

HALLIBURTON

iCem[®] Service

CATAMOUNT EXPLORATION LLC

For: Reed Fischer

Date: Sunday, December 03, 2017

IGW-123B

IGW-123B

CATAMOUNT - IGW-123B

Job Date: Sunday, December 03, 2017

Sincerely,

Farmington Cement Engineering

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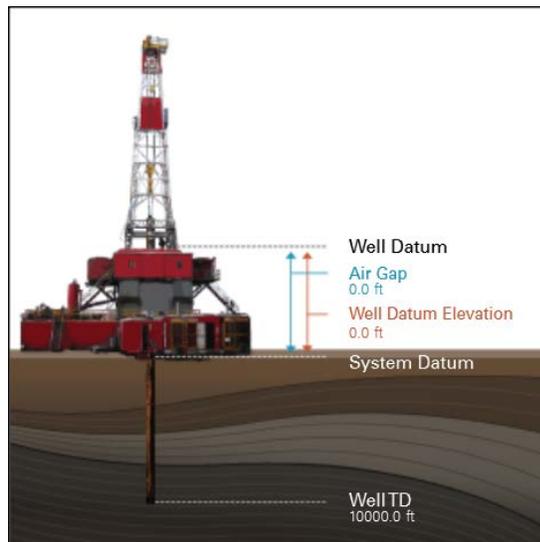
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1.0 Job Design

1.1 Overview

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

Well Snapshot



Simulations Performed

1.1 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)
Int Mud	1	9.20	4.00			0.00		0.00
Tuned Spacer	2	11.50	5.50			20.00		3.64
PRB Lead 2334020/1	3	12.30	5.50	2.4347	13.641	41.19	95.00	7.49
PRB Lead 2334020/1 w/CBL	4	12.30	5.50	2.4347	13.641	69.38	160.00	12.61
PRB Tail 2334025/1	5-1	13.50	5.50	1.8690	9.406	44.94	135.00	8.17
Shutdown	5-2			1.8690	9.406		0.00	10.00
Top Plug/Start Displacement								
Fresh Water	6-1	8.33	6.00			50.00		8.33
Fresh Water	6-2	8.33	4.00			25.00		6.25
Fresh Water	6-3	8.33	2.00			11.64		5.82
Total:						262.16		62.32

*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)	PS Pump Rate (bbl/min)	DH Density (ppg)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	12/3/2017	03:30:00	USER					REQUESTED ON LOCATION TIME 0700
Event	2	Pre-Convoy Safety Meeting	12/3/2017	06:30:00	USER					WITH HES, JSA COMPLETED, 1 F-450, 1 RED TIGER CEMENTING UNIT, 2 660 BULK TRUCKS
Event	3	Arrive At Loc	12/3/2017	08:50:00	USER					RIG RUNNING CASING UPON HES ARRIVAL, ALL EQUIPMENT AND MATERIALS ON LOCATION
Event	4	Assessment Of Location Safety Meeting	12/3/2017	09:00:00	USER					WITH HES, JSA COMPLETED, SDS OFFERED FOR ALL HES MATERIALS
Event	5	Other	12/3/2017	09:20:00	USER					WATER TEST: CHLOR 0, TEMP 53 DEG F, PH 7.3
Event	6	Pre-Rig Up Safety Meeting	12/3/2017	09:30:00	USER					WITH HES, JSA COMPLETED
Event	7	Rig-Up Equipment	12/3/2017	09:40:00	USER					1 LINE RAN TO THE FLOOR, 1 LINE RAN TO THE PIT, MANIFOLD ON THE GROUND, 1, 5.5 IN QUICK-LATCH PLUG CONTAINER
Event	8	Other	12/3/2017	10:00:00	USER					TD 3596 FT, TP 3586 FT, CSG 5.5 IN. 17 LB/FT J-55, HOLE 7.875 IN, SHOE 45 FT, SURFACE SET AT 377 FT, 8.625 IN 24 LB/FT J-55
Event	9	Other	12/3/2017	10:15:00	USER	10.00	0.00	8.44	0.0	RIG CIRCULATION, 504 BBL, 121 PSI, 5.6 BBL/MIN, PIPE WAS STATIC, RAT HOLE LENGTH 10 FT, MWT 9.0 LB/GAL WBM
Event	10	Pre-Job Safety Meeting	12/3/2017	10:20:00	USER	12.00	0.00	8.44	0.0	WITH HES, CATAMOUNT, AND D&J 3, JSA COMPLETED
Event	11	Start Job	12/3/2017	10:38:54	COM4	9.00	0.00	8.43	0.0	
Event	12	Fill Lines	12/3/2017	10:42:47	USER	35.00	2.00	8.52	0.6	2 BBL FRESH WATER, RETURNS AT 2 BBL AWAY
Event	13	Test Lines	12/3/2017	10:47:14	COM4	4576.00	0.00	8.60	2.2	LOW TEST AT 1855 PSI, HIGH TEST AT 4576 PSI, PRESSURE HOLDING
Event	14	Pump Tuned Spacer III	12/3/2017	10:53:52	COM4	18.00	0.00	11.50	0.0	MIXED AT 11.5 LB/GAL, 20 BBL, 3.73 FT3/SK, 24 GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD

