# ConocoPhillips

Yolanda Perez Sr. Regulatory Analyst P.O. Box 2197, WL3 6106 Houston, Texas 77252-2197 Tel: 832-486-2329 Fax: 832-486-2764

RECEIVED

Oil Conservation Division 1220 S. St. Francis Drive Santa Fe, NM 87505

Attn: Will Jones

Santa Fe, NM 87505

1220 So. St. Francis Drive

February 3, 2004

#### RE: Jicarilla 30 #5 SWD, API #30-039-20460 **UIC Permit - SWD-807 Rio Arriba County, NM**

New Mexico Oil Conservation Division

Dear Mr. Jones.

Attached please find letter submitted to the EPA requesting an increase in maximum surface injection pressure on the above-mentioned Salt Water Disposal well.

If you have any questions or require additional information, please call me at (832) 486-2329 or email me at yolanda.perez@conocophillips.com.

Sincerely,

Yolanda Perez Sr. Regulatory Analyst Mid America Business Unit



Yolanda Perez Sr. Regulatory Analyst P.O. Box 2197, WL3 6106 Houston, Texas 77252-2197 Tel: 832-486-2329 Fax: 832-486-2764

February 3, 2004

USEPA 1445 Ross Ave. Dallas, TX 75202

Attn: Bill Hurlbut (6WQ-SG)

#### RE: Jicarilla 30 #5 SWD UIC Permit #06SNMJ1P9071 Permit Modification for Injection Pressure Increase

Dear Bill,

A step-rate test was conducted on the Jicarilla 30 #5 SWD on November 8, 2003. Two tests were concluded to show a consistent increase in parting pressure for the injected intervals. The conclusion of the analysis is that an increase in allowable surface injection pressure is warranted. The current permitted maximum surface injection pressure is 934 psi. The included data and analysis observed a fracture parting pressure of 3389 & 3394 psi. ConocoPhillips Company requests approval to modify the above-mentioned UIC permit to allow a maximum surface injection pressure of 1500 psi.

Both tests were conducted consistently. Each started at the minimum allowable pump rate of 0.7 bpm. Seven steps were conducted on each test. The steps were fifteen minutes in length with an increase of 0.5 bpm. A bottom hole pressure gauge was run in accordance with compliance to ascertain exact bottom hole pressure data. Step-rate test #1 observed an estimated fracture parting pressure of 3389 psi. Step-rate test #2 observed an estimated fracture parting pressure of 3394 psi. The BHP gauge depth was 5254', the Injection liquid was 2% KCI and Liquid Gradient was 0.438 psi/ft. The surface pressure and pumping data, as well as the BHP gauge data, was previously submitted to the EPA electronically on January 16, 2004.

If you have any questions or need additional information, please contact me at (832) 486-2329 or by email at <u>yolanda.perez@conocophillips.com</u>.

