

DATE <u>5/14/01</u>	SUSPENSE <u>N/R</u>	ENGINEER <u>DC</u>	LOGGED IN <u>W</u>	TYPE <u>IP1</u>	APP NO. <u>113540030</u>
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ABOVE THIS LINE FOR DIVISION USE ONLY

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



ADMINISTRATIVE APPLICATION COVERSHEET

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

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

- [1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]
 [A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
 [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☒ IPI ☐ EOR ☐ PPR

- [2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or ☐ Does Not Apply
 [A] ☐ Working, Royalty or Overriding Royalty Interest Owners
 [B] ☐ Offset Operators, Leaseholders or Surface Owner
 [C] ☐ Application is One Which Requires Published Legal Notice
 [D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
 [E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,
 [F] ☐ Waivers are Attached

- [3] **INFORMATION / DATA SUBMITTED IS COMPLETE** - Certification

I hereby certify that I, or personnel under my supervision, have reviewed the applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common.

I understand that any omission of data (including API numbers, pool codes, etc.), pertinent information and any required notification is cause to have the application package returned with no action taken.

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

<u>STEPHEN GUILLOT</u>	<u><i>Stephen Guillot</i></u>	<u>Production Engineer</u>	<u>5/8/01</u>
Print or Type Name	Signature	Title	Date
		<u>guillsh@texaco.com</u>	
		e-mail Address	



Texaco Exploration and Production Inc
Permian Basin Business Unit
Hobbs Operating Unit

P. O. Box 3109
Midland TX 79702-3019
505 688 4100

May 8, 2001

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe NM 87501
Attention: Mr. David R. Catanach

RE: **Request for Increase in Surface Injection Pressure Limits**

Texaco Exploration and Production Inc
Central Vacuum Unit Well No. 173H; T17S, R34E; PMX-211; API # 30-025-35212
Central Vacuum Unit Well No. 241H; T17S, R34E; PMX-211; API # 30-025-35213
New Mexico "Z" State NCT-1 Well No. 1; T18S, R34E; SWD-776; API # 30-025-29988
Lea County, New Mexico

Dear Mr. Catanach,

Texaco requests permission to increase surface injection pressure limits in these three wells. Step rate tests were performed on the three above-captioned wells on February 27, May 2, and March 6, 2001 respectively. Mr. Gary Wink of the District 1 office was notified about these tests by phone.

The first two wells are horizontal injectors drilled as part of the Central Vacuum Unit CO₂ flood. Well 173H injected water during the test up to a final surface pressure of 1901 PSIG and the radial flow straight line was maintained until the end of the test. Our highest typical requested injection pressure limits for CO₂ injection wells in the Vacuum field are 1500 PSIG for water injection (well below the maximum test pressure) and 1850 PSIG for CO₂ injection; therefore, we request increasing our permitted injection pressures to these limits.

Well 241H injected water during the test up to a final surface pressure of 1864 PSIG and our interpretation is that a straight line was established after a long wellbore storage period, but the last two points departed from that straight line. We calculated surface formation parting pressure to be 1514 PSIG. Therefore, for this well we also request surface injection pressure limits of 1500 PSIG for water injection and 1850 PSIG for CO₂ injection.

The New Mexico "Z" State NCT-1 Well No. 1 is a water disposal well. During our step rate test of this well we injected water up to a final surface pressure of 2152 PSIG and the radial flow straight line was maintained until the end of the test. We request an injection pressure limit of 2152 PSIG for this well.

Thank you for your consideration. Please call me at 915-688-4577 if you have questions or concerns.

