

HALLIBURTON

iCem® Service

BISON OIL & GAS II LLC-EBUS

Grotheer 5-61 11B-2-3 Production

Job Date: Saturday, August 13, 2022

Sincerely,

Meghan Van Zyl

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 **Grotheer 5-61 11B-2-3** 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 56 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

Sold To #: 324725		Ship To #: 9063268		Quote #:		Sales Order #: 0908049519				
Customer: BISON OIL & GAS II LLC-EBUS				Customer Rep: Josh Johnson						
Well Name: GROTHEER 5-61			Well #: 11B-2-3			API/UWI #: 05-123-51440-00				
Field:		City (SAP): BRIGGSDALE		County/Parish: WELD			State: COLORADO			
Legal Description: 11-5N-61W										
Contractor: PATTERSON-UTI ENERGY				Rig/Platform Name/Num: PATTERSON 345						
Job BOM: 7523 7523										
Well Type: VERTICAL OIL										
Sales Person: HALAMERICA\HB47954				Srv Supervisor: Brandon Parker						
Job										
Formation Name										
Formation Depth (MD)		Top				Bottom				
Form Type				BHST						
Job depth MD		16253ft		Job Depth TVD		6140				
Water Depth				Wk Ht Above Floor		4				
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	8.835	36			0	1976	0	1976
Casing		5.5	4.892	17			0	16247	0	6140
Open Hole Section			8.5				1976	16253	1976	6140
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5					Top Plug	5.5	1	citadel	
Float Shoe	5.5	1	citadel	16247		Bottom Plug	5.5	1	citadel	
Float Collar	5.5	1	citadel	16242		SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5	270	scepter	
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	TUNED PRIME CEMENT SPACER SYS		50	bbl	11.5	3.74	23.65	6	1775

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	ElastiCem Cap Cement	SBM CEM ELASTICEM™ SYS	460	sack	13	1.66	8.3	9	3818
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	IsoBond Lead Cement	SBM CEM FDP-C1371 SYS	600	sack	13	1.55	7.22	9	4332
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	ElastiCem Tail Cement	SBM CEM ELASTICEM™ SYS	1510	sack	13.2	1.59	7.78	9	11747
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
5	MMCR Displacement	MMCR Displacement	377	bbl	8.33			10	15834
Comment 893bbbls mix water total used.									

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Date	Time	Dwnhole Density (ppg)	Cmb Pump Rate (bbl/min)	Pump A Pressure (psi)	Cmb Stg Total (bbl)	Comments
1	Call Out	8/13/2022	01:30:00					crew called out to 5.5" production casing with an on location time 07:30 for Civitas
2	Pre-Convoy Safety Meeting	8/13/2022	05:00:00					meeting with crew to discuss safety/hazards associated with traveling
3	Depart from Service Center or Other Site	8/13/2022	05:15:00					
4	Arrive at Location from Service Center	8/13/2022	07:00:00					met with Josh Kliesen/Josh Johnson with Crestone and went over job numbers, water sources, cmt volumes and iron placement
5	Assessment Of Location Safety Meeting	8/13/2022	07:01:11					hazard hunt, check location, bulk and water volumes, fuel in bins, water 82, ph 6, chlo 0, td 16253, tp 16247, sj 5', fc 16242, sp 1976, surface casing 9.625 36#, production casing 5.5" 17#, wf 9.1ppg, tvd 6140, Citadel top/bottom plugs and fe, cnt used 270.
6	Safety Meeting - Pre Rig-Up	8/13/2022	07:55:00					meeting with hes personnel to discuss safety/hazards associated with rigging up
7	Rig-Up Equipment	8/13/2022	08:00:00					rig up iron to red zone, water and bulk
8	Casing on Bottom	8/13/2022	08:50:00					rig landed casing . TRK casing company
9	Rig-Up Equipment	8/13/2022	08:58:00					stab plug container so rig could begin circulating

