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Oil and Gas Research Program

North Dakota Industrial Commission

Application

Project Title: The Mini-GTL® Zero Flare Solution™ that captures 100% of Associated Gas Flaring at the Wellhead and Converts it to Biodegradable and Environmentally Safe Liquid Fuels and Chemicals.

Applicant:
GasTechno Energy and Fuels (USA) LLC.

Principal Investigator:
Walter Breidenstein

Date of Application: November 1, 2014

Amount of Request: \$600,000

Total Amount of Proposed Project: \$2,800,000

Duration of Project:
December 1, 2014 – December 1, 2017

Point of Contact (POC):
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ABSTRACT

Objective

The main objective of this demonstration is to validate an innovative, profitable solution to eliminate the growing problem of associated gas flaring which is subject to increasingly stringent federal, state and local regulation. Regulations targeting the reduction of methane and carbon emissions from the oil and gas sector are on the way as evidenced by a series of Oil and Natural Gas Air Pollution Standard white papers released by the White House which is seen as a first step toward regulating methane emissions from the sector. Further, in July 2014, the North Dakota Industrial Commission (NDIC) adopted a flaring reduction policy (Order No. 24655) aimed at reducing natural gas flaring in the Bakken and Three Forks Formations. The policy sets aggressive flare gas capture targets of 77% by January 1, 2015, 85% by January 1, 2016 and 90% by October 1, 2020 with the threat of oil production restrictions if targets are not met.

GasTechno Energy & Fuels (USA) LLC (GEF) has developed a proprietary, single-stage process for converting associated flared gas to liquids which can be deployed, even at small scales, at the wellhead to eliminate associated gas flaring. The objectives of the demonstration project are threefold:

1. Implement GEF's patented Miniature Gas-to-Liquids (Mini-GTL®) technology known as the GasTechno® process that eliminates associated gas flaring at the wellhead in North Dakota to meet increasingly stringent regulatory requirements;
2. Utilize the GasTechno® Mini-GTL® process to convert associated gas into easily transportable, commercially saleable, biodegradable and environmentally friendly liquid fuels & chemicals;
3. Quantify the full lifecycle Zero Flare Solution™ economic and emission reduction benefits from the elimination of associated gas flaring.

Through the achievement of these objectives, the demonstration project will advance the goals and purpose of the Oil and Gas Research Council.

Expected Results

Results will be measured through a scorecard designed to monitor priority outcomes for the demonstration, focused on the following three areas:

100% Reduction of Associated Gas Flare "ZERO FLARE SOLUTION"	Liquid Fuel & Chemical Commercial Production Value	Total Economic Improvements
<ul style="list-style-type: none">• 100% capture and conversion of stranded or associated gas at the wellhead• Ability to accept all off-spec gas up to 60% CO₂, 25% N₂, 25% N₂S, and any amount of ethane.	<ul style="list-style-type: none">• Methanol price and annual volume sold• Ethanol price and annual volume sold• Formalin price and volume sold• NGL's price and volume sold	<ul style="list-style-type: none">• Volume and value of end products from formerly wasted gas resource• Avoided revenue loss from oil production curtailment under flaring regulation with Environmental Benefit• Jobs added for construction and operations

Project Details

Duration – 12 to 36 months: Beginning December 1, 2014 through the expected useful life of each well converted from flare to GTL production.

Total Project Cost – \$2,800,000: GEF is requesting \$600,000 (21% of total project cost) from the North Dakota Industrial Commission to support a \$2,200,000 cash and in-kind investment from GEF.

Participants – GEF, SM Energy Co., Emerson Process Management and SEI Tech Inc

PROJECT DESCRIPTION

Gas Flaring Background

Gas flaring is a growing epidemic of wasted resources and environmental degradation, and has become a pervasive practice for disposal of gas associated with oil production. Financial, legal and regulatory barriers to pipeline development have left well operators with little choice. According to the EPA, as of 2011, North Dakota ranked second in the nation with gas flaring exceeding 130 MMSCF per day with the number of wells expected to increase five-fold to 50,000 by 2030. Flaring wastes valuable energy resources, creates pollution subject to increasingly stringent regulation, and emits carbon monoxide, nitrogen oxide, hydrogen sulfide, and unburned hydrocarbons. A commercially viable alternative to gas flaring will provide increased profitability for operators and mineral owners, ensure compliance with state and federal regulations, and improve the industry image through complete resource utilization.

