

Santa Fe Main Office  
Phone: (505) 476-3441  
General Information  
Phone: (505) 629-6116

State of New Mexico  
Energy, Minerals and Natural Resources

Online Phone Directory Visit:  
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OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

WELL API NO. 30-025-45459
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name WEST EUMONT UNIT
8. Well Number #527
9. OGRID Number 371416
10. Pool name or Wildcat [22800] EUMONT; Y-7R-Q (OIL)

**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.)

1. Type of Well: Oil Well  Gas Well  Other INJECTION-WATER

2. Name of Operator  
FORTY ACRES ENERGY LLC

3. Address of Operator  
11757 KATY FREEWAY, SUITE 725, HOUSTON, TX 77079

4. Well Location  
Unit Letter K : 2365 feet from the SOUTH line and 2460 feet from the WEST line  
Section 35 Township 20S Range 36E NMPM LEA County

11. Elevation (Show whether DR, RKB, RT, GR, etc.)  
3557' GL

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

<p><b>NOTICE OF INTENTION TO:</b></p> <p>PERFORM REMEDIAL WORK <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/></p> <p>TEMPORARILY ABANDON <input type="checkbox"/> CHANGE PLANS <input type="checkbox"/></p> <p>PULL OR ALTER CASING <input type="checkbox"/> MULTIPLE COMPL <input type="checkbox"/></p> <p>DOWNHOLE COMMINGLE <input type="checkbox"/></p> <p>CLOSED-LOOP SYSTEM <input type="checkbox"/></p> <p>OTHER: <input type="checkbox"/></p>	<p><b>SUBSEQUENT REPORT OF:</b></p> <p>REMEDIAL WORK <input type="checkbox"/> ALTERING CASING <input type="checkbox"/></p> <p>COMMENCE DRILLING OPNS. <input type="checkbox"/> P AND A <input type="checkbox"/></p> <p>CASING/CEMENT JOB <input type="checkbox"/></p> <p>OTHER: <input checked="" type="checkbox"/> <b>STEP RATE TEST</b></p>
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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.

In Reference to:


WFX-1036  
~~IPI 534~~ invalid with tubing size changed to 3-1/2" tubing

MIRU. RU wireline. RIH w/ BHP gauge. Performed Step Rate Test (SRT) with 3.5" tbg on perfs 3715-4060' as follows: 1) Monitor & record surface tbg & csg pressures; 2) Start injection @ 0.2 BPM, hold for 20 minutes, step up in 0.1 BPM increments until 0.5 BPM, holding each for 20 minutes, then step to 0.7, 1.0, 1.2 & 1.5 BPM, holding each for 20 minutes, then step up in 0.5 BPM increments to 6.5 BPM, holding each for 20 minutes; 3) Stop pumping & shut-in well after holding last rate for 20 minutes. Continue to monitor & record surface tbg & csg pressures until pressure levels out (approx. 15-30 minutes after shut-in). Record ISIP. After SRT is complete, POOH w/ BHP gauge. Return to injection.

SRT data and analysis attached. **FAE requests an IPI granting the WEU 527 a MSIP of 1,371 psi with 3-1/2" L-80 IPC tubing.**

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  TITLE SR RESERVOIR ENGINEER DATE 28 APR 2026

Type or print name VANESSA NEAL E-mail address: vanessa@faenergyus.com PHONE: 832-219-0990  
**For State Use Only**

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

## STEP RATE TEST ANALYSIS

**Well Name** WEST EUMONT UNIT #527  
**API** 30-025-45459  
**SRT Date** 4/23/2026

	Injection Rate		Surface Pressure		Bottomhole Pressure	
Minimum	0.20	BPM	1,165	PSI	2,804	PSI
Maximum	6.50	BPM	1,953	PSI	3,321	PSI

### Inflection Point Seen

Corresponding Readings @ Inflection	WEU 527 - IPI Request				
Surface Pressure	1,523	psi	MSIP	1,371	PSI
Bottomhole Pressure	3,210	psi	Perf Range	3,715 - 4,060	FT
Injection Rate	1.5	BPM	Tubing Size	3-1/2" L-80 IPC	

