



# Terra Energy Partners

**Well Name: STRAIT BOTTOM RANCH SG 22-22**

**API #: 05-045-24007**

**Job Type: Production**

**Date Job Completed: 3/22/2020**

**Quote #:** QUO-43819

**Execution #:** EXC-25412



## Terra Energy Partners

Attention: Mr. Lynn Cass | (970) 263-2716 | [LCass@terraep.com](mailto:LCass@terraep.com)

Terra Energy Partners | 4828 Loop Central Dr., Suite 900 | Houston, TX 77081

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Dear Mr. Cass,

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

Sincerely,

Devon Hanson

Field Engineer | (701) 590-5946 | [devon.hanson@bjservices.com](mailto:devon.hanson@bjservices.com)

Field Office 28730 US-6, Rifle, CO 81650

Phone: (970) 632-2412

Sales Office 999 18th St. Suite 1200 Denver, CO 80202

Phone: (281) 408-2361

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# BJ Cementing Treatment Report

SERVICE SUPERVISOR	Francisco Castillo	FORMATION	
CLIENT FIELD REPRESENTATIVE	Darrel Leatherman	RIG	H&P 318
DISTRICT	Rifle, CO	COUNTY	GARFIELD
SERVICE	Cementing	STATE / PROVINCE	CO

## WELL GEOMETRY

TYPE	ID (in)	OD (in)	WEIGHT (lb/ft)	MD (ft)	TVD (ft)	EXCESS (%)	GRADE	THREAD
Casing	4.00	4.50	11.60	6,303.00	5,895.00		P-110	
Open Hole	8.75	0.00	0.00	6,310.00	5,895.00	100.00		
Previous Casing	9.00	9.63	32.30	1,003.00	949.00		H-40	

## HARDWARE

Bottom Plug Used?	No	Tool Type	Float Collar
Top Plug Used?	Yes	Tool Depth (ft)	6,270.00
Top Plug Provided By	Non BJ	Max Casing Pressure - Rated (psi)	10690.00
Top Plug Size	4.500	Max Casing Pressure - Operated (psi)	8552.00
Centralizers Used	Yes	Pipe Movement	Reciprocation
Centralizers Type	Bow	Job Pumped Through	Manifold
Landing Collar Depth (ft)	6,270	Top Connection Thread	8RD
Top Connection Size	4.5		

## CIRCULATION PRIOR TO JOB

Well Circulated By	Rig	YP Mud In	6
Circulation Prior to Job	Yes	Solids Present at End of Circulation	No
Circulation Time (min)	30.00	10 sec SGS	3
Circulation Rate (bpm)	10.70	10 min SGS	11
Circulation Volume (bbls)	321.00	30 min SGS	20
Lost Circulation Prior to Cement Job	No	Flare Prior to / during the Cement Job	No
Mud Density In (ppg)	9.20	Gas Present	No
PV Mud In	10		

## TEMPERATURE

Ambient Temperature (°F)	49.00	Slurry Cement Temperature (°F)	67.00
Mix Water Temperature (°F)	65.00	Flow Line Temperature (°F)	85.00

## FLUID DETAILS

FLUID TYPE	FLUID NAME	DENSITY (ppg)	YIELD (Cu Ft/sk)	H <sub>2</sub> O REQ (gals/sk)	PLN TOP FLD (ft)	LENGTH (ft)	VOL (sk)	VOL (Cu Ft)	VOL (bbls)
Spacer / Pre Flush / Flush	Water	8.30			0.00				10.00
Spacer / Pre Flush / Flush	Mud Flush	8.40			0.00				20.00
Spacer / Pre Flush / Flush	Water	8.30			0.00				10.00
Top-Out / Scavenger Slurry	Scavenger	11.00	3.0951	19.21		0.00	91	280.00	49.90
Tail Slurry	Tail Cement	12.50	2.1127	12.04	3,175.00	3,159.00	921	1945.00	346.30
Displacement Final	Displacement	8.30			0.00			0.00	97.70

FLUID TYPE	FLUID NAME	COMPONENT	CONCENTRATION	UOM
Spacer / Pre Flush / Flush	Mud Flush	SPACER SURFACTANT, SS-201	0.5000	GPB
Spacer / Pre Flush / Flush	Mud Flush	MUD REMOVAL, SAPP	10.0000	PPB
Top-Out / Scavenger Slurry	Scavenger	EXTENDER, BENTONITE	8.0000	BWOB
Top-Out / Scavenger Slurry	Scavenger	CEMENT, ASTM TYPE III	65.0000	PCT
Top-Out / Scavenger Slurry	Scavenger	Cement Additive, Sodium Metasilicate A-2	0.2000	BWOB
Top-Out / Scavenger Slurry	Scavenger	CEMENT, FLY ASH (POZZOLAN)	35.0000	PCT
Top-Out / Scavenger Slurry	Scavenger	FOAM PREVENTER, FP-25	0.3000	BWOB
Tail Slurry	Tail Cement	Cement Additive, Sodium Metasilicate A-2	0.3000	BWOB
Tail Slurry	Tail Cement	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	Tail Cement	CEMENT EXTENDER, GYPSUM, A-10	2.0000	BWOB
Tail Slurry	Tail Cement	FLUID LOSS, FL-66	0.7000	BWOB
Tail Slurry	Tail Cement	FOAM PREVENTER, FP-25	0.3000	BWOB

