
PDC Energy

Treatment Summary

Wells Ranch 24-22

Weld County, Colorado

Section 2
Township T6
Range 63W

Codell Refrac

pHaserFrac

June 6, 2012

HALLIBURTON

Pdc Energy Ebus
Do Not Mail - Box 26
Bridgeport, West Virginia 26330

Wells Ranch 24-22
Wattenberg Field
Weld County, Colorado
United States of America
S:22 T:6N R:63W
API/UWI 05-123-27317

Codell Refrac Stage Cost Estimate Down Casing

Prepared for: Kelly Lewis
Office Number: 303-883-5279

June 5, 2012
Version: 1

Submitted by:
Matthew Jespersen
Halliburton
2990 Weld County Rd 27
Brighton, Colorado 80601
+3036554713



HALLIBURTON

**PDC ENERGY EBUS
DO NOT MAIL - BOX 26
BRIDGEPORT, WV 26330**

Wells Ranch 24-22

Interval 1
Weld County, Colorado

Sales Order: 9572546

Post Job Report

For: Chad Sailors
Date: Wednesday, June 06, 2012

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HALLIBURTON

2.0 WELL INFORMATION

2.1 Customer Information

Customer	PDC ENERGY EBUS
Sales Order	9572546
Well Name	Wells Ranch
Interval	1
Well Number	24-22
Job Date	06-Jun-2012
County	Weld
State	Colorado
UWI/API	05-123-27317
Lease Name	WELLS RANCH
Country	United States of America
H2S Present	Unknown
Customer Representative	Chad Sailors
Customer Telephone Number	303-883-5279
Halliburton Representative	GOMEZ