### Observations

This step rate test (SRT) was performed on WEST EUMONT UNIT #527 on Apr 23, 2026. The injector has active perforations from 3715' to 4060' which fall within the QUEEN formation of the EUMONT pool, part of the approved injection interval per WFX-1036. A recent workover on the WEU 527 upsized the tubing from 2-7/8" J-55 IPC tubing to 3-1/2" L-80 IPC tubing. The purpose of this SRT is to determine the maximum surface injection pressure (MSIP) at which WEU 527 can inject without fracturing the reservoir and request an injection pressure increase (IPI) for this MSIP and larger tubing size.

Please find the following attached to this report:

- 1) Summary Table of SRT results with calculated hydrostatic and friction pressures and gradients;
- 2) Time Plot of WEU 527 SRT showing surface pressure (SP), bottomhole pressure (BHP), injection rate, and cumulative injection volume over time;
- 3) Pressure vs Injection Rate graph showing conventional SRT analysis;
- 4) Cumulative Derivative Method Table with derivative calculations for 'new' mathematical technique for SRT analysis that overcomes uncertainty of conventional analysis;
- 5) Cumulative Derivative Rate vs BHP graph showing distinct features of increased injectivity; and,
- 6) WEU 527 current wellbore schematic, at time of SRT.

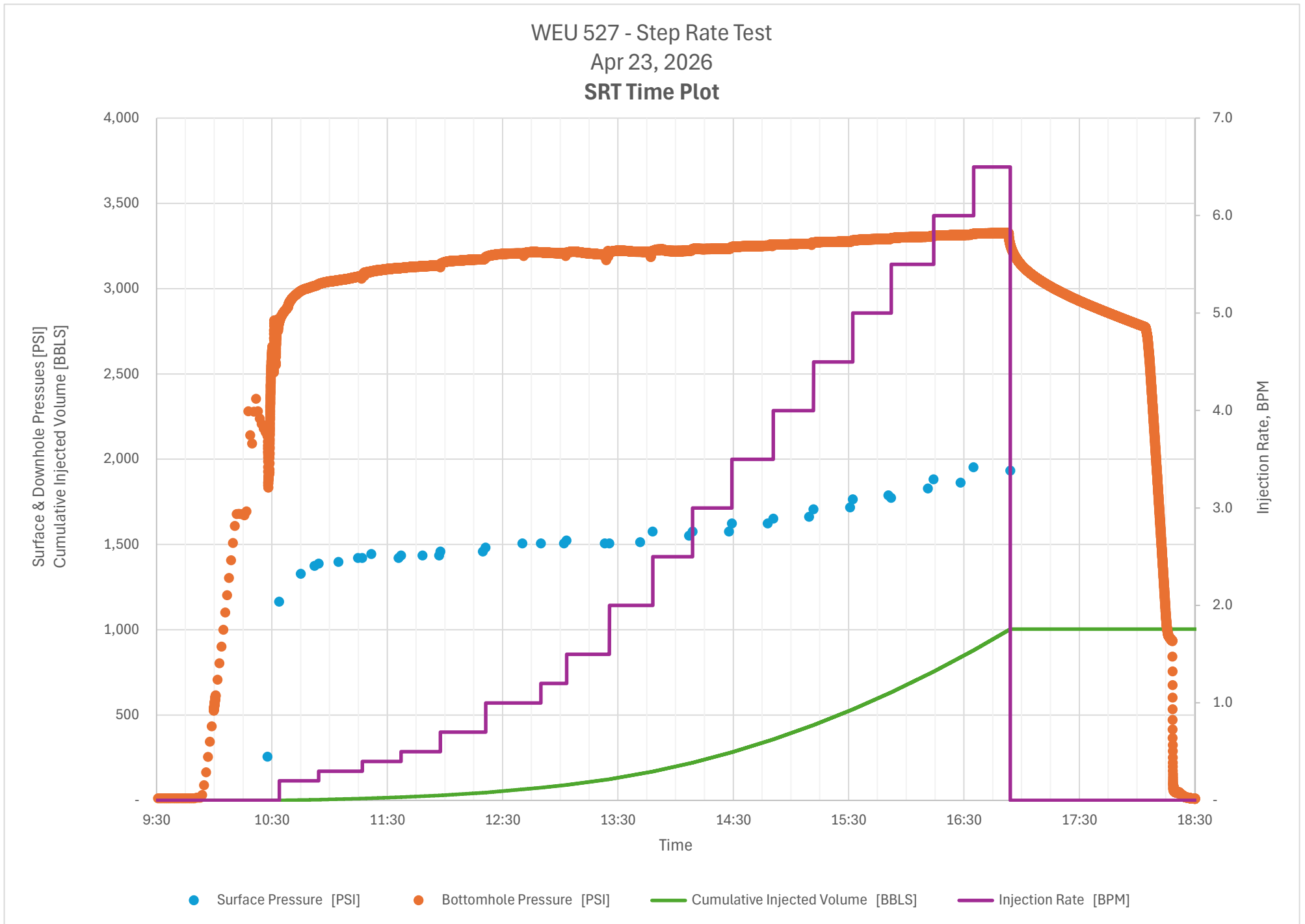
The SRT was performed at injection rates ranging from 0.2 to 6.5 BPM, each rate held at 20 minute intervals. Corresponding surface and bottomhole pressures at these rates can be seen in the call outs above and on the Summary Table. When using conventional methods to evaluate the Pressure vs Injection Rate graph, there is a high degree of uncertainty on the inflection point. It could occur anywhere within the bottomhole pressure range of 3,147 to 3,213 psi.

