



# **Great Western Operating Company, LLC**

## **SURFACE POST JOB REPORT**

### **JOB PURPOSE: PRIMARY**

**Tower LD 19-259HN 05-001-10297**  
**S:21 T:1S R:67W Adams CO**

CallSheet #: 75401  
Proposal #: 50633



**Attention:** Great Western Operating Company LLC,  
Great Western Operating Company, LLC  
1001 17TH STREET, SUITE 2000 | DENVER, CO 80202

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Dear Great Western Operating Company LLC,

Thank you for the opportunity to provide cementing services on this well. American Cementing strives to achieve complete customer satisfaction. If you have any questions regarding the services or data provided, please contact American Cementing at any time.

Sincerely,

**Jason Creel**

Field Engineer | (307) 256-0306 | [jason.creel@americancementing.com](mailto:jason.creel@americancementing.com)

**Field Office**      1716 E Allison Rd, Cheyenne, WY 82007  
Phone: (307) 638-5585

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## 1 Job Details & Summary

### 1.1 Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Top (ft)	Bottom (ft)	Excess (%)
Open Hole	Outer	n/a	13.5	n/a	0	2040	40
Casing	Inner	9.625	8.921	36	0	2040	0

### 1.2 Equipment / People

Unit Type	Unit
Field Storage Silo	CTS-454
Field Storage Silo	CTS-442
Pneumatic Trailer	FUF-308
Pneumatic Trailer	FTF-031
Cement Pump	CPF-184
Light Duty Pickups	LDV-5223

### 1.3 Timing

Event	Date/Time
Call Out	11/10/2020 12:00
Depart Facility	11/10/2020 14:00
On Location	11/10/2020 16:00
Rig Up Iron	11/10/2020 16:30
Job Started	11/10/2020 20:40
Job Completed	11/10/2020 23:19
Rig Down Iron	11/10/2020 23:45
Depart Location	11/11/2020 01:00

### 1.4 Casing Equipment

Type	Description	Qty	MD	TVD
Bow Spring Centralizers	9.625"	19		
Landing/Float Collar	9.625"	1	1996	1995
Float Shoe	9.625"	1	2040	2040

#### • 1.4.1 Casing Equipment-Centralizer Depths

Surface Centralizers, 40.43, 82.2, 166.42, 292.88, 419.37, 545.42, 671.78, 797.58, 923.97, 1050.36, 1176.7, 1303.1, 1427.18, 1553.65, 1672.59, 1792.67, 1913.34, 1953.59, 2023.8

## 1.5 General Job Information

Metrics	Value
Well Fluid Density	8.33 lb/gal
Well Fluid Type	8.33
Rig Circulation Vol	300 bbls
Rig Circulation Time	0.5 hours
Calculated Displacement	154 bbls
Actual Displacement	154 bbls
Total Spacer to Surface	20 bbls
Total CMT to Surface	39 bbls
Well Topped Out	No

## 1.6 Job Details

Metrics	Value
Flare Prior to Job	No
Flare During Job	No
Flare at End of Job	No
Well Full Prior to Job	Yes
Well Fluid Density Into Well	8.4 lb/gal
Well Fluid Density Out of Well	8.4 lb/gal

## 1.7 Job Details (cont.)

Metrics	Value
BHCT	86 °F
BHST	110 °F
Ambient Temperature	24 °F

## 1.8 Circulation

Lost Circulation Experienced
No

## 1.9 Job Execution Information

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft <sup>3</sup> /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Volume (cu.ft)	Top (ft)
1	1	Fresh Water	Spacer	8.34			42.00		20.00		0
1	2	ACem S100.3.XC	Primary	14.50	1.39	6.81		1000.00	247.62	1390	0
1	3	Fresh Water	Displacement Final	8.34			42.00		154.00		0

## 1.10 Job Fluid Details

Job	Fluid	Type	Fluid	Product	Function	Conc.	Uom
1	2	Primary	ACem S100.3.XC	ASTM TYPE III	Cement	100.00	%
1	2	Primary	ACem S100.3.XC	STATIC FREE	Other	0.01	lb/sk

