

# HALLIBURTON

iCem<sup>®</sup> Service

**SRC ENERGY INC**

**Troudt 40C-23-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 40C-23-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 29bbbls 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]**

## HALLIBURTON

## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 359915	Ship To #: 3851308	Quote #:	Sales Order #: 0905134369							
Customer: SRC ENERGY INC-EBUS		Customer Rep: Kevin								
Well Name: TROUDT	Well #: 40C-23-M	API/UWI #: 05-123-46243-00								
Field: WATTENBERG	City (SAP): LUCERNE	County/Parish: WELD	State: COLORADO							
Legal Description: NE NW-27-6N-66W-760FNL-1745FWL										
Contractor: PRECISION DRLG		Rig/Platform Name/Num: PRECISION 562								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB41307		Srv Supervisor: Adam Covington								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type		BHST								
Job depth MD	15038ft	Job Depth TVD								
Water Depth		Wk Ht Above Floor								
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	LTC	J-55	0	1764		1764
Casing		5.5	4.778	20	TXP-BTC	P110IC	0	15038		0
Open Hole Section			8.5				1764	15058	0	7153
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			15038		Top Plug	5.5	1		
Float Shoe	5.5					Bottom Plug	5.5	1		
Float Collar	5.5					SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5	212		
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	Tuned Spacer III	Tuned Spacer III	40	bbl	11.5	3.86		6		
Stage/Plug #: 2										
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	1198	sack	13.2	1.57		8	7.54	

last updated on 9/18/2018 9:43:16 AM

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## HALLIBURTON

## 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	308.8	bbl	13.2	2.04		8	9.77
9.77 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	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	Clay-web Displacement	Clay-web Displacement	261	bbl	8.33			8	
0.75 gal/bbl		CLA-WEB - TOTE (101985045)							
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	109 ft			Reason		Shoe Joint	
Mix Water:		pH 7	Mix Water Chloride:0 ppm			Mix Water Temperature:		69 °F °C	
Cement Temperature:		87 °F °C	Plug Displaced by:8.33 lb/gal			Disp. Temperature:		69 °F °C	
Plug Bumped?		Yes	Bump Pressure:2950 psi			Floats Held?		Yes/No	
Cement Returns:		29 bbl	Returns Density:13.2 lb/gal			Returns Temperature:		91 °F	
Comment TD- 15058' 8.5" OH. TP-15038' 5.5" 20#, PREVIOUS CASING AT 1764' 9 5/8" 36#, TVD-7153', MUD 10.2#, WET SHOE SUB AT 14292'. ESTIMATED TOP OF TAIL IS AT 6813'. WATER 69 DEGREES, PH-7, CHLORIDES-0, SULFATES-0. 29 BBLS OF CEMENT BACK TO SURFACE.									

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	9/16/2018	01:30:00	USER				CALLED OUT BY SERVICE COORDINATOR FOR O/L AT 0700
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	9/16/2018	05:45:00	USER				HELD MEETING WITH ALL HES EMPLOYEES IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	3	Depart Shop for Location	Depart Shop for Location	9/16/2018	06:00:00	USER				HELD MEETING WITH ALL PERSONNEL IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	4	Arrive At Loc	Arrive At Loc	9/16/2018	06:30:00	USER				UPON ARRIVAL MET WITH COMPANY MAN TO DISCUSS JOB DETAILS AND CALCULATIONS, PERFORMED HAZARD HUNT AND SITE ASSESSMENT.
Event	5	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	9/16/2018	06:45:00	USER				DISCUSSED RIGGING UP HAZARDS AND PROCEDURE ACCORDING TO HMS.
Event	6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	9/16/2018	09:00:00	USER	3.00	8.11	0.00	HELD SAFETY MEETING WITH ALL JOB ASSOCIATED PERSONNEL TO DISCUSS JOB PROCEDURE, HAZARDS AND STOP WORK AUTHORITY. Water test- PH-6, Chlor-0, Temp-65. Cement temp-70.
Event	7	Start Job	Start Job	9/16/2018	09:23:41	COM4	3.00	8.12	0.00	FILLED LINES WITH 3 BBLS OF FRESH WATER 2 BPM, 211 PSI.
Event	8	Test Lines	Test Lines	9/16/2018	09:31:06	COM4	122.00	8.12	0.00	PERFORMED A 500 PSI KICKOUT AND A 5TH GEAR STALL. THEN PERFORMED A 6500 PSI PRESSURE TEST. PRESSURE WAS BLEEDING OFF VERY FAST SO WE SHUT DOWN AND CHANGED VALVES ON RELEASE LINE. DIDN'T HOLD SO WE GREASED THE VALVE AND TRIED AGAIN AND IT HELD. HELD FOR 3 MINUTES. NO LEAKS AFTER.
Event	9	Pump Spacer 1	Pump Spacer 1	9/16/2018	10:10:20	COM4	355.00	11.05	4.00	PUMPED 40 BBLS OF 11.5#, 3.86y, 24.1wr. TUNED SPACER III WITH 20 GALLONS OF MUSOL, 20 GALLONS OF DUAL SPACER B AND 10 GALLONS OF D-AIR. 4 BPM, 410 PSI. FULL RETURNS.

