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# **Terra Energy Partners, LLC**

## **LONG STRING POST JOB REPORT**

**FEDERAL WMC 412-20 05-045-24495**  
**S:17 T:7S R:93W Garfield CO**

CallSheet #: 84074  
Proposal #: 64211



**LONG STRING Post Job Report**

**Attention:** Mr. Dustin Childers | (936) 524-8828 | dchilders@terraep.com  
Terra Energy Partners, LLC  
4828 Loop Central Dr., Suite 900 | Houston, TX 77081

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Dear Mr. Dustin Childers,

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,

**Holly Mbugua**

Field Engineer II | (720) 505-1300 | holly.mbugua@americancementing.com

**Field Office**      28730 US-6, Rifle, CO 81650  
Phone: (970) 657-1157

## Job Details & Summary

### Geometry

Type	Function	OD (in)	ID (in)	Weight (lb/ft)	Thread	Top (ft)	Bottom (ft)	Excess (%)
Casing	Outer	9.625	8.921	36	n/a	0	1138	0
Open Hole	Outer	n/a	8.75	n/a	n/a	1145	9050	60
Open Hole	Outer	n/a	8.75	n/a	n/a	9050	11357	50
Casing	Inner	4.5	4	11.6	n/a	0	11357	0

### Equipment / People

Unit Type	Unit	Power Unit	Employee #1	Employee #2
Field Storage Silo	FSS-470			
Field Storage Silo	FSS-438			
AS Cement Trailer Float	CTF-901	TRC-115	Wall, Lynn	
AS Cement Trailer Float	CTF-138	TRC-201	Richey, Steven	
Cement Trailer Float	CTF-576	TRB-421	Morales, Adrian	Schweitzer, Casey
Cement Pump Float	CPF-091	TRH-082	Woronovitch, Collin	
Light Duty Vehicles	LDV-088		Lancaster, Stephen	

### Timing

Event	Date/Time
Call Out	10/19/2022 21:43
Depart Facility	10/19/2022 22:00
On Location	10/20/2022 04:43
Rig Up Iron	10/20/2022 05:05
Job Started	10/20/2022 07:55
Job Completed	10/20/2022 10:30
Rig Down Iron	10/20/2022 10:35
Depart Location	10/20/2022 11:55

### General Job Information

Metrics	Value
Well Fluid Density	8.9 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	721 bbls
Rig Circulation Time	1 hours
Calculated Displacement	175.6 bbls
Actual Displacement	175.6 bbls
Total Spacer to Surface	0 bbls
Total CMT to Surface	0 bbls
Well Topped Out	N/A

### Job Details

Metrics	Value
Flare Prior to Job	No
Flare Prior to Job	0 units
Flare During Job	No
Flare During Job	0 units
Flare at End of Job	No
Flare at End of Job	0 units
Well Full Prior to Job	Yes
Well Fluid Density Into Well	8.9 lb/gal
Well Fluid Density Out of Well	8.9 lb/gal

### Job Details (cont.)

Metrics	Value
BHCT	206 °F
BHST	270 °F

### Water Analysis

Metrics	Value	Recommended
Water Source	None	
Temperature	55 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	73 mg/L	0-3000 mg/L
Total Alkalinity	120	0-1000
Total Hardness	70 mg/L	0-500 mg/L
Carbonates	NA mg/L	0-100 mg/L
Sulfates	200 mg/L	0-1500 mg/L
Potassium	450 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

## Circulation

Lost Circulation Experienced

No

## Job Execution Information

Fluid	Product	Function	Density (lb/gal)	Yield (ft <sup>3</sup> /sk)	Water Rq. (gal/sk)	Water Rq. (gal/bbl)	Volume (sks)	Volume (bbl)	Designed Top (ft)
1	Water	Flush	8.34			42.00		10.00	6256
2	Mud Flush	Flush	8.45			40.86		20.00	6370
3	Water	Flush	8.34			42.00		10.00	6599
4	Lead Cement	Lead	12.70	2.00	10.99		574.00	204.70	6713
5	Tail Cement	Tail	13.50	1.85	8.97		589.00	193.58	9050
6	Displacement	DisplacementFinal	8.34			42.00		177.00	0

