

DATE IN 12/1/08	SUSPENSE	ENGINEER WJONES	LOGGED IN 12/2/08	TYPE SWD	APP NO. PKAA 0833729709
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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



RECEIVED
 2008 DEC 1 PM 4 43

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.

Doug Rubick

Print or Type Name

D. Rubick
 Signature

Production Engineer

Title

doug.rubick@chk.com

e-mail Address

11/20/2008

Date

Chesapeake Energy
OLD FURNACE (8 wells)
FPE-308
Pool 33720
WFX-520 - Nov. 83
642 PSI
Admin Ord. Aug 92
800 PSI
Artesia
BLM
Carlsbad

Temp IPE-303

Submit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
June 19, 2008

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

WELL API NO.

5. Indicate Type of Lease

STATE ☐ FEE ☐

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name
Old Indian Draw Unit Wells:
2,5,6,10,11,12,16, & 21

8. Well Number

9. OGRID Number

147179

10. Pool name or Wildcat
~~Old Indian Draw Unit~~ *Delaware* **3720**
300022

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☐ Gas Well ☐ Other Injection Wells

2. Name of Operator
Chesapeake Operating, Inc.

3. Address of Operator P.O. Box 18496
Oklahoma City, OK 73154-0496

4. Well Location

Unit Letter _____ : _____ feet from the _____ line and _____ feet from the _____ line
Section _____ Township 22S Range 28E NMPM County Lea

11. Elevation (Show whether DR, RKB, RT, GR, etc.)

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐

OTHER: Injection Pressure Increase (IPI)

☒

OTHER:

☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Chesapeake Operating, Inc. respectfully requests to increase the injection pressure on eight wells in the Old Indian Draw Unit Area. A copy of the division order establishing the water flood (Order # WFX-520) is attached. For your review, please find the attached application letter along with step rates tests performed for each well and a time vs. pressure plot.

Copies of this application have been submitted to the Artesia New Mexico Oil Conservation Division office.

Old Indian Draw Unit #2 30-015-21391 O-18-22S-28E 660' FSL & 1980' FEL
Old Indian Draw Unit #5 30-015-21618 G-18-22S-28E 1980' FNL & 1980' FEL
Old Indian Draw Unit #6 30-015-21619 K-18-22S-28E 2002' FSL & 1721' FWL
Old Indian Draw Unit #10 30-015-21843 C-18-22S-28E 997' FNL & 1785' FWL
Old Indian Draw Unit #11 30-015-21844 A-19-22S-28E 330' FNL & 668' FEL
Old Indian Draw Unit #12 30-015-21845 E-18-22S-28E 1658' FNL & 794' FWL
Old Indian Draw Unit #16 30-015-21959 M-7-22S-28E 330' FSL & 794' FWL
Old Indian Draw Unit #21 30-015-22101 O-7-22S-28E 330' FSL & 2283' FEL

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Doug Rubick TITLE Production Engineer DATE 11/21/2008

Type or print name Doug Rubick E-mail address: doug.rubick@chk.com PHONE: (405)879-3178

For State Use Only

APPROVED BY: _____ TITLE _____ DATE _____

Conditions of Approval (if any):

November 17, 2008

Will Jones
NMOCD
1220 South St. Francis Drive
Santa Fe, NM 87505

Dear Mr. Jones,

Chesapeake Energy respectfully requests to increase the injection pressure on eight wells in the Old Indian Draw Unit (OIDU) waterflood. This waterflood has been active since 1983 and step rate tests have not been performed since 1992. Please see the table below for a summary of the current pressure limitations for the injection wells at the OIDU waterflood.

642 PSI

Well	API	Current Inj Press Limit	Order	Order Date	Comments
OIDU #2	3001521391	800	WFX-520	9/10/1992	Division Order for increased injection pressure after SRT.
OIDU #4	3001521505	800	WFX-521 ~ 2.	9/11/1992	Division Order for increased injection pressure after SRT.
OIDU #5	3001521618	800	WFX-520	9/10/1992	Division Order for increased injection pressure after SRT.
OIDU #6	3001521619	800	WFX-520	9/10/1992	Division Order for increased injection pressure after SRT.
OIDU #10	3001521843	800	WFX-520	9/10/1992	Division Order for increased injection pressure after SRT.
OIDU #11	3001521844	800	WFX-520	9/10/1992	Division Order for increased injection pressure after SRT.
OIDU #12	3001521845	800	WFX-520	9/10/1992	Division Order for increased injection pressure after SRT.
OIDU #16	3001521959	800	WFX-520	9/10/1992	Division Order for increased injection pressure after SRT.
OIDU #21	3001522101	800	WFX-520	9/10/1992	Division Order for increased injection pressure after SRT.

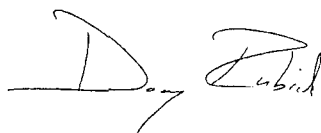
Not on
This
WFX

Step rate tests were performed on all nine of the injectors between June 5th and June 18th, 2008. Eight of the nine test results indicate there is room for an increase in maximum injection pressure. Results from each step rate test are attached and summarized in the table below.

Well	API	Fracture Pressure	Requested Inj Press Limit	Date SRT Ran
OIDU #2	3001521391	996	946	6/13/2008
OIDU #5	3001521618	930	880	6/9/2008
OIDU #6	3001521619	990	940	6/5/2008
OIDU #10	3001521843	1,096	1,046	6/18/2008
OIDU #11	3001521844	1,010	960	6/12/2008
OIDU #12	3001521845	1,022	972	6/6/2008
OIDU #16	3001521959	1,076	1,026	6/17/2008
OIDU #21	3001522101	984	934	6/16/2008

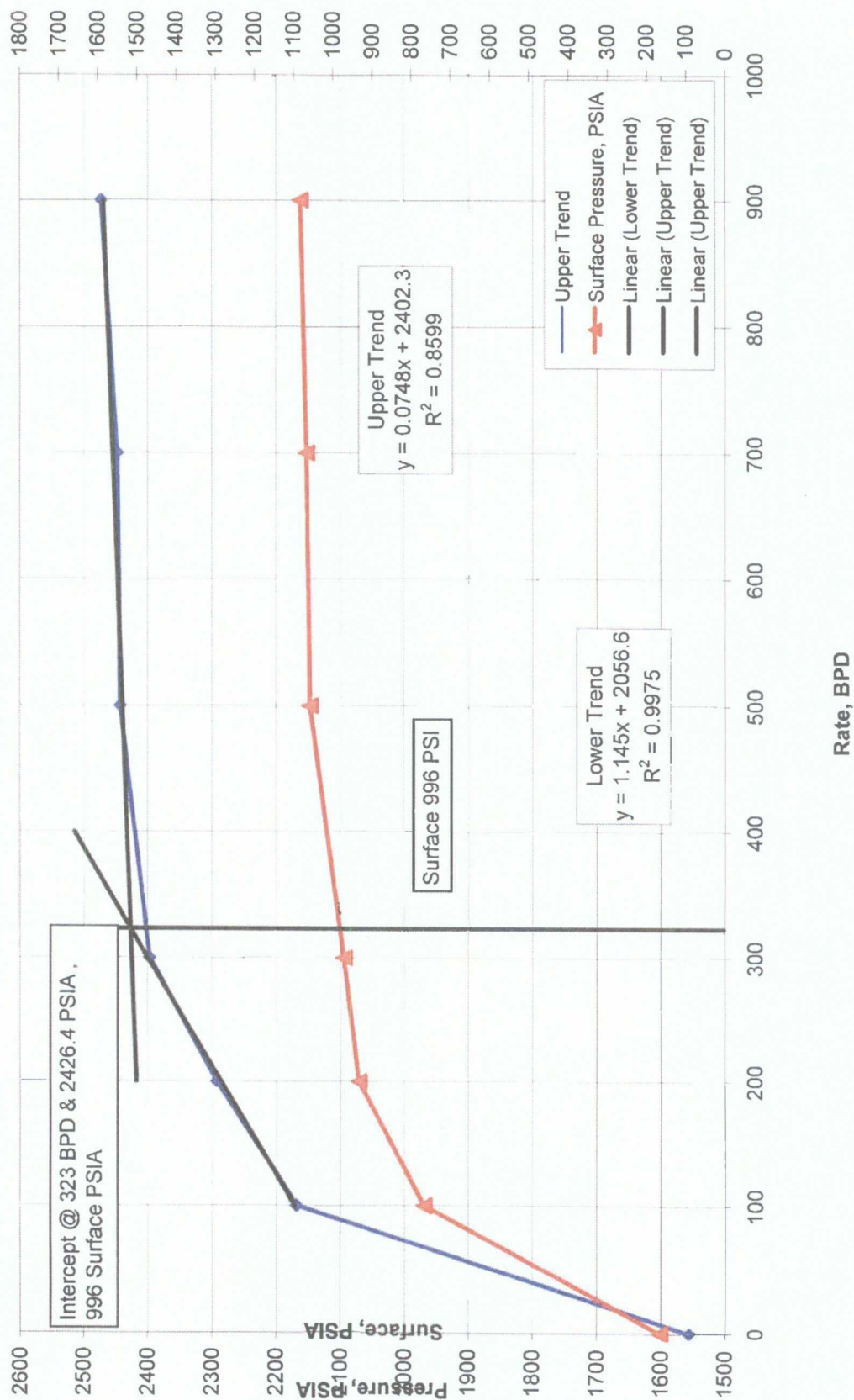
Should you require further information or have any questions, please call Doug Rubick at 405-208-3185.

