

**State of Colorado
Oil and Gas Conservation Commission**

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BRADENHEAD TEST REPORT

Step 1. Record all tubing and casing pressures as found. Step 2. Sample now. If intermediate or surface casing pressure > 25 psi. In sensitive areas, 1 psi.
Step 3. Conduct Bradenhead test. Step 4. Conduct intermediate casing test. Step 5. Send report to BLM within 3 days and to OGCC within 10 days. Include wellbore diagram if not previously submitted or if wellbore configuration has changed since prior program. Attach gas and liquid analyses if sampled.

1. OGCC Operator Number: 10531 3. BLM Lease No: 52447A
 2. Name of Operator: VANGUARD OPERATING LLC
 4. API Number; 05-045-07736-00 5. Multiple completion? Yes No
 6. Well Name: GIBSON GULCH UNIT Number: 9-30A
 7. Location (QtrQtr, Sec, Twp, Rng, Meridian): NWSW,29,6S,91W,6
 8. County GARFIELD 9. Field Name: MAMM CREEK
 10. Minerals: Fee State Federal Indian

11. Date of Test: 06/21/2018
 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: <u>224</u> Fm: <u>WMFK</u>	Tubing: _____ Fm: _____	Prod Csg <u>87</u> Fm: <u>WMFK</u>	Intermediate Csg: _____	Surf. Csg <u>173</u>
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BRADENHEAD TEST

Buried valve? Yes No
 Confirmed open? Yes No
 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 Define characteristics of flow in "Bradenhead Flow" column using letter designations below:
 O = No Flow; C = Continuous; D = Down to 0; V = Vapor
 H = Water H2O; M = Mud; W = Whisper; S = Surge; G = Gas

Elapsed Time (Min:Sec)	Fm: Tubing	Fm: Tubing:	Prod Csg PSIG	Intermedia Csg PSIG	Bradenhead Flow:
00:00	WMFK 224	<input type="checkbox"/>	<input type="checkbox"/> 87		G
05:00	WMFK 237	<input type="checkbox"/>	<input type="checkbox"/> 89		G
10:00	WMFK 237	<input type="checkbox"/>	<input type="checkbox"/> 88		W
15:00	WMFK 237	<input type="checkbox"/>	<input type="checkbox"/> 88		W
20:00	WMFK 237	<input type="checkbox"/>	<input type="checkbox"/> 90		V
25:00	WMFK 237	<input type="checkbox"/>	<input type="checkbox"/> 90		V
30:00	WMFK 237	<input type="checkbox"/>	<input type="checkbox"/> 90		V

BRADENHEAD SAMPLE TAKEN?
 Yes No Gas Liquid

Character of Bradenhead fluid: Clear Fresh
 Sulfur Salty Black

Other:(describe) _____
 Sample cylinder number: _____

Instantaneous Bradenhead PSIG at end of test: > 0

INTERMEDIATE CASING TEST

Buried valve? Yes No
 Confirmed open? Yes No
 With gauges monitoring production, intermediate casing and tubing pressures, open the intermediate casing valve. Record pressures at five minute intervals Characterize flow in "Intermediate Flow" column using letter designations below:
 O = No Flow; C = Continuous; D = Down to 0; V = Vapor
 H = Water H2O; M = Mud; W = Whisper; S = Surge; G = Gas

Elapsed Time (Min:Sec)	Fm: Tubing	Fm: Tubing:	Prod Csg PSIG	Intermedia Csg PSIG	Bradenhead Flow:
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

INTERMEDIATE SAMPLE TAKEN?
 Yes No Gas Liquid

Character of Intermediate fluid: Clear Fresh
 Sulfur Salty Black

Other:(describe) _____
 Sample cylinder number: _____

Instantaneous Intermediate Casing PSIG at end of test: > _____

Comments: First tubing reading was not accurate, replaced guage connection before second reading. DM, DH

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

Test Performed By: Dustin Miller Title: Production Foreman Phone: (970) 230-1154

Signed: Dustin Miller Title: Production Foreman Date: 6/22/2018

Witnessed By: Darin Holtz Title: Field Inspector Agency: COGCC