OCD-HOBBS

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

5. Lease Serial No.
NMNM27508

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well
☐ Oil Well ☐ Gas Well ☒ Other: INJECTION

8. Well Name and No.
WILDER 29 FEDERAL SWD 1

2. Name of Operator
CONOCOPHILLIPS COMPANY
Contact: ASHLEY BERGEN
E-Mail: ashley.bergen@conocophillips.com

9. API Well No.
30-025-40500-00-S1

3a. Address
MIDLAND, TX 79710

3b. Phone No. (include area code)
Ph: 432-688-6938

10. Field and Pool, or Exploratory
SWD

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 29 T26S R32E SENW 2010FNL 2560FWL

11. County or Parish, and State
LEA COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☒ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☒ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

ConocoPhillips completed the step rate test and attached are the results.

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #339924 verified by the BLM Well Information System
For CONOCOPHILLIPS COMPANY, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 06/14/2016 (16PP0754SE)

Name *(Printed/Typed)* ASHLEY BERGEN — Title REGULATORY SPECIALIST

Signature (Electronic Submission) — Date 05/23/2016

ACCEPTED FOR RECORD

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By _____ Title _____ Date JUN 28 2015

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. Office

BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Accepted for Record Only

STEP RATE TEST DATA FOR BLM

OPERATOR: CONOCOPHILLIPS WELL: WILDER FEDERAL SWD 1

DATA COLLECTION DATE: 07/23/15 API#: 3002540500 LEASE: NM27508

Sfc Loc: T26S-R32E, SEC 29, 2010FNL&2560FWL

TBG O.D.: 3-1/2" TBG WT: 9.3 Grade: L-80 Coupling: 8 rd EUE Packer at: 5159'

Top injection Depth: 5204FT X .2 PSIG/F=EXPECTED SURFACE FRACTURE: 1040psi

WITH MUD WT SCALE: 9.09 lbl/gal Msrd NO FLOW FORMATION PSIG: 3112 @5204'

Injection Fluid lbs/gal: 9.09 Hydrostatic press of fluid at top of depth of injection 3212 psi

Beginning well head press: 600 Target max rate bbl/d: 11,000

1. Take a charted recorder of shut-in pressure for no less than 48 hrs. If the shut-in pressure is above the expected fracture pressure, the well head pressure will need to be bled off before beginning the step rate test.
2. Perform a minimum of 7 steps, recording rate to ±0.1 bpm and surface pressure to ±10 psig in five minute intervals. The first two step rate pressures must be below .2 psig/ft x depth at top of injection.
3. The last two 5 minute surface pressure readings of each (minimum 30 minute) steps are to be within 15 psig of each other. If not, hold that step injection rate past the 30 minute step until two consecutive pressure readings are within 15 psig. Record the average of those two readings as the data point for that step.

Wilder Federal 29-1 SWD Step Rate Test Summary

The Wilder test was completed on July 23, 2015. The well was shut-in Monday, the 20th and a chart recorder was connected to the well at 13:15. Chart recorder was removed 47 hours and 18 minutes later. The chart recorder was a two day recorder and a one day chart was used. The test was scheduled for Wednesday morning but due to equipment availability was moved to Thursday morning. Service equipment was hooked up and gauge was run in hole and landed at the top of perf, 5204ft. With no flow a BHP gauge reading of 3112 psi and a surface pressure of 600 psi was recorded. The targeted max injection rate was estimated at 11,000 b/d. An anticipated bottom hole fracture pressure was 3642 psi. The injection test started at 15:07 with a rate of 5% of max flow, 550 b/d rate. Every five minutes the surface and BHP pressure was recorded. See data sheet for results. Each step took 30 minutes as per BLM conditions. Between each step, rate was stabilized in less than one minute. At the 30 minute mark of step five the surface pressure went down 2 psi and I continued at the same rate for another 5 minutes. At that time the pressure went back up so I continued to step six. Rate was stable at 80% of max rate. The surface pressure slowly decreased by 2 or 3 psi so I continued until the pressure decreased by a total of 19 psi through the step. I ended the test at that time due to the pressure decline on the surface. The BHP gauge still had a slight increase but never went down. The pump was shut down and instantaneous pressure readings were taken. The line to the pump could not be shut in because the pressure transmitter was upstream of valve and the surface reading of the well would be blocked in. 5, 10 and 15 minute shut-in pressures were recorded. Test complete.