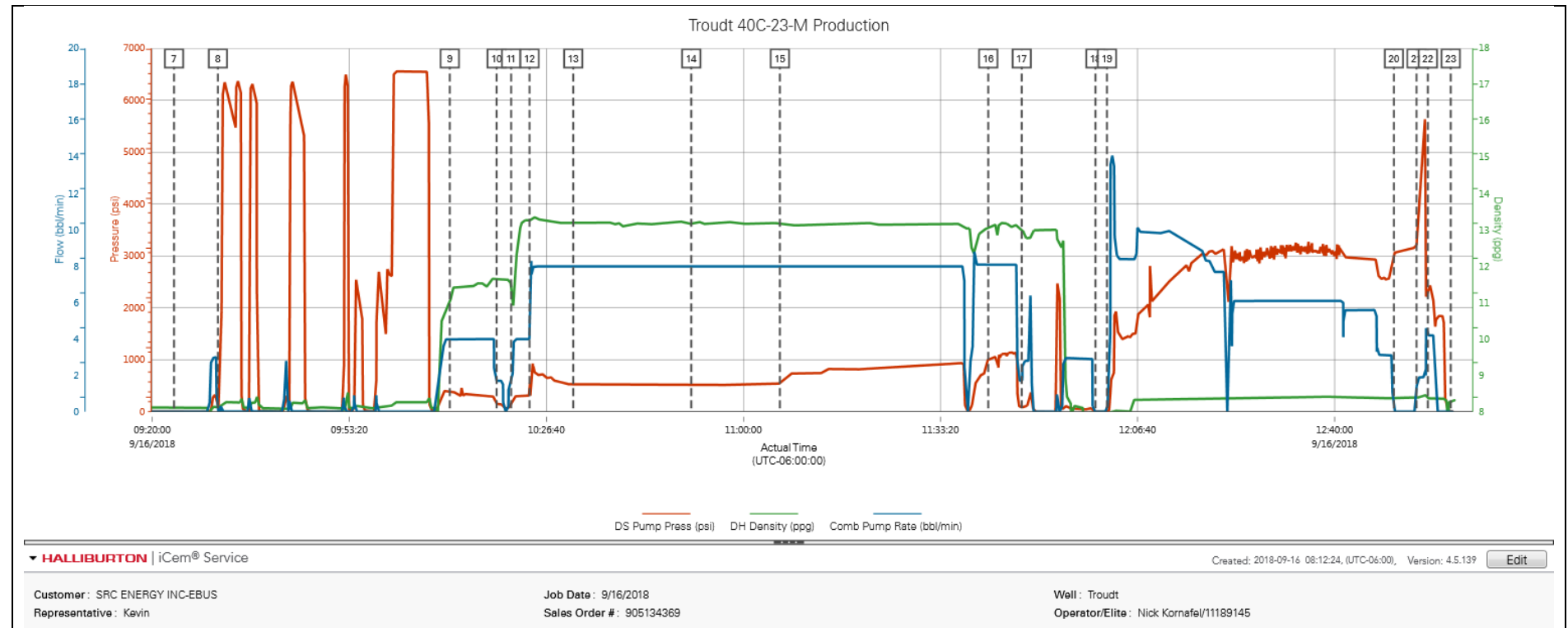
Event	10	Check Weight	Check Weight	9/16/2018	10:18:15	COM4	143.00	11.64	1.70	USED PRESSURIZED MUD SCALES TO WEIGH UP SPACER. SPACER WEIGHED UP AT 11.5#
Event	11	Drop Bottom Plug	Drop Bottom Plug	9/16/2018	10:20:42	COM4	164.00	11.40	1.70	ADAM COVINGTON DROPPED NON HALLIBURTON 5.5" BOTTOM PLUG. CO. MAN WITNESSED.
Event	12	Pump Lead Cement	Pump Lead Cement	9/16/2018	10:23:49	COM4	307.00	13.21	4.30	PUMPED 335 BBLS (1198 SKS) OF 13.2#, 1.57y, 7.54wr. LEAD CEMENT AT 8 BPM, 675 PSI. FULL RETURNS.
Event	13	Check Weight	Check Weight	9/16/2018	10:31:13	COM4	516.00	13.22	8.00	USED PRESSURIZED MUD SCALES TO WEIGH UP CEMENT. CEMENT WEIGHED UP AT 13.2#.
Event	14	Check Weight	Check Weight	9/16/2018	10:51:10	COM4	509.00	13.18	8.00	USED PRESSURIZED MUD SCALES TO WEIGH UP CEMENT. CEMENT WEIGHED UP AT 13.2#.
Event	15	Pump Tail Cement	Pump Tail Cement	9/16/2018	11:06:10	COM4	514.00	13.13	8.00	PUMPED 309 BBLS (850 SKS) OF 13.2#, 2.04y, 9.77wr TAIL CEMENT AT 8 BPM, 514 PSI.
Event	16	Check Weight	Check Weight	9/16/2018	11:41:25	COM4	1011.00	13.01	8.10	USED PRESSURIZED MUD SCALES TO WEIGH UP CEMENT. CEMENT WEIGHED UP AT 13.2#
Event	17	Shutdown	Shutdown	9/16/2018	11:47:04	COM4	66.00	13.00	1.70	SHUTDOWN TO WASH PUMPS AND LINES.
Event	18	Drop Top Plug	Drop Top Plug	9/16/2018	11:59:33	COM4	-2.00	7.96	0.00	ADAM COVINGTON DROPPED NON HALLIBURTON 5.5" TOP PLUG. CO MAN WITNESSED.
Event	19	Pump Displacement	Pump Displacement	9/16/2018	12:01:29	COM4	-1.00	8.00	0.00	PUMPED 331 BBLS OF DISPLACEMENT. FIRST 20 BBLS AND LAST 70 BBLS HAD MMCR DISPERSED THROUGHOUT. THE REST OF DISPLACEMENT HAD 20 GALLONS OF CLAWEB AND 3 LBS OF BE3 DISPERSED. STARTED AT 3 BPM, 550 PSI. THEN INCREASED RATE. MAINTAINED 10 BPM AS LONG AS PRESSURE WOULD ALLOW, THEN WENT DOWN ACCORDING TO PRESSURES.