Sincerely,

Yolanda Perez

Yolanda Perez Sr. Regulatory Analyst Mid America Business Unit

CC:---- Will Jones, NMOCD

**ConocoPhillips Company** Jicarilla 30-#5 SWD **Mesa Verde Formation Test Summary & Conclusion** 

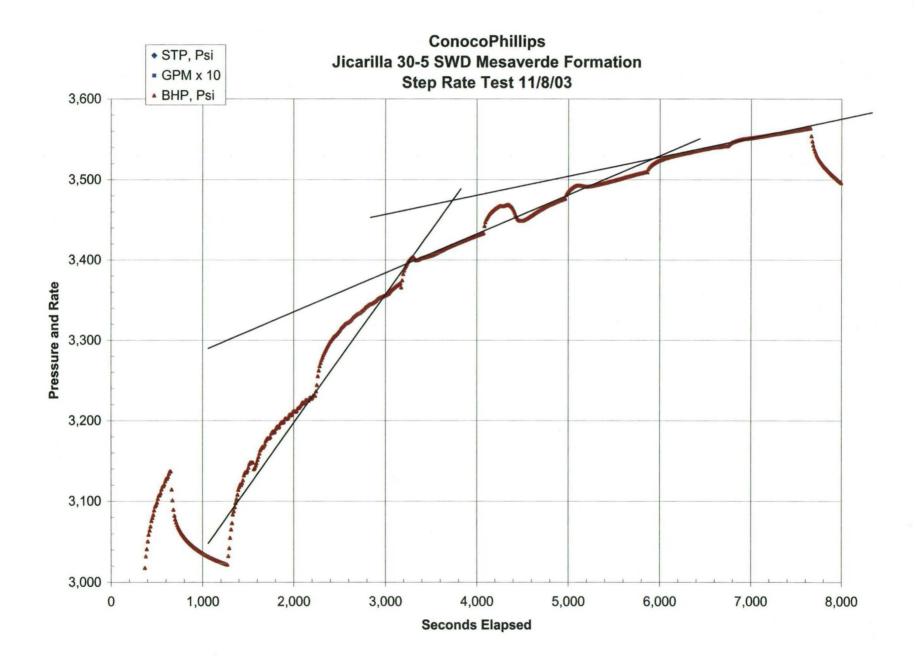
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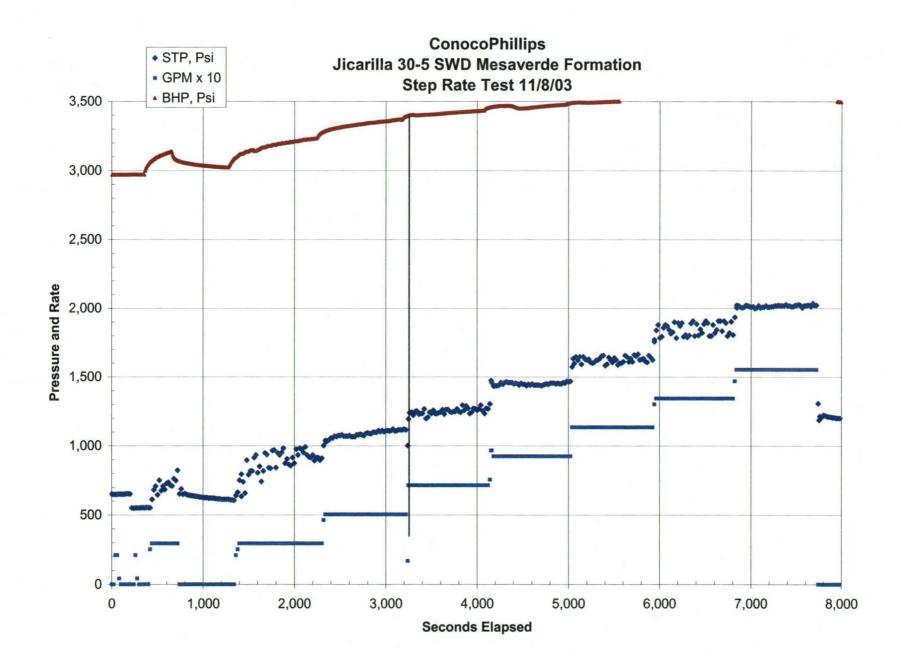
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BHP gauge depth: 5254'

