UICI-005

EPA FALL OFF TEST REPORT

2022

From: Philana Thompson
To: Chavez, Carl, EMNRD
Subject: [EXTERNAL] FOT Submittal
Date: Monday, October 10, 2022 12:25:04 PM

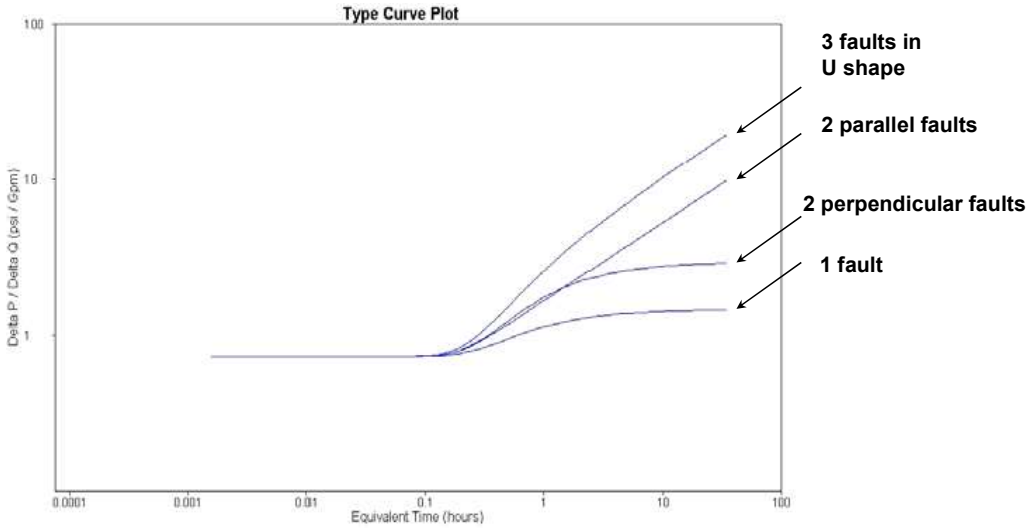
CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

The FOT has been submitted electronically Doc ID 149870

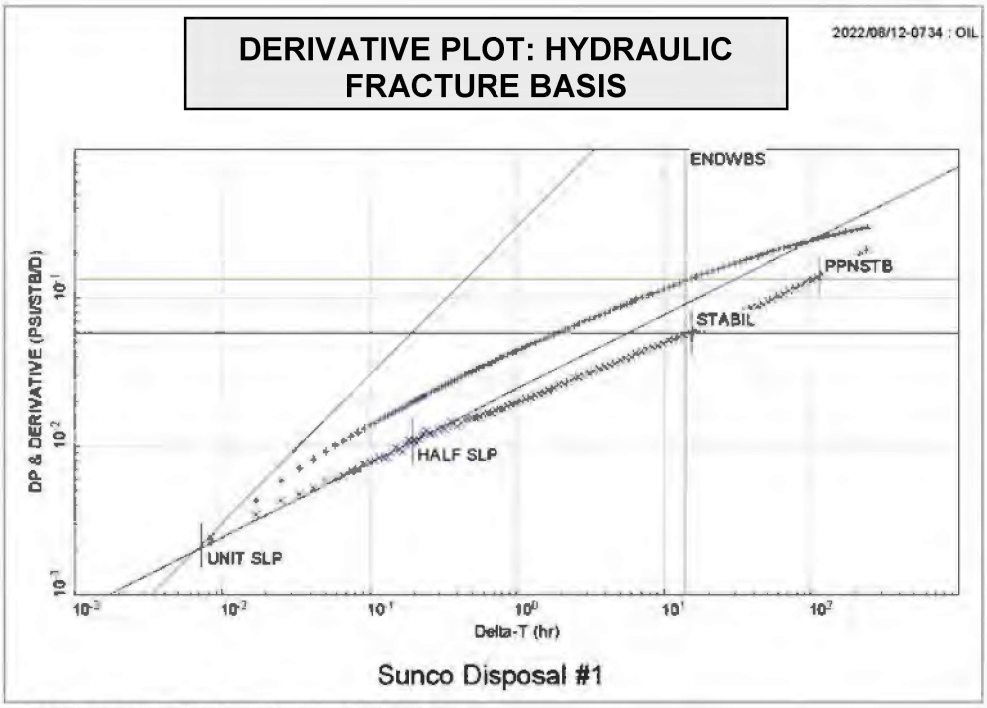
Thank you,
Philana

Philana Thompson
(505) 486-1171
HSE & Regulatory Compliance
Merrion Oil & Gas Corporation

Boundary Effects from Sealing Faults – Derivative Patterns



DERIVATIVE PLOT: HYDRAULIC FRACTURE BASIS



Sunco Disposal #1

Partial Penetration Vertical Fracture

well. storage	= 0.140 BBLS/PSI
skin	= -5.31
permeability	= 8.08 MD
Perm-Thickness	= 889. MD-FEET
Half.Length	= 586. FEET
Hp/Heff	= 0.435
Eff. Thickness	= 110. FEET
P-extrap.	= 3360.53 PSI
R(inv) at 15.09 hr	= 456. FEET
Smoothing Coef	= 0.,0.

Static-Data and Constants

Volume-Factor	= 1.002 vol/vol
Thickness	= 110.0 FEET
Viscosity	= 0.7370 CP
Total Compress	= .7140E-05 1/PSI
Rate	= -1685. STB/D
Storivity	= .8954E-04 FEET/PSI
Diffusivity	= 3551. FEET^2/HR
Gauge Depth	= 4362. FEET
Perf. Depth	= 4350. FEET
Datum Depth	= 4362. FEET
Analysis-Data	ID: GAU007
Based on Gauge	ID: GAU007
PFA Starts:	2022-08-08 12:28:55
PFA Ends :	2022-08-22 09:21:25

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. 30-045-28653
	5. Indicate Type of Lease STATE ☐ FEE ☒
	6. State Oil & Gas Lease No.
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 Sunco Disposal
1. Type of Well: Oil Well ☐ Gas Well ☐ Other SWD Class I	8. Well Number #1
2. Name of Operator Agua Moss, LLC	9. OGRID Number 247130
3. Address of Operator PO Box 600 Farmington, NM 87499	10. Pool name or Wildcat SWD-MV
4. Well Location Unit Letter__E__:___1595____feet from the _____North___ line and ___1005___feet from the _West_____line Section 2 Township 29N Range 12W NMPM County San Juan	
[redacted]	11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 5859'

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 ☐			
OTHER: FOT ☐		OTHER: FOT ☒	

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.

Agua Moss, LLC completed the FOT 8/22/2022, see the attached FOT Analysis and results

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__Philana Thompson_____ TITLE_____HSE & Regulatory Compliance Specialist_____DATE__10/7/2022_____

Type or print name __Philana Thompson_____ E-mail address: __pthompson@merrion.bz_____ PHONE: _505-486-1171____

For State Use Only

APPROVED BY:_____TITLE_____DATE_____

Conditions of Approval (if any):

Sunco SWD #1

30-045-28653

Class I Disposal: UICI-5-0

2022 Fall off Test

Agua Moss, LLC

P.O Box 600

Farmington, NM 87499

ORGID 247130

Report Components:

1. Facility Operator Information
    a. Agua Moss, LLC
    b. PO Box 600 Farmington, NM 87499
    c. OGRID 247130
2. Well Information:
    a. UIC Permit # UICI-5-0
    b. Class I
    c. Sunco Disposal #1
    d. 30-045-28653
    e. UL E, Sec 2, T29N, R12W 1595 FNL & 1005 FWL San Juan County
3. Current Wellbore Diagram: **Attached** (page 4)
4. Copy of Electronic Log: **Previously submitted 1992** (Page 36)
5. Copy of Porosity Log: **Previously submitted 1992** (Page 37)
6. See attached Fall off Test Analysis
    a. Fall off Test Procedure (Page 5)
    b. Analysis (Page 5)
    c. Results (Page 27)
    d. Summary (Page 27)
7. Results Comparison attached (page 28)
8. The raw test data will be kept on file for a period of 3-years and will be made available to the NMOCD upon written request. (Page 48)
9. Conclusions (page 28)
10. Any pressure or temperature anomaly: At 9:15 pm on 9/9/2022 the pumps shut down due to the high pressure kill, the pumps were immediately restarted, and the issues resolved. The injection period was extended by 24 hours to achieve the 50 hours of uninterrupted injection time.
11. Plots attached
    a. Pressure and Rate (fig 3) (page 29)
    b. Injection Rate vs Time (fig 4) (page 30)
    c. Pressure and Rate (fig 5) (page 31)
    d. Elapsed Time (fig 2) (page 5)
    e. Derivative Plot (fig 6) (page 32)
    f. Horner Plot (fig 7) (page 33)
    g. Elapsed Gauge Time (fig 8) (page 34)
    h. Injection Volumes and Surface Pressure (fig 9) (page 35)
12. NO PVT data necessary, wellbore fluid is fresh-to-slightly saline water. No significant hydrocarbons present that would alter the density, compressibility and/or viscosity of the fluid.
13. The Agua Moss, LLC internal Daily Injection Reports were used to determine the appropriate injection history to use for the analysis. A summary of those reports (January 2022 through July 2022) are attached. (page 39-41)
14. The Sunco Disposal #1 has injected approximately 16,689,852 bbls into the point lookout formation from 1994 through August 2022. The offset well McGrath SWD #4 API 30-045-25923 was plugged 7/25/2013. Cumulative injection 1994-7/2013 27,746,479 bbls.
15. 2 Mile AOR:

a. AOR 2 mile (page 42)
b. AOR 2 mile well data (page 43-47)
c. The McGrath #4 was the only offset well that was injecting into the Point Lookout formation within 1 mile. This well was plugged 7/25/2013.

16. Geological information was provided in the 2012 Permit renewal and approved in 2012.
17. Offset Wells: One offset well that was completed in the same injection interval was the McGrath #4. This well was plugged 7/2013 and therefore was not impacted.
18. Chronological listing of the daily, testing activities (Operations Log) attached (page 48-50)
    a. Date of Test: 8/8/2022 – 8/22/2022
    b. Type of injection fluid: Produced water
    c. Final Injection Pressure & Temp prior to shutting in the well: 3787 psi, 33°C
    d. Total shut-in time: 240 hours
    e. Final static pressure & temp at the end of the fall-off portion of the test: 3263 psi, 46°C
19. Location of the shut-in valve: **A wing valve located on the well's Christmas tree was closed to begin the FOT**
20. Pressure Gauges: (pages 51)
    a. 3V Sapphire – 4M gauge Model 1139
    b. Pressure range: **16-15,000 psig**
    c. Last Calibration: **2/27/2022**

Wellbore Schematic:

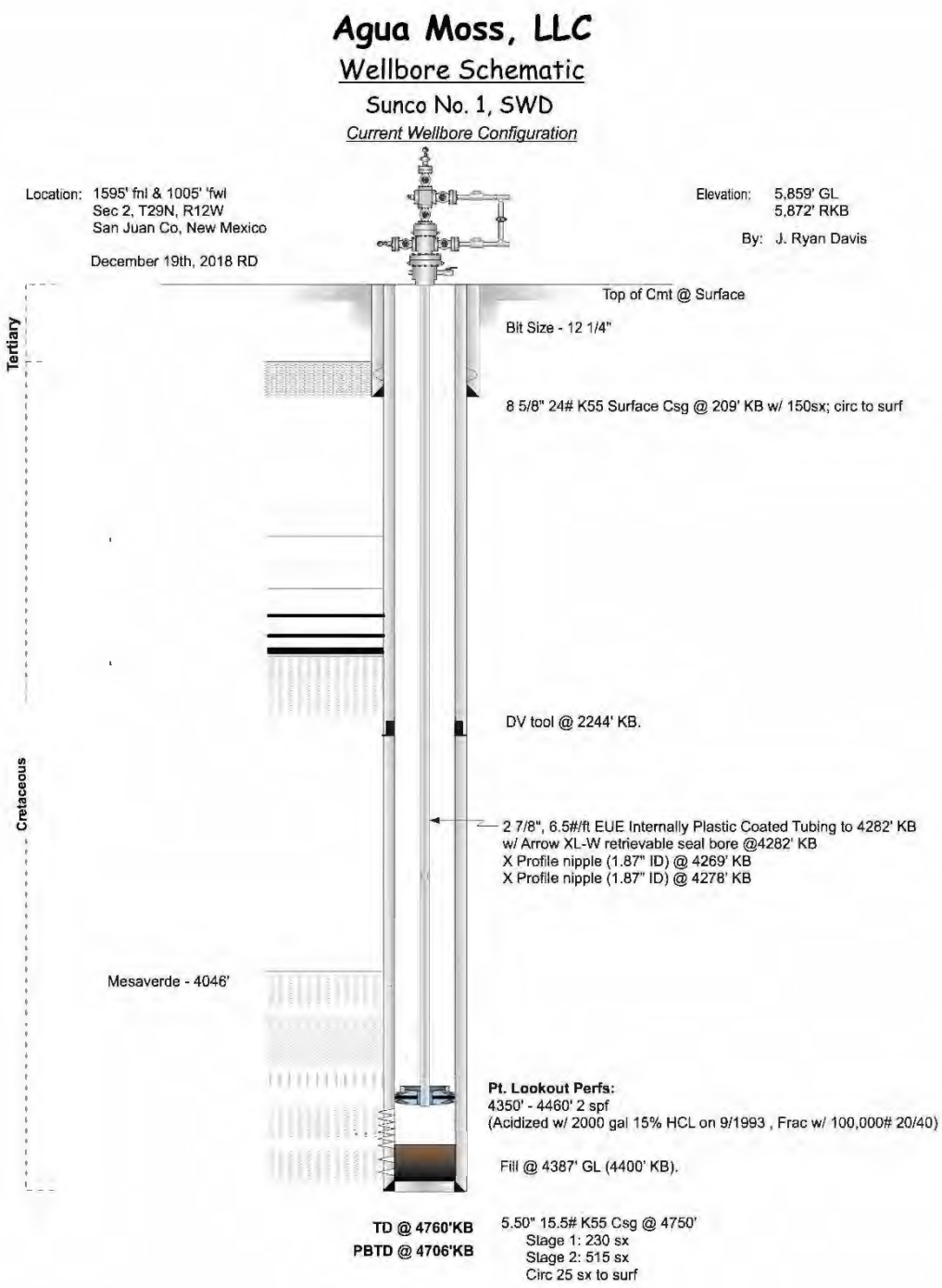


Figure 1: Wellbore Schematic

At the request of the NMOCD and permit requirements, a Falloff Test (FOT) was performed on the Sunco SWD #1 Class I injection well (UICI-5-0) from **8/8/2022 to 8/22/2022**. Below is a summary of findings from the FOT.

Procedure:

Tandem electronic gauges were run in the subject well along with two Foxboro IGP10S industrial pressure transducers installed at surface. The initial BHP was 3229 psi at a depth of 4269'. The injection period started at 12:29 pm on 08/08/2022, with a total of 6,461 bbls injected over 93 hours and an average injection rate of 1,684 bpd (49 gpm). At 9:15 pm on 9/9/2022 the pumps shut down due to high pressure kill, the pumps were immediately restarted and the issues resolved. The injection period was extended by 24 hours to achieve the 50 hours of uninterrupted injection time. The final bottom hole injection pressure was 3787 psi. Injection was shut down and the well was shut it at the wellhead. The bottom hole pressures were monitored for 240 hours of pressure falloff. The final BHP was 3263 psi.

Analysis:

The FOT data was compiled in excel and analyzed. The data was also given to a third party consultant for further analysis and confirmation of results, the analysis is found on pages 8 -20.

A Cartesian plot of pressure and temperature versus elapsed time is presented in Figure 2 below. The stabilization of pressure was confirmed prior to shut-in. The plot was reviewed for anomalous data and none was found other than the data from 9:15 pm on 9/9/22 when the pumps shut down.

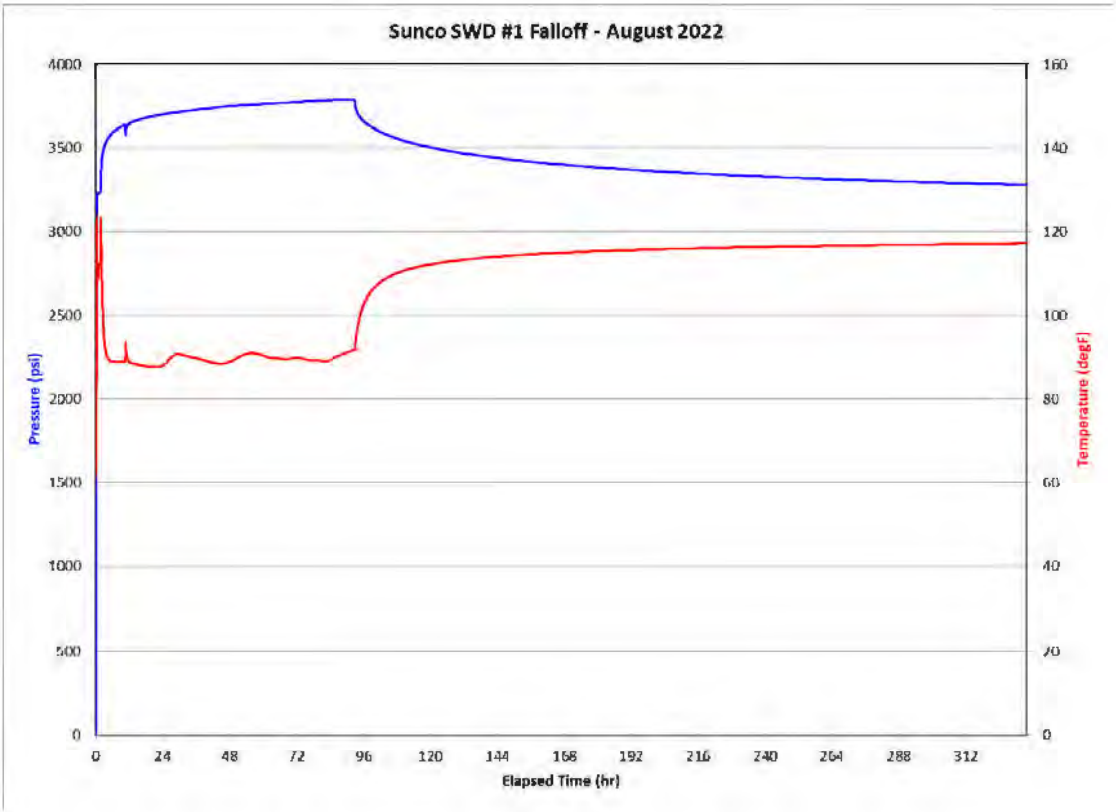


Figure 2 BH Pressure and Temperature vs. Time

IRT Analysis

2022 Fall-off Pressure Test Analysis
for the
Sunco Disposal Well #1
San Juan County, New Mexico

prepared for

Merrion Oil and Gas Corporation

16 September 2022

International Reservoir Technologies, Inc.
Lakewood, Colorado, USA

Tel. (303) 279-0877
Fax (303) 279-0936

Sunco Disposal Well #1 2022 Fall-off Test Results

Summary:

The results of the 2022 fall off test (FOT) for the Sunco Disposal Well #1 indicate that the reported wellbore fill at the depth of 4374 feet GL did influence the test analysis. However, a set of satisfactory results was obtained using the three different analysis methods as described below. The calculated results are comparable to the 2015, 2016, 2017 and 2018 fall-off test results.

Both the bottom hole gauge data and the surface gauge reported pressures were analyzed for this report. The results were similar for both data sets which would support using only a surface gauge for the FOT in the future.

As noted in the 2018 report, the pressure transient effects of the partial penetration condition of the completion due to the fill, plus the hydraulic fracture and the wellbore storage effects do obscure to some extent the reservoir property influences; however, again a reasonable and satisfactory set of reservoir properties could be calculated. The conventional straight-line analysis for extrapolated pressure and the reservoir property calculations from the MDH type plot is acceptable and the type curve analysis and the derivative plot results are reasonable. The input parameters for the fluid properties (i.e. PVT data) were the same as the 2018, 2017 and 2016 tests with the source being the report titled “2nd Quarter 2016 Sampling - Injection Well.pdf”, NM1-9 INJECTION WELL ANALYTICAL RESULTS, Agua Moss Disposal Facility, Crouch Mesa Road, San Juan County, New Mexico, 6/28/16.

For the analysis using the BH gauge data, the results from the derivative, Horner and MDH type pressure plots are summarized in the table below. The results for the different methods were consistent and the average calculated properties were:

- Estimated Kw (permeability) = 9.1 md
- Estimated skin = -5.8
- Extrapolated pressure = 3,303 psig
- Fracture half-length = 586 feet (from derivative half-slope line)
- Radius of investigation = 1,690 feet

Calculated Reservoir Parameters - Bottom Hole Guage				
	Horner Analysis	MDH Plot	Derivative Plot	Average
Estimated Kw (permeability, mD)	11.5	7.7	8.1	9.1
Estimated skin (dimensionless)	-6.7	-5.5	-5.3	-5.8
Extrapolated pressure (psig)	3,174	3,375	3,361	3,303
Fracture half-length (feet)	--	--	586	586
Radius of investigation (feet)	--	1,960	--	1,960

For the analysis using the surface gauge data, the results from the derivative, Horner and MDH type pressure plots are summarized in the table below. The surface recorded data was adjusted to BH datum of 4362 feet using a gradient of 0.431 psi/foot. Also, the initial few minutes of surface gauge data was smoothed slightly due to erratic points caused by the proximity to the pump as the injection was stopped.

The results for the different methods were consistent and the average calculated properties were:

- Estimated Kw (permeability) = 8.7 md
- Estimated skin = -5.8
- Extrapolated pressure = 3,293 psig
- Fracture half-length = 701 feet (from derivative half-slope line)
- Radius of investigation = 1,930 feet

Calculated Reservoir Parameters - Gauge (Adjusted to BH Datum)				
	Horner Analysis	MDH Plot	Derivative Plot	Average
Estimated Kw (permeability, mD)	10.8	8.0	7.3	8.7
Estimated skin (dimensionless)	-6.7	-5.4	-5.4	-5.8
Extrapolated pressure (psig)	3,168	3,372	3,339	3,293
Fracture half-length (feet)	--	--	701	701
Radius of investigation (feet)	--	1,930	--	1,930

Larger versions of the following analysis plots appear at the end of this document.

Input data and assumptions:

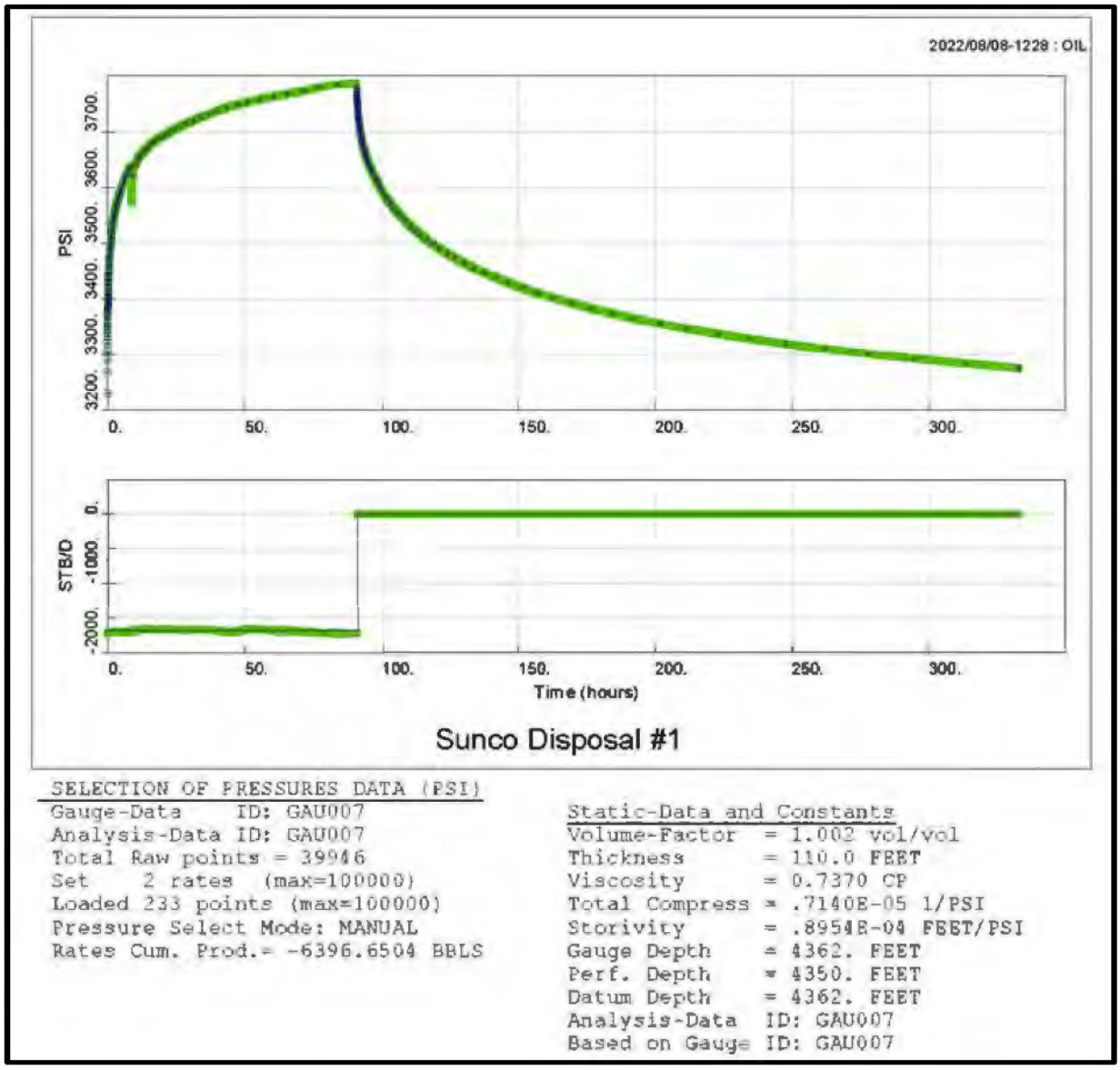
Assumptions:

- Formation fluid properties equal injection water properties due to cumulative volume injected and miscibility of formation water and injection water
- Reservoir temperature = 91 deg F
- Porosity = 0.114 (fraction, estimated from density log)
- Net pay = 110 feet
- Rock compressibility = 4.50E-06 1/psi (correlation)
- Wellbore radius = 0.506 ft
- Wellbore volume total = 34.88 bbls (tubing = 24.79 bbls, casing = 10.09 bbls)
- Wellbore compressibility = injection water compressibility =2.64E-06 1/psi (from Osif correlation)
- Injected water specific gravity = 1.006 (pure water =1.0); density = 8.392 lb./gal, TDS = 15,500 mg/L
- Injected water FVF = 1.0023 rb/stb (McCain correlation)
- Injected water viscosity = 0.737 cp (McCain correlation)

International Reservoir Technologies, Inc.

BOTTOM HOLE GAUGE PRESSURE & RATE DATA PLOT:

This plot shows the raw data from the bottom hole pressure gauge and the injection rate data.



BOTTOM HOLE GAUGE DERIVATIVE PLOT:

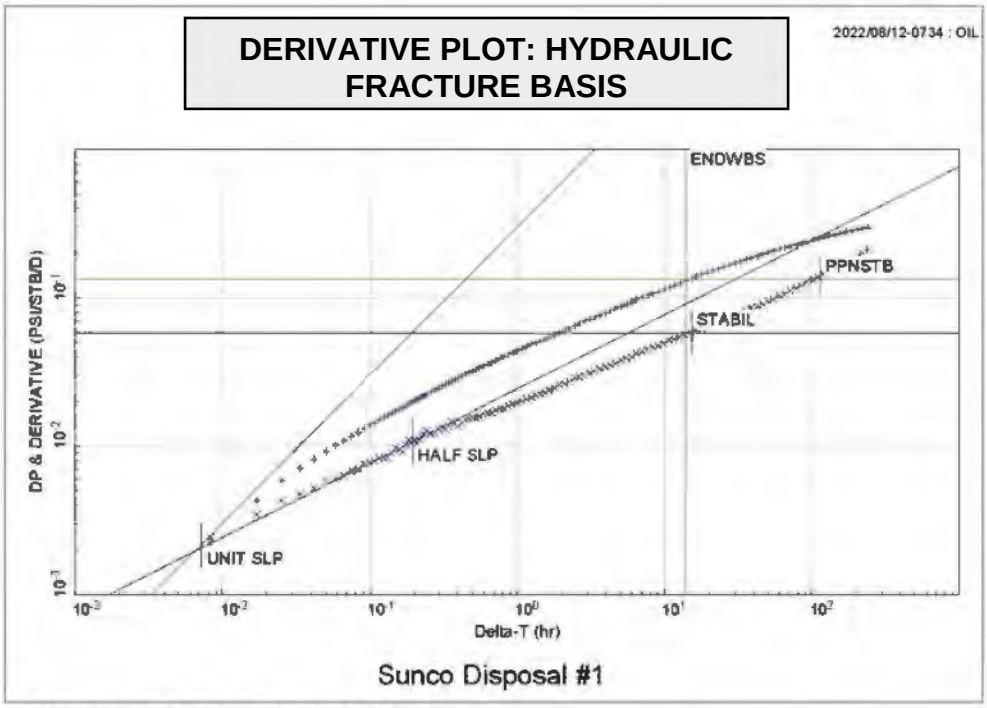
Conclusions: The behavior of the derivative curve is affected by the wellbore fill, the wellbore storage and the influence of an apparent hydraulic fracture. The derivative analysis was made using a hydraulic fracture reservoir model, with partial penetration, to best calculate the reservoir properties.

The plot below implies a half-slope as shown in the derivative curve which is characteristic of linear-flow due to a hydraulic-fracture. The calculated permeability is 8.1 md and the calculated half-length for the fracture was 586 feet.

- Estimated Kw (permeability) = 8.1 md
- Estimated skin = -5.3
- Fracture half-length = 586 feet
- Estimated extrapolated pressure = 3,361 psig

International Reservoir Technologies, Inc.

DERIVATIVE PLOT: HYDRAULIC FRACTURE BASIS



Partial Penetration Vertical Fracture

well. storage	= 0.140 BBLS/PSI
skin	= -5.31
permeability	= 8.08 MD
Perm-Thickness	= 889. MD-FEET
Half.Length	= 586. FEET
Hp/Heff	= 0.435
Eff. Thickness	= 110. FEET
P-extrap.	= 3360.53 PSI
R(inv) at 15.09 hr	= 456. FEET
Smoothing Coef	= 0.,0.

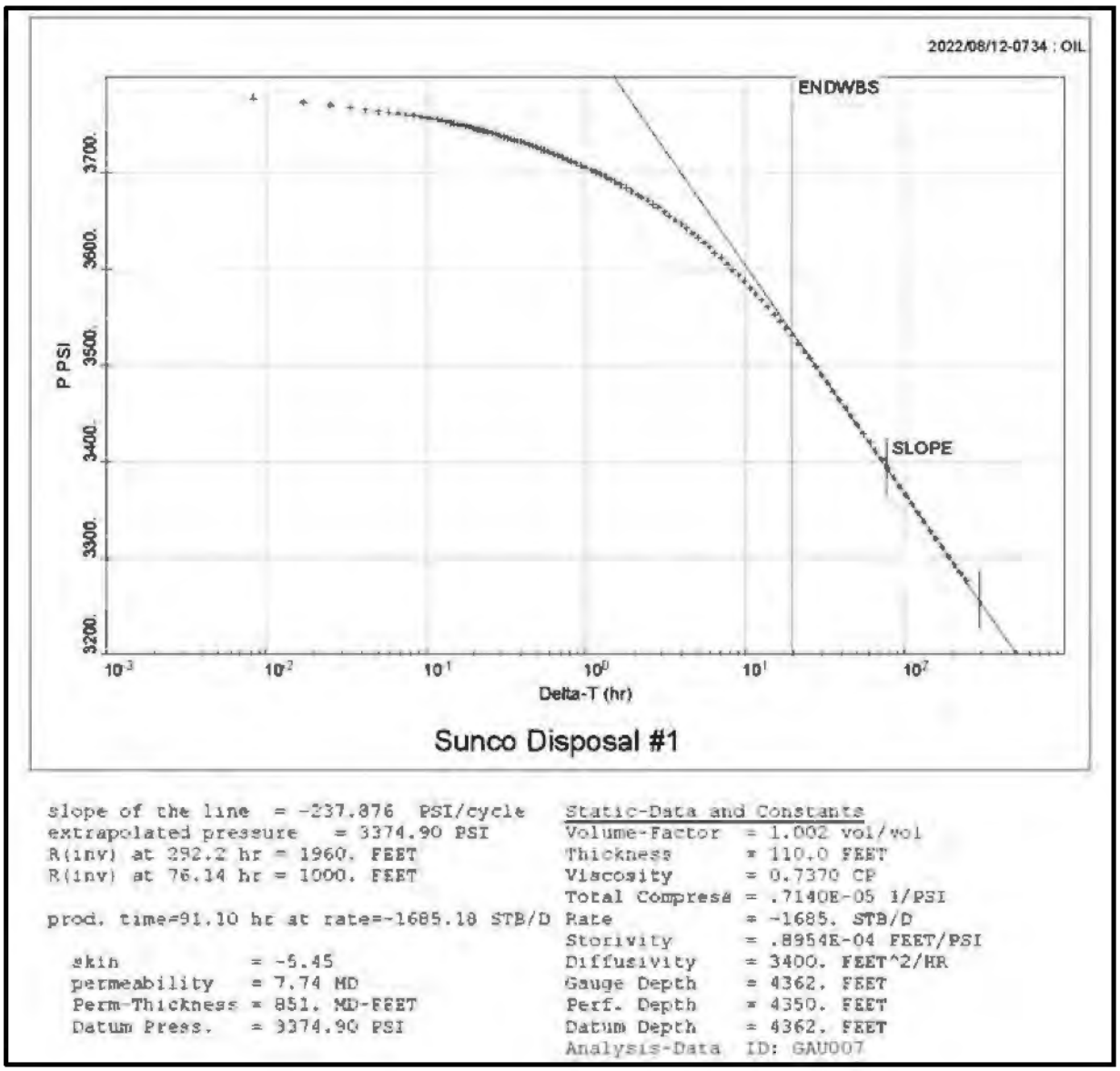
Static-Data and Constants

Volume-Factor	= 1.002 vol/vol
Thickness	= 110.0 FEET
Viscosity	= 0.7370 CP
Total Compress	= .7140E-05 1/PSI
Rate	= -1685. STB/D
Storivity	= .8954E-04 FEET/PSI
Diffusivity	= 3551. FEET^2/HR
Gauge Depth	= 4362. FEET
Perf. Depth	= 4350. FEET
Datum Depth	= 4362. FEET
Analysis-Data	ID: GAU007
Based on Gauge	ID: GAU007
PFA Starts:	2022-08-08 12:28:55
PFA Ends :	2022-08-22 09:21:25

BOTTOM HOLE GAUGE MDH PLOT:

Conclusions: The MDH stabilized flow period was reached relatively late in the conventional straight-line extrapolation for the extrapolated pressure, however the MDH values do appear reasonable.

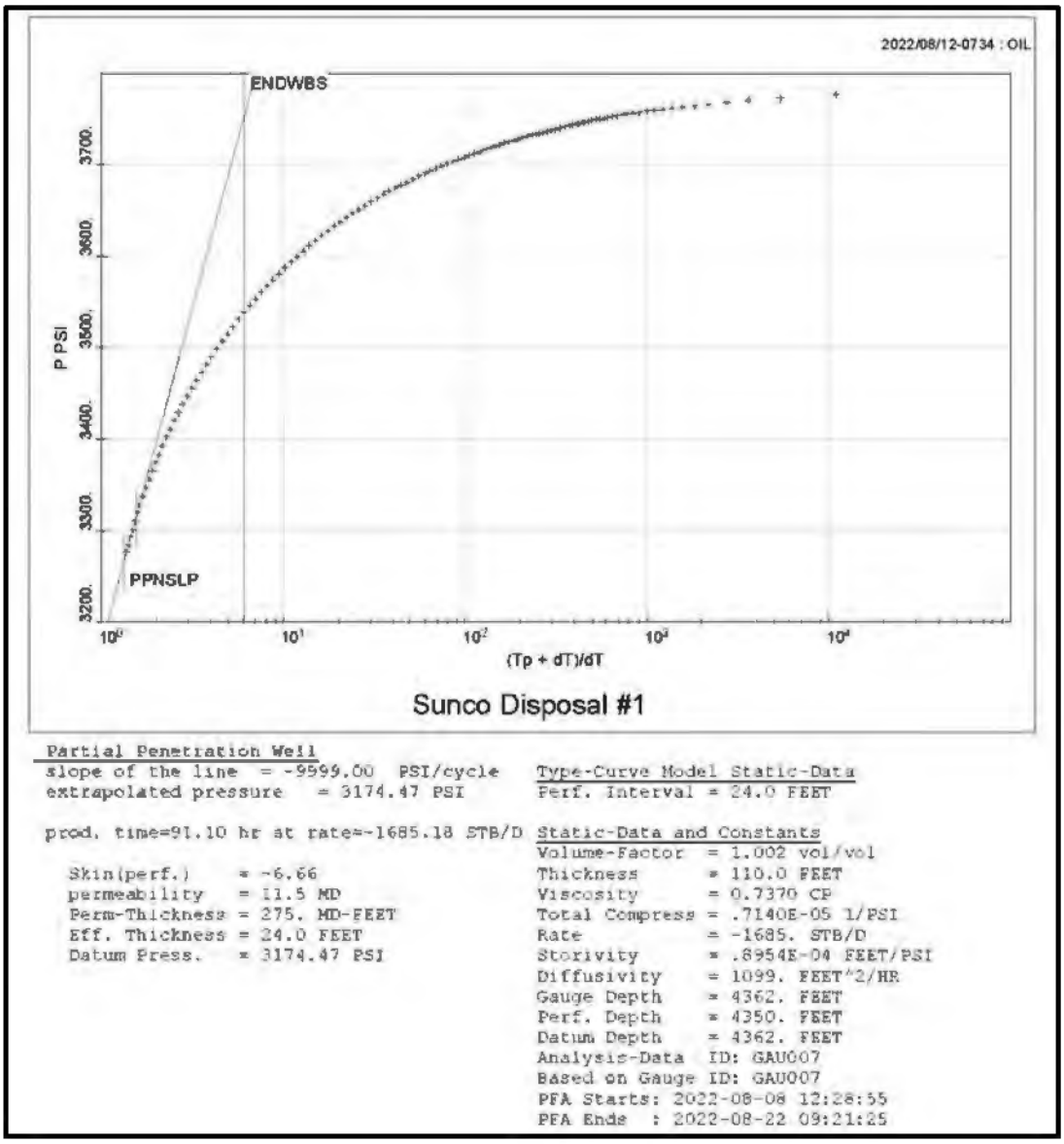
- Estimated extrapolated pressure = 3,375 psig
- Estimated Kw (permeability) = 7.7 md
- Estimated skin = -5.5
- Radius of investigation = 1,960 feet



BOTTOM HOLE GAUGE HORNER PLOT:

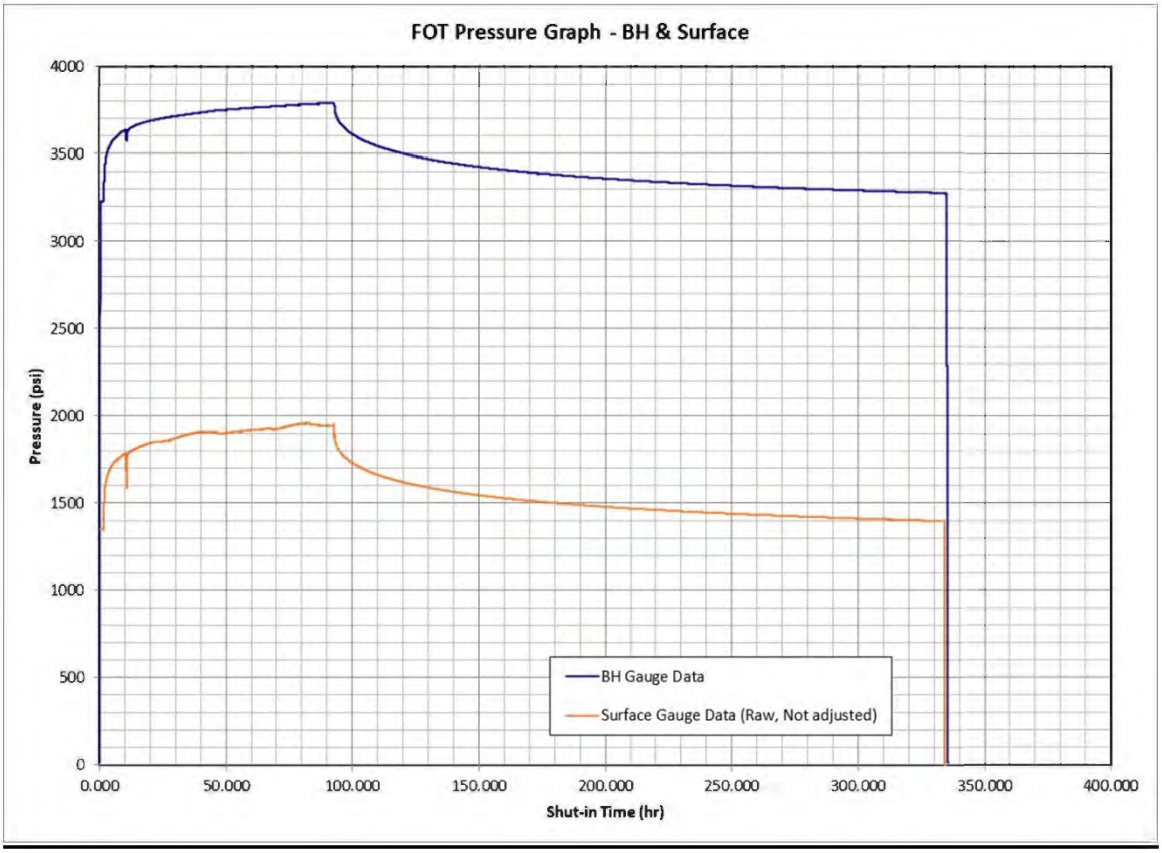
Conclusions: The stabilized flow period was reached late in the conventional straight-line extrapolation; however, the calculated reservoir parameters do appear reasonable.

- Estimated extrapolated pressure = 3,174 psig
- Estimated Kw (permeability) = 11.5 md
- Estimated skin = -6.7



International Reservoir Technologies, Inc.

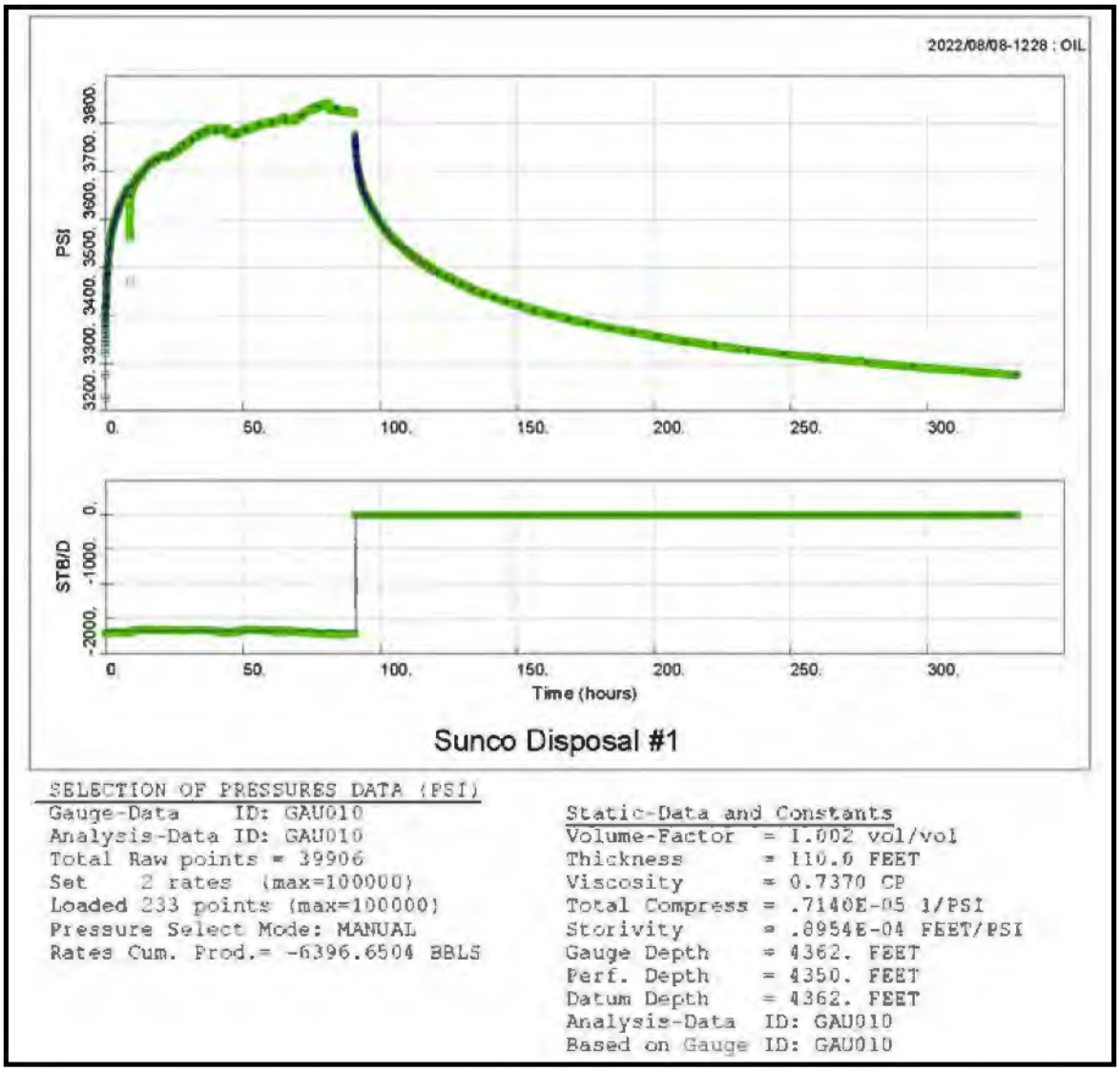
SURFACE GAUGE & BOTTOM HOLE GAUGE PRESSURE COMPARISON PLOT:



International Reservoir Technologies, Inc.

