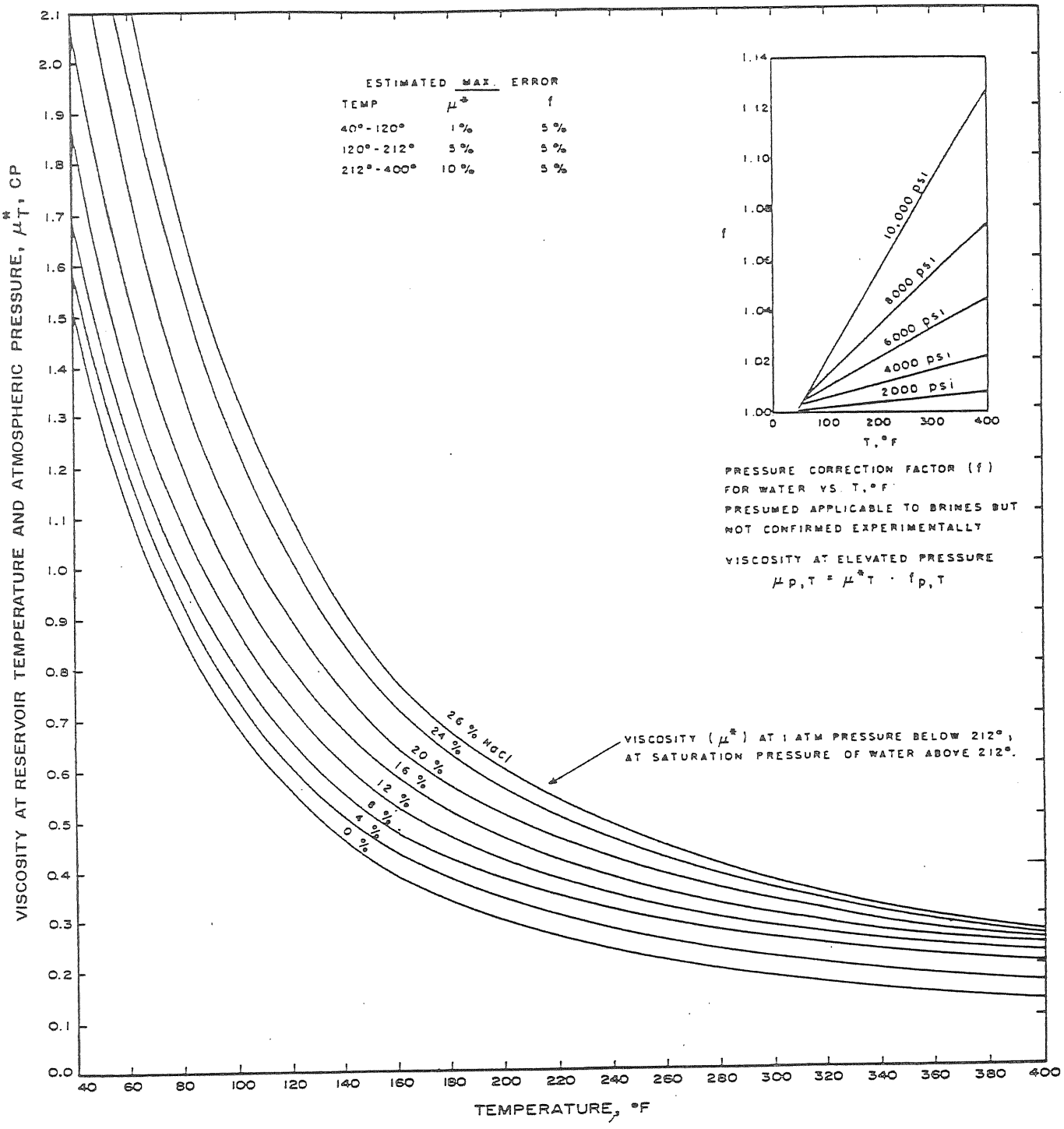


Fig. D.35 Water viscosity at various salinities and temperatures. After Matthews and Russell, data of Chesnut.[18]

FROM: Earlougher, R.C., 1977, "Advances in Well Test Analysis", SPE of AIME, Dallas, Texas

APPENDIX G

DAILY RATE HISTORY DATA

APPENDIX G

Chukka Well No. 2

Daily Rate History

Date/Time	Chukka Injection Rate (gpm)	Chukka Pressure (psig)	Date/Time	Chukka Injection Rate (gpm)	Chukka Pressure (psig)
06-15-16 00:00	0.00	998.56	07-19-16 00:00	97.13	1288.12
06-16-16 00:00	54.42	1171.64	07-20-16 00:00	99.65	1300.02
06-17-16 00:00	105.08	1326.75	07-21-16 00:00	103.23	1315.30
06-18-16 00:00	110.79	1356.08	07-22-16 00:00	109.58	1342.19
06-19-16 00:00	111.91	1356.99	07-23-16 00:00	110.83	1350.02
06-20-16 00:00	111.07	1356.10	07-24-16 00:00	110.47	1350.03
06-21-16 00:00	113.53	1367.35	07-25-16 00:00	116.12	1375.92
06-22-16 00:00	103.81	1323.81			
06-23-16 00:00	92.70	1277.29			
06-24-16 00:00	46.71	1142.94			
06-25-16 00:00	119.23	1392.86			
06-26-16 00:00	121.56	1400.11			
06-27-16 00:00	119.75	1393.50			
06-28-16 00:00	120.11	1396.05			
06-29-16 00:00	120.00	1393.81			
06-30-16 00:00	118.82	1390.85			
07-01-16 00:00	118.14	1382.97			
07-02-16 00:00	115.06	1369.86			
07-03-16 00:00	113.24	1360.02			
07-04-16 00:00	113.52	1361.15			
07-05-16 00:00	95.47	1282.48			
07-06-16 00:00	107.94	1332.72			
07-07-16 00:00	100.06	1298.07			
07-08-16 00:00	100.38	1300.02			
07-09-16 00:00	101.92	1309.40			
07-10-16 00:00	106.53	1328.02			
07-11-16 00:00	100.30	1300.01			
07-12-16 00:00	100.73	1300.02			
07-13-16 00:00	100.66	1300.02			
07-14-16 00:00	99.11	1292.58			
07-15-16 00:00	94.98	1275.04			
07-16-16 00:00	94.05	1275.08			
07-17-16 00:00	93.80	1275.08			
07-18-16 00:00	94.05	1275.06			

APPENDIX H

GAUGE CALIBRATION SHEETS

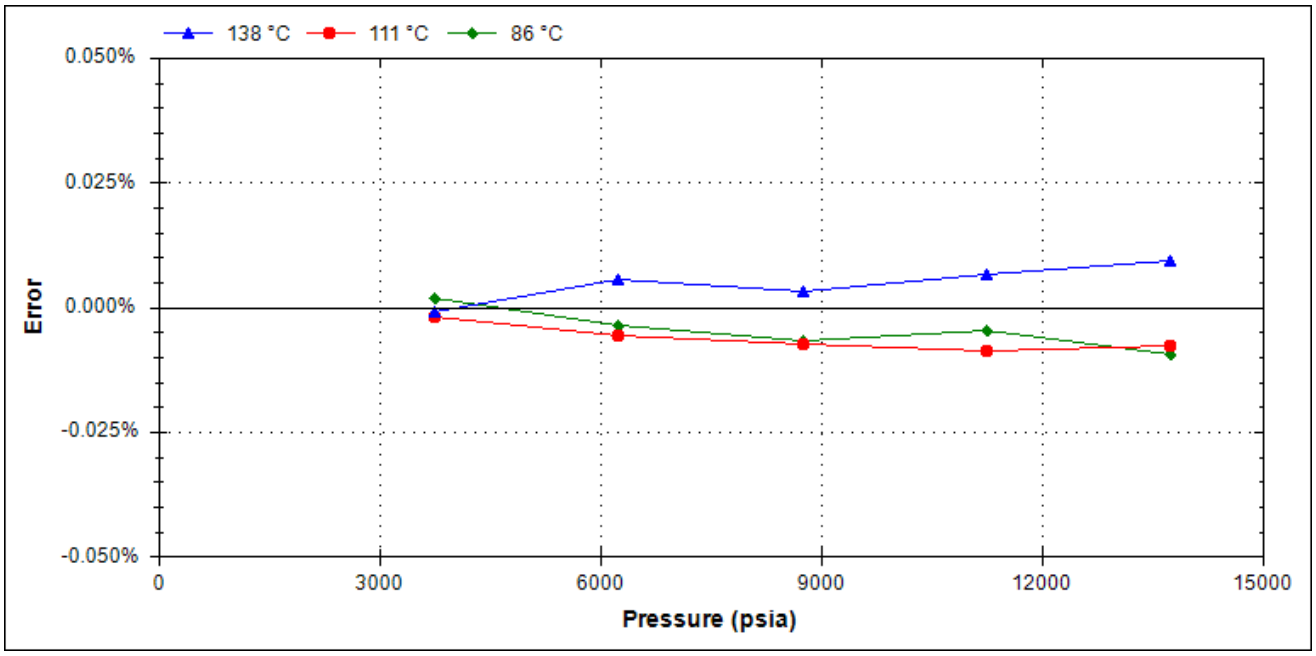
DataCan

"The Next Generation of Down Hole Tools"

Calibration Date:	16-Mar-16	**Calibration System:**	CALIBRATION02
Max Pressure Error:	0.010% F.S.	**Batch Number:**	20160314.155156
Max Temperature Error:	0.156 °C		
Part Number:	101250		
Serial Number:	DC2050		

1.375 OD Welded Piezo IV Calibrated Assy			
Max Pressure		Max Temperature	
psi	kPa	ºF	ºC
15,000	103,421	351	177

Accuracy: As shown in the graph below, this DataCan Pressure gauge conforms to within +/- 0.030% F.S. of the pressure standard used in calibration, which is accurate to within +/- 0.01% of reading.



Working Standards

Sun Electronic Systems Environmental Chamber, Model: EC127, Serial: EC0063
DHI Instruments Pressure Controller, Model: PPCH-200M (30,000psi Reference), Serial: 614

Traceability Statement

All working standards are traceable to nationally or internationally recognized standards.

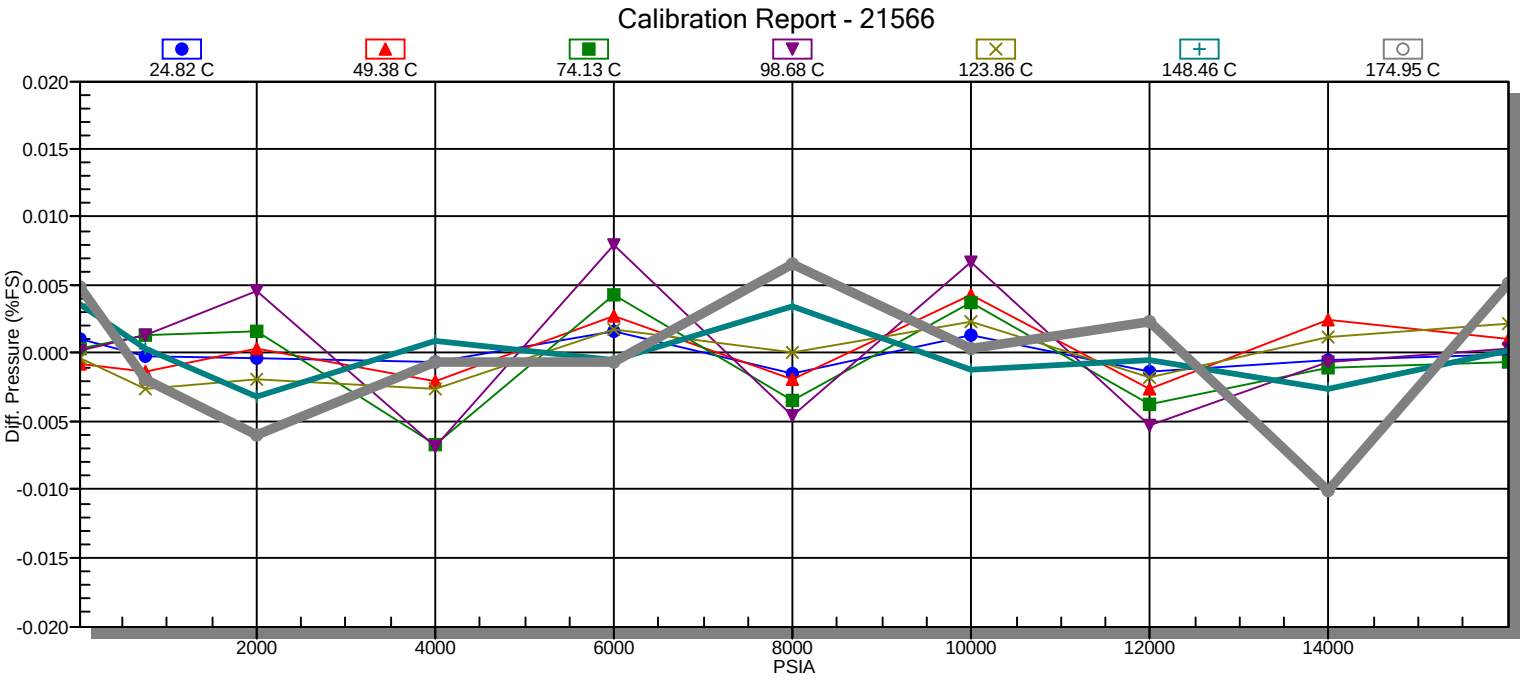
Approved By:
DataCan Services Corp.

Calibrated By:
Angelo Pulido

SPARTEK SYSTEMS
GEOPHYSICAL INSTRUMENTATION
"Providing our customers with Best in Class Technology"

#1 Thevenaz Industrial Trail
Sylvan Lake, AB, Ca, T4S 2J6
Phone (403) 887-2443
Fax (403) 887-4050
www.sparteksystems.com

Pressure Gauge Certificate of Calibration



GAUGE NUMBER: 21566

2-D POLYNOMIAL LMS CURVEFIT

Source of f:	Pres	Temp	Pressure Equation:
Fit Order:	3	4	Pressure (PSI) = A + xp(B + xp(C + xp(D)))
Prescale:	xp = m * (fp - fp0)	xt = m * (ft - ft0)	
m:	0.01	0.01	Temperature Compenstation:
	fp0 = 25120	ft0 = 60780	A = A0 + xt(A1 + xt(A2 + xt(A3 + xt(A4))))
			B = B0 + xt(B1 + xt(B2 + xt(B3 + xt(B4))))
			C = C0 + xt(C1 + xt(C2 + xt(C3 + xt(C4))))
			D = D0 + xt(D1 + xt(D2 + xt(D3 + xt(D4))))

0	1	2	3	4
Pressure (psi) STANDARD FIT COEFFICIENTS:				
A 14.88652413	-0.2824377191	-0.01958011869	4.079977308E-06	-1.32351769E-08
B 41.05065827	-0.02082855127	2.725622637E-05	-2.29528527E-08	8.454116478E-11
C -0.001956843652	1.136716788E-05	-1.724170294E-08	7.903995042E-11	-3.609331649E-14
D 6.680992089E-07	-3.577913397E-09	1.209701179E-11	-6.916813055E-14	-6.100916517E-17

Temperature (C) STANDARD FIT COEFFICIENTS

A 24.87285078

B -0.7219280038

C -0.0007614000137

D -4.707668561E-07

SPARTEK SYSTEMS
GEOPHYSICAL INSTRUMENTATION
"Providing our customers with Best in Class Technology"

#1 Thevenaz Industrial Trail
Sylvan Lake, AB, Ca, T4S 2J6
Phone (403) 887-2443
Fax (403) 887-4050
www.sparteksystems.com

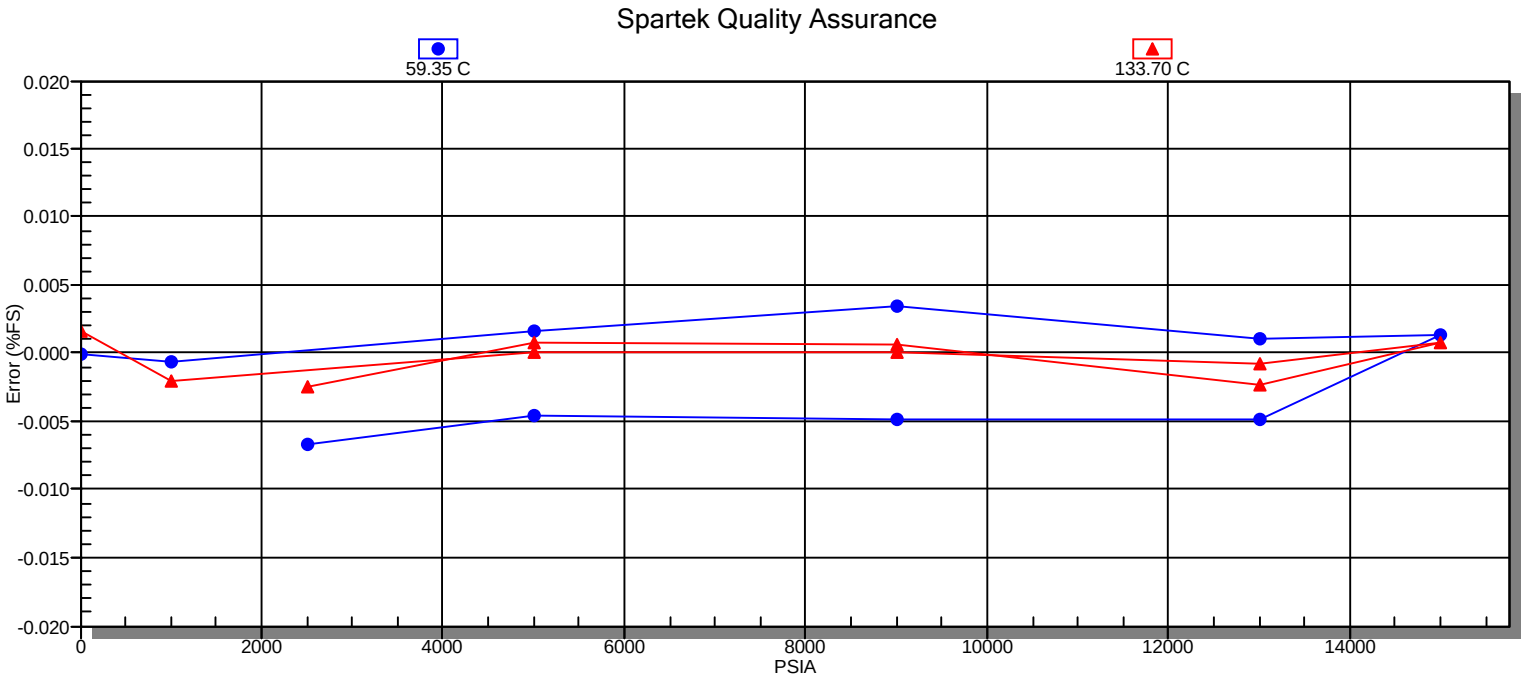
Pressure Gauge Certificate of Conformance

SERIAL NUMBER	21566	CALIBRATION DATE	APR 21/15
MODEL NUMBER	1282 FF2	TRACEABILITY DOC.	CAL-STANDARD-001
PRESSURE RANGE	14.80 - 16000.00 psi	PRESSURE REFERENCE	NIST Traceable
TEMP. RANGE	24.82 - 174.95 °C	TEMP. REFERENCE	NIST Traceable

Testing and Verification Completed on APR 15/15. The instrument response is within the stated specifications for this type of pressure gauge.

As shown in the graph below, this Spartek Gauge conformed to within +/- 0.020 %F.S. of the pressure standard used in calibration, which is accurate to within +/- 0.01% of reading. This gives an overall accuracy of +/-(0.020%F.S. + 0.01% of reading)

NOTE
Units calibrated with a bellows meet performance specifications from 200 psi to full scale. Operating range is from 0 to full scale.



Accepted By: _____

SPARTEK SYSTEMS INC. Corporate SEAL

Date: APR 22/15

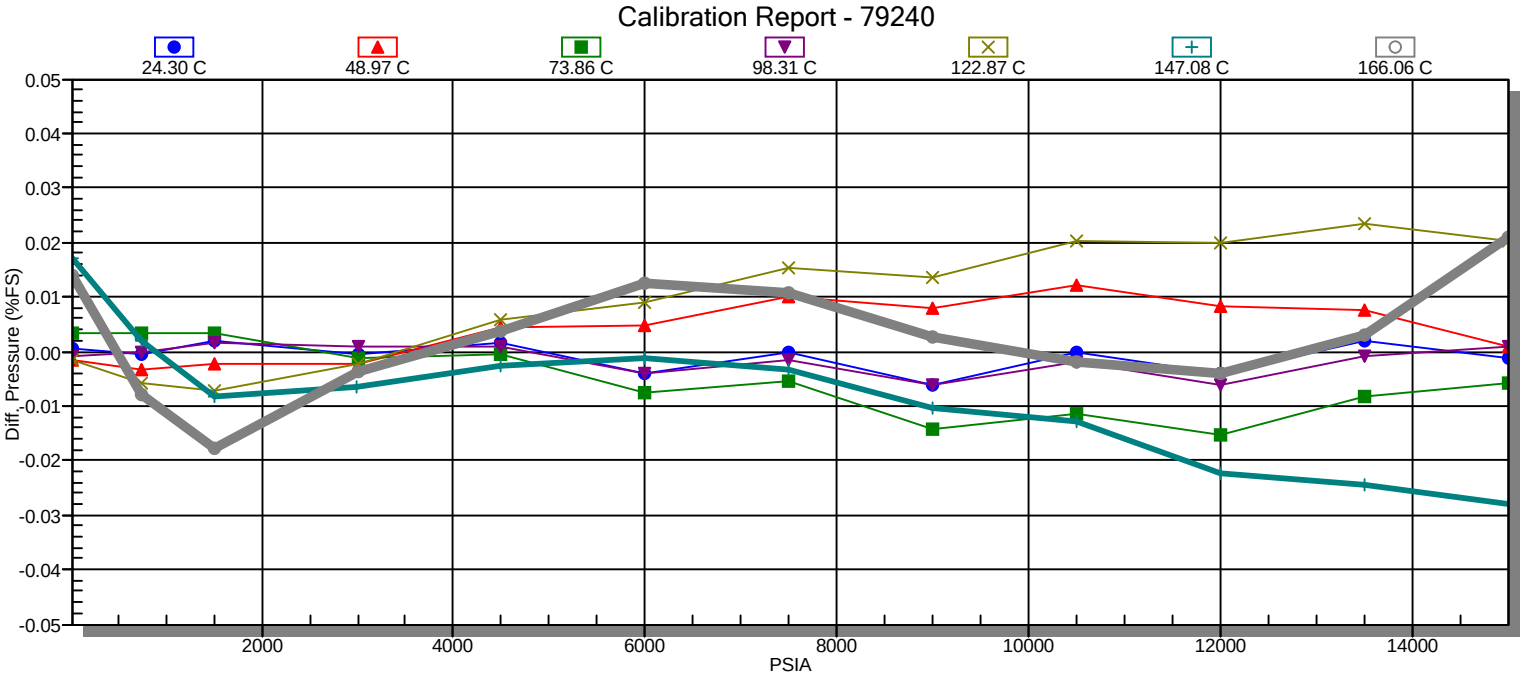
Error File: Gauge # 21566

Pressure psi	Temperature Deg. C	Count (Pres)	Count (Temp)	DIFF (press) psi
14.80	24.82	25120.21	60780.42	0.17
750.00	24.78	26912.20	60779.79	-0.03
2000.00	24.84	29966.64	60780.45	-0.06
3999.90	24.88	34871.18	60780.72	-0.09
6000.00	24.85	39797.98	60779.96	0.25
8000.00	24.83	44742.42	60778.71	-0.23
10000.00	24.87	49708.48	60780.63	0.21
12000.00	24.87	54689.76	60777.55	-0.22
14000.00	24.90	59690.15	60779.82	-0.09
16000.00	24.86	64705.40	60776.57	0.00
15.10	49.38	25154.79	57266.10	-0.11
750.00	49.34	26913.79	57265.60	-0.21
2000.00	49.43	29914.67	57266.05	0.06
4000.00	49.37	34734.47	57264.44	-0.32
6000.00	49.34	39581.32	57265.73	0.44
8000.00	49.37	44447.60	57263.74	-0.29
10000.00	49.38	49340.55	57265.92	0.68
12000.00	49.43	54249.08	57263.63	-0.42
14000.00	49.21	59182.60	57264.96	0.39
16000.00	49.42	64132.00	57263.81	0.17
14.90	74.13	25324.08	53425.42	0.05
750.00	74.04	27046.78	53426.00	0.21
2000.00	74.10	29984.79	53427.37	0.27
4000.00	74.08	34705.80	53422.92	-1.07
6000.00	74.08	39461.94	53426.22	0.68
8000.00	74.18	44237.65	53421.70	-0.55
10000.00	74.20	49045.04	53425.54	0.60
12000.00	74.03	53870.59	53420.75	-0.61
14000.00	74.12	58723.84	53423.84	-0.17
16000.00	74.11	63597.48	53422.36	-0.10
15.10	98.68	25663.62	49209.09	0.04
750.00	98.63	27342.58	49211.43	0.22
2000.00	98.61	30209.63	49211.92	0.72
4000.00	98.85	34818.09	49206.66	-1.09
6000.00	98.68	39467.94	49209.52	1.27
8000.00	98.93	44138.64	49204.52	-0.72
10000.10	98.84	48848.12	49210.15	1.06
12000.00	98.87	53576.19	49204.65	-0.85
14000.00	98.88	58337.76	49207.50	-0.11
16000.00	98.95	63122.38	49203.70	0.05
15.10	123.86	26211.95	44590.58	-0.06
750.00	123.88	27839.86	44591.31	-0.42
2000.00	123.81	30622.30	44594.75	-0.30
4000.00	123.88	35105.55	44590.63	-0.42
6000.00	123.92	39627.19	44593.04	0.29
7999.90	123.89	44182.33	44589.14	0.01
10000.00	123.91	48773.35	44594.02	0.37
12000.00	123.86	53394.16	44587.33	-0.29
14000.00	123.89	58048.48	44592.19	0.19
16000.10	123.96	62730.49	44588.18	0.35
15.20	148.46	27020.42	39508.57	0.56
749.90	148.49	28589.29	39509.75	0.07
2000.00	148.53	31273.24	39512.17	-0.50
4000.00	148.43	35607.16	39510.87	0.14
6000.00	148.50	39981.92	39510.29	-0.09
8000.00	148.48	44399.94	39508.92	0.54
10000.00	148.49	48854.29	39511.97	-0.19
12000.00	148.52	53348.28	39507.96	-0.09
14000.00	148.57	57876.62	39508.91	-0.41
16000.10	148.52	62439.82	39505.76	0.03
15.00	174.95	28241.68	33441.82	0.78
750.00	174.92	29735.88	33443.23	-0.31
2000.00	174.95	32295.46	33446.85	-0.97
4000.00	174.92	36437.98	33444.70	-0.10
6000.00	174.96	40628.14	33446.84	-0.11
8000.00	174.95	44870.22	33440.85	1.05
10000.10	174.93	49153.59	33444.05	0.05
12000.00	174.94	53484.27	33438.95	0.38
14000.00	174.94	57851.58	33442.96	-1.62
16000.00	174.95	62267.78	33437.08	0.83

SPARTEK SYSTEMS
GEOPHYSICAL INSTRUMENTATION
"Providing our customers with Best in Class Technology"

#1 Thevenaz Industrial Trail
Sylvan Lake, AB, Ca, T4S 2J6
Phone (403) 887-2443
Fax (403) 887-4050
www.sparteksystems.com

Pressure Gauge Certificate of Calibration



GAUGE NUMBER: 79240

2-D POLYNOMIAL LMS CURVEFIT

Source of f:	Pres	Temp	Pressure Equation:
Fit Order:	3	4	Pressure (PSI) = A + xp(B + xp(C + xp(D)))
Prescale:	xp = m * (fp - fp0)	xt = m * (ft - ft0)	
m:	0.01	0.01	Temperature Compenstation:
	fp0 = 706553	ft0 = 169216	A = A0 + xt(A1 + xt(A2 + xt(A3 + xt(A4))))
			B = B0 + xt(B1 + xt(B2 + xt(B3 + xt(B4))))
			C = C0 + xt(C1 + xt(C2 + xt(C3 + xt(C4))))
			D = D0 + xt(D1 + xt(D2 + xt(D3 + xt(D4))))

0	1	2	3	4
Pressure (psi) STANDARD FIT COEFFICIENTS:				
A 15.06048423	0.1062621715	0.0006790385736	2.808885004E-06	3.612388973E-09
B 4.349500759	-0.002783187053	5.350177499E-07	1.29123029E-10	3.256089021E-12
C -2.079242425E-05	-1.117988109E-07	-1.865025164E-09	-7.893310697E-12	-1.042701479E-14
D 4.069851823E-10	2.993582973E-11	4.839127738E-13	2.04517194E-15	2.658842901E-18

Temperature (C) STANDARD FIT COEFFICIENTS

A 24.37226014

B -0.2791985605

C 7.045336281E-05

D -2.514563987E-08

Error File: Gauge # 79240

Pressure psi	Temperature Deg. C	Count (Pres)	Count (Temp)	DIFF (press) psi
15.00	24.30	706553.33	169216.75	0.08
750.00	24.36	723464.50	169252.00	-0.10
1500.00	24.33	740763.17	169251.13	0.31
3000.00	24.22	775432.17	169287.50	-0.10
4500.00	24.32	810214.17	169274.88	0.23
6000.00	24.34	845094.50	169285.63	-0.61
7500.00	24.48	880059.83	169242.38	-0.02
9000.00	24.39	915109.17	169222.63	-0.93
10500.00	24.46	950202.50	169144.75	-0.03
12000.00	24.36	985373.00	169090.50	-0.60
13500.00	24.51	1020545.17	168982.75	0.30
15000.00	24.40	1055782.67	168894.00	-0.20
15.05	48.97	706672.00	160659.75	-0.21
750.00	48.95	722686.67	160691.75	-0.49
1500.00	49.08	739062.33	160687.75	-0.32
3000.00	49.03	771895.00	160731.63	-0.34
4500.15	49.12	804832.50	160720.13	0.66
6000.00	49.15	837856.83	160739.13	0.70
7500.00	49.05	870948.33	160703.88	1.52
9000.00	49.03	904126.17	160695.00	1.21
10500.00	49.05	937345.17	160638.00	1.85
12000.00	49.10	970631.67	160597.50	1.22
13500.00	49.02	1003926.00	160515.38	1.12
15000.00	48.99	1037276.50	160443.75	0.11
15.05	73.86	706753.50	152254.50	0.51
750.00	73.80	721956.33	152282.00	0.51
1500.00	73.78	737495.50	152283.88	0.51
3000.00	73.78	768648.00	152327.38	-0.19
4500.00	73.95	799893.83	152314.25	-0.10
5999.95	73.84	831234.50	152348.63	-1.11
7500.00	73.88	862627.17	152306.13	-0.80
9000.00	73.80	894104.83	152315.00	-2.13
10500.00	73.81	925604.50	152256.88	-1.69
12000.00	73.98	957191.67	152240.88	-2.29
13500.00	73.91	988769.33	152168.63	-1.24
15000.00	73.84	1020403.00	152118.50	-0.85
15.05	98.31	706822.33	144288.38	-0.14
750.00	98.31	721285.17	144315.38	-0.04
1500.00	98.35	736069.67	144315.13	0.22
3000.00	98.33	765707.67	144358.63	0.12
4500.00	98.49	795419.83	144351.50	0.13
6000.00	98.27	825218.67	144378.63	-0.62
7500.00	98.46	855072.83	144349.50	-0.22
9000.00	98.40	885010.83	144362.13	-0.93
10500.00	98.39	914966.50	144315.00	-0.31
12000.00	98.32	945004.67	144310.63	-0.93
13500.00	98.55	975017.67	144243.50	-0.12
15000.00	98.30	1005120.67	144216.25	0.13
15.05	122.87	706901.83	136781.88	-0.26
750.00	122.92	720665.17	136806.38	-0.87
1500.05	123.06	734737.83	136804.63	-1.10
3000.00	122.86	762976.00	136846.88	-0.34
4500.00	122.91	791285.00	136836.25	0.88
6000.00	123.01	819679.00	136868.50	1.35
7500.00	122.98	848108.50	136842.25	2.28
8999.95	122.95	876621.83	136861.75	2.02
10500.05	122.95	905158.67	136824.13	3.05
12000.00	122.92	933760.83	136815.63	2.96
13500.00	123.23	962364.17	136767.88	3.51
15000.00	122.91	991036.17	136748.00	3.03
15.15	147.08	706979.33	129830.13	2.58
750.00	147.12	720076.50	129852.88	0.31
1500.00	147.02	733478.67	129851.25	-1.22
2999.95	147.02	760418.50	129891.00	-1.00
4500.00	147.18	787432.17	129878.63	-0.37
6000.00	147.39	814540.33	129912.13	-0.18
7500.00	147.14	841670.50	129891.00	-0.49
9000.00	147.14	868890.67	129913.75	-1.56
10500.00	147.23	896110.17	129874.25	-1.95
12000.00	147.05	923422.33	129885.25	-3.38

SPARTEK SYSTEMS
GEOPHYSICAL INSTRUMENTATION
"Providing our customers with Best in Class Technology"

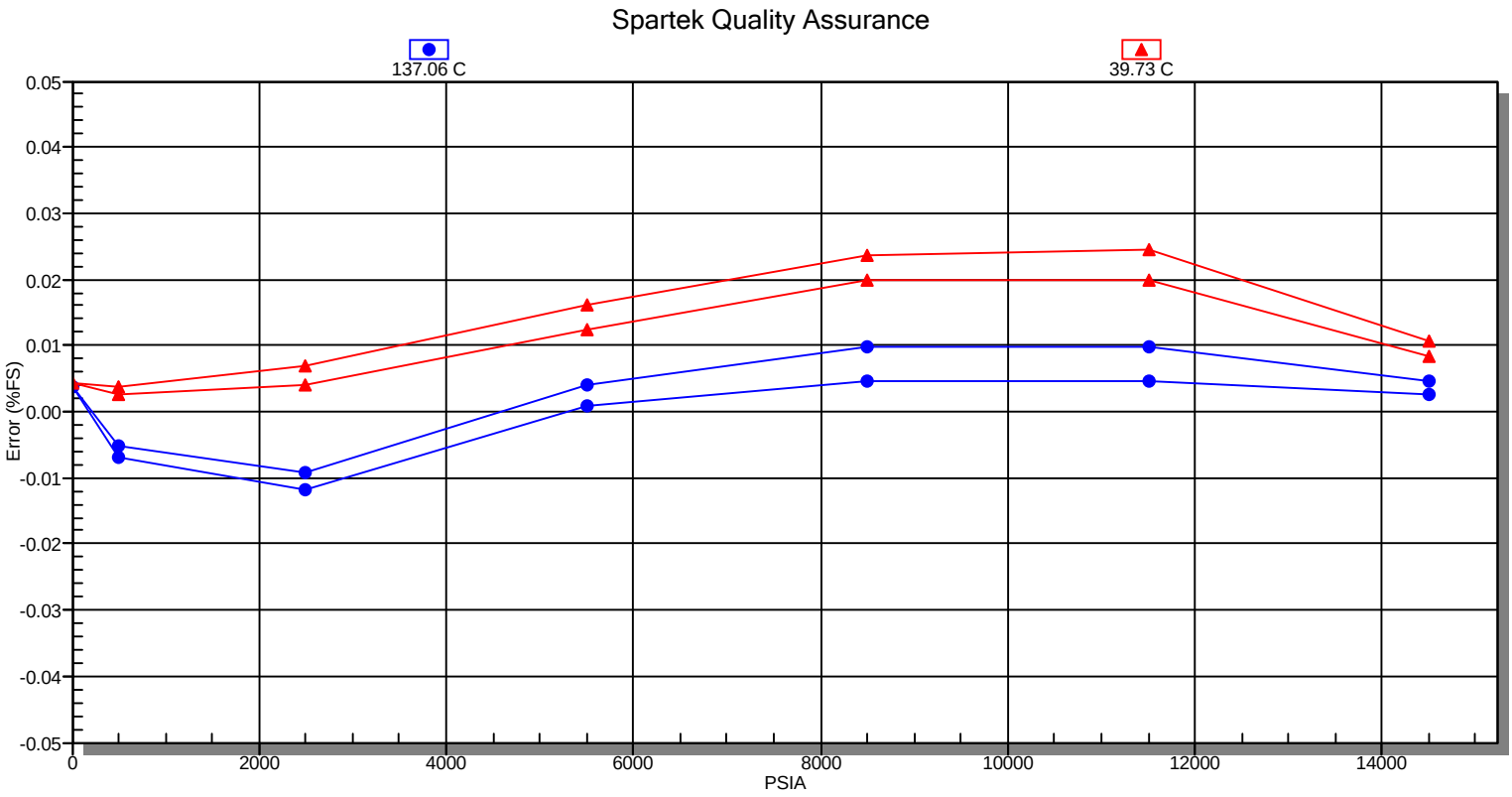
#1 Thevenaz Industrial Trail
Sylvan Lake, AB, Ca, T4S 2J6
Phone (403) 887-2443
Fax (403) 887-4050
www.sparteksystems.com

Pressure Gauge Certificate of Conformance

SERIAL NUMBER	79240	CALIBRATION DATE	MAR 09/16
MODEL NUMBER	1227 FF3	TRACEABILITY DOC.	CAL-STANDARD-001
PRESSURE RANGE	15.00 - 15000.00 psi	PRESSURE REFERENCE	NIST Traceable
TEMP. RANGE	24.30 - 166.06 °C	TEMP. REFERENCE	NIST Traceable

Testing and Verification Completed on MAR 03/16. The instrument response is within the stated specifications for this type of pressure gauge.

