

HALLIBURTON

iCem[®] Service

HIGHLANDS NATURAL RESOURCES-EBUS

Date: Wednesday, May 16, 2018

Ouray 5-64 15-16-1BHZ Surface

Job Date: Tuesday, May 08, 2018

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 **Ouray 5-64 15-16-1BHZ** 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 62 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 [Fort Lupton]

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

Sold To #: 378724	Ship To #: 3863266	Quote #: 0022439586	Sales Order #: 0904838119							
Customer: HIGHLANDS NATURAL RESOURCES-EBUS		Customer Rep: Danny Warner								
Well Name: OURAY	Well #: 5-64 15-16-1BHZ	API/UWI #: 05-005-07342-00								
Field: WILDCAT	City (SAP): AURORA	County/Parish: ARAPAHOE	State: COLORADO							
Legal Description: NE SE-15-5S-64W-2280FSL-440FEL										
Contractor: TRUE DRLG		Rig/Platform Name/Num: TRUE 33								
Job BOM: 7521 7521										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB41307		Srv Supervisor: Prince Perez								
Job										
Formation Depth (MD)	Top 0	Bottom	2,156'							
Job depth MD	2,146'	Job Depth TVD	2,156'							
		Wk Ht Above Floor	6'							
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	LTC	J-55	0	2,146	0	2,146
Open Hole Section			13.5				0	2,156	0	2,156
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	9.625			2,146		Top Plug	9.625	1	KLX	
Float Collar	9.625			2,100						
						Plug Container	9.625	1	HES	
						Centralizers	9.625	25		
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	Spacer	Red Dye Spacer	20	bbl	8.33			4	840	
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	Lead	SWIFCEM (TM) SYSTEM	330	sacks	12	2.53	14.65	8	4,834.5	

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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/mi n	Total Mix Fluid Gal
3	Tail	SWIFCEM (TM) SYSTEM	445	sacks	13.5	1.75	8.96	8	3,987.2
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
4	Displacement	Fresh Water	162.33	bbl	8.33			8	
Cement Left In Pipe		Amount	46 ft			Reason		Shoe Joint	
Mix Water:pH		6.8	Mix Water Chloride:		0 ppm	Mix Water Temperature:		64 °F	
Cement Temperature:##		°F °C	Plug Displaced by:		8.33 lb/gal	Disp. Temperature:		64 °F	
Plug Bumped?		Yes	Bump Pressure:		640 psi	Floats Held?		Yes	
Cement Returns:		62 bbbls							
Comment We pumped 10 bbls of fresh water, 10 bbls of red dye, 148.7 bbls of lead, 138.7 bbls of tail, followed by 162.33 bbls of displacement. We bumped the plug at 640 psi and got back 62 bbls of cement. 1 bbl back when checking floats.									

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	5/7/2018	21:30:00	USER				CREW CALLED OUT AT 15:30, REQUESTED ON LOCATION 21:30. CREW PICKED UP CEMENT, CHEMICALS, WINCH TRACTOR 11019289 FROM FT. LUPTON, CO. .
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	5/8/2018	01:15:00	USER				DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Yard	Crew Leave Yard	5/8/2018	01:30:00	USER				STARTED JOURNEY MANAGEMENT.
Event	4	Arrive at Location from Service Center	Arrive at Location	5/8/2018	02:30:00	USER				END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; CASING- 9.625 36# @ 2,146', 13.5" HOLE 2,156', SHOE 46', FRESH WATER DISPLACEMENT, KLX TOP PLUG, AND 25 CENTRALIZERS. CASING LANDED @ 02:45 05/08/2018. RIG CIRCULATED 2 BOTTOMS UP.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	5/8/2018	02:45:00	USER				HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	5/8/2018	03:00:00	USER				CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Rig-Up Completed	Rig-Up Completed	5/8/2018	04:00:00	USER	0.00	0.00	0.00	WAITED ON RIG TO FINISH CIRCULATING.
Event	8	Safety Meeting - Pre Job	Safety Meeting - Pre Job	5/8/2018	04:30:00	USER	8.07	1.60	5.00	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	9	Start Job	Start Job	5/8/2018	06:09:24	COM5	7.42	0.50	1.00	BEGIN RECORDING JOB DATA.
Event	10	Test Lines	Test Lines	5/8/2018	06:13:18	COM5	8.34	0.00	2835.00	PRESSURE TESTED IRON TO 2500 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 920 PSI, 5TH GEAR STALL OUT @ 1,830 PSI.
Event	11	Pump Spacer 1	Pump Spacer 1	5/8/2018	06:17:22	COM5	8.33	4.90	95.00	PUMP 20 BBLS OF FRESH WATER WITH RED DYE. PUMP RATE 4 BBLS/MIN @ 130 PSI.
Event	12	Pump Lead Cement	Pump Lead Cement	5/8/2018	06:21:16	COM5	11.47	4.90	120.00	PUMP 330 SKS OF SWIFTCEM @ 12.0 LB/GAL, 2.53 FT3/SK,

