



INDUSTRIAL COMMISSION OF NORTH DAKOTA

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Governor

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NEW

December 9, 2014

Industrial Commission Adopts New Standards to Improve Oil Transportation Safety

BISMARCK - The North Dakota Industrial Commission today adopted new conditioning standards to improve the safety of Bakken crude oil for transport.

Order No. 25417 sets operating standards for conditioning equipment to properly separate production fluids into gas and liquid. The order includes parameters for temperatures and pressures under which the equipment must operate to ensure that light hydrocarbons are removed before oil is shipped to market.

"The North Dakota Industrial Commission reiterates the importance of making Bakken crude oil as safe as possible for transportation," commission members--Gov. Jack Dalrymple, Attorney General Wayne Stenehjem and Agriculture Commissioner Doug Goehring-- said in a joint statement following today's meeting. "This order will bring every barrel of Bakken crude within standards to improve the safety of oil for transport."

The three-member commission approved Commission Order 25417 after receiving additional comments on the working draft which the Commission discussed on November 13, 2014.

The new standard -- Commission Order No. 25417 -- requires operators to condition Bakken crude oil to a vapor pressure of no more than 13.7 pounds per square inch (psi). National standards set crude oil stability at a vapor pressure of 14.7 psi. Under the order, all Bakken crude oil produced in North Dakota will be conditioned with no exceptions. The order requires operators to separate light hydrocarbons from all Bakken crude oil to be transported and prohibits the blending of light hydrocarbons back into oil supplies prior to shipment.

Lynn Helms, director of the state's Department of Mineral Resources, said the department's Oil and Gas Division staff will conduct field inspections to enforce compliance. He said oil companies that do not comply could face a penalty of up to \$12,500 for every day in violation.

Commission members said the effective date of April 1, 2015, allows time for producers who want to utilize alternative conditioning or stabilization methods to request a hearing before the commission and also allows time for companies to install needed equipment.

The commission developed the new oil conditioning standards after a Sept. 23, 2014 public hearing and receipt of additional comments. In considering new standards, the commission heard from a wide range of stakeholders including North Dakota residents and representatives from the energy industry. Also taken into consideration were recent crude oil quality and safety studies including the federal government study conducted by the U.S. Pipeline and Hazardous Materials Safety Administration.

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Executive Summary - December 9, 2014:

Commission Order #25417 is complex in chemistry, but simple when broken down into three key points.

First, this commission order was written as a matter of safety. Rail accidents across the country have drawn attention for the need to better understand how Bakken oil is produced and processed at the well site. The commission initially received 1,114 pages of testimony from 33 groups or individuals, all providing input on how Bakken crude oil is produced and how to make it as safe as possible to transport. Subsequent to the November 13, 2014 Industrial Commission meeting the record was opened and an additional 141 pages of testimony from 25 groups or individuals were provided on the working draft order.

Second, the resulting order is based on science from the testimony received. The goal is to produce crude oil that does not exceed a Vapor Pressure of 13.7 pounds per square inch (psi). National standards recognize oil with a Vapor Pressure of 14.7 psi or less to be stable. Allowing for a Vapor Pressure of 13.7 psi or less, adjusts for an error margin of one psi in the sampling procedures and measurement equipment. It's important to note that winter blend gasoline has a Vapor Pressure of 13.5 psi.

An estimated 80% of Bakken wells will be able to produce a product below 13.7 psi Vapor Pressure by complying with temperature and pressure parameters detailed in paragraphs 2a through 2c of the commission order.

- (a) Operate all well site crude oil conditioning equipment within flow rate, pressure, and temperature ranges specified by the manufacturer.
- (b) Operating at a pressure of no more than 50 psi must heat fluid to at least 110 degrees Fahrenheit.
- (c) Operating at a pressure greater than 50 psi must heat fluid to at least 110 degrees Fahrenheit and install equipment to recover vapors from the crude oil storage tanks.

