ELM RIDGE EXPLORATION
IGE #107
Fruitland Coal 15cp 70Q Delta 140

API: 05-067-09074

S: 11 T: 33N R: 8W
La Plata County, Colorado

Sales Order: 9877773

Post Job Report

For: Monty Streigel
Date: Monday, October 15, 2012
Treater: Jonathan Castillo
Engineer: Scott Ross

HALLIBURTON

Post Job

HALLIBURTON

Fracturing Service Treatment Report

Legal Data

Date:	October 15, 2012	District:	Farmington	Customer:	Elm Ridge Resources	S.O. #:	9877773
Well Name:	IGE #107	Legals:	S: 11 T: 33N R: 8W	County/State:	La Plata / CO	API#:	05-067-09074

Well Data

Job Type:	15 cp 70Q Delta 140 with Sandwedge Max NT						
Formation:	Fruitland Coal	Total Depth:	3,223	Tubing:	-		
Casing:	5.5 " 17.0 # J-55	Liner:	-	Packer:	-		
Perforations:	4 spf	Perf Size:	0.34 "	Total:	92	Interval:	2,666 - 2,905'

Treatment Data

Slurry		Foam		Average Rates		Pressure	
Pad Volume:	14,376	Pad Volume:	45,194	Clean:	-	Average:	2,187
Treatment:	19,539	Treatment:	47,622	Slurry:	13.5	ISIP:	3,578
Flush:	2,526	Flush:	-	Foam	37.6	5 Minute:	2,898
Total:	36,441	Total:	92,816	N2 / C02	22,846	10 Minute:	2,892
Pad %:	42%	Sand Total:	121,070	Q	68	15 Minute:	2,886

Job Data

Time	Volumes		Rates		Pressure	Sand	Stage Description
Stage Time	Stage Volume	Fluid Total	Slurry Rate	BH Rate	Tubing/Casing	Stage LBS	
9:54	-	-	-	-	870 on WH	-	Start Job
9:54	282	282	1.3	1.3	778	-	Start Load & Break
9:56	1,020	1,302	10.0	9.8	889	-	Start Acid Spearhead
9:58	1,190	2,492	12.3	17.4	952	-	Start Pre-Pad
10:01	13,186	15,678	12.1	40.0	2,251	200	Start Pad
10:27	2,481	18,159	12.2	37.5	2,153	7,200	Start 1.0# 20/40 PRS w/ SW Max NT
10:31	4,103	22,262	13.3	35.7	2,034	19,800	Start 2.0# 20/40 PRS w/ SW Max NT
10:39	4,706	26,968	14.7	34.9	1,975	30,100	Start 3.0# 20/40 PRS w/ SW Max NT
10:46	5,381	32,349	16.2	36.0	2,120	39,800	Start 4.0# 20/40 PRS w/ SW Max NT
10:54	2,868	35,217	16.7	34.4	2,605	23,500	Start 5.0# 20/40 PRS w/ SW Max NT
10:58	2,526	37,743	16.9	16.2	3,097	470	Start Fluid Flush
11:02	-	37,743	-	-	3,578	-	Shut Down - ISIP
11:07	-	37,743	-	-	2,898	-	5 min - SIP
11:12	-	37,743	-	-	2,892	-	10 min - SIP
11:17	-	37,743	-	-	2,886	-	15 min - SIP
-	-	37,743	-	-	-	-	Shut In

Job Summary & Comments

Pumped 1,000 gallons of 15% FE/HCl acid.
Pumped 1,329 mscf of N2 and used 320 mscf for cool down.
Pumped 33,915 gallons of 15 cp 70Q Delta w/ Sandwedge Max NT frac fluid (excluding 2,526 gallons of fluid flush) at an avg. rate of 13.5 bpm and an avg. WHTP of 2,187 psi.
Pumped 92,816 gallons of 15 cp 70Q Delta 140 w/ Sandwedge Max NT foam frac fluid (excluding - gallons of flush) at an avg. rate of 37.6 bpm and an avg. quality of 68%.
Pumped 1271 sacks of 20/40 PRS (per weight slips) with a max BH sand concentration of 6.1 lb/gal.
Coated 1241 sacks of 20/40 PRS with Sandwedge Max NT at a concentration of 2.4 gal/Mlbs starting at the 1.0 # treatment sand stage.
Total fluid to recover is 768 bbls.
A 42% pad was pumped.
The maximum surface pressure reached (during treatment) was 3,486 psi.
The final frac gradient at the end of the job was 1.36 psi/ft.
Pumped 2,787 gallons of Waterfrac G and 28,448 gallons of Delta Frac.
Job pumped per customer request.