As shown in the graph below, this Spartek Gauge conformed to within +/- 0.050 %F.S. of the pressure standard used in calibration, which is accurate to within +/- 0.01% of reading. This gives an overall accuracy of +/-(0.050%F.S. + 0.01% of reading)



Accepted By: Jeff Barnes

SPARTEK SYSTEMS INC. Corporate SEAL

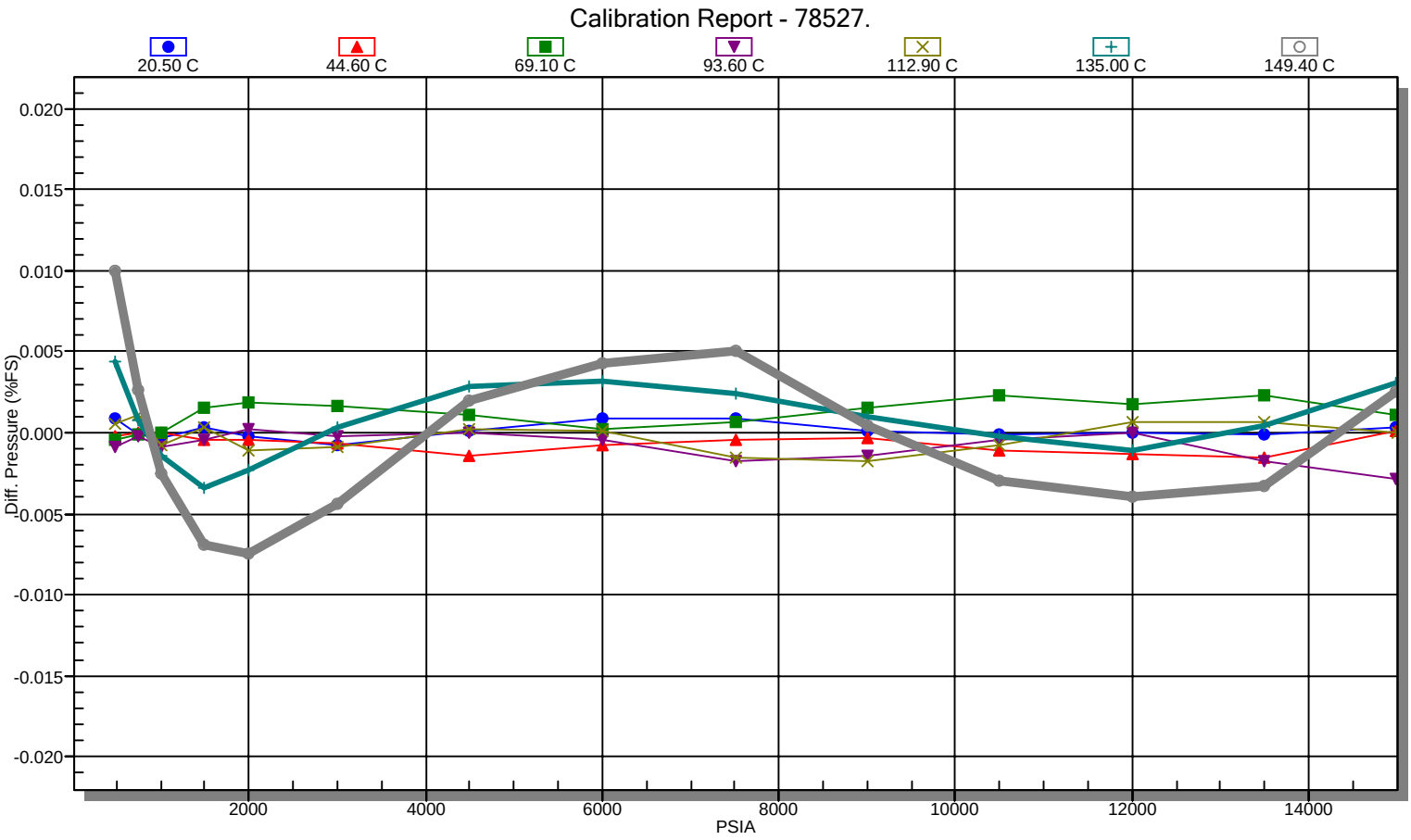
Date: MAR 16/16

13500.00	147.16	950713.83	129840.13	-3.68
15000.05	147.20	978091.33	129830.75	-4.20
15.10	166.06	706900.33	124222.75	2.07
750.00	165.85	719464.33	124239.00	-1.17
1500.00	166.23	732347.33	124240.75	-2.67
3000.00	165.99	758301.67	124278.50	-0.55
4500.00	166.15	784327.67	124267.00	0.54
6000.00	166.31	810482.00	124306.00	1.87
7500.00	166.32	836644.00	124282.75	1.63
9000.00	166.23	862907.00	124317.50	0.41
10500.00	166.30	889152.00	124279.50	-0.28
12000.00	165.93	915495.33	124290.25	-0.59
13500.00	166.21	941814.00	124254.00	0.44
15000.00	166.16	968210.33	124248.25	3.16

Spartek Systems
#1 Thevenaz Ind. Tr.
Sylvan Lake, AB, Ca, T4S 1P5
Phone (403) 887-2443
Fax (403) 887-4050

Pressure Gauge

Certificate of Calibration



GAUGE NUMBER: 78527

2-D POLYNOMIAL LMS CURVEFIT

Source of f:	Pres	Temp	Pressure Equation:
Fit Order:	3	4	Pressure (PSI) = A + xp(B + xp(C + xp(D)))
Prescale:	xp = m * (fp - fp0)	xt = m * (ft - ft0)	
m:	0.01	0.01	Temperature Compenstation:
	fp0 = 690829	ft0 = 149063	A = A0 + xt(A1 + xt(A2 + xt(A3 + xt(A4))))
			B = B0 + xt(B1 + xt(B2 + xt(B3 + xt(B4))))
			C = C0 + xt(C1 + xt(C2 + xt(C3 + xt(C4))))
			D = D0 + xt(D1 + xt(D2 + xt(D3 + xt(D4))))

0	1	2	3	4
Pressure (psi) STANDARD FIT COEFFICIENTS:				
A 492.8927344	-0.1140480423	0.0001173403626	-8.634862992E-07	-1.568094118E-09
B 5.137265618	-0.004253659152	6.919611456E-08	4.783816734E-10	1.158369822E-11
C -1.124332832E-05	4.304456416E-08	-3.537545481E-10	-4.531192772E-12	-1.073483766E-14
D 3.648417738E-10	-1.112609937E-11	4.697256201E-14	9.395194696E-16	2.422805716E-18

Temperature (C) STANDARD FIT COEFFICIENTS

A 20.72189773

B -0.3664520773

C -5.299327756E-05

D -3.448809106E-07

Ramp report: Serial # 79240
Gauge range = 15000.050 PSI. Max. DIFF. = 7.500
Ramp check result: PASS, Max Err = 0.025% F.S.

DW Pressure	Gauge Pressure	RPM4 Pressure	Differential	%F.S.	Oven Temp.	Gauge Temp.
14500.00	14500.39	14500.07	0.39	0.0026	137.06	137.38
11500.00	11500.68	11500.26	0.68	0.0045	137.09	137.19
8500.00	8500.70	8500.30	0.70	0.0047	136.76	137.09
5500.00	5500.14	5500.39	0.14	0.0009	136.89	137.09
2500.00	2498.21	2500.12	-1.79	0.0119	136.79	137.20
500.00	498.95	499.75	-1.05	0.0070	137.01	137.33
15.10	15.67	14.68	0.57	0.0038	136.81	137.40
500.00	499.20	499.72	-0.80	0.0053	136.89	137.36
2500.00	2498.63	2499.96	-1.37	0.0092	137.05	137.28
5500.00	5500.59	5500.21	0.59	0.0039	137.05	137.18
8500.00	8501.48	8500.09	1.48	0.0099	137.07	137.18
11500.00	11501.45	11500.07	1.45	0.0097	137.10	137.29
14500.00	14500.70	14499.99	0.70	0.0047	136.94	137.43
14500.00	14501.25	14500.03	1.25	0.0083	39.73	39.56
11500.00	11502.99	11500.21	2.99	0.0199	39.65	39.12
8500.00	8502.98	8500.19	2.98	0.0199	39.63	38.82
5500.00	5501.84	5500.28	1.84	0.0123	39.71	38.71
2500.00	2500.59	2499.95	0.59	0.0039	39.78	38.78
500.00	500.40	499.66	0.40	0.0027	39.73	38.92
15.00	15.65	14.58	0.65	0.0044	39.89	38.97
500.00	500.55	499.71	0.55	0.0036	39.78	38.94
2500.00	2501.06	2500.03	1.06	0.0070	39.88	38.83
5500.00	5502.42	5500.22	2.42	0.0161	39.80	38.79
8500.00	8503.54	8500.11	3.54	0.0236	39.83	38.91
11500.00	11503.68	11500.06	3.68	0.0246	39.85	39.20
14500.00	14501.59	14500.12	1.59	0.0106	39.89	39.63

Spartek Systems
#1 Thevenaz Ind. Tr.
Sylvan Lake, AB, Ca, T4S 1P5
Phone (403) 887-2443
Fax (403) 887-4050

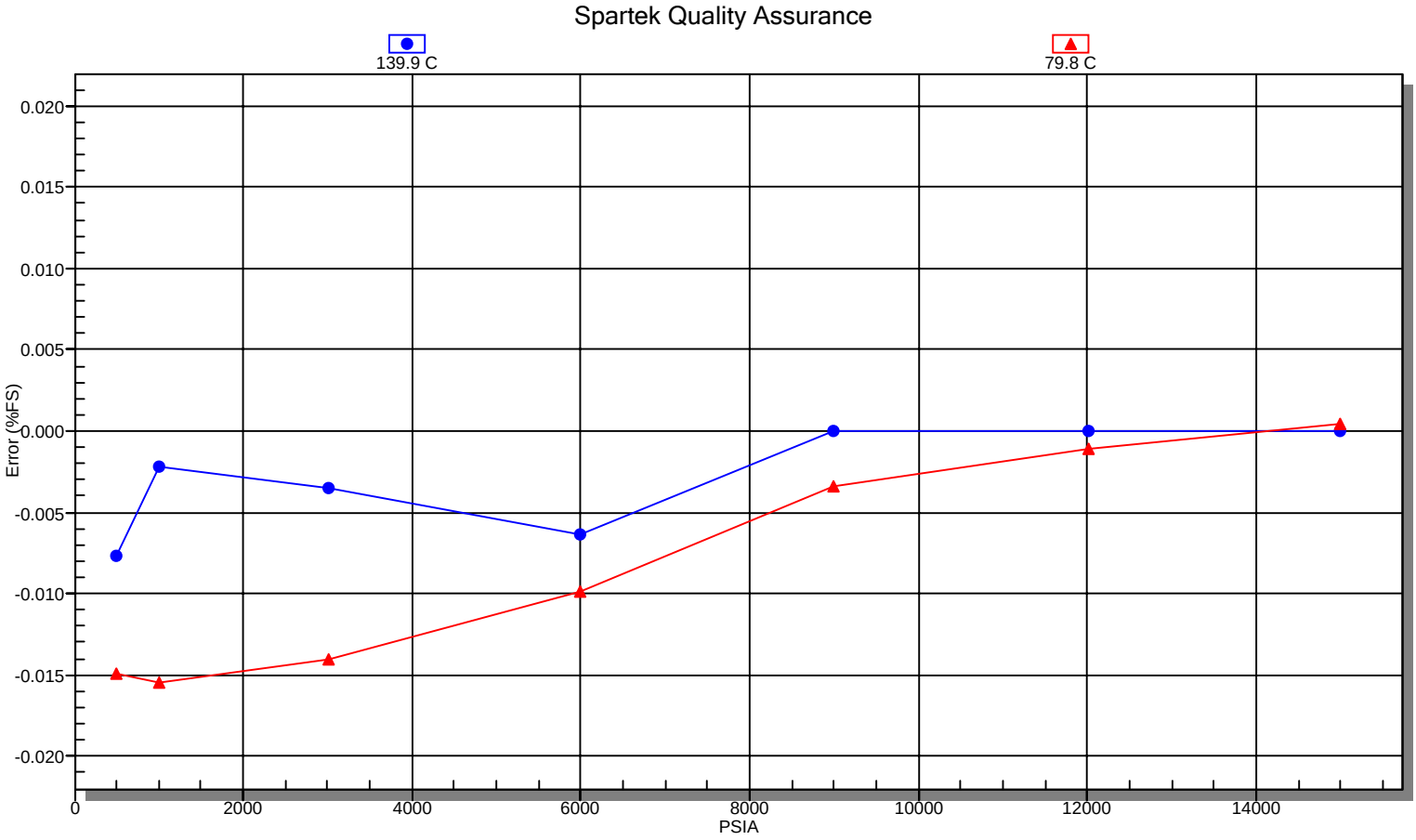
Pressure Gauge

Certificate of Conformance

MODEL	1139	REVISION	0
SERIAL NUMBER	78527	DEADWEIGHT USED	Piston Cylinder No. 528
CALIBRATED	FEB13/09	E.U.B. CERT. DATE	May 09 2007
PRESSURE RANGE	14996.63 psi	TEMPERATURE RANGE	149.50 Deg. C

ACCURACY

As shown in the graph below, this Spartek Gauge conformed to within +/- 0.022 %F.S. of the pressure standard used in calibration, which is accurate to within +/- 0.01% of reading. This gives an overall accuracy of +/-(0.022%F.S. + 0.01% of reading)



Accepted By: _____

Date: Wednesday, February 18, 2009

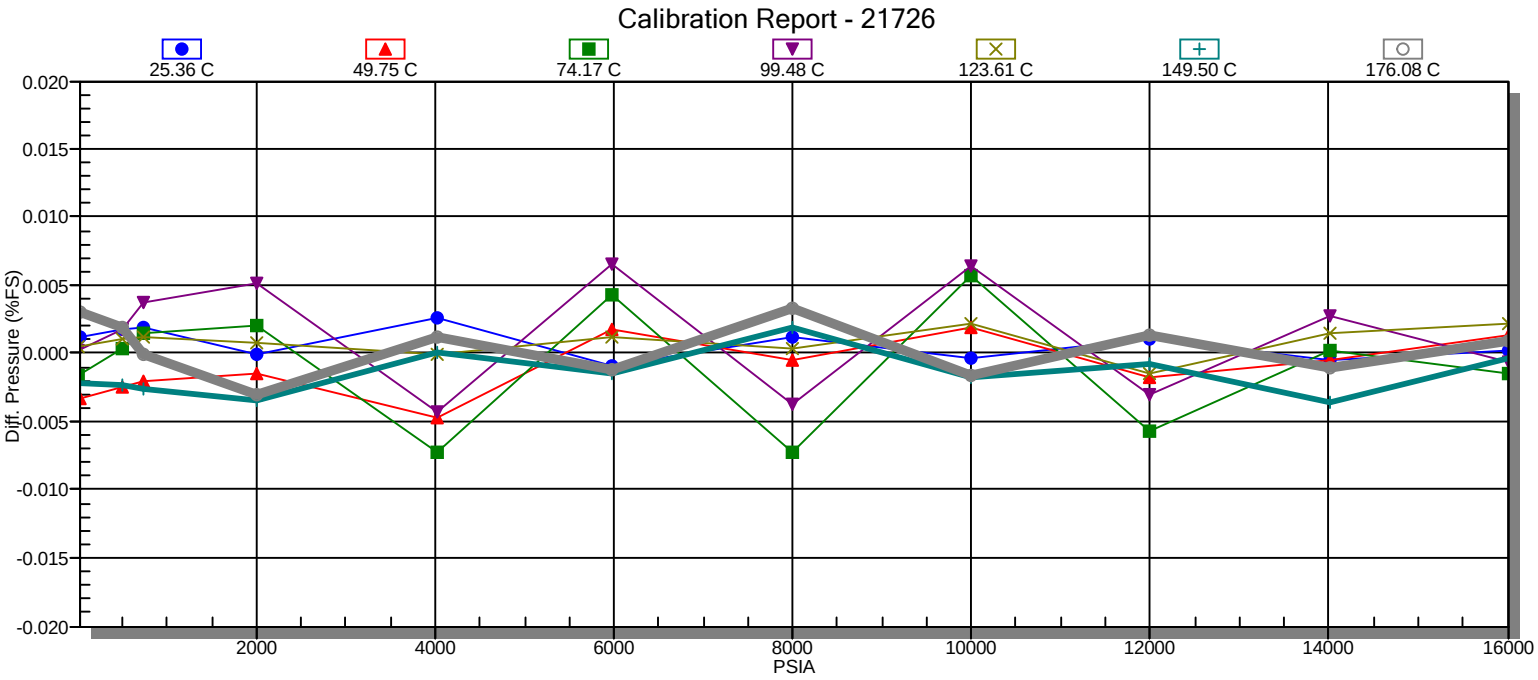
0 points eliminated.
Error File: Gauge # 78527

Pressure psi	Temperature Deg. C	Count (Pres)	Count (Temp)	DIFF (press) psi
492.76	20.50	690829.00	149063.50	0.13
754.15	20.40	695916.33	149087.25	-0.02
1001.65	20.30	700737.00	149096.25	-0.04
1494.94	20.50	710345.00	149070.75	0.05
2002.70	20.40	720251.67	149120.50	-0.04
3004.63	20.40	739812.33	149160.00	-0.11
4498.34	20.30	769010.67	149187.25	0.01
5993.80	20.30	798273.33	149194.75	0.14
7504.15	20.40	827879.33	149217.00	0.13
8999.67	20.30	857224.33	149230.50	0.01
10494.17	20.30	886545.00	149216.75	-0.01
12005.53	20.40	916225.33	149204.75	0.00
13501.13	20.30	945628.00	149196.75	-0.02
14996.62	20.30	974990.33	149161.50	0.05
492.76	44.60	690673.00	142443.75	-0.04
754.16	44.60	695498.00	142449.25	-0.01
1001.65	44.60	700067.67	142455.75	0.00
1494.95	44.60	709178.33	142464.75	-0.06
2002.70	44.60	718563.67	142477.75	-0.07
3004.63	44.70	737098.33	142494.50	-0.10
4498.33	44.60	764772.00	142525.75	-0.22
5993.79	44.60	792523.33	142548.25	-0.12
7504.13	44.60	820585.67	142564.50	-0.06
8999.63	44.60	848394.33	142569.50	-0.05
10494.11	44.60	876215.33	142577.50	-0.16
12005.45	44.60	904354.33	142570.50	-0.20
13501.03	44.60	932208.67	142558.00	-0.23
14996.49	44.60	960073.33	142542.50	0.01
492.73	69.10	690495.33	135742.25	-0.06
754.12	69.10	695077.00	135752.25	-0.01
1001.61	69.10	699416.00	135759.50	0.00
1494.90	69.10	708070.00	135760.00	0.23
2002.65	69.10	716982.33	135776.75	0.28
3004.57	69.10	734580.00	135794.75	0.25
4498.24	69.10	760851.67	135821.50	0.16
5993.70	69.10	787191.67	135841.00	0.03
7504.02	69.10	813831.33	135856.00	0.10
8999.51	69.10	840239.00	135866.25	0.23
10493.98	69.20	866651.67	135871.50	0.35
12005.32	69.10	893376.67	135871.75	0.27
13500.89	69.10	919833.00	135864.25	0.35
14996.35	69.10	946292.33	135853.75	0.17
492.72	93.60	690299.67	129284.75	-0.13
754.11	93.50	694662.00	129290.00	-0.03
1001.61	93.50	698790.33	129293.75	-0.13
1494.90	93.50	707024.67	129293.50	-0.07
2002.66	93.60	715507.33	129305.00	0.03
3004.58	93.50	732254.33	129324.50	-0.04
4498.28	93.50	757256.00	129351.75	-0.01
5993.75	93.60	782316.00	129368.00	-0.07
7504.10	93.60	807657.67	129385.50	-0.26
8999.62	93.50	832787.33	129403.50	-0.22
10494.11	93.50	857920.33	129412.00	-0.06
12005.47	93.50	883350.67	129413.25	0.00
13501.07	93.50	908515.33	129404.50	-0.26
14996.56	93.60	933698.00	129396.50	-0.43
492.70	112.90	690145.67	124390.50	0.09
754.09	112.80	694345.67	124397.50	0.17
1001.59	112.80	698317.67	124403.75	-0.12
1494.89	112.90	706247.33	124400.50	0.04
2002.65	112.90	714410.33	124416.50	-0.17
3004.58	112.90	730534.33	124430.75	-0.13
4498.30	112.80	754602.67	124452.25	0.03
5993.78	112.80	778725.00	124466.75	0.01
7504.14	112.80	803120.00	124488.00	-0.22
8999.67	112.80	827300.00	124500.00	-0.26
10494.17	112.80	851487.00	124507.50	-0.11
12005.54	112.80	875969.33	124513.00	0.10
13501.14	112.80	900203.67	124511.75	0.10

SPARTEK SYSTEMS
GEOPHYSICAL INSTRUMENTATION
"Providing our customers with Best in Class Technology"

#1 Thevenaz Industrial Trail
Sylvan Lake, AB, Ca, T4S 2J6
Phone (403) 887-2443
Fax (403) 887-4050
www.sparteksystems.com

Pressure Gauge Certificate of Calibration



GAUGE NUMBER: 21726

2-D POLYNOMIAL LMS CURVEFIT

Source of f:	Pres	Temp	Pressure Equation:
Fit Order:	3	3	Pressure (PSI) = A + xp(B + xp(C + xp(D)))
Prescale:	xp = m * (fp - fp0)	xt = m * (ft - ft0)	
m:	0.01	0.01	Temperature Compenstation:
	fp0 = 16759	ft0 = 64464	A = A0 + xt(A1 + xt(A2 + xt(A3 + xt(A4))))
			B = B0 + xt(B1 + xt(B2 + xt(B3 + xt(B4))))
			C = C0 + xt(C1 + xt(C2 + xt(C3 + xt(C4))))
			D = D0 + xt(D1 + xt(D2 + xt(D3 + xt(D4))))

0	1	2	3	4
Pressure (psi) STANDARD FIT COEFFICIENTS:				
A 13.09857717	0.127974273	-0.0186245155	1.046101332E-05	41.65885005
B -0.02111438644	2.462165166E-05	-5.793793432E-08	-0.001862508604	1.174064763E-05
C -2.608216969E-08	6.391731223E-11	4.460150877E-07	-6.422382048E-09	1.390778757E-11
D -2.509008954E-14	1	-13.5	25.33	176.11

Temperature (C) STANDARD FIT COEFFICIENTS

A 25.4075362

B -0.723763381

C -0.0008530980666

D -6.801162841E-07

14996.63	112.90	924446.00	124506.75	0.01
492.69	135.00	689983.33	119038.00	0.66
754.09	135.00	693995.67	119039.50	0.12
1001.58	135.10	697798.67	119044.25	-0.22
1494.88	134.90	705388.00	119052.00	-0.51
2002.64	135.10	713211.33	119058.50	-0.34
3004.58	134.90	728663.33	119074.00	0.04
4498.29	135.00	751727.67	119095.75	0.43
5993.76	135.00	774849.00	119116.75	0.47
7504.12	135.10	798228.33	119134.75	0.37
8999.63	135.00	821400.33	119148.00	0.15
10494.13	135.10	844580.00	119159.75	-0.04
12005.50	135.10	868032.00	119163.00	-0.16
13501.10	135.00	891265.33	119168.75	0.06
14996.59	135.00	914502.00	119167.75	0.46
492.70	149.40	689896.67	115737.25	1.50
754.09	149.40	693789.33	115741.00	0.40
1001.59	149.40	697480.33	115743.00	-0.38
1494.88	149.50	704854.67	115749.75	-1.04
2002.65	149.50	712459.33	115754.00	-1.12
3004.58	149.40	727492.00	115770.50	-0.66
4498.29	149.50	749941.33	115787.00	0.29
5993.76	149.40	772452.33	115810.75	0.63
7504.12	149.50	795213.00	115825.00	0.76
8999.64	149.50	817763.00	115835.25	0.07
10494.14	149.50	840321.33	115843.75	-0.45
12005.50	149.50	863149.33	115846.00	-0.58
13501.10	149.50	885752.67	115847.25	-0.49
14996.58	149.50	908374.00	115849.25	0.38

SPARTEK SYSTEMS
GEOPHYSICAL INSTRUMENTATION
"Providing our customers with Best in Class Technology"

#1 Thevenaz Industrial Trail
Sylvan Lake, AB, Ca, T4S 2J6
Phone (403) 887-2443
Fax (403) 887-4050
www.sparteksystems.com

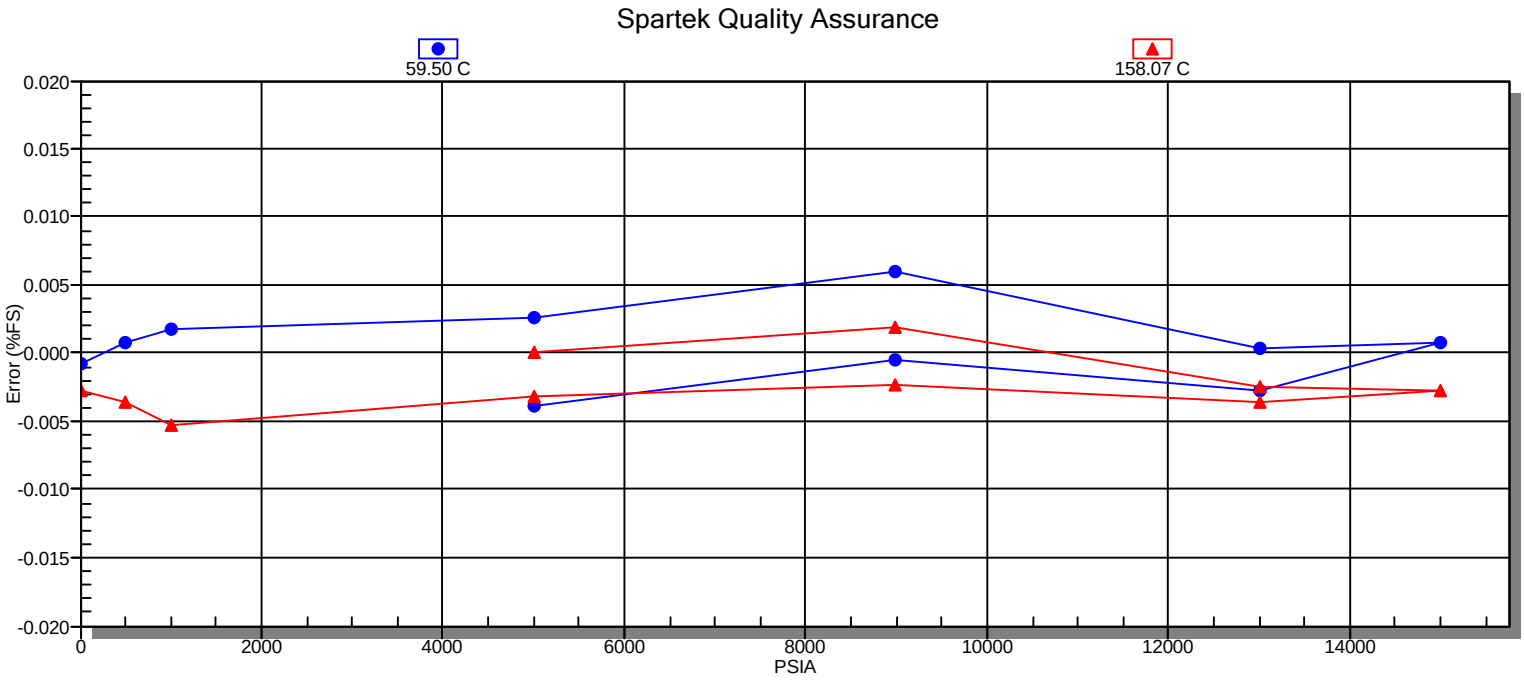
Pressure Gauge Certificate of Conformance

SERIAL NUMBER	21726	CALIBRATION DATE	JUN 01/15
MODEL NUMBER	1251 FF3	TRACEABILITY DOC.	CAL-STANDARD-001
PRESSURE RANGE	13.14 - 16001.81 psi	PRESSURE REFERENCE	NIST Traceable
TEMP. RANGE	25.36 - 176.08 °C	TEMP. REFERENCE	NIST Traceable

Testing and Verification Completed on JUN 02/15. The instrument response is within the stated specifications for this type of pressure gauge.

As shown in the graph below, this Spartek Gauge conformed to within +/- 0.020 %F.S. of the pressure standard used in calibration, which is accurate to within +/- 0.01% of reading. This gives an overall accuracy of +/-(0.020%F.S. + 0.01% of reading)

NOTE
Units calibrated with a bellows meet performance specifications from 200 psi to full scale. Operating range is from 0 to full scale.



Accepted By: _____ Date: JUN 05/15

SPARTEK SYSTEMS INC.
Corporate SEAL

Ramp report: Serial # 21566
Gauge range = 16000.100 PSI. Max. DIFF. = 3.200
Ramp check result: PASS, Max Err = 0.007% F.S.

DW Pressure	Gauge Pressure	RPM4 Pressure	Differential	%F.S.	Oven Temp.	Gauge Temp.
2500.00	2498.93	2514.00	-1.07	0.0067	59.35	59.17
4999.80	4999.06	5014.00	-0.74	0.0046	59.32	59.18
9000.00	8999.23	9014.00	-0.77	0.0048	59.09	59.19
13000.00	12999.22	13014.00	-0.78	0.0049	59.24	59.19
14999.90	15000.11	15014.00	0.21	0.0013	59.28	59.19
13000.00	13000.16	13014.00	0.16	0.0010	59.26	59.19
8999.90	9000.45	9014.00	0.55	0.0034	59.23	59.18
5000.00	5000.25	5014.00	0.25	0.0016	59.25	59.19
1000.00	999.91	1014.00	-0.09	0.0006	59.24	59.18
14.80	14.79	14.00	-0.01	0.0001	59.35	59.18
2500.00	2499.60	2514.00	-0.40	0.0025	133.70	133.69
5000.00	5000.11	5014.00	0.11	0.0007	133.78	133.70
9000.00	9000.10	9014.00	0.10	0.0006	133.75	133.71
13000.00	12999.62	13014.00	-0.38	0.0024	133.71	133.70
15000.00	15000.12	15014.00	0.12	0.0007	133.70	133.70
13000.00	12999.87	13014.00	-0.13	0.0008	133.75	133.69
9000.00	9000.02	9014.00	0.02	0.0001	133.68	133.68
4999.90	4999.91	5014.00	0.01	0.0001	133.69	133.67
1000.00	999.68	1014.00	-0.32	0.0020	133.67	133.67
15.10	15.35	14.00	0.25	0.0016	133.74	133.69

Error File: Gauge # 21726

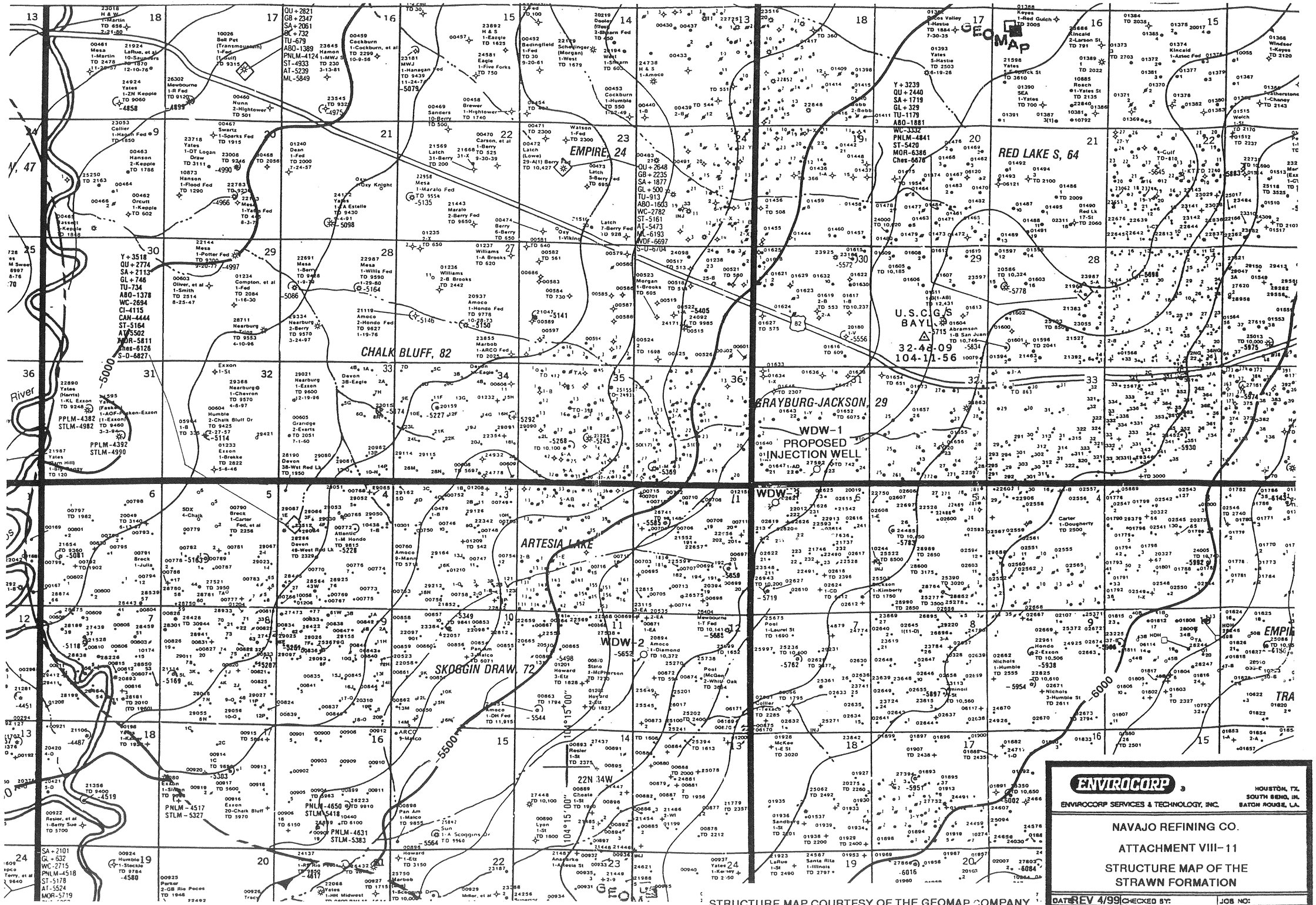
Pressure psi	Temperature Deg. C	Count (Pres)	Count (Temp)	DIFF (press) psi
13.14	25.36	16759.58	64464.11	0.20
506.90	25.40	17945.65	64463.05	0.28
740.66	25.38	18507.57	64465.61	0.30
1992.36	25.39	21520.14	64466.13	-0.02
4010.72	25.33	26396.85	64468.40	0.42
5985.66	25.40	31185.37	64464.48	-0.14
8006.60	25.34	36107.33	64466.94	0.19
9993.61	25.35	40963.28	64463.78	-0.07
11996.07	25.37	45876.52	64463.48	0.18
14010.78	25.38	50836.37	64464.11	-0.08
16001.81	25.41	55755.36	64462.74	0.02
13.15	49.75	16823.05	60969.38	-0.54
506.91	49.75	17987.91	60970.17	-0.39
740.67	49.71	18539.91	60970.00	-0.33
1992.38	49.72	21500.59	60971.49	-0.23
4010.75	49.73	26292.40	60970.50	-0.74
5985.69	49.72	31007.22	60970.83	0.28
8006.64	49.77	35850.39	60965.11	-0.07
9993.65	49.74	40635.70	60970.02	0.30
11996.11	49.74	45475.78	60968.01	-0.27
14010.83	49.73	50367.00	60965.86	-0.07
16001.85	49.74	55219.50	60964.93	0.21
13.12	74.17	17020.30	57135.56	-0.26
506.88	74.13	18160.96	57136.28	0.06
740.64	74.15	18701.56	57138.37	0.25
1992.34	74.11	21601.25	57140.60	0.33
4010.72	74.18	26296.00	57137.43	-1.17
5985.66	74.16	30923.44	57136.78	0.69
8006.62	74.13	35675.53	57134.25	-1.15
9993.63	74.12	40381.43	57138.07	0.90
11996.10	74.18	45137.45	57133.32	-0.92
14010.82	74.14	49952.23	57138.42	0.04
16001.85	74.13	54727.45	57135.74	-0.24
13.12	99.48	17402.82	52764.11	0.03
506.89	99.49	18513.60	52765.01	0.28
740.64	99.44	19040.47	52766.66	0.59
1992.35	99.42	21866.83	52769.57	0.81
4010.73	99.46	26447.35	52762.61	-0.69
5985.69	99.49	30966.64	52766.79	1.05
8006.65	99.47	35613.60	52761.18	-0.60
9993.67	99.42	40218.28	52766.21	1.02
11996.15	99.47	44878.26	52762.29	-0.47
14010.88	99.44	49598.31	52764.78	0.44
16001.91	99.46	54282.83	52763.30	-0.09
13.12	123.61	17978.62	48174.80	0.09
506.88	123.58	19055.91	48175.42	0.16
740.64	123.55	19566.85	48174.89	0.19
1992.34	123.56	22310.53	48176.23	0.12
4010.72	123.59	26766.17	48172.09	0.00
5985.66	123.59	31161.53	48176.51	0.18
8006.61	123.57	35694.26	48169.28	0.06
9993.61	123.56	40184.20	48178.46	0.34
11996.09	123.54	44738.58	48170.05	-0.24
14010.80	123.56	49353.01	48174.25	0.23
16001.83	123.57	53939.45	48172.15	0.36
13.14	149.50	18879.80	42723.01	-0.34
506.90	149.50	19915.53	42721.54	-0.37
740.66	149.46	20406.01	42725.10	-0.42
1992.36	149.44	23046.06	42726.60	-0.56
4010.74	149.45	27341.17	42727.88	0.00
5985.68	149.45	31584.06	42729.59	-0.23
8006.64	149.51	35969.30	42724.43	0.31
9993.64	149.50	40316.58	42727.97	-0.29
11996.11	149.49	44736.68	42721.54	-0.12
14010.83	149.46	49217.30	42725.13	-0.58
16001.86	149.47	53679.47	42721.21	-0.05
13.18	176.08	20177.19	36469.09	0.49
506.94	176.11	21162.22	36468.21	0.30
740.70	176.04	21629.28	36467.58	-0.01
1992.40	176.04	24142.94	36471.28	-0.49

Ramp report: Serial # 21726
Gauge range = 16001.910 PSI. Max. DIFF. = 3.200
Ramp check result: PASS, Max Err = 0.006% F.S.