The test was ended before the max injection rate was achieved due to the fact the surface pressure showed signs of decreasing pressure at 1705 psi. Although the formation pressure stayed relatively steady, it never showed signs of breakdown.

Wilder Step Rate Test

Step 1

TARGET TEST RATE TARGET TEST RATE (5% OF 11,000b/d)= 0.38 bpm

START TIME:	3:06
END TIME:	3:36

TIME	5 MIN	10 MIN	15 MIN	20 MIN	25 MIN	30 MIN	35 MIN	40 MIN	45 MIN	50 MIN	55 MIN	60 MIN
SURFACE PRESSURE PSI	595	617	648	668	679	687						
Formation Pressure PSI	3144	3159	3169	3176	3179	3182						

Step 2

TARGET TEST RATE TARGET TEST RATE (10% of 11,000 b/d= 0.76 bpm

START TIME:	3:36
END TIME:	4:06

TIME	5 MIN	10 MIN	15 MIN	20 MIN	25 MIN	30 MIN	35 MIN	40 MIN	45 MIN	50 MIN	55 MIN	60 MIN
SURFACE PRESSURE PSI	700	710	711	716	716	717						
Formation Pressure PSI	3188	3192	3195	3197	3199	3200						

Step 3

TARGET TEST RATE TARGET TEST RATE (20%11,000 b/d)= 1.53 bpm

START TIME:	4:06
END TIME:	4:36

TIME	5 MIN	10 MIN	15 MIN	20 MIN	25 MIN	30 MIN	35 MIN	40 MIN	45 MIN	50 MIN	55 MIN	60 MIN
SURFACE PRESSURE PSI	776	780	782	785	786	787						
Formation Pressure PSI	3215	3220	3223	3226	3228	3230						

Step 4

TARGET TEST RATE TARGET TEST RATE (40%OF 11,000b/d)= 3.1 bpm

START TIME:	4:36
END TIME:	5:06

TIME	5 MIN	10 MIN	15 MIN	20 MIN	25 MIN	30 MIN	35 MIN	40 MIN	45 MIN	50 MIN	55 MIN	60 MIN
SURFACE PRESSURE PSI	1009	1016	1022	1022	1022	1025						
Formation Pressure PSI	3255	3262	3266	3270	3271	3273						

Step 5

TARGET TEST RATE TARGET TEST RATE (60%OF 11,000b/d)= 4.58 bpm

START TIME:	5:06
END TIME:	5:41

TIME	5 MIN	10 MIN	15 MIN	20 MIN	25 MIN	30 MIN	35 MIN	40 MIN	45 MIN	50 MIN	55 MIN	60 MIN
SURFACE PRESSURE PSI	1318	1329	1339	1343	1345	1343	1345.5					
Formation Pressure PSI	3287	3292	3293	3294	3296	3296	3297					

Step 6

TARGET TEST RATE TARGET TEST RATE (80%OF 11,000b/d)= 6.1 bpm

START TIME:	5:41	
END TIME:	6:11	**STOPPED TEST**

TIME	5 MIN	10 MIN	15 MIN	20 MIN	25 MIN	30 MIN	35 MIN	40 MIN	45 MIN	50 MIN	55 MIN	60 MIN
SURFACE PRESSURE PSI	1705	1703	1700	1695	1688	1687						
Formation Pressure PSI	3307	3309	3310	3311	3312	3312						

