



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Betty Rivera
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

February 13, 2002

ChevronTexaco
15 Smith Road
Midland, Texas 79705

Attn: Mr. Britton M. McQuien

RE: *Injection Pressure Increase, - ~~168~~ 168*
Vacuum Grayburg-San Andres Unit
Tertiary Recovery Project,
Lea County, New Mexico

Dear Mr. McQuien:

Reference is made to your request dated February 1, 2002, to increase the surface injection pressure on three wells within the above-referenced tertiary recovery project. This request is based on step rate tests conducted on the subject wells on January 17-18, 2002. The results of the tests have been reviewed by my staff and we feel an increase in injection pressure on these wells is justified at this time.

You are therefore authorized to increase the surface injection pressure on the wells shown on Exhibit "A". The Division Director may rescind this injection pressure increase if it becomes apparent that the injected fluid is not being confined to the injection zone or is endangering any fresh water aquifers.

Sincerely,

Lori Wrotenbery
Director

LW/DRC

cc: Oil Conservation Division - Hobbs
Files: PMX-216; PSI-X-2002

Exhibit "A"
ChevronTexaco
Injection Pressure Increase

<i>Well and Location</i>	<i>Maximum Surface Injection Pressure Water</i>	<i>Maximum Surface Injection Pressure CO₂</i>
Vacuum Gb-SA Unit Well No. 135 API No. 30-025-35561 Unit G, Section 1, T-18S, R-34E	1900 PSIG	1850 PSIG
Vacuum Gb-SA Unit Well No. 235 API No. 30-025-35562 Unit H, Section 1, T-18S, R-34E	1900 PSIG	1850 PSIG
Vacuum Gb-SA Unit Well No. 249 API No. 30-025-35563 Unit F, Section 1, T-18S, R-34E	1550 PSIG	1850 PSIG
All wells located in Lea County, New Mexico.		

PKRVO203834990

1P1-~~448~~ N/R
168
AMX-216

February 1, 2002

FEB - 4 2002

ChevronTexaco

New Mexico Energy, Minerals, and Natural Resources Department
Oil Conservation Division
Attn: David Catanach
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Subject: Request increase in surface injection for wells Vacuum Grayburg San Andres Unit #135, #235, #249.

Dear Mr. Catanach:

Texaco Exploration and Production Inc. respectfully requests increases in injection pressure for the following Vacuum Grayburg San Andres Unit wells:

Well Number	API Number	Location	Requested Max Surface Water Injection Pressure	Requested Max Surface CO ₂ Injection Pressure
135	3002535561	Unit G, Section 1, T-18S, R-34E	1900 PSIG	1850 PSIG
235	3002535562	Unit G, Section 1, T-18S, R-34E	1900 PSIG	1850 PSIG
249	3002535563	Unit G, Section 1, T-18S, R-34E	1550 PSIG	1850 PSIG

The requested surface injection pressures are in accordance with Order No. R4442-A authorizing Texaco to initiate a tertiary CO₂ flood on the Vacuum Grayburg San Andres Unit.

Enclosed, please find step rate tests for the wells listed above. For wells #135 and #235, no break was observed at pressures in excess of the requested pressures. Well #249 appeared to break at 1659 psig. The requested injection pressure should be sufficiently below the parting pressure to prevent migration of fluids out of zone.

February 1, 2002
Mr. David Catanach
Page Two

If you have any questions or comments about this request, please contact Britton M. McQuien @ (915) 687-7218.

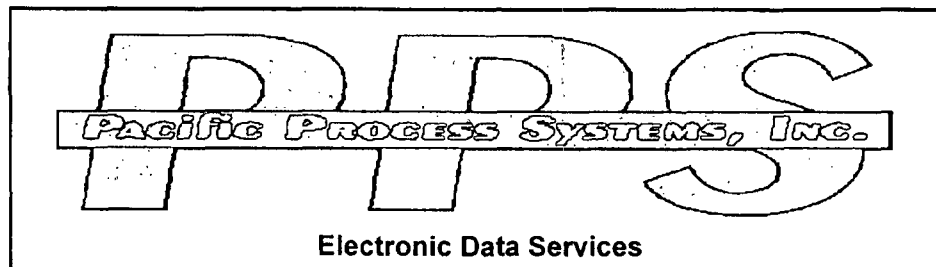
Very Truly Yours,

A handwritten signature in cursive script, reading "Britton McQuien".