## TREATMENT SUMMARY

TIME	FLUID	RATE (bpm)	FLUID VOL (bbls)	PIPE PRESS (psi)
3/22/2020 8:08:00 PM	Water	6.50	10.00	753.00
3/22/2020 8:09:00 PM	Mud Flush	7.00	20.00	1375.00
3/22/2020 8:17:00 PM	Water	7.00	10.00	1373.00
3/22/2020 8:19:00 PM	Scavenger	7.00	50.00	979.00
3/22/2020 8:26:00 PM	Tail Cement	7.00	346.30	1005.00
3/22/2020 9:34:00 PM	Displacement	7.00	97.70	1253.00

Client: Terra Energy Partners

Well: STRAIT BOTTOM RANCH SG 22-22

Well API: 05-045-24007

Start Date: 3/22/2020

End Date: 3/22/2020

Field Ticket #: FT-25412-S6X8S40202-87442



## MIN / MAX / AVG PRESSURE AND RATES

	MIN	MAX	AVG
Pressure (psi)	753.00	1375.00	1123.00
Rate (bpm)	6.50	7.00	6.92

## DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amt of Cement Returned / Reversed	0.00
Calculated Displacement Vol (bbls)	97.00	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	97.00	Amt of Spacer to Surface	30.00
Did Float Hold?	Yes	Pressure Left on Casing (psi)	0.00
Bump Plug	Yes	Amt Bled Back After Job	0.50
Bump Plug Pressure (psi)	2417.00	Total Volume Pumped (bbls)	533.00
Were Returns Planned at Surface	No	Top Out Cement Spotted	No
Cement Returns During Job	None	Lost Circulation During Cement Job	No

# BJ Cementing Event Log

Long String - Rifle, CO - Francisco Castillo

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	03/22/2020 11:00	Callout					ON LOCATION AT 14:00 HRS
2	03/22/2020 12:30	Depart for Location					LEAVE THE YARD
3	03/22/2020 13:30	Arrive on Location					ARRIVE ON LOCATION, RIG RUNNING CASING
4	03/22/2020 14:00	Rig Up					RIG UP MEETING, RIG UP
5	03/22/2020 19:00	Other (See comment)					RIG LAND CASING, CIRCULATE WELL
6	03/22/2020 19:20	STEACS Briefing					PRE-JOB SAFETY MEETING
7	03/22/2020 20:06	Pressure Test				4500.00	PRESSURE TEST LINES
8	03/22/2020 20:08	Pump Spacer	8.3400	6.50	10.00	753.00	WATER SPACER
9	03/22/2020 20:09	Pump Spacer	8.5000	7.00	20.00	1375.00	MUD FLUSH SPACER
10	03/22/2020 20:17	Pump Spacer	8.3400	7.00	10.00	1373.00	WATER SPACER
11	03/22/2020 20:19	Pumping Cement	11.0000	7.00	50.00	979.00	SCAVENGER CEMENT AT 11 PPG
12	03/22/2020 20:26	Pump Tail Cement	12.5000	7.00	50.00	1005.00	PRIMARY CMT 921SKS/346BBLS AT 12.5PPG, 2.11YLD, 12.04GPS
13	03/22/2020 20:36	Pump Tail Cement	12.5000	7.00	50.00	997.00	100 BBLS PUMPED CEMENT SLURRY
14	03/22/2020 20:46	Pump Tail Cement	12.5000	7.00	50.00	995.00	150 BBLS PUMPED CEMENT SLURRY
15	03/22/2020 20:56	Pump Tail Cement	12.5000	6.50	50.00	817.00	200 BBLS PUMPED CEMENT SLURRY
16	03/22/2020 21:07	Pump Tail Cement	12.5000	6.50	50.00	861.00	250 BBLS PUMPED CEMENT SLURRY
17	03/22/2020 21:16	Pump Tail Cement	12.5000	6.50	50.00	853.00	300 BBLS PUMPED CEMENT SLURRY
18	03/22/2020 21:20	Pump Tail Cement	12.5000	6.50	46.00	871.00	346 BBLS PUMPED CEMENT SLURRY
19	03/22/2020 21:25	End Pumping					SHUTDOWN, WASH PUMP AND LINES

Client: Terra Energy Partners

Well Name / API: STRAIT BOTTOM RANCH SG 22-22 / 05-045-24007

Well MD: 6310

Quote #: QUO-43819-J7K9N6

Plan #: ORD-25412-S6X8S4

Execution #: EXC-25412-S6X8S402



SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
20	03/22/2020 21:34	Pump Displacement	8.3500	7.00	87.00	1071.00	DISPLACEMENT KCL WATER
21	03/22/2020 21:45	Pump Displacement	8.3500	4.00	10.00	1253.00	SLOW RATE
22	03/22/2020 21:48	Land Plug				2417.00	LAND PLUG
23	03/22/2020 21:50	Check Floats					FLOATS HELD, 0.5 BBL FLOW BACK
24	03/22/2020 22:00	Rig Down					RIG DOWN MEETING, RIG DOWN
25	03/22/2020 23:45	Leave Location					AAR, JM, LEAVE LOCATION



# TERRA 4 1/2 PRODUCTION

