AE Order Number Banner

Application Number: pMSG2406947217

IPI-546

Spur Energy Partners LLC [328947]

Revised March 23, 2017

RECEIVED:	REVIEWER:	TYPE:	APP NO:

ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Geological & Engineering Bureau –
1220 South St. Francis Drive, Santa Fe, NM 87505

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Applicant: _____ **OGRID Number:** _____
Well Name: _____ **API:** _____
Pool: _____ **Pool Code:** _____

SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED BELOW

1) **TYPE OF APPLICATION:** Check those which apply for [A]
   A. Location – Spacing Unit – Simultaneous Dedication
   ☐ NSL ☐ NSP (PROJECT AREA) ☐ NSP (PRORATION UNIT) ☐ SD

   B. Check one only for [I] or [II]
   [I] Commingling – Storage – Measurement
   ☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
   [II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery
   ☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

FOR OCD ONLY
☐ Notice Complete
☐ Application Content Complete

2) **NOTIFICATION REQUIRED TO:** Check those which apply.
   A. ☐ Offset operators or lease holders
   B. ☐ Royalty, overriding royalty owners, revenue owners
   C. ☐ Application requires published notice
   D. ☐ Notification and/or concurrent approval by SLO
   E. ☐ Notification and/or concurrent approval by BLM
   F. ☐ Surface owner
   G. ☐ For all of the above, proof of notification or publication is attached, and/or,
   H. ☐ No notice required

3) **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

_____ Date

_____ Print or Type Name

_____ Phone Number

_____ Signature

_____ e-mail Address

January 25, 2024

New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Attn: Mr. Phillip Goetze, Engineering Bureau

Re: Request of Spur Energy Partners, LLC for an injection pressure increase on its Osage Boyd 15 No.1 SWD (API No.30-015-28992) located in Section 15, Township 19 South, Range 25 East, NMPM, Eddy County, New Mexico.

Dear Mr. Goetze,

Spur Energy Partners acquired the Osage Boyd 15 No.1 SWD from Percussion Petroleum, LLC in June 2019. The well was drilled in 1996 by Nearburg Producing Company as an Upper Penn (Dagger Draw) oil well to a depth of 8,135 feet. It was subsequently TA'd in 2005 and extended until 2017. In 2018, the well was permitted, reentered and configured for salt water disposal by Percussion Petroleum under SWD-1717 prior to being acquired by Spur Energy. It was completed and configured with 3-1/2" tubing and is currently authorized for disposal into the Cisco and Canyon formations utilizing perforations from 7682 feet to 7916 feet with a maximum surface injection pressure of 1536 psi (0.2 psi/ ft.). The SWD has been in continuous use since originally permitted in 2018. The well is currently an active SWD for Spur's private use and is critical to its area operations.

Spur submitted a notice of intent sundry report which was approved by OCD in February 2023. The step rate was performed in November of last year and executed as proposed in the sundry. The test went smoothly with no equipment issues and an adequate supply of water was on hand. All steps were completed at designed rates and durations however, pressures did not build as expected so two (2) steps were added. The BHP indicates something of a break around 5250 psi. We believe this is due to the well having been gel acid-fracked with 40,000 gallons in this interval and that this test did not create any new fractures. We feel targeting a bottom hole pressure of 5320 psi, or .693 psi/ft, which correlates to 2000 psi surface injection pressure, would not create any new fractures. This is further supported by the results of the Lakewood Farms step rate test which saw a fracture pressure of 5470 psi, or a fracture gradient of .704 psi/ft. the Lakewood Farms is less than 3 miles away and is completed in a similar interval. I would note too that if Spur had not added the 2 steps of increased rates, the test as designed would not have detected any noticeable breaks in pressure. The Secrest Et Al SWD #1 in the same zone saw no such break based on that well's SRT, pressure was increased to 2700 psi surface.

Based on the results of the step-rate test and circumstantial evidence from the Secrest SWD data, we hereby request that maximum permitted surface injection pressure may safely be increased to 2000 psi (~0.26 psi/ ft. surface gradient or 0.693 psi/ ft. bottom hole gradient). I respectfully request that the approval of this injection pressure increase proceed swiftly and if you require additional information or have any questions, please do not hesitate to call or email me.

Best regards,

Ben Stone, Partner
SOS Consulting, LLC
Agent for Spur Energy Partners, LLC

Cc: Project file

Spur Energy Partners, LLC

Osage Boyd 15 SWD #1

Step-Rate Test Conducted 9/18/2023.

API# 30-015-28922, F-15-19S-25E, Eddy County, New Mexico

Background

The Osage Boyd 15 Com #1 was originally drilled in June 1996 to a depth of 8,135 feet as an Upper Penn oil well by Nearburg Producing Company. The well was temporarily abandoned (TA'd) in 2005 and Nearburg received subsequent approval to extend the TA period until May 2017.

In March 2018, Percussion Petroleum acquired the well and received approval to reenter and configure it as a salt water disposal well. OCD permit SWD-1717 authorized a perforated disposal interval into the Cisco and Canyon formations from 7640 feet to 7916 feet. (The well was renamed to drop 'Com' from the SWD designation.) Percussion perforated from 7682 feet to 7916 and ran 3-1/2" tubing set in a packer at 7650 feet. The well has been in regular use since originally configured for SWD in June/ July 2018. Daily average rates have been from 2500 bwpd to nearly 5200 bwpd in the first few years; so far, through 2023 rates have averaged between 2500 and 3000 bwpd Injection pressure has been at or near the allowable calculated surface pressure of 1536 psi. *(0.2 psi/ ft to uppermost injection depth of 7682 feet.)*

Spur Energy Partners, LLC acquired the well in June 2019 and the well remains an active SWD for Spur Energy in support of its area operations.

Spur Energy Partners expects that an increase in this SWD's capacity would result in the well's longevity and value as a reliable disposal asset for future years. A NOI sundry was submitted to outline the step-rate test which would be performed consistent with OCD guidelines to acquire suitable SRT data so that an increase in pressure could be approved. OCD approved that sundry on February 23, 2023. Disposal operations continued and the SRT delayed in favor of other operational necessities as well as disposal scheduling concerns. The well was shut-in for 48+ hours of pre-test static observation on 11/12/2023 and the test conducted on 11/14/2023. *(See job data and charts contained herein.)*

History

The salt water disposal well history has been uneventful. It has operated normally with standard reports of bradenhead test and successful MITs performed as required. The daily injection rate has generally and gradually trended downward and is the impetus for Spur Energy to make the request for increased injection pressure.

The procedure, job summary and all appropriate test data follow this page. A copy of the NOI sundry which includes the wellbore diagram, the original permit and other supporting documents are included herein.

Osage Boyd SWD SRT Job Report

11/9/2023

2 frac tanks set and filled with produced water from battery. Same produced water that is currently being injected at this facility.

11/1/2023

Set BHPG with slickline. Tandem BHPG set on 1 second data, have 1mm data point capturing capability - enough for 11.5 days.

11/12/2023

Well shut in at 8:10am – 48hrs prior to SRT

11/14/2023

Arrived on location, Acid tech already on location. Rig up iron. Rig up iron to casing, pressure up to 497 psi and monitor pressure with transducer, can be seen on pump chart. 5 psi lost in first 5 minutes then pressure remained flat at 492 for the remainder of the 30 test. Casing integrity confirmed. Bleed casing off and monitor via transducer for entire job. Rig up pumps back to iron and after 30 minutes, pressure tested up to Acid Tech's valve to 4225 psi, tubing transmitter located on the tubing right above master valve. Began SRT

SITP to start 300 psi

Step 1: .4 BPM for 45 mins - tubing pressure at the end of the stage - 503

Step 2: .8 BPM for 45 mins - tubing pressure at the end of the stage - 696

Step 3: 1.2 BPM for 45 mins - tubing pressure at the end of the stage - 910

Step 4: 1.6 BPM for 45 mins - tubing pressure at the end of the stage - 1080

Step 5: 2.4 BPM for 45 mins - tubing pressure at the end of the stage – 1333

Step 6: 3.2 BPM for 45 mins - tubing pressure at the end of the stage - 1582

Step 7: 4.0 BPM for 45 mins - tubing pressure at the end of the stage – 1828

Two more stages added due to the lack of increase of pressure, wanted to gather more data points. Called for 2 vac trucks of water.

