

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS-EBUS**

**For: Shawn McIntyre**

Date: Sunday, August 12, 2018

Rinn Valley East N17-20-7C

Job Date: Sunday, August 12, 2018

Sincerely,

**Adam Covington**

## 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. iCem 3D Displacement results are used to understand how fluids intermix during a cement job. Simulation and 3D displacement results are not intended as and should not be used as a replacement for bond logs in determining top of cement. Current 3D model calculations are known to model more volume than the input volume for standard cases due to known calculation improvements required. For rotational cases, the modeled volume will be impacted by the same calculations impacting the standard cases, as well as additional constraints imposed to make the calculation time required operationally feasible. Therefore, until further notice, 3D displacement results should not be used for replacement of a bond log, or used as an identifier of top of cement. 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	Real-Time Job Summary .....	6
1.1	Job Event Log .....	6
2.0	Attachments.....	9
2.1	Rinn Valley East N17-20-7C-Custom Results.png .....	9
3.0	Custom Graphs.....	10
3.1	Custom Graph .....	10

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 369404		<b>Ship To #:</b> 3892501		<b>Quote #:</b>		<b>Sales Order #:</b> 0905049335	
<b>Customer:</b> EXTRACTION OIL & GAS -				<b>Customer Rep:</b> Shawn McIntyre			
<b>Well Name:</b> RINN VALLEY EAST			<b>Well #:</b> N17-20-7C		<b>API/UWI #:</b> 05-123-47320-00		
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> FIRESTONE		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO	
<b>Legal Description:</b> SW SE-17-2N-68W-786FSL-1774FEL							
<b>Contractor:</b>				<b>Rig/Platform Name/Num:</b> Cartel 11			
<b>Job BOM:</b> 7521 7521							
<b>Well Type:</b> HORIZONTAL OIL							
<b>Sales Person:</b> HALAMERICA\HX38199				<b>Srv Supervisor:</b> Adam Covington			
<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>	1615ft		<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>

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	1615	0	0
Open Hole Section			13.5				0	1616	0	0

Tools and Accessories									
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	9.625			1615		Top Plug	9.625	1	HES
Float Shoe	9.625					Bottom Plug	9.625		HES
Float Collar	9.625					SSR plug set	9.625		HES
Insert Float	9.625					Plug Container	9.625	1	HES
Stage Tool	9.625					Centralizers	9.625		HES

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	Red Dye Spacer	Red Dye Spacer	10	bbl	8.33			4	

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	SwiftCem	SWIFTCEM (TM) SYSTEM	550	sack	13.5	1.74		7	9.2	
9.20 Gal		<b>FRESH WATER</b>								
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	Fresh Water	Fresh Water	121	bbl	8.33			8		
Cement Left In Pipe		Amount	44 ft		Reason			Shoe Joint		
<b>Comment</b> TD-1616 13.5" OH, TP-1615 9 5/8" 36#, FC-1571. WATER-70 DEGREES, PH-7, CHLORIDES-0, SULFATES-0. 31 BBLS OF CEMENT TO SURFACE.										

