Cement Post Job Report

GRMR Oil & Gas, LLC
370 Interlocken Blvd, Suite 550
Broomfield, CO 80021

Hamill #19-16D
05-081-07820
S:19 T:5N R:90W
Moffat, CO

Prepared For:

Mr. Mike Griffis
mike.griffis@grmroilandgas.com
(303) 515-5921

Job Completion Data:

10/29/2015
CallSheet #: 48
Proposal #: 10115

Submitted by:

Herron Kennedy
(720) 417-3459
herronkennedy@altcem.com

ALTCEM

Dear Mr. Mike Griffis,

Thank you for the opportunity to provide cementing services on this well. ALTCem strives to achieve complete customer satisfaction. If you have any questions regarding the services or data provided, please contact ALTCem at any time.

Sincerely,

Herron Kennedy

Field Office

1808 East Allison Rd., Cheyenne Wy., 82007
Phone: (307) 638-5585

Sales Office

475 17th St. Suite 460 Denver Co., 80202
Phone: (303) 296-1158

Contents

Job Details & Summary

Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)	New	Burst	Collapse
Casing	Outer	9.625	8.755	43.5	n/a	0	810	0			
Open Hole	Outer	n/a	7.88	n/a	n/a	810	6980	50			
DrillPipe	Inner	5	4.276	19.5	n/a	0	5956	0			

Equipment / People

Unit Type	Unit	Power Unit	Employee #1	Employee #2
Light Duty Pickups	5		Andrews, Anthony	Miller, Shane
Cement Pump	103	303	Hyde, Andrew	
Tractor	204		Orner, Lance	Havel, Casey
Bulk Trailer	501	201	Casciato, Luke	Moore, Mike

Timing

Event	Date/Time
Call Out	10/26/2015 23:15
Depart Facility	10/27/2015 02:00
On Location	10/27/2015 08:00
Rig Up Iron	10/27/2015 11:00
Job Started	10/27/2015 13:19
Job Completed	10/29/2015 06:42
Rig Down Iron	10/29/2015 07:15
Depart Location	10/29/2015 10:00

General Job Information

Metrics	Value
Well Fluid Density	9 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	bbls
Rig Circulation Time	12/30/1899 10:00:00 AM hours
Calculated Displacement	98.8 bbls
Actual Displacement	98.8 bbls
Total Spacer to Surface	0 bbls
Total CMT to Surface	0 bbls
Well Topped Out	N/A
Top Out Volume	bbls

Job Details

Metrics	Value
Flare Prior to Job	No
Flare Prior to Job	units
Flare During Job	No
Flare During Job	units
Flare at End of Job	No
Flare at End of Job	units
Well Full Prior to Job	Yes
Well Fluid Density Into Well	9 lb/gal
Well Fluid Density Out of Well	9 lb/gal

Job Details (cont.)

Metrics	Value
BHCT	128 °F
BHST	168 °F

Circulation

Lost Circulation Experienced	Losses into Spacer	Losses into Cement	Losses into Displacement
N/A	N/A	N/A	N/A

Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom	Start (gal)	End (gal)	Used (gal)
1	2	Plug	ALTCem Plug100-X1	ACG-10	Cement	100.00	%			
1	2	Plug	ALTCem Plug100-X1	AR-10	Retarder	0.20	%BWOB			
1	5	Plug	ALTCem Plug100-X1	ACG-10	Cement	100.00	%			
1	5	Plug	ALTCem Plug100-X1	AR-10	Retarder	0.20	%BWOB			
1	8	Plug	ALTCem Plug100-X1	ACG-10	Cement	100.00	%			
1	8	Plug	ALTCem Plug100-X1	AR-10	Retarder	0.10	%BWOB			
1	11	Plug	ALTCem Plug100-X1	ACG-10	Cement	100.00	%			
1	11	Plug	ALTCem Plug100-X1	AR-10	Retarder	0.10	%BWOB			
1	13	Primary	ALTCem Plug100-X1	ACG-10	Cement	100.00	%			
1	16	Plug	ALTCem Plug100-X1	ACG-10	Cement	100.00	%			
1	16	Plug	ALTCem Plug100-X1	ACL-10	Accelerator	2.00	%BWOW			
1	19	Plug	ALTCem Plug100-X1	ACG-10	Cement	100.00	%			
1	19	Plug	ALTCem Plug100-X1	ACL-10	Accelerator	2.00	%BWOW			