DW Pressure	Gauge Pressure	RPM4 Pressure	Differential	%F.S.	Oven Temp.	Gauge Temp.
4999.88	4999.25	4999.83	-0.63	0.0039	59.50	59.45
8990.61	8990.54	8990.19	-0.07	0.0004	59.50	59.46
12997.68	12997.25	12996.95	-0.43	0.0027	59.47	59.46
14999.84	14999.96	14998.87	0.12	0.0007	59.48	59.46
12997.68	12997.73	12996.82	0.05	0.0003	59.51	59.45
8990.61	8991.58	8990.29	0.97	0.0061	59.49	59.45
4999.87	5000.28	4999.80	0.41	0.0026	59.45	59.45
1002.92	1003.21	1003.08	0.29	0.0018	59.44	59.45
506.88	507.00	507.10	0.12	0.0008	59.48	59.45
13.11	13.00	13.11	-0.11	0.0007	59.51	59.46
4999.91	4999.92	4999.87	0.01	0.0001	158.07	158.01
8990.64	8990.93	8990.08	0.29	0.0018	158.12	158.02
12997.70	12997.31	12996.87	-0.39	0.0024	158.08	158.03
14999.87	14999.44	14998.81	-0.43	0.0027	158.10	158.02
12997.70	12997.13	12996.84	-0.57	0.0036	158.08	158.01
8990.63	8990.26	8990.23	-0.37	0.0023	158.08	157.99
4999.90	4999.40	4999.84	-0.50	0.0031	158.07	157.99
1002.95	1002.10	1003.05	-0.85	0.0053	158.02	157.97
506.91	506.34	507.14	-0.57	0.0036	158.05	157.98
13.15	12.72	13.25	-0.43	0.0027	158.01	157.97

APPENDIX I

STRAWN STRUCTURE MAPS



STRUCTURE MAP COURTESY OF THE GEOMAP COMPANY
Poster July 1997

ENVIROCORP
ENVIROCORP SERVICES & TECHNOLOGY, INC.
HOUSTON, TX.
SOUTH BEND, IN.
BATON ROUGE, LA.

NAVAJO REFINING CO.

ATTACHMENT VIII-11

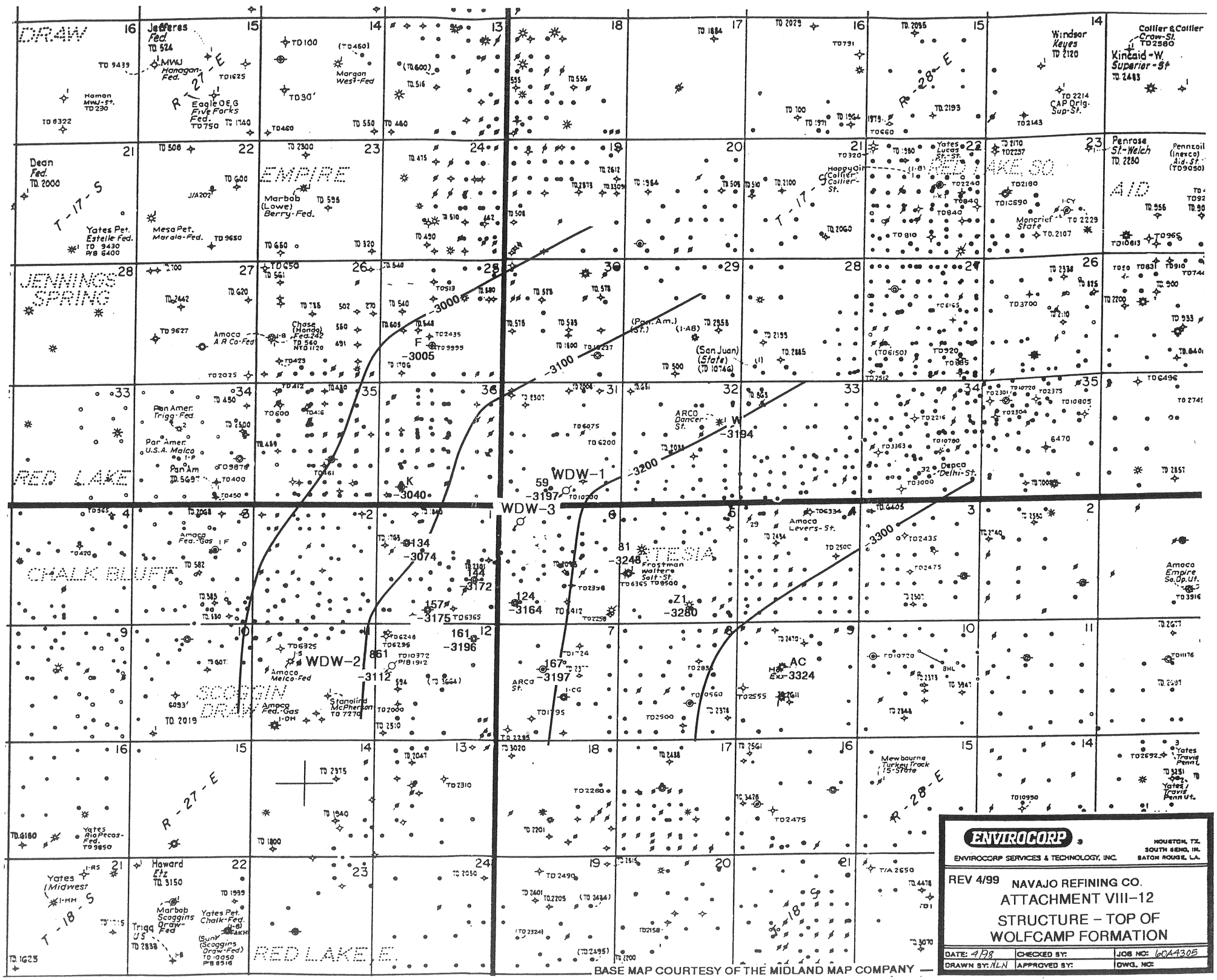
STRUCTURE MAP OF THE STRAWN FORMATION

DATE: REV 4/99	CHECKED BY:	JOB NO:
DRAWN BY:	APPROVED BY:	DWG. NO:

APPENDIX I

APPENDIX J

WOLFCAMP STRUCTURE MAPS



157 ID NO.
-4025 SUBSEA DEPTH

ENVIROCORP
ENVIROCORP SERVICES & TECHNOLOGY, INC.
HOUSTON, TX.
SOUTH BEND, IN.
BATON ROUGE, LA.

REV 4/99 NAVAJO REFINING CO.

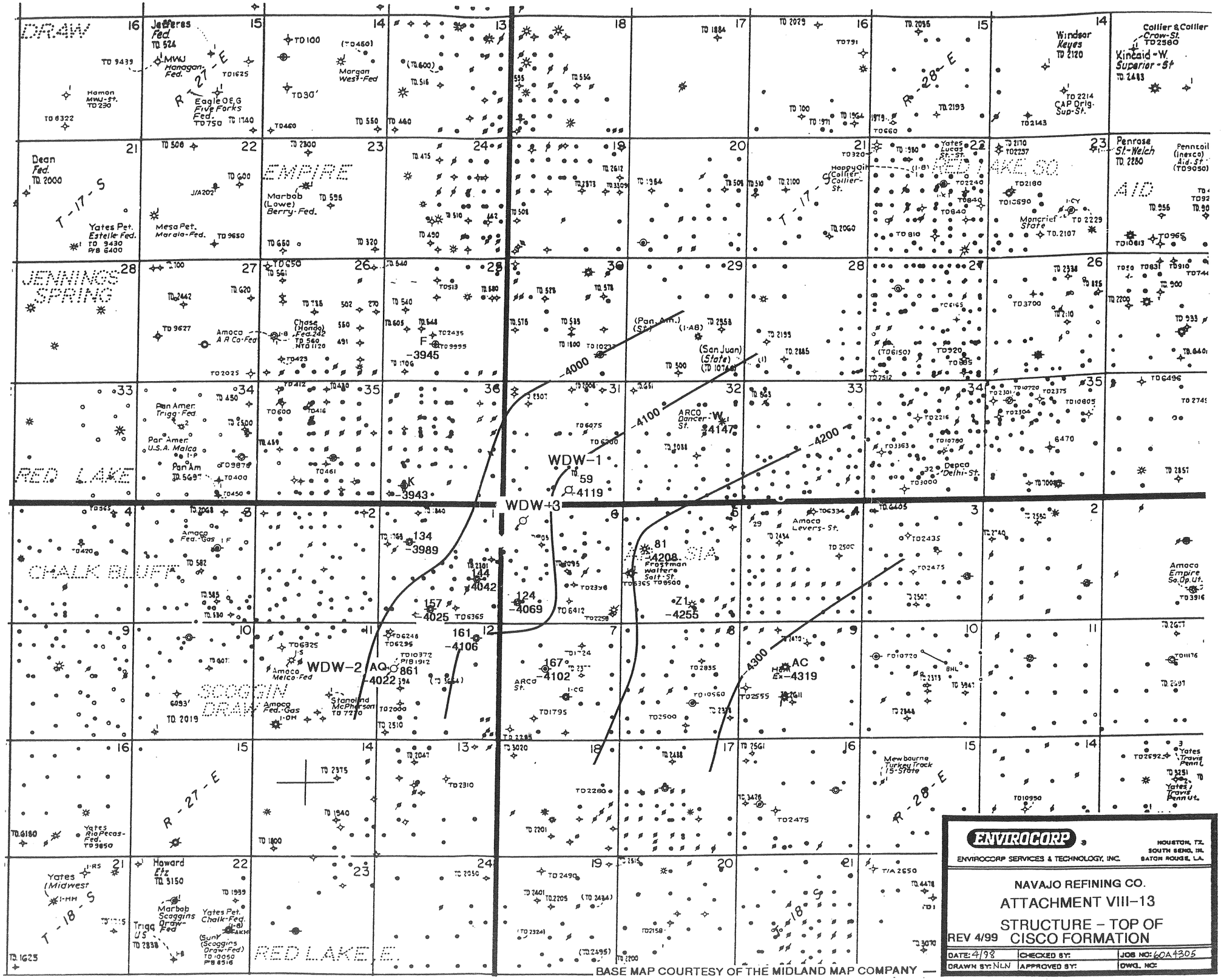
ATTACHMENT VIII-12

STRUCTURE – TOP OF WOLFCAMP FORMATION

DATE: 4/98	CHECKED BY:	JOB NO: 60A4305
DRAWN BY: MLN	APPROVED BY:	DWG. NO:

APPENDIX K

CISCO STRUCTURE MAPS



157 ID NO.
-4025 SUBSEA DEPTH

BASE MAP COURTESY OF THE MIDLAND MAP COMPANY

ENVIROCORP
ENVIROCORP SERVICES & TECHNOLOGY, INC.
HOUSTON, TX. SOUTH BEND, IN. BATON ROUGE, LA.

NAVAJO REFINING CO.

ATTACHMENT VIII-13

STRUCTURE – TOP OF CISCO FORMATION

REV 4/99

DATE: 4/98	CHECKED BY:	JOB NO: 60A4305
DRAWN BY: NLN	APPROVED BY:	DWG. NO:

APPENDIX L

CHRONOLOGY OF FIELD ACTIVITIES

APPENDIX M

PANSYSTEM© ANALYSIS OUTPUT

Company	Navajo Refining Company
Location	Artesia, NM
Well	Chukka Well No. 2
Test Date	July 22, 2016 to July 27, 2016
Test Type	Buildup/Falloff Test
Gauge Type/Serial Number	DataCan/DC-2050
Gauge Depth	7570 feet
Injection Interval	7570 feet to 8390 feet
Completion Type	Perforated 2 SPF on 120 deg Phasing
Top of Fill	8362 feet GL
Analyst	LKM
WSP | PB Project No.	50904A

Reservoir Description
Fluid type : Water
Well orientation : Vertical
Number of wells : 1
Number of layers : 1

Layer Parameters Data

	Layer 1
Formation thickness	175.0000 ft
Average formation porosity	0.1000
Water saturation	0.0000
Gas saturation	0.0000
Formation compressibility	0.000000 psi-1
Total system compressibility	8.4000e-6 psi-1
Layer pressure	4259.406000 psia
Temperature	0.000000 deg F

Well Parameters Data

	Well 1
Well radius	0.3281 ft
Distance from observation to active well	0.000000 ft
Wellbore storage coefficient	1.740798 bbl/psi
Storage Amplitude	0.000000 psi
Storage Time Constant	0.000000 hr
Second Wellbore Storage	0.000000 bbl/psi
Time Change for Second Storage	0.000000 hr
Well offset - x direction	0.0000 ft
Well offset - y direction	0.0000 ft

Fluid Parameters Data

	Layer 1
Oil gravity	0.000000 API
Gas gravity	0.000000 sp grav
Gas-oil ratio (produced)	0.000000 scf/STB
Water cut	1.000000
Water salinity	0.000000 ppm
Check Pressure	0.000000 psia
Check Temperature	0.000000 deg F
Gas-oil ratio (solution)	0.000000 scf/STB
Bubble-point pressure	0.000000 psia
Oil density	0.000 lb/ft3

Fluid Parameters Data (cont)

	Layer 1
Oil viscosity	0.000 cp
Oil formation volume factor	0.000 RB/STB
Gas density	0.000 lb/ft3
Gas viscosity	0.0 cp
Gas formation volume factor	0.000 ft3/scf
Water density	0.000 lb/ft3
Water viscosity	0.570 cp
Water formation volume factor	1.000 RB/STB
Oil compressibility	0.000000 psi-1
Initial Gas compressibility	0.000000 psi-1
Water compressibility	0.000000 psi-1

Layer 1 Correlations
Not Used

Layer 1 Model Data
Layer 1 Model Type : Radial homogeneous

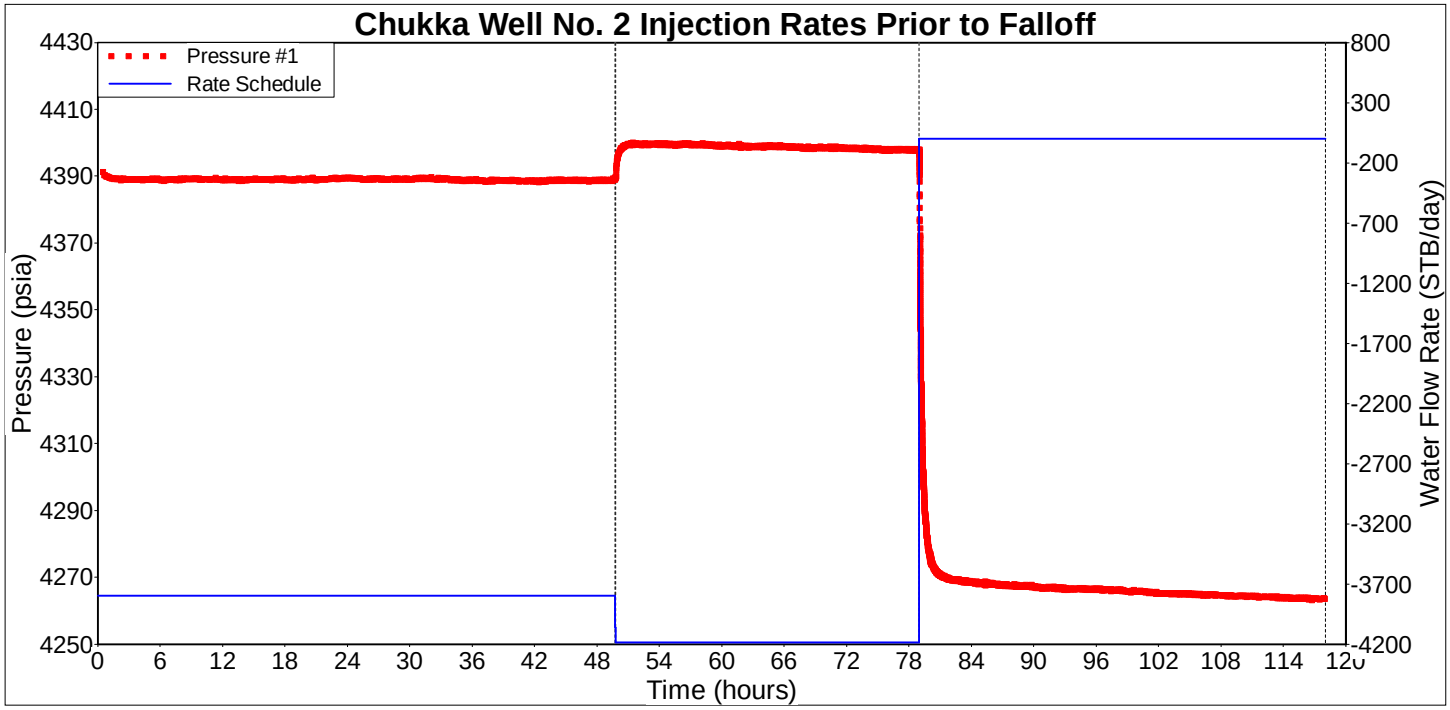
	Layer 1
Permeability	509.9670 md
Skin factor (Well 1)	25.7299

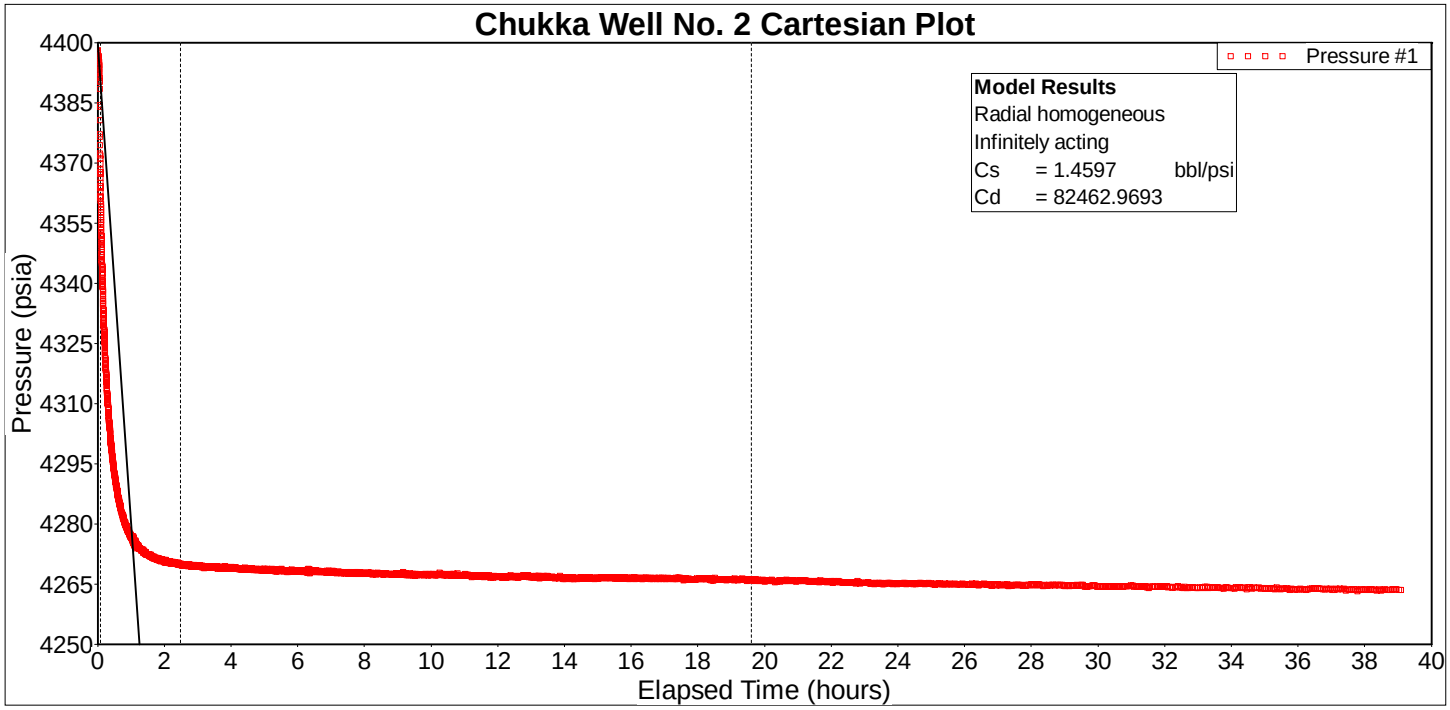
Rate Change Data

Time Hours	Pressure psia	Rate STB/day
-897.763060	0.000000	0.000000
-873.763060	0.000000	-1865.690000
-849.763060	0.000000	-3602.650000
-753.763060	0.000000	-3833.920000
-729.763060	0.000000	-3559.110000
-705.763060	0.000000	-3178.220000
-513.763060	0.000000	-4102.550000
-441.763060	0.000000	-3855.050000
-393.763060	0.000000	-3700.630000
-321.763060	0.000000	-3455.520000
-297.763060	0.000000	-3652.580000
-225.763060	0.000000	-3447.930000
-201.763060	0.000000	-3398.190000
-105.763060	0.000000	-3230.460000

Rate Change Data (cont)

Time Hours	Pressure psia	Rate STB/day
-81.763060	0.000000	-3330.330000
-57.763060	0.000000	-3416.600000
-33.763060	0.000000	-3539.200000
-26.246390	0.000000	-3590.010000
49.764720	4388.960000	-3797.860000
49.832780	4389.320000	-4065.160000
79.003610	4398.020000	-4184.540000
118.085560	4263.520000	0.000000


Chukka Well No. 2 Injection Rates Prior to Falloff
Pressure #1
Rate Schedule
Pressure (psia)
Water Flow Rate (STB/day)
Time (hours)
4430
4410
4390
4370
4350
4330
4310
4290
4270
4250
800
300
-200
-700
-1200
-1700
-2200
-2700
-3200
-3700
-4200
0
6
12
18
24
30
36
42
48
54
60
66
72
78
84
90
96
102
108
114
120



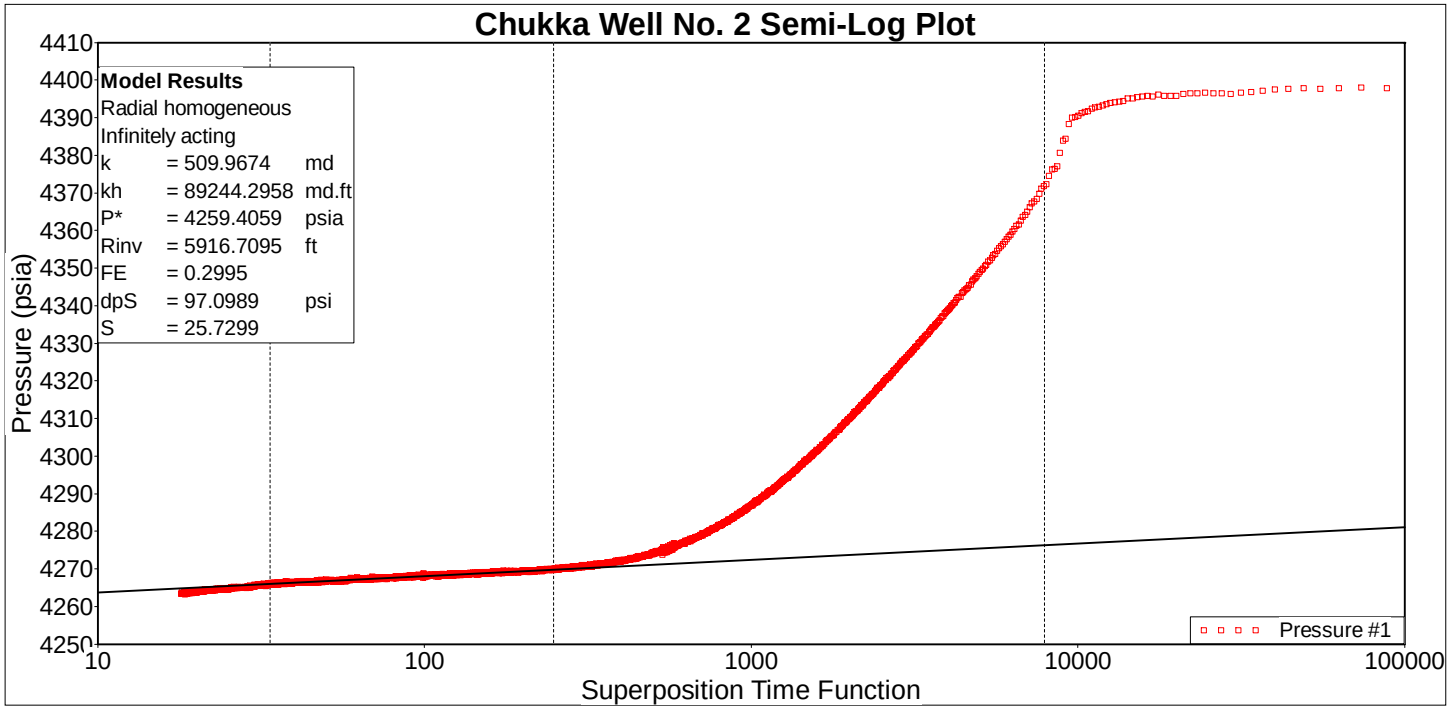
Chukka Well No. 2 Cartesian Plot Model Results
Radial homogeneous - Infinitely acting

Classic Wellbore Storage

	Value
Wellbore storage coefficient	1.459658 bbl/psi
Dimensionless wellbore storage	8.2463e4

Chukka Well No. 2 Cartesian Plot Line Details
Line type : Wellbore storage
Slope : -119.45
Intercept : 4399.21
Coefficient of Determination : 0.909647

Number of Intersections = 0



Chukka Well No. 2 Semi-Log Plot Model Results
Radial homogeneous - Infinitely acting

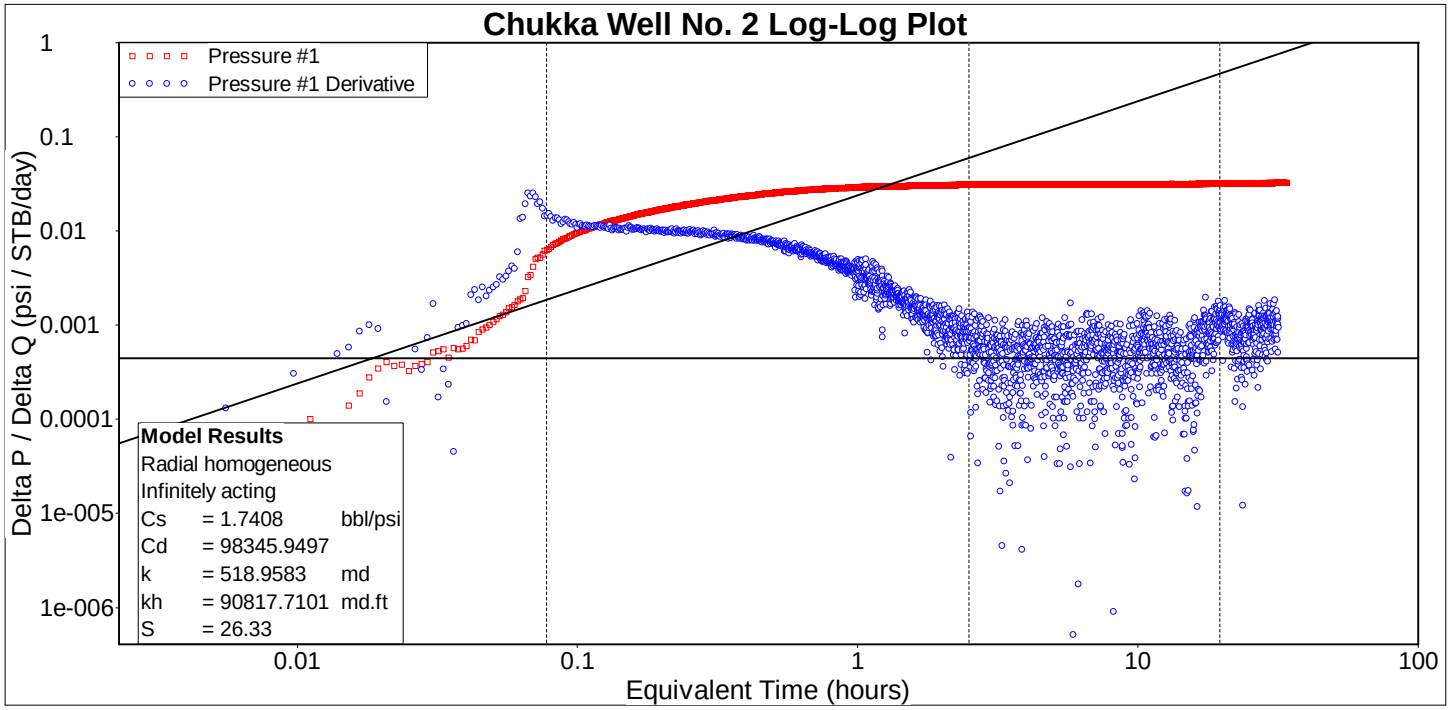
Classic Wellbore Storage

	Value
Permeability	509.967404 md
Permeability-thickness	8.9244e4 md.ft
Extrapolated pressure	4259.405872 psia
Radius of investigation	5916.709524 ft
Flow efficiency	0.299502
dP skin (constant rate)	97.098920 psi
Skin factor	25.72987

Chukka Well No. 2 Semi-Log Plot Line Details
Line type : Radial flow
Slope : 4.34473
Intercept : 4259.41
Coefficient of Determination : 0.984005

	Radial flow
Extrapolated pressure	4259.405872 psia
Pressure at dt = 1 hour	4271.519842 psia

Number of Intersections = 0



Chukka Well No. 2 Log-Log Plot Model Results
Radial homogeneous - Infinitely acting

Classic Wellbore Storage

	Value
Wellbore storage coefficient	1.7408 bbl/psi
Dimensionless wellbore storage	9.8346e4
Permeability	518.958343 md
Permeability-thickness	9.0818e4 md.ft
Skin factor	26.330032

Chukka Well No. 2 Log-Log Plot Line Details
Line type : Wellbore storage
Slope : 1
Intercept : 0.0239354
Coefficient of Determination : Not Used

Line type : Radial flow
Slope : 0
Intercept : 0.000443107
Coefficient of Determination : Not Used

Number of Intersections = 0

LOGS

- **Dual Induction Log Sections from 7924 feet to 8476 feet**
- **Neutron Density Log Sections from 7924 feet to 8476 feet**
- **Mewbourne Well No. 1, July 23, 1998, Temperature Log**

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

FLOWING GRADIENT SURVEY

Company:	PB Energy Storage Services, Inc.	Test Date:	7/22/2016
Well:	Chukka Well No. 2	Location:	Eddy County, TX
Field:	Davonia	Status:	Injecting
Formation:	Unavailable		

Well Data:	Wellhead Connection: 3.5" EUE	Gauge Type:	Electronic
	Elevation: 13 ft above GL	Gauge SN:	DC-2050
	Tubing: 3" Set at 7570 ft (EOT)	Gauge Range:	15000 psi
	Casing: 5.5" Set at 8770 ft (PBTD)	Gauge OD:	1.2500"
	Perfs: 7570 - 7736; 7826 - 8399 ft (MD		
	Datum: 7985 ft (MD)		

Depth			Pressure					
MD ft	TVD ft	Delta Depth ft	WHP psia	BHT °F	Gauge Pressure psia	Delta Pressure psi	Pressure Gradient psi / ft	Comments
0	0	0	1363	100.51	1356.82	0.00	0.0000	RIH with electronic gauges.
7570	7570	7570		112.51	4390.23	3033.41	0.4007	Suspended gauge at TD=7570 ft.

BHT at Test Depth:	112.50 °F	Oil Level:	None	Previous BHP: U/A
Extrapolated BHP at Datum:	4557.00 psia	Water Level:	Injecting	BHP Change: U/A
BHP Gradient at Datum :	0.4007 psi/ft	Csg Press:	N/A	

Remarks: RIH with electronic gauges while injecting water. Suspend gauges at 7570 ft on slickline for extended injection period and subsequent BHP falloff test.

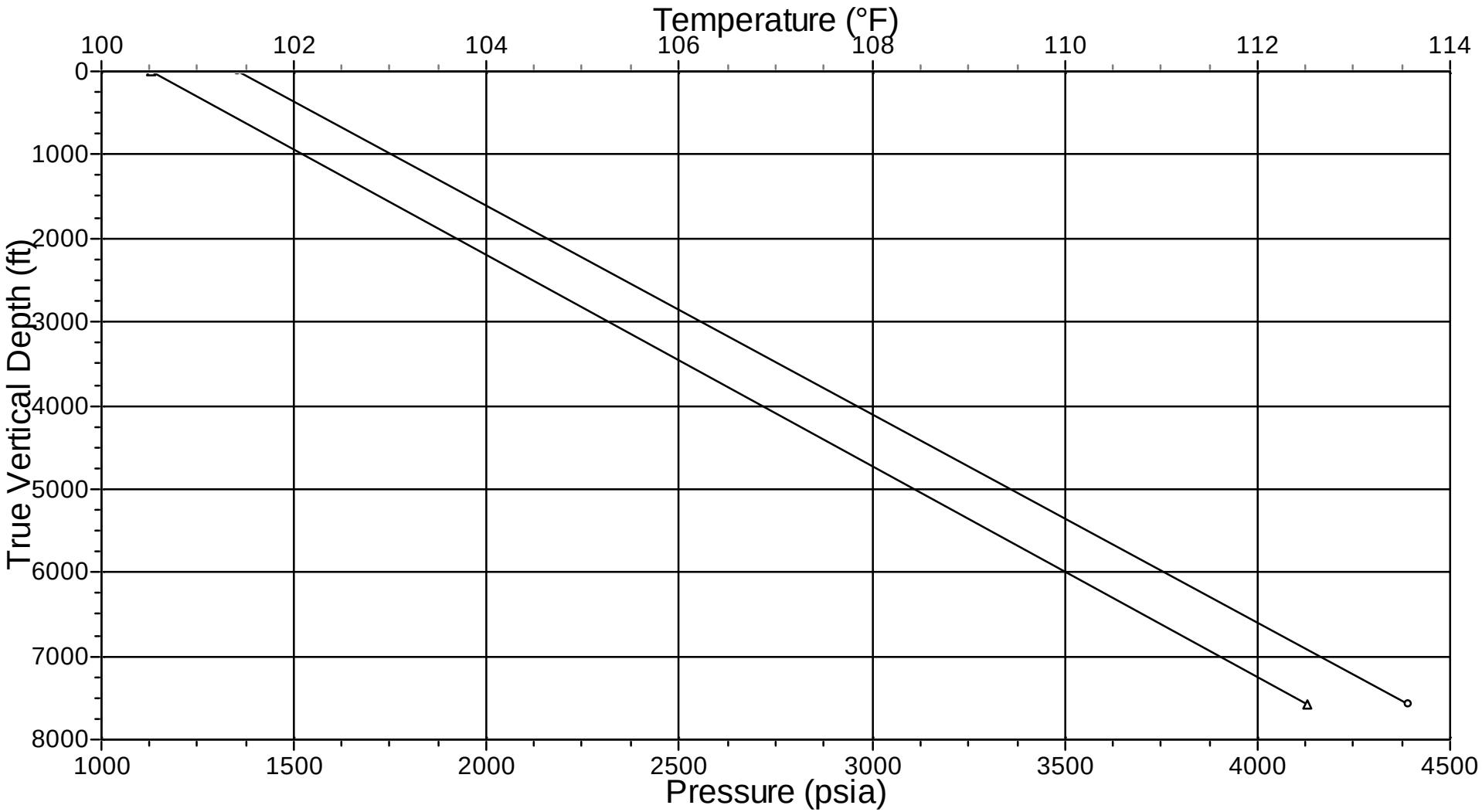
Certified: FESCO, Ltd. - Ozona, Texas

By: Tom Anderson
District Manager - (325) 392-3773

PB Energy Storage Services, Inc.

