GeoShurr Resources, LLC
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Dear Ms. Fine:

This letter provides a response to specific questions raised by reviews of the proposal entitled "Identification of Shallow Biogenic Gas Systems in Eastern North Dakota". Details are provided on the deliverable products, the timetable is reconfigured as a work plan, direct expenses are more fully explained, and general comments are included at the end.

DELIVERABLE PRODUCTS

Regional work will be done at a scale of 1:1,000,000 (1 in = 16 mi). Nine or ten Landsat scenes will be mapped in two bands for a total of up to 20 images. Follow-on work may be warranted and will include 1 or 2 scenes at a scale of 1:250,000 (1 in = 4 mi) in two bands for 2-4 additional images. All images will be submitted as a part of the final report.

Specific deliverable products include:

- Overlays with linear features mapped for each image.
- Mosaic of ranked linear features @ 1:1,000,000.
- Compilation of pertinent public domain data @ 1:1,000,000.
- Interpretation of regional lineament zones @ 1:1,000,000.
- Map of sweetspots @ 1:1,000,000.
- Map of 2-4 selected sweetspots @ 1:250,000.
- Field data from gas detector readings.
- Analytic data from commercial labs.

TIMETABLE RECONFIGURED AS A WORK PLAN

Lead-in Activities	Oct, 2009	Set up accounts, order images, evaluate available public domain data.
Regional Studies	Nov, Dec, 2009	Map linear features on satellite images.
	Nov, Dec, 2009	Compile published data summaries.
	Jan, Feb, 2010	Interpret regional lineament zones.
	March, 2010	Evaluation point--prepare status report.
Sweetspot Characterization	April, 2010	Compile public domain data.
	May, 2010	Integrate with lineament zones.
	June, 2010	Interpret sweetspots.
	July, 2010	Field screening with gas detectors. Sample and analyze water and gas.
	Aug, 2010	Rank sweetspots.
Final Activities	Sept, 2010	Evaluation point--prepare final report.

EXPLANATION OF DIRECT EXPENSES

Satellite Images

The EROS Data Center of the US Geological Survey as of this spring, supplies digital files of Landsat images at no cost. The main expense now is to have a commercial vendor convert the digital files to standard photographic products. The numbers below reflect a variety of vendors' estimates as well as possible new products beyond the conventional photo-quality output.

20 images @ $30 - $65	=	$ 600 - $1300
4 images @ $300 - $500	=	$ 1200 - $2000
Possible new products	=	$ 1500 - $2000
Shipping	=	$ 100 - $ 200
Total	**=**	**$ 3400 - $ 5500**

Gas Detector Rental

Two types of portable gas detectors will be used: the flame ionization detector (FID) is more accurate over a wide range and the infrared detector is a multi-gas meter that is smaller and more robust. Both detectors have on-board sampling pumps that pull the air sample from various levels in the swell bore. The numbers below show a range of vendors' estimates for monthly rental. Shipping charges are based on flammable materials, viz. the gas cylinders used as calibration standards.

FID	=	$ 1500 - $2000
IR Detector	=	$ 1000 - $1500
Shipping	=	$ 200 - $ 300
Total	**=**	**$ 2700 - $3800**

Lab Analyses

The total number of water and gas samples collected for lab analysis will depend on the number of available wells, the final sampling protocol, and the presence of gas in the observations wells. This in turn will depend upon the outcome of the sweetspot identification and characterization. Water quality will include bicarbonate and sulfate; headspace gas composition will include hydrocarbons, nitrogen, and carbon dioxide; isotope analyses will include carbon and deuterium isotopes in methane and carbon dioxide. Obviously, much of this line-item will not be spent if no gas is present. Shipping charges include overnight for water and headspace samples and flammable materials handling for gas isotopes.

Water Quality:	20 - 30 samples @ $50	= $ 1000 - $1500
Headspace Gas:	20 - 30 samples @ $50-$100	= $ 1000 - $3000
Isotope Analyses:	8 - 10 samples @ $300-$500	= $ 2400 - $5000
Shipping		= $ 500 - $1000
	Total	**= $ 4900 - $10,500**

GENERAL COMMENTS

The mission and scope of the ND Geological Survey is necessarily broad. It includes the kind of basic geologic work that forms the basis for fundamental exploration. The proposed project builds and expands on the work already completed by the Survey. This is an ideal example of a public-private partnership that provides specific information to be used in shallow gas exploration. If overlap with the Survey's mission and scope is to be avoided in these proposals, then that should be clearly articulated in the guidelines. ***Survey staff reviewed the proposal and commented on it before submission.***

The price of natural gas is currently depressed, but it will go up. As America's demand for clean energy expands, prices will return to a sustainable level--maybe over a period of a year or two, rather than within the next few months. The promise of deep shale gas has an emerging caveat: decline curves are very steep.

Shallow gas in eastern North Dakota is in a unique market situation. It is Midcontinent gas rather than Rocky Mountain gas, so the price is higher and more stable. Furthermore, shallow gas in eastern North Dakota has the potential to provide adequate reserves for local consumption. In any case, now is the time to do basic work to provide the information infrastructure required for expanded exploration when the price recovers.

The opportunity to respond to reviewers' specific questions is greatly appreciated. It is an important strength of the ND Oil and Gas Research Council's proposal process.

Sincerely,

George W. Shurr