

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Date: Monday, July 03, 2017

Bittersweet #3-1-13 Surface

Job Date: Friday, June 23, 2017

Sincerely,

Justin Lansdale

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Bittersweet #3-1-13** 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.

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 [Fort Lupton]

The Road to Excellence Starts with Safety

Sold To #: 369404	Ship To #: 3727498	Quote #:	Sales Order #: 0904108449
Customer: EXTRACTION OIL & GAS		Customer Rep: Kalyn Holgate/Larry Siegel	
Well Name: CS-BITTERSWEET		Well #: 3-1-13	API/UWI #: 05-123-42937-00
Field: WATTENBERG	City (SAP): GREELEY	County/Parish: WELD	State: COLORADO
Legal Description: SW SE-36-6N-66W-341FSL-2063FEL			
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 341	
Job BOM: 7521 7521			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX38199		Srcv Supervisor: Bryan Kraft	

Job

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	1585ft	Job Depth TVD	1585ft
Water Depth		Wk Ht Above Floor	4ft
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		J-55	0	1585	0	1585
Open Hole Section			13.5				0	1595	0	1595

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe					Top Plug	9.625	1	HES
Float Shoe	9.625	1		1585	Bottom Plug			
Float Collar	9.625	1		1543	SSR plug set			
Insert Float					Plug Container	9.625	1	HES
Stage Tool					Centralizers	9.625	14	

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	Spacer	RED DYED FRESH WATER	10	bbl	8.34			3	42	

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	Cement	SWIFTCEM (TM) SYSTEM	525	sack	13.5	1.74	9.2	8	4830
94 lbm		TYPE I / II CEMENT, BULK (101439798)							
9.20 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
3	Displacement	FRESH WATER	119	bbl	8.34			8	4998
Cement Left In Pipe									
Amount		42 ft			Reason			Shoe Joint	
Mix Water:	pH 7.0	Mix Water Chloride:	<20 ppm		Mix Water Temperature:	55 °F			
Cement Temperature:	N/A	Plug Displaced by:	8.3 lb/gal Fresh Water		Disp. Temperature:	55 °F			
Plug Bumped?	Yes	Bump Pressure:	430 psi		Floats Held?	Yes			
Cement Returns:	25 bbl	Returns Density:	N/A		Returns Temperature:	N/A			
Comment Plug bumped @ calculated displacement, Floats held, 1 BBL back to the truck. 25 BBLs cement returned to surface.									

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Call Out	Call Out	6/22/2017	19:00:00	USER	CREW CALLED OUT AT 19:00 6/22/2017, REQUESTED ON LOCATION 2:00 6/23/2017. CREW PICKED UP CEMENT, TOP PLUG, AND RED DYE FROM FORT LUPTON, CO. BULK 660: 11645065/11398319, BULK 660: 12350112/10867096, PUMP 11644701/11645460.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/22/2017	22:45:00	USER	DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Yard	Crew Leave Yard	6/22/2017	23:00:00	USER	STARTED JOURNEY MANAGEMENT.
Event	4	Arrive at Location from Service Center	Arrive at Location	6/23/2017	00:00:00	USER	END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING: 36# 9.625" J-55 @ 1585', 42' SHOE JOINT, 13.5" OPEN HOLE, 8.4 PPG WELL FLUID, FRESH WATER DISPLACEMENT. CASING LANDED @ 5:00 6/23/2017.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	6/23/2017	04:15:00	USER	HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	6/23/2017	04:20:00	USER	CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	6/23/2017	04:30:00	USER	MEETING WITH HALLIBURTON PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	8	Start Job	Start Job	6/23/2017	05:26:45	COM5	BEGIN RECORDING JOB DATA.
Event	9	Test Lines	Test Lines	6/23/2017	05:28:55	COM5	PRESSURE TESTED IRON TO 2500 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 1130 PSI, 5TH GEAR STALL OUT @ 1740 PSI.
Event	10	Pump Spacer 1	Pump Red Dyed Spacer	6/23/2017	05:33:58	COM5	PUMP 10 BBLs OF RED DYED FRESH WATER

							SPACER.
Event	11	Pump Cement	Pump Cement @ 13.5 ppg	6/23/2017	05:40:29	COM5	PUMP 525 SKS OF SWIFCEM @ 13.5 LB/GAL, 1.74 YIELD, 9.2 GAL/SK, 163 BBLS, TOL @ SURFACE, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	12	Shutdown	Shutdown	6/23/2017	06:04:48	COM5	SHUTDOWN TO DROP TOP PLUG.
Event	13	Drop Top Plug	Drop Top Plug	6/23/2017	06:05:22	COM5	PLUG LEFT CONTAINER, VERIFIED BY COMPANY.
Event	14	Pump Displacement	Pump Fresh Water Displacement	6/23/2017	06:06:11	COM5	BEGIN CALCULATED DISPLACEMENT OF 119 BBLS WITH FRESH WATER.
Event	15	Cement Returns to Surface	Cement Returns to Surface	6/23/2017	06:17:16	USER	CEMENT TO SURFACE @ 94 BBLS INTO DISPLACEMENT, CALCULATED AMOUNT OF 25 BBLS LEAD TO SURFACE.
Event	16	Bump Plug	Bump Plug	6/23/2017	06:22:53	USER	PLUG BUMPED AT CALCULATED DISPLACEMENT. PRESSURED 500 PSI OVER FINAL CIRCULATING PRESSURE OF 500 PSI.
Event	17	Shutdown	Shutdown	6/23/2017	06:23:02	USER	SHUTDOWN FOR 1 MINUTE.
Event	18	Check Floats	Check Floats	6/23/2017	06:23:19	USER	RELEASED PRESSURE, FLOATS HELD, 1 BBL BACK.
Event	19	End Job	End Job	6/23/2017	06:23:57	USER	STOP RECORDING JOB DATA.
Event	20	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	6/23/2017	06:30:00	USER	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	21	Rig-Down Completed	Rig-Down Completed	6/23/2017	07:15:00	USER	ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.

Event	22	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/23/2017	07:25:00	USER	DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
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Event	23	Depart Location	Depart Location	6/23/2017	07:30:00	USER	THANK YOU FOR USING HALLIBURTON - BRYAN KRAFT AND CREW.
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3.0 Attachments

3.1 Job Chart