Flowing Gradient Plot

Well:	Chukka Well No. 2	Gauge Type:	Electronic
Field:	Davonia	Gauge Range:	15000 psi
Test Date:	07/22/2016	Gauge SN:	DC-2050



J201607280801.001A

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/22/16	09:45:01	-79.01611		11.83		86.18	Powered up gauge.
07/22/16	09:50:04	-78.93194		9.22		89.27	
07/22/16	09:53:04	-78.88194		8.73		92.89	
07/22/16	09:53:34	-78.87361	1366	1363.05		96.36	Pressured up lubricator.
07/22/16	09:54:04	-78.86528		1356.83		101.98	
07/22/16	09:55:04	-78.84861		1356.61		103.83	
07/22/16	09:56:04	-78.83194		1356.86		103.11	
07/22/16	09:57:04	-78.81528		1356.41		102.25	
07/22/16	09:58:04	-78.79861		1356.67		101.54	
07/22/16	09:59:04	-78.78194		1356.88		101.09	
07/22/16	10:00:04	-78.76528		1357.06		100.77	
07/22/16	10:01:04	-78.74861		1357.09		100.56	
07/22/16	10:01:19	-78.74444	1363	1356.82		100.51	RIH with electronic gauges.
07/22/16	10:02:04	-78.73194		1389.29		114.11	
07/22/16	10:04:04	-78.69861		1726.04		115.17	
07/22/16	10:06:04	-78.66528		2127.89		114.29	
07/22/16	10:08:04	-78.63194		2470.51		113.56	
07/22/16	10:10:04	-78.59861		2914.05		112.84	
07/22/16	10:12:04	-78.56528		3322.70		112.37	
07/22/16	10:14:04	-78.53194		3686.04		112.18	
07/22/16	10:16:04	-78.49861		4067.55		112.24	
07/22/16	10:18:04	-78.46528	1365	4391.08		112.48	Gauge at TD=7570 ft (MD).
07/22/16	10:20:04	-78.43194		4390.97		112.49	
07/22/16	10:25:04	-78.34861		4390.23		112.51	7570 ft stop.
07/22/16	10:30:04	-78.26528		4390.04		112.52	
07/22/16	10:50:09	-77.93056		4389.45		112.56	
07/22/16	11:10:09	-77.59722		4389.31		112.60	
07/22/16	11:30:09	-77.26389		4388.97		112.63	
07/22/16	11:50:09	-76.93056		4389.14		112.65	
07/22/16	12:10:09	-76.59722		4388.90		112.67	
07/22/16	12:30:09	-76.26389		4389.23		112.69	
07/22/16	12:50:09	-75.93056		4389.04		112.69	
07/22/16	13:10:09	-75.59722		4389.22		112.69	
07/22/16	13:30:09	-75.26389		4388.78		112.69	
07/22/16	13:50:09	-74.93056		4388.99		112.68	
07/22/16	14:10:09	-74.59722		4389.01		112.68	
07/22/16	14:30:09	-74.26389		4388.84		112.67	
07/22/16	14:50:09	-73.93056		4389.00		112.66	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/22/16	15:10:09	-73.59722		4388.80		112.65	
07/22/16	15:30:09	-73.26389		4389.10		112.64	
07/22/16	15:50:09	-72.93056		4389.06		112.64	
07/22/16	16:10:09	-72.59722		4388.87		112.63	
07/22/16	16:30:09	-72.26389		4388.80		112.62	
07/22/16	16:50:09	-71.93056		4388.92		112.61	
07/22/16	17:10:09	-71.59722		4389.04		112.61	
07/22/16	17:30:09	-71.26389		4389.28		112.60	
07/22/16	17:50:09	-70.93056		4389.06		112.61	
07/22/16	18:10:09	-70.59722		4389.34		112.60	
07/22/16	18:30:09	-70.26389		4389.24		112.59	
07/22/16	18:50:09	-69.93056		4389.20		112.58	
07/22/16	19:10:09	-69.59722		4389.22		112.58	
07/22/16	19:30:09	-69.26389		4389.10		112.56	
07/22/16	19:50:09	-68.93056		4389.02		112.55	
07/22/16	20:10:09	-68.59722		4388.82		112.55	
07/22/16	20:30:09	-68.26389		4389.16		112.53	
07/22/16	20:50:09	-67.93056		4389.10		112.52	
07/22/16	21:10:09	-67.59722		4389.18		112.53	
07/22/16	21:30:09	-67.26389		4388.81		112.53	
07/22/16	21:50:09	-66.93056		4389.04		112.50	
07/22/16	22:10:09	-66.59722		4389.00		112.48	
07/22/16	22:30:09	-66.26389		4388.89		112.46	
07/22/16	22:50:09	-65.93056		4388.91		112.43	
07/22/16	23:10:09	-65.59722		4388.89		112.41	
07/22/16	23:30:09	-65.26389		4388.77		112.40	
07/22/16	23:50:09	-64.93056		4388.95		112.39	
07/23/16	00:10:09	-64.59722		4388.88		112.39	
07/23/16	00:30:09	-64.26389		4388.89		112.39	
07/23/16	00:50:09	-63.93056		4389.09		112.39	
07/23/16	01:10:09	-63.59722		4388.97		112.39	
07/23/16	01:30:09	-63.26389		4389.01		112.39	
07/23/16	01:50:09	-62.93056		4388.88		112.38	
07/23/16	02:10:09	-62.59722		4388.74		112.36	
07/23/16	02:30:09	-62.26389		4388.84		112.34	
07/23/16	02:50:09	-61.93056		4388.90		112.32	
07/23/16	03:10:09	-61.59722		4389.05		112.30	
07/23/16	03:30:09	-61.26389		4389.04		112.28	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/23/16	03:50:09	-60.93056		4389.12		112.25	
07/23/16	04:10:09	-60.59722		4388.91		112.22	
07/23/16	04:30:09	-60.26389		4389.00		112.19	
07/23/16	04:50:09	-59.93056		4389.15		112.17	
07/23/16	05:10:09	-59.59722		4388.93		112.13	
07/23/16	05:30:09	-59.26389		4388.74		112.10	
07/23/16	05:50:09	-58.93056		4389.10		112.07	
07/23/16	06:10:09	-58.59722		4388.91		112.03	
07/23/16	06:30:09	-58.26389		4389.20		112.00	
07/23/16	06:50:09	-57.93056		4389.21		111.97	
07/23/16	07:10:09	-57.59722		4389.11		111.93	
07/23/16	07:30:09	-57.26389		4389.15		111.90	
07/23/16	07:50:09	-56.93056		4389.38		111.88	
07/23/16	08:10:09	-56.59722		4389.10		111.86	
07/23/16	08:30:09	-56.26389		4389.17		111.85	
07/23/16	08:50:09	-55.93056		4389.45		111.84	
07/23/16	09:10:09	-55.59722		4389.35		111.80	
07/23/16	09:30:09	-55.26389		4389.19		111.77	
07/23/16	09:50:09	-54.93056		4389.42		111.75	
07/23/16	10:10:09	-54.59722		4389.41		111.71	
07/23/16	10:30:09	-54.26389		4389.20		111.69	
07/23/16	10:50:09	-53.93056		4389.25		111.67	
07/23/16	11:10:09	-53.59722		4389.28		111.64	
07/23/16	11:30:09	-53.26389		4389.16		111.62	
07/23/16	11:50:09	-52.93056		4389.07		111.60	
07/23/16	12:10:09	-52.59722		4389.04		111.57	
07/23/16	12:30:09	-52.26389		4389.35		111.54	
07/23/16	12:50:09	-51.93056		4389.06		111.51	
07/23/16	13:10:09	-51.59722		4389.02		111.48	
07/23/16	13:30:09	-51.26389		4388.91		111.45	
07/23/16	13:50:09	-50.93056		4389.07		111.41	
07/23/16	14:10:09	-50.59722		4389.19		111.38	
07/23/16	14:30:09	-50.26389		4388.81		111.34	
07/23/16	14:50:09	-49.93056		4389.08		111.32	
07/23/16	15:10:09	-49.59722		4389.52		111.29	
07/23/16	15:30:09	-49.26389		4389.20		111.27	
07/23/16	15:50:09	-48.93056		4389.17		111.24	
07/23/16	16:10:09	-48.59722		4389.31		111.22	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/23/16	16:30:09	-48.26389		4389.35		111.21	
07/23/16	16:50:09	-47.93056		4389.10		111.21	
07/23/16	17:10:09	-47.59722		4389.37		111.24	
07/23/16	17:30:09	-47.26389		4389.53		111.33	
07/23/16	17:50:09	-46.93056		4389.13		111.45	
07/23/16	18:10:09	-46.59722		4389.08		111.61	
07/23/16	18:30:09	-46.26389		4389.08		111.79	
07/23/16	18:50:09	-45.93056		4388.94		111.97	
07/23/16	19:10:09	-45.59722		4389.44		112.15	
07/23/16	19:30:09	-45.26389		4388.90		112.30	
07/23/16	19:50:09	-44.93056		4389.33		112.43	
07/23/16	20:10:09	-44.59722		4389.15		112.55	
07/23/16	20:30:09	-44.26389		4388.89		112.66	
07/23/16	20:50:09	-43.93056		4388.85		112.75	
07/23/16	21:10:09	-43.59722		4388.73		112.83	
07/23/16	21:30:09	-43.26389		4388.50		112.90	
07/23/16	21:50:09	-42.93056		4388.94		112.96	
07/23/16	22:10:09	-42.59722		4388.57		113.02	
07/23/16	22:30:09	-42.26389		4388.79		113.06	
07/23/16	22:50:09	-41.93056		4388.42		113.10	
07/23/16	23:10:09	-41.59722		4388.34		113.14	
07/23/16	23:30:09	-41.26389		4388.46		113.16	
07/23/16	23:50:09	-40.93056		4388.62		113.18	
07/24/16	00:10:09	-40.59722		4388.65		113.21	
07/24/16	00:30:09	-40.26389		4388.51		113.22	
07/24/16	00:50:09	-39.93056		4388.55		113.23	
07/24/16	01:10:09	-39.59722		4388.62		113.23	
07/24/16	01:30:09	-39.26389		4388.48		113.23	
07/24/16	01:50:09	-38.93056		4388.62		113.23	
07/24/16	02:10:09	-38.59722		4388.58		113.22	
07/24/16	02:30:09	-38.26389		4388.39		113.21	
07/24/16	02:50:09	-37.93056		4388.52		113.19	
07/24/16	03:10:09	-37.59722		4388.41		113.18	
07/24/16	03:30:09	-37.26389		4388.64		113.16	
07/24/16	03:50:09	-36.93056		4388.39		113.13	
07/24/16	04:10:09	-36.59722		4388.68		113.10	
07/24/16	04:30:09	-36.26389		4388.51		113.07	
07/24/16	04:50:09	-35.93056		4388.55		113.04	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	05:10:09	-35.59722		4388.62		113.01	
07/24/16	05:30:09	-35.26389		4388.68		112.98	
07/24/16	05:50:09	-34.93056		4388.91		112.94	
07/24/16	06:10:09	-34.59722		4388.69		112.90	
07/24/16	06:30:09	-34.26389		4388.75		112.86	
07/24/16	06:50:09	-33.93056		4388.69		112.83	
07/24/16	07:10:09	-33.59722		4388.68		112.79	
07/24/16	07:30:09	-33.26389		4388.79		112.76	
07/24/16	07:50:09	-32.93056		4388.72		112.72	
07/24/16	08:10:09	-32.59722		4388.70		112.68	
07/24/16	08:30:09	-32.26389		4388.69		112.64	
07/24/16	08:50:09	-31.93056		4388.69		112.59	
07/24/16	09:10:09	-31.59722		4389.07		112.55	
07/24/16	09:30:09	-31.26389		4388.67		112.51	
07/24/16	09:50:09	-30.93056		4388.66		112.47	
07/24/16	10:10:09	-30.59722		4389.03		112.45	
07/24/16	10:30:09	-30.26389		4388.81		112.46	
07/24/16	10:50:09	-29.93056		4388.65		112.46	
07/24/16	11:10:09	-29.59722		4388.84		112.47	
07/24/16	11:30:09	-29.26389		4388.82		112.48	
07/24/16	11:35:39	-29.17222		4389.07		112.48	Increased the water injection rate.
07/24/16	11:50:09	-28.93056		4396.56		112.51	
07/24/16	12:10:09	-28.59722		4398.47		112.52	
07/24/16	12:30:09	-28.26389		4399.21		112.48	
07/24/16	12:50:09	-27.93056		4399.51		112.41	
07/24/16	13:10:09	-27.59722		4399.66		112.31	
07/24/16	13:30:09	-27.26389		4399.57		112.23	
07/24/16	13:50:09	-26.93056		4399.64		112.08	
07/24/16	14:10:09	-26.59722		4399.40		111.94	
07/24/16	14:30:09	-26.26389		4399.33		111.81	
07/24/16	14:50:09	-25.93056		4399.76		111.69	
07/24/16	15:10:09	-25.59722		4399.61		111.56	
07/24/16	15:30:09	-25.26389		4399.76		111.43	
07/24/16	15:50:09	-24.93056		4399.83		111.31	
07/24/16	16:10:09	-24.59722		4399.53		111.19	
07/24/16	16:30:09	-24.26389		4399.56		111.06	
07/24/16	16:50:09	-23.93056		4399.42		110.95	
07/24/16	17:10:09	-23.59722		4399.47		110.83	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	17:30:09	-23.26389		4399.71		110.72	
07/24/16	17:50:09	-22.93056		4399.57		110.59	
07/24/16	18:10:09	-22.59722		4399.52		110.48	
07/24/16	18:30:09	-22.26389		4399.57		110.39	
07/24/16	18:50:09	-21.93056		4399.32		110.26	
07/24/16	19:10:09	-21.59722		4399.48		110.14	
07/24/16	19:30:09	-21.26389		4399.63		110.02	
07/24/16	19:50:09	-20.93056		4399.54		109.90	
07/24/16	20:10:09	-20.59722		4399.39		109.79	
07/24/16	20:30:09	-20.26389		4399.37		109.68	
07/24/16	20:50:09	-19.93056		4399.16		109.59	
07/24/16	21:10:09	-19.59722		4399.39		109.48	
07/24/16	21:30:09	-19.26389		4399.18		109.38	
07/24/16	21:50:09	-18.93056		4399.14		109.28	
07/24/16	22:10:09	-18.59722		4399.00		109.19	
07/24/16	22:30:09	-18.26389		4399.13		109.10	
07/24/16	22:50:09	-17.93056		4399.19		109.01	
07/24/16	23:10:09	-17.59722		4399.08		108.92	
07/24/16	23:30:09	-17.26389		4399.18		108.82	
07/24/16	23:50:09	-16.93056		4398.99		108.75	
07/25/16	00:10:09	-16.59722		4398.99		108.64	
07/25/16	00:30:09	-16.26389		4399.10		108.53	
07/25/16	00:50:09	-15.93056		4398.78		108.42	
07/25/16	01:10:09	-15.59722		4398.82		108.31	
07/25/16	01:30:09	-15.26389		4398.91		108.20	
07/25/16	01:50:09	-14.93056		4398.60		108.08	
07/25/16	02:10:09	-14.59722		4399.15		107.98	
07/25/16	02:30:09	-14.26389		4398.93		107.87	
07/25/16	02:50:09	-13.93056		4399.12		107.77	
07/25/16	03:10:09	-13.59722		4398.85		107.68	
07/25/16	03:30:09	-13.26389		4398.79		107.59	
07/25/16	03:50:09	-12.93056		4398.80		107.50	
07/25/16	04:10:09	-12.59722		4398.87		107.41	
07/25/16	04:30:09	-12.26389		4398.71		107.32	
07/25/16	04:50:09	-11.93056		4398.69		107.24	
07/25/16	05:10:09	-11.59722		4398.78		107.15	
07/25/16	05:30:09	-11.26389		4398.76		107.06	
07/25/16	05:50:09	-10.93056		4398.30		106.98	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/25/16	06:10:09	-10.59722		4398.31		106.90	
07/25/16	06:30:09	-10.26389		4398.50		106.82	
07/25/16	06:50:09	-9.93056		4398.67		106.73	
07/25/16	07:10:09	-9.59722		4398.65		106.66	
07/25/16	07:30:09	-9.26389		4398.70		106.62	
07/25/16	07:50:09	-8.93056		4398.53		106.55	
07/25/16	08:10:09	-8.59722		4398.51		106.48	
07/25/16	08:30:09	-8.26389		4398.47		106.41	
07/25/16	08:50:09	-7.93056		4398.30		106.37	
07/25/16	09:10:09	-7.59722		4398.46		106.32	
07/25/16	09:30:09	-7.26389		4398.39		106.29	
07/25/16	09:50:09	-6.93056		4398.27		106.25	
07/25/16	10:10:09	-6.59722		4398.36		106.21	
07/25/16	10:30:09	-6.26389		4398.10		106.18	
07/25/16	10:50:09	-5.93056		4398.25		106.15	
07/25/16	11:10:09	-5.59722		4398.43		106.12	
07/25/16	11:30:09	-5.26389		4398.28		106.10	
07/25/16	11:50:09	-4.93056		4398.24		106.07	
07/25/16	12:10:09	-4.59722		4398.14		106.03	
07/25/16	12:30:09	-4.26389		4397.85		106.01	
07/25/16	12:50:09	-3.93056		4398.06		105.99	
07/25/16	13:10:09	-3.59722		4398.04		105.97	
07/25/16	13:30:09	-3.26389		4397.77		105.94	
07/25/16	13:50:09	-2.93056		4397.99		105.92	
07/25/16	14:10:09	-2.59722		4397.90		105.91	
07/25/16	14:30:09	-2.26389		4397.86		105.90	
07/25/16	14:50:09	-1.93056		4398.08		105.88	
07/25/16	15:10:09	-1.59722		4397.83		105.86	
07/25/16	15:30:09	-1.26389		4397.79		105.85	
07/25/16	15:50:09	-0.93056		4397.92		105.84	
07/25/16	16:10:09	-0.59722		4397.68		105.82	
07/25/16	16:30:09	-0.26389		4397.95		105.79	
07/25/16	16:45:54	-0.00139		4397.60		105.76	Water Injection Rate = Unavailable.
07/25/16	16:45:59	0.00000		4397.85	0.00	105.76	Operator SI well for 39 hr falloff test.
07/25/16	16:46:04	0.00139		4397.67	-0.18	105.76	
07/25/16	16:46:09	0.00278		4397.44	-0.41	105.76	
07/25/16	16:46:14	0.00417		4397.23	-0.62	105.76	
07/25/16	16:46:19	0.00556		4396.86	-0.99	105.76	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/25/16	16:46:24	0.00694		4396.58	-1.27	105.76	
07/25/16	16:46:29	0.00833		4396.32	-1.53	105.75	
07/25/16	16:46:34	0.00972		4396.47	-1.38	105.76	
07/25/16	16:46:39	0.01111		4396.43	-1.42	105.76	
07/25/16	16:46:44	0.01250		4396.66	-1.19	105.76	
07/25/16	16:46:49	0.01389		4396.47	-1.38	105.75	
07/25/16	16:46:54	0.01528		4396.41	-1.44	105.76	
07/25/16	16:46:59	0.01667		4396.33	-1.52	105.76	
07/25/16	16:47:04	0.01806		4395.87	-1.98	105.76	
07/25/16	16:47:09	0.01944		4395.81	-2.04	105.76	
07/25/16	16:47:14	0.02083		4395.72	-2.13	105.76	
07/25/16	16:47:19	0.02222		4396.13	-1.72	105.76	
07/25/16	16:47:24	0.02361		4395.63	-2.22	105.76	
07/25/16	16:47:29	0.02500		4395.71	-2.14	105.76	
07/25/16	16:47:34	0.02639		4395.68	-2.17	105.76	
07/25/16	16:47:39	0.02778		4395.53	-2.32	105.76	
07/25/16	16:47:44	0.02917		4395.09	-2.76	105.76	
07/25/16	16:47:49	0.03056		4395.13	-2.72	105.75	
07/25/16	16:47:54	0.03194		4394.51	-3.34	105.76	
07/25/16	16:47:59	0.03333		4394.29	-3.56	105.76	
07/25/16	16:48:04	0.03472		4394.11	-3.74	105.76	
07/25/16	16:48:09	0.03611		4393.83	-4.02	105.76	
07/25/16	16:48:14	0.03750		4393.52	-4.33	105.76	
07/25/16	16:48:19	0.03889		4393.23	-4.62	105.76	
07/25/16	16:48:24	0.04028		4392.81	-5.04	105.76	
07/25/16	16:48:29	0.04167		4392.64	-5.21	105.76	
07/25/16	16:48:34	0.04306		4392.32	-5.53	105.76	
07/25/16	16:48:39	0.04444		4391.69	-6.16	105.75	
07/25/16	16:48:44	0.04583		4391.58	-6.27	105.76	
07/25/16	16:48:49	0.04722		4391.19	-6.66	105.76	
07/25/16	16:48:54	0.04861		4390.53	-7.32	105.76	
07/25/16	16:48:59	0.05000		4390.15	-7.70	105.76	
07/25/16	16:49:04	0.05139		4390.00	-7.85	105.76	
07/25/16	16:49:09	0.05278		4388.38	-9.47	105.76	
07/25/16	16:49:14	0.05417		4384.43	-13.42	105.76	
07/25/16	16:49:24	0.05694		4380.56	-17.29	105.76	
07/25/16	16:49:29	0.05833		4377.10	-20.75	105.76	
07/25/16	16:49:34	0.05972		4376.40	-21.45	105.76	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/25/16	16:49:44	0.06250		4374.44	-23.41	105.76	
07/25/16	16:49:49	0.06389		4372.35	-25.50	105.76	
07/25/16	16:49:54	0.06528		4371.78	-26.07	105.76	
07/25/16	16:50:04	0.06806		4369.70	-28.15	105.76	
07/25/16	16:50:09	0.06944		4368.30	-29.55	105.76	
07/25/16	16:50:19	0.07222		4367.22	-30.63	105.77	
07/25/16	16:50:24	0.07361		4366.18	-31.67	105.77	
07/25/16	16:50:34	0.07639		4364.15	-33.70	105.77	
07/25/16	16:50:44	0.07917		4362.68	-35.17	105.77	
07/25/16	16:50:54	0.08194		4361.24	-36.61	105.77	
07/25/16	16:50:59	0.08333		4360.45	-37.40	105.77	
07/25/16	16:51:09	0.08611		4358.86	-38.99	105.77	
07/25/16	16:51:19	0.08889		4357.69	-40.16	105.77	
07/25/16	16:51:29	0.09167		4356.28	-41.57	105.77	
07/25/16	16:51:39	0.09444		4355.29	-42.56	105.77	
07/25/16	16:51:49	0.09722		4353.79	-44.06	105.77	
07/25/16	16:51:59	0.10000		4352.68	-45.17	105.77	
07/25/16	16:52:14	0.10417		4350.92	-46.93	105.77	
07/25/16	16:52:24	0.10694		4349.90	-47.95	105.77	
07/25/16	16:52:34	0.10972		4348.96	-48.89	105.78	
07/25/16	16:52:49	0.11389		4347.22	-50.63	105.78	
07/25/16	16:52:59	0.11667		4346.46	-51.39	105.78	
07/25/16	16:53:14	0.12083		4344.79	-53.06	105.78	
07/25/16	16:53:29	0.12500		4343.51	-54.34	105.79	
07/25/16	16:53:39	0.12778		4342.40	-55.45	105.79	
07/25/16	16:53:54	0.13194		4341.43	-56.42	105.80	
07/25/16	16:54:09	0.13611		4340.21	-57.64	105.80	
07/25/16	16:54:24	0.14028		4339.01	-58.84	105.80	
07/25/16	16:54:39	0.14444		4337.90	-59.95	105.81	
07/25/16	16:54:59	0.15000		4336.12	-61.73	105.81	
07/25/16	16:55:14	0.15417		4335.02	-62.83	105.82	
07/25/16	16:55:29	0.15833		4334.21	-63.64	105.83	
07/25/16	16:55:49	0.16389		4332.55	-65.30	105.83	
07/25/16	16:56:09	0.16944		4331.32	-66.53	105.83	
07/25/16	16:56:24	0.17361		4330.33	-67.52	105.83	
07/25/16	16:56:44	0.17917		4329.01	-68.84	105.84	
07/25/16	16:57:04	0.18472		4327.81	-70.04	105.84	
07/25/16	16:57:29	0.19167		4326.42	-71.43	105.85	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/25/16	16:57:49	0.19722		4325.30	-72.55	105.86	
07/25/16	16:58:09	0.20278		4324.24	-73.61	105.86	
07/25/16	16:58:34	0.20972		4322.92	-74.93	105.87	
07/25/16	16:58:54	0.21528		4321.98	-75.87	105.88	
07/25/16	16:59:19	0.22222		4320.87	-76.98	105.89	
07/25/16	16:59:44	0.22917		4319.59	-78.26	105.89	
07/25/16	17:00:09	0.23611		4318.14	-79.71	105.90	
07/25/16	17:00:39	0.24444		4317.07	-80.78	105.91	
07/25/16	17:01:04	0.25139		4315.92	-81.93	105.91	
07/25/16	17:01:34	0.25972		4314.62	-83.23	105.92	
07/25/16	17:02:04	0.26806		4313.51	-84.34	105.92	
07/25/16	17:02:34	0.27639		4312.40	-85.45	105.93	
07/25/16	17:03:04	0.28472		4311.27	-86.58	105.94	
07/25/16	17:03:34	0.29306		4310.13	-87.72	105.94	
07/25/16	17:04:09	0.30278		4308.78	-89.07	105.95	
07/25/16	17:04:39	0.31111		4307.96	-89.89	105.96	
07/25/16	17:05:14	0.32083		4306.94	-90.91	105.97	
07/25/16	17:05:54	0.33194		4305.55	-92.30	105.97	
07/25/16	17:06:29	0.34167		4304.73	-93.12	105.98	
07/25/16	17:07:09	0.35278		4303.57	-94.28	106.00	
07/25/16	17:07:49	0.36389		4302.47	-95.38	106.01	
07/25/16	17:08:29	0.37500		4301.26	-96.59	106.03	
07/25/16	17:09:09	0.38611		4300.31	-97.54	106.03	
07/25/16	17:09:54	0.39861		4299.19	-98.66	106.04	
07/25/16	17:10:39	0.41111		4298.29	-99.56	106.05	
07/25/16	17:11:24	0.42361		4297.22	-100.63	106.06	
07/25/16	17:12:09	0.43611		4296.43	-101.42	106.07	
07/25/16	17:12:59	0.45000		4295.24	-102.61	106.08	
07/25/16	17:13:49	0.46389		4294.49	-103.36	106.09	
07/25/16	17:14:44	0.47917		4293.42	-104.43	106.11	
07/25/16	17:15:34	0.49306		4292.39	-105.46	106.12	
07/25/16	17:16:29	0.50833		4291.61	-106.24	106.14	
07/25/16	17:17:29	0.52500		4290.77	-107.08	106.15	
07/25/16	17:18:29	0.54167		4289.53	-108.32	106.16	
07/25/16	17:19:29	0.55833		4288.90	-108.95	106.18	
07/25/16	17:20:29	0.57500		4287.82	-110.03	106.19	
07/25/16	17:21:34	0.59306		4287.36	-110.49	106.20	
07/25/16	17:22:39	0.61111		4286.58	-111.27	106.22	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/25/16	17:23:49	0.63056		4285.49	-112.36	106.23	
07/25/16	17:24:59	0.65000		4284.95	-112.90	106.25	
07/25/16	17:26:14	0.67083		4284.22	-113.63	106.27	
07/25/16	17:27:29	0.69167		4283.56	-114.29	106.28	
07/25/16	17:28:44	0.71250		4282.67	-115.18	106.30	
07/25/16	17:30:04	0.73472		4282.13	-115.72	106.32	
07/25/16	17:31:29	0.75833		4281.46	-116.39	106.34	
07/25/16	17:32:54	0.78194		4280.67	-117.18	106.36	
07/25/16	17:34:19	0.80556		4280.29	-117.56	106.38	
07/25/16	17:35:49	0.83056		4279.85	-118.00	106.39	
07/25/16	17:37:24	0.85694		4279.07	-118.78	106.41	
07/25/16	17:38:59	0.88333		4278.40	-119.45	106.44	
07/25/16	17:40:39	0.91111		4278.19	-119.66	106.46	
07/25/16	17:42:19	0.93889		4277.47	-120.38	106.48	
07/25/16	17:44:09	0.96944		4277.12	-120.73	106.50	
07/25/16	17:45:54	0.99861		4276.71	-121.14	106.52	
07/25/16	17:47:49	1.03056		4276.10	-121.75	106.54	
07/25/16	17:49:44	1.06250		4276.55	-121.30	106.57	
07/25/16	17:51:44	1.09583		4275.55	-122.30	106.59	
07/25/16	17:53:44	1.12917		4275.08	-122.77	106.61	
07/25/16	17:55:49	1.16389		4274.35	-123.50	106.63	
07/25/16	17:58:04	1.20139		4274.20	-123.65	106.65	
07/25/16	18:00:19	1.23889		4273.86	-123.99	106.68	
07/25/16	18:02:34	1.27639		4273.53	-124.32	106.71	
07/25/16	18:04:59	1.31667		4273.45	-124.40	106.73	
07/25/16	18:07:24	1.35694		4273.01	-124.84	106.75	
07/25/16	18:09:59	1.40000		4272.55	-125.30	106.78	
07/25/16	18:12:34	1.44306		4272.49	-125.36	106.80	
07/25/16	18:15:19	1.48889		4272.17	-125.68	106.83	
07/25/16	18:18:04	1.53472		4272.10	-125.75	106.86	
07/25/16	18:20:59	1.58333		4272.20	-125.65	106.89	
07/25/16	18:23:54	1.63194		4271.73	-126.12	106.91	
07/25/16	18:26:59	1.68333		4271.44	-126.41	106.94	
07/25/16	18:30:04	1.73472		4271.49	-126.36	106.97	
07/25/16	18:33:19	1.78889		4271.14	-126.71	107.00	
07/25/16	18:36:39	1.84444		4271.01	-126.84	107.03	
07/25/16	18:40:09	1.90278		4270.94	-126.91	107.06	
07/25/16	18:43:44	1.96250		4270.59	-127.26	107.09	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/25/16	18:47:24	2.02361		4270.51	-127.34	107.12	
07/25/16	18:51:09	2.08611		4270.53	-127.32	107.15	
07/25/16	18:55:04	2.15139		4270.39	-127.46	107.17	
07/25/16	18:59:04	2.21806		4270.33	-127.52	107.22	
07/25/16	19:03:14	2.28750		4270.17	-127.68	107.25	
07/25/16	19:07:29	2.35833		4270.03	-127.82	107.28	
07/25/16	19:11:54	2.43194		4269.85	-128.00	107.31	
07/25/16	19:16:29	2.50833		4269.76	-128.09	107.34	
07/25/16	19:21:09	2.58611		4269.79	-128.06	107.38	
07/25/16	19:25:59	2.66667		4269.57	-128.28	107.41	
07/25/16	19:30:59	2.75000		4269.60	-128.25	107.44	
07/25/16	19:36:04	2.83472		4269.49	-128.36	107.48	
07/25/16	19:41:24	2.92361		4269.44	-128.41	107.52	
07/25/16	19:46:49	3.01389		4269.43	-128.42	107.55	
07/25/16	19:52:29	3.10833		4269.17	-128.68	107.58	
07/25/16	19:58:19	3.20556		4269.39	-128.46	107.62	
07/25/16	20:04:19	3.30556		4269.24	-128.61	107.65	
07/25/16	20:10:29	3.40833		4268.97	-128.88	107.70	
07/25/16	20:16:49	3.51389		4269.22	-128.63	107.73	
07/25/16	20:23:24	3.62361		4269.02	-128.83	107.77	
07/25/16	20:30:14	3.73750		4268.98	-128.87	107.80	
07/25/16	20:37:09	3.85278		4269.17	-128.68	107.84	
07/25/16	20:44:24	3.97361		4268.88	-128.97	107.87	
07/25/16	20:51:49	4.09722		4268.86	-128.99	107.91	
07/25/16	20:59:29	4.22500		4268.77	-129.08	107.95	
07/25/16	21:07:24	4.35694		4268.68	-129.17	107.99	
07/25/16	21:15:34	4.49306		4268.71	-129.14	108.02	
07/25/16	21:23:54	4.63194		4268.59	-129.26	108.06	
07/25/16	21:32:34	4.77639		4268.68	-129.17	108.10	
07/25/16	21:41:29	4.92500		4268.63	-129.22	108.14	
07/25/16	21:50:44	5.07917		4268.43	-129.42	108.18	
07/25/16	22:00:14	5.23750		4268.52	-129.33	108.21	
07/25/16	22:10:04	5.40139		4268.28	-129.57	108.25	
07/25/16	22:20:09	5.56944		4268.41	-129.44	108.28	
07/25/16	22:30:34	5.74306		4268.43	-129.42	108.32	
07/25/16	22:41:19	5.92222		4268.21	-129.64	108.36	
07/25/16	22:52:19	6.10556		4268.20	-129.65	108.39	
07/25/16	23:03:44	6.29583		4267.51	-130.34	108.43	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/25/16	23:15:34	6.49306		4268.26	-129.59	108.48	
07/25/16	23:27:39	6.69444		4267.99	-129.86	108.51	
07/25/16	23:40:14	6.90417		4267.92	-129.93	108.54	
07/25/16	23:53:09	7.11944		4268.01	-129.84	108.57	
07/26/16	00:06:24	7.34028		4267.74	-130.11	108.61	
07/26/16	00:20:09	7.56944		4267.79	-130.06	108.63	
07/26/16	00:34:19	7.80556		4267.61	-130.24	108.67	
07/26/16	00:48:54	8.04861		4267.45	-130.40	108.70	
07/26/16	01:03:59	8.30000		4267.57	-130.28	108.73	
07/26/16	01:19:29	8.55833		4267.29	-130.56	108.76	
07/26/16	01:35:29	8.82500		4267.31	-130.54	108.80	
07/26/16	01:51:59	9.10000		4267.58	-130.27	108.83	
07/26/16	02:08:59	9.38333		4267.35	-130.50	108.85	
07/26/16	02:26:34	9.67639		4267.51	-130.34	108.88	
07/26/16	02:44:39	9.97778		4267.46	-130.39	108.91	
07/26/16	03:03:19	10.28889		4267.63	-130.22	108.94	
07/26/16	03:22:34	10.60972		4267.18	-130.67	108.97	
07/26/16	03:42:24	10.94028		4266.96	-130.89	108.99	
07/26/16	04:02:49	11.28056		4267.09	-130.76	109.01	
07/26/16	04:23:54	11.63194		4266.94	-130.91	109.04	
07/26/16	04:45:39	11.99444		4266.82	-131.03	109.08	
07/26/16	05:08:09	12.36944		4266.85	-131.00	109.10	
07/26/16	05:31:14	12.75417		4266.60	-131.25	109.13	
07/26/16	05:55:04	13.15139		4266.78	-131.07	109.15	
07/26/16	06:19:39	13.56111		4266.55	-131.30	109.17	
07/26/16	06:45:04	13.98472		4266.64	-131.21	109.20	
07/26/16	07:11:14	14.42083		4266.59	-131.26	109.22	
07/26/16	07:38:09	14.86944		4266.55	-131.30	109.23	
07/26/16	08:05:59	15.33333		4266.25	-131.60	109.26	
07/26/16	08:34:39	15.81111		4266.31	-131.54	109.28	
07/26/16	09:04:14	16.30417		4266.37	-131.48	109.30	
07/26/16	09:34:44	16.81250		4266.49	-131.36	109.31	
07/26/16	10:06:09	17.33611		4266.54	-131.31	109.34	
07/26/16	10:38:34	17.87639		4266.16	-131.69	109.35	
07/26/16	11:11:59	18.43333		4266.25	-131.60	109.37	
07/26/16	11:46:29	19.00833		4266.13	-131.72	109.41	
07/26/16	12:21:59	19.60000		4266.06	-131.79	109.41	
07/26/16	12:58:39	20.21111		4266.01	-131.84	109.43	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/26/16	13:36:29	20.84167		4265.59	-132.26	109.44	
07/26/16	14:15:29	21.49167		4265.64	-132.21	109.45	
07/26/16	14:55:39	22.16111		4265.66	-132.19	109.46	
07/26/16	15:37:04	22.85139		4265.45	-132.40	109.48	
07/26/16	16:19:49	23.56389		4265.06	-132.79	109.49	
07/26/16	17:03:54	24.29861		4265.14	-132.71	109.50	
07/26/16	17:49:19	25.05556		4264.98	-132.87	109.51	
07/26/16	18:36:09	25.83611		4265.02	-132.83	109.52	
07/26/16	19:24:29	26.64167		4264.90	-132.95	109.53	
07/26/16	20:14:19	27.47222		4264.59	-133.26	109.54	
07/26/16	21:05:44	28.32917		4264.69	-133.16	109.55	
07/26/16	21:58:39	29.21111		4264.56	-133.29	109.56	
07/26/16	22:53:19	30.12222		4264.41	-133.44	109.57	
07/26/16	23:49:39	31.06111		4264.71	-133.14	109.57	
07/27/16	00:47:44	32.02917		4264.12	-133.73	109.58	
07/27/16	01:47:39	33.02778		4264.12	-133.73	109.59	
07/27/16	02:49:24	34.05694		4263.96	-133.89	109.60	
07/27/16	03:53:04	35.11806		4263.90	-133.95	109.61	
07/27/16	04:58:44	36.21250		4263.73	-134.12	109.61	
07/27/16	06:06:29	37.34167		4263.65	-134.20	109.62	
07/27/16	07:16:19	38.50556		4263.48	-134.37	109.62	
07/27/16	07:55:49	39.16389	976	4263.60	-134.25	109.64	POOH making static gradient stops.
07/27/16	07:55:54	39.16528		4260.20		109.64	
07/27/16	07:55:59	39.16667		4251.79		109.65	
07/27/16	07:56:04	39.16806		4244.41		109.74	
07/27/16	07:57:04	39.18472		4043.05		114.53	
07/27/16	07:57:19	39.18889		4015.74		113.97	Arrived at 7000 ft stop.
07/27/16	07:58:04	39.20139		4017.34		113.44	
07/27/16	07:59:09	39.21944		4017.18		113.34	
07/27/16	08:00:09	39.23611		4017.21		113.32	
07/27/16	08:01:09	39.25278		4017.23		113.31	
07/27/16	08:02:09	39.26944		4017.15		113.30	
07/27/16	08:03:09	39.28611		4017.57		113.29	
07/27/16	08:03:29	39.29167		4017.31		113.29	Left 7000 ft stop.
07/27/16	08:04:09	39.30278		3904.57		113.12	
07/27/16	08:05:09	39.31944		3727.53		110.55	
07/27/16	08:06:04	39.33472		3578.68		108.45	Arrived at 6000 ft stop.
07/27/16	08:06:09	39.33611		3583.24		108.29	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/27/16	08:07:09	39.35278		3583.28		107.78	
07/27/16	08:08:09	39.36944		3583.02		107.71	
07/27/16	08:09:09	39.38611		3582.90		107.68	
07/27/16	08:10:09	39.40278		3582.98		107.67	
07/27/16	08:11:09	39.41944		3582.86		107.65	
07/27/16	08:11:14	39.42083		3582.83		107.66	Left 6000 ft stop.
07/27/16	08:12:09	39.43611		3485.14		106.89	
07/27/16	08:13:09	39.45278		3364.56		105.59	
07/27/16	08:14:09	39.46944		3251.36		103.78	
07/27/16	08:15:09	39.48611		3156.40		102.16	
07/27/16	08:15:19	39.48889		3145.51		101.88	Arrived at 5000 ft stop.
07/27/16	08:16:09	39.50278		3149.48		101.37	
07/27/16	08:17:09	39.51944		3149.35		101.27	
07/27/16	08:18:09	39.53611		3148.95		101.24	
07/27/16	08:19:09	39.55278		3149.16		101.22	
07/27/16	08:20:09	39.56944		3149.10		101.21	
07/27/16	08:20:39	39.57778		3148.97		101.21	Left 5000 ft stop.
07/27/16	08:21:09	39.58611		3099.55		101.22	
07/27/16	08:22:09	39.60278		2953.93		99.87	
07/27/16	08:23:09	39.61944		2811.11		98.74	
07/27/16	08:23:59	39.63333		2712.18		97.32	Arrived at 4000 ft stop.
07/27/16	08:24:09	39.63611		2715.26		97.16	
07/27/16	08:25:09	39.65278		2715.01		96.87	
07/27/16	08:26:09	39.66944		2714.92		96.82	
07/27/16	08:27:09	39.68611		2714.98		96.81	
07/27/16	08:28:09	39.70278		2714.82		96.80	
07/27/16	08:29:09	39.71944		2714.84		96.78	Left 4000 ft stop.
07/27/16	08:30:09	39.73611		2614.97		96.18	
07/27/16	08:31:09	39.75278		2516.62		95.25	
07/27/16	08:32:09	39.76944		2408.32		94.38	
07/27/16	08:33:09	39.78611		2304.27		93.62	
07/27/16	08:33:29	39.79167		2279.28		93.37	Arrived at 3000 ft stop.
07/27/16	08:34:09	39.80278		2281.15		93.13	
07/27/16	08:35:09	39.81944		2281.43		93.06	
07/27/16	08:36:09	39.83611		2281.21		93.04	
07/27/16	08:37:09	39.85278		2281.32		93.04	
07/27/16	08:38:09	39.86944		2281.00		93.03	
07/27/16	08:38:39	39.87778		2281.16		93.03	Left 3000 ft stop.

