HALLIBURTON

iCem® Service

EXTRACTION OIL & GAS

Date: Wednesday, July 11, 2018

Rinn Valley East N17-20-12N Surface

Job Date: Saturday, July 07, 2018

Sincerely,

Bryce Hinsch

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 bong 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 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Rinn Valley East N17-20-12N** 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 24 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 #:** 3888575	**Quote #:**	**Sales Order #:** 0904977070
Customer: EXTRACTION OIL & GAS -		**Customer Rep:**	
Well Name: RINN VALLEY EAST	**Well #:** N17-20-12N		**API/UWI #:** 05-123-47178-00
Field: WATTENBERG	**City (SAP):** FIRESTONE	**County/Parish:** WELD	**State:** COLORADO
Legal Description: SE SE-18-2N-68W-199FSL-505FEL			
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	1550ft		**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	1550	0	0
Open Hole Section			13.5				0	1550	0	0

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	9.625			1550		**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	550	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	122.5	bbl	8.33				

Cement Left In Pipe	**Amount**	44 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 (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	7/6/2018	12:00:00	USER				Crew callout
Event	2	Arrive At Loc	Arrive At Location	7/6/2018	15:00:00	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	3	Arrive At Loc	Water Test	7/6/2018	15:01:00	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	4	Arrive At Loc	Well Info	7/6/2018	15:02:00	USER				TD: 1619' , TP : 1623.5', SJ: 41.15', OH: 13 1/2", Casing: Size/Weight/: 9 5/8" 36# J-55, Previous Casing Shoe: n/a'
Event	5	Arrive At Loc	Job Info	7/6/2018	15:03:00	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: 122bbls fresh water, CMT

										left in Pipe: 41.15' Reason: shoe joint
Event	6	Pressure Test	Pressure Test	7/6/2018	20:36:49	USER	0.00	8.23	904.00	Low pressure test surface lines @ 904psi
Event	7	Pressure Test	Pressure Test	7/6/2018	20:39:27	USER	0.00	8.30	2551.00	High pressure test surface lines @2551psi
Event	8	Pump Spacer 1	Pump Spacer 1	7/6/2018	20:41:45	USER	2.70	8.19	12.00	Pump 30bbls fresh water spacer
Event	9	Pump Spacer 2	Pump Spacer 2	7/6/2018	20:46:53	USER	6.00	8.35	87.00	Pump 10bbls red dye water spacer
Event	10	Pump Lead Cement	Pump Lead Cement	7/6/2018	20:49:23	USER	6.00	13.38	101.00	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	7/6/2018	21:18:50	USER	0.00	14.44	57.00	
Event	12	Drop Top Plug	Drop Top Plug	7/6/2018	21:19:09	USER	0.00	21.07	3.00	HES service supervisor drops hwe top plug
Event	13	Pump Displacement	Pump Displacement	7/6/2018	21:19:54	USER	6.20	12.48	36.00	Pump approx. 122.5bbls fresh water displacement
Event	14	Cement Returns to Surface	Cement Returns to Surface	7/6/2018	21:36:47	USER	6.00	8.42	428.00	Approx. 24bbls/135cuft/78sks cement returns to surface
Event	15	Slow Rate	Slow Rate	7/6/2018	21:39:53	USER	2.00	8.41	390.00	Slow rate to 2bpm
Event	16	Bump Plug	Bump Plug	7/6/2018	21:42:33	USER	0.00	8.44	846.00	Bump hwe top plug @

										885psi
Event	17	Pressure Test	Pressure Test	7/6/2018	21:42:46	USER	0.00	8.44	875.00	Pressure test casing 10min @ 872psi
Event	18	Bleed Casing	Bleed Casing	7/6/2018	21:44:25	USER	0.00	8.45	890.00	Bleed off casing/surface lines and verify float collar holds (successful casing test)
Event	19	Depart Location	Depart Location	7/7/2018	01:00:00	USER				
Event	20	Depart Location	Gratitude	7/7/2018	01:01:00	USER				

3.0 Attachments

3.1 Extraction Rinn Valley N17-20-12N Surface Job Chart