Yours truly,

Stephen Guillot
Production Engineer

Attachments

Cc: Mr. Chris Williams
Hobbs NMOCD



Step Rate Injection Test Report

for

Texaco Exploration & Production

CVU 173H

February 27, 2001

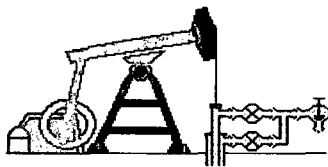


TABLE OF CONTENTS

SECTION I	CONTENTS
SECTION II	SEQUENCE OF EVENTS
SECTION III	DATA REPORT
SECTION IV	CHART



COMPANY : Texaco Exploration & Production
WELL: CVU 173H
COMPANY REP: Steve Guillot
PERFORATIONS: N/A

PACKER DEPTH: 4221'

SERVICE DATES : Feburary 27, 2001
TEST TYPE : Step Rate Injection
PTS TECHNICIANS : D. Ginanni/B. Fowler
BHP GAUGE DEPTH: 4230'

DATE	TIME	REMARKS
02/27/01	10:05	Start test & 600 BPD
02/27/01	10:20	Increase to 1000 BPD
02/27/01	10:35	Increase to 1400 BPD
02/27/01	10:50	Increase to 2000 BPD
02/27/01	11:05	Increase to 2400 BPD
	11:20	Increase to 2900 BPD
	11:35	Increase to 3500 BPD
	11:50	Increase to 4000 BPD
	12:05	Increase to 4500 BPD
	12:20	Increase to 5000 BPD
	12:35	Increase to 5500 BPD
	12:46	Start Falloff
	13:00	End of test



COMPANY : Texaco Exploration & Production
WELL: CVU 173H
COMPANY REP: Steve Guillot
PERFORATIONS: N/A

February 27, 2001
Step Rate Injection
D. Ginanni/B. Fowler
4230'

STEP NO.	TIME	SURFACE TUBING PRESS. (psig)	CUMULATIVE VOL INJECTED (bbls)	INJECTION RATE (bbls/day)	INJECTION RATE (gpm)	MEASURED BHP (psi)
	10:05	229.8				2102.7
	10:10	212.7	2.0	567.3	16.55	2117.9
	10:15	257.3	4.1	607.1	17.71	2124.9
1	10:20	258.0	7.4	955.9	27.88	2132.8
	10:25	254.7	10.7	946.6	27.61	2134.7
	10:30	317.4	14.1	994.4	29.00	2139.5
2	10:35	351.5	19.1	1439.2	41.98	2152.5
	10:40	349.8	24.2	1457.3	42.51	2155.9
	10:45	351.6	29.1	1422.3	41.48	2157.9
3	10:50	407.4	35.9	1940.8	56.61	2185.6
	10:55	401.5	42.4	1885.6	55.00	2190.1
	11:00	532.6	49.0	1907.5	55.64	2199.3
4	11:05	524.0	57.1	2317.9	67.61	2212.7
	11:10	533.7	65.3	2355.7	68.71	2218.4
	11:15	539.2	73.4	2349.9	68.54	2222.5
5	11:20	707.5	82.9	2716.6	79.23	2245.7
	11:25	714.2	93.3	2995.5	87.37	2253.9
	11:30	924.8	103.8	3029.7	88.37	2265.3
6	11:35	899.0	116.3	3598.3	104.95	2285.1
	11:40	868.3	128.4	3503.7	102.19	2292.8
	11:45	877.1	140.8	3564.9	103.98	2299.1
7	11:50	1109.7	155.1	4112.0	119.93	2324.9
	11:55	1061.6	169.4	4117.0	120.08	2333.4
	12:00	1284.5	183.8	4153.2	121.13	2351.3
8	12:05	1307.1	200.0	4671.5	136.25	2368.2
	12:10	1313.2	216.4	4705.1	137.23	2377.2
	12:15	1557.1	232.7	4693.7	136.90	2387.3
9	12:20	1623.1	251.0	5279.5	153.99	2413.5
	12:25	1620.2	269.4	5310.2	154.88	2424.1
	12:30	1936.8	288.2	5403.0	157.59	2449.1
10	12:35	1920.7	308.5	5834.2	170.16	2461.3
Falloff	12:40	1860.6	328.8	5851.4	170.67	2470.7
	12:45	1901.1	349.1	5856.9	170.82	2364.5