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/27/16	08:39:09	39.88611		2235.24		93.00	
07/27/16	08:40:09	39.90278		2147.82		92.56	
07/27/16	08:41:09	39.91944		2034.08		91.46	
07/27/16	08:42:09	39.93611		1915.43		90.55	
07/27/16	08:43:04	39.95139		1844.81		90.19	Arrived at 2000 ft stop.
07/27/16	08:43:09	39.95278		1847.27		90.19	
07/27/16	08:44:09	39.96944		1847.46		90.19	
07/27/16	08:45:09	39.98611		1847.41		90.20	
07/27/16	08:46:09	40.00278		1847.31		90.20	
07/27/16	08:47:09	40.01944		1847.19		90.20	
07/27/16	08:48:09	40.03611		1847.29		90.21	
07/27/16	08:48:14	40.03750		1847.28		90.20	Left 2000 ft stop.
07/27/16	08:49:09	40.05278		1769.37		89.50	
07/27/16	08:50:09	40.06944		1668.25		88.19	
07/27/16	08:51:09	40.08611		1570.63		87.37	
07/27/16	08:52:09	40.10278		1494.58		86.82	
07/27/16	08:53:09	40.11944		1412.09		85.47	Arrived at 1000 ft stop.
07/27/16	08:54:09	40.13611		1414.36		84.99	
07/27/16	08:55:09	40.15278		1414.18		84.92	
07/27/16	08:56:09	40.16944		1413.98		84.89	
07/27/16	08:57:09	40.18611		1413.89		84.87	
07/27/16	08:58:09	40.20278		1413.98		84.86	
07/27/16	08:58:24	40.20694		1414.10		84.86	Left 1000 ft stop.
07/27/16	08:59:09	40.21944		1349.00		85.42	
07/27/16	09:00:09	40.23611		1252.26		84.39	
07/27/16	09:01:09	40.25278		1143.94		84.03	
07/27/16	09:02:09	40.26944		1041.16		87.49	
07/27/16	09:03:09	40.28611		980.08		90.15	Gauge at surface.
07/27/16	09:04:09	40.30278		979.81		91.56	
07/27/16	09:05:09	40.31944		980.07		91.76	
07/27/16	09:06:09	40.33611		980.16		91.91	
07/27/16	09:07:09	40.35278		980.50		92.07	
07/27/16	09:08:09	40.36944		980.17		92.27	
07/27/16	09:09:09	40.38611		980.29		92.49	
07/27/16	09:10:09	40.40278		980.38		92.69	
07/27/16	09:10:39	40.41111	975	979.61		92.74	Surface stop.
07/27/16	09:10:49	40.41389		997.94		92.74	Closed crown valve.
07/27/16	09:11:04	40.41806		996.58		92.72	Pressured down lubricator.

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Chukka Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, TX	Gauge SN:	DC-2050
Perfs:	7570 - 7736; 7826 - 8399 ft (MD)	Gauge Range:	15000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/27/16	09:11:09	40.41944		184.07		92.30	
07/27/16	09:11:29	40.42500		7.09		92.65	Test complete.
07/27/16	09:20:09	40.56944		7.27		92.74	
07/27/16	09:40:09	40.90278		7.54		94.35	
07/27/16	09:48:29	41.04167		7.73		94.26	Powered down gauge.

Remarks: MIRU slickline. RIH with 1.25" weight bar. Tagged bottom at 8352 ft. POOH. RIH and suspended electronic gauges at 7570 ft. Injected water into well for 78.5 hrs. SI well for 39 hr falloff test. POOH making static gradient stops. RDMO.

Certified: FESCO, Ltd. - Ozona, Texas

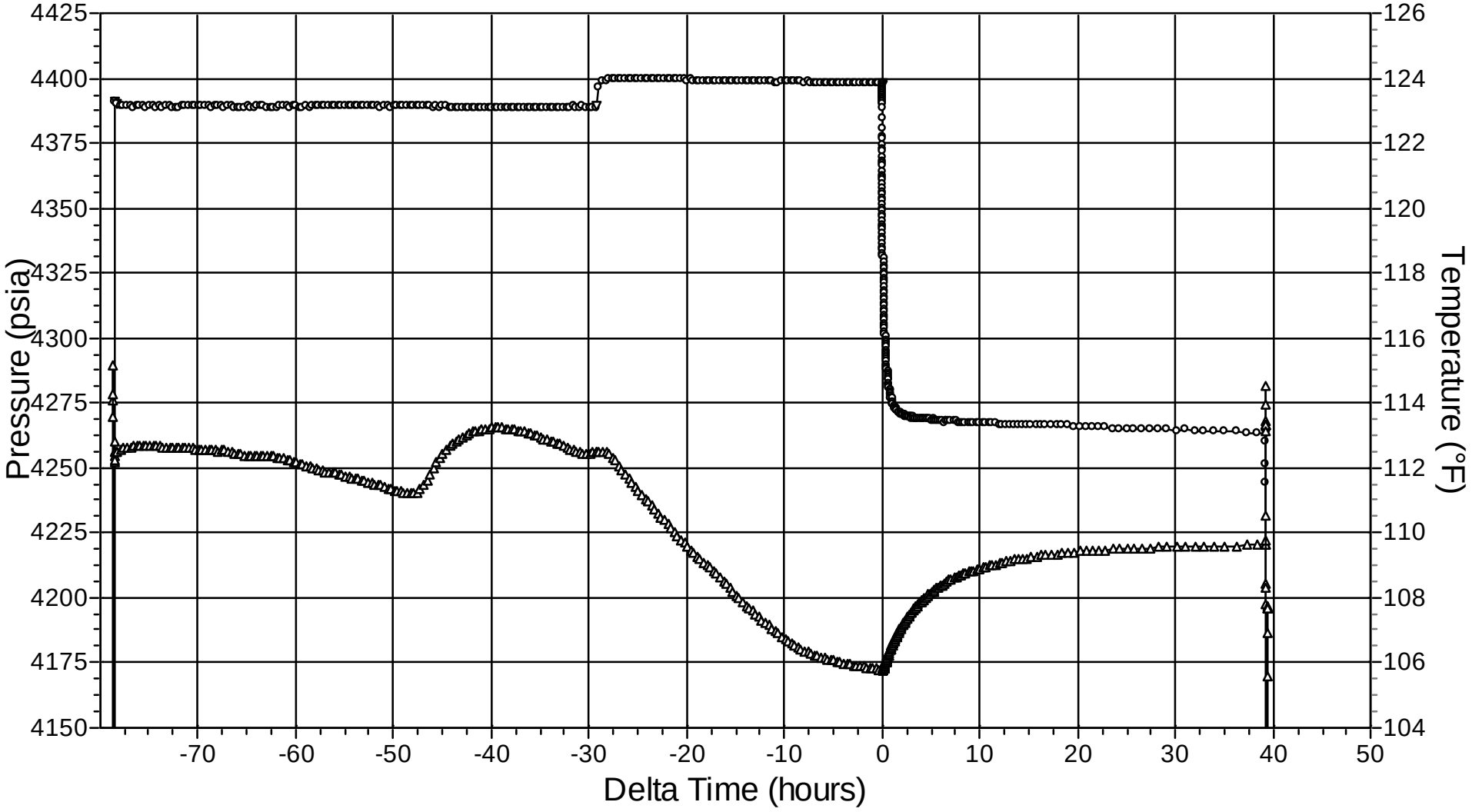
By: Tom Anderson
District Manager - (325) 392-3773

Job No.: J201607280801.001A

PB Energy Storage Services, Inc.

Cartesian Plot

Well:	Chukka Well No. 2	Gauge Type:	Electronic
Field:	Davonia	Gauge Range:	15000 psi
Test Date:	07/22 - 07/27/2016	Gauge SN:	DC-2050

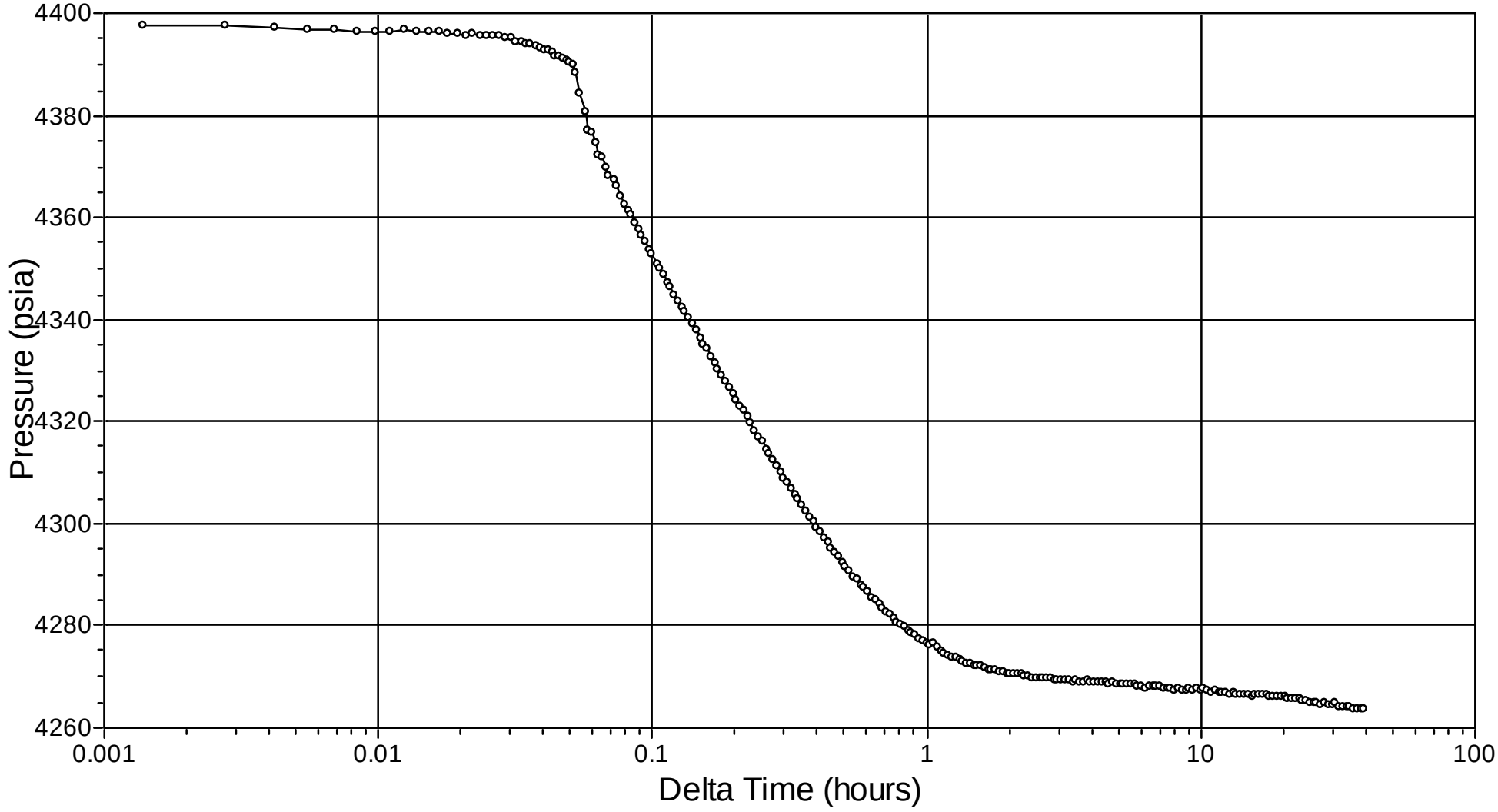


J201607280801.001A

PB Energy Storage Services, Inc.

Semilog Plot (Falloff Test)

Well:	Chukka Well No. 2	Gauge Type:	Electronic
Field:	Davonia	Gauge Range:	15000 psi
Test Date:	07/22 - 07/27/2016	Gauge SN:	DC-2050

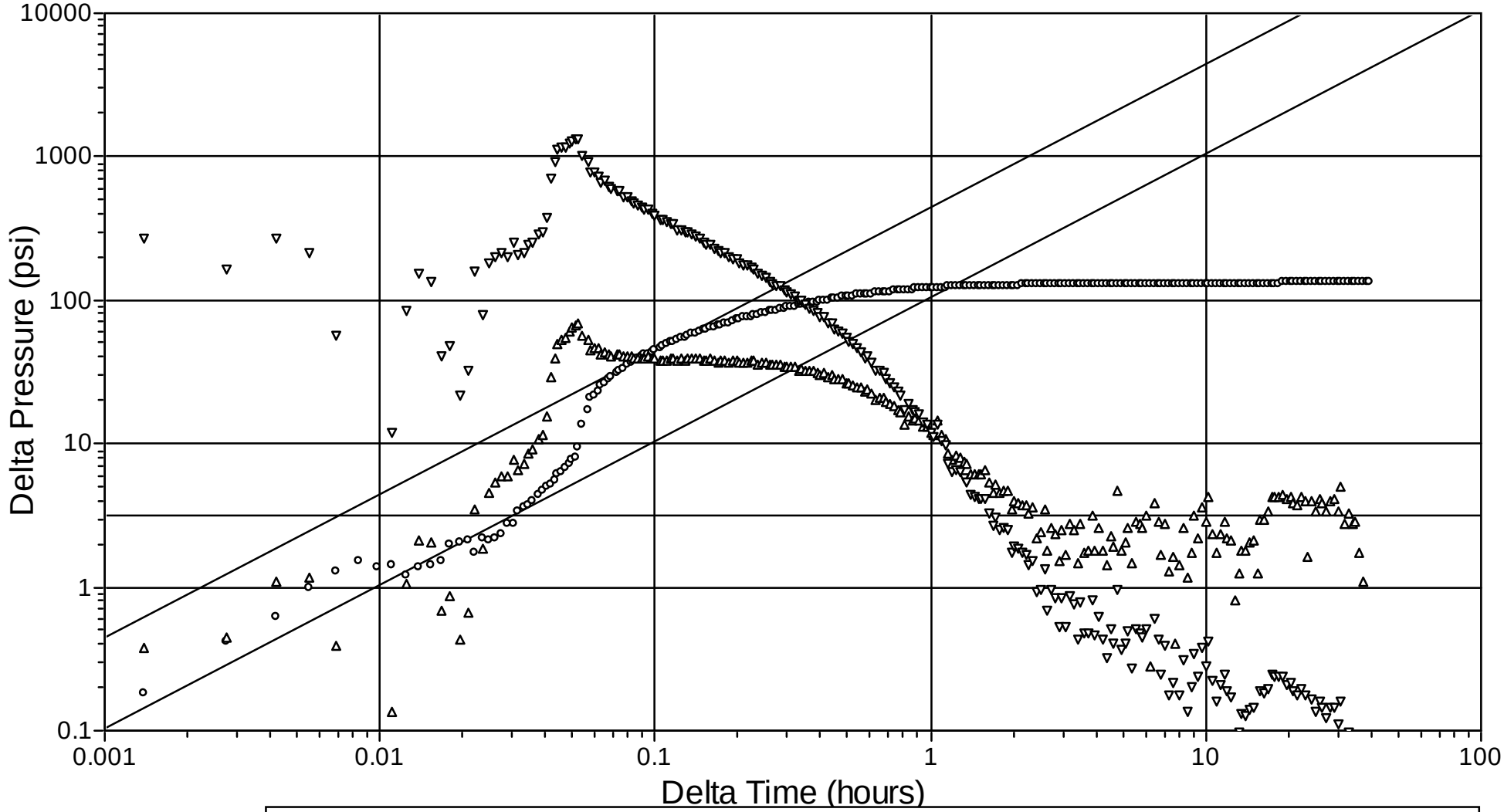


J201607280801.001A

PB Energy Storage Services, Inc.

Well:	Chukka Well No. 2	Gauge Type:	Electronic
Field:	Davonia	Gauge Range:	15000 psi
Test Date:	07/22 - 07/27/2016	Gauge SN:	DC-2050

Log Plot (Falloff Test)



J201607280801.001A

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

STATIC GRADIENT SURVEY

Company:	PB Energy Storage Services, Inc.	Test Date:	7/27/2016
Well:	Chukka Well No. 2	Location:	Eddy County, TX
Field:	Davonia	Status:	Shut in.
Formation:	Unavailable		

Well Data:	Wellhead Connection: 3.5" EUE	Gauge Type:	Electronic
	Elevation: 13 ft above GL	Gauge SN:	DC-2050
	Tubing: 3" Set at 7570 ft (EOT)	Gauge Range:	15000 psi
	Casing: 5.5" Set at 8770 ft (PBTD)	Gauge OD:	1.2500"
	Perfs: 7570 - 7736; 7826 - 8399 ft (MD		
	Datum: 7985 ft (MD)		

Depth			Pressure					
MD ft	TVD ft	Delta Depth ft	WHP psia	BHT °F	Gauge Pressure psia	Delta Pressure psi	Pressure Gradient psi / ft	Comments
0	0	0	975	92.74	979.61	0.00	0.0000	
1000	1000	1000		84.86	1414.10	434.49	0.4345	
2000	2000	1000		90.20	1847.28	433.18	0.4332	
3000	3000	1000		93.03	2281.16	433.88	0.4339	
4000	4000	1000		96.78	2714.84	433.68	0.4337	
5000	5000	1000		101.21	3148.97	434.13	0.4341	
6000	6000	1000		107.66	3582.83	433.86	0.4339	
7000	7000	1000		113.29	4017.31	434.48	0.4345	
7570	7570	570	976	109.64	4263.60	246.29	0.4321	POOH making static gradient stops.

BHT at Test Depth:	109.60 °F	Oil Level:	None	Previous BHP:	U/A
Extrapolated BHP at Datum:	4443.00 psia	Water Level:	Surface	BHP Change:	U/A
BHP Gradient at Datum :	0.4321 psi/ft	Csg Press:	N/A		

Remarks: POOH after 39 hr falloff test with electronic gauges making static gradient stops to surface. RDMO.

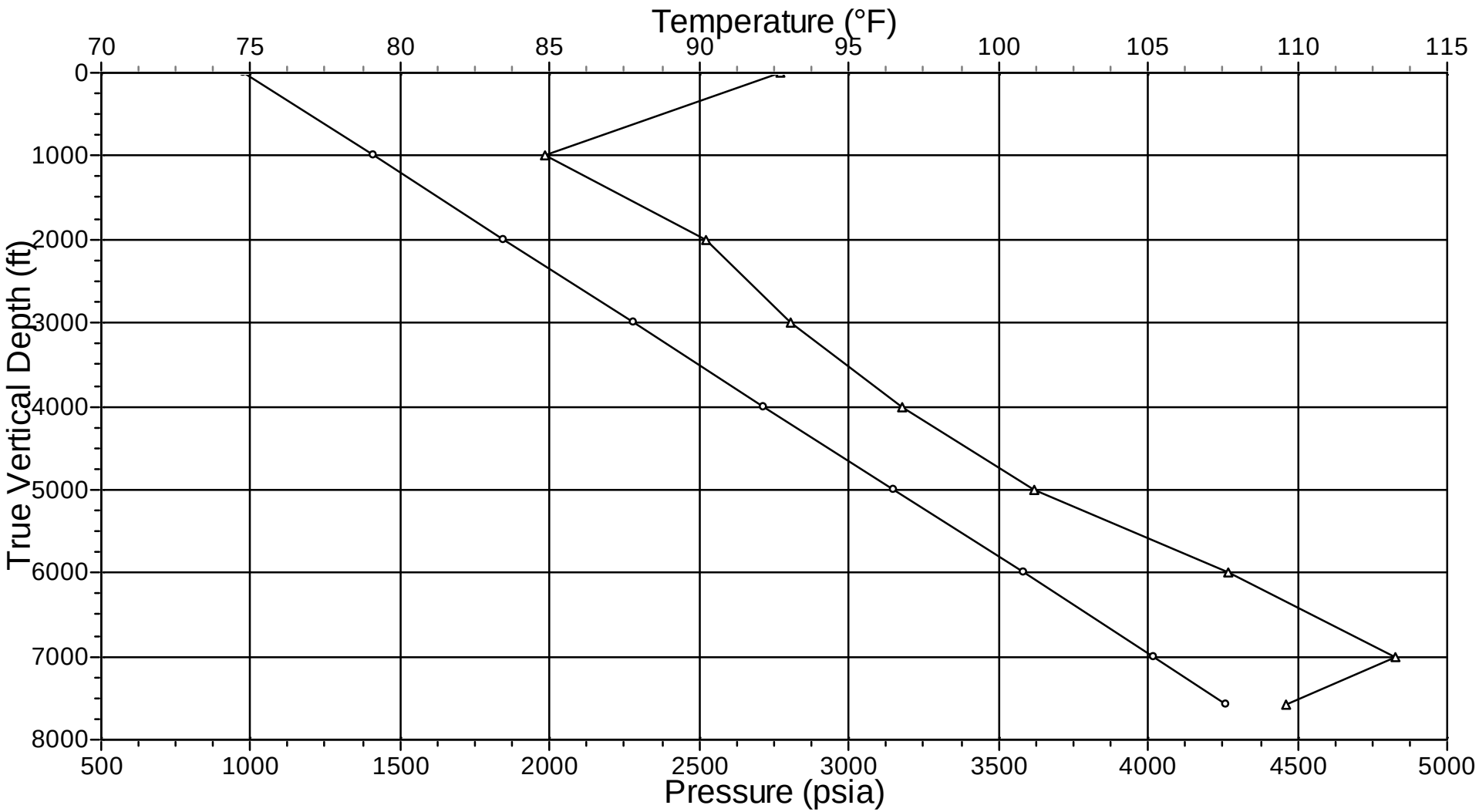
Certified: FESCO, Ltd. - Ozona, Texas

By: Tom Anderson
District Manager - (325) 392-3773

PB Energy Storage Services, Inc.

Static Gradient Plot

Well:	Chukka Well No. 2	Gauge Type:	Electronic
Field:	Davonia	Gauge Range:	15000 psi
Test Date:	07/27/2016	Gauge SN:	DC-2050



J201607280801.001A

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

FLOWING GRADIENT SURVEY

Company:	PB Energy Storage Services, Inc.	Test Date:	7/22/2016
Well:	Mewbourne Well No. 1	Location:	Eddy County, NM
Field:	Davonia	Status:	Injecting
Formation:	Unavailable		

Well Data:	Wellhead Connection: 2" EUE	Gauge Type:	
	Elevation: 13 ft above GL	Gauge SN:	SP-21726
	Tubing: 4.5" Set at 7829 ft (EOT)	Gauge Range:	16000 psi
	Casing: 7" Set at 9094 ft (PBTD)	Gauge OD:	1.2500"
	Perfs: 7924 - 8188; 8220 - 8476 ft (MD		
	Datum: 8200 ft (MD)		

Depth			Pressure					
MD ft	TVD ft	Delta Depth ft	WHP psia	BHT °F	Gauge Pressure psia	Delta Pressure psi	Pressure Gradient psi / ft	Comments
0	0	0	1360	100.72	1358	0	0.0000	
7820	7820	7820	1360	106.50	4688	3330	0.4258	

BHT at Test Depth:	107 °F	Oil Level:	Flowing	Previous BHP: U/A
Extrapolated BHP at Datum:	4849 psia	Water Level:	Flowing	BHP Change: U/A
BHP Gradient at Datum :	0.4258 psi/ft	Csg Press:	N/A	

Remarks: RIH with electronic gauges while injecting water. Suspend gauges at 7820 ft on slickline for extended injection period and subsequent BHP falloff test.

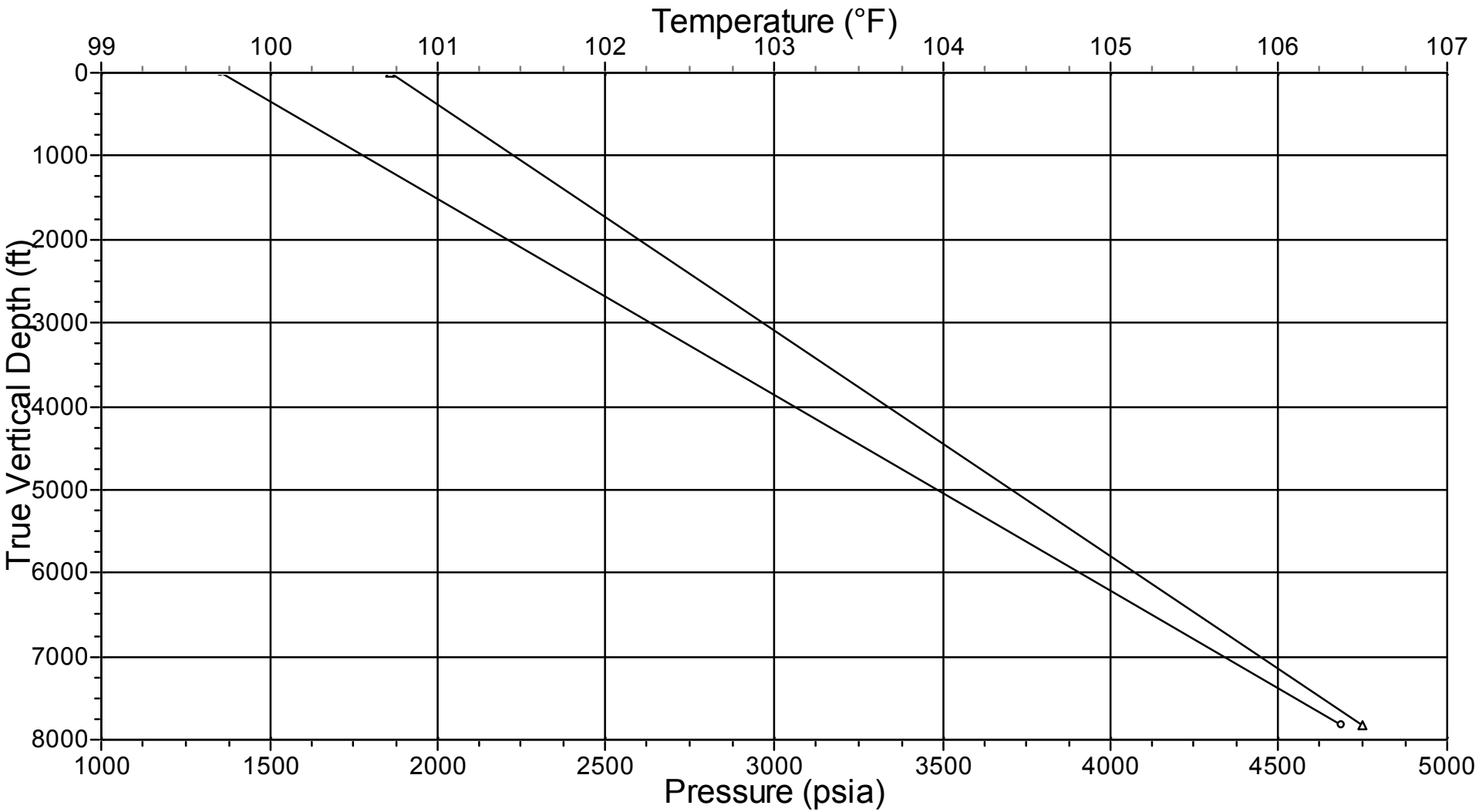
Certified: FESCO, Ltd. - Ozona, Texas

By: Tom Anderson
District Manager - (325) 392-3773

PB Energy Storage Services, Inc.

Flowing Gradient Plot

Well:	Mewbourne Well No. 1	Gauge Type:	Electronic
Field:	Davonia	Gauge Range:	16000 psi
Test Date:	07/22/2016	Gauge SN:	SP-21726



