



# Terra Energy Partners

Well Name: STRAIT BOTTOM RANCH SG 422-22

API #: 05-045-24010

Job Type: Production

Date Job Completed: 4/1/2020

Quote #: QUO-44119

Execution #: EXC-25604



## Terra Energy Partners

Attention: Mr. Lynn Cass | (970) 263-2716 | 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

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

<b>SERVICE SUPERVISOR</b>	Eugene Castaneda	<b>FORMATION</b>	
<b>CLIENT FIELD REPRESENTATIVE</b>	Craig Borgstede	<b>RIG</b>	H&P 318
<b>DISTRICT</b>	Rifle, CO	<b>COUNTY</b>	GARFIELD
<b>SERVICE</b>	Cementing	<b>STATE / PROVINCE</b>	CO

## WELL GEOMETRY

TYPE	ID (in)	OD (in)	WEIGHT (lb/ft)	MD (ft)	TVD (ft)	EXCESS (%)	GRADE	THREAD
Open Hole	8.75	0.00	0.00	6,037.00	5,861.00	100.00		
Previous Casing	9.00	9.63	32.30	1,004.00	971.00		H-40	
Casing	4.00	4.50	11.60	6,030.06	5,861.00		P-110	

## HARDWARE

<b>Bottom Plug Used?</b>	No	<b>Tool Type</b>	Float Collar
<b>Top Plug Used?</b>	Yes	<b>Tool Depth (ft)</b>	5,999.05
<b>Top Plug Provided By</b>	Non BJ	<b>Max Casing Pressure - Rated (psi)</b>	10690.00
<b>Top Plug Size</b>	4.500	<b>Max Casing Pressure - Operated (psi)</b>	8552.00
<b>Centralizers Used</b>	Yes	<b>Pipe Movement</b>	Reciprocation
<b>Centralizers Type</b>	Bow	<b>Job Pumped Through</b>	Manifold
<b>Landing Collar Depth (ft)</b>	5,999	<b>Top Connection Thread</b>	8rd
<b>Top Connection Size</b>	4.5		

## CIRCULATION PRIOR TO JOB

<b>Well Circulated By</b>	Rig	<b>Flare Prior to / during the Cement Job</b>	No
<b>Circulation Prior to Job</b>	Yes	<b>Gas Present</b>	No
<b>Circulation Time (min)</b>	60.00	<b>Solids Present at End of Circulation</b>	No
<b>Circulation Rate (bpm)</b>	10.70	<b>Lost Circulation Prior to Cement Job</b>	No
<b>Circulation Volume (bbls)</b>	642.00	<b>Mud Density In (ppg)</b>	9.20

## TEMPERATURE

<b>Ambient Temperature (°F)</b>	61.00	<b>Mix Water Temperature (°F)</b>	61.00
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## 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	2,946.00	3,131.00	913	1928.00	343.20
Displacement Final	Displacement	8.30			0.00			0.00	93.80

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, FLY ASH (POZZOLAN)	35.0000	PCT
Top-Out / Scavenger Slurry	Scavenger	Cement Additive, Sodium Metasilicate A-2	0.2000	BWOB
Top-Out / Scavenger Slurry	Scavenger	FOAM PREVENTER, FP-25	0.3000	BWOB
Top-Out / Scavenger Slurry	Scavenger	CEMENT, ASTM TYPE III	65.0000	PCT
Tail Slurry	Tail Cement	CEMENT EXTENDER, GYPSUM, A-10	2.0000	BWOB
Tail Slurry	Tail Cement	CEMENT, ASTM TYPE III	100.0000	PCT
Tail Slurry	Tail Cement	FOAM PREVENTER, FP-25	0.3000	BWOB
Tail Slurry	Tail Cement	FLUID LOSS, FL-66	0.7000	BWOB
Tail Slurry	Tail Cement	Cement Additive, Sodium Metasilicate A-2	0.3000	BWOB

## TREATMENT SUMMARY

TIME	FLUID	RATE (bpm)	FLUID VOL (bbls)	PIPE PRESS (psi)
4/1/2020 10:43:00 PM	Water	5.00	10.00	1000.00
4/1/2020 10:45:00 PM	Mud Flush	6.00	20.00	1010.00
4/1/2020 10:48:00 PM	Water	6.00	10.00	1070.00
4/1/2020 10:51:00 PM	Scavenger	6.00	49.90	790.00
4/1/2020 11:00:00 PM	Tail Cement	7.20	343.20	1000.00
4/2/2020 12:05:00 AM	Displacement	9.60	93.80	1391.00