GasTechno Energy and Fuels Introduces Mini-GTL® Technology

GEF has developed a proprietary, single-stage process for conversion of natural gas to liquids in the patented GasTechno® process. Traditionally, a capital- and energy-intensive two-stage process has been used to create liquids, such as diesel, LPG and naphtha. In this process, natural gas is first converted to syngas, which is then processed through a catalyst, to produce methanol or diesel and other liquid chemicals or fuels. The process is complex and requires costly high-maintenance catalysts and large scale to be profitable. In order to be economic, three to four-stage plants typically require hundreds of millions of dollars in capital investment. Unfortunately, individual oil field flaring operations are relatively small-scale, remotely located and do not produce enough gas to justify investment in these plants. For these applications, the GasTechno® process is currently the only well-site proven and demonstrated option.

The single step GasTechno® process can be deployed remotely at miniature and small-scales since it eliminates the costly pretreatment, reforming and syngas steps by converting the associated gas directly into methanol and higher-value oxygenates via a patented direct partial oxidation process. The GasTechno® system features an energy-efficient recycle loop where hydrocarbons are scrubbed and recycled until the desired conversion is achieved. Eliminating the reforming, syngas and catalyst steps greatly reduces the capital and operating costs of GasTechno's Mini-GTL® solution relative to the traditional technology.

Most importantly, the GasTechno® process utilizes no catalysts, and therefore has a high tolerance for common gas contaminants without costly pre-treatment. The process is quite tolerant of nitrogen and carbon dioxide, and accepts limited sour gas without significant adverse effects. In almost all cases, whether from gas produced at biodigesters and landfills or gas associated with flaring at oil wells, the process accepts the associated methane feedstock "as-is."

Initial Field Michigan Demonstration Project

At the end of 2012, GasTechno® and XStar Resources entered into an agreement under the Early Adopter Program to construct a Portable Mini-GTL® plant to demonstrate the technical feasibility of the GasTechno® process at a well-site field demonstration scale. XStar Resources agreed to provide up to \$500,000 toward the plant cost and up to \$230,000 toward testing and field operations costs.

From January to May 2013, GasTechno® designed, engineered and constructed the Portable Mini-GTL® plant in Petoskey, Michigan at the GasTechno® fabrication shop. Images of the plant and components are shown in Exhibit A.

Exhibit A: Mini-GTL Plant



This Portable Mini-GTL® plant was first put into production and operated with utility natural gas in June 2013. In August 2013, the plant was moved and installed at a small oil and gas field located in northern Michigan where it processed and tested results of operations on more than 25,000 scfd of flared gas until November 2013. The Mini-GTL® plant was moved back to operate on pipeline gas during winter of 2013-14.

