

# HALLIBURTON

iCem<sup>®</sup> Service

## **BISON OIL & GAS II LLC**

**Ross 8-60 18-7-5 Surface**

Job Date: Monday, May 16, 2022

Sincerely,

**Meghan Van Zyl**

## Legal Notice

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### Disclaimer:

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Ross 8-60 18-7-5** 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 20 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**

<b>Sold To #:</b> 324725		<b>Ship To #:</b> 324725		<b>Quote #:</b>		<b>Sales Order #:</b> 0907866361				
<b>Customer:</b> BISON OIL & GAS II LLC						<b>Customer Rep:</b> Kenny Graham				
<b>Well Name:</b> Ross 8-60				<b>Well #:</b> 18-7-5		<b>API/UWI #:</b>				
<b>Field:</b>		<b>City (SAP):</b> keota		<b>County/Parish:</b> Weld			<b>State:</b> COLORADO			
<b>Legal Description:</b>										
<b>Contractor:</b> ENSIGN DRLG						<b>Rig/Platform Name/Num:</b> ENSIGN 140				
<b>Job BOM:</b> 7521 7521										
<b>Well Type:</b> OIL & GAS WELL										
<b>Sales Person:</b> HALAMERICA\HX41066						<b>Srvc Supervisor:</b> Nicholas Roles				
<b>Job</b>										
<b>Formation Name</b>										
<b>Formation Depth (MD)</b>		<b>Top</b>				<b>Bottom</b>				
<b>Form Type</b>				<b>BHST</b>						
<b>Job depth MD</b>		1955ft		<b>Job Depth TVD</b>						
<b>Water Depth</b>				<b>Wk Ht Above Floor</b>						
<b>Perforation Depth (MD)</b>		<b>From</b>		<b>To</b>						
<b>Well Data</b>										
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>
Open Hole Section			13.5				0	1955		1955
Casing		9.625	8.921	36			0	1955		1955
<b>Tools and Accessories</b>										
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	
Guide Shoe	9.625					Top Plug	9.625	1		
Float Shoe	9.625			1955		Bottom Plug	9.625	1		
Float Collar	9.625			1911		SSR plug set	9.625		HES	
Insert Float	9.625					Plug Container	9.625	1	HES	
Stage Tool	9.625					Centralizers	9.625		HES	
<b>Fluid Data</b>										
<b>Stage/Plug #: 1</b>										
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft<sup>3</sup>/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>	
1	Water with dye	Water with dye	10	bbl	8.34		420	6		
<b>Fluid Data</b>										
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft<sup>3</sup>/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>	
2	SwiftCem	SBM SWIFTCCEM CEMENT SYSTEM CEM	600	sack	13.5	1.75	5538	8	9.23	

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	Displacement	Displacement	148	bbl	8.34		6258	10		
Cement Left In Pipe		Amount	44 ft		Reason			Shoe Joint		
Mix Water:		pH 7	Mix Water Chloride:			>3000 ppm		Mix Water Temperature:		65 °F °C
Cement Temperature:		## °F °C	Plug Displaced by:			8.33 lb/gal		Disp. Temperature:		65 °F °C
Plug Bumped?		Yes	Bump Pressure:			1200 psi MPa		Floats Held?		Yes
Cement Returns:		20 bbl m3	Returns Density:			## lb/gal kg/m3		Returns Temperature:		## °F °C
Comment Est. 20bbls cement to surface. 290bbls mix water total used.										

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Seq No.	Activity	Graph Label	Date	Time	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
1	Arrive at Location from Service Center	Arrive at Location from Service Center	5/15/2022	09:00:00					Upon arrival to location, signed in with onsite safety personnel. Met with company man and discussed job specific requirements and specifications.
2	Call Out	Call Out	5/15/2022	09:00:00					Called out by service coordinator for OL time of 1500.
3	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	5/15/2022	16:00:00					Held pre rig up JSA for hazards, hazard hunt with crew, and discussed plan for spotting equipment and rigging up lines for job. Discussed muster points and closest emergency location as well as coordinates.
4	Rig-Up Equipment	Rig-Up Equipment	5/15/2022	16:30:00					Begin rig up with crew.
5	Rig-Up Completed	Rig-Up Completed	5/15/2022	17:00:00					Complete rig up for job to nearest point before red zone.
6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	5/15/2022	17:30:00	7.89	0.00	-17.00	0.00	Held job specific hazards as well as confirming job procedure with co man and rest of crew associated with job.
7	Other	Other	5/15/2022	17:45:00	7.90	0.00	-16.00	0.00	Mix water test results- PH-7, Chlo-0, Temp-65F.
8	Start Job	Start Job	5/15/2022	18:13:32	7.98	0.00	-7.00	16.80	TD-1955' 13.5", TP-1955' 9.625" 36#, FC-1911', OH-13.5", Mud-8.8#
9	Test Lines	Test Lines	5/15/2022	18:16:13	8.36	0.00	10.00	3.10	Pumped 3bbls to fill lines, established circulation, shutdown and closed manifold, performed 500psi k/o function test, continued with 5th gear stall at 1850psi

									proceeded to bring pressure to 3500psi. Pressure stabilized and held with no leaks.
10	Pump Spacer 1	Pump Spacer 1	5/15/2022	18:19:14	8.37	0.00	16.00	3.20	Pumped 10bbls fresh water with 1/3btl green Dye at 6bpm 220psi.
11	Drop Bottom Plug	Drop Bottom Plug	5/15/2022	18:23:52	8.36	0.00	28.00	10.00	Dropped by HES supervisor, witnessed by company man.
12	Pump Cement	Pump Cement	5/15/2022	18:23:56	8.36	0.00	28.00	10.00	Pumped 600sks or 187bbls 13.5# 1.75y 9.23g/s Swiftcem at 8bpm 310psi. Mix Water=5737gal.
13	Check Weight	Check Weight	5/15/2022	18:26:52	8.38	0.00	35.00	0.00	Weight verified with pressurized mud scales.
14	Check Weight	Check Weight	5/15/2022	18:33:17	13.54	7.50	663.00	38.10	Weight verified with pressurized mud scales.
15	Shutdown	Shutdown	5/15/2022	18:51:34	14.04	0.00	133.00	187.40	
16	Drop Top Plug	Drop Top Plug	5/15/2022	18:52:53	14.61	0.00	3.00	187.40	Dropped by HES supervisor, witnessed by company man.
17	Pump Displacement	Pump Displacement	5/15/2022	18:52:55	14.61	0.00	3.00	0.00	Pumped 148bbls of fresh water at 8bpm 550psi.
18	Bump Plug	Bump Plug	5/15/2022	19:14:34					Slowed down to 4bpm at 130bbls away, final circulating pressure - 700psi, Bumped at 1200psi.
19	Check Floats	Check Floats	5/15/2022	19:15:51					Released pressure to check floats, got 1bbls back. Floats held.
20	End Job	End Job	5/15/2022	19:18:00					Est. 20bbls cement to surface.
21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	5/15/2022	19:20:00					Held safety meeting with crew prior to rig down, discussed possibility of trapped pressure, swing radius, slips trips and falls, pinch points and risks associated with rig down.
22	Rig Down Lines	Rig Down Lines	5/15/2022	19:30:00					Begin rig down
23	Rig-Down Completed	Rig-Down Completed	5/15/2022	20:00:00					Rig down complete with no injuries, spills or damage to equipment.





3.0 Attachments

3.1 Real Time iCem Job Chart

