

# HALLIBURTON

iCem<sup>®</sup> Service

## **SRC ENERGY INC-EBUS**

Date: Tuesday, August 14, 2018

## **Troudt 1N-23B-M Production**

Job Date: Monday, August 13, 2018

Sincerely,  
**Tyler Hill**

## Legal Notice

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### Disclaimer:

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Troudt 1N-23B-M** cement **Production** 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 20 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 Ft. Lupton**

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 359915		<b>Ship To #:</b> 3851236		<b>Quote #:</b>		<b>Sales Order #:</b> 0905055476				
<b>Customer:</b> SRC ENERGY INC-EBUS				<b>Customer Rep:</b> Kevin						
<b>Well Name:</b> TROUDT			<b>Well #:</b> 1N-23B-M		<b>API/UWI #:</b> 05-123-46235-00					
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> LUCERNE		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO				
<b>Legal Description:</b> NE NW-27-6N-66W-760FNL-1640FWL										
<b>Contractor:</b> PRECISION DRLG				<b>Rig/Platform Name/Num:</b> PRECISION 562						
<b>Job BOM:</b> 7523 7523										
<b>Well Type:</b> HORIZONTAL OIL										
<b>Sales Person:</b> HALAMERICA\HB41307				<b>Srv Supervisor:</b> Nicholas Roles						
<b>Job</b>										
<b>Formation Name</b>										
<b>Formation Depth (MD)</b>		<b>Top</b>		<b>Bottom</b>						
<b>Form Type</b>				<b>BHST</b>						
<b>Job depth MD</b>		15487ft		<b>Job Depth TVD</b>						
<b>Water Depth</b>				<b>Wk Ht Above Floor</b>						
<b>Perforation Depth (MD)</b>		<b>From</b>		<b>To</b>						
<b>Well Data</b>										
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>
Casing		9.625	8.921	36	LTC	J-55	0	1829		1829
Casing		5.5	4.778	20	TXP-BTC	P110IC	0	15487		6959
Open Hole Section			8.5				1829	15505	1829	6959
<b>Tools and Accessories</b>										
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	
Guide Shoe	5.5			15487		Top Plug	5.5	1	WTH	
Float Shoe	5.5					Bottom Plug	5.5	1	WTH	
Float Collar	5.5			15378		SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5		HES	
<b>Fluid Data</b>										
<b>Stage/Plug #: 1</b>										
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>	
1	Tuned Spacer III	Tuned Spacer III	40	bbl	11.5	3.86		5		
0.25 gal/bbl		<b>D-AIR 3000L, 5 GAL PAIL (101007444)</b>								
0.50 gal/bbl		<b>MUSOL A, 330 GAL TOTE - (790828)</b>								
0.50 gal/bbl		<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</b>								

145.18 lbm/bbl		BARITE, BULK (100003681)							
36.09 gal/bbl		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
2	ElastiCem	ELASTICEM (TM) SYSTEM	1271	sack	13.2	1.57		8	7.54
7.54 Gal		FRESH WATER							
0.15 %		FE-2 (100001615)							
0.27 %		SCR-100 (100003749)							
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	NeoCem	NeoCem TM	851	sack	13.2	2.04		8	9.77
9.71 Gal		FRESH WATER							
0.08 %		SCR-100 (100003749)							
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	MMCR Displacement	MMCR Displacement	40	bbl	8.34			10	
0.2220 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
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
5	Clay-web Displacement	Clay-web Displacement	231	bbl	8.33			10	
1 gal/Mgal		CLA-WEB - BULK (101985043)							
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
6	MMCR Displacement	MMCR Displacement	70	bbl	8.34			8	
0.20 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
Cement Left In Pipe		Amount	0 ft		Reason			Wet Shoe	

Mix Water:	pH 06	Mix Water Chloride:	0ppm	Mix Water Temperature:	70 °F °C
Cement Temperature:	## °F °C	Plug Displaced by:	8.33 lb/gal	Disp. Temperature:	70 °F °C
Plug Bumped?	Yes	Bump Pressure:	2900psi MPa	Floats Held?	Yes
Cement Returns:	20 bbl m3	Returns Density:	## lb/gal kg/m3	Returns Temperature:	## °F °C
<b>Comment</b> Got 20bbls cement to surface. Estimated TOT-7913'					