Injection liquid: 2% KCl

Liquid Gradient: 0.438 psi/ft



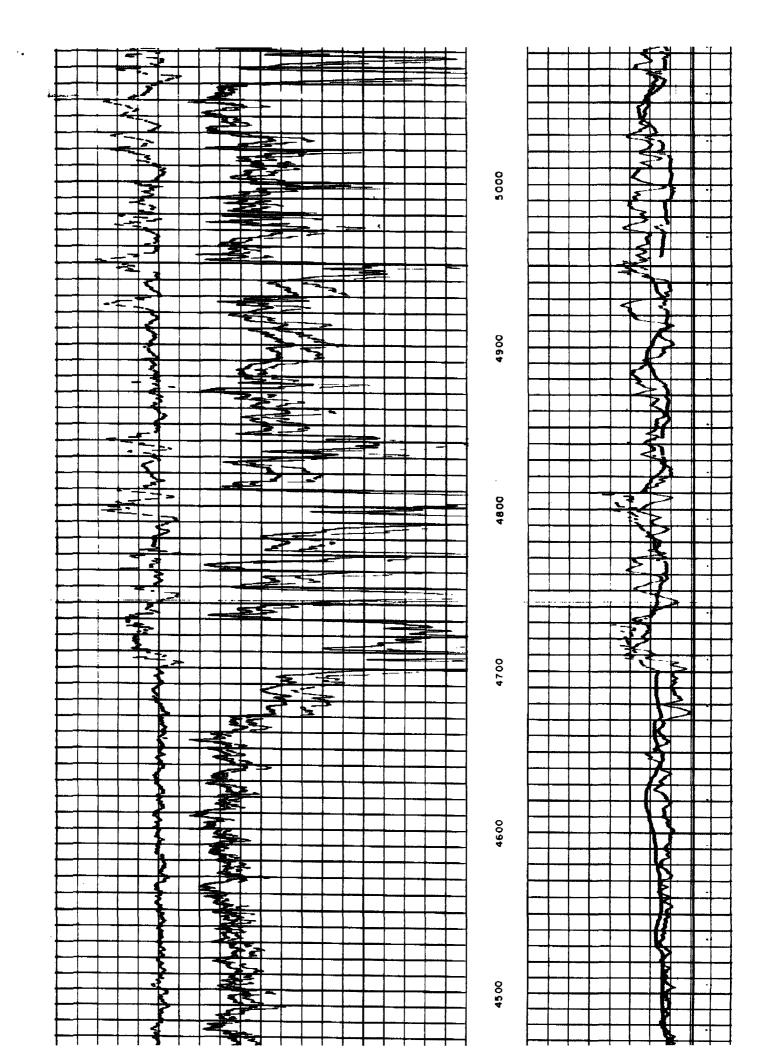


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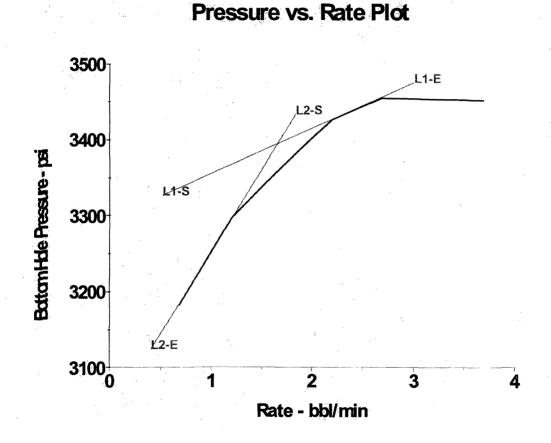


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### Step-Rate Test #1

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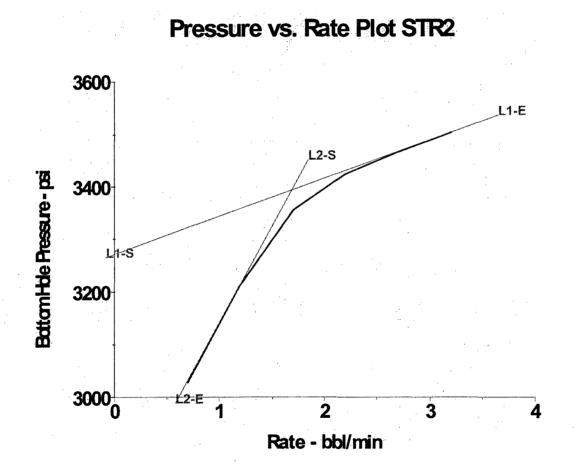
The test started at an injection rate of 0.7 bpm. Seven steps were conducted each a consistent 0.5 bpm increase. Please see the included data for this test.



Lines L1-S & L2-S are based upon the inflection point of the rate vs. bottom hole pressure curve. The point of intersection defines the estimated fracture parting pressure, 3389 psi.

#### Step-Rate Test #2

The test started at an injection rate of 0.7 bpm. Seven steps were conducted each a consistent 0.5 bpm increase. Please see the included data for this test.



The second test illustrates the fracture parting pressure as 3394 psi.

