

# HALLIBURTON

iCem<sup>®</sup> Service

**SRC ENERGY INC**

**Troudt 1N-23C-M Production**

Sincerely,  
**Meghan Jacobs**

## Legal Notice

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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-23C-1M** 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 56bbls of cement 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 #: 359915		Ship To #: 3851161		Quote #:		Sales Order #: 0905040848					
Customer: SRC ENERGY INC-EBUS				Customer Rep: Tim Jones							
Well Name: TROUDT			Well #: 1N-23C-M			API/UWI #: 05-123-46241-00					
Field: WATTENBERG		City (SAP): LUCERNE		County/Parish: WELD		State: COLORADO					
Legal Description: NE NW-27-6N-66W-760FNL-1624FWL											
Contractor: PRECISION DRLG				Rig/Platform Name/Num: PRECISION 562							
Job BOM: 7523 7523											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HB41307				Srvc Supervisor: Thomas Haas							
<b>Job</b>											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type					BHST						
Job depth MD		15694ft			Job Depth TVD		7032'				
Water Depth					Wk Ht Above Floor 5'						
Perforation Depth (MD)		From			To						
<b>Well Data</b>											
Description	New / Used	Size in	ID in	Weight lbn/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	1834	0	1834	
Casing		5.5	4.778	20	TXP-BTC	P110IC	0	15694	0	0	
Open Hole Section			8.5				1834	15714	1834	7032	
<b>Tools and Accessories</b>											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5					Top Plug	5.5	1	W.F.		
Float Shoe	5.5	1	W.F.	15694		Bottom Plug	5.5	1	W.F.		
Wet Shoe Sub	5.5	1	W.F.	15587		SSR plug set	5.5				
Insert Float	5.5					Plug Container	5.5	1			
Stage Tool	5.5					Centralizers	5.5				
<b>Fluid Data</b>											
Stage/Plug #: 1											
Fluid #	Stage Type	Fluid Name			Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Tuned Spacer III	Tuned Spacer III			40	bbl	11.5	3.86	24.1	6	1402
Fluid #	Stage Type	Fluid Name			Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	ElastiCem	ELASTICEM (TM) SYSTEM			1301	sack	13.2	1.57	7.54	8	9810

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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	NeoCem	NeoCem TM	909	sack	13.2	2.036	9.71	8	8826
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	20	bbl	8.34			8	
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	Water	Water	256	bbl	8.33			8	
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			Reason Wet Shoe			Shoe Joint	
Mix Water:	pH 7	Mix Water Chloride:	<300 ppm			Mix Water Temperature:	73 °F		
Cement Temperature:	N/A	Plug Displaced by:	8.33 lb/gal F.W.			Disp. Temperature:	N/A		
Plug Bumped?	Yes	Bump Pressure:	2620 psi			Floats Held?	Yes		
Cement Returns:	56 bbl	Returns Density:	N/A			Returns Temperature:	N/A		
Comment The plug bumped @ calculated displacement @ 2620 PSI. The sleeve opened @ 5075 PSI and pumped a 6 BBL wet shoe. The floats held and received 2.5 BBLS back to the truck. Total of 56 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	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	DS Pump Press <i>(psi)</i>	Comments
Event	1	Call Out	Call Out	8/6/2018	11:30:00	USER				CREW CALLED OUT AT 11:30 8/6/2018, REQUESTED ON LOCATION 17:30 8/6/2018. CREW PICKED UP CEMENT, CHEMICALS (20 GAL MUSOL A, 20 GAL DUAL SPACER B, 10 GAL D-AIR, 20 GAL CLA-WEB, 20 GAL MICROMATRIX, 3LBS BE-3), 200 LBS OF SUGAR, AND PLUG CONTAINER FROM FORT LUPTON, CO. BULK 660: 12350112/10784982, BULK 660: 11808699/11633846, PUMP ELITE 11644701/11360070.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/6/2018	15:45:00	USER				DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW
Event	3	Crew Leave Yard	Crew Leave Yard	8/6/2018	16:00:00	USER				STARTED JOURNEY MANAGEMENT.
Event	4	Arrive At Loc	Arrive At Loc	8/6/2018	17:00:00	USER				END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING: 36# 9.625" @ 1834', CASING: 20# 5.5" HCP110 @ 15694', 107' SHOE JOINT, 8.5" OPEN HOLE, TVD @ 7032', 9.7 PPG WELL FLUID, FRESH WATER DISPLACEMENT.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	8/6/2018	17:15:00	USER				HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	8/6/2018	17:20:00	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	8/6/2018	18:30:00	USER	8.46	0.00	4.00	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	8	Start Job	Start Job	8/6/2018	19:03:04	COM4	0.85	0.00	3.00	START JOB DATA RECORDING.
Event	9	Test Lines	Test Lines	8/6/2018	19:05:12	COM4	8.44	0.00	151.00	PRESSURE TESTED IRON TO 6700 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 1000 PSI, 5TH GEAR STALL OUT @ 1900 PSI.