SCALES

Event	15	Pump Lead 1 Cement	12/3/2017	10:59:07	COM4	45.00	4.00	12.30	41.1	MIXED AT 12.3 LB/GAL, 95 SKS, 2.43 FT3/SK, 13.61GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	16	Check weight	12/3/2017	11:04:45	COM4	91.00	5.50	12.29	27.9	DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	17	Pump Lead 2 Cement	12/3/2017	11:09:41	COM4	93.00	5.50	12.30	69.2	MIXED AT 12.3 LB/GAL, 160 SKS, 2.43 FT3/SK, 13.64 GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	18	Check weight	12/3/2017	11:13:48	COM4	88.00	5.50	12.30	22.9	DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	19	Pump Tail Cement	12/3/2017	11:26:28	COM4	99.00	5.50	13.27	45.0	MIXED AT 13.5 LB/GAL, 135 SKS, 1.87 FT3/SK, 9.40 GAL/SK, DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	20	Check weight	12/3/2017	11:27:56	COM4	101.00	5.50	13.45	8.0	DENSITY VERIFIED USING PRESSURIZED MUD SCALES
Event	21	Shutdown	12/3/2017	11:38:14	USER	107.00	5.50	13.49	64.4	
Event	22	Clean Lines	12/3/2017	11:40:31	COM4	59.00	2.40	9.14	69.4	WASHED PUMPS AND LINES TO THE RESERVE PIT
Event	23	Drop Top Plug	12/3/2017	11:43:12	USER	21.00	0.00	8.29	0.0	PLUG LAUNCHED, CUSTOMER WITNESSED
Event	24	Pump Displacement	12/3/2017	11:44:22	COM4	74.00	5.30	8.09	82.8	FRESH WATER
Event	25	Slow Rate	12/3/2017	11:58:09	USER	826.00	3.10	8.30	75.0	SLOWED AT 75 BBL AWAY TO 3 BBL/MIN
Event	26	Bump Plug	12/3/2017	11:58:39	USER	1917.00	0.00	8.34	81.8	PLUG BUMPED AT CALCULATED DISPLACEMENT, 830 PSI
Event	27	Check Floats	12/3/2017	12:01:28	USER	2036.00	0.00	8.35	81.8	FLOATS HOLDING, .5 BBL RETURNED TO THE TRUCK
Event	28	End Job	12/3/2017	12:04:50	COM4					NO ADD HOURS, RIG SUPPLIED TOP PLUG, RIG DID NOT USE SUGAR
Event	29	Pre-Rig Down Safety Meeting	12/3/2017	12:10:00	USER					WITH HES, JSA COMPLETED
Event	30	Rig Down Lines	12/3/2017	12:15:00	USER					
Event	31	Pre-Convoy Safety Meeting	12/3/2017	12:30:00	USER					WITH HES, JSA COMPLETED
Event	32	Other	12/3/2017	12:45:00	USER					SPACER 20 BBL TUNED SPACER III, LEAD 1 CEMENT 41.1