Sincerely,



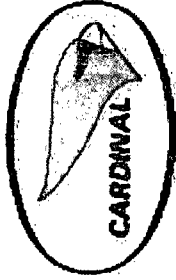
Doug Rubick
Field Engineer

Chesapeake Energy Corp. Old Indian Draw # 2 Step Rate Test 06-13-2008



Step Rate Test

Chesapeake Energy
Old Indian Draw # 2
Field: Indian Draw
Eddy County, NM



	S Time	E Time	D Time	Last Rate	Step	B. H. Pressure	Surf	Cum	Delta	Avg.	Lower	Upper
			Min	BPD	BPD	PSIA	PSIA	BBL	BBL	BPD	Trend	Trend
1	7:27 AM	8:00 AM	33	0	0	1556.3	166.5	0	0	0		
2	8:00 AM	9:00 AM	60	100	100	2167.8	767.4	4.9	4.9	118	2167.8	
3	9:00 AM	10:00 AM	60	200	100	2292.2	933.3	12.4	7.5	180	2292.2	
4	10:00 AM	11:00 AM	60	300	100	2396.8	972.5	24.4	12	288	2396.8	
5	11:00 AM	12:00 PM	60	500	200	2443.2	1059.5	44.4	20	480		2443.2
6	12:00 PM	1:00 PM	60	700	200	2447.7	1067.7	73.5	29.1	698		2447.7
7	1:00 PM	2:00 PM	60	900	200	2473.1	1083.6	111.4	37.9	910		2473.1
8	2:00 PM	3:00 PM	60	0	-900	2380.9	987.7	111.4	0	0		