## **Conclusion**

The step-rate test on the Jicarilla 30-#5 was performed to illustrate the increase fracture parting pressure for the current injection of produced field water. The fracture parting pressure is estimated to be 3389 psi. The project used 2% KCL which has a specific gravity of 1.012 ppg. This extrapolates a surface treating pressure of 1088 psi.

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#### Convert to Salt Water Disposal Procedure Jicarilla 30-5

Objective: To convert the well from its current state of temporarily abandoned Gallup/Dakota producer to a saltwater disposal well in the Mesa Verde. The well will need to be perforated in the Mesa Verde, a step rate test completed, stimulated if necessary, and tubing and packer installed.

#### Well Information:

Production Casing:	4 1/2" 10.5 lb/ft set at 7525' Capacity01594 bbls/ft or .6698 gals/ft Drift diameter 3.927"
Current Perfs:	Gallup 6399' – 6439' Dakota 7211' – 7413'
Proposed Tubing:	2 3/8" to 4550' Capacity 00387 bbls/ft or .1626 gals/ft
Proposed Perfs:	Mesa Verde Cliffhouse Member: 4672'-78', 4680'-96', Menefee Member: 4752'-58', 4772'-82' 4816'- 26' 4846'-64', 4894'-4904', 4912'-16', 4930'- 40', 4996'-5000', 5008'-28', 5176'-82', Point Lookout Member: 5204'-24', 5234'-44', 5278'-98', 5306'-26'

#### Procedure:

- 1. Rig up pulling unit.
- 2. Install BOP
- 3. Pressure test casing to 1500 psi.
- 4. RIH with 2 3/8" tubing to 5400' and circulate hole clean. Note: all fluid used in this procedure should be clean produced water.
- 5. Pull tubing up to 3000' and swab fluid level to that point. POOH.
- 6. Rig up perforating company with lubricator.
- 7. Perforate Point Lookout Interval of the Mesa Verde and the lowest section of the Menefee (5176') with 4 shots per foot.
- 8. Rig up a pump truck and begin pumping clean produced water into the perforations at ¼ BPM, continue increasing injection rate in 1/8 BPM increments (with each step being at least 5 minutes in duration or longer if necessary to get a stabilized rate and pressure) until a clear change in slope of the pressure rate curve occurs. Take at least two step beyond the break point before concluding the test. Record the pressure and rate