Britton M. McQuien

enclosure

cc: Chris Williams - NMOCD



Step Rate Injection Test Report

for

Chevron / Texaco

GSAU #135

Unit Letter G

Sec.1 - T18S - R34E

01-17-02

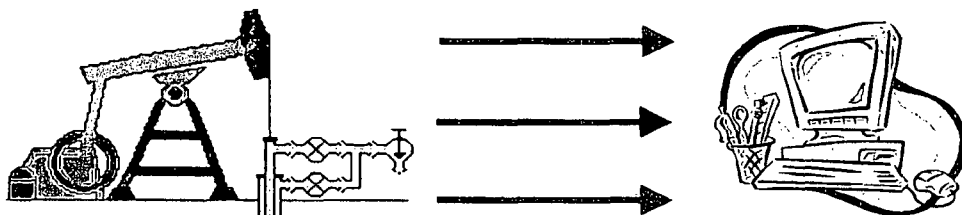


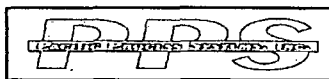
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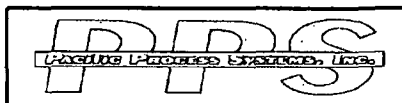


COMPANY : Chevron / Texaco
WELL: GSAU #135
COMPANY REP: Brett McQueen
PERFORATIONS: N/A

N/A

SERVICE DATES : 01-17-02
TEST TYPE : Step Rate
PPS TECHNICIANS : Joe Brown
BHP GAUGE DEPTH: N/A

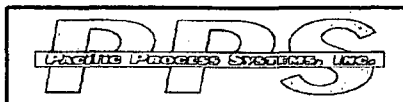
DATE	TIME	REMARKS
01/17/02	9:15	Opened well 187# surface pressure. Began injection At 400 Bbls/Day
01/17/02	9:30	Started Test
01/17/02	9:35	
01/17/02	9:40	
01/17/02	9:45	Rate #1
01/17/02	9:50	
01/17/02	9:55	
01/17/02	10:00	Rate #2
01/17/02	10:05	
01/17/02	10:10	
01/17/02	10:15	Rate #3
01/17/02	10:20	
01/17/02	10:25	
01/17/02	10:30	Rate #4
01/17/02	10:35	
01/17/02	10:40	
01/17/02	10:45	Rate #5
01/17/02	10:50	
01/17/02	10:55	
01/17/02	11:00	Rate #6
01/17/02	11:05	
01/17/02	11:10	
01/17/02	11:15	Rate #7
01/17/02	11:20	
01/17/02	11:25	
01/17/02	11:30	Rate #8
01/17/02	11:35	
01/17/02	11:40	
01/17/02	11:45	Rate #9
01/17/02	11:50	
01/17/02	11:55	
01/17/02	12:00	Rate #10
01/17/02	12:05	
01/17/02	12:10	
01/17/02	12:15	Rate #11
01/17/02	12:20	
01/17/02	12:25	
01/17/02	12:30	Rate #12
01/17/02	12:31	Fall Off



COMPANY : Chevron / Texaco
 WELL: GSAU #135
 COMPANY REP: Brett McQueen
 PERFORATIONS: N/A

SERVICE DATES : 01-17-02
 TEST TYPE : Step Rate
 PPS TECHNICIANS : Joe Brown
 BHP GAUGE DEPTH: N/A

STEP NO.	TIME	SURFACE TUBING PRESS. (psig)	CUMULATIVE VOL INJECTED (bbls)	INJECTION RATE (bbls/day)	INJECTION RATE (gpm) (31/34.2857)	MEASURED BHP (psi)
	9:30	360.7				
	9:35	374.2	1.6	460.1	13.42	
	9:40	401.4	3.2	460.8	13.44	
1	9:45	434.8	4.8	470.4	13.72	
	9:50	533.0	7.5	763.7	22.28	
	9:55	566.4	10.2	788.0	22.98	
2	10:00	618.1	13.0	799.5	23.32	
	10:05	732.1	16.7	1068.9	31.18	
	10:10	734.1	20.5	1083.3	31.59	
3	10:15	757.0	24.2	1077.5	31.43	
	10:20	848.0	28.9	1340.8	39.11	
	10:25	872.8	33.7	1401.8	40.89	
4	10:30	894.5	38.6	1411.8	41.18	
	10:35	985.4	44.5	1696.9	49.49	
	10:40	1016.2	50.5	1708.0	49.82	
5	10:45	1040.7	56.4	1721.9	50.22	
	10:50	1123.9	63.2	1949.6	56.86	
	10:55	1161.0	70.1	1997.4	58.26	
6	11:00	1179.0	77.1	2004.3	58.46	
	11:05	1270.3	85.0	2279.1	66.47	
	11:10	1295.4	93.0	2295.0	66.94	
7	11:15	1337.3	101.0	2298.9	67.05	
	11:20	1413.1	109.9	2562.4	74.74	
	11:25	1445.7	118.8	2583.9	75.36	
8	11:30	1463.6	127.8	2572.9	75.04	
	11:35	1564.3	137.8	2884.2	84.12	
	11:40	1580.9	147.8	2889.5	84.28	
9	11:45	1609.4	157.8	2888.8	84.26	
	11:50	1681.8	168.6	3105.0	90.56	
	11:55	1714.4	179.5	3117.7	90.93	
10	12:00	1728.0	190.3	3117.0	90.91	
	12:05	1823.7	202.2	3427.0	99.95	
	12:10	1854.4	214.2	3466.3	101.10	



