

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS**

Date: Friday, June 09, 2017

## **TC Country Club West 4-9-11 Production**

Job Date: Saturday, May 06, 2017

Sincerely,

**Julia Nichols**

## Legal Notice

---

### Disclaimer:

All information in this report is provided subject to the terms and conditions which govern the services provided by Halliburton. Halliburton personnel use their best efforts in gathering information and their best judgment in interpreting it, but any interpretation, research, analysis or recommendation furnished by Halliburton are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and empirical relationships and assumptions are not infallible, and with respect to which professionals in the industry may differ. Accordingly, HALLIBURTON IS UNABLE TO GUARANTEE THE ACCURACY OF ANY CHART INTERPRETATION, RESEARCH ANALYSIS, OR JOB RECOMMENDATION and any interpretation or recommendation is not for use of or reliance upon by any third party. The customer has full responsibility for any of its decisions which are based on the information provided in this report.

## Table of Contents

---

1.0	Cementing Job Summary .....	4
1.1	Executive Summary .....	4
2.0	Real-Time Job Summary .....	7
2.1	Job Event Log .....	7
3.0	Attachments.....	8
3.1	Custom Results – Job Chart with Events .....	8
3.2	Custom Results – Job Chart with Events .....	9

## 1.0 Cementing Job Summary

---

### 1.1 Executive Summary

---

Halliburton appreciates the opportunity to perform the cementing services on the **TC Country Club West 4-9-11** 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 barrels 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 [Ft. Lupton]**

## HALLIBURTON

## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 389404		Ship To #: 3754152		Quote #:		Sales Order #: 0904009350					
Customer: EXTRACTION OIL & GAS				Customer Rep: Kaylen Holgate							
Well Name: TC COUNTRY CLUB WEST			Well #: 4-9-11		API/UWI #: 05-123-43505-00						
Field: WATTENBERG		City (SAP): GREELEY		County/Parish: WELD		State: COLORADO					
Legal Description: SE NE-8-5N-06W-2494FNL-1194FEL											
Contractor: PATTERSON-UTI ENERGY				Rig/Platform Name/Num: PATTERSON 341							
Job BOM: 7523 7523											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HX38199					Srvc Supervisor: Vaughn Oteri						
Job											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type					BHST						
Job depth MD		20200ft			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	1587	0	1587
Casing			5.5	4.67	23			0	20186	0	7090
Open Hole Section				8.5				1587	20200	1587	7090
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			20186		Bottom Plug	5.5				
Float Collar	5.5			20181		SSR plug set	5.5				
Insert Float	5.5					Plug Container	5.5	1	HES		
Stage Tool	5.5					Centralizers	5.5				
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	3.74		5	
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	ElastiCem Lead	ELASTICEM (TM) SYSTEM			3175	sack	13.2	1.57		8	7.53

**HALLIBURTON**

*Cementing Job Summary*

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
3	Displacement	Displacement	425	bbl	8.33			8	
<b>Cement Left In Pipe</b>									
<b>Amount</b>		5 ft			<b>Reason</b>			Shoe Joint	
<b>Comment</b> 53bbls of cement back to surface									

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press <i>(psi)</i>	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	Comments
Event	1	Call Out	Call Out	5/6/2017	04:00:00	USER				Call out from ARC hub
Event	2	Arrive At Loc	Arrive At Loc	5/6/2017	09:00:00	USER				Arrived on location met with company rep to discuss job process and concerns
Event	3	Other	Other	5/6/2017	09:01:01	USER				TD-20200 TP-20186 FC-20181 Surf-1587 Mud-10.0ppg Casing 5.5 23#
Event	4	Start Job	Start Job	5/6/2017	11:37:13	COM4	0.00	8.42	0.00	Held pre job safety meeting with all hands on location to dicuss job process and safety
Event	5	Test Lines	Test Lines	5/6/2017	11:56:58	COM4	4577.00	8.52	0.00	Test pump and lines to 4672psi, no leaks, held good
Event	6	Pump Spacer 1	Pump Spacer 1	5/6/2017	11:58:11	COM4	13.00	8.40	0.00	Pump 11.5ppg Tuned Spacer III at 4bpm, 301psi. 50bbls
Event	7	Pump Lead Cement	Pump Lead Cement	5/6/2017	12:11:05	COM4	206.00	13.23	5.60	Pump 3175sks or 887bbls y-1.57/ gps-7.53 of Elasticem at 8bpm, 537psi
Event	8	Other	Other	5/6/2017	14:09:37	COM4	149.00	10.08	5.40	Pump 7bbls of MMCR water for wet shoe
Event	9	Shutdown	Shutdown	5/6/2017	14:10:50	COM4	3.00	8.12	0.00	
Event	10	Clean Lines	Clean Lines	5/6/2017	14:11:42	COM4	-11.00	8.30	0.00	Wash pump and lines with fresh water
Event	11	Drop Top Plug	Drop Top Plug	5/6/2017	14:11:45	COM4	-10.00	8.31	0.00	KLX tool hand released plug witnessed by company rep and HES supervisor
Event	12	Pump Displacement	Pump Displacement	5/6/2017	14:18:05	COM4	-2.00	6.88	0.00	Pumped 425bbls of fresh water to displace cement
Event	13	Bump Plug	Bump Plug	5/6/2017	15:06:11	COM4	2954.00	8.36	0.00	Bump plug 500psi over final pump pressure
Event	14	End Job	End Job	5/6/2017	15:22:41	COM4	0.00	8.27	0.00	53bbls of cement back to surface

## 3.0 Attachments

### 3.1 Custom Results – Job Chart with Events



### 3.2 Custom Results – Job Chart with Events