Step 8: 5.0 BPM for 45 mins - tubing pressure at the end of the stage - 2056

Step 9: 7.0 BPM for 45 mins - tubing pressure at the end of the stage – 2520

ISIP - 1782

5 min shut in pressure - 1634

10 min shut in pressure - 1568

15 min shut in pressure - 1513

Rig down and move out pump.

11/16/2023

RU slickline truck and retrieve BHPG. Data sent to engineer to begin processing.

Original Proposed Steps:

Step Rate Test - 3k Well Head					
Step	Time Start (mins)	Time End (mins)	Rate (BPM)	Stage Volume (Bbl)	Cumulative Volume (Bbl)
1	0	45	0.25	11	11
2	45	90	0.50	23	34
3	90	135	0.90	41	74
4	135	180	1.80	81	155
5	180	225	2.70	122	277
6	225	270	3.60	162	439
7	270	315	4.50	203	641

Adjusted Steps due to minimum rate on pump being .4 BPM and well injectivity decreasing over the last year:

Step Rate Test - Adjusted					
Step	Time Start (mins)	Time End (mins)	Rate (BPM)	Stage Volume (Bbl)	Cumulative Volume (Bbl)
1	0	45	0.40	18	18
2	45	90	0.80	36	54
3	90	135	1.20	54	108
4	135	180	1.60	72	180
5	180	225	2.40	108	288
6	225	270	3.20	144	432
7	270	315	4.00	180	612

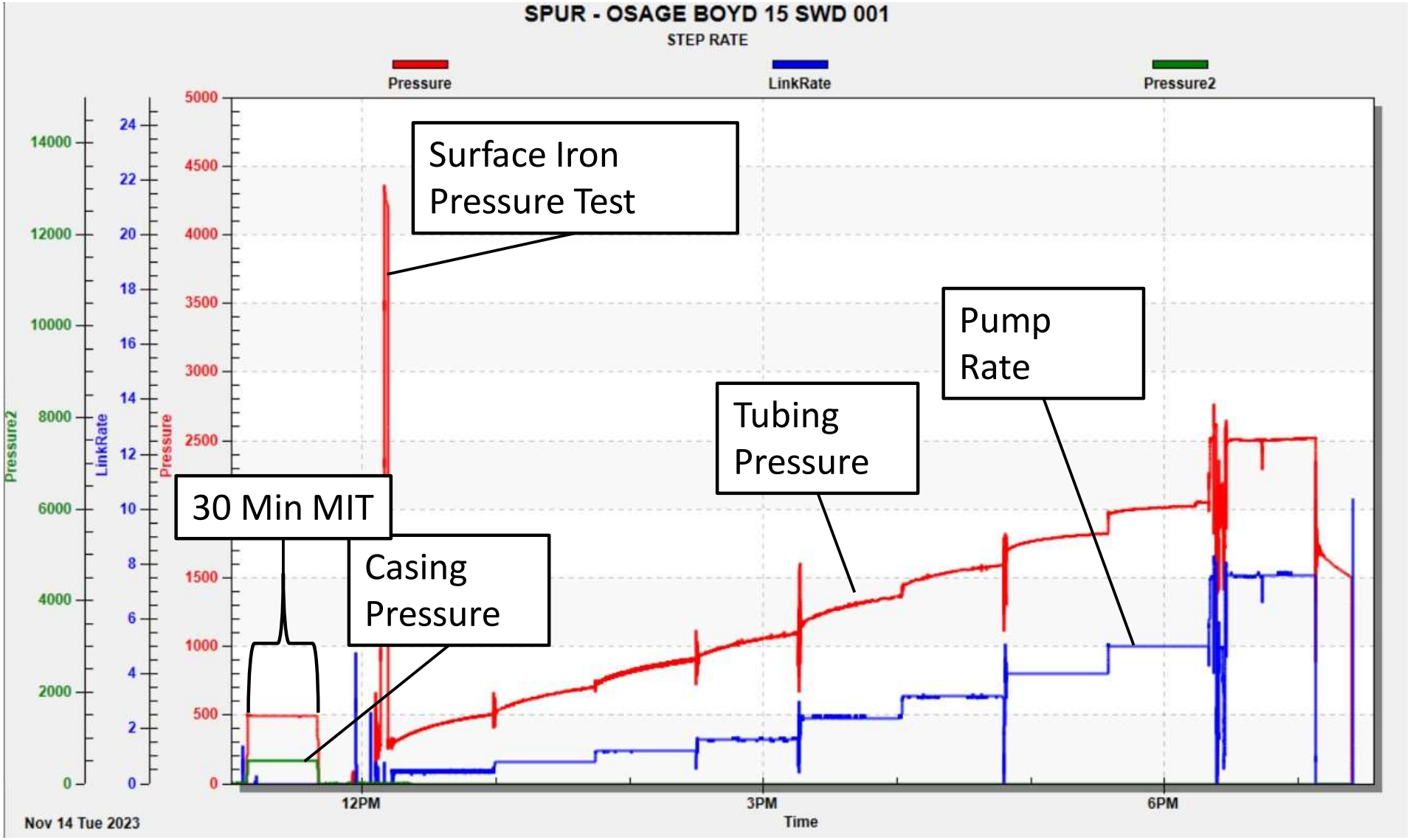
Actual pump schedule with added steps:

Step Rate Test - Actual					
Step	Time Start (mins)	Time End (mins)	Rate (BPM)	Stage Volume (Bbl)	Cumulative Volume (Bbl)
1	0	45	0.40	18	18
2	45	90	0.80	36	54
3	90	135	1.20	54	108
4	135	180	1.60	72	180
5	180	225	2.40	108	288
6	225	270	3.20	144	432
7	270	315	4.00	180	612
8	315	360	5.00	225	837
9	360	405	7.00	315	1152