1.145 2056.6
0.0748 2402.3

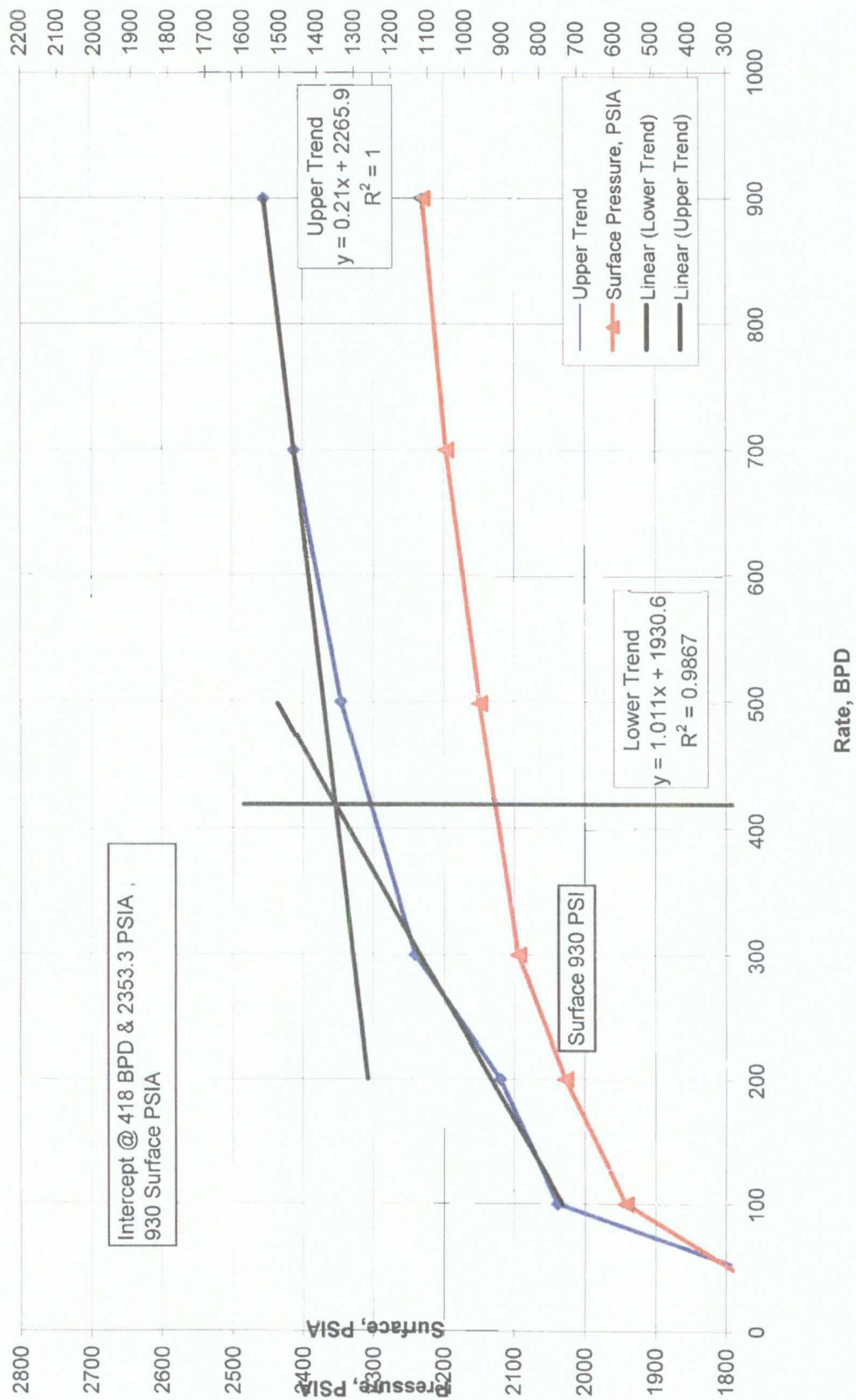
int point: 323.02373 BPD
2426.4622 Psia



Chesapeake Energy Corp. Old Indian Draw # 2
Step Rate Test 06-13-2008

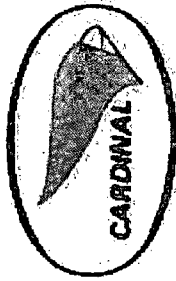


Chesapeake Energy Corp. Old Indian Draw # 5 Step Rate Test 06-09-2008



Step Rate Test

Chesapeake Energy
 Old Indian Draw # 5
 Field: Indian Draw
 Eddy County, NM



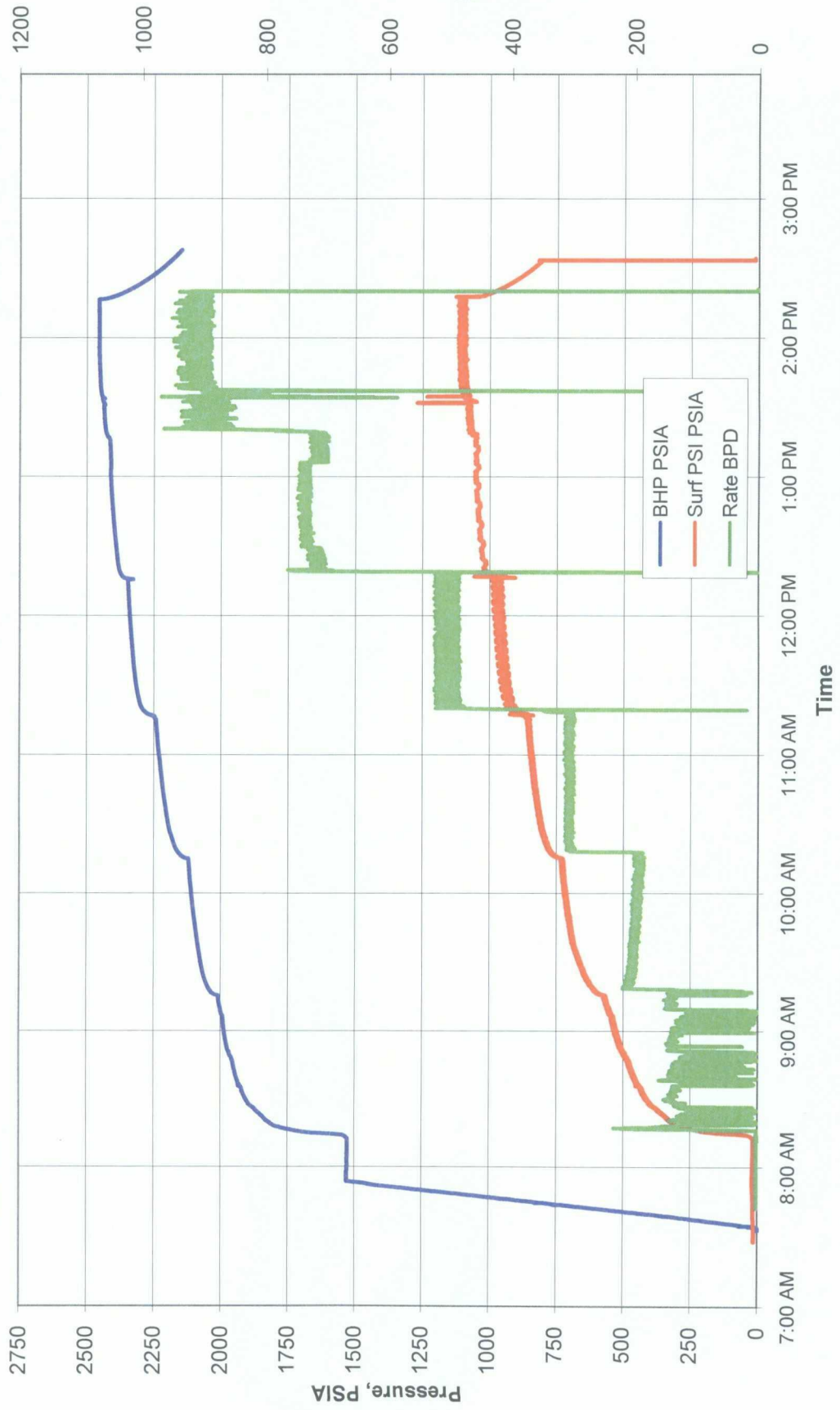
	S Time	E Time	D Time	Last Rate	Step	B. H. Pressure		Surf	Cum	Delta	Avg.	Lower	Upper
						BPD	PSIA						
1	7:53 AM	8:15 AM	22	0	0	0	1526.8	16.7	0	0	0		
2	8:15 AM	9:15 AM	60	100	100	100	2038.5	569.3	5.5	5.5	132	2038.5	
3	9:15 AM	10:15 AM	60	200	100	100	2119.3	732.8	13.7	8.2	197	2119.3	
4	10:15 AM	11:15 AM	60	300	100	100	2240.7	859	26.3	12.6	302	2240.7	
5	11:15 AM	12:15 PM	60	500	200	200	2346.1	963.4	47	20.7	497		
6	12:15 PM	1:15 PM	60	700	200	200	2412.9	1053.6	77.5	30.5	732		2412.9
7	1:15 PM	2:15 PM	60	900	200	200	2454.9	1116	114.6	37.1	890		2454.9
8	2:15 PM	2:15 PM	0	0	-900	-900	2211.6	813.3	114.6	0	0		

1.011 1930.6
 0.21 2265.9

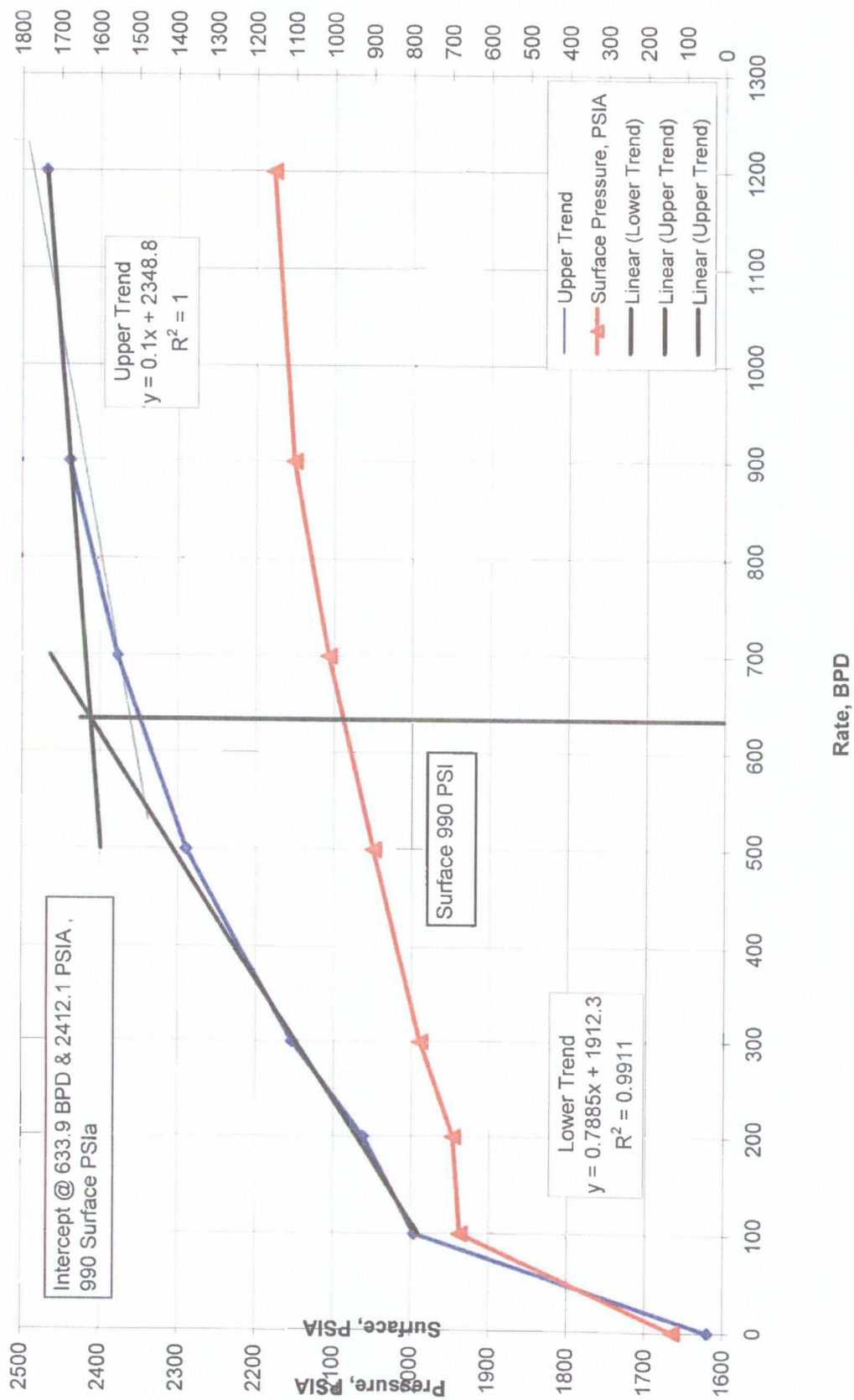
int point: 418.60175 BPD
 2353.8064 Psia