Roughly 15% of Bakken wells operate equipment described in item 2d. Operators will need to demonstrate through sampling and testing in compliance with national standards that the resulting product does not exceed a Vapor Pressure of 13.7 psi.

- (d) Operating at temperatures and pressures not described in paragraphs (b) or (c) must demonstrate through sampling and testing in compliance with national standards that Vapor Pressure is no greater than 13.7 psi.

The remaining 5% of estimated wells are expected to seek alternative methods for conditioning or stabilizing crude oil and must request approval from the commission through notice and hearing.

- (e) Facilities utilizing alternate methods for crude oil conditioning other than separators and/or emulsion heater-treaters will only be approved after due notice and hearing.

Finally, the standards described in the order are enforceable. The Oil and Gas Division's more than 30 field inspectors can visually inspect gauges on facility equipment to determine operating temperatures and pressures while oil and gas measurement staff can review and approve Vapor Pressure testing. Additional Department of Mineral Resources staff has been included in the Governor's budget for dedication to western North Dakota. Operators found in violation of the order could be subject to a penalty of \$12,500 a day. The order is effective April 1, 2015.

In conclusion, with the strong science and enforceability of this order, the state of North Dakota will be requiring that every barrel of Bakken crude oil will be conditioned.

BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

CASE NO. 23084
ORDER NO. 25417

IN THE MATTER OF A HEARING CALLED ON
A MOTION OF THE COMMISSION TO
CONSIDER AMENDING THE BAKKEN,
BAKKEN/THREE FORKS, THREE FORKS,
AND/OR SANISH POOL FIELD RULES TO
ESTABLISH OIL CONDITIONING STANDARDS
AND/OR IMPOSE SUCH PROVISIONS AS
DEEMED APPROPRIATE TO IMPROVE THE
TRANSPORTATION SAFETY AND
MARKETABILITY OF CRUDE OIL.

ORDER OF THE COMMISSION

THE COMMISSION FINDS:

- (1) This cause came on for hearing at 9:00 a.m. on the 23rd day of September, 2014.
- (2) This special hearing was called on a motion of the Commission to consider amending the Bakken, Bakken/Three Forks, Three Forks, and/or Sanish Pool field rules to establish oil conditioning standards and/or impose such provisions as deemed appropriate to improve the transportation safety and marketability of crude oil.
- (3) Prior to the hearing, the Commission indicated it was seeking testimony of technical nature for input on the following:
 - (a) Typical operating temperature, pressure, and retention time of gas/liquid separators;
 - (b) Optimum operating gas/liquid separator temperature, pressure, and retention time to effectively remove light hydrocarbons;
 - (c) Typical operating temperature, pressure, and retention time of treaters;
 - (d) Optimum operating treater temperature, pressure, and retention time to effectively remove light hydrocarbons;
 - (e) Optimum oil stock tank pressure to effectively operate vapor collection equipment;

- (f) Optimum oil tank settling time prior to shipment;
- (g) Capital costs of typical gas/liquid separator and treating equipment;
- (h) Operating costs of typical gas/liquid separator and treating equipment;
- (i) Other field operation methods to effectively reduce the light hydrocarbons in crude oil; and
- (j) Crude oil quality and safety studies including but not limited to those conducted by American Fuel & Petrochemical Manufacturers, PHMSA & FRA Operation Classification, Transportation Safety Board of Canada, and Turner Mason & Company.

Written comments were allowed no later than 5:00 p.m., Monday, September 22, 2014.

(4) The Commission received written comments from Joel Noyes of Hess Corporation, Phillip Steck with the New York Legislature, Don Morrison of Dakota Resource Council, John Zellitti of Triangle USA Petroleum Corporation including video, Ron Day of Tesoro, Kari Cutting of the North Dakota Petroleum Council (NDPC) including slides, and Tony Lucero of Enerplus Resources USA Corporation.

The record in this case was left open to allow American Fuel & Petrochemical Manufacturers to submit written comments. Comments were received October 1, 2014 and the record was closed.