Osage Boyd SWD – Step Rate Test Analysis

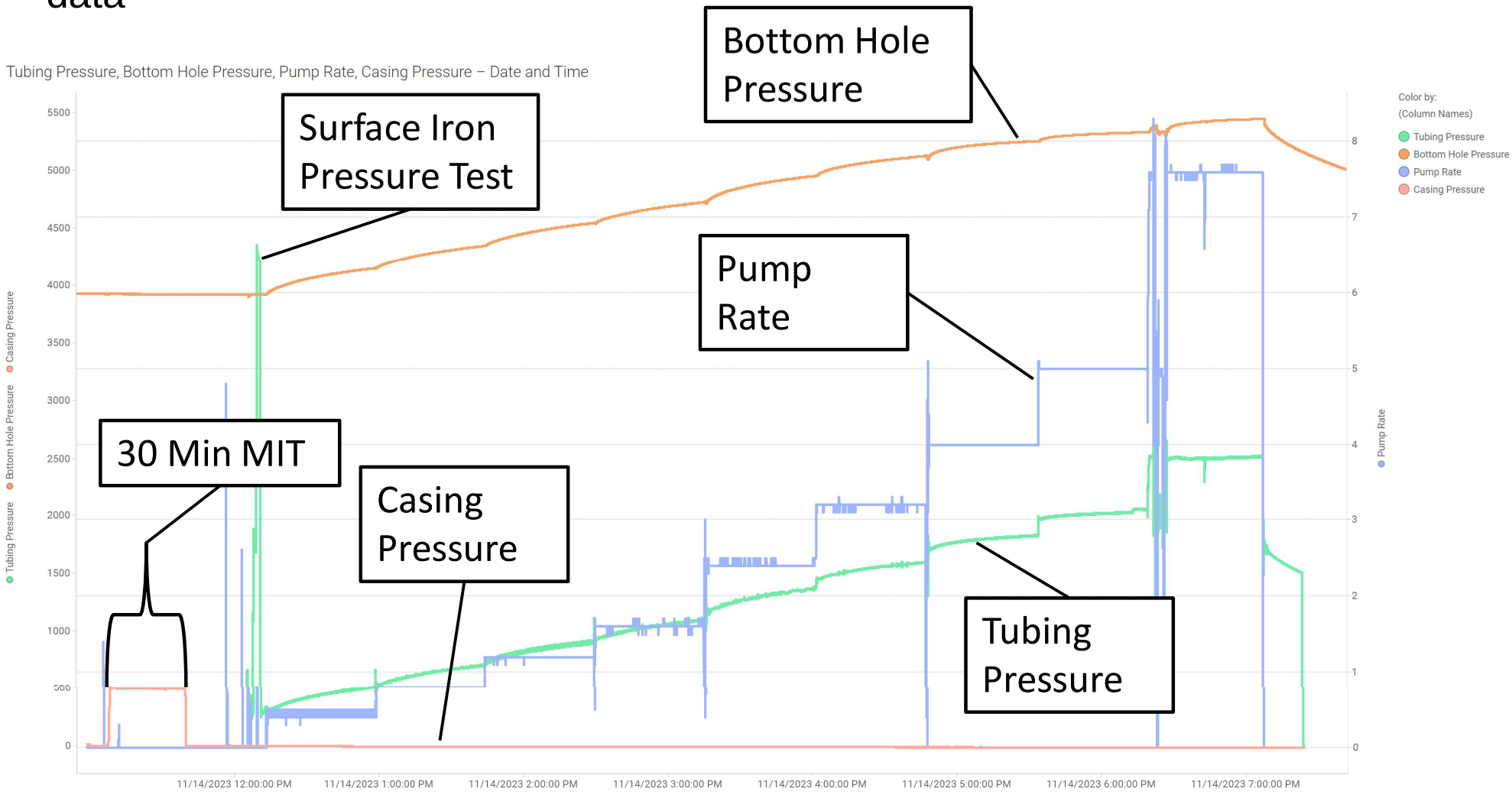
Pump Chart

- Tubing transducer moved to casing for MIT and back to tubing for SRT



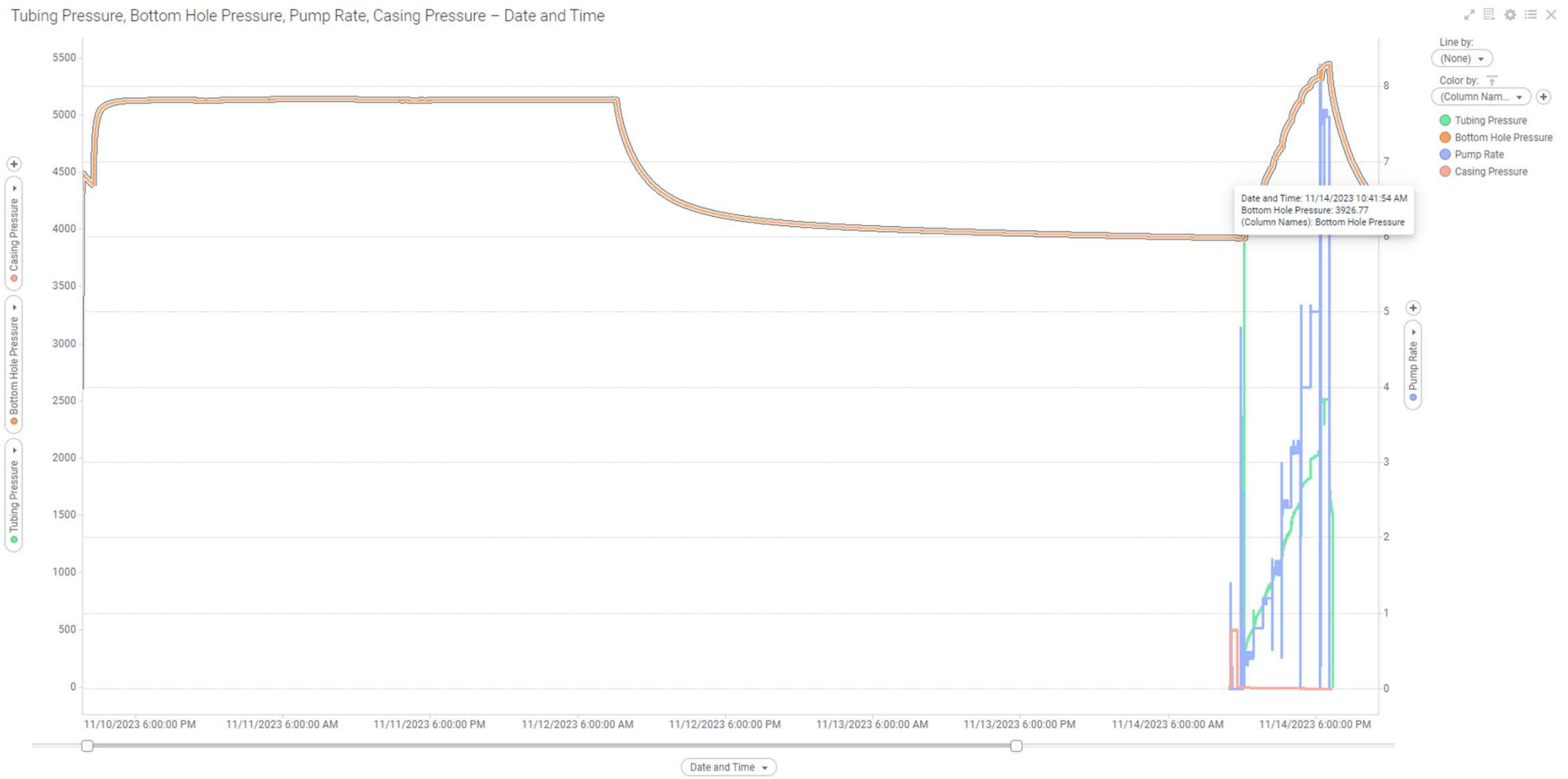
Combined Chart

- 2 Stages added to test due to not reaching max pressure, wanted to gather more data