3.0 ACTUAL STAGE SUMMARY

3.1 Stage Summary

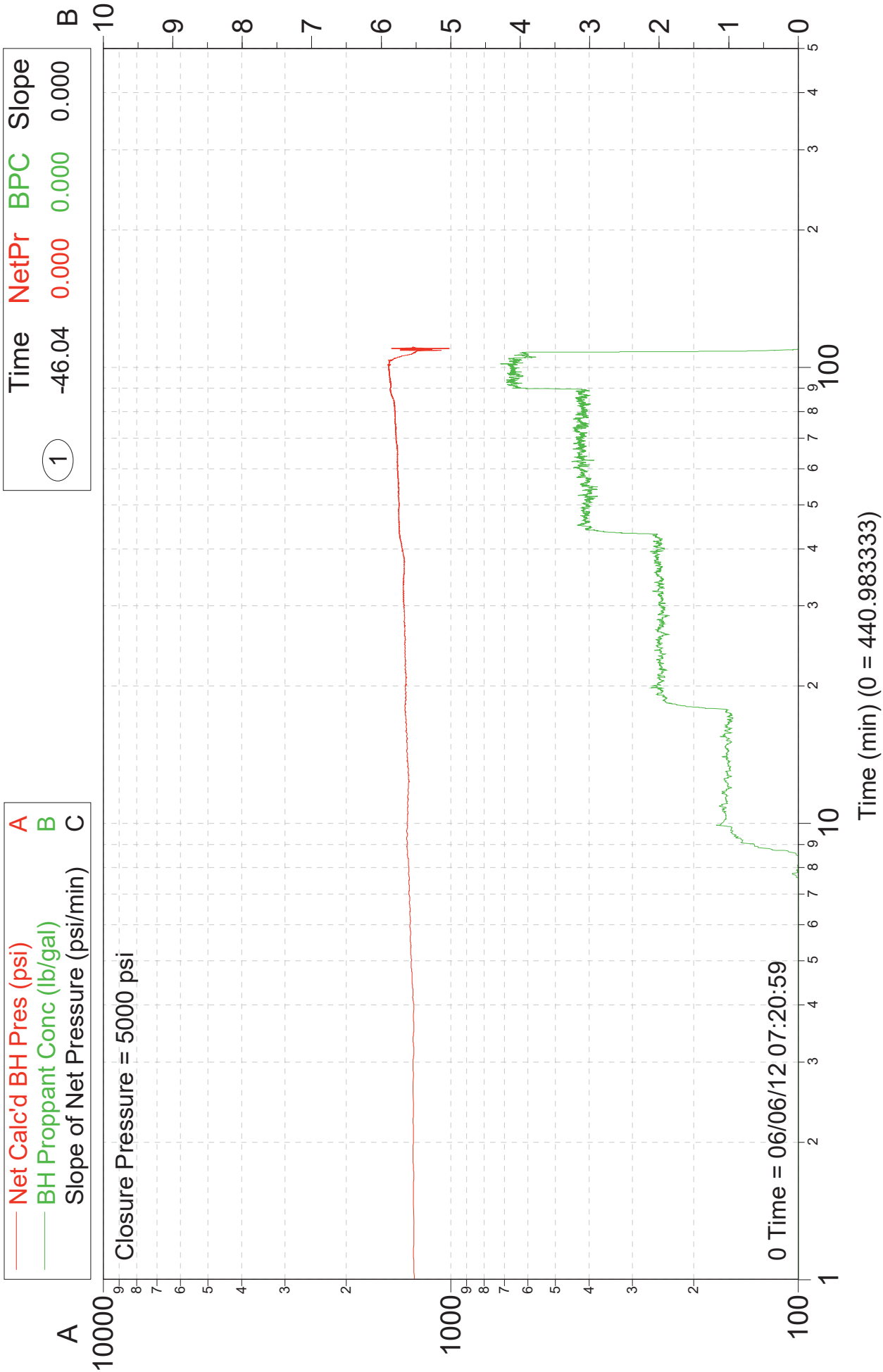
Stage Number	Stage Time	Start Time	End Time	Time min	Pump Time min	Max Treat Pr psi	Max Slurry Rate bpm
1	06-Jun-12 06:58:25	06:49:36	06-Jun-12 06:58:25	8.85	8.40	4224	41.6
2	06-Jun-12 07:25:31	06:58:26	06-Jun-12 07:25:31	27.10	27.03	4142	23.0
3	06-Jun-12 07:34:20	07:25:32	06-Jun-12 07:34:20	8.82	8.82	3577	22.7
4	06-Jun-12 07:59:42	07:34:21	06-Jun-12 07:59:42	25.38	25.37	3393	22.6
5	06-Jun-12 08:29:43	07:59:43	06-Jun-12 08:29:43	30.02	30.02	3249	22.8
6	06-Jun-12 08:46:30	08:29:44	06-Jun-12 08:46:30	16.77	16.77	3168	22.8
7	06-Jun-12 09:00:29	08:46:31	06-Jun-12 09:00:29	13.99	13.98	3159	22.7
8	06-Jun-12 09:05:32	09:00:30	06-Jun-12 09:05:32	5.05	5.05	3190	22.9
9	06-Jun-12 09:29:59	09:05:33	06-Jun-12 09:29:59	24.45	5.40	3932	22.3

Stage Number	Stage Time	Max Wellhead Rate bpm	Max Prop Conc lb/gal	Max Slurry Prop Conc lb/gal	Avg Treating Pressure psi	Avg Clean Rate bpm	Avg Slurry Rate bpm
1	06-Jun-12 06:58:25	41.6	0.00	0.00	3088	14.1	14.1
2	06-Jun-12 07:25:31	23.0	0.91	0.91	3732	22.0	22.0
3	06-Jun-12 07:34:20	22.7	1.74	1.74	3446	21.6	22.6
4	06-Jun-12 07:59:42	22.6	2.77	2.77	3264	20.6	22.5
5	06-Jun-12 08:29:43	22.8	3.23	3.23	3138	19.8	22.6
6	06-Jun-12 08:46:30	22.8	4.07	4.07	3153	19.9	22.7
7	06-Jun-12 09:00:29	22.7	4.24	4.24	3071	19.1	22.6
8	06-Jun-12 09:05:32	22.9	4.13	4.13	3090	19.9	22.6
9	06-Jun-12 09:29:59	22.3	1.25	1.25	3533	19.6	19.7