J201607280802.001A

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Mewbourne Well No. 1	Gauge Depth:	109 ft
Field:	Davonia	Gauge Type:	
Location:	Eddy County, NM	Gauge SN:	SP-21726
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/22/16	10:00:05	-49.52917		12		86	Powered up gauge.
07/22/16	10:01:00	-49.51389		12		87	
07/22/16	10:02:00	-49.49722		12		88	
07/22/16	10:03:05	-49.47917		12		89	
07/22/16	10:04:05	-49.46250		12		89	
07/22/16	10:05:05	-49.44583		12		90	
07/22/16	10:06:05	-49.42917		12		90	
07/22/16	10:07:05	-49.41250		12		90	
07/22/16	10:08:05	-49.39583		12		90	
07/22/16	10:09:05	-49.37917		16		91	
07/22/16	10:10:05	-49.36250		19		93	
07/22/16	10:10:25	-49.35694	1345	1349		94	Pressured up lubricator.
07/22/16	10:11:05	-49.34583		1357		95	
07/22/16	10:12:05	-49.32917		1354		98	
07/22/16	10:13:05	-49.31250		1360		99	
07/22/16	10:14:05	-49.29583		1359		101	
07/22/16	10:15:05	-49.27917		1359		101	
07/22/16	10:16:05	-49.26250		1366		102	
07/22/16	10:16:15	-49.25972	1345	1361		102	RIH with gauge.
07/22/16	10:17:05	-49.24583		1496		104	
07/22/16	10:18:05	-49.22917		1640		107	
07/22/16	10:19:05	-49.21250		1696		108	
07/22/16	10:20:05	-49.19583		1838		108	
07/22/16	10:21:05	-49.17917		2096		108	
07/22/16	10:22:05	-49.16250		2407		108	
07/22/16	10:23:05	-49.14583		2728		108	
07/22/16	10:24:05	-49.12917		3096		107	
07/22/16	10:25:05	-49.11250		3477		107	
07/22/16	10:26:05	-49.09583		3859		106	
07/22/16	10:27:05	-49.07917		4225		106	
07/22/16	10:28:05	-49.06250		4597		106	
07/22/16	10:28:35	-49.05417	1345	4682		106	Gauge at TD=7820 ft (MD).
07/22/16	10:29:05	-49.04583		4682		106	
07/22/16	10:30:05	-49.02917		4682		106	
07/22/16	10:31:05	-49.01250		4682		106	
07/22/16	10:32:05	-48.99583		4682		106	
07/22/16	10:33:05	-48.97917		4682		107	
07/22/16	10:34:05	-48.96250		4682		107	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Mewbourne Well No. 1	Gauge Depth:	109 ft
Field:	Davonia	Gauge Type:	
Location:	Eddy County, NM	Gauge SN:	SP-21726
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/22/16	10:35:05	-48.94583		4681		107	
07/22/16	10:36:05	-48.92917		4682		107	
07/22/16	10:37:05	-48.91250		4682		107	
07/22/16	10:38:05	-48.89583		4681		107	
07/22/16	10:39:05	-48.87917		4681		107	
07/22/16	10:40:05	-48.86250		4681		107	
07/22/16	10:41:05	-48.84583		4681		107	
07/22/16	10:41:15	-48.84306	1345	4681		107	POOH to fix lubricator leak.
07/22/16	10:42:05	-48.82917		4541		107	
07/22/16	10:43:05	-48.81250		4344		106	
07/22/16	10:44:05	-48.79583		4100		106	
07/22/16	10:45:05	-48.77917		3840		106	
07/22/16	10:46:05	-48.76250		3563		106	
07/22/16	10:47:05	-48.74583		3275		106	
07/22/16	10:48:05	-48.72917		2980		106	
07/22/16	10:49:05	-48.71250		2656		106	
07/22/16	10:50:05	-48.69583		2309		107	
07/22/16	10:51:05	-48.67917		1924		107	
07/22/16	10:52:05	-48.66250		1540		108	
07/22/16	10:53:00	-48.64722		1375		109	Gauge at surface.
07/22/16	10:53:05	-48.64583		1377		109	
07/22/16	10:54:05	-48.62917		1362		109	
07/22/16	10:54:20	-48.62500		1357		108	Pressured down lubricator.
07/22/16	10:55:05	-48.61250		11		105	
07/22/16	10:56:05	-48.59583		12		103	
07/22/16	10:57:05	-48.57917		14		100	
07/22/16	10:58:05	-48.56250		14		99	
07/22/16	10:59:05	-48.54583		14		99	
07/22/16	11:00:05	-48.52917		13		98	
07/22/16	11:01:05	-48.51250		13		98	
07/22/16	11:02:05	-48.49583		13		99	
07/22/16	11:03:05	-48.47917		12		99	
07/22/16	11:04:05	-48.46250		12		99	
07/22/16	11:05:05	-48.44583		12		100	
07/22/16	11:06:05	-48.42917		12		100	
07/22/16	11:07:05	-48.41250		12		100	
07/22/16	11:07:40	-48.40278	1360	1359		100	Repressured lubricator.
07/22/16	11:08:05	-48.39583		1354		100	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Mewbourne Well No. 1	Gauge Depth:	109 ft
Field:	Davonia	Gauge Type:	
Location:	Eddy County, NM	Gauge SN:	SP-21726
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/22/16	11:09:05	-48.37917		1355		101	
07/22/16	11:10:05	-48.36250		1357		101	
07/22/16	11:11:05	-48.34583		1357		101	
07/22/16	11:11:55	-48.33194	1360	1358		101	RIH with gauge to 7820 ft.
07/22/16	11:12:05	-48.32917		1370		101	
07/22/16	11:13:05	-48.31250		1627		104	
07/22/16	11:14:05	-48.29583		2021		107	
07/22/16	11:15:05	-48.27917		2436		107	
07/22/16	11:16:05	-48.26250		2848		107	
07/22/16	11:17:05	-48.24583		3267		107	
07/22/16	11:18:05	-48.22917		3678		107	
07/22/16	11:19:05	-48.21250		4089		106	
07/22/16	11:20:05	-48.19583		4498		106	
07/22/16	11:20:55	-48.18194	1360	4689		106	Gauge at TD=7820 ft (MD).
07/22/16	11:21:05	-48.17917		4688		106	
07/22/16	11:22:05	-48.16250		4688		106	
07/22/16	11:23:05	-48.14583		4688		106	
07/22/16	11:24:05	-48.12917		4688		106	
07/22/16	11:25:05	-48.11250		4688		106	
07/22/16	11:26:05	-48.09583		4688		106	
07/22/16	11:27:05	-48.07917		4688		106	
07/22/16	11:28:05	-48.06250		4688		106	
07/22/16	11:29:05	-48.04583		4688		106	
07/22/16	11:30:00	-48.03056	1360	4688		107	7820 ft stop.
07/22/16	11:45:00	-47.78056		4688		107	
07/22/16	12:00:00	-47.53056		4688		107	
07/22/16	12:20:00	-47.19722		4688		107	
07/22/16	12:40:00	-46.86389		4688		107	
07/22/16	13:00:05	-46.52917		4687		107	
07/22/16	13:20:05	-46.19583		4688		107	
07/22/16	13:40:05	-45.86250		4688		107	
07/22/16	14:00:05	-45.52917		4688		107	
07/22/16	14:20:05	-45.19583		4688		107	
07/22/16	14:40:05	-44.86250		4688		107	
07/22/16	15:00:05	-44.52917		4688		107	
07/22/16	15:20:05	-44.19583		4688		107	
07/22/16	15:40:05	-43.86250		4688		107	
07/22/16	16:00:05	-43.52917		4688		107	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Mewbourne Well No. 1	Gauge Depth:	109 ft
Field:	Davonia	Gauge Type:	
Location:	Eddy County, NM	Gauge SN:	SP-21726
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/22/16	16:20:05	-43.19583		4688		107	
07/22/16	16:40:05	-42.86250		4688		107	
07/22/16	17:00:05	-42.52917		4688		107	
07/22/16	17:20:05	-42.19583		4688		107	
07/22/16	17:40:05	-41.86250		4688		107	
07/22/16	18:00:05	-41.52917		4688		107	
07/22/16	18:20:05	-41.19583		4688		107	
07/22/16	18:40:05	-40.86250		4688		107	
07/22/16	19:00:05	-40.52917		4688		107	
07/22/16	19:20:05	-40.19583		4688		107	
07/22/16	19:40:05	-39.86250		4688		107	
07/22/16	20:00:05	-39.52917		4688		107	
07/22/16	20:20:05	-39.19583		4688		107	
07/22/16	20:40:05	-38.86250		4688		107	
07/22/16	21:00:05	-38.52917		4688		107	
07/22/16	21:20:05	-38.19583		4688		107	
07/22/16	21:40:05	-37.86250		4688		107	
07/22/16	22:00:05	-37.52917		4688		107	
07/22/16	22:20:05	-37.19583		4688		107	
07/22/16	22:40:05	-36.86250		4688		107	
07/22/16	23:00:05	-36.52917		4688		107	
07/22/16	23:20:05	-36.19583		4688		107	
07/22/16	23:40:05	-35.86250		4688		107	
07/23/16	00:00:05	-35.52917		4688		107	
07/23/16	00:20:05	-35.19583		4688		107	
07/23/16	00:40:05	-34.86250		4688		107	
07/23/16	01:00:05	-34.52917		4689		107	
07/23/16	01:20:05	-34.19583		4688		107	
07/23/16	01:40:05	-33.86250		4689		107	
07/23/16	02:00:05	-33.52917		4689		107	
07/23/16	02:20:05	-33.19583		4689		107	
07/23/16	02:40:05	-32.86250		4689		107	
07/23/16	03:00:05	-32.52917		4688		107	
07/23/16	03:20:05	-32.19583		4688		107	
07/23/16	03:40:05	-31.86250		4688		107	
07/23/16	04:00:05	-31.52917		4688		107	
07/23/16	04:20:05	-31.19583		4688		107	
07/23/16	04:40:05	-30.86250		4688		107	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Mewbourne Well No. 1	Gauge Depth:	109 ft
Field:	Davonia	Gauge Type:	
Location:	Eddy County, NM	Gauge SN:	SP-21726
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/23/16	05:00:05	-30.52917		4688		107	
07/23/16	05:20:05	-30.19583		4688		107	
07/23/16	05:40:05	-29.86250		4689		107	
07/23/16	06:00:05	-29.52917		4688		107	
07/23/16	06:20:05	-29.19583		4688		107	
07/23/16	06:40:05	-28.86250		4688		107	
07/23/16	07:00:05	-28.52917		4688		107	
07/23/16	07:20:05	-28.19583		4688		107	
07/23/16	07:40:05	-27.86250		4688		107	
07/23/16	08:00:05	-27.52917		4688		107	
07/23/16	08:20:05	-27.19583		4688		107	
07/23/16	08:40:05	-26.86250		4688		107	
07/23/16	09:00:05	-26.52917		4688		107	
07/23/16	09:20:05	-26.19583		4688		107	
07/23/16	09:40:05	-25.86250		4688		107	
07/23/16	10:00:05	-25.52917		4688		107	
07/23/16	10:20:05	-25.19583		4688		107	
07/23/16	10:40:05	-24.86250		4688		107	
07/23/16	11:00:05	-24.52917		4688		107	
07/23/16	11:20:05	-24.19583		4688		107	
07/23/16	11:40:05	-23.86250		4688		107	
07/23/16	12:00:05	-23.52917		4688		107	
07/23/16	12:20:05	-23.19583		4688		107	
07/23/16	12:40:05	-22.86250		4688		107	
07/23/16	13:00:05	-22.52917		4688		107	
07/23/16	13:20:05	-22.19583		4688		107	
07/23/16	13:40:05	-21.86250		4688		107	
07/23/16	14:00:05	-21.52917		4688		107	
07/23/16	14:20:05	-21.19583		4688		107	
07/23/16	14:40:05	-20.86250		4688		107	
07/23/16	15:00:05	-20.52917		4688		107	
07/23/16	15:20:05	-20.19583		4688		107	
07/23/16	15:40:05	-19.86250		4688		107	
07/23/16	16:00:05	-19.52917		4688		107	
07/23/16	16:20:05	-19.19583		4688		107	
07/23/16	16:40:05	-18.86250		4688		107	
07/23/16	17:00:05	-18.52917		4688		107	
07/23/16	17:20:05	-18.19583		4688		107	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Mewbourne Well No. 1	Gauge Depth:	109 ft
Field:	Davonia	Gauge Type:	
Location:	Eddy County, NM	Gauge SN:	SP-21726
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/23/16	17:40:05	-17.86250		4688		107	
07/23/16	18:00:05	-17.52917		4688		107	
07/23/16	18:20:05	-17.19583		4689		107	
07/23/16	18:40:05	-16.86250		4689		107	
07/23/16	19:00:05	-16.52917		4689		107	
07/23/16	19:20:05	-16.19583		4689		107	
07/23/16	19:40:05	-15.86250		4689		107	
07/23/16	20:00:05	-15.52917		4689		106	
07/23/16	20:20:05	-15.19583		4689		106	
07/23/16	20:40:05	-14.86250		4689		106	
07/23/16	21:00:05	-14.52917		4689		106	
07/23/16	21:20:05	-14.19583		4689		106	
07/23/16	21:40:05	-13.86250		4689		106	
07/23/16	22:00:05	-13.52917		4689		106	
07/23/16	22:20:05	-13.19583		4689		106	
07/23/16	22:40:05	-12.86250		4689		106	
07/23/16	23:00:05	-12.52917		4689		106	
07/23/16	23:20:05	-12.19583		4689		106	
07/23/16	23:40:05	-11.86250		4689		106	
07/24/16	00:00:05	-11.52917		4689		107	
07/24/16	00:20:05	-11.19583		4689		107	
07/24/16	00:40:05	-10.86250		4689		107	
07/24/16	01:00:05	-10.52917		4689		107	
07/24/16	01:20:05	-10.19583		4689		107	
07/24/16	01:40:05	-9.86250		4689		107	
07/24/16	02:00:05	-9.52917		4689		107	
07/24/16	02:20:05	-9.19583		4689		107	
07/24/16	02:40:05	-8.86250		4689		107	
07/24/16	03:00:05	-8.52917		4689		107	
07/24/16	03:20:05	-8.19583		4689		107	
07/24/16	03:40:05	-7.86250		4689		107	
07/24/16	04:00:05	-7.52917		4689		107	
07/24/16	04:20:05	-7.19583		4689		107	
07/24/16	04:40:05	-6.86250		4689		107	
07/24/16	05:00:05	-6.52917		4689		107	
07/24/16	05:20:05	-6.19583		4689		107	
07/24/16	05:40:05	-5.86250		4689		107	
07/24/16	06:00:05	-5.52917		4689		107	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Mewbourne Well No. 1	Gauge Depth:	109 ft
Field:	Davonia	Gauge Type:	
Location:	Eddy County, NM	Gauge SN:	SP-21726
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	06:20:05	-5.19583		4689		107	
07/24/16	06:40:05	-4.86250		4689		107	
07/24/16	07:00:05	-4.52917		4689		107	
07/24/16	07:20:05	-4.19583		4689		107	
07/24/16	07:40:05	-3.86250		4689		107	
07/24/16	08:00:05	-3.52917		4689		107	
07/24/16	08:20:05	-3.19583		4688		107	
07/24/16	08:40:05	-2.86250		4688		107	
07/24/16	09:00:05	-2.52917		4688		107	
07/24/16	09:20:05	-2.19583		4688		107	
07/24/16	09:40:05	-1.86250		4688		107	
07/24/16	10:00:05	-1.52917		4688		107	
07/24/16	10:20:05	-1.19583		4688		107	
07/24/16	10:40:05	-0.86250		4688		107	
07/24/16	11:00:05	-0.52917		4688		107	
07/24/16	11:20:05	-0.19583		4688		107	
07/24/16	11:31:45	-0.00139		4688		107	Water Injection Rate = Unavailable.
07/24/16	11:31:50	0.00000		4688	0.00	107	Operator SI well for BHP falloff test.
07/24/16	11:31:55	0.00139		4688	-0.44	107	
07/24/16	11:32:00	0.00278		4688	-0.53	107	
07/24/16	11:32:05	0.00417		4687	-0.99	107	
07/24/16	11:32:10	0.00556		4687	-1.17	107	
07/24/16	11:32:15	0.00694		4687	-1.61	107	
07/24/16	11:32:20	0.00833		4687	-1.90	107	
07/24/16	11:32:25	0.00972		4686	-2.38	107	
07/24/16	11:32:30	0.01111		4686	-2.63	107	
07/24/16	11:32:35	0.01250		4685	-3.59	107	
07/24/16	11:32:40	0.01389		4685	-3.58	107	
07/24/16	11:32:45	0.01528		4684	-4.29	107	
07/24/16	11:32:50	0.01667		4684	-4.86	107	
07/24/16	11:32:55	0.01806		4683	-5.75	107	
07/24/16	11:33:00	0.01944		4682	-6.21	107	
07/24/16	11:33:05	0.02083		4682	-6.89	107	
07/24/16	11:33:10	0.02222		4681	-7.64	107	
07/24/16	11:33:15	0.02361		4680	-8.57	107	
07/24/16	11:33:20	0.02500		4679	-9.13	107	
07/24/16	11:33:25	0.02639		4678	-10.90	107	
07/24/16	11:33:30	0.02778		4677	-11.08	107	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Mewbourne Well No. 1	Gauge Depth:	109 ft
Field:	Davonia	Gauge Type:	
Location:	Eddy County, NM	Gauge SN:	SP-21726
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	11:33:35	0.02917		4676	-12.28	107	
07/24/16	11:33:40	0.03056		4674	-14.04	107	
07/24/16	11:33:45	0.03194		4674	-14.56	107	
07/24/16	11:33:50	0.03333		4673	-15.40	107	
07/24/16	11:33:55	0.03472		4672	-16.56	107	
07/24/16	11:34:00	0.03611		4671	-17.46	107	
07/24/16	11:34:05	0.03750		4670	-17.97	107	
07/24/16	11:34:10	0.03889		4669	-19.12	107	
07/24/16	11:34:15	0.04028		4668	-20.06	107	
07/24/16	11:34:20	0.04167		4668	-20.74	107	
07/24/16	11:34:25	0.04306		4667	-21.61	107	
07/24/16	11:34:30	0.04444		4666	-22.63	107	
07/24/16	11:34:35	0.04583		4665	-23.28	107	
07/24/16	11:34:40	0.04722		4664	-24.01	107	
07/24/16	11:34:45	0.04861		4663	-24.91	107	
07/24/16	11:34:50	0.05000		4663	-25.65	107	
07/24/16	11:34:55	0.05139		4662	-26.30	107	
07/24/16	11:35:00	0.05278		4661	-27.15	107	
07/24/16	11:35:05	0.05417		4660	-27.94	107	
07/24/16	11:35:15	0.05694		4659	-29.37	107	
07/24/16	11:35:20	0.05833		4658	-30.16	107	
07/24/16	11:35:25	0.05972		4658	-30.82	107	
07/24/16	11:35:35	0.06250		4656	-32.28	107	
07/24/16	11:35:40	0.06389		4655	-32.96	107	
07/24/16	11:35:45	0.06528		4655	-33.62	107	
07/24/16	11:35:55	0.06806		4653	-35.05	107	
07/24/16	11:36:00	0.06944		4653	-35.69	107	
07/24/16	11:36:10	0.07222		4651	-37.08	107	
07/24/16	11:36:15	0.07361		4651	-37.72	107	
07/24/16	11:36:25	0.07639		4649	-39.06	107	
07/24/16	11:36:35	0.07917		4648	-40.34	107	
07/24/16	11:36:45	0.08194		4647	-41.65	107	
07/24/16	11:36:50	0.08333		4646	-42.27	107	
07/24/16	11:37:00	0.08611		4645	-43.54	107	
07/24/16	11:37:10	0.08889		4644	-44.78	107	
07/24/16	11:37:20	0.09167		4642	-46.02	107	
07/24/16	11:37:30	0.09444		4641	-47.24	107	
07/24/16	11:37:40	0.09722		4640	-48.44	107	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Mewbourne Well No. 1	Gauge Depth:	109 ft
Field:	Davonia	Gauge Type:	
Location:	Eddy County, NM	Gauge SN:	SP-21726
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	11:37:50	0.10000		4639	-49.65	107	
07/24/16	11:38:05	0.10417		4637	-51.42	107	
07/24/16	11:38:15	0.10694		4636	-52.57	107	
07/24/16	11:38:25	0.10972		4635	-53.72	107	
07/24/16	11:38:40	0.11389		4633	-55.43	107	
07/24/16	11:38:50	0.11667		4632	-56.55	107	
07/24/16	11:39:05	0.12083		4630	-58.22	107	
07/24/16	11:39:20	0.12500		4629	-59.86	107	
07/24/16	11:39:30	0.12778		4627	-60.95	107	
07/24/16	11:39:45	0.13194		4626	-62.55	107	
07/24/16	11:40:00	0.13611		4624	-64.14	107	
07/24/16	11:40:15	0.14028		4623	-65.71	107	
07/24/16	11:40:30	0.14444		4621	-67.26	107	
07/24/16	11:40:50	0.15000		4619	-69.29	107	
07/24/16	11:41:05	0.15417		4618	-70.80	107	
07/24/16	11:41:20	0.15833		4616	-72.28	107	
07/24/16	11:41:40	0.16389		4614	-74.24	107	
07/24/16	11:42:00	0.16944		4612	-76.17	107	
07/24/16	11:42:15	0.17361		4611	-77.60	107	
07/24/16	11:42:35	0.17917		4609	-79.48	107	
07/24/16	11:42:55	0.18472		4607	-81.33	107	
07/24/16	11:43:20	0.19167		4605	-83.62	107	
07/24/16	11:43:40	0.19722		4603	-85.41	107	
07/24/16	11:44:00	0.20278		4601	-87.18	107	
07/24/16	11:44:25	0.20972		4599	-89.37	107	
07/24/16	11:44:45	0.21528		4597	-91.08	107	
07/24/16	11:45:10	0.22222		4595	-93.21	107	
07/24/16	11:45:35	0.22917		4593	-95.30	107	
07/24/16	11:46:00	0.23611		4591	-97.35	107	
07/24/16	11:46:30	0.24444		4589	-99.77	107	
07/24/16	11:46:55	0.25139		4587	-101.76	107	
07/24/16	11:47:25	0.25972		4584	-104.11	107	
07/24/16	11:47:55	0.26806		4582	-106.42	107	
07/24/16	11:48:25	0.27639		4580	-108.69	107	
07/24/16	11:48:55	0.28472		4577	-110.92	107	
07/24/16	11:49:25	0.29306		4575	-113.11	107	
07/24/16	11:50:00	0.30278		4573	-115.63	107	
07/24/16	11:50:30	0.31111		4571	-117.74	107	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Mewbourne Well No. 1	Gauge Depth:	109 ft
Field:	Davonia	Gauge Type:	
Location:	Eddy County, NM	Gauge SN:	SP-21726
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	11:51:05	0.32083		4568	-120.17	107	
07/24/16	11:51:45	0.33194		4566	-122.88	107	
07/24/16	11:52:20	0.34167		4563	-125.22	107	
07/24/16	11:53:00	0.35278		4561	-127.83	107	
07/24/16	11:53:40	0.36389		4558	-130.39	107	
07/24/16	11:54:20	0.37500		4555	-132.91	107	
07/24/16	11:55:00	0.38611		4553	-135.37	107	
07/24/16	11:55:45	0.39861		4550	-138.08	107	
07/24/16	11:56:30	0.41111		4548	-140.73	107	
07/24/16	11:57:15	0.42361		4545	-143.33	107	
07/24/16	11:58:00	0.43611		4543	-145.87	107	
07/24/16	11:58:50	0.45000		4540	-148.63	107	
07/24/16	11:59:40	0.46389		4537	-151.33	107	
07/24/16	12:00:35	0.47917		4534	-154.23	107	
07/24/16	12:01:25	0.49306		4532	-156.80	108	
07/24/16	12:02:20	0.50833		4529	-159.57	108	
07/24/16	12:03:20	0.52500		4526	-162.51	108	
07/24/16	12:04:20	0.54167		4523	-165.37	108	
07/24/16	12:05:20	0.55833		4520	-168.16	108	
07/24/16	12:06:20	0.57500		4518	-170.88	108	
07/24/16	12:07:25	0.59306		4515	-173.74	108	
07/24/16	12:08:30	0.61111		4512	-176.53	108	
07/24/16	12:09:40	0.63056		4509	-179.45	108	
07/24/16	12:10:50	0.65000		4506	-182.29	108	
07/24/16	12:12:05	0.67083		4503	-185.24	108	
07/24/16	12:13:20	0.69167		4500	-188.10	108	
07/24/16	12:14:35	0.71250		4498	-190.87	108	
07/24/16	12:15:55	0.73472		4495	-193.74	108	
07/24/16	12:17:20	0.75833		4492	-196.70	108	
07/24/16	12:18:45	0.78194		4489	-199.55	108	
07/24/16	12:20:10	0.80556		4486	-202.30	108	
07/24/16	12:21:40	0.83056		4483	-205.13	108	
07/24/16	12:23:15	0.85694		4480	-208.00	108	
07/24/16	12:24:50	0.88333		4478	-210.78	108	
07/24/16	12:26:30	0.91111		4475	-213.58	108	
07/24/16	12:28:10	0.93889		4472	-216.29	108	
07/24/16	12:30:00	0.96944		4469	-219.15	108	
07/24/16	12:31:45	0.99861		4467	-221.78	108	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Mewbourne Well No. 1	Gauge Depth:	109 ft
Field:	Davonia	Gauge Type:	
Location:	Eddy County, NM	Gauge SN:	SP-21726
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	12:33:40	1.03056		4464	-224.54	108	
07/24/16	12:35:35	1.06250		4461	-227.18	108	
07/24/16	12:37:35	1.09583		4459	-229.83	108	
07/24/16	12:39:35	1.12917		4456	-232.36	108	
07/24/16	12:41:40	1.16389		4454	-234.88	108	
07/24/16	12:43:55	1.20139		4451	-237.48	108	
07/24/16	12:46:10	1.23889		4448	-239.96	108	
07/24/16	12:48:25	1.27639		4446	-242.32	108	
07/24/16	12:50:50	1.31667		4444	-244.73	108	
07/24/16	12:53:15	1.35694		4441	-247.03	108	
07/24/16	12:55:50	1.40000		4439	-249.35	108	
07/24/16	12:58:25	1.44306		4437	-251.56	108	
07/24/16	13:01:10	1.48889		4435	-253.78	108	
07/24/16	13:03:55	1.53472		4433	-255.88	108	
07/24/16	13:06:50	1.58333		4430	-257.98	108	
07/24/16	13:09:45	1.63194		4428	-259.96	108	
07/24/16	13:12:50	1.68333		4426	-261.93	108	
07/24/16	13:15:55	1.73472		4425	-263.78	108	
07/24/16	13:19:10	1.78889		4423	-265.61	108	
07/24/16	13:22:30	1.84444		4421	-267.38	108	
07/24/16	13:26:00	1.90278		4419	-269.05	108	
07/24/16	13:29:35	1.96250		4418	-270.82	108	
07/24/16	13:33:15	2.02361		4416	-272.31	108	
07/24/16	13:37:00	2.08611		4415	-273.82	108	
07/24/16	13:40:55	2.15139		4413	-275.28	108	
07/24/16	13:44:55	2.21806		4412	-276.67	108	
07/24/16	13:49:05	2.28750		4410	-278.01	108	
07/24/16	13:53:20	2.35833		4409	-279.27	108	
07/24/16	13:57:45	2.43194		4408	-280.48	108	
07/24/16	14:02:20	2.50833		4407	-281.64	108	
07/24/16	14:07:00	2.58611		4406	-282.73	108	
07/24/16	14:11:50	2.66667		4405	-283.77	108	
07/24/16	14:16:50	2.75000		4404	-284.75	108	
07/24/16	14:21:55	2.83472		4403	-285.68	108	
07/24/16	14:27:15	2.92361		4402	-286.56	108	
07/24/16	14:32:40	3.01389		4401	-287.38	108	
07/24/16	14:38:20	3.10833		4400	-288.17	108	
07/24/16	14:44:10	3.20556		4400	-288.90	108	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Mewbourne Well No. 1	Gauge Depth:	109 ft
Field:	Davonia	Gauge Type:	
Location:	Eddy County, NM	Gauge SN:	SP-21726
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	14:50:10	3.30556		4399	-289.59	108	
07/24/16	14:56:20	3.40833		4398	-290.24	108	
07/24/16	15:02:40	3.51389		4398	-290.84	108	
07/24/16	15:09:15	3.62361		4397	-291.41	108	
07/24/16	15:16:05	3.73750		4396	-291.95	108	
07/24/16	15:23:00	3.85278		4396	-292.44	108	
07/24/16	15:30:15	3.97361		4395	-292.91	108	
07/24/16	15:37:40	4.09722		4395	-293.34	108	
07/24/16	15:45:20	4.22500		4395	-293.75	108	
07/24/16	15:53:15	4.35694		4394	-294.13	108	
07/24/16	16:01:25	4.49306		4394	-294.48	108	
07/24/16	16:09:45	4.63194		4394	-294.81	108	
07/24/16	16:18:25	4.77639		4393	-295.12	108	
07/24/16	16:27:20	4.92500		4393	-295.41	108	
07/24/16	16:36:35	5.07917		4393	-295.68	108	
07/24/16	16:46:05	5.23750		4392	-295.94	108	
07/24/16	16:55:55	5.40139		4392	-296.17	108	
07/24/16	17:06:00	5.56944		4392	-296.39	108	
07/24/16	17:16:25	5.74306		4392	-296.60	108	
07/24/16	17:27:10	5.92222		4392	-296.79	108	
07/24/16	17:38:10	6.10556		4391	-296.96	108	
07/24/16	17:49:35	6.29583		4391	-297.13	108	
07/24/16	18:01:25	6.49306		4391	-297.28	108	
07/24/16	18:13:30	6.69444		4391	-297.42	108	
07/24/16	18:26:05	6.90417		4391	-297.56	108	
07/24/16	18:39:00	7.11944		4391	-297.68	108	
07/24/16	18:52:15	7.34028		4391	-297.79	108	
07/24/16	19:06:00	7.56944		4391	-297.90	108	
07/24/16	19:20:10	7.80556		4390	-298.00	108	
07/24/16	19:34:45	8.04861		4390	-298.09	108	
07/24/16	19:49:50	8.30000		4390	-298.17	108	
07/24/16	20:05:20	8.55833		4390	-298.26	108	
07/24/16	20:21:20	8.82500		4390	-298.33	108	
07/24/16	20:37:50	9.10000		4390	-298.40	108	
07/24/16	20:54:50	9.38333		4390	-298.47	108	
07/24/16	21:12:25	9.67639		4390	-298.54	108	
07/24/16	21:30:30	9.97778		4390	-298.58	109	
07/24/16	21:49:10	10.28889		4390	-298.66	109	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Mewbourne Well No. 1	Gauge Depth:	109 ft
Field:	Davonia	Gauge Type:	
Location:	Eddy County, NM	Gauge SN:	SP-21726
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	22:08:25	10.60972		4390	-298.73	109	
07/24/16	22:28:15	10.94028		4390	-298.80	109	
07/24/16	22:48:40	11.28056		4390	-298.87	109	
07/24/16	23:09:45	11.63194		4389	-298.94	109	
07/24/16	23:31:30	11.99444		4389	-299.00	109	
07/24/16	23:54:00	12.36944		4389	-299.07	109	
07/25/16	00:17:05	12.75417		4389	-299.14	109	
07/25/16	00:40:55	13.15139		4389	-299.21	109	
07/25/16	01:05:30	13.56111		4389	-299.28	109	
07/25/16	01:30:55	13.98472		4389	-299.35	109	
07/25/16	01:57:05	14.42083		4389	-299.42	109	
07/25/16	02:24:00	14.86944		4389	-299.49	109	
07/25/16	02:51:50	15.33333		4389	-299.56	109	
07/25/16	03:20:30	15.81111		4389	-299.64	109	
07/25/16	03:50:05	16.30417		4389	-299.71	109	
07/25/16	04:20:35	16.81250		4389	-299.78	109	
07/25/16	04:52:00	17.33611		4389	-299.85	109	
07/25/16	05:24:25	17.87639		4388	-299.93	109	
07/25/16	05:57:50	18.43333		4388	-300.01	109	
07/25/16	06:32:20	19.00833		4388	-300.09	109	
07/25/16	07:07:50	19.60000		4388	-300.16	109	
07/25/16	07:44:30	20.21111		4388	-300.24	109	
07/25/16	08:22:20	20.84167		4388	-300.30	109	
07/25/16	09:01:20	21.49167		4388	-300.36	109	
07/25/16	09:41:30	22.16111		4388	-300.42	109	
07/25/16	10:22:55	22.85139		4388	-300.48	109	
07/25/16	11:05:40	23.56389		4388	-300.55	109	
07/25/16	11:49:45	24.29861		4388	-300.62	109	
07/25/16	12:35:10	25.05556		4388	-300.71	109	
07/25/16	13:22:00	25.83611		4388	-300.81	109	
07/25/16	14:10:20	26.64167		4387	-300.91	109	
07/25/16	15:00:10	27.47222		4387	-301.01	109	
07/25/16	15:51:35	28.32917		4387	-301.10	109	
07/25/16	16:44:30	29.21111		4387	-301.19	109	
07/25/16	17:39:10	30.12222		4387	-301.29	109	
07/25/16	18:35:30	31.06111		4387	-301.38	109	
07/25/16	19:33:35	32.02917		4387	-301.46	109	
07/25/16	20:33:30	33.02778		4387	-301.56	109	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Mewbourne Well No. 1	Gauge Depth:	109 ft
Field:	Davonia	Gauge Type:	
Location:	Eddy County, NM	Gauge SN:	SP-21726
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/25/16	21:35:15	34.05694		4387	-301.65	109	
07/25/16	22:38:55	35.11806		4387	-301.74	109	
07/25/16	23:44:35	36.21250		4387	-301.86	109	
07/26/16	00:52:20	37.34167		4386	-302.00	109	
07/26/16	02:02:10	38.50556		4386	-302.16	109	
07/26/16	03:14:10	39.70556		4386	-302.34	109	
07/26/16	04:28:25	40.94306		4386	-302.52	109	
07/26/16	05:45:00	42.21944		4386	-302.68	109	
07/26/16	07:03:55	43.53472		4386	-302.83	109	
07/26/16	08:25:20	44.89167		4385	-302.98	109	
07/26/16	09:49:20	46.29167		4385	-303.14	109	
07/26/16	11:15:55	47.73472		4385	-303.29	109	
07/26/16	12:45:10	49.22222		4385	-303.42	109	
07/26/16	14:17:15	50.75694		4385	-303.55	109	
07/26/16	15:52:10	52.33889		4385	-303.71	109	
07/26/16	17:30:00	53.96944		4385	-303.89	109	
07/26/16	19:10:55	55.65139		4384	-304.06	109	
07/26/16	20:55:00	57.38611		4384	-304.27	109	
07/26/16	22:42:20	59.17500		4384	-304.50	109	
07/27/16	00:33:00	61.01944		4384	-304.72	109	
07/27/16	02:27:10	62.92222		4383	-304.97	109	
07/27/16	04:24:50	64.88333		4383	-305.33	109	
07/27/16	06:26:10	66.90556		4383	-305.76	109	
07/27/16	07:59:35	68.46250	979	4383	-305.89	109	Ended falloff test.
07/27/16	08:00:00	68.46944		4382	-306.01	109	
07/27/16	08:00:15	68.47361	979	4382	-306.01	109	POOH with gauge to surface.
07/27/16	08:01:05	68.48750		4315		109	
07/27/16	08:02:05	68.50417		4125		110	
07/27/16	08:03:05	68.52083		3930		110	
07/27/16	08:04:05	68.53750		3729		109	
07/27/16	08:05:05	68.55417		3519		107	
07/27/16	08:06:05	68.57083		3299		105	
07/27/16	08:07:05	68.58750		3064		103	
07/27/16	08:08:05	68.60417		2820		101	
07/27/16	08:09:05	68.62083		2565		98	
07/27/16	08:10:05	68.63750		2315		96	
07/27/16	08:11:05	68.65417		2040		94	
07/27/16	08:12:05	68.67083		1758		92	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Mewbourne Well No. 1	Gauge Depth:	109 ft
Field:	Davonia	Gauge Type:	
Location:	Eddy County, NM	Gauge SN:	SP-21726
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/27/16	08:13:05	68.68750		1461		90	
07/27/16	08:14:05	68.70417		1259		88	
07/27/16	08:15:05	68.72083		1085		86	
07/27/16	08:16:05	68.73750		1003		87	
07/27/16	08:16:40	68.74722	979	984		88	Gauge at surface.
07/27/16	08:17:05	68.75417		984		88	
07/27/16	08:18:05	68.77083		979		87	
07/27/16	08:19:05	68.78750		977		86	
07/27/16	08:20:05	68.80417		977		86	
07/27/16	08:21:05	68.82083		977		86	
07/27/16	08:22:05	68.83750		977		86	
07/27/16	08:23:05	68.85417		977		86	
07/27/16	08:24:05	68.87083		977		85	
07/27/16	08:24:50	68.88333	979	977		85	Pressured down lubricator.
07/27/16	08:25:05	68.88750		868		85	
07/27/16	08:25:45	68.89861		12		85	Test complete.
07/27/16	08:30:05	68.97083		14		85	
07/27/16	08:35:06	69.05444		15		97	Powered down gauge.

Remarks: MIRU slickline. RIH with 1.25" weight bar. Tagged obstruction at 7924 ft. POOH. RIH and suspend electronic gauges at 7820 ft. Coninue injecting for 48 hours. SI well for 68.5 hr BHP falloff test. POOH with gauges to surface. RDMO.

Certified: FESCO, Ltd. - Ozona, Texas

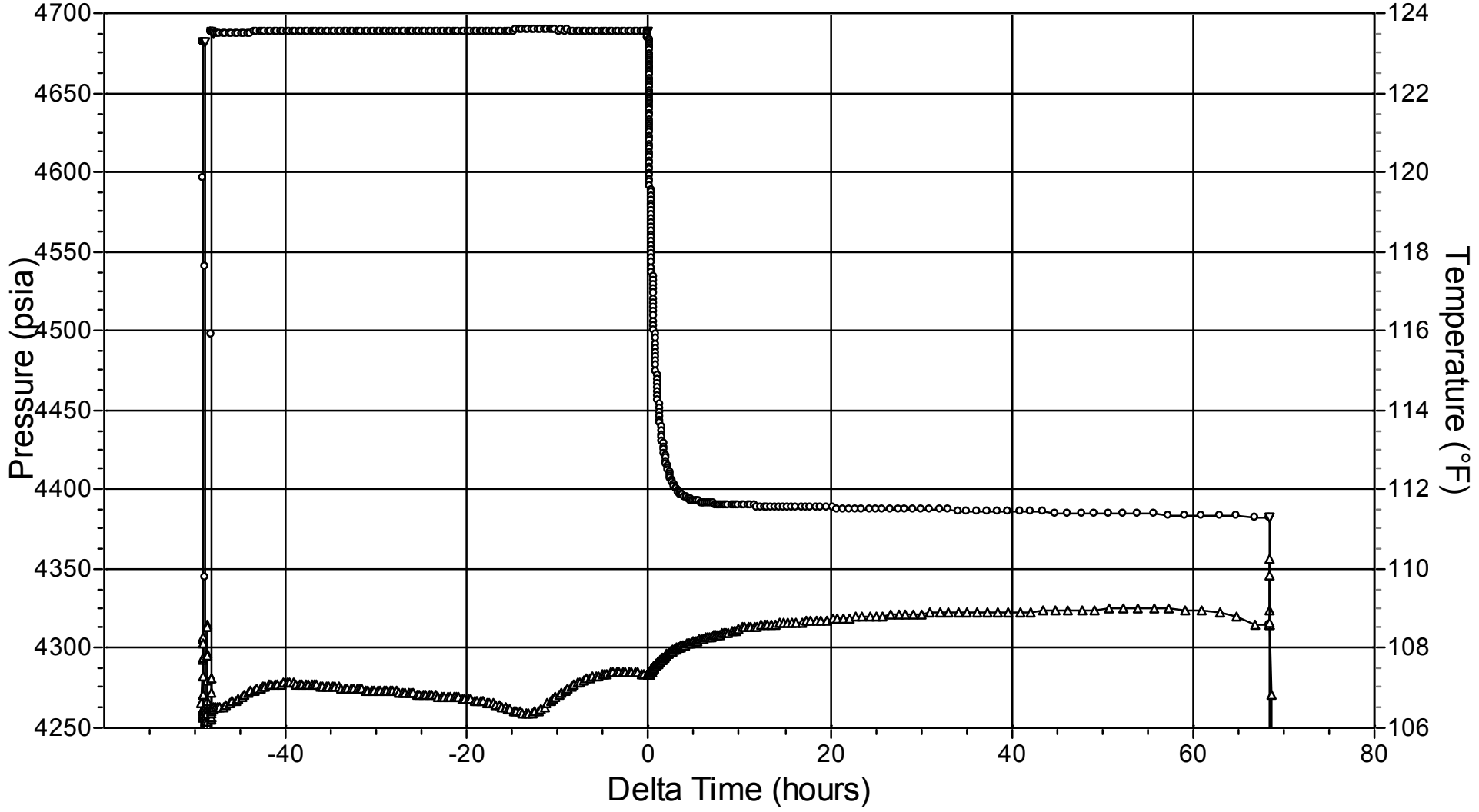
By: Tom Anderson
District Manager - (325) 392-3773

Job No.: J201607280802.001A

PB Energy Storage Services, Inc.

Cartesian Plot

Well:	Mewbourne Well No. 1	Gauge Type:	Electronic
Field:	Davonia	Gauge Range:	16000 psi
Test Date:	07/22 - 07/27/2016	Gauge SN:	SP-21726

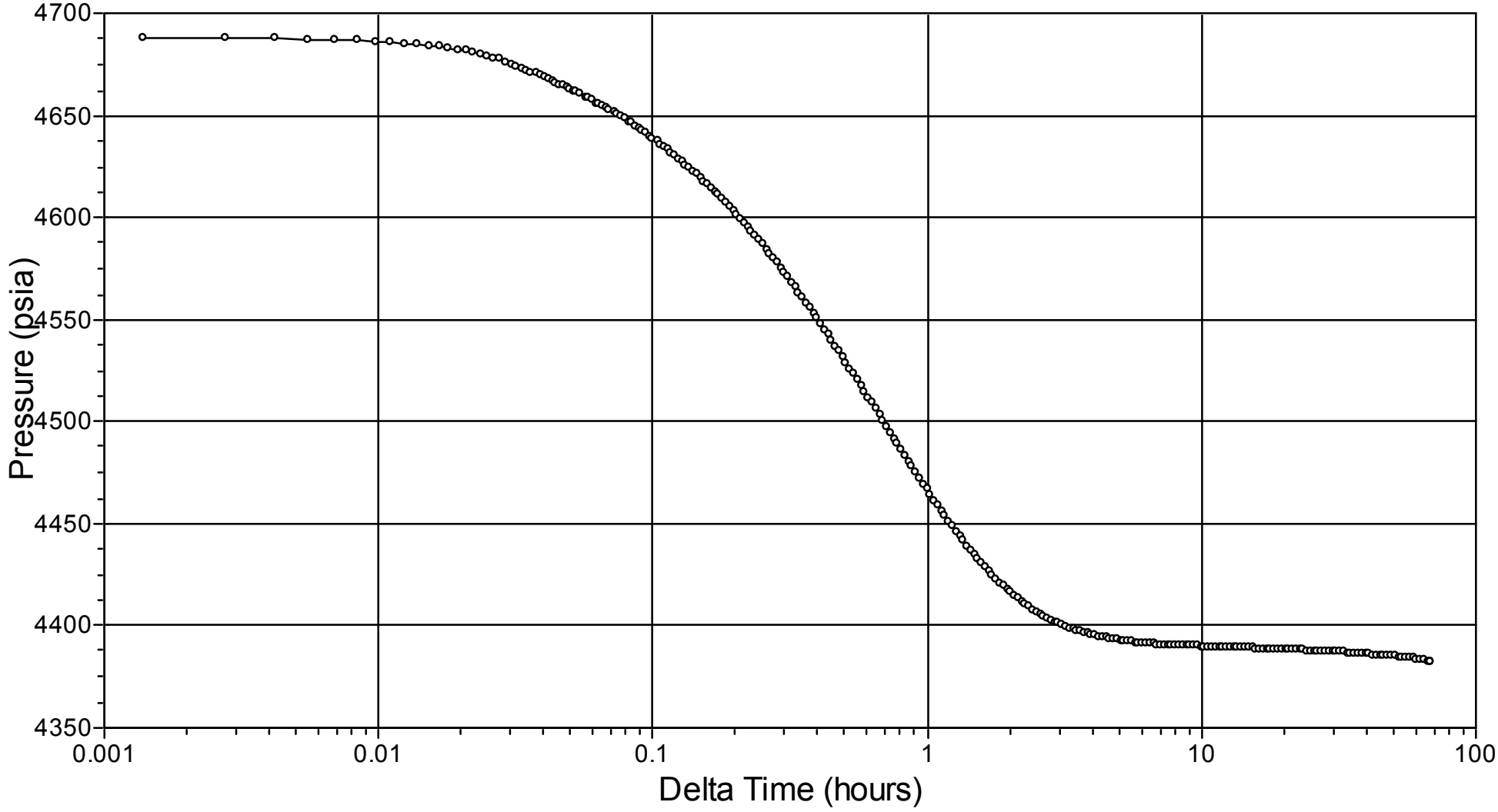


J201607280802.001A

PB Energy Storage Services, Inc.

Semilog Plot (Falloff Test)

Well:	Mewbourne Well No. 1	Gauge Type:	Electronic
Field:	Davonia	Gauge Range:	16000 psi
Test Date:	07/22 - 07/27/2016	Gauge SN:	SP-21726

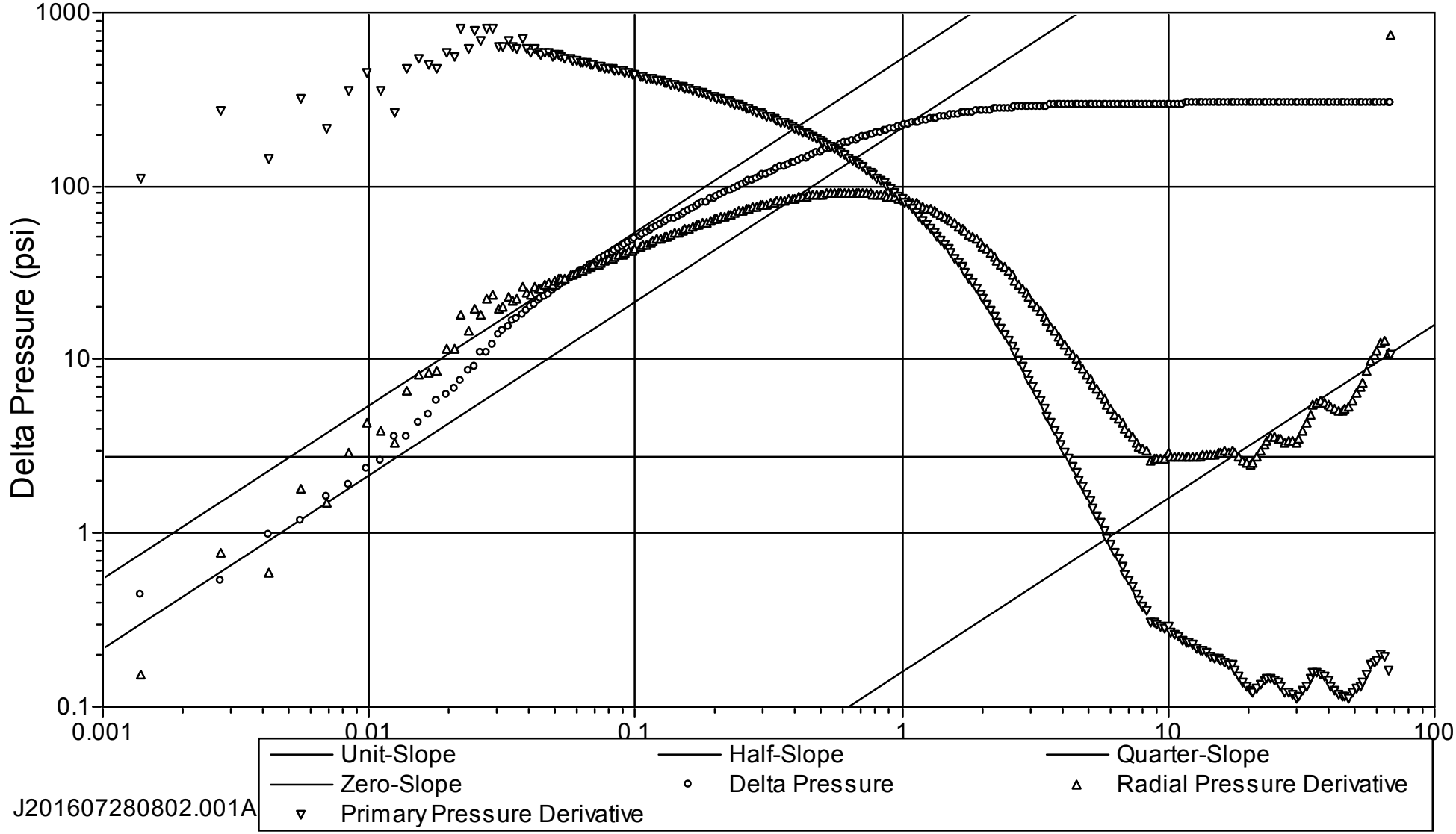


J201607280802.001A

PB Energy Storage Services, Inc.