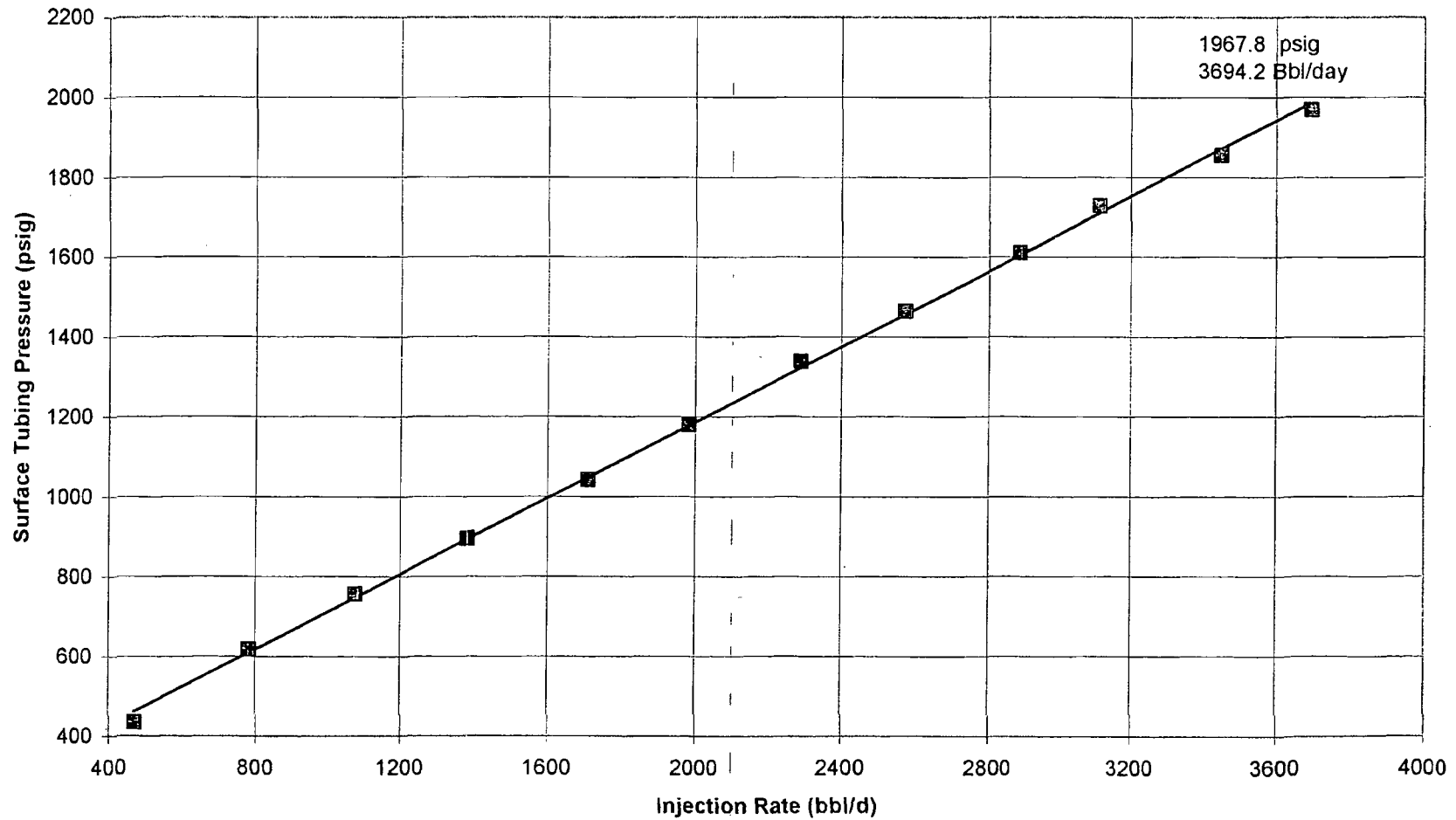
COMPANY : Chevron / Texaco
 WELL: GSAU #135
 COMPANY REP: Brett McQueen
 PERFORATIONS: N/A

SERVICE DATES : 01-17-02
 TEST TYPE : Step Rate
 PPS TECHNICIANS : Joe Brown
 BHP GAUGE DEPTH: N/A

STEP NO.	TIME	SURFACE TUBING PRESS. (psig)	CUMULATIVE VOL INJECTED (bbls)	INJECTION RATE (bbls/day)	INJECTION RATE (gpm) (31/34.2857)	MEASURED BHP (psi)
11	12:15	1854.4	226.2	3462.7	100.99	
	12:20	1940.4	239.1	3693.0	107.71	
	12:25	1962.6	251.9	3696.5	107.82	
Falloff	12:30	1967.8	264.7	3693.2	107.72	
	12:31	1575.2				
	12:32	1515.6				
	12:33	1466.0				
	12:34	1427.8				
	12:35	1397.0				
	12:40	1294.7				
	12:45	1232.8				