Stage Number	Stage Time	Avg Wellhead Rate bpm	Avg Slurry Prop Conc lb/gal	Avg Hydraulic Horsepower hp	Clean Volume gal	Slurry Volume gal	Wellhead Volume gal
1	06-Jun-12 06:58:25	14.1	0.00	1070	4988	4988	4988
2	06-Jun-12 07:25:31	22.0	0.36	2011	25011	25031	25031
3	06-Jun-12 07:34:20	22.6	1.03	1907	7990	8365	8365
4	06-Jun-12 07:59:42	22.5	1.98	1799	21992	23969	23969
5	06-Jun-12 08:29:43	22.6	3.06	1737	25007	28476	28476
6	06-Jun-12 08:46:30	22.7	3.11	1751	13989	15964	15964
7	06-Jun-12 09:00:29	22.6	4.06	1702	11220	13284	13284
8	06-Jun-12 09:05:32	22.6	3.10	1713	4227	4798	4798
9	06-Jun-12 09:29:59	19.7	0.52	1708	4438	4476	4476
Total					118861	129351	129351

Stage Number	Stage Time	Prop Mass 100*lb
1	06-Jun-12 06:58:25	0.00
2	06-Jun-12 07:25:31	4.37
3	06-Jun-12 07:34:20	82.60
4	06-Jun-12 07:59:42	435.76
5	06-Jun-12 08:29:43	764.88
6	06-Jun-12 08:46:30	435.49
7	06-Jun-12 09:00:29	455.14
8	06-Jun-12 09:05:32	124.69
9	06-Jun-12 09:29:59	8.45
Total		2311.38