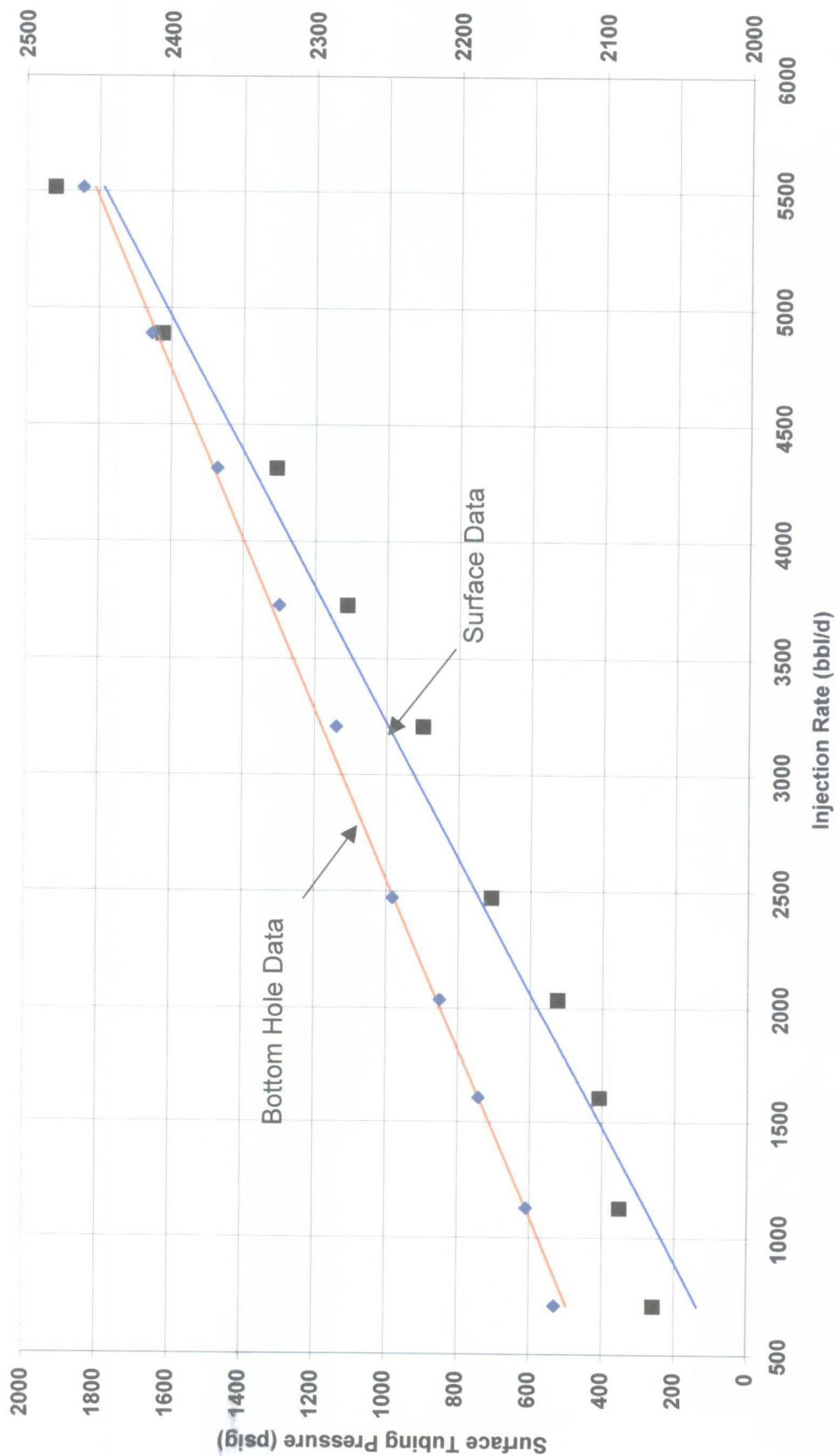
COMPANY : Texaco Exploration & Production
 WELL: CVU 173H
 COMPANY REP: Steve Guillot
 PERFORATIONS: N/A

February 27, 2001
 Step Rate Injection
 D. Ginanni/B. Fowler
 4230'

STEP NO	TIME	SURFACE TUBING PRESS. (psig)	CUMULATIVE VOL INJECTED (bbls)	INJECTION RATE (bbls/day)	INJECTION RATE (gpm)	MEASURED BHP (psi)
#REF!	12:46	386.3				
	12:47	353.1				
	12:48	337.6				
	12:49	325.6				
	12:50	316.4				
	12:55	286.4				
	13:00	269.0				