10	Circulate Well	8/13/2022	09:05:00					start circulation, pumped at 10.6bpm, 13040 strokes and 920psi
11	Pre-Job Safety Meeting	8/13/2022	10:38:00	8.27	0.00	-16.97	13.29	meeting with all personnel on location to discuss safety/hazards associated with job, also covered job procedures. all personnel signed jsa
12	Break Circulation	8/13/2022	10:58:00	8.27	0.00	-15.81	0.00	ko rig pumps, run hes hose to standpipe
13	Start Job	8/13/2022	11:09:44	8.27	0.00	-15.76	0.00	start recording real time data
14	Drop Bottom Plug	8/13/2022	11:11:43	6.47	0.00	-15.58	0.00	bottom plug pre loaded prior to starting cmt job. plug loaded by Josh Johnson with Crestone
15	Pump Water	8/13/2022	11:11:58	0.25	1.03	-14.34	0.02	pumped 3bbls at 3bpm and top psi 203
16	Test Lines	8/13/2022	11:13:57	8.35	0.23	180.92	0.04	test eko, 5th gear stall, high test 5257 held for 2 minutes final psi was 5266
17	Pump Spacer 1	8/13/2022	11:22:29	8.44	0.00	12.58	0.00	pumped 50bbls of tuned prime, 11.5ppg, 3.74 yield, 23.65 gal/sk pumped at 6bpm and average psi was 250. weight confirmed using pressurized mud scales. calculated all 50bbls of spacer to surface
18	Other	8/13/2022	11:23:49	10.80	0.16	63.79	2.89	shutdown communication issues between operator and bulk hand.
19	Resume Pumping	8/13/2022	11:25:23	11.27	0.80	46.79	2.90	online pumping spacer
20	Other	8/13/2022	11:27:04	12.47	1.94	100.31	5.97	shutdown mixing issue, had operator shutdown to resolve the issue and to scale spacer before pumping dh
21	Resume Pumping	8/13/2022	11:28:49	12.12	0.00	36.40	6.05	online pumping spacer
22	Pump Cement	8/13/2022	11:35:39	11.66	6.12	130.46	0.41	pumped 136bbls of cap cement, 460sks, 13ppg, 1.66 yield, 8.3 gal/sk pumped at 9bpm and average psi was 300. weight confirmed using pressurized mud scales. set time at 70bc

5:29hrs, MW 3818, calculated 52bbbls of cap cmt to surface,
83.8bbbls left inside surface casing

23	Pump Lead Cement	8/13/2022	11:56:13	12.97	7.19	198.08	177.49	pumped 165.6bbbls of latex cmt, 600sks, 13ppg, 1.55 yield, 7.22gal/sk pumped at 9bpm and average psi was 500. weight confirmed using pressurized mud scales. set time at 70bc 5:19hrs. MW 4332, calculated top of lead cmt at 1749.7ft.
24	Pump Tail Cement	8/13/2022	12:20:20	12.81	7.39	284.23	0.49	pumped 427.6bbbls of tail cmt, 1510sks, 13.2ppg, 1.59 yield, 7.78 gal/sk pumped at 9bpm and average psi was 400. weight confirmed using pressurized mud scales. set time at 70bc is 4:31hrs, MW 11748, calculated top of tail cmt at 5769.06ft
25	Other	8/13/2022	12:25:31	13.37	8.96	400.50	45.51	citadel bottom plug ruptured at 837psi
26	Shutdown	8/13/2022	13:25:37	12.54	7.46	263.23	518.30	done pumping cmt
27	Clean Lines	8/13/2022	13:30:59	12.80	0.82	-7.64	0.01	closed three valves on hes manifold to well. cleaned lines and pump to 4sided tank below rig stairs. pumped 23bbbls to clean lines and pump. pre load top plug
28	Other	8/13/2022	13:47:05	8.19	1.46	23.58	23.28	
29	Drop Top Plug	8/13/2022	13:49:12	8.21	0.00	-14.25	0.00	top plug pre loaded while hes was washing lines and pumps. loaded by Crestone company rep Josh Johnson and witnessed by HES supervisor
30	Pump Displacement	8/13/2022	13:49:22	8.18	0.84	-5.57	0.02	calculated disp. fc st at 16242 x .0232 =376.8bbbls
31	Slow Rate	8/13/2022	14:31:28	8.39	8.80	2726.03	369.73	slow rate 8.6bpm 2600 psi to 4bpm 2115psi at 356bbbls
32	Bump Plug	8/13/2022	14:34:38	8.39	0.00	2577.52	382.68	plug bumped at calculated volumes of 376.8bbbls, psi 2150 and ko pumps at 2750, psi climbed to 2850 and held solid
33	Check Floats	8/13/2022	14:36:39	8.42	0.00	2769.11	0.00	citadel floats held 3.5bbbls back to the pump truck
34	End Job	8/13/2022	14:37:53	8.27	0.00	-17.24	0.00	

35	Pump Water	8/13/2022	14:45:00	8.33	0.00	-14.66	13.87	pumped 40bbls at 8bpm through stack with 100lbs sugar
36	Spacer Returns to Surface	8/13/2022	14:50:00	8.22	8.27	176.06	23.88	rig took back 50bbls of tuned prime spacer
37	Cement Returns to Surface	8/13/2022	14:51:00	8.20	8.26	169.63	32.28	rig took back 56bbls of cap cmt
38	Pre-Rig Down Safety Meeting	8/13/2022	14:52:00	8.19	4.21	142.25	40.44	meeting to discuss safety/hazards associated with rigging down
39	Rig-Down Equipment	8/13/2022	14:53:00	8.18	4.83	36.48	44.47	
40	Depart Location for Service Center or Other Site	8/13/2022	16:30:00					
41	Other	8/13/2022	16:31:00					Thank You for Choosing Halliburton Cement. Parker and Crew. (970)397-4969

3.0 Attachments

3.1 Real Time iCem Job Chart