The following concerned land/royalty owners also submitted written comments: R.J. Larsen, Edward Decker, Paul Hanson, Nancy Casler, and Timothy Lane.

The Commission also received written comments from Ron Schalow.

(5) The Commission received oral comments at the hearing from Jon Ramer of Terrenus Resources, Hal Cooper of CP&Y Engineering, Kari Cutting of NDPC, Jeff Hume on behalf of the NDPC, Brent Lohnes of Hess Corporation, Roger Kelley of Continental Resources, Inc., Keith Lilie of Statoil Oil & Gas LP, Eric Bayes of Oasis Petroleum North America LLC, Jeff Hume of Continental Resources, Inc., Phil Archer of Whiting Oil and Gas Corporation, Wayne King of Grit Industries, Inc., Tony Lucero of Enerplus Resources USA Corporation, Colin Nikiforuk of CRNG Energy Inc., Theodora Bird Bear, Scott Skokos, Marie Hoff, and Lynn Wolff of the Dakota Resource Council, Connie Triplett, a North Dakota State Legislator, John Fanto of True Oil LLC, and Darrell Graf with the Fire Academy of North Dakota.

(6) The Commission reopened the record in this matter on November 13, 2014 to allow additional public comment until 5 p.m., Wednesday November 19, 2014, to specifically address technical corrections within the Commission's working draft order.

Subsequently the Commission received written comments from Brian Wold of WPX Energy Williston LLC, Brent Lohnes of Hess Corporation, Tony Lucero of Enerplus Resources USA Corporation, Matthew Gusdorf of XTO Energy Inc., Ron Ness of the North Dakota Petroleum

Council, Nathan Savage of Savage Services Corporation, Christy Williamson of ONEOK Rockies Midstream, Terry Kovacevich of Marathon Oil Company, Robert Greco with the American Petroleum Institute, David Friedman with the American Fuel & Petrochemical Manufacturers, Taylor Reid of Oasis Petroleum North America LLC, Dennis Lindberg of SM Energy Company, Jon Ramer of Catalytic Resources LLC, Lawrence Bender representing EOG Resources Inc., Scott Skokos of the Dakota Resource Council, Jeff Hume of Continental Resources Inc., Dennis Sutton of PetroQual LLC, Brent Miller of Whiting Petroleum Corporation, Colin Nikiforuk of CRNG Energy Inc., and Bret Wolz of HyCap Energy LLC.

Nancy Casler, Paul Hanson, Randy Olson, Jeffrey Rodacker, and Gordon Schwallie also submitted written comments as concerned citizens.

(7) Some of the written comments indicated that this matter should be conducted under administrative rulemaking. The Commission finds that matters such as this one are intended to address field operating practices for a limited number of producing pools and should be handled as has been done previously with subject matter similar in nature, as in: (1) Commission Order No. 14496 which set requirements for 2560-acre drilling and spacing units; (2) Commission Order No. 14497 which established 1280-acre drilling units within the Bakken Pool; (3) Commission Order No. 14498 which established a 200-foot setback relative to the heel and toe of horizontal Bakken Pool wells; and (4) Commission Order No. 24665 which modified flaring regulations for Bakken, Bakken/Three Forks, and Three Forks Pools.

(8) Having allowed all interested persons an opportunity to be heard and having heard, reviewed, and considered all testimony and evidence presented, and the subsequent comments received on the working draft order, the Commission makes the following conclusions. Much of the testimony and comments were relevant, but did not address the requested topics on which the Commission sought testimony and comments.