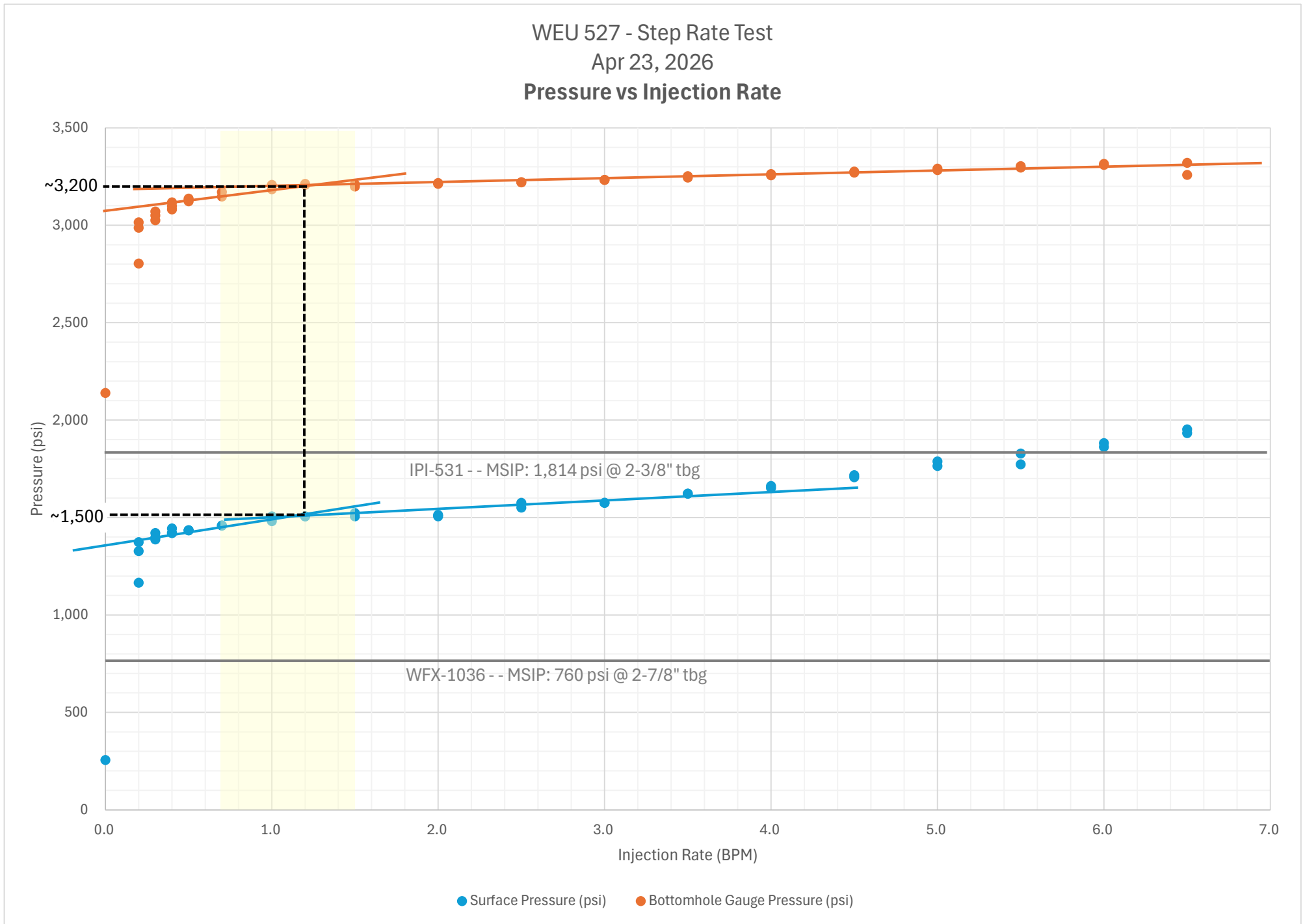
A new mathematical technique was published in October 2023 presenting the use of cumulative derivatives to recognize the opening and closing of fractures when cumulative growth of the rate of injectivity shows a change. The calculations demonstrated in this publication can be found on the Cumulative Derivative Method Table. When plotting the cumulative derivative of injection rate with respect to bottomhole injection pressure vs BHP the first distinct feature of increased injectivity is clearly shown at a unique pressure. This graph indicates the fracture opens (inflection point) at a BHP of 3,210 psi with a corresponding SP of 1,523 psi.