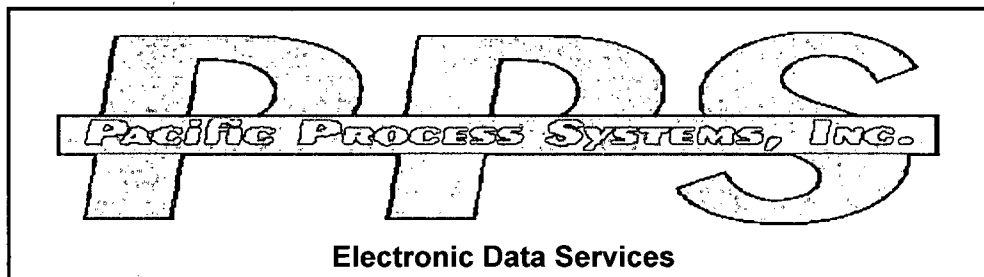
Pacific PROCESS SYSTEMS, INC.

Step Rate Injection Test



Phone: (505) 392-8813
Fax: (505) 392-6612

3406 Lovington Highway
Hobbs, NM 88240



Step Rate Injection Test Report

for

Texaco E&P

CVU 241H

5/2/01

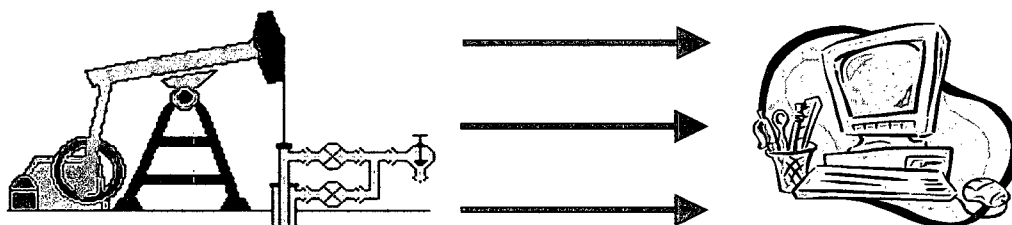
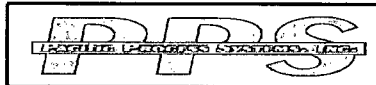


TABLE OF CONTENTS

SECTION I	CONTENTS
SECTION II	SEQUENCE OF EVENTS
SECTION III	DATA REPORT
SECTION IV	CHART



COMPANY : Texaco E&P
WELL: CVU 241H
COMPANY REP: Steve Guillot
PERFORATIONS: N/A

4127

SERVICE DATES : 5/2/01
TEST TYPE : Step Rate Injection
PTS TECHNICIANS : D. Ginanni/B. Cooper
BHP GAUGE DEPTH: 4100

DATE	TIME	REMARKS
05/02/01	11:01	Start pumping @ 700 BPD
05/02/01	11:06	
05/02/01	11:11	
05/02/01	11:16	Increase to 1100 BPD
05/02/01	11:21	
05/02/01	11:26	
05/02/01	11:31	Increase to 1500 BPD
05/02/01	11:36	
05/02/01	11:41	
05/02/01	11:46	Increase to 1900 BPD
05/02/01	11:51	
05/02/01	11:56	
05/02/01	12:01	Increase to 2400 BPD
05/02/01	12:06	
05/02/01	12:11	
05/02/01	12:16	Increase to 2900 BPD
05/02/01	12:21	
05/02/01	12:26	
05/02/01	12:31	Increase to 3400 BPD
05/02/01	12:36	
05/02/01	12:41	
05/02/01	12:46	Increase to 3900 BPD
05/02/01	12:51	
05/02/01	12:56	
05/02/01	13:01	Increase to 4400 BPD
05/02/01	13:06	
05/02/01	13:11	
05/02/01	13:16	Increase to 4900 BPD
05/02/01	13:21	
05/02/01	13:26	
05/02/01	13:31	Increase to 5400 BPD
05/02/01	13:36	
05/02/01	13:41	
05/02/01	13:46	Increase to 5900 BPD
05/02/01	13:51	
05/02/01	13:56	
05/02/01	14:01	Stop pumping, start falloff