Treater/N2 Treater	J. Castillo \ J. Castillo
TCC Operator:	S. Ross
Engineer:	S. Ross

Chemicals Pumped

Chemical	Beg. Strap	After Prime Up	Ending Strap	Design	Used	Ticket Total	Percentage Error	
BC-140	319	317	270	43	47	48.6	8.37%	
AQF-2	206	204	119	86	85	87	-1.16%	
GBW-30	15	15		15	15	15	-	
OptiFlo H.T.E.	31	31		31	31	31	-	
Losurf 300D	111	107	92	16	14	18	-11.25%	
Sandwedge Max NT	504	504	238	290	266	266	-8.28%	
LGC-36 UC	370	370	106	171	264	264	54.39%	
BA-20	15	15		15	15	15	-	

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1.0 WELL INFORMATION

1.1 Customer Information

Customer	ELM RIDGE EXPLORATION CO LLC - EBUS
Sales Order	9877773
Well Name	IGE
Interval	1
Well Number	107
Job Date	15-Oct-2012
County	La Plata
State	Colorado
UWI/API	05067090740000
Country	United States of America
H2S Present	Unknown
Customer Representative	Monty Streigel
Customer Telephone Number	70Q Delta 140 Foam Frac W/SW NT
Halliburton Representative	Castillo

1.2 Pipe Information

Equipment	Top MD ft	Bottom MD ft	OD in	ID in	Weight lb/ft
Casing	0.0	3223.0	5.500	4.892	17.00
Surface Pipe	0.0	25.0	5.000	4.000	

1.3 Perforation Intervals

Top MD ft	Bottom MD ft	Number of Shots	Perf Density spf	Perf Phasing °	Perf Orientation °	Perf Formation
2666.0	2672.0	25	4.0	2	0	Fruitland Coal
2762.0	2770.0	33	4.0	2	0	Fruitland Coal
2858.0	2864.0	25	4.0	2	0	Fruitland Coal
2902.0	2905.0	13	4.0	2	0	Fruitland Coal

2.0 PUMPING SCHEDULE

2.1 Designed Pumping Schedule

Stage Number	Description	Flow Path	Fluid System	Clean Volume gal	Slurry Volume gal	Prop Conc Start lb/gal	Prop Conc End lb/gal
1	Load Well	In	WATER FRAC G 30# - SBM (15347)	200	200	0.00	0.00
2	Acid Spearhead	In	7.5% HF ACID	1000	1000	0.00	0.00
3	Pre-Pad	In	DELTA FRAC 140 - R - SBM	300	300	0.00	0.00
4	Pad	In	DELTA FRAC 140 - R - SBM	13500	13500	0.00	0.00
5	1# 20/40 arizona	In	DELTA FRAC 140 - R - SBM	2196	2514	3.19	3.19
6	2# 20/40 arizona	In	DELTA FRAC 140 - R - SBM	3274	4181	6.11	6.11
7	3# 20/40 arizona	In	DELTA FRAC 140 - R - SBM	3410	4771	8.80	8.80
8	4# 20/40 arizona	In	DELTA FRAC 140 - R - SBM	3574	5402	11.28	11.28
9	5# 20/40 arizoona	In	DELTA FRAC 140 - R - SBM	2210	3570	13.57	13.57
10	Flush	In	DELTA FRAC 140 - R - SBM	2506	2506	0.00	0.00
11	Shut-In	In		0	0	0.00	0.00
Total				32170	37945		

2.2 Designed Pumping Schedule (continued)

Stage Number	Description	Prop Type	Prop Mass 100*lb	Rate Stage Start bpm	Rate Stage End bpm	Stage Time min
1	Load Well			5.0	5.0	0.95
2	Acid Spearhead			20.0	20.0	1.19
3	Pre-Pad			10.5	10.5	0.68
4	Pad			10.5	10.5	30.61
5	1# 20/40 arizona	SAND - PREMIUM - 20/40, BULK, SK (100003678)	70.05	12.0	12.0	4.98
6	2# 20/40 arizona	SAND - PREMIUM - 20/40, BULK, SK (100003678)	200.04	13.4	13.4	7.41
7	3# 20/40 arizona	SAND - PREMIUM - 20/40, BULK, SK (100003678)	300.08	14.7	14.7	7.72
8	4# 20/40 arizona	SAND - PREMIUM - 20/40, BULK, SK (100003678)	403.15	15.9	15.9	8.09
9	5# 20/40 arizoona	SAND - PREMIUM - 20/40, BULK, SK (100003678)	299.90	17.0	17.0	5.00
10	Flush			35.0	35.0	1.70
11	Shut-In			0.0	0.0	0.00
Total			1273.22			68.34

3.0 ACTUAL STAGE SUMMARY

3.1 Stage Summary

Stage Number	Start Time	Max Treat Pr psi	Avg Treating Pressure psi	Max Slurry Rate bpm	Avg Slurry Rate bpm	Avg Clean Rate bpm
1	09:54:28	874	834	7.6	3.5	3.5
2	09:56:22	1031	889	13.7	9.8	9.8
3	09:58:52	1176	952	21.7	12.3	12.3
4	10:01:09	2478	2251	12.9	12.1	12.1
5	10:27:03	2252	2153	13.1	12.2	10.6
6	10:31:55	2144	2034	14.5	13.3	10.4
7	10:39:14	2039	1975	16.0	14.7	10.4
8	10:46:52	2404	2120	17.2	16.2	10.7
9	10:54:48	2825	2602	16.9	16.7	10.5
10	10:58:55	4024	2983	24.2	20.9	20.9