Chesapeake Energy Corp. Old Indian Draw # 5
Step Rate Test 06-09-2008

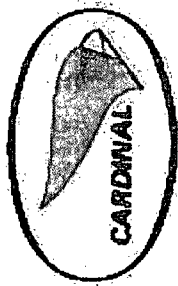


Chesapeake Energy Corp. Old Indian Draw # 6 Step Rate Test 06-05-2008



Step Rate Test

Chesapeake Energy
Old Indian Draw # 6
Field: Indian Draw
Eddy County, NM



	S Time	E Time	D Time	Last Rate	Step	B. H. Pressure	Surf	Cum	Delta	Avg.	Lower	Upper
			Min	BPD	BPD	PSIA	PSIA	BBL	BBL	BPD	Trend	Trend
1	9:17 AM	9:30 AM	13	0	0	1619.6	130.4	0	0	0		
2	9:30 AM	10:30 AM	60	100	100	1995.5	675.1	5.3	5.3	127	1995.5	
3	10:30 AM	11:30 AM	60	200	100	2061.4	693.4	13.5	8.2	197	2061.4	
4	11:30 AM	12:30 PM	60	300	100	2153.2	778.1	26.1	12.6	302	2153.2	
5	12:30 PM	1:30 PM	60	500	200	2289.1	899.4	48.2	22.1	530		
6	1:30 PM	2:30 PM	60	700	200	2377.7	1014.6	77.8	29.6	710		
7	2:30 PM	3:30 PM	60	900	200	2438.8	1103.8	115.5	37.7	905		2438.8
8	3:30 PM	4:30 PM	60	1200	300	2468.8	1155.9	167.7	52.2	1253		2468.8
9	4:30 PM	4:45 PM	15	0	-1200	2245.3	852.1	167.7	0	0		

0.7885 1912.3
0.1 2348.8

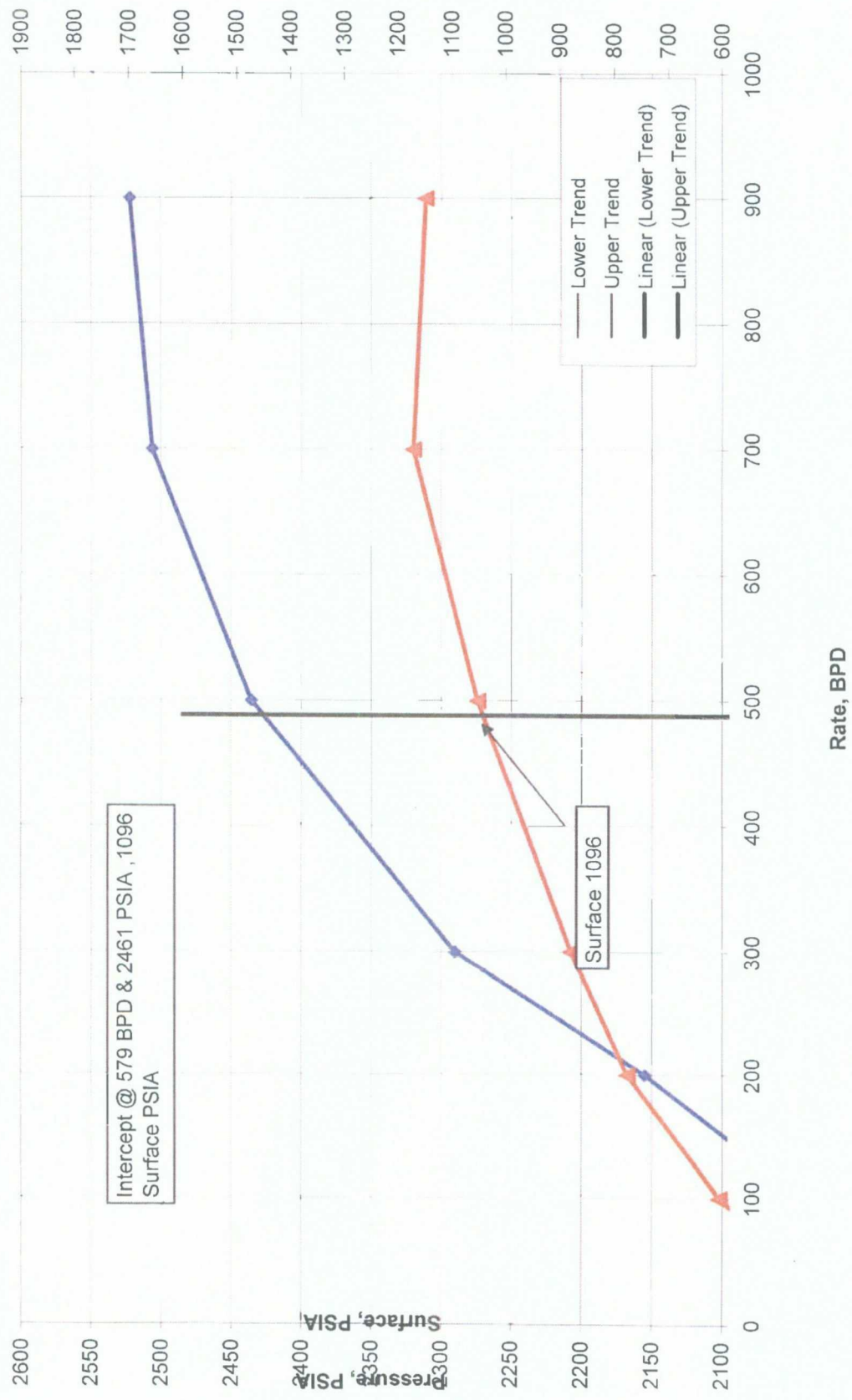
int point: 633.98693 BPD
2412.1987 Psia



Chesapeake Energy Corp. Old Indian Draw # 6
Step Rate Test 06-05-2008



Chesapeake Energy Corp. Old Indian Draw # 10 Step Rate Test 06-18-2008



Step Rate Test

Chesapeake Energy
Old Indian Draw #.10
Field: Indian Draw
Eddy County, NM



	S Time	E Time	D Time	Last Rate	Step	B. H. Pressure	Surf	Cum	Delta	Avg.	Lower	Upper
			Min	BPD	BPD	PSIA	PSIA	BBL	BBL	BPD	Trend	Trend
1	8:01 AM	8:30 AM	29	0	0	1830.7	324.7	0	0	0		
2	8:30 AM	9:30 AM	60	100	100	2041.3	605.6	5.2	5.2	125		
3	9:30 AM	10:30 AM	60	200	100	2155	776.1	13.4	8.2	197		
4	10:30 AM	11:30 AM	60	300	100	2290.1	880	25.8	12.4	298		
5	11:30 AM	12:30 PM	60	500	200	2435.6	1053	47.1	21.3	511		
6	12:30 PM	1:30 PM	60	700	200	2506.1	1171.6	76	28.9	694		
7	1:30 PM	2:30 PM	60	900	200	2522.2	1148.3	114.4	38.4	922		
8	2:30 PM	2:45 PM	15	0	-900	2381.5	991.9	114.4	0	0		

