



Terra Energy Partners, LLC

LONG STRING POST JOB REPORT

WMC 344-24-794 05-045-24537
S:19 T:7S R:93W Garfield CO

CallSheet #: 85487
Proposal #: 66375



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

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,

Zen Keith

SME North | (307) 757-7178 | zen.keith@americacementing.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	1174	0
Open Hole	Outer	n/a	8.75	n/a	n/a	1174	7982	85
Open Hole	Outer	n/a	8.75	n/a	n/a	7982	11204	50
Casing	Inner	4.5	4	11.6	n/a	0	11204	0

Equipment / People

Unit Type	Unit	Power Unit	Employee #1	Employee #2
Cement Trailer Float	CTF-182	TRC-249	Richey, Steven	Vega, Alexis
Field Storage Silo	FSS-470			
Field Storage Silo	FSS-438			
Cement Pump Float	CPF-136	TRH-855	Bradbrook, Jeremy	
Light Duty Vehicles	LDV-061		Woronovitch, Collin	

Timing

Event	Date/Time
Call Out	1/21/2023 12:40
Depart Facility	1/21/2023 17:00
On Location	1/21/2023 19:30
Rig Up Iron	1/21/2023 22:45
Job Started	1/22/2023 00:50
Job Completed	1/22/2023 04:16
Rig Down Iron	1/22/2023 04:25
Depart Location	1/22/2023 07:00

General Job Information

Metrics	Value
Well Fluid Density	9.15 lb/gal
Well Fluid Type	WBM
Rig Circulation Vol	1100 bbls
Rig Circulation Time	2 hours
Calculated Displacement	173.2 bbls
Actual Displacement	173.2 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	9.15 lb/gal
Well Fluid Density Out of Well	9.15 lb/gal

Job Details (cont.)

Metrics	Value
BHCT	178 °F
BHST	236 °F
Initial ISIP	psi
Final ISIP	psi
Sks in Formation	sks
Injection #1	bpm
Injection #1	psi
Injection #2	bpm
Injection #2	psi

Water Analysis

Metrics	Value	Recommended
Water Source	Flat Tank	
Temperature	75 °F	50-80 °F
pH Level	7	5.5-8.5
Chlorides	400 mg/L	0-3000 mg/L
Total Alkalinity	220	0-1000
Total Hardness	120 mg/L	0-500 mg/L
Carbonates	NA mg/L	0-100 mg/L
Sulfates	140 mg/L	0-1500 mg/L
Potassium	200 mg/L	0-3000 mg/L
Iron	0 mg/L	0-300 mg/L

Circulation

Lost Circulation Experienced	Losses into Spacer	Losses into Cement	Losses into Displacement
Yes	0	NA	NA

Circulation Details

NO RETURNS UNTIL BEGINNING OF SCAVENGER. PARTIAL RETURNS THROUGHOUT JOB. NO RETURNS FIRST 35 BBLs OF DISPLACEMENT. CAUGHT RETURNS 35 BBLs INTO DISPLACEMENT. RIG RECOVERED 560 BBLs