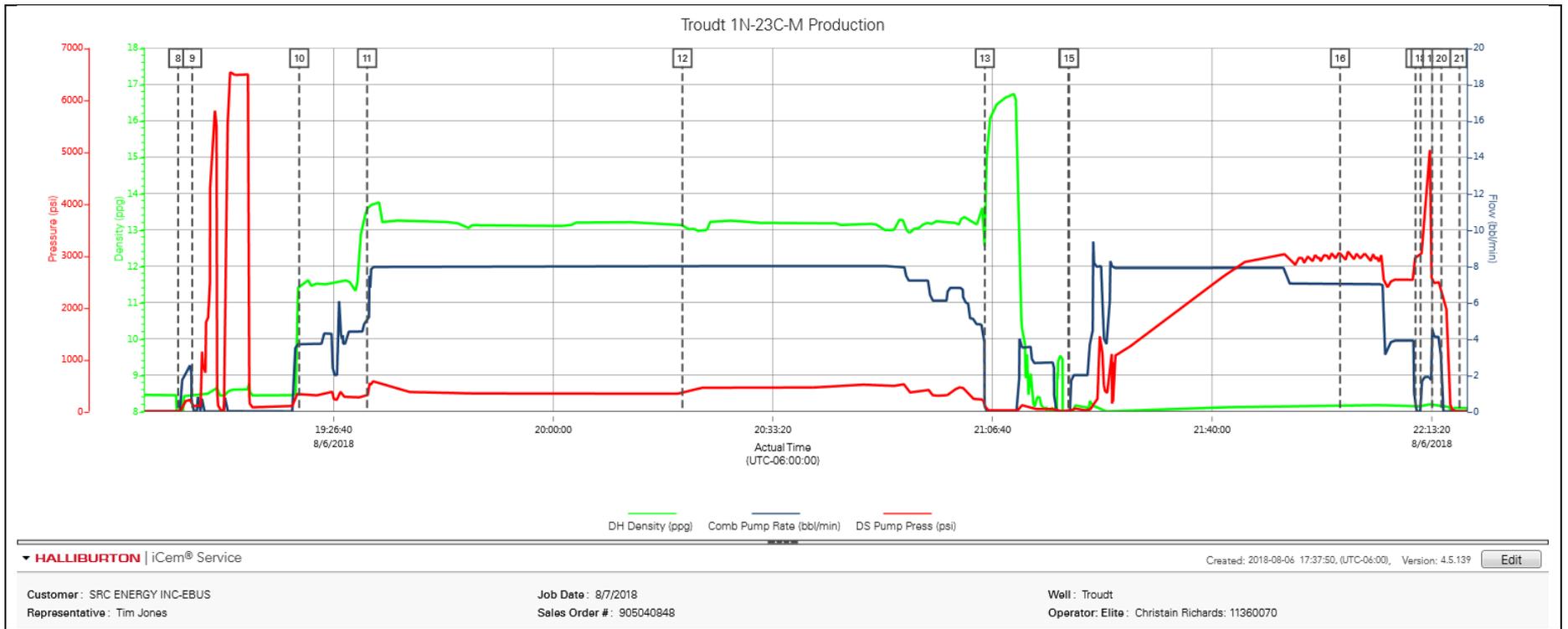
Event	10	Pump Spacer 1	Pump Spacer 1	8/6/2018	19:21:26	COM4	11.48	3.70	338.00	PUMP 40 BBLs OF TUNED SPACER @ 11.5 LB/GAL, 3.86 YIELD, 24.1 GAL/SKS, ADDED 20 GAL MUSOL A, 20 GAL DUAL SPACER B, 10 GAL D-AIR, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	11	Pump Lead Cement	Pump Lead Cement	8/6/2018	19:31:44	COM4	13.56	4.90	328.00	PUMP 1301 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.57 YIELD, 7.54 GAL/SK, 364 BBLs, CALCULATED TOT @ SURFACE, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	12	Pump Tail Cement	Pump Tail Cement	8/6/2018	20:19:36	COM4	13.09	8.00	348.00	PUMP 909 SKS OF NEOCEM @ 13.2 LB/GAL, 2.04 YIELD, 9.715 GAL/SK, 330 BBLs, CALCULATED TOT @ 7657', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	13	Shutdown	Shutdown	8/6/2018	21:05:30	COM4	12.82	0.00	114.00	SHUTDOWN TO WASH PUMPS LINE, AND DROP TOP PLUG.
Event	14	Drop Top Plug	Drop Top Plug	8/6/2018	21:18:11	COM4	-0.12	0.00	7.00	PLUG LEFT PLUG CONTAINER, VERIFIED BY COMPANY MAN.
Event	15	Pump Displacement	Pump Displacement	8/6/2018	21:18:17	COM4	-0.19	0.00	8.00	BEGIN CALCULATED DISPLACEMENT OF 346 BBLs WITH FRESH WATER. FIRST 20 BBLs WITH 10 GAL MMCR, CLA-WEB, AND BE-3, REST OF DISPLACEMENT WITH 20 GAL CLA-WEB AND 3 LBS BE-3. LAST 70 BBLs WITH 10 GAL MMCR.
Event	16	Cement Returns to Surface	Cement Returns to Surface	8/6/2018	21:59:25	USER	8.16	7.00	3037.00	CEMENT RETURNED TO SURFACE 290 BBL INTO DISPLACEMENT, 56 BBL CEMENT RETURNED TO SURFACE.