Event	20	Bump Plug	Bump Plug	9/16/2018	12:50:02	COM4	3055.00	8.38	0.00	BUMPED PLUG. FCP-2500, BUMP PRESSURE WAS 2950 PSI. HELD FOR 5 MINUTES. GOT 29 BBLS OF CEMENT BACK TO SURFACE.
Event	21	Pressure Up Well	Pressure Up Well	9/16/2018	12:53:52	COM4	3213.00	8.39	1.40	AFTER HOLDING PRESSURE WE STARTED PUMPING 3 BBLS AT 1.8 BPM, TO SHIFT SLEEVE. SLEEVE SHIFTED AT 5573 PSI. THEN WENT IMMEDIATELY INTO PUMPING A 6 BBL WET SHOE AT 4.2 BPM, 2400 PSI.
Event	22	Other	Other	9/16/2018	12:55:46	COM4	2348.00	8.37	4.20	bled pressure off. GOT 2 BBLS OF WATER BACK TO THE TRUCK, INDICATING THAT THE FLOATS HELD.



Event	23	End Job	End Job	9/16/2018	12:59:39	COM4	2.00	8.34	0.00	TD- 15058' 8.5" OH. TP-15038' 5.5" 20#, PREVIOUS CASING AT 1764' 9 5/8" 36#, TVD-7153', MUD 10.2#, WET SHOE SUB AT 14292'. ESTIMATED TOP OF TAIL IS AT 6813'. WATER 69 DEGREES, PH-7, CHLORIDES-0, SULFATES-0. 29 BBLs OF CEMENT BACK TO SURFACE.
Event	24	Safety Meeting - Pre Rig-Down	Pre-Rig Down Safety Meeting	9/16/2018	13:10:00	USER				DISCUSSED RIGGING DOWN HAZARDS AND PROCEDURE ACCORDING TO HMS.
Event	25	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	9/16/2018	15:10:00	USER				HELD MEETING WITH ALL HES EMPLOYEES IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	26	Depart Location	Depart Location	9/16/2018	15:25:00	USER				PRE JOURNEY MANAGEMENT PRIOR TO DEPARTURE.

## 3.0 Attachments

### 3.1 Troutd 40C-23-M Production – Job Chart with Events



## 3.2 Troudt 40C-23-M Production – Job Chart without Events