Stage Number	Slurry Volume gal	Clean Volume gal	Prop Mass 100*lb	Avg Hydraulic Horsepower hp
1	105	105	0.00	71
2	1020	1020	0.00	214
3	1190	1190	0.00	288
4	13186	13177	2.05	668
5	2481	2154	72.06	642
6	4103	3207	197.57	664
7	4706	3342	300.62	712
8	5381	3574	398.36	840
9	2868	1804	234.74	1068
10	2526	2505	4.72	1531
Total	37566	32078	1210.12	

4.0 PERFORMANCE HIGHLIGHTS

4.1 Job Event Log

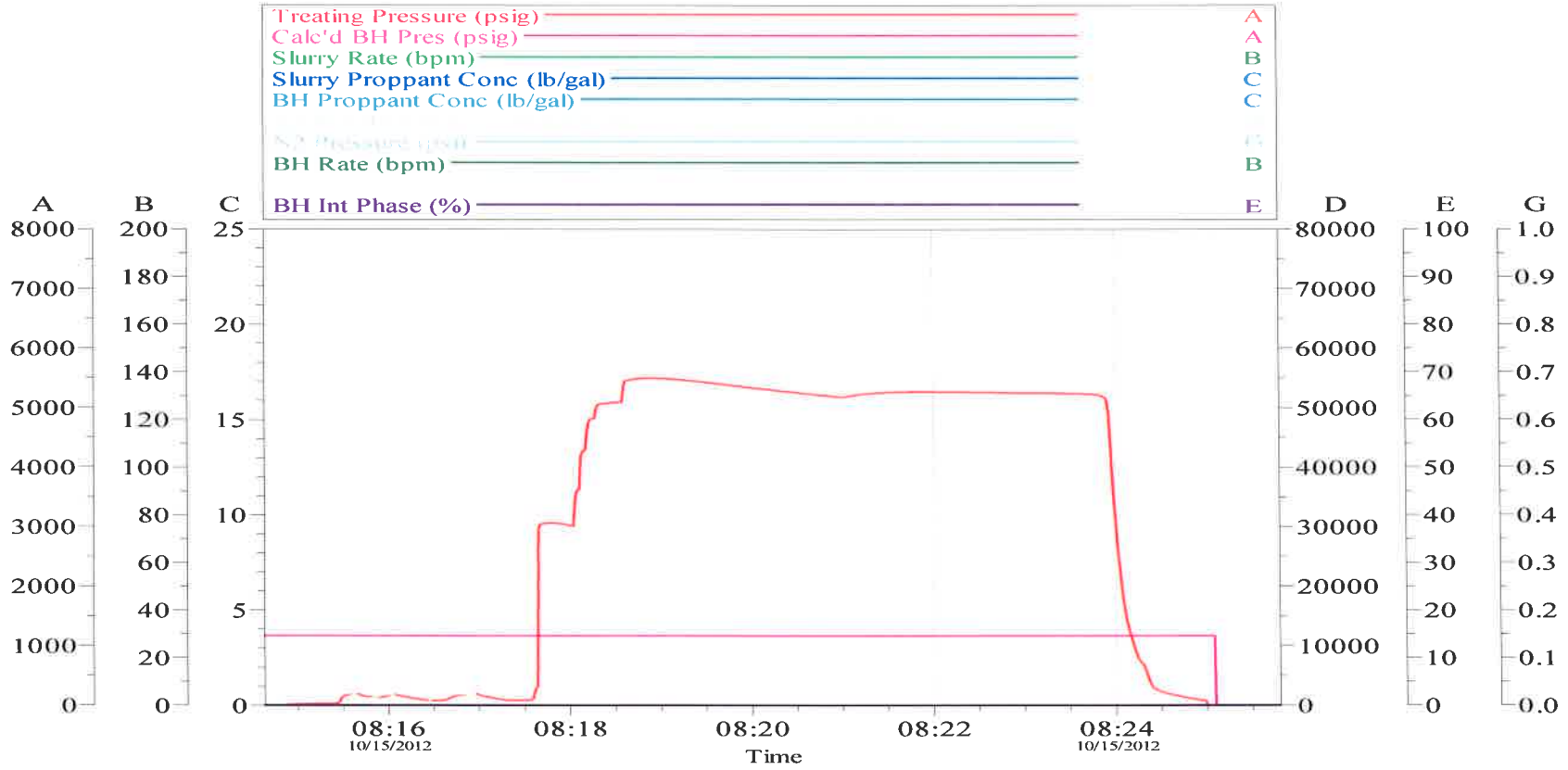
Stage Number	Event Number	Time	Description	Comment	Treating Pressure psi	N2 Pressure psi	Slurry Rate bpm	N2 Standard Rate scfm
	1	15-Oct-12 05:30:07	Arrive At Loc					
	2	06:00:07	Pre-Rig Up Safety Meeting					
	3	07:35:07	Rig-Up Completed					
	4	08:11:38	Start Job	Starting Job				
	5	08:14:58	Prime Pumps		12	-3682	2.0	0
	6	08:21:15	Pressure Test		5227	-4	0.0	0
	7	08:25:05	Pause	Suspending Job	0	0	0.0	0
	8	08:30:46	Pre-Job Safety Meeting		0	0	0.0	0
	9	08:57:56	Resume	Resuming Job	0	0	0.0	0
	10	09:23:02	Pressure Test		-8	2561	0.0	128
	11	09:25:30	Other	leak on lo-torc and single	-9	2155	0.0	0
1		09:54:27	Stage 1	Load Well	0	-11	0.0	27
		09:54:28	Start Averaging	Start Avg Trt 1	0	-12	0.0	26
2		09:56:21	Stage 2	Acid Spearhead	873	892	7.6	0
3		09:58:51	Stage 3	Pre-Pad	903	882	10.3	0
4		10:01:08	Stage 4	Pad	1176	1226	11.8	10736
5		10:27:03	Stage 5	1# 20/40 arizona	2252	2415	11.9	26890
6		10:31:55	Stage 6	2# 20/40 arizona	2132	2282	13.1	23082
7		10:39:14	Stage 7	3# 20/40 arizona	2017	2109	14.4	19767
8		10:46:52	Stage 8	4# 20/40 arizona	1982	2092	15.9	18397
9		10:54:47	Stage 9	5# 20/40 arizoona	2404	2504	16.9	18985
10		10:58:55	Stage 10	Flush	2831	2941	16.7	19447
11		11:02:25	Stage 11	Shut-In	3491	33	0.0	0
	12	11:03:52	ISIP		3396	-10	0.0	0
	13	11:05:52	Post-Job Safety Meeting (Pre Rig-Down)		3384	-10	0.0	0
	14	11:08:52	Shut-In Pressure @ 5 Minutes		3357	-11	0.0	0