**Per the results of this SRT, FAE requests an IPI granting the WEU 527 a MSIP of 1,371 psi with 3-1/2" L-80 IPC tubing.**

SRT Summary Table

Injection Rate (BPM)	Surface Pressure (psi)	Bottomhole Gauge Pressure (psi)	Bottomhole Gauge Depth (ft)	Hydrostatic Pressure Gradient (psi/ft)	Total Hydrostatic Pressure @ BH Gauge Depth (psi)	Total Friction Pressure Loss in Tubing (psi)	Friction Pressure Gradient (psi/1000 ft)	Comments
0.0	256	2,139	3,630	0.5188	1,883	0	0	START - - STEP RATE TEST - - OPEN PSI
0.2	1,165	2,804	3,630	0.5188	1,883	244	67	0.2 BPM 20 MIN 4 BBLS
0.2	1,328	2,987	3,630	0.5188	1,883	225	62	RATE & PSI CHECK
0.2	1,374	3,015	3,630	0.5188	1,883	242	67	RATE & PSI CHECK
0.3	1,388	3,026	3,630	0.5188	1,883	246	68	0.3 BPM 20 MIN 6 BBLS
0.3	1,398	3,050	3,630	0.5188	1,883	231	64	RATE & PSI CHECK
0.3	1,421	3,070	3,630	0.5188	1,883	234	64	RATE & PSI CHECK
0.4	1,421	3,081	3,630	0.5188	1,883	223	62	0.4 BPM 20 MIN 8 BBLS
0.4	1,444	3,098	3,630	0.5188	1,883	229	63	RATE & PSI CHECK
0.4	1,421	3,118	3,630	0.5188	1,883	187	51	RATE & PSI CHECK
0.5	1,435	3,123	3,630	0.5188	1,883	196	54	0.5 BPM 20 MIN 10 BBLS
0.5	1,435	3,131	3,630	0.5188	1,883	188	52	RATE & PSI CHECK
0.5	1,435	3,137	3,630	0.5188	1,883	182	50	RATE & PSI CHECK
0.7	1,459	3,147	3,630	0.5188	1,883	195	54	0.7 BPM 20 MIN 15 BBLS
0.7	1,459	3,171	3,630	0.5188	1,883	171	47	RATE & PSI CHECK
1.0	1,482	3,185	3,630	0.5188	1,883	180	50	1.0 BPM 20 MIN 20 BBLS
1.0	1,506	3,207	3,630	0.5188	1,883	182	50	RATE & PSI CHECK
1.2	1,506	3,213	3,630	0.5188	1,883	176	49	1.2 BPM 20 MIN 30 BBLS
1.2	1,506	3,208	3,630	0.5188	1,883	182	50	RATE & PSI CHECK
1.5	1,523	3,210	3,630	0.5188	1,883	196	54	1.5 BPM 20 MIN 30 BBLS
1.5	1,506	3,199	3,630	0.5188	1,883	191	52	RATE & PSI CHECK
2.0	1,506	3,213	3,630	0.5188	1,883	176	49	2.0 BPM 20 MIN 40 BBLS
2.0	1,514	3,217	3,630	0.5188	1,883	180	50	RATE & PSI CHECK
2.5	1,576	3,220	3,630	0.5188	1,883	239	66	2.5 BPM 20 MIN 50 BBLS
2.5	1,551	3,221	3,630	0.5188	1,883	213	59	RATE & PSI CHECK
3.0	1,576	3,233	3,630	0.5188	1,883	226	62	3.0 BPM 20 MIN 60 BBLS
3.0	1,576	3,233	3,630	0.5188	1,883	226	62	RATE & PSI CHECK
3.5	1,623	3,244	3,630	0.5188	1,883	262	72	3.5 BPM 20 MIN 70 BBLS
3.5	1,623	3,252	3,630	0.5188	1,883	254	70	RATE & PSI CHECK
4.0	1,651	3,256	3,630	0.5188	1,883	278	77	4.0 BPM 20 MIN 80 BBLS
4.0	1,662	3,263	3,630	0.5188	1,883	282	78	RATE & PSI CHECK
4.5	1,707	3,270	3,630	0.5188	1,883	320	88	4.5 BPM 20 MIN 90 BBLS
4.5	1,717	3,276	3,630	0.5188	1,883	325	89	RATE & PSI CHECK
5.0	1,765	3,283	3,630	0.5188	1,883	366	101	5.0 BPM 20 MIN 100 BBLS
5.0	1,788	3,291	3,630	0.5188	1,883	380	105	RATE & PSI CHECK
5.5	1,773	3,296	3,630	0.5188	1,883	361	99	5.5 BPM 20 MIN 110 BBLS
5.5	1,829	3,303	3,630	0.5188	1,883	409	113	RATE & PSI CHECK
6.0	1,882	3,310	3,630	0.5188	1,883	455	125	6.0 BPM 20 MIN 120 BBLS
6.0	1,863	3,315	3,630	0.5188	1,883	432	119	RATE & PSI CHECK
6.5	1,953	3,321	3,630	0.5188	1,883	516	142	6.5 BPM 20 MIN 130 BBLS
6.5	1,933	3,259	3,630	0.5188	1,883	558	154	SHUTDOWN