0.5015 2217.7
0.0645 2431

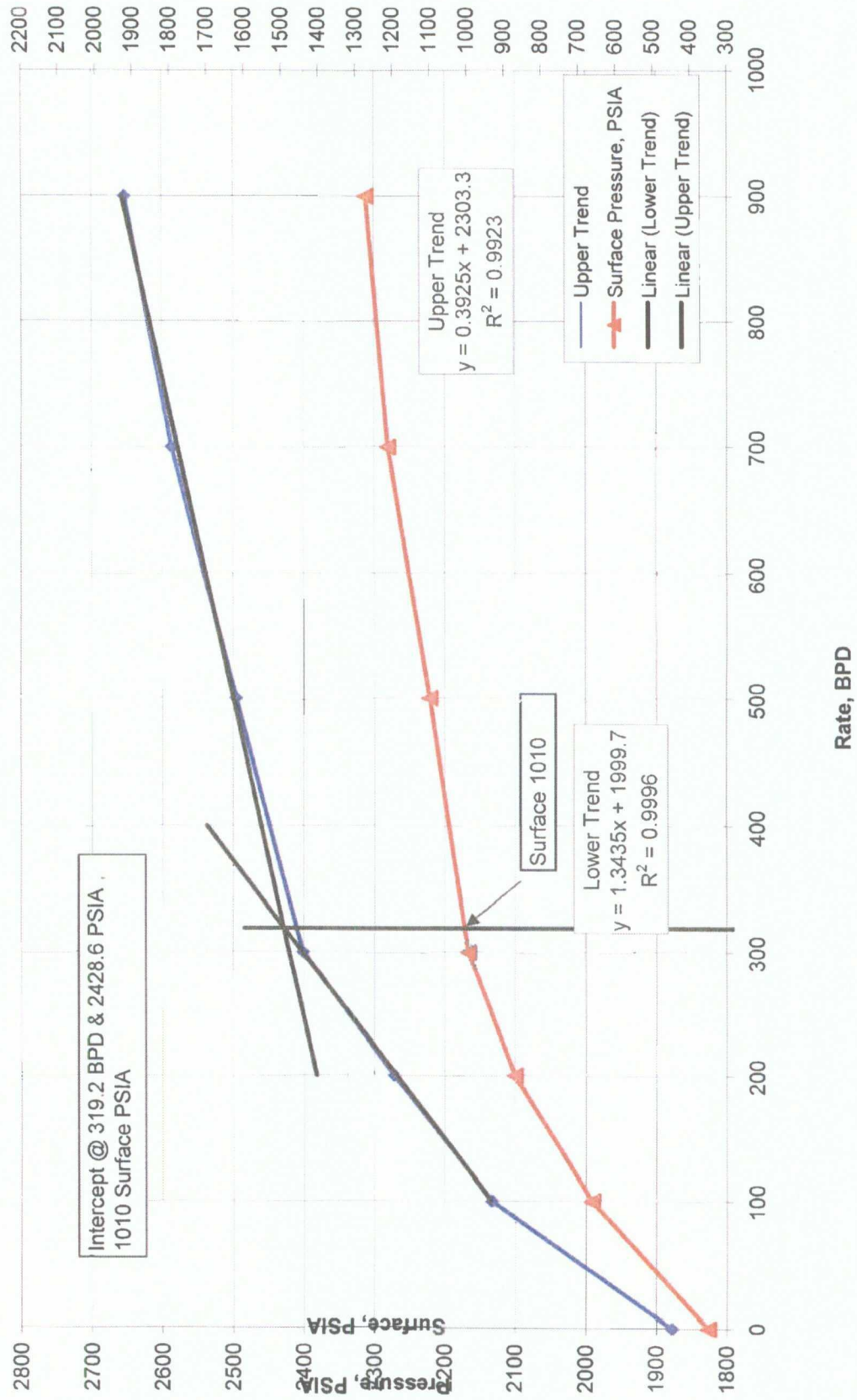
int point: 488.10069 BPD
2462.4825 Psia



Chesapeake Energy Corp. Old Indian Draw #10
Step Rate Test 06-18-2008

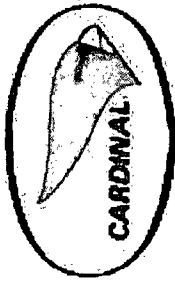


Chesapeake Energy Corp. Old Indian Draw # 11 Step Rate Test 06-12-2008



Step Rate Test

Chesapeake Energy
Old Indian Draw # 11
Field: Indian Draw
Eddy County, NM



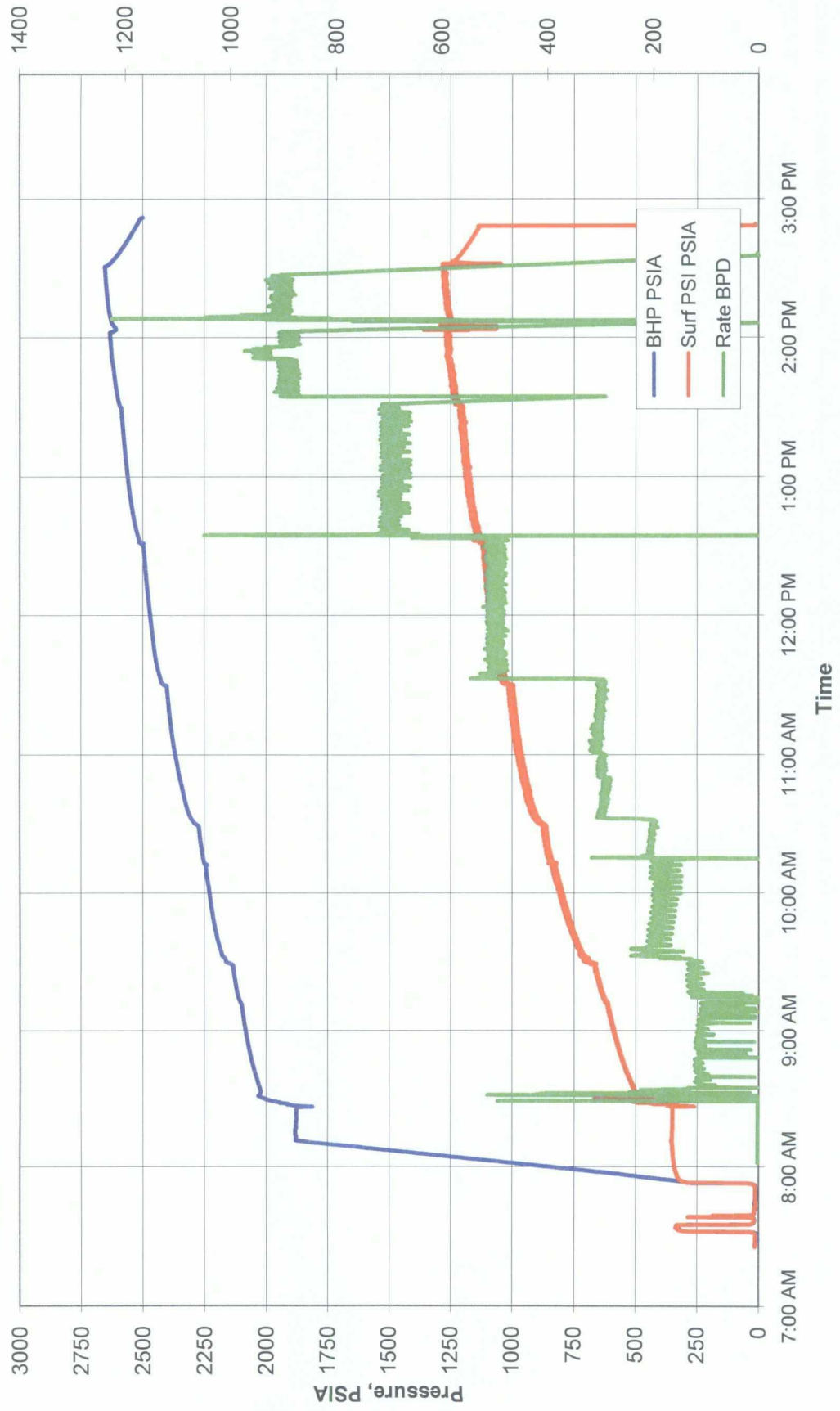
	S Time	E Time	D Time	Last Rate	Step	B. H. Pressure	Surf	Cum	Delta	Avg.	Lower	Upper
			Min	BPD	BPD	PSIA	PSIA	BBL	BBL	BPD	Trend	Trend
1	8:11 AM	8:30 AM	19	0	0	1877.6	350.7	0	0	0		
2	8:30 AM	9:30 AM	60	100	100	2132.6	663.4	5.1	5.1	122	2132.6	
3	9:30 AM	10:30 AM	60	200	100	2271.4	870.7	13	7.9	190	2271.4	
4	10:30 AM	11:30 AM	60	300	100	2401.3	996.4	25.4	12.4	298	2401.3	
5	11:30 AM	12:30 PM	60	500	200	2495.6	1100.2	45.4	20	480		2495.6
6	12:30 PM	1:30 PM	60	700	200	2586.1	1213	74.9	29.5	708		2586.1
7	1:30 PM	2:30 PM	60	900	200	2652.6	1272.4	111.5	36.6	878		2652.6
8	2:30 PM	2:45 PM	15	0	-900	2538.4	1133.7	111.5	0	0		