## 1.0 Real-Time Job Summary

### 1.1 Job Event Log

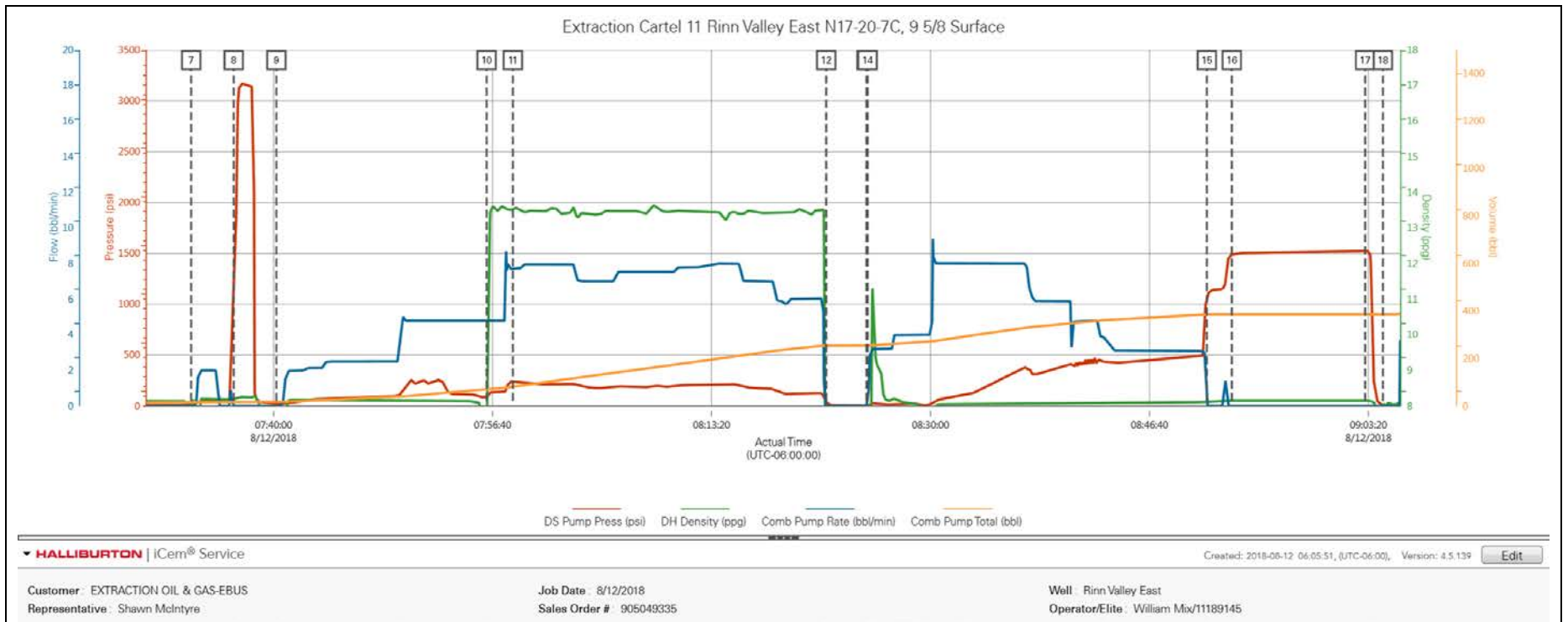
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press <i>(psi)</i>	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	Comb Pump Total <i>(bbl)</i>	Comments
Event	1	Call Out	Call Out	8/12/2018	00:30:00	USER					CALLED OUT BY SERVICE COORDINATOR FOR O/L AT 0500
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/12/2018	01:20:00	USER					HELD MEETING WITH ALL HES EMPLOYESS IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	3	Depart Shop for Location	Depart Shop for Location	8/12/2018	01:30:00	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	8/12/2018	05:30:00	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	8/12/2018	06:30:00	USER					DISCUSSED RIGGING UP HAZARDS AND PROCEDURE ACCORDING TO HMS.
Event	6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	8/12/2018	07:15:00	USER	8.00	8.14	0.00	15.00	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	8/12/2018	07:33:44	COM4	33.00	8.17	0.00	15.00	FILLED LINES WITH 3 BBLS OF FRESH WATER. 2 BPM, 50 PSI. FULL RETURNS.
Event	8	Test Lines	Test Lines	8/12/2018	07:36:58	COM4	968.00	8.20	0.00	18.10	PERFORMED A 3000 PSI PRESSURE TEST AFTER A 500 PSI KICKOUT TEST AND A 5TH GEAR STALL. NO LEAKS. HELD FOR A COUPLE MINUTES.
Event	9	Pump Spacer 1	Pump Spacer 1	8/12/2018	07:40:13	COM4	18.00	0.00	0.00	18.10	PUMPED 40 BBLS OF FRESH WATER SPACER AT 4 BPM, 250 PSI. FULL RETURNS.
Event	10	Pump Lead Cement	Pump Lead Cement	8/12/2018	07:56:13	COM4	88.00	7.30	4.80	70.50	PUMPED 170.4 BBLS (550 SKS) OF 13.5#, 1.74Y, 9.2wr. OF CEMENT. 7 BPM, 270 PSI. FULL RETURNS.
Event	11	Check Weight	Check Weight	8/12/2018	07:58:13	COM4	244.00	13.53	7.70	81.70	USED PRESSURIZED MUD SCALES TO WEIGH UP CEMENT. CEMENT WEIGHED UP AT 13.5#
Event	12	Shutdown	Shutdown	8/12/2018	08:22:04	COM4	38.00	1.06	0.00	255.00	SHUTDOWN TO WASH PUMPS AND LINES.
Event	13	Drop Top Plug	Drop Top Plug	8/12/2018	08:25:08	COM4	5.00	0.22	0.00	255.00	ADAM COVINGTON DROPPED HALLIBURTON 9 5/8" TOP PLUG. DRILLER WITNESSED.
Event	14	Pump Displacement	Pump Displacement	8/12/2018	08:25:13	COM4	5.00	0.22	0.00	255.00	PUMPED 121.4 BBLS OF FRESH WATER DISPLACEMENT. 8 BPM, 120 PSI. FULL RETURNS. HAD TO ADJUST RATE ACCORDING TO PRESSURE.
Event	15	Bump Plug	Bump Plug	8/12/2018	08:51:02	COM4	1072.00	8.14	0.00	386.10	BUMPED PLUG. FCP-540 PSI. HELD FOR A MINUTE.

Event	16	Pressure Up Well	Pressure Up Well	8/12/2018	08:52:56	COM4	1492.00	8.15	0.00	386.30	PERFORMED A 1500 PSI CASING TEST FOR 10 MINUTES. AS PER CO. MAN.
Event	17	Other	Other	8/12/2018	09:03:05	COM4	1525.00	8.15	0.00	386.30	RELEASED PRESSURE TO CHECK FLOATS. GOT 1 BBL BACK TO TRUCK INDICATING THAT THE FLOATS HELD.
Event	18	End Job	End Job	8/12/2018	09:04:26	COM4	11.00	8.08	0.00	386.30	TD-1616 13.5" OH, TP-1615 9 5/8" 36#, FC-1571. WATER-70 DEGREES, PH-7, CHLORIDES-0, SULFATES-0. 31 BBLs OF CEMENT TO SURFACE.
Event	19	Safety Meeting - Pre Rig-Down	Pre-Rig Down Safety Meeting	8/12/2018	09:15:00	USER					DISCUSSED RIGGING DOWN HAZARDS AND PROCEDURE ACCORDING TO HMS.
Event	20	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/12/2018	09:50:00	USER					HELD MEETING WITH ALL HES EMPLOYEES IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	21	Depart Location	Depart Location	8/12/2018	10:00:00	USER					PRE JOURNEY MANAGEMENT PRIOR TO DEPARTURE.

2.0 Attachments

2.1 Rinn Valley East N17-20-7C-Custom Results.png



3.0 Custom Graphs

3.1 Custom Graph

