

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Date: Wednesday, November 08, 2017

Darlene East 29N-20-11C Surface

Job Date: Sunday, October 08, 2017

Sincerely,

Bryce Hinsch

Legal Notice

Disclaimer:

All information in this report is provided subject to the terms and conditions which govern the services provided by Halliburton. Halliburton personnel use their best efforts in gathering information and their best judgment in interpreting it, but any interpretation, research, analysis or recommendation furnished by Halliburton are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and empirical relationships and assumptions are not infallible, and with respect to which professionals in the industry may differ. Accordingly, HALLIBURTON IS UNABLE TO GUARANTEE THE ACCURACY OF ANY CHART INTERPRETATION, RESEARCH ANALYSIS, OR JOB RECOMMENDATION and any interpretation or recommendation is not for use of or reliance upon by any third party. The customer has full responsibility for any of its decisions which are based on the information provided in this report.

Table of Contents

1.0 Cementing Job Summary 4

 1.1 Executive Summary4

2.0 Real-Time Job Summary 7

 2.1 Job Event Log7

3.0 Attachments..... 10

 3.1 Extraction Darlene East 29N-20-11C Surface Job Chart10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Darlene East 29N-20-11C** 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 50 bbls 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]

The Road to Excellence Starts with Safety

Sold To #: 369404		Ship To #: 3825698		Quote #:		Sales Order #: 0904354591					
Customer: EXTRACTION OIL & GAS -				Customer Rep: Shayne Hackford							
Well Name: DARLENE EAST			Well #: 29N-20-11C		API/UWI #: 05-123-45416-00						
Field: GROVER		City (SAP): KEOTA		County/Parish: WELD		State: COLORADO					
Legal Description: SW SE-29-12N-61W-363FSL-1942FEL											
Contractor: PATTERSON-UTI ENERGY				Rig/Platform Name/Num: PATTERSON 346							
Job BOM: 7521 7521											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HX38199				Srvc Supervisor: Bryan Kraft							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type				BHST							
Job depth MD		1597ft		Job Depth TVD	1597ft						
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	0	9.625	8.921	36	8 RD	J-55	0	1597	0	1597	
Open Hole Section			13.5				0	1615	0	1615	
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	HES	1597		Bottom Plug					
Float Collar	9.625	1	HES	1562		SSR plug set					
Insert Float						Plug Container	9.625	1	HES		
Stage Tool						Centralizers					
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	FRESH WATER	10	bbl	8.33			4	420
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	Spacer	RED DYED FRESH WATER	10	bbl	8.33			4	420
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	Cement	SWIFCEM (TM) SYSTEM	600	sack	13.5	1.74	9.2	8	5520
9.20 Gal		FRESH WATER							
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
4	Displacement	FRESH WATER	121	bbl	8.33			8	5082
Cement Left In Pipe		Amount	35 ft		Reason			Shoe Joint	
Mix Water:		pH 7.0	Mix Water Chloride:			<300 ppm		Mix Water Temperature:	
Cement Temperature:		N/A	Plug Displaced by:			8.3 lb/gal Fresh Water		Disp. Temperature:	
Plug Bumped?		Yes	Bump Pressure:			580 psi		Floats Held?	
Cement Returns:		50 bbl	Returns Density:			N/A		Returns Temperature:	
Comment: The plug bumped @ calculated displacement @ 580 PSI, shutdown for 5 minutes @ 1080 PSI. The floats held and received 0.5 BBLS back to the truck. Cement returned to surface @ 71 BBLS into displacement. Total of 50 BBLS of cement to surface.									