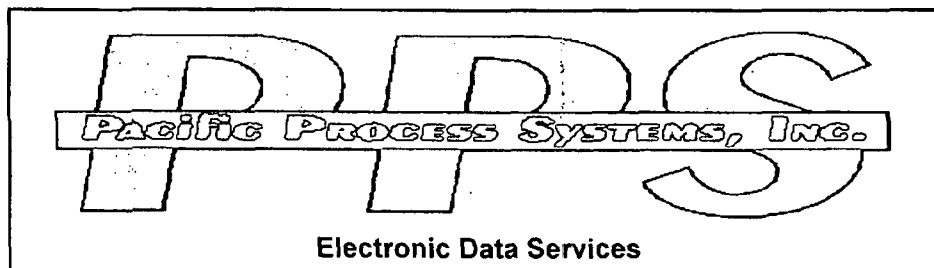
Pacific PROCESS SYSTEMS, INC.

Step Rate Injection Test



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

3406 Lovington Hwy.
Hobbs, NM 88240



Step Rate Injection Test Report

for

Chevron / Texaco

GSAU #235

Unit Letter H

Sec. 1 - T18S - R34E

01/17/02

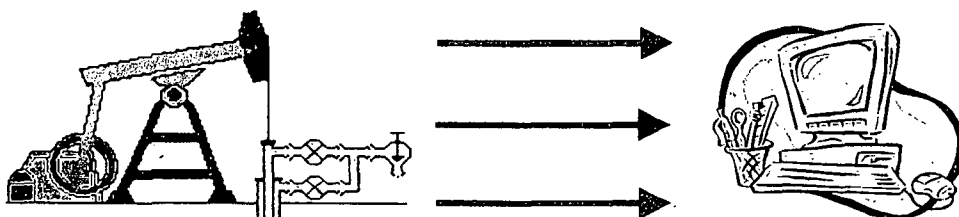


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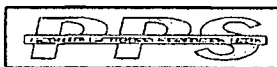
SEQUENCE OF EVENTS

SECTION III

DATA REPORT

SECTION IV

CHART



COMPANY : Chevron / Texaco
WELL : GSAU #235
COMPANY REP: Brett McQueen
PERFORATIONS: N/A

N/A

SERVICE DATES : 01/17/02
TEST TYPE : Step Rate
PPS TECHNICIANS : Joe Brown
BHP GAUGE DEPTH: N/A

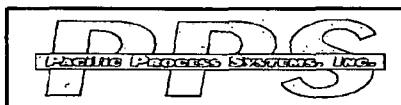
DATE	TIME	REMARKS
01/17/02	14:30	Opened Well At 717# surface pressure. Began injection at 800 Bbls/Day.
01/17/02	15:00	Started Test
01/17/02	15:05	
01/17/02	15:10	
01/17/02	15:15	Rate #1
01/17/02	15:20	
01/17/02	15:25	
01/17/02	15:30	Rate #2
01/17/02	15:35	
01/17/02	15:40	
01/17/02	15:45	Rate #3
01/17/02	15:50	
01/17/02	15:55	
01/17/02	16:00	Rate #4
01/17/02	16:05	
01/17/02	16:10	
01/17/02	16:15	Rate #5
01/17/02	16:20	
01/17/02	16:25	
01/17/02	16:30	Rate #6
01/17/02	16:35	
01/17/02	16:40	
01/17/02	16:45	Rate #7
01/17/02	16:50	
01/17/02	16:55	
01/17/02	17:00	Rate #8
01/17/02	17:05	
01/17/02	17:10	
01/17/02	17:15	Rate #9
01/17/02	17:20	
01/17/02	17:25	
01/17/02	17:30	Rate #10
01/17/02	17:35	
01/17/02	17:40	
01/17/02	17:45	Rate #11
01/17/02	17:50	
01/17/02	17:55	
01/17/02	18:00	Rate #12
01/17/02	18:05	
01/17/02	18:10	
01/17/02	18:15	Rate #13
01/17/02	18:20	
01/17/02	18:25	
01/17/02	18:30	Rate #14
01/17/02	18:35	
01/17/02	18:40	
01/17/02	18:45	Rate #15
01/17/02	18:46	Fall Off



COMPANY : Chevron / Texaco
 WELL: GSAU #235
 COMPANY REP: Brett McQueen
 PERFORATIONS: N/A