## 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	8/12/2018	19:00:00	USER				Called out by Service Coordinator for O/L at 0000
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	8/12/2018	22:45:00	USER				Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	8/12/2018	23:00:00	USER				Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	8/13/2018	00:00:00	USER				Upon arrival met with company man to discuss job details and calculations, performed hazard hunt and site assessment.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	8/13/2018	00:15:00	USER				Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	8/13/2018	00:30:00	USER				Water test- PH-6, Chlor-0, Temp-70
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	8/13/2018	01:30:00	USER	8.55	0.00	2.00	Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.
Event	8	Start Job	Start Job	8/13/2018	02:02:01	COM4	8.48	0.00	2.00	TD-15505', TP-15487' 5.5" 20#, WS Sub-15378', TVD-6959', OH-8.5", SURF-1829' 9.625" 36#, MUD-9.8#
Event	9	Test Lines	Test Lines	8/13/2018	02:04:08	COM4	8.54	0.00	114.00	Pumped 5bbls fresh water



										to fill lines, closed manifold and performed 500psi k/o function test, proceeded to perform 5th gear stall at 1452psi, continued to bring pressure up to 6000psi. Pressure stabilized and held with no leaks
Event	10	Pump Spacer 1	Pump Spacer 1	8/13/2018	02:09:00	COM4	8.50	1.40	29.00	Pumped 40bbls 11.5# 3.8y 23.8g/s Tuned Spacer III with 20g Musol A, 20g Dual Spacer B and 10g D-Air at 5bpm 340psi.
Event	11	Drop Bottom Plug	Drop Bottom Plug	8/13/2018	02:15:32	COM4	11.77	4.10	378.00	Dropped by HES supervisor, witnessed by company man.
Event	12	Pump Lead Cement	Pump Lead Cement	8/13/2018	02:16:52	COM4	13.31	4.50	393.00	Pumped 1271sks or 355bbls 13.2# 1.57y 7.54g/s Elasticem at 8bpm 400psi.
Event	13	Check Weight	Check Weight	8/13/2018	02:42:39	COM4	13.20	8.10	376.00	Weight verified with pressurized mud scales.
Event	14	Pump Tail Cement	Pump Tail Cement	8/13/2018	03:05:59	COM4	13.21	8.20	395.00	Pumped 851sks or 309bbls 13.2# 2.04y 9.77g/s Neocem at 8bpm 475psi.
Event	15	Check Weight	Check Weight	8/13/2018	03:12:57	COM4	13.09	8.20	629.00	Weight verified with pressurized mud scales.
Event	16	Check Weight	Check Weight	8/13/2018	03:33:56	COM4	13.24	8.10	734.00	Weight verified with pressurized mud scales.
Event	17	Shutdown	Shutdown	8/13/2018	03:52:22	COM4	8.57	4.00	98.00	Pumped 5bbls fresh water to clean through pumps and lines.
Event	18	Drop Top Plug	Drop Top Plug	8/13/2018	03:55:34	COM4	8.33	0.00	54.00	Dropped by HES supervisor, witnessed by company man.
Event	19	Pump Displacement	Pump Displacement	8/13/2018	03:55:37	COM4	8.31	0.00	43.00	Pumped 341bbls fresh water with 10g MMCR in first 40bbls, 10g MMCR in

										the last 70bbbls, 20g clayweb and 3# biocide throughout.
Event	20	Bump Plug	Bump Plug	8/13/2018	04:40:55	COM4	8.44	0.00	2824.00	Slowed down to 3bpm at 320bbbls away, final circulating pressure- 2400psi, bump pressure- 2900psi.
Event	21	Pressure Up Well	Pressure Up Well	8/13/2018	04:44:08	COM4	8.44	0.00	2907.00	Pumped fresh water to sheer at 5015psi, continued to pump 6bbbls fresh water at 4bpm 2540psi.
Event	22	Check Floats	Check Floats	8/13/2018	04:48:19	USER	8.43	0.00	2110.00	Released pressure and got 2.5bbbls back to pump. Floats held.
Event	23	Shutdown	Shutdown	8/13/2018	04:49:15	COM4	8.39	0.00	57.00	
Event	24	End Job	End Job	8/13/2018	04:49:25	COM4	8.39	0.00	19.00	Got 20bbbls cement to surface. Estimated TOT- 7913'
Event	25	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	8/13/2018	05:00:00	USER				All HSE present. Discussed red zone areas and trapped pressure hazards. Watch for suspended loads and rig down procedures, including hand placement, lifting techniques, and swing radius.
Event	26	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/13/2018	06:15:00	USER				All HSE present and fit to drive. Aware of directions and hazards.
Event	27	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	8/13/2018	06:30:00	USER				Pre journey managment prior to departure.

3.0 Attachments

3.1 Troudt 1N-23B-M Production.png

