

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS

Date: Thursday, March 09, 2017

TC Aims 4-9-11 Surface

Job Date: Sunday, February 28, 2017

Sincerely,

Julia Nichols

Legal Notice

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **TC Aims 4-9-11** cement **Surface** casing 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.

Approximately 30 barrels of cement were returned to surface.

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 [Ft. Lupton]

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 369404	Ship To #: 3762982	Quote #:	Sales Order #: 0903850240							
Customer: EXTRACTION OIL & GAS		Customer Rep:								
Well Name: TC AIMS	Well #: 4-9-11	API/UWI #: 05-123-43749-00								
Field: WATTENBERG	City (SAP): GREELEY	County/Parish: WELD	State: COLORADO							
Legal Description: SE NE-8-5N-86W-2822FNL-1191FEL										
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 341								
Job BOM: 7521										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199		Srv Supervisor: Mike Loughran								
Job										
Formation Name										
Formation Depth (MD)	Top 0	Bottom	1618							
Form Type	BHST									
Job depth MD	1574ft	Job Depth TVD	1574							
Water Depth	Wk Ht Above Floor 5									
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		9.625	8.921	36			0	1574		0
Open Hole Section			13.5				0	1618		0
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make		
Guide Shoe	9.625				Top Plug	9.625	1	HES		
Float Shoe	9.625	1		1574	Bottom Plug	9.625		HES		
Float Collar	9.625	1		1533	SSR plug set	9.625		HES		
Insert Float	9.625				Plug Container	9.625	1	HES		
Stage Tool	9.625				Centralizers	9.625		HES		
Fluid Data										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Red Dye Water Spacer	Red Dye Water Spacer	20	bbl	8.34			4		
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
2	SwiftCem	SWIFTCCEM (TM) SYSTEM	550	sack	13.5	1.74		7	9.2	
94 lbm		TYPE I / II CEMENT, BULK (101439798)								
9.20 Gal		FRESH WATER								

last updated on 2/28/2017 8:57:01 AM

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Created: Thursday, March 09, 2017

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Cementing Job Summary

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Displacement	Displacement	118.5	bbl	8.34			6	
Cement Left In Pipe		Amount	41 ft				Reason		Shoe Joint
Mix Water:		pH 7	Mix Water: 0 ppm			Mix Water Temperature:		54 °F	
			Chloride:						
Comment 30BBLS of Cement to Surface									

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	2/22/2017	04:30:00	USER					Callout for on loc. time 0900
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	2/22/2017	06:45:00	USER					Discuss route, Safe driving, start JM
Event	3	Crew Leave Yard	Crew Leave Yard	2/22/2017	07:00:00	USER					
Event	4	Arrive At Loc	Arrive At Loc	2/22/2017	07:50:00	USER					Meet with customer to discuss job, Rig running casing
Event	5	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	2/22/2017	08:00:00	USER					hazard hunt, discuss where to spot trucks
Event	6	Rig-Up Equipment	Rig-Up Equipment	2/22/2017	08:15:00	USER					rig up all surface lines and iron to buffer zone
Event	7	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	2/22/2017	10:15:00	USER	0.00	8.49	-2.00	0.00	JSA safe rig up
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	2/22/2017	10:15:00	USER	0.00	8.49	-2.00	0.00	With all associated personnel. Discuss hazards of our equipment, iron, pressure
Event	9	Start Job	Start Job	2/22/2017	10:33:45	COM1	0.00	8.51	-1.00	0.00	Begin recording data
Event	10	Test Lines	Test Lines	2/22/2017	10:40:12	COM1	0.00	8.48	1328.00	3.30	HMS pressure test to 2500 psi
Event	11	Pump Spacer 1	Pump Spacer 1	2/22/2017	10:44:57	COM1	0.40	8.45	28.00	0.00	20 bbls fresh water with Red Dye
Event	12	Pump Lead Cement	Pump Lead Cement	2/22/2017	10:55:04	COM1	2.00	8.42	53.00	20.40	550 sacks SwiftCem, 170.44 bbls, 13.5 ppg, 1.74 yield, 9.2 gal/sack, verified with pressurized scales

Event	13	Shutdown	Shutdown	2/22/2017	11:24:19	COM1	0.00	13.57	49.00	165.40	
Event	14	Drop Top Plug	Drop top plug	2/22/2017	11:27:20	COM1	0.00	14.26	7.00	165.40	Drop top plug verified by customer
Event	15	Pump Displacement	Pump Displacement	2/22/2017	11:29:38	COM1	0.00	14.16	8.00	165.40	118.5 bbls fresh water, See cement at 88 bbls into displacement, 30 bbls cement to surface
Event	16	Bump Plug	Bump Plug	2/22/2017	11:54:27	COM1	0.00	8.19	934.00	117.70	500 psi over final circulating psi of 460 psi. Casing test to 1500 psi for 5 min.
Event	17	Check Floats	Check Floats	2/22/2017	12:01:58	USER	0.00	8.23	898.00	117.80	Release pressure, Floats hold, 1 bbl back to truck
Event	18	End Job	End Job	2/22/2017	12:03:36	COM1					Stop recording data
Event	19	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	2/22/2017	12:10:00	USER	5.00	8.18	72.00	4.30	JSA safe rig down
Event	20	Rig Down Lines	Rig Down Lines	2/22/2017	12:15:00	USER	2.10	8.25	14.00	23.80	
Event	21	Crew Leave Location	Crew Leave Location	2/22/2017	13:30:00	USER					Start JM. Thanks for choosing Halliburton!

3.0 Attachments

3.1 Custom Results – Job Chart with Events