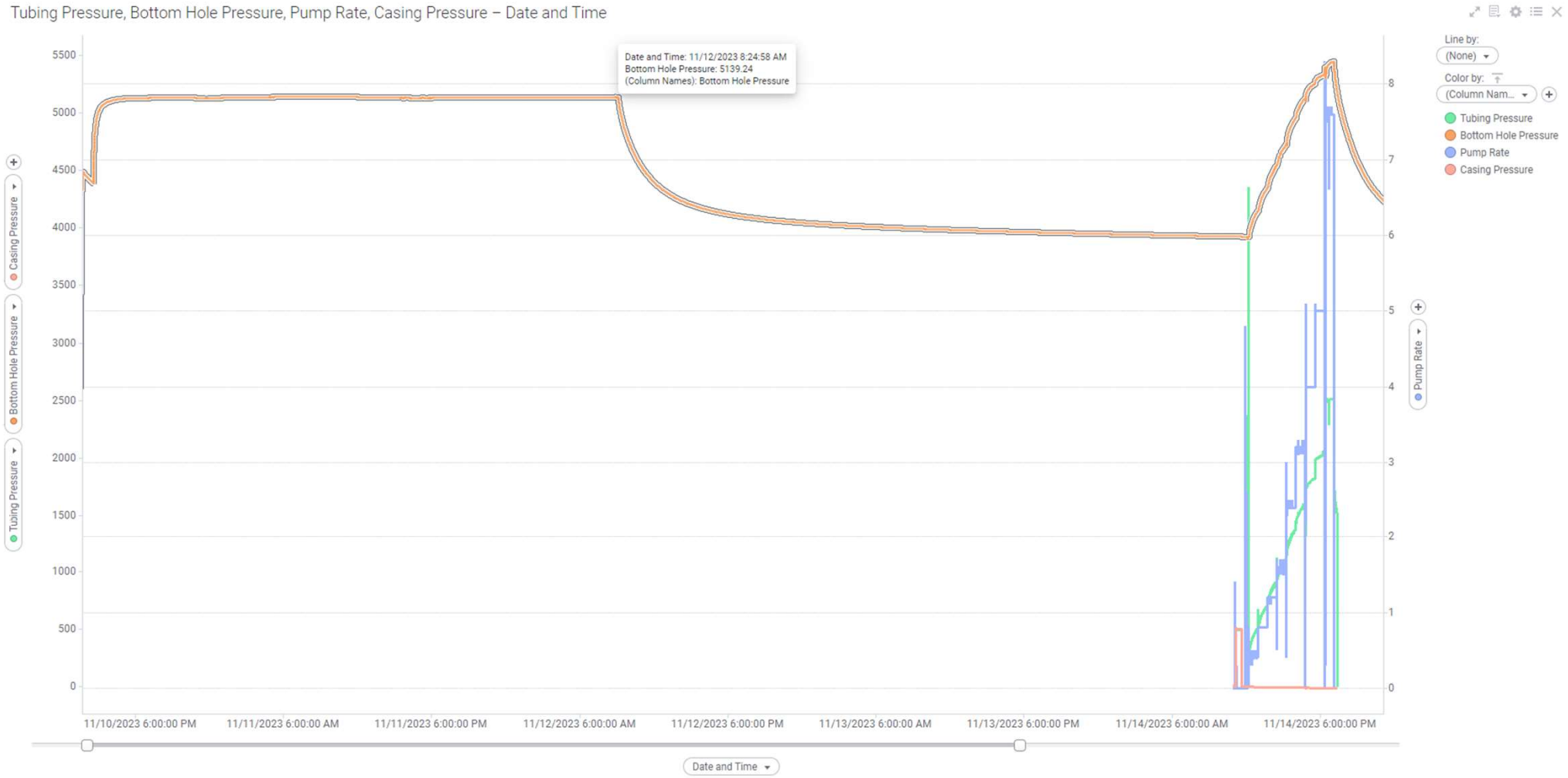
SIBHP

- 48hr SIBHP 3926 psi



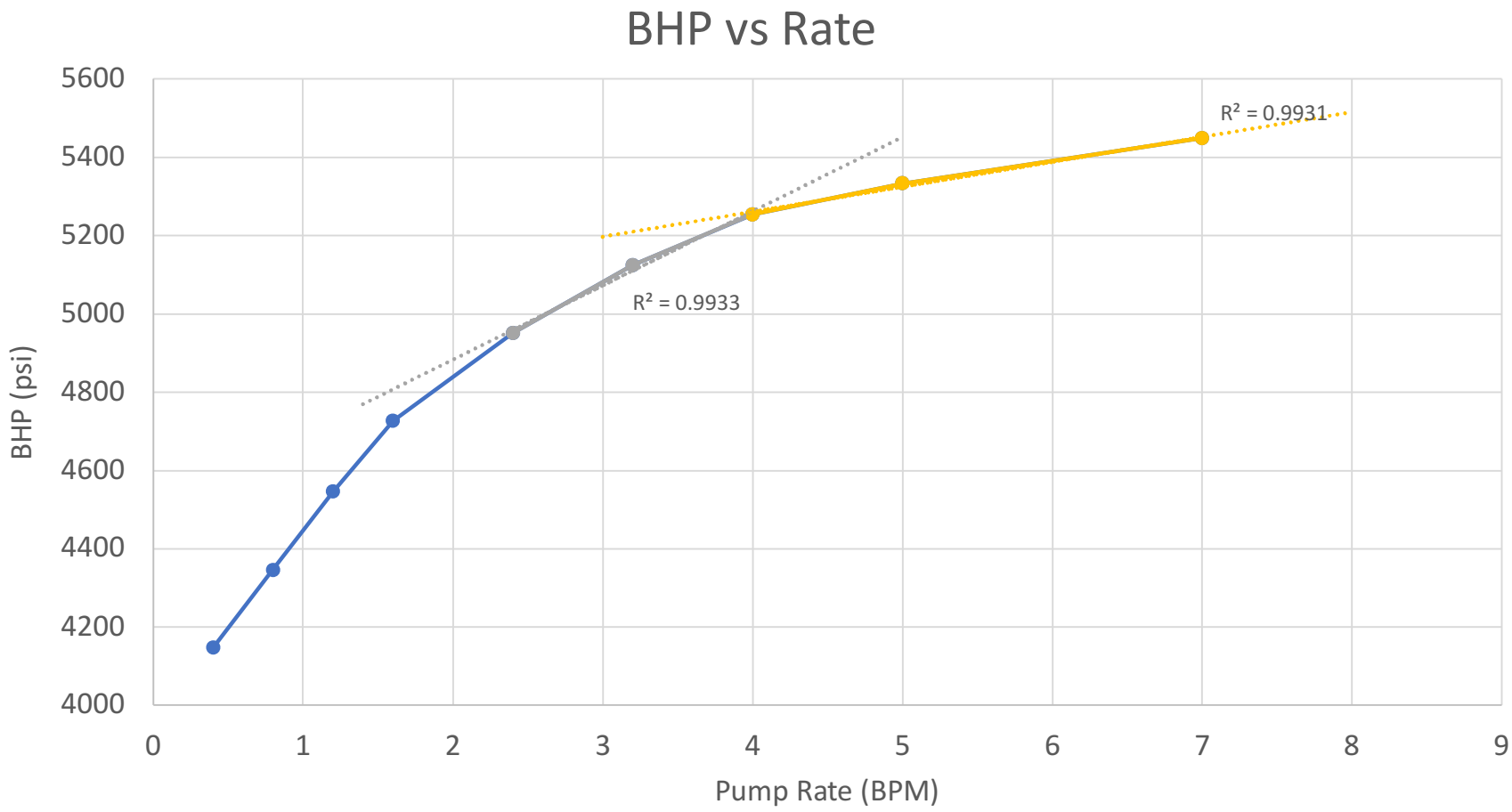
BHP with normal pump cycles

- 5139 psi BHP during normal pump cycles with surface pump injecting at 2500 BWPD @ 1,526 psi
- Little pressure loss due to friction; majority of pressure making it to the reservoir



BHP vs Rate

- After initial loading, possible break observed around 4bpm
- Comparable tests (Secrest SWD SRT) saw no break at 5356 psi BHP. This well is perforated within the same reservoir. Break is possibly seen due to this well having previously been frac'd when it was a producing well



Rate, BHP and Injection Pressure Table

Step	Rate (BPM)	Bottom Hole Pressure (psi)	Injection Pressure (psi)
0	0.0	3926	271
1	0.4	4147	505
2	0.8	4346	700
3	1.2	4546	887
4	1.6	4727	1098
5	2.4	4951	1363
6	3.2	5124	1589
7	4	5254	1825
8	5	5333	2055
9	7	5448	2517

ACID TECH SERVICES

	Date:	Time:
Truck Called:	11/14/2023	3:00 AM
Arrived at location:	11/14/2023	7:00 AM
Start Job:	11/14/2023	11:00 AM
Finish Job:	11/14/2023]	7:22 PM
Leave Location:	11/14/2023	7:30 PM

Job Log

Acid Tech Services	Customer Name:	SPUR			23AA1114-A
P.O. BOX	Lease Name:	OSAGE BOYD 15			
MIDLAND, TEXAS 79711	Well #:	SWD 001		Supervisor:	ANGEL ARANGO
OFFICE # 432-563-2243	Type of Job:	STEP RATE		County:	EDDY
FAX #432-563-0449	Date:	11/14/2023	CUSTOMER REPRESENTATIVE:		

