

HALLIBURTON

iCem[®] Service

SRC ENERGY INC - EBUS

Golden Eagle 2N-1B-M Production

Sincerely,
Meghan Jacobs

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	Cementing Job Summary	4
1.1	Executive Summary	4
2.0	Real-Time Job Summary	8
2.1	Job Event Log	8
3.0	Attachments.....	11
3.1	Golden Eagle 2N-1B-M Production – Job Chart	11

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Golden Eagle 2N-1B-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 40 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 #: 359915		Ship To #: 3977059		Quote #:		Sales Order #: 0905775607				
Customer: SRC ENERGY INC-EBUS					Customer Rep: Andy Boshard					
Well Name: GOLDEN EAGLE			Well #: 2N-1B-M			API/UWI #:				
Field:		City (SAP): LUCERNE		County/Parish: WELD			State: COLORADO			
Legal Description:										
Contractor: PRECISION DRLG					Rig/Platform Name/Num: PRECISION 562					
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA/HB41307					Srvc Supervisor: Nicholas Cummins					
Job										
Formation Name										
Formation Depth (MD)		Top 1805			Bottom			15145		
Form Type					BHST					
Job depth MD		15125ft			Job Depth TVD		7119			
Water Depth					Wk Ht Above Floor		3'			
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	1805	0	1805
Casing		5.5	4.778	20	TXP-BTC	P110IC	0	15125	0	0
Open Hole Section			8.5				1805	15145	1805	7119
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5	1	WTHR	15125		Top Plug	5.5	1	WTHR	
Float Shoe	5.5					Bottom Plug	5.5	1	WTHR	
Wet Shoe Sub	5.5	1	WTHR	15022		SSR plug set	5.5			
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5	231		
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 Prime Cement Spacer	SBM FDP-C1337-18 CEMENT SPACER SYS	80	bbl	11.5	3.84	23.9	6	2796
2	ElastiCem	ELASTICEM (TM) SYSTEM	338	sack	13.2	1.57	7.54	8	4221
3	NeoCem	NeoCem TM	306	bbl	13.2	2.04	9.75	8	9975
4	MMCR Displacement	MMCR Displacement	20	bbl	8.34			8	
0.50 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
5	Water	Water	243	bbl	8.33			8	
1 gal/Mgal		CLA-WEB - BULK (101985043)							
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 ft			Reason			Wet Shoe	

Mix Water:	pH 7	Mix Water Chloride:	<400 ppm	Mix Water Temperature:	65°F
Cement Temperature:	63°F	Plug Displaced by:	8.33 lb/gal	Disp. Temperature:	65 °F
Plug Bumped?	Yes	Bump Pressure:	2568 psi	Floats Held?	Yes
Cement Returns:	40 bbl	Returns Density:		Returns Temperature:	

Comment
 80 bbls Spacer
 338 bbls Lead
 306 bbls Tail
 333 bbls of displacement with MMCR in the first 20 bbls then BE-3 and Clay Web throughout.MMCR in last 70 bbls
 Plug Bumped Floats Held 3 bbls back
 Estimated 80 bbls of Spacer to surface.
 Estimated 40 bbls Lead to surface.
 Estimated top of Tail 6,520'.

2.0 Real-Time Job Summary

2.1 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>	Comments
Event	1	Call Out	Call Out	6/19/2019	07:00:00	USER				The crew was called out on 6/19/19 at 0700. The customer requested HES on location at 1230 on 6/19/19.
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	6/19/2019	11:30:00	USER				The crew held a pre journey safety meeting discussing the route and potential hazards while driving The supervisor called in a journey. The crew departed service center.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	6/19/2019	12:31:00	USER				The crew arrived on location safely. The rig was still running casing. The supervisor met with the Company man and received numbers. TD 15,145', TP 15,125' 5 1/2" 20# HCP-110, WSS 15,022', PC 1,805' 9 5/8" 36# J-55, TVD 7,119', OH 8 1/2", Mud 9.8 ppg Cent 233.
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	6/19/2019	12:33:00	USER				Crew discussed all potential hazards on location.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	6/19/2019	12:45:00	USER				Crew held a safety meeting discussing the rig up procedure. Also all potential hazards associated with rigging up all HES equipment and lines.
Event	6	Rig-Up Equipment	Rig-Up Equipment	6/19/2019	12:55:00	USER				The crew rigged up all HES equipment and lines.
Event	7	Rig-Up Completed	Rig-Up Completed	6/19/2019	13:53:00	USER				Rig up completed, no one got hurt.
Event	8	Safety Meeting - Pre Job	Safety Meeting - Pre Job	6/19/2019	15:00:00	USER	43.00	8.17	0.00	The crew and all personal involved with cement job discussed all potential hazards associated with job. Followed by the job procedure to ensure everyone understood the plan of action
Event	9	Start Job	Start Job	6/19/2019	15:47:20	COM1	29.00	8.23	0.00	Started recording data from 11189145. We filled lines with 3 bbls of water at 3 bpm, pressure was at 270 psi.