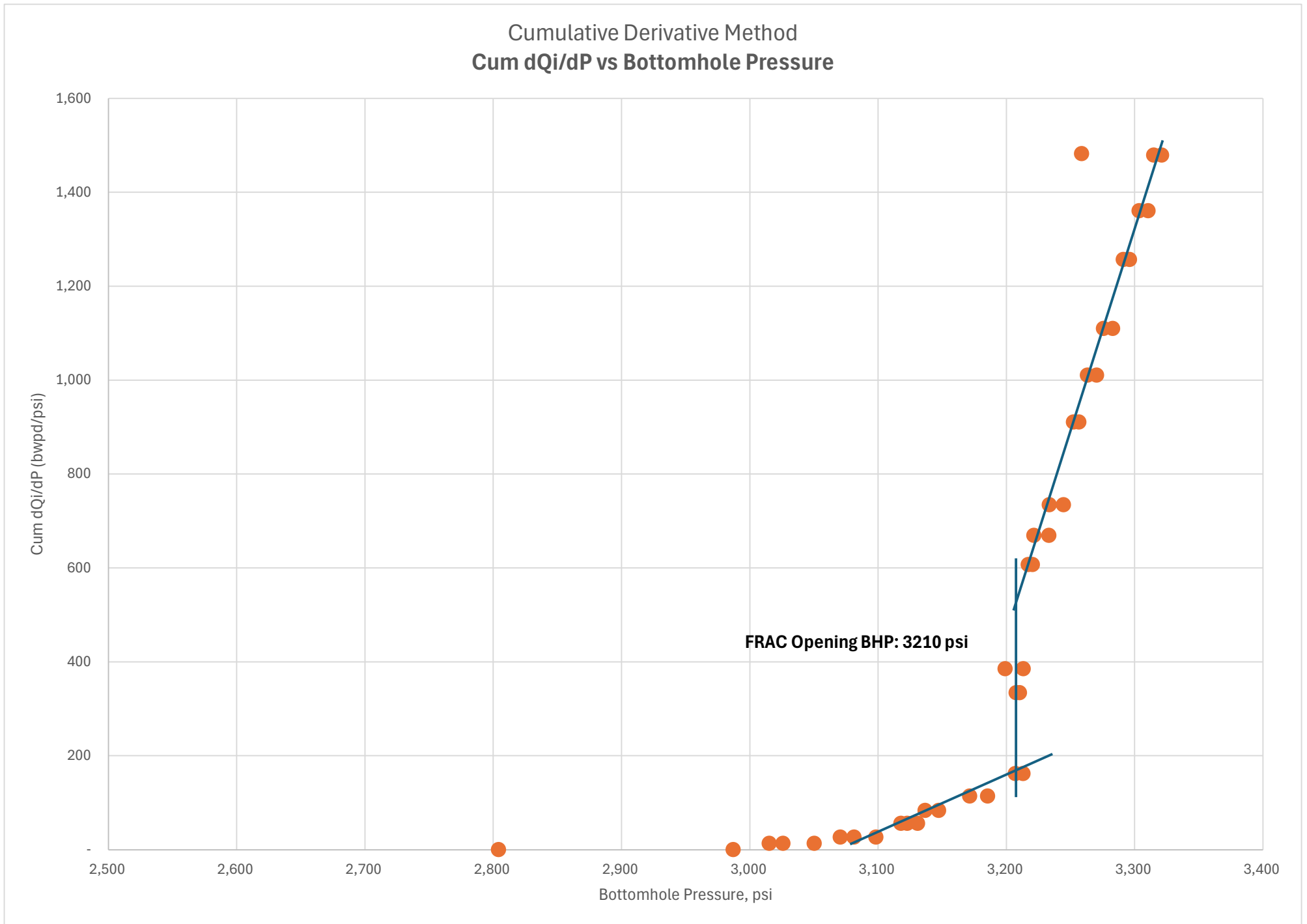
**Cumulative Derivative Method Table**

Injection Rate (BPM)	Injection Rate (BWIPD)	Bottomhole Gauge Pressure (psi)	dQi/dP BHP Derivative (bwpd/psi)	Cum dQi/dP BHP Cumulative Derivative Method (bwpd/psi)	Surface Pressure (psi)	dQi/dP SP Derivative (bwpd/psi)	Cum dQi/dP SP Cumulative Derivative Method (bwpd/psi)
0.0	0	2,139	0.43	0.43	256	0.32	0.32
0.2	288	2,804		0.43	1,165		0.32
0.2	288	2,987		0.43	1,328		0.32
0.2	288	3,015	13.33	13.77	1,374	10.29	10.60
0.3	432	3,026		13.77	1,388		10.60
0.3	432	3,050		13.77	1,398	6.26	16.86
0.3	432	3,070	13.46	27.22			16.86
0.4	576	3,081		27.22	1,421		16.86
0.4	576	3,098		27.22	1,444		16.86
0.4	576	3,118	29.15	56.37	1,421	10.29	27.15
0.5	720	3,123		56.37			27.15
0.5	720	3,131		56.37			27.15
0.5	720	3,137	27.43	83.80	1,435	12.00	39.15
0.7	1,008	3,147		83.80			39.15
0.7	1,008	3,171	30.84	114.64	1,459	18.78	57.93
1.0	1,440	3,185		114.64	1,482	12.00	69.93
1.0	1,440	3,207	47.92	162.56			69.93
1.2	1,728	3,213		162.56			69.93
1.2	1,728	3,208	172.11	334.67	1,506	25.41	95.34
1.5	2,160	3,210		334.67	1,523	(42.35)	52.99