Job Logs

Line	#	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Annular Pressure (psi)	Comment
1		Call Out	10/26/2015	23:15						
2		Pre Convoy Safety Meeting	10/27/2015	01:45						
3		Crew Leave Yard	10/27/2015	02:00						
4		Arrive At Loc	10/27/2015	08:00						
5		Assessment Of Loc Safety Meeting	10/27/2015	08:05						
6		Spot Equipment	10/27/2015	09:50						
7		Pre Rig-Up Safety Meeting	10/27/2015	10:15						
8		Rig Up Equipment	10/27/2015	10:20						
9		Pre Job Safety Meeting	10/27/2015	13:00						
10		Start Job	10/27/2015	13:19						Plug #1 5" 19.5 #/ft DP in 7 7/8" OH @ 5956
11		Test Lines	10/27/2015	13:21						2400 PSI Test
12		Pump Spacer Ahead	10/27/2015	13:58	8.33	3	6.4	135		Fresh Water Ahead
13		Pump CMT	10/27/2015	14:00	15.8	3	9.2	300		45 Sks @ 15.8 ppg 1.15 yld 4.97 Gal/SK H2O Type G w/ 0.2 % AR-10
14		Pump Spacer Behind	10/27/2015	14:04	8.33	3	3.6	204		Fresh Water Behind
15		Pump Displacement	10/27/2015	14:05	9	5	98.8	250		Mud Disp.
16		Shutdown	10/27/2015	14:25						Shutdown/ Check balance. Turn over to rig to pull drill pipe to 5438 and circulate bottoms up. Pipe pulled dry.
17		Start Job	10/27/2015	15:43						Plug #2
18		Pump Spacer Ahead	10/27/2015	15:43	8.33	3	6.4	154		Fresh Water Ahead
19		Pump CMT	10/27/2015	15:47	15.8	3	9.2	270		45 Sks @ 15.8 ppg 1.15 yld 4.97 Gal/SK H2O Type G w/ 0.2 % AR-10
20		Pump Spacer Behind	10/27/2015	15:49	8.33	3	3.6	186		Fresh Water Behind
21		Pump Displacement	10/27/2015	15:50	9	5	89.6	165		Mud Disp.
22		Shutdown	10/27/2015	16:20						Shutdown/ Check Balance. Turn over to rig to pull pipe up to 4768 and circulate bottoms up. Pipe pulled dry
23		Start Job	10/27/2015	17:24						Plug # 3 DP @ 4768
24		Pump Spacer Ahead	10/27/2015	17:24	8.33	3	6.4	170		Fresh H2O Ahead
25		Pump CMT	10/27/2015	17:26	15.8	3	9.2	155		45 Sks @ 15.8 ppg 1.15 yld 4.97 Gal/SK H2O w/ 0.1% AR-10
26		Pump Spacer Behind	10/27/2015	17:29	8.33	3	3.6	205		Fresh H2O Behind
27		Pump Displacement	10/27/2015	17:30	9	5	77	325		Mud Disp.
28		Shutdown	10/27/2015	17:47						Shutdown/ Check balance. Pipe pulled dry. Turn over to rig to pull DP up to 4288 for plug # 4
29		Start Job	10/27/2015	18:40						Plug # 4 DP @ 4288'

