

# OGRP Quarterly NEWSLETTER

*This quarterly newsletter is produced by the Oil and Gas Research Program to provide periodic information and updates on Program activities to the citizens of North Dakota. It is the objective of this newsletter to report on the use of ND tax dollars to further promote ND resources for the economic benefit of the state.*



## From the Director's Desk

This quarter, we decided to put a special focus on select, current Oil & Gas Research Program (OGRP) projects to give the reader a flavor of the advancements being made to more effectively produce North Dakota's oil and gas resources. We are currently supporting several projects that are tackling the key challenges facing production growth. The Williston Basin continues to provide an era of economic success. The following summaries of a few highlighted OGRP projects underscore what makes this Bakken machine run so well. These are indeed exciting times to be a North Dakotan!

OGRP Director

*Brent Brannan*

## INDUSTRIAL COMMISSION OF NORTH DAKOTA OIL & GAS RESEARCH PROGRAM

**Governor**  
Jack Dalrymple

**Attorney General**  
Wayne Stenehjem

**Agriculture Commissioner**  
Doug Goehring

**Director**  
Brent Brannan

## Mission Statement

*The mission of the Oil and Gas Research Council is to promote the growth of the oil and gas industry through research and education.*

## A Few Highlighted Programs

### Energy Curriculum Project

*Bismarck State College*      *\$250,000 Project Cost*

The EmPower North Dakota Commission regularly heard from energy companies that "workforce" was one of the top issues spanning all industry sectors. Despite work with Job Service North Dakota and an energy career awareness program for high school students, there were still issues of North Dakota's youth leaving the state to find jobs. To find a way to keep young talent in the state and interested in energy careers, an EmPower subcommittee was formed. Conversations held with stakeholders ultimately led to the decision that energy education needed to happen early in a child's school career, and students are currently receiving very little state-specific information. The North Dakota Studies curriculum is required for all North Dakota schools, so that vehicle was one way to ensure that the energy message is delivered.

Energy curriculum is being created and inserted into the North Dakota Studies courses for students in 4th grade and 8th grade, including online modules, with 2 weeks of content related to North Dakota's energy resources. The updated curriculum will have relevant information about North Dakota's robust energy resources in North Dakota Studies courses in 4th and 8th grade. Students and teachers will have the opportunity to learn about energy and its relevance to North Dakota. Teachers will be trained on content and delivery of new curriculum and technology. Workforce needs will be mitigated because of an increased interest and understanding of the energy industry and the abundance of career options in North Dakota.

### Program to Determine the Uniqueness of Three Forks Bench Reserves, Determine Optimal Well Density in the Bakken Pool, and Optimize Bakken Production

*EERC and Continental Resources*      *\$115,230,000 Project Cost*

The goal of this project being conducted by the Energy & Environmental Research Center (EERC) in close coordination with Continental Resources, Inc., and several of the Williston Basin's premier operating companies is to simultaneously improve Bakken system oil recovery and reduce the environmental footprint of production activities. The anticipated outcomes of this project are to increase well productivity and economic output of North Dakota's oil and gas resources, decrease environmental impacts of wellsite operations, and reduce demand for infrastructure construction and maintenance. Specific results will likely include:

- a) A greater understanding of Bakken–Three Forks reservoirs and subsequent significant increases to estimates of recoverable hydrocarbons.
- b) Less truck traffic, resulting in decreased diesel emissions, road dust, and spills.
- c) Reduced road maintenance costs, wastewater production, disposal costs, and freshwater use.
- d) Reduced land use impacts.
- e) Increased revenue for the state, royalty owners, and operators from added product streams captured earlier in the well life cycle.

## Effects of Oil and Gas Development on Mule Deer Populations in Western North Dakota

North Dakota Game and Fish Department (NDGF)  
\$659,000 Project Cost

2013 was the first year of a 3-year field study on the effects of energy development on mule deer in western North Dakota. The field work for this study began on February 17, 2013, when the NDGF Department captured and radio-collared 90 female mule deer. A second capture took place in December 2013 when 46 additional deer were captured and collared. Currently, NDGF has 112 radio-collared deer: 65 mule deer does, 17 mule deer yearlings (collared as fawns), and 30 mule deer fawns. A final capture is expected to take place in December 2014.

To date, NDGF has collected over 115,000 GPS fixes from radio-collars on 106 mule deer does and 60 female mule deer fawns. The spatial data from the GPS fixes provide the primary data NDGF will assess for this study. NDGF will analyze survival of radio-collared deer, abundance data, age and sex structures of the mule deer population, and stress levels and pregnancy rates of captured does.

### Enhanced Bakken Recovery Research Program

EERC *\$1,350,000 Project Cost*

The EERC is conducting a research program to evaluate the use of carbon dioxide (CO<sub>2</sub>) to increase the ultimate recovery of Bakken oil while simultaneously storing CO<sub>2</sub>. The objective is to use new and existing reservoir characterization and laboratory data integrated with reservoir modeling to determine whether CO<sub>2</sub>-based enhanced oil recovery (EOR) will result in greater production in the Bakken Formation. The ultimate goals of the project are to generate previously unavailable knowledge regarding the CO<sub>2</sub> storage capacity of North Dakota shale and to determine the potential to increase oil recovery from such shale. The results of this work will provide insight regarding relationships between Bakken oil, key reservoir attributes, and CO<sub>2</sub> under reservoir conditions in order to better understand the efficient use of CO<sub>2</sub> for EOR.

# OGRP

## THE NEXT

# GRANT ROUND APPLICATION DEADLINE IS NOVEMBER 1.

### How Can You Learn More about Us?

Scan the QR code, or visit our Web site at  
[www.dmr.nd.gov/ogr](http://www.dmr.nd.gov/ogr)



### A Look Ahead . . .

Future quarterly OGRP newsletters will focus on project updates, emerging priorities for OGRP, and key insights from leaders of our Program council. The goal of these newsletters, as always, will be to translate how OGRP projects are impacting oil and gas exploration and recovery in our state and why that matters to the reader. Look for the next issue at the end of our fall season!

If you would like to receive an electronic copy of this newsletter on a regular basis, please send your e-mail address to [brentbrannan@gmail.gov](mailto:brentbrannan@gmail.gov). We would be happy to include you on the mailing list.

## OGRP Quarterly

  
**North Dakota**  
oil & gas research program

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