1.5	2,160	3,199	50.81	385.48			52.99
2.0	2,880	3,213		385.48	1,506		52.99
2.0	2,880	3,217	222.22	607.70	1,514	11.61	64.60
2.5	3,600	3,220		607.70	1,576		64.60
2.5	3,600	3,221	61.96	669.67	1,551	28.80	93.40
3.0	4,320	3,233		669.67			93.40
3.0	4,320	3,233	65.45	735.12	1,576	15.32	108.72
3.5	5,040	3,244		735.12			108.72
3.5	5,040	3,252	176.04	911.16	1,623	25.71	134.44
4.0	5,760	3,256		911.16	1,651		134.44
4.0	5,760	3,263	99.72	1,010.88	1,662	16.00	150.44
4.5	6,480	3,270		1,010.88	1,707		150.44
4.5	6,480	3,276	99.45	1,110.33	1,717	15.00	165.44
5.0	7,200	3,283		1,110.33	1,765		165.44
5.0	7,200	3,291	146.94	1,257.27	1,788	(48.00)	117.44
5.5	7,920	3,296		1,257.27	1,773		117.44
5.5	7,920	3,303	103.60	1,360.87	1,829	13.58	131.02
6.0	8,640	3,310		1,360.87	1,882		131.02
6.0	8,640	3,315	118.81	1,479.68	1,863	8.00	139.02
6.5	9,360	3,321		1,479.68	1,953		139.02
6.5	9,360	3,259	2.87	1,482.55	1,933	4.84	143.86

Article | October 6, 2023

[New Mathematical Technique for Step Rate Test Analysis Aids Determination of Fracture Pressure and Overcomes the Uncertainty of Conventional Analysis | ACS Omega](#)