SURFACE GAUGE PRESSURE (ADJUSTED) & RATE DATA PLOT:

This plot shows the pressure data from the surface gauge after adjustment to the BH datum of 4362 feet and the injection rate data.



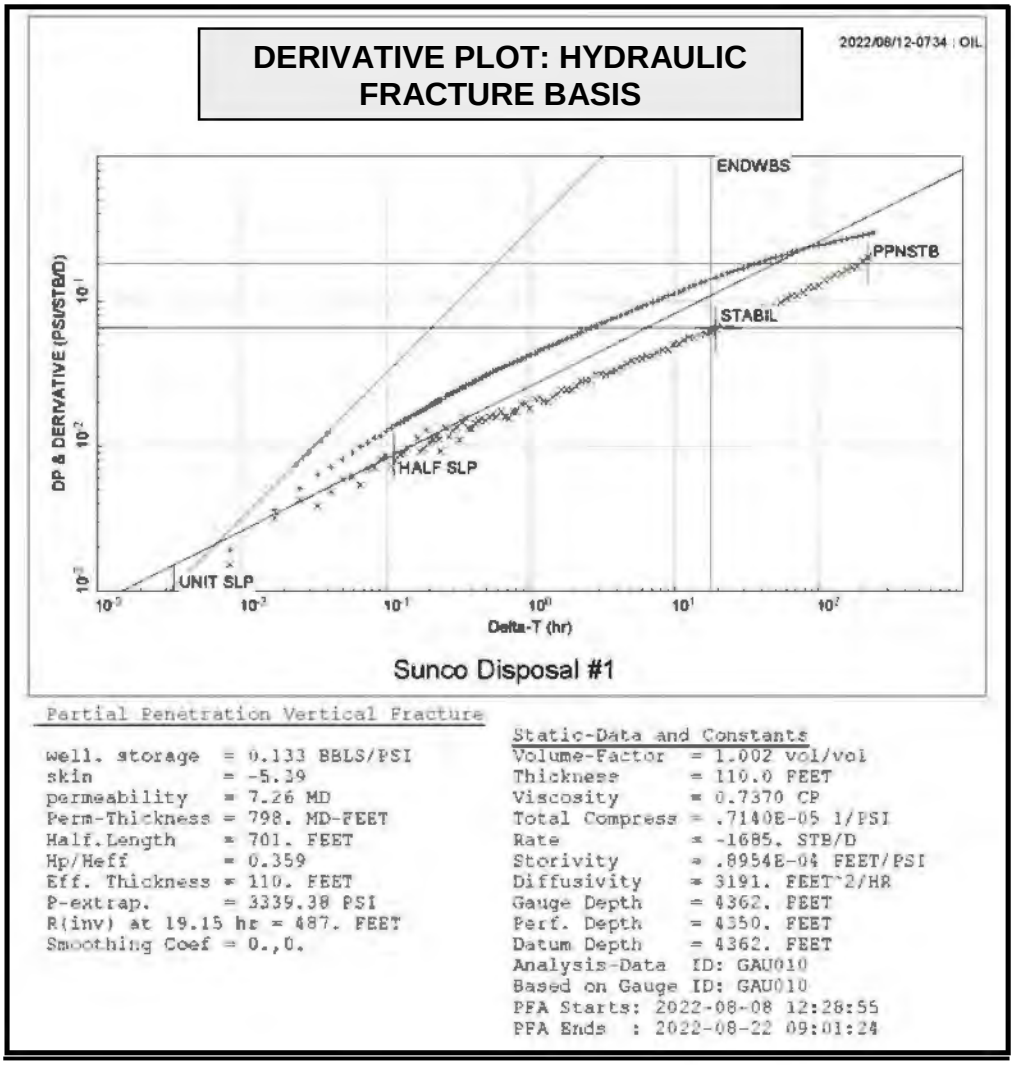
International Reservoir Technologies, Inc.

SURFACE GAUGE PRESSURE (ADJUSTED) DERIVATIVE PLOT:

Conclusions: As with the BH gauge data, the behavior of the derivative curve is affected by the wellbore fill, the wellbore storage, and the influence of an apparent hydraulic fracture. Again, the derivative analysis was made using a hydraulic fracture reservoir model, with partial penetration, to best calculate the reservoir properties.

The plot below implies a half-slope as shown in the derivative curve which is characteristic of linear-flow due to a hydraulic-fracture. The calculated permeability is 7.3 md and the calculated half-length for the fracture was 701 feet.

- Estimated Kw (permeability) = 7.3 md
- Estimated skin = -5.4
- Fracture half-length = 701 feet
- Estimated extrapolated pressure = 3,339 psig

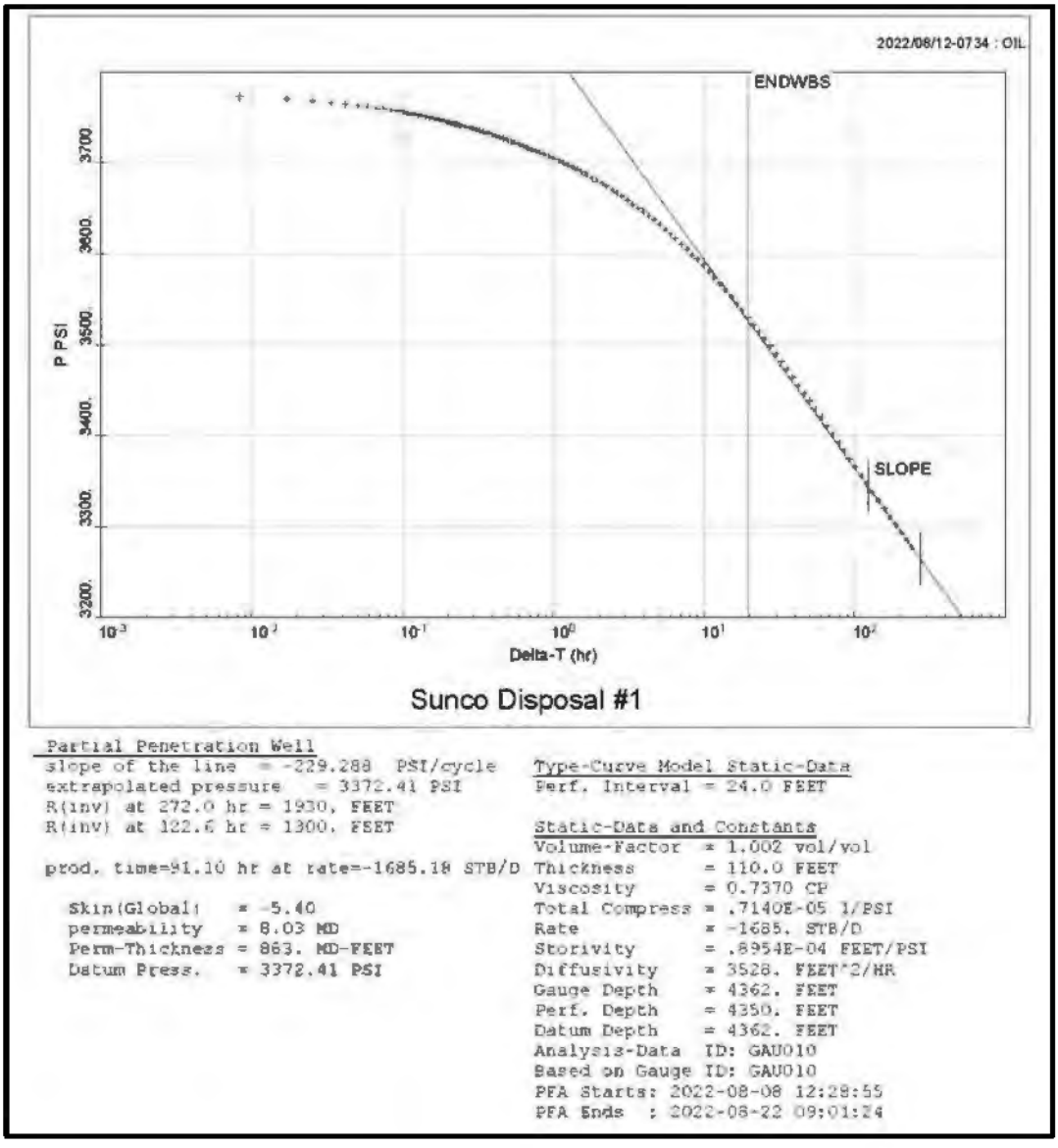


International Reservoir Technologies, Inc.

SURFACE GAUGE PRESSURE (ADJUSTED) MDH PLOT:

Conclusions: As with the bottom hole gauge data, the MDH stabilized flow period was reached relatively late in the conventional straight-line extrapolation for the extrapolated pressure, however the MDH values do appear reasonable.

- Estimated extrapolated pressure = 3,372 psig
- Estimated Kw (permeability) = 8.0 md
- Estimated skin = -5.4
- Radius of investigation = 1,930 feet

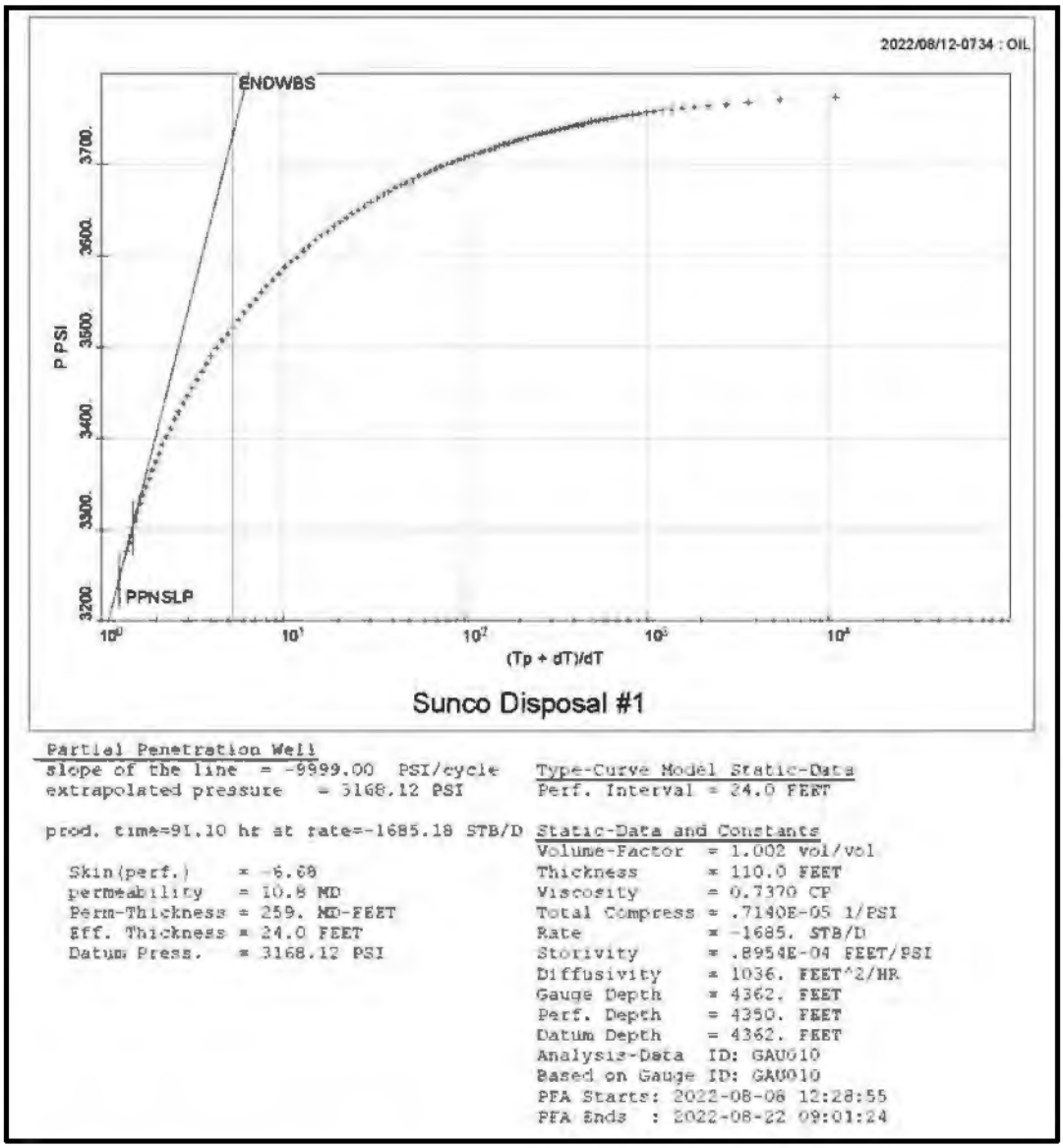


International Reservoir Technologies, Inc.

SURFACE GAUGE PRESSURE (ADJUSTED) HORNER PLOT:

Conclusions: The stabilized flow period was reached late in the conventional straight-line extrapolation; however, the calculated reservoir parameters do appear reasonable.

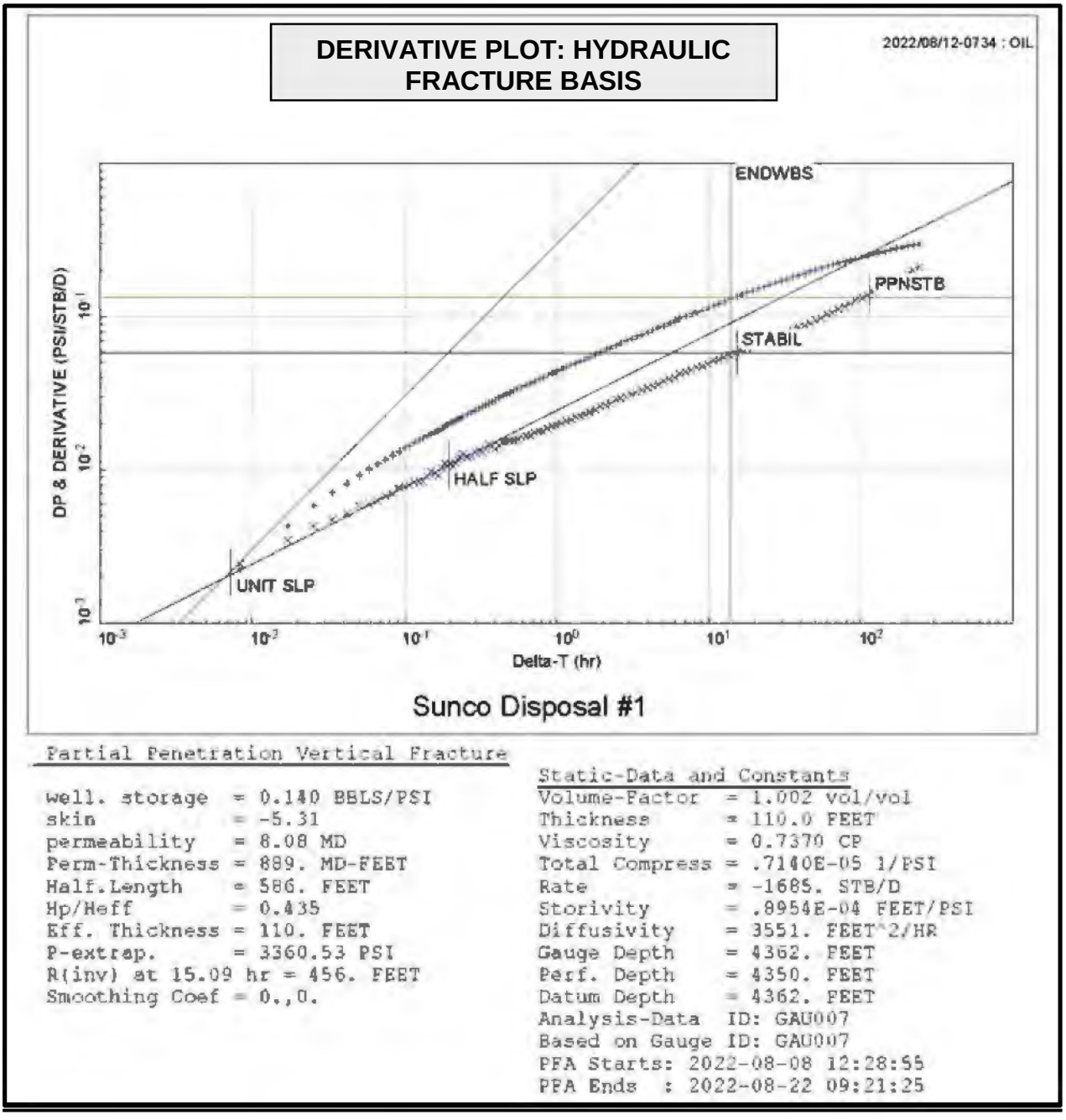
- Estimated extrapolated pressure = 3,168 psig
- Estimated Kw (permeability) = 10.8 md
- Estimated skin = -6.7



International Reservoir Technologies, Inc.

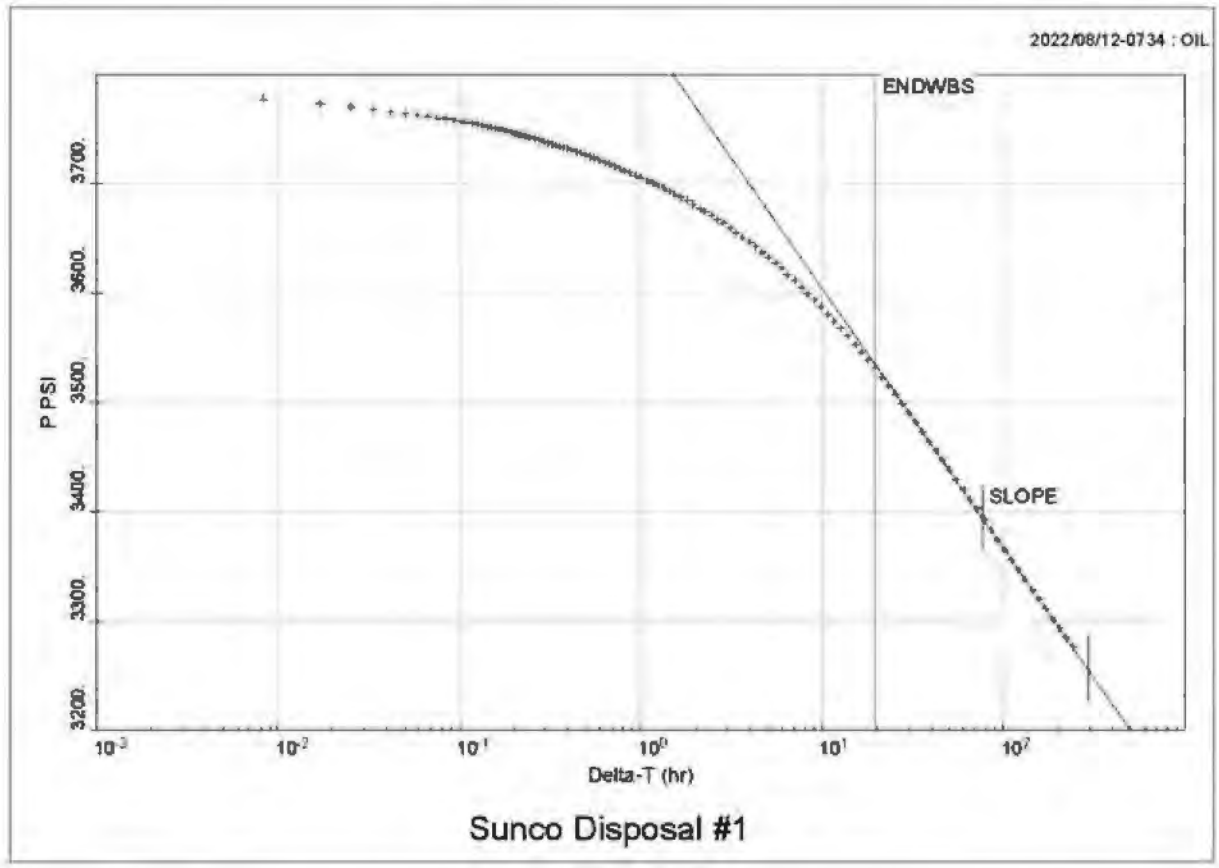
ENLARGED PLOTS:

BOTTOM HOLE GAUGE DERIVATIVE PLOT:



International Reservoir Technologies, Inc.

BOTTOM HOLE GAUGE MDH PLOT:



slope of the line = -237.876 PSI/cycle
extrapolated pressure = 3374.90 PSI
R(inv) at 292.2 hr = 1960. FEET
R(inv) at 76.14 hr = 1000. FEET

prod. time=91.10 hr at rate=-1685.18 STB/D

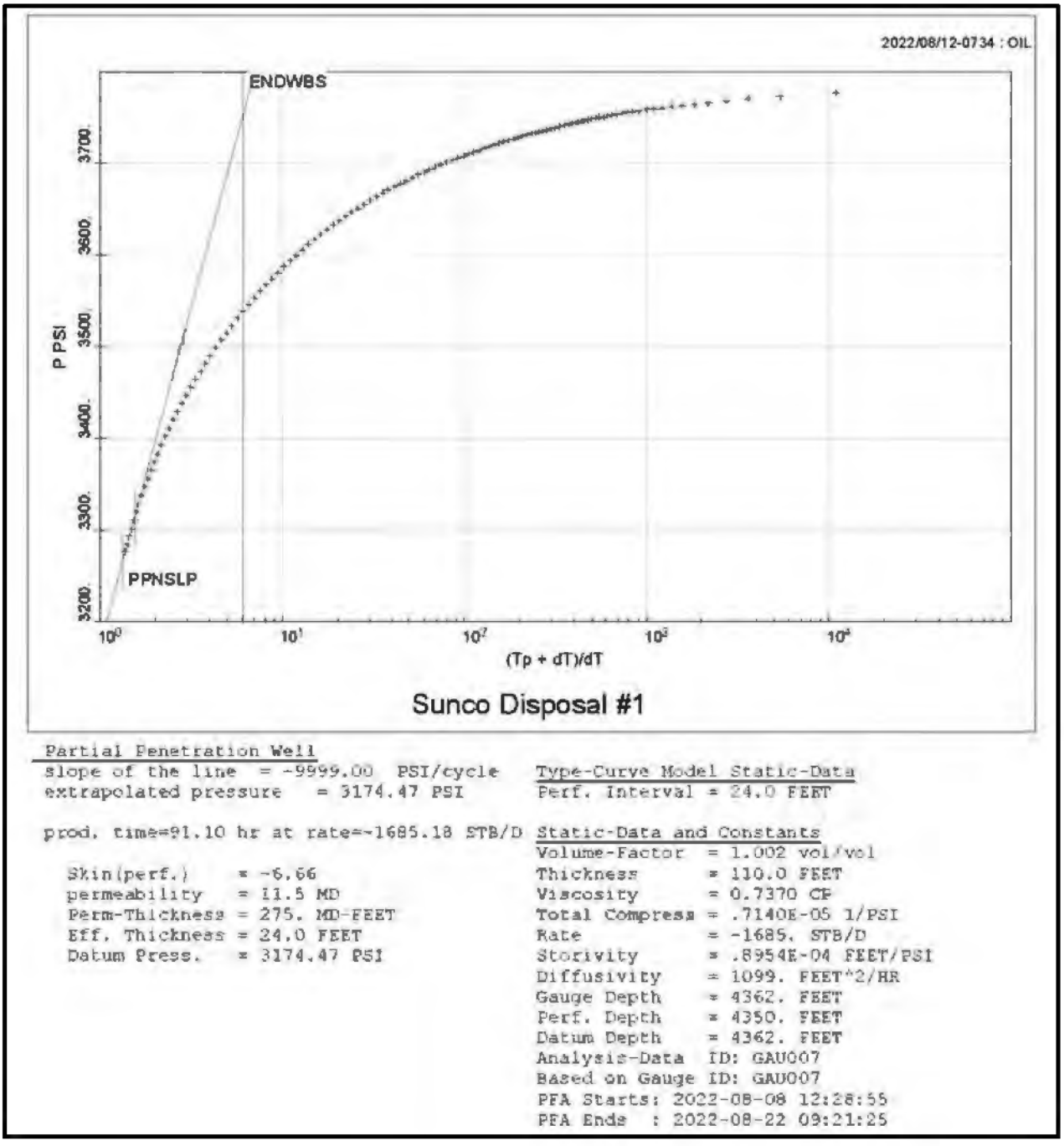
skin	= -5.45
permeability	= 7.74 MD
Perm-Thickness	= 851. MD-FEET
Datum Press.	= 3374.90 PSI

Static-Data and Constants

Volume-Factor	= 1.002 vol/vol
Thickness	= 110.0 FEET
Viscosity	= 0.7370 CP
Total Compress	= .7140E-05 1/PSI
Rate	= -1685. STB/D
Storivity	= .8954E-04 FEET/PSI
Diffusivity	= 3400. FEET^2/HR
Gauge Depth	= 4362. FEET
Perf. Depth	= 4350. FEET
Datum Depth	= 4362. FEET
Analysis-Data	ID: GAU007

International Reservoir Technologies, Inc.

BOTTOM HOLE GAUGE HORNER PLOT:



Partial Penetration Well
slope of the line = -9999.00 PSI/cycle
extrapolated pressure = 3174.47 PSI

prod. time=91.10 hr at rate=-1685.18 STB/D

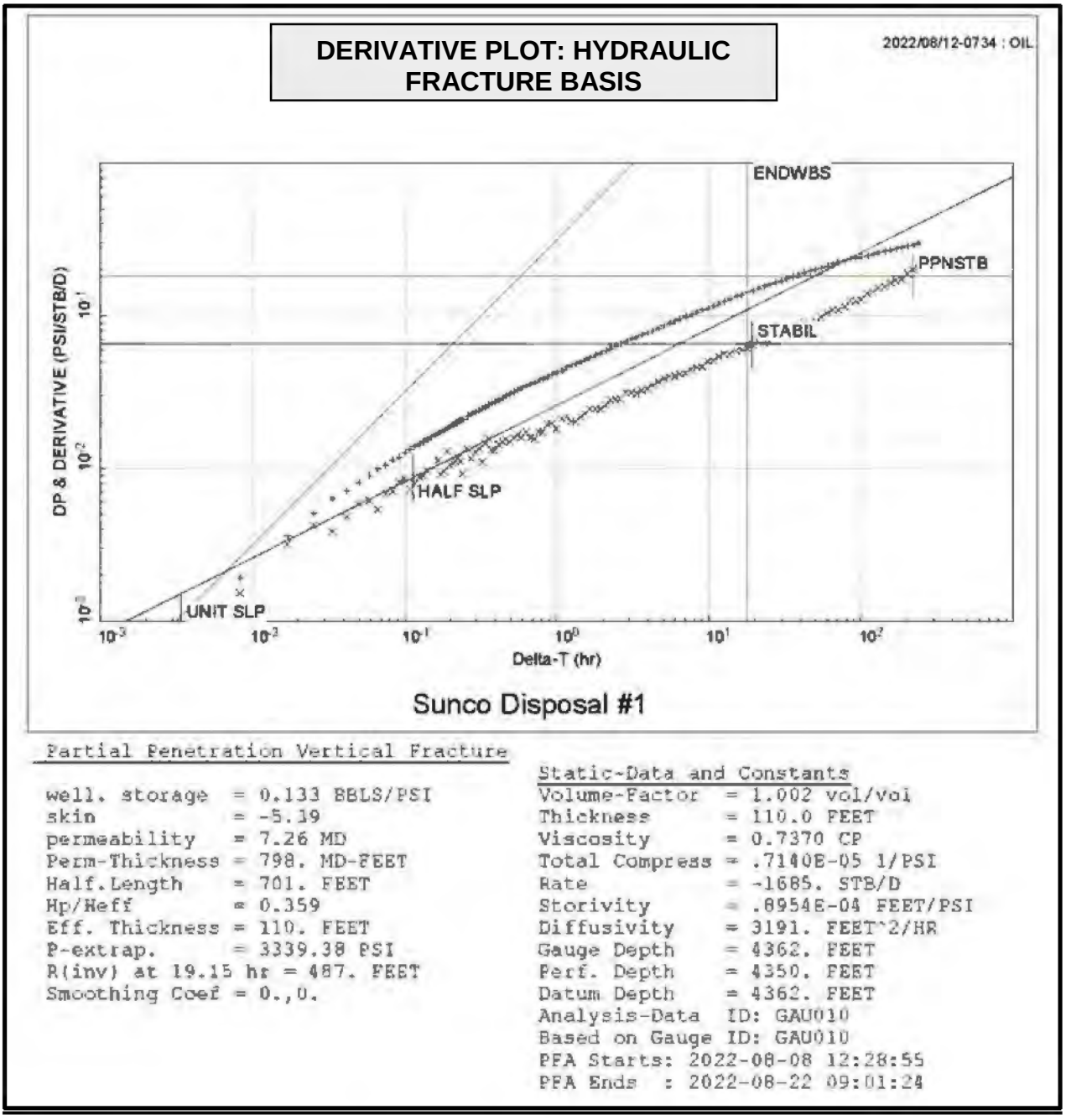
Skin(perf.) = -6.66
permeability = 11.5 MD
Perm-Thickness = 275. MD-FEET
Eff. Thickness = 24.0 FEET
Datum Press. = 3174.47 PSI

Type-Curve Model Static-Data
Perf. Interval = 24.0 FEET

Static-Data and Constants
Volume-Factor = 1.002 vol/vol
Thickness = 110.0 FEET
Viscosity = 0.7370 CP
Total Compress = .7140E-05 1/PSI
Rate = -1685. STB/D
Storivity = .8954E-04 FEET/PSI
Diffusivity = 1099. FEET^2/HR
Gauge Depth = 4362. FEET
Perf. Depth = 4350. FEET
Datum Depth = 4362. FEET
Analysis-Data ID: GAU007
Based on Gauge ID: GAU007
PFA Starts: 2022-08-08 12:28:55
PFA Ends : 2022-08-22 09:21:25

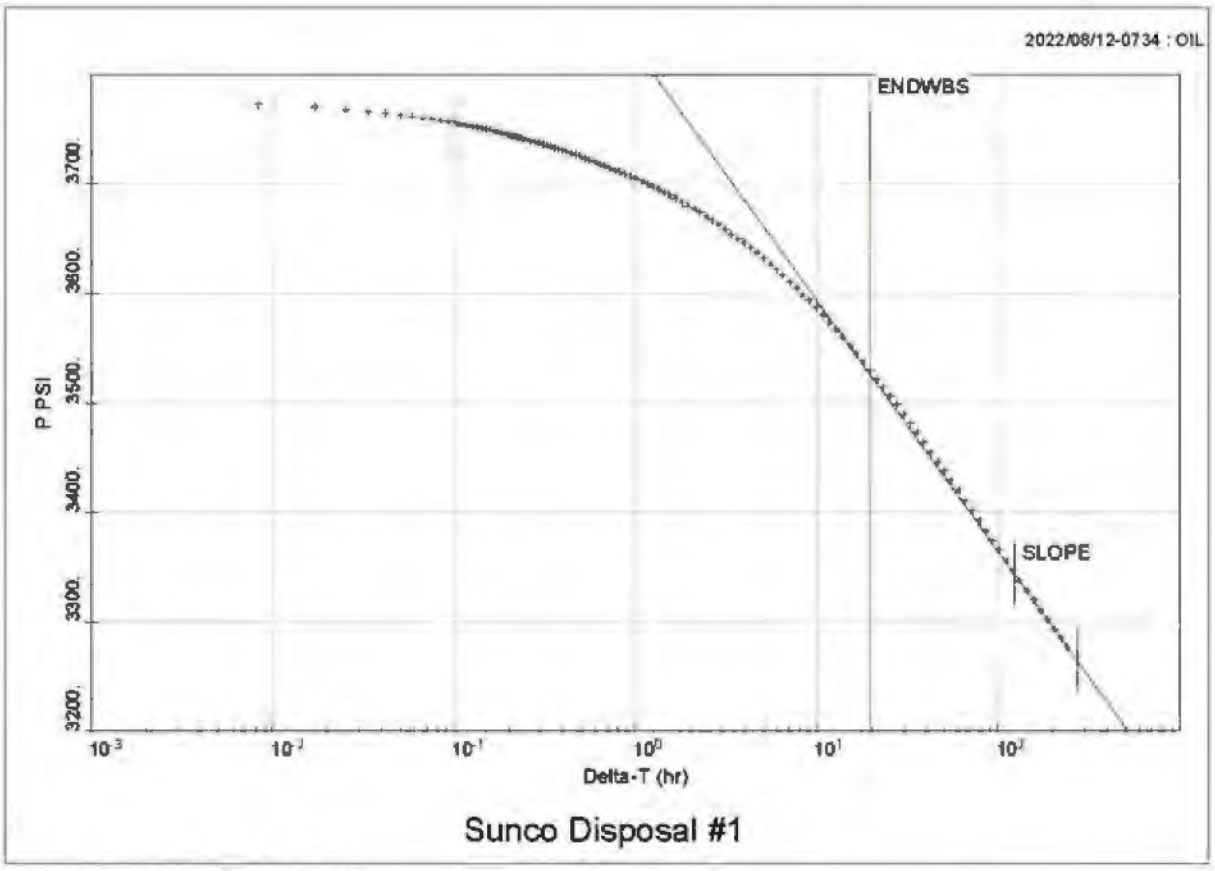
International Reservoir Technologies, Inc.

SURFACE GAUGE PRESSURE (ADJUSTED) DERIVATIVE PLOT:



International Reservoir Technologies, Inc.

SURFACE GAUGE PRESSURE (ADJUSTED) MDH PLOT:



Partial Penetration Well
slope of the line = -229.288 PSI/cycle
extrapolated pressure = 3372.41 PSI
R(inv) at 272.0 hr = 1930. FEET
R(inv) at 122.6 hr = 1300. FEET

prod. time=91.10 hr at rate=-1685.18 STB/D

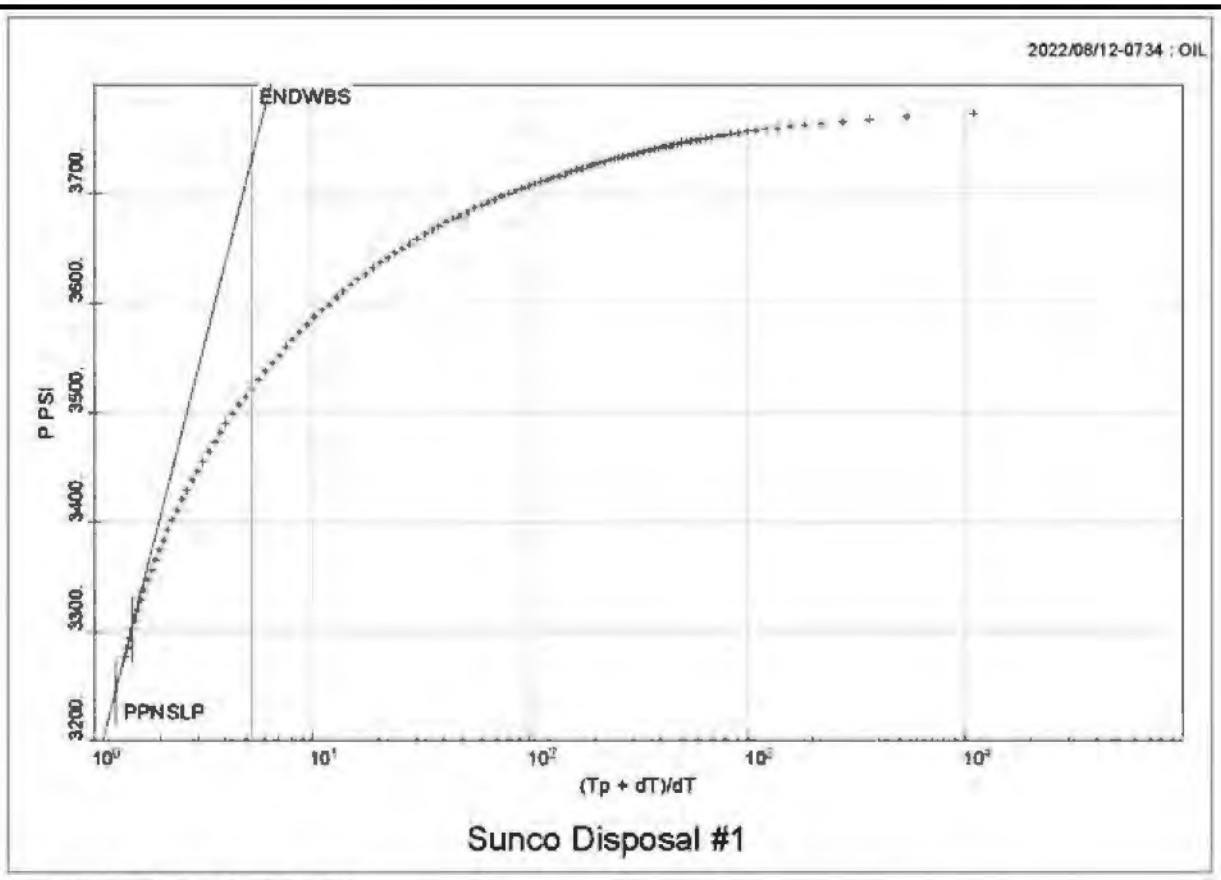
Skin(Global) = -5.40
permeability = 8.03 MD
Perm-Thickness = 883. MD-FEET
Datum Press. = 3372.41 PSI

Type-Curve Model Static-Data
Perf. Interval = 24.0 FEET

Static-Data and Constants
Volume-Factor = 1.002 vol/vol
Thickness = 110.0 FEET
Viscosity = 0.7370 CP
Total Compress = .7140E-05 1/PSI
Rate = -1685. STB/D
Storivity = .8954E-04 FEET/PSI
Diffusivity = 3528. FEET^2/HR
Gauge Depth = 4362. FEET
Perf. Depth = 4350. FEET
Datum Depth = 4362. FEET
Analysis-Data ID: GAU010
Based on Gauge ID: GAU010
PFA Starts: 2022-08-08 12:28:55
PFA Ends : 2022-08-22 09:01:24

International Reservoir Technologies, Inc.

SURFACE GAUGE PRESSURE (ADJUSTED) HORNER PLOT:



Partial Penetration Well
slope of the line = -9999.00 PSI/cycle
extrapolated pressure = 3168.12 PSI

prod. time=91.10 hr at rate=-1685.18 STB/D

Skin(perf.) = -6.68
permeability = 10.8 MD
Perm-Thickness = 259. MD-FEET
Eff. Thickness = 24.0 FEET
Datum Press. = 3168.12 PSI

Type-Curve Model Static-Data
Perf. Interval = 24.0 FEET

Static-Data and Constants
Volume-Factor = 1.002 vol/vol
Thickness = 110.0 FEET
Viscosity = 0.7370 CP
Total Compress = .7140E-05 1/PSI
Rate = -1685. STB/D
Storivity = .8954E-04 FEET/PSI
Diffusivity = 1036. FEET^2/HR
Gauge Depth = 4362. FEET
Perf. Depth = 4350. FEET
Datum Depth = 4362. FEET
Analysis-Data ID: GAU010
Based on Gauge ID: GAU010
PFA Starts: 2022-08-08 12:28:55
PFA Ends : 2022-08-22 09:01:24

Results:

The results from the Horner, MDH, and Derivative pressure plots are summarized in the Table 2 below. The results for the different methods were consistent and the average calculated properties were:

1. P* = 3174 psi
2. K = 9.1 md
3. S = -5.8
4. Radius of Investigation = 1960 feet
5. No indication of boundary

Table 1: Calculated Reservoir Properties

Calculated Reservoir Parameters - Bottom Hole Guage				
	Horner Analysis	MDH Plot	Derivative Plot	Average
Estimated Kw (permeability, mD)	11.5	7.7	8.1	9.1
Estimated skin (dimensionless)	-6.7	-5.5	-5.3	-5.8
Extrapolated pressure (psig)	3,174	3,375	3,361	3,303
Fracture half-length (feet)	--	--	586	586
Radius of investigation (feet)	--	1,960	--	1,960

In addition to the bottom hole gauges, transducers at surface collected pressure. Bottom hole pressures were calculated using a gradient of 0.431 psi/foot and FOT results were calculated from the surface data. The surface data results were similar to the bottom hole gauge data. The results from the Horner, MDH, and Derivative pressure plots are summarized in the Table 2 below. The results for the different methods were consistent and the average calculated properties were:

1. P* = 3168 psi
2. K = 8.7 md
3. S = -5.8
4. Radius of Investigation = 1930 feet
5. No indication of boundary

Table 2: Calculated Reservoir Properties Surface Gauges

Calculated Reservoir Parameters - Gauge (Adjusted to BH Datum)				
	Horner Analysis	MDH Plot	Derivative Plot	Average
Estimated Kw (permeability, mD)	10.8	8.0	7.3	8.7
Estimated skin (dimensionless)	-6.7	-5.4	-5.4	-5.8
Extrapolated pressure (psig)	3,168	3,372	3,339	3,293
Fracture half-length (feet)	--	--	701	701
Radius of investigation (feet)	--	1,930	--	1,930

Comparison with past Falloff Tests:

The results from the 2022 Falloff Test were compiled with previous RPE and FOT results from the facility and are shown below in Table 3.

Table 3: Results Comparison

	2022	2021	2020	2019	2018	2017	2016	2015	2010	2009	2008	2007
Rate (bbl/day)	**1684**				3292	3150	3132	3340	4500			
P* (psi)	**3263**	3194*	2968*	2939*	3479	3273	3114	3283	3231	3242	3176	3258
K (md)	**9.1**				10.8	10.4	11.5	15.8	13.6	10.2	20.7	
S	**-5.8**				-6.0	-6.0	-5.93	-5.97	-7.18	-7.23	-6.79	
Radius of Inv (ft)	**1960**				1690	1790	1430	1580	1450	1250	1750	1620
Frac ½ Length (ft)	**586**				598	517	594	467	893	926	596	688
Boundary	**none**				none	none	none	none	648, 1520	755	987	none

Agua Moss did not conduct tests prior to 2015 and is relying on the 2010 report submitted by Key Energy, the past operator, for those results. The following observations were derived from a comparison of the results:

1. The radius of investigation for 2022 was adequate enough to see out beyond all of the previously seen boundaries.
   Note: On 2010 results seems peculiar to have a boundary beyond the Radius of Investigation.
2. The parameters calculated compare well enough with previous FOT parameter to validate the 2022 FOT results.

The raw test data obtain during the 2022 FOT will be kept on file for a period of three (3) years and will be available upon request.

* The pressure shown for 2021 through 2019 is a bottom hole pressure calculated based on surface pressure and a fluid gradient. This pressure is being compared to the extrapolated reservoir pressures from previously completed Falloff Test. The comparison is being used to gauge the current condition of the injection interval to ensure the interval is suitable for continued injection operations.

Conclusions:

Based on the above analysis and results comparison, Agua Moss believes the Sunco SWD #1 2022 FOT was successfully completed. The results do not show indications of concern in continuing the current waste injection operations. In addition, the comparison of results between bottom hole gauges and surface gauges indicate that surface gauges provide a similar result.

