



Terra Energy Partners

Well Name: STRAIT BOTTOM RANCH SG 412-22

API #: 05-045-24006

Job Type: Production

Date Job Completed: 3/28/2020

Quote #: QUO-43889

Execution #: EXC-25516



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

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@bjsservices.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

BJ Cementing Treatment Report

| | | | |
|-----------------------------|--------------|------------------|----------|
| SERVICE SUPERVISOR | Douglas Diaz | FORMATION | |
| CLIENT FIELD REPRESENTATIVE | Garrett Wade | 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 | 6,264.00 | 5,847.00 | | P-110 | |
| Previous Casing | 9.00 | 9.63 | 32.30 | 1,003.00 | 947.00 | | H-40 | |
| Open Hole | 8.75 | 0.00 | 0.00 | 6,274.00 | 5,847.00 | 100.00 | | |

HARDWARE

| | | | |
|---------------------------|-------|--------------------------------------|---------------|
| Bottom Plug Used? | No | Tool Type | Float Collar |
| Top Plug Used? | Yes | Tool Depth (ft) | 6,236.50 |
| Top Plug Provided By | BJ | Max Casing Pressure - Rated (psi) | 10690.00 |
| Top Plug Size | 4.500 | Max Casing Pressure - Operated (psi) | 8552.00 |
| Centralizers Used | No | Pipe Movement | Reciprocation |
| Landing Collar Depth (ft) | 6,236 | Job Pumped Through | Manifold |
| Top Connection Size | 4.5 | Top Connection Thread | 8 RND |

CIRCULATION PRIOR TO JOB

| | | | |
|---------------------------|--------|--|------|
| Well Circulated By | Rig | Flare Prior to / during the Cement Job | No |
| Circulation Prior to Job | Yes | Gas Present | No |
| Circulation Time (min) | 60.00 | Solids Present at End of Circulation | No |
| Circulation Rate (bpm) | 11.00 | Lost Circulation Prior to Cement Job | No |
| Circulation Volume (bbls) | 660.00 | Mud Density In (ppg) | 9.70 |

TEMPERATURE

| | | | |
|----------------------------|-------|--------------------------------|-------|
| Ambient Temperature (°F) | 24.00 | Slurry Cement Temperature (°F) | 64.00 |
| Mix Water Temperature (°F) | 56.00 | | |

FLUID DETAILS

| FLUID TYPE | FLUID NAME | DENSITY (ppg) | YIELD (Cu Ft/sk) | H ₂ 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 | 3,103.00 | 3,177.00 | 926 | 1956.00 | 348.20 |
| Displacement Final | Displacement | 8.30 | | | 0.00 | | | 0.00 | 96.90 |

| 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 | FOAM PREVENTER, FP-25 | 0.3000 | BWOB |
| Top-Out / Scavenger Slurry | Scavenger | CEMENT, ASTM TYPE III | 65.0000 | PCT |
| 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 |
| Tail Slurry | Tail Cement | Cement Additive, Sodium Metasilicate A-2 | 0.3000 | BWOB |
| 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 |
| Tail Slurry | Tail Cement | CEMENT, ASTM TYPE III | 100.0000 | PCT |

TREATMENT SUMMARY

| TIME | FLUID | RATE (bpm) | FLUID VOL (bbls) | PIPE PRESS (psi) |
|----------------------|--------------|------------|------------------|------------------|
| 3/28/2020 4:48:00 AM | Water | 6.50 | 10.00 | 1213.00 |
| 3/28/2020 5:00:00 AM | Mud Flush | 7.00 | 20.00 | 1324.00 |
| 3/28/2020 5:03:00 AM | Water | 7.00 | 10.00 | 1339.00 |
| 3/28/2020 5:06:00 AM | Scavenger | 7.00 | 50.00 | 1424.00 |
| 3/28/2020 5:12:00 AM | Tail Cement | 7.00 | 348.00 | 1110.00 |
| 3/28/2020 6:08:00 AM | Displacement | 8.00 | 97.00 | 1982.00 |

MIN / MAX / AVG PRESSURE AND RATES

| | MIN | MAX | AVG |
|----------------|---------|---------|---------|
| Pressure (psi) | 1110.00 | 1982.00 | 1398.67 |
| Rate (bpm) | 6.50 | 8.00 | 7.08 |

Client: Terra Energy Partners

Well: STRAIT BOTTOM RANCH SG 412-22

Well API: 05-045-24006

Start Date: 3/28/2020

End Date: 3/28/2020

Field Ticket #: FT-25516-D8V5S10202-26147



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 | 0.00 |
| Did Float Hold? | Yes | Pressure Left on Casing (psi) | 0.00 |
| Bump Plug | Yes | Amt Bled Back After Job | 0.75 |
| Bump Plug Pressure (psi) | 2433.00 | Total Volume Pumped (bbls) | 535.00 |
| Were Returns Planned at Surface | No | Top Out Cement Spotted | No |
| Cement Returns During Job | Partial | Lost Circulation During Cement Job | No |