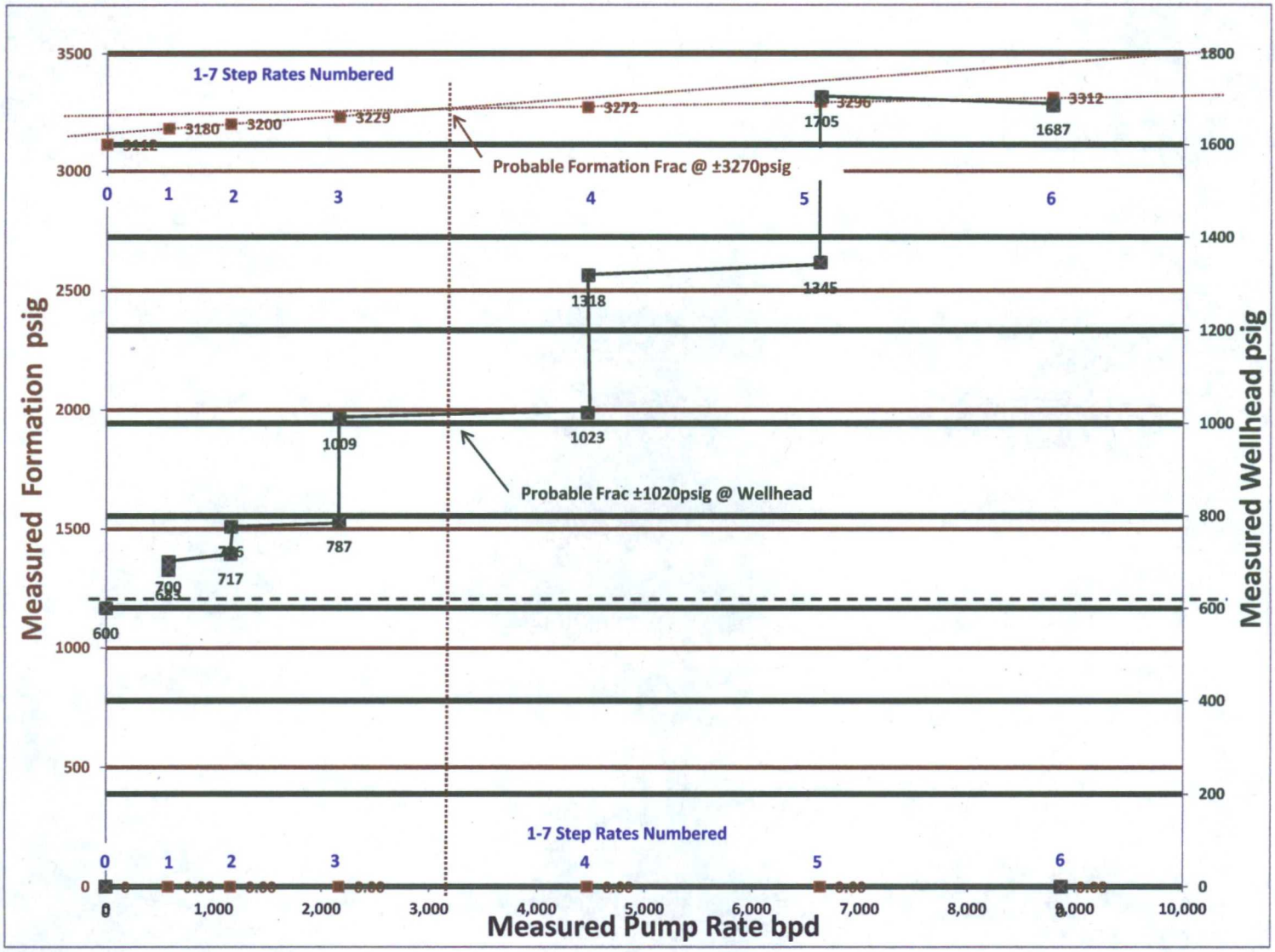
Step 7

TARGET TEST RATE TARGET TEST RATE (100%OF 11,000b/d)= 7.6 bpm

START TIME:		**Did not do step**
END TIME:		