Stage Number	Event Number	Time	Description	Comment	Treating Pressure psi	N2 Pressure psi	Slurry Rate bpm	N2 Standard Rate scfm
	15	11:13:52	Shut-In Pressure @ 10 Minutes		3327	-3682	0.0	0
	16	11:18:52	Shut-In Pressure @ 15 Minutes		3313	-3682	0.0	0
	17	11:20:52	Clean Lines		3253	-3681	0.0	0
	18	12:30:52	Rig Down Lines		2824	-3681	0.0	0
	19	13:30:52	Depart Location for Home		2824	-3681	0.0	0

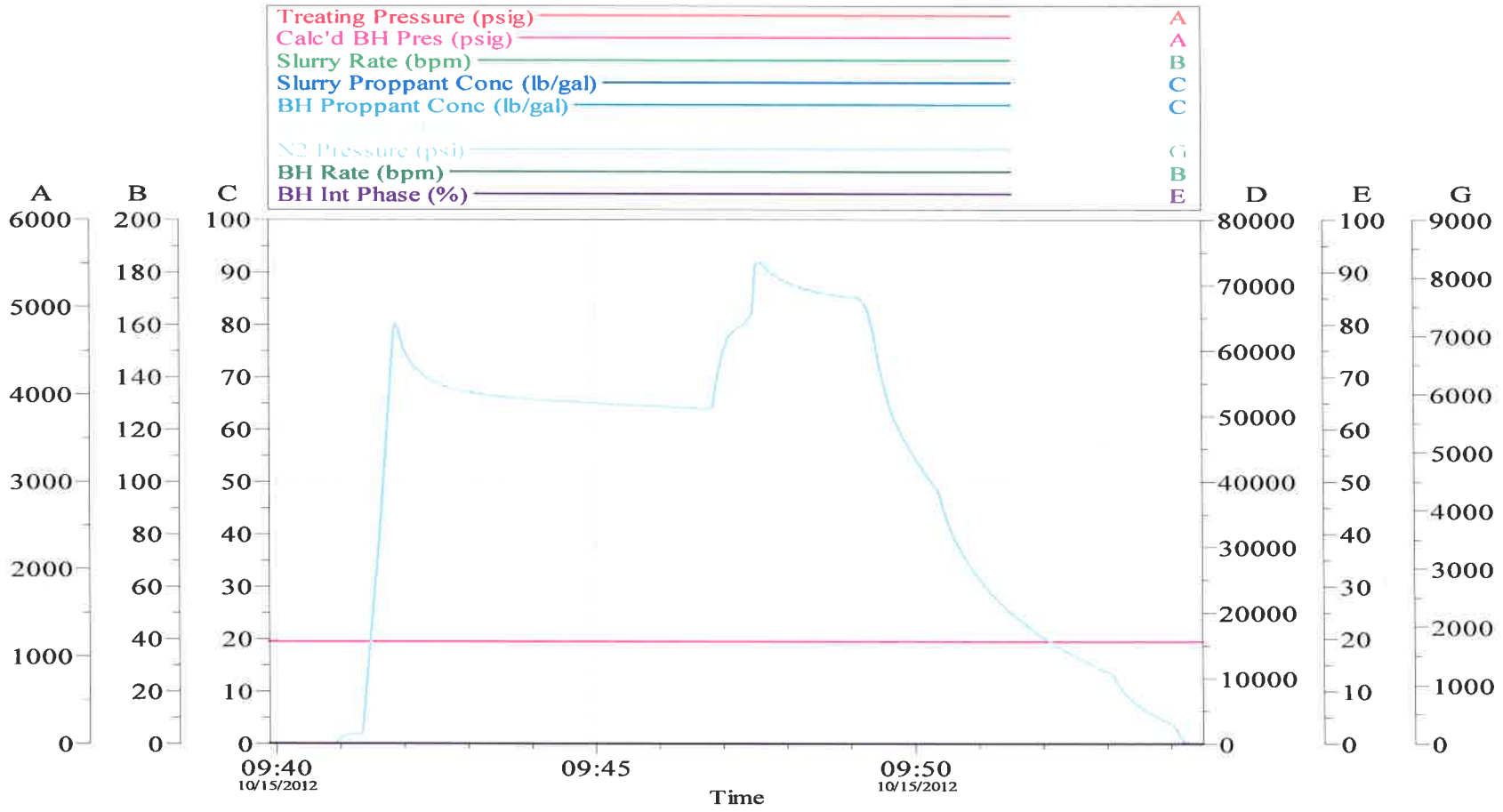
Stage Number	Event Number	Time	Description	Comment	Job Clean Vol gal	Job Slurry Vol gal	Job N2 Standard Vol scf	Job Proppant 100*lb
	1	05:30:07	Arrive At Loc					
	2	06:00:07	Pre-Rig Up Safety Meeting					
	3	07:35:07	Rig-Up Completed					
	4	08:11:38	Start Job	Starting Job				
	5	08:14:58	Prime Pumps		22	22	0	0.00
	6	08:21:15	Pressure Test		282	282	0	0.00
	7	08:25:05	Pause	Suspending Job	282	282	0	0.00
	8	08:30:46	Pre-Job Safety Meeting		282	282	0	0.00
	9	08:57:56	Resume	Resuming Job	282	282	0	0.00
	10	09:23:02	Pressure Test		282	282	112	0.00
	11	09:25:30	Other	leak on lo-torc and single	282	282	121	0.00
1		09:54:27	Stage 1	Load Well	282	282	518	0.00