Net Pressure Plot
Wells Ranch 24-22 - Codell

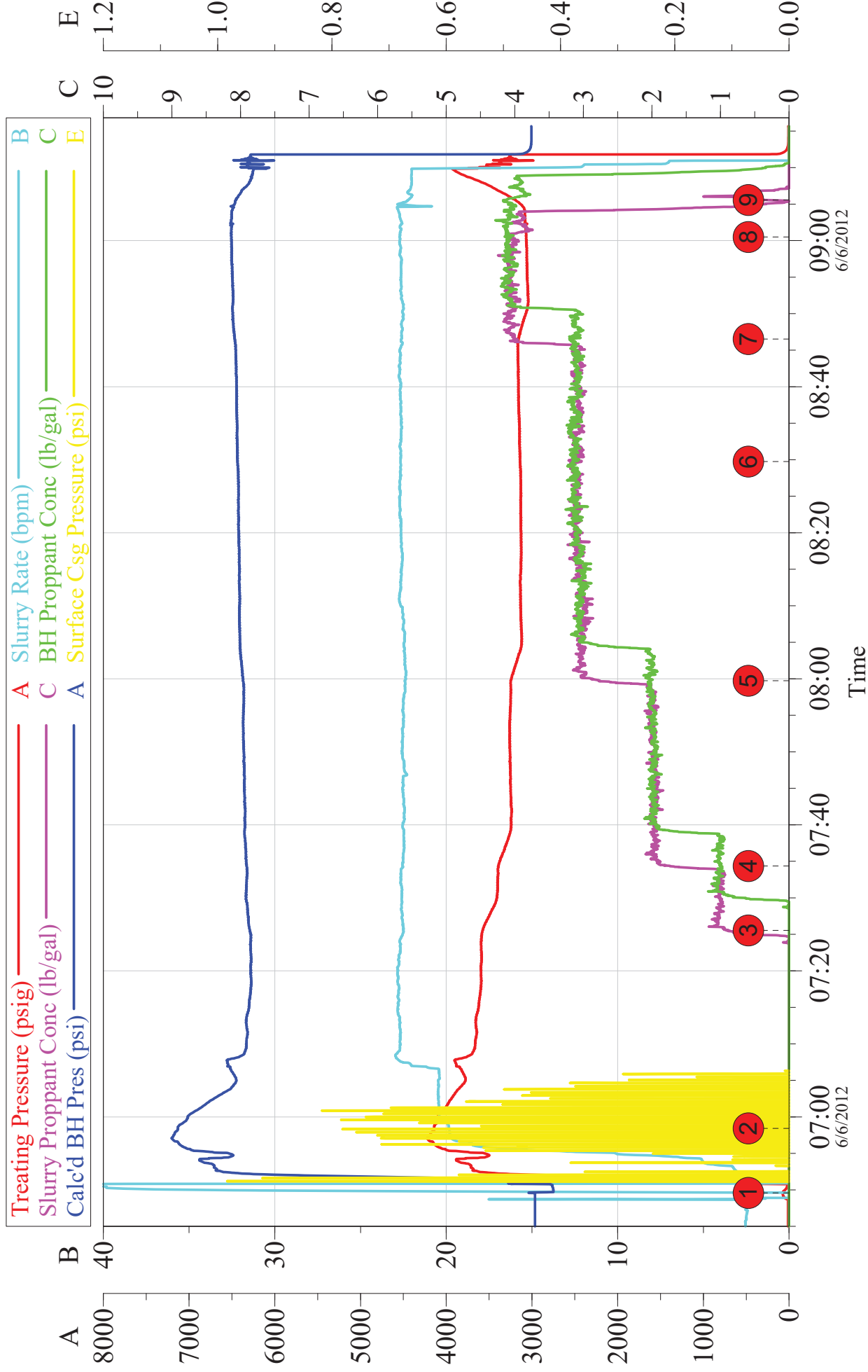


Customer: PDC ENERGY EBUS	Job Date: 06-Jun-2012	Sales Order #: 9572546
Well Description: Wells Ranch 24-22	UWI: 05-123-27317	

INSITE for Stimulation v4.2.0
06-Jun-12 09:15

Treatment Plot

Wells Ranch 24-22 - Codell



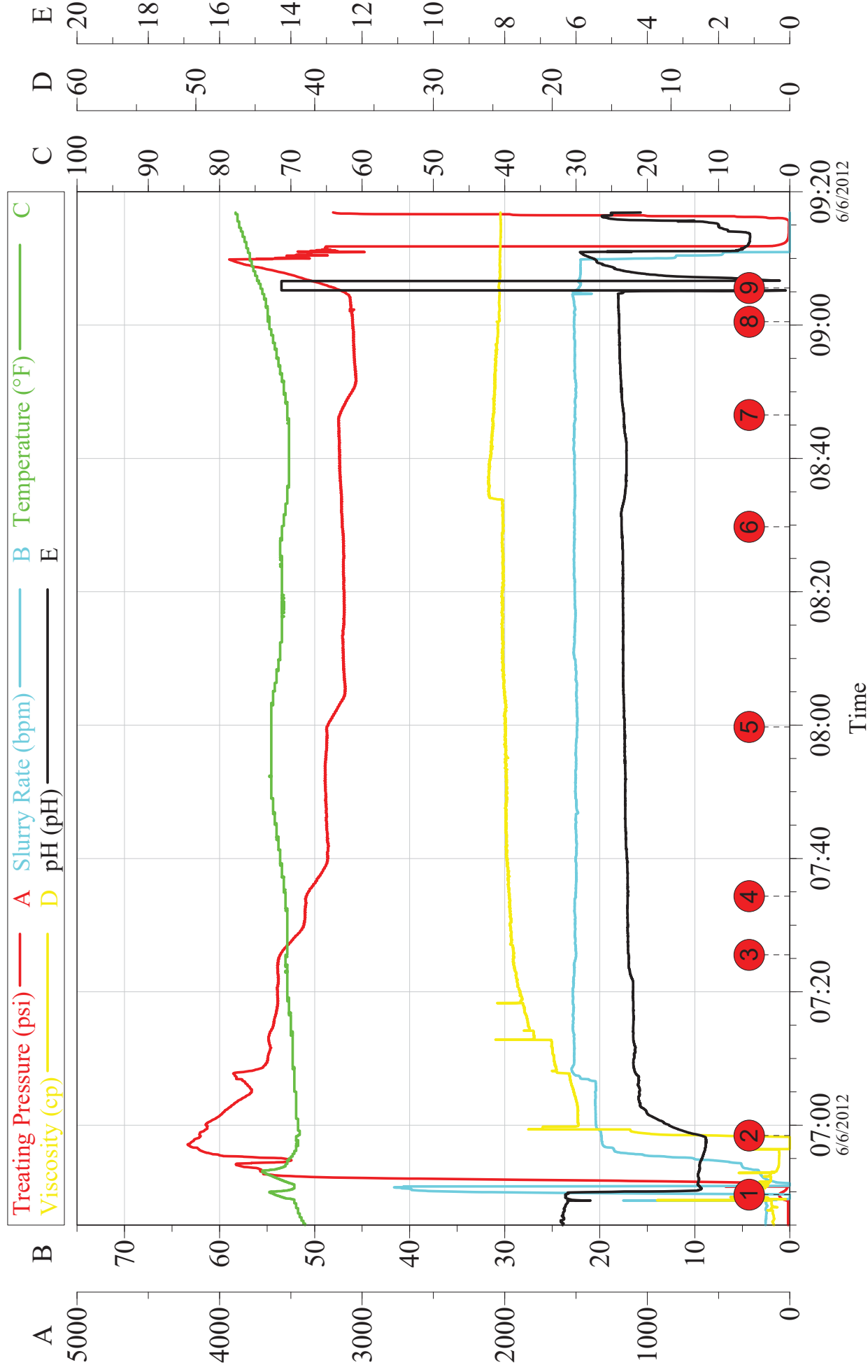
Customer: PDC ENERGY EBUS
Well Description: Wells Ranch 24-22

