

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:

402528794

BRADENHEAD TEST REPORT

Step 1. Before opening any valves, record all tubing and casing pressures as found.

Step 2. Collect liquid and gas samples as required; consult Bradenhead Testing and Reporting Instructions and Guidance for field specific Orders at <http://cogcc/reg.html#opguidance>

Step 3. Conduct Bradenhead test.

Step 4. Submit Form 17 within 10 days of test. Attach a wellbore diagram if not previously submitted or if wellbore configuration has changed since last wellbore diagram was submitted.

Step 5. Submit sample analytical results via Form 43.

1. OGCC Operator Number: 81490 3. BLM Lease No: _____

2. Name of Operator: ST CROIX OPERATING INC

4. API Number: 05-121-10609-00 5. Multiple completion? ☐ Yes ☒ No

6. Well Name: HEIMERMAN Number: 18-2

7. Location (QtrQtr, Sec, Twp, Rng, Meridian): NWNW,18,2S,51W,6

8. County WASHINGTON 9. Field Name: HAMMER HEAD

10. Minerals: ☒ Fee ☐ State ☐ Federal ☐ Indian

11. Date of Test: 10/28/2020

12. Well Status: ☐ Flowing
☐ Shut In ☐ Gas Lift
☒ Pumping ☐ Injection
☐ Clock/Intermitter
☐ Plunger Lift

13. Number of Casing Strings:
☒ Two ☐ Three ☐ Liner?

14. EXISTING PRESSURES

| | | | | | |
|-------------------------------|-----------------------|----------------------------|------------------------|-------------------------|-------------|
| Record all pressures as found | Tubing: 0 Fm: JSND | Tubing: _____ Fm: _____ | Prod Csg 0 Fm: JSND | Intermediate Csg: _____ | Surf. Csg 0 |
|-------------------------------|-----------------------|----------------------------|------------------------|-------------------------|-------------|

BRADENHEAD TEST

With gauges monitoring production, intermediate casing and tubing pressures, open surface casing (Bradenhead) valve (if no intermediate casing, monitor only the production casing and tubing pressures.) Record pressures at five minute intervals.

Describe character of flow in "Bradenhead Flow" column: O = No Flow; C = Continuous; D = Down to 0; S = Surge; W = Whisper

Describe fluid type in "Bradenhead Fluid" column: H = Water H₂O; M = Mud; G = Gas; V = Vapor; L = Liquid Hydrocarbon; H & M = Water & Mud; H & G = Water & Gas; H & V = Water & Vapor; M & G = Mud & Gas; M & V = Mud & Vapor; G & V = Gas & Vapor; H & L = Water & Liquid Hydrocarbon; M & L = Mud & Liquid Hydrocarbon; G & L = Gas & Liquid Hydrocarbon; V & L = Vapor & Liquid Hydrocarbon; N = None

| | | | | | | | |
|--|------------------------|------------|--------------------------|----------------------------|---------------------|------------------|-------------------|
| Buried valve? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | Elapsed Time (Min:Sec) | Fm: Tubing | Fm: Tubing: | Prod Csg PSIG | Intermedia Csg PSIG | Bradenhead Flow: | Bradenhead Fluid: |
| Confirmed open? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 00:00 | JSND 0 | <input type="checkbox"/> | <input type="checkbox"/> 0 | | NO FLOW | NONE |
| BRADENHEAD SAMPLE TAKEN? | 05:00 | JSND 0 | <input type="checkbox"/> | <input type="checkbox"/> 0 | | NO FLOW | NONE |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Gas <input type="checkbox"/> Liquid | 10:00 | JSND 0 | <input type="checkbox"/> | <input type="checkbox"/> 0 | | NO FLOW | NONE |
| Character of Bradenhead fluid: | 15:00 | JSND 0 | <input type="checkbox"/> | <input type="checkbox"/> 0 | | NO FLOW | NONE |
| <input type="checkbox"/> Clear <input type="checkbox"/> Fresh | 20:00 | JSND 0 | <input type="checkbox"/> | <input type="checkbox"/> 0 | | NO FLOW | NONE |
| <input type="checkbox"/> Sulfur <input type="checkbox"/> Salty <input type="checkbox"/> Black | 25:00 | JSND 0 | <input type="checkbox"/> | <input type="checkbox"/> 0 | | NO FLOW | NONE |
| Other:(describe) | 30:00 | JSND 0 | <input type="checkbox"/> | <input type="checkbox"/> 0 | | NO FLOW | NONE |
| Instantaneous Bradenhead PSIG at end of test: > 0 | | | | | | | |

INTERMEDIATE CASING TEST

With gauges monitoring production, intermediate casing and tubing pressures, open surface casing (Bradenhead) valve (if no intermediate casing, monitor only the production casing and tubing pressures.) Record pressures at five minute intervals.

Describe character of flow in "Intermediate Flow" column: O = No Flow; C = Continuous; D = Down to 0; S = Surge; W = Whisper

Describe fluid type in "Intermediate Fluid" column: H = Water H₂O; M = Mud; G = Gas; V = Vapor; L = Liquid Hydrocarbon; H & M = Water & Mud; H & G = Water & Gas; H & V = Water & Vapor; M & G = Mud & Gas; M & V = Mud & Vapor; G & V = Gas & Vapor; H & L = Water & Liquid Hydrocarbon; M & L = Mud & Liquid Hydrocarbon; G & L = Gas & Liquid Hydrocarbon; V & L = Vapor & Liquid Hydrocarbon; N = None

| | | | | | | | |
|---|--|--------------------------|--------------------------|--------------------------|-----------------------|--------------------|---------------------|
| Buried valve? <input type="checkbox"/> Yes <input type="checkbox"/> No | Elapsed Time (Min:Sec) | Fm: Tubing | Fm: Tubing: | Prod Csg PSIG | Intermediate Csg PSIG | Intermediate Flow: | Intermediate Fluid: |
| Confirmed open? <input type="checkbox"/> Yes <input type="checkbox"/> No | 00:00 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | |
| INTERMEDIATE SAMPLE TAKEN? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Gas <input type="checkbox"/> Liquid | 05:00 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | |
| | 10:00 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | |
| | 15:00 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | |
| | 20:00 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | |
| Character of Intermediate fluid: <input type="checkbox"/> Clear <input type="checkbox"/> Fresh <input type="checkbox"/> Sulfur <input type="checkbox"/> Salty <input type="checkbox"/> Black Other:(describe) _____ | 25:00 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | |
| | 30:00 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | |
| | Instantaneous Intermediate Casing PSIG at end of test: > _____ | | | | | | |

Comments:

I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

| | | |
|---------------------------------------|----------------------------------|------------------------------|
| Test Performed By: <u>Tim Crumley</u> | Title: <u>Pumper</u> | Phone: <u>(970) 768-5659</u> |
| Signed: <u>Ryan Dornbos</u> | Title: <u>Petroleum Engineer</u> | Date: <u>11/9/2020</u> |
| Witnessed By: _____ | Title: _____ | Agency: _____ |