1.3435 1999.7
0.3925 2303.3

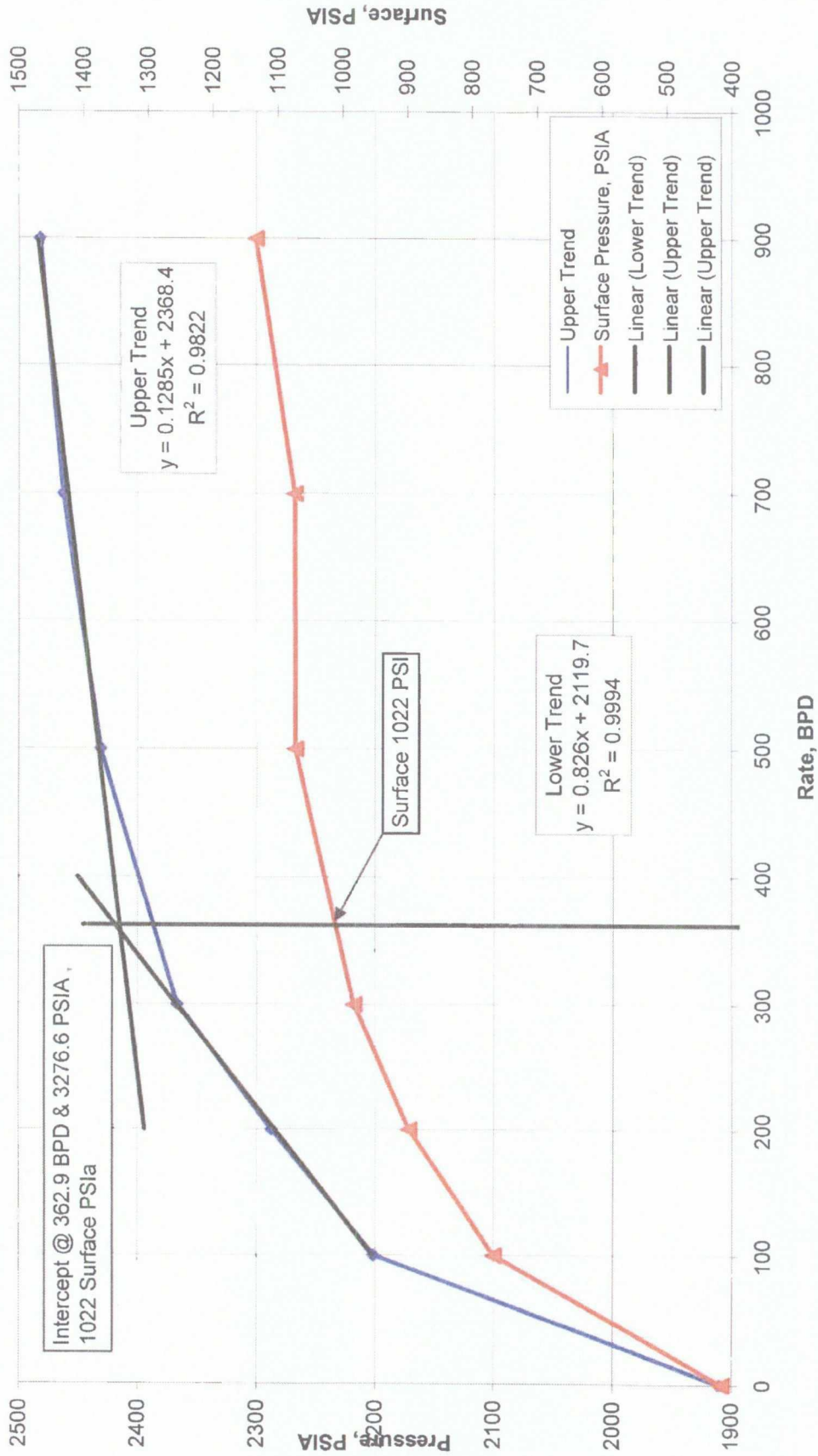
int point: 319.2429 BPD
2428.6028 Psia



Chesapeake Energy Corp. Old Indian Draw # 11
Step Rate Test 06-12-2008

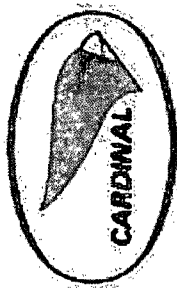


Chesapeake Energy Corp. Old Indian Draw # 12 Step Rate Test 06-06-2008



Step Rate Test

Chesapeake Energy
Old Indian Draw # 12
Field: West Teas
Eddy County, NM



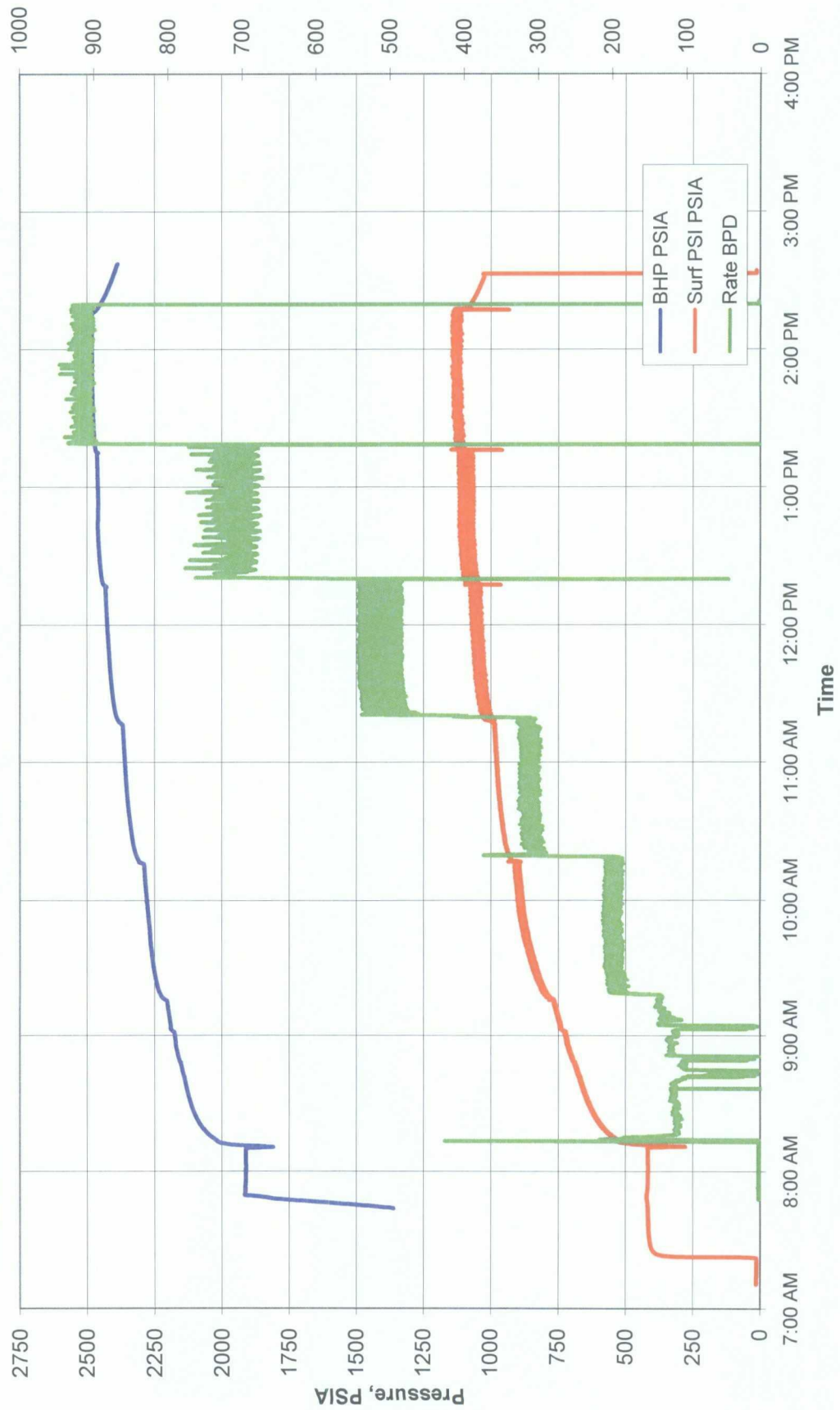
	S Time	E Time	D Time Min	Last Rate BPD	Step BPD	B. H. Pressure PSIA	Surf PSIA	Cum BBL	Delta BBL	Avg. BPD	Lower Trend	Upper Trend
1	7:49 AM	8:15 AM	26	0	0	1910.4	416.5	0	0	0		
2	8:15 AM	9:15 AM	60	100	100	2201.2	768	5.2	5.2	125	2201.2	
3	9:15 AM	10:15 AM	60	200	100	2287.2	898.4	13.4	8.2	197	2287.2	
4	10:15 AM	11:15 AM	60	300	100	2366.4	983.7	26.4	13	312	2366.4	
5	11:15 AM	12:15 PM	60	500	200	2430.6	1073.4	47.4	21	504	2430.6	
6	12:15 PM	1:15 PM	60	700	200	2462.3	1074.3	75.8	28.4	682	2462.3	
7	1:15 PM	2:15 PM	60	900	200	2482	1133.9	114.7	38.9	934		2482
8	2:15 PM	3:15 PM	60	1200	300	2413	1028	114.7	0	0		