## 2 Job Logs

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1	Arrive On Location	11/10/2020	16:00					Crew Arrived on Location/ Checked and verified mix water and cement. Adams County, Pre-Job Air Temperature 32F, to Pump Primary Cement Job, Designed TOC of Cement: At Surface
2	Safety Meeting	11/10/2020	16:30					Pre Rig Up Safety Meeting with Crew
3	Rig Up	11/10/2020	16:00					Crew Rigged up Treating equipment and lines.
4	Waiting	11/10/2020	20:15					Waiting on Rig Crew To Run Casing
5	Safety Meeting	11/10/2020	20:20					Safety Meeting with Rig Crew, and Company Representative
6	Fill Lines	11/10/2020	20:41	8.34	4	5	110	Prime up Pump and Lines
7	Pressure	11/10/2020	20:50	8.34	0.5	0.5	2500	Pressure Test Lines to 2500 psi
8	Pump Spacer	11/10/2020	21:08	8.34	4	20	150	Pump 20 bbls of Fresh Water with Blue Dye/ Full Returns
9	Pump Cement	11/10/2020	21:14	14.5	4	10	130	Pump First 10 bbls of Cement at 14.5 ppg/ 1000 sks (1.39 Yield, 6.8 gps, 162 Mix Water.)/ 248 bbls/ From Silo 26/Wet Sample Taken And Verified/Full Returns.
10	Rate Change	11/10/2020	21:17	14.5	5	10	300	Rate changed to 5 bpm
11	Pump Cement	11/10/2020	21:24	14.5	5	50	360	Pumped 50 bbls of Cement Away/ From Silo 26/Wet Sample Taken and Verified / Full Returns
12	Pump Cement	11/10/2020	21:40	14.5	5	100	350	Pumped 100 bbls of Cement Away/From Silo 26/ Wet Sample Taken and Verified / Full Returns
13	Silo Change	11/10/2020	21:42	14.5	5	120	320	Changed From Silo 26 to Silo 6
14	Pump Cement	11/10/2020	21:45	14.5	5	150	350	Pumped 150 bbls of Cement Away/From Silo 2 /Full Returns
15	Pump Cement	11/10/2020	21:55	14.5	5	200	400	Pumped 200 bbls of Cement Away/From Silo 2 /Full Returns
16	Shutdown	11/10/2020	22:08					Shutdown to Drop Top Plug/ Shutdown at 248 bbls of Cement Away
17	Pump Displacement	11/10/2020	22:11	8.4	4	10	160	Pump First 10 bbls of Displacement/ Wash Pump and Lines on Top of Plug
18	Rate Change	11/10/2020	22:13	8.4	5	10	200	Changed Rate to 5 bpm
19	Pump Displacement	11/10/2020	22:22	8.4	5	50	360	Pumped 50 bbls of Displacement Away/ Chemicals throughout/ Full Returns
20	Spacer to Surface	11/10/2020	22:27	8.4	5	90	600	Blue Dyed Spacer to Surface/ Full Returns
21	Pump Displacement	11/10/2020	22:32	8.4	5	100	720	Pumped 100 bbls of Displacement Away/ Chemicals Throughout/ Full Returns
22	Cement to Surface	11/10/2020	22:34	8.4	5	120	845	Cement To Surface at 120 bbls Pumped Away/ Full Returns. 32bbl Cement to Surface
23	Rate Change	11/10/2020	22:37	8.4	4	130	740	Slowed Rate to 4 bpm to Reduce Pressure/ Full Returns
24	Rate Change	11/10/2020	22:40	8.4	3	140	750	Slowed Rate to 3 bpm to Land the Plug
25	Pump Displacement	11/10/2020	22:45	8.4	3	154	1765	Pumped 150 bbls of Displacement Away/ Chemicals Throughout / Full Returns
26	Land Plug	11/10/2020	22:47	8.4	3	154	1765	Landed the Plug at 154 bbls of Displacement Pumped/ FCP was 850 psi and Took it to 1765 psi. Got 39bbl of cement to surface
27	Casing Test	11/10/2020	22:48					Began 30 Min Casing Test/ Starting Pressure was 1765psi .

