

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS**

United States of America, COLORADO

**For: Kalyn Holgate**

Date: Thursday, February 16, 2017

**Mickey 9**

Production

Job Date: Monday, January 23, 2017

Sincerely,

**Justin Lansdale**

## Legal Notice

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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 **Mickey 9** 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.

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]**



## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 369404	Ship To #: 3766630	Quote #:	Sales Order #: 0903793056
Customer: EXTRACTION OIL & GAS		Customer Rep: Kalyn Holgate	
Well Name: MICKEY	Well #: 9	API/UWI #: 05-123-43846-00	
Field: WATTENBERG	City (SAP): WINDSOR	County/Parish: WELD	State: COLORADO
Legal Description: SW NE-5-6N-67W-2421FNL-1888FEL			
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 346	
Job BOM: 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX38199		Srvc Supervisor: Nicholas Roles	

### Job

Formation Name		
Formation Depth (MD)	Top	Bottom
Form Type		BHST
Job depth MD	17293ft	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	1551		1551
Casing		5.5	4.778	20			0	17293	0	7054
Open Hole Section			7.875				1551	17313	1551	7054

### Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5				Top Plug	5.5		HES
Float Shoe	5.5			17293	Bottom Plug	5.5		HES
Float Collar	5.5			17289	SSR plug set	5.5		HES
Insert Float	5.5				Plug Container	5.5		HES
Stage Tool	5.5				Centralizers	5.5		HES

### Fluid Data

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	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	50	bbl	11.5	3.74		5	
	149.34 lbm/bbl	BARITE, BULK (100003681)							
	35.40 gal/bbl	FRESH WATER							
	0.30 gal/bbl	MUSOL A, 330 GAL TOTE - (790828)							
	0.30 gal/bbl	DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)							

last updated on 1/23/2017 9:37:48 AM

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*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
2	ElastiCemW/O CBL	ELASTICEM (TM) SYSTEM	150	sack	13.2	1.57		8	7.48
7.48 Gal		FRESH WATER							
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	ElastiCem W/ Super CBL	ELASTICEM (TM) SYSTEM	2050	sack	13.2	1.57		8	7.49
7.49 Gal		FRESH WATER							
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
4	Displacement	Displacement	382	bbl	8.33			10	
Cement Left In Pipe		Amount	0 ft	Reason				Wet Shoe	
Comment Got 80bbbls cement to surface.									

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Call Out	Call Out	1/22/2017	14:00:00	USER	Crew call out for o/l at 2200
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/23/2017	20:00:00	USER	all crew aware of hazards and directions. all fit to drive.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	1/23/2017	21:00:00	USER	Met with company man to discuss job details and procedure. Performed hazard hunt and site assessment. Rig had 3000ft casing left to run.
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	1/23/2017	21:30:00	USER	All hse present. Discussed bulk and iron placement and all red zone areas. Caution taped high pressure zones.
Event	5	Other	Other	1/23/2017	23:00:00	USER	Water Test- PH-6 Chlo-0 Temp-60 Cement-65
Event	6	Start Job	Start Job	1/23/2017	05:50:09	COM1	TD-17313', TP- 17293' 5.5" 20#, FC-17289', TVD-7054', SURF- 1551' 9.625" 36#, OH- 7.825", MUD-9.1#.
Event	7	Test Lines	Test Lines	1/23/2017	05:52:51	COM1	Pumped 5bbls fresh water, shutdown, closed 2" valve, performed 500psi k/o function test, proceeded to bring pressure up to 4500psi. Pressure held and no leaks.
Event	8	Pump Spacer 1	Pump Spacer 1	1/23/2017	05:56:34	COM1	Pumped 50bbls of 11.5# 3.74y 23.7g/s Tuned Spacer III with 15g Dual Spacer B, 15g Musol A and 10g D-Air at 5bpm 410psi.
Event	9	Check Weight	Check Weight	1/23/2017	05:58:24	COM1	Weight verified by pressurized mud scales.
Event	10	Pump Lead Cement	Pump Lead Cement	1/23/2017	06:06:02	COM1	Pumped 150sk or 41.9bbls of 13.2# 1.57y 7.48g/s Elasticem w/o CBL at 8bpm 670psi.
Event	11	Check Weight	Check Weight	1/23/2017	06:09:58	COM1	Weight verified by pressurized mud scales.
Event	12	Pump Tail Cement	Pump Tail Cement	1/23/2017	06:12:36	COM1	Pumped 2050sk or 573bbls of 13.2# 1.57y 7.49g/s Elasticem w/ CBL at 8bpm 729psi.

Event	13	Check Weight	Check Weight	1/23/2017	06:17:06	COM1	Weight verified by pressurized mud scales.
Event	14	Check Weight	Check Weight	1/23/2017	06:45:53	COM1	Weight verified by pressurized mud scales.
Event	15	Check Weight	Check Weight	1/23/2017	07:16:36	COM1	Weight verified by pressurized mud scales.
Event	16	Shutdown	Shutdown	1/23/2017	07:32:20	USER	Clean pumps and lines with 5bbls fresh water. Swapped over to rig and blew down lines to pits.
Event	17	Drop Top Plug	Drop Top Plug	1/23/2017	07:41:46	COM1	Dropped by KLX tool hand, witnessed by HSE supervisor and company man.
Event	18	Pump Displacement	Pump Displacement	1/23/2017	07:41:51	COM1	Pumped 382bbls fresh water at 10bpm 2400psi.
Event	19	Bump Plug	Bump Plug	1/23/2017	08:40:52	COM1	Slowed down to 4bpm at 2700psi 15bbls away, bumped plug at 2200psi, held for 1min.
Event	20	Pressure Up	Pressure Up	1/23/2017	08:41:58	USER	Pumped 1bbl fresh water at 2bpm, burst disc at 3506psi.
Event	21	Pump Water	Pump Water	1/23/2017	08:42:15	USER	Pumped 5bbls fresh water at 5bpm 2800psi for wet shoe.
Event	22	Check Floats	Check Floats	1/23/2017	08:44:40	USER	Got 3bbls fresh water back to truck.
Event	23	End Job	End Job	1/23/2017	08:48:12	COM1	Got 80bbls cement to surface.
Event	24	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	1/23/2017	09:00:00	USER	All HSE present. Discussed red zone areas and trapped pressure hazards. Watch for suspended loads and rig down procedures, including hand placement, lifting techniques, and swing radius.
Event	25	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/23/2017	10:30:00	USER	All HSE present and fit to drive. Aware of directions and hazards.
Event	26	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	1/23/2017	10:45:00	USER	Pre journey management prior to departure.

2.2 Custom Graph