SERVICE DATES : 01/17/02
 TEST TYPE : Step Rate
 PPS TECHNICIANS : Joe Brown
 BHP GAUGE DEPTH: N/A

STEP NO.	TIME.	SURFACE TUBING PRESS. (psig)	CUMULATIVE VOL INJECTED (bbls)	INJECTION RATE (bbls/day)	INJECTION RATE (gpm) (3)/34.2857	MEASURED BHP (psi)
	15:00	805.4				
	15:05	817.4	1.7	487.1	14.21	
	15:10	850.0	3.4	496.1	14.47	
1	15:15	872.2	5.1	480.1	14.00	
	15:20	938.7	7.7	759.8	22.16	
	15:25	927.2	10.5	802.2	23.40	
2	15:30	958.9	13.3	800.3	23.34	
	15:35	1066.1	17.0	1080.9	31.53	
	15:40	1067.7	20.8	1091.6	31.84	
3	15:45	1062.0	24.6	1091.0	31.82	
	15:50	1120.2	29.4	1376.1	40.14	
	15:55	1139.7	34.2	1396.1	40.72	
4	16:00	1154.5	39.1	1395.5	40.70	
	16:05	1222.4	45.0	1691.0	49.32	
	16:10	1232.1	50.9	1710.6	49.89	
5	16:15	1245.6	56.8	1711.3	49.91	
	16:20	1305.8	63.8	2005.2	58.48	
	16:25	1319.3	70.8	2016.8	58.82	
6	16:30	1335.0	77.9	2046.2	59.68	
	16:35	1395.9	86.0	2318.9	67.63	
	16:40	1412.3	94.0	2317.4	67.59	
7	16:45	1431.1	102.1	2324.3	67.79	
	16:50	1474.3	111.2	2613.3	76.22	
	16:55	1495.5	120.3	2622.6	76.49	
8	17:00	1509.9	129.4	2625.0	76.56	
	17:05	1558.3	139.4	2888.4	84.24	
	17:10	1561.9	149.5	2901.0	84.61	
9	17:15	1577.1	159.6	2905.2	84.74	
	17:20	1619.9	170.5	3153.8	91.99	
	17:25	1623.0	181.5	3172.9	92.54	
10	17:30	1637.0	192.5	3173.6	92.56	
	17:35	1672.7	204.4	3418.0	99.69	
	17:40	1690.9	216.3	3416.4	99.64	



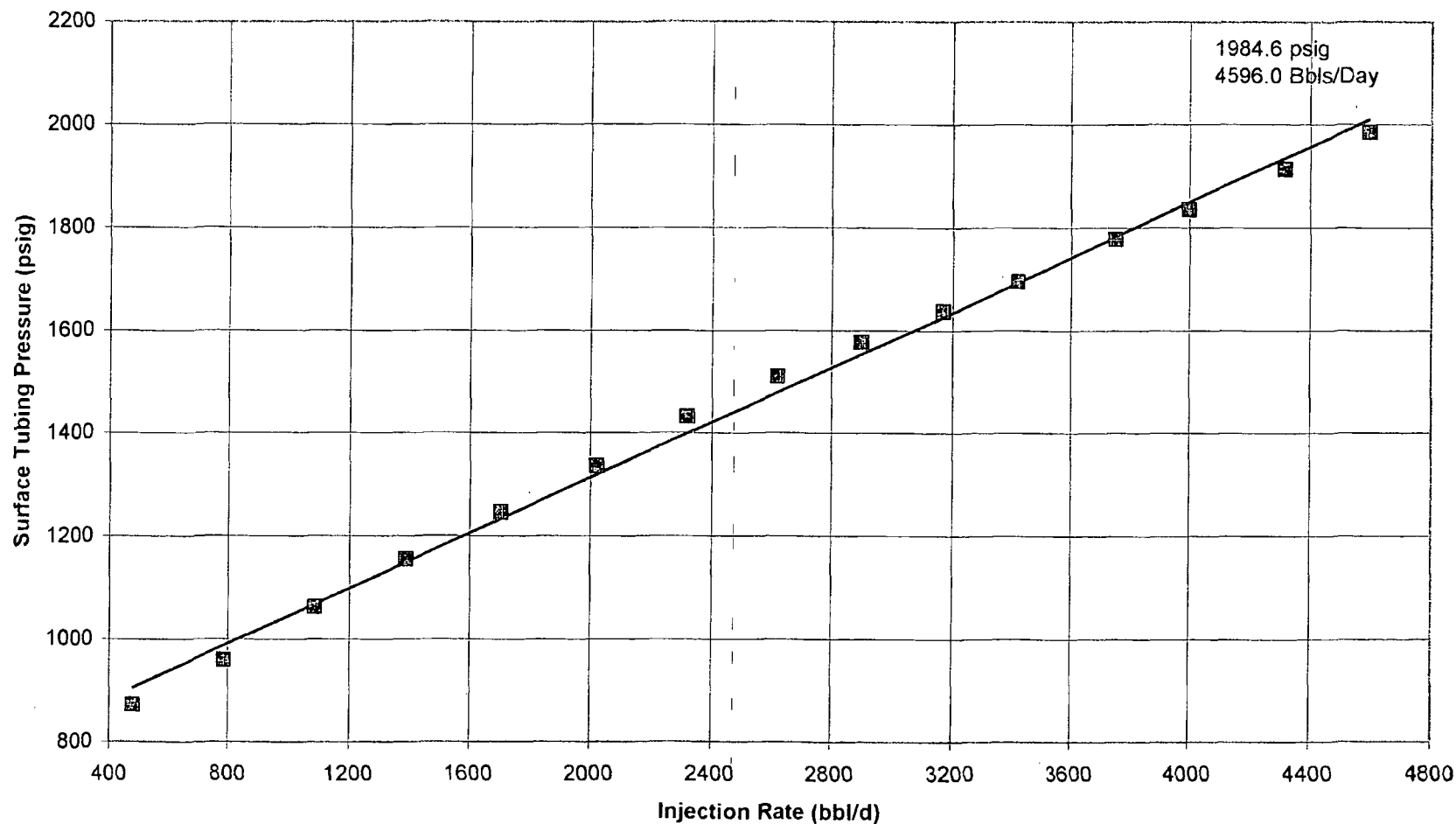
COMPANY : Chevron / Texaco
 WELL: GSAU #235
 COMPANY REP: Brett McQueen
 PERFORATIONS: N/A

