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*HEARINGS SECTION*

# RAILROAD COMMISSION OF TEXAS

## OFFICE OF GENERAL COUNSEL

**OIL AND GAS DOCKET NO. 7B-0268629**

COMMISSION CALLED HEARING TO CONSIDER WHETHER OPERATION OF THE RANGE PRODUCTION COMPANY BUTLER UNIT WELL NO. 1H (RRC ID 253732) AND TEAL UNIT WELL NO. 1H (RRC ID 253729) IN THE NEWARK, EAST (BARNETT SHALE) FIELD, HOOD COUNTY, TEXAS, ARE CAUSING OR CONTRIBUTING TO CONTAMINATION OF CERTAIN DOMESTIC WATER WELLS IN PARKER COUNTY, TEXAS

Heard by: Donna K. Chandler, Technical Examiner  
Gene Montes, Hearings Examiner

**Appearances:**

**Representing:**

David Jackson  
Stephen Ravel  
John Riley  
Andrew Sims  
Mike Middlebrook  
Norman Warpinski  
John McBeath  
Mark McGaffrey  
Keith Wheeler  
Charles Kreidler  
Alan Kornacki  
Chris Hosek

Range Production Company

David Cooney

Railroad Commission staff

Barry Hageman

Enervest Operating Co, LLC

Bill Stevens

Texas Alliance of Energy Producers

**Procedural history:**

Notice of Hearing:	December 8, 2010
Hearing held:	January 19-20, 2011
Transcript date:	January 24, 2011
Record Closed:	February 17, 2011
PFD issued:	March 7, 2011

**EXAMINERS' REPORT AND PROPOSAL FOR DECISION**

**STATEMENT OF THE CASE**

This hearing was called by the Railroad Commission of Texas ("RRC") to determine whether the Butler Unit Well No. 1H ("Butler well") or the Teal Unit Well No. 1H ("Teal well"), both horizontal drainhole wells operated by Range Production Company ("Range") and producing from the Newark, East (Barnett Shale) Field, are causing or contributing to the contamination of certain domestic water wells in Parker County. The Notice of Hearing specifically states:

"...the Commission will consider the extent and causation of and responsibility for, any contamination that may have occurred, or which is likely to occur, in domestic water wells in the area of the Range Production Company Butler Unit, Well No. 1H (RRC No. 253732) and the Teal Unit, Well No. 1H (RRC No. 253779), and, more particularly, whether the operation of these wells has caused or contributed, or may cause or contribute, to any such contamination. The Commission may also consider whether there is any alternative cause or contributor to any contamination that may have occurred."

The RRC has had an ongoing investigation into the cause of gas being produced in the domestic water wells since August 2010. In October 2010, the Environmental Protection Agency ("EPA") began its own investigation into the cause of the contamination of the wells, and on December 7, 2010, the EPA issued an Emergency Administrative Order to Range. (See Attachment A, Range Exhibit No. 5). In the order, the EPA concluded that, "[Range] caused or contributed to the endangerment identified herein [inter alia, benzene and methane in two nearby domestic water wells.]" (See Attachment A, Conclusion of Law No. 46). The Order further described to Range "..... the action you must take to ensure the Butler Unit and Teal Unit production facilities pose no imminent and substantial endangerment to public health through methane contamination of an underground source of drinking water."

The Notice of this hearing was sent to Range, the owners of the two domestic water wells at issue and to three EPA officials. The Notice stated "The Commission encourages the participation of EPA in the hearing and presentation by EPA of evidence in its possession supporting the findings of fact and conclusions of law in the Emergency Administrative Order." Range appeared at the RRC hearing and presented evidence in support of its position that the operations of its Teal well and Butler well are not contributing to the production of methane in domestic water wells.

RRC staff appeared at the hearing and cross-examined Range's witnesses. Staff presented an exhibit summarizing the RRC's investigations in this matter, beginning August 6, 2010. (See Attachment B, Staff Exhibit 1).

There was no appearance at the hearing by any representative of the EPA or by owners of the water wells identified as contaminated.

### DISCUSSION OF THE EVIDENCE

#### Background

In August 2010, Mr. Steven Lipsky complained to the Abilene District Office of the RRC that his domestic water well contained natural gas. On August 17, 2010, the RRC collected water samples from the Lipsky well for analysis. On August 26, 2010, the RRC collected gas samples from the Lipsky well for analysis. At approximately the same time, the RRC requested Range to provide a gas analysis from both the bradenhead (the space between the surface casing and the production casing of the well) and from the production tubing of its Butler well.<sup>1</sup> The RRC further requested that Range test the mechanical integrity of the casing of its Butler well. The Butler well is the nearest producing well to the Lipsky well. The path of the Butler well comes within a horizontal distance of approximately 450 feet of the location of the Lipsky water well, but at that point, the Butler wellbore is more than 5,000 feet deeper than the Lipsky water well.

In a memo dated September 22, 2010, the RRC Abilene District Office staff stated "Each of the gas samples taken, the Lipsky water well, the Butler Unit production and the Butler Unit bradenhead gas had distinct characteristics from each of the others." Range conducted the requested production casing integrity test on its Butler No. 1 on October 14, 2010. The test, which was witnessed by RRC personnel, indicated no communication between the surface casing, production casing, or production tubing.