Log Plot (Falloff Test)

Well:	Mewbourne Well No. 1	Gauge Type:	Electronic
Field:	Davonia	Gauge Range:	16000 psi
Test Date:	07/22 - 07/27/2016	Gauge SN:	SP-21726



J201607280802.001A

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

STATIC GRADIENT SURVEY

Company:	PB Energy Storage Services, Inc.	Test Date:	7/27/2016
Well:	Mewbourne Well No. 1	Location:	Eddy County, NM
Field:	Davonia	Status:	Shut in.
Formation:	Unavailable		

Well Data:	Wellhead Connection: 2" EUE	Gauge Type:	
	Elevation: 13 ft above GL	Gauge SN:	SP-21566
	Tubing: 4.5" Set at 7829 ft (EOT)	Gauge Range:	16000 psi
	Casing: 7" Set at 9094 ft (PBTD)	Gauge OD:	1.2500"
	Perfs: 7924 - 8188; 8220 - 8476 ft (MD		
	Datum: 8200 ft (MD)		

Depth			Pressure					
MD ft	TVD ft	Delta Depth ft	WHP psig	BHT °F	Gauge Pressure psig	Delta Pressure psi	Pressure Gradient psi / ft	Comments
0	0	0	979	85.49	977	0	0.0000	
7820	7820	7820	979	108.59	4382	3405	0.4354	POOH after 68 hr BHP falloff test.

BHT at Test Depth:	109 °F	Oil Level:	None	Previous BHP:	U/A
Extrapolated BHP at Datum:	4548 psig	Water Level:	Surface	BHP Change:	U/A
BHP Gradient at Datum :	0.4354 psi/ft	Csg Press:	N/A		

Remarks: POOH after 68 hr BHP falloff test to surface. RDMO.

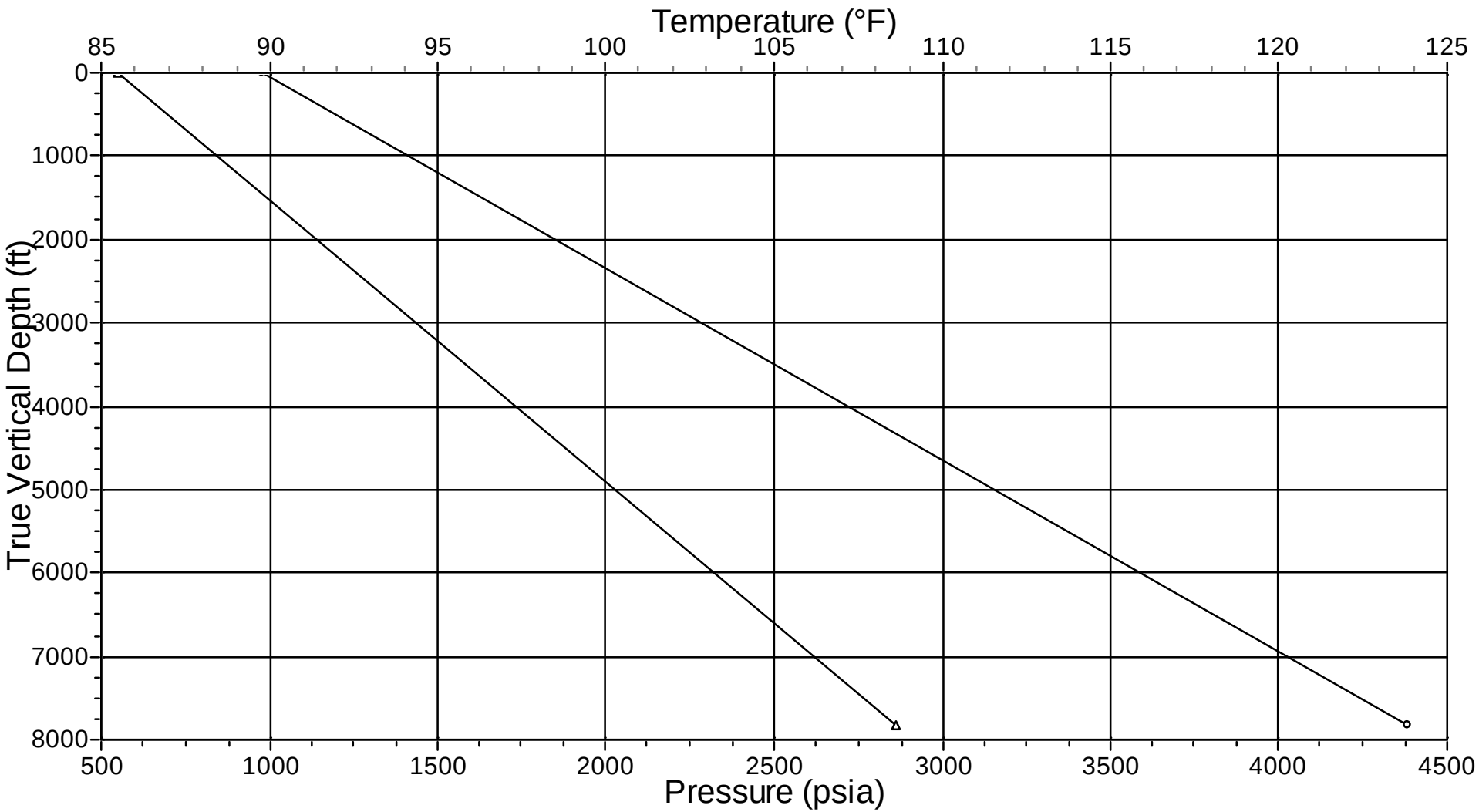
Certified: FESCO, Ltd. - Ozona, Texas

By: Tom Anderson
District Manager - (325) 392-3773

PB Energy Storage Services, Inc.

Static Gradient Plot

Well:	Mewbourne Well No. 1	Gauge Type:	Electronic
Field:	Davonia	Gauge Range:	16000 psi
Test Date:	07/27/2016	Gauge SN:	SP-21566



J201607280802.001A

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

FLOWING GRADIENT SURVEY

Company:	PB Energy Storage Services, Inc.	Test Date:	7/22/2016
Well:	Gaines Well No. 3	Location:	Eddy County, NM
Field:	Davonia	Status:	Flowing
Formation:	Unavailable		

Well Data:	Wellhead Connection: 2.5" EUE	Gauge Type:	Electronic
	Elevation: 13 ft above GL	Gauge SN:	SP-21566
	Tubing: 4.5" Set at 7575 ft (EOT)	Gauge Range:	16000 psi
	Casing: 7" Set at 9022 ft	Gauge OD:	1.2500"
	Perfs: 7660 - 8450; 8540 - 8620 ft (MD		
	Datum: 8140 ft (MD)		

Depth			Pressure					
MD ft	TVD ft	Delta Depth ft	WHP psia	BHT °F	Gauge Pressure psia	Delta Pressure psi	Pressure Gradient psi / ft	Comments
0	0		1385	109.56	1378.56	0.00		
7660	7660		1385	115.43	4402.65	0.00		

BHT at Test Depth:	115.40	°F	Oil Level: None	Previous BHP:	U/A
Extrapolated BHP at Datum:	4403.00	psia	Water Level: Injecting	BHP Change:	U/A
BHP Gradient at Datum :	0.0000	psi/ft	Csg Press: N/A		

Remarks: RIH with electronic gauges while injecting water. Suspend gauges at 7660 ft on slickline for extended injection period and subsequent BHP falloff test.

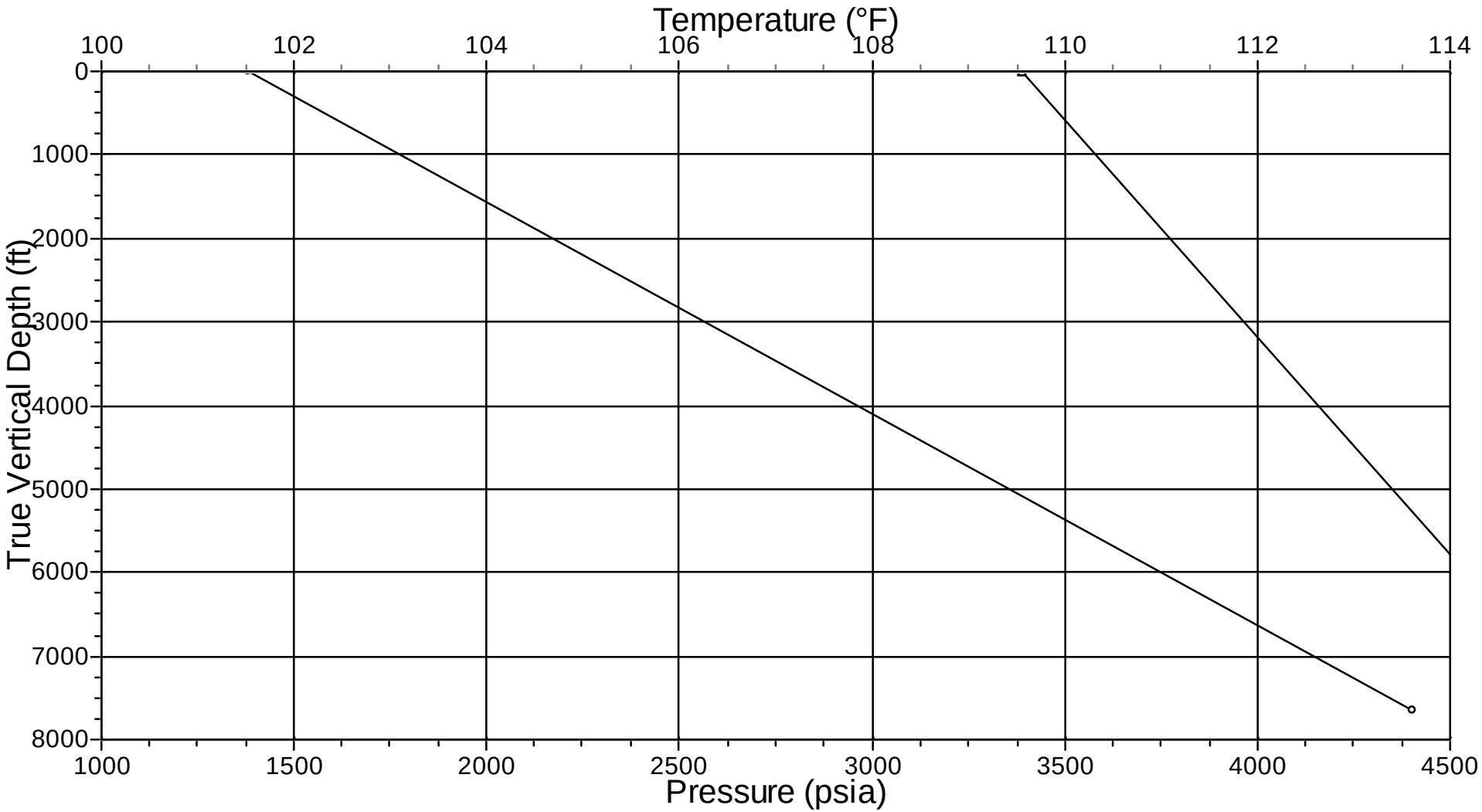
Certified: FESCO, Ltd. - Ozona, Texas

By: Tom Anderson
District Manager - (325) 392-3773

PB Energy Storage Services, Inc.

Flowing Gradient Plot

Well:	Gaines Well No. 3	Gauge Type:	Electronic
Field:	Davonia	Gauge Range:	16000 psi
Test Date:	07/22/2016	Gauge SN:	SP-21566



J201607280803.001A

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Gaines Well No. 3	Gauge Depth:	7660 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-21566
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/22/16	09:00:05	-49.40972		11.02		84.47	Powered up gauge.
07/22/16	09:10:05	-49.24306		9.68		91.13	
07/22/16	09:20:05	-49.07639		9.20		96.29	
07/22/16	09:30:05	-48.90972		8.53		100.61	
07/22/16	09:40:05	-48.74306		8.56		103.05	
07/22/16	09:46:05	-48.64306		9.08		102.52	
07/22/16	09:47:55	-48.61250		1369.21		102.59	Pressured up lubricator.
07/22/16	09:48:05	-48.60972		1370.48		102.94	
07/22/16	09:49:05	-48.59306		1376.41		103.92	
07/22/16	09:49:25	-48.58750		1353.69		103.77	Pressured down lubricator.
07/22/16	09:51:05	-48.55972		9.82		102.63	
07/22/16	09:55:05	-48.49306		8.07		101.90	
07/22/16	10:00:05	-48.40972		7.86		101.79	
07/22/16	10:05:05	-48.32639		8.20		103.41	
07/22/16	10:11:05	-48.22639		8.33		105.25	
07/22/16	10:14:05	-48.17639		1047.40		107.02	
07/22/16	10:15:05	-48.15972		1339.78		107.80	
07/22/16	10:16:05	-48.14306	1385	1379.68		107.87	Pressured up lubricator.
07/22/16	10:17:05	-48.12639		1379.02		107.70	
07/22/16	10:18:05	-48.10972		1379.81		107.44	
07/22/16	10:19:05	-48.09306		1378.45		107.34	
07/22/16	10:20:05	-48.07639		1378.40		107.80	
07/22/16	10:21:05	-48.05972		1378.32		108.25	
07/22/16	10:22:05	-48.04306		1379.46		108.55	
07/22/16	10:23:05	-48.02639		1379.36		108.96	
07/22/16	10:24:05	-48.00972		1379.18		109.28	
07/22/16	10:25:05	-47.99306		1379.12		109.44	
07/22/16	10:26:05	-47.97639		1379.52		109.48	
07/22/16	10:26:45	-47.96528	1385	1378.56		109.56	RIH with gauge to 7660 ft.
07/22/16	10:27:05	-47.95972		1396.09		110.39	
07/22/16	10:28:05	-47.94306		1521.46		113.58	
07/22/16	10:29:05	-47.92639		1656.74		114.99	
07/22/16	10:30:05	-47.90972		1767.60		115.56	
07/22/16	10:31:05	-47.89306		1943.33		115.78	
07/22/16	10:32:05	-47.87639		2116.00		115.83	
07/22/16	10:33:05	-47.85972		2313.86		115.79	
07/22/16	10:34:05	-47.84306		2510.45		115.70	
07/22/16	10:35:05	-47.82639		2726.54		115.58	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Gaines Well No. 3	Gauge Depth:	7660 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-21566
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/22/16	10:36:05	-47.80972		2941.78		115.45	
07/22/16	10:37:05	-47.79306		3175.72		115.33	
07/22/16	10:38:05	-47.77639		3422.03		115.23	
07/22/16	10:39:05	-47.75972		3655.00		115.16	
07/22/16	10:40:05	-47.74306		3875.48		115.14	
07/22/16	10:41:05	-47.72639		4064.65		115.16	
07/22/16	10:42:05	-47.70972		4232.51		115.21	
07/22/16	10:43:05	-47.69306		4368.31		115.28	
07/22/16	10:43:35	-47.68472	1385	4402.50		115.32	Gauge at TD=7660 ft (MD).
07/22/16	10:44:05	-47.67639		4402.48		115.35	
07/22/16	10:45:05	-47.65972		4401.71		115.39	
07/22/16	10:46:05	-47.64306		4401.72		115.41	
07/22/16	10:47:05	-47.62639		4402.10		115.42	
07/22/16	10:48:05	-47.60972		4402.09		115.42	
07/22/16	10:49:05	-47.59306		4402.15		115.43	
07/22/16	10:50:05	-47.57639		4402.12		115.43	
07/22/16	10:51:05	-47.55972		4402.13		115.43	
07/22/16	10:52:05	-47.54306		4402.60		115.43	
07/22/16	10:53:05	-47.52639		4402.57		115.43	
07/22/16	10:54:05	-47.50972		4402.60		115.43	
07/22/16	10:55:05	-47.49306		4402.64		115.43	
07/22/16	10:56:05	-47.47639		4402.62		115.43	
07/22/16	10:57:05	-47.45972		4402.63		115.43	
07/22/16	10:58:05	-47.44306		4402.64		115.43	
07/22/16	10:59:05	-47.42639		4402.65		115.43	
07/22/16	11:00:00	-47.41111	1385	4402.65		115.43	7660 ft stop.
07/22/16	11:20:05	-47.07639		4403.12		115.43	
07/22/16	11:40:05	-46.74306		4403.16		115.43	
07/22/16	12:00:05	-46.40972		4403.22		115.43	
07/22/16	12:20:05	-46.07639		4403.19		115.43	
07/22/16	12:40:05	-45.74306		4403.23		115.43	
07/22/16	13:00:05	-45.40972		4403.25		115.42	
07/22/16	13:20:05	-45.07639		4403.25		115.42	
07/22/16	13:40:05	-44.74306		4403.26		115.41	
07/22/16	14:00:05	-44.40972		4403.25		115.40	
07/22/16	14:20:05	-44.07639		4403.23		115.39	
07/22/16	14:40:05	-43.74306		4403.23		115.38	
07/22/16	15:00:05	-43.40972		4403.24		115.37	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Gaines Well No. 3	Gauge Depth:	7660 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-21566
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/22/16	15:20:05	-43.07639		4403.28		115.36	
07/22/16	15:40:05	-42.74306		4403.31		115.36	
07/22/16	16:00:05	-42.40972		4403.31		115.35	
07/22/16	16:20:05	-42.07639		4403.32		115.35	
07/22/16	16:40:05	-41.74306		4403.32		115.36	
07/22/16	17:00:05	-41.40972		4403.32		115.37	
07/22/16	17:20:05	-41.07639		4403.27		115.38	
07/22/16	17:40:05	-40.74306		4403.30		115.38	
07/22/16	18:00:05	-40.40972		4403.34		115.38	
07/22/16	18:20:05	-40.07639		4403.34		115.37	
07/22/16	18:40:05	-39.74306		4403.38		115.37	
07/22/16	19:00:05	-39.40972		4403.36		115.36	
07/22/16	19:20:05	-39.07639		4403.34		115.35	
07/22/16	19:40:05	-38.74306		4403.41		115.34	
07/22/16	20:00:05	-38.40972		4403.31		115.32	
07/22/16	20:20:05	-38.07639		4403.18		115.31	
07/22/16	20:40:05	-37.74306		4403.17		115.29	
07/22/16	21:00:05	-37.40972		4403.10		115.27	
07/22/16	21:20:05	-37.07639		4403.04		115.25	
07/22/16	21:40:05	-36.74306		4402.88		115.23	
07/22/16	22:00:05	-36.40972		4402.68		115.21	
07/22/16	22:20:05	-36.07639		4402.55		115.21	
07/22/16	22:40:05	-35.74306		4402.49		115.21	
07/22/16	23:00:05	-35.40972		4402.46		115.22	
07/22/16	23:20:05	-35.07639		4402.40		115.23	
07/22/16	23:40:05	-34.74306		4402.34		115.23	
07/23/16	00:00:05	-34.40972		4402.26		115.23	
07/23/16	00:20:05	-34.07639		4402.17		115.22	
07/23/16	00:40:05	-33.74306		4402.00		115.21	
07/23/16	01:00:05	-33.40972		4401.82		115.19	
07/23/16	01:20:05	-33.07639		4401.32		115.16	
07/23/16	01:40:05	-32.74306		4400.98		115.13	
07/23/16	02:00:05	-32.40972		4400.74		115.11	
07/23/16	02:20:05	-32.07639		4400.67		115.08	
07/23/16	02:40:05	-31.74306		4400.61		115.05	
07/23/16	03:00:05	-31.40972		4400.68		115.02	
07/23/16	03:20:05	-31.07639		4400.58		114.99	
07/23/16	03:40:05	-30.74306		4400.56		114.95	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Gaines Well No. 3	Gauge Depth:	7660 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-21566
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/23/16	04:00:05	-30.40972		4399.99		114.91	
07/23/16	04:20:05	-30.07639		4399.88		114.88	
07/23/16	04:40:05	-29.74306		4399.62		114.84	
07/23/16	05:00:05	-29.40972		4399.47		114.80	
07/23/16	05:20:05	-29.07639		4399.38		114.77	
07/23/16	05:40:05	-28.74306		4399.31		114.73	
07/23/16	06:00:05	-28.40972		4399.32		114.69	
07/23/16	06:20:05	-28.07639		4399.21		114.66	
07/23/16	06:40:05	-27.74306		4399.19		114.63	
07/23/16	07:00:05	-27.40972		4399.29		114.60	
07/23/16	07:20:05	-27.07639		4399.36		114.58	
07/23/16	07:40:05	-26.74306		4399.45		114.55	
07/23/16	08:00:05	-26.40972		4399.52		114.52	
07/23/16	08:20:05	-26.07639		4399.50		114.49	
07/23/16	08:40:05	-25.74306		4399.56		114.46	
07/23/16	09:00:05	-25.40972		4399.67		114.43	
07/23/16	09:20:05	-25.07639		4399.70		114.40	
07/23/16	09:40:05	-24.74306		4399.72		114.37	
07/23/16	10:00:05	-24.40972		4399.69		114.34	
07/23/16	10:20:05	-24.07639		4399.67		114.31	
07/23/16	10:40:05	-23.74306		4399.63		114.27	
07/23/16	11:00:05	-23.40972		4399.56		114.24	
07/23/16	11:20:05	-23.07639		4399.49		114.20	
07/23/16	11:40:05	-22.74306		4399.40		114.16	
07/23/16	12:00:05	-22.40972		4399.39		114.11	
07/23/16	12:20:05	-22.07639		4399.37		114.07	
07/23/16	12:40:05	-21.74306		4399.38		114.03	
07/23/16	13:00:05	-21.40972		4399.37		113.99	
07/23/16	13:20:05	-21.07639		4399.37		113.96	
07/23/16	13:40:05	-20.74306		4399.46		113.93	
07/23/16	14:00:05	-20.40972		4399.39		113.91	
07/23/16	14:20:05	-20.07639		4399.22		113.88	
07/23/16	14:40:05	-19.74306		4399.14		113.86	
07/23/16	15:00:05	-19.40972		4399.02		113.85	
07/23/16	15:20:05	-19.07639		4398.90		113.84	
07/23/16	15:40:05	-18.74306		4398.77		113.89	
07/23/16	16:00:05	-18.40972		4398.69		114.00	
07/23/16	16:20:05	-18.07639		4398.57		114.17	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Gaines Well No. 3	Gauge Depth:	7660 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-21566
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/23/16	16:40:05	-17.74306		4398.43		114.38	
07/23/16	17:00:05	-17.40972		4397.87		114.61	
07/23/16	17:20:05	-17.07639		4397.51		114.83	
07/23/16	17:40:05	-16.74306		4397.42		115.05	
07/23/16	18:00:05	-16.40972		4397.41		115.24	
07/23/16	18:20:05	-16.07639		4397.54		115.40	
07/23/16	18:40:05	-15.74306		4397.50		115.54	
07/23/16	19:00:05	-15.40972		4397.53		115.66	
07/23/16	19:20:05	-15.07639		4397.50		115.76	
07/23/16	19:40:05	-14.74306		4397.51		115.86	
07/23/16	20:00:05	-14.40972		4397.53		115.94	
07/23/16	20:20:05	-14.07639		4397.49		116.00	
07/23/16	20:40:05	-13.74306		4397.54		116.06	
07/23/16	21:00:05	-13.40972		4397.57		116.12	
07/23/16	21:20:05	-13.07639		4397.56		116.16	
07/23/16	21:40:05	-12.74306		4397.58		116.19	
07/23/16	22:00:05	-12.40972		4397.50		116.22	
07/23/16	22:20:05	-12.07639		4397.49		116.25	
07/23/16	22:40:05	-11.74306		4397.52		116.27	
07/23/16	23:00:05	-11.40972		4397.56		116.29	
07/23/16	23:20:05	-11.07639		4397.54		116.30	
07/23/16	23:40:05	-10.74306		4397.53		116.30	
07/24/16	00:00:05	-10.40972		4397.51		116.30	
07/24/16	00:20:05	-10.07639		4397.51		116.29	
07/24/16	00:40:05	-9.74306		4397.50		116.28	
07/24/16	01:00:05	-9.40972		4397.50		116.26	
07/24/16	01:20:05	-9.07639		4397.47		116.24	
07/24/16	01:40:05	-8.74306		4397.41		116.22	
07/24/16	02:00:05	-8.40972		4397.30		116.19	
07/24/16	02:20:05	-8.07639		4397.21		116.15	
07/24/16	02:40:05	-7.74306		4397.12		116.12	
07/24/16	03:00:05	-7.40972		4397.04		116.08	
07/24/16	03:20:05	-7.07639		4396.97		116.04	
07/24/16	03:40:05	-6.74306		4396.93		116.00	
07/24/16	04:00:05	-6.40972		4396.90		115.96	
07/24/16	04:20:05	-6.07639		4396.82		115.92	
07/24/16	04:40:05	-5.74306		4396.80		115.88	
07/24/16	05:00:05	-5.40972		4396.72		115.83	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Gaines Well No. 3	Gauge Depth:	7660 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-21566
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	05:20:05	-5.07639		4396.42		115.79	
07/24/16	05:40:05	-4.74306		4396.33		115.75	
07/24/16	06:00:05	-4.40972		4396.29		115.72	
07/24/16	06:20:05	-4.07639		4396.37		115.67	
07/24/16	06:40:05	-3.74306		4396.35		115.63	
07/24/16	07:00:05	-3.40972		4396.38		115.59	
07/24/16	07:20:05	-3.07639		4396.30		115.54	
07/24/16	07:40:05	-2.74306		4396.28		115.48	
07/24/16	08:00:05	-2.40972		4396.33		115.43	
07/24/16	08:20:05	-2.07639		4396.31		115.39	
07/24/16	08:40:05	-1.74306		4396.26		115.38	
07/24/16	09:00:05	-1.40972		4396.17		115.38	
07/24/16	09:20:05	-1.07639		4396.11		115.38	
07/24/16	09:40:05	-0.74306		4396.15		115.40	
07/24/16	10:00:05	-0.40972		4396.23		115.40	
07/24/16	10:14:55	-0.16250		4396.25		115.41	Water injection rate increased.
07/24/16	10:20:05	-0.07639		4398.76		115.41	
07/24/16	10:24:35	-0.00139		4399.36		115.44	Water injection rate = Unavailable.
07/24/16	10:24:40	0.00000		4399.40	0.00	115.44	Operator stopped inj. pump. Start 68 hr falloff.
07/24/16	10:24:45	0.00139		4398.85	-0.55	115.44	
07/24/16	10:24:50	0.00278		4398.57	-0.83	115.44	
07/24/16	10:24:55	0.00417		4398.37	-1.03	115.44	
07/24/16	10:25:00	0.00556		4398.14	-1.26	115.44	
07/24/16	10:25:05	0.00694		4397.94	-1.46	115.44	
07/24/16	10:25:10	0.00833		4397.75	-1.65	115.44	
07/24/16	10:25:15	0.00972		4397.13	-2.27	115.44	
07/24/16	10:25:20	0.01111		4397.15	-2.25	115.44	
07/24/16	10:25:25	0.01250		4396.64	-2.76	115.44	
07/24/16	10:25:30	0.01389		4396.58	-2.82	115.44	
07/24/16	10:25:35	0.01528		4396.39	-3.01	115.44	
07/24/16	10:25:40	0.01667		4395.81	-3.59	115.44	
07/24/16	10:25:45	0.01806		4395.59	-3.81	115.44	
07/24/16	10:25:50	0.01944		4395.33	-4.07	115.44	
07/24/16	10:25:55	0.02083		4395.05	-4.35	115.44	
07/24/16	10:26:00	0.02222		4394.78	-4.62	115.45	
07/24/16	10:26:05	0.02361		4394.49	-4.91	115.45	
07/24/16	10:26:10	0.02500		4394.24	-5.16	115.45	
07/24/16	10:26:15	0.02639		4394.02	-5.38	115.45	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Gaines Well No. 3	Gauge Depth:	7660 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-21566
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	10:26:20	0.02778		4393.80	-5.60	115.45	
07/24/16	10:26:25	0.02917		4393.60	-5.80	115.45	
07/24/16	10:26:30	0.03056		4393.39	-6.01	115.45	
07/24/16	10:26:35	0.03194		4393.11	-6.29	115.45	
07/24/16	10:26:40	0.03333		4392.70	-6.70	115.45	
07/24/16	10:26:45	0.03472		4392.32	-7.08	115.45	
07/24/16	10:26:50	0.03611		4391.99	-7.41	115.45	
07/24/16	10:26:55	0.03750		4391.72	-7.68	115.45	
07/24/16	10:27:00	0.03889		4391.40	-8.00	115.45	
07/24/16	10:27:05	0.04028		4391.13	-8.27	115.45	
07/24/16	10:27:10	0.04167		4390.86	-8.54	115.45	
07/24/16	10:27:15	0.04306		4390.65	-8.75	115.45	
07/24/16	10:27:20	0.04444		4390.38	-9.02	115.45	
07/24/16	10:27:25	0.04583		4390.18	-9.22	115.45	
07/24/16	10:27:30	0.04722		4389.50	-9.90	115.45	
07/24/16	10:27:35	0.04861		4389.22	-10.18	115.45	
07/24/16	10:27:40	0.05000		4388.91	-10.49	115.45	
07/24/16	10:27:45	0.05139		4388.56	-10.84	115.45	
07/24/16	10:27:50	0.05278		4388.22	-11.18	115.45	
07/24/16	10:27:55	0.05417		4387.93	-11.47	115.45	
07/24/16	10:28:05	0.05694		4387.30	-12.10	115.45	
07/24/16	10:28:10	0.05833		4387.02	-12.38	115.45	
07/24/16	10:28:15	0.05972		4386.74	-12.66	115.45	
07/24/16	10:28:25	0.06250		4386.21	-13.19	115.45	
07/24/16	10:28:30	0.06389		4385.59	-13.81	115.45	
07/24/16	10:28:35	0.06528		4385.42	-13.98	115.44	
07/24/16	10:28:45	0.06806		4384.63	-14.77	115.44	
07/24/16	10:28:50	0.06944		4384.24	-15.16	115.44	
07/24/16	10:29:00	0.07222		4383.79	-15.61	115.44	
07/24/16	10:29:05	0.07361		4383.56	-15.84	115.44	
07/24/16	10:29:15	0.07639		4383.15	-16.25	115.44	
07/24/16	10:29:25	0.07917		4382.77	-16.63	115.44	
07/24/16	10:29:35	0.08194		4382.40	-17.00	115.44	
07/24/16	10:29:40	0.08333		4382.23	-17.17	115.44	
07/24/16	10:29:50	0.08611		4381.90	-17.50	115.44	
07/24/16	10:30:00	0.08889		4381.59	-17.81	115.44	
07/24/16	10:30:10	0.09167		4381.27	-18.13	115.44	
07/24/16	10:30:20	0.09444		4380.99	-18.41	115.44	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Gaines Well No. 3	Gauge Depth:	7660 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-21566
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	10:30:30	0.09722		4380.69	-18.71	115.44	
07/24/16	10:30:40	0.10000		4380.41	-18.99	115.43	
07/24/16	10:30:50	0.10278		4380.15	-19.25	115.43	Closed wing valve.
07/24/16	10:30:55	0.10417		4373.40	-26.00	115.43	
07/24/16	10:31:05	0.10694		4372.23	-27.17	115.43	
07/24/16	10:31:15	0.10972		4370.88	-28.52	115.43	
07/24/16	10:31:30	0.11389		4369.42	-29.98	115.43	
07/24/16	10:31:40	0.11667		4368.74	-30.66	115.43	
07/24/16	10:31:55	0.12083		4368.10	-31.30	115.43	
07/24/16	10:32:10	0.12500		4367.33	-32.07	115.42	
07/24/16	10:32:20	0.12778		4366.75	-32.65	115.42	
07/24/16	10:32:35	0.13194		4366.13	-33.27	115.42	
07/24/16	10:32:50	0.13611		4365.56	-33.84	115.42	
07/24/16	10:33:05	0.14028		4364.91	-34.49	115.42	
07/24/16	10:33:20	0.14444		4364.23	-35.17	115.42	
07/24/16	10:33:40	0.15000		4364.25	-35.15	115.42	
07/24/16	10:33:55	0.15417		4362.84	-36.56	115.42	
07/24/16	10:34:10	0.15833		4361.65	-37.75	115.42	
07/24/16	10:34:30	0.16389		4360.68	-38.72	115.41	
07/24/16	10:34:50	0.16944		4359.77	-39.63	115.41	
07/24/16	10:35:05	0.17361		4359.12	-40.28	115.41	
07/24/16	10:35:25	0.17917		4358.29	-41.11	115.41	
07/24/16	10:35:45	0.18472		4357.49	-41.91	115.41	
07/24/16	10:36:10	0.19167		4356.52	-42.88	115.41	
07/24/16	10:36:30	0.19722		4355.78	-43.62	115.41	
07/24/16	10:36:50	0.20278		4355.06	-44.34	115.41	
07/24/16	10:37:15	0.20972		4354.19	-45.21	115.41	
07/24/16	10:37:35	0.21528		4353.51	-45.89	115.41	
07/24/16	10:38:00	0.22222		4352.68	-46.72	115.41	
07/24/16	10:38:25	0.22917		4351.89	-47.51	115.41	
07/24/16	10:38:50	0.23611		4351.10	-48.30	115.41	
07/24/16	10:39:20	0.24444		4350.20	-49.20	115.41	
07/24/16	10:39:45	0.25139		4349.47	-49.93	115.40	
07/24/16	10:40:15	0.25972		4348.61	-50.79	115.40	
07/24/16	10:40:45	0.26806		4347.78	-51.62	115.40	
07/24/16	10:41:15	0.27639		4346.98	-52.42	115.40	
07/24/16	10:41:45	0.28472		4346.20	-53.20	115.40	
07/24/16	10:42:15	0.29306		4345.44	-53.96	115.40	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Gaines Well No. 3	Gauge Depth:	7660 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-21566
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	10:42:50	0.30278		4344.58	-54.82	115.40	
07/24/16	10:43:20	0.31111		4343.87	-55.53	115.40	
07/24/16	10:43:55	0.32083		4343.06	-56.34	115.40	
07/24/16	10:44:35	0.33194		4342.17	-57.23	115.40	
07/24/16	10:45:10	0.34167		4341.41	-57.99	115.40	
07/24/16	10:45:50	0.35278		4340.57	-58.83	115.40	
07/24/16	10:46:30	0.36389		4339.76	-59.64	115.39	
07/24/16	10:47:10	0.37500		4338.97	-60.43	115.39	
07/24/16	10:47:50	0.38611		4338.22	-61.18	115.39	
07/24/16	10:48:35	0.39861		4337.39	-62.01	115.39	
07/24/16	10:49:20	0.41111		4336.61	-62.79	115.39	
07/24/16	10:50:05	0.42361		4335.84	-63.56	115.39	
07/24/16	10:50:50	0.43611		4335.11	-64.29	115.39	
07/24/16	10:51:40	0.45000		4334.32	-65.08	115.39	
07/24/16	10:52:30	0.46389		4333.56	-65.84	115.39	
07/24/16	10:53:25	0.47917		4332.77	-66.63	115.39	
07/24/16	10:54:15	0.49306		4332.08	-67.32	115.39	
07/24/16	10:55:10	0.50833		4331.33	-68.07	115.38	
07/24/16	10:56:10	0.52500		4330.57	-68.83	115.38	
07/24/16	10:57:10	0.54167		4329.84	-69.56	115.38	
07/24/16	10:58:10	0.55833		4329.14	-70.26	115.38	
07/24/16	10:59:10	0.57500		4328.48	-70.92	115.38	
07/24/16	11:00:15	0.59306		4327.78	-71.62	115.38	
07/24/16	11:01:20	0.61111		4327.12	-72.28	115.38	
07/24/16	11:02:30	0.63056		4326.45	-72.95	115.38	
07/24/16	11:03:40	0.65000		4325.80	-73.60	115.38	
07/24/16	11:04:55	0.67083		4325.15	-74.25	115.37	
07/24/16	11:06:10	0.69167		4324.53	-74.87	115.37	
07/24/16	11:07:25	0.71250		4323.95	-75.45	115.37	
07/24/16	11:08:45	0.73472		4323.35	-76.05	115.37	
07/24/16	11:10:10	0.75833		4322.76	-76.64	115.37	
07/24/16	11:11:35	0.78194		4322.19	-77.21	115.37	
07/24/16	11:13:00	0.80556		4321.66	-77.74	115.37	
07/24/16	11:14:30	0.83056		4321.13	-78.27	115.36	
07/24/16	11:16:05	0.85694		4320.60	-78.80	115.36	
07/24/16	11:17:40	0.88333		4320.11	-79.29	115.36	
07/24/16	11:19:20	0.91111		4319.61	-79.79	115.36	
07/24/16	11:21:00	0.93889		4319.14	-80.26	115.36	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Gaines Well No. 3	Gauge Depth:	7660 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-21566
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	11:22:50	0.96944		4318.67	-80.73	115.36	
07/24/16	11:24:35	0.99861		4318.23	-81.17	115.36	
07/24/16	11:26:30	1.03056		4317.80	-81.60	115.35	
07/24/16	11:28:25	1.06250		4317.38	-82.02	115.35	
07/24/16	11:30:25	1.09583		4316.97	-82.43	115.35	
07/24/16	11:32:25	1.12917		4316.59	-82.81	115.35	
07/24/16	11:34:30	1.16389		4316.21	-83.19	115.35	
07/24/16	11:36:45	1.20139		4315.83	-83.57	115.34	
07/24/16	11:39:00	1.23889		4315.47	-83.93	115.34	
07/24/16	11:41:15	1.27639		4315.14	-84.26	115.34	
07/24/16	11:43:40	1.31667		4314.80	-84.60	115.34	
07/24/16	11:46:05	1.35694		4314.48	-84.92	115.34	
07/24/16	11:48:40	1.40000		4314.15	-85.25	115.34	
07/24/16	11:51:15	1.44306		4313.85	-85.55	115.33	
07/24/16	11:54:00	1.48889		4313.56	-85.84	115.33	
07/24/16	11:56:45	1.53472		4313.28	-86.12	115.33	
07/24/16	11:59:40	1.58333		4312.99	-86.41	115.33	
07/24/16	12:02:35	1.63194		4312.72	-86.68	115.32	
07/24/16	12:05:40	1.68333		4312.45	-86.95	115.32	
07/24/16	12:08:45	1.73472		4312.20	-87.20	115.32	
07/24/16	12:12:00	1.78889		4311.94	-87.46	115.32	
07/24/16	12:15:20	1.84444		4311.69	-87.71	115.31	
07/24/16	12:18:50	1.90278		4311.45	-87.95	115.31	
07/24/16	12:22:25	1.96250		4311.20	-88.20	115.31	
07/24/16	12:26:05	2.02361		4310.98	-88.42	115.30	
07/24/16	12:29:50	2.08611		4310.76	-88.64	115.30	
07/24/16	12:33:45	2.15139		4310.53	-88.87	115.30	
07/24/16	12:37:45	2.21806		4310.31	-89.09	115.29	
07/24/16	12:41:55	2.28750		4310.10	-89.30	115.29	
07/24/16	12:46:10	2.35833		4309.89	-89.51	115.29	
07/24/16	12:50:35	2.43194		4309.68	-89.72	115.28	
07/24/16	12:55:10	2.50833		4309.48	-89.92	115.28	
07/24/16	12:59:50	2.58611		4309.29	-90.11	115.28	
07/24/16	13:04:40	2.66667		4309.10	-90.30	115.27	
07/24/16	13:09:40	2.75000		4308.90	-90.50	115.27	
07/24/16	13:14:45	2.83472		4308.72	-90.68	115.26	
07/24/16	13:20:05	2.92361		4308.54	-90.86	115.26	
07/24/16	13:25:30	3.01389		4308.38	-91.02	115.26	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Gaines Well No. 3	Gauge Depth:	7660 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-21566
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	13:31:10	3.10833		4308.20	-91.20	115.25	
07/24/16	13:37:00	3.20556		4308.04	-91.36	115.25	
07/24/16	13:43:00	3.30556		4307.89	-91.51	115.24	
07/24/16	13:49:10	3.40833		4307.75	-91.65	115.24	
07/24/16	13:55:30	3.51389		4307.61	-91.79	115.24	
07/24/16	14:02:05	3.62361		4307.48	-91.92	115.23	
07/24/16	14:08:55	3.73750		4307.36	-92.04	115.23	
07/24/16	14:15:50	3.85278		4307.23	-92.17	115.22	
07/24/16	14:23:05	3.97361		4307.10	-92.30	115.22	
07/24/16	14:30:30	4.09722		4306.97	-92.43	115.21	
07/24/16	14:38:10	4.22500		4306.85	-92.55	115.21	
07/24/16	14:46:05	4.35694		4306.73	-92.67	115.20	
07/24/16	14:54:15	4.49306		4306.61	-92.79	115.20	
07/24/16	15:02:35	4.63194		4306.48	-92.92	115.19	
07/24/16	15:11:15	4.77639		4306.37	-93.03	115.18	
07/24/16	15:20:10	4.92500		4306.25	-93.15	115.18	
07/24/16	15:29:25	5.07917		4306.14	-93.26	115.17	
07/24/16	15:38:55	5.23750		4306.01	-93.39	115.17	
07/24/16	15:48:45	5.40139		4305.90	-93.50	115.16	
07/24/16	15:58:50	5.56944		4305.80	-93.60	115.16	
07/24/16	16:09:15	5.74306		4305.69	-93.71	115.15	
07/24/16	16:20:00	5.92222		4305.61	-93.79	115.15	
07/24/16	16:31:00	6.10556		4305.53	-93.87	115.14	
07/24/16	16:42:25	6.29583		4305.46	-93.94	115.13	
07/24/16	16:54:15	6.49306		4305.37	-94.03	115.13	
07/24/16	17:06:20	6.69444		4305.30	-94.10	115.12	
07/24/16	17:18:55	6.90417		4305.21	-94.19	115.12	
07/24/16	17:31:50	7.11944		4305.11	-94.29	115.11	
07/24/16	17:45:05	7.34028		4305.03	-94.37	115.11	
07/24/16	17:58:50	7.56944		4304.96	-94.44	115.10	
07/24/16	18:13:00	7.80556		4304.89	-94.51	115.09	
07/24/16	18:27:35	8.04861		4304.84	-94.56	115.09	
07/24/16	18:42:40	8.30000		4304.77	-94.63	115.08	
07/24/16	18:58:10	8.55833		4304.70	-94.70	115.08	
07/24/16	19:14:10	8.82500		4304.62	-94.78	115.07	
07/24/16	19:30:40	9.10000		4304.52	-94.88	115.07	
07/24/16	19:47:40	9.38333		4304.43	-94.97	115.06	
07/24/16	20:05:15	9.67639		4304.35	-95.05	115.05	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Gaines Well No. 3	Gauge Depth:	7660 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-21566
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/24/16	20:23:20	9.97778		4304.29	-95.11	115.05	
07/24/16	20:42:00	10.28889		4304.23	-95.17	115.04	
07/24/16	21:01:15	10.60972		4304.14	-95.26	115.04	
07/24/16	21:21:05	10.94028		4304.03	-95.37	115.03	
07/24/16	21:41:30	11.28056		4303.93	-95.47	115.03	
07/24/16	22:02:35	11.63194		4303.82	-95.58	115.02	
07/24/16	22:24:20	11.99444		4303.74	-95.66	115.02	
07/24/16	22:46:50	12.36944		4303.68	-95.72	115.01	
07/24/16	23:09:55	12.75417		4303.62	-95.78	115.01	
07/24/16	23:33:45	13.15139		4303.52	-95.88	115.01	
07/24/16	23:58:20	13.56111		4303.41	-95.99	115.00	
07/25/16	00:23:45	13.98472		4303.33	-96.07	115.00	
07/25/16	00:49:55	14.42083		4303.28	-96.12	114.99	
07/25/16	01:16:50	14.86944		4303.18	-96.22	114.99	
07/25/16	01:44:40	15.33333		4303.07	-96.33	114.99	
07/25/16	02:13:20	15.81111		4302.96	-96.44	114.98	
07/25/16	02:42:55	16.30417		4302.90	-96.50	114.98	
07/25/16	03:13:25	16.81250		4302.84	-96.56	114.98	
07/25/16	03:44:50	17.33611		4302.73	-96.67	114.97	
07/25/16	04:17:15	17.87639		4302.59	-96.81	114.97	
07/25/16	04:50:40	18.43333		4302.49	-96.91	114.97	
07/25/16	05:25:10	19.00833		4302.46	-96.94	114.96	
07/25/16	06:00:40	19.60000		4302.37	-97.03	114.96	
07/25/16	06:37:20	20.21111		4302.27	-97.13	114.96	
07/25/16	07:15:10	20.84167		4302.22	-97.18	114.95	
07/25/16	07:54:10	21.49167		4302.15	-97.25	114.95	
07/25/16	08:34:20	22.16111		4302.03	-97.37	114.95	
07/25/16	09:15:45	22.85139		4301.92	-97.48	114.95	
07/25/16	09:58:30	23.56389		4301.90	-97.50	114.95	
07/25/16	10:42:35	24.29861		4301.80	-97.60	114.95	
07/25/16	11:28:00	25.05556		4301.64	-97.76	114.94	
07/25/16	12:14:50	25.83611		4301.54	-97.86	114.94	
07/25/16	13:03:10	26.64167		4301.46	-97.94	114.94	
07/25/16	13:53:00	27.47222		4301.31	-98.09	114.94	
07/25/16	14:44:25	28.32917		4301.21	-98.19	114.94	
07/25/16	15:37:20	29.21111		4301.10	-98.30	114.94	
07/25/16	16:32:00	30.12222		4301.07	-98.33	114.93	
07/25/16	17:28:20	31.06111		4300.93	-98.47	114.93	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Gaines Well No. 3	Gauge Depth:	7660 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-21566
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/25/16	18:26:25	32.02917		4300.84	-98.56	114.93	
07/25/16	19:26:20	33.02778		4300.61	-98.79	114.93	
07/25/16	20:28:05	34.05694		4300.53	-98.87	114.93	
07/25/16	21:31:45	35.11806		4300.33	-99.07	114.92	
07/25/16	22:37:25	36.21250		4300.15	-99.25	114.92	
07/25/16	23:45:10	37.34167		4299.99	-99.41	114.91	
07/26/16	00:55:00	38.50556		4299.72	-99.68	114.91	
07/26/16	02:07:00	39.70556		4299.56	-99.84	114.91	
07/26/16	03:21:15	40.94306		4299.38	-100.02	114.91	
07/26/16	04:37:50	42.21944		4299.13	-100.27	114.91	
07/26/16	05:56:45	43.53472		4298.97	-100.43	114.91	
07/26/16	07:18:10	44.89167		4298.75	-100.65	114.91	
07/26/16	08:42:10	46.29167		4298.64	-100.76	114.92	
07/26/16	10:08:45	47.73472		4298.49	-100.91	114.92	
07/26/16	11:38:00	49.22222		4298.22	-101.18	114.93	
07/26/16	13:10:05	50.75694		4298.05	-101.35	114.93	
07/26/16	14:45:00	52.33889		4297.71	-101.69	114.93	
07/26/16	16:22:50	53.96944		4297.53	-101.87	114.94	
07/26/16	18:03:45	55.65139		4297.31	-102.09	114.94	
07/26/16	19:47:50	57.38611		4297.12	-102.28	114.94	
07/26/16	21:35:10	59.17500		4296.91	-102.49	114.94	
07/26/16	23:25:50	61.01944		4296.65	-102.75	114.95	
07/27/16	01:20:00	62.92222		4296.38	-103.02	114.95	
07/27/16	03:17:40	64.88333		4296.19	-103.21	114.95	
07/27/16	05:19:00	66.90556		4295.91	-103.49	114.96	
07/27/16	06:38:30	68.23056	985	4295.77	-103.63	114.96	Ended falloff test. Prepare to POOH.
07/27/16	07:03:50	68.65278	985	4295.86		114.60	POOH with gauge to surface,
07/27/16	07:03:55	68.65417		4295.93		114.60	
07/27/16	07:04:00	68.65556		4295.59		114.60	
07/27/16	07:05:00	68.67222		4295.57		114.61	
07/27/16	07:06:05	68.69028		4283.09		114.71	
07/27/16	07:07:05	68.70694		4279.32		115.21	
07/27/16	07:08:05	68.72361		4237.51		115.99	
07/27/16	07:09:05	68.74028		4079.12		116.96	
07/27/16	07:10:05	68.75694		3904.27		115.95	
07/27/16	07:11:05	68.77361		3728.08		114.31	
07/27/16	07:12:05	68.79028		3571.66		112.51	
07/27/16	07:13:05	68.80694		3463.63		111.01	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Gaines Well No. 3	Gauge Depth:	7660 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-21566
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/27/16	07:14:05	68.82361		3276.77		109.29	
07/27/16	07:15:05	68.84028		3083.74		107.35	
07/27/16	07:16:05	68.85694		2886.08		105.12	
07/27/16	07:17:05	68.87361		2685.84		103.09	
07/27/16	07:18:05	68.89028		2481.61		101.19	
07/27/16	07:19:05	68.90694		2273.19		99.46	
07/27/16	07:20:05	68.92361		2059.75		97.74	
07/27/16	07:21:05	68.94028		1841.96		95.45	
07/27/16	07:22:05	68.95694		1621.00		93.56	
07/27/16	07:23:05	68.97361		1394.95		91.67	
07/27/16	07:24:05	68.99028		1212.91		90.20	
07/27/16	07:25:05	69.00694		1066.03		87.48	
07/27/16	07:26:05	69.02361		1005.34		87.52	
07/27/16	07:26:10	69.02500	985	1003.36		87.48	Gauge at surface.
07/27/16	07:27:05	69.04028		1002.41		86.79	
07/27/16	07:28:05	69.05694		986.83		86.31	
07/27/16	07:29:05	69.07361		981.96		88.35	
07/27/16	07:30:05	69.09028		983.51		89.77	
07/27/16	07:31:05	69.10694		983.85		90.51	
07/27/16	07:32:05	69.12361		983.95		90.95	
07/27/16	07:33:05	69.14028		983.91		91.27	
07/27/16	07:34:05	69.15694		983.86		91.57	
07/27/16	07:35:05	69.17361		983.84		91.87	
07/27/16	07:36:05	69.19028		983.84		92.15	
07/27/16	07:37:05	69.20694		983.83		92.41	
07/27/16	07:38:05	69.22361		983.84		92.65	
07/27/16	07:39:05	69.24028		983.86		92.85	
07/27/16	07:40:05	69.25694		983.88		93.01	
07/27/16	07:41:05	69.27361		983.86		93.16	
07/27/16	07:42:05	69.29028		984.45		93.30	
07/27/16	07:43:05	69.30694		984.05		93.42	
07/27/16	07:44:05	69.32361		983.97		93.52	
07/27/16	07:44:35	69.33194	985	984.00		93.56	Pressured down lubricator.
07/27/16	07:44:55	69.33750		8.03		93.57	Test complete.
07/27/16	07:45:05	69.34028		8.05		93.58	
07/27/16	08:00:05	69.59028		9.19		96.67	
07/27/16	08:15:05	69.84028		7.80		104.33	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	PB Energy Storage Services, Inc.	Test Date:	07/22 - 07/27/2016
Well:	Gaines Well No. 3	Gauge Depth:	7660 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-21566
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
07/27/16	08:19:25	69.91250		8.23		104.62	Powered down gauge.