		09:54:28	Start Averaging	Start Avg Trt 1	0	0	0	0.00
2		09:56:21	Stage 2	Acid Spearhead	105	105	110	0.00
3		09:58:51	Stage 3	Pre-Pad	1132	1132	110	0.00
4		10:01:08	Stage 4	Pad	2315	2315	5524	0.00
5		10:27:03	Stage 5	1# 20/40 arizona	15492	15501	694751	2.05
6		10:31:55	Stage 6	2# 20/40 arizona	17653	17991	809811	74.52
7		10:39:14	Stage 7	3# 20/40 arizona	20853	22085	958975	271.68
8		10:46:52	Stage 8	4# 20/40 arizona	24202	26802	1097740	573.12
9		10:54:47	Stage 9	5# 20/40 arizoona	27777	32183	1246182	971.63
10		10:58:55	Stage 10	Flush	29605	35087	1325011	1208.86
11		11:02:25	Stage 11	Shut-In	32078	37566	1325711	1210.12
	12	11:03:52	ISIP		32078	37566	1328471	1210.12
	13	11:05:52	Post-Job Safety Meeting (Pre Rig-Down)		32078	37566	1328471	1210.12
	14	11:08:52	Shut-In Pressure @ 5 Minutes		32078	37566	1328504	1210.12
	15	11:13:52	Shut-In Pressure @ 10 Minutes		32078	37566	1328713	1210.12
	16	11:18:52	Shut-In Pressure @ 15 Minutes		32078	37566	1328735	1210.12
	17	11:20:52	Clean Lines		32078	37566	1328735	1210.12
	18	12:30:52	Rig Down Lines		32078	37566	1328735	1210.12
	19	13:30:52	Depart Location for Home		32078	37566	1328735	1210.12

5.0 ATTACHMENTS

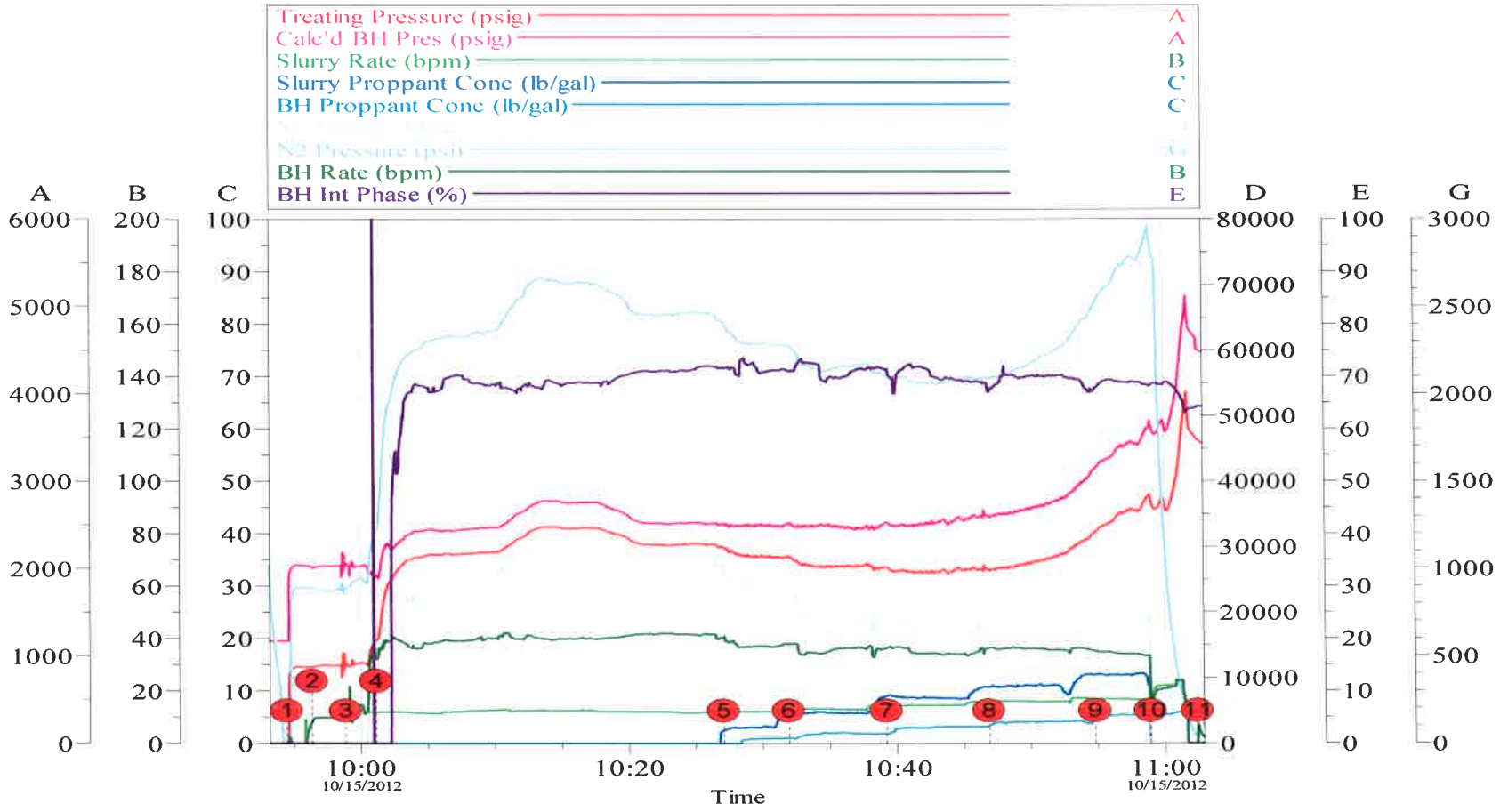
5.1 Fluid Pressure Test



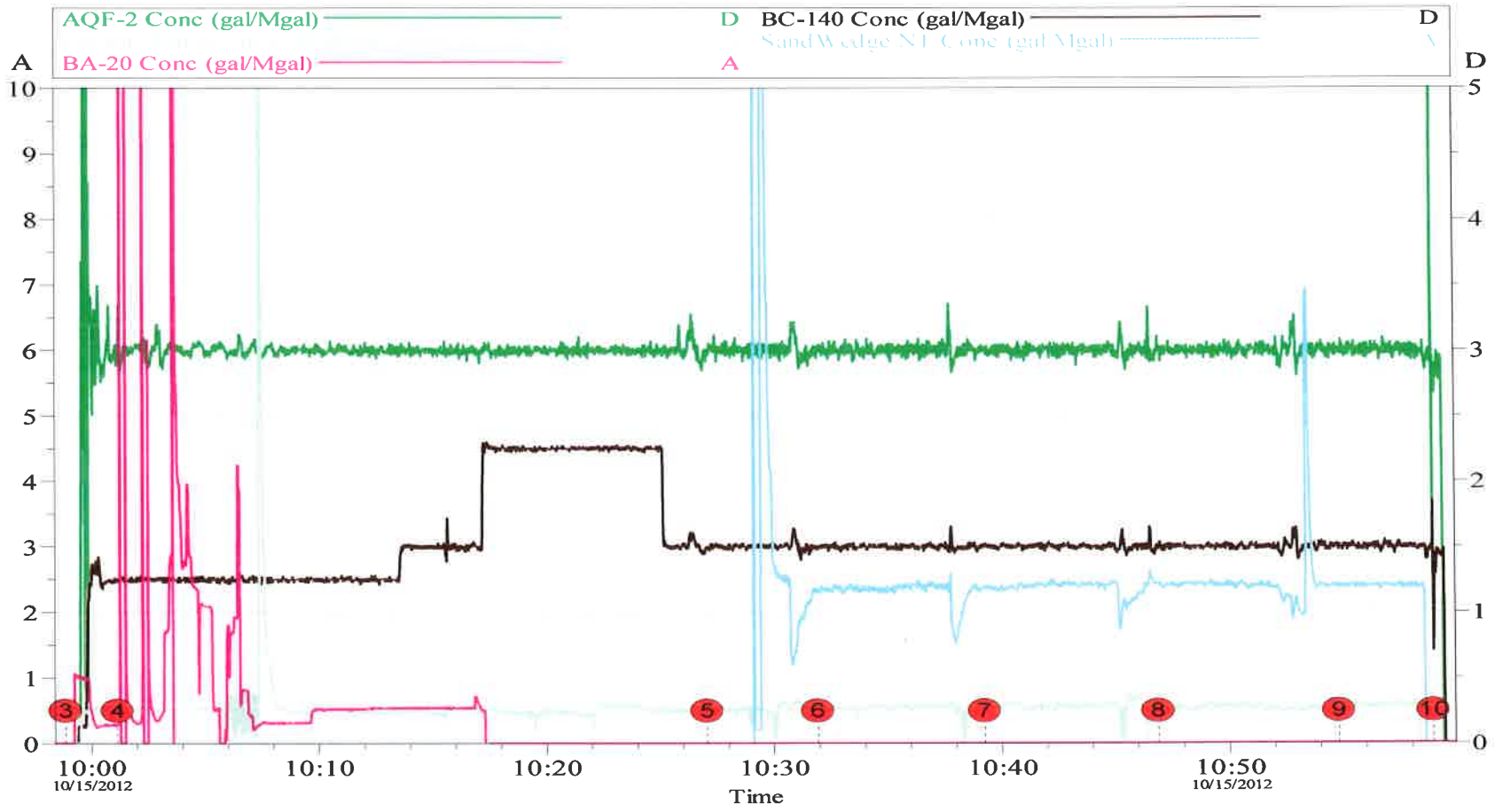
5.2 Nitrogen Pressure Test



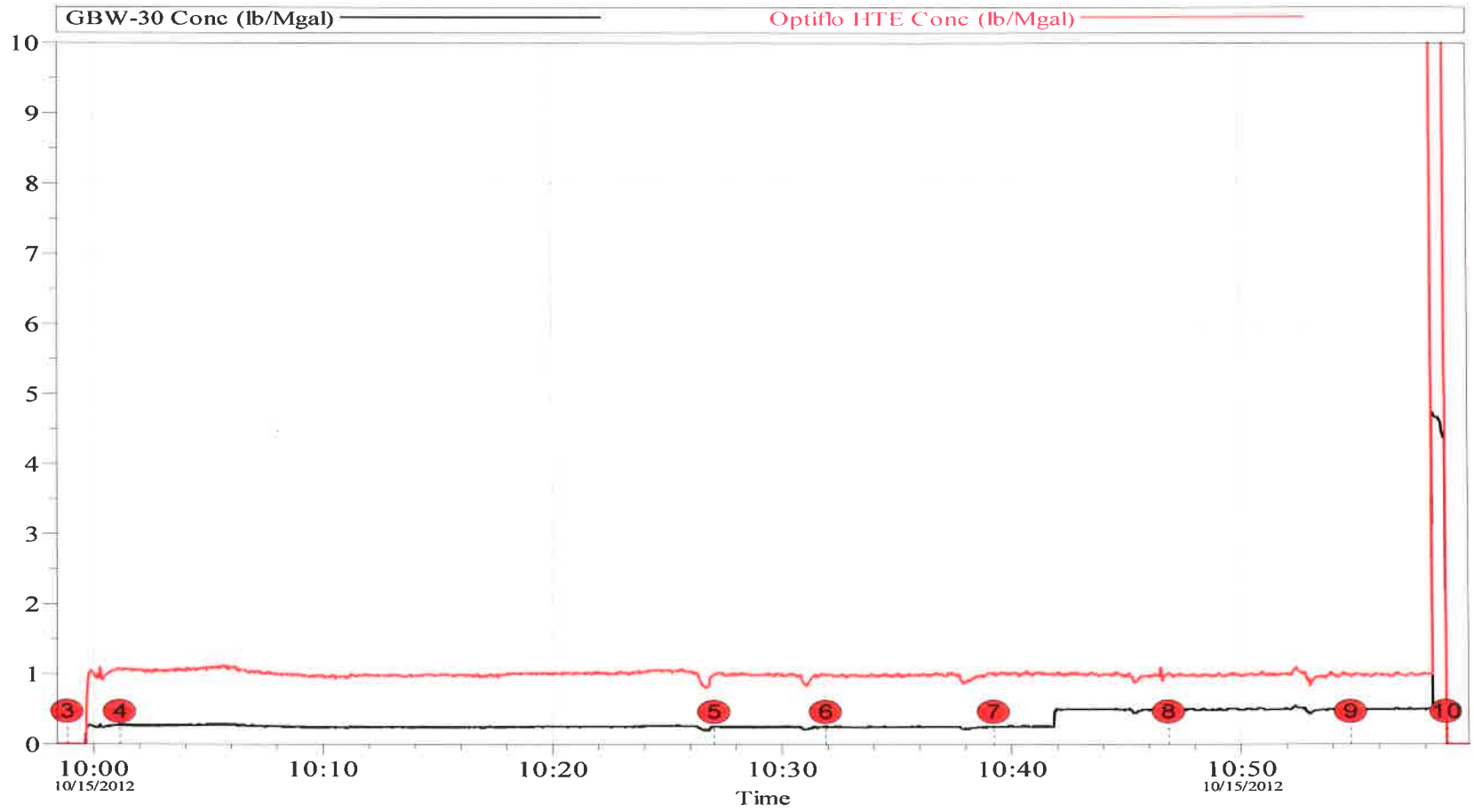
5.3 Treatment Plot



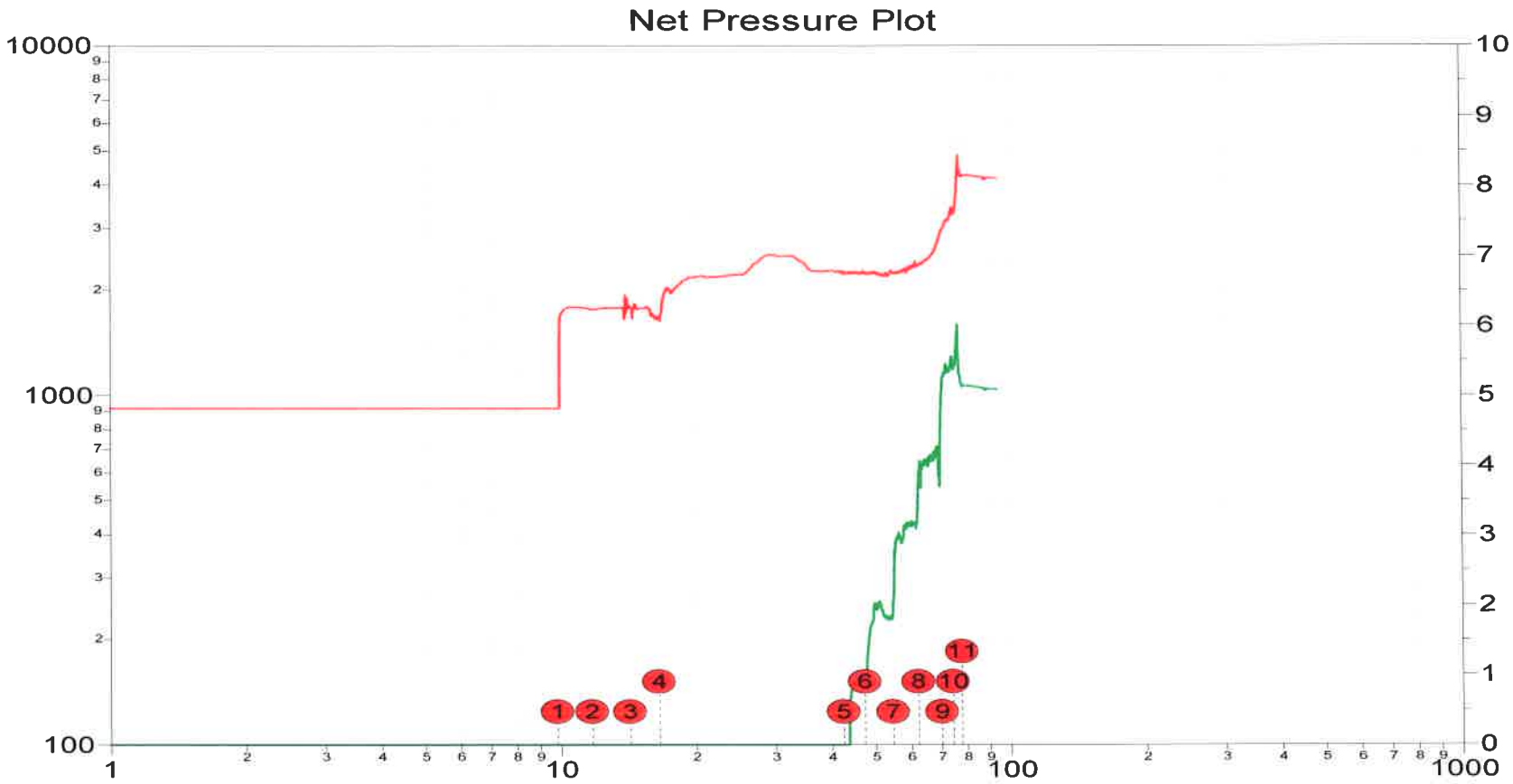
5.4 LA Chemical Plot



5.5 DA Chemical Plot



5.6 Net Pressure Plot



Customer:	ELM RIDGE EXPLORATION CO LLC - EBUS	Job Date:	15-Oct-2012	Sales Order #:	9877773
Well Description:	IGE 107	UWI:	05067090740000		