## MIN / MAX / AVG PRESSURE AND RATES

	MIN	MAX	AVG
Pressure (psi)	790.00	1391.00	1043.50
Rate (bpm)	5.00	9.60	6.63

Client: Terra Energy Partners, LLC

Well: STRAIT BOTTOM RANCH SG 422-22

Well API: 05-045-24010

Start Date: 4/1/2020

End Date: 4/2/2020

Field Ticket #: FT-25604-T7N9H40202-43066



## DISPLACEMENT AND END OF JOB SUMMARY

Displaced By	BJ	Amt of Cement Returned / Reversed	0.00
Calculated Displacement Vol (bbls)	93.00	Method Used to Verify Returns	Visual
Actual Displacement Vol (bbls)	93.00	Amt of Spacer to Surface	0.00
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)	1391.00	Total Volume Pumped (bbls)	526.00
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 - Eugene Castaneda

SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
1	04/01/2020 13:00	Callout					Crew got called out.
2	04/01/2020 16:00	Other (See comment)					Crew Did their pre-trip inspections and got equipment road ready.
3	04/01/2020 17:15	STEACS Briefing					Steacs briefing for convoy.
4	04/01/2020 17:30	Arrive on Location					Arrived on location.
5	04/01/2020 18:15	STEACS Briefing					Steacs briefing for rig up.
6	04/01/2020 18:30	Rig Up					Crew rigged up what needed to be rigged up.
7	04/01/2020 19:30	Other (See comment)					Rig running casing.
8	04/01/2020 21:40	STEACS Briefing					Steacs briefing for job procedure,rig circulating.
9	04/01/2020 22:38	Other (See comment)					Fill lines.
10	04/01/2020 22:40	Pressure Test				4000.00	Test lines.
11	04/01/2020 22:43	Pump Spacer	8.3000	5.00	10.00	1000.00	10 bbl freshwater spacer,good returns.
12	04/01/2020 22:45	Pump Spacer	8.4000	6.00	20.00	1010.00	20 bbl mud flush spacer,good returns.
13	04/01/2020 22:48	Pump Spacer	8.3000	6.00	10.00	1070.00	10 bbl freshwater spacer,good returns.
14	04/01/2020 22:51	Pumping Cement	11.0000	6.00	50.00	790.00	Pumped a total of 50 bbl scavenger,good returns.
15	04/01/2020 23:00	Pump Tail Cement	12.5000	6.00	50.00	765.00	Pumping tail 50 bbl gone,good returns.
16	04/01/2020 23:09	Pump Tail Cement	12.5000	6.00	100.00	740.00	Pumping tail 100 bbl gone,good returns.
17	04/01/2020 23:16	Pump Tail Cement	12.5000	6.00	150.00	745.00	Pumping tail 150 bbl gone,good returns.
18	04/01/2020 23:24	Pump Tail Cement	12.5000	6.70	200.00	900.00	Pumping tail 200 bbl gone,good returns.
19	04/01/2020 23:33	Pump Tail Cement	12.5000	6.70	240.00	960.00	Pumping tail 240 bbl gone,lost returns.

Client: Terra Energy Partners, LLC

Well Name / API: STRAIT BOTTOM RANCH SG 422-22 / 05-045-24010

Well MD: 6037

Quote #: QUO-44119-F2L8N8

Plan #: ORD-25604-T7N9H4

Execution #: EXC-25604-T7N9H402



SEQ	START DATE / TIME	EVENT	DENSITY (ppg)	PUMP RATE (bpm)	PUMP VOL (bbls)	PIPE PRESSURE (psi)	COMMENTS
20	04/01/2020 23:40	Pump Tail Cement	12.5000	7.20	300.00	1000.00	Pumping tail 300 bbl gone,no returns.
21	04/01/2020 23:47	Pump Tail Cement	12.5000	5.00	343.00	490.00	Pumped a total 343 bbl tail,no returns.
22	04/01/2020 23:56	Wash Pumps and Lines					Shut down wash pump and released top plug.
23	04/02/2020 00:05	Pump Displacement	8.3000	9.60	30.00	980.00	Pumping displacement 30 bbl gone,no returns.
24	04/02/2020 00:08	Pump Displacement	8.3000	9.60	60.00	1350.00	Pumping displacement 60 bbl gone,no returns.
25	04/02/2020 00:12	Pump Displacement	8.3000	3.50	80.00	870.00	Pumping displacement 80 bbl gone,decrease rate,no returns.
26	04/02/2020 00:14	Land Plug	8.3000	3.50	93.00	1391.00	Landed plug at calculated displacement.
27	04/02/2020 00:17	Other (See comment)					Release pressure .5 back,Floats held.
28	04/02/2020 00:20	STEACS Briefing					Steacs briefing for rig down.
29	04/02/2020 00:30	Rig Down					Crew rigged down wwhat needed to be rigged down.
30	04/02/2020 01:00	Filling Out Ticket					Doing paperwork.
31	04/02/2020 01:30	STEACS Briefing					Steacs briefing for convoy.
32	04/02/2020 01:40	Leave Location					Departing location.