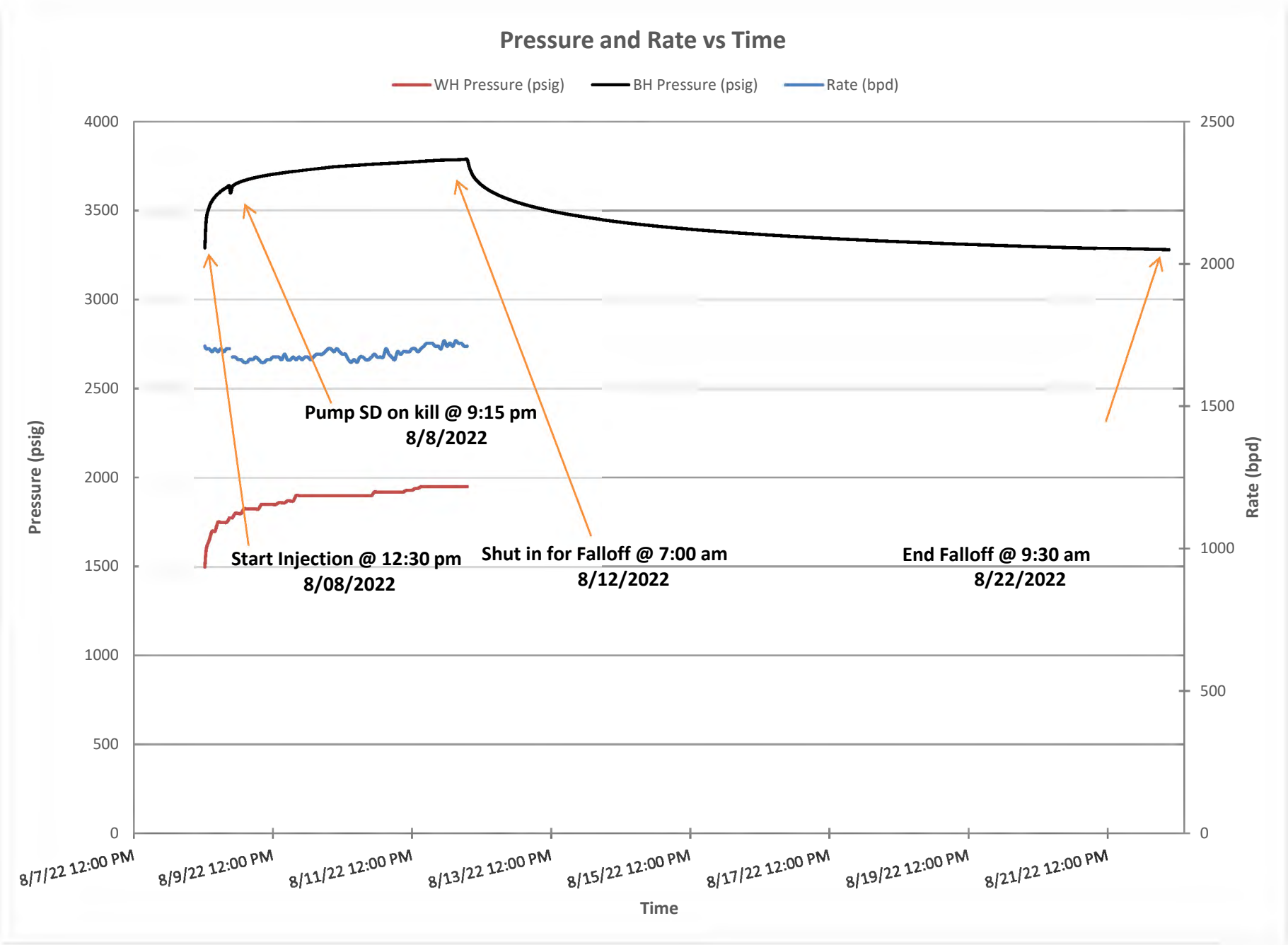


Figure 3 Pressure and Rate vs Time

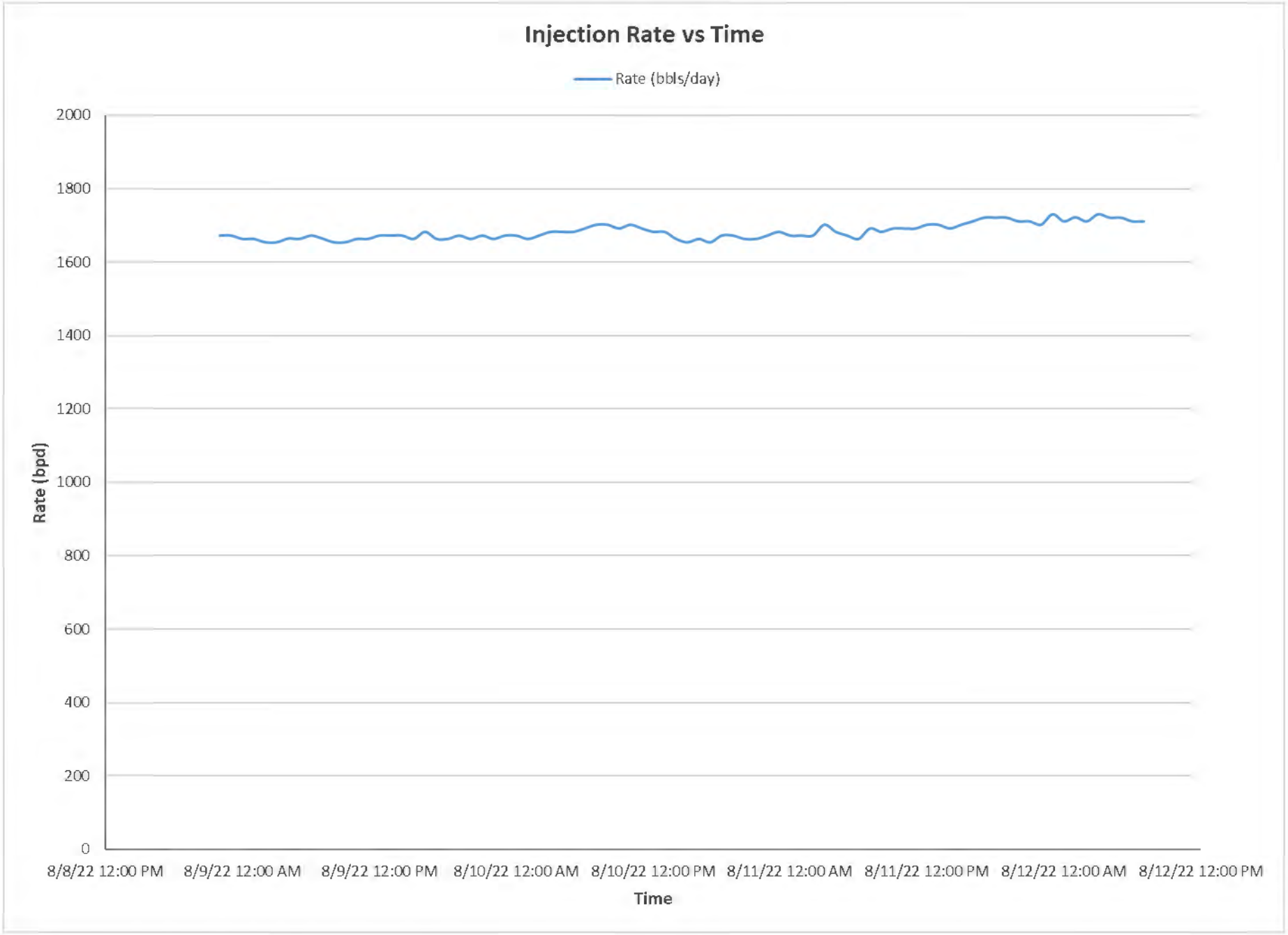


Figure 4 Injection Rate vs Time

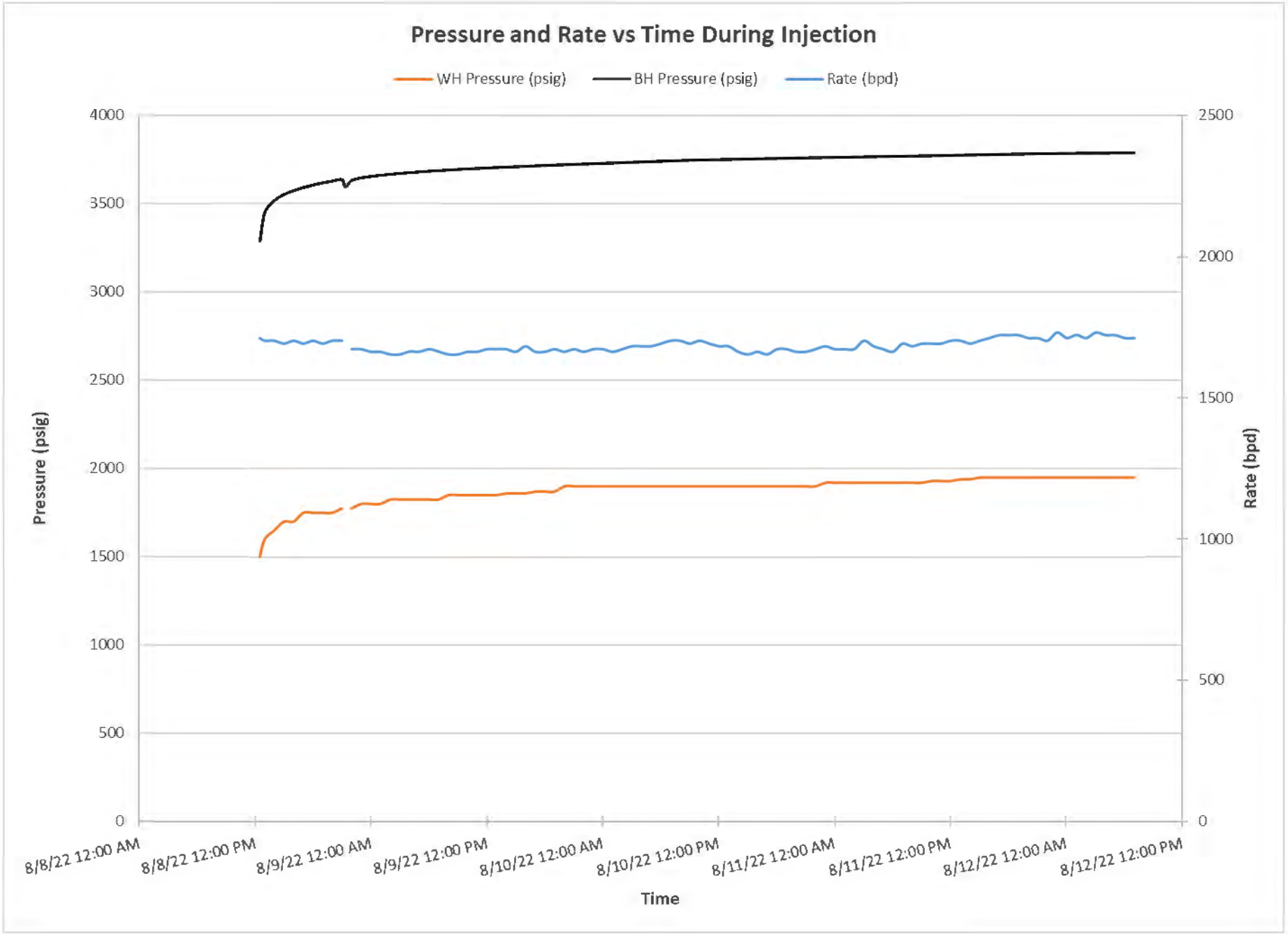


Figure 5 Pressure and Rate vs Time During Injection

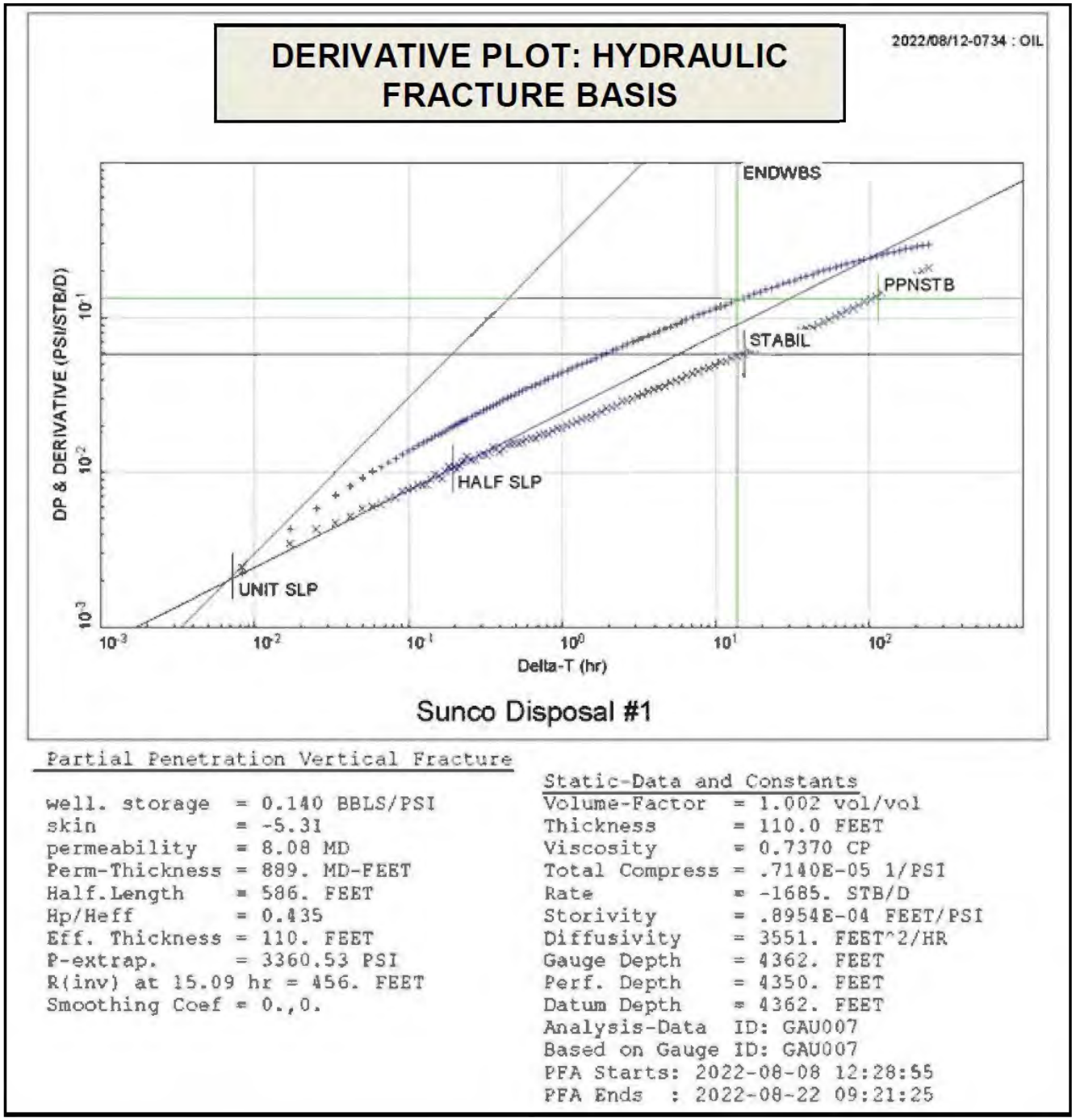


Figure 6 Derivative Plot

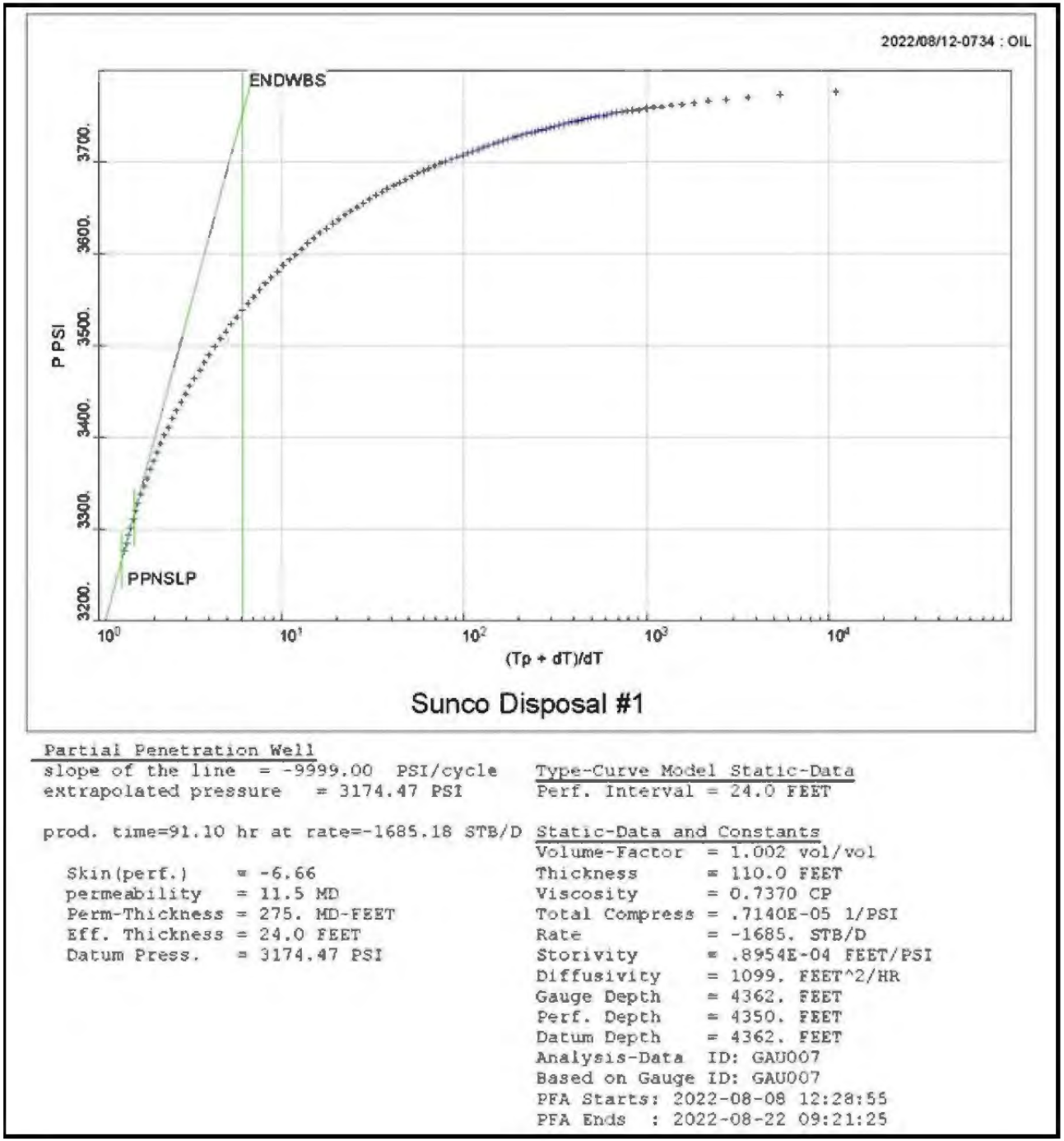


Figure 7 Horner Plot

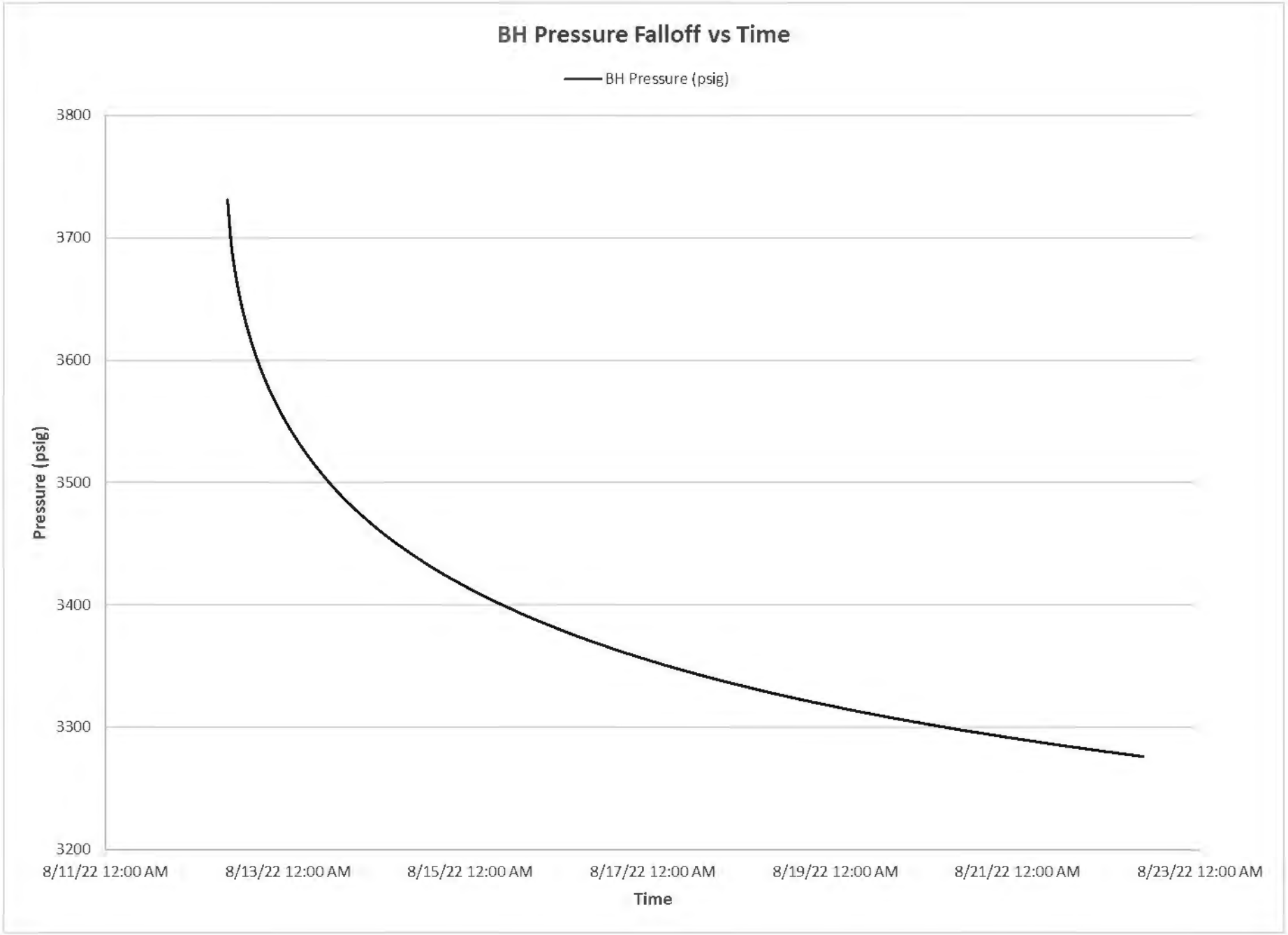


Figure 8 BH Pressure Falloff vs Elapsed Time

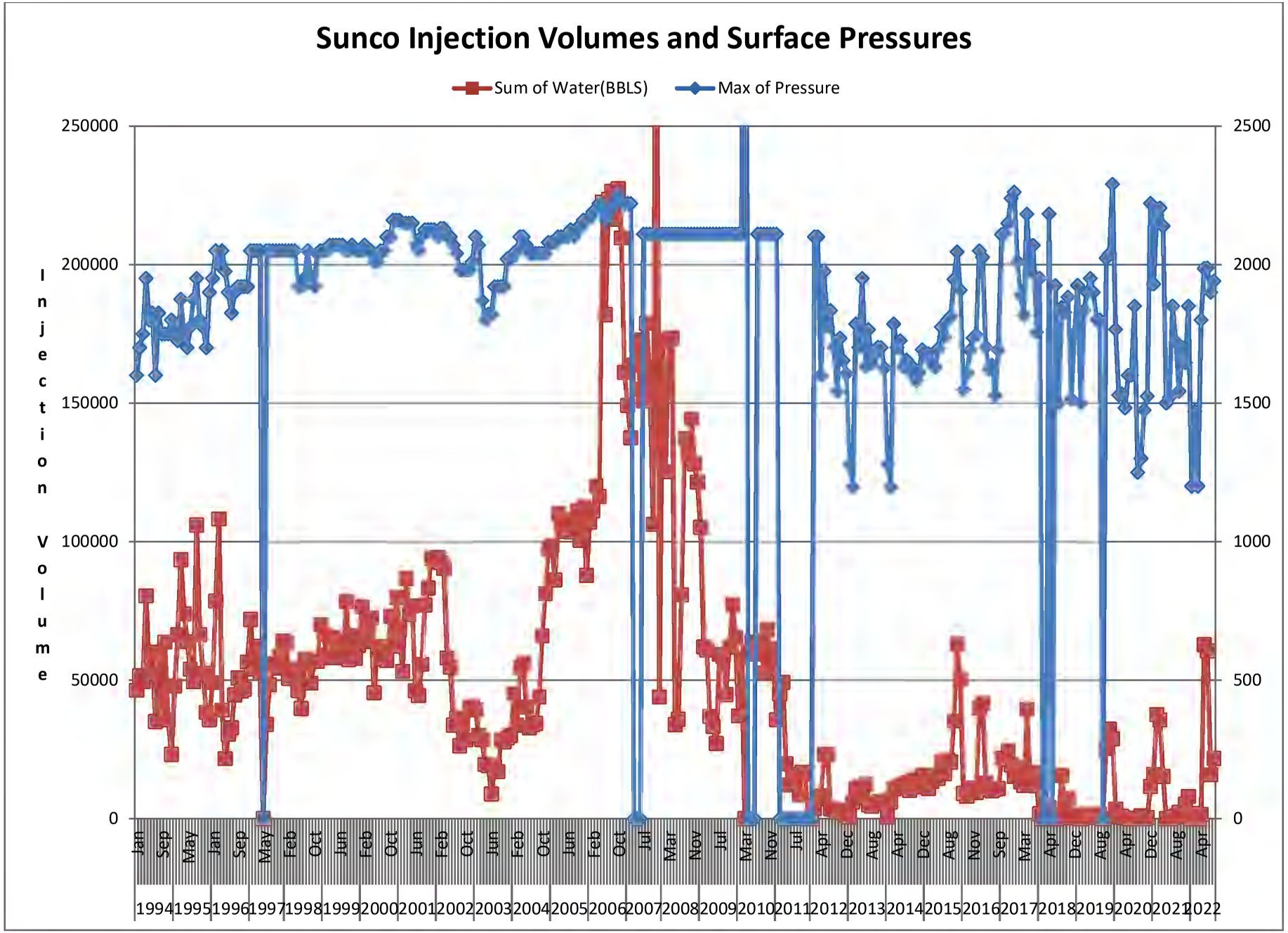
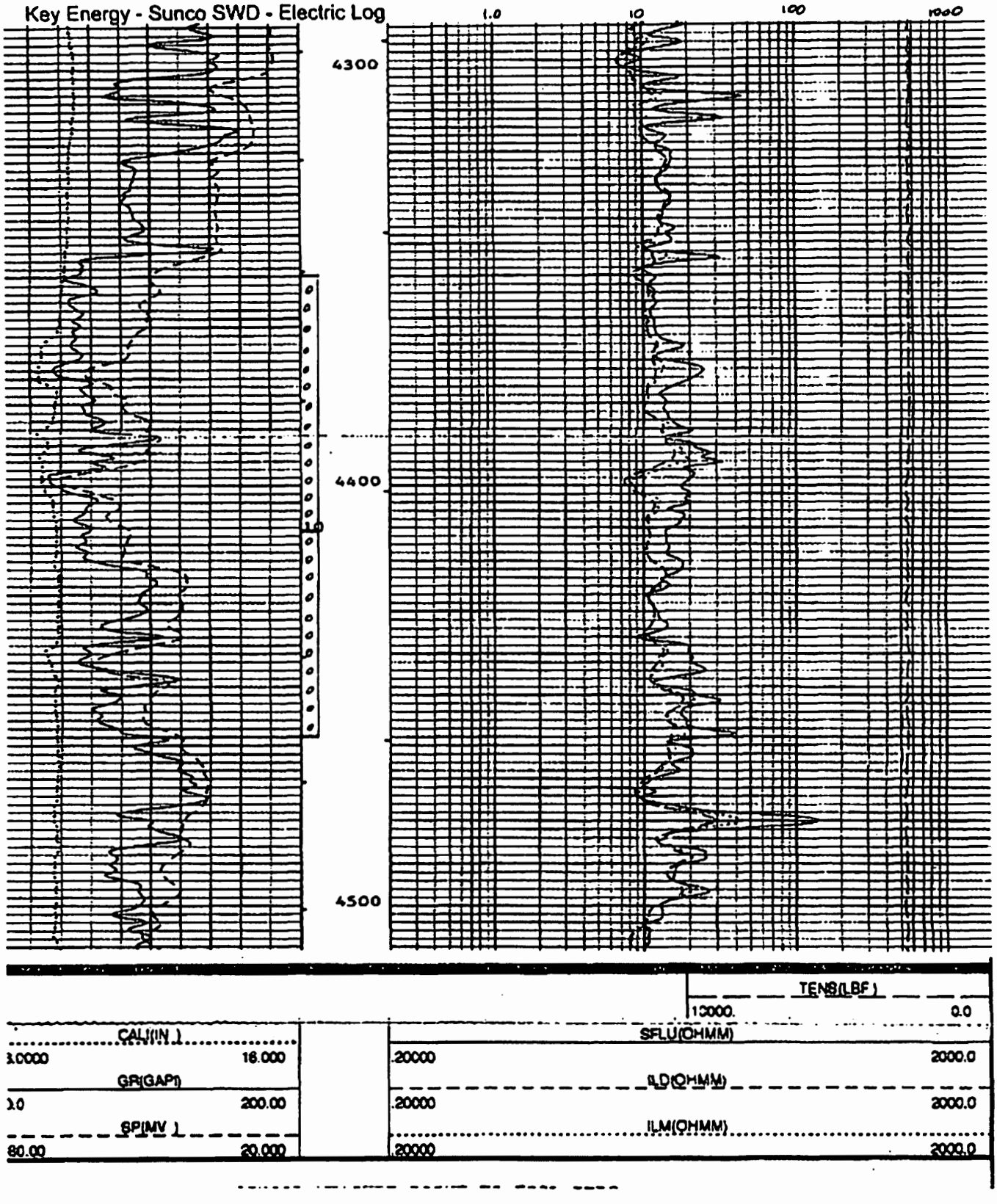
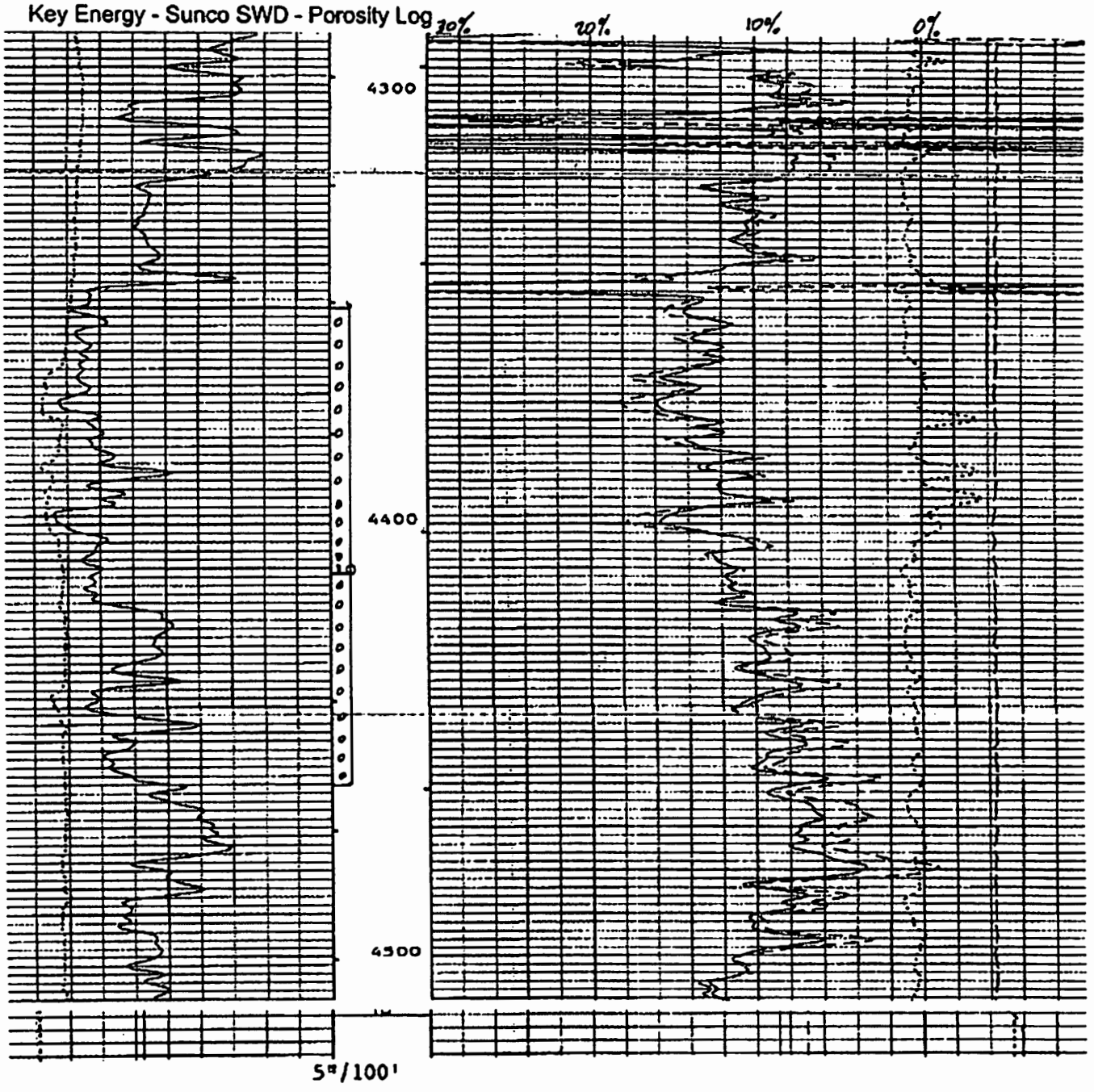
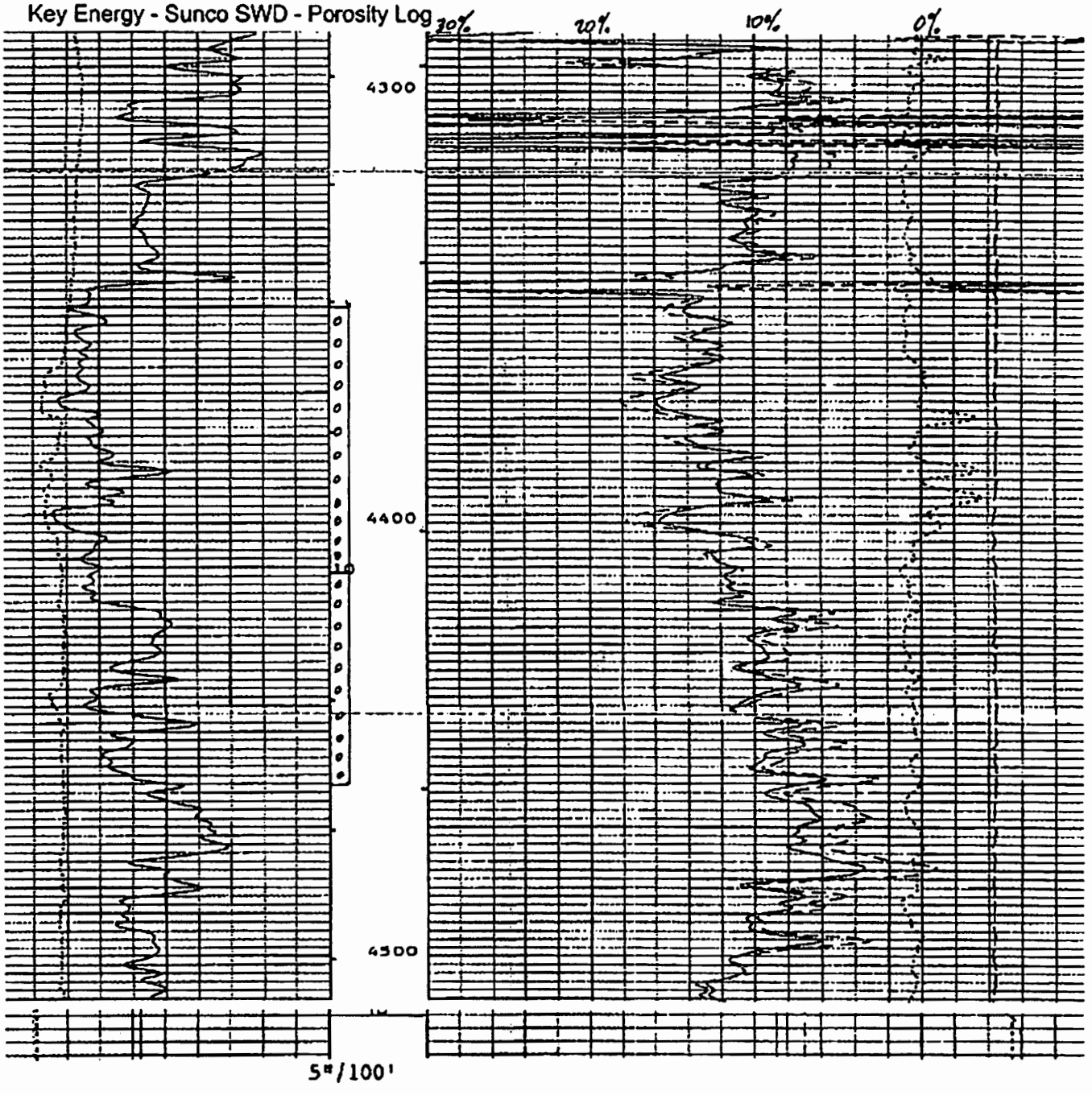


Figure 9 Injection and Pressure Plot


Key Energy - Sunco SWD - Electric Log
1.0
10
100
1000
4300
4400
4500
TENS(LBF)
10000.
0.0
CALI(IN)
3.0000
16.000
SFLU(OHMM)
.20000
2000.0
GR(GAPI)
0.0
200.00
ILD(OHMM)
.20000
2000.0
SP(MV)
80.00
20.000
ILM(OHMM)
.20000
2000.0


Key Energy - Sunco SWD - Porosity Log
30%
20%
10%
0%
4300
4400
4500
5"/100'
CP 32.6
FILE 6
01-FEB-1992 20:21
(UP)
DRHO(G/C3)
-.2500
.25000
TENS(LBF)
10000.
0.0
CALI(IN)
8.0000
16.000
RHOB(G/C3)
2.0000
3.0000
GR(GAPI)
0.0
200.00
DPHI(V/V)
.30000
-.1000


Key Energy - Sunco SWD - Porosity Log
30%
20%
10%
0%
4300
4400
4500
5"/100'
CP 32.6
FILE 6
01-FEB-1992 20:21
(UP)
DRHO(G/C3)
-.2500
.25000
TENS(LBF)
10000.
0.0
CALI(IN)
8.0000
16.000
RHOB(G/C3)
2.0000
3.0000
GR(GAPI)
0.0
200.00
DPHI(V/V)
.30000
-.1000

2022

Agua Moss, LLC

Sunco Disposal #1 30-045-28653

Quarterly
Injection Report

	Average Pressure (psig)	Maximum Pressure (psig)	Minimum Pressure (psig)	Average Flow (gpm)	Maxium Flow (gpm)	Minimum Flow (gpm)	Average Annular Pressure (psig)	Maximum Annular Pressure (psig)	Minimum Annular Pressure (psig)	Average Volume (bpd)	Maximum Volume (bpd)	Minimum Volume (bpd)	Volume (barrels)	Total Cumulative Volume (barrels)	
													Previous year	15182756	
Jan-2022	1200	1200	1200	0	0	0	0	0	0	0	0	0	0	15182756	
Feb-2022	1280	1800	1150	17.80138889	24.2375	11.1416667	0	0	0	610.3333333	831	382	1831	15184587	
Mar-2022	1200	1200	1200	0	0	0	0	0	0	0	0	0	0	15184587	
													Previous Quarter	15184587	
Apr-2022	1050	1050	1050	15.05972222	22.86666667	10.4125	0	0	0	516.3333333	784	357	1549	15186136	
May-2022	1815.179	2000	1150	65.41979167	125.2708333	33.2791667	0	0	0	2242.964286	4295	1141	62803	15248939	
Jun-2022	1800	1950	1250	58.84180556	84.175	20.825	0	0	0	2017.433333	2886	714	60523	15309462	
													Previous Quarter	15309462	
Jul-22	1836.538	2000	1450	57.85208333	69.0375	43.6333333	0	0	0	1983.5	2367	1496	15868	15325330	
Aug-22	1870	2250	1350	45.4125	71.05	15.6333333	0	0	0	1557	2436	536	21798	15347128	
Sep-22	#DIV/0!	0	0	0	0	0	0	0	0	#DIV/0!	0	0	0	15347128	
													Previous Quarter	15347128	
Oct-2022	#DIV/0!	0	0	0	0	0	0	0	0	#DIV/0!	0	0	0	15347128	
Nov-2022	#DIV/0!	0	0	0	0	0	0	0	0	#DIV/0!	0	0	0	15347128	
Dec-2022	#DIV/0!	0	0	0	0	0	0	0	0	#DIV/0!	0	0	0	15347128	
												Total for year	**164372**	**15511500**	**Life Of well injected**

	WH	AP
1/1/22		
1/2/22		
1/3/22		
1/4/22		
1/5/22		
1/6/22		
1/7/22		
1/8/22		
1/9/22		
1/10/22		
1/11/22		
1/12/22	1200	
1/13/22		
1/14/22		
1/15/22		
1/16/22		
1/17/22		
1/18/22		
1/19/22	1200	
1/20/22		
1/21/22	1200	
1/22/22		
1/23/22		
1/24/22		
1/25/22		
1/26/22	1200	
1/27/22	1200	
1/28/22		
1/29/22		
1/30/22		
1/31/22		
	1200	0 AVG
	1200	0 MIN
	1200	0 MAX

	WH	AP
2/1/22		
2/2/22		
2/3/22	1150	
2/4/22		
2/5/22		
2/6/22		
2/7/22		
2/8/22	1150	
2/9/22		
2/10/22		
2/11/22		
2/12/22		
2/13/22		
2/14/22		
2/15/22		
2/16/22		
2/17/22		
2/18/22		
2/19/22		
2/20/22		
2/21/22	1150	
2/22/22	1150	
2/23/22		
2/24/22		
2/25/22		
2/26/22		
2/27/22		
2/28/22	1800	
	1280	0 AVG
	1150	0 MIN
	1800	0 MAX

	WH	AP
3/1/22	1200	
3/2/22		
3/3/22		
3/4/22		
3/5/22		
3/6/22		
3/7/22	1200	
3/8/22		
3/9/22		
3/10/22		
3/11/22		
3/12/22		
3/13/22		
3/14/22		
3/15/22		
3/16/22	1200	
3/17/22		
3/18/22		
3/19/22		
3/20/22		
3/21/22		
3/22/22		
3/23/22		
3/24/22		
3/25/22		
3/26/22		
3/27/22		
3/28/22		
3/29/22		
3/30/22		
3/31/22		
	1200	0 AVG
	1200	0 MIN
	1200	0 MAX

	WH	AP
4/1/22		
4/2/22		
4/3/22		
4/4/22		
4/5/22		
4/6/22		
4/7/22	1050	
4/8/22		
4/9/22		
4/10/22		
4/11/22		
4/12/22	1050	
4/13/22		
4/14/22		
4/15/22		
4/16/22		
4/17/22		
4/18/22		
4/19/22		
4/20/22		
4/21/22		
4/22/22		
4/23/22		
4/24/22		
4/25/22	1050	
4/26/22	1050	
4/27/22	1050	
4/28/22	1050	
4/29/22		
4/30/22		
	1050	0 AVG
	1050	0 MIN
	1050	0 MAX

	WH	AP
5/1/22		
5/2/22		
5/3/22	1150	
5/4/22	1350	
5/5/22	1450	
5/6/22	1550	
5/7/22		
5/8/22	1500	
5/9/22	1850	
5/10/22	1850	
5/11/22	1900	
5/12/22	1900	
5/13/22	1900	
5/14/22	1900	
5/15/22	2000	
5/16/22	1950	
5/17/22	1950	
5/18/22	2000	
5/19/22	2000	
5/20/22	2000	
5/21/22	1975	
5/22/22	1750	
5/23/22	1750	
5/24/22	1950	
5/25/22	1950	
5/26/22	1950	
5/27/22	1750	
5/28/22	1900	
5/29/22	1750	
5/30/22	1950	
5/31/22	1950	
	1815.179	0 AVG
	1150	0 MIN
	2000	0 MAX

	WH	AP
6/1/22	1950	
6/2/22	1950	
6/3/22	1750	
6/4/22	1950	
6/5/22	1250	
6/6/22	1800	
6/7/22	1750	
6/8/22	1750	
6/9/22	1950	
6/10/22	1950	
6/11/22	1950	
6/12/22	1750	
6/13/22	1750	
6/14/22	1750	
6/15/22	1950	
6/16/22	1900	
6/17/22	1750	
6/18/22	1700	
6/19/22	1900	
6/20/22	1700	
6/21/22	1800	
6/22/22	1900	
6/23/22	1750	
6/24/22	1700	
6/25/22	1800	
6/26/22	1700	
6/27/22	1700	
6/28/22	1700	
6/29/22	1900	
6/30/22	1900	
	1800	0 AVG
	1250	0 MIN
	1950	0 MAX

	WH	AP
7/1/22	1900	
7/2/22	1950	
7/3/22	1800	
7/4/22	2000	
7/5/22	1900	
7/6/22	1950	
7/7/22	2000	
7/8/22	1900	
7/9/22	1700	
7/10/22		
7/11/22		
7/12/22	1525	
7/13/22		
7/14/22		
7/15/22		
7/16/22		
7/17/22		
7/18/22		
7/19/22		
7/20/22	1450	
7/21/22		
7/22/22		
7/23/22		
7/24/22		
7/25/22		
7/26/22		
7/27/22	1900	
7/28/22	1900	
7/29/22		
7/30/22		
7/31/22		
	1836.538	0 AVG
	1450	0 MIN
	2000	0 MAX

	WH	AP
8/1/22		
8/2/22		
8/3/22		
8/4/22		
8/5/22	1350	
8/6/22		
8/7/22		
8/8/22	1800	
8/9/22	1900	
8/10/22	1920	
8/11/22	1950	
8/12/22	1950	
8/13/22		
8/14/22		
8/15/22		
8/16/22		
8/17/22	1400	
8/18/22		
8/19/22		
8/20/22		
8/21/22		
8/22/22	1750	
8/23/22	1950	
8/24/22	1850	
8/25/22	1950	
8/26/22	2100	
8/27/22	1900	
8/28/22		
8/29/22	2000	
8/30/22	2250	
8/31/22	1900	
	1870	0 AVG
	1350	0 MIN
	2250	0 MAX