SERVICE DATES : 01/17/02
 TEST TYPE : Step Rate
 PPS TECHNICIANS : Joe Brown
 BHP GAUGE DEPTH: N/A

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	17:45	1694.8	228.1	3418.5	99.71	
	17:50	1754.0	241.1	3734.4	108.92	
	17:55	1764.9	254.2	3761.7	109.72	
12	18:00	1777.2	267.2	3759.3	109.65	
	18:05	1813.9	281.1	3999.2	116.64	
	18:10	1832.1	295.0	4004.3	116.79	
13	18:15	1834.7	308.9	3997.5	116.59	
	18:20	1891.8	323.9	4320.1	126.00	
	18:25	1902.1	338.9	4317.6	125.93	
14	18:30	1913.6	353.9	4321.7	126.05	
	18:35	1956.0	369.8	4586.9	133.79	
	18:40	1974.9	385.8	4600.3	134.18	
Falloff	18:45	1984.6	401.8	4600.7	134.19	
	18:46	1628.8				
	18:47	1613.7				
	18:48	1594.3				
	18:49	1575.3				
	18:50	1558.1				
	18:55	1489.8				
	19:00	1439.9				

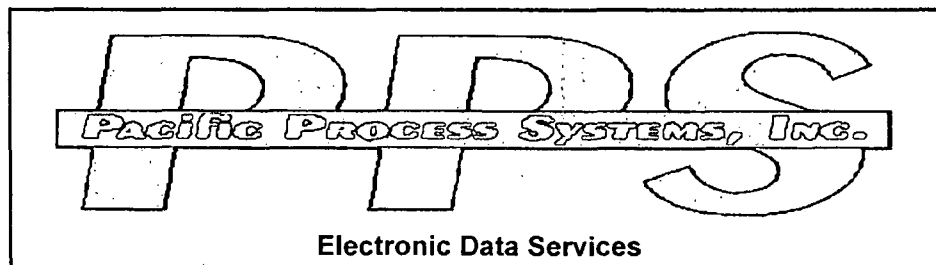
Pacific Process Systems, Inc.

Step Rate Injection Test



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

3406 Lovington Hwy.
Hobbs, NM 88240



Step Rate Injection Test Report

for

Chevron / Texaco

GSAU #249

Unit Letter F

Sec.1 - T18S - R34E

01/18/02

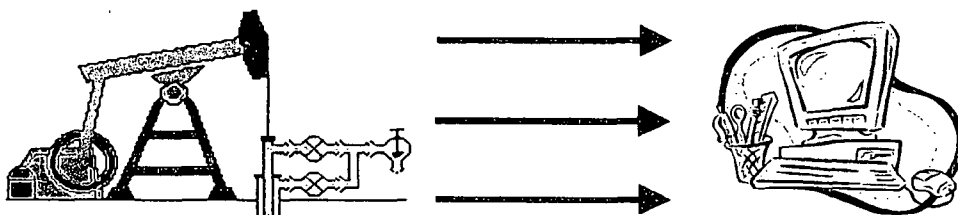


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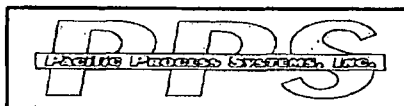


COMPANY: Chevron / Texaco
WELL: GSAU #249
COMPANY REP: Brett McQueen
PERFORATIONS: N/A