COMPANY : Texaco E&P
 WELL: CVU 241H
 COMPANY REP: Steve Guillot
 PERFORATIONS: N/A

SERVICE DATES : 5/2/01
 TEST TYPE : Step Rate Injection
 PTS TECHNICIANS : D. Ginanni/B. Cooper
 BHP GAUGE DEPTH: 4100

STEP NO.	TIME	SURFACE TUBING PRESS. (psig)	CUMULATIVE VOL. INJECTED (bbls)	INJECTION RATE (bbls/day)	INJECTION RATE (gpm) (3)/34.2857	MEASURED BHP (psi)
	11:01	486.5				2046.7
	11:06	453.8	2.4	694.4	20.25	2058.1
	11:11	417.2	4.9	712.2	20.77	2062.1
1	11:16	397.8	7.6	793.4	23.14	2066.8
	11:21	351.0	11.8	1205.6	35.16	2088.1
	11:26	308.8	15.9	1167.2	34.04	2087.5
2	11:31	285.1	20.0	1175.8	34.30	2090.9
	11:36	298.0	25.1	1486.7	43.36	2097.7
	11:41	310.9	30.5	1549.2	45.19	2103.1
3	11:46	329.1	36.1	1618.0	47.19	2107.9
	11:51	360.8	43.0	1988.5	58.00	2114.5
	11:56	384.9	49.9	1986.3	57.94	2120.5
4	12:01	413.7	57.1	2057.1	60.00	2125.4
	12:06	476.7	65.9	2534.3	73.92	2134.7
	12:11	520.2	74.7	2544.4	74.21	2143.1
5	12:16	526.8	83.4	2518.9	73.47	2150.2
	12:21	597.1	93.2	2813.4	82.06	2159.2
	12:26	646.1	103.6	2983.9	87.03	2169.4
6	12:31	696.6	114.2	3071.1	89.57	2178.0
	12:36	779.0	126.3	3473.1	101.30	2190.8
	12:41	811.2	138.2	3430.7	100.06	2200.5
7	12:46	816.7	150.2	3443.5	100.44	2206.3
	12:51	984.5	164.0	3988.8	116.34	2223.9
	12:56	1022.8	178.2	4076.4	118.90	2235.1
8	13:01	1079.0	192.3	4074.5	118.84	2244.7
	13:06	1200.4	207.5	4380.2	127.76	2259.5
	13:11	1210.8	222.6	4337.4	126.51	2269.5
9	13:16	1213.1	238.0	4433.0	129.30	2277.9
	13:21	1439.2	254.1	4650.6	135.64	2294.5
	13:26	1464.0	271.7	5052.4	147.36	2306.7
10	13:31	1477.9	289.2	5060.6	147.60	2315.9
	13:36	1662.5	308.1	5432.2	158.44	2331.0
	13:41	1685.2	327.2	5502.2	160.48	2341.8



