



Great Western Operating Company, LLC

SURFACE POST JOB REPORT

JOB PURPOSE: PRIMARY

Tower LD 19-099HN 05-001-10299
S:21 T:1S R:67W Adams CO

CallSheet #: 75337
Proposal #: 50601



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

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

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	2011	30
Casing	Inner	9.625	8.921	36	0	2011	0

1.2 Equipment / People

Unit Type	Unit
Pneumatic Trailer	CTF-018
Field Storage Silo	CTS-449
Cement Pump	CPF-184
Light Duty Pickups	LDV-5223
Bulk Trailer	CTF-007

1.3 Timing

Event	Date/Time
Call Out	11/2/2020 04:00
Depart Facility	11/2/2020 07:00
On Location	11/2/2020 08:30
Rig Up Iron	11/2/2020 09:00
Job Started	11/2/2020 13:03
Job Completed	11/2/2020 14:56
Rig Down Iron	11/2/2020 15:05
Depart Location	11/2/2020 16:00

1.4 Casing Equipment

Type	Description	Qty	MD	TVD
Bow Spring Centralizers	9.625"	19		
Landing/Float Collar	9.625"	1	1967	1967
Float Shoe	9.625"	1	2011	2011

• 1.4.1 Casing Equipment-Centralizer Depths

Surface Centralizers, 41.23, 83.34, 166.99, 293.48, 420, 546.45, 672.32, 798.15, 922.67, 1044.51, 1165.27, 1284.38, 1404.91, 1525.64, 1645.85, 1766.05, 1885.38, 1925.19, 1994.8

1.5 General Job Information

Metrics	Value
Well Fluid Density	8.4 lb/gal
Well Fluid Type	Water
Rig Circulation Vol	357 bbls
Rig Circulation Time	30 hours
Calculated Displacement	152.1 bbls
Actual Displacement	152.1 bbls
Total Spacer to Surface	20 bbls
Total CMT to Surface	37 bbls
Well Topped Out	No
Top Out Volume	0 bbls

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	64 °F

1.8 Circulation

Lost Circulation Experienced
No

1.9 Job Execution Information

Job	Fluid	Product	Function	Density (lb/gal)	Yield (ft ³ /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		930.00	230.29	1292.70	0
1	3	Fresh Water	Displacement Final	8.34			42.00		152.20		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	%

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	Callout	11/2/2020	04:00					Crew called out, requested on location at 10:00
2	Safety Meeting	11/2/2020	06:45					Talked with the American Cementing Crew about the hazards of driving to location.
3	Depart For Location	11/2/2020	07:00					Crew departed for location
4	Arrive On Location	11/2/2020	08:30					Crew arrived on location and talked about the hazards of spotting in equipment.
5	Safety Meeting	11/2/2020	08:45					Talked with crew about the hazards of rigging up water bulk and iron lines.
6	Rig Up Iron	11/2/2020	09:00					Crew rigged up
7	Waiting	11/2/2020	09:30					Waited for rig to finish Running casing and to circulating the well.
8	Safety Meeting	11/2/2020	12:45					Talked with American Cementing Crew and rig Crews about the hazards of pumping the job.
9	Fill Lines	11/2/2020	13:03	8.33	5	5	150	Pump 5 bbls water ahead to fill lines for the pressure test.
10	Shutdown	11/2/2020	13:05	8.33			50	Shutdown to line out valves for pressure test
11	Pressure Test Lines	11/2/2020	13:06	8.33			2800	Pressure Test AC lines to 2500 PSI.
12	Pump Spacer	11/2/2020	13:08	8.33	4	20	150	Pump 20 bbls water spacer with blue dye
13	Pump Cement	11/2/2020	13:13	14.5	5	0	148	Mix and Pump 930 total sacks of ACem Cement at 14.5 lb/gal, 1.39 cuft/sk and 6.81 gals/sk from Silo 6 and Pods 1 and 2 on CTF-007. Pump first 15 bbls at 4 bpm, then bring rate up to 5 bpm.
14	Pump Cement	11/2/2020	13:24	14.5	6	50	270	Bring rate up to 6 bpm with 50 bbls away.
15	Pump Cement	11/2/2020	13:32	14.5	6	119	300	Switch to pod 2 on CTF-007 for 210 sacks.
16	Pump Cement	11/2/2020	13:41	14.5	6	168	300	Switch to pod 1 on CTF-007 for 210 sacks.
17	Shutdown	11/2/2020	13:56	14.5	0	230	0	Shutdown to drop top plug and line out valves for displacement.
18	Pump Displacement	11/2/2020	14:00	8.33	7	0	100	Pump 152.2 bbls water displacement with Biocide and O2 scavenger.
19	Pump Displacement	11/2/2020	14:08	8.33	7	50	400	50bbls away.
20	Pump Displacement	11/2/2020	14:14	8.33	7	90	800	Blue dye to surface
21	Pump Displacement	11/2/2020	14:18	8.33	7	115	850	Cement to Surface
22	Slow Pump Rate	11/2/2020	14:21	8.33	3	142	800	Slow rate to land the plug.
23	Land Plug	11/2/2020	14:24	8.33	0	152.2	1580	Land plug, bring pressure up to 1580 psi for 30 min casing test. FCP was 800 psi
24	Test Casing	11/2/2020	14:34	8.33	0	152.2	1593	10 min into casing test.
25	Test Casing	11/2/2020	14:44	8.33	0	152.2	1597	20 min into casing test.
26	Test Casing	11/2/2020	14:54	8.33	0	152.2	1597	30 min into casing test.
27	Check Floats	11/2/2020	14:56					Floats held with 1 bbl back
28	Safety Meeting	11/2/2020	15:00					Talked with AC Crew about the hazards of rigging down.
29	Rig Down Iron	11/2/2020	15:05					Rig Down



Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
30	Safety Meeting	11/2/2020	15:55					Talked with AC Crew about the hazards of driving back to the yard.
31	Depart Location	11/2/2020	16:00					Job Completed, no issues. Crew Departed Location.

3 Water Analysis

Metrics	Value	Recommended
Water Source	None	
Temperature	66 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	0 mg/L	0-3000 mg/L
Total Alkalinity	140	0-1000
Total Hardness	25 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	5 mg/L	0-300 mg/L

4 Pump Diagrams

Summary Trend



11/2/2020 2:57:36 PM