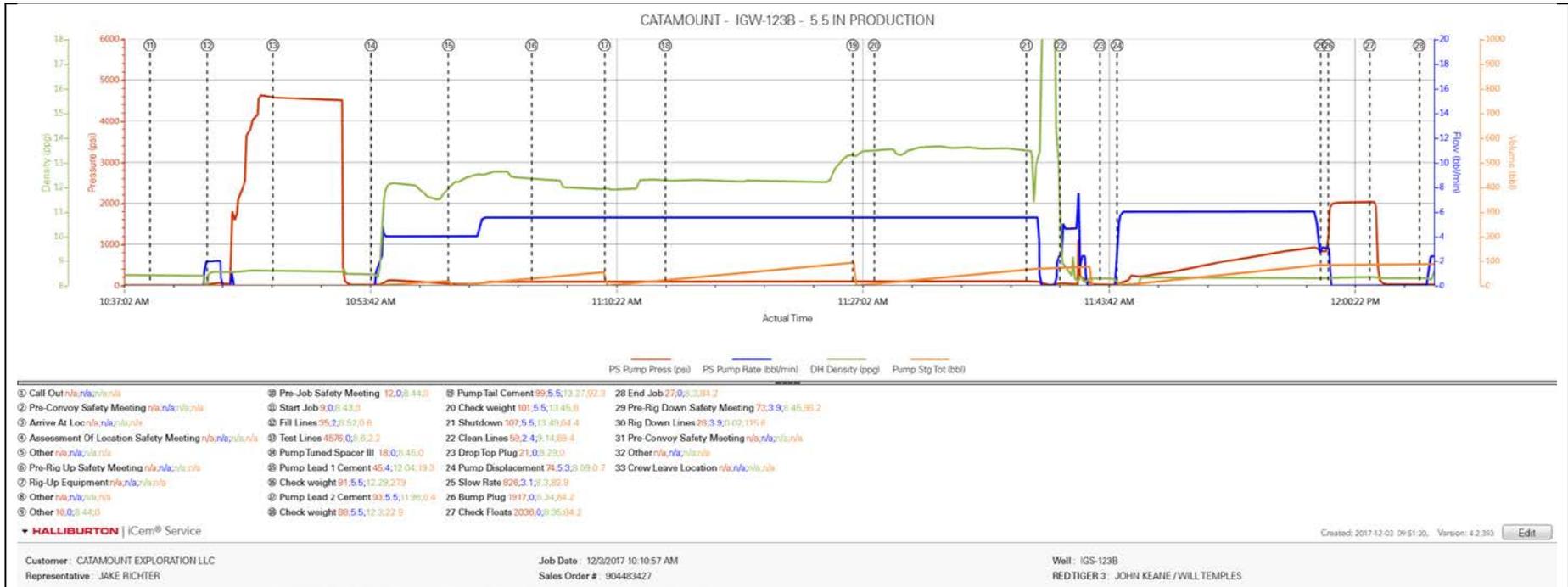
BBL, LEAD 2 CEMENT 69.2 BBL, TAIL CEMENT 45.0 BBL,
42 BBL CEMENT CIRCULATED TO SURFACE, TOP OF TAIL
CEMENT 2165 FT, FINAL DISPLACEMENT 81.8 BBL

Event	33	Crew Leave Location	12/3/2017	12:50:00	USER
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THANKS FOR USING HALLIBURTON, JOHN KEANE AND
CREW

3.0 Attachments

3.1 CATAMOUNT - IGW-123B- With Events.png



3.2 CATAMOUNT - IGW-123B- Without Events.png