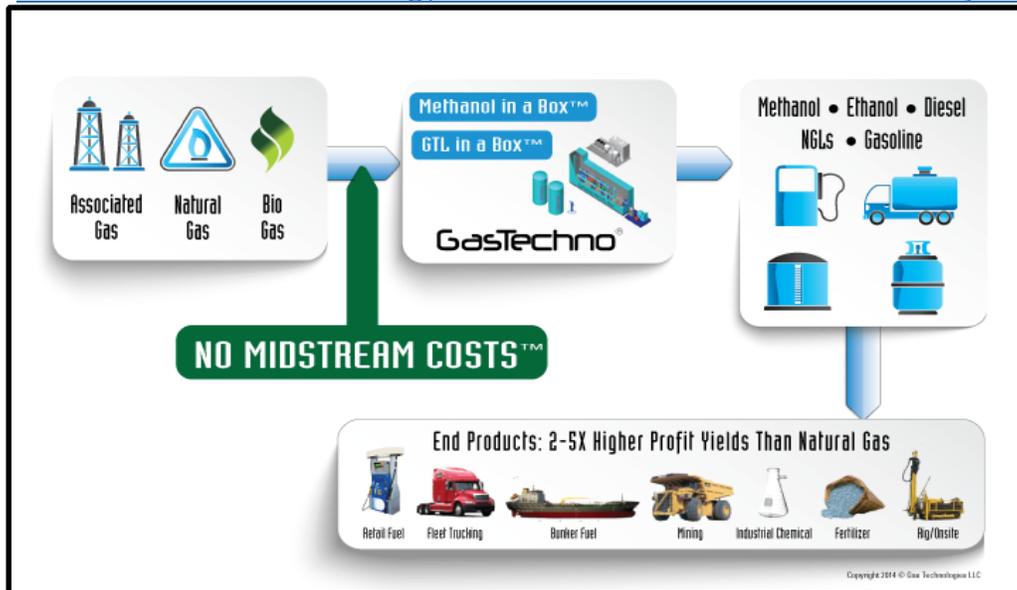
North Dakota Objectives

With this project, GasTechno® will implement (See Exhibit B) a full lifecycle Zero Flare Solution™ that will eliminate associated gas flaring via conversion to commercially saleable liquid chemicals. As stated above, this project will achieve the following objectives:

1. Implement GEF's patented Miniature Gas-to-Liquids (Mini-GTL®) technology known as the GasTechno® process that eliminates associated gas flaring at the wellhead in North Dakota to meet increasingly stringent regulatory requirements;
2. Utilize the GasTechno® Mini-GTL® process to convert associated gas into easily transportable, commercially saleable, biodegradable and environmentally friendly liquid fuels & chemicals;

- Quantify the full lifecycle Zero Flare Solution™ economic and emission reduction benefits from the elimination of associated gas flaring.

Exhibit B: GasTechno Energy and Fuels Zero Flare Solution™ Project



On April 22, 2014, GasTechno® CEO, Walter Breidenstein testified at the North Dakota Flaring Task Force: “The GasTechno® process offers a viable economic solution to flared gas reduction by converting that wasted resource to Methanol. The valuable commodity will reduce the growing imports of Methanol coming from Canada and Chile into the North Dakota market and place the region and the state in the position of production leader in the industry.”

Methodology

The Michigan GasTechno® Portable Mini-GTL® demonstration plant was successful and is ready for full-scale commercialization with SM-Energy Co., a North Dakota well operator. For this project, the Mini-GTL® plant will be installed at a site located in the SE/4 SE/4 Sec. 12 T150N R99W in McKenzie County, ND. The Holm 14-12CTB Battery layout will include an Natural Gas Liquids (NGL) processing plant and a Mini-GTL plant combined and operate for a planned minimum 360 days for demonstration to industry. Recovered NGL and GTL liquids (methanol, ethanol, formalin blend) will be removed off-site every 3-4 days and delivered to storage tanks.

The Mini-GTL plant will be capable of processing between 150 - 300 mscfd (thousand scfd) and generate approximately 1,000 gallons per day (gpd) of NGLs, 1,100 gpd of methanol, 300 gpd of ethanol and 220 gpd of formalin.

The project results will encourage operators who are flaring associated gas and facing potential oil production restrictions to adopt a Zero Flare Solution™ that captures and converts this wasted resource into commercially saleable liquid fuels and chemicals and thereby eliminates unnecessary flaring to meet environmental compliance requirements. Specific activities will include the following:

- Installation of the NGL & GasTechno® Mini-GTL® plant at the SE/4 SE/4 Sec. 12 T150N R99W in McKenzie County, ND, aka Holm 14-12CTB Battery within 60-120 days of grant award.
- Within thirty days of installation, the NGL and GTL operation will be commenced, all flaring monitored and eliminated, and liquid fuels & chemicals being produced, stored and removed.

3. Program Management solutions at site and further calculations of the emissions reductions and reporting of the value add savings at the wellhead using various industry metrics and economic models.

Additional information on the area of the SM Energy test site can be found in Appendix G.

Anticipated Results for Work Stream

GEF expects the demonstration will show the high positive impact of these proven technologies on both economic development and the environment. Capturing associated gas, a wasted resource, and monetizing it into commercially saleable liquid fuels and chemicals, can greatly enhance the economic value of oil producing wells and meet increasingly stringent environmental regulations.