30		Pump Spacer Ahead	10/27/2015	18:40	8.33	3	6.4	190		Fresh H2O Ahead
31		Pump CMT	10/27/2015	18:42	15.8	3	9.2	167		45 Sks @ 15.8 ppg 1.15 yld 4.97 Gal/SK H2O w/ 0.1% AR-10
32		Pump Spacer Behind	10/27/2015	18:44	8.33	3	3.3	154		Fresh H2O Behind
33		Pump Displacement	10/27/2015	18:45	9	5	68.5	303		Mud Disp.
34		Shutdown	10/27/2015	19:00						Shutdown/ Check Balance, turn over to rig to pull DP to 3154' and Circulate. Pipe Pulled Dry.
35		Start Job	10/27/2015	20:05						Plug # 5 DP @ 3154'
36		Pump Spacer Ahead	10/27/2015	20:05	8.33	3	6.4	185		Fresh H2O Ahead
37		Pump CMT	10/27/2015	20:08	15.8	3	9.2	154		45 sks @ 15.8 ppg 1.25 yld 4.97 gal/sk h2o G neat
38		Pump Spacer Behind	10/27/2015	20:11	8.33	3	3.6	257		Fresh H2O Behind
39		Pump Displacement	10/27/2015	20:12	9	5	48.5	360		Mud Disp.
40		Shutdown	10/27/2015	20:23						Shutdown/ Check Balance. Turn overf to rig to pull DP to 885'. Pipe pulled dry, circulate.
41		Start Job	10/27/2015	21:57						Plug # 6 (First attempt)
42		Pump Spacer Ahead	10/27/2015	21:57	8.33	3	7.5	210		Fresh H2O Ahead
43		Pump CMT	10/27/2015	21:59	15.8	3	13.3	130		65 sks @ 15.8 ppg 1.15 yld 4.97 gal/sk h2o type G with 2% CaCL.
44		Pump Spacer Behind	10/27/2015	22:05	8.33	3	2.5	160		Fresh H2O Behind
45		Pump Displacement	10/27/2015	22:06	9	5	9.5	110		Mud Disp.
46		Shutdown	10/27/2015	22:09						Shutdown/ Turn over to rig to pull 3 stands of DP, Circulate 4 hrs. Tagged CMT @ 814' (4' below surface shoe)
47		Start Job	10/28/2015	04:31						Plug #6 (2nd attempt) DP @ 813
48		Pump Spacer Ahead	10/28/2015	04:31	8.33	3	7.5	212		Fresh H2O Ahead
49		Pump CMT	10/28/2015	04:34	15.8	3	7	129		34 sks @ 15.8 ppg 1.15 yld 4.97 Gal/sk H2O
50		Pump Spacer Behind	10/28/2015	04:36	8.33	3	2.5	147		Fresh H2O Behind
51		Pump Displacement	10/28/2015	04:37	9	5	9.5	105		Mud Disp.
52		Shutdown	10/28/2015	04:40						Shutdown/ Turn over to rig to pull 3 stands of DP, Circulate 4 hrs. Pipe pulled dry.
53		Start Job	10/28/2015	20:41						Plug #6 (3rd Attempt) DP @ 813'
54		Pump Spacer Ahead	10/28/2015	20:41	8.33	3	7.5	220		Fresh Water Ahead
55		Pump CMT	10/28/2015	20:44	15.8	3	7	138		34 sks @ 15.8 ppg 1.15 yld 4.97 gal/sk H2O G cmt w/ CaCL
56		Pump Spacer Behind	10/28/2015	20:46	8.33	3	2.5	158		Fresh Water Behind
57		Pump Displacement	10/28/2015	20:47	9	5	9.5	100		Mud Disp
58		Shutdown	10/28/2015	20:51						Shutdown/ Turn over to rig to pull 3 stands od DP and circulate 4 hrs. Pipe Pulled dry.
59		Other	10/29/2015	04:30						Attempted to tag cmt, ran dp to 760' w/o tagging, pulled up to 697' to circulate, received traces of cmt to surface. Circulated an additional hour and ran DP to 729' and tagged cmt.