Tubing Size:		Casing size:		Tbg Capacity:			
Tubing weight:		Casing weight:		Top Perf:			On Form:
Tubing bbl/lnft		Casing bbl/lnft:		Bottom Perf:			
Packer depth:		Annulus:		Flush Top Perf:			
End of Tbg:		Total Depth:		Flush Bottom Perf:			
Top Perf:		Open Hole:		Annular Capacity:			
Bottom Perf:		Liner Size:		Maximum:			Psi
Holes in Csg:		Top of Liner					

Max psi:	2,600	Min psi:	O	Avg psi:	1,683	Max rate:	7.5	Avg rate:	4.4	I S I P	1782
Load to recover		1239 BBLS				1,634	5 min	1,568	10 min	1,513	15 min

Acid Systems

Acid System:	N/A	Gallons	N/A			
Diverter:	N/A	Balls	N/A	Coarse Rock Salt	N/A	Arrive on Loc: / Safety Meeting:

Time	Injection Rate: Rate:	Bbls in		Job Pressures Tbg psi.	Csg psi
11:01 AM					RIG UP AND CONNECT TO WELL
11:09 AM					511 LOAD UP CSG 500 PSI 30 MIN HOLD
12:07 PM					PRIME AND PRESSURE TEST LINES
12:11 PM				300	O OPEN WELL @ O PSI
12:13 PM	0.4	O		300	O ESTABLISH RATE & PSI ON WATER .4 BPM 45 MIN
12:23 PM	0.4	4		385	O RATE/PSI CHECK
12:33 PM	0.4	8		433	O RATE/PSI CHECK
12:43 PM	0.4	12		469	O RATE/PSI CHECK
12:53 PM	0.4	17		503	O RATE/PSI CHECK
12:59 PM	0.8	20		509	O INCREASE RATE
1:09 PM	0.8	28		592	O RATE/PSI CHECK
1:19 PM	0.8	36		641	O RATE/PSI CHECK
1:29 PM	0.8	44		670	O RATE/PSI CHECK
1:39 PM	0.8	52		696	O RATE/PSI CHECK
1:44 PM	1.2	56		701	O INCREASE RATE
1:54 PM	1.2	68		804	O RATE/PSI CHECK
2:04 PM	1.2	80		842	O RATE/PSI CHECK
2:14 PM	1.2	92		875	O RATE/PSI CHECK
2:24 PM	1.2	104		910	O RATE/PSI CHECK
2:30 PM	1.6	112		937	O INCREASE RATE
2:40 PM	1.6	127		994	O RATE/PSI CHECK
2:50 PM	1.6	144		1,034	O RATE/PSI CHECK
3:00 PM	1.6	159		1,062	O RATE/PSI CHECK

Job Log Remarks:

SERVICE REPRESENTATIVE:	Signature Please	CUSTOMER REPRESENATIVE:	Signature Please
ANGEL ARANGO		X	

ACID TECH SERVICES

Ticket Number: **23AA1114-A**

Customer: **SPUR**

Date: **11/14/2023**

Lease: **OSAGE BOYD 15**

Well: **SWD 001**

Job Type: **STEP RATE**

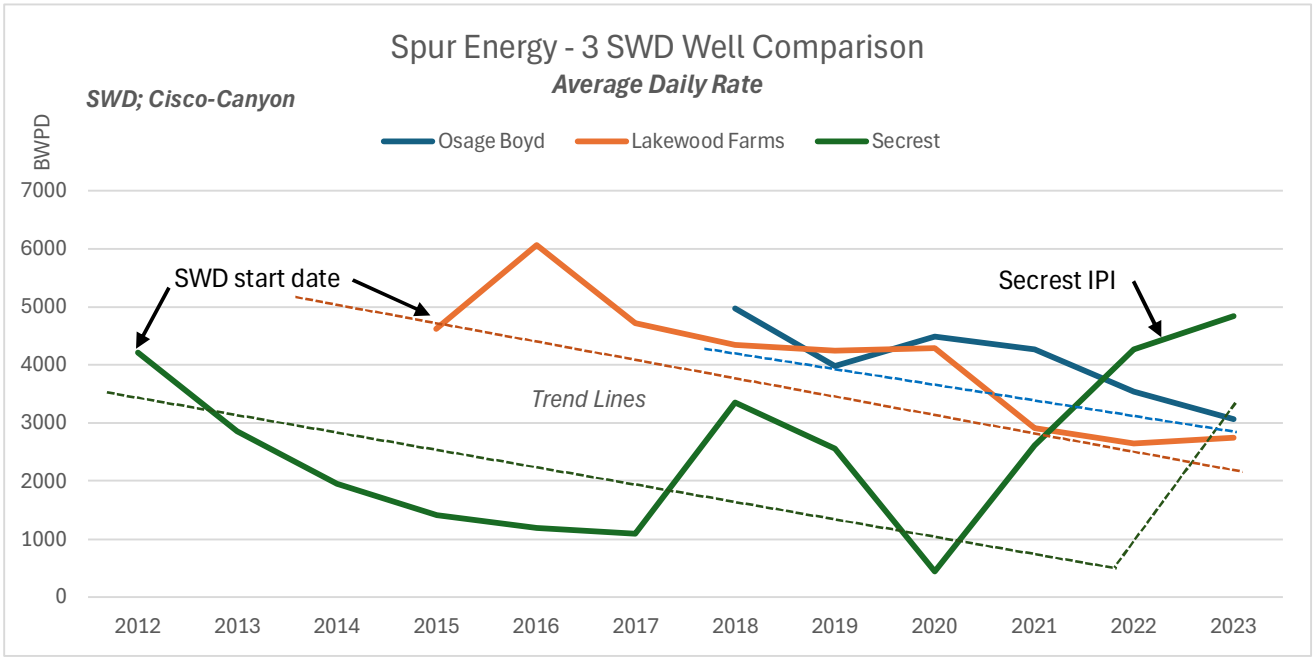
	Injection Rate:			Job Pressures		Job Log Remarks:
Time	Rate:	Bbls in		Tbg psi.	Csg psi	
3:10 PM	1.6	175		1,080	O	RATE/PSI CHECK
3:17 PM	2.4	186		1,155	O	INCREASE RATE
3:27 PM	2.4	210		1,247	O	RATE/PSI CHECK
3:37 PM	2.4	234		1,284	O	RATE/PSI CHECK
3:47 PM	2.4	259		1,333	O	RATE/PSI CHECK
4:02 PM	3.2	296		1,438	O	INCREASE RATE
4:12 PM	3.2	328		1,504	O	RATE/PSI CHECK
4:22 PM	3.2	360		1,533	O	RATE/PSI CHECK
4:32 PM	3.2	392		1,564	O	RATE/PSI CHECK
4:42 PM	3.2	424		1,582	O	RATE/PSI CHECK
4:49 PM	4	442		1,707	O	INCREASE RATE
4:59 PM	4	482		1,763	O	RATE/PSI CHECK
5:09 PM	4	522		1,787	O	RATE/PSI CHECK
5:19 PM	4	562		1,802	O	RATE/PSI CHECK
5:29 PM	4	602		1,822	O	RATE/PSI CHECK
5:34 PM	4	622		1,828	O	RATE/PSI CHECK
5:34 PM	5	672		1,969	O	INCREASE RATE
5:44 PM	5	722		2,001	O	RATE/PSI CHECK
5:54 PM	5	772		2,007	O	RATE/PSI CHECK
6:04 PM	5	822		2,020	O	RATE/PSI CHECK
6:14 PM	5	872		2,053	O	RATE/PSI CHECK
6:19 PM	5	897		2,056	O	RATE/PSI CHECK
6:20 PM	7	900		2,475	O	INCREASE RATE
6:22 PM	7.5	915		2,600	O	INCREASE RATE
6:28 PM	7.5	948		2,495	O	CAUGHT SOME AIR RESUME PUMPING
6:38 PM	7.5	1023		2,505	O	RATE/PSI CHECK
6:48 PM	7.5	1098		2,509	O	RATE/PSI CHECK
6:58 PM	7.5	1173		2,512	O	RATE/PSI CHECK
7:07 PM	O	1239		2,520	O	SHUTDOWN

Thank you for your business, your patronage is greatly appreciated!!!

