

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS

For:

Date: Monday, July 23, 2018

Well: Alma West 26W-20-3

Job Date: Wednesday, July 18, 2018

Sincerely,

Halliburton

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.

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Alma West 26W-20-3** 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 15 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 #: 3791449	Quote #:	Sales Order #: 0904995838
Customer: EXTRACTION OIL & GAS -		Customer Rep:	
Well Name: ALMA WEST		Well #: 26W-20-3	API/UWI #: 05-001-10022-00
Field: WATTENBERG	City (SAP): IRONDALE	County/Parish: ADAMS	State: COLORADO
Legal Description: SW SE-25-1S-66W-287FSL-1904FEL			
Contractor: Shawn McIntyre		Rig/Platform Name/Num: Cartel 11	
Job BOM: 7521 7521			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX38199		Srvc Supervisor: Fernando Luna	

Job

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	1644ft		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	0	9.625	8.921	36	8 RD	J-55	0	1622	0	0
Open Hole Section			13.5				0	1626	0	0

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	9.625			1644	Top Plug	9.625		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		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					

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	570	sack	13.5	1.74		5	9.2
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
3	Fresh Water	Fresh Water	0	bbl	8.33				
Cement Left In Pipe									
Amount		43 ft			Reason			Shoe Joint	
Mix Water: pH ##		Mix Water Chloride: ## ppm			Mix Water Temperature: ## °F °C				
Cement Temperature: ## °F °C		Plug Displaced by: ## lb/gal kg/m3 XXXX			Disp. Temperature: ## °F °C				
Plug Bumped? Yes/No		Bump Pressure: #### psi MPa			Floats Held? Yes/No				
Cement Returns: ## bbl m3		Returns Density: ## lb/gal kg/m3			Returns Temperature: ## °F °C				
Comment									

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate <i>(bbl/min)</i>	DH Density <i>(ppg)</i>	PS Pump Press <i>(psi)</i>	Comments
Event	1	Arrive At Loc	Arrive At Loc	7/18/2018	00:00:00	USER				HES crew arrives on location, signs in with rig safety captain, conducts hazard hunt, spots equipment, conducts pre-rig up safety meeting, completes jsa, and verify volumes with co-rep
Event	2	Slow Rate	Water Test	7/18/2018	00:01:00	USER				Water test=pH: 7, Cl: <120, temp 66 degrees, Well Fluid density: 8.4 water temp: approx.. 86, calibrate pressurized mud scales via provided fresh water source @ 8.33ppg
Event	3	Slow Rate	Well Info	7/18/2018	00:02:00	USER				TD: 1626' , TP : 1630.58', SJ: 42.15', OH: 13 1/2", Casing: Size/Weight/: 9 5/8" 36# J-55, Previous Casing Shoe: n/a'
Event	4	Slow Rate	Job Info	7/18/2018	00:03:00	USER				Spacer 1: 30bbl fresh water TOS: approx.. surface' Spacer 2: 10bbls red dye water TOS: Surface Lead Cement: approx.. 170bbls/957cuft/550sks lead cement @ +/- 13.5 density/1.74 yield/9.2 waterTOC: approx... surface' , Displacement: 123.5bbls fresh water, CMT left in Pipe: 42.15' Reason:

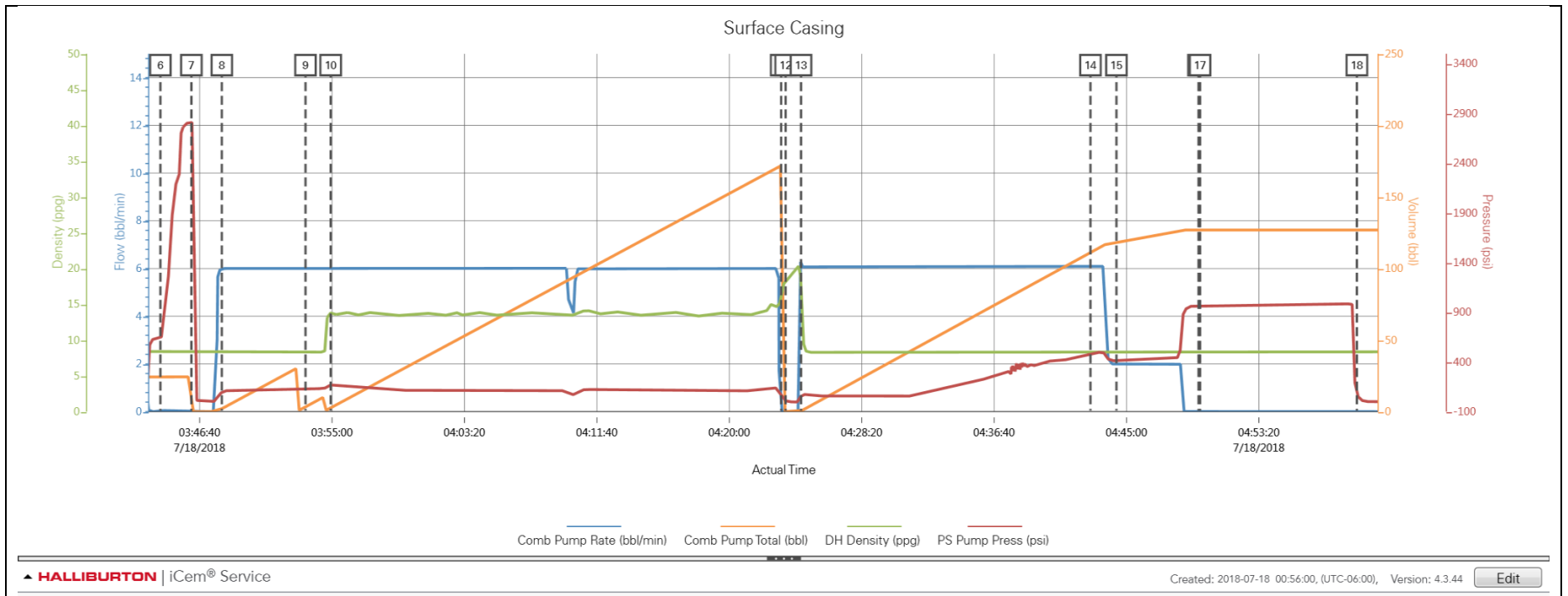
shoe joint

Event	5	Safety Meeting - Pre Job	Safety Meeting - Pre Job	7/18/2018	00:04:00	USER				
Event	6	Pressure Test	Pressure Test	7/18/2018	03:44:12	USER	0.00	8.35	644.00	Low pressure test surface lines @ 646psi
Event	7	Pressure Test	Pressure Test	7/18/2018	03:46:09	USER	0.00	8.40	2809.00	High pressure test surface lines @ 2809psi
Event	8	Pump Water	Pump Water	7/18/2018	03:48:04	USER	6.00	8.34	99.00	Pump 30bbls fresh water spacer
Event	9	Pump Spacer	Pump Red Dye Water	7/18/2018	03:53:20	USER	6.00	8.33	130.00	Pump 10bbls red dye water spacer
Event	10	Pump Cement	Pump Cement	7/18/2018	03:54:55	USER	6.00	13.71	159.00	Scale and pump approx. 170bbls/957cuft/550sks lead cement @ +/- 13.5 density/1.74 yield/9.2 water (Type I-II Cement Pre-Mix Dry 94 Poly-E-Flake Pre-Mix Dry 0.1250 Enhancer 923, CMT Pre-Mix Dry 2 Cal-Seal 60 Pre-Mix Dry 2 Econolite Pre-Mix Dry 1.25 Versaset Pre-Mix Dry 0.20
Event	11	Shutdown	Shutdown	7/18/2018	04:23:16	USER	0.00	16.70	54.00	
Event	12	Drop Top Plug	Drop Top Plug	7/18/2018	04:23:33	USER	0.00	18.36	8.00	HES service supervisor drops hwe top plug
Event	13	Pump Displacement	Pump Displacement	7/18/2018	04:24:31	USER	6.10	16.50	64.00	Pump 123bbls fresh water displacement
Event	14	Cement Returns to Surface	Cement Returns to Surface	7/18/2018	04:42:44	USER	6.10	8.31	486.00	Approx. 15bbls/84cuft/48sks cement returns to surface
Event	15	Slow Rate	Slow Rate	7/18/2018	04:44:22	USER	2.00	8.32	410.00	Slow rate to 2bpm

