

HALLIBURTON

iCem[®] Service

CATAMOUNT EXPLORATION LLC

For: Reed Fischer

Date: Tuesday, November 21, 2017

Catamount, Hahn #3 , Surface

Hahn #3

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Sincerely,

Farmington Cement Engineering

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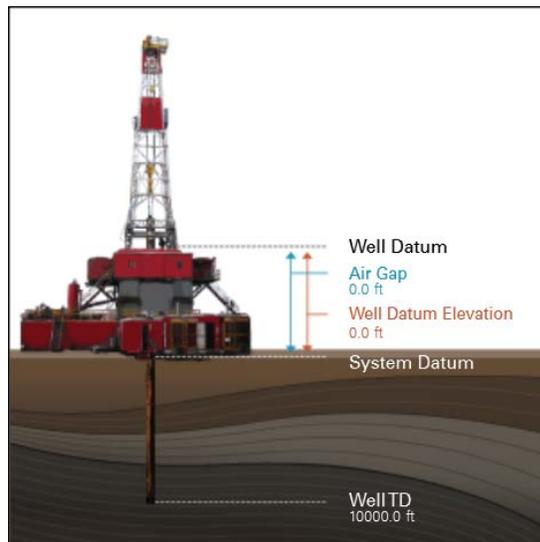
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1.0 Job Design

1.1 Overview

Job Type	Primary Cement Job
Injection Path	Casing/Conventional
Foam Job	No

Well Snapshot



Simulations Performed

1.2 Pump Schedule

Description	Stage No.	Density (ppg)	Rate (bbl/min)	Yield (ft ³ /sack)	Water Req. (gal/sack)	Volume (bbl)	Bulk Cement (sacks)	Duration (min)
Spud Mud	1	8.50	5.00			0.00		0.00
Fresh Water	2	8.33	4.00			20.00		5.00
Surface Cement 2334018/1	3	15.80	4.50	1.1745	5.156	78.45	375.00	17.43
Top Plug/Start Displacement								
Fresh Water	4-1	8.33	4.50			20.00		4.44
Fresh Water	4-2	8.33	2.00			11.87		5.93
Total:						130.31		32.81

*Pump schedule may include additional rows for displacement if "Automatic Rate Adjustment" was enabled and ECDs approached the fracture gradient.

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	PS Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Recirc Density (ppg)	Comments
Event	1	Call Out	11/21/2017	10:00:00	USER						Job called out @ 1000
Event	2	Depart Yard Safety Meeting	11/21/2017	13:25:00	USER						Depart yard meeting held with crew
Event	3	Depart from Service Center or Other Site	11/21/2017	14:00:00	USER						Departed from yard @ 1400
Event	4	well info	11/21/2017	15:18:56	USER						OH- 551' 12 1/4" Surface-541' 8 5/8" 24# SJ- 41' Mud wt. 8.7# Psi to lift- 165
Event	5	Water test	11/21/2017	15:43:57	USER						PH- 7 Chlorides- 29 Temp- 50 Sufates-<400
Event	6	Arrive At Loc	11/21/2017	16:00:00	USER						Arrived on location @ 1600 rig pulling drill pipe
Event	7	Pre-Rig Up Safety Meeting	11/21/2017	17:30:00	USER						Pre rig up meeting with crew
Event	8	Rig-Up Equipment	11/21/2017	17:45:00	USER						Rigged up Halliburton a 2" iron and water hoses
Event	9	Start Job	11/21/2017	18:59:11	COM5	-5.70	8.34	0.00	0.0	0.39	
Event	10	Pre-Job Safety Meeting	11/21/2017	19:00:00	USER	-5.70	8.37	0.00	0.0	0.38	Pre job safety meeting with all affected personnel on location
Event	11	Prime Pumps	11/21/2017	19:17:03	COM5	20.30	8.30	1.70	0.4	0.37	Prime pumps
Event	12	Test Lines	11/21/2017	19:20:10	COM5						Test pumps and lines to 2500psi
Event	13	Check weight	11/21/2017	19:23:37	COM5						

Event	14	Pump Spacer 1	11/21/2017	19:26:32	COM5						Pump 10 bbl fresh water spacer
Event	15	Pump Cement	11/21/2017	19:30:46	COM5	180.30	16.73	5.50	12.8	15.91	375sks@15.8# 1.18 yield 5.24 wrq = 78.8bbl cmt 47 bbl mix water
Event	16	Check weight	11/21/2017	19:31:29	COM5	167.30	15.88	5.50	16.8	15.76	
Event	17	Check weight	11/21/2017	19:38:14	COM5	127.30	15.81	5.10	43.4	15.95	
Event	18	Pump Displacement	11/21/2017	19:46:22	COM5						Calculated 31.8bbl to land plug
Event	19	Cement Returns to Surface	11/21/2017	19:48:36	USER	38.30	15.54	1.90	0.5	0.16	Calculated 36 bbl of cmt back. 30 bbl of good cmt actually returned to surface
Event	20	Bump Plug	11/21/2017	19:57:41	USER	864.30	7.95	0.00	33.2	0.16	Calculated 195 psi to land plug. plug landed @ 230psi took it 700 psi over to 940 psi
Event	21	Check Floats	11/21/2017	20:02:00	USER	57.30	7.92	0.00	33.2	0.16	Check floats, floats held 1.5 bbl back
Event	22	Pre-Rig Down Safety Meeting	11/21/2017	20:20:20	USER	11.30	8.51	4.10	6.6	8.26	Pre-rig down meeting with crew
Event	23	End Job	11/21/2017	20:33:54	COM5	-0.70	-0.19	0.00	83.0	-0.04	
Event	24	Depart Location for Yard	11/21/2017	20:35:23	USER						Departed from location @ 2100

3.0 Attachments

3.1 Catamount, Hahn #3 , Surface -Custom Results.png