by Dipak Mandal\*Khaled A. ElraiesShiferaw Jufar

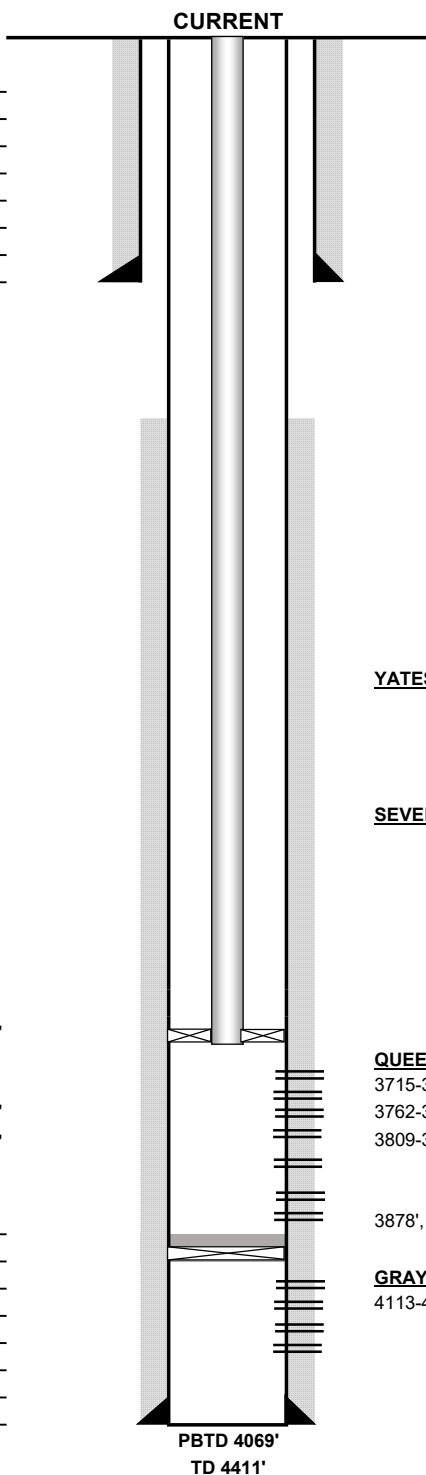


Well Name: WEST EUMONT UNIT #527 API: 30-025-45459 Lease Type: PRIVATE  
 Location: 2365' FSL & 2460' FWL T-R-Sec-Spot-Lot: 20S-36E-35K Lease No: \_\_\_\_\_  
 Formation(s): [22800] EUMONT; YATES-7 RVRS-QUEEN (OIL) County/State: Lea, NM

Surface Csg  
 Size: 8-5/8"  
 Wt.&Thrd: 24# ST&C  
 Grade: J-55 8rd  
 Set @: 1425'  
 Sxs cmt: 710 sxs  
 Circ: 96 bbls  
 TOC: Surface  
 Hole Size: 12-1/4"

KB: 3564'  
 DF: 3563'  
 GL: 3557'  
 Spud Date: 3/6/2019  
 Compl. Date: 4/29/2019

**History - Highlights**  
**2019-03:** D&C Well. Test GRAYBURG. RC to EUMONT  
**2019-06:** Start Injection  
**2024-03:** Clean out to 4065'. Set dual pkr to isolate perms 3715-3755'. Acidize 3762-3818' w/ 2500 gals acid  
**2024-08:** Reset dual pkr to isolate perms 3715-3798'.  
**2026-04:** Fill @ 4042'. Clean out iron sulfide scale to PBTD @ 4069'; Add perms 3878-4060' to Lwr QUEEN; Run 3-1/2" tbg & perform SRT



YATES (Top @ 2936')

SEVEN RIVERS (Top @ 3264')

ASIX Pkr 3658'  
 Top of Cmt 4069'  
 CIPB 4075'

QUEEN (Top @ 3698')

3715-3719', 3722-3737', 3740-3746', 3748-3755' (4 SPF) - Jun 2019  
 3762-3764', 3777-3780', 3782-3790', 3794-3798' (4 SPF) - Jun 2019  
 3809-3818' (4 SPF) - Jun 2019  
 Acidized 3715-3818' w/ 3000 gals 15% NEFE HCL acid w/ 300 bio balls, flush w/ 18 bbls 2% KCL wtr; Acidized 3762-3818' w/ 2500 gal acid to blend & displace w/ 30 bbl wtr.  