N/A

SERVICE DATES: 01/18/02
TEST TYPE: Step Rate
PPS TECHNICIANS: Joe Brown
BHP GAUGE DEPTH: N/A

DATE	TIME	REMARKS
01/18/02	9:00	Opened well at 806# surface pressure. Began injection at 400 Bbls/Day ¹⁰
01/18/02	9:15	Started Test
01/18/02	9:20	
01/18/02	9:25	
01/18/02	9:30	Rate #1
01/18/02	9:35	
01/18/02	9:40	
01/18/02	9:45	Rate #2
01/18/02	9:50	
01/18/02	9:55	
01/18/02	10:00	Rate #3
01/18/02	10:05	
01/18/02	10:10	
01/18/02	10:15	Rate #4
01/18/02	10:20	
01/18/02	10:25	
01/18/02	10:30	Rate #5
01/18/02	10:35	
01/18/02	10:40	
01/18/02	10:45	Rate #6
01/18/02	10:50	
01/18/02	10:55	
01/18/02	11:00	Rate #7
01/18/02	11:05	
01/18/02	11:10	
01/18/02	11:15	Rate #8
01/18/02	11:20	
01/18/02	11:25	
01/18/02	11:30	Rate #9
01/18/02	11:35	
01/18/02	11:40	
01/18/02	11:45	Rate #10
01/18/02	11:50	
01/18/02	11:55	
01/18/02	12:00	Rate #11
01/18/02	12:05	
01/18/02	12:10	
01/18/02	12:15	Rate #12
01/18/02	12:20	
01/18/02	12:25	
01/18/02	12:30	Rate #13
01/18/02	12:35	
01/18/02	12:40	
01/18/02	12:45	Rate #14
01/18/02	12:50	
01/18/02	12:55	
01/18/02	13:00	Rate #15
01/18/02	13:01	Flow Off



COMPANY : Chevron / Texaco
 WELL: GSAU #249
 COMPANY REP: Brett McQueen
 PERFORATIONS: N/A

SERVICE DATES : 01/18/02
 TEST TYPE : Step Rate
 PPS TECHNICIANS : Joe Brown
 BHP GAUGE DEPTH: N/A

STEP NO.	TIME	SURFACE TUBING PRESS. (psig)	CUMULATIVE VOL INJECTED (bbls)	INJECTION RATE (bbls/day)	INJECTION RATE (gpm) (3)/34.2857	MEASURED BHP (psi)
	9:15	739.5				
	9:20	757.5	1.7	484.6	14.13	
	9:25	786.8	3.4	485.4	14.16	
1	9:30	785.1	5.1	504.7	14.72	
	9:35	832.1	7.9	806.2	23.51	
	9:40	866.9	10.8	822.5	23.99	
2	9:45	880.8	13.7	830.3	24.22	
	9:50	944.1	17.4	1089.2	31.77	
	9:55	963.8	21.3	1101.7	32.13	
3	10:00	973.2	25.5	1230.3	35.88	
	10:05	1007.8	30.4	1389.6	40.53	
	10:10	1049.4	35.3	1420.1	41.42	
4	10:15	1046.2	40.2	1420.6	41.43	
	10:20	1082.8	46.2	1710.6	49.89	
	10:25	1119.0	52.1	1713.4	49.98	
5	10:30	1111.7	58.1	1721.7	50.22	
	10:35	1177.3	65.0	1991.5	58.09	
	10:40	1198.7	71.9	1997.6	58.26	
6	10:45	1208.1	78.9	1993.2	58.13	
	10:50	1264.3	86.9	2303.7	67.19	
	10:55	1286.8	94.8	2298.8	67.05	
7	11:00	1304.9	102.8	2300.1	67.09	
	11:05	1335.1	111.9	2599.6	75.82	
	11:10	1371.7	120.8	2578.1	75.19	
8	11:15	1399.9	129.8	2577.1	75.17	
	11:20	1452.4	139.8	2881.4	84.04	
	11:25	1478.7	149.8	2885.0	84.14	
9	11:30	1497.7	159.8	2887.5	84.22	
	11:35	1554.9	170.8	3168.6	92.42	
	11:40	1549.8	181.8	3178.4	92.70	
10	11:45	1590.8	192.9	3178.5	92.71	
	11:50	1647.7	205.0	3496.4	101.98	
	11:55	1650.7	217.2	3513.3	102.47	



