

ABOVE THIS LINE FOR DIVISION USE ONLY

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



Quantum
 243874

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST 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
- [D] Other: Specify _____
- [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] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

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

David Catanach
 Print or Type Name

David Catanach
 Signature

Agent for Quantum Resources Management, LLC
 Title

2/25/11
 Date

drcatanach@netscape.com
 E-Mail Address

WFX-733
IPI-360

February 25, 2011

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

Attention: Mr. Daniel Sanchez, Acting Division Director

HAND DELIVERED

Re: Application for Increased Injection Pressure
Quantum Resources Management, LLC
Artesia Unit Waterflood Project
Artesia Queen-Grayburg-San Andres Pool (3230)
Eddy County, New Mexico

Dear Mr. Sanchez,

Quantum Resources Management, LLC ("Quantum") as current operator of the Artesia Unit Waterflood Project, located in portions of Sections 25, 26, 34, 35 and 36, Township 17 South, Range 28 East, and Sections 2 & 3, Township 18 South, Range 28 East, NMPM, Eddy County, New Mexico, hereby requests administrative approval to increase the surface injection pressure on a unit-wide basis for all injection wells within the unit area.

Waterflood operations within the Artesia Unit were initially approved by Division Order No. R-2876 dated March 5, 1965. Waterflood operations have been ongoing since that time. Additional injection wells within the unit area have subsequently been added and permitted by Division Orders No. R-3311, WFX-330, WFX-347, WFX-374, WFX-385, WFX-436, WFX-470, WFX-733, WFX-768 and R-11720, as amended. There are currently twenty-one active or permitted injection wells within the unit area.

An examination of Division records appears to show that most of the injection wells within the Artesia Unit were permitted prior to 1980. It is our understanding that prior to that time, the Division did not impose a maximum surface injection pressure on permitted injection wells and, for that reason, it is difficult to ascertain whether or not most of these injection wells are subject to a maximum surface injection pressure, and what that pressure may be.

As a result of prior step rate tests conducted within the Artesia Unit, five of the injection wells within the unit area are subject to surface pressure limits of 1050, 1050, 1300, 1000, and 850 psi. (See Division Orders No. IPI-234 and IPI-360.)

*Quantum Resources Management, LLC
Request for Surface Injection Pressure Increase
Artesia Unit Waterflood Project
Eddy County, New Mexico*

Melrose Operating Company, the previous operator of the Artesia Unit, conducted step rate injection tests on seven wells within the unit area during the period from May, 2006 through April, 2010. In addition to those tests, Quantum has conducted step rate injection tests on three additional wells during February, 2011. The step rate tests generally indicate fracture pressures ranging from 600-1564 psi. Step rate tests conducted on the Artesia Unit Wells No. 53 and 54 appear to be anomalies since they indicate fracture pressures in the 600-842 psi range. These tests do not appear to be consistent with the results of the eight other tests conducted within the unit area. If these two tests are not considered, the average fracture pressure that was determined in the remaining eight wells is 1250 psi. **Consequently, Quantum hereby requests authority to increase the surface injection pressure on a unit-wide basis within the Artesia Unit to 1,200 psi.** (Note: the only exception is the Artesia Unit No. 29. This well currently has a maximum surface injection pressure limit of 1,300 psi). The proposed pressure increase represents a fairly conservative pressure gradient of approximately 0.6 psi/ft. Approval of the proposed pressure increase will allow Quantum to effectively and efficiently conduct secondary recovery operations within the Artesia Unit, thereby increasing the recovery of hydrocarbons from the Artesia Queen-Grayburg-San Andres Pool. Also, Quantum believes that the proposed surface injection pressure will not fracture the injection formation or confining strata, and will therefore protect fresh water resources within the unit area.

Attached is a table showing a list of the injection wells within the Artesia Unit, along with its API No., well location, currently authorized surface injection pressure, and test results on those wells recently tested.

Also attached is a map of the Artesia Unit showing the location of the injection wells within the unit area, as well as the location of the recently-tested injection wells.

Also attached is a graphical presentation of the step rate tests conducted.

If you should have any questions, please contact me at (505) 690-9453.

Sincerely,



Mr. David Catanach
Agent for Quantum Resources Management, LLC
1401 McKinney Street
Suite 2400
Houston, Texas 77010

Xc: OCD-Artesia

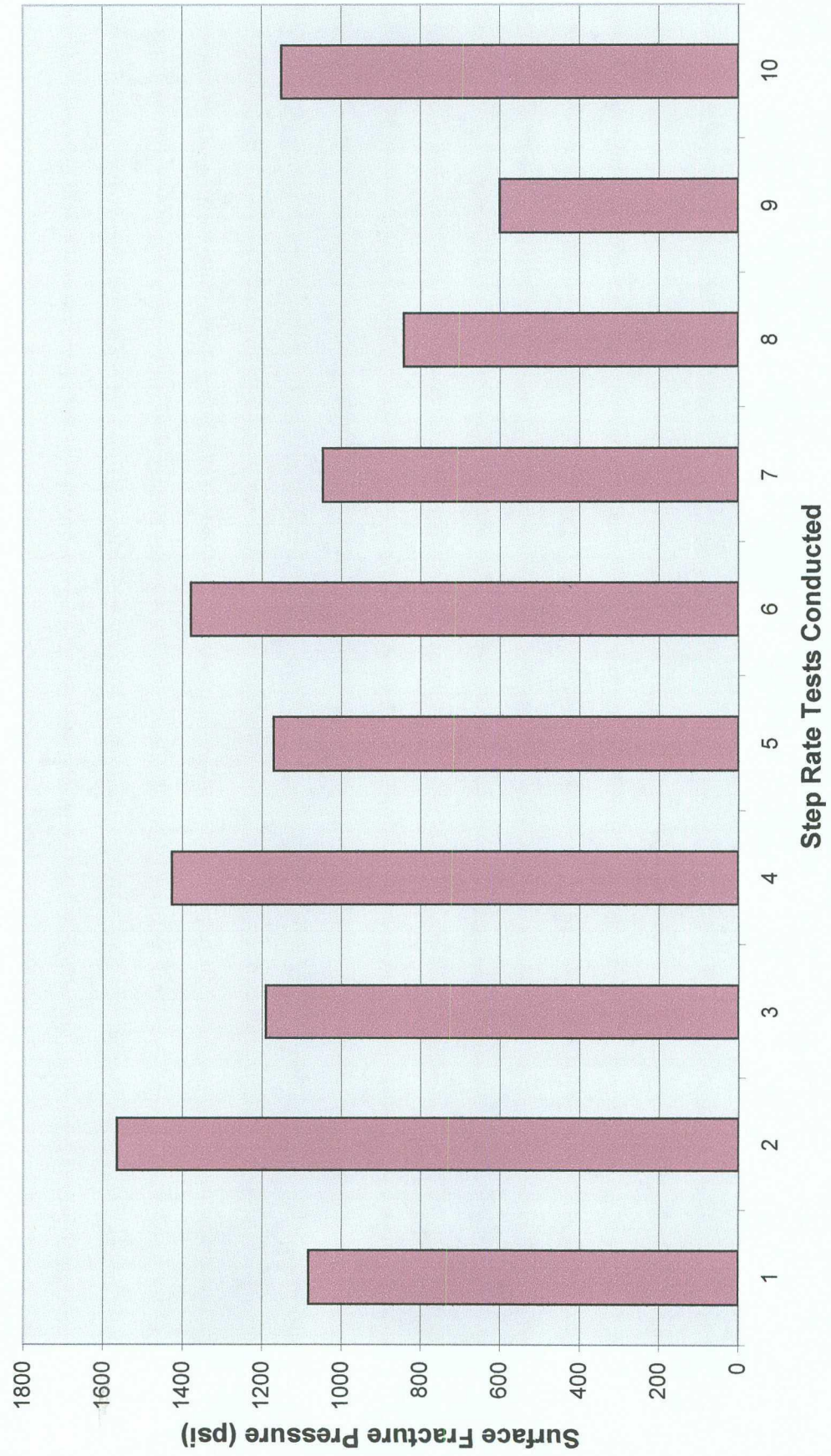
SRT'S
1 2009
8 2011
22 2011
23 2006
28 2006
29 2009
53 2009
54 2006
65 2011

Quantum Resources Management, LLC
Artesia Unit Injection Wells
Step Rate Test Results

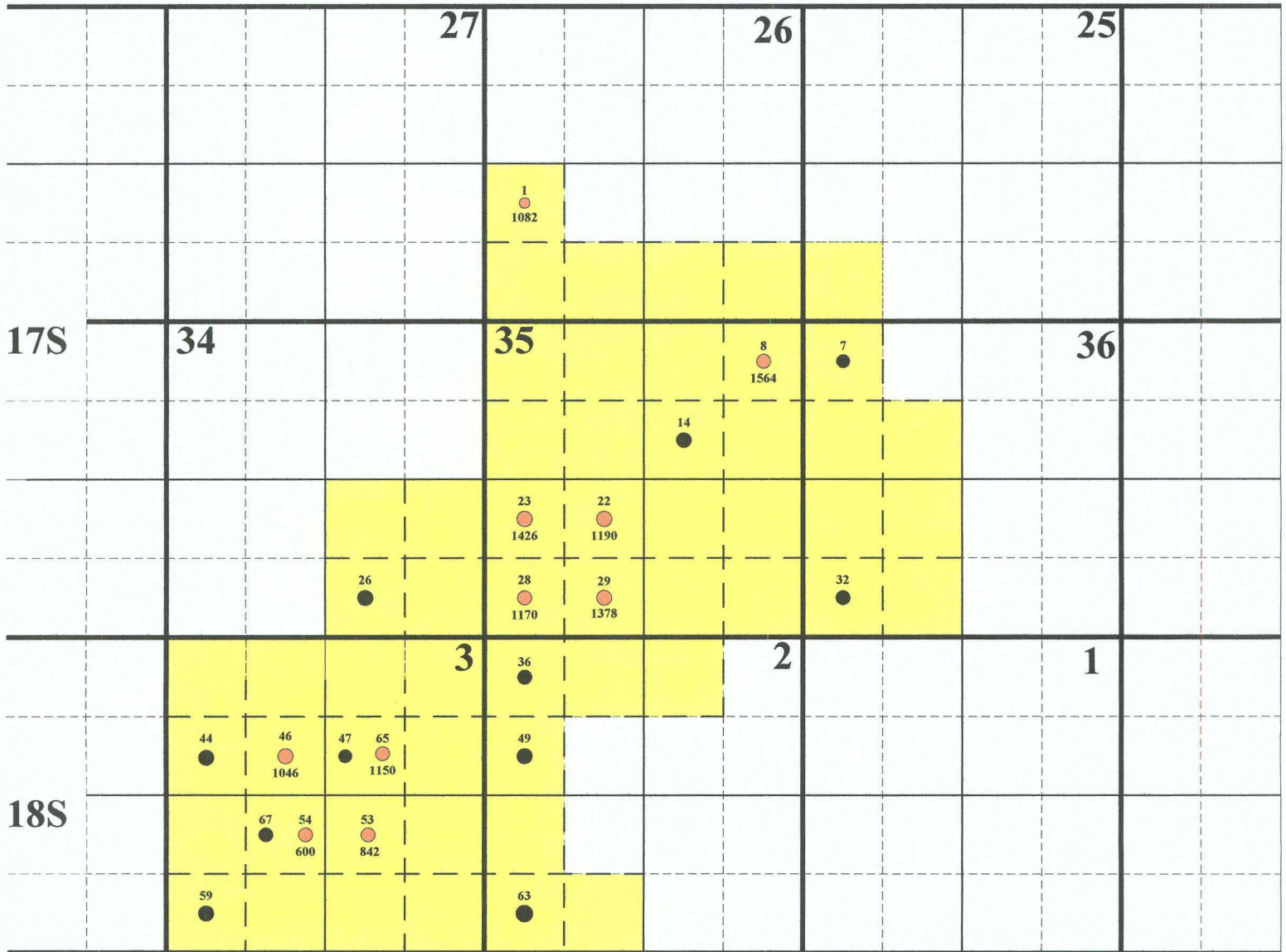
Well Name	Well No.	API No.	Well Location UL-S-T-R	Authorized Pressure	Test Results
Artesia Ut.	1	30-015-01564	Unit L, Section 26, T-17S, R-28E	1050 psi	1082 psi
Artesia Ut.	7	30-015-10080	Unit D, Section 36, T-17S, R-28E	*	
Artesia Ut.	8	30-015-01751	Unit A, Section 35, T-17S, R-28E	*	1564 psi
Artesia Ut.	14	30-015-01755	Unit G, Section 35, T-17S, R-28E	*	
Artesia Ut.	22	30-015-01747	Unit K, Section 35, T-17S, R-28E	*	1190 psi
Artesia Ut.	23	30-015-01746	Unit L, Section 35, T-17S, R-28E	1050 psi	1426 psi
Artesia Ut.	26	30-015-01708	Unit O, Section 34, T-17S, R-28E	*	
Artesia Ut.	28	30-015-01732	Unit M, Section 35, T-17S, R-28E	*	1170 psi
Artesia Ut.	29	30-015-01742	Unit N, Section 35, T-17S, R-28E	1300 psi	1378 psi
Artesia Ut.	32	30-015-01764	Unit M, Section 36, T-17S, R-28E	*	
Artesia Ut.	36	30-015-01782	Unit D, Section 2, T-18S, R-28E	*	
Artesia Ut.	44	30-015-01796	Unit E, Section 3, T-18S, R-28E	*	
Artesia Ut.	46	30-015-02541	Unit F, Section 3, T-18S, R-28E	1000 psi	1046 psi
Artesia Ut.	47	30-015-02545	Unit G, Section 3, T-18S, R-28E	*	
Artesia Ut.	49	30-015-01779	Unit E, Section 2, T-18S, R-28E	*	
Artesia Ut.	53	30-015-01788	Unit J, Section 3, T-18S, R-28E	850 psi	842 psi
Artesia Ut.	54	30-015-01801	Unit K, Section 3, T-18S, R-28E	434 psi	600 psi
Artesia Ut.	59	30-015-01792	Unit M, Section 3, T-18S, R-28E	*	
Artesia Ut.	63	30-015-01781	Unit M, Section 2, T-18S, R-28E	*	
Artesia Ut.	65	30-015-20273	Unit G, Section 3, T-18S, R-28E	*	1150 psi
Artesia Ut.	67	30-015-20327	Unit K, Section 3, T-18S, R-28E	*	

* Division Order Nos. R-2876, R-3311, WFX-330, WFX-347, WFX-374, WFX-436 did not establish a surface injection pressure limit for these wells.

