

BEFORE THE OIL AND GAS CONSERVATION COMMISSION  
OF THE STATE OF COLORADO

IN THE MATTER OF ALLEGED VIOLATIONS OF THE RULES ) CAUSE NO. 1V  
AND REGULATIONS OF THE COLORADO OIL AND GAS )  
CONSERVATION COMMISSION BY **ENCANA OIL & GAS** ) DOCKET NO. 0507-OV-07  
**USA INC.**, GARFIELD COUNTY, COLORADO )

NOTICE OF HEARING

Between January 19, 2001 and March 16, 2001 Ballard Petroleum, LLC ("Ballard") drilled four (4) gas wells on the G33 pad located in the SW $\frac{1}{4}$  NE $\frac{1}{4}$  of Section 33, Township 6 South, Range 92 West, 6<sup>th</sup> P.M. These wells are: the Boulton No. 33-2 Well, which was spud on January 19, 2001, the Boulton No. 33-7 Well, which was spud on February 5, 2001, the Boulton No. 33-8 Well, which was spud on February 24, 2001, and the Boulton No. 33-9 Well, which was spud on March 16, 2001. The wells were drilled directionally to the Williams Fork Formation. Drilling records indicate shallow natural gas was not observed in the Wasatch Formation during the drilling of these wells and no unusual conditions were encountered.

Between January 19, 2001 and June 26, 2001, the gas wells on the G33 pad were completed. All four (4) wells on the G33 pad were fracture stimulated ("frac, frac'ed").

On April 30, 2001, COGCC staff received a complaint from Mr. Harland Walker (co-owner of Amos/Walker water well) alleging impact to his water well from oil and gas operations on the G33 pad. Mr. Walker complained that his well had begun to produce smelly, dark gray, "fizzing" water and that the amount of water that the well could produce had decreased. He stated that the water well problems began a week or two earlier. On May 1, 2001, the following day, COGCC staff received a similar complaint from Mr. Larry Amos (co-owner of Amos/Walker water well) stating that the well cap had blown off and that gray fizzy water gushed from the well.

Effective December 31, 2001, Alberta Energy Corporation became the operator of the Boulton wells located on the G33 pad.

The Amos/Walker water well is located in the SE $\frac{1}{4}$  of Section 33, Township 6 South, Range 92 West, 6<sup>th</sup> P.M. The Amos/Walker water well was completed on May 26, 1981 for Divide Creek Land and Cattle Company under Colorado Division of Water Resources water well Permit No. 113065. The total depth of the well is 225 feet below the ground surface (fbgs) and at the time of completion, the well had a static water level of 68 feet fbgs. The well was permitted as a domestic water well that could be used to supply water to not more than three (3) single family dwellings for normal household purposes, fire protection, and the irrigation of not over one (1) acre of home gardens and lawns.

Effective June 1, 2002, EnCana Oil & Gas (USA) Inc. became the operator of the Boulton wells located on the G33 pad.

COGCC staff investigated both of these complaints by conducting site inspections, measuring bradenhead pressures, and performing and overseeing water and gas sampling and analysis. This work was conducted in 2001, 2004, and is currently ongoing. Water samples were collected from the Amos/Walker water well on May 4, 2001, May 21, 2001, August 28, 2001, January 20, 2004 and December 20, 2004. Methane concentrations of 12, 7, 0.1, 13 and 7.9 milligrams per liter (mg/l), respectively, were detected in these samples. Analysis of the stable isotopes of carbon and hydrogen in the methane and compositional analysis were performed on gas samples collected from the Amos/Walker water well on May 23, 2001, May 21, 2004, and July 23, 2004. The analytical results showed the gas in the water well is thermogenic and similar to Williams Fork Formation production gas from nearby gas wells on the G33 well pad.

Samples of Williams Fork Formation production gas was collected from the Boulton 33-2 Well on July 20, 2004, from the Boulton 33-7 Well on July 20, 2004 and from the Boulton 33-9 Well on April 21, 2001 and on September 9, 2004. Bradenhead gas samples were collected from the Boulton 33-7 Well on September 22, 2004 and January 5, 2005, from the Boulton 33-8 Well on September 22, 2004, and from the Boulton 33-9 Well on September 9, 2004. All of the samples were isotopically and compositionally similar to the Williams Fork Formation production gas and the gas detected in the Amos/Walker water well.