Remarks: MIRU slickline. RIH with 1.25" weight bar. Cleared 7665 ft. POOH. RIH and suspend electronic gauges at 7660 ft. Coninue injecting for 48 hours. SI well for 68 hr BHP falloff test. POOH with gauges to surface. RDMO.

Certified: FESCO, Ltd. - Ozona, Texas

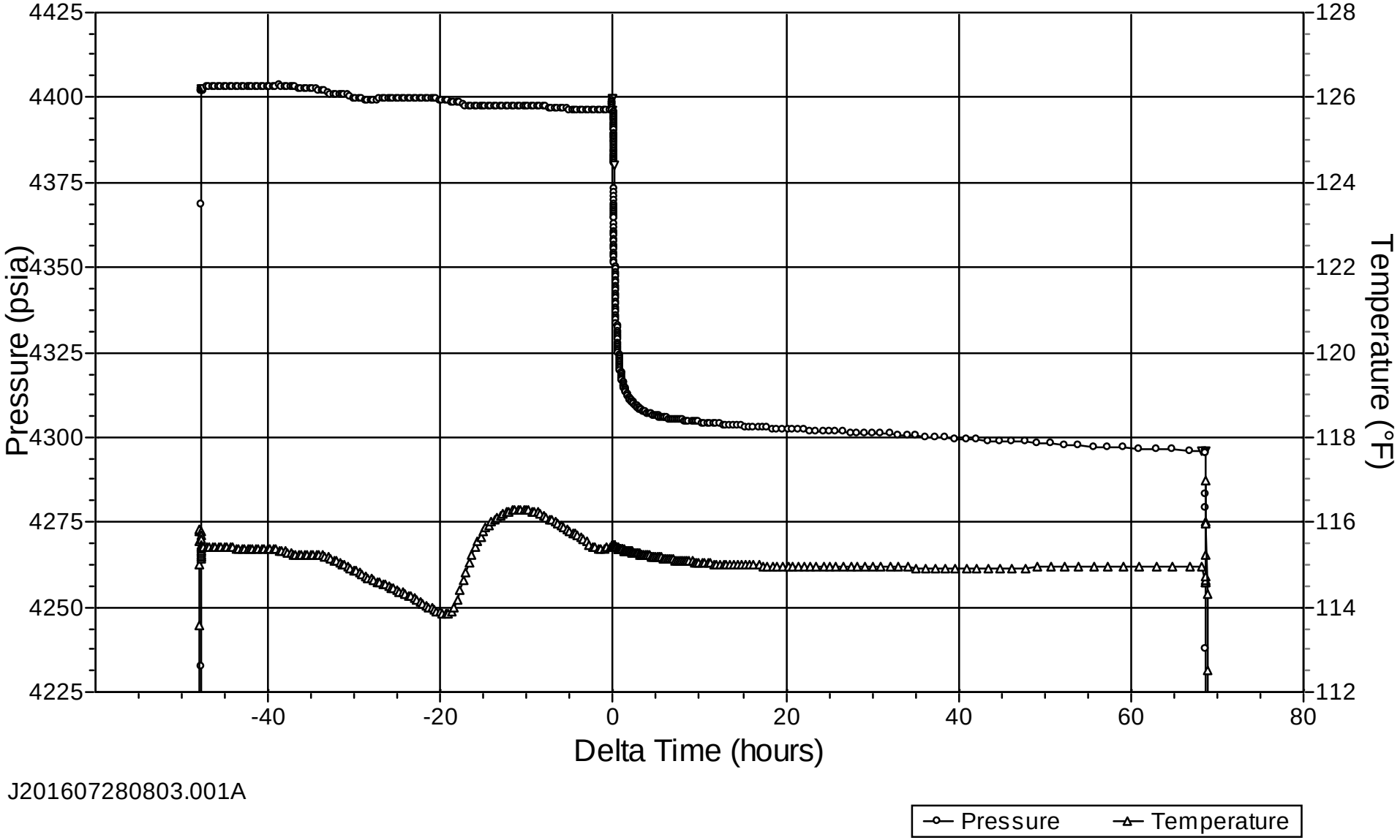
By: Tom Anderson
District Manager - (325) 392-3773

Job No.: J201607280803.001A

PB Energy Storage Services, Inc.

Cartesian Plot

Well:	Gaines Well No. 3	Gauge Type:	Electronic
Field:	Davonia	Gauge Range:	16000 psi
Test Date:	07/22 - 07/27/2016	Gauge SN:	SP-21566

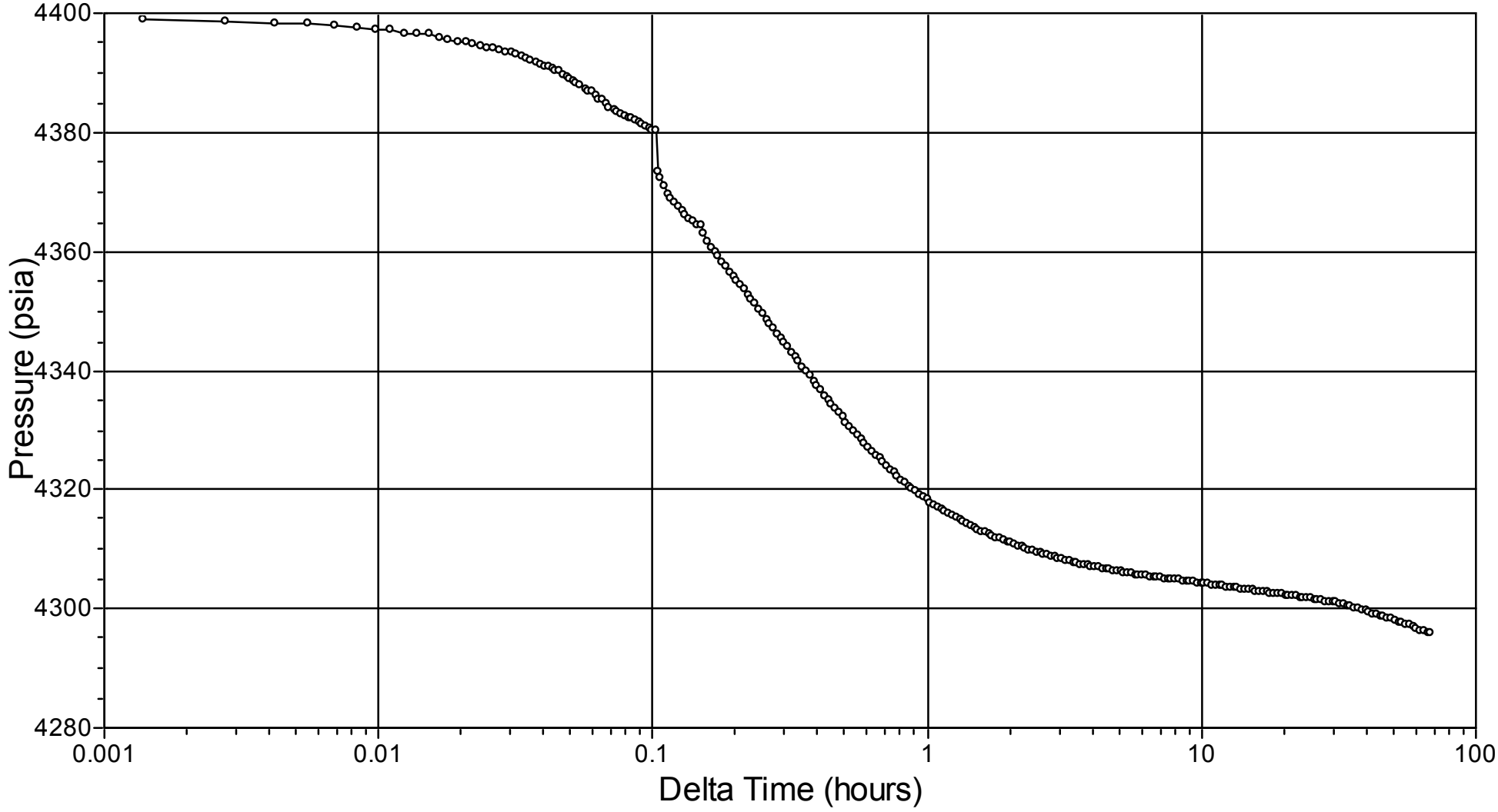


J201607280803.001A

PB Energy Storage Services, Inc.

Semilog Plot (Falloff Test)

Well:	Gaines Well No. 3	Gauge Type:	Electronic
Field:	Davonia	Gauge Range:	16000 psi
Test Date:	07/22 - 07/27/2016	Gauge SN:	SP-21566

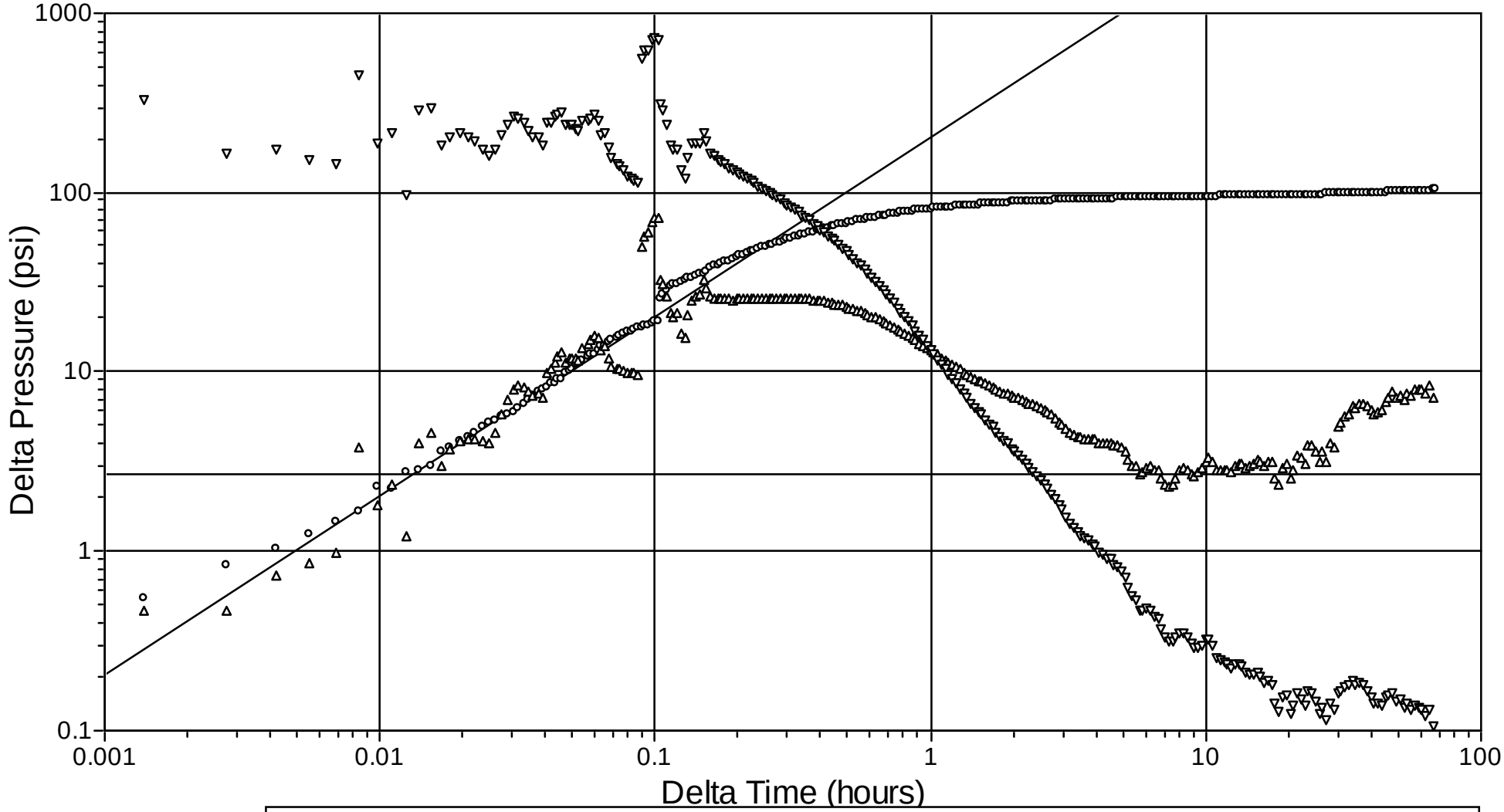


J201607280803.001A

PB Energy Storage Services, Inc.

Log Plot (Falloff Test)

Well:	Gaines Well No. 3	Gauge Type:	Electronic
Field:	Davonia	Gauge Range:	16000 psi
Test Date:	07/22 - 07/27/2016	Gauge SN:	SP-21566



J201607280803.001A

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

STATIC GRADIENT SURVEY

Company:	PB Energy Storage Services, Inc.	Test Date:	7/22/2016
Well:	Gaines Well No. 3	Location:	Eddy County, NM
Field:	Davonia	Status:	Shut in.
Formation:	Unavailable		

Well Data:	Wellhead Connection: 2.5" EUE	Gauge Type:	Electronic
	Elevation: 13 ft above GL	Gauge SN:	SP-21566
	Tubing: 4.5" Set at 7575 ft (EOT)	Gauge Range:	16000 psi
	Casing: 7" Set at 9022 ft	Gauge OD:	1.2500"
	Perfs: 7660 - 8450; 8540 - 8620 ft (MD		
	Datum: 8140 ft (MD)		

Depth			Pressure					
MD ft	TVD ft	Delta Depth ft	WHP psia	BHT °F	Gauge Pressure psia	Delta Pressure psi	Pressure Gradient psi / ft	Comments
0	0	0	985	93.56	984.00	0.00	0.0000	
7660	7660	7660	985	114.60	4295.86	3311.86	0.4324	POOH after 68 hr falloff test.

BHT at Test Depth:	114.60 °F	Oil Level:	None	Previous BHP:	U/A
Extrapolated BHP at Datum:	4503.00 psia	Water Level:	Surface	BHP Change:	U/A
BHP Gradient at Datum :	0.4324 psi/ft	Csg Press:	N/A		

Remarks: POOH after 68 hr BHP falloff test to surface. RDMO.

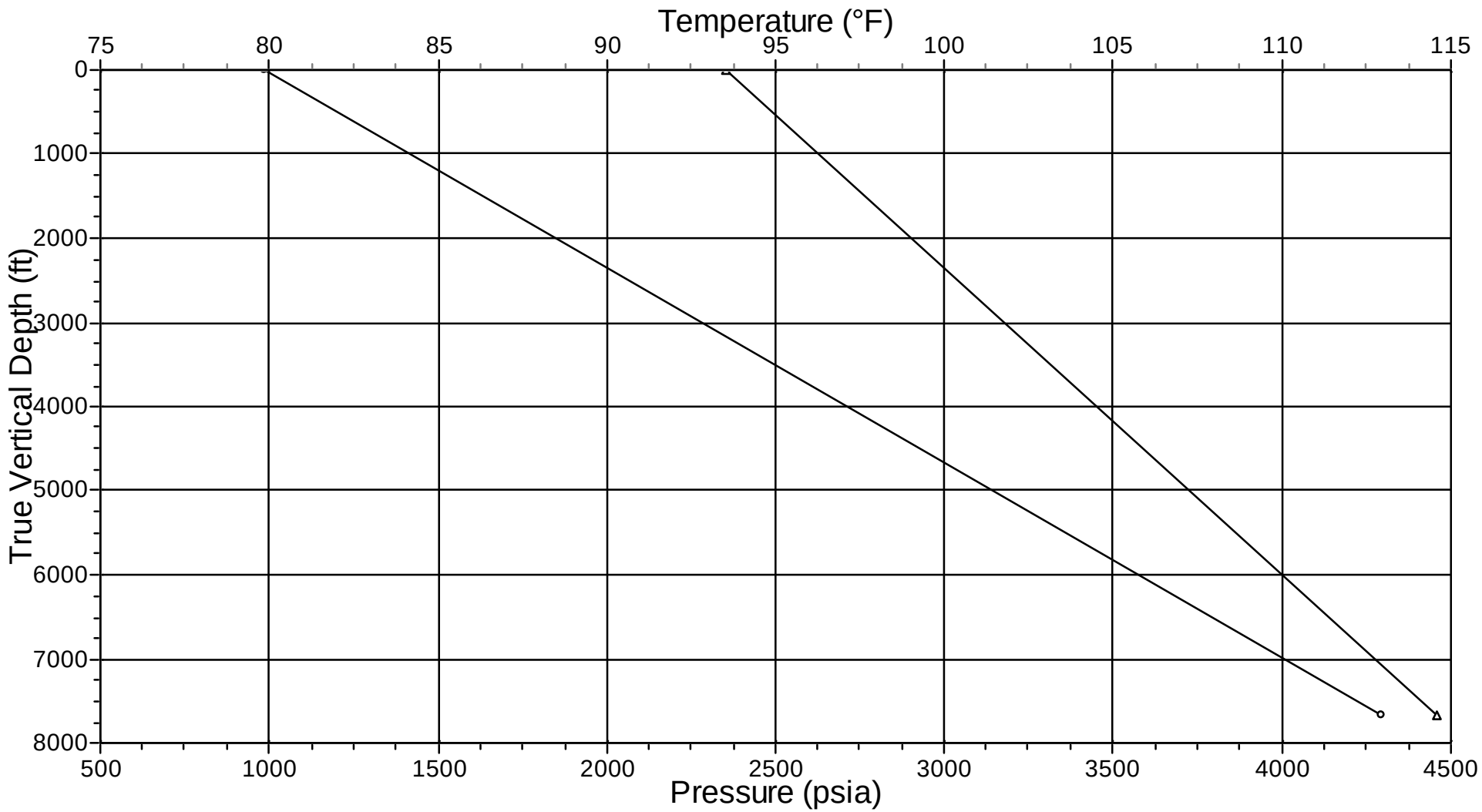
Certified: FESCO, Ltd. - Ozona, Texas

By: Tom Anderson
District Manager - (325) 392-3773

PB Energy Storage Services, Inc.

Static Gradient Plot

Well:	Gaines Well No. 3	Gauge Type:	Electronic
Field:	Davonia	Gauge Range:	16000 psi
Test Date:	07/22/2016	Gauge SN:	SP-21566



J201607280803.001A

Submit 1 Copy To Appropriate District Office
District I – (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II – (575) 748-1283
811 S. First St., Artesia, NM 88210
District III – (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV – (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
Revised July 18, 2013

WELL API NO.
30-015-20894

5. Indicate Type of Lease
STATE X☐ FEE ☐

6. State Oil & Gas Lease No.
B-2071-28

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
CHUKKA – WDW - 2

1. Type of Well: Oil Well ☐ Gas Well ☐X Other: Injection Well

8. Well Number: WDW - 2

2. Name of Operator:
HollyFrontier Navajo Refining LLC.

9. OGRID Number: 15694

3. Address of Operator:
P.O. BOX 159, ARTESIA, NM. 88211 ; 501 E. MAIN, ARTESIA, NM. 88210

10. Pool name or Wildcat:
PENN 96918

4. Well Location
Unit Letter_: E____: 1980__feet from the__NORTH line and ____660__feet from the ___WEST__line
Section 12 Township 18S Range 27E NMPM County: EDDY

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
3607' GL., 3623' RKB

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	P AND A	☐
PULL OR ALTER CASING	☐	MULTIPLE COMPL	☐	CASING/CEMENT JOB	☐		
DOWNHOLE COMMINGLE	☐						
CLOSED-LOOP SYSTEM	☐						
X: OTHER: PERFORM PRESSURE FALLOFF TEST				OTHER:	☐		

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

July 22, 2016 –Install bottomhole gauges into WDW-1, WDW-2, and WDW-3 by 11:45am. Continue injection into all three wells.

July 23, 2016 – Continue injection into all three wells.

July 24, 2016 – At 2:00 PM, the offset wells WDW-1 and WDW-3 will be shut-in. A constant injection rate will be established for WDW-2 at 160 GPM and continue for a 30-hour injection period. Do not exceed 1400 psig wellhead pressure.

July 25, 2016 – At 8:00pm, WDW-2 will be shut in for a 30-hour falloff period. WDW-1 and WDW-3 will remain shut-in.

July 26, 2016– All three wells will continue to be shut in while monitoring falloff pressure in all three wells.

July 27, 2016 – At 8:00am, acquire downhole pressure gauges from all three wells. Tag bottom of fill and come out of hole very slowly, making 7-minute gradient stops while coming out of WDW-2 every 1000 feet (7000 ft, 6000 ft, 5000 ft, 4000 ft, 3000 ft, 2000 ft, 1000 ft, surface). Turn the wells back to Navajo personnel

Spud Date: | Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Lewis Dade TITLE: Env. Spec DATE 7/13/2016

Type or print name: Lewis Dade E-mail address: Lewis.Dade@hollyfrontier.com PHONE: 575-746-5281

For State Use Only

APPROVED BY: Carly Chavez TITLE Environmental Engineer DATE 7/21/2016

Conditions of Approval (if any):

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, May 12, 2016 11:24 AM
To: Denton, Scott (Scott.Denton@HollyFrontier.com); pthompson@merrion.bz
Cc: Griswold, Jim, EMNRD; Kuehling, Monica, EMNRD; Smith, Cory, EMNRD; Inge, Richard, EMNRD
Subject: New Mexico UIC Class I (non-hazardous) Well MIT & Annual Fall-Off Test Scheduling with Completion by September 30, 2016 (San Juan and Eddy Counties)

Scott and Philana:

Re: Annual Fall-Off Test for Agua Moss, LLC (San Juan County): UICl-005 (API# 30-045-28653); and HollyFrontier Navajo Refining Company (Eddy County): UICl-008-1 (WDW-1) API# 30-015-27592; UICl-008-2 (WDW-2) API# 30-015-20894 & UICl-008-3 (WDW-3) API# 30-015-26575

Good morning. It is that time of year again to remind operators about their annual Underground Injection Control (UIC) Program Fall-Off Tests (FOT) and Mechanical Integrity Tests (MIT) for this season to be completed on or before Friday, September 30, 2016. A C-103 Form with details about your well plans must be submitted to the District Office with a copy to me in Santa Fe.

The list of operator names w/ associated UIC Class I (non-hazardous) Wells affected by this notification are provided above. Operators are aware of the MIT (30 min @ => 300 psig) and Bradenhead Test requirements.

The FOT spans several days with a couple of important notes to operators from past testing, please install your bottom hole gauge(s) with recorder(s) at least 48-hours in advance of the pump shut-off during the pseudo steady-state injection period. OCD recommends that operators clean out the wellbore to eliminate erroneous well bore related FOT results. The OCD District Office would appreciate notifications for the dates and times of the bottom hole gauge installation, and pump shut-off to observe the short term fall-off in pressure in order to make arrangements to witness these actions.

Also, you are accountable for your OCD approved FOT Test Plan and the requirements in the UIC Test Guidance with Reporting Requirements at http://www.emnrd.state.nm.us/ocd/documents/UICGuidance.pdf. For access to your FOT Plan, please enter your permit information on "OCD Online" at http://ocdimage.emnrd.state.nm.us/imaging/AEOrderCriteria.aspx and enter the Order Type "UICI" along with your Order number.

For information on New Mexico's UIC Program and training information, please go to: http://www.emnrd.state.nm.us/OCD/publications.html.

Please contact me at (505) 476-3490 on or before May 31, 2016 to schedule your MIT and FOT date and time or if you have questions.

Thank you in advance for your cooperation.

Copy: UIC Class I (non-hazardous) Well Files UICI- 5; and UICI 8-1, 8-2 & 8-3

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

Phone: (505) 476-3490
Main Phone: (505) 476-3440
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: www.emnrd.state.nm.us/ocd
Why not prevent pollution, minimize waste, reduce operation costs, and move forward with the rest of the Nation? To see how, go to “Publications” and “Pollution Prevention” on the OCD Website.