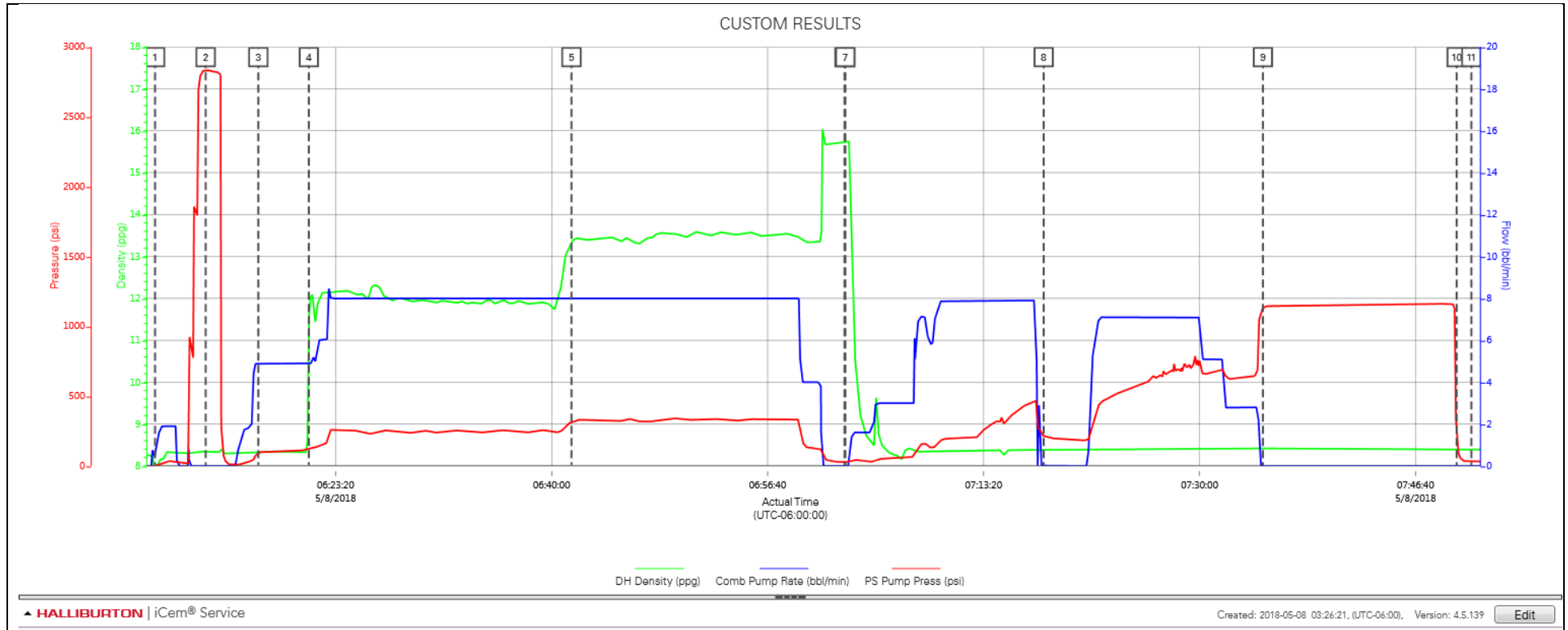
14.65 GAL/SK, 148.70 BBLS, TOL @ SURFACE, HOL
CALCULATED 603.13', DENSITY VERIFIED BY PRESSURIZED
MUD SCALES. PUMP RATE 8 BBLS/MIN @ 280 PSI.