Quantum Resources Management, LLC Step Rate Test Results



28 East



Artesia Unit Area

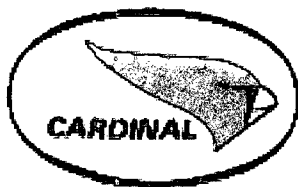


Existing Injection Well/Well Number



**Existing Injection Well
Step Rate Test Conducted
Well Number/Surface Fracture Pressure**

Step Rate Test



Cardinal Surveys Company

September 15, 2009

Melrose Operating
Artesia Unit # 1
Field:
Eddy County, New Mexico
SC 58485B
File # 19547

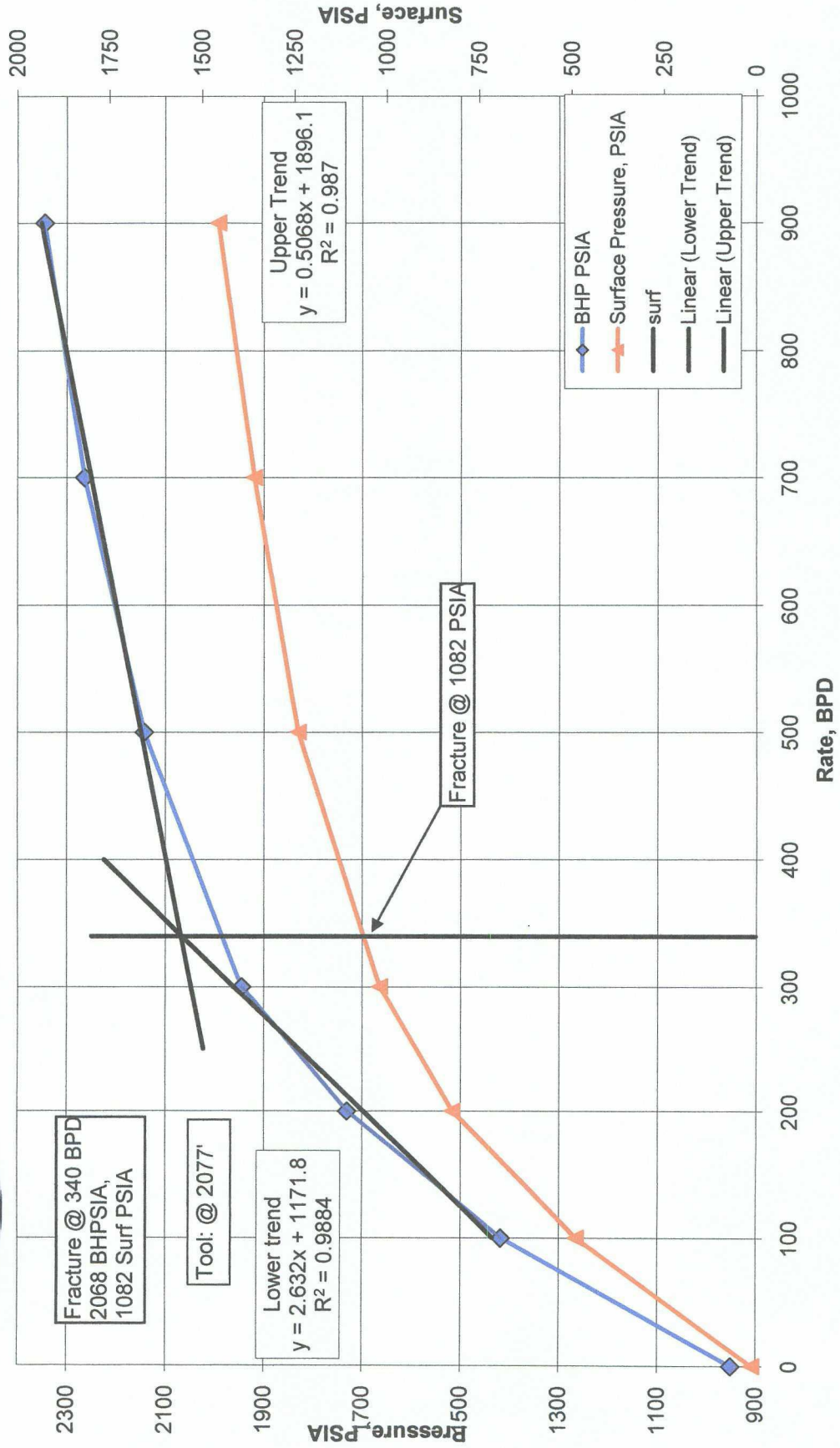
Fracture @ 340 BPD
2068 BHPSIA,
1082 Surf PSIA

Downhole PSI Tool Ser. No.
Surface PSI Gauge Ser. No.
Tool @ 2077'

Start Time	End Time	Rate BPD	Comments
1	7:32 AM 9:00 AM		0 On Bottom
2	9:00 AM 9:30 AM	100	
3	9:30 AM 10:00 AM	200	
4	10:00 AM 10:30 AM	300	
5	10:30 AM 11:00 AM	500	
6	11:00 AM 11:30 AM	700	
7	11:30 AM 12:00 PM	900	
8	12:00 PM 12:15 PM		0 Fall Off

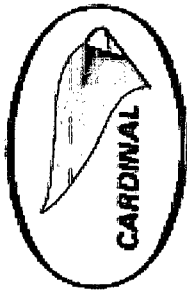


Melrose Operating Artesia Unit # 1
Step Rate Test 09-15-2009



Step Rate Test

Melrose Operating
 Artesia Unit # 1
 Field:
 Eddy County, New Mexico



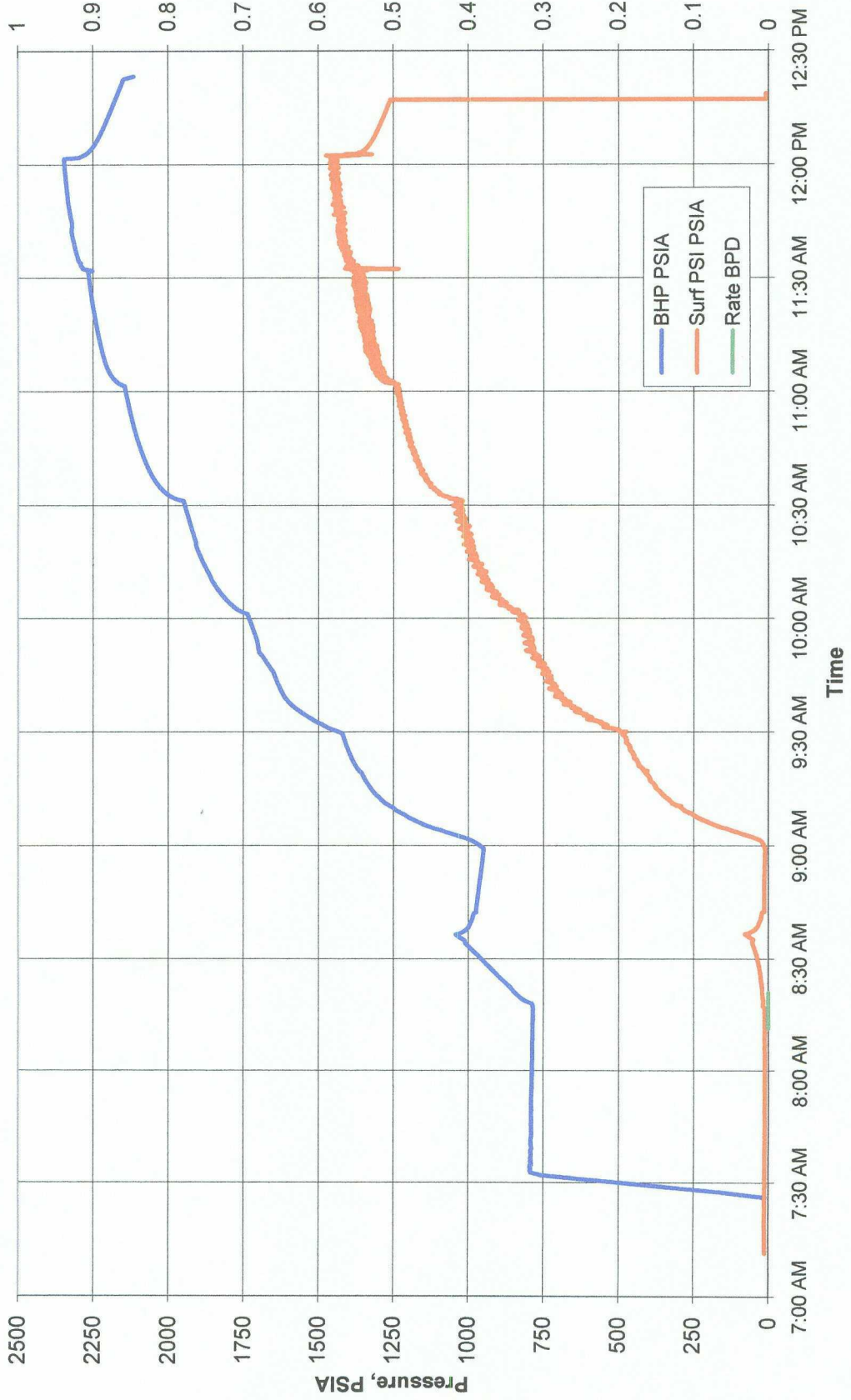
	S Time	E Time	D Time		Last Rate	Step	B. H. Pressure		Surf	Cum	Delta		Avg.	Lower	Upper
			Min				BPD	PSIA			BBL	BBL			
1	7:32 AM	9:00 AM	88		0	0	951	10.8	1.6	1.60	0				
2	9:00 AM	9:30 AM	30		100	100	1418.5	487.5	3.7	2.10	101		1418.5		
3	9:30 AM	10:00 AM	30		200	100	1731.1	822	8.1	4.40	211		1731.1		
4	10:00 AM	10:30 AM	30		300	100	1944.9	1019.1	14.5	6.40	307		1944.9		
5	10:30 AM	11:00 AM	30		500	200	2142.8	1240.9	25.2	10.70	206			2142.8	
6	11:00 AM	11:30 AM	30		700	200	2264.3	1359.6	39.7	14.50	182			2264.3	
7	11:30 AM	12:00 PM	30		900	200	2345.5	1456.3	59	19.30	926			2345.5	
8	12:00 PM	12:15 PM	15		0	-900	2184.2	1260.8	59	0.00	0				

2.632 1171.8
 0.5068 1896.1

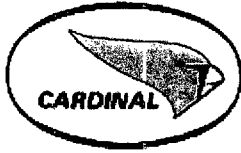
int point: 340.81498 BPD
 2068.825 Psia



Melrose Operating Artesia Unit # 1 Step Rate Test 09-15-2009



Step Rate Test



Cardinal Surveys Company

February 7, 2011

Quantum Petroleum
Artesia # 8
Field:
Eddy County, New Mexico
SC 59516
File # 20151

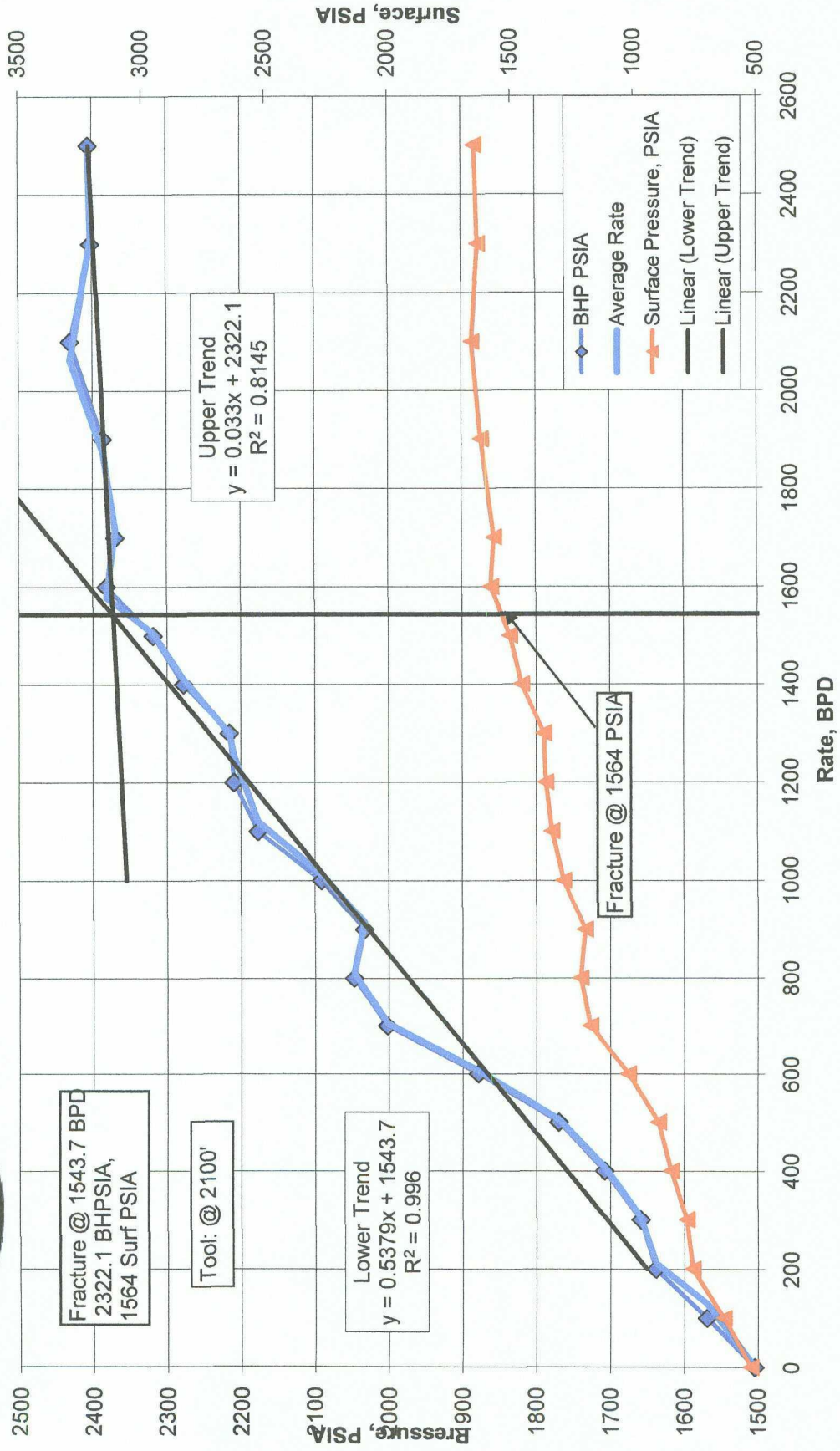
Fracture @ BPD
2354.6 BHPSIA,
1396 Surf PSIA

