HALLIBURTON

iCem® Service

BISON OIL AND GAS LLC

Date: Monday, January 15, 2018

Castor 8-59 19-24-16 Production

Job Date: Wednesday, December 06, 2017

Sincerely,

Bryce Hinsch

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Castor 8-59 19-24-16** 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 15 bbls of spacer were returned to surface.

Lead was cut short due to mixing issues. Lead top estimated at 1,357'. Chart was not able to record the last portion of displacement.

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 #: 380957	**Ship To #:** 3837895	**Quote #:** 0022362322	**Sales Order #:** 0904461246
Customer: BISON OIL & GAS II LLC		**Customer Rep:**	
Well Name: CASTOR 8-59	**Well #:** 19-24-16	**API/UWI #:** 05-123-45855-00	
Field: WILDCAT	**City (SAP):** RAYMER	**County/Parish:** WELD	**State:** COLORADO
Legal Description: NE SE-19-8N-59W-1421FSL-410FEL			
Contractor: ENSIGN DRLG	**Rig/Platform Name/Num:** ENSIGN 160		
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\H139013	**Srvc Supervisor:**		

Job

Formation Name				
Formation Depth (MD)	**Top**		**Bottom**	
Form Type			**BHST**	
Job depth MD	14000ft		**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		9.625	8.921	36			0	1925	0	1925
Casing		5.5	4.67	23			0	13422	0	6131
Open Hole Section			8.5				1925	13451	0	6131

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe						**Top Plug**	5.5	1	HES
Float Shoe	5.5			13422		**Bottom Plug**	5.5	2	HES
Float Collar	5.5			13329		**SSR plug set**			
Insert Float						**Plug Container**			
Stage Tool						**Centralizers**			

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	12.0 lb/gal Tuned Spacer III	Tuned Spacer III	80	bbl	12	3.16		4	

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	13.2# ElastiCemLead	ELASTICEM (TM) SYSTEM	230	sack	13.2	1.57		3	7.53
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	13.2# NeoCem Tail	NeoCem TM	862	sack	13.2	2.04		6	9.75
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	Displacment	Displacment	295.6	bbl	9.25			10	

Cement Left In Pipe	**Amount**	92 ft	Reason	**Shoe Joint**

Comment There were full returns throughout the job. Got 15 bbls. of spacer to surface. There was no cement to surface. Estimated TOL is 1,357' and TOT is 6,895. Floats held. Got 5 bbls. of fluid back to truck. Customer decided to cut lead cement 57 bbls. early due to mixing issues. Bumped the plug 295 bbls. away at 2,200 psi. Finale pressure was 2,700 psi. Held pressure for a 5 minute casing test.

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)	DS Pump Press (psi)	DH Density (ppg)	Comments
Event	1	Call Out	Call Out	12/5/2017	18:30:00	USER				Crew was called out at 18:30 for an on location time of 01:00.
Event	2	Depart Location Safety Meeting	Depart Location Safety Meeting	12/5/2017	23:00:00	USER				Crew held a pre journey safety meeting and JSA.
Event	3	Depart Shop for Location	Depart Shop for Location	12/5/2017	23:10:00	USER				Started journey management with dispatch and left location.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	12/6/2017	01:15:00	USER				Crew performed a site assessment and hazard hunt on location. Checked in with the customer and discussed the job procedures, rig up and well bore schematics to calculate the job. The rig was making up the liner hanger.
Event	5	Other	Other	12/6/2017	01:25:00	USER				W
Event	6	Start Job	Start Job	12/6/2017	05:05:21	COM4	0.00	18.00	0.00	Pumped 3 bbls. of fresh water to fill lines and establish circulation.
Event	7	Test Lines	Test Lines	12/6/2017	05:07:59	COM4	0.00	101.00	0.00	Pressure tested lines to 4,500 psi. with a 500 psi. kickout.
Event	8	Drop Bottom Plug	Drop Bottom Plug	12/6/2017	05:35:04	USER	0.00	348.00	0.00	Dropped the bottom plug wittnes by the customer.
Event	9	Pump Spacer 1	Pump Spacer 1	12/6/2017	05:37:03	COM4	0.00	348.00	0.00	Pumped 80 bbls. of Tuned Spacer III with surfactants mixed at 12 ppg.,Yield: 3.16

										ft3/sks, 19.3 gal/sks. Density was verified by pressurized scales.
Event	10	Drop Bottom Plug	Drop Bottom Plug	12/6/2017	06:09:41	COM4	0.00	347.00	12.24	Dropped the bottom plug wittnessed by the customer.
Event	11	Pump Lead Cement	Pump Lead Cement	12/6/2017	06:20:28	COM4	0.00	360.00	9.43	Pumped 230 bbls. (822.4 sks.) of Elasticem mixed at 13.2 ppg.,Yield: 1.57 ft3/sks, 7.53 gal/sks. Density was verified by pressurized scales. 50 bbls. into lead cement, the batch mixer choked off the flow of water causing mixing problems. We were able to maintain 60 gpm. for 230 bbls. At 230 bbls the flow was significantly reduced to under 30 gpm. It was decided at that time to switch to tail 57 bbls. early.
Event	12	Pump Tail Cement	Pump Tail Cement	12/6/2017	08:50:08	COM4	1.70	462.00	13.41	Pumped 862 bbls. of Neocem mixed at 13.2 ppg. Yeild: 2.04 ft3/sk, 9.75 gal/sk. Density was verified by pressurized scales. while pumping tail cement the flow of water returned to normal operating pressuer and rate of 215 gpm. The flex had a short in a power wire and the ADC system was inoperable at that time. Mixed by hand and verified density by pressurized scales. Rate was an average of 6 bpm. for the remander of tail.
Event	13	Shutdown	Shutdown	12/6/2017	09:53:35	COM4	0.00	500.00	13.87	Shutdown and loaded the top plug wittnesed by the

										company man.
Event	14	Pump Displacement	Pump Displacement	12/6/2017	10:15:00	USER	10.30	1556.00	8.52	Pumped 295 bbls. of fresh water for displacment with MMCR in the first 20 bbls. Displacment did not chart due to the flex shorting out.
Event	15	Bump Plug	Bump Plug	12/6/2017	11:00:00	USER				Bumped the plug 500 psi. over 2,200 psi. Finale pressure was 2,700 psi. Got 15 bbls. of spacer to surface. Estimated TOL is 1,357' and TOT is 6,895'
Event	16	Check Floats	Check Floats	12/6/2017	11:05:00	USER				Bled off pressure to check floats. Flaots held. Got 5 bbls. of fluid back to the trcuk.
Event	17	End Job	End Job	12/6/2017	11:15:00	USER				Washed pumps and lines until clean.
Event	18	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	12/6/2017	11:20:00	USER				Halliburton cement crew held a pre rig down safety meeting and JSA.
Event	19	Rig-Down Equipment	Rig-Down Equipment	12/6/2017	11:30:00	USER				Rigged down all lines, hoses and equipment.
Event	20	Depart Location Safety Meeting	Depart Location Safety Meeting	12/6/2017	14:30:00	USER				Held a pre journey safety meeting with the crew.
Event	21	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	12/6/2017	15:00:00	USER				Started journey management with dispatch and left location.

3.0 Attachments

3.1 Bison Oil & Gas II Castor 8-59 19-24-16 Production Job Chart