Job Date: 06-Jun-2012
UWI: 05-123-27317

Sales Order #: 9572546

QAQC Plot

Wells Ranch 24-22 - Codell



Customer: PDC ENERGY EBUS Sales Order #: 9572546

Job Date: 06-Jun-2012

UWI: 05-123-27317

Well Description: Wells Ranch 24-22

[illegible]

HALLIBURTON						JOB LOG				9572546	
COUNTRY UNITED STATES				LOCATION BRIGHTON, COLORADO				BDA ROCKIES NWA		TICKET DATE 6-Jun-2012	
H.E.S. EMPLOYEE NAME CRUZ QUEZADA				MBU ID #N/A		EMP NO. 478606		SUB PSL PRODUCTION ENHANCEMENT			
CUSTOMER REP. / PHONE CHAD SAILORS				COMPANY PDC				JOB PURPOSE CODE 15321			
WELL NAME WELLS RANCH		WELL NO. 2422		API/UWI # 05-123-27317				COUNTY WELD		JOB CLASSIFICATION pHaserFrac	
WELL LOCATION GREELY				SEC / TWP / RNG SEC 22 / T6N / R63W				DEPARTMENT NO. 5005		FORMATION CODELL REFRAC	
Chart No.	Time	Rate (BPM)	Volume (BBL)(GAL)	Pmps		Press.(PSI)		Job Description / Remarks			
				T	C	Tbg	Csg				
	2:00 AM										
	2:30 AM							YARD SAFETY MEETING			
	3:45 AM							ON LOCATION			
	4:00 AM							PRE - RIGUP SAFETY MEETING			
	5:51 AM							PRIME UP TRUCKS			
	6:15 AM							TEST LINES TO 6429 MAX PRESSURE AT 5500			
								POP OFFS AT 5425			
								BACKSIDE AT N/A			
	6:21 AM							PRE - JOB SAFETY MEETING			
	6:47 AM							START JOB			
	6:47 AM		41				200	LOAD			
	6:49 AM	3.2	47	1			3708	BREAK FORMATION			
	6:47 AM			1			200	START ACTIVE PAD			
	6:54 AM	19.9	119	4			4135	START PHASER PAD			
	7:22 AM	22.5	714	4			3577	START 1.00 PPG SAND STAGE			
	7:26 AM	22.6	820	4			3403	1.00 PPG SAND ON FORMATION			
	7:30 AM	22.5	904	4			3393	START 2.00 PPG SAND STAGE			
	7:35 AM	22.5	1010	4			3261	2.00 PPG SAND ON FORMATION			
	7:56 AM	22.4	1428	4			3249	START 3.00 PPG SAND STAGE			
	8:00 AM	22.7	1534	4			3122	3.00 PPG SAND ON FORMATION			
	8:26 AM	22.7	2024	4			3139	START 2. PPG 3.00 SAND STAGE			
	8:43 AM	22.6	2357	4			3157	START 4.00 SAND STAGE			
	8:47 AM	22.6	2463	4			3058	4.00 PPG SAND ON FORMATION			
	8:57 AM	22.7	2624	4			3066	START SBXL 4.00 SAND STAGE			
	9:02 AM	22.2	2725	4			3192	ACID			
	9:02 AM	22.2	2725	4			3192	FLUSH			
	9:07 AM						3257	JOB COMPLETED			
								AVERAGES :		SHUTIN PRESSURES :	
								PRESSURE	3286	INSTANT	3247
								RATE	22.5	5 MIN	N/A
								TEMP	71.2	10 MIN	N/A
								VIS.	26.2	15 MIN	N/A
										TOTAL VOLUME	2830
								PRESSURE	4424	FLUSH VOLUME	106
								RATE	23		