0.826 2119.7
0.1285 2368.4

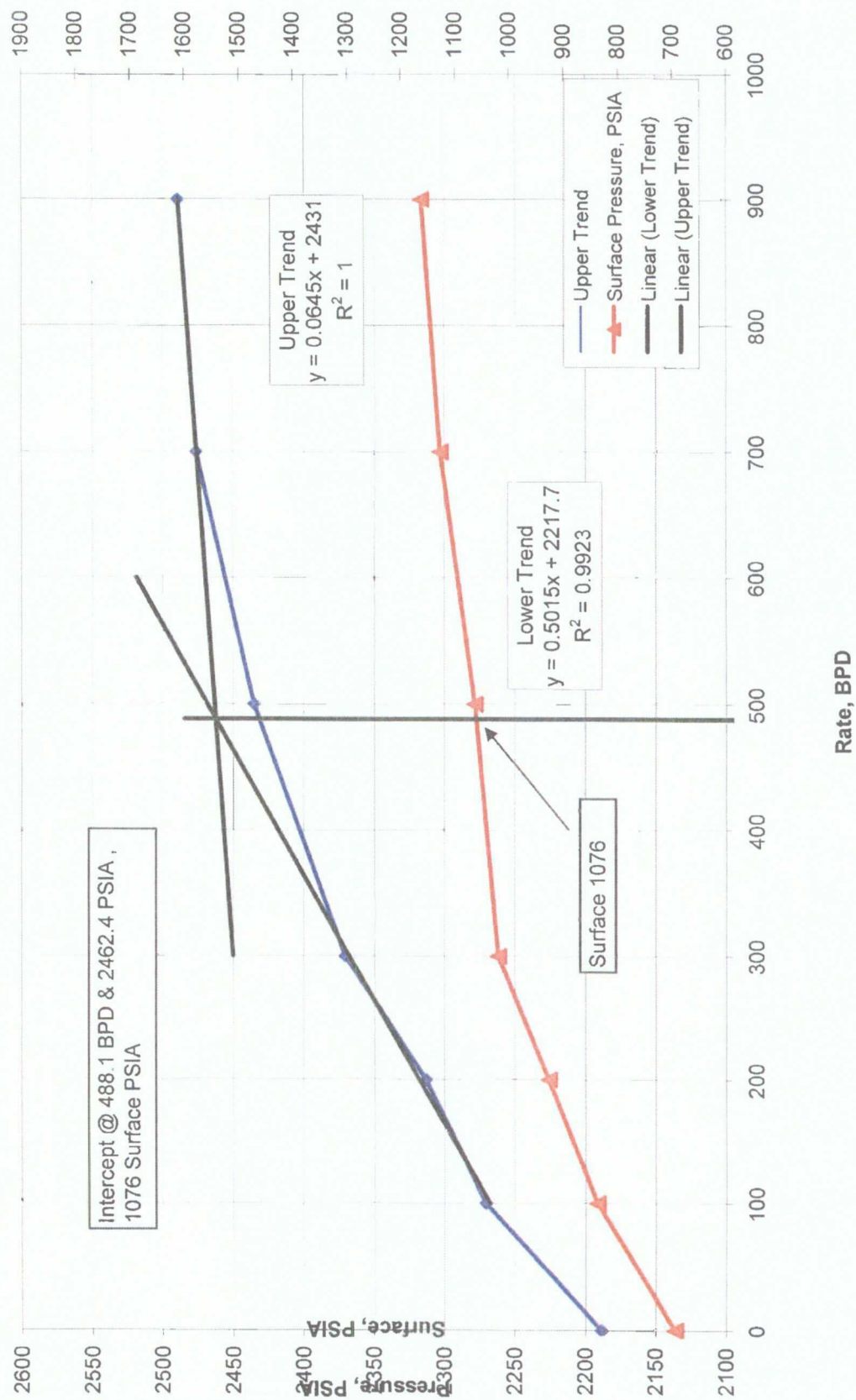
int point: 356.55914 BPD
2414.2178 Psia



Chesapeake Energy Corp. Old Indian Draw # 12
Step Rate Test 06-04-2008

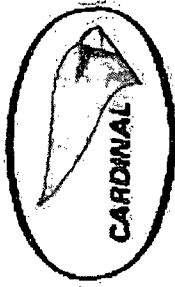


Chesapeake Energy Corp. Old Indian Draw # 16 Step Rate Test 06-17-2008



Step Rate Test

Chesapeake Energy
Old Indian Draw # 16
Field: Indian Draw
Eddy County, NM



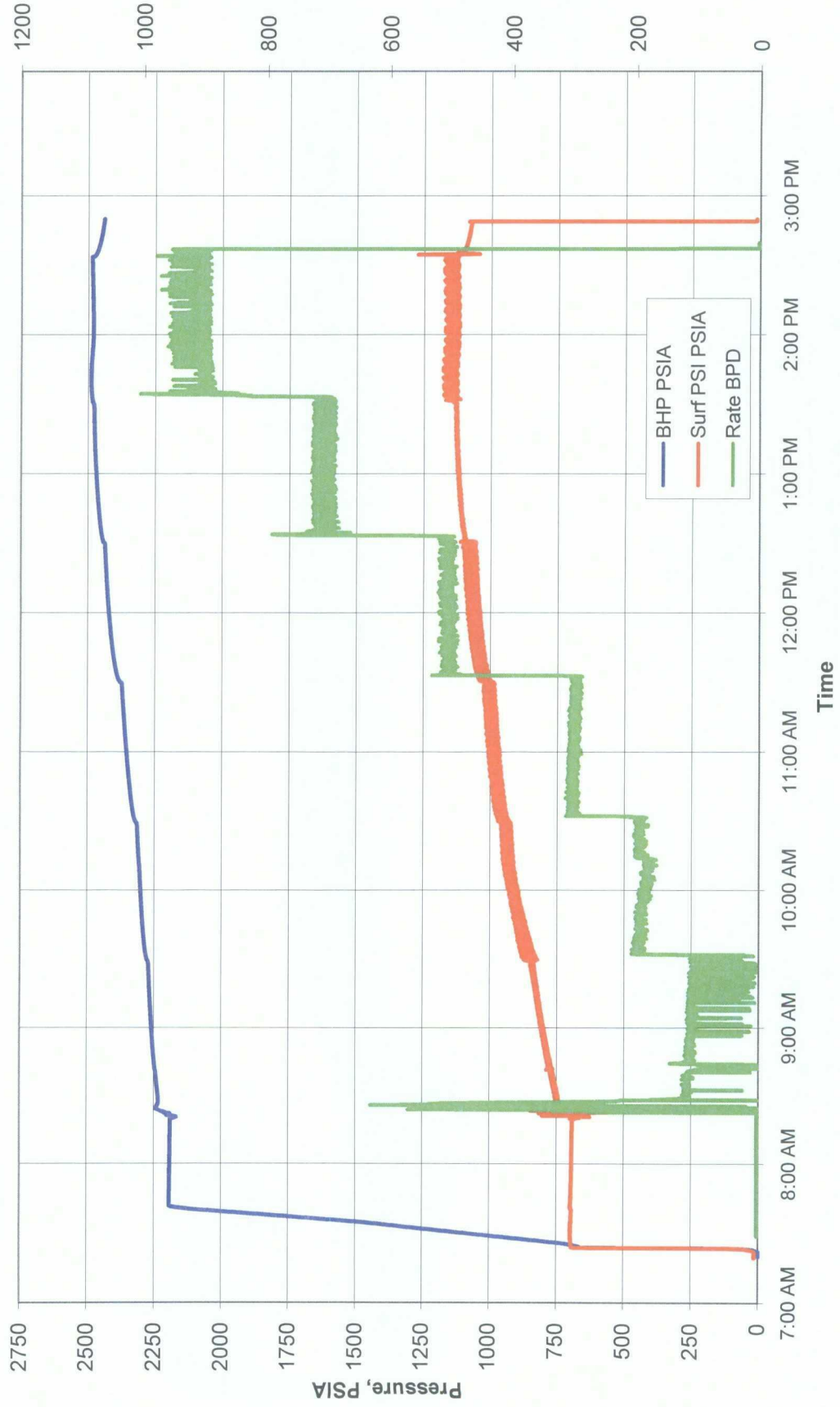
	S Time	E Time	D Time	Last Rate	Step	B. H. Pressure	Surf	Cum	Delta	Avg.	Lower	Upper
			Min	BPD	BPD	PSIA	PSIA	BBL	BBL	BPD	Trend	Trend
1	7:41 AM	8:30 AM	49	0	0	2188.5	694.8	0	0	0		
2	8:30 AM	9:30 AM	60	100	100	2270.4	838.2	5.8	5.8	139	2270.4	
3	9:30 AM	10:30 AM	60	200	100	2312.9	927.7	13.2	7.4	178	2312.9	
4	10:30 AM	11:30 AM	60	300	100	2370.7	1021	25.4	12.2	293	2370.7	
5	11:30 AM	12:30 PM	60	500	200	2435.1	1063.7	45.8	20.4	490		2476.1
6	12:30 PM	1:30 PM	60	700	200	2476.1	1127.6	75	29.2	701		2489
7	1:30 PM	2:30 PM	60	900	200	2489	1162.2	115.2	40.2	965		
8	2:30 PM	2:45 PM	15	0	-900	2443.9	1073.6	115.2	0	0		