STANDARDS OF SUCCESS

Zero Flare Solution Demonstration Scorecard (Illustrative)

Measurable	Goal	Improvement metric	Estimated Percentage/Amount
Emissions at the well head	Eliminate flare, bring well into compliance with NDIC flaring Order	200 mscfd of gas eliminated CO ₂ , CH ₄ , CO, NO _x	100% flare gas reduction
Value of NGLs sold	Generate revenue	Market; e.g., \$1.70 / gal	\$617,000 / year
Value of methanol sold	Generate revenue	Market; e.g., \$1.70/gal.	\$617,000/year
Value of ethanol sold	Generate revenue	Market; e.g., \$2.39/gal.	\$237,000/year
Value of formalin sold	Generate revenue	Market; e.g., \$1.30/gal.	\$94,000/year
Value of avoided oil production restriction	Avoid lost oil production income	\$80 per barrel	\$1,017,960/ per year
Jobs added	Create demand for new skills from new technologies.	# of trained workers # of new job roles developed	20 trained technicians Five new job types

Facilities

The GasTechno® Mini-GTL® equipment is fully self-contained within a modular intermodal 40 foot long container and is single skid mounted. The GasTechno® system is scalable and can be easily transported and placed at remote sites. Outside battery limits, a mobile gas-fired generator will provide electricity to power on-site equipment. Liquid oxygen, required for the process, will be supplied from third party sourced vendors. In the pictures below, we demonstrate that we have already started fabrication of the Mini-GTL plant, and started receiving long lead order equipment items.



RESOURCES

Resource	Description
Gas Techno Energy & Fuels (USA) LLC	Mini-GTL Plant Construction & Operation
Emerson Electric & SEI Tech, Inc.	Start-up, Operation Support, Maintenance
SM-Energy Co.	SE/4 SE/4 Sec. 12 T150N R99W in McKenzie County, ND., Holm 14-12CTB Battery
ND Oil and Gas Commission – Research Committee	Progress reporting, public communications

Equipment	Description
GasTechno NGL & Mini-GTL®	150 to 300,000 scfd mini gas to liquid plant
Storage tanks	Bulk NGL & GTL liquid storage tanks
Power generator, compressor	Generator and compressor for Mini-GTL® operation
O2 supply system	O2 supply for Mini-GTL

Techniques to Be Used: Availability and Capability

GasTechno® will utilize existing and proven “off the shelf” equipment already in use in the oil and gas industry combined with patented technology developed by Gas Technologies LLC and licensed to GasTechno Energy & Fuels (USA) LLC. The GasTechno® system features an energy-neutral recycle loop where unreacted methane is scrubbed and recycled until the overall desired conversion is achieved. The GasTechno® process is comparatively simple, employs a single step, low maintenance design, requires a lower capital investment, and accepts a broader range of off-specification gases and flow rates.

Immediate Environmental and Economic Impacts

The environmental and economic impacts of the project will be positive throughout the demonstration. GasTechno® expects flared gas emissions at the site to be eliminated, thus reducing existing emissions by 150,000 to 300,000 scfd. The project’s expected investment is approximately \$2,800,000 and will create up seven to five (5) full time jobs during the installation, demonstration and operation.

Long Term Technological and Economic Impacts

The purpose of this demonstration is to confirm the economic and environmental benefits of the GasTechno® Mini-GTL® system. A successful project will provide operators with proof of an economically viable solution for compliance with Federal and State emissions flaring laws and regulations and an opportunity to create economic value from a currently wasted resource. The value of GTL fuels and chemicals for North Dakota could reach over \$600 million per year, should existing flares be eliminated with the technology. By 2030, 50,000 new wells could be in production and it is estimated that 20% of those will not have good economic solutions to flaring. If this waste can be converted to biodegradable and environmentally friendly fuels and chemicals, an estimated \$9 billion in additional revenues could be realized by operators and owners.

Why the Project is Needed

This demonstration is needed to validate an innovative, profitable solution to eliