

Contract No. G-019-041
“Identification of Shallow Biogenic Gas Systems in Eastern North Dakota – Phase I”
Submitted by **GeoShurr Resources LLC**
Principal Investigator: George W. Shurr

PARTICIPANTS

Sponsor	Cost Share
GeoShurr Resources, LLC	\$ 32,000
Fischer Oil & Gas, Inc.	\$ 3,000
White Eagle Exploration, Inc.	\$ 10,000
North Dakota Industrial Commission	<u>\$ 45,000</u>
Total Project Cost	\$ 90,000

Project Schedule – 6 months

Contract Date – December 8, 2009

Start Date – December 1, 2009

Completion Date – Phase I – December 31, 2010

Project Deliverables:

Status Report: March 15, 2010 v

Final Report: December 31, 2010

OBJECTIVE/STATEMENT OF WORK:

The objective of this project is to generate information that will enhance exploration and development of shallow biogenic gas in counties in eastern North Dakota that are currently not producing oil or gas. The methodology employed in this investigation would utilize published structural and stratigraphic information, satellite images as well as compilation of published gravity and magnetic, syntheses of Precambrian basement geology to identify regional lineament zones as “sweetspots.” The deliverables would include a map of regional lineament zones, locations of ranked sweetspots and a set of supporting field and laboratory measurements.

Conditions placed on the Phase I funding was that the applicant work with the North Dakota Geological Survey. The deliverable for the Phase I work is to be an interim report to the Council post January 1, 2010. The deliverable for the Phase I work shall include a map depicting the regional lineament zones.

STATUS

The contract has been executed and the work has been started. The applicant has held meetings with the North Dakota Geological Survey.

March 15, 2010

The March 15, 2010 status report has been received. The Executive Summary of this status report states in part:

This report deals specifically with the regional studies of Phase I aimed at mapping regional lineament zones east of Longitude 100° West in eastern North Dakota.

Regional lineament zones outline corridors of enhanced fracture porosity and permeability in shall gas reservoirs. The natural gas systems in eastern North Dakota include shall (<2500 ft) early-generation

biogenic gas and ultra-shall (<1000 ft) late generation biogenic gas. These are both potential resources in a part of the state that does not have significant oil and gas activity.

Satellite images are used to map linear features that are the primary data set for interpreting regional lineament zones. Eighteen images (Landsat 7, nine scenes, thematic mapper Bands 3 and 5) have been acquired. Hundreds of linear features have now been mapped on each of the eighteen images. Analysis and interpretation of this data set is currently in progress.

Published information constitutes a secondary data source that is important in interpreting the significance of specific lineament zones for shall gas exploration. The published maps include gas shows and water quality, surface geology and geomorphology, bedrock stratigraphy and structure, and geophysics and interpretations of Precambrian basement terranes. These multiple data sources are being collected for use during the later stages of interpretation. Many of the publications are from the North Dakota Geological Survey (NDGS) and coordination with NDGS is actively maintained.

The Status Report concludes as follows:

In summary, work on Phase I regional studies is progressing well on the timeframe anticipated in the contract. Landsat images have been acquired, linear features have been mapped, and data analysis and interpretation are currently in progress. It is anticipated that a preliminary map of regional lineament zones will soon be compiled. The subsequent evaluation of the lineament zones using the secondary published data sources will set the stage for sweet spot characterization.

June 10, 2010

A no-cost extension has been granted changing the Phase I final report date from June 15, 2010 to October 15, 2010. This will allow the contractor time to include field work that was completed during the summer months in the October 15 report.

October 6, 2010

A no-cost extension has been granted changing the Phase I final report date from October 15, 2010 to December 31, 2010. This will allow the contractor time to incorporate information from the North Dakota Geological Survey into the December 31 report.