

HALLIBURTON

iCem® Service

NOBLE CHEVRON ENERGY INC-EBUS

Booth Federal DD06-785

Production Casing

Job Date: Saturday, September 03, 2022

Sincerely,

Steven Markovich

Legal Notice

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the Booth Federal DD06-785 production casing. 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 56 bbl. of spacer 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 #: 345242		Ship To #: 3932299		Quote #:		Sales Order #: 0908095411				
Customer: NOBLE CHEVRON ENERGY INC-EBUS					Customer Rep: Dave Nielson					
Well Name: BOOTH FEDERAL			Well #: DD06-785			API/UWI #: 05-123-49303-00				
Field: WATTENBERG		City (SAP): KERSEY		County/Parish: WELD			State: COLORADO			
Contractor: PATTERSON-UTI ENERGY				Rig/Platform Name/Num: PATTERSON 268						
Job BOM: 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX41066					Srvc Supervisor: Steven Markovich					
Job										
Job depth MD		17397ft			Job Depth TVD		6741ft			
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			0	1947	0	1947
Casing		5.5	4.892	17			0	17397	0	6741
Open Hole Section			8.5				1947	17411	1947	6741
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Float Shoe	5.5	1	Citadel	17397		Bottom Plug	5.5	4	Citadel	
Float Collar	5.5	1	Citadel	17390						

Fluid Data									
Stage #: 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	Spacer	Tuned Prime Spacer	120	bbl	11.5	3.88			4245
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	Cap Cement	EconoCem™	140	sack	13.2	1.58	7.99	6	1119
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	Lead Cement	ElastiCem™	726	sack	13.2	1.67	8.03	6	5830
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	Tail Cement	NeoCem™	1164	sack	13.2	2.04	9.79	6	11396
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	Displacement	Treated Fresh Water	403	bbl	8.33				16886
Cement Left In Pipe	Amount	Reason			Wet Shoe				
Mix Water:	pH 7	Mix Water Chloride:	0 ppm	Mix Water Temperature:	67 °F				
Plug Bumped?	Yes	Plug Displaced by:	8.33 lb/gal Treated Water	Disp. Temperature:	67 °F				
Cement Returns:	0 bbl.	Bump Pressure:	2212 psi	Floats Held?	Yes				
<p>Comment: Spacer to surface at 348bbbls away brining 56bbbls of spacer to surface. Pumped plug at calculated displacement. Final lift pressure was 2212psi. After 5 mins pressure was 2741psi. Released pressure to check floats. After 5bbbls back floats held. Pump 5.5bbbls back in at 2bbl/min to land and burst plug. Plug burst at 3426psi. Pumped 3bbl wet shoe to seat final plug. After holding pressure for 5 mins opened release line to check floats. After 5.5bbbls back floats held. Started 30 min flow check. After 30 min flow check. We got back an additional 0.5bbl. Estimated Top of Tail Cement 7035' Estimated Top of Lead Cement 1773', Estimated Top of Cap Cement 947'. 22,587 gallons (537.79bbbls) of mix water was used.</p>									