SERVICE REPRESENTATIVE Signature Please

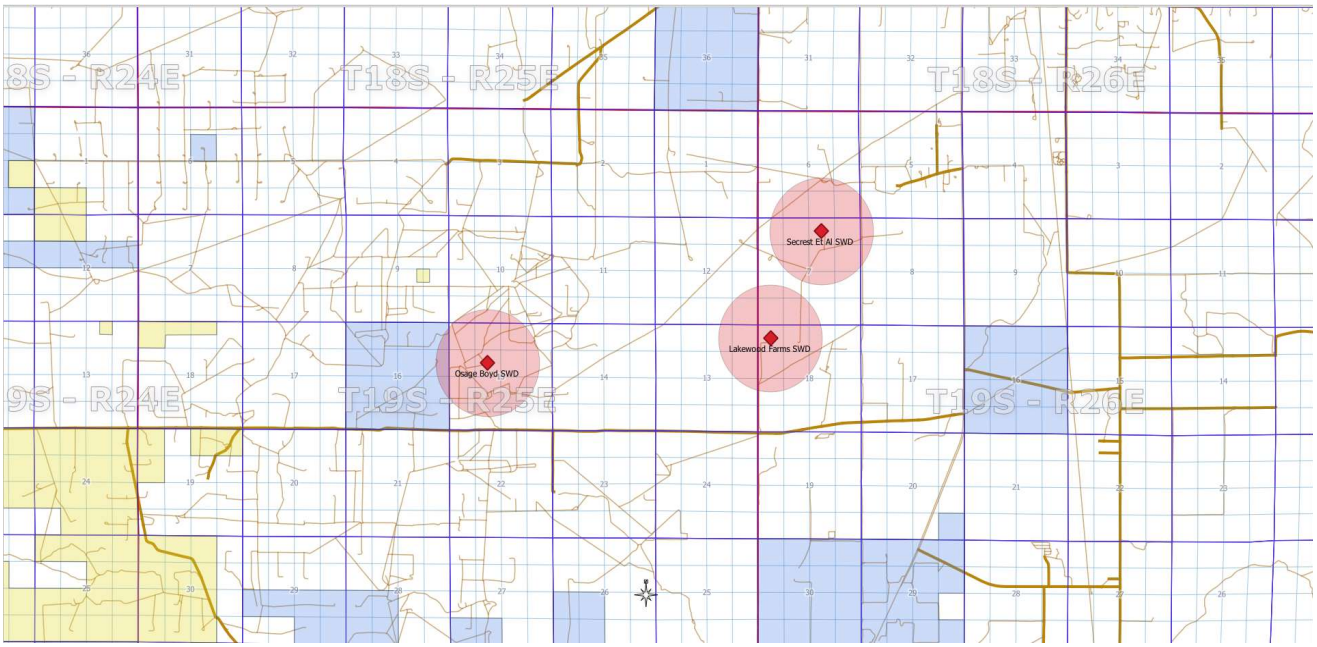
CUSTOMER REPRESENATIVE: Signature Please

X



Note: Trend lines show similar rates of decline of daily injection rates into Cisco-Canyon completions.

Map showing proximity of subject wells.



SOS Consulting, LLC

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

State of New Mexico
Energy, Minerals and Natural Resources

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

Form C-103
Revised July 18, 2013

WELL API NO. 30-015-28992

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: OSAGE BOYD 15 SWD

1. Type of Well: Oil Well ☐ Gas Well ☐ Other SWD

8. Well Number 1

2. Name of Operator: SPUR ENERGY PARTNERS LLC

9. OGRID Number 328947

3. Address of Operator: 9655 KATY FREEWAY, SUITE 500, HOUSTON, TX 77024

10. Pool name or Wildcat: SWD; CISCO-CANYON

4. Well Location
Unit Letter F : 1980 feet from the NORTH line and 1980 feet from the WEST line
Section 15 Township 19S Range 25E NMPM EDDY County

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 3454' GR

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:	☐			OTHER:			☐

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

Spur Energy Partners LLC requests to perform a step rate test to determine if injection pressure can be raised without fracturing the formation.

Please find propsed procedure and all other documentation attached for your use.
Thank you.

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 Sarah Chapman TITLE REGULATORY DIRECTOR DATE 02/22/2023

Type or print name SARAH CHAPMAN E-mail address: SCHAPMAN@SPURENERGY.COM PHONE: 832-930-8613

For State Use Only

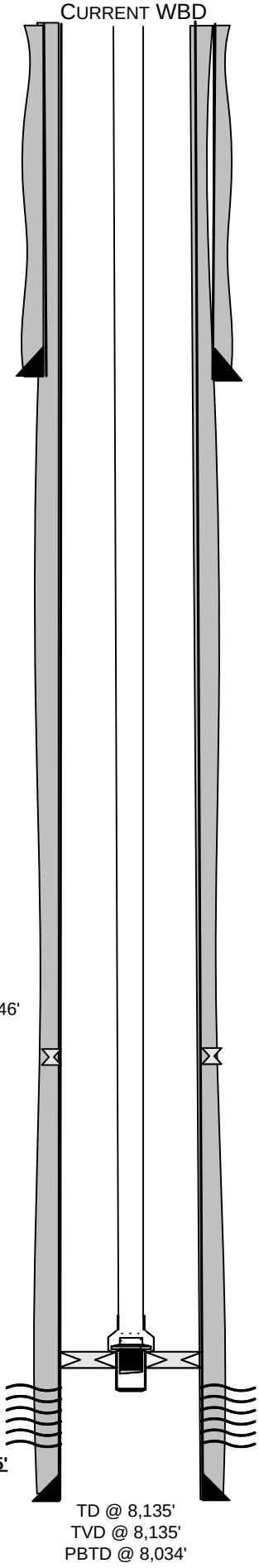
APPROVED BY: _____ TITLE _____ DATE _____
Conditions of Approval (if any):

Osage Boyd 15 SWD #1

Formerly the Osage Boyd 15 Fed #8
Eddy County, NM
API# 30-015-28992

CURRENT WBD

SPUD DATE: 6/15/2000
ELEV: 3454' GL 13' KB



9-5/8" 36# J-55 CSG @ 1,132'
14-¾" HOLE
CMT W/ 1150 SX
CIRC TO SURF

DV TOOL @ 5,946'

TUBING DETAIL
13' KB
3-½" 9.3# IPC TUBING
PACKER @ +/- 7,650'

CISCO/CANYON PERFS (7,682-7,916')
318 HOLES

7" 26/23# N-80/K-55 CSG @ 8,135'
8-¾" HOLE
CMT W/ 1200 SX IN 2 STAGES
CIRC TO SURF

TD @ 8,135'
TVD @ 8,135'
PBTD @ 8,034'

CREATED ON 12/14/2022
UPDATED ON

Osage Boyd 15 1 SWD

Step Rate Test
Hunter Spragg – 817.914.0987
AFE – TBD

NW Shelf
Eddy County, NM

OBJECTIVES

Perform a step rate test on the Osage Boyd SWD to determine if injection pressure can be raised without fracturing the formation. 45-minute steps chosen due to lower permeability. Literature suggests Cisco/Canyon averages 5-10 md.

