

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS

For: Ty Entenmann

Date: Friday, February 27, 2015

GP-DAIRY 1-20-19

GP-DAIRY 1-20-19

Job Date: Saturday, January 24, 2015

Sincerely,

Sebastian Estenssoro

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Table of Contents

1.0 Cementing Job Summary 4

 1.1 Executive Summary4

 1.2 Planned Pumping Schedule5

 1.3 Job Overview7

 1.4 Water Field Test.....8

2.0 Real-Time Job Summary 9

 2.1 Job Event Log9

3.0 Attachments..... 10

 3.1 GP-DAIRY 1-20-19-Custom Results.png10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **GP Dairy 1-20-19**, cement **KOP** job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

Halliburton Brighton

Job Times

	Date	Time
Requested Time On Location:	1/23/2015	2230
Called Out Time:	1/23/2015	1400
Arrived On Location At:	1/23/2015	2230
Job Started At:	1/24/2015	0203
Job Completed At:	1/24/2015	0315
Departed Location At:	1/24/2015	0520

1.2 Planned Pumping Schedule

Event	Pressure (psi)	Rate (bpm)	Volume (bbl)	Sacks	Density (ppg)	Yield (ft3/sk)	WR (gal/sk)
START JOB							
FILL LINES							
PRESSURE TEST	3000						
CLEAN SPACER AHEAD		4	30		13	1.78	27.6
CEMENT		4	44		17.5	0.94	3.32
CLEAN SPACER BEHIND		1	5		13	1.78	27.6
DISPLACEMENT TO BALANCE		6	71		12		
SHUT DOWN							

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*Cementing Job Summary**The Road to Excellence Starts with Safety*

Sold To #: 369404		Ship To #: 3596219		Quote #:		Sales Order #: 0902070803				
Customer: EXTRACTION OIL & GAS				Customer Rep: Shawn M						
Well Name: GP-DAIRY		Well #: 1-20-19		API/UWI #: 05-123-40328-00						
Field: WATTENBERG	City (SAP): GREELEY	County/Parish: WELD		State: COLORADO						
Legal Description: NE NE-20-5N-65W-658FNL-1305FEL										
Contractor: H & P DRLG		Rig/Platform Name/Num: H & P 319								
Job BOM: 7529										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB21661				Srv Supervisor: Steven Markovich						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		7712ft		Job Depth TVD						
Water Depth				Wk Ht Above Floor						
Perforation Depth (MD)		From		To						
Well Data										
Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing	3	9.625	8.921	36			0	882	0	0
Open Hole Section			8.75				882	7712	0	0
Fluid Data										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Plug #1	GRANITECEM (TM) SYSTEM	268	sack	17.5	0.94		5	3.32	
3.32 Gal		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
2	CLEANSPEACER III	CLEANSPEACER III	35	bbl	13	1.78				
0 gal/bbl		FRESH WATER								
Cement Left In Pipe										
Cement Left In Pipe		Amount	Reason			Shoe Joint				
Comment										

1.3 Job Overview

		Units	Description
1	Surface temperature at time of job	°F	36
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	12
7	Time circulated before job	HH:MM	3:00
10	Pipe movement during hole circulation	Y/N	N
14	Calculated displacement	bbls	71
15	Job displaced by	Rig/HES	HES
16	Annular flow before job	Y/N	N
17	Annular flow after job	Y/N	N
20	Was lost circulation experienced at any time?	Y/N	N

1.4 Water Field Test

Item	Recorded Value	Units	Max Acceptable Limit	Potential Problems in Exceeding Limit
pH	7	-	6.0-8.0	Chemicals in the water can cause severe retardation
Chlorides	500	ppm	3000 ppm	Can shorten thickening time of cement
Sulfates	200	ppm	1500 ppm	Will greatly decrease the strength of cement
Total Hardness		ppm	500 mg/L	High concentrations will accelerate the set of the cement
Calcium		ppm	500 ppm	High concentrations will accelerate the set of the cement
Total Alkalinity		ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all (typically occurs @ pH \geq 8.3).
Bicarbonates		ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all
Potassium		ppm	5000 ppm	High concentrations will shorten the pump time of cement (indicates the presence of chlorides, therefore if Potassium levels are measured as high, so should the chlorides)
Iron	0	ppm	300 ppm	High concentrations will accelerate the set of the cement
Temperature	75	°F	50-80 °F	High temps will accelerate; Low temps may risk freezing in cold weather

Submitted Respectfully by:

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	PS Pump Press (psi)	PS Pump Rate (bbl/min)	Comments
Event	1	Arrive at Location from Service Center	Arrive at Location from Service Center	1/23/2015	22:30:00	USER				Arrived on location rig ready for us
Event	2	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	1/23/2015	22:40:00	USER				JSA and hazard hunt with HES crew
Event	3	Rig-Up Equipment	Rig-Up Equipment	1/23/2015	22:50:00	USER				Rigged up HES lines and equipment
Event	4	Other	Other	1/24/2015	00:30:00	USER				Waited for lab reports on the Cement
Event	5	Pre-Job Safety Meeting	Pre-Job Safety Meeting	1/24/2015	01:30:00	USER				JSA with HES and rig crew on job procedure
Event	6	Start Job	Start Job	1/24/2015	02:03:18	COM6	8.16	8.00	0.00	
Event	7	Test Lines	Test Lines	1/24/2015	02:21:15	COM6	9.69	27.00	0.00	Test lines to 3000psi
Event	8	Pump Spacer 1	Pump Spacer 1	1/24/2015	02:25:24	COM6	8.66	42.00	0.00	Pump 30bbls of 13ppg Spacer
Event	9	Pump Lead Cement	Pump Lead Cement	1/24/2015	02:35:07	COM6	15.66	303.00	0.00	Pump 44bbls of 17.5ppg Cement
Event	10	Pump Spacer 2	Pump Spacer 2	1/24/2015	02:50:16	COM6	13.95	70.00	0.00	Pump 5bbls of 13ppg Spacer
Event	11	Pump Displacement	Pump Displacement	1/24/2015	02:51:01	COM6	11.00	64.00	0.00	Pump 71bbls of Mud
Event	12	Release Drillpipe Pressure	Release Drillpipe Pressure	1/24/2015	03:13:30	USER	10.81	178.00	0.00	Released pressure got 3bbls of mud back
Event	13	End Job	End Job	1/24/2015	03:15:00	COM6	10.85	3.00	0.00	Thank you Markovich and crew

3.0 Attachments

3.1 GP-DAIRY 1-20-19-Custom Results.png