Event	17	Bump Plug	Bump Plug	8/6/2018	22:10:51	COM4	8.14	0.00	2979.00	PLUG BUMPED AT CALCULATED DISPLACEMENT, FINAL CIRCULATING PSI OF 2620 PSI.
Event	18	Other	Shift Wet Shoe Sleeve	8/6/2018	22:11:37	USER	8.14	0.00	3006.00	PRESSURED UP TO SHIFT WET SHOE SLEEVE WET SHOE SLEEVE SHIFTED AT 5075 PSI.
Event	19	Other	Pump Wet Shoe	8/6/2018	22:13:24	USER	8.16	4.50	2467.00	PUMPED 6 BBL WET SHOE.
Event	20	Check Floats	Check Floats	8/6/2018	22:14:48	USER	8.16	0.00	2338.00	RELEASED PRESSURE BACK TO THE TRUCK FLOATS HELD, 2.5 BBL BACK.
Event	21	End Job	End Job	8/6/2018	22:17:33	COM4	8.11	0.00	3.00	END JOB DATA RECORDING.
Event	22	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/6/2018	22:20:00	USER	8.08	0.00	0.00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON

AND HOSES.

Event	23	Rig-Down Completed	Rig-Down Completed	8/6/2018	23:00:00	USER	ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL.
Event	24	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/6/2018	23:15:00	USER	DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	25	Crew Leave Location	Crew Leave Location	8/7/2018	23:30:00	USER	THANK YOU FOR USING HALLIBURTON - THOMAS HAAS AND CREW.

3.0 Attachments

3.1 Troutd 1N-23C-M Production – Job Chart with Events



3.2 Troutd 1N-23C-M Production – Job Chart without Events