## Job Fluid Details

Fluid	Type	Fluid	Product	Function	Conc.	Uom
2	Flush	Mud Flush	SAPP	Surfactant	10.00	lb/bbl
2	Flush	Mud Flush	SS-201	Surfactant	0.50	gal/bbl
4	Lead	Lead Cement	ASTM TYPE I/II	Cement	100.00	%
4	Lead	Lead Cement	BA-90	BondEnhancer	3.00	lb/sk
4	Lead	Lead Cement	FL-66	FluidLoss	0.50	%BWOB
4	Lead	Lead Cement	FP-24	Defoamer	0.30	%BWOB
4	Lead	Lead Cement	GW-86	Viscosifier	0.10	%BWOB
4	Lead	Lead Cement	IntegraSeal POLI	LostCirculation	0.25	lb/sk
4	Lead	Lead Cement	R-3	Retarder	0.45	%BWOB
4	Lead	Lead Cement	STATIC FREE	Other	0.01	lb/sk
5	Tail	Tail Cement	BA-90	BondEnhancer	10.00	%
5	Tail	Tail Cement	CLASS G	Cement	70.00	%
5	Tail	Tail Cement	FLY ASH (POZZOLAN)	Extender	20.00	%
5	Tail	Tail Cement	BENTONITE	Viscosifier	6.00	%BWOB
5	Tail	Tail Cement	FL-24	FluidLoss	0.40	%BWOB
5	Tail	Tail Cement	FP-24	Defoamer	0.30	%BWOB
5	Tail	Tail Cement	IntegraSeal PHENO	LostCirculation	3.00	lb/sk
5	Tail	Tail Cement	R-3	Retarder	0.30	%BWOB
5	Tail	Tail Cement	S-8	StrengthRetrogression	25.00	%BWOB