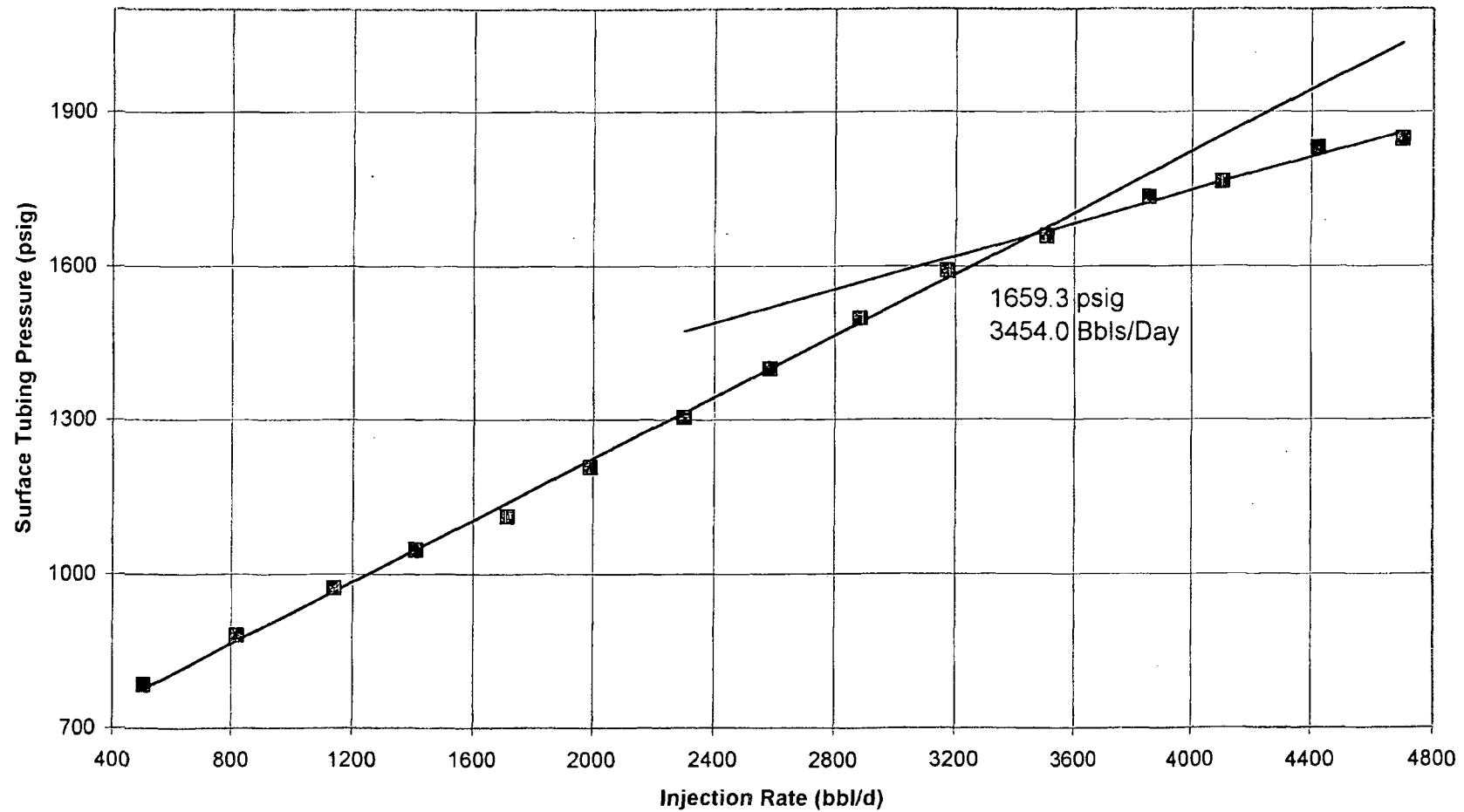
COMPANY : Chevron / Texaco
 WELL: GSAU #249
 COMPANY REP: Brett McQueen
 PERFORATIONS: N/A

SERVICE DATES : 01/18/02
 TEST TYPE : Step Rate
 PPS TECHNICIANS : Joe Brown
 BHP GAUGE DEPTH: N/A

STEP NO.	TIME	SURFACE TUBING PRESS. (psig)	CUMULATIVE VOL INJECTED (bbls)	INJECTION RATE (bbls/day)	INJECTION RATE (gpm) (3y/34.2857)	MEASURED BHP (psi)
11	12:00	1657.2	229.4	3506.2	102.27	
	12:05	1720.9	242.7	3832.9	111.79	
	12:10	1740.9	256.1	3863.8	112.69	
12	12:15	1734.0	269.5	3865.4	112.74	
	12:20	1769.3	283.8	4096.2	119.47	
	12:25	1766.9	298.0	4108.2	119.82	
13	12:30	1764.1	312.3	4106.7	119.78	
	12:35	1812.9	327.6	4416.0	128.80	
	12:40	1813.7	343.0	4417.9	128.85	
14	12:45	1829.7	358.4	4433.0	129.30	
	12:50	1850.7	374.7	4700.8	137.11	
	12:55	1858.7	391.0	4706.0	137.26	
Falloff	13:00	1847.3	407.3	4698.4	137.04	
	13:01	1466.1				
	13:02	1442.3				
	13:03	1430.7				
	13:04	1421.0				
	13:05	1412.6				
	13:10	1383.9				
	13:15	1365.1				

Pacific PROCESS SYSTEMS, INC.

Step Rate Injection Test



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