On May 17, 2001 staff observed that the bradenhead pressures at the Boulton 33-9 and Boulton 33-8 Wells were 425 pounds per square inch gage (psig) and 300 psig, respectively. These pressures were high enough to exceed the strength of the formation below the surface casing shoe and allow gas to migrate from the gas well to the surrounding strata. On November 1, 2004, bradenhead pressures were measured on wells of the G33 pad. The Boulton No. 33-2 Well bradenhead pressure was 100 psig. The Boulton No. 33-7 Well bradenhead pressure was 225 psig. The Boulton No. 33-8 Well bradenhead pressure was 220 psig. The Boulton No. 33-9 Well bradenhead pressure was 80 psig. Several remedial cement squeezes and periods of venting to try and address the bradenhead pressures have been attempted.

Although the Boulton 33-8 and Boulton 33-9 Wells were remedially cemented, the bradenhead pressure survey conducted in May, 2004 observed pressures of 160 psig and 250 psig, respectively. In May 2005 the Boulton 33-7 and 33-8 wells still had bradenhead pressure of 130 psig build up in less than twenty-four (24) hours and the Boulton 33-9 had a pressure of 20 psig. Remedial work to address bradenhead pressures and venting is ongoing. The time periods when elevated levels of dissolved methane were found in the Amos/Walker water well follow and correspond to time periods when the bradenheads were shut-in and elevated bradenhead pressures have been observed at the wells on the G33 pad. Failure of the formation below the surface casing shoe in one or more of the wells on the G33 pad is the most likely mechanism that allowed Williams Fork Formation gas to migrate into the Amos/Walker water well.

The Amos/Walker water well has been sampled numerous times since COGCC staff received the initial complaints in 2001. Benzene, toluene, ethylbenzene, and xylenes (BTEX), frac fluid constituents, or other oil and gas related contaminants have never been detected in any of the water samples collected from the Amos/Walker water well to date. Thermogenic methane isotopically and compositionally similar to Williams Fork Formation gas and other thermogenic gas constituents including ethane, propane, n-butane, iso-butane, n-pentane, iso-pentane, and hexane are the only contaminants that have been detected in the Amos/Walker water well.

COGCC staff have reviewed all well files, completion reports, fracturing records, field tickets, and analytical results from gas and water samples for all work done on the G33 pad wells from April 2001 to the present. The evaluation was designed to look for evidence of damage caused by fracturing and completing the wells. A review of all pressure records collected during frac operations indicate the stimulations were confined to the intended formation interval. None of the stimulation records exhibited severe pressure losses that would have occurred if the stimulation communicated with the shallow fresh water aquifer. Analytical results from extensive water sampling of nearby water wells likewise demonstrate that no frac fluids were ever found to be present in the ground water. Large volumes of potassium, sodium and chlorides were used in the frac stimulation fluids. Elevated levels of these frac fluids have never been detected in the Amos/Walker water well at any time. It is not physically possible for additives to the frac fluids to be present in the Amos/Walker water well when the frac fluids themselves have never been present. The test analyses indicate that ground water contamination at the Amos/Walker water well is limited to methane, ethane, propane, n-butane, iso-butane, n-pentane, iso-pentane, and hexane. To date, BTEX compounds have not been detected in the Amos/Walker water well, however, testing for these compounds will continue to ensure detection should they appear in the future. The ground water impacts at the Amos/Walker water well is not a result of the hydraulic fracturing. The most likely cause of the gas impacts in the Amos/Walker water well is inadequate isolation of the Williams Fork Formation that resulted in the higher than normal bradenhead pressures and gas migration into the Wasatch Formation.

On June 7, 2004, COGCC staff issued a Notice of Alleged Violation ("NOAV") to EnCana for impacts to the Amos/Walker water well. The NOAV cited alleged violations of Rule 209., failure to protect water-bearing formations from contamination by gas, Rule 324.A.a., failure to take precautions to prevent significant adverse environmental impact to water resources and to prevent the unauthorized discharge of gas, Rule 906.a., failure to contain releases immediately upon discovery. The abatement required the operator to investigate the releases in accordance with Rules 909.a., b., and c., and remediate in accordance with Rules 910.a. and b. which required the sampling of the water well and submittal of a Site Investigation Remediation Workplan, Form 27 or other response by EnCana. The deadline for providing this information was July 7, 2004.