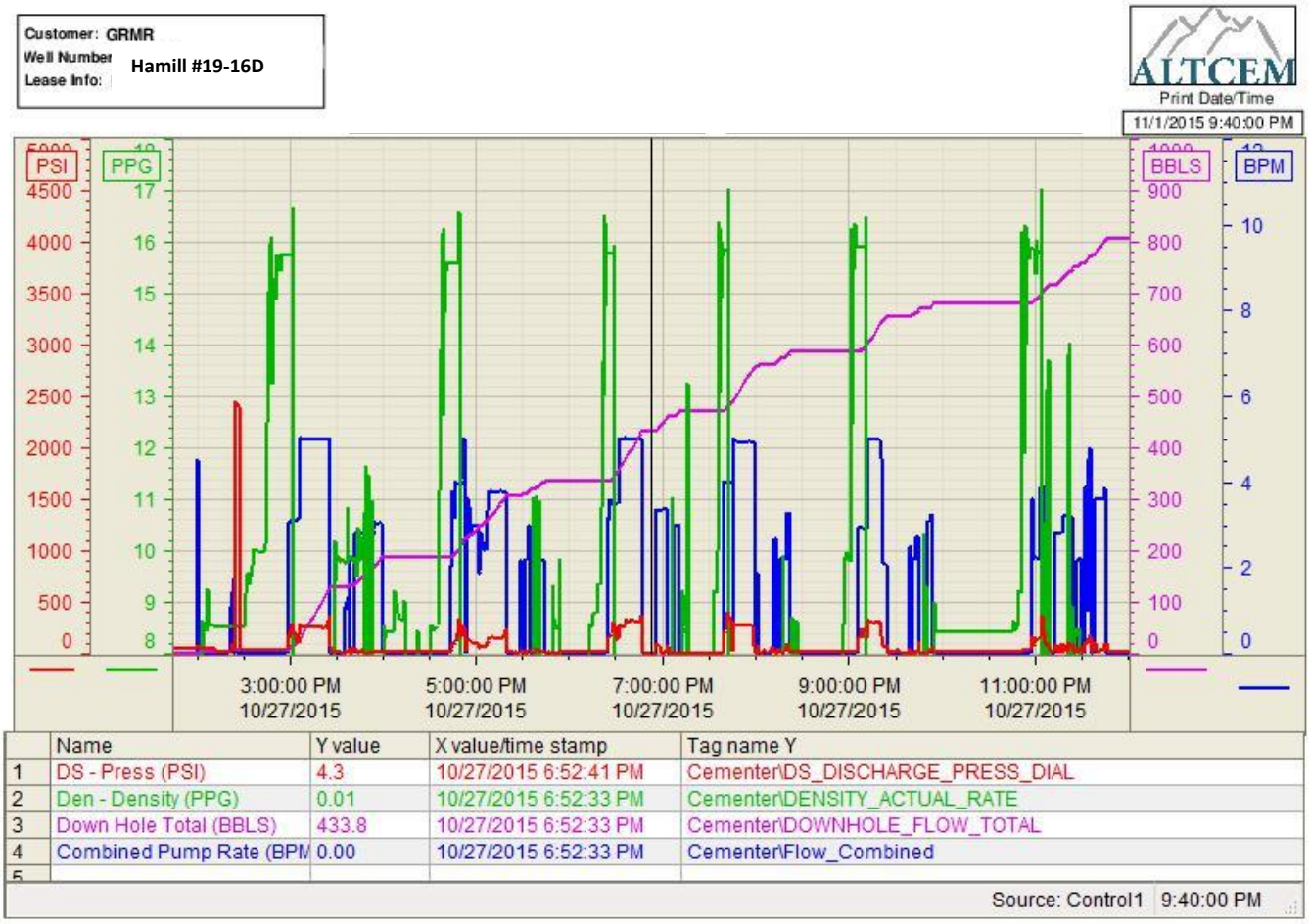
60		Start Job	10/29/2015	06:07						Plug # 7 DP @ 120'
61		Pump Spacer Ahead	10/29/2015	06:15	8.33	2	5	108		Fresh Water Ahead
62		Pump Cmt	10/29/2015	06:18	15.8	2	8.5	143		42 sks @ 15.8 ppg 1.15 yld 4.97 gal/sk h2o G cmt w/ CaCL
63		Flush Lines	10/29/2015	06:22	8.33	2	2.5	160		Pump 2.5 bbls Fresh water behind to clear lines to the rig floor. Cmt to surface @ 2 bbl away.
64		Shutdown	10/29/2015	06:23						Shutdown, pull DP out of hole.
65		Pull Out of Hole	10/29/2015	06:25						
66		End Job	10/29/2015	06:26						
67		Post Job Safety Meeting	10/29/2015	07:00						
68		Rig Down Equip	10/29/2015	07:15						
69		Pre Convoy Safety Meeting	10/29/2015	08:45						

Water Analysis

Metrics	Value	Recommended
Water Source	Upright Rig Tank	
Temperature	58 °F	50-80 °F
pH Level	6	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	120	0-1000
Total Hardness	8 mg/L	0-500 mg/L
Carbonates	0 mg/L	0-100 mg/L
Sulfates	<200 mg/L	0-1500 mg/L
Potassium	450 mg/L	0-3000 mg/L
Iron	15 mg/L	0-300 mg/L