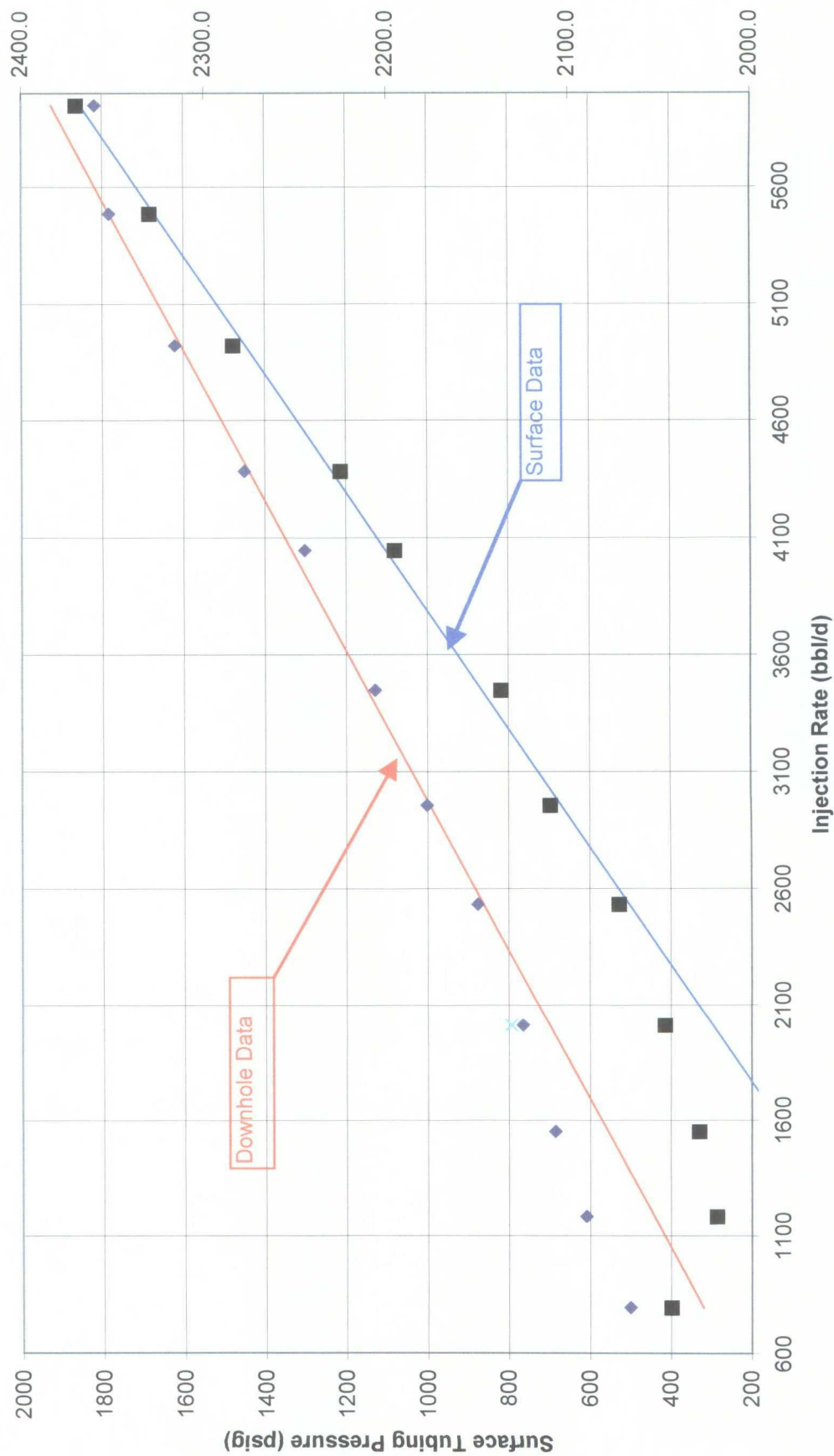
COMPANY : **Texaco E&P**
 WELL: **CVU 241H**
 COMPANY REP: **Steve Guillot**
 PERFORATIONS: **N/A**

SERVICE DATES : **5/2/01**
 TEST TYPE : **Step Rate Injection**
 PTS TECHNICIANS : **D. Ginanni/B. Cooper**
 BHP GAUGE DEPTH: **4100**

STEP NO.	TIME	SURFACE TUBING PRESS. (psig)	CUMULATIVE VOL INJECTED (bbls)	INJECTION RATE (bbls/day)	INJECTION RATE (gpm) (3)/34,2857	MEASURED BHP (psi)
11	13:46	1683.0	346.4	5524.6	161.13	2351.7
	13:51	1820.5	367.0	5937.9	173.19	2367.7
	13:56	1842.1	387.6	5934.2	173.08	2377.3
12	14:01	1863.8	408.3	5967.9	174.06	2359.6
Falloff	14:02	549.7				
	14:03	474.4				
	14:04	435.7				
	14:05	412.0				
	14:10	363.4				
	14:15	338.8				

