

# HALLIBURTON

iCem® Service

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

**Ross 8-60 18-7-4 Surface**

Job Date: Sunday, May 15, 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 18-7-4** 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 25 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> 0907858304	
<b>Customer:</b> BISON OIL & GAS II LLC				<b>Customer Rep:</b> Kenny Graham			
<b>Well Name:</b> Ross 8-60			<b>Well #:</b> 18-7-4		<b>API/UWI #:</b> 05-123-51395		
<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			

**Job**

<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>	1968ft			<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>		

**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
Open Hole Section			13.5				0	1968	0	1968
Casing		9.625	8.921	36			0	1968	0	1968

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	9.625				Top Plug	9.625	1	
Float Shoe	9.625			1968	Bottom Plug	9.625	1	
Float Collar	9.625			1924	SSR plug set	9.625		HES
Insert Float	9.625				Plug Container	9.625	1	HES
Stage Tool	9.625				Centralizers	9.625		HES

**Fluid Data**

<b>Stage/Plug #: 1</b>										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Water with dye	Water with dye	10	bbl	8.34		420	6		

  

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
2	SwiftCem	SBM SWIFTCEM 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 ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
3	Displacement	Displacement	149	bbl	8.34		6258	8		
Cement Left In Pipe		Amount	44 ft		Reason			Shoe Joint		
Mix Water:		pH 7	<b>Mix Water Chloride:</b>		>3000 ppm		Mix Water Temperature:		65 °F °C	
Cement Temperature:		## °F °C	<b>Plug Displaced by:</b>		8.33 lb/gal		Disp. Temperature:		65 °F °C	
Plug Bumped?		Yes	<b>Bump Pressure:</b>		1150 psi MPa		Floats Held?		Yes	
Cement Returns:		25 bbl m3	<b>Returns Density:</b>		## lb/gal kg/m3		Returns Temperature:		## °F °C	
<b>Comment</b> Est. 25bbls 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	Call Out	Call Out	5/14/2022	20:00:00					Called out by service coordinator for OL time of 2330.
2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	5/14/2022	22:15:00					Discuss all hazards associated with journey, directions to destination, complete journey management if needed, and ensure all convoy is fit for duty.
3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	5/14/2022	22:30:00					Depart from service center or other job site.
4	Arrive at Location from Service Center	Arrive at Location from Service Center	5/15/2022	00:00:00					Upon arrival to location, signed in with onsite safety personnel. Met with company man and discussed job specific requirements and specifications.
5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	5/15/2022	00:15:00					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.
6	Rig-Up Equipment	Rig-Up Equipment	5/15/2022	00:30:00					Begin rig up with crew.
7	Rig-Up Completed	Rig-Up Completed	5/15/2022	01:30:00	0.00	0.00	16.00	0.00	Complete rig up for job to nearest point before red zone.
8	Other	Other	5/15/2022	02:00:00	8.00	0.00	30.00	13.10	Mix water test results- PH-7, Chlo-0, Temp-65F.

9	Safety Meeting - Pre Job	Safety Meeting - Pre Job	5/15/2022	02:30:00	7.99	0.00	19.00	13.10	Held job specific hazards as well as confirming job procedure with co man and rest of crew associated with job.
10	Start Job	Start Job	5/15/2022	02:35:08	5.57	0.00	46.00	0.00	TD-1968' 13.5", TP-1968' 9.625" 36#, FC-1924', OH-13.5", Mud-8.8#
11	Test Lines	Test Lines	5/15/2022	02:36:56	8.33	0.00	195.00	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.
12	Pump Spacer 1	Pump Spacer 1	5/15/2022	02:40:26	8.32	0.00	129.00	3.20	Pumped 10bbls fresh water with 1/3btl green Dye at 4.5bpm 120psi.
13	Pump Cement	Pump Cement	5/15/2022	02:44:54	8.33	0.00	152.00	0.00	Pumped 600sks or 187bbls 13.5# 1.75y 9.23g/s Swiftcem at 8bpm 310psi. Mix Water=5538gal.
14	Check Weight	Check Weight	5/15/2022	02:50:17	13.32	2.60	241.00	6.30	Weight verified with pressurized mud scales.
15	Check Weight	Check Weight	5/15/2022	02:59:17	13.52	8.20	776.00	48.30	Weight verified with pressurized mud scales.
16	Shutdown	Shutdown	5/15/2022	03:19:24	14.18	0.00	131.00	202.10	
17	Drop Top Plug	Drop Top Plug	5/15/2022	03:20:34	15.94	0.00	-18.00	202.10	Dropped by HES supervisor, witnessed by company man.
18	Pump Displacement	Pump Displacement	5/15/2022	03:20:36	15.94	0.00	-18.00	0.00	Pumped 149bbls of fresh water at 8bpm 550psi.
19	Bump Plug	Bump Plug	5/15/2022	03:45:23	8.37	0.00	1095.00	153.00	Slowed down to 4bpm at 130bbls away, final circulating pressure - 550psi, Bumped at 1150psi.
20	Other	Other	5/15/2022	03:45:45	8.37	0.00	1096.00	153.00	Released pressure to check floats, got 0.5 bbls back. Floats held.
21	End Job	End Job	5/15/2022	03:47:35	8.37	0.00	-5.00	153.00	Est. 25bbls cement to surface.

22	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	5/15/2022	03:50:00	8.37	0.00	-5.00	0.00	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.
23	Rig Down Lines	Rig Down Lines	5/15/2022	04:00:00	8.37	10.60	258.00	19.80	Begin rig down
24	Rig-Down Completed	Rig-Down Completed	5/15/2022	05:00:00					Rig down complete with no injuries, spills or damage to equipment.

3.0 Attachments

3.1 Real Time iCem Job Chart