TIME	5 MIN	10 MIN	15 MIN	20 MIN	25 MIN	30 MIN	35 MIN	40 MIN	45 MIN	50 MIN	55 MIN	60 MIN
SURFACE PRESSURE PSI												
Formation Pressure PSI												

Time: 6:11	Surface	Formation	
INSTANT SHUT-IN:	810	3292	PSI
5 MINUTE SHUT-IN:	781	3267	PSI
10 MINUTE SHUT-IN:	765	3252	PSI
15 MINUTE SHUT-IN:	757	3245	PSI



Data collected:	7/23/15
Operator:	ConocoPhillips Company
Well:	WILDER 29 FEDERAL SWD-1
Sfc Loc:	T26S-R32E,29.2010n2560w
API#:	3002540500
Lease:	NM27508
Order:	SWD-1303a, 10/05/2012
Frmtn:	Cherry Canyon, 5204-5920, 104
Pkr @:	5159
Top Inj:	5204
Btm Inj:	5920

	Pmp bpm	Pmp bpd	@Top Inj psig	Wellhead psig
Beg (w/static psig)	0.0	0	3112	600
End Step 1	0.4	576	3180	683
Beg Step 2, Sfc	0.4	577	XXXX	700
End Step 2	0.8	1152	3200	717
Beg Step 3, Sfc	0.8	1153	XXXX	776
End Step 3	1.5	2160	3229	787
Beg Step 4, Sfc	1.5	2162	XXXX	1009
End Step 4	3.1	4464	3272	1023
Beg Step 5, Sfc	3.1	4468	XXXX	1318
End Step 5	4.6	6624	3296	1345
Beg Step 6, Sfc	4.6	6631	XXXX	1705
End Step 6	6.1	8784	3312	1687
Beg Step 7, Sfc	6.2	8872	XXXX	0
End Step 7	0.0	0	0	0

Calculated Disposal Fluid Wt. - lbs/gal:	9.3
Instant Shut In Pressure at Surface - psig:	810
I S I P at Formation - psig:	3292
From Chart - Surface psig @ Fracture:	1022
Current Permitted WH pressure:	1041
Frac psig - 50psig = Maximum WH psig:	972
Well's formation fracture gradient psig/ft:	0.17

Comment: The well was fracked with 150,000lbs 16/30 sand 01/22/2014, which seems to account for the minor BHP increases with rate changes. This SRT after a frac illistrates the logic of limiting stimulation pressure and avoiding fracture treatments of injection wells in order to limit disposal fluids to a well's target formation. Especially in the Delaware group of formations. The evaluated frac pressure of this SRT is essentially the same as the injection generic surface pressure target of 0.2 x depth of top perf. The surface pressure increases seem to result essentialy from friction increases in the tubing responding to rate change as little formation pressure increases are recorded. The surface pressure drop between step 5 and 6 may have something to do with fluid dynamics of flow rate through the tubing or the equipment on location.