Downhole PSI Tool Ser. No.
Surface PSI Gauge Ser. No.
Tool @ 2100

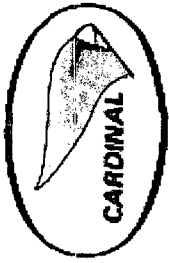
Start Time	End Time	Rate BPD	Comments
1	9:08 AM	10:00 AM	0 On Bottom
2	10:00 AM	10:30 AM	100
3	10:30 AM	11:00 AM	200
4	11:00 AM	11:30 AM	300
5	11:30 AM	12:00 PM	400
6	12:00 PM	12:30 PM	500
7	12:30 PM	1:00 PM	600
8	1:00 PM	1:30 PM	700
9	1:30 PM	2:00 PM	800
10	2:00 PM	2:30 PM	900
11	2:30 PM	3:00 PM	1000
12	3:00 PM	3:30 PM	1100
13	3:30 PM	4:00 PM	1200
14	4:00 PM	4:30 PM	1300
15	4:30 PM	5:00 PM	1400
16	5:00 PM	5:30 PM	1500
17	5:30 PM	6:00 PM	1600
18	6:00 PM	6:30 PM	1700
19	6:30 PM	7:00 PM	1900
20	7:00 PM	7:30 PM	2100
21	7:30 PM	8:00 PM	2300
22	8:00 PM	8:30 PM	2500
23	8:30 PM	8:45 PM	0 Fall Off



**Quantum Petroleum Artesia # 8
Step Rate Test 02-07-2011**



Step Rate Test



Quantum Petroleum

Artesia # 8

Field:

Eddy County, New Mexico

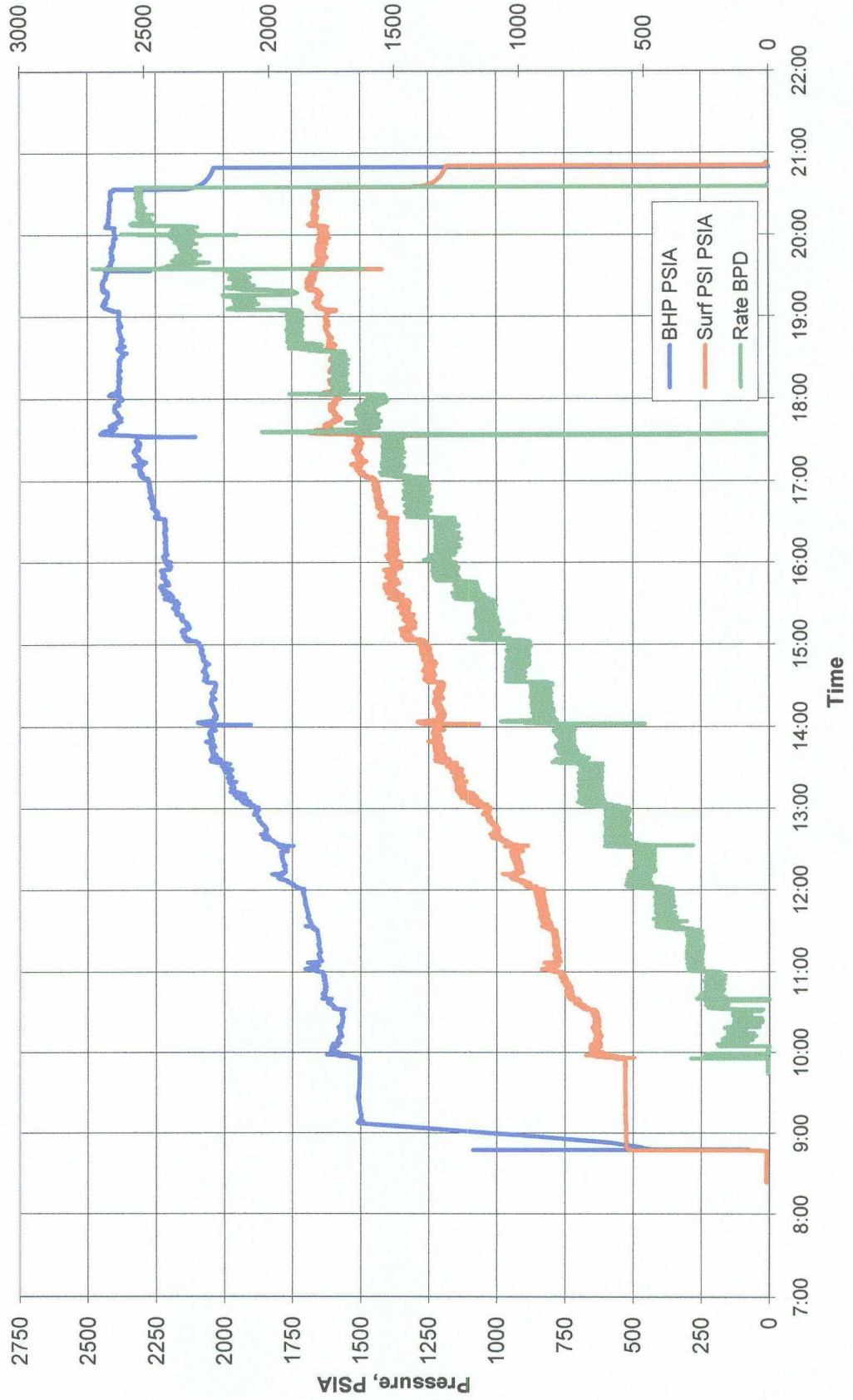
	S Time	E Time	D Time		Last Rate	Step	Average B. H. Pressure		Surf	Cum	Delta	Avg.	Lower	Upper
			Min	Max			Rate	PSIA						
1	9:08 AM	10:00 AM	52	0	0	0	1504.5	528.9	0	0.00	0			
2	10:00 AM	10:30 AM	30	100	100	100	1569.1	639.1	3.2	3.20	154			
3	10:30 AM	11:00 AM	30	200	100	100	1638.6	765.7	7.3	4.10	197			
4	11:00 AM	11:30 AM	30	300	100	100	1659.4	789.9	13.6	6.30	302		1638.6	
5	11:30 AM	12:00 PM	30	400	100	100	1707.9	853.4	22	8.40	101			
6	12:00 PM	12:30 PM	30	500	100	100	1769.8	905.5	32.6	10.60	106			
7	12:30 PM	1:00 PM	30	600	100	100	1879	1028.9	44.9	12.30	590			
8	1:00 PM	1:30 PM	30	700	100	705.68164	2002.3	1179.9	60	15.10	725			
9	1:30 PM	2:00 PM	30	800	100	809.7971	2047.2	1220.2	76.4	16.40	787			
10	2:00 PM	2:30 PM	30	900	100	914.19296	2033.4	1202.8	95.5	19.10	917		2033.4	
11	2:30 PM	3:00 PM	30	1000	100	1012.2501	2091.1	1288.8	116.6	21.10	1013		2091.1	
12	3:00 PM	3:30 PM	30	1100	100	1119.3755	2177	1337	139.6	23.00	1104			
13	3:30 PM	4:00 PM	30	1200	100	1254.9624	2209.6	1361.2	164.2	24.60	1181		2209.6	
14	4:00 PM	4:30 PM	30	1300	100	1299.1005	2215.7	1369.2	192.6	28.40	1363			
15	4:30 PM	5:00 PM	30	1400	100	1411.428	2277.7	1459	221.8	29.20	1402			
16	5:00 PM	5:30 PM	30	1500	100	1505.0517	2318.7	1507.3	253.4	31.60	1517			
17	5:30 PM	6:00 PM	30	1600	100	1578.0517	2381.6	1583	286.6	33.20	1594		2381.6	
18	6:00 PM	6:30 PM	30	1700	100	1715.0863	2369.6	1570.8	322.8	36.20	1738		2369.6	
19	6:30 PM	7:00 PM	30	1900	200	1873.4934	2386.2	1622.2	361.9	39.10	1877		2386.2	
20	7:00 PM	7:30 PM	30	2100	200	2061.406	2430.6	1659.6	405.8	43.90	2107			
21	7:30 PM	8:00 PM	30	2300	200	2309.8915	2402.1	1633.5	458.9	53.10	2549			
22	8:00 PM	8:30 PM	30	2500	200	2481.8644	2405.1	1647.2	507.9	49.00	2352		2405.1	
23	8:30 PM	8:45 PM	15	0	-2500	0	2039.2	1182	507.9	0.00	0			

0.5379 1543.7
0.033 2322.1

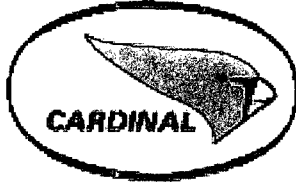
int point: 1541.6914 BPD
2372.9758 Psia



Quantum Petroleum Artesia # 8 Step Rate Test 02-07-2011



Step Rate Test



Cardinal Surveys Company

February 9, 2011

Quantum Petroleum
Artesia # 22
Field:
Eddy County, New Mexico
SC 59518
File # 20153

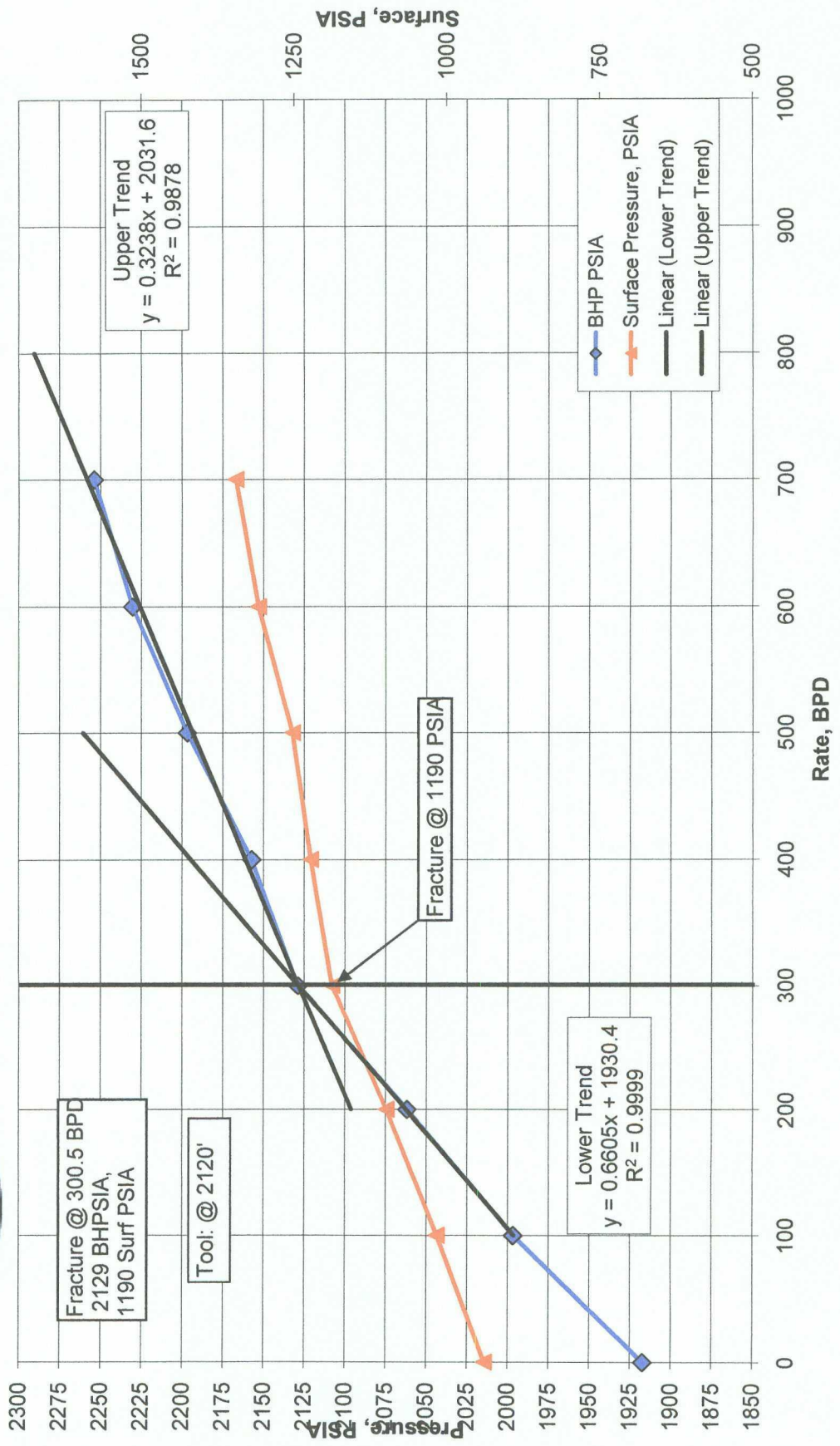
Fracture @ 300.5 BPD
2129 BHPSIA,
1190 Surf PSIA

Downhole PSI Tool Ser. No.
Surface PSI Gauge Ser. No.
Tool @ 2120

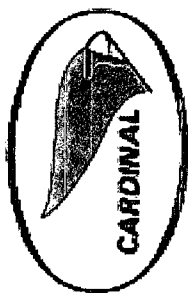
Start Time	End Time	Rate BPD	Comments
1	1:04 PM	1:15 PM	0 On Bottom
2	1:15 PM	1:45 PM	100
3	1:45 PM	2:15 PM	200
4	2:15 PM	2:45 PM	300
5	2:45 PM	3:15 PM	400
6	3:15 PM	3:45 PM	500
7	3:45 PM	4:15 PM	600
8	4:15 PM	4:45 PM	700
9	4:45 PM	5:00 PM	0 Fall Off