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<sup>1</sup> The Butler well is a horizontal drainhole well producing from the Newark, East (Barnett Shale) Field at a depth of approximately 5,700 feet.

On October 26, 2010, the EPA collected the following samples for its investigation:

1. water and gas samples from the Lipsky water well;
2. a water sample from the Rick Hayley domestic water well storage tank;
3. gas and water samples from the tubing of the Butler well; and
4. gas sample from the tubing of the Teal Unit Well No. 1H.<sup>2</sup>

The horizontal portions of the Teal well and Butler well are approximately 1,000 feet apart and the wells are drilled from the same surface location. The Rick Hayley domestic water well is on property adjacent to the Lipsky property to the north and is a horizontal distance of approximately 300 feet from the path of the Butler well. However, at that point, the Butler well is more than 5,000 feet deeper than the Hayley water well. (See Attachment C, portion of Range Exhibit No. 30).

In a letter dated December 3, 2010, Range notified John Tintera, Executive Director of the RRC, that Range would continue to work with the RRC to demonstrate that both the Teal well and the Butler well were in compliance with all RRC regulations. In the same letter, Range offered to collect soil samples to investigate the possible source of gas production in the Lipsky well, provide gas monitoring equipment and alternative water sources to Mr. Lipsky, and install monitoring wells as directed by the RRC. The letter further indicated that Range's initial analyses indicated that the gas produced in the Lipsky water well had a different constituent analysis than gas from both the Butler well production tubing and from the Butler well bradenhead.

On December 7, 2010, the EPA issued an Emergency Administrative Order ("EAO") to Range. On December 8, 2010, the RRC issued its Notice of Hearing in this docket.

#### Range Operations

Michael Middlebrook, Vice President of Operations for the Barnett Shale and Northeast Marcellus Shale for Range, testified regarding Range's operations in the area, specifically concerning the Teal and Butler wells. The Teal well was drilled beginning in March 2009 and the Butler well was drilled beginning in June 2009. Both wells were put on production in August 2009. The wells are drilled from the same surface location, which is approximately 2,300 feet southeast of the Lipsky water well.

In August 2010, after Mr. Lipsky's complaint to the RRC about his water well, RRC staff inspected the Teal and Butler wells. Both wells were producing at the time of the inspection. The inspection revealed that the Teal well had no pressure on the bradenhead and the Butler well had 30 psi on the bradenhead. The pressure on the Butler well bled

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<sup>2</sup> The Teal Unit Well No. 1H is another horizontal drainhole well producing from the Newark, East (Barnett Shale) and operated by Range.

down to 0 psi within 10 seconds.<sup>3</sup> Pressure on the bradenhead of a well is an indication that formations behind uncemented production casing are seeping fluid into the space behind the production casing. Range was requested to collect and analyze gas samples from the production tubing and from the bradenhead of the Butler well.

The Butler well has surface casing set at 412 feet and cemented to surface. The well has production casing set from its total measured depth of 9,054 feet to surface, including a horizontal lateral approximately 3,300 feet in length. The top of cement behind the production casing is found in the vertical portion of the wellbore at approximately 4,850 feet, as verified by a cement bond log. There is no cement behind the production casing from a depth of 4,850 feet to surface. The gas sample taken from the tubing is therefore gas from the Barnett Shale producing interval. The gas sample taken from the bradenhead is gas from any formation open to the wellbore above 4,850 feet.

Because of the pressure found on the bradenhead of the Butler well, the RRC requested Range to perform a pressure test on the well to confirm the integrity of the production casing. This test was performed on October 14, 2010 and was witnessed by RRC personnel. In order to perform the test, Range placed a packer on the tubing to isolate the tubing from the casing/tubing annulus. The well held 845 psi on the annulus between the tubing and casing for 30 minutes, while the tubing pressure held at 540 psig. The bradenhead pressure was 28 psi during the entire test. These pressures demonstrate that the casing in the well has integrity, i.e. that there are no pathways for gas to migrate from the production tubing to the annulus or from the tubing/casing annular space to the back side of the production casing.

In late October, Range was contacted by the EPA, requesting that EPA be allowed to take gas samples from the Butler well. On October 26, 2010, the EPA collected a gas sample from the tubing of the Butler well. At the same time that the EPA was collecting its single sample, Range collected additional samples of gas from the Butler well tubing, the Butler bradenhead, and the Teal tubing. Because there was no bradenhead pressure on the Teal well, no gas sample could be collected from the bradenhead of that well at that time. Range also collected a sample of the gas that is being reinjected into the casing in both wells for gas lift purposes.

Approximately 30 days after the EPA had collected its sample, Range was notified by phone of the EPA's position that the gas in the Lipsky water well was the same as Range's production gas. Range requested the EPA's gas sampling data, but the EPA did not provide the data.

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<sup>3</sup> More recently, the bradenhead pressure in the Butler well builds only to about 5 psi and bleeds down to 0 psi immediately.