Job Execution Information

Fluid	Product	Function	Density (lb/gal)	Yield (ft ³ /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	5811
2	Mud Flush	Flush	8.45			40.86		20.00	5910
3	Water	Flush	8.34			42.00		10.00	6108
4	Scavenger	Scavenger	11.00	3.08	18.84		92.00	50.39	6207
5	Lead	Lead	12.50	2.26	12.59		323.00	129.82	6701
6	Tail	Tail	13.00	2.05	10.26		784.00	285.96	7982
7	Displacement	DisplacementFinal	8.34			42.00		173.20	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	Scavenger	Scavenger	ASTM TYPE I/II	Cement	65.00	%
4	Scavenger	Scavenger	FLY ASH (POZZOLAN)	Extender	35.00	%
4	Scavenger	Scavenger	BENTONITE	Viscosifier	6.00	%BWOB
4	Scavenger	Scavenger	FP-24	Defoamer	0.30	%BWOB
4	Scavenger	Scavenger	GW-86	Viscosifier	0.10	%BWOB
4	Scavenger	Scavenger	IntegraSeal PHENO	LostCirculation	3.00	lb/sk
4	Scavenger	Scavenger	XCem-916	Retarder	0.45	%BWOB
5	Lead	Lead	ASTM TYPE I/II	Cement	100.00	%
5	Lead	Lead	ATHX-1102	Thixotropic	0.10	%BWOB
5	Lead	Lead	FL-66	FluidLoss	0.30	%BWOB
5	Lead	Lead	FP-24	Defoamer	0.30	%BWOB
5	Lead	Lead	GW-86	Viscosifier	0.10	%BWOB
5	Lead	Lead	IntegraSeal PHENO	LostCirculation	0.50	lb/sk
5	Lead	Lead	IntegraSeal POLI	LostCirculation	0.25	lb/sk
5	Lead	Lead	R-7C	Retarder	0.10	%BWOB
5	Lead	Lead	STATIC FREE	Other	0.01	lb/sk
5	Lead	Lead	XCem-1009	Extender	10.00	lb/sk
5	Lead	Lead	XCem-916	Retarder	0.45	%BWOB
6	Tail	Tail	CLASS G	Cement	50.00	%
6	Tail	Tail	FLY ASH (POZZOLAN)	Extender	50.00	%
6	Tail	Tail	BENTONITE	Viscosifier	6.00	%BWOB
6	Tail	Tail	FL-66	FluidLoss	0.40	%BWOB
6	Tail	Tail	FP-24	Defoamer	0.30	%BWOB
6	Tail	Tail	GW-86	Viscosifier	0.10	%BWOB
6	Tail	Tail	IntegraSeal PHENO	LostCirculation	0.50	lb/sk
6	Tail	Tail	IntegraSeal POLI	LostCirculation	0.25	lb/sk
6	Tail	Tail	S-8	StrengthRetgression	20.00	%BWOB
6	Tail	Tail	XCem-1009	Extender	6.00	lb/sk
6	Tail	Tail	XCem-916	Retarder	0.40	%BWOB