Quantum Petroleum Artesia Unit # 22
Step Rate Test 02-09-2011



Step Rate Test



Quantum Petroleum
 Artesia Unit # 22
 Field:
 Eddy County, New Mexico

	S Time	E Time	D Time		Last Rate	Step	B. H. Pressure		Surf	Cum	Delta	Avg.	Lower		Upper	
			Min	BPD			PSIA	PSIA					Trend	Trend		
1	1:04 PM	1:15 PM	11	0	0	0	1917.4	938.4	0	0.00	0					
2	1:15 PM	1:45 PM	30	100	100	100	1996.8	1016.3	2.1	2.10	101		1996.8			
3	1:45 PM	2:15 PM	30	200	100	100	2061.9	1099.1	6	3.90	187		2061.9			
4	2:15 PM	2:45 PM	30	300	100	100	2128.9	1188.3	12.6	6.60	317		2128.9			
5	2:45 PM	3:15 PM	30	400	100	100	2157.3	1223.1	20.6	8.00	67			2157.3		
6	3:15 PM	3:45 PM	30	500	100	100	2196.8	1252.9	31.2	10.60	125			2196.8		
7	3:45 PM	4:15 PM	30	600	100	100	2230.5	1308.3	43.7	12.50	600			2230.5		
8	4:15 PM	4:45 PM	30	700	100	100	2254	1345.1	58.4	14.70	706				2254	
9	4:45 PM	5:00 PM	15	0	-700	-700	2185.6	1755.4	58.4	0.00	0					

0.6605 1930.4
 0.3238 2031.6

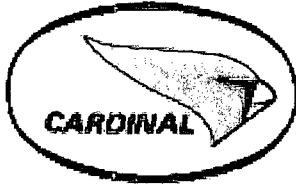
int point: 300.5643 BPD
 2128.9227 Psia



Quantum Petroleum Artesia Unit # 22 Step Rate Test 02-09-2011



Step Rate Test



Cardinal Surveys Company

April 14, 2010

QUANTUM Petroleum
Artesia # 23
Field:
Eddy County, New Mexico
SC 59515
File # 20148

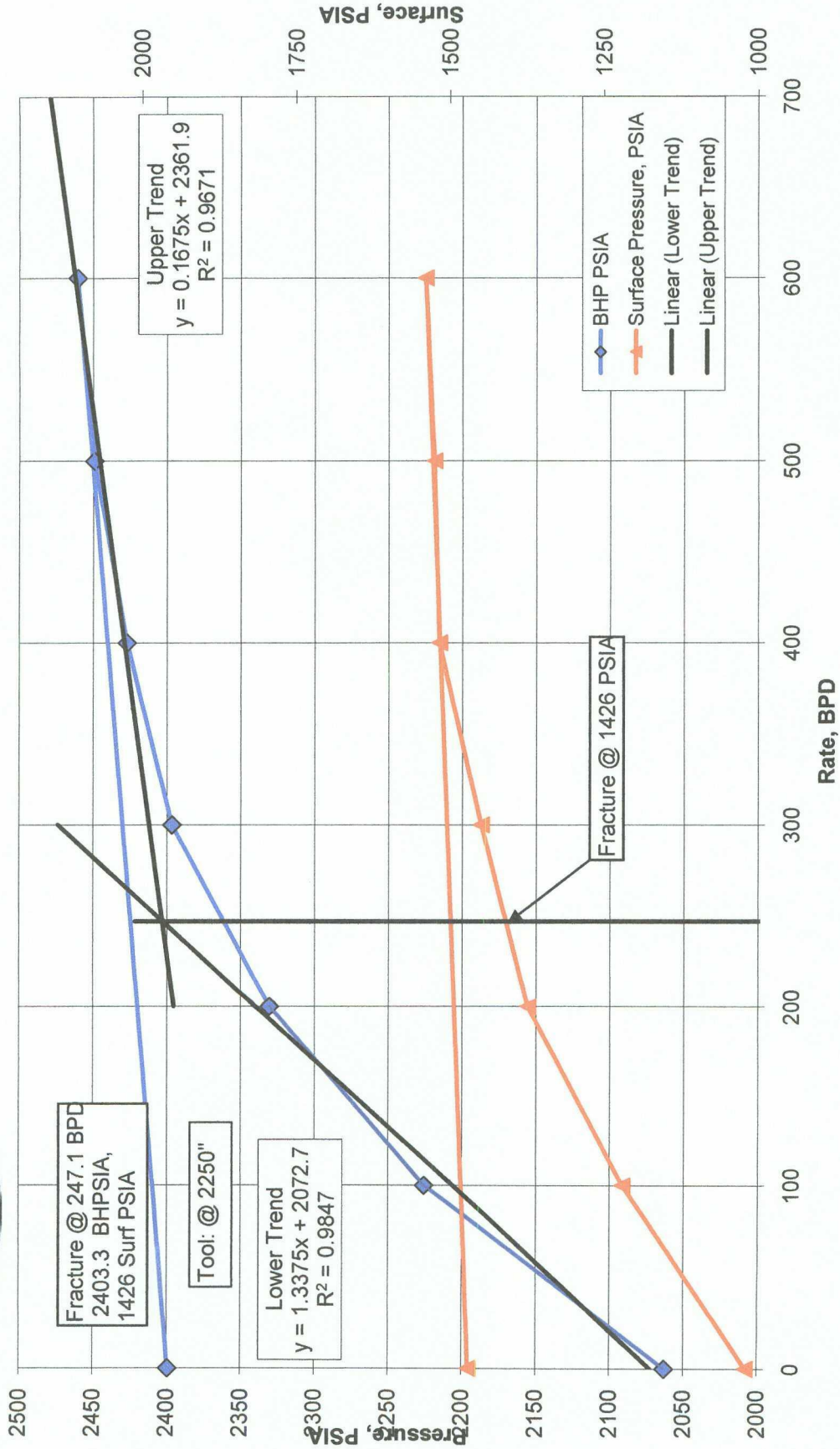
Fracture @ 247.1 BPD
2403.3 BHPSIA,
1426 Surf PSIA

Downhole PSI Tool Ser. No.
Surface PSI Gauge Ser. No.
Tool @ 2250'

	Start Time	End Time	Rate BPD	Comments
1	11:13 AM	11:15 AM		0 On Bottom
2	11:15 AM	11:45 AM	100	
3	11:45 AM	12:15 PM	200	
4	12:15 PM	12:45 PM	300	
5	12:45 PM	1:15 PM	400	
6	1:15 PM	1:45 PM	500	
7	1:45 PM	2:15 PM	600	
8	2:15 PM	2:30 PM		0 Fall Off

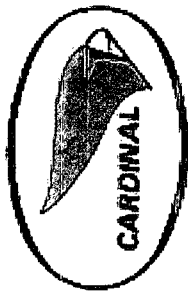


Quantum Petroleum Artesia # 23
Step Rate Test 01-31-2011



Step Rate Test

Quantum Petroleum
 Artesia # 23
 Field:
 Eddy County, New Mexico



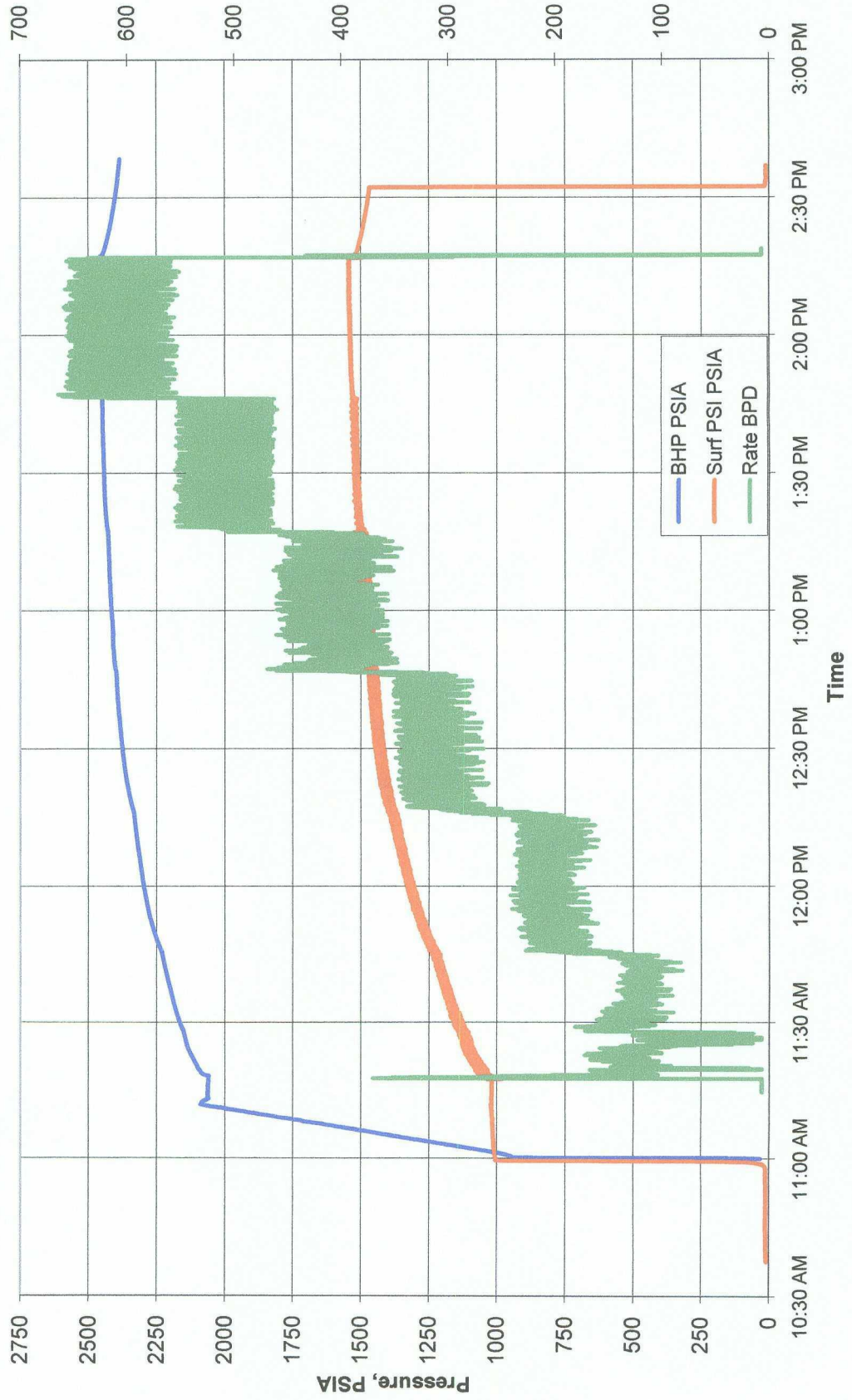
	S Time	E Time	D Time		Last Rate	Step	B. H. Pressure		Surf	Cum	Delta	Avg.	Lower		Upper
			Min	BPD			PSIA	PSIA					Trend	Trend	
1	11:13 AM	11:15 AM	2	0	0	0	2063.1	PSIA	1019.1	0	0.00	0	2063.1		
2	11:15 AM	11:45 AM	30	100	100	100	2225.7	PSIA	1219.6	2.2	2.20	106	2225.7		
3	11:45 AM	12:15 PM	30	200	100	100	2330.6	PSIA	1373.6	6.3	4.10	197	2330.6		
4	12:15 PM	12:45 PM	30	300	100	100	2396.6	PSIA	1449.4	12.6	6.30	302			
5	12:45 PM	1:15 PM	30	400	100	100	2427.1	PSIA	1517.8	21	8.40	101		2427.1	
6	1:15 PM	1:45 PM	30	500	100	100	2449.2	PSIA	1526	31.1	10.10	82		2449.2	
7	1:45 PM	2:15 PM	30	600	100	100	2460.6	PSIA	1540.2	43.9	12.80	614		2460.6	
8	2:15 PM	2:30 PM	15	0	-600	-600	2399.5	PSIA	1469.9	43.9	0.00	0			

1.3375 2072.7
 0.1675 2361.9

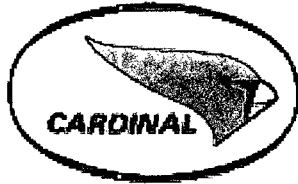
int point: 247.17949 BPD
 2403.3026 Psia



Quantum Petroleum Artesia # 23 Step Rate Test 01-31-2011



Step Rate Test



Cardinal Surveys Company

May 2, 2006

Melrose Operating
Artesia Unit # 28
Field:
Eddy County, NM

Intercept @ 580.6 BPD &
2053.0 PSIA, 1169.9
Surf. PSIA

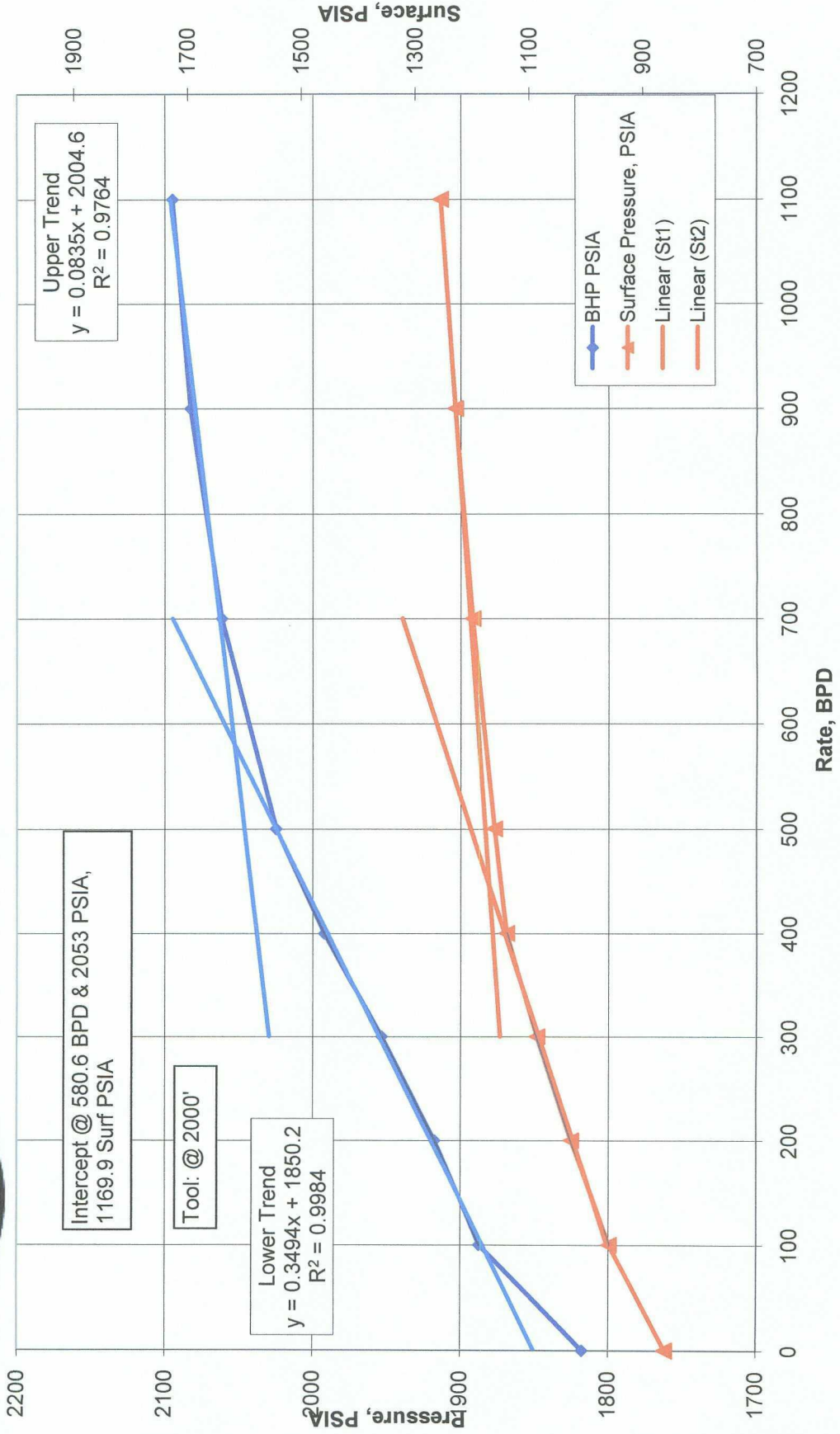
SC 55951
File # 17,458

Downhole PSI Tool Ser. No. 76149
Surface PSI Gauge Ser. No. 10548
Tool @ 2000

	Start Time	End Time	Rate BPD	Comments
1	7:43 AM	8:00 AM		0 On Bottom
2	8:00 AM	8:30 AM	100	
3	8:30 AM	9:00 AM	200	
4	9:00 AM	9:30 AM	300	
5	9:30 AM	10:00 AM	400	
6	10:00 AM	10:30 AM	500	
7	10:30 AM	11:00 AM	700	
8	11:00 AM	11:30 AM	900	
9	11:30 AM	12:00 PM	1100	
10	12:00 PM	12:15 PM		0 Fall Off