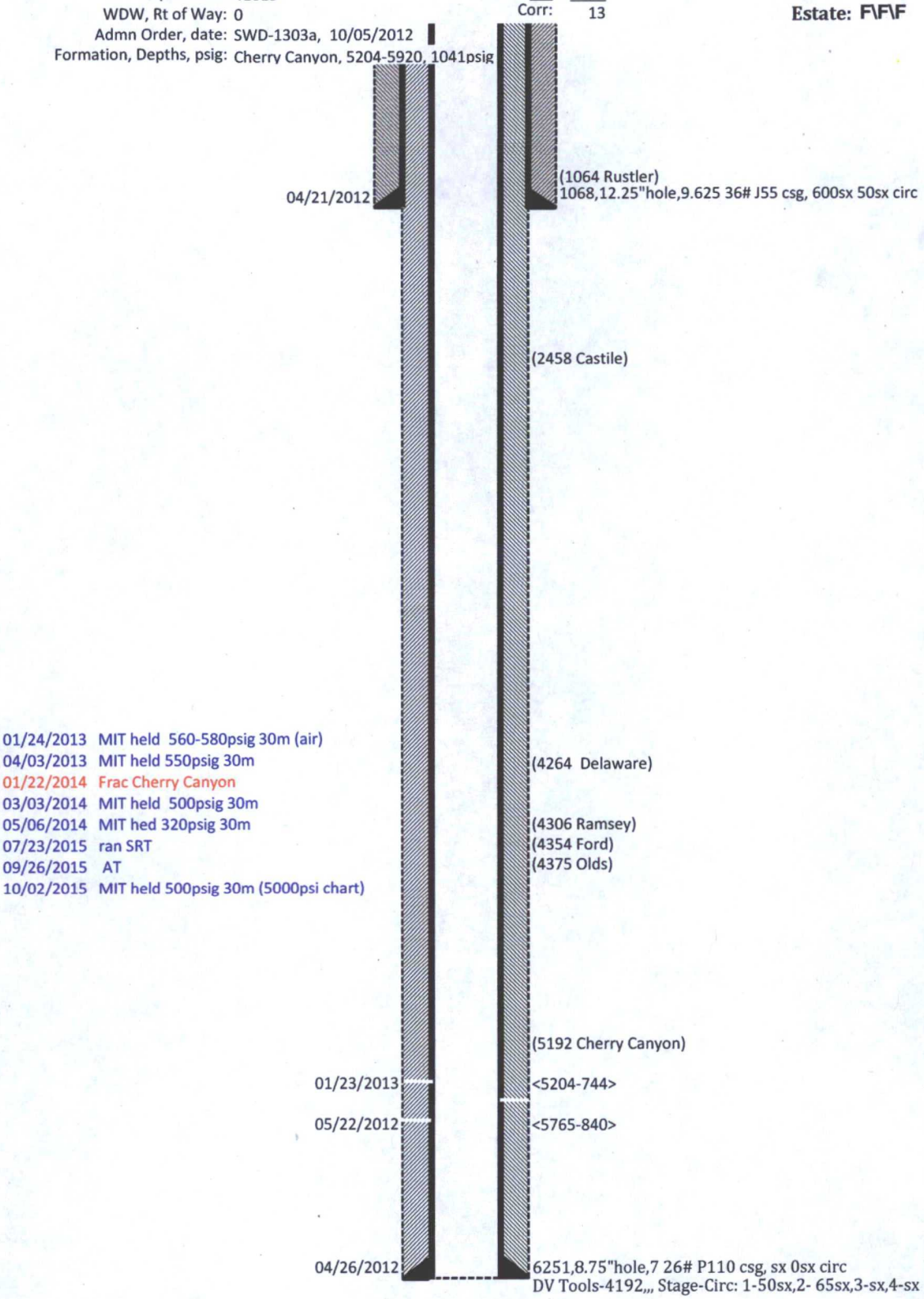
Operator: ConocoPhillips Company
Surface Lease: NM27508 **BHL:** NM27508
Case No: NM27508 **Lease Agreement**
Subsurface Concerns for Casing Designs: , , , ,

Well: WILDER 29 FEDERAL SWD-1
API: 3002540500
@ Srfce: T26S-R32E,29.2010n2560w
@ M TD: T26S-R32E,29.2010n2560w

Well Status: SWD
Spud date: 41019
WDW, Rt of Way: 0
Admn Order, date: SWD-1303a, 10/05/2012
Formation, Depths, psig: Cherry Canyon, 5204-5920, 1041psig

KB: 3144
GL: 3131
Corr: 13

Estate: F\F\F



01/24/2013 MIT held 560-580psig 30m (air)
04/03/2013 MIT held 550psig 30m
01/22/2014 Frac Cherry Canyon
03/03/2014 MIT held 500psig 30m
05/06/2014 MIT hed 320psig 30m
07/23/2015 ran SRT
09/26/2015 AT
10/02/2015 MIT held 500psig 30m (5000psi chart)

Diagram last updated: 12/17/2015