- Estimated BHP Bomb set date – 4 days before the job
- Estimated Well SI date – 2 days before the job
- Estimated SRT Date - TBD
- Pressure Bomb retrieval date – the day after the job

Well Information	
Surface Location (NAD83)	Latitude: 32.6628227° / Longitude: -104.474762°
Ground Elevation / KB	3,454' / 13'
API Number	30-015-28992
AFE Number	**TBD - $75,000**

Wellbore Details	
TVD / PBTD	TVD: 8,135' / PBTD: 8,034'
Perforations MD'	***7,682' - 7,916'***

Casing & Tubing Details - Current/Planned										
Size	**Depth** *(MD)*	**Weight** *lb/ft*	**Grade**	**ID** *In*	**Drift** *In*	**Thread**	**Burst** *psi*	**Collapse** *psi*	**Yield** *Mlbs*	**Cap** *bbl/ft*
7" *csg*	0' – 8,135'	23/26	K-55	6.366	6.241	?	4,360	3,270	366	0.0394
3.5" IPC *tbg*	0' – 7,650'	9.3	?	2.961	2.9	EUE 8RD	?	?	?	0.0087

PROCEDURE

Spur Energy Partners LLC is committed to providing a safe working environment for all personnel. A safety meeting will be held prior to commencing each operation in order to define/clarify objectives, roles and responsibilities, identify all potential risk/hazards and establish a work procedure that is safe and environmentally sound. Meetings are to be documented on the reports returned to Spur Energy Partners LLC.

PERFORM SAFETY CHECKS AND SAFETY MEETING

1. Perform a safety meeting prior to rigging up **ANY** equipment on location. Discuss the job procedure and objective with all personnel on location. Document the safety meeting on the daily report sent to Spur. Make note of all potential risks/hazards, and clearly identify an emergency route and emergency vehicle. Also make note of any new or inexperienced personnel on location. Ensure proper Personal Protective Equipment (PPE) is used during the job. Minimums are hard hats, steel toes, safety glasses, H_2S monitors, and FR certified clothing as required. Designate a smoking area off location and 100' from any potential hydrocarbons.

Preparation

1. Set 2 - 500 bbl Frac tanks on location and begin filling with produced water from the facility. Do not use fresh water or produced water from any of the other surrounding facilities. Fill completely. Leave hoses attached to water tanks at the facility so water in water tanks can be utilized at the end of the test if needed.

2. Wellhead is shown to be rated to 3k psi. Ensure all wellhead valves have the same or higher rating.

72 hours before SRT

3. Notify OCD representative that SRT is planned to occur in 72 hours.

4. Notify OCD that a MIT will be ran with the pump truck and recorded in the data van on the date of the SRT. Ask if a chart recorder is required, if so, ensure one is on location for the day of the SRT.

5. Ensure well is on a vacuum; MIRU Precision Pressure Data Slickline truck and crane, utilize a pack-off for well control.

6. Run in hole with BHP Bomb and set at 7,650' from surface on top of the packer or XO.

    a) Ensure bomb is rated to 10k psi or greater and can collect 1 million data points and is set to collect data 1 time every second. This will give us 11.5 days of data collection in case we occur any delays.

48 hours before SRT

7. Shut in well and isolate injection line. Ensure 0 injection is able to occur.

Step Rate Test Procedure

8. RU pump and manifold both frac tanks together. Run 1 – 2" injection lines.

    a) RU an injection line and pressure transmitter to the production casing-tubing annulus and pressure up to 500 psi and preform an MIT.

        i. Have the service company save and export this data, call this file "Osage Boyd MIT prior to SRT" and clear the data and prepare for SRT data collection.

    b) Ensure pumps can pump can output 4.5 bpm at 3500 psi.

    c) Max pressure limit for this job is 3000 psi.

    d) Install pressure transmitters on the tubing, not the discharge of the pump, and another transmitter on the production casing.

    e) A turbine meter is to be used to measure injection rate.

    f) Rig injection line up to the tubing.

9. Close bottom master valve and open all other valves and test Iron and wellhead up to master valve to 3700 psi.

10. Open lower master valve and begin step rate test. Follow the below schedule exactly. Do not stop injection. Do not alter schedule unless breakdown is observed. Steps need to be exactly at prescribed rates and for exactly 45 minutes unless:

    a) Breakdown is observed and 2 more steps passed that are not in the schedule.

        i. If this is the case and there is pressure headroom, we will divide the remaining pressure rating of the wellhead by number of remaining steps needed to get to 3 and add 1 – target a starting pressure for those remaining step instead of rate.

            1. I.e. Stage 6 break is observed at 2500 psi and wellhead is rated to 3000 psi. 3000-2500 = 500 psi. 2 more stages needed, add one. 500/3= 166 psi. Stage 7 should be started at 2666 psi and stage 8 started at the end of stage 7 pressure plus 166 psi. Rate is to be held steady through the remainder of the stage. Stage duration is to be the same as the previous stages.

        ii. If there is no more pressure headroom available, hold the rate steady for the amount of time equivalent to running the needed number of extra stages add notes in stage notes.

            1. I.e. if breakdown is observed on stage 6, and the ending pressure of stage 6 is 2950 psi and wellhead is rated to 3000 psi, keep the same rate for the duration of stage 6 for stage 7 and 8.

Step Rate Test - 3k Well Head					
Step	**Time Start (mins)**	**Time End (mins)**	**Rate (BPM)**	**Stage Volume (Bbl)**	**Cumulative Volume (Bbl)**
1	**0**	**45**	**0.25**	**11**	**11.3**
2	**45**	**90**	**0.50**	**23**	**33.8**
3	**90**	**135**	**0.90**	**41**	**74.3**
4	**135**	**180**	**1.80**	**81**	**155.3**
5	**180**	**225**	**2.70**	**122**	**276.8**
6	**225**	**270**	**3.60**	**162**	**438.8**
7	**270**	**315**	**4.50**	**203**	**641.3**

11. RD pump and iron.

12. MIRU Slickline unit and crane if required.

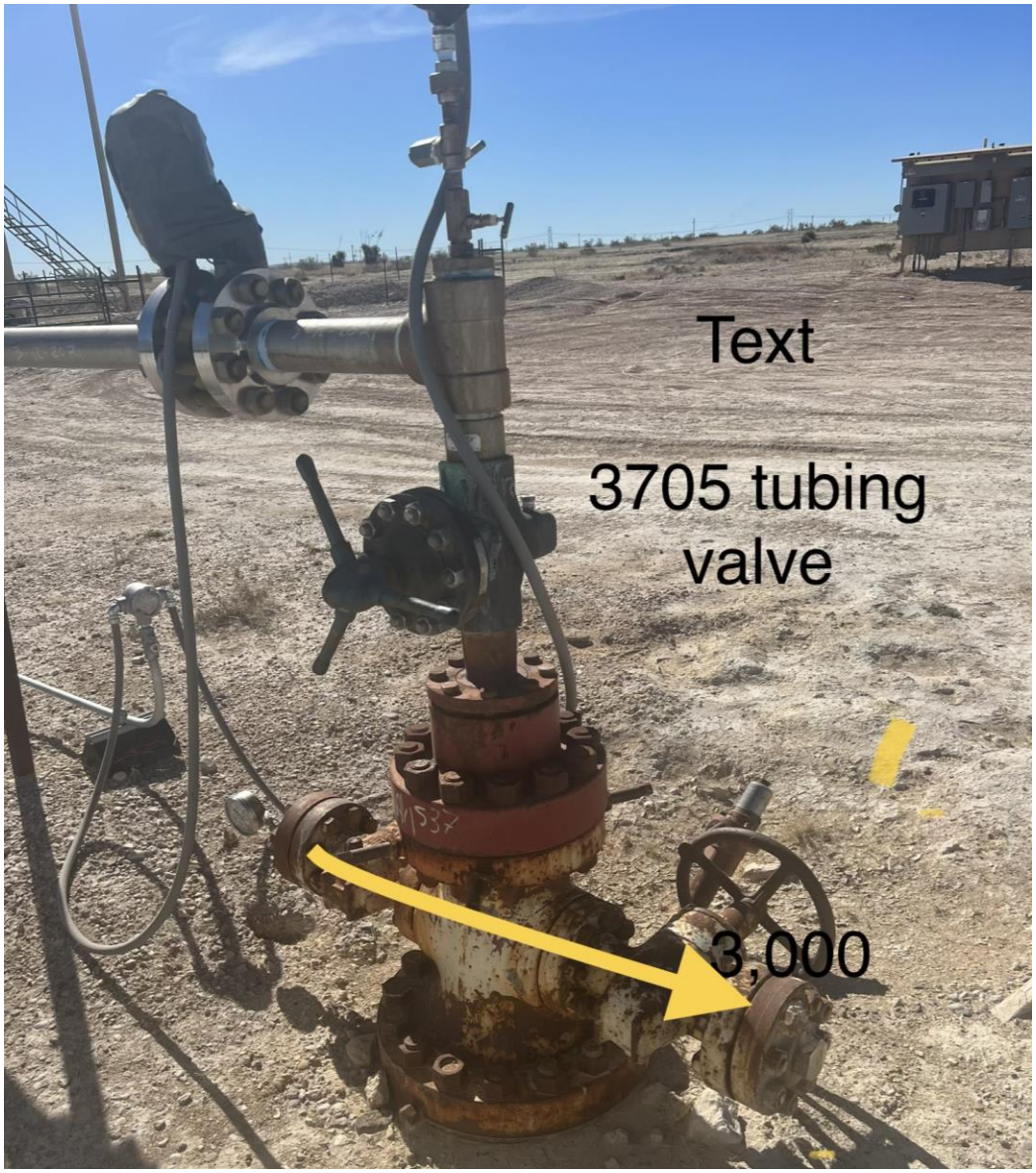
13. RIH to 7,722’ to retrieve the BHP Bomb. Send all data to Engineer.