Bonanza Creek

410 17th Street , Ste 1380
Denver, CO 80202

Wells Ranch 24-22

Codell Refrac

05-123-27317

SWSE SEC 22 T6 R63W

June 6, 2012

Ticket #: 9572546

Treater: Cruz Quezada

IFS: Brandon White

Engineer: Adebambo Alli

Customer: Chad Sailors

Pre Job Inventory

Total Water on Location		7156.6 bbls	300,577 gal
Total Water after Prime Up	0 Gal Prime Up	7156.6 bbls	300,577 gal
Bottoms		57.1 bbls	2,400 gal
Water Required for Design		2809.5 bbls	118,000 gal
Excess		4289.9 bbls	180,177 gal

Total Sand	Ottawa 20/40	217,200 #
Proppant Hauled From	SB Excel 20/40	8,000 #
		Brighton

Pressure Test

Lines Tested To	psi	Volume Calculations	
		Top Perf	6,832 ft
		TVD Difference	0 ft
Max Pressure	5000 psi		
Kick-Outs	4800 psi	Wellbore Volume	4577 gal
			109.0 bbls

Event Log

	Pressure	Rate	Pressure Analysis			
6:49 Opened wellhead	72		ISIP	psi	ISDP	3247 psi
6:53 Formation Break	3708	3.2	IFG	psi/ft	FFG	0.908 psi/ft
6:58 Begin Crosslinked gel	4137	19.9	1 min	psi	1 min	NA psi
7:25 Begin 1.00 ppg sand	3574	22.5	4 min	psi	5 min	NA psi
7:30 1.00 ppg sand on formation	3403	22.6	Leakoff	0 psi	Leakoff	NA psi
7:34 Begin 2.00 ppg sand	3395	22.6				
7:39 2.00 ppg sand on formation	3248	22.5				
7:59 Begin 3.00 ppg	3249	22.4				
8:04 3.00 ppg sand on formation	3123	22.5				
8:45 Begin 4.00 ppg sand	3165	22.5				
8:51 4.00 ppg sand on formaton	3050	22.5				
9:00 Begin 4.00 ppg SB Excel	3070	22.7				
9:05 Begin Acid	3152	22.5				
9:06 Marked Flush	3190	22.2				
9:11 ISDP	3247					

Average Pressure	3286 psi
Rate	22.5 bpm
Viscosity	26.2 cP
Temperature	71.2 °F
pH	4.69

Maximum Pressure	4224 psi
Rate	23.0 bpm

Fluid Totals

FDP PrePad	118.8 bbls	4,988 Gal
pHaserFrac	2581.8 bbls	108,436 Gal
SLF	1986.3 bbls	83,425 Gal
Load to Recover	2830.0 bbls	118,862 Gal

Ticket