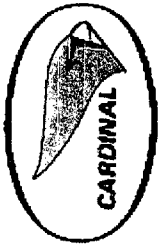


Melrose Operating Artesia Unit # 28
Step Rate Test 05-02-2006



Step Rate Test

Melrose Operating
 Artesia Unit # 28
 Field:
 Eddy Co. NM



1	S Time	E Time	D Time	Last Rate	Step	B. H. Pressure		Surf	Cum	Delta	Avg.	Lower	Upper		Surf.	Surf.
						BPD	PSIA						Trend	Trend		
1	7:43 AM	8:00 AM	17	0	0	1817.7	PSIA	861.1	0	0	0					
2	8:00 AM	8:30 AM	30	100	100	1887.4	959.3	2.1	2.1	101	1887.4	1887.4	959.3			
3	8:30 AM	9:00 AM	30	200	100	1917.6	1025.7	5.7	3.6	173	1917.6	1917.6	1025.7			
4	9:00 AM	9:30 AM	30	300	100	1953.3	1086	12.1	6.4	307	1953.3	1953.3	1086			
5	9:30 AM	10:00 AM	30	400	100	1992.2	1139	20.1	8	384	1992.2	1992.2	1139			
6	10:00 AM	10:30 AM	30	500	100	2024.8	1160.5	30.7	10.6	509	2024.8	2024.8	1139			
7	10:30 AM	11:00 AM	30	700	200	2061.5	1198.8	45.5	14.8	710	2061.5	2061.5	1139			
8	11:00 AM	11:30 AM	30	900	200	2082.7	1229.4	64.6	19.1	917	2082.7	2082.7	1229.4			
9	11:30 AM	12:00 PM	30	1100	200	2094.9	1255.6	87.5	22.9	1099	2094.9	2094.9	1255.6			
10	12:00 PM	12:15 PM	15	0	-1100	2036.5	1162.7	87.5	0	0						

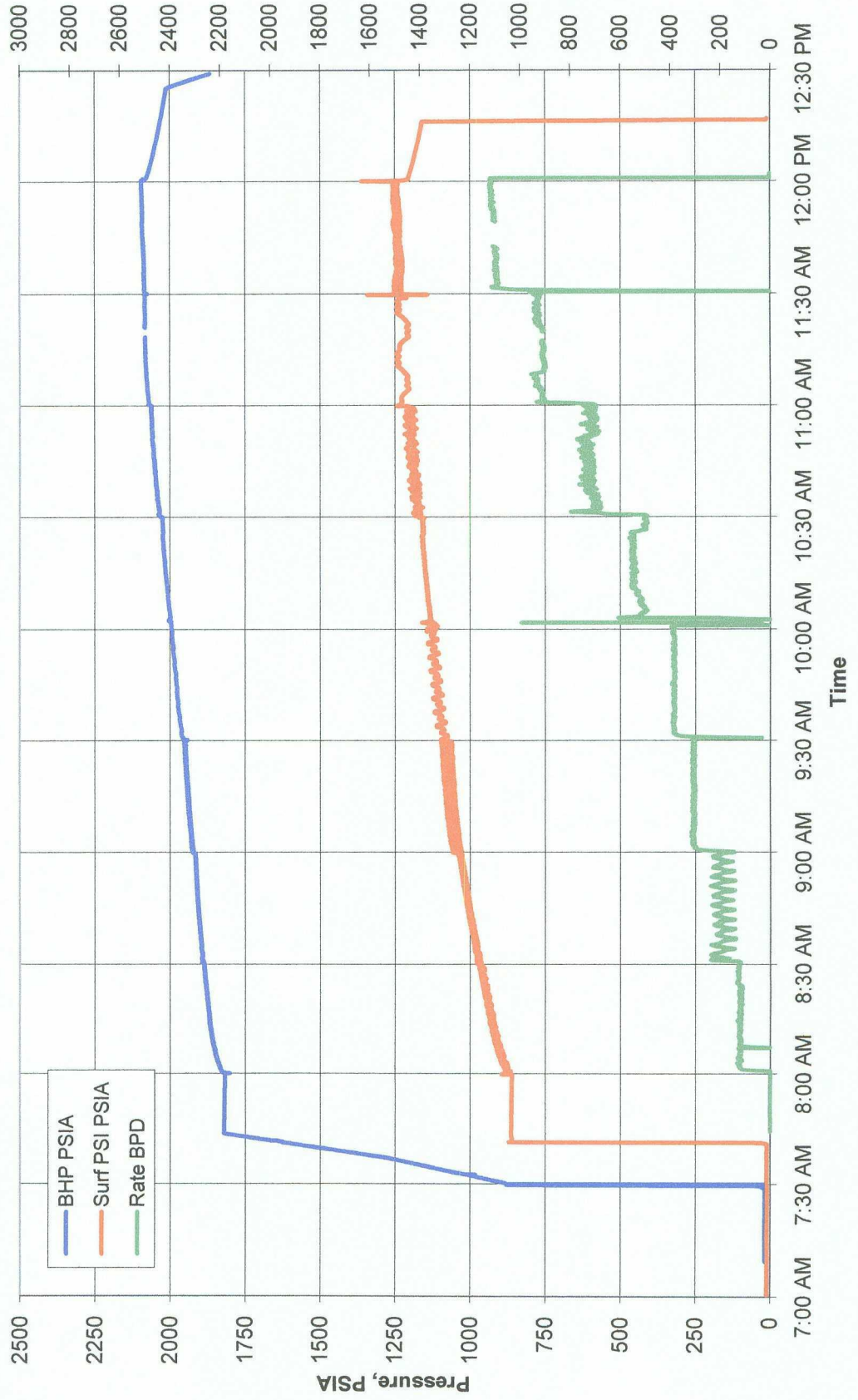
File # 17,458

0.3494 1850.2 0.5994 902.65
 0.0835 2004.6 0.131 1111.5

int point: 580.66942 BPD 445.87959
 2053.0859 Psia 1169.91023

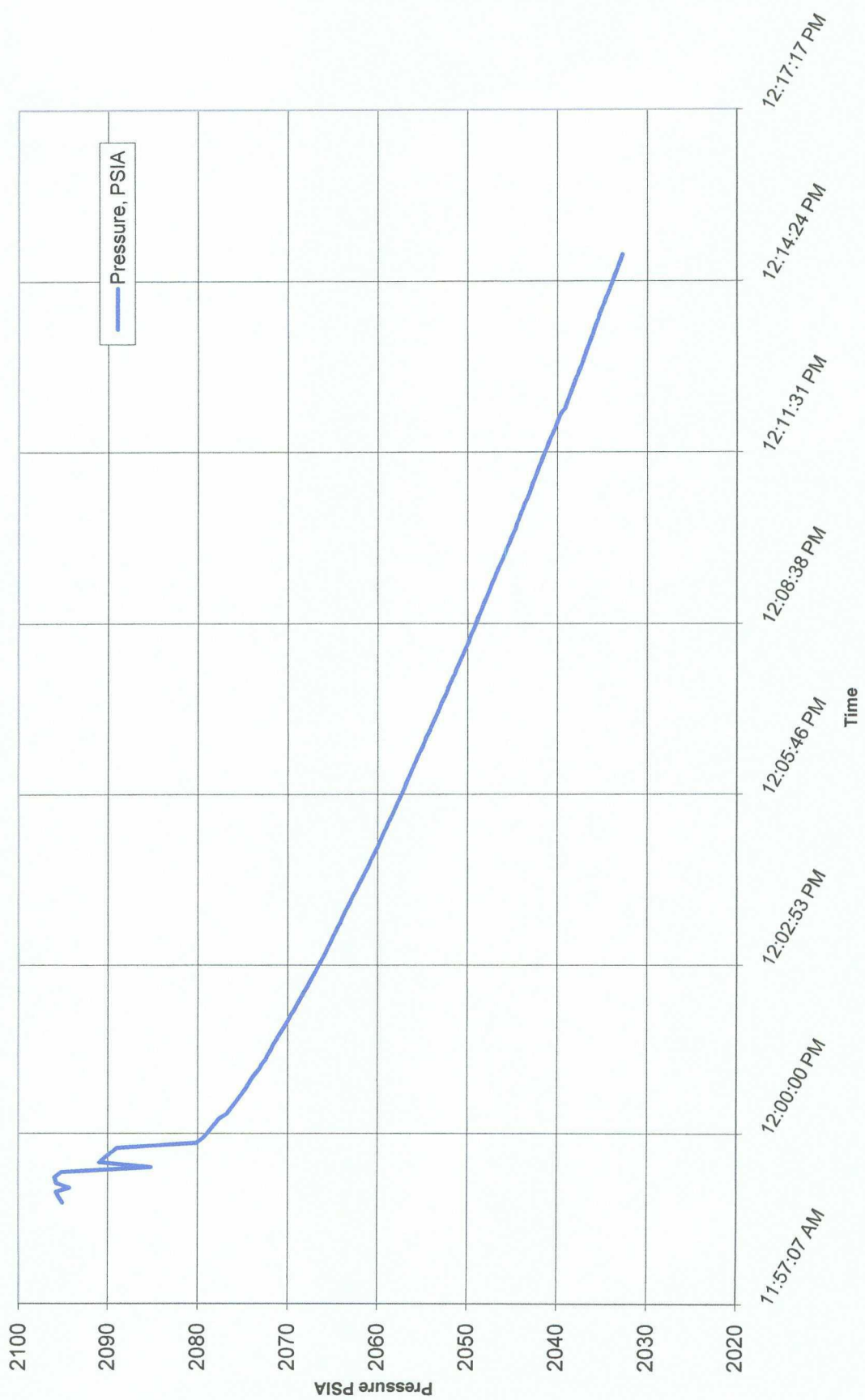


Melrose Operating Artesia Unit # 28
Step Rate Test 05-02-2006

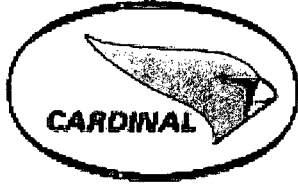




Melrose Operating Artesia Unit # 28 Step Rate Test 05-02-2006



Step Rate Test



Cardinal Surveys Company

September 29, 2009

Melrose Operating
Artesia Unit # 29
Field:
Eddy County, New Mexico
SC 58486
File # 19486

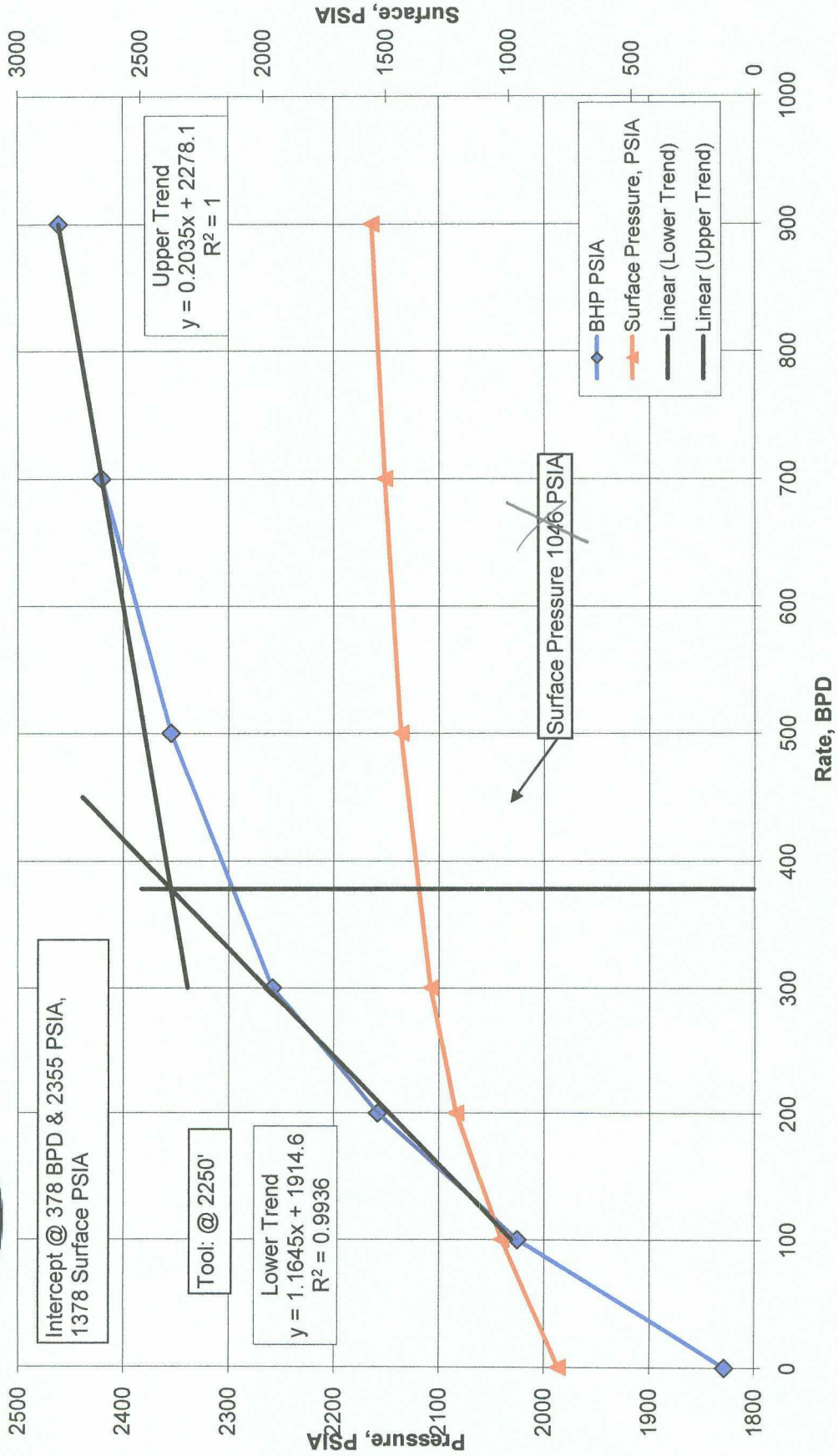
Intercept @ 378 BPD &
2355 PSIA, 1378
Surface PSIA