Appendix

Current Tubing Detail

7,645’ of 3.5” IPC tubing
Packer set ~7,650’

Current Wellhead



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

CONDITIONS

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 189167
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
mgebremichael	The operation pressure envelop for the well is limited by Larkin Head which is rated at 3000 Psi. OCD has determined that the max pressure for the SRT shall not exceed 2700 Psi.	2/23/2023

State of New Mexico
Energy, Minerals and Natural Resources Department

Administrative Order SWD-1717
March 27, 2018

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Pursuant to the provisions of Division Rule 19.15.26.8(B) NMAC, Percussion Petroleum Operating, LLC (the "operator") seeks an administrative order for its Osage Boyd 15 SWD Well No. 1 ("subject well") with a location of 1980 feet from the North line and 1980 feet from the West line, Unit F of Section 15, Township 19 South, Range 25 East, NMPM, Eddy County, New Mexico, for the purpose of produced water disposal.

THE DIVISION DIRECTOR FINDS THAT:

The application has been duly filed under the provisions of Division Rule 19.15.26.8 (B) NMAC and satisfactory information has been provided that affected parties have been notified and no objections have been received within the prescribed waiting period. The applicant has presented satisfactory evidence that all requirements prescribed in Division Rule 19.15.26.8 NMAC have been met and the operator is in compliance with Division Rule 19.15.5.9 NMAC.

IT IS THEREFORE ORDERED THAT:

The applicant, Percussion Petroleum Operating, LLC (OGRID 371755), is hereby authorized to utilize its Osage Boyd 15 SWD Well No. 1 (API 30-015-28992) with a location of 1980 feet from the North line and 1980 feet from the West line, Unit F of Section 15, Township 19 South, Range 25 East, NMPM, Eddy County, for disposal of oil field produced water (UIC Class II only) through perforations into an interval consisting of the Cisco and Canyon formations from 7640 feet to 7916 feet. Injection will occur through internally-coated, 3½-inch or smaller tubing with a packer set within 100 feet of the top perforation of the disposal interval.

Sources of the UIC Class II fluids for disposal in the subject well shall be limited to the production from wells operated by Percussion Petroleum Operating, LLC. Sources of UIC Class II fluids from other operators not operated by Percussion Petroleum Operating, LLC shall not be permitted for disposal in the subject well.

The injection authority granted under this order is not transferable except upon approval of the Division Director. The Director shall only approve a change of operator if the conditions regarding the sources of UIC Class II fluids, identified in the preceding paragraph of this order, are maintained by the new operator. If the new operator does not comply with these conditions, then the injection authority granted under this order shall terminate ipso facto. The Division may

require the operator to demonstrate mechanical integrity of this injection well that will be transferred prior to approving transfer of authority to inject.

The operator shall conduct a swab test of the new perforations for hydrocarbon potential analysis of hydrocarbon content. The Division's District office shall be noticed prior to this test and given the opportunity to witness the swab test. The operator shall supply the Division's District office and Santa Fe Engineering Bureau office a Sundry notice with the results of the swab test prior to commencing injection

IT IS FURTHER ORDERED THAT:

The operator shall take all steps necessary to ensure that the disposed water enters only the approved disposal interval and is not permitted to escape to other formations or onto the surface. This includes the completion and construction of the well as described in the application with the following modifications and, if necessary, as modified by the District Supervisor.

After installing tubing, the casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge or an approved leak detection device in order to determine leakage in the casing, tubing, or packer. The casing shall be pressure tested from the surface to the packer setting depth to assure casing integrity.

The well shall pass an initial mechanical integrity test ("MIT") prior to initially commencing disposal and prior to resuming disposal each time the disposal packer is unseated. All MIT procedures and schedules shall follow the requirements in Division Rule 19.15.26.11A. NMAC. The Division Director retains the right to require at any time wireline verification of completion and packer setting depths in this well.

The wellhead injection pressure on the well shall be limited to **no more than 1528 psi.** The Director of the Division may authorize an increase in tubing pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the disposed fluid from the target formations. Such proper showing shall be demonstrated by sufficient evidence including but not limited to an acceptable Step-Rate Test.

In addition, the disposal well or system shall be equipped with a pressure limiting device in workable condition which shall, at all times, limit surface tubing pressure to the maximum allowable pressure for this well. The operator shall install and maintain a chart recorder showing casing and tubing pressures during disposal operations.

The operator shall notify the supervisor of the Division's District office of the date and time of the installation of disposal equipment and of any MIT so that the same may be inspected and witnessed. The operator shall provide written notice of the date of commencement of disposal to the Division's District office. The operator shall submit monthly reports of the disposal operations on Division Form C-115, in accordance with Division Rules 19.15.26.13 and 19.15.7.24 NMAC.

The operator shall notify the supervisor of the Division's District office of the date and

time of the installation of disposal equipment and of any MIT so that the same may be inspected and witnessed. The operator shall provide written notice of the date of commencement of disposal to the Division's District I office. The operator shall submit monthly reports of the disposal operations on Division Form C-115, in accordance with Division Rules 19.15.26.13 and 19.15.7.24 NMAC.

The disposal authority granted herein shall terminate two (2) years after the effective date of this Order if the operator has not commenced injection operations into the subject well. One year after the last date of reported disposal into this well, the Division shall consider the well abandoned, and the authority to dispose will terminate *ipso facto*. The Division, upon written request mailed by the operator prior to the termination date, may grant an extension thereof for good cause.

Compliance with this Order does not relieve the operator of the obligation to comply with other applicable federal, state or local laws or rules, or to exercise due care for the protection of fresh water, public health and safety and the environment.

Jurisdiction is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh or protectable waters or (2) consistent with the requirements in this order, whereupon the Division may, after notice and hearing, terminate the disposal authority granted herein.

HEATHER RILEY
Director

HR/mam

cc: Oil Conservation Division – Artesia District Office
Well File - 30-015-28992

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

CONDITIONS

Action 321883

CONDITIONS

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 321883
	Action Type: [IM-SD] Admin Order Support Doc (ENG) (IM-AAO)

CONDITIONS

Created By	Condition	Condition Date
mgebremichael	None	3/9/2024