

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS**

Date: Monday, April 02, 2018

### **WS-Sunrise 4-5-5 Production**

Job Date: Wednesday, March 07, 2018

Sincerely,

**Bryce Hinsch**

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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 **WS-Sunrise 4-5-5** 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 53 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]**

*The Road to Excellence Starts with Safety*

Sold To #: 369404	Ship To #: 3847521	Quote #:	Sales Order #: 0904692717
Customer: EXTRACTION OIL & GAS		Customer Rep: HANS CARY	
Well Name: WS-SUNRISE		Well #: 4-5-5	API/UWI #: 05-123-46049-00
Field: WATTENBERG	City (SAP): GREELEY	County/Parish: WELD	State: COLORADO
Legal Description: SW SE-32-6N-65W-251FSL-1668FEL			
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 346	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX38199		Srvc Supervisor: Vitali Neverdasov	

**Job**

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	11799ft	Job Depth TVD	6968
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	0	9.625	8.921	36		J-55	0	1591	0	1591
Casing	0	5.5	4.778	20		P-110	0	11799	0	6968
Open Hole Section			8.5				1591	11819	1591	6968

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5				Top Plug	5.5	1	KLX
Float Shoe	5.5	1	KLX	11799	Bottom Plug	5.5		
Float Collar	5.5	1	KLX	11795	SSR plug set	5.5		
Insert Float	5.5				Plug Container	5.5	1	HES
Stage Tool	5.5				Centralizers	5.5		HES

**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	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	50	bbl	11.5	3.73	23.4	4		
149.34 lbm/bbl		<b>BARITE, BULK (100003681)</b>								
35 gal/bbl		<b>FRESH WATER</b>								

0.50 gal/bbl		<b>MUSOL A, 330 GAL TOTE - (790828)</b>									
0.50 gal/bbl		<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</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 ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>		
2	ElastiCem	ELASTICEM (TM) SYSTEM	1935	sack	13.2	1.57		8	7.53		
7.53 Gal		<b>FRESH WATER</b>									
0.45 %		<b>SCR-100 (100003749)</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 ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>		
3	Displacement	Displacement	261	bbl	8.33			8			
Cement Left In Pipe		<b>Amount</b>	ft	<b>Reason</b>				<b>WET SHOE</b>			
<b>Comment : 53 BBLs OF CEMENT BACK TO SURFACE. TOTAL DISPLACEMENT 261 BBLs.</b>											

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	PS Pump Press <i>(psi)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	Call Out	3/7/2018	02:00:00	USER					ON LOCATION @ 07:30
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	3/7/2018	05:15:00	USER					DEPART YARD SAFETY MEETING
Event	3	Depart Shop for Location	Depart Shop for Location	3/7/2018	05:30:00	USER					CALLED JORNEY
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	3/7/2018	06:25:00	USER					32 MILES. DISCUSS NUMBERS AND JOB PROCEDURE WITH CUSTOMER. RIG IS RUNNING CASING. CANNOT SPOT TRUCKS/ CASING RACKS ON THE WAY.
Event	5	Other	Other	3/7/2018	08:15:00	USER					SPOT TRUCKS
Event	6	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	3/7/2018	08:20:00	USER					RIG UP JSA
Event	7	Rig-up Lines	Rig-up Lines	3/7/2018	08:25:00	USER					RIG UP ALL SURFACE LINES TO THE BUFFER ZONE
Event	8	Casing on Bottom	Casing on Bottom	3/7/2018	09:48:00	USER					CASING LANDED
Event	9	Other	Other	3/7/2018	10:00:00	USER					RIG UP FLOOR FOR RIG TO CIRCULATE
Event	10	Safety Meeting - Pre Job	Safety Meeting - Pre Job	3/7/2018	10:44:00	USER	8.16	0.00	14.00	0.0	PRE JOB SAFETY MEETING WITH ALL PERSONEL INVOLVED
Event	11	Start Job	Start Job	3/7/2018	11:05:12	COM4	8.15	0.00	15.00	0.0	
Event	12	Test Lines	Test Lines	3/7/2018	11:12:00	USER	8.29	0.00	4910.00	2.4	LOAD LINE AND PRESSURE TEST TO 4970 PSI

Event	13	Pump Spacer	Pump Spacer	3/7/2018	11:17:00	USER	11.43	3.80	270.00	2.0	BATCH/ WEIGH/ PUMP 50 BBLs OF TUNED III SPACER WITH SURFACTANS
Event	14	Pump Cement	Pump Cement	3/7/2018	11:28:00	USER	12.01	6.00	290.00	44.4	BATCH/ WEIGH/ PUMP 1935 SKS (541.1 BBLs) OF ELASTICEM @ 13.2 PPG.
Event	15	Shutdown	Shutdown	3/7/2018	12:40:01	USER	12.83	0.00	29.00	543.4	WASH PUMPS AND LINES
Event	16	Drop Top Plug	Drop Top Plug	3/7/2018	12:54:00	USER	8.13	0.00	15.00	0.0	
Event	17	Pump Displacement	Pump Displacement	3/7/2018	12:56:00	USER	8.15	10.10	307.00	5.9	FRESH WATER DISPLACEMENT
Event	18	Slow Rate	Slow Rate	3/7/2018	13:22:00	USER	8.19	5.00	2360.00	236.3	SLOW RATE TO 5 BPM
Event	19	Bump Plug	Bump Plug	3/7/2018	13:27:00	USER	8.20	0.00	2896.00	257.1	BUMP PLUG 500 OVER FINAL CIRCULATING PRESSURE OF 2340 PSI @ 2784 PSI
Event	20	Other	Other	3/7/2018	13:29:00	USER	8.18	4.80	2415.00	259.5	BURST DISC @ 3740 PSI AND PUMP 5 BBLs WET SHOE
Event	21	Shutdown	Shutdown	3/7/2018	13:30:00	USER	8.16	0.00	1945.00	0.0	
Event	22	Check Floats	Check Floats	3/7/2018	13:31:00	USER	7.78	0.00	56.00	0.0	FLOATS HOLD
Event	23	End Job	End Job	3/7/2018	13:34:00	COM4	8.11	0.00	19.00	0.0	
Event	24	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	3/7/2018	13:40:00	USER					RIG DOWN SAFETY MEETING

3.0 Attachments

3.1 Extraction WS-Sunrise 4-5-5 Production Job Chart