 3878', 3898', 3940-3943', 3983', 4019', 4026', 4034', 4045', 4057', 4060' (4 SPF) - Apr 2026

GRAYBURG (Top @ 4075')

4113-4119', 4134-4140', 4193-4197', 4236-4262' (2 SPF) - Apr 2019 [ISOLATED]

Production Csg  
 Size: 5-1/2"  
 Wt.&Thrd: 15.5#  
 Grade: J-55 8rd  
 Set @: 4411'  
 Sxs Cmt: 330 sxs  
 Circ: \_\_\_\_\_  
 TOC: \_\_\_\_\_  
 Hole Size: 7-7/8"

Notes	# of JTS	LENGTH	DEPTH	DESCRIPTION/GRADE
	114		3653'	3 1/2" IPC L80 TBG
	1	5	3658'	5 1/2" AS1-X PACKER

Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

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

CONDITIONS

Action 579997

**CONDITIONS**

Operator: FORTY ACRES ENERGY, LLC 11757 KATY FWY HOUSTON, TX 77079173	OGRID: 371416
	Action Number: 579997
	Action Type: [C-103Z] Sub. General Sundry (C-103Z)

**CONDITIONS**

Created By	Condition	Condition Date
anthony.harris	For offset wells where tubing upsize is planned without a Step Rate Test, please submit an analysis with each IPI request to justify the requested Maximum surface injection pressure (MSIP). This should include a narrative on whether equivalent Geological, rock mechanical, and reservoir properties exist across all wells together with an analysis of the anticipated bottomhole fracture pressure, and the equivalent surface pressure based upon friction parameters determined from the WEU 527 SRT.	4/30/2026