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
27	Casing Test	11/10/2020	22:48					Pressured to 1765psi
28	Casing Test	11/10/2020	22:58					10 Min Point of Casing Test/ Pressure was 1763psi
29	Casing Test	11/10/2020	23:08					20 Min Point of Casing Test/ Pressure was 1763psi
30	Casing Test	11/10/2020	23:18					30 Min Point of Casing Test/ Pressure was 1763psi
31	Check Floats	11/10/2020	23:19					Check Floats, 3/4 bbl Back, Floats Held
32	Safety Meeting	11/10/2020	23:30					Pre Rig Down Safety Meeting with Crew
33	Rig Down	11/10/2020	23:45					Crew Rigged Down Treating Equipment
34	Depart Location	11/11/2020	01:00					Crew Departed Location

### 3 Water Analysis

Metrics	Value	Recommended
Water Source	None	
Temperature	80 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	180	0-1000
Total Hardness	120 mg/L	0-500 mg/L
Carbonates	0 mg/L	0-100 mg/L
Sulfates	>200 mg/L	0-1500 mg/L
Potassium	0 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L



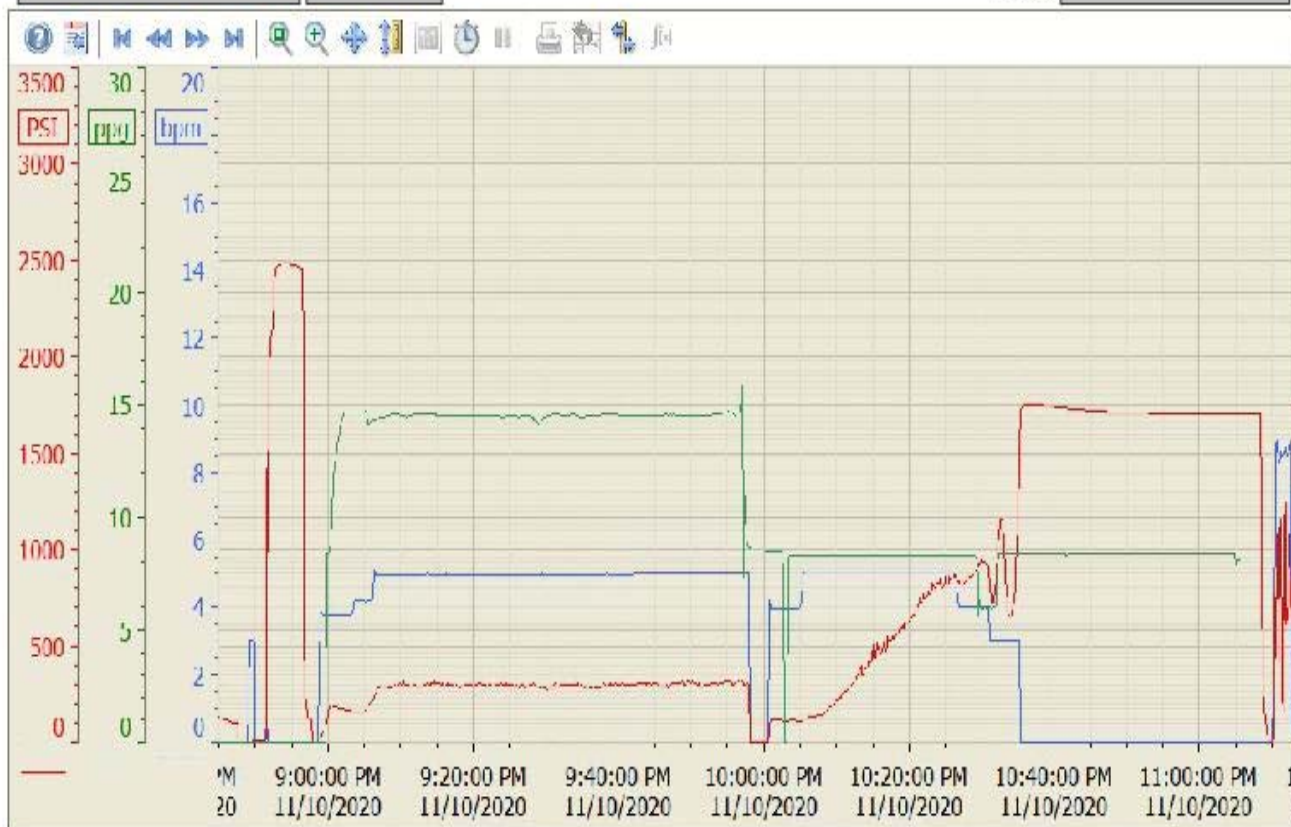
## 4 Pump Diagrams

### Summary Trend

Great Western

Tower LD

Lease: 19-259HN



11/10/2020 11:20:38