IT IS THEREFORE ORDERED:

- (1) No well shall be hereafter produced in a Bakken, Bakken/Three Forks, Three Forks, and/or Sanish Pool (the Bakken Petroleum System), except in conformity with the regulations below without special order of the Commission after due notice and hearing.
- (2) All wells completed in the Bakken Petroleum System must be produced through equipment utilizing the following conditioning standards to improve the marketability and safe transportation of the crude oil:
 - (a) A gas-liquid separator and/or emulsion heater-treater of ample capacity and in good working order that effectively separates the production into gaseous and liquid hydrocarbons, must be operated within manufacturer's recommended operating limits;
 - (b) Production facilities utilizing a gas-liquid separator and/or an emulsion heater-treater operating at a pressure of no more than 50 psi on the final stage of separation prior to the crude oil storage tanks must heat the produced fluids to a temperature of no less than 110 degrees Fahrenheit. Such temperature may be

applied in the emulsion heater-treater or prior to the fluids entering the separator if no emulsion heater-treater is utilized; or

- (c) Production facilities utilizing a gas-liquid separator and/or an emulsion heater-treater operating at a pressure greater than 50 psi on the final stage of separation prior to the vapor recovery system or crude oil storage tanks must heat the produced fluids to a temperature of no less than 110 degrees Fahrenheit and shall also be required to install a vapor recovery system on or immediately upstream of the crude oil storage tanks; or
 - (d) Production facilities utilizing gas-liquid separator(s) and/or emulsion heater-treater(s) operating at pressures and temperatures other than those provided in (b) or (c) above shall be allowed only upon the operator demonstrating that the operating pressures and temperatures of the separator(s) and/or emulsion heater-treater(s) are producing crude oil with a Vapor Pressure of Crude Oil (VPCR_x) no greater than 13.7 psi or 1 psi less than the vapor pressure of stabilized crude oil as defined in the latest version of ANSI/API RP3000 whichever is lower. Such test must be performed by a person sufficiently trained to perform the test. All VPCR_x tests shall be performed in accordance with the latest version of ASTM D6377 and shall be conducted quarterly. Samples for testing must be collected in accordance with ASTM D3700 or ASTM D5842 at the point of custody transfer. A Sundry Notice (Form 4) shall be submitted to the Director within 15 days of the test date which includes a screen shot and/or printout of the VPCR_x test conducted and details the operating capacities, pressures, and temperatures of all well site conditioning equipment at the time of the test; or
 - (e) Production facilities utilizing an alternative oil conditioning method other than a gas-liquid separator(s) and/or an emulsion heater-treater(s) will only be approved by the Commission after due notice and hearing, and must: (a) be capable of delivering crude oil with a VPCR_x no greater than 13.7 psi at custody transfer; or (b) provide safe transportation of marketable crude oil to a crude oil conditioning or stabilization plant.
 - (f) Commission personnel will periodically inspect production facilities and records to confirm operator compliance with the standards and requirements contained herein. Noncompliance could result in the Commission issuing civil and criminal penalties pursuant to North Dakota Century Code § 38-08-16.
- (3) The following practices are hereby prohibited:
- (a) Blending crude oil produced from the Bakken Petroleum System with liquids recovered from gas pipelines prior to custody transfer; and
 - (b) Blending crude oil produced from the Bakken Petroleum System with natural gas liquids (i.e. condensate, pentanes, butanes, or propane) prior to custody transfer.

(4) The operator of any transload rail facility shall notify the Director of discovering that any crude oil received from the Bakken Petroleum System violates federal crude oil safety standards. The notice shall indicate: (a) the federal standard violated and the date; (b) the probable source of such crude oil, if known; and (c) an outline on the final disposition of such crude oil and the process subsequently utilized to provide the safe transportation of such crude oil.

(5) The Commission shall have continuing jurisdiction in this matter and specifically reserves the authority, upon its own motion or the motion of any interested party, to: (a) review such requirements outlined herein; (b) determine whether additional requirements are warranted; and (c) make such further amendments or modifications as the Commission deems appropriate.

(6) This order is hereby effective April 1, 2015, shall cover all wells completed in the Bakken Petroleum System, and shall continue in full force and effect until further order of the Commission.

Dated this 9th day of December, 2014.

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA

/s/ Jack Dalrymple, Governor

/s/ Wayne Stenehjem, Attorney General

/s/ Doug Goehring, Agriculture Commissioner