On July 7, 2004, COGCC staff received a letter from EnCana contesting the NOAV and requesting a meeting with the COGCC staff to discuss the Amos/Walker water well.

On July 15, 2004, COGCC staff met with EnCana concerning the NOAV issued on June 7, 2004, and EnCana agreed to implement the conditions of the NOAV without modification.

On July 23, 2004, COGCC staff received EnCana's Site Investigation Remediation Workplan, Form 27 as required in the NOAV issued June 7, 2004.

On July 26, 2004, COGCC staff sent a letter of approval with conditions to EnCana for its Site Investigation Remediation Workplan, Form 27. Copies of the approval letter and Form 27 were also sent to the Amoses and Walkers. The conditions of approval included collecting two (2) water samples on a quarterly basis; one sample directly from the water well prior to the discharge of the water into the cistern and one sample from a household water tap. Field parameters were to be measured and observations made during the sampling, including water color, odor, temperature, presence of bubbling, well flow rate, changes in water well performance during sampling, and well maintenance. The samples were to be analyzed for BTEX compounds, dissolved methane, total metals, major anions, bromide, nitrate and nitrite as total nitrogen, total dissolved solids, pH, and conductivity. In addition, on a semi-annual basis samples were to be collected directly from the water well prior to water discharge into the cistern for stable isotope and gas composition analysis.

EnCana should be found in violation of Rule 209., failure to protect water-bearing formations and failure to prevent the intermingling of the gas and water strata. EnCana should be found in violation of Rule 324.A.a., failure to prevent a significant adverse environmental impact to water resources, to protect public health, safety and welfare and to prevent the unauthorized discharge of gas. EnCana should be found in violation of Rule 906.a., failure to control and contain a release of E&P waste immediately upon discovery.

In addition, EnCana should continue to monitor the Amos/Walker water well according to the approved Site Investigation Remediation Workplan, Form 27, and should be required to remediate the affected aquifer until dissolved methane, ethane, propane, n-butane, iso-butane, n-pentane, iso-pentane, and hexane have returned to pre-release levels for a sufficient period of time to insure the release has been eliminated. EnCana should provide safe domestic and drinking water to the Amos and Walker households and their assigns that meets Colorado drinking water quality standards and is free from methane, ethane, propane, n-butane, iso-butane, n-pentane, iso-pentane, and hexane. Further, EnCana should be assessed an appropriate fine for the above-described rule violations.

NOTICE IS HEREBY GIVEN, that the Oil and Gas Conservation Commission of the State of Colorado, pursuant to the above, has scheduled the above-entitled matter for hearing on:

Date: Monday, July 11, 2005  
Time: 10:00 a.m.  
Place: Garfield County Fairgrounds  
New Indoor Arena Meeting Facility  
1001 Railroad Avenue  
Rifle, CO 81650

In accordance with the Americans with Disabilities Act, if any party requires special accommodations as a result of a disability for this hearing, please contact Matt Walker at (303) 894-2100 ext. 139, prior to the hearing and arrangements will be made.

Pursuant to said hearing in the above-entitled matter at the time and place aforesaid, or at any adjourned meeting, the Commission will enter such orders as it deems appropriate to protect the health, safety and welfare of the public and to prevent the waste of oil and gas, either or both, in the operations of said field, and to carry out the purposes of the statute.

**In accordance with Rule 509., any interested party desiring to protest the granting of the application or to intervene on the application should file with the Commission a written protest or intervention no later than June 27, 2005, briefly stating the basis of the protest or intervention.** Such interested party shall, at the same time, serve a copy of the protest or intervention to the person filing the application. An original and nine (9) copies shall be filed with the Commission (Rule 503.f.). **Anyone who files a protest or intervention must be available to participate in a prehearing conference during the week of June 27, 2005.** Pursuant to Rule 503.e., if a party who has received notice under Rule 503.b. wishes to receive further pleadings in the above-referenced matter, that party must file a protest or intervention in accordance with these rules.

IN THE NAME OF THE STATE OF COLORADO

OIL AND GAS CONSERVATION COMMISSION  
OF THE STATE OF COLORADO

By \_\_\_\_\_  
Patricia C. Beaver, Secretary

Dated at Suite 801  
1120 Lincoln Street  
Denver, Colorado 80203  
June 10, 2005