Event	10	Test Lines	Test Lines	6/19/2019	15:50:33	COM1	99.00	8.05	0.00	We pressure tested all HES lines to 6,500 psi. The pressure test passed.
Event	11	Pump Spacer 1	Pump Spacer 1	6/19/2019	15:54:46	COM1	-2.00	8.11	0.00	We pumped 80 bbls of Spacer at 6 bpm. Pressure was at 400 psi. 11.5 ppg 3.84 yield 23.9 gal/sk. We used pressurized scales to verify density.
Event	12	Drop Bottom Plug	Drop Bottom Plug	6/19/2019	16:07:11	USER	422.00	11.61	6.50	Plug left container witnessed by company man.
Event	13	Pump Lead Cement	Pump Lead Cement	6/19/2019	16:07:29	COM1	459.00	11.85	6.50	Pumped 338 bbls (1209 sks) of Lead cement at 8 bpm, pressure was at 652 psi. 13.2 ppg 1.57 yield 7.54 gal/sk. We used pressurized scales to verify density.
Event	14	Pump Tail Cement	Pump Tail Cement	6/19/2019	16:52:11	COM1	446.00	13.33	8.20	Pumped 306 bbls (841 sks) of Tail cement at 8 bpm, pressure was at 830 psi. 13.2 ppg 2.04 yield 9.75 gal/sk. We used pressurized scales to verify density.
Event	15	Shutdown	Shutdown	6/19/2019	17:32:45	COM1	37.00	1.53	0.00	Shutdown blew air from rig floor to low wall. Pumped 15 bbls of fresh water to clean pumps and lines.
Event	16	Drop Top Plug	Drop Top Plug	6/19/2019	17:47:51	COM1	1.00	-0.05	0.00	Plug left container witnessed by company man.
Event	17	Pump Displacement	Pump Displacement	6/19/2019	17:47:56	COM1	1.00	-0.05	0.00	Pumped the calculated displacement of 333 bbls. With MMCR in the first 20 bbls. Then BE-3 and Clay Web throughout till the last 40 bbls. MMCR in the Last 70 bbls.
Event	18	Bump Plug	Bump Plug	6/19/2019	18:30:59	COM1	3196.00	8.25	0.00	Bumped plug. Final circulating pressure was 2,568 psi. We pressured up to 3,128 psi before shutting down.
Event	19	Shift Tool - Lower	Shift Tool - Lower	6/19/2019	18:33:36	COM1	3290.00	8.25	0.00	We pressured up to 5,643 psi to shift the wet shoe sub at 2 bpm. Then pumped a 6 bbl wet shoe at 5 bpm. Released pressure back to truck to check floats 3 bbls back. Floats held.
Event	20	End Job	End Job	6/19/2019	18:35:31	USER	4631.00	8.34	2.00	
Event	21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	6/19/2019	18:40:00	USER	0.00	8.18	0.00	Crew held a safety meeting discussing the rig down procedure. Also all potential hazards associated with rigging down all HES equipment and lines.
Event	22	Rig-Down Equipment	Rig-Down Equipment	6/19/2019	18:45:00	USER	2.00	8.18	0.00	The crew rigged down all HES equipment and lines.
Event	23	Rig-Down Completed	Rig-Down Completed	6/19/2019	19:26:00	USER				Rig down completed no one got hurt.

Event	24	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/19/2019	20:00:00	USER	The crew held a pre journey safety meeting discussing the route and potential hazards while driving The supervisor called in a journey.
Event	25	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	6/19/2019	20:10:00	USER	Nick Cummins and crew would like to thank you for your business, and choosing Halliburton Cement! Please feel free to call if you have any questions.

3.0 Attachments

3.1 Golden Eagle 2N-1B-M Production – Job Chart