0.5015 2217.7
0.0645 2431

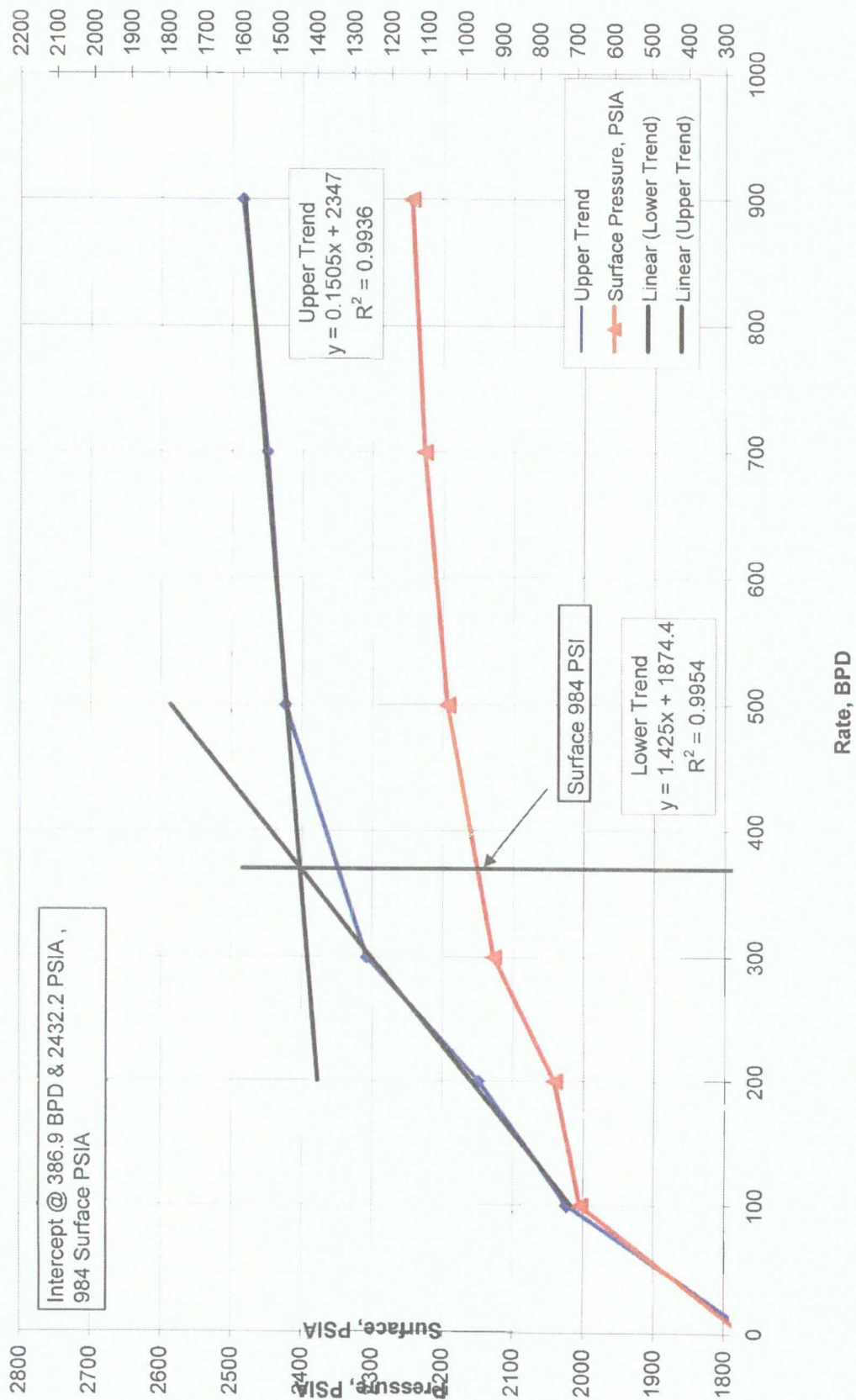
int point: 488.10069 BPD
2462.4825 Psia



Chesapeake Energy Corp. Old Indian Draw #16
Step Rate Test 06-17-2008

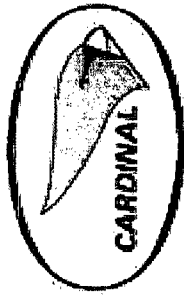


Chesapeake Energy Corp. Old Indian Draw # 21 Step Rate Test 06-16-2008



Step Rate Test

Chesapeake Energy
Old Indian Draw # 21
Field: Indian Draw
Eddy County, NM



	S Time	E Time	D Time	Last Rate	Step	B. H. Pressure	Surf	Cum	Delta	Avg.	Lower	Upper
	Min		BPD	PSIA	BPD	PSIA	BBL	BBL	BBL	BPD	Trend	Trend
1	8:06 AM	8:45 AM	39	0	0	1757.1	246.2	0	0	0		
2	8:45 AM	9:45 AM	60	100	100	2022.5	689.1	5.2	5.2	125	2022.5	
3	9:45 AM	10:45 AM	60	200	100	2148.3	758	12.9	7.7	185	2148.3	
4	10:45 AM	11:45 AM	60	300	100	2307.5	923.1	24.6	11.7	281	2307.5	
5	11:45 AM	12:45 PM	60	500	200	2423.7	1047.6	44.4	19.8	475		2423.7
6	12:45 PM	1:45 PM	60	700	200	2449.6	1110	74.4	30	720		2449.6
7	1:45 PM	2:45 PM	60	900	200	2483.9	1144.5	111.5	37.1	890		2483.9
8	2:45 PM	3:00 PM	15	0	-900	2405.5	1018.9	111.5	0	0		

1.4425 1874
0.1505 2374

int point: 386.9969 BPD
2432.243 Psia



Chesapeake Energy Corp. Old Indian Draw #21
Step Rate Test 06-16-2008