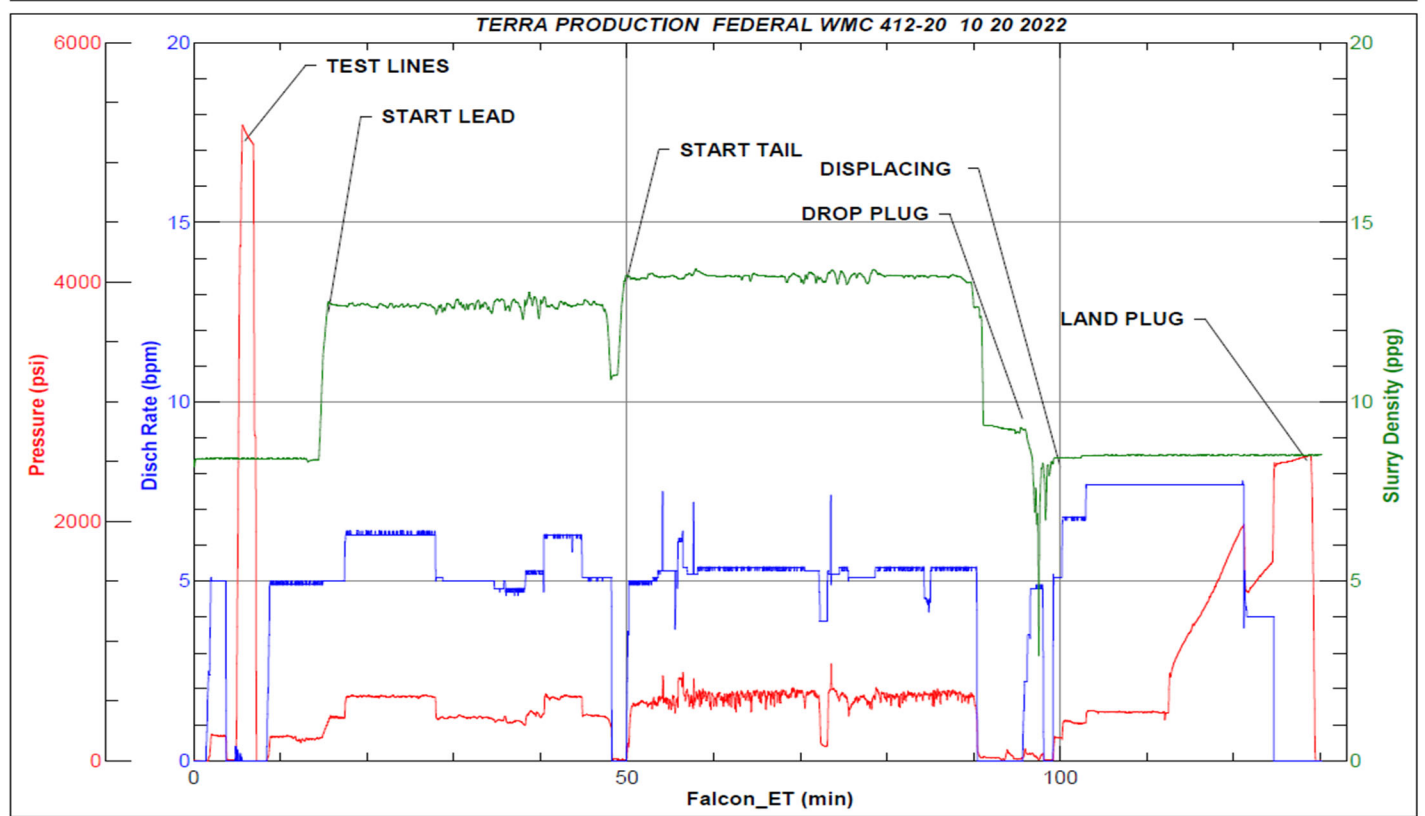
## Job Logs

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1	Callout	10/19/2022	21:43					CREW CALLED OUT FOR ON LOCATION TIME OF 10/20/22 05:00
2	Depart Location	10/19/2022	22:00					DEPART RCO YARD FOR LOCATION
3	Arrive On Location	10/20/2022	04:43					ARRIVE ON CUSTOMER SITE
4	Rig Up Iron	10/20/2022	05:05					RIG UP IRON AND HOSES
5	Waiting	10/20/2022	06:30					WAITING ON RIG TO RUN CASING
6	Safety Meeting	10/20/2022	07:55					JSA SAFETY MEETING WITH AC CREW, RIG HANDS, AND CUSTOMER REP
7	Fill Lines	10/20/2022	08:25	8.34	2	10	70	FILL LINES WITH FRESH WATER
8	Pressure Test Lines	10/20/2022	08:30	8.34			5000	PRESSURE TEST PUMP AND LINES TO 5000 PSI
9	Pump mudflush	10/20/2022	08:35	8.45	5	20	213	PUMP MUD FLUSH + SURFACTANT
10	Pump FW flush	10/20/2022	08:39	8.34	5	10	232	PUMP FRESH WATER FLUSH
11	Pump Lead Cement	10/20/2022	08:43	12.7	5	5	328	BEGIN PUMPING LEAD CEMENT. DENSITY VERIFIED WITH MUD SCALE
12	Pump Lead Cement	10/20/2022	08:49	12.7	6.3	50	530	50 BBLS LEAD CEMENT PUMPED
13	Pump Lead Cement	10/20/2022	09:00	12.7	5	100	328	100 BBLS LEAD CEMENT PUMPED
14	Pump Lead Cement	10/20/2022	09:07	12.7	6.3	150	527	150 BBLS LEAD CEMENT PUMPED
15	Pump Lead Cement	10/20/2022	09:14	12.7	5	205	390	205 BBLS LEAD CEMENT PUMPED
16	Pump Tail Cement	10/20/2022	09:15	13.5	5	5	387	BEGIN PUMPING TAIL CEMENT. DENSITY VERIFIED WITH MUD SCALE
17	Pump Tail Cement	10/20/2022	09:25	13.5	5.4	50	512	50 BBLS TAIL CEMENT PUMPED
18	Pump Tail Cement	10/20/2022	09:34	13.5	5.4	100	600	100 BBLS TAIL CEMENT PUMPED
19	Pump Tail Cement	10/20/2022	09:43	13.5	5.1	150	491	150 BBLS TAIL CEMENT PUMPED
20	Pump Tail Cement	10/20/2022	09:51	13.5	5.4	190	577	190 BBLS TAIL CEMENT PUMPED
21	Pump Tail Cement	10/20/2022	09:54	13.5	5.4	194	518	194 BBLS TAIL CEMENT PUMPED
22	Clean Pumps and Lines	10/20/2022	09:55					BLOW DOWN STANDPIPE, WASH UP PUMP AND LINES
23	Drop Top Plug	10/20/2022	10:05	8.34	5	5	197	DROP PLUG, VERIFIED BY CUSTOMER REP. BEGIN KCL DISPLACEMENT
24	Pump Displacement	10/20/2022	10:11	8.34	7.7	50	380	50 BBLS KCL DISPLACEMENT PUMPED
25	Pump Displacement	10/20/2022	10:18	8.34	7.7	100	770	100 BBLS KCL DISPLACEMENT PUMPED (caught plug @ 95 bbls pumped)
26	Pump Displacement	10/20/2022	10:24	8.34	7.7	150	1731	150 BBLS KCL DISPLACEMENT PUMPED
27	Pump Displacement	10/20/2022	10:30	8.34	4	175	1487	175 BBLS KCL DISPLACEMENT PUMPED
28	Land Plug	10/20/2022	10:30	8.34	4	175	2460	LAND PLUG. FCP - 1640 PSI, BUMPED TO 2460 PSI
29	Check Floats	10/20/2022	10:34					CHECK FLOATS. FLOATS HELD, 2 BBLS BACK
30	Rig Down Iron	10/20/2022	10:35					RIG DOWN IRON AND HOSES
31	Depart Location	10/20/2022	11:55					DEPART LOCATION FOR RCO YARD

## Pump Diagrams



JobMaster Program Version 5.01C1  
Job Number: 84074  
Customer: TERRA  
Well Name: FEDERAL WMC 412-20



Job Start: Thursday, October 20, 2022