Job Logs

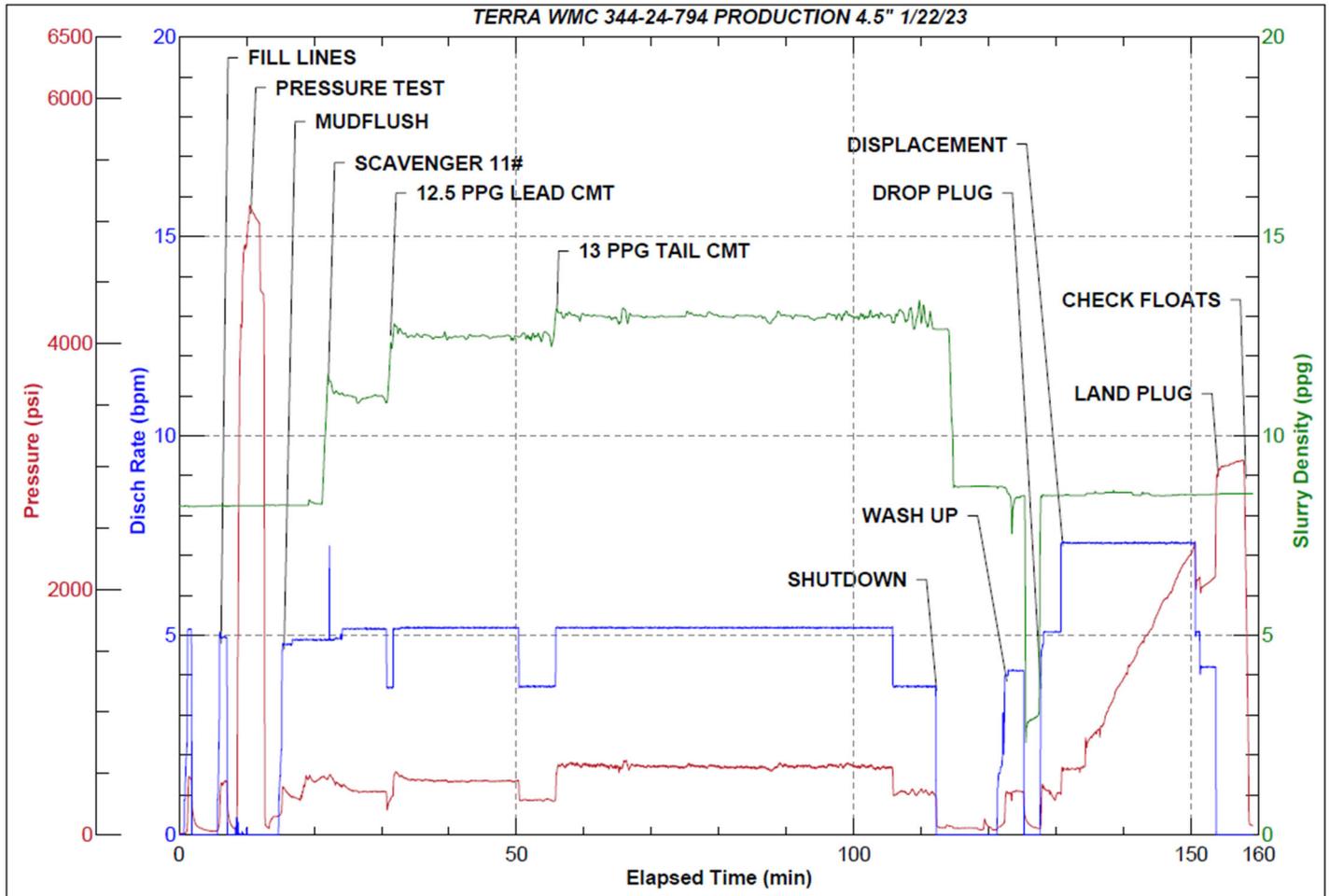
Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbls)	Pipe Pressure (psi)	Comment
1	Callout	1/21/2023	12:40					CREW CALLED OUT FOR ON LOCATION TIME OF 19:30
2	Depart Location	1/21/2023	17:00					CREW DEPARTS RCO YARD FOR RIG LOCATION
3	Arrive On Location	1/21/2023	19:30					CREW ARRIVES ON LOCATION UNABLE TO SPOT EQUIPMENT DUE TO WATER TEMP ON TANKS BEING HIGH AND WATER HAULERS NEEDING ROOM TO WORK ON COOLING WATER DOWN. RIG STILL RUNNING CASING
4	Other	1/21/2023	19:30					WAITING ON RIG TO FINISH RUNNING CASING AND WATER TEMPERATURE TO BE COOLED DOWN BY TRANSFERING HOT WATER FOR COLD WATER. EQUIPMENT SPOTTED @ 22:30
5	Rig Up Iron	1/21/2023	22:45					RIG UP IRON HOSES AND EQUIPMENT
6	Other	1/21/2023	23:30					WAITING ON RIG TO FINISH RUNNING CASING. CASING ON BOTTOM @ 23:20 FINISH RIGGING UP FLOOR AND STAND PIPE. RIG CIRCULATED FOR 2 HOURS 1100 BBLs
7	Safety Meeting	1/22/2023	00:50					PRE JOB SAFETY MEETING WITH RIG CREW AND COMPANY MAN.
8	Fill Lines	1/22/2023	01:37	8.34	5	10	500	FILL LINES WITH 10 BBLs OF FRESHWATER. NO RETURNS
9	Pressure Test Lines	1/22/2023	01:45	8.34			5130	PRESSURE TEST PUMP AND IRON TO 5000 PSI
10	Pump Spacer	1/22/2023	01:52	8.45	5	20	390	PUMP 20 BBLs MUD FLUSH + SURFACTANT. PARTIAL RETURNS
11	Other	1/22/2023	01:56	8.34	5	10	405	PUMP 10 BBLs FRESHWATER FLUSH
12	Pump Scavenger	1/22/2023	01:58	11	5	0	440	BEGIN PUMPING SCAVENGER 11.0 PPG RETURNS
13	Pump Scavenger	1/22/2023	02:08	11	5	50	432	50 BBLs (92 SKS) SCAVENGER PUMPED. RETURNS. ESTIMATED TOP OF SCAVENGER 2697'
14	Pump Lead Cement	1/22/2023	02:08	12.5	3.5	0	303	BEGIN PUMPING 12.5 PPG LEAD CEMENT, WEIGHT VERIFIED BY MUD SCALE
15	Pump Lead Cement	1/22/2023	02:18	12.5	5.2	50	439	50 BBLs LEAD CEMENT PUMPED
16	Pump Lead Cement	1/22/2023	02:28	12.5	3.7	50	287	100 BBLs LEAD CEMENT PUMPED. RETURNS
17	Pump Lead Cement	1/22/2023	02:33	12.5	3.5	30	303	130 BBLs (323 SKS) TOTAL LEAD CEMENT PUMPED. ESTIMATED TOP OF LEAD 3611'
18	Pump Tail Cement	1/22/2023	02:33	13	3.5	0	340	BEGIN PUMPING 13 PPG TAIL CEMENT. WEIGHT VERIFIED BY MUD SCALE.
19	Pump Tail Cement	1/22/2023	02:43	13	5.2	50	550	50 BBLs TAIL CEMENT PUMPED
20	Pump Tail Cement	1/22/2023	02:52	13	5.2	50	555	100 BBLs TAIL CEMENT PUMPED
21	Pump Tail Cement	1/22/2023	03:02	13	5.2	50	550	150 BBLs TAIL CEMENT PUMPED RETURNS
22	Pump Tail Cement	1/22/2023	03:12	13	5.2	50	554	200 BBLs TAIL CEMENT PUMPED
23	Pump Tail Cement	1/22/2023	03:22	13	5.2	50	553	250 BBLs TAIL CEMENT PUMPED