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)	DS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	10/7/2017	23:00:00	USER				CREW CALLED OUT AT 23:00 10/7/2017, REQUESTED ON LOCATION 5:00 10/8/2017. CREW PICKED UP CEMENT, TOP PLUG, RED DYE, 100 LBS OF SUGAR, PLUG CONTAINER AND MANIFOLD FROM FORT LUPTON, CO. BULK 660: 10025030, BULK 660: 11689672, PUMP 11897034/11645460.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	10/8/2017	02:00:00	USER				DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Yard	Crew Leave Yard	10/8/2017	02:15:00	USER				STARTED JOURNEY MANAGEMENT.
Event	4	Arrive At Loc	Arrive At Loc	10/8/2017	04:00:00	USER				E
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	10/8/2017	06:30:00	USER				HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	10/8/2017	06:45:00	USER				CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	10/8/2017	10:15:00	USER	0.00	0.00	-13.00	MEETING WITH HALLIBURTON PERSONNEL.

COMMUNICATED
 POTENTIAL SAFETY
 HAZARDS AND JOB DETAILS.

Event	8	Start Job	Start Job	10/8/2017	10:38:45	COM5				START RECORDING JOB DATA.
Event	9	Test Lines	Test Lines	10/8/2017	10:42:26	USER	8.36	0.00	868.00	PRESSURE TESTED IRON TO 2500 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 800 PSI, 5TH GEAR STALL OUT @ 2200 PSI.
Event	10	Pump Spacer 1	Pump Fresh Water Spacer	10/8/2017	10:47:54	USER	8.21	0.80	36.00	PUMP 10 BBLS FRESH WATER SPACER.
Event	11	Pump Spacer 2	Pump Red Dyed Spacer	10/8/2017	10:49:35	USER	8.35	4.00	162.00	PUMP 10 BBLS OF RED DYED FRESH WATER SPACER.
Event	12	Pump Cement	Pump Cement @ 13.5 ppg	10/8/2017	10:54:10	USER	13.12	6.00	372.00	PUMP 600 SKS OF SWIFTCEM @ 13.5 LB/GAL, 1.74 YIELD, 9.2 GAL/SK, 186 BBLS, CALCULATED TOL @ SURFACE, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	13	Shutdown	Shutdown	10/8/2017	11:22:50	USER	14.55	0.00	43.00	SHUTDOWN TO DROP TOP PLUG. VERIFIED BY COMPANY MAN.
Event	14	Drop Top Plug	Drop Top Plug	10/8/2017	11:23:45	USER	14.55	0.00	-1.00	PLUG LEFT CONTAINER.
Event	15	Pump Displacement	Pump Fresh Water Displacement	10/8/2017	11:24:43	USER	13.62	1.60	8.00	BEGIN CALCULATED DISPLACEMENT OF 121 BBLS WITH FRESH WATER.
Event	16	Cement Returns to Surface	Cement Returns to Surface	10/8/2017	11:35:59	USER	8.30	9.00	549.00	CEMENT TO SURFACE @ 71 BBLS INTO DISPLACEMENT, TOTAL AMOUNT OF 50 BBLS LEAD TO SURFACE.
Event	17	Bump Plug	Bump Plug	10/8/2017	11:42:31	USER	8.30	5.00	509.00	PLUG BUMPED AT CALCULATED

										DISPLACEMENT. PRESSURED 500 PSI OVER FINAL CIRCULATING PRESSURE OF 580 PSI.
Event	18	Shutdown	Shutdown	10/8/2017	11:43:21	USER	8.34	0.00	1070.00	SHUTDOWN FOR 5 MINUTE @ 1080 PSI.
Event	19	Check Floats	Check Floats	10/8/2017	11:47:37	USER	8.35	0.00	291.00	RELEASED PRESSURE, FLOATS HELD, 0.5 BBL BACK.
Event	20	End Job	End Job	10/8/2017	11:48:34	USER	8.32	0.00	-11.00	STOP RECORDING JOB DATA.
Event	21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	10/8/2017	11:55:00	USER	8.44	10.00	357.00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	22	Rig-Down Completed	Rig-Down Completed	10/8/2017	12:45:00	USER				ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event	23	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	10/8/2017	13:20:00	USER				DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	24	Crew Leave Location	Crew Leave Location	10/8/2017	13:30:00	USER				THANK YOU FOR USING HALLIBURTON - BRYAN KRAFT AND CREW.

3.0 Attachments

3.1 Extraction Darlene East 29N-20-11C Surface Job Chart