Downhole PSI Tool Ser. No.
Surface PSI Gauge Ser. No.
Tool @ 2100'

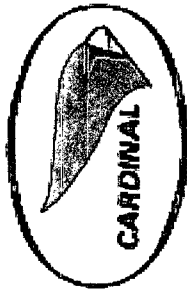
	Start Time	End Time	Rate BPD	Comments
1	8:22 AM	9:00 AM		0 On Bottom
2	9:00 AM	9:30 AM	100	
3	9:30 AM	10:00 AM	200	
4	10:00 AM	10:30 AM	300	
5	10:30 AM	11:00 AM	500	
6	11:00 AM	11:30 AM	700	
7	11:30 AM	12:00 PM	900	
8	12:00 PM	12:15 PM		0 Fall Off



Melrose Operating Artesia Unit # 29
Step Rate Test 09-03-2009



Step Rate Test



Melrose Operating
 Artesia Unit # 29
 Field:
 Eddy County, New Mexico

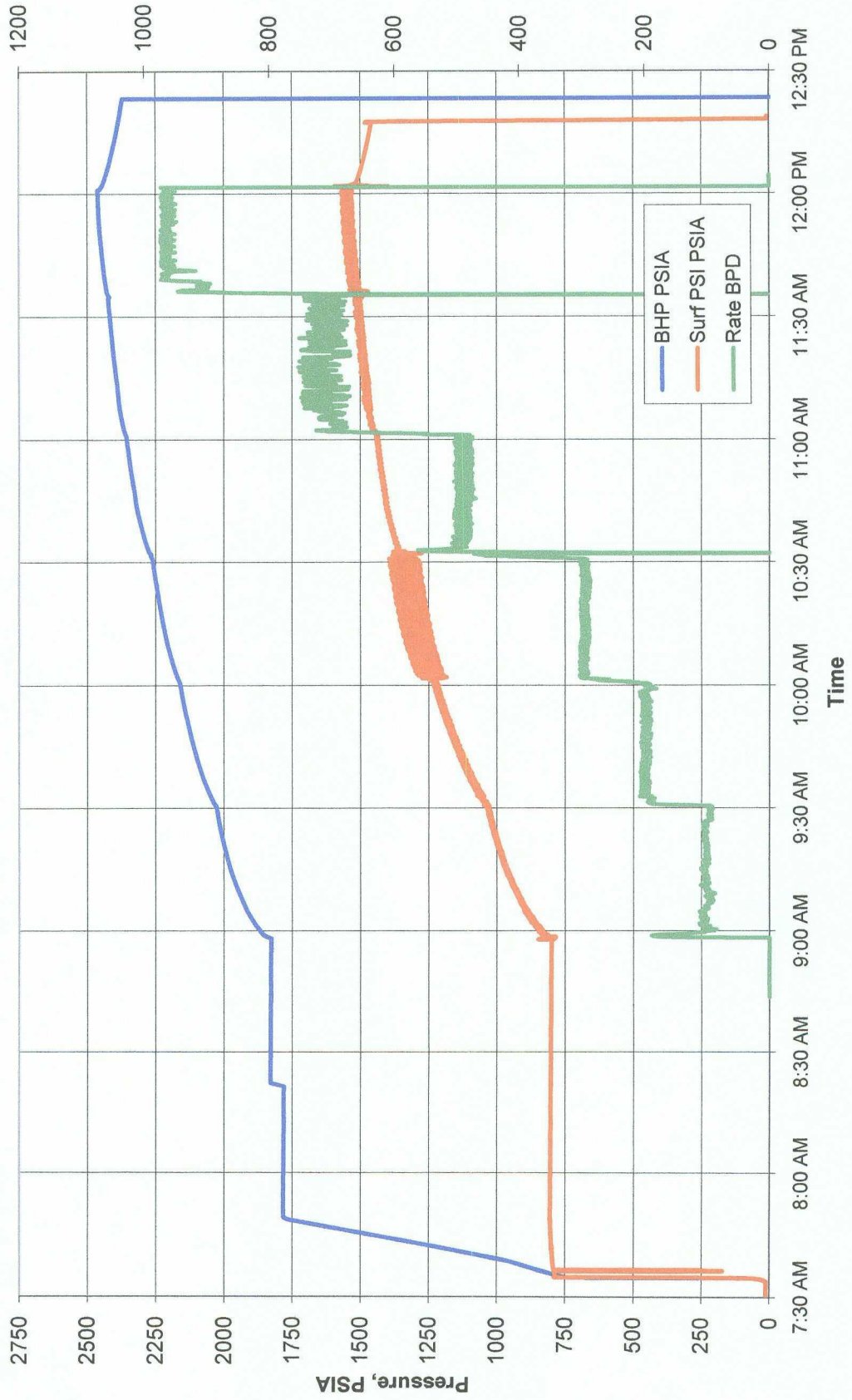
	S Time	E Time	D Time		Last Rate	Step	B. H. Pressure		Surf	Cum	Delta	Avg.	Lower		Upper	
			Min	BPD			PSIA	BPD					Trend	Trend		
1	8:22 AM	9:00 AM	38	0	0	0	1828.7	800.6	0	0.00	0					
2	9:00 AM	9:30 AM	30	100	100	100	2025.6	1031.5	2.3	2.30	110	2025.6				
3	9:30 AM	10:00 AM	30	200	100	100	2158.3	1216.5	6.5	4.20	202	2158.3				
4	10:00 AM	10:30 AM	30	300	100	100	2258.5	1320.6	12.7	6.20	298	2258.5				
5	10:30 AM	11:00 AM	30	500	200	200	2354.5	1441.2	22.9	10.20	192					
6	11:00 AM	11:30 AM	30	700	200	200	2420.5	1506.7	38.9	16.00	278				2420.5	
7	11:30 AM	12:00 PM	30	900	200	200	2461.2	1560.5	56.9	18.00	864				2461.2	
8	Melrose Opf	12:15 PM	#VALUE!	0	-900	-900	2391.5	1460.3	56.9	0.00	0					

1.1645 1914.6
 0.2035 2278.1

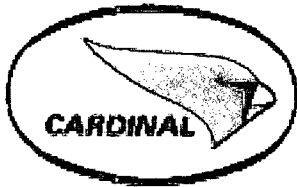
int point: 378.25182 BPD
 2355.0742 Psia



Melrose Operating Artesia Unit # 29
Step Rate Test 09-03-2009



Step Rate Test



Cardinal Surveys Company

September 14, 2009

Melrose Operating
Artesia Unit # 46
Field:
Eddy County, New Mexico
SC 58491
File # 19545

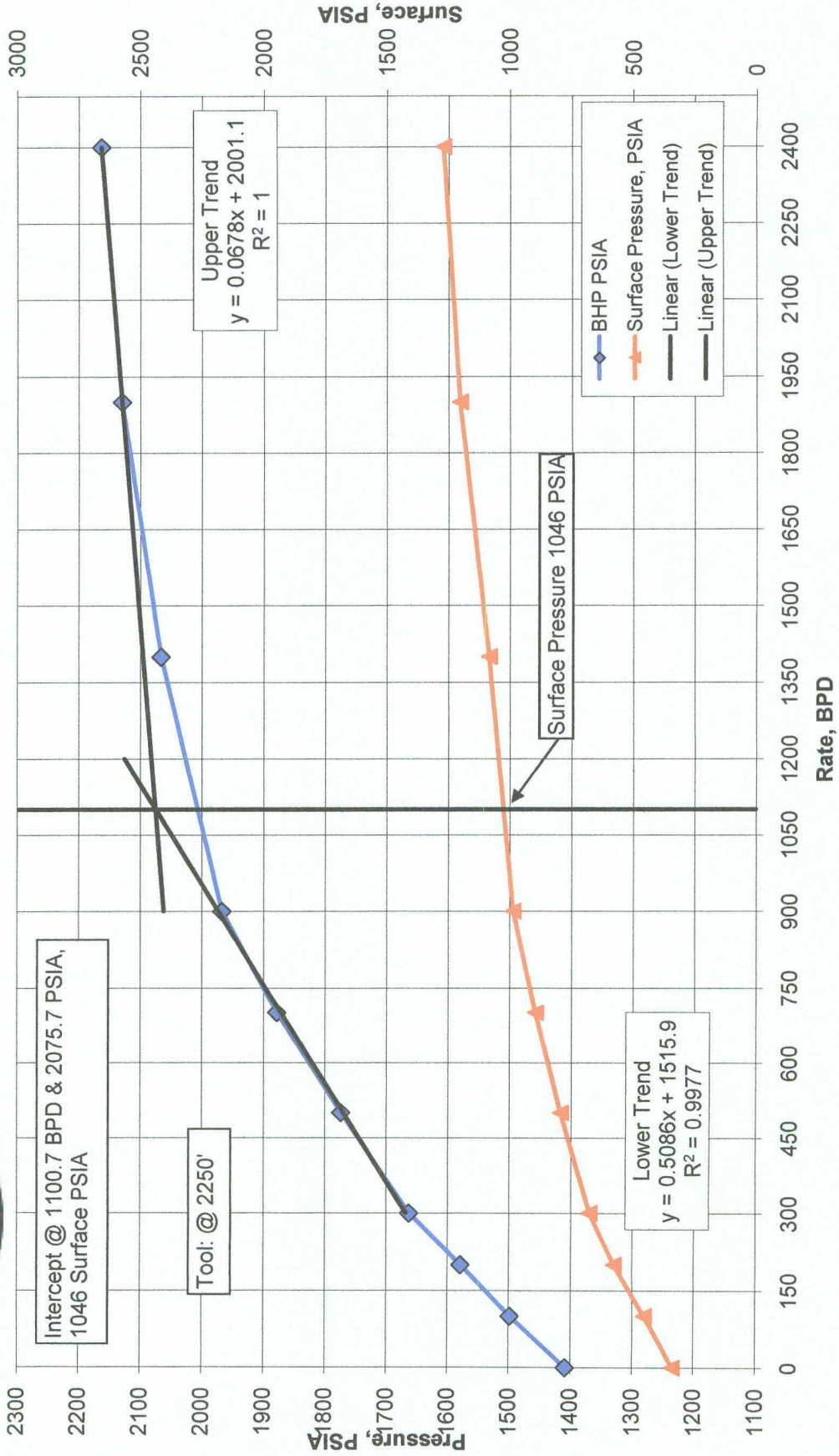
Intercept @ 1100.7 BPD
& 2075.7 PSIA, 1046
Surface PSIA

Downhole PSI Tool Ser. No.
Surface PSI Gauge Ser. No.
Tool @ 2250'

Start Time	End Time	Rate BPD	Comments
1	8:20 AM 8:45 AM		0 On Bottom
2	8:45 AM 9:15 AM	100	
3	9:15 AM 9:45 AM	200	
4	9:45 AM 10:15 AM	300	
5	10:15 AM 10:45 AM	500	
6	10:45 AM 11:15 AM	700	
7	11:15 AM 11:45 AM	900	
8	11:45 AM 12:15 PM	1400	
10	12:15 PM 12:45 PM	1900	
12	12:45 PM 1:15 PM	2400	
14	1:15 PM 1:30 PM		0 Fall Off