Line	Event	Date (MM/DD/YY)	Time (HH:MM)	Density (lb/gal)	Pump Rate (bpm)	Pump Volume (bbbls)	Pipe Pressure (psi)	Comment
24	Pump Tail Cement	1/22/2023	03:30	13	3.5	36	313	286 BBLS (784 SKS) TOTAL TAIL CEMENT PUMPED. ESTIMATED TOP OF TAIL 5988'
25	Clean Pumps and Lines	1/22/2023	03:31					BLOW RIG AIR TO CLEAR LINES, VALVE MANIFOLD TO WASH UP PUMP AND LINES TO PIT
26	Drop Top Plug	1/22/2023	03:45	8.34	5	2	331	DROP PLUG, WITNESSED BY CUSTOMER REP. BEGIN KCL DISPLACEMENT NO RETURNS FIRST 35 BBLS
27	Pump Displacement	1/22/2023	03:53	8.34	7.3	50	833	50 BBLS DISPLACEMENT PUMPED. CAUGHT PRESSURE AND RETURNS @ 35 BBLS DISPLACED
28	Pump Displacement	1/22/2023	04:00	8.34	7.3	50	1553	100 BBLS DISPLACEMENT PUMPED
29	Pump Displacement	1/22/2023	04:07	8.34	7.3	50	2380	150 BBLS DISPLACEMENT PUMPED. FCP-2380 PSI @ 7.3 BPM BEFORE SLOW DOWN. RETURNS. RIG RECOVERED 560 BBLS
30	Pump Displacement	1/22/2023	04:13	8.34	4	23.2	2050	173.2 BBLS (CALCULATED) DISPLACEMENT PUMPED
31	Land Plug	1/22/2023	04:13				2980	PLUG LANDED FCP-2050 PSI BUMPED TO 2980 PSI
32	Check Floats	1/22/2023	04:16					BLEED PRESSURE OFF AND CHECK FLOATS, FLOATS HELD 2 BBLS BACK
33	Rig Down Iron	1/22/2023	04:25					PRE RIG DOWN SAFETY MEETING. PICKLE/ BLOW DOWN IRON, RIG DOWN EQUIPMENT, IRON AND HOSES
34	Depart Location	1/22/2023	07:00					CREW DEPARTS LOCATION

Pump Diagrams



JobMaster Program Version 5.01C1
Job Number: 85487
Customer: TERRA
Well Name: WMC 344-24-794



Job Start: Sunday, January 22, 2023