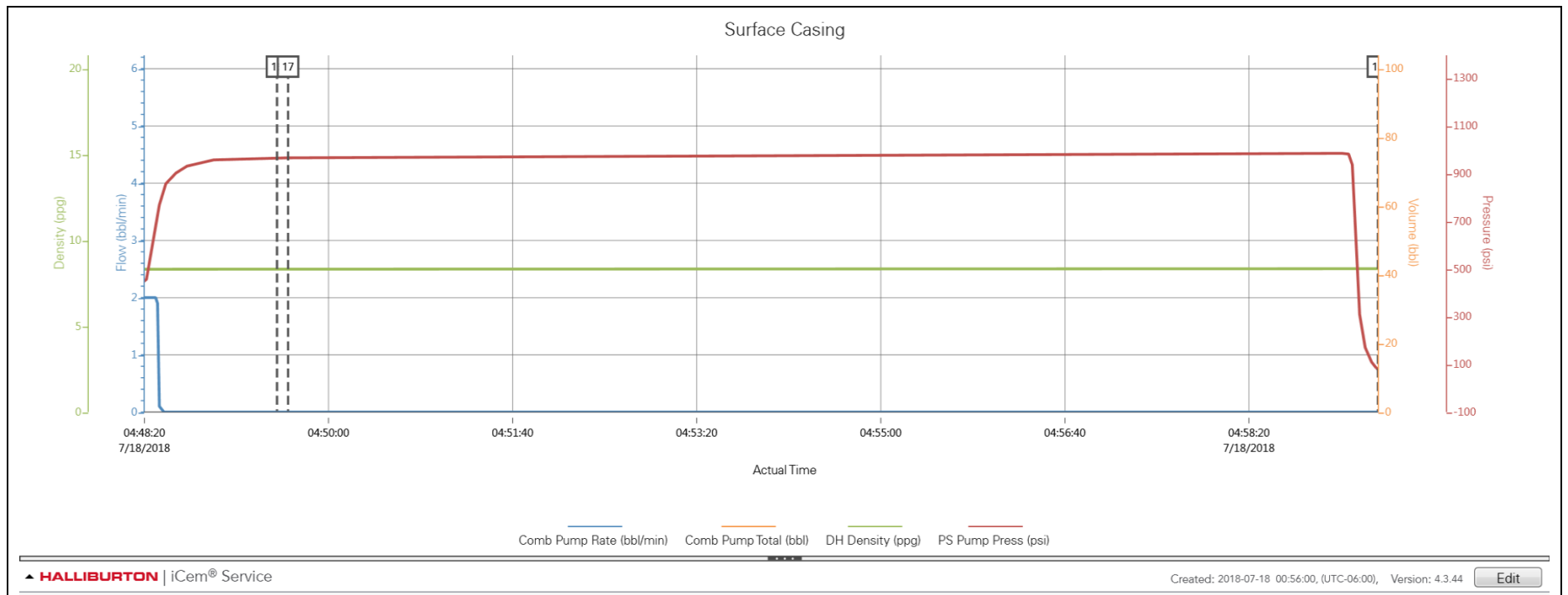
Event	16	Bump Plug	Bump Plug	7/18/2018	04:49:32	USER	0.00	8.34	965.00	Bump hwe top plug @ 966psi
Event	17	Pressure Test	Pressure Test	7/18/2018	04:49:38	USER	0.00	8.34	966.00	Pressure test casing @ 966psi for 10min
Event	18	Bleed Casing	Bleed Casing	7/18/2018	04:59:30	USER	0.00	8.35	77.00	Bleed off casing/surface lines and verify float collar holds (successful casing test)
Event	19	Depart Location	Depart Location	7/18/2018	08:00:00	USER				HES crew conducts pre-rig down safety meeting, signs out with rig safety captain and departs location
Event	20	Depart Location	Gratitude	7/18/2018	08:01:00	USER				Thank you for choosing Halliburton Energy Services

3.0 Attachments

3.1 Surface Casing.png



3.2 Casing Pressure Test.png



3.3 Well# 15NH-Custom Results.png