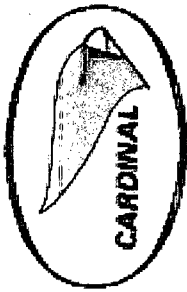


**Melrose Operating Artesia Unit # 46
Step Rate Test 09-14-2009**



Step Rate Test

Melrose Operating
 Artesia Unit # 46
 Field:
 Eddy County, New Mexico



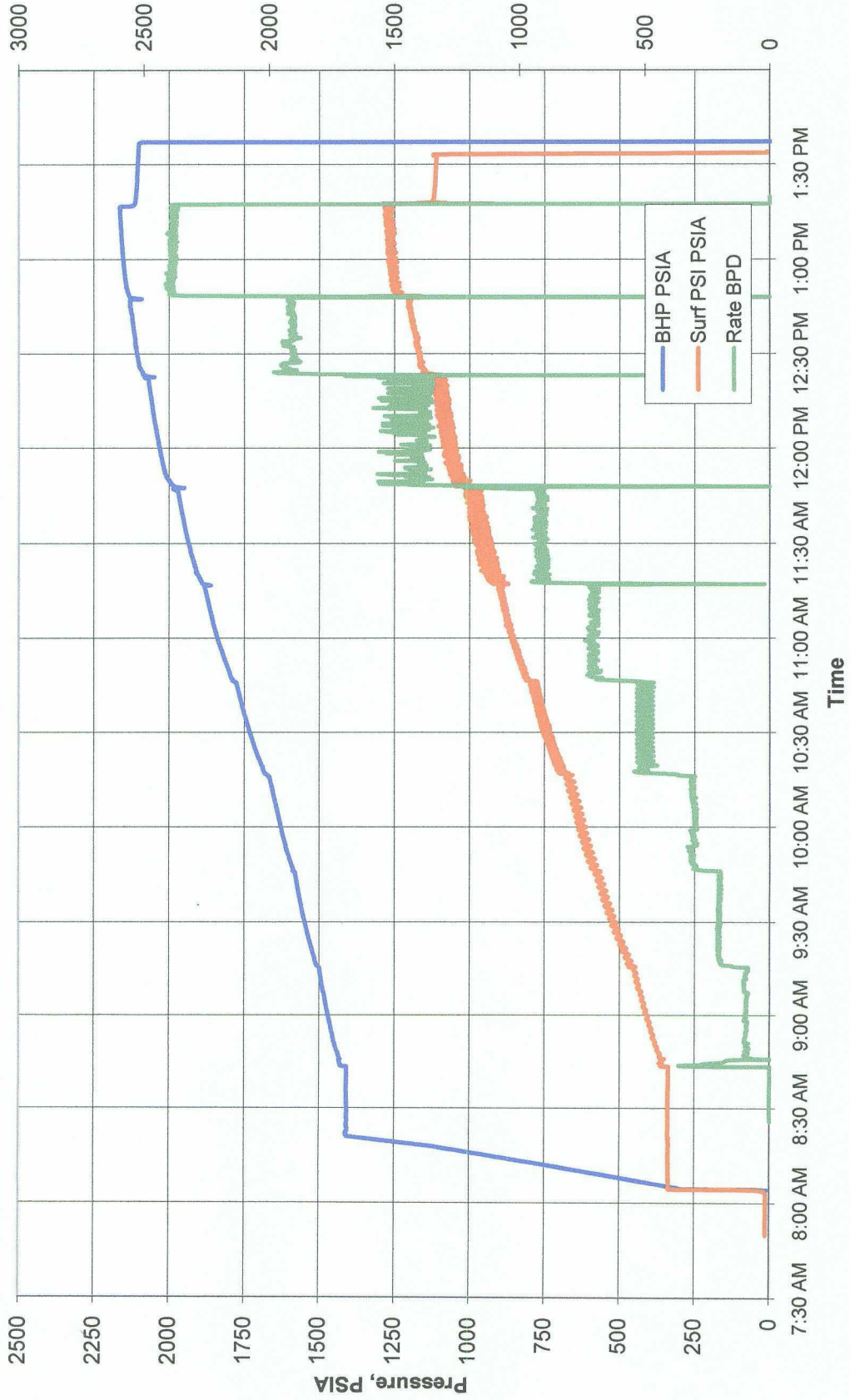
	S Time	E Time	D Time Min	Last Rate BPD	Step BPD	B. H. Pressure		Surf PSIA	Cum BBL	Delta BBL	Avg. BPD	Lower Trend	Upper Trend
						PSIA	PSIA						
1	8:20 AM	8:45 AM	25	0	0	1409.1	337.3	0	0.00	0			
2	8:45 AM	9:15 AM	30	100	100	1498.5	453.2	2.3	2.30	110			
3	9:15 AM	9:45 AM	30	200	100	1579.2	575.7	6.6	4.30	206			
4	9:45 AM	10:15 AM	30	300	100	1663.5	676	13	6.40	307	1663.5		
5	10:15 AM	10:45 AM	30	500	200	1774.4	793.6	23.5	10.50	197	1774.4		
6	10:45 AM	11:15 AM	30	700	200	1878.6	896	38.2	14.70	202	1878.6		
7	11:15 AM	11:45 AM	30	900	200	1967.8	987.3	57.6	19.40	931	1967.8		
8	11:45 AM	12:15 PM	30	1400	500	2066.8	1086	91.4	33.80	1622			
10	12:15 PM	12:45 PM	30	1900	500	2129.9	1204.4	125	33.60	1613			2129.9
12	12:45 PM	1:15 PM	30	2400	-2400	2163.8	1272	175.1	50.10	2405			2163.8
14	1:15 PM	1:30 PM	15	0	0	2103	1109.7	175.1	0.00	0			

0.5086 1515.9
 0.0678 2001.1

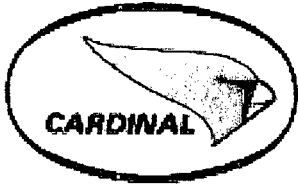
int point: 1100.726 BPD
 2075.7292 Psia



Melrose Operating Artesia Unit # 46
Step Rate Test 09-14-2009



Step Rate Test



Cardinal Surveys Company

September 4, 2009

Melrose Operating
Artesia Unit # 53
Field:
Eddy County, New Mexico
SC 58487A
File # 19536

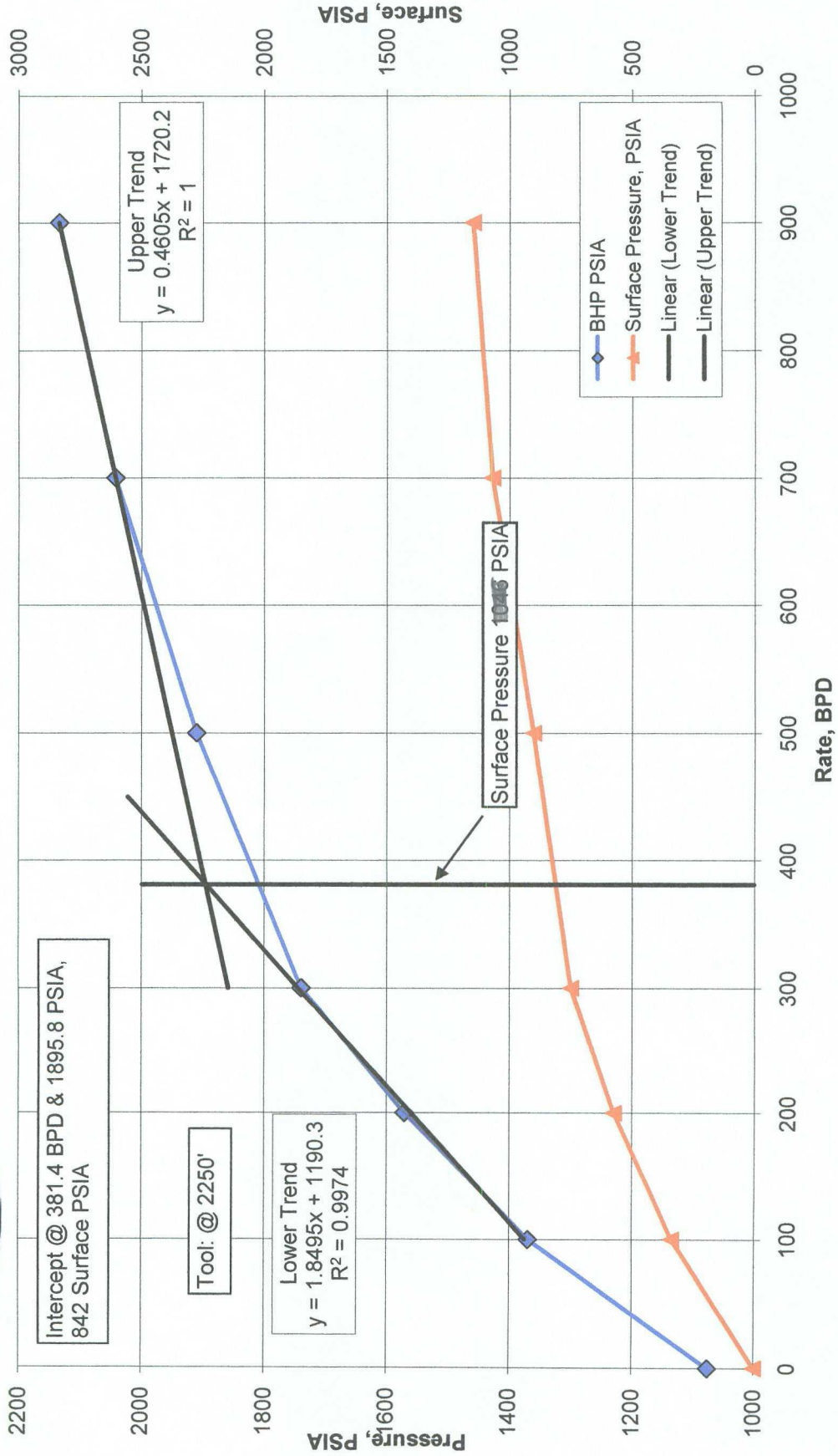
Intercept @ 381.4 BPD &
1895.8 PSIA, 842
Surface PSIA

Downhole PSI Tool Ser. No.
Surface PSI Gauge Ser. No.
Tool @ 2250'

Start Time	End Time	Rate BPD	Comments
1	9:13 AM 9:45 AM		0 On Bottom
2	9:45 AM 10:15 AM	100	
3	10:15 AM 10:45 AM	200	
4	10:45 AM 11:15 AM	300	
5	11:15 AM 11:45 AM	500	
6	11:45 AM 12:15 PM	700	
7	12:15 PM 12:45 PM	900	
8	12:45 PM 1:00 PM		0 Fall Off

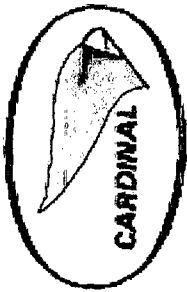


Melrose Operating Artesia Unit # 53
Step Rate Test 09-04-2009



Step Rate Test

Melrose Operating
 Artesia Unit # 53
 Field:
 Eddy County, New Mexico



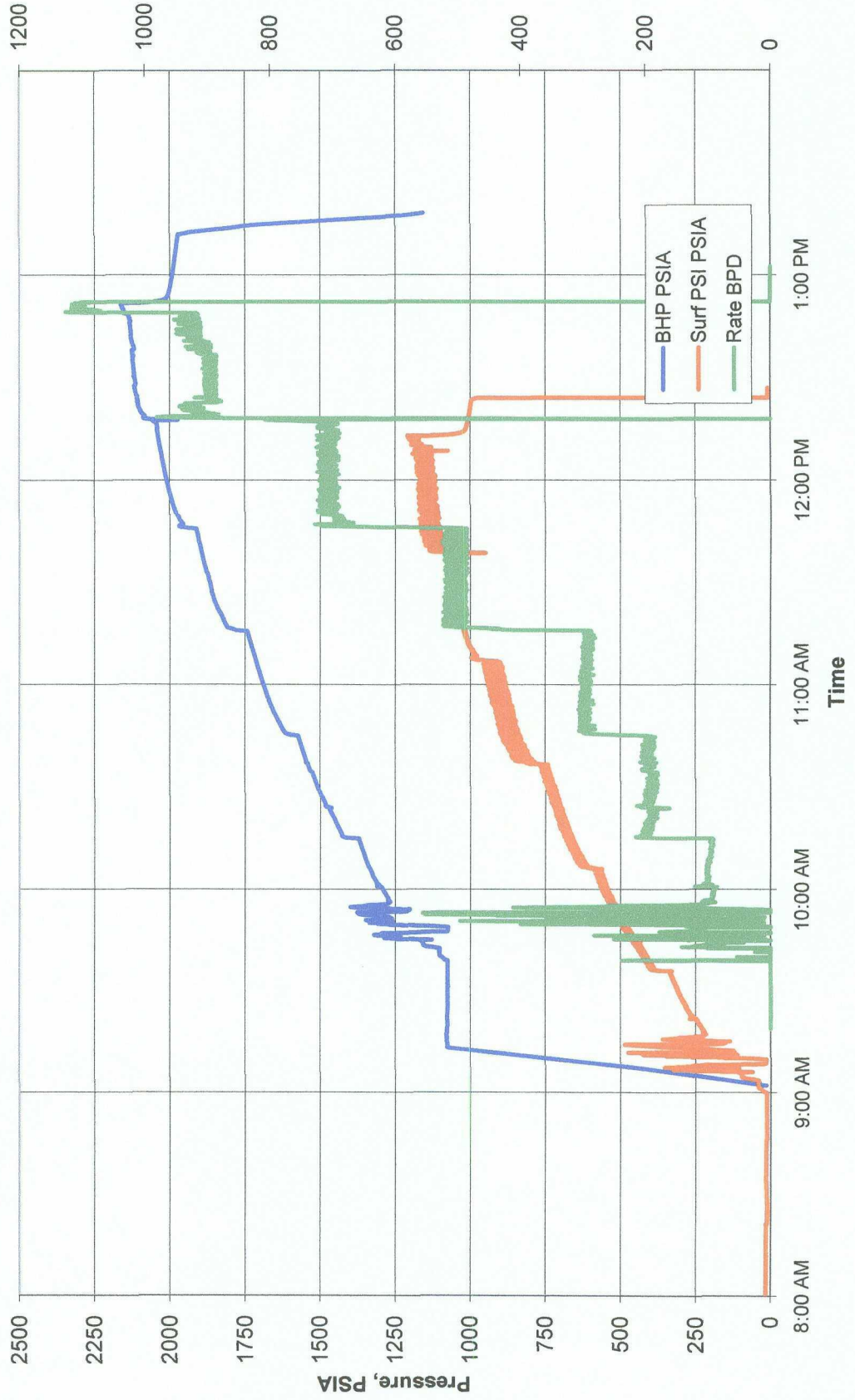
	S Time	E Time	D Time		Last Rate BPD	Step BPD	B. H. Pressure		Surf PSIA	Cum BBL	Delta		Avg. BPD	Lower Trend	Upper Trend
			Min				BPD	PSIA			BBL	BBL			
1	9:13 AM	9:45 AM	32		0	0	1076.8	PSIA	0	0	0.00	0			
2	9:45 AM	10:15 AM	30		100	100	1369.8		338	3.6	3.60	173	1369.8		
3	10:15 AM	10:45 AM	30		200	100	1571.1		574.1	7.7	4.10	197	1571.1		
4	10:45 AM	11:15 AM	30		300	100	1739.7		749.8	14.1	6.40	307	1739.7		
5	11:15 AM	11:45 AM	30		500	200	1910.3		902.4	24.5	10.40	192		1910.3	
6	11:45 AM	12:15 PM	30		700	200	2042.5		1069.9	39.9	15.40	240		2042.5	
7	12:15 PM	12:45 PM	30		900	200	2134.6		1149.3	59.3	19.40	931		2134.6	
8	12:45 PM	1:00 PM	15		0	-900	1991.4		997.7	59.3	0.00	0			

1.8495 1190.3
 0.4605 1720.2

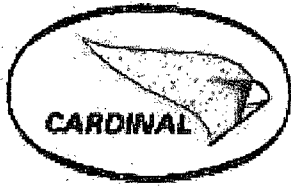
int point: 381.49748 BPD
 1895.8796 Psia