# JICARILLA 30 5 Proposed SWD Completion (300392046000)

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## 4/10/2001

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Int 7211.0 -	7413.0 7413.0 6439.0	Dakota	4000 G pad gel wate + 77,000# 10/20 sd.	r. Frac w/ 58,760 G AIR= 41 bpm @ 33 IS. Balled off	1% KCL 300# ISIP			2/24/	'1972 '1972	Water	ICL
Int 7211.0 - 7211.0 - 6399.0 - ( 6399.0 - (	7413.0 7413.0 6439.0 6439.0	Dakota Dakota Gallup Gallup	4000 G pad gel wate + 77,000# 10/20 sd. 2000# Acid w/ 500 G + 30 E 2,000 G pad gel wate + 31,600# 10/20 sd. 800#	r. Frac w/ 58,760 G AIR= 41 bpm @ 33 IS. Balled off Fr. Frac w/ 32,450 G AIR= 35 bpm @ 30	1% KCL 300# ISIP G 1% KCL 00# ISIP	Fracture Acid Sque		2/24/	'1972 '1972	Water	ICL
Int 7211.0 - 7211.0 - 6399.0 - 6 6399.0 - 6	7413.0 7413.0 6439.0 6439.0 7413.0	Dakota Dakota Gallup Gallup Gallup/Dak	4000 G pad gel wate + 77,000# 10/20 sd. 2000# Acid w/ 500 G + 30 E 2,000 G pad gel wate + 31,600# 10/20 sd. 800# to Dumped 500 G - flus	r. Frac w/ 58,760 G AIR= 41 bpm @ 33 IS. Balled off or. Frac w/ 32,450 G AIR= 35 bpm @ 30 h with 10 bbls water	1% KCL 300# ISIP 6 1% KCL 00# ISIP	Fracture Acid Sque Fracture Acid Dump	9 <b>20</b>	2/24/ 2/25/ 2/25/ 12/7/	1972 1972 1972 1972	Water	ICL
Int 7211.0 - 7211.0 - 6399.0 - 6 6399.0 - 6	7413.0 7413.0 6439.0 6439.0 7413.0	Dakota Dakota Gallup Gallup Gallup/Dak	4000 G pad gel wate + 77,000# 10/20 sd. 2000# Acid w/ 500 G + 30 E 2,000 G pad gel wate + 31,600# 10/20 sd. 800#	r. Frac w/ 58,760 G AIR= 41 bpm @ 33 IS. Balled off or. Frac w/ 32,450 G AIR= 35 bpm @ 30 h with 10 bbls water	1% KCL 300# ISIP 6 1% KCL 00# ISIP	Fracture Acid Sque Fracture	9 <b>20</b>	2/24/ 2/25/ 2/25/ 12/7/	1972 1972 1972 1972	Water 15% I Water	ICL
Int 7211.0 - 7211.0 - 6399.0 - 6399.0 - 6399.0 - 6399.0 - 1005 Rui Int	7413.0 7413.0 6439.0 6439.0 7413.0	Dakota Dakota Gallup Gallup Gallup/Dak	4000 G pad gel wate + 77,000# 10/20 sd. 2000# Acid w/ 500 G + 30 E 2,000 G pad gel wate + 31,600# 10/20 sd. 800# to Dumped 500 G - flus	r. Frac w/ 58,760 G AIR= 41 bpm @ 33 IS. Balled off or. Frac w/ 32,450 G AIR= 35 bpm @ 30 h with 10 bbls water	1% KCL 300# ISIP 3 1% KCL 00# ISIP	Fracture Acid Sque Fracture Acid Dump	9 <b>20</b>	2/24/ 2/25/ 2/25/ 12/7/	1972 1972 1972 1972	Water 15% H Water 15% H	ICL
Int 7211.0 - 7211.0 - 6399.0 - ( 6399.0 - ( 6399.0 - ) 6399.0 - 1 <b>.ogs Ru</b> i Int 200.0 - 7	7413.0 7413.0 6439.0 6439.0 7413.0 n 523.0	Dakota Dakota Gallup Gallup Gallup/Dak	4000 G pad gel wate + 77,000# 10/20 sd. 2000# Acid w/ 500 G + 30 E 2,000 G pad gel wate + 31,600# 10/20 sd. 800# co Dumped 500 G - flus	r. Frac w/ 58,760 G AIR= 41 bpm @ 33 IS. Balled off or. Frac w/ 32,450 G AIR= 35 bpm @ 30 h with 10 bbls water	1% KCL 300# ISIP 3 1% KCL 00# ISIP i C Dress	Acid Squee Fracture Acid Dump Acid Dump	9 <b>29</b>	2/24/ 2/25/ 2/25/ 12/7/	1972 1972 1972 1972	Water 15% H Water	ICL ICL
Int 7211.0 - 7211.0 - 6399.0 - 6399.0 - 6399.0 - 6399.0 - 0 - 0 - 0 - 5	7413.0 7413.0 6439.0 6439.0 7413.0 n 523.0 7485.0	Dakota Dakota Gallup Gallup Gallup/Dak	4000 G pad gel wate + 77,000# 10/20 sd. 2000# Acid w/ 500 G + 30 E 2,000 G pad gel wate + 31,600# 10/20 sd. 800# co Dumped 500 G - flus	r. Frac w/ 58,760 G AIR= 41 bpm @ 33 IS. Balled off or. Frac w/ 32,450 G AIR= 35 bpm @ 30 h with 10 bbls water	1% KCL 300# ISIP 3 1% KCL 00# ISIP 4 C Dress Geart	Acid Squee Fracture Acid Dump Acid Dump	eze	2/24/ 2/25/ 2/25/ 12/7/ Type DENS CBL	1972 1972 1972 1972	Water 15% H Water 15% H	ICL ICL te 1972 1972