Pump Diagrams

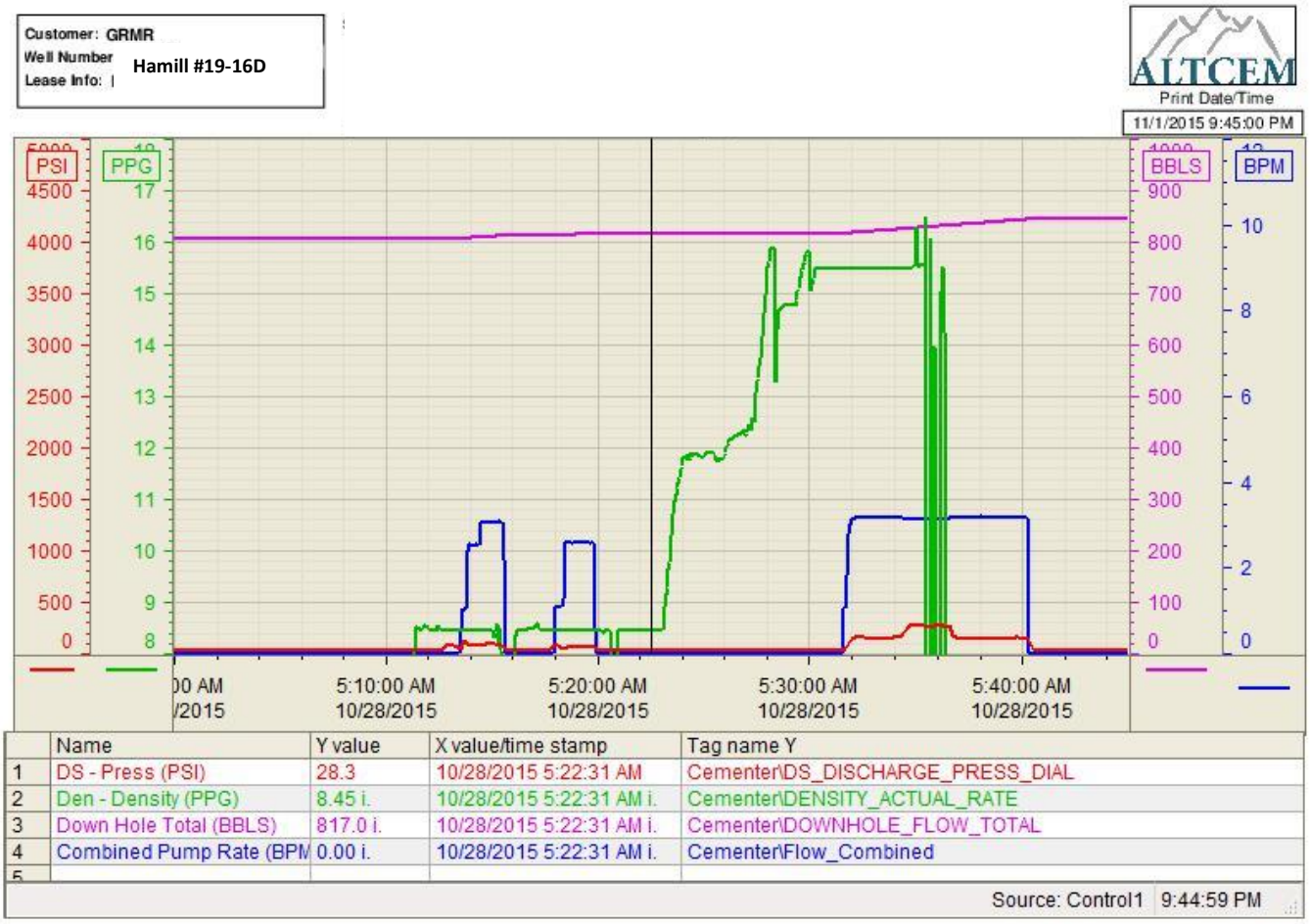
Plugs 1-6



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	4.3	10/27/2015 6:52:41 PM	Cementer\DS_DISCHARGE_PRESS_DIAL
2	Den - Density (PPG)	0.01	10/27/2015 6:52:33 PM	Cementer\DENSITY_ACTUAL_RATE
3	Down Hole Total (BBLS)	433.8	10/27/2015 6:52:33 PM	Cementer\DOWNHOLE_FLOW_TOTAL
4	Combined Pump Rate (BPM	0.00	10/27/2015 6:52:33 PM	Cementer\Flow_Combined
5				