Melrose Operating Artesia Unit # 53
Step Rate Test 09-04-2009



Step Rate Test



Cardinal Surveys Company

April 4, 2006

Melrose Operating
Artesia Unit # 54
Field:
Eddy County, NM

Intercept @ 447.9 BPD
& 1672.6 PSIA

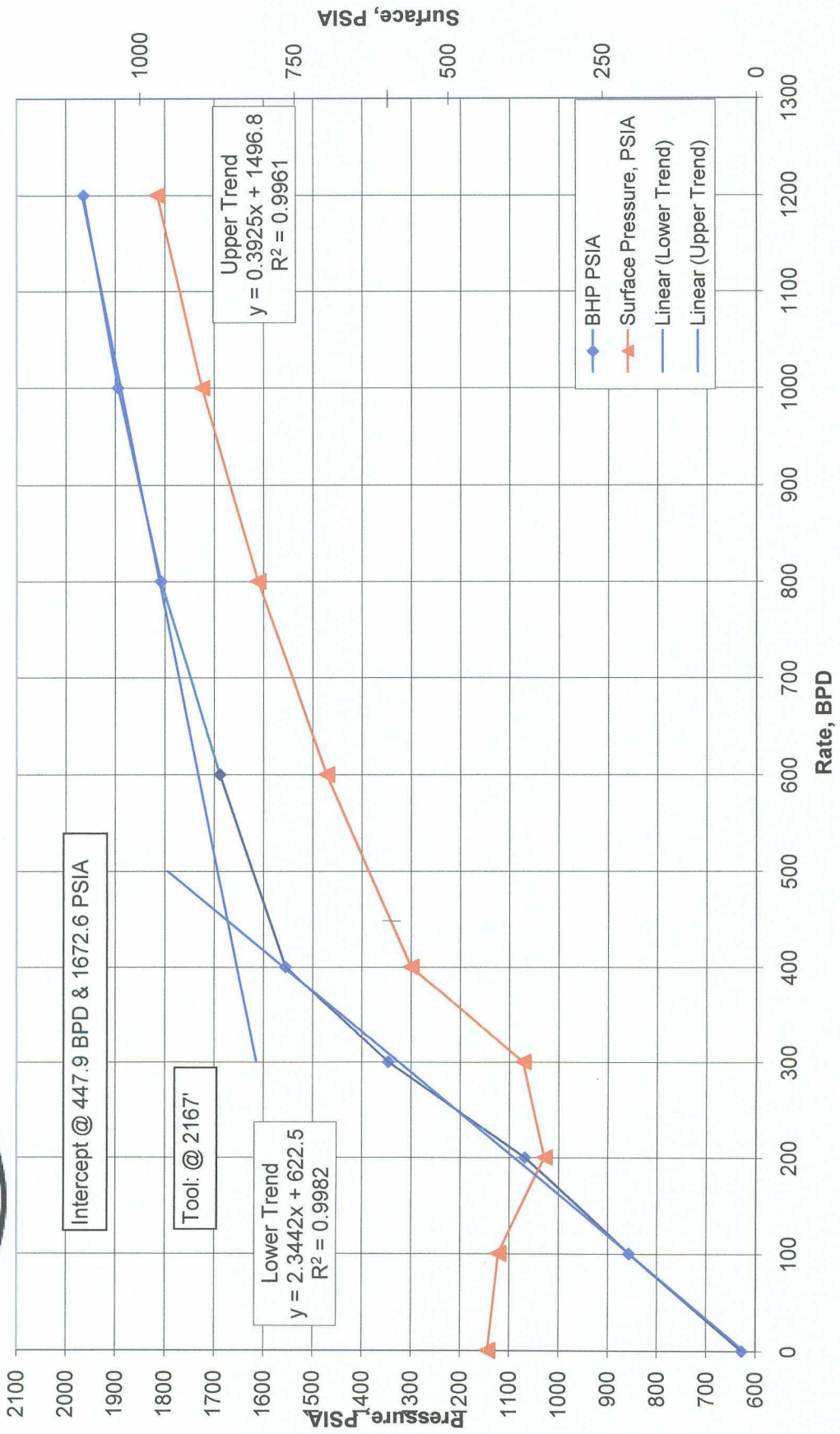
SC54707

Downhole PSI Tool Ser. No. 76149
Surface PSI Gauge Ser. No. 10548
Tool @ 2167

	Start Time	End Time	Rate BPD	Comments
1	9:40 AM	9:45 AM		0 On Bottom
2	9:45 AM	10:15 AM	100	
3	10:15 AM	10:45 AM	200	
4	10:45 AM	11:15 AM	300	
5	11:15 AM	11:45 AM	400	
6	11:45 AM	12:15 PM	600	
7	12:15 PM	12:45 PM	800	
8	12:45 PM	1:15 PM	1000	
9	1:15 PM	1:45 PM	1200	
10				

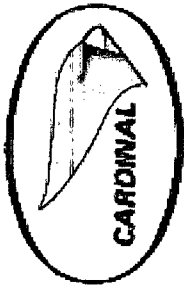


Melrose Operating Artesia Unit # 54
Step Rate Test 04-04-2006



Step Rate Test

Melrose Operating
 Artesia Unit # 54
 Field:
 Eddy Co. NM



	S Time	E Time	D Time Min	Last Rate BPD	Step BPD	B. H. Pressure		Cum BBL	Delta BBL	Avg. BPD	Lower Trend	Upper Trend
						PSIA	PSIA					
1	9:40 AM	9:45 AM	5	0	0	628	0	0	0	0	628	
2	9:45 AM	10:15 AM	30	100	100	857.6	2.06	2.06	2.06	99	857.6	
3	10:15 AM	10:45 AM	30	200	100	1068.9	4.24	6.3	4.24	204	1068.9	
4	10:45 AM	11:15 AM	30	300	100	1346.6	6.3	12.6	6.3	302	1346.6	
5	11:15 AM	11:45 AM	30	400	100	1555.6	8.4	21	8.4	403	1555.6	
6	11:45 AM	12:15 PM	30	600	200	1688.3	12.03	33.03	12.03	577		1808
7	12:15 PM	12:45 PM	30	800	200	1808	16.47	49.5	16.47	791		1895
8	12:45 PM	1:15 PM	30	1000	200	1895	21	70.5	21	1008		1965
9	1:15 PM	1:45 PM	30	1200	200	1965	26.9	97.4	26.9	1291		

2.3442 622.5
 0.3925 1496.8

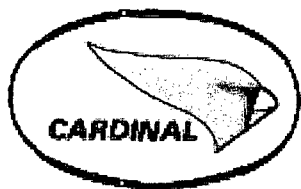
int point: 447.96844 BPD
 1672.6276 Psia



Melrose Operating Artesia Unit # 54
Step Rate Test 04-04-2006



Step Rate Test



Cardinal Surveys Company

February 11, 2011

Quantum Petroleum
Artesia # 65
Field:
Eddy County, New Mexico
SC 59520
File # 20155

Fracture @ 1235.4 BPD
1996.2 BHPSIA,
1150 Surf PSIA

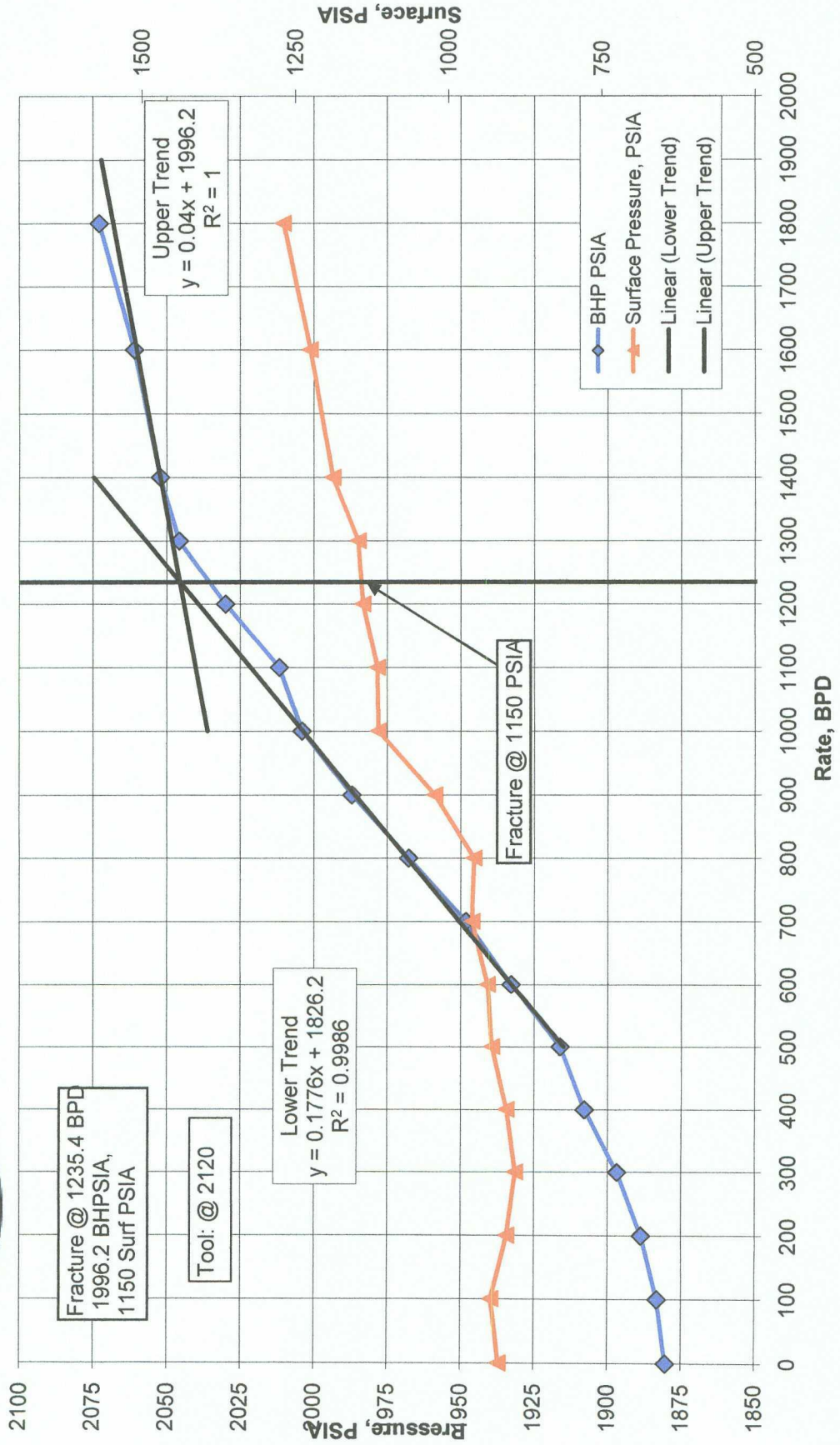
Downhole PSI Tool Ser. No.
Surface PSI Gauge Ser. No.
Tool @ 2120'

	Start Time	End Time	Rate BPD	Comments
1	8:58 AM	9:15 AM		0 On Bottom
2	9:15 AM	9:45 AM	100	
3	9:45 AM	10:15 AM	200	
4	10:15 AM	10:45 AM	300	
5	10:45 AM	11:15 AM	400	
6	11:15 AM	11:45 AM	500	
7	11:45 AM	12:15 PM	600	
8	12:15 PM	12:45 PM	700	
9	12:45 PM	1:15 PM	800	
10	1:15 PM	1:45 PM	900	
11	1:45 PM	2:15 PM	1000	
12	2:15 PM	2:45 PM	1100	

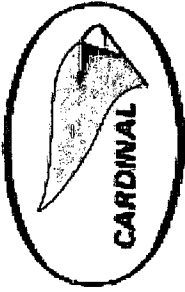
13	2:45 PM	3:15 PM	1200
14	3:15 PM	3:45 PM	1300
15	3:45 PM	4:15 PM	1400
16	4:15 PM	4:45 PM	1600
17	4:45 PM	5:15 PM	1800
18	5:15 PM	5:30 PM	0 Fall Off



Quantum Petroleum Artesia Unit # 65
Step Rate Test 02-11-2011



Step Rate Test



Quantum Petroleum
 Artesia Unit # 65
 Field:
 Eddy County, New Mexico

	S Time	E Time	D Time	Last Rate	Step	B. H. Pressure		Surf	Cum	Delta	Avg.	Lower		Upper	
						BPD	PSIA					Trend	Trend		
1	8:58 AM	9:15 AM	17	0	0	1880.4	PSIA	917.9	0	0.00	0				
2	9:15 AM	9:45 AM	30	100	100	1883.3		930.4	2.4	2.40	115				
3	9:45 AM	10:15 AM	30	200	100	1888.7		904.7	6.3	3.90	187				
4	10:15 AM	10:45 AM	30	300	100	1896.9		890.8	12.4	6.10	293				
5	10:45 AM	11:15 AM	30	400	100	1908		905.2	21.1	8.70	125				
6	11:15 AM	11:45 AM	30	500	100	1916.2		929	31.3	10.20	72	1916.2			
7	11:45 AM	12:15 PM	30	600	100	1932.9		936.5	43.5	12.20	586	1932.9			
8	12:15 PM	12:45 PM	30	700	100	1948.3		961.9	57.8	14.30	686	1948.3			
9	12:45 PM	1:15 PM	30	800	100	1967.8		958.7	74.5	16.70	802	1967.8			
10	1:15 PM	1:45 PM	30	900	100	1987.1		1022.7	93.6	19.10	917	1987.1			
11	1:45 PM	2:15 PM	30	1000	100	2004.1		1114.8	114.9	21.30	1022	2004.1			
12	2:15 PM	2:45 PM	30	1100	100	2011.8		1116.3	138.4	23.50	1128	1916.2			
13	2:45 PM	3:15 PM	30	1200	100	2030.1		1140.1	163.4	25.00	1200	1932.9			
14	3:15 PM	3:45 PM	30	1300	100	2045.8		1147.5	190.9	27.50	1320	1948.3			
15	3:45 PM	4:15 PM	30	1400	100	2052.2		1188.9	220.1	29.20	1402	1967.8			2052.2
16	4:15 PM	4:45 PM	30	1600	100	2061		1225.7	253.3	0.00	0	1987.1			2060.2
17	4:45 PM	5:15 PM	30	1800	100	2073		1269.7	291.4	0.00	0	2004.1			
18	5:15 PM	5:30 PM	15	0	100					0.00	0				

0.1776 1826.2
 0.04 1996.2

int point: 1235.4651 BPD
 2045.6186 Psia