BJ Cementing Event Log

Long String - Rifle, CO - Douglas Diaz

| SEQ | START DATE / TIME | EVENT | DENSITY (ppg) | PUMP RATE (bpm) | PUMP VOL (bbls) | PIPE PRESSURE (psi) | COMMENTS |
|-----|-------------------|---------------------|---------------|-----------------|-----------------|---------------------|---|
| 1 | 03/27/2020 23:00 | Callout | | | | | Yard call 2300 on location 0200 |
| 2 | 03/28/2020 00:28 | Depart for Location | | | | | Leave Rifle shop for location |
| 3 | 03/28/2020 01:45 | Arrive on Location | | | | | Arrive on location, rig running casing |
| 4 | 03/28/2020 01:45 | Spot Units | | | | | Spot in all equipment |
| 5 | 03/28/2020 02:20 | Rig Up | | | | | Pre rig up safety meeting, rig in all equipment and lines on the ground |
| 6 | 03/28/2020 03:00 | Rig | | | | | Waiting on rig to finish casing and circulate |
| 7 | 03/28/2020 04:20 | STEACS Briefing | | | | | Pre job safety meeting with company man and rig crew |
| 8 | 03/28/2020 04:28 | Rig | | | | | Waiting on rig to finish circulating |
| 9 | 03/28/2020 04:39 | Rig | | | | | Rig ended circulation, circulated 60 mins @ 11 BBLs/min total of 660 BBLs |
| 10 | 03/28/2020 04:39 | Rig | | | | | Waiting on rig to lay down CRT |
| 11 | 03/28/2020 04:42 | Rig Up | | | | | Rig up cement head and lines on the floor |
| 12 | 03/28/2020 04:48 | Prime Up | 8.3400 | 6.50 | 10.00 | 1213.00 | Prime up pump and lines |
| 13 | 03/28/2020 04:50 | Rig | | | | | Rig needed to blow down |
| 14 | 03/28/2020 04:56 | Pressure Test | | | | 5000.00 | Pressure test |
| 15 | 03/28/2020 05:00 | Pump Spacer | 8.3400 | 7.00 | 20.00 | 1324.00 | Pumping mud flush spacer |
| 16 | 03/28/2020 05:03 | Pump Spacer | 8.3400 | 7.00 | 10.00 | 1339.00 | Pumping fresh water spacer |
| 17 | 03/28/2020 05:06 | Pumping Cement | 11.0000 | 7.00 | 0.00 | 1424.00 | Pumping scavenger |
| 18 | 03/28/2020 05:06 | Pumping Cement | 11.0000 | 7.00 | 50.00 | 1110.00 | Pumping scavenger |
| 19 | 03/28/2020 05:12 | Pump Tail Cement | 12.5000 | 7.00 | 0.00 | 1110.00 | Pumping tail cement |

Client: Terra Energy Partners

Well Name / API: STRAIT BOTTOM RANCH SG 412-22 / 05-045-24006

Well MD: 6280

Quote #: QUO-43889-N0C6M2

Plan #: ORD-25516-D8V5S1

Execution #: EXC-25516-D8V5S102



| SEQ | START DATE / TIME | EVENT | DENSITY (ppg) | PUMP RATE (bpm) | PUMP VOL (bbls) | PIPE PRESSURE (psi) | COMMENTS |
|-----|-------------------|----------------------|---------------|-----------------|-----------------|---------------------|--|
| 20 | 03/28/2020 05:12 | Pump Tail Cement | 12.5000 | 7.00 | 50.00 | 1000.00 | Pumping tail cement |
| 21 | 03/28/2020 05:20 | Pump Tail Cement | 12.5000 | 7.00 | 100.00 | 975.00 | Pumping tail cement |
| 22 | 03/28/2020 05:26 | Pump Tail Cement | 12.5000 | 7.00 | 150.00 | 953.00 | Pumping tail cement |
| 23 | 03/28/2020 05:33 | Pump Tail Cement | 12.5000 | 7.00 | 200.00 | 989.00 | Pumping tail cement |
| 24 | 03/28/2020 05:41 | Pump Tail Cement | 12.5000 | 7.00 | 250.00 | 980.00 | Pumping tail cement |
| 25 | 03/28/2020 05:48 | Pump Tail Cement | 12.5000 | 7.00 | 300.00 | 952.00 | Pumping tail cement |
| 26 | 03/28/2020 05:55 | Pump Tail Cement | 12.5000 | 7.00 | 348.00 | 945.00 | Pumping tail cement |
| 27 | 03/28/2020 06:01 | Wash Pumps and Lines | | | | | Washed pump and lines to pit |
| 28 | 03/28/2020 06:08 | Drop Top Plug | | | | | Dropped top plug verified by company man |
| 29 | 03/28/2020 06:08 | Pump Displacement | 8.3400 | 7.00 | 0.00 | 636.00 | Pumping KCL displacement, no returns |
| 30 | 03/28/2020 06:08 | Pump Displacement | 8.3400 | 8.00 | 50.00 | 1562.00 | Pumping KCL displacement, regained returns @ 40 BBLs away |
| 31 | 03/28/2020 06:15 | Pump Displacement | 8.3400 | 4.00 | 97.00 | 1330.00 | Pumping KCL displacement, lost returns @ 60 BBLs away |
| 32 | 03/28/2020 06:22 | Land Plug | | | | 2433.00 | Land plug, FCP 1330 PSI bumped to 2433 PSI |
| 33 | 03/28/2020 06:22 | Check Floats | | | | | Bled pressure, floats held, .75 BBLs bled back |
| 34 | 03/28/2020 06:25 | Wash Pumps and Lines | | | | | Washed and winterized pump and lines to pit |
| 35 | 03/28/2020 06:45 | Rig Down | | | | | Pre rig down safety meeting, rigged down lines and equipment |
| 36 | 03/28/2020 07:15 | Leave Location | | | | | Leave location to pick up equipment for surface job |





Terra SG 412-22 Prod (IG CPF-011 3/28/20)