	WH	AP
9/1/22		
9/2/22		
9/3/22		
9/4/22		
9/5/22		
9/6/22		
9/7/22		
9/8/22		
9/9/22		
9/10/22		
9/11/22		
9/12/22		
9/13/22		
9/14/22		
9/15/22		
9/16/22		
9/17/22		
9/18/22		
9/19/22		
9/20/22		
9/21/22		
9/22/22		
9/23/22		
9/24/22		
9/25/22		
9/26/22		
9/27/22		
9/28/22		
9/29/22		
9/30/22		
	#DIV/0!	0 AVG
	0	0 MIN
	0	0 MAX

	WH	AP
10/1/22		
10/2/22		
10/3/22		
10/4/22		
10/5/22		
10/6/22		
10/7/22		
10/8/22		
10/9/22		
10/10/22		
10/11/22		
10/12/22		
10/13/22		
10/14/22		
10/15/22		
10/16/22		
10/17/22		
10/18/22		
10/19/22		
10/20/22		
10/21/22		
10/22/22		
10/23/22		
10/24/22		
10/25/22		
10/26/22		
10/27/22		
10/28/22		
10/29/22		
10/30/22		
10/31/22		
	#DIV/0!	0 AVG
	0	0 MIN
	0	0 MAX

	WH	AP
11/1/22		
11/2/22		
11/3/22		
11/4/22		
11/5/22		
11/6/22		
11/7/22		
11/8/22		
11/9/22		
11/10/22		
11/11/22		
11/12/22		
11/13/22		
11/14/22		
11/15/22		
11/16/22		
11/17/22		
11/18/22		
11/19/22		
11/20/22		
11/21/22		
11/22/22		
11/23/22		
11/24/22		
11/25/22		
11/26/22		
11/27/22		
11/28/22		
11/29/22		
11/30/22		
	#DIV/0!	0 AVG
	0	0 MIN
	0	0 MAX

	WH	AP
12/1/22		
12/2/22		
12/3/22		
12/4/22		
12/5/22		
12/6/22		
12/7/22		
12/8/22		
12/9/22		
12/10/22		
12/11/22		
12/12/22		
12/13/22		
12/14/22		
12/15/22		
12/16/22		
12/17/22		
12/18/22		
12/19/22		
12/20/22		
12/21/22		
12/22/22		
12/23/22		
12/24/22		
12/25/22		
12/26/22		
12/27/22		
12/28/22		
12/29/22		
12/30/22		
12/31/22		
	#DIV/0!	0 AVG
	0	0 MIN
	0	0 MAX

Total Injected	Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow
1/1/22	0		2/1/22			3/1/22	0	0	4/1/2022			5/1/2022			6/1/2022	2587	75.45416667	7/1/2022	2176	63.46666667	8/1/2022			9/1/2022		0	10/1/2022		0	11/1/2022			12/1/2022		0
1/2/22			2/2/22			3/2/22			4/2/2022			5/2/2022			6/2/2022	1912	55.76666667	7/2/2022	1987	57.95416667	8/2/2022			9/2/2022			10/2/2022			11/2/2022		0	12/2/2022		0
1/3/22			2/3/22	382	11.14166667	3/3/22			4/3/2022			5/3/2022	1522	44.39166667	6/3/2022	1573	45.87916667	7/3/2022	1496	43.63333333	8/3/2022			9/3/2022			10/3/2022			11/3/2022		0	12/3/2022		0
1/4/22			2/4/22			3/4/22			4/4/2022			5/4/2022	1141	33.27916667	6/4/2022	1865	54.39583333	7/4/2022	1718	50.10833333	8/4/2022			9/4/2022			10/4/2022			11/4/2022			12/4/2022		0
1/5/22			2/5/22			3/5/22			4/5/2022			5/5/2022	2248	65.56666667	6/5/2022	714	20.825	7/5/2022	2295	66.9375	8/5/2022			9/5/2022			10/5/2022			11/5/2022			12/5/2022		
1/6/22			2/6/22			3/6/22			4/6/2022			5/6/2022	2850	83.125	6/6/2022	1761	51.3625	7/6/2022	1936	56.46666667	8/6/2022			9/6/2022			10/6/2022			11/6/2022			12/6/2022		0
1/7/22			2/7/22			3/7/22			4/7/2022			5/7/2022			6/7/2022	2046	59.675	7/7/2022	2367	69.0375	8/7/2022			9/7/2022	0		10/7/2022			11/7/2022			12/7/2022		0
1/8/22			2/8/22			3/8/22			4/8/2022			5/8/2022	2240	65.33333333	6/8/2022	1745	50.89583333	7/8/2022	1893	55.2125	8/8/2022	817	23.82916667	9/8/2022			10/8/2022			11/8/2022			12/8/2022		0
1/9/22			2/9/22			3/9/22			4/9/2022			5/9/2022	1277	37.24583333	6/9/2022	2030	59.20833333	7/9/2022			8/9/2022	1641	47.8625	9/9/2022			10/9/2022			11/9/2022			12/9/2022		
1/10/22			2/10/22			3/10/22			4/10/2022			5/10/2022	1200	35	6/10/2022	2480	72.33333333	7/10/2022			8/10/2022	1711	49.90416667	9/10/2022			10/10/2022			11/10/2022			12/10/2022		
1/11/22			2/11/22			3/11/22			4/11/2022			5/11/2022	4295	125.2708333	6/11/2022	2627	76.62083333	7/11/2022			8/11/2022	1693	49.37916667	9/11/2022			10/11/2022			11/11/2022			12/11/2022		
1/12/22			2/12/22			3/12/22			4/12/2022	408	11.9	5/12/2022	3031	88.40416667	6/12/2022	1862	54.30833333	7/12/2022			8/12/2022	536	15.63333333	9/12/2022			10/12/2022			11/12/2022			12/12/2022		
1/13/22			2/13/22			3/13/22			4/13/2022			5/13/2022	2077	60.57916667	6/13/2022	1794	52.325	7/13/2022			8/13/2022			9/13/2022			10/13/2022			11/13/2022			12/13/2022		
1/14/22			2/14/22			3/14/22			4/14/2022			5/14/2022	2564	74.78333333	6/14/2022	2152	62.76666667	7/14/2022			8/14/2022			9/14/2022			10/14/2022			11/14/2022			12/14/2022		
1/15/22			2/15/22			3/15/22			4/15/2022			5/15/2022	2461	71.77916667	6/15/2022	2824	82.36666667	7/15/2022			8/15/2022			9/15/2022			10/15/2022			11/15/2022			12/15/2022		
1/16/22			2/16/22			3/16/22			4/16/2022			5/16/2022	2711	79.07083333	6/16/2022	2530	73.79166667	7/16/2022			8/16/2022			9/16/2022			10/16/2022			11/16/2022			12/16/2022		
1/17/22			2/17/22			3/17/22			4/17/2022			5/17/2022	1909	55.67916667	6/17/2022	1470	42.875	7/17/2022			8/17/2022			9/17/2022			10/17/2022			11/17/2022			12/17/2022		
1/18/22		0	2/18/22			3/18/22			4/18/2022			5/18/2022	2266	66.09166667	6/18/2022	1815	52.9375	7/18/2022			8/18/2022			9/18/2022			10/18/2022			11/18/2022			12/18/2022		
1/19/22		0	2/19/22			3/19/22			4/19/2022			5/19/2022	2022	58.975	6/19/2022	1700	49.58333333	7/19/2022			8/19/2022			9/19/2022			10/19/2022			11/19/2022			12/19/2022		
1/20/22		0	2/20/22			3/20/22			4/20/2022			5/20/2022	2694	78.575	6/20/2022	1791	52.2375	7/20/2022			8/20/2022			9/20/2022			10/20/2022			11/20/2022			12/20/2022		
1/21/22		0	2/21/22			3/21/22			4/21/2022			5/21/2022	3099	90.3875	6/21/2022	2657	77.49583333	7/21/2022			8/21/2022			9/21/2022			10/21/2022			11/21/2022			12/21/2022		
1/22/22		0	2/22/22	618	18.025	3/22/22			4/22/2022			5/22/2022	1977	57.6625	6/22/2022	2886	84.175	7/22/2022			8/22/2022	790	23.04166667	9/22/2022			10/22/2022			11/22/2022			12/22/2022		
1/23/22		0	2/23/22			3/23/22			4/23/2022			5/23/2022	2137	62.32916667	6/23/2022	1676	48.88333333	7/23/2022			8/23/2022	1513	44.12916667	9/23/2022			10/23/2022			11/23/2022			12/23/2022		
1/24/22		0	2/24/22			3/24/22			4/24/2022			5/24/2022	2836	82.71666667	6/24/2022	2037	59.4125	7/24/2022			8/24/2022	2292	66.85	9/24/2022			10/24/2022			11/24/2022			12/24/2022		
1/25/22		0	2/25/22			3/25/22			4/25/2022	784	22.86666667	5/25/2022	2221	64.77916667	6/25/2022	1582	46.14166667	7/25/2022			8/25/2022	1943	56.67083333	9/25/2022			10/25/2022			11/25/2022	0		12/25/2022		
1/26/22		0	2/26/22			3/26/22			4/26/2022			5/26/2022	1588	46.31666667	6/26/2022	2061	60.1125	7/26/2022			8/26/2022	2259	65.8875	9/26/2022			10/26/2022			11/26/2022	0		12/26/2022		
1/27/22		0	2/27/22			3/27/22			4/27/2022			5/27/2022	1538	44.85833333	6/27/2022	962	28.05833333	7/27/2022			8/27/2022	1014	29.575	9/27/2022	0		10/27/2022			11/27/2022			12/27/2022		
1/28/22		0	2/28/22	831	24.2375	3/28/22			4/28/2022	357	10.4125	5/28/2022	1591	46.40416667	6/28/2022	2409	70.2625	7/28/2022			8/28/2022			9/28/2022			10/28/2022			11/28/2022			12/28/2022		
1/29/22		0				3/29/22			4/29/2022			5/29/2022	1523	44.42083333	6/29/2022	2555	74.52083333	7/29/2022			8/29/2022	1078	31.44166667	9/29/2022			10/29/2022			11/29/2022	0		12/29/2022		
1/30/22		0				3/30/22			4/30/2022			5/30/2022	2639	76.97083333	6/30/2022	2420	70.58333333	7/30/2022			8/30/2022	2436	71.05	9/30/2022			10/30/2022			11/30/2022	0		12/30/2022		
1/31/22		0				3/31/22						5/31/2022	3146	91.75833333				7/31/2022			8/31/2022	2075	60.52083333				10/31/2022						12/31/2022		
AVG	0	0		610.3333333	17.80138889		0	0		516.3333333	15.05972222		2242.964286	65.41979167		2017.433333	58.84180556		1983.5	57.85208333		1557	45.4125		#DIV/0!	0		#DIV/0!	0		#DIV/0!	0		#DIV/0!	0
MAX	0	0		831	24.2375		0	0		784	22.86666667		4295	125.2708333		2886	84.175		2367	69.0375		2436	71.05		0	0		0	0		0	0		0	0
MIN	0	0.0000000		382	11.1416667		0	0.0000000		357	10.4125000		1141	33.2791667		714	20.8250000		1496	43.6333333		536	15.6333333		0	0.0000000		0	0.0000000		0	0.0000000		0	0.0000000
Total for mont	0			1831			0			1549			62803			60523			15868			21798			0			0			0			0	

2022 AREA OF REVIEW
UNIT LETTERS ENCOMPASSED BY THE 2-MILE AOR

Sec	TWN	RNG	UL	
1	29N	12W	ALL	
2	29N	12W	ALL	
3	29N	12W	ALL	
4	29N	12W	ACFJKNP	
9	29N	12W	ABH	
10	29N	12W	ABCDIJN	
11	29N	12W	ACDGHILOP	
12	29N	12W	AEFKM	
25	30N	12W	EMN	
26	30N	12W	FGLNOP	
27	30N	12W	LMP	
28	30N	12W	O	
33	30N	12W	GHIJK	
34	30N	12W	ALL	
35	30N	12W	ALL	
36	30N	12W	AEIMN	

Radius expanded to 2 miles for permit renewal requirements.

													Surface Casing			INT Casing			Production Casing					
API	Well Name	Well #	Current Operator	Type	Lease	Status	Sec	TWN	RNG	UL	Spud Date	TD	size	depth	Sacks TOC	size	depth	Sacks TOC	size	depth	Sacks TOC	Perfs	Packer	PLUGGED
30-045-08851	ALLEN A	#001	BP America	Gas	Private	Plugged	1	29N	12W	D	3/12/1961	6785	8.265	264	200 surf				4.5	6785	300 surf	6518-6718		3/27/2018
30-045-26214	ALLEN A	#001E	SIMCOE LLC	Gas	Federal	Active	1	29N	12W	L	3/22/1985	5825	8.625	318	225 surf				5.5	6622	820 surf	6425-6602		
30-045-08661	Dudley Cornell A	#001	SIMCOE LLC	Gas	Federal	Active	1	29N	12W	O	11/15/1960	6730	9.625	263	200 surf				4.5	6707	300 surf	6434-6587		
30-045-24129	Dudley Cornell A	#001E	SIMCOE LLC	Gas	Federal	Active	1	29N	12W	G	4/28/1980	6722	9.625	348	250 surf				4.5	6710	180 surf	6496-6629		
30-045-34348	Allen Com	#100	Burlington	Gas	Federal	Plugged	1	29N	12W	B	10/22/2007	138												1/22/2009
30-045-08782	Cornell	5	Burlington	Gas	Federal	Plugged	1	29N	12W	G	9/30/1955	99999												4/28/1994
30-045-29167	Hike	1	Dugan Production	Gas	Federal	Active	1	29N	12W	G	7/10/1994	3840	8.625	260	175 surf				4.5	3820	595 surf	3710-3718	3710	
30-045-08656	Cornell	2	Energen Resources	Gas	Federal	Plugged	1	29N	12W	M	10/2/1955	1996												9/15/2005
30-045-29539	Cornell	3R	Epic Energy	Gas	Federal	Plugged	1	29N	12W	I	10/7/1955	0	7	131	45-53				3.5	2193	434-741	1991-2041		7/13/2018
30-045-29538	Cornell	5R	HilCorp	Gas	Federal	Active	1	29N	12W	A	4/14/1998	2225	7	131	45-53				3.5	2215	434-741	2029-2059		
30-045-08783	PRE-ONGARD WELL	#001	Pre Ongard	Gas	Private	Plugged	1	29N	12W	F	7/9/2003	2090												12/31/1901
30-045-08641	PRE-ONGARD WELL	#003	Pre Ongard	Gas	Federal	Plugged	1	29N	12W	O	4/11/1998	2203												11/16/1981
30-045-08793	Pre-Ongard		Southern union	Gas	Private	Plugged	1	29N	12W	E	3/16/1948	2125												3/16/1948
30-045-32346	CORNELL	#002R	Southland Royalty	Gas	Federal	Active	1	29N	12W	M	7/22/2004	2152	7	137	90 surf				4.5	2151	310 surf	1702-1926		
30-045-31612	Cornell	2S	Southland Royalty	Gas	Federal	Active	1	29N	12W	O	7/27/1957	0	7	136	56 surf				4.5	2058	225 surf	1725-1921		
30-045-28653	SUNCO DISPOSAL	#001	Agua Moss	Salt Water Disposal	Private	Active	2	29N	12W	E	1/28/1992	4760	8.625	209	150 surf				5.5	4760	1010 surf	4350-4460	4282 10/15/07	4350-4460 TA'd
30-045-33573	CORNELL COM	#500S	Burlington	Gas	Private	Plugged	2	29N	12W	P	3/18/2006	2210	7	132	34 surf	6.25	2210		4.5	2198	279 surf	1754-1939 1743-1924		1/23/2013
30-045-08844	KATTLER	#001	Burlington	Gas	Private	Plugged	2	29N	12W	C	1/26/1945	2069	10	846	surf	5.5	1960		3.5	2050	205 surf	1961-2007		5/26/2012
30-045-08713	McGrath SRC	#001	Burlington	Gas	Private	Plugged	2	29n	12w	j	7/7/1973	2136												1998
30-045-30486	MCGRATH SRC	#001R	Burlington	Gas	Private	Plugged	2	29N	12W	J	3/23/2001	2235												6/25/2010
30-045-32241	BECK	#001R	HilCorp	Gas	Private	Active	2	29N	12W	G	12/1/2004	2225	7	135	34 surf				4.5	2221	262 surf	1774-2077		
30-045-33811	BECK	#001S	HilCorp	Gas	Private	Active	2	29N	12W	D	8/17/2006	2200	7	162	85 surf				4.5	2195	255 surf	1730-1951		
30-045-31580	CORNELL COM	#500	HilCorp	Gas	Federal	Active	2	29N	12W	N	7/14/2003	2136	7	139	44 surf	6.25	2126		4.5	2126	258 surf	1658-1878		
30-045-08714	CORNELL SRC	#007	HilCorp	Gas	Federal	Active	2	29N	12W	L	7/29/1944	2107	16	42	10 surf	5.5	1978		3.5	2106	250 surf	1976-2010		

30-045-08704	MCGRATH B	#001	HilCorp	Gas	Private	Active	2	29N	12W	J	11/19/1961	6720	8.625	318	225 surf				4.5	1865	1065 surf	6489-6596		
30-045-08839	YOUNG	#001	HilCorp	Gas	Private	Active	2	29N	12W	D	8/1/1961	6740	8.625	307	275 surf				4.5	6739	700 surf	6446-6644		
30-045-08797	Pre-Ongard		Southland	Gas	Private	Plugged	2	29n	12w	g	4/14/1948	2125												2/23/1984
30-045-27635	PRE-ONGARD WELL	#500		Gas	Federal	Plugged	2	29N	12W	M														12/31/1901
30-045-08709	MCGRATH	#003	Burlington	Gas	Private	Plugged	3	29N	12W	J	3/4/1945	2040												3/1/2013
30-045-60274	WALKER 2	#002	Burlington	Gas	Private	Plugged	3	29N	12W	D	1/8/1945	1974												7/24/1998
30-045-08823	Walker SRC	1	Burlington	Gas	Private	Plugged	3	29N	12W	G	2/25/1943	2050												10/12/2009
30-045-33580	MCGRATH	#003S	HilCorp	Gas	Private	TA'd	3	29N	12W	B	7/13/2007	2132	7	218	150 surf				4.5	2112	289 surf	1692-1904		TA'd 10/23/2009
30-045-08712	MCGRATH A	#001	HilCorp	Gas	Private	Active	3	29N	12W	I	3/14/1964	6689	8.625	307	250 surf				4.5	6688	500 surf	6432-6524		
30-045-32931	WALKER	#100S	HilCorp	Gas	Private	Active	3	29N	12W	F	8/14/2005	2120	7	144	61 surf				4.5	2117	238 surf	1621-1885		
30-045-08801	WALKER 1	#001	HilCorp	Gas	Private	Active	3	29N	12W	E	4/12/1960	6620	8.625	232	150 surf				4.5	6620	300 surf	6546-6556		
30-045-30244	WALKER 100	#100	HilCorp	Gas	Private	TA'd	3	29N	12W	L	3/30/2001	1948	7	126	140-168				4.5	1940	219-399	1659-1872	1597 CIBP@1609	Tad
30-045-08711	Pre-Ongard		Union Texas	Gas	Private	Plugged	3	29N	12W	K	6/25/1955	1940												11/10/1964
30-045-29117	RIGGS	#001	Enduring Resources	Gas	Private	Active	4	29N	12W	A	6/24/1994	1900												
30-045-29118	RIGGS	#002	Enduring Resources	Gas	Private	Plugged	4	29N	12W	N	6/28/1994	1890												5/8/2017
30-045-32239	RIGGS	#003	Enduring Resources	Gas	Private	Active	4	29N	12W	C	2/21/2005	1906												
30-045-32312	RIGGS	#004	Enduring Resources	Gas	Private	Active	4	29N	12W	P	3/20/2005	2002												
30-045-08718	STANDARD	#001	HilCorp	Gas	Federal	Active	4	29N	12W	J	11/3/1960	6600	8.625	236	175 surf				4.5	6600	250 surf	6356-6510		
30-045-08720	DEVONIAN FEDERAL	#001	Holcomb Oil & Gas	Gas	Federal	Active	4	29N	12W	K	6/23/1959	6538												
30-045-24552	PRE-ONGARD WELL	#001	Pre Ongard	Gas	Federal	Plugged	4	29N	12W	A	5/29/1981	0												12/7/1995
30-045-08804	FEDERAL	#001	Riggs Oil & Gas	Gas	Federal	Plugged	4	29N	12W	F	5/29/1959	1856												2/9/2017
30-045-08586	FLORANCE GAS COM B	#001	SIMCOE LLC	Gas	Federal	Active	9	29N	12W	H	1/20/1964	6470												
30-045-28824	ROPCO FEE FC 9	#002	HilCorp	Gas	Private	Active	9	29N	12W	A	11/25/1992	1975												
30-045-26855	PRE-ONGARD WELL	#001	Pre Ongard	Gas	Private	Plugged	9	29N	12W	B	3/18/1988	0												3/9/1989
30-045-08601	CORNELL A	#001	SIMCOE LLC	Gas	Federal	Active	10	29N	12W	D	12/28/1960	6510												
30-045-24132	CORNELL A	#001E	BP America	Gas	Federal	Plugged	10	29N	12W	N	4/4/1980	6350												1/24/2018

30-045-08605	CORNELL	#007	Burlington	Gas	Federal	Plugged	10	29N	12W	C	4/20/1956	1807												7/18/1996
30-045-23889	BECK A	#001E	HilCorp	Gas	Federal	Active	10	29N	12W	B	1/5/1981	6514	8.625	240	150 surf				4.5	6514	765 surf	6277-6454		
30-045-08517	BECK A	#001	HilCorp	Gas	Private	Active	10	29N	12W	J	6/12/1962	6410												
30-045-30381	CORNELL	#100	HilCorp	Gas	Federal	Active	10	29N	12W	B	1/7/2003	1968	7	147	55 surf				4.5	1959	229 surf	1543-1704 1744-1800		
30-045-08523	PRE-ONGARD WELL	#001	Pre Ongard	Water	Private	Permanently	10	29N	12W	J	8/21/1946	1871												10/31/1977
30-045-23758	Pre-Ongard		Southland	Gas	Federal	Plugged	10	29N	12W	A	12/19/1980	1870												2/10/1984
30-045-34452	BECK 29 12 10	#108	Synergy	Gas	Federal	Plugged	10	29N	12W	N	2/21/2008	1865												4/27/2020
30-045-13092	CORNELL C	#001	SIMCOE LLC	Gas	Federal	Active	11	29N	12W	D	12/6/1961	6604	8.625	250	150 surf				4.5	6604	300 surf	6298-6483		
30-045-08615	CORNELL	#006	Epic Energy	Gas	Federal	Active	11	29N	12W	C	11/7/1955	1839	8.625	106	70 surf	5.5	1811		3.5	2022	181 surf	1811-1839		
30-045-31581	CORNELL	#101	HilCorp	Gas	Federal	Active	11	29N	12W	D	10/7/2003	2008	7	140	35 surf				4.5	2000	270 surf	1726-1764		
30-045-24447	FEDERAL PRI	#001E	HilCorp	Gas	Federal	Active	11	29N	12W	H	10/9/1980	6581												
30-045-29945	PAYNE	#001R	Mcelvain Energy	Gas	Federal	Active	11	29N	12W	H	10/27/1999	2050												
30-045-32667	PRI	#003	Mcelvain Energy	Gas	Federal	Active	11	29N	12W	I	2/27/2005	1960												
30-045-13218	PRE-ONGARD WELL	#010	Pre Ongard	Gas	Federal	Plugged	11	29N	12W	A		0												12/31/1901
30-045-08558	PRE-ONGARD WELL	#001	Pre Ongard	Gas	Federal	Plugged	11	29N	12W	G	1/1/1940	0												4/16/1976
30-045-08515	PRE-ONGARD WELL	#001	Pre Ongard	Gas	Private	Plugged	11	29N	12W	L	11/25/1932	0												12/13/1982
30-045-20067	PRE-ONGARD WELL	#001	Pre Ongard	Gas	Federal	Plugged	11	29N	12W	O	5/5/1967	0												4/18/1986
30-045-08475	CARROLL CORNELL	#012	Producing Royalties	Gas	Federal	Plugged	11	29N	12W	P	11/22/1953	1895												6/13/1979
30-045-22118	PAYNE	#001	Producing Royalties	Gas	Federal	Plugged	11	29N	12W	A	7/31/1976	2060												2/13/2002
30-045-24086	CORNELL D	#001E	SIMCOE LLC	Gas	Federal	Active	12	29N	12W	A	5/22/1980	6635												
30-045-24283	CORNELL E	#001E	SIMCOE LLC	Gas	Federal	Active	12	29N	12W	F	5/12/1980	6609												
30-045-08444	CORNELL E	#001	BP America	Gas	Federal	Plugged	12	29N	12W	M	9/28/1962	6562												6/27/2017
30-045-08528	CORNELL SRC	#004	Burlington	Gas	Federal	Plugged	12	29N	12W	K	5/25/1941	1970												3/29/2017
30-045-22119	PAYNE	#002	Mcelvain Energy	Gas	Federal	Plugged	12	29N	12W	F	7/22/1976	2062												10/30/2010
30-045-22962	PAYNE	#002J	RIM Operating	Gas	Federal	Active	12	29N	12W	E	6/12/1978	2026												
30-045-33015	PRI	#001S	RIM Operating	Gas	Federal	Active	12	29N	12W	A	9/20/2005	2057												

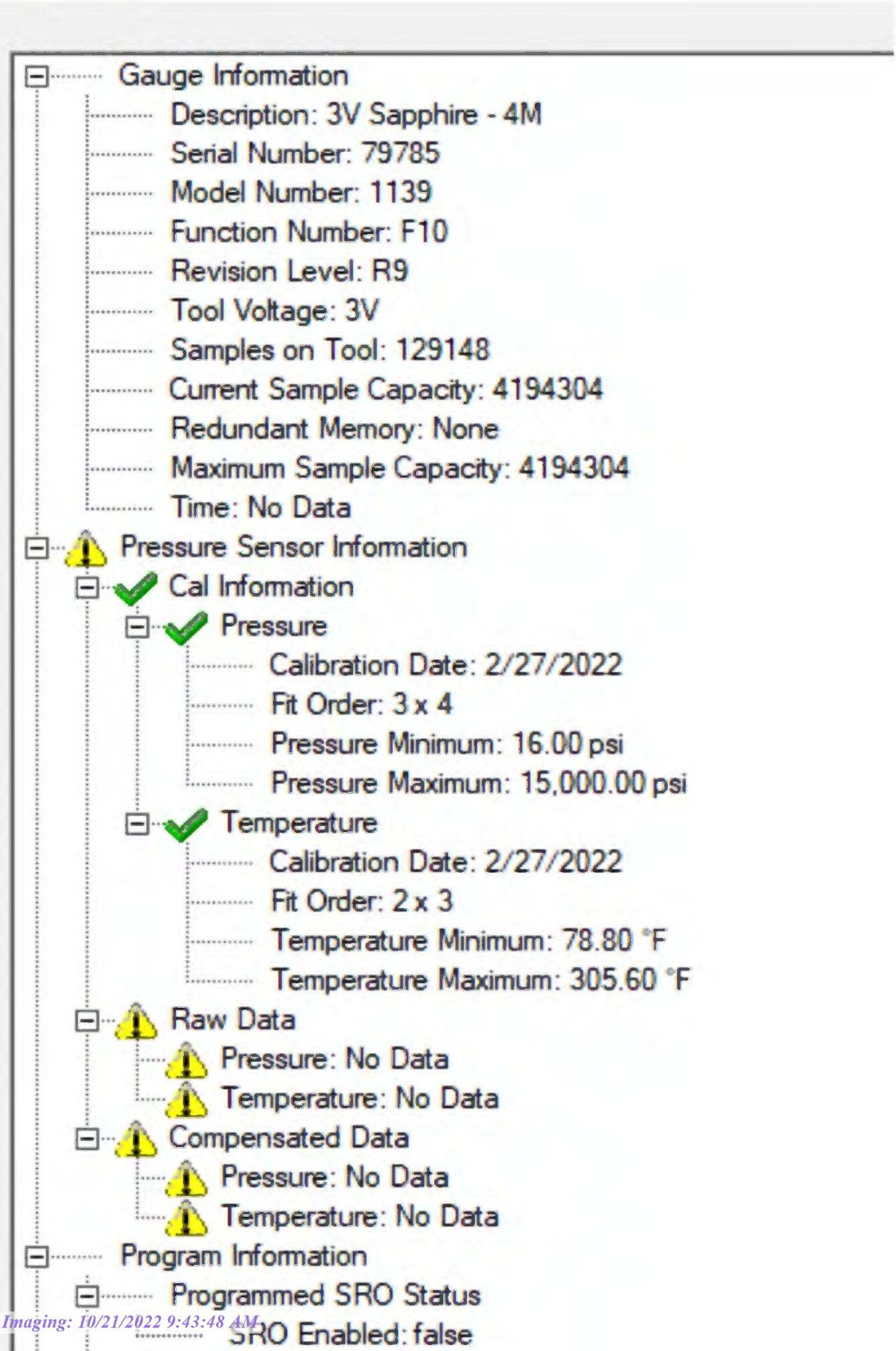
30-045-32665	PRI	#001	RIM Operating	Gas	Federal	Active	12	29N	12W	E	2/17/2005	2090											
30-045-32666	PRI	#002	RIM Operating	Gas	Federal	Active	12	29N	12W	M	2/8/2005	2010											
30-045-09117	PRE-ONGARD WELL	#001	ONGARD WELL OPERATOR	Gas	Private	Plugged	25	30N	12W	M	4/13/1953	0											5/26/1958
30-045-26121	ROWLAND GAS COM	#001E	HilCorp	Gas	Private	Active	25	30N	12W	M	3/19/1985	6560											
30-045-29707	RUBY CORSCOT A	#001	HilCorp	Gas	Private	Active	25	30N	12W	N	9/25/1999	2007											
30-045-31641	RUBY CORSCOT A	#002	HilCorp	Gas	Private	Active	25	30N	12W	E	6/2/2003	2076											
30-045-30456	KATY COM	#002	[14634] MERRION OIL & GAS CORP	Gas	Private	Plugged	26	30N	12W	P	4/27/2001	2028											8/10/2015
30-045-09177	PAUL PALMER	#001	[14634] MERRION OIL & GAS CORP	Gas	Private	Plugged	26	30N	12W	L	9/13/1961	3509											8/14/2015
30-045-29414	PRE-ONGARD WELL	#001	ONGARD WELL OPERATOR	Gas	Private	Plugged	26	30N	12W	G	6/21/1953	0											12/31/1901
30-045-09130	PRE-ONGARD WELL	#003	ONGARD WELL OPERATOR	Gas	Private	Plugged	26	30N	12W	O		0											3/12/1954
30-045-09165	PAUL PALMER D	#001	[5073] CONOCO INC	Gas	Private	Plugged	26	30N	12W	L	10/11/1961	99999											3/17/1995
30-045-30027	PADILLA	#001	HilCorp	Gas	Private	Active	26	30N	12W	F	1/15/2004	1953											
30-045-32243	PADILLA	#002	HilCorp	Gas	Private	Active	26	30N	12W	N	5/13/2004	2153											
30-045-09200	PRE-ONGARD WELL	#001	ONGARD WELL OPERATOR	Gas	Private	Plugged	27	30N	12W	L	3/30/1947	0											3/17/1959
30-045-13120	DUFF GAS COM B	#001	AMERICA PRODUCTION	Gas	Private	Plugged	27	30N	12W	P	2/28/1962	1950											5/30/1996
30-045-30544	DUFF GAS COM	#003	HilCorp	Gas	Private	Active	27	30N	12W	P	4/1/2001	5167											
30-045-09134	DUFF GAS COM C	#001	HilCorp	Gas	Private	Active	27	30N	12W	M	1/30/1964	6365											
30-045-26076	DUFF GAS COM C	#001E	HilCorp	Gas	Private	Active	27	30N	12W	P	9/20/1984	6500											
30-045-29664	DUFF GAS COM C	#002	HilCorp	Gas	Private	Active	27	30N	12W	M	10/16/1998	1856											
30-045-31284	DUFF GAS COM C	#004	HilCorp	Gas	Private	Active	27	30N	12W	P	1/27/2003	1996											
30-045-34235	GILBREATH	#002	Enduring Resources	Gas	Private	Active	28	30N	12W	O	4/30/2008	2170											
30-045-09037	HARGIS	#001	MCGEE OIL & GAS ONSHORE LP	Gas	Private	Plugged	33	30N	12W	G	9/15/1944	1808											2/23/1994
30-045-08999	PRE-ONGARD WELL	#002	ONGARD WELL OPERATOR	Gas	Private	Plugged	33	30N	12W	J	7/10/1946	0											6/4/1982
30-045-08998	JULANDER	#002	PRODUCTION CORP	Gas	Private	Plugged	33	30N	12W	I	4/1/1946	1936											4/12/1999
30-045-29023	REDFERN	#002	Enduring Resources	Gas	Private	Active	33	30N	12W	H	12/5/1993	1950											
30-045-32236	REDFERN	#003	Enduring Resources	Gas	Private	Active	33	30N	12W	I	3/8/2005	1993											

30-045-28912	SHIOTANI	#007	Enduring Resources	Gas	Private	Active	33	30N	12W	K	12/31/1992	1782												
30-045-09001	MADDOX	#001	HilCorp	Gas	Private	Active	33	30N	12W	J	9/21/1961	6400												
30-045-25923	MCGRATH	#004	BURLINGTON RESOURCES OIL &	Salt Water Disposal	Federal	Plugged	34	30N	12W	B	9/4/1984	4700												7/25/2013
30-045-09052	PRE-ONGARD WELL	#001	ONGARD WELL OPERATOR	Gas	Federal	Plugged	34	30N	12W	F	9/11/1945	0												1/22/1964
30-045-08939	PRE-ONGARD WELL	#001	ONGARD WELL OPERATOR	Gas	Private	Plugged	34	30N	12W	L	1/1/1945	0												6/4/1982
30-045-08950	HUDSON	2	Burlington	Gas	Federal	Plugged	34	30N	12W	P	7/17/1946	2137												9/26/2008
30-045-08945	MCGRATH C	#001	Burlington	Gas	Federal	Plugged	34	30n	12W	p	2/7/1963	6637												4/29/2009
30-045-26141	DUFF GAS COM	#001E	HilCorp	Gas	Federal	TA'd	34	30N	12W	G	11/20/1984	6608	8.625	316	295 surf				4.5	6608	1000 surf	6396-6576 04'RC to FC 1492-1870		TA'd 3/5/14
30-045-09071	DUFF GAS COM	#001	HilCorp	Gas	Private	Active	34	30N	12W	D	1/30/1962	6425												
30-045-31756	JULANDER	#100	HilCorp	Gas	Private	Shut In	34	30N	12W	D	7/13/2005	1895												
30-045-33411	JULANDER	#100S	HilCorp	Gas	Federal	Shut In	34	30N	12W	M	3/7/2006	2075												
30-045-31355	CARNAHAN COM	#001Y	HOLCOMB OIL & GAS INC	Gas	Private	Active	35	30N	12W	A	2/15/2003	2150												
30-045-11770	HUDSON J	#003	HilCorp	Gas	Federal	TA'd	35	30N	12W	E	7/22/1966	6750	8.625	306	250 surf				4.5	6750	750 surf	6460-6680 01' RC to FC 1784-1994		
30-045-08946	CARNAHAN COM	#001	Holcomb Oil & Gas	Gas	Private	Active	35	30N	12W	P	12/19/1960	6778	8.625	301	200 surf				4.5	6760	445 surf	6521-6708 94 RC to FC 1824-2037		
30-045-25844	CARNAHAN COM	#002	Merrion Oil & Gas	Gas	Private	Active	35	30N	12W	P	6/15/1984	6780	8.625	230	170 surf				4.5	6777	1425 surf	6529-6714		
30-045-20140	Pre-Ongard		Southland	Gas	Federal	Plugged	35	30N	12W	L	9/7/1967	DH												6/9/1982
30-045-28177	FC STATE COM	#024	Burlington	Gas	State	Plugged	36	30N	12W	M	10/9/1990	6608												3/26/2013
30-045-12188	NEW MEXICO COM N	#001	HilCorp	Gas	State	Active	36	30N	12W	E	1/2/1966	6562												
30-045-31074	NEW MEXICO COM N	#100	HilCorp	Gas	State	Shut In	36	30N	12W	A	8/29/2002	2135												
30-045-08986	STATE COM AH	#030	HilCorp	Gas	State	Active	36	30N	12W	I	6/14/1961	6645												
30-045-24037	STATE COM AH	#030E	HilCorp	Gas	State	Plugged	36	30N	12W	N	8/10/1980	6620												4/28/2016

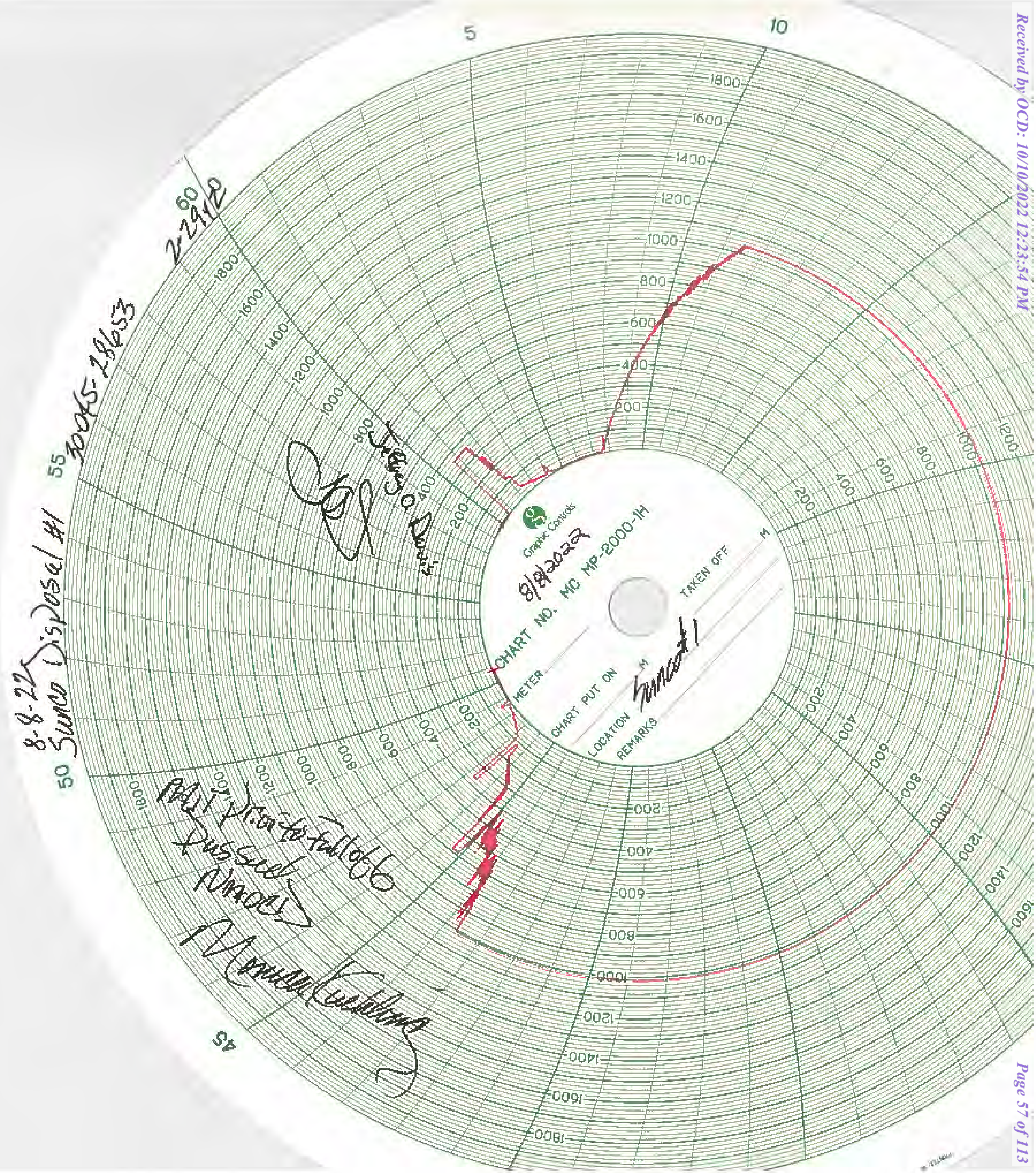
Agua Moss - Sunco Disposal				
Operations Log for Falloff Test				
Date	**Rate (bbls/day)**	**TBG Pressure (psig)**	**CSG Pressure (psig)**	**Comment**
8/8/22 9:00 AM				Perform BH test & MIT test
8/8/22 10:43 AM				PLUGGED IN GAUGES
8/8/22 10:48 AM				OPENED WELL
8/8/22 11:04 AM				SET GAUGES
8/8/22 12:30 PM	1711	1500	0	Start injection
8/8/22 1:00 PM	1702	1600	0	
8/8/22 2:00 PM	1702	1650	0	
8/8/22 3:00 PM	1692	1700	0	
8/8/22 4:00 PM	1702	1700	0	
8/8/22 5:00 PM	1692	1750	0	
8/8/22 6:00 PM	1702	1750	0	
8/8/22 7:00 PM	1692	1750	0	
8/8/22 8:00 PM	1702	1750	0	
8/8/22 9:00 PM	1702	1775	0	
8/8/22 9:15 PM				Down HP kill
8/8/22 9:30 PM				Back on
8/8/22 10:00 PM	1673	1775	0	
8/8/22 11:00 PM	1673	1800	0	
8/9/22 12:00 AM	1664	1800	0	
8/9/22 1:00 AM	1664	1800	0	
8/9/22 2:00 AM	1655	1825	0	
8/9/22 3:00 AM	1655	1825	0	
8/9/22 4:00 AM	1665	1825	0	
8/9/22 5:00 AM	1664	1825	0	
8/9/22 6:00 AM	1673	1825	0	
8/9/22 7:00 AM	1665	1825	0	
8/9/22 8:00 AM	1655	1850	0	
8/9/22 9:00 AM	1655	1850	0	
8/9/22 10:00 AM	1664	1850	0	
8/9/22 11:00 AM	1664	1850	0	
8/9/22 12:00 PM	1673	1850	0	
8/9/22 1:00 PM	1673	1850	0	
8/9/22 2:00 PM	1673	1860	0	
8/9/22 3:00 PM	1664	1860	0	
8/9/22 4:00 PM	1683	1860	0	
8/9/22 5:00 PM	1664	1870	0	
8/9/22 6:00 PM	1664	1870	0	
8/9/22 7:00 PM	1673	1870	0	
8/9/22 8:00 PM	1664	1900	0	
8/9/22 9:00 PM	1673	1900	0	
8/9/22 10:00 PM	1664	1900	0	

8/9/22 11:00 PM	1673	1900	0	
8/10/22 12:00 AM	1673	1900	0	
8/10/22 1:00 AM	1664	1900	0	
8/10/22 2:00 AM	1673	1900	0	
8/10/22 3:00 AM	1683	1900	0	
8/10/22 4:00 AM	1683	1900	0	
8/10/22 5:00 AM	1683	1900	0	
8/10/22 6:00 AM	1692	1900	0	
8/10/22 7:00 AM	1702	1900	0	
8/10/22 8:00 AM	1702	1900	0	
8/10/22 9:00 AM	1692	1900	0	
8/10/22 10:00 AM	1702	1900	0	
8/10/22 11:00 AM	1692	1900	0	
8/10/22 12:00 PM	1683	1900	0	
8/10/22 1:00 PM	1683	1900	0	
8/10/22 2:00 PM	1664	1900	0	
8/10/22 3:00 PM	1655	1900	0	
8/10/22 4:00 PM	1664	1900	50	
8/10/22 5:00 PM	1655	1900	50	
8/10/22 6:00 PM	1673	1900	50	
8/10/22 7:00 PM	1673	1900	50	
8/10/22 8:00 PM	1664	1900	60	
8/10/22 9:00 PM	1664	1900	60	
8/10/22 10:00 PM	1673	1900	60	
8/10/22 11:00 PM	1683	1920	60	
8/11/22 12:00 AM	1673	1920	60	
8/11/22 1:00 AM	1673	1920	60	
8/11/22 2:00 AM	1673	1920	60	
8/11/22 3:00 AM	1702	1920	60	
8/11/22 4:00 AM	1683	1920	60	
8/11/22 5:00 AM	1673	1920	60	
8/11/22 6:00 AM	1664	1920	60	
8/11/22 7:00 AM	1692	1920	60	
8/11/22 8:00 AM	1683	1920	60	
8/11/22 9:00 AM	1692	1920	90	
8/11/22 10:00 AM	1692	1930	90	
8/11/22 11:00 AM	1692	1930	100	
8/11/22 12:00 PM	1702	1930	100	
8/11/22 1:00 PM	1702	1940	100	
8/11/22 2:00 PM	1692	1940	100	
8/11/22 3:00 PM	1702	1950	100	
8/11/22 4:00 PM	1711	1950	100	
8/11/22 5:00 PM	1721	1950	100	
8/11/22 6:00 PM	1721	1950	100	
8/11/22 7:00 PM	1721	1950	100	
8/11/22 8:00 PM	1711	1950	100	
8/11/22 9:00 PM	1711	1950	120	

8/11/22 10:00 PM	1702	1950	120	
8/11/22 11:00 PM	1730	1950	180	
8/12/22 12:00 AM	1711	1950	180	
8/12/22 1:00 AM	1722	1950	200	
8/12/22 2:00 AM	1711	1950	220	
8/12/22 3:00 AM	1730	1950	230	
8/12/22 4:00 AM	1721	1950	240	
8/12/22 5:00 AM	1721	1950	300	
8/12/22 6:00 AM	1711	1950	300	
8/12/22 7:00 AM	1711	1950	300	Shut in for Falloff Test
8/22/22 9:30 AM				End falloff test
8/22/22 9:38 AM				RELEASED GAUGES @9:38:10
				MADE STOPS @
8/22/22 9:46 AM				3000' 9:41:36-9:46:36
8/22/22 9:54 AM				2000' 9:49:18-9:54:18
8/22/22 10:01 AM				1000' 9:56:35-10:01:35
8/22/22 10:10 AM				0' 10:05:30-10:10:30
8/22/22 10:19 AM				UNPLUGGED GAUGES


Verify Gauge
Gauge Information
Description: 3V Sapphire - 4M
Serial Number: 79785
Model Number: 1139
Function Number: F10
Revision Level: R9
Tool Voltage: 3V
Samples on Tool: 129148
Current Sample Capacity: 4194304
Redundant Memory: None
Maximum Sample Capacity: 4194304
Time: No Data
Pressure Sensor Information
Cal Information
Pressure
Calibration Date: 2/27/2022
Fit Order: 3 x 4
Pressure Minimum: 16.00 psi
Pressure Maximum: 15,000.00 psi
Temperature
Calibration Date: 2/27/2022
Fit Order: 2 x 3
Temperature Minimum: 78.80 °F
Temperature Maximum: 305.60 °F
Raw Data
Pressure: No Data
Temperature: No Data
Compensated Data
Pressure: No Data
Temperature: No Data
Program Information
Programmed SRO Status
SRO Enabled: false

Received by OCD: 10/10/2022 12:23:54 PM



NEW MEXICO ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE
1000 RIO BRAZOS ROAD
AZTEC NM 87410
(505) 334-6178 FAX: (505) 334-6170
http://emnrd.state.nm.us/ocd/District III/3district.htm

BRADENHEAD TEST REPORT

(submit 1 copy to above address)

Date of Test 8-8-22 Operator Agua Moss API #30-0 45 28653

Property Name SunCo Disp Well No. 1 Location: Unit K Section 2 Township 29 Range 12

Well Status(Shut-In or Producing) Initial PSI: Tubing 1360 Intermediate N/A Casing 300 Bradenhead 0

OPEN BRADENHEAD AND INTERMEDIATE TO ATMOSPHERE INDIVIDUALLY FOR 15 MINUTES EACH

Testing	PRESSURE Bradenhead BH	Bradenhead Int	Bradenhead Csg	INTERM Int	INTERM Csg
TIME 5 min	0		300		
10 min	0		300		
15 min	0		300		
20 min					
25 min					
30 min					

FLOW CHARACTERISTICS	BRADENHEAD	INTERMEDIATE
Steady Flow		
Surges		
Down to Nothing		
Nothing	✓	
Gas		
Gas & Water		
Water		

If bradenhead flowed water, check all of the descriptions that apply below:

CLEAR____ FRESH____ SALTY____ SULFUR____ BLACK____

5 MINUTE SHUT-IN PRESSURE BRADENHEAD____ INTERMEDIATE N/A

REMARKS: Nothing when opened. Nothing when opened after 5 min Shut in

By____ Witness Monica Kuehling

Sunco SWD #1

30-045-28653

Class I Disposal: UICI-5-0

2022 Fall off Test

Agua Moss, LLC

P.O Box 600

Farmington, NM 87499

ORGID 247130

Report Components:

1. Facility Operator Information
    a. Agua Moss, LLC
    b. PO Box 600 Farmington, NM 87499
    c. OGRID 247130
2. Well Information:
    a. UIC Permit # UICI-5-0
    b. Class I
    c. Sunco Disposal #1
    d. 30-045-28653
    e. UL E, Sec 2, T29N, R12W 1595 FNL & 1005 FWL San Juan County
3. Current Wellbore Diagram: **Attached** (page 4)
4. Copy of Electronic Log: **Previously submitted 1992** (Page 36)
5. Copy of Porosity Log: **Previously submitted 1992** (Page 37)
6. See attached Fall off Test Analysis
    a. Fall off Test Procedure (Page 5)
    b. Analysis (Page 5)
    c. Results (Page 27)
    d. Summary (Page 27)
7. Results Comparison attached (page 28)
8. The raw test data will be kept on file for a period of 3-years and will be made available to the NMOCD upon written request. (Page 48)
9. Conclusions (page 28)
10. Any pressure or temperature anomaly: At 9:15 pm on 9/9/2022 the pumps shut down due to the high pressure kill, the pumps were immediately restarted, and the issues resolved. The injection period was extended by 24 hours to achieve the 50 hours of uninterrupted injection time.
11. Plots attached
    a. Pressure and Rate (fig 3) (page 29)
    b. Injection Rate vs Time (fig 4) (page 30)
    c. Pressure and Rate (fig 5) (page 31)
    d. Elapsed Time (fig 2) (page 5)
    e. Derivative Plot (fig 6) (page 32)
    f. Horner Plot (fig 7) (page 33)
    g. Elapsed Gauge Time (fig 8) (page 34)
    h. Injection Volumes and Surface Pressure (fig 9) (page 35)
12. NO PVT data necessary, wellbore fluid is fresh-to-slightly saline water. No significant hydrocarbons present that would alter the density, compressibility and/or viscosity of the fluid.
13. The Agua Moss, LLC internal Daily Injection Reports were used to determine the appropriate injection history to use for the analysis. A summary of those reports (January 2022 through July 2022) are attached. (page 39-41)
14. The Sunco Disposal #1 has injected approximately 16,689,852 bbls into the point lookout formation from 1994 through August 2022. The offset well McGrath SWD #4 API 30-045-25923 was plugged 7/25/2013. Cumulative injection 1994-7/2013 27,746,479 bbls.
15. 2 Mile AOR:

a. AOR 2 mile (page 42)
b. AOR 2 mile well data (page 43-47)
c. The McGrath #4 was the only offset well that was injecting into the Point Lookout formation within 1 mile. This well was plugged 7/25/2013.