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq. No.	Activity	Date	Time	Comments
1	Check Floats	9/2/2022	16:00:00	Job called out with an on location time of 2200.
2	Pre-Convoy Safety Meeting	9/2/2022	17:00:00	JSA with HES crew on driving safety and route to rig.
3	Arrive at Location from Service Center	9/2/2022	17:30:00	Arrived on location, rig just rigged down the casing crew.
4	Pre-Rig Up Safety Meeting	9/2/2022	22:00:00	JSA and hazard hunt with HES crew.
5	Rig-Up Equipment	9/2/2022	22:15:00	Rig up HES lines and equipment.
6	Pre-Job Safety Meeting	9/3/2022	04:30:00	JSA with HES and rig crew on job safety and procedure.
7	Start Job	9/3/2022	05:00:00	TD 17411' TP 17396.9' FC 17389.9' 5 1/2" 17# Production Casing, 9 5/8" 36# Surface Casing set at 1947', TVD 6741'. Estimated Top of Tail Cement 7035', Estimated Top of Lead Cement 1773', Estimated Top of Cap Cement 947'. 22587 gallons or 537.79bbls to mix spacer and cement.
8	Drop Bottom Plug	9/3/2022	05:16:45	Plug loaded into casing by company rep.
9	Test Lines	9/3/2022	05:17:04	Set kick outs to 500psi and check low pressure kick outs. Then bring pressure up to 5000psi and hold.
10	Test Lines	9/3/2022	06:02:25	Test IBOP to 2000psi.
11	Check Weight	9/3/2022	06:09:12	Weight verified by pressurized scales.
12	Pump Spacer 1	9/3/2022	06:11:39	Pump 120bbls of 11.5ppg 3.88yield Tuned Prime Spacer. Pumped at 6.5bbl/min 700psi.
13	Check Weight	9/3/2022	06:26:46	Weight verified by pressurized scales.
14	Drop Bottom Plug	9/3/2022	06:42:36	Plug loaded into Casing by company rep.
15	Check Weight	9/3/2022	06:44:22	Weight verified by pressurized scales.
16	Pump Cap Cement	9/3/2022	06:47:14	Pump 39.39bbls (140sks) of 13.2ppg 1.58yield Cap Cement. Pumped at 5bbl/min 370psi.
17	Check Weight	9/3/2022	06:50:48	Weight verified by pressurized scales.
18	Check Weight	9/3/2022	06:52:34	Weight verified by pressurized scales.
19	Pump Lead Cement	9/3/2022	06:55:36	Pump 215.93bbls (726sks) of 13.2ppg 1.67yield Lead Cement. Pumped at 9bbl/min 900psi.

20	Check Weight	9/3/2022	06:57:49	Weight verified by pressurized scales.
21	Check Weight	9/3/2022	07:01:25	Weight verified by pressurized scales.
22	Pump Tail Cement	9/3/2022	07:26:50	Pump 422.91bbls (1164sks) of 13.2ppg 2.04yield Tail Cement. Pumped at 9bbl/min 1030psi.
23	Check Weight	9/3/2022	07:28:46	Weight verified by pressurized scales.
24	Check Weight	9/3/2022	07:32:23	Weight verified by pressurized scales.
25	Check Weight	9/3/2022	08:07:56	Weight verified by pressurized scales.
26	Shutdown	9/3/2022	08:31:21	Shutdown and clean pumps and lines.
27	Other	9/3/2022	08:45:25	Pump green dye till visible at wash up tank.
28	Drop Top Plug	9/3/2022	08:52:04	1500k plug put into the casing by company rep.
29	Pump Displacement	9/3/2022	08:52:07	Pump 3bbls of MMCR H2O.
30	Drop Top Plug	9/3/2022	08:57:40	3000k plug put into casing by company rep.
31	Pump Displacement	9/3/2022	08:57:58	Pump 403bbls of H2O. First 20bbls with MMCR then 383bbls of treaded H2O. Pumped at 10bbl/min and slowed rate with pressure increase. Spacer to surface at 348bbls away bringing 56bbls of spacer to surface.
32	Bump Plug	9/3/2022	10:02:56	Bumped plug at calculated displacement. Final lift pressure was 2212psi. Took pressure 500psi over and held for 5 mins.
33	Check Floats	9/3/2022	10:08:42	After 5mins checked floats. After 5bbls back floats held.
34	Other	9/3/2022	10:12:03	Pump 3bbls back in to land and burst plug.
35	Other	9/3/2022	10:17:27	Plug ruptured at 3611psi and held for 5 mins.
36	Other	9/3/2022	10:24:20	After 5 opened release line to check floats. After 5.5bbls back floats held.
37	Other	9/3/2022	10:25:00	Start 30 min no flow test.
38	Other	9/3/2022	10:55:00	After 30 mins we gain 0.5bbls more.
39	End Job	9/3/2022	11:12:34	Thank you, Steve Markovich and crew.
40	Safety Meeting	9/3/2022	11:20:00	Pre rig down safety meeting.
41	Rig-Down Equipment	9/3/2022	11:25:00	Rig down HES lines and equipment.
42	Crew Leave Location	9/3/2022	12:45:00	HES crew leave location.

3.0 Attachments

3.1 Job Chart