Source: Control1 9:40:00 PM

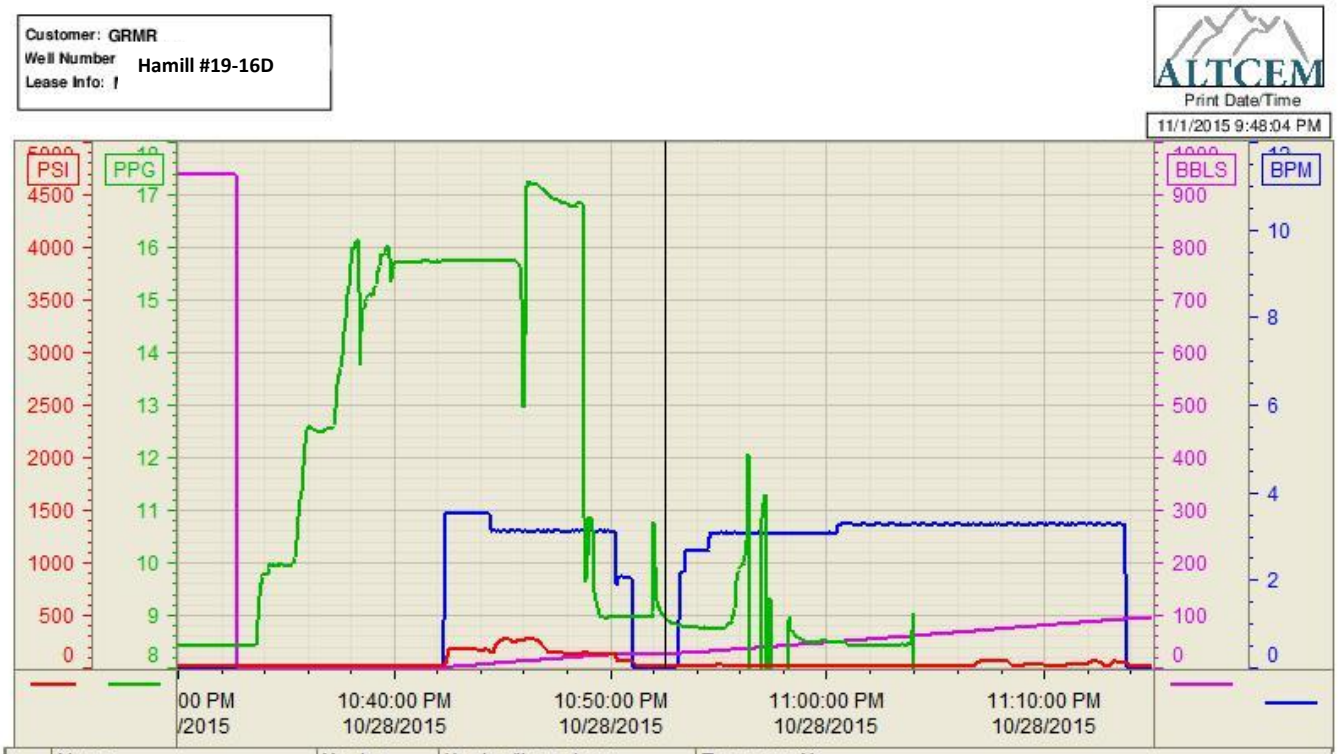
Plug 7



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	28.3	10/28/2015 5:22:31 AM	Cementer\DS_DISCHARGE_PRESS_DIAL
2	Den - Density (PPG)	8.45 i.	10/28/2015 5:22:31 AM i.	Cementer\DENSITY_ACTUAL_RATE
3	Down Hole Total (BBLS)	817.0 i.	10/28/2015 5:22:31 AM i.	Cementer\DOWNHOLE_FLOW_TOTAL
4	Combined Pump Rate (BPM	0.00 i.	10/28/2015 5:22:31 AM i.	Cementer\Flow_Combined
5				