PUMP 445 SKS OF SWIFTCEM @ 13.5 LB/GAL, 1.75 FT3/SK,
8.96 GAL/SK 138.70 BBLS. HOT CALCULATED @ 1,552.87'
TOT CALCULATED @ 603.13'. DENSITY VERIFIED BY
PRESSURIZED MUD SCALES. PUMP RATE 8 BBLS/MIN @ 331
PSI.

Event	13	Pump Tail Cement	Pump Tail Cement	5/8/2018	06:41:32	COM5	13.33	8.00	314.00	14.65 GAL/SK, 148.70 BBLS, TOL @ SURFACE, HOL CALCULATED 603.13', DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBLS/MIN @ 280 PSI.
Event	14	Drop Top Plug	Drop Top Plug	5/8/2018	07:02:36	COM5	15.73	0.00	29.00	PUMP 445 SKS OF SWIFTCEM @ 13.5 LB/GAL, 1.75 FT3/SK, 8.96 GAL/SK 138.70 BBLS. HOT CALCULATED @ 1,552.87' TOT CALCULATED @ 603.13'. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBLS/MIN @ 331 PSI.
Event	15	Pump Displacement	Pump Displacement	5/8/2018	07:02:40	COM5	15.73	0.00	29.00	PLUG LEFT CONTAINER, VERIFIED BY COMPANY REP.
Event	16	Shutdown	Shutdown	5/8/2018	07:17:58	USER	8.38	0.00	213.00	BEGIN CALCULATED DISPLACEMENT OF 162 BBLS WITH FRESH WATER WITH BIOCIDES. CEMENT TO SURFACE @ 100 BBLS INTO DISPLACEMENT 62 BBLS CEMENT TO SURFACE.
Event	17	Bump Plug	Bump Plug	5/8/2018	07:34:53	COM5	8.42	0.00	1132.00	SHUTDOWN FOR RIG TO SWAP OVER TO CELLAR PUMP.
Event	18	Check Floats	Check Floats	5/8/2018	07:49:50	USER	8.42	0.00	201.00	PLUG BUMPED AT CALCULATED DISPLACEMENT. PRESSURED 500 PSI OVER BUMP TO 1140 PSI. HELD FOR 15 MINS FOR CASING PRESSURE TEST.
Event	19	End Job	End Job	5/8/2018	07:50:58	COM5				RELEASED PRESSURE, FLOATS HELD, 1 BBL BACK.
Event	20	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	5/8/2018	08:00:00	USER	8.37	9.70	372.00	STOP RECORDING JOB DATA.
Event	21	Rig-Down Equipment	Rig-Down Equipment	5/8/2018	08:30:00	USER				DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	22	Rig-Down Completed	Rig-Down Completed	5/8/2018	09:30:00	USER				RIG DOWN BULK AND MIXING EQUIPMENT.
Event	23	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	5/8/2018	10:00:00	USER				ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event	24	Depart Location	Depart Location	5/8/2018	10:30:00	USER				DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
										THANK YOU FOR USING HALLIBURTON - NICK PETERSON AND CREW.

3.0 Attachments

3.1 CUSTOM RESULTS – JOB CHART WITH EVENTS



3.2 CUSTOM RESULTS – JOB CHART WITHOUT EVENTS