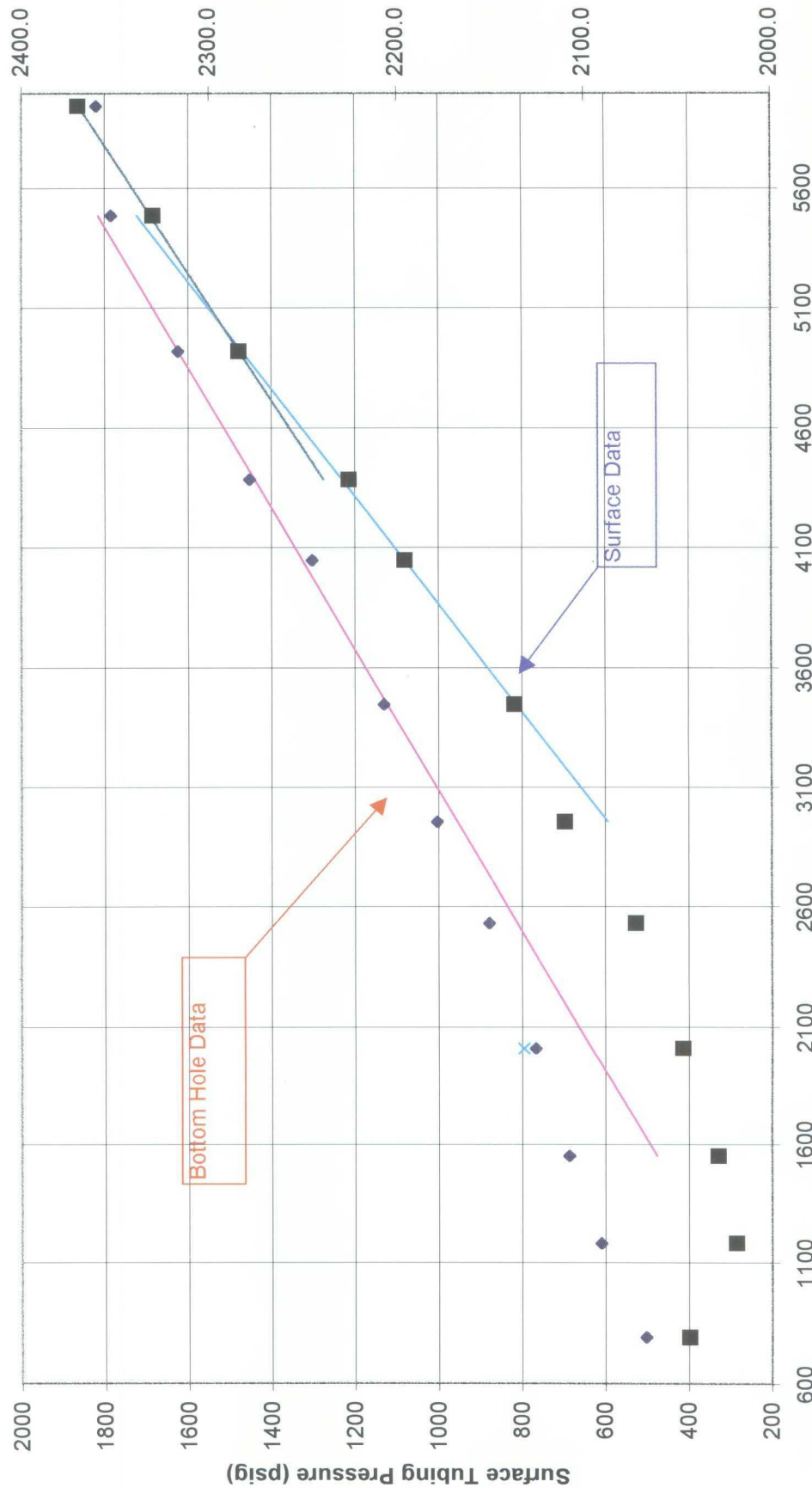
Pacific PROCESS SYSTEMS, INC.

Step Rate Injection Test



Pacific Process Systems, Inc.

Step Rate Injection Test - CVU 241H



equation of first line (blue) = $0.4462x - 727.38$
 equation of second line (green) = $0.3759x - 374.29$
 intersection @ 1514 psig

3406 Lovington Hwy.
 Hobbs, NM 88240

Phone: (505) 392-8813
 Fax: (505) 392-6612

Interpreted by Texaco (S.N. Guilford)