Source: Control1 9:44:59 PM

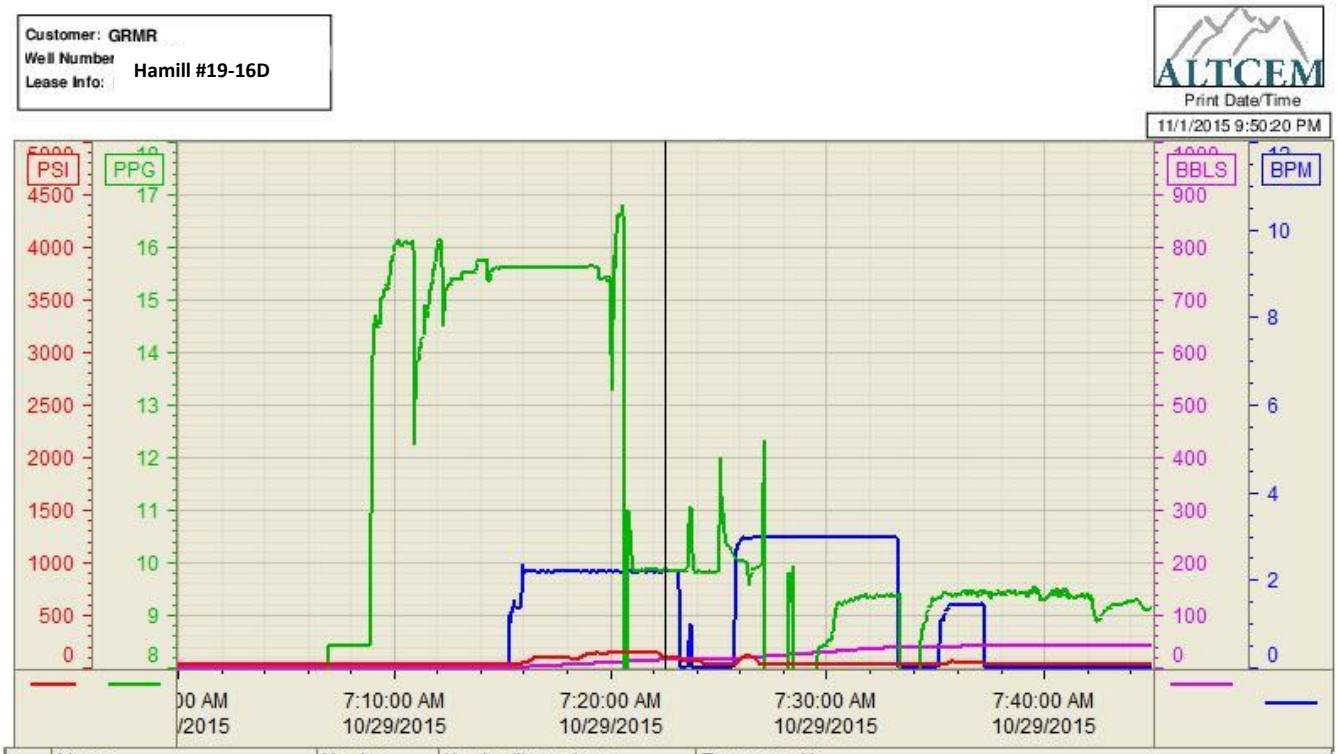
Plug 8



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	17.4	10/28/2015 10:52:31 PM	Cementer\DS_DISCHARGE_PRESS_DIAL
2	Den - Density (PPG)	8.96 i.	10/28/2015 10:52:31 PM i.	Cementer\DENSITY_ACTUAL_RATE
3	Down Hole Total (BBLS)	27.1 i.	10/28/2015 10:52:31 PM i.	Cementer\DOWNHOLE_FLOW_TOTAL
4	Combined Pump Rate (BPM	0.00 i.	10/28/2015 10:52:31 PM i.	Cementer\Flow_Combined
5				

Source: Control1 9:48:04 PM

Plug 9



	Name	Y value	X value/time stamp	Tag name Y
1	DS - Press (PSI)	95.9	10/29/2015 7:22:31 AM	Cementer\DS_DISCHARGE_PRESS_DIAL
2	Den - Density (PPG)	9.86 i.	10/29/2015 7:22:31 AM i.	Cementer\DENSITY_ACTUAL_RATE
3	Down Hole Total (BBLS)	15.3 i.	10/29/2015 7:22:31 AM i.	Cementer\DOWNHOLE_FLOW_TOTAL
4	Combined Pump Rate (BPM	2.19	10/29/2015 7:22:31 AM	Cementer\Flow_Combined
5				

Source: Control1 9:50:21 PM