16. Geological information was provided in the 2012 Permit renewal and approved in 2012.
17. Offset Wells: One offset well that was completed in the same injection interval was the McGrath #4. This well was plugged 7/2013 and therefore was not impacted.
18. Chronological listing of the daily, testing activities (Operations Log) attached (page 48-50)
    a. Date of Test: 8/8/2022 – 8/22/2022
    b. Type of injection fluid: Produced water
    c. Final Injection Pressure & Temp prior to shutting in the well: 3787 psi, 33°C
    d. Total shut-in time: 240 hours
    e. Final static pressure & temp at the end of the fall-off portion of the test: 3263 psi, 46°C
19. Location of the shut-in valve: **A wing valve located on the well's Christmas tree was closed to begin the FOT**
20. Pressure Gauges: (pages 51)
    a. 3V Sapphire – 4M gauge Model 1139
    b. Pressure range: **16-15,000 psig**
    c. Last Calibration: **2/27/2022**

Wellbore Schematic:

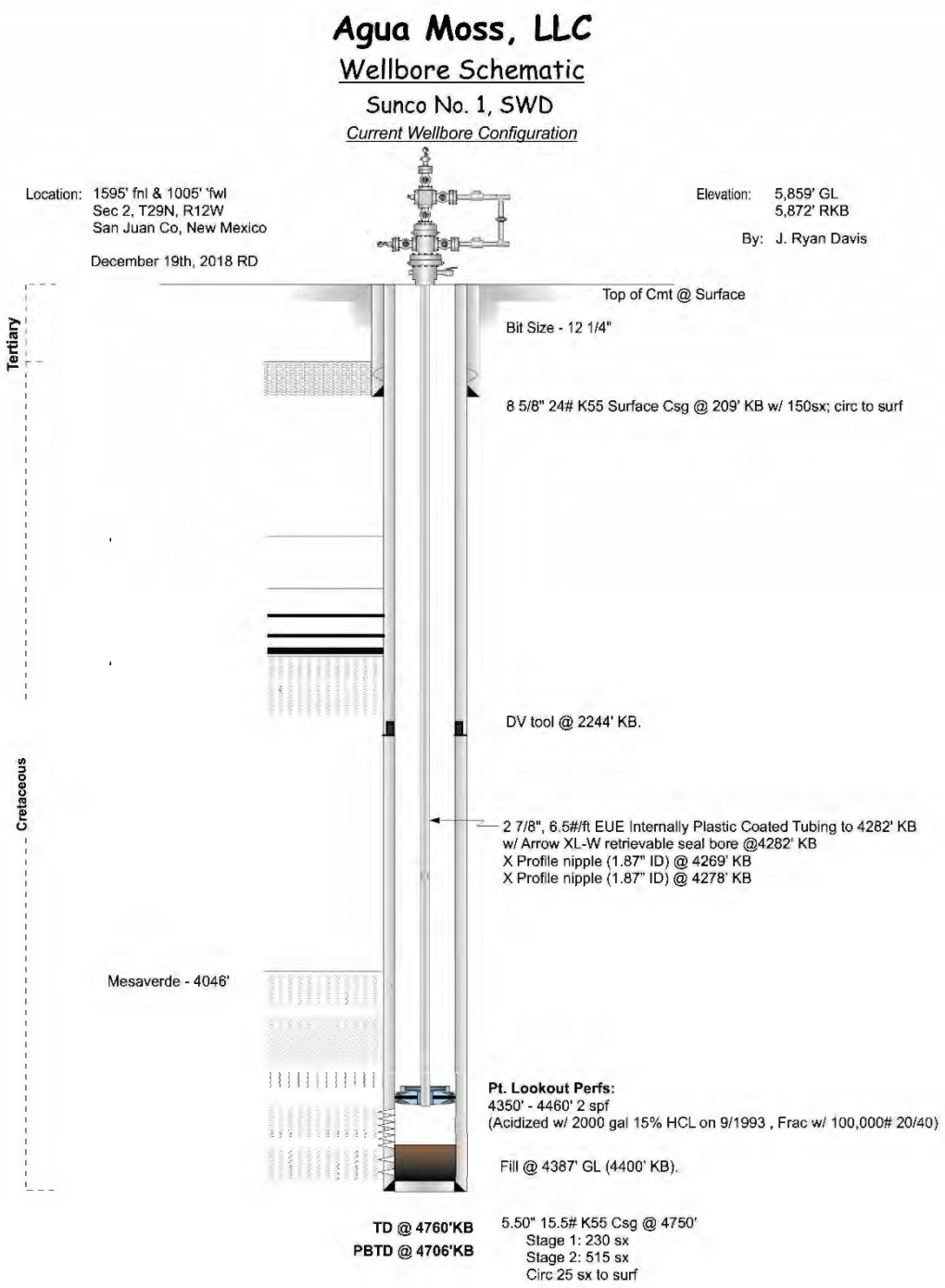


Figure 1: Wellbore Schematic

At the request of the NMOCD and permit requirements, a Falloff Test (FOT) was performed on the Sunco SWD #1 Class I injection well (UICI-5-0) from **8/8/2022 to 8/22/2022**. Below is a summary of findings from the FOT.

Procedure:

Tandem electronic gauges were run in the subject well along with two Foxboro IGP10S industrial pressure transducers installed at surface. The initial BHP was 3229 psi at a depth of 4269'. The injection period started at 12:29 pm on 08/08/2022, with a total of 6,461 bbls injected over 93 hours and an average injection rate of 1,684 bpd (49 gpm). At 9:15 pm on 9/9/2022 the pumps shut down due to high pressure kill, the pumps were immediately restarted and the issues resolved. The injection period was extended by 24 hours to achieve the 50 hours of uninterrupted injection time. The final bottom hole injection pressure was 3787 psi. Injection was shut down and the well was shut it at the wellhead. The bottom hole pressures were monitored for 240 hours of pressure falloff. The final BHP was 3263 psi.

Analysis:

The FOT data was compiled in excel and analyzed. The data was also given to a third party consultant for further analysis and confirmation of results, the analysis is found on pages 8 -20.

A Cartesian plot of pressure and temperature versus elapsed time is presented in Figure 2 below. The stabilization of pressure was confirmed prior to shut-in. The plot was reviewed for anomalous data and none was found other than the data from 9:15 pm on 9/9/22 when the pumps shut down.

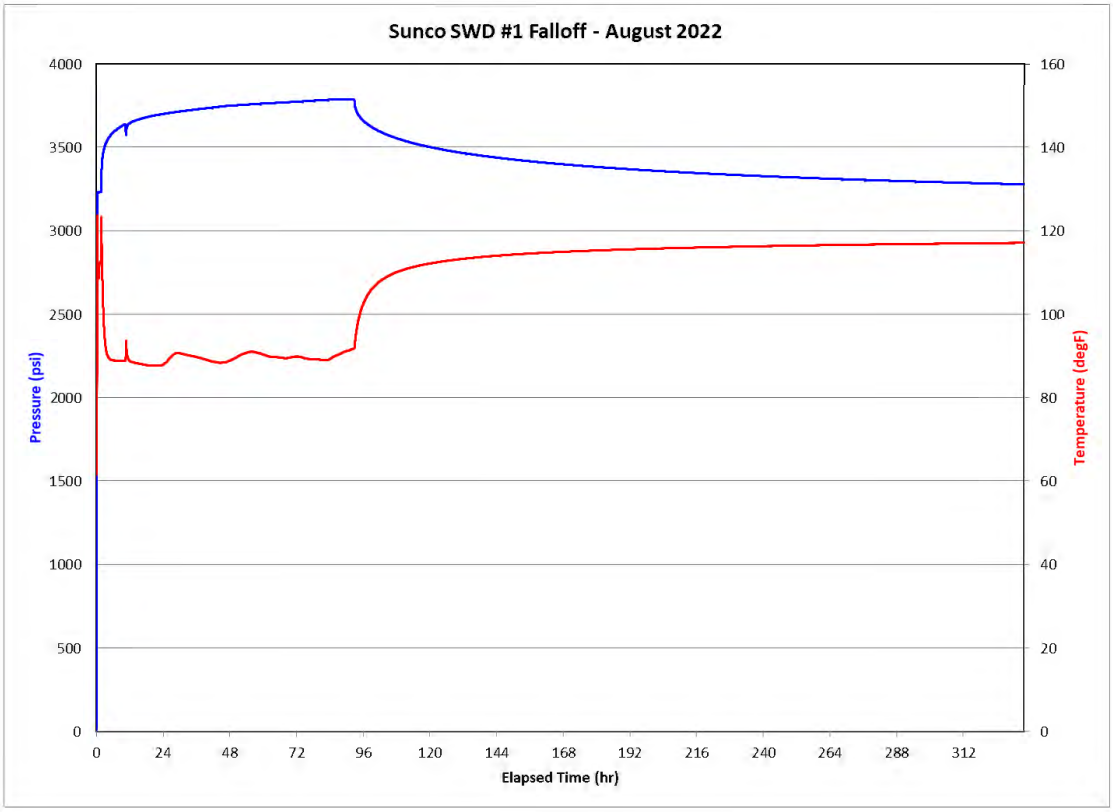


Figure 2 BH Pressure and Temperature vs. Time

IRT Analysis

2022 Fall-off Pressure Test Analysis
for the
Sunco Disposal Well #1
San Juan County, New Mexico

prepared for

Merrion Oil and Gas Corporation

16 September 2022

International Reservoir Technologies, Inc.
Lakewood, Colorado, USA

Tel. (303) 279-0877
Fax (303) 279-0936

Sunco Disposal Well #1 2022 Fall-off Test Results

Summary:

The results of the 2022 fall off test (FOT) for the Sunco Disposal Well #1 indicate that the reported wellbore fill at the depth of 4374 feet GL did influence the test analysis. However, a set of satisfactory results was obtained using the three different analysis methods as described below. The calculated results are comparable to the 2015, 2016, 2017 and 2018 fall-off test results.

Both the bottom hole gauge data and the surface gauge reported pressures were analyzed for this report. The results were similar for both data sets which would support using only a surface gauge for the FOT in the future.

As noted in the 2018 report, the pressure transient effects of the partial penetration condition of the completion due to the fill, plus the hydraulic fracture and the wellbore storage effects do obscure to some extent the reservoir property influences; however, again a reasonable and satisfactory set of reservoir properties could be calculated. The conventional straight-line analysis for extrapolated pressure and the reservoir property calculations from the MDH type plot is acceptable and the type curve analysis and the derivative plot results are reasonable. The input parameters for the fluid properties (i.e. PVT data) were the same as the 2018, 2017 and 2016 tests with the source being the report titled “2nd Quarter 2016 Sampling - Injection Well.pdf”, NM1-9 INJECTION WELL ANALYTICAL RESULTS, Agua Moss Disposal Facility, Crouch Mesa Road, San Juan County, New Mexico, 6/28/16.

For the analysis using the BH gauge data, the results from the derivative, Horner and MDH type pressure plots are summarized in the table below. The results for the different methods were consistent and the average calculated properties were:

- Estimated Kw (permeability) = 9.1 md
- Estimated skin = -5.8
- Extrapolated pressure = 3,303 psig
- Fracture half-length = 586 feet (from derivative half-slope line)
- Radius of investigation = 1,690 feet

Calculated Reservoir Parameters - Bottom Hole Guage				
	Horner Analysis	MDH Plot	Derivative Plot	Average
Estimated Kw (permeability, mD)	11.5	7.7	8.1	9.1
Estimated skin (dimensionless)	-6.7	-5.5	-5.3	-5.8
Extrapolated pressure (psig)	3,174	3,375	3,361	3,303
Fracture half-length (feet)	--	--	586	586
Radius of investigation (feet)	--	1,960	--	1,960

For the analysis using the surface gauge data, the results from the derivative, Horner and MDH type pressure plots are summarized in the table below. The surface recorded data was adjusted to BH datum of 4362 feet using a gradient of 0.431 psi/foot. Also, the initial few minutes of surface gauge data was smoothed slightly due to erratic points caused by the proximity to the pump as the injection was stopped.

The results for the different methods were consistent and the average calculated properties were:

- Estimated Kw (permeability) = 8.7 md
- Estimated skin = -5.8
- Extrapolated pressure = 3,293 psig
- Fracture half-length = 701 feet (from derivative half-slope line)
- Radius of investigation = 1,930 feet

Calculated Reservoir Parameters - Gauge (Adjusted to BH Datum)				
	Horner Analysis	MDH Plot	Derivative Plot	Average
Estimated Kw (permeability, mD)	10.8	8.0	7.3	8.7
Estimated skin (dimensionless)	-6.7	-5.4	-5.4	-5.8
Extrapolated pressure (psig)	3,168	3,372	3,339	3,293
Fracture half-length (feet)	--	--	701	701
Radius of investigation (feet)	--	1,930	--	1,930

Larger versions of the following analysis plots appear at the end of this document.

Input data and assumptions:

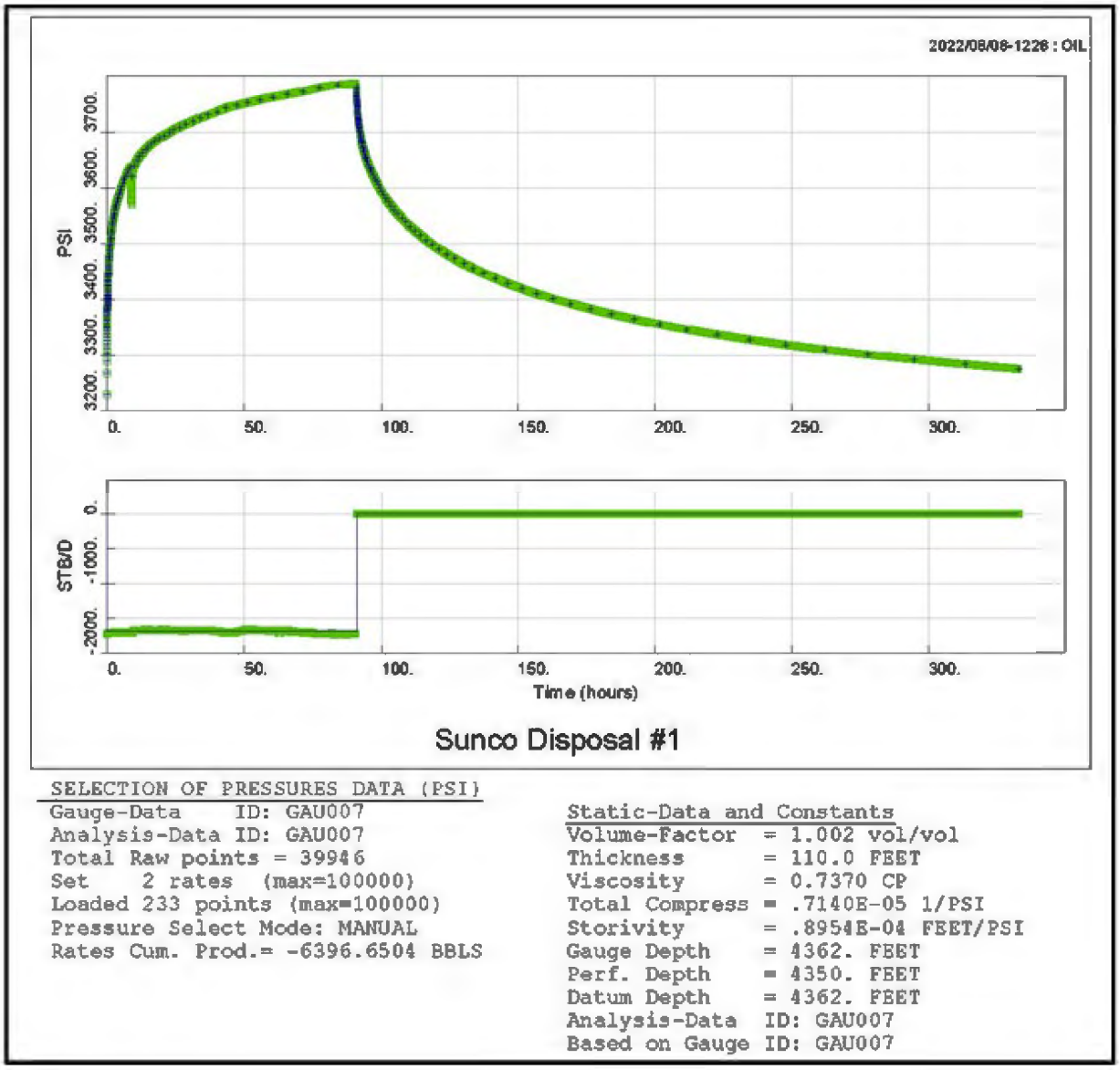
Assumptions:

- Formation fluid properties equal injection water properties due to cumulative volume injected and miscibility of formation water and injection water
- Reservoir temperature = 91 deg F
- Porosity = 0.114 (fraction, estimated from density log)
- Net pay = 110 feet
- Rock compressibility = 4.50E-06 1/psi (correlation)
- Wellbore radius = 0.506 ft
- Wellbore volume total = 34.88 bbls (tubing = 24.79 bbls, casing = 10.09 bbls)
- Wellbore compressibility = injection water compressibility =2.64E-06 1/psi (from Osif correlation)
- Injected water specific gravity = 1.006 (pure water =1.0); density = 8.392 lb./gal, TDS = 15,500 mg/L
- Injected water FVF = 1.0023 rb/stb (McCain correlation)
- Injected water viscosity = 0.737 cp (McCain correlation)

International Reservoir Technologies, Inc.

BOTTOM HOLE GAUGE PRESSURE & RATE DATA PLOT:

This plot shows the raw data from the bottom hole pressure gauge and the injection rate data.



SELECTION OF PRESSURES DATA (PSI)
Gauge-Data ID: GAU007
Analysis-Data ID: GAU007
Total Raw points = 39946
Set 2 rates (max=100000)
Loaded 233 points (max=100000)
Pressure Select Mode: MANUAL
Rates Cum. Prod.= -6396.6504 BBLS

Static-Data and Constants
Volume-Factor = 1.002 vol/vol
Thickness = 110.0 FEET
Viscosity = 0.7370 CP
Total Compress = .7140E-05 1/PSI
Storivity = .8954E-04 FEET/PSI
Gauge Depth = 4362. FEET
Perf. Depth = 4350. FEET
Datum Depth = 4362. FEET
Analysis-Data ID: GAU007
Based on Gauge ID: GAU007

BOTTOM HOLE GAUGE DERIVATIVE PLOT:

Conclusions: The behavior of the derivative curve is affected by the wellbore fill, the wellbore storage and the influence of an apparent hydraulic fracture. The derivative analysis was made using a hydraulic fracture reservoir model, with partial penetration, to best calculate the reservoir properties.

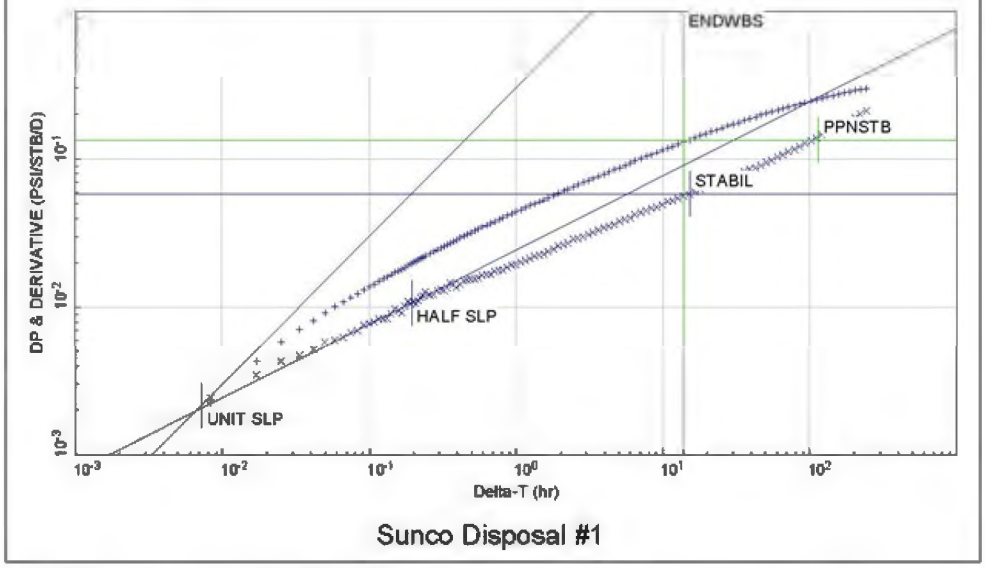
The plot below implies a half-slope as shown in the derivative curve which is characteristic of linear-flow due to a hydraulic-fracture. The calculated permeability is 8.1 md and the calculated half-length for the fracture was 586 feet.

- Estimated Kw (permeability) = 8.1 md
- Estimated skin = -5.3
- Fracture half-length = 586 feet
- Estimated extrapolated pressure = 3,361 psig

International Reservoir Technologies, Inc.

DERIVATIVE PLOT: HYDRAULIC FRACTURE BASIS

2022/08/12-0734 ; OIL



Sunco Disposal #1

Partial Penetration Vertical Fracture

well. storage	= 0.140 BBLS/PSI
skin	= -5.31
permeability	= 8.08 MD
Perm-Thickness	= 889. MD-FEET
Half.Length	= 586. FEET
Hp/Heff	= 0.435
Eff. Thickness	= 110. FEET
P-extrap.	= 3360.53 PSI
R(inv) at 15.09 hr	= 456. FEET
Smoothing Coef	= 0.,0.

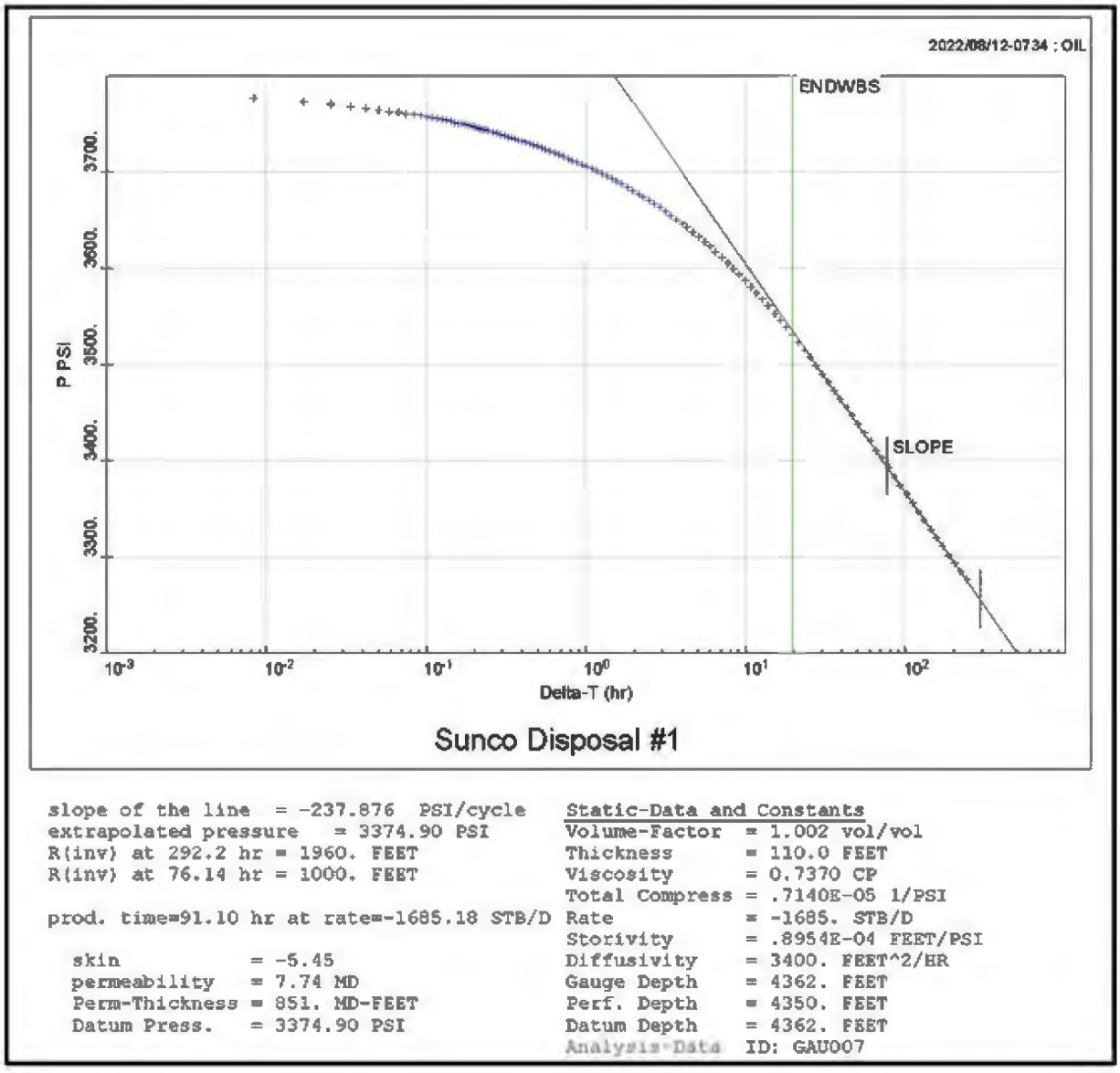
Static-Data and Constants

Volume-Factor	= 1.002 vol/vol
Thickness	= 110.0 FEET
Viscosity	= 0.7370 CP
Total Compress	= .7140E-05 1/PSI
Rate	= -1685. STB/D
Storivity	= .8954E-04 FEET/PSI
Diffusivity	= 3551. FEET^2/HR
Gauge Depth	= 4362. FEET
Perf. Depth	= 4350. FEET
Datum Depth	= 4362. FEET
Analysis-Data	ID: GAU007
Based on Gauge	ID: GAU007
PFA Starts:	2022-08-08 12:28:55
PFA Ends :	2022-08-22 09:21:25

BOTTOM HOLE GAUGE MDH PLOT:

Conclusions: The MDH stabilized flow period was reached relatively late in the conventional straight-line extrapolation for the extrapolated pressure, however the MDH values do appear reasonable.

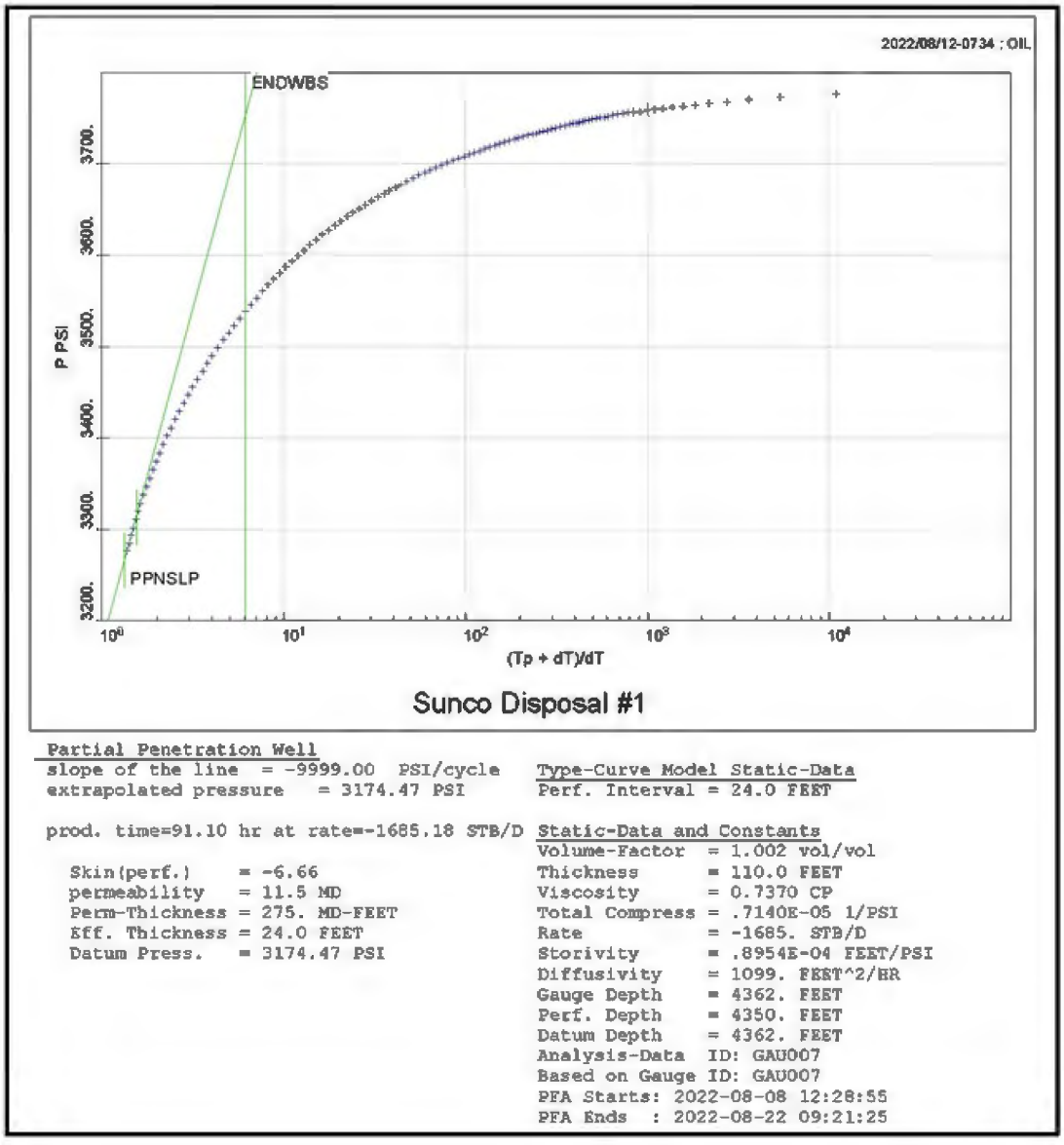
- Estimated extrapolated pressure = 3,375 psig
- Estimated Kw (permeability) = 7.7 md
- Estimated skin = -5.5
- Radius of investigation = 1,960 feet



BOTTOM HOLE GAUGE HORNER PLOT:

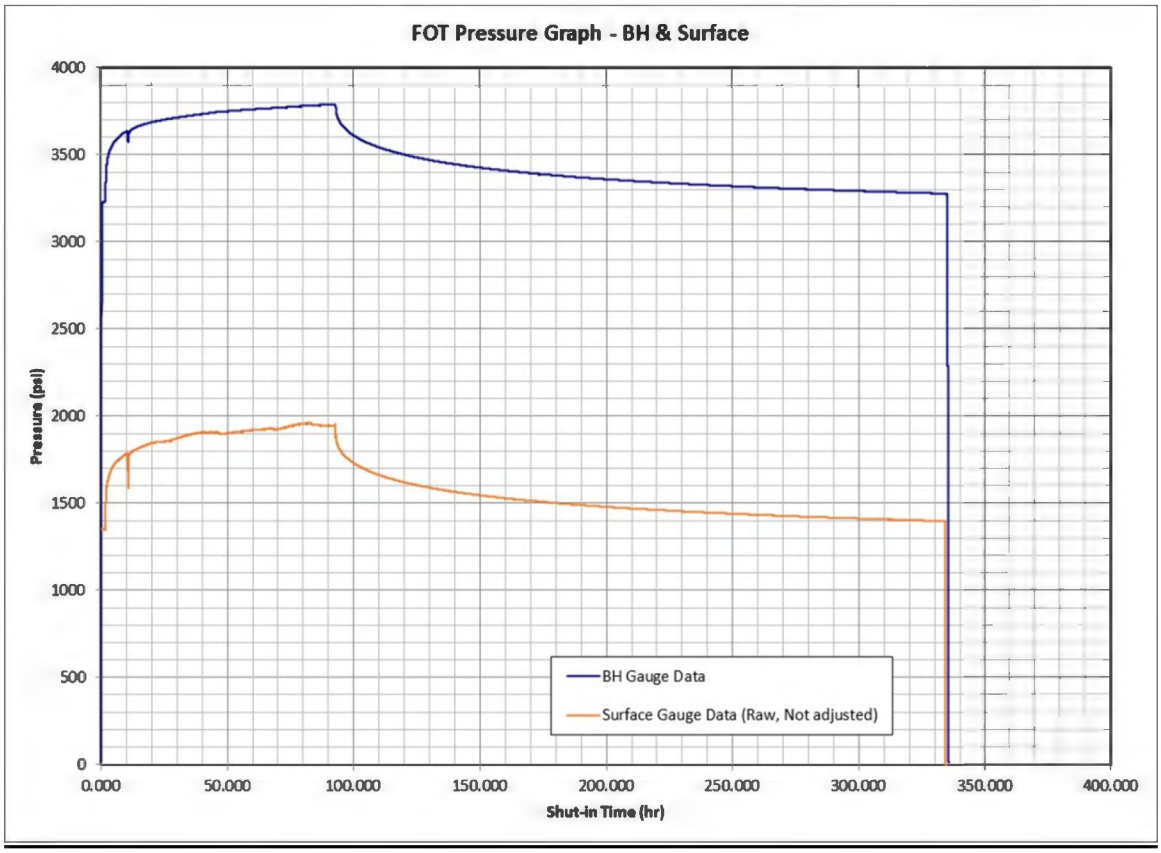
Conclusions: The stabilized flow period was reached late in the conventional straight-line extrapolation; however, the calculated reservoir parameters do appear reasonable.

- Estimated extrapolated pressure = 3,174 psig
- Estimated Kw (permeability) = 11.5 md
- Estimated skin = -6.7



International Reservoir Technologies, Inc.

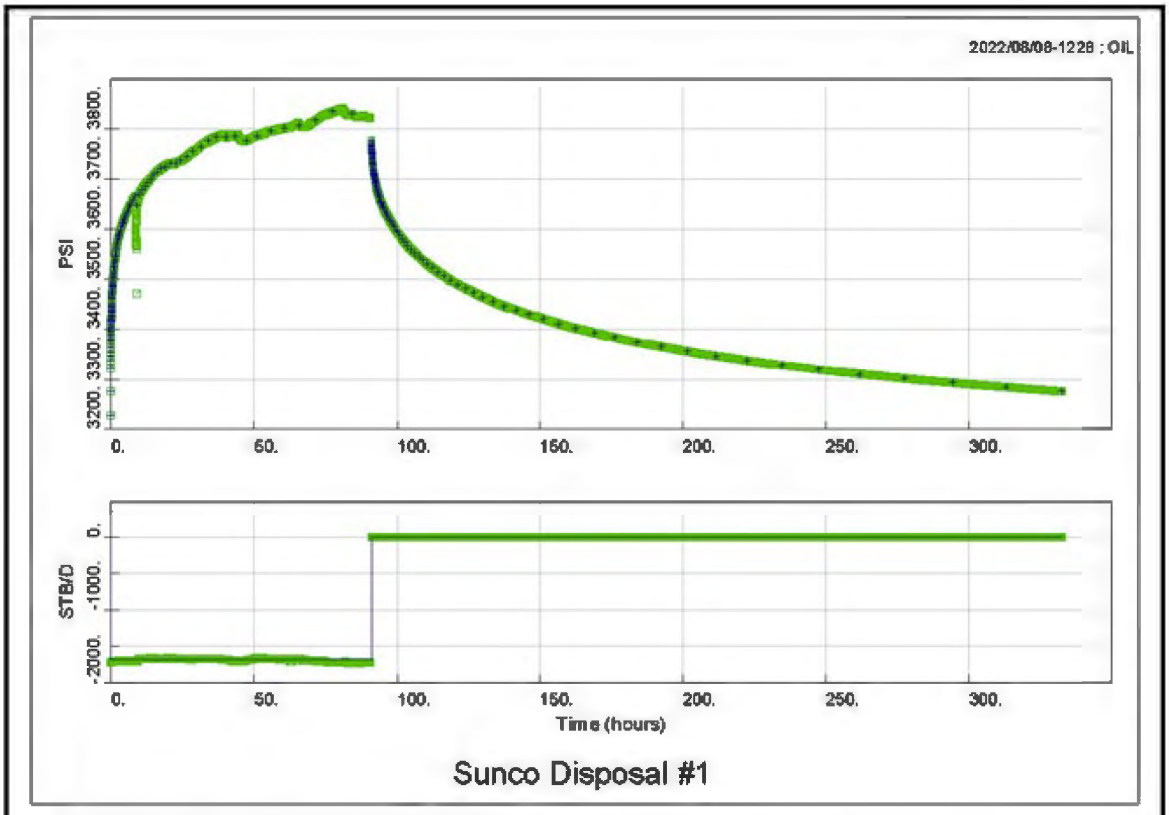
SURFACE GAUGE & BOTTOM HOLE GAUGE PRESSURE COMPARISON PLOT:



International Reservoir Technologies, Inc.

SURFACE GAUGE PRESSURE (ADJUSTED) & RATE DATA PLOT:

This plot shows the pressure data from the surface gauge after adjustment to the BH datum of 4362 feet and the injection rate data.



SELECTION OF PRESSURES DATA (PSI)

Gauge-Data ID: GAU010
Analysis-Data ID: GAU010
Total Raw points = 39906
Set 2 rates (max=100000)
Loaded 233 points (max=100000)
Pressure Select Mode: MANUAL
Rates Cum. Prod.= -6396.6504 BBLS

Static-Data and Constants

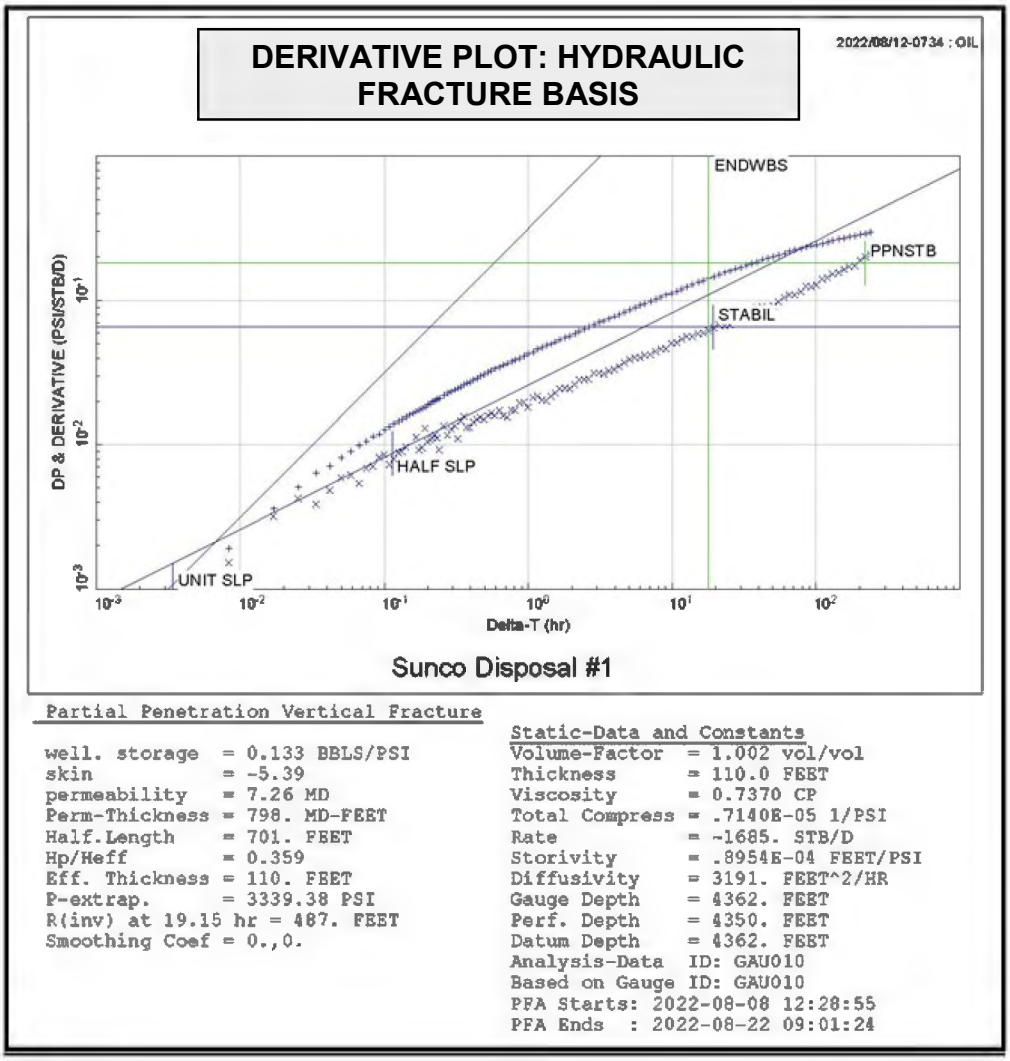
Volume-Factor = 1.002 vol/vol
Thickness = 110.0 FEET
Viscosity = 0.7370 CP
Total Compress = .7140E-05 1/PSI
Storivity = .8954E-04 FEET/PSI
Gauge Depth = 4362. FEET
Perf. Depth = 4350. FEET
Datum Depth = 4362. FEET
Analysis-Data ID: GAU010
Based on Gauge ID: GAU010

SURFACE GAUGE PRESSURE (ADJUSTED) DERIVATIVE PLOT:

Conclusions: As with the BH gauge data, the behavior of the derivative curve is affected by the wellbore fill, the wellbore storage, and the influence of an apparent hydraulic fracture. Again, the derivative analysis was made using a hydraulic fracture reservoir model, with partial penetration, to best calculate the reservoir properties.

The plot below implies a half-slope as shown in the derivative curve which is characteristic of linear-flow due to a hydraulic-fracture. The calculated permeability is 7.3 md and the calculated half-length for the fracture was 701 feet.

- Estimated Kw (permeability) = 7.3 md
- Estimated skin = -5.4
- Fracture half-length = 701 feet
- Estimated extrapolated pressure = 3,339 psig

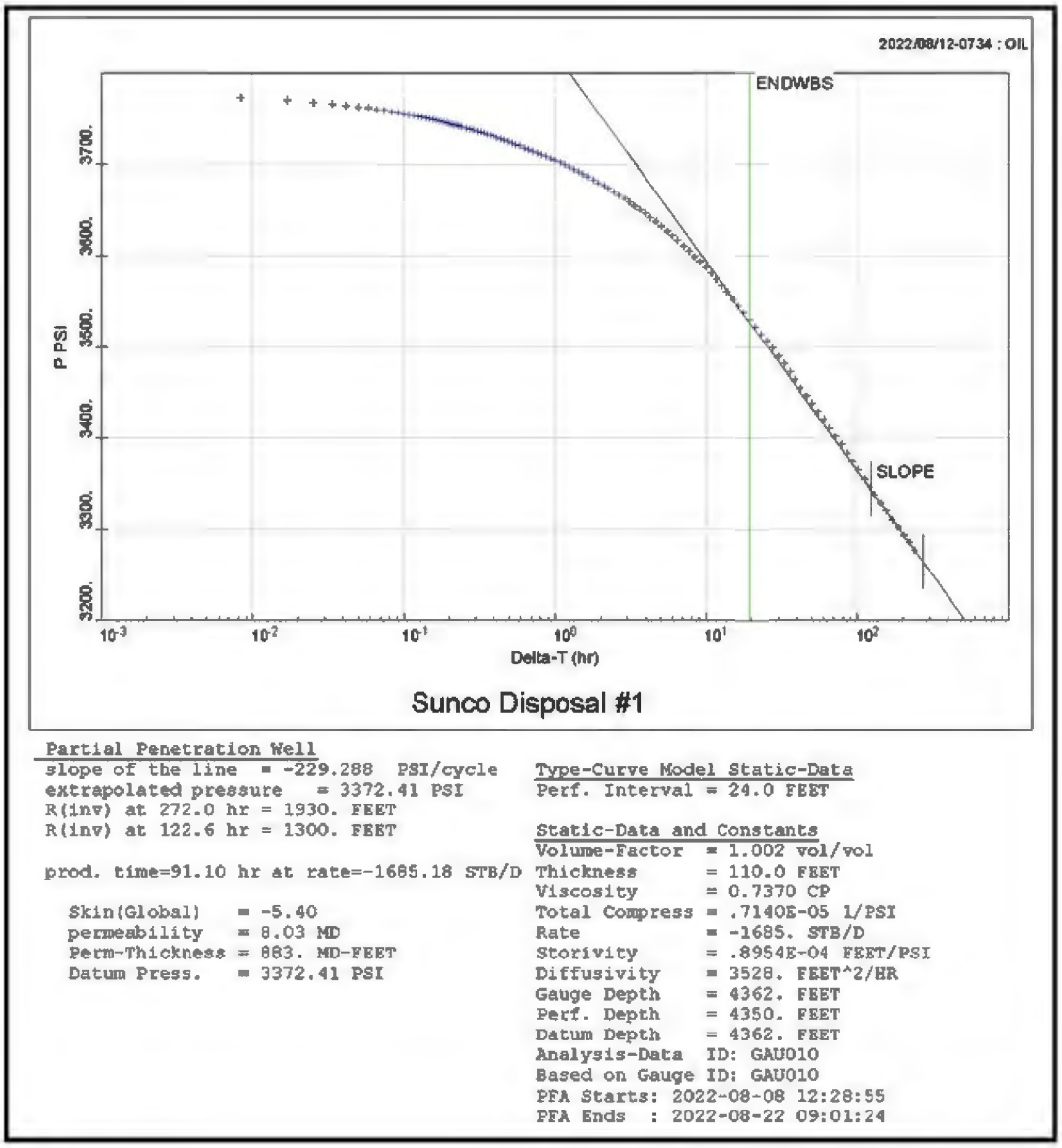


International Reservoir Technologies, Inc.

SURFACE GAUGE PRESSURE (ADJUSTED) MDH PLOT:

Conclusions: As with the bottom hole gauge data, the MDH stabilized flow period was reached relatively late in the conventional straight-line extrapolation for the extrapolated pressure, however the MDH values do appear reasonable.

- Estimated extrapolated pressure = 3,372 psig
- Estimated Kw (permeability) = 8.0 md
- Estimated skin = -5.4
- Radius of investigation = 1,930 feet



Partial Penetration Well
slope of the line = -229.288 PSI/cycle
extrapolated pressure = 3372.41 PSI
R(inv) at 272.0 hr = 1930. FEET
R(inv) at 122.6 hr = 1300. FEET

prod. time=91.10 hr at rate=-1685.18 STB/D

Skin(Global) = -5.40
permeability = 8.03 MD
Perm-Thickness = 883. MD-FEET
Datum Press. = 3372.41 PSI

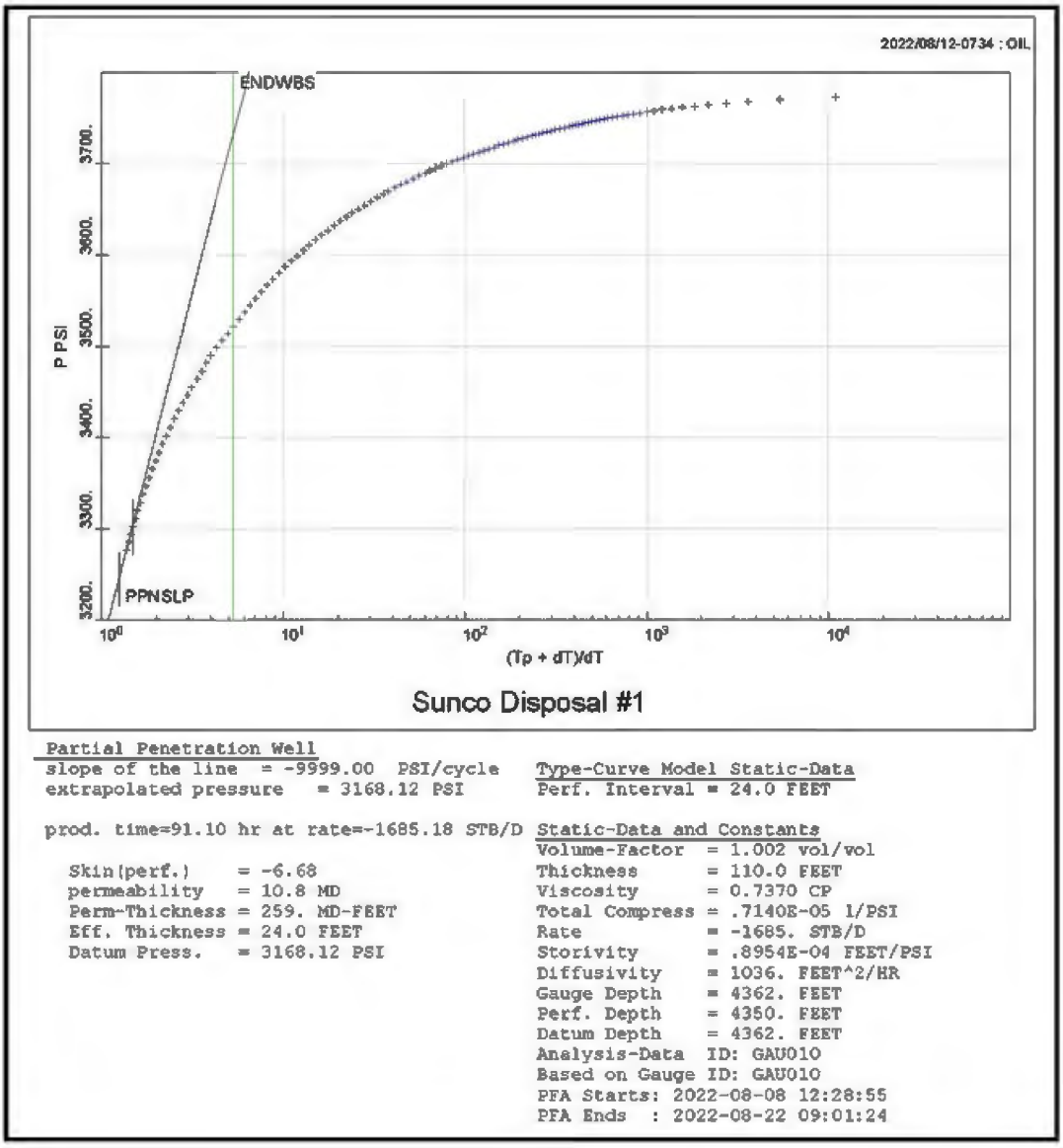
Type-Curve Model Static-Data
Perf. Interval = 24.0 FEET

Static-Data and Constants
Volume-Factor = 1.002 vol/vol
Thickness = 110.0 FEET
Viscosity = 0.7370 CP
Total Compress = .7140E-05 1/PSI
Rate = -1685. STB/D
Storivity = .8954E-04 FEET/PSI
Diffusivity = 3528. FEET^2/HR
Gauge Depth = 4362. FEET
Perf. Depth = 4350. FEET
Datum Depth = 4362. FEET
Analysis-Data ID: GAU010
Based on Gauge ID: GAU010
PFA Starts: 2022-08-08 12:28:55
PFA Ends : 2022-08-22 09:01:24

SURFACE GAUGE PRESSURE (ADJUSTED) HORNER PLOT:

Conclusions: The stabilized flow period was reached late in the conventional straight-line extrapolation; however, the calculated reservoir parameters do appear reasonable.

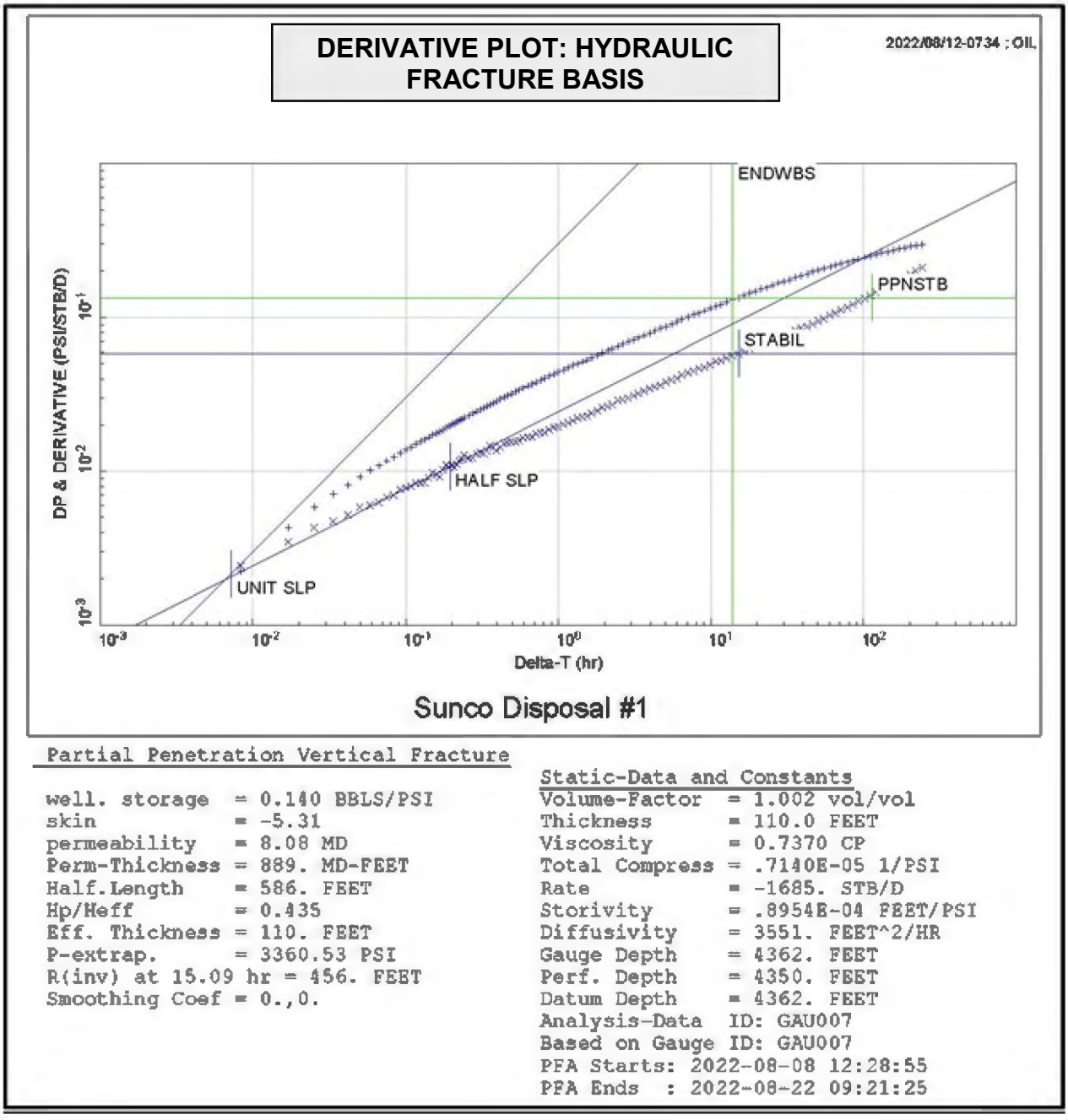
- Estimated extrapolated pressure = 3,168 psig
- Estimated Kw (permeability) = 10.8 md
- Estimated skin = -6.7



International Reservoir Technologies, Inc.

ENLARGED PLOTS:

BOTTOM HOLE GAUGE DERIVATIVE PLOT:



Partial Penetration Vertical Fracture

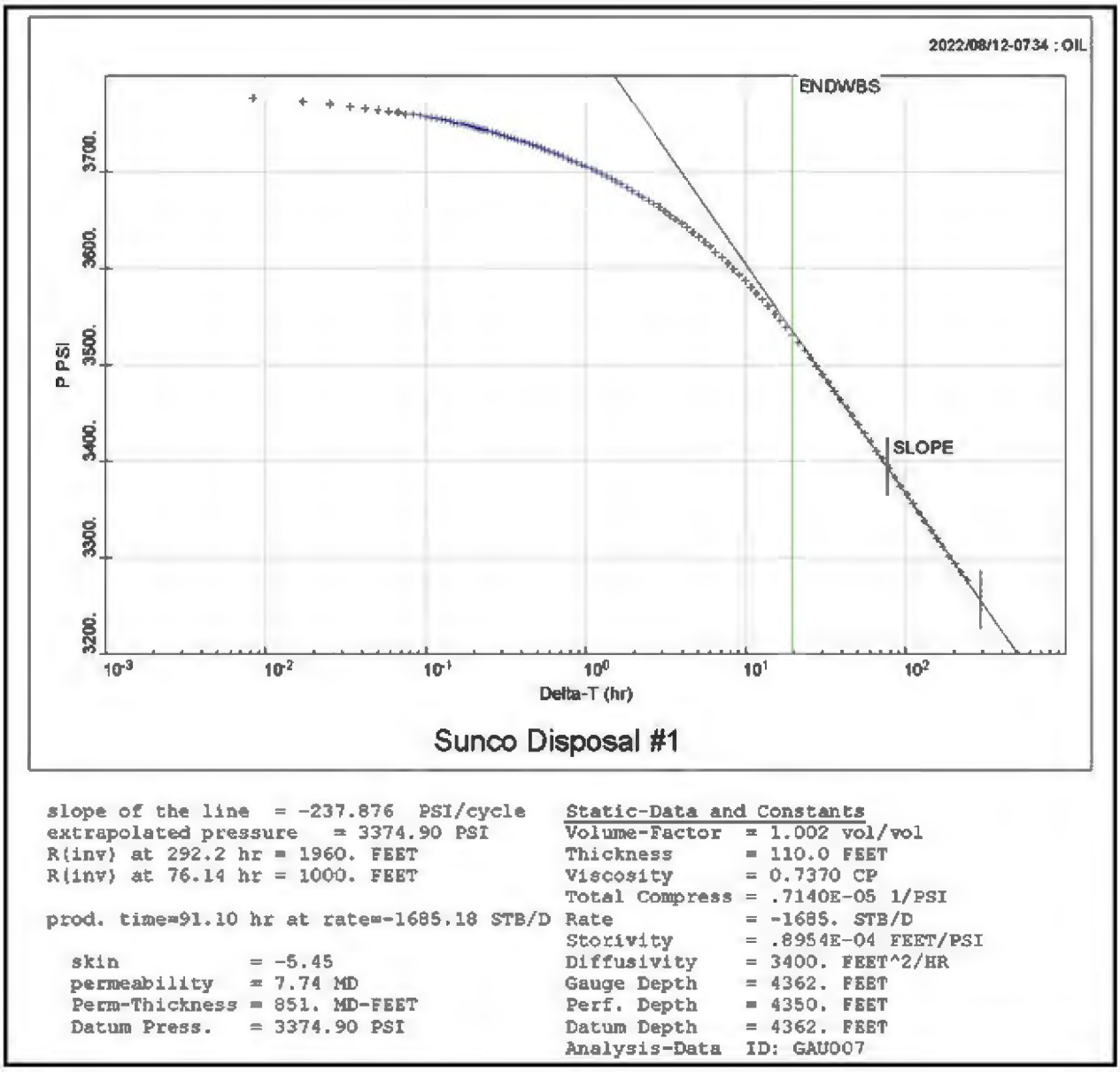
well. storage = 0.140 BBLS/PSI
skin = -5.31
permeability = 8.08 MD
Perm-Thickness = 889. MD-FEET
Half.Length = 586. FEET
Hp/Heff = 0.435
Eff. Thickness = 110. FEET
P-extrap. = 3360.53 PSI
R(inv) at 15.09 hr = 456. FEET
Smoothing Coef = 0.,0.

Static-Data and Constants

Volume-Factor = 1.002 vol/vol
Thickness = 110.0 FEET
Viscosity = 0.7370 CP
Total Compress = .7140E-05 1/PSI
Rate = -1685. STB/D
Storivity = .8954E-04 FEET/PSI
Diffusivity = 3551. FEET^2/HR
Gauge Depth = 4362. FEET
Perf. Depth = 4350. FEET
Datum Depth = 4362. FEET
Analysis-Data ID: GAU007
Based on Gauge ID: GAU007
PFA Starts: 2022-08-08 12:28:55
PFA Ends : 2022-08-22 09:21:25

International Reservoir Technologies, Inc.

BOTTOM HOLE GAUGE MDH PLOT:



slope of the line = -237.876 PSI/cycle
extrapolated pressure = 3374.90 PSI
R(inv) at 292.2 hr = 1960. FEET
R(inv) at 76.14 hr = 1000. FEET

prod. time=91.10 hr at rate=-1685.18 STB/D

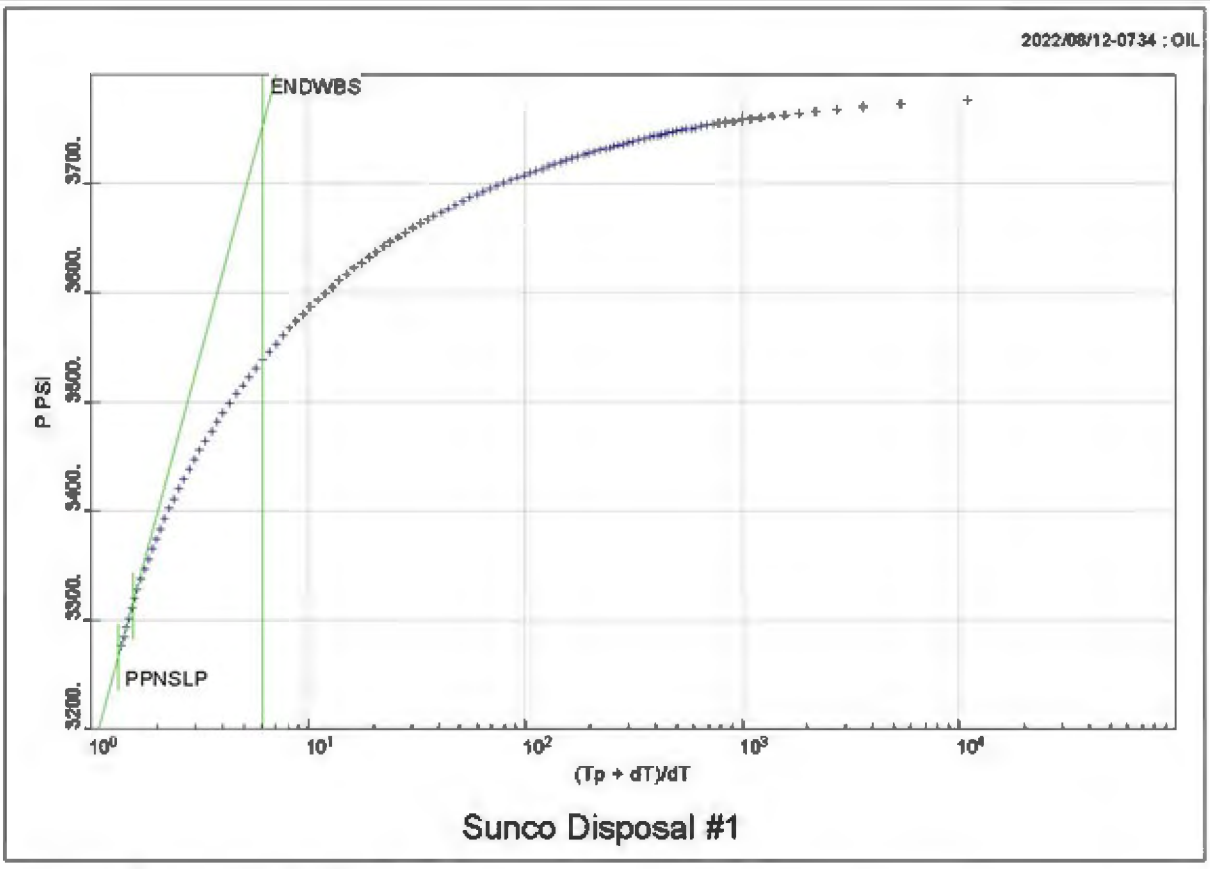
skin	= -5.45
permeability	= 7.74 MD
Perm-Thickness	= 851. MD-FEET
Datum Press.	= 3374.90 PSI

Static-Data and Constants

Volume-Factor	= 1.002 vol/vol
Thickness	= 110.0 FEET
Viscosity	= 0.7370 CP
Total Compress	= .7140E-05 1/PSI
Rate	= -1685. STB/D
Storivity	= .8954E-04 FEET/PSI
Diffusivity	= 3400. FEET^2/HR
Gauge Depth	= 4362. FEET
Perf. Depth	= 4350. FEET
Datum Depth	= 4362. FEET
Analysis-Data	ID: GAU007

International Reservoir Technologies, Inc.

BOTTOM HOLE GAUGE HORNER PLOT:



Partial Penetration Well
slope of the line = -9999.00 PSI/cycle
extrapolated pressure = 3174.47 PSI

prod. time=91.10 hr at rate=-1685.18 STB/D

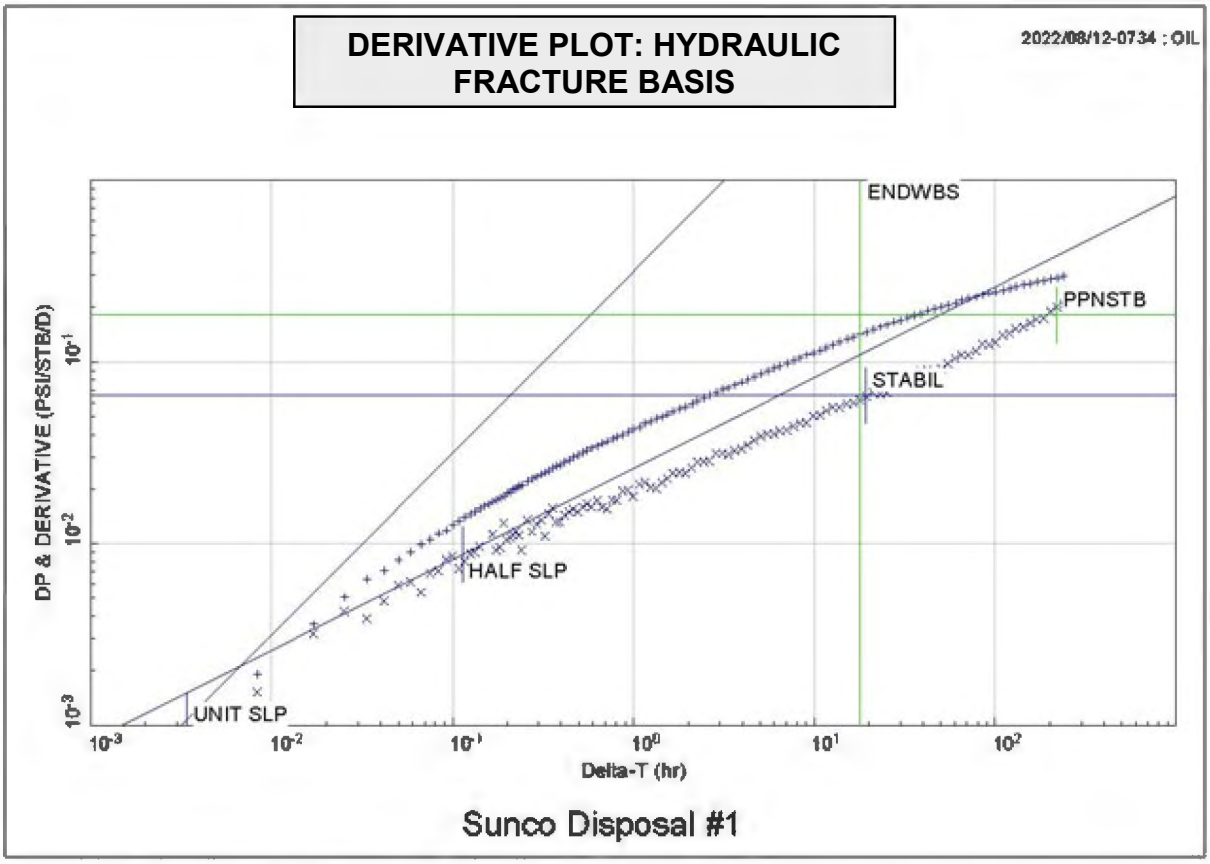
Skin(perf.) = -6.66
permeability = 11.5 MD
Perm-Thickness = 275. MD-FEET
Eff. Thickness = 24.0 FEET
Datum Press. = 3174.47 PSI

Type-Curve Model Static-Data
Perf. Interval = 24.0 FEET

Static-Data and Constants
Volume-Factor = 1.002 vol/vol
Thickness = 110.0 FEET
Viscosity = 0.7370 CP
Total Compress = .7140E-05 1/PSI
Rate = -1685. STB/D
Storivity = .8954E-04 FEET/PSI
Diffusivity = 1099. FEET^2/HR
Gauge Depth = 4362. FEET
Perf. Depth = 4350. FEET
Datum Depth = 4362. FEET
Analysis-Data ID: GAU007
Based on Gauge ID: GAU007
PFA Starts: 2022-08-08 12:28:55
PFA Ends : 2022-08-22 09:21:25

International Reservoir Technologies, Inc.

SURFACE GAUGE PRESSURE (ADJUSTED) DERIVATIVE PLOT:



Partial Penetration Vertical Fracture

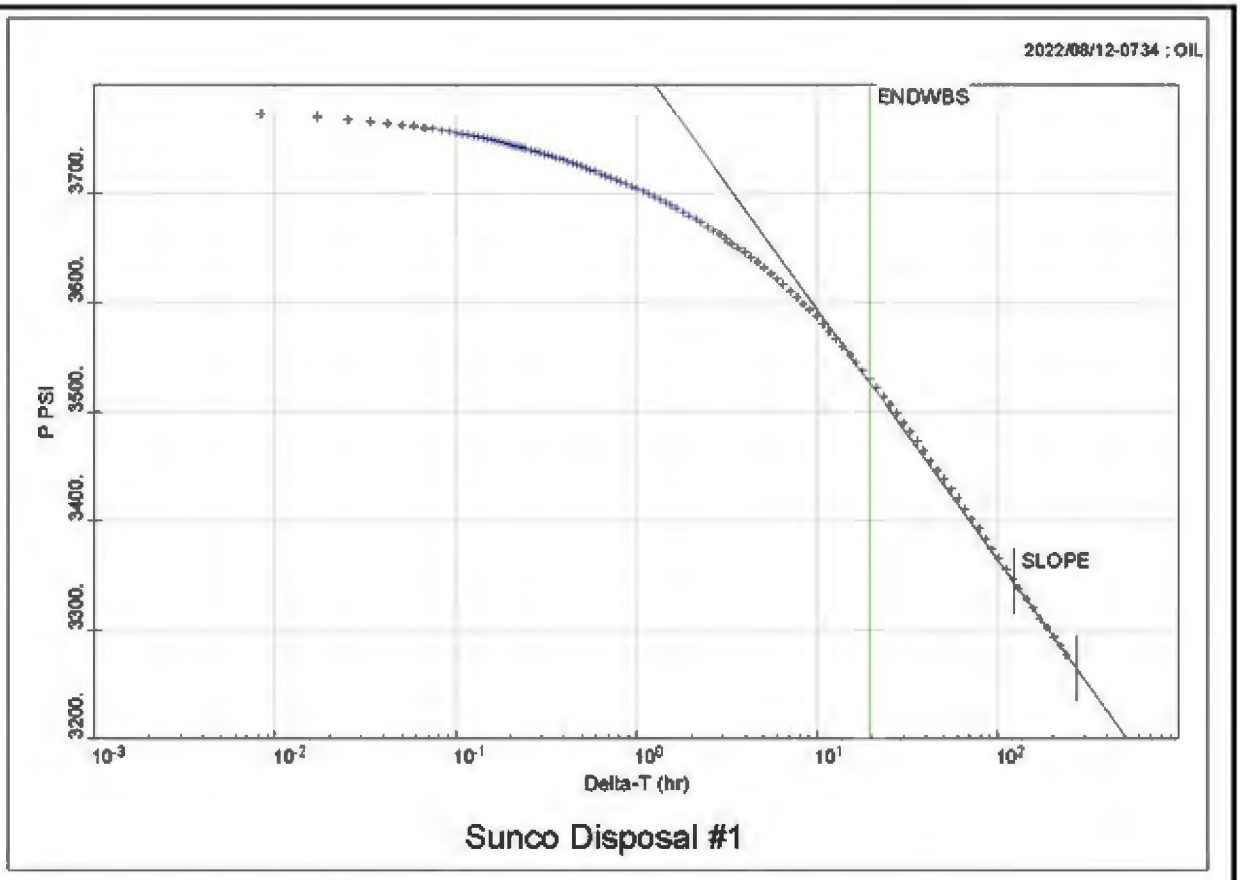
well. storage	= 0.133 BBLS/PSI
skin	= -5.39
permeability	= 7.26 MD
Perm-Thickness	= 798. MD-FEET
Half.Length	= 701. FEET
Hp/Heff	= 0.359
Eff. Thickness	= 110. FEET
P-extrap.	= 3339.38 PSI
R(inv) at 19.15 hr	= 487. FEET
Smoothing Coef	= 0.,0.

Static-Data and Constants

Volume-Factor	= 1.002 vol/vol
Thickness	= 110.0 FEET
Viscosity	= 0.7370 CP
Total Compress	= .7140E-05 1/PSI
Rate	= -1685. STB/D
Storivity	= .8954E-04 FEET/PSI
Diffusivity	= 3191. FEET^2/HR
Gauge Depth	= 4362. FEET
Perf. Depth	= 4350. FEET
Datum Depth	= 4362. FEET
Analysis-Data	ID: GAU010
Based on Gauge	ID: GAU010
PFA Starts:	2022-08-08 12:28:55
PFA Ends	: 2022-08-22 09:01:24

International Reservoir Technologies, Inc.

SURFACE GAUGE PRESSURE (ADJUSTED) MDH PLOT:



Partial Penetration Well
slope of the line = -229.288 PSI/cycle
extrapolated pressure = 3372.41 PSI
R(inv) at 272.0 hr = 1930. FEET
R(inv) at 122.6 hr = 1300. FEET

prod. time=91.10 hr at rate=-1685.18 STB/D

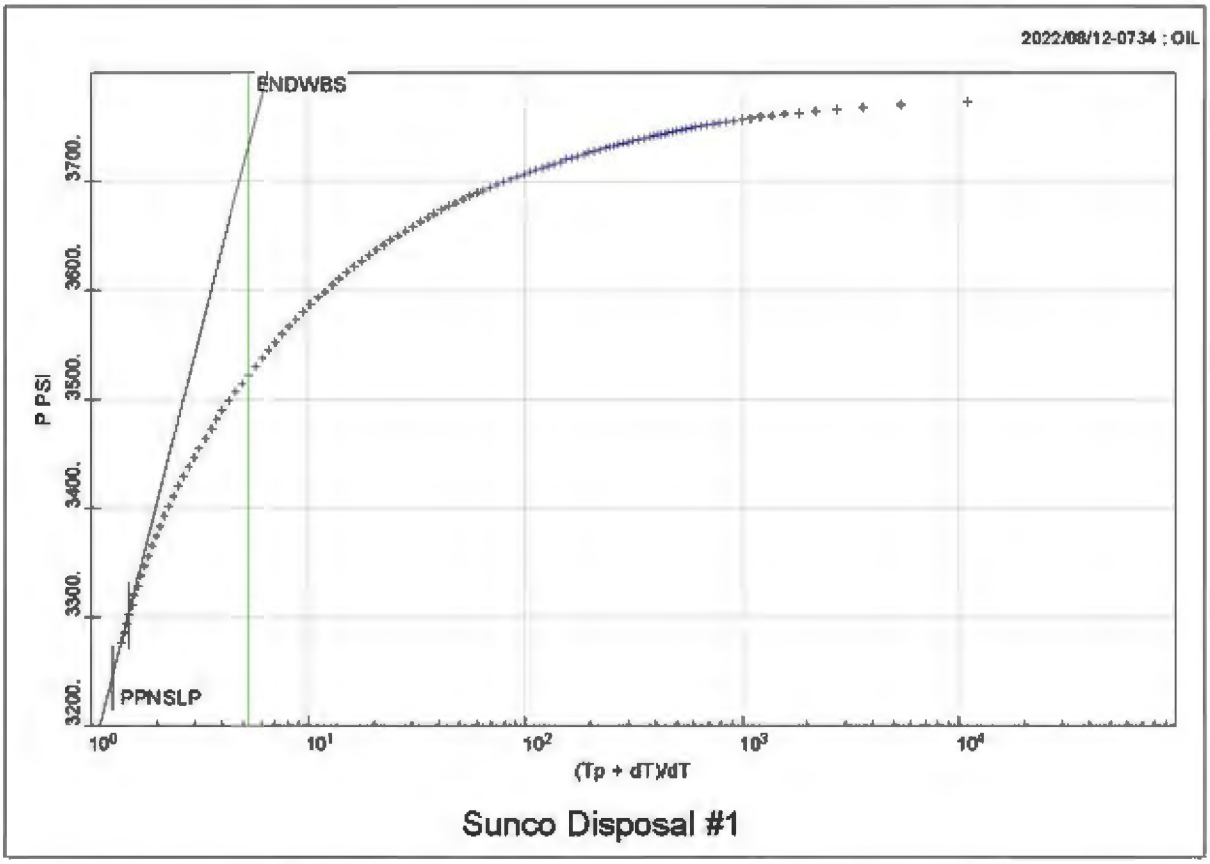
Skin(Global) = -5.40
permeability = 8.03 MD
Perm-Thickness = 883. MD-FEET
Datum Press. = 3372.41 PSI

Type-Curve Model Static-Data
Perf. Interval = 24.0 FEET

Static-Data and Constants
Volume-Factor = 1.002 vol/vol
Thickness = 110.0 FEET
Viscosity = 0.7370 CP
Total Compress = .71405-05 1/PSI
Rate = -1685. STB/D
Storivity = .8954E-04 FEET/PSI
Diffusivity = 3528. FEET^2/HR
Gauge Depth = 4362. FEET
Perf. Depth = 4350. FEET
Datum Depth = 4362. FEET
Analysis-Data ID: GAU010
Based on Gauge ID: GAU010
PFA Starts: 2022-08-08 12:28:55
PFA Ends : 2022-08-22 09:01:24

International Reservoir Technologies, Inc.

SURFACE GAUGE PRESSURE (ADJUSTED) HORNER PLOT:



Partial Penetration Well
slope of the line = -9999.00 PSI/cycle
extrapolated pressure = 3168.12 PSI

prod. time=91.10 hr at rate=-1685.18 STB/D

Skin(perf.) = -6.68
permeability = 10.8 MD
Perm-Thickness = 259. MD-FEET
Eff. Thickness = 24.0 FEET
Datum Press. = 3168.12 PSI

Type-Curve Model Static-Data
Perf. Interval = 24.0 FEET

Static-Data and Constants
Volume-Factor = 1.002 vol/vol
Thickness = 110.0 FEET
Viscosity = 0.7370 CP
Total Compress = .7140E-05 1/PSI
Rate = -1685. STB/D
Storivity = .8954E-04 FEET/PSI
Diffusivity = 1036. FEET^2/HR
Gauge Depth = 4362. FEET
Perf. Depth = 4350. FEET
Datum Depth = 4362. FEET
Analysis-Data ID: GAU010
Based on Gauge ID: GAU010
PFA Starts: 2022-08-08 12:28:55
PFA Ends : 2022-08-22 09:01:24

Results:

The results from the Horner, MDH, and Derivative pressure plots are summarized in the Table 2 below. The results for the different methods were consistent and the average calculated properties were:

1. P* = 3174 psi
2. K = 9.1 md
3. S = -5.8
4. Radius of Investigation = 1960 feet
5. No indication of boundary

Table 1: Calculated Reservoir Properties

Calculated Reservoir Parameters - Bottom Hole Guage				
	Horner Analysis	MDH Plot	Derivative Plot	Average
Estimated Kw (permeability, mD)	11.5	7.7	8.1	9.1
Estimated skin (dimensionless)	-6.7	-5.5	-5.3	-5.8
Extrapolated pressure (psig)	3,174	3,375	3,361	3,303
Fracture half-length (feet)	--	--	586	586
Radius of investigation (feet)	--	1,960	--	1,960

In addition to the bottom hole gauges, transducers at surface collected pressure. Bottom hole pressures were calculated using a gradient of 0.431 psi/foot and FOT results were calculated from the surface data. The surface data results were similar to the bottom hole gauge data. The results from the Horner, MDH, and Derivative pressure plots are summarized in the Table 2 below. The results for the different methods were consistent and the average calculated properties were:

1. P* = 3168 psi
2. K = 8.7 md
3. S = -5.8
4. Radius of Investigation = 1930 feet
5. No indication of boundary

Table 2: Calculated Reservoir Properties Surface Gauges

Calculated Reservoir Parameters - Gauge (Adjusted to BH Datum)				
	Horner Analysis	MDH Plot	Derivative Plot	Average
Estimated Kw (permeability, mD)	10.8	8.0	7.3	8.7
Estimated skin (dimensionless)	-6.7	-5.4	-5.4	-5.8
Extrapolated pressure (psig)	3,168	3,372	3,339	3,293
Fracture half-length (feet)	--	--	701	701
Radius of investigation (feet)	--	1,930	--	1,930

Comparison with past Falloff Tests:

The results from the 2022 Falloff Test were compiled with previous RPE and FOT results from the facility and are shown below in Table 3.

Table 3: Results Comparison

	2022	2021	2020	2019	2018	2017	2016	2015	2010	2009	2008	2007
Rate (bbl/day)	**1684**				3292	3150	3132	3340	4500			
P* (psi)	**3263**	3194*	2968*	2939*	3479	3273	3114	3283	3231	3242	3176	3258
K (md)	**9.1**				10.8	10.4	11.5	15.8	13.6	10.2	20.7	
S	**-5.8**				-6.0	-6.0	-5.93	-5.97	-7.18	-7.23	-6.79	
Radius of Inv (ft)	**1960**				1690	1790	1430	1580	1450	1250	1750	1620
Frac ½ Length (ft)	**586**				598	517	594	467	893	926	596	688
Boundary	**none**				none	none	none	none	648, 1520	755	987	none

Agua Moss did not conduct tests prior to 2015 and is relying on the 2010 report submitted by Key Energy, the past operator, for those results. The following observations were derived from a comparison of the results:

1. The radius of investigation for 2022 was adequate enough to see out beyond all of the previously seen boundaries.
   Note: On 2010 results seems peculiar to have a boundary beyond the Radius of Investigation.
2. The parameters calculated compare well enough with previous FOT parameter to validate the 2022 FOT results.

The raw test data obtain during the 2022 FOT will be kept on file for a period of three (3) years and will be available upon request.

---

* The pressure shown for 2021 through 2019 is a bottom hole pressure calculated based on surface pressure and a fluid gradient. This pressure is being compared to the extrapolated reservoir pressures from previously completed Falloff Test. The comparison is being used to gauge the current condition of the injection interval to ensure the interval is suitable for continued injection operations.

Conclusions:

Based on the above analysis and results comparison, Agua Moss believes the Sunco SWD #1 2022 FOT was successfully completed. The results do not show indications of concern in continuing the current waste injection operations. In addition, the comparison of results between bottom hole gauges and surface gauges indicate that surface gauges provide a similar result.

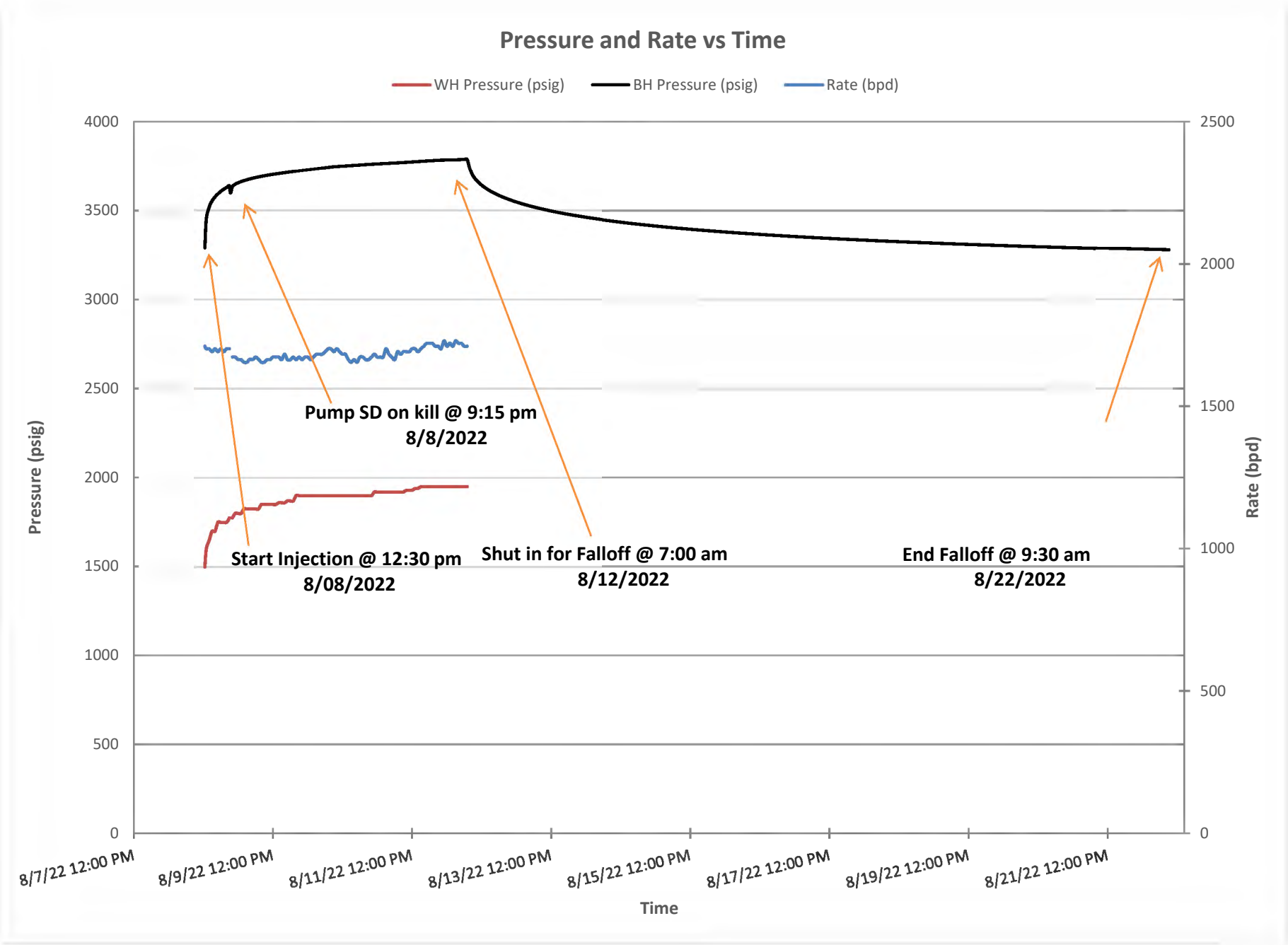


Figure 3 Pressure and Rate vs Time

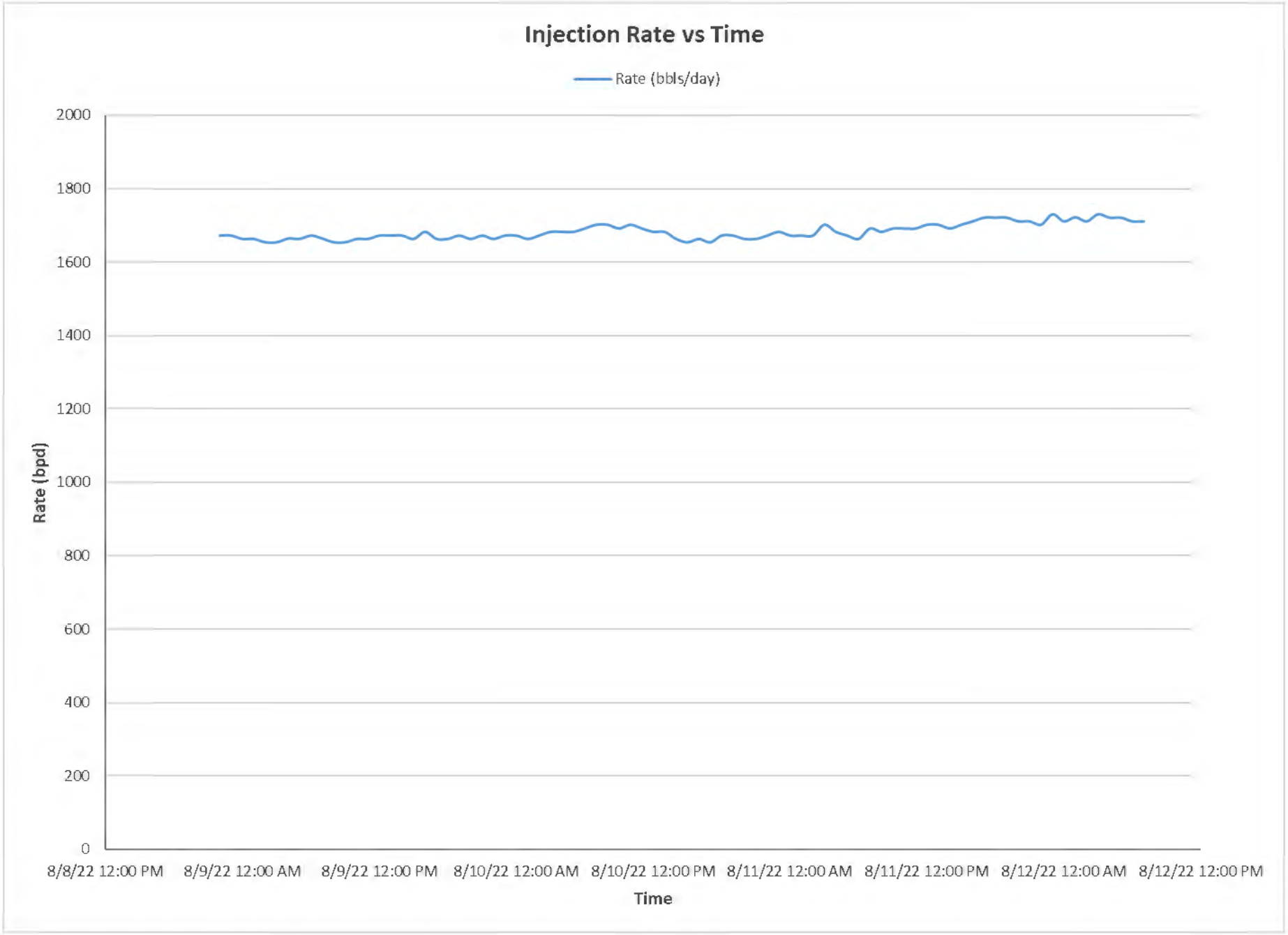


Figure 4 Injection Rate vs Time

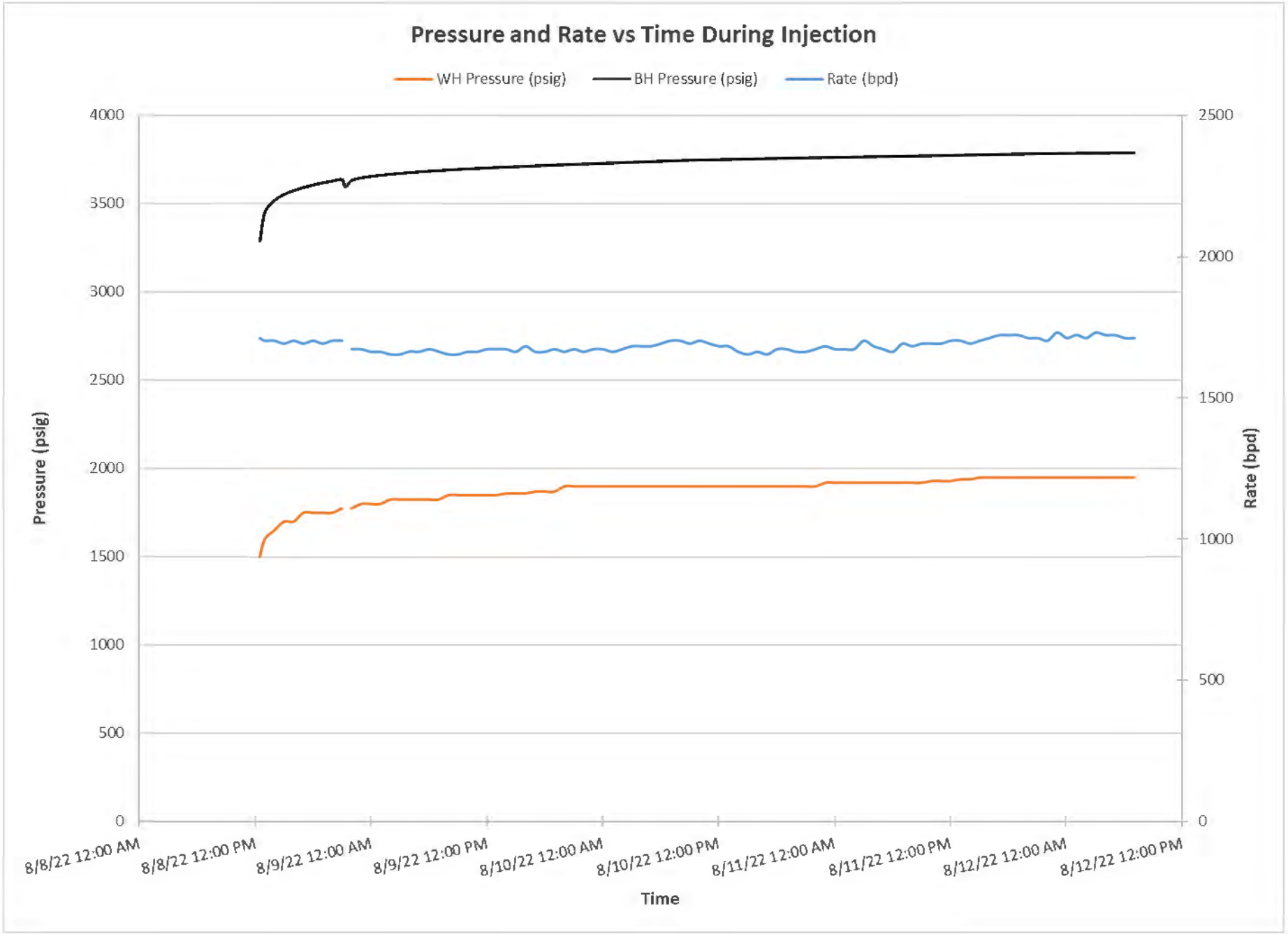


Figure 5 Pressure and Rate vs Time During Injection

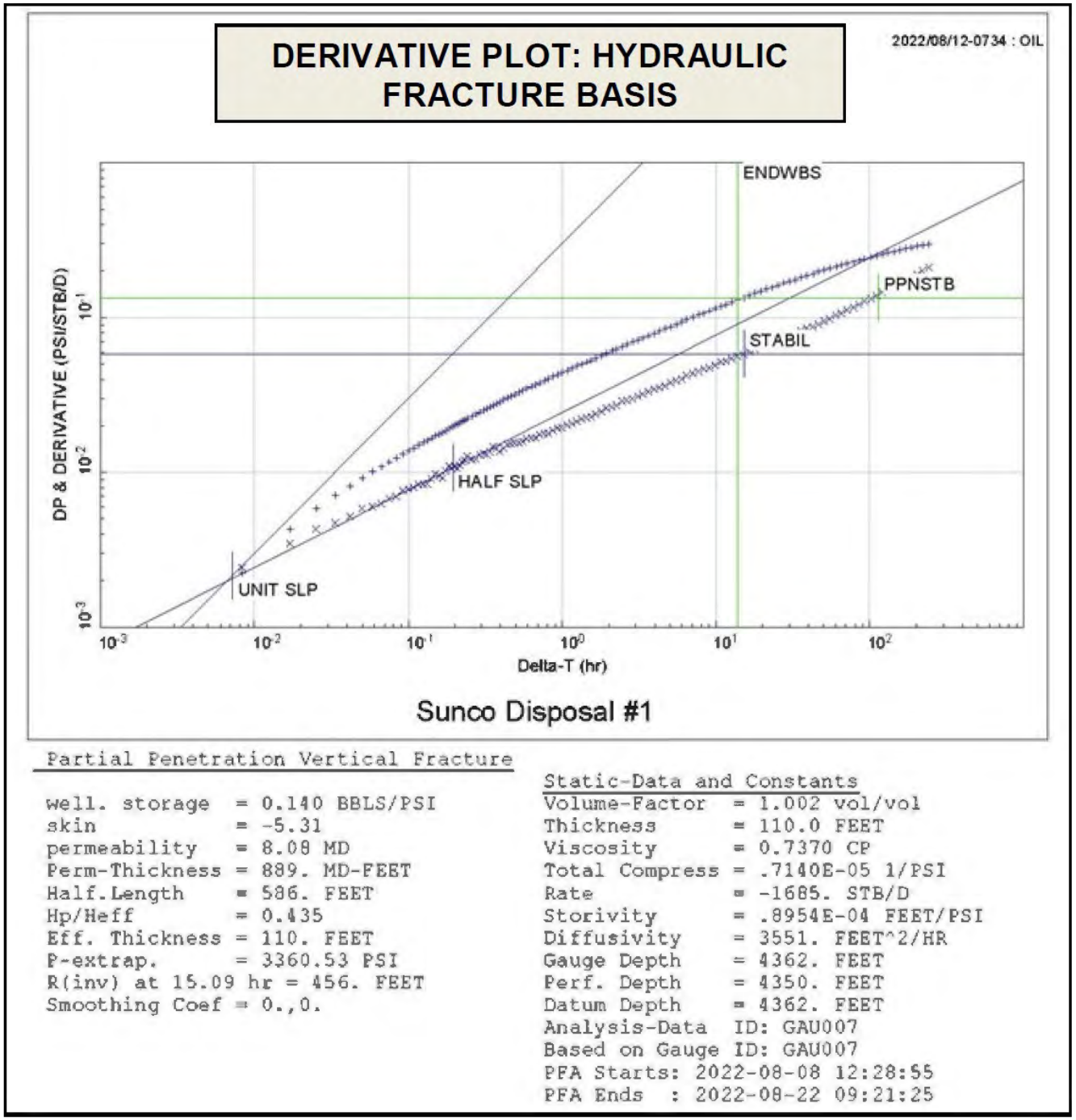


Figure 6 Derivative Plot

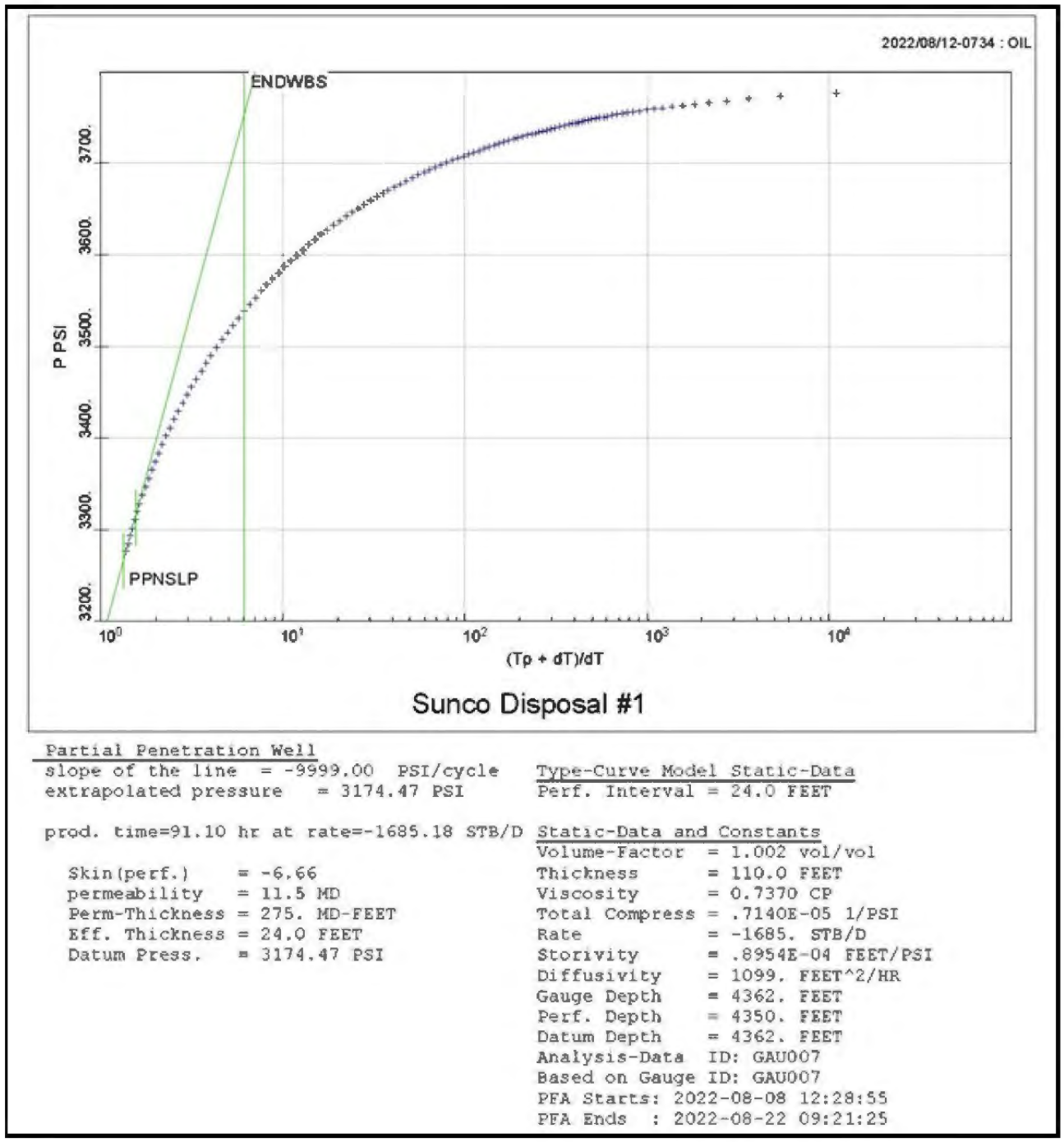


Figure 7 Horner Plot

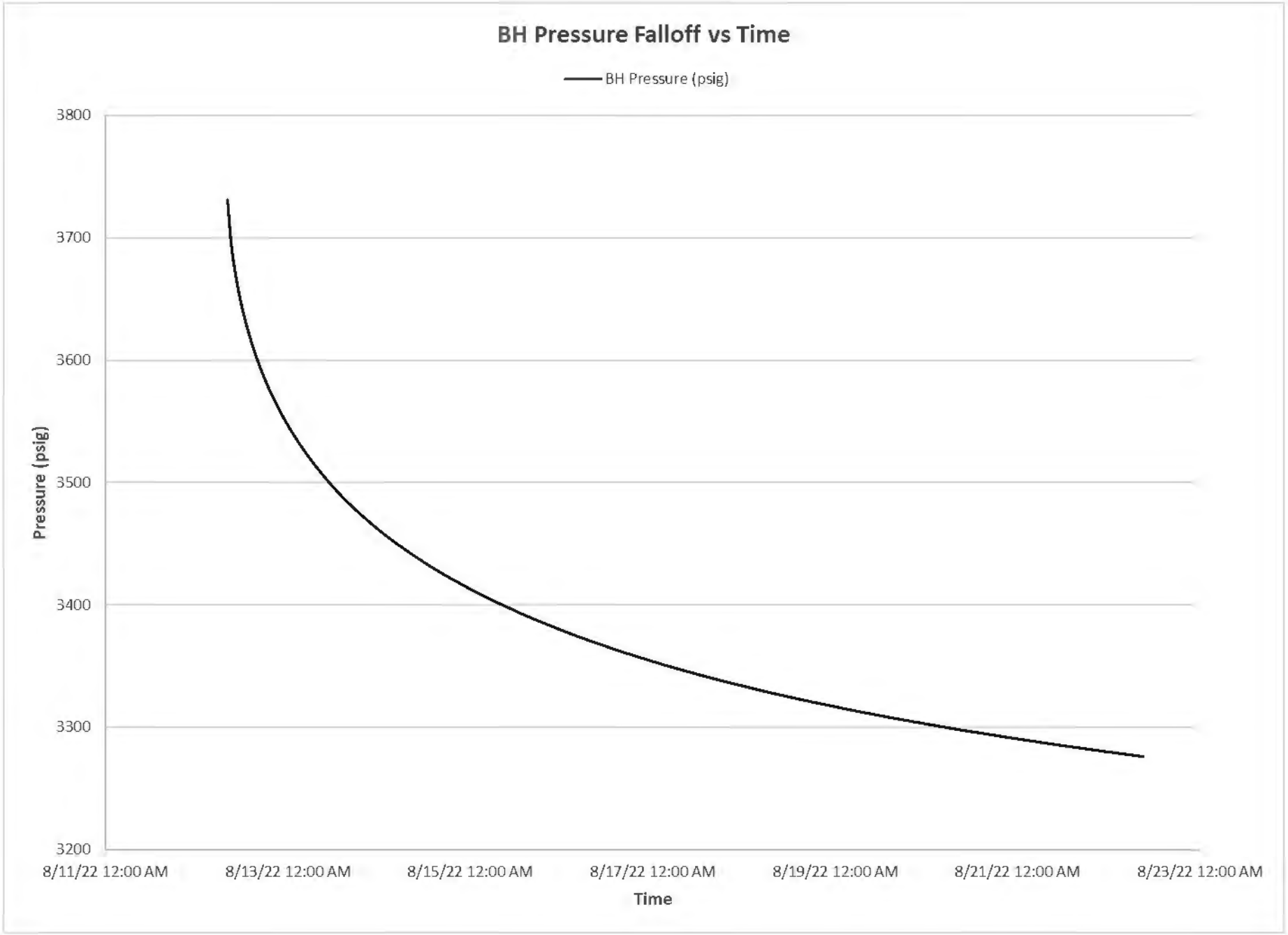


Figure 8 BH Pressure Falloff vs Elapsed Time

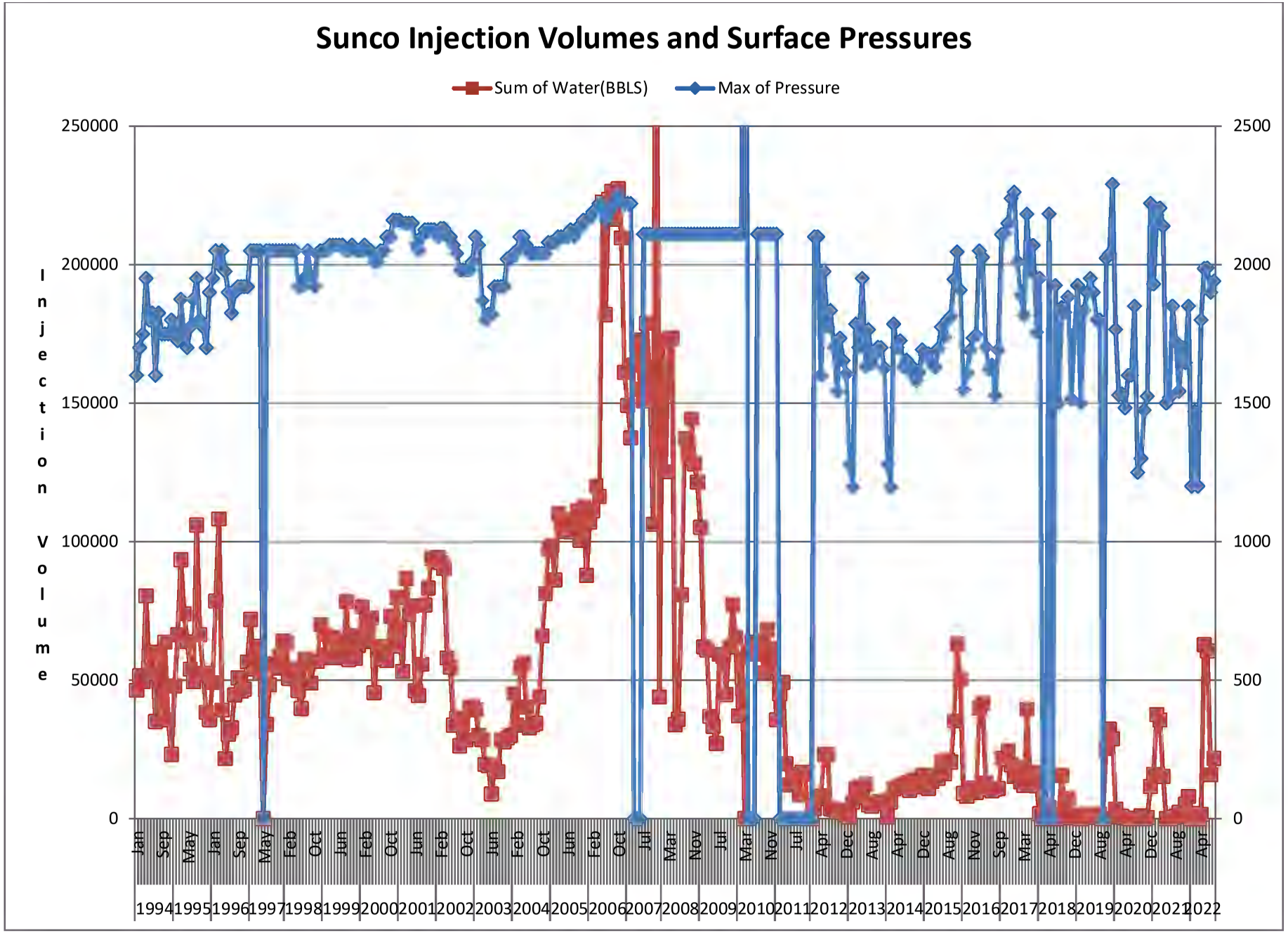
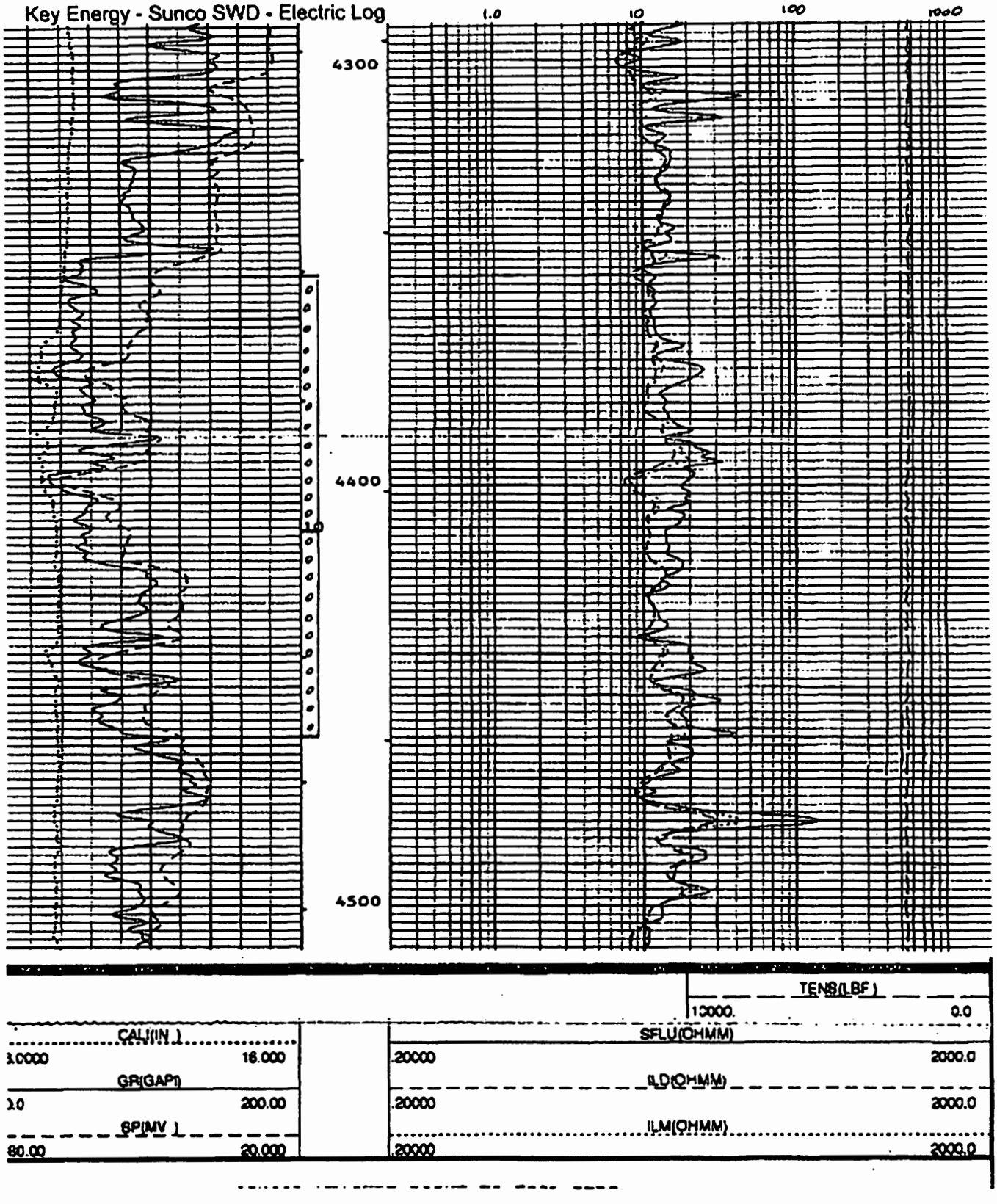
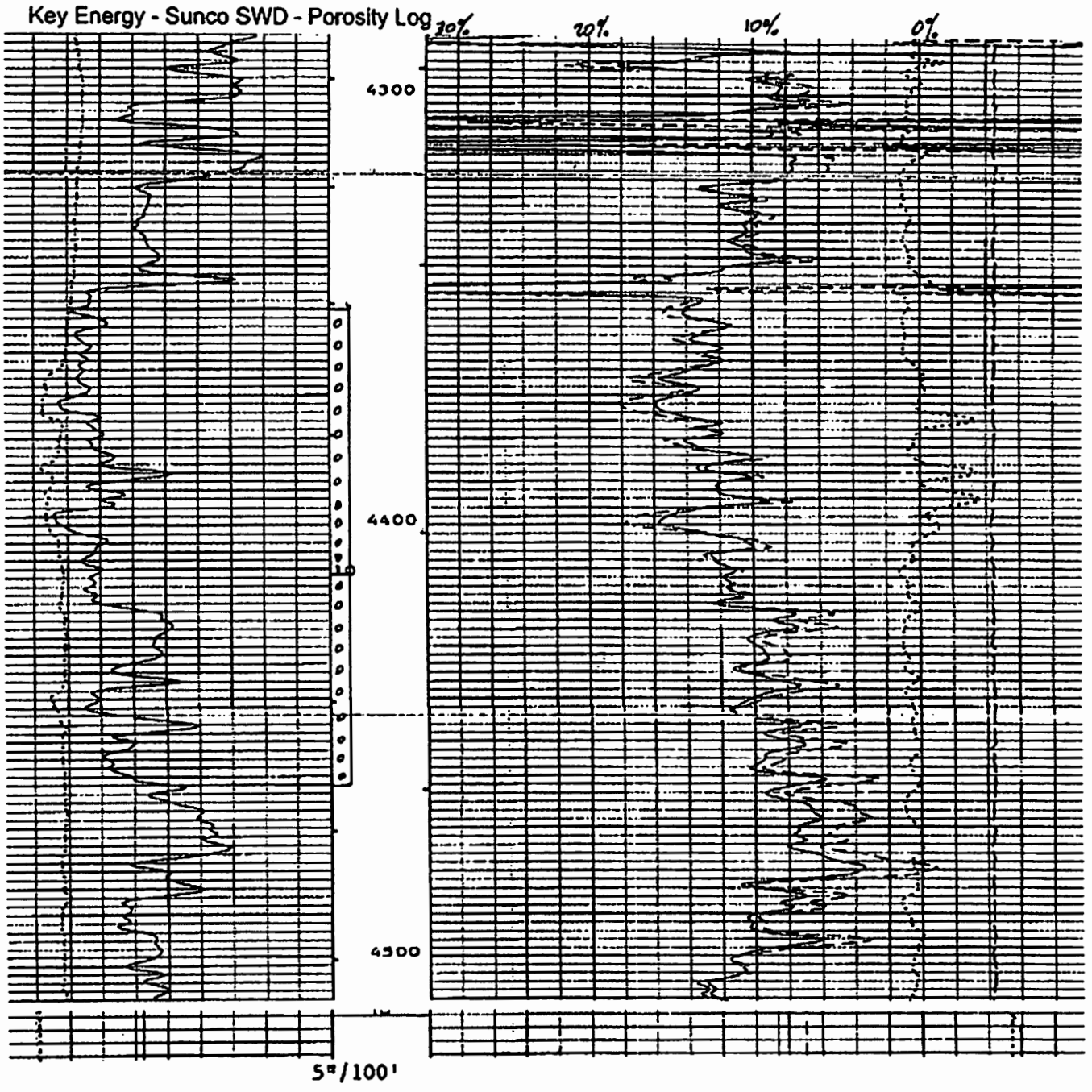
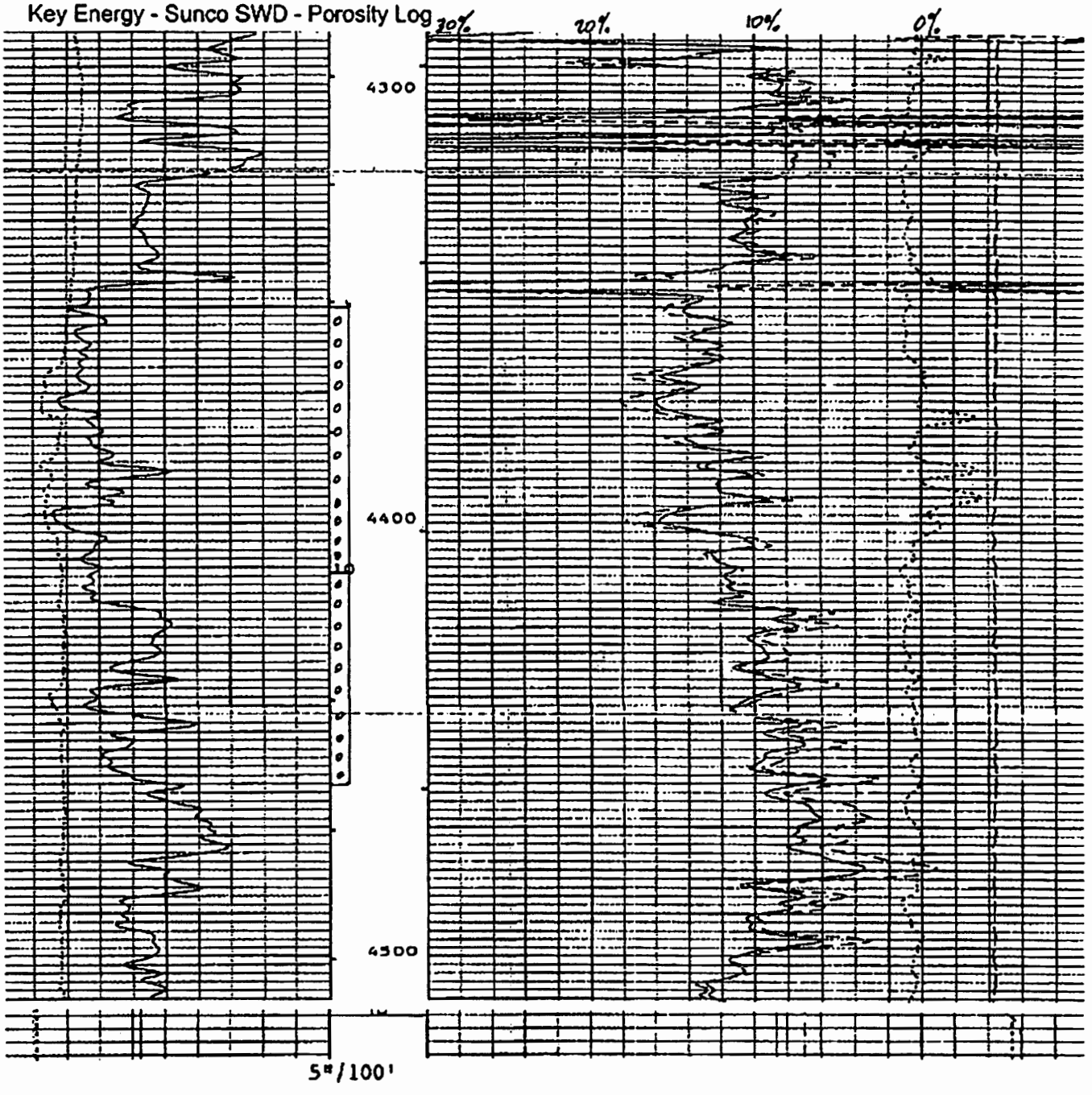


Figure 9 Injection and Pressure Plot


Key Energy - Sunco SWD - Electric Log
1.0
10
100
1000
4300
4400
4500
TENS(LBF)
10000.
0.0
CALI(IN)
3.0000
16.000
SFLU(OHMM)
.20000
2000.0
GR(GAPI)
0.0
200.00
ILD(OHMM)
.20000
2000.0
SP(MV)
80.00
20.000
ILM(OHMM)
.20000
2000.0


Key Energy - Sunco SWD - Porosity Log
30%
20%
10%
0%
4300
4400
4500
5"/100'
CP 32.6
FILE 6
01-FEB-1992 20:21
(UP)
DRHO(G/C3)
-.2500
.25000
TENS(LBF)
10000.
0.0
CALI(IN)
6.0000
16.000
RHOB(G/C3)
2.0000
3.0000
GR(GAPI)
0.0
200.00
DPHI(V/V)
.30000
-.1000


Key Energy - Sunco SWD - Porosity Log
30%
20%
10%
0%
4300
4400
4500
5"/100'
CP 32.6
FILE 6
01-FEB-1992 20:21
(UP)
DRHO(G/C3)
-.2500
.25000
TENS(LBF)
10000.
0.0
CALI(IN)
8.0000
16.000
RHOB(G/C3)
2.0000
3.0000
GR(GAPI)
0.0
200.00
DPHI(V/V)
.30000
-.1000

2022

Agua Moss, LLC

Sunco Disposal #1 30-045-28653

Quarterly
Injection Report

	Average Pressure (psig)	Maximum Pressure (psig)	Minimum Pressure (psig)	Average Flow (gpm)	Maxium Flow (gpm)	Minimum Flow (gpm)	Average Annular Pressure (psig)	Maximum Annular Pressure (psig)	Minimum Annular Pressure (psig)	Average Volume (bpd)	Maximum Volume (bpd)	Minimum Volume (bpd)	Volume (barrels)	Total Cumulative Volume (barrels)	
													Previous year	15182756	
Jan-2022	1200	1200	1200	0	0	0	0	0	0	0	0	0	0	15182756	
Feb-2022	1280	1800	1150	17.80138889	24.2375	11.1416667	0	0	0	610.3333333	831	382	1831	15184587	
Mar-2022	1200	1200	1200	0	0	0	0	0	0	0	0	0	0	15184587	
													Previous Quarter	15184587	
Apr-2022	1050	1050	1050	15.05972222	22.86666667	10.4125	0	0	0	516.3333333	784	357	1549	15186136	
May-2022	1815.179	2000	1150	65.41979167	125.2708333	33.2791667	0	0	0	2242.964286	4295	1141	62803	15248939	
Jun-2022	1800	1950	1250	58.84180556	84.175	20.825	0	0	0	2017.433333	2886	714	60523	15309462	
													Previous Quarter	15309462	
Jul-22	1836.538	2000	1450	57.85208333	69.0375	43.6333333	0	0	0	1983.5	2367	1496	15868	15325330	
Aug-22	1870	2250	1350	45.4125	71.05	15.6333333	0	0	0	1557	2436	536	21798	15347128	
Sep-22	#DIV/0!	0	0	0	0	0	0	0	0	#DIV/0!	0	0	0	15347128	
													Previous Quarter	15347128	
Oct-2022	#DIV/0!	0	0	0	0	0	0	0	0	#DIV/0!	0	0	0	15347128	
Nov-2022	#DIV/0!	0	0	0	0	0	0	0	0	#DIV/0!	0	0	0	15347128	
Dec-2022	#DIV/0!	0	0	0	0	0	0	0	0	#DIV/0!	0	0	0	15347128	
												Total for year	**164372**	**15511500**	**Life Of well injected**

	WH	AP
1/1/22		
1/2/22		
1/3/22		
1/4/22		
1/5/22		
1/6/22		
1/7/22		
1/8/22		
1/9/22		
1/10/22		
1/11/22		
1/12/22	1200	
1/13/22		
1/14/22		
1/15/22		
1/16/22		
1/17/22		
1/18/22		
1/19/22	1200	
1/20/22		
1/21/22	1200	
1/22/22		
1/23/22		
1/24/22		
1/25/22		
1/26/22	1200	
1/27/22	1200	
1/28/22		
1/29/22		
1/30/22		
1/31/22		
	1200	0 AVG
	1200	0 MIN
	1200	0 MAX

	WH	AP
2/1/22		
2/2/22		
2/3/22	1150	
2/4/22		
2/5/22		
2/6/22		
2/7/22		
2/8/22	1150	
2/9/22		
2/10/22		
2/11/22		
2/12/22		
2/13/22		
2/14/22		
2/15/22		
2/16/22		
2/17/22		
2/18/22		
2/19/22		
2/20/22		
2/21/22	1150	
2/22/22	1150	
2/23/22		
2/24/22		
2/25/22		
2/26/22		
2/27/22		
2/28/22	1800	
	1280	0 AVG
	1150	0 MIN
	1800	0 MAX

	WH	AP
3/1/22	1200	
3/2/22		
3/3/22		
3/4/22		
3/5/22		
3/6/22		
3/7/22	1200	
3/8/22		
3/9/22		
3/10/22		
3/11/22		
3/12/22		
3/13/22		
3/14/22		
3/15/22		
3/16/22	1200	
3/17/22		
3/18/22		
3/19/22		
3/20/22		
3/21/22		
3/22/22		
3/23/22		
3/24/22		
3/25/22		
3/26/22		
3/27/22		
3/28/22		
3/29/22		
3/30/22		
3/31/22		
	1200	0 AVG
	1200	0 MIN
	1200	0 MAX

	WH	AP
4/1/22		
4/2/22		
4/3/22		
4/4/22		
4/5/22		
4/6/22		
4/7/22	1050	
4/8/22		
4/9/22		
4/10/22		
4/11/22		
4/12/22	1050	
4/13/22		
4/14/22		
4/15/22		
4/16/22		
4/17/22		
4/18/22		
4/19/22		
4/20/22		
4/21/22		
4/22/22		
4/23/22		
4/24/22		
4/25/22	1050	
4/26/22	1050	
4/27/22	1050	
4/28/22	1050	
4/29/22		
4/30/22		
	1050	0 AVG
	1050	0 MIN
	1050	0 MAX

	WH	AP
5/1/22		
5/2/22		
5/3/22	1150	
5/4/22	1350	
5/5/22	1450	
5/6/22	1550	
5/7/22		
5/8/22	1500	
5/9/22	1850	
5/10/22	1850	
5/11/22	1900	
5/12/22	1900	
5/13/22	1900	
5/14/22	1900	
5/15/22	2000	
5/16/22	1950	
5/17/22	1950	
5/18/22	2000	
5/19/22	2000	
5/20/22	2000	
5/21/22	1975	
5/22/22	1750	
5/23/22	1750	
5/24/22	1950	
5/25/22	1950	
5/26/22	1950	
5/27/22	1750	
5/28/22	1900	
5/29/22	1750	
5/30/22	1950	
5/31/22	1950	
	1815.179	0 AVG
	1150	0 MIN
	2000	0 MAX

	WH	AP
6/1/22	1950	
6/2/22	1950	
6/3/22	1750	
6/4/22	1950	
6/5/22	1250	
6/6/22	1800	
6/7/22	1750	
6/8/22	1750	
6/9/22	1950	
6/10/22	1950	
6/11/22	1950	
6/12/22	1750	
6/13/22	1750	
6/14/22	1750	
6/15/22	1950	
6/16/22	1900	
6/17/22	1750	
6/18/22	1700	
6/19/22	1900	
6/20/22	1700	
6/21/22	1800	
6/22/22	1900	
6/23/22	1750	
6/24/22	1700	
6/25/22	1800	
6/26/22	1700	
6/27/22	1700	
6/28/22	1700	
6/29/22	1900	
6/30/22	1900	
	1800	0 AVG
	1250	0 MIN
	1950	0 MAX

	WH	AP
7/1/22	1900	
7/2/22	1950	
7/3/22	1800	
7/4/22	2000	
7/5/22	1900	
7/6/22	1950	
7/7/22	2000	
7/8/22	1900	
7/9/22	1700	
7/10/22		
7/11/22		
7/12/22	1525	
7/13/22		
7/14/22		
7/15/22		
7/16/22		
7/17/22		
7/18/22		
7/19/22		
7/20/22	1450	
7/21/22		
7/22/22		
7/23/22		
7/24/22		
7/25/22		
7/26/22		
7/27/22	1900	
7/28/22	1900	
7/29/22		
7/30/22		
7/31/22		
	1836.538	0 AVG
	1450	0 MIN
	2000	0 MAX

	WH	AP
8/1/22		
8/2/22		
8/3/22		
8/4/22		
8/5/22	1350	
8/6/22		
8/7/22		
8/8/22	1800	
8/9/22	1900	
8/10/22	1920	
8/11/22	1950	
8/12/22	1950	
8/13/22		
8/14/22		
8/15/22		
8/16/22		
8/17/22	1400	
8/18/22		
8/19/22		
8/20/22		
8/21/22		
8/22/22	1750	
8/23/22	1950	
8/24/22	1850	
8/25/22	1950	
8/26/22	2100	
8/27/22	1900	
8/28/22		
8/29/22	2000	
8/30/22	2250	
8/31/22	1900	
	1870	0 AVG
	1350	0 MIN
	2250	0 MAX

	WH	AP
9/1/22		
9/2/22		
9/3/22		
9/4/22		
9/5/22		
9/6/22		
9/7/22		
9/8/22		
9/9/22		
9/10/22		
9/11/22		
9/12/22		
9/13/22		
9/14/22		
9/15/22		
9/16/22		
9/17/22		
9/18/22		
9/19/22		
9/20/22		
9/21/22		
9/22/22		
9/23/22		
9/24/22		
9/25/22		
9/26/22		
9/27/22		
9/28/22		
9/29/22		
9/30/22		
	#DIV/0!	0 AVG
	0	0 MIN
	0	0 MAX

	WH	AP
10/1/22		
10/2/22		
10/3/22		
10/4/22		
10/5/22		
10/6/22		
10/7/22		
10/8/22		
10/9/22		
10/10/22		
10/11/22		
10/12/22		
10/13/22		
10/14/22		
10/15/22		
10/16/22		
10/17/22		
10/18/22		
10/19/22		
10/20/22		
10/21/22		
10/22/22		
10/23/22		
10/24/22		
10/25/22		
10/26/22		
10/27/22		
10/28/22		
10/29/22		
10/30/22		
10/31/22		
	#DIV/0!	0 AVG
	0	0 MIN
	0	0 MAX

	WH	AP
11/1/22		
11/2/22		
11/3/22		
11/4/22		
11/5/22		
11/6/22		
11/7/22		
11/8/22		
11/9/22		
11/10/22		
11/11/22		
11/12/22		
11/13/22		
11/14/22		
11/15/22		
11/16/22		
11/17/22		
11/18/22		
11/19/22		
11/20/22		
11/21/22		
11/22/22		
11/23/22		
11/24/22		
11/25/22		
11/26/22		
11/27/22		
11/28/22		
11/29/22		
11/30/22		
	#DIV/0!	0 AVG
	0	0 MIN
	0	0 MAX

	WH	AP
12/1/22		
12/2/22		
12/3/22		
12/4/22		
12/5/22		
12/6/22		
12/7/22		
12/8/22		
12/9/22		
12/10/22		
12/11/22		
12/12/22		
12/13/22		
12/14/22		
12/15/22		
12/16/22		
12/17/22		
12/18/22		
12/19/22		
12/20/22		
12/21/22		
12/22/22		
12/23/22		
12/24/22		
12/25/22		
12/26/22		
12/27/22		
12/28/22		
12/29/22		
12/30/22		
12/31/22		
	#DIV/0!	0 AVG
	0	0 MIN
	0	0 MAX

Total Injected	Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow
1/1/22	0		2/1/22			3/1/22	0	0	4/1/2022			5/1/2022			6/1/2022	2587	75.45416667	7/1/2022	2176	63.46666667	8/1/2022			9/1/2022		0	10/1/2022		0	11/1/2022			12/1/2022		0
1/2/22			2/2/22			3/2/22			4/2/2022			5/2/2022			6/2/2022	1912	55.76666667	7/2/2022	1987	57.95416667	8/2/2022			9/2/2022			10/2/2022			11/2/2022		0	12/2/2022		0
1/3/22			2/3/22	382	11.14166667	3/3/22			4/3/2022			5/3/2022	1522	44.39166667	6/3/2022	1573	45.87916667	7/3/2022	1496	43.63333333	8/3/2022			9/3/2022			10/3/2022			11/3/2022		0	12/3/2022		0
1/4/22			2/4/22			3/4/22			4/4/2022			5/4/2022	1141	33.27916667	6/4/2022	1865	54.39583333	7/4/2022	1718	50.10833333	8/4/2022			9/4/2022			10/4/2022			11/4/2022			12/4/2022		0
1/5/22			2/5/22			3/5/22			4/5/2022			5/5/2022	2248	65.56666667	6/5/2022	714	20.825	7/5/2022	2295	66.9375	8/5/2022			9/5/2022			10/5/2022			11/5/2022			12/5/2022		
1/6/22			2/6/22			3/6/22			4/6/2022			5/6/2022	2850	83.125	6/6/2022	1761	51.3625	7/6/2022	1936	56.46666667	8/6/2022			9/6/2022			10/6/2022			11/6/2022			12/6/2022		0
1/7/22			2/7/22			3/7/22			4/7/2022			5/7/2022			6/7/2022	2046	59.675	7/7/2022	2367	69.0375	8/7/2022			9/7/2022		0	10/7/2022			11/7/2022			12/7/2022		0
1/8/22			2/8/22			3/8/22			4/8/2022			5/8/2022	2240	65.33333333	6/8/2022	1745	50.89583333	7/8/2022	1893	55.2125	8/8/2022	817	23.82916667	9/8/2022			10/8/2022			11/8/2022			12/8/2022		0
1/9/22			2/9/22			3/9/22			4/9/2022			5/9/2022	1277	37.24583333	6/9/2022	2030	59.20833333	7/9/2022			8/9/2022	1641	47.8625	9/9/2022			10/9/2022			11/9/2022			12/9/2022		
1/10/22			2/10/22			3/10/22			4/10/2022			5/10/2022	1200	35	6/10/2022	2480	72.33333333	7/10/2022			8/10/2022	1711	49.90416667	9/10/2022			10/10/2022			11/10/2022			12/10/2022		
1/11/22			2/11/22			3/11/22			4/11/2022			5/11/2022	4295	125.2708333	6/11/2022	2627	76.62083333	7/11/2022			8/11/2022	1693	49.37916667	9/11/2022			10/11/2022			11/11/2022			12/11/2022		
1/12/22			2/12/22			3/12/22			4/12/2022	408	11.9	5/12/2022	3031	88.40416667	6/12/2022	1862	54.30833333	7/12/2022			8/12/2022	536	15.63333333	9/12/2022			10/12/2022			11/12/2022			12/12/2022		
1/13/22			2/13/22			3/13/22			4/13/2022			5/13/2022	2077	60.57916667	6/13/2022	1794	52.325	7/13/2022			8/13/2022			9/13/2022			10/13/2022			11/13/2022			12/13/2022		
1/14/22			2/14/22			3/14/22			4/14/2022			5/14/2022	2564	74.78333333	6/14/2022	2152	62.76666667	7/14/2022			8/14/2022			9/14/2022			10/14/2022			11/14/2022			12/14/2022		
1/15/22			2/15/22			3/15/22			4/15/2022			5/15/2022	2461	71.77916667	6/15/2022	2824	82.36666667	7/15/2022			8/15/2022			9/15/2022			10/15/2022			11/15/2022			12/15/2022		
1/16/22			2/16/22			3/16/22			4/16/2022			5/16/2022	2711	79.07083333	6/16/2022	2530	73.79166667	7/16/2022			8/16/2022			9/16/2022			10/16/2022			11/16/2022			12/16/2022		
1/17/22			2/17/22			3/17/22			4/17/2022			5/17/2022	1909	55.67916667	6/17/2022	1470	42.875	7/17/2022			8/17/2022			9/17/2022			10/17/2022			11/17/2022			12/17/2022		
1/18/22		0	2/18/22			3/18/22			4/18/2022			5/18/2022	2266	66.09166667	6/18/2022	1815	52.9375	7/18/2022			8/18/2022			9/18/2022			10/18/2022			11/18/2022			12/18/2022		
1/19/22		0	2/19/22			3/19/22			4/19/2022			5/19/2022	2022	58.975	6/19/2022	1700	49.58333333	7/19/2022			8/19/2022			9/19/2022			10/19/2022			11/19/2022			12/19/2022		
1/20/22		0	2/20/22			3/20/22			4/20/2022			5/20/2022	2694	78.575	6/20/2022	1791	52.2375	7/20/2022			8/20/2022			9/20/2022			10/20/2022			11/20/2022			12/20/2022		
1/21/22		0	2/21/22			3/21/22			4/21/2022			5/21/2022	3099	90.3875	6/21/2022	2657	77.49583333	7/21/2022			8/21/2022			9/21/2022			10/21/2022			11/21/2022			12/21/2022		
1/22/22		0	2/22/22	618	18.025	3/22/22			4/22/2022			5/22/2022	1977	57.6625	6/22/2022	2886	84.175	7/22/2022			8/22/2022	790	23.04166667	9/22/2022			10/22/2022			11/22/2022			12/22/2022		
1/23/22		0	2/23/22			3/23/22			4/23/2022			5/23/2022	2137	62.32916667	6/23/2022	1676	48.88333333	7/23/2022			8/23/2022	1513	44.12916667	9/23/2022			10/23/2022			11/23/2022			12/23/2022		
1/24/22		0	2/24/22			3/24/22			4/24/2022			5/24/2022	2836	82.71666667	6/24/2022	2037	59.4125	7/24/2022			8/24/2022	2292	66.85	9/24/2022			10/24/2022			11/24/2022			12/24/2022		
1/25/22		0	2/25/22			3/25/22			4/25/2022	784	22.86666667	5/25/2022	2221	64.77916667	6/25/2022	1582	46.14166667	7/25/2022			8/25/2022	1943	56.67083333	9/25/2022			10/25/2022			11/25/2022		0	12/25/2022		
1/26/22		0	2/26/22			3/26/22			4/26/2022			5/26/2022	1588	46.31666667	6/26/2022	2061	60.1125	7/26/2022			8/26/2022	2259	65.8875	9/26/2022			10/26/2022			11/26/2022		0	12/26/2022		
1/27/22		0	2/27/22			3/27/22			4/27/2022			5/27/2022	1538	44.85833333	6/27/2022	962	28.05833333	7/27/2022			8/27/2022	1014	29.575	9/27/2022		0	10/27/2022			11/27/2022			12/27/2022		
1/28/22		0	2/28/22	831	24.2375	3/28/22			4/28/2022	357	10.4125	5/28/2022	1591	46.40416667	6/28/2022	2409	70.2625	7/28/2022			8/28/2022			9/28/2022			10/28/2022			11/28/2022			12/28/2022		
1/29/22		0				3/29/22			4/29/2022			5/29/2022	1523	44.42083333	6/29/2022	2555	74.52083333	7/29/2022			8/29/2022	1078	31.44166667	9/29/2022			10/29/2022			11/29/2022		0	12/29/2022		
1/30/22		0				3/30/22			4/30/2022			5/30/2022	2639	76.97083333	6/30/2022	2420	70.58333333	7/30/2022			8/30/2022	2436	71.05	9/30/2022			10/30/2022			11/30/2022		0	12/30/2022		
1/31/22		0				3/31/22						5/31/2022	3146	91.75833333				7/31/2022			8/31/2022	2075	60.52083333				10/31/2022						12/31/2022		
AVG	0	0		610.3333333	17.80138889		0	0		516.3333333	15.05972222		2242.964286	65.41979167		2017.433333	58.84180556		1983.5	57.85208333		1557	45.4125		#DIV/0!	0		#DIV/0!	0		#DIV/0!	0		#DIV/0!	0
MAX	0	0		831	24.2375		0	0		784	22.86666667		4295	125.2708333		2886	84.175		2367	69.0375		2436	71.05		0	0		0	0		0	0		0	0
MIN	0	0.0000000		382	11.1416667		0	0.0000000		357	10.4125000		1141	33.2791667		714	20.8250000		1496	43.6333333		536	15.6333333		0	0.0000000		0	0.0000000		0	0.0000000		0	0.0000000
Total for mont	0			1831			0			1549			62803			60523			15868			21798			0			0			0			0	

2022 AREA OF REVIEW
UNIT LETTERS ENCOMPASSED BY THE 2-MILE AOR

Sec	TWN	RNG	UL	
1	29N	12W	ALL	
2	29N	12W	ALL	
3	29N	12W	ALL	
4	29N	12W	ACFJKNP	
9	29N	12W	ABH	
10	29N	12W	ABCDIJN	
11	29N	12W	ACDGHILOP	
12	29N	12W	AEFKM	
25	30N	12W	EMN	
26	30N	12W	FGLNOP	
27	30N	12W	LMP	
28	30N	12W	O	
33	30N	12W	GHIJK	
34	30N	12W	ALL	
35	30N	12W	ALL	
36	30N	12W	AEIMN	

Radius expanded to 2 miles for permit renewal requirements.

													Surface Casing			*INT Casing*			*Production Casing*					
API	Well Name	Well #	Current Operator	Type	Lease	Status	Sec	TWN	RNG	UL	Spud Date	TD	size	depth	Sacks TOC	size	depth	Sacks TOC	size	depth	Sacks TOC	Perfs	Packer	PLUGGED
30-045-08851	ALLEN A	#001	BP America	Gas	Private	Plugged	1	29N	12W	D	3/12/1961	6785	8.265	264	200 surf				4.5	6785	300 surf	6518-6718		3/27/2018
30-045-26214	ALLEN A	#001E	SIMCOE LLC	Gas	Federal	Active	1	29N	12W	L	3/22/1985	5825	8.625	318	225 surf				5.5	6622	820 surf	6425-6602		
30-045-08661	Dudley Cornell A	#001	SIMCOE LLC	Gas	Federal	Active	1	29N	12W	O	11/15/1960	6730	9.625	263	200 surf				4.5	6707	300 surf	6434-6587		
30-045-24129	Dudley Cornell A	#001E	SIMCOE LLC	Gas	Federal	Active	1	29N	12W	G	4/28/1980	6722	9.625	348	250 surf				4.5	6710	180 surf	6496-6629		
30-045-34348	Allen Com	#100	Burlington	Gas	Federal	Plugged	1	29N	12W	B	10/22/2007	138												1/22/2009
30-045-08782	Cornell	5	Burlington	Gas	Federal	Plugged	1	29N	12W	G	9/30/1955	99999												4/28/1994
30-045-29167	Hike	1	Dugan Production	Gas	Federal	Active	1	29N	12W	G	7/10/1994	3840	8.625	260	175 surf				4.5	3820	595 surf	3710-3718	3710	
30-045-08656	Cornell	2	Energen Resources	Gas	Federal	Plugged	1	29N	12W	M	10/2/1955	1996												9/15/2005
30-045-29539	Cornell	3R	Epic Energy	Gas	Federal	Plugged	1	29N	12W	I	10/7/1955	0	7	131	45-53				3.5	2193	434-741	1991-2041		7/13/2018
30-045-29538	Cornell	5R	HilCorp	Gas	Federal	Active	1	29N	12W	A	4/14/1998	2225	7	131	45-53				3.5	2215	434-741	2029-2059		
30-045-08783	PRE-ONGARD WELL	#001	Pre Ongard	Gas	Private	Plugged	1	29N	12W	F	7/9/2003	2090												12/31/1901
30-045-08641	PRE-ONGARD WELL	#003	Pre Ongard	Gas	Federal	Plugged	1	29N	12W	O	4/11/1998	2203												11/16/1981
30-045-08793	Pre-Ongard		Southern union	Gas	Private	Plugged	1	29N	12W	E	3/16/1948	2125												3/16/1948
30-045-32346	CORNELL	#002R	Southland Royalty	Gas	Federal	Active	1	29N	12W	M	7/22/2004	2152	7	137	90 surf				4.5	2151	310 surf	1702-1926		
30-045-31612	Cornell	2S	Southland Royalty	Gas	Federal	Active	1	29N	12W	O	7/27/1957	0	7	136	56 surf				4.5	2058	225 surf	1725-1921		
30-045-28653	SUNCO DISPOSAL	#001	Agua Moss	Salt Water Disposal	Private	Active	2	29N	12W	E	1/28/1992	4760	8.625	209	150 surf				5.5	4760	1010 surf	4350-4460	4282 10/15/07	4350-4460 TA'd
30-045-33573	CORNELL COM	#500S	Burlington	Gas	Private	Plugged	2	29N	12W	P	3/18/2006	2210	7	132	34 surf	6.25	2210		4.5	2198	279 surf	1754-1939 1743-1924		1/23/2013
30-045-08844	KATTLER	#001	Burlington	Gas	Private	Plugged	2	29N	12W	C	1/26/1945	2069	10	846	surf	5.5	1960		3.5	2050	205 surf	1961-2007		5/26/2012
30-045-08713	McGrath SRC	#001	Burlington	Gas	Private	Plugged	2	29n	12w	j	7/7/1973	2136												1998
30-045-30486	MCGRATH SRC	#001R	Burlington	Gas	Private	Plugged	2	29N	12W	J	3/23/2001	2235												6/25/2010
30-045-32241	BECK	#001R	HilCorp	Gas	Private	Active	2	29N	12W	G	12/1/2004	2225	7	135	34 surf				4.5	2221	262 surf	1774-2077		
30-045-33811	BECK	#001S	HilCorp	Gas	Private	Active	2	29N	12W	D	8/17/2006	2200	7	162	85 surf				4.5	2195	255 surf	1730-1951		
30-045-31580	CORNELL COM	#500	HilCorp	Gas	Federal	Active	2	29N	12W	N	7/14/2003	2136	7	139	44 surf	6.25	2126		4.5	2126	258 surf	1658-1878		
30-045-08714	CORNELL SRC	#007	HilCorp	Gas	Federal	Active	2	29N	12W	L	7/29/1944	2107	16	42	10 surf	5.5	1978		3.5	2106	250 surf	1976-2010		

30-045-08704	MCGRATH B	#001	HilCorp	Gas	Private	Active	2	29N	12W	J	11/19/1961	6720	8.625	318	225 surf				4.5	1865	1065 surf	6489-6596		
30-045-08839	YOUNG	#001	HilCorp	Gas	Private	Active	2	29N	12W	D	8/1/1961	6740	8.625	307	275 surf				4.5	6739	700 surf	6446-6644		
30-045-08797	Pre-Ongard		Southland	Gas	Private	Plugged	2	29n	12w	g	4/14/1948	2125												2/23/1984
30-045-27635	PRE-ONGARD WELL	#500		Gas	Federal	Plugged	2	29N	12W	M														12/31/1901
30-045-08709	MCGRATH	#003	Burlington	Gas	Private	Plugged	3	29N	12W	J	3/4/1945	2040												3/1/2013
30-045-60274	WALKER 2	#002	Burlington	Gas	Private	Plugged	3	29N	12W	D	1/8/1945	1974												7/24/1998
30-045-08823	Walker SRC	1	Burlington	Gas	Private	Plugged	3	29N	12W	G	2/25/1943	2050												10/12/2009
30-045-33580	MCGRATH	#003S	HilCorp	Gas	Private	TA'd	3	29N	12W	B	7/13/2007	2132	7	218	150 surf				4.5	2112	289 surf	1692-1904		TA'd 10/23/2009
30-045-08712	MCGRATH A	#001	HilCorp	Gas	Private	Active	3	29N	12W	I	3/14/1964	6689	8.625	307	250 surf				4.5	6688	500 surf	6432-6524		
30-045-32931	WALKER	#100S	HilCorp	Gas	Private	Active	3	29N	12W	F	8/14/2005	2120	7	144	61 surf				4.5	2117	238 surf	1621-1885		
30-045-08801	WALKER 1	#001	HilCorp	Gas	Private	Active	3	29N	12W	E	4/12/1960	6620	8.625	232	150 surf				4.5	6620	300 surf	6546-6556		
30-045-30244	WALKER 100	#100	HilCorp	Gas	Private	TA'd	3	29N	12W	L	3/30/2001	1948	7	126	140-168				4.5	1940	219-399	1659-1872	1597 CIBP@1609	Tad
30-045-08711	Pre-Ongard		Union Texas	Gas	Private	Plugged	3	29N	12W	K	6/25/1955	1940												11/10/1964
30-045-29117	RIGGS	#001	Enduring Resources	Gas	Private	Active	4	29N	12W	A	6/24/1994	1900												
30-045-29118	RIGGS	#002	Enduring Resources	Gas	Private	Plugged	4	29N	12W	N	6/28/1994	1890												5/8/2017
30-045-32239	RIGGS	#003	Enduring Resources	Gas	Private	Active	4	29N	12W	C	2/21/2005	1906												
30-045-32312	RIGGS	#004	Enduring Resources	Gas	Private	Active	4	29N	12W	P	3/20/2005	2002												
30-045-08718	STANDARD	#001	HilCorp	Gas	Federal	Active	4	29N	12W	J	11/3/1960	6600	8.625	236	175 surf				4.5	6600	250 surf	6356-6510		
30-045-08720	DEVONIAN FEDERAL	#001	Holcomb Oil & Gas	Gas	Federal	Active	4	29N	12W	K	6/23/1959	6538												
30-045-24552	PRE-ONGARD WELL	#001	Pre Ongard	Gas	Federal	Plugged	4	29N	12W	A	5/29/1981	0												12/7/1995
30-045-08804	FEDERAL	#001	Riggs Oil & Gas	Gas	Federal	Plugged	4	29N	12W	F	5/29/1959	1856												2/9/2017
30-045-08586	FLORANCE GAS COM B	#001	SIMCOE LLC	Gas	Federal	Active	9	29N	12W	H	1/20/1964	6470												
30-045-28824	ROPCO FEE FC 9	#002	HilCorp	Gas	Private	Active	9	29N	12W	A	11/25/1992	1975												
30-045-26855	PRE-ONGARD WELL	#001	Pre Ongard	Gas	Private	Plugged	9	29N	12W	B	3/18/1988	0												3/9/1989
30-045-08601	CORNELL A	#001	SIMCOE LLC	Gas	Federal	Active	10	29N	12W	D	12/28/1960	6510												
30-045-24132	CORNELL A	#001E	BP America	Gas	Federal	Plugged	10	29N	12W	N	4/4/1980	6350												1/24/2018

30-045-08605	CORNELL	#007	Burlington	Gas	Federal	Plugged	10	29N	12W	C	4/20/1956	1807												7/18/1996
30-045-23889	BECK A	#001E	HilCorp	Gas	Federal	Active	10	29N	12W	B	1/5/1981	6514	8.625	240	150 surf				4.5	6514	765 surf	6277-6454		
30-045-08517	BECK A	#001	HilCorp	Gas	Private	Active	10	29N	12W	J	6/12/1962	6410												
30-045-30381	CORNELL	#100	HilCorp	Gas	Federal	Active	10	29N	12W	B	1/7/2003	1968	7	147	55 surf				4.5	1959	229 surf	1543-1704 1744-1800		
30-045-08523	PRE-ONGARD WELL	#001	Pre Ongard	Water	Private	Permanently	10	29N	12W	J	8/21/1946	1871												10/31/1977
30-045-23758	Pre-Ongard		Southland	Gas	Federal	Plugged	10	29N	12W	A	12/19/1980	1870												2/10/1984
30-045-34452	BECK 29 12 10	#108	Synergy	Gas	Federal	Plugged	10	29N	12W	N	2/21/2008	1865												4/27/2020
30-045-13092	CORNELL C	#001	SIMCOE LLC	Gas	Federal	Active	11	29N	12W	D	12/6/1961	6604	8.625	250	150 surf				4.5	6604	300 surf	6298-6483		
30-045-08615	CORNELL	#006	Epic Energy	Gas	Federal	Active	11	29N	12W	C	11/7/1955	1839	8.625	106	70 surf	5.5	1811		3.5	2022	181 surf	1811-1839		
30-045-31581	CORNELL	#101	HilCorp	Gas	Federal	Active	11	29N	12W	D	10/7/2003	2008	7	140	35 surf				4.5	2000	270 surf	1726-1764		
30-045-24447	FEDERAL PRI	#001E	HilCorp	Gas	Federal	Active	11	29N	12W	H	10/9/1980	6581												
30-045-29945	PAYNE	#001R	Mcelvain Energy	Gas	Federal	Active	11	29N	12W	H	10/27/1999	2050												
30-045-32667	PRI	#003	Mcelvain Energy	Gas	Federal	Active	11	29N	12W	I	2/27/2005	1960												
30-045-13218	PRE-ONGARD WELL	#010	Pre Ongard	Gas	Federal	Plugged	11	29N	12W	A		0												12/31/1901
30-045-08558	PRE-ONGARD WELL	#001	Pre Ongard	Gas	Federal	Plugged	11	29N	12W	G	1/1/1940	0												4/16/1976
30-045-08515	PRE-ONGARD WELL	#001	Pre Ongard	Gas	Private	Plugged	11	29N	12W	L	11/25/1932	0												12/13/1982
30-045-20067	PRE-ONGARD WELL	#001	Pre Ongard	Gas	Federal	Plugged	11	29N	12W	O	5/5/1967	0												4/18/1986
30-045-08475	CARROLL CORNELL	#012	Producing Royalties	Gas	Federal	Plugged	11	29N	12W	P	11/22/1953	1895												6/13/1979
30-045-22118	PAYNE	#001	Producing Royalties	Gas	Federal	Plugged	11	29N	12W	A	7/31/1976	2060												2/13/2002
30-045-24086	CORNELL D	#001E	SIMCOE LLC	Gas	Federal	Active	12	29N	12W	A	5/22/1980	6635												
30-045-24283	CORNELL E	#001E	SIMCOE LLC	Gas	Federal	Active	12	29N	12W	F	5/12/1980	6609												
30-045-08444	CORNELL E	#001	BP America	Gas	Federal	Plugged	12	29N	12W	M	9/28/1962	6562												6/27/2017
30-045-08528	CORNELL SRC	#004	Burlington	Gas	Federal	Plugged	12	29N	12W	K	5/25/1941	1970												3/29/2017
30-045-22119	PAYNE	#002	Mcelvain Energy	Gas	Federal	Plugged	12	29N	12W	F	7/22/1976	2062												10/30/2010
30-045-22962	PAYNE	#002J	RIM Operating	Gas	Federal	Active	12	29N	12W	E	6/12/1978	2026												
30-045-33015	PRI	#001S	RIM Operating	Gas	Federal	Active	12	29N	12W	A	9/20/2005	2057												

30-045-32665	PRI	#001	RIM Operating	Gas	Federal	Active	12	29N	12W	E	2/17/2005	2090											
30-045-32666	PRI	#002	RIM Operating	Gas	Federal	Active	12	29N	12W	M	2/8/2005	2010											
30-045-09117	PRE-ONGARD WELL	#001	ONGARD WELL OPERATOR	Gas	Private	Plugged	25	30N	12W	M	4/13/1953	0											5/26/1958
30-045-26121	ROWLAND GAS COM	#001E	HilCorp	Gas	Private	Active	25	30N	12W	M	3/19/1985	6560											
30-045-29707	RUBY CORSCOT A	#001	HilCorp	Gas	Private	Active	25	30N	12W	N	9/25/1999	2007											
30-045-31641	RUBY CORSCOT A	#002	HilCorp	Gas	Private	Active	25	30N	12W	E	6/2/2003	2076											
30-045-30456	KATY COM	#002	[14634] MERRION OIL & GAS CORP	Gas	Private	Plugged	26	30N	12W	P	4/27/2001	2028											8/10/2015
30-045-09177	PAUL PALMER	#001	[14634] MERRION OIL & GAS CORP	Gas	Private	Plugged	26	30N	12W	L	9/13/1961	3509											8/14/2015
30-045-29414	PRE-ONGARD WELL	#001	ONGARD WELL OPERATOR	Gas	Private	Plugged	26	30N	12W	G	6/21/1953	0											12/31/1901
30-045-09130	PRE-ONGARD WELL	#003	ONGARD WELL OPERATOR	Gas	Private	Plugged	26	30N	12W	O		0											3/12/1954
30-045-09165	PAUL PALMER D	#001	[5073] CONOCO INC	Gas	Private	Plugged	26	30N	12W	L	10/11/1961	99999											3/17/1995
30-045-30027	PADILLA	#001	HilCorp	Gas	Private	Active	26	30N	12W	F	1/15/2004	1953											
30-045-32243	PADILLA	#002	HilCorp	Gas	Private	Active	26	30N	12W	N	5/13/2004	2153											
30-045-09200	PRE-ONGARD WELL	#001	ONGARD WELL OPERATOR	Gas	Private	Plugged	27	30N	12W	L	3/30/1947	0											3/17/1959
30-045-13120	DUFF GAS COM B	#001	AMERICA PRODUCTION	Gas	Private	Plugged	27	30N	12W	P	2/28/1962	1950											5/30/1996
30-045-30544	DUFF GAS COM	#003	HilCorp	Gas	Private	Active	27	30N	12W	P	4/1/2001	5167											
30-045-09134	DUFF GAS COM C	#001	HilCorp	Gas	Private	Active	27	30N	12W	M	1/30/1964	6365											
30-045-26076	DUFF GAS COM C	#001E	HilCorp	Gas	Private	Active	27	30N	12W	P	9/20/1984	6500											
30-045-29664	DUFF GAS COM C	#002	HilCorp	Gas	Private	Active	27	30N	12W	M	10/16/1998	1856											
30-045-31284	DUFF GAS COM C	#004	HilCorp	Gas	Private	Active	27	30N	12W	P	1/27/2003	1996											
30-045-34235	GILBREATH	#002	Enduring Resources	Gas	Private	Active	28	30N	12W	O	4/30/2008	2170											
30-045-09037	HARGIS	#001	MCGEE OIL & GAS ONSHORE LP	Gas	Private	Plugged	33	30N	12W	G	9/15/1944	1808											2/23/1994
30-045-08999	PRE-ONGARD WELL	#002	ONGARD WELL OPERATOR	Gas	Private	Plugged	33	30N	12W	J	7/10/1946	0											6/4/1982
30-045-08998	JULANDER	#002	PRODUCTION CORP	Gas	Private	Plugged	33	30N	12W	I	4/1/1946	1936											4/12/1999
30-045-29023	REDFERN	#002	Enduring Resources	Gas	Private	Active	33	30N	12W	H	12/5/1993	1950											
30-045-32236	REDFERN	#003	Enduring Resources	Gas	Private	Active	33	30N	12W	I	3/8/2005	1993											

30-045-28912	SHIOTANI	#007	Enduring Resources	Gas	Private	Active	33	30N	12W	K	12/31/1992	1782												
30-045-09001	MADDOX	#001	HilCorp	Gas	Private	Active	33	30N	12W	J	9/21/1961	6400												
30-045-25923	MCGRATH	#004	BURLINGTON RESOURCES OIL &	Salt Water Disposal	Federal	Plugged	34	30N	12W	B	9/4/1984	4700												7/25/2013
30-045-09052	PRE-ONGARD WELL	#001	ONGARD WELL OPERATOR	Gas	Federal	Plugged	34	30N	12W	F	9/11/1945	0												1/22/1964
30-045-08939	PRE-ONGARD WELL	#001	ONGARD WELL OPERATOR	Gas	Private	Plugged	34	30N	12W	L	1/1/1945	0												6/4/1982
30-045-08950	HUDSON	2	Burlington	Gas	Federal	Plugged	34	30N	12W	P	7/17/1946	2137												9/26/2008
30-045-08945	MCGRATH C	#001	Burlington	Gas	Federal	Plugged	34	30n	12W	p	2/7/1963	6637												4/29/2009
30-045-26141	DUFF GAS COM	#001E	HilCorp	Gas	Federal	TA'd	34	30N	12W	G	11/20/1984	6608	8.625	316	295 surf				4.5	6608	1000 surf	6396-6576 04'RC to FC 1492-1870		TA'd 3/5/14
30-045-09071	DUFF GAS COM	#001	HilCorp	Gas	Private	Active	34	30N	12W	D	1/30/1962	6425												
30-045-31756	JULANDER	#100	HilCorp	Gas	Private	Shut In	34	30N	12W	D	7/13/2005	1895												
30-045-33411	JULANDER	#100S	HilCorp	Gas	Federal	Shut In	34	30N	12W	M	3/7/2006	2075												
30-045-31355	CARNAHAN COM	#001Y	HOLCOMB OIL & GAS INC	Gas	Private	Active	35	30N	12W	A	2/15/2003	2150												
30-045-11770	HUDSON J	#003	HilCorp	Gas	Federal	TA'd	35	30N	12W	E	7/22/1966	6750	8.625	306	250 surf				4.5	6750	750 surf	6460-6680 01' RC to FC 1784-1994		
30-045-08946	CARNAHAN COM	#001	Holcomb Oil & Gas	Gas	Private	Active	35	30N	12W	P	12/19/1960	6778	8.625	301	200 surf				4.5	6760	445 surf	6521-6708 94 RC to FC 1824-2037		
30-045-25844	CARNAHAN COM	#002	Merrion Oil & Gas	Gas	Private	Active	35	30N	12W	P	6/15/1984	6780	8.625	230	170 surf				4.5	6777	1425 surf	6529-6714		
30-045-20140	Pre-Ongard		Southland	Gas	Federal	Plugged	35	30N	12W	L	9/7/1967	DH												6/9/1982
30-045-28177	FC STATE COM	#024	Burlington	Gas	State	Plugged	36	30N	12W	M	10/9/1990	6608												3/26/2013
30-045-12188	NEW MEXICO COM N	#001	HilCorp	Gas	State	Active	36	30N	12W	E	1/2/1966	6562												
30-045-31074	NEW MEXICO COM N	#100	HilCorp	Gas	State	Shut In	36	30N	12W	A	8/29/2002	2135												
30-045-08986	STATE COM AH	#030	HilCorp	Gas	State	Active	36	30N	12W	I	6/14/1961	6645												
30-045-24037	STATE COM AH	#030E	HilCorp	Gas	State	Plugged	36	30N	12W	N	8/10/1980	6620												4/28/2016

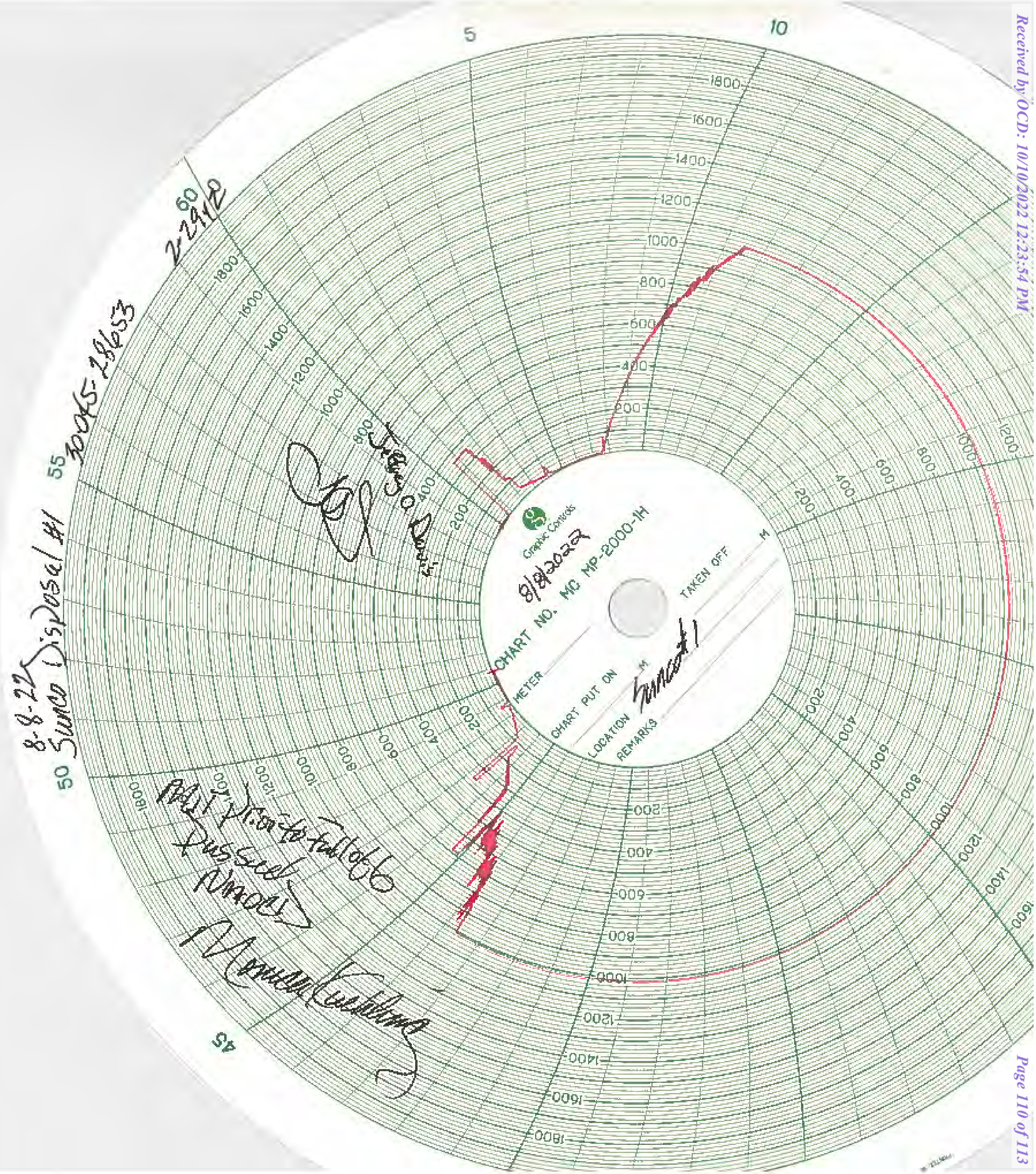
Agua Moss - Sunco Disposal				
Operations Log for Falloff Test				
Date	**Rate (bbls/day)**	**TBG Pressure (psig)**	**CSG Pressure (psig)**	**Comment**
8/8/22 9:00 AM				Perform BH test & MIT test
8/8/22 10:43 AM				PLUGGED IN GAUGES
8/8/22 10:48 AM				OPENED WELL
8/8/22 11:04 AM				SET GAUGES
8/8/22 12:30 PM	1711	1500	0	Start injection
8/8/22 1:00 PM	1702	1600	0	
8/8/22 2:00 PM	1702	1650	0	
8/8/22 3:00 PM	1692	1700	0	
8/8/22 4:00 PM	1702	1700	0	
8/8/22 5:00 PM	1692	1750	0	
8/8/22 6:00 PM	1702	1750	0	
8/8/22 7:00 PM	1692	1750	0	
8/8/22 8:00 PM	1702	1750	0	
8/8/22 9:00 PM	1702	1775	0	
8/8/22 9:15 PM				Down HP kill
8/8/22 9:30 PM				Back on
8/8/22 10:00 PM	1673	1775	0	
8/8/22 11:00 PM	1673	1800	0	
8/9/22 12:00 AM	1664	1800	0	
8/9/22 1:00 AM	1664	1800	0	
8/9/22 2:00 AM	1655	1825	0	
8/9/22 3:00 AM	1655	1825	0	
8/9/22 4:00 AM	1665	1825	0	
8/9/22 5:00 AM	1664	1825	0	
8/9/22 6:00 AM	1673	1825	0	
8/9/22 7:00 AM	1665	1825	0	
8/9/22 8:00 AM	1655	1850	0	
8/9/22 9:00 AM	1655	1850	0	
8/9/22 10:00 AM	1664	1850	0	
8/9/22 11:00 AM	1664	1850	0	
8/9/22 12:00 PM	1673	1850	0	
8/9/22 1:00 PM	1673	1850	0	
8/9/22 2:00 PM	1673	1860	0	
8/9/22 3:00 PM	1664	1860	0	
8/9/22 4:00 PM	1683	1860	0	
8/9/22 5:00 PM	1664	1870	0	
8/9/22 6:00 PM	1664	1870	0	
8/9/22 7:00 PM	1673	1870	0	
8/9/22 8:00 PM	1664	1900	0	
8/9/22 9:00 PM	1673	1900	0	
8/9/22 10:00 PM	1664	1900	0	

8/9/22 11:00 PM	1673	1900	0	
8/10/22 12:00 AM	1673	1900	0	
8/10/22 1:00 AM	1664	1900	0	
8/10/22 2:00 AM	1673	1900	0	
8/10/22 3:00 AM	1683	1900	0	
8/10/22 4:00 AM	1683	1900	0	
8/10/22 5:00 AM	1683	1900	0	
8/10/22 6:00 AM	1692	1900	0	
8/10/22 7:00 AM	1702	1900	0	
8/10/22 8:00 AM	1702	1900	0	
8/10/22 9:00 AM	1692	1900	0	
8/10/22 10:00 AM	1702	1900	0	
8/10/22 11:00 AM	1692	1900	0	
8/10/22 12:00 PM	1683	1900	0	
8/10/22 1:00 PM	1683	1900	0	
8/10/22 2:00 PM	1664	1900	0	
8/10/22 3:00 PM	1655	1900	0	
8/10/22 4:00 PM	1664	1900	50	
8/10/22 5:00 PM	1655	1900	50	
8/10/22 6:00 PM	1673	1900	50	
8/10/22 7:00 PM	1673	1900	50	
8/10/22 8:00 PM	1664	1900	60	
8/10/22 9:00 PM	1664	1900	60	
8/10/22 10:00 PM	1673	1900	60	
8/10/22 11:00 PM	1683	1920	60	
8/11/22 12:00 AM	1673	1920	60	
8/11/22 1:00 AM	1673	1920	60	
8/11/22 2:00 AM	1673	1920	60	
8/11/22 3:00 AM	1702	1920	60	
8/11/22 4:00 AM	1683	1920	60	
8/11/22 5:00 AM	1673	1920	60	
8/11/22 6:00 AM	1664	1920	60	
8/11/22 7:00 AM	1692	1920	60	
8/11/22 8:00 AM	1683	1920	60	
8/11/22 9:00 AM	1692	1920	90	
8/11/22 10:00 AM	1692	1930	90	
8/11/22 11:00 AM	1692	1930	100	
8/11/22 12:00 PM	1702	1930	100	
8/11/22 1:00 PM	1702	1940	100	
8/11/22 2:00 PM	1692	1940	100	
8/11/22 3:00 PM	1702	1950	100	
8/11/22 4:00 PM	1711	1950	100	
8/11/22 5:00 PM	1721	1950	100	
8/11/22 6:00 PM	1721	1950	100	
8/11/22 7:00 PM	1721	1950	100	
8/11/22 8:00 PM	1711	1950	100	
8/11/22 9:00 PM	1711	1950	120	

8/11/22 10:00 PM	1702	1950	120	
8/11/22 11:00 PM	1730	1950	180	
8/12/22 12:00 AM	1711	1950	180	
8/12/22 1:00 AM	1722	1950	200	
8/12/22 2:00 AM	1711	1950	220	
8/12/22 3:00 AM	1730	1950	230	
8/12/22 4:00 AM	1721	1950	240	
8/12/22 5:00 AM	1721	1950	300	
8/12/22 6:00 AM	1711	1950	300	
8/12/22 7:00 AM	1711	1950	300	Shut in for Falloff Test
8/22/22 9:30 AM				End falloff test
8/22/22 9:38 AM				RELEASED GAUGES @9:38:10
				MADE STOPS @
8/22/22 9:46 AM				3000' 9:41:36-9:46:36
8/22/22 9:54 AM				2000' 9:49:18-9:54:18
8/22/22 10:01 AM				1000' 9:56:35-10:01:35
8/22/22 10:10 AM				0' 10:05:30-10:10:30
8/22/22 10:19 AM				UNPLUGGED GAUGES

Verify Gauge

- Gauge Information
  - Description: 3V Sapphire - 4M
  - Serial Number: 79785
  - Model Number: 1139
  - Function Number: F10
  - Revision Level: R9
  - Tool Voltage: 3V
  - Samples on Tool: 129148
  - Current Sample Capacity: 4194304
  - Redundant Memory: None
  - Maximum Sample Capacity: 4194304
  - Time: No Data
- Pressure Sensor Information
  - Cal Information
    - Pressure
      - Calibration Date: 2/27/2022
      - Fit Order: 3 x 4
      - Pressure Minimum: 16.00 psi
      - Pressure Maximum: 15,000.00 psi
    - Temperature
      - Calibration Date: 2/27/2022
      - Fit Order: 2 x 3
      - Temperature Minimum: 78.80 °F
      - Temperature Maximum: 305.60 °F
  - Raw Data
    - Pressure: No Data
    - Temperature: No Data
  - Compensated Data
    - Pressure: No Data
    - Temperature: No Data
- Program Information
  - Programmed SRO Status
    - SRO Enabled: false



NEW MEXICO ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE
1000 RIO BRAZOS ROAD
AZTEC NM 87410
(505) 334-6178 FAX: (505) 334-6170
http://emnrd.state.nm.us/ocd/District III/3district.htm

BRADENHEAD TEST REPORT

(submit 1 copy to above address)

Date of Test 8-8-22 Operator Agua Moss API #30-0 45 28653

Property Name Sunco Disp Well No. 1 Location: Unit E Section 2 Township 29 Range 12

Well Status(Shut-In or Producing) Initial PSI: Tubing 1360 Intermediate N/A Casing 300 Bradenhead 0

OPEN BRADENHEAD AND INTERMEDIATE TO ATMOSPHERE INDIVIDUALLY FOR 15 MINUTES EACH

PRESSURE

Testing	Bradenhead BH	Bradenhead Int	Bradenhead Csg	INTERM Int	INTERM Csg
TIME					
5 min	0		300		
10 min	0		300		
15 min	0		300		
20 min					
25 min					
30 min					

FLOW CHARACTERISTICS

	BRADENHEAD	INTERMEDIATE
Steady Flow		
Surges		
Down to Nothing		
Nothing	✓	
Gas		
Gas & Water		
Water		

If bradenhead flowed water, check all of the descriptions that apply below:

CLEAR____ FRESH____ SALTY____ SULFUR____ BLACK____

5 MINUTE SHUT-IN PRESSURE BRADENHEAD____ INTERMEDIATE N/A

REMARKS: Nothing when opened. Nothing when opened after 5 min Shut in

By _____ Witness Monica Kuehling

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

COMMENTS

Action 149870

COMMENTS

Operator: AGUA MOSS, LLC P.O. Box 600 Farmington, NM 87499	OGRID: 247130
	Action Number: 149870
	Action Type: [UF-DP] Generic Discharge Plan (DISCHARGE PLAN SERVICE COMPANIES)

COMMENTS

Created By	Comment	Comment Date
cchavez	UICI-5 Fall-Off Test 2022 Test Comments: 1) Agree with hydraulic fracture flow but bi-linear flow. 2) Disagree with addition of partial penetration due to lack of negative slope on log-log plot. 3) Log-Log type curve matches the bilinear 2 parallel faults type curves included in FOT doc. 4) Lower permeability injection interval observed.	10/21/2022

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 149870

CONDITIONS

Operator:	OGRID:
AGUA MOSS, LLC P.O. Box 600 Farmington, NM 87499	247130
	Action Number: 149870
	Action Type: [UF-DP] Generic Discharge Plan (DISCHARGE PLAN SERVICE COMPANIES)

CONDITIONS

Created By	Condition	Condition Date
cchavez	Conditions of Approval are as follows: 1) Tag and record well TD during well workovers, testing and logging. 2) Devise injection approach to effectively achieve and maintain steady-state injection rate prior to FOT monitoring, i.e., Step Rate Test increased rate to achieve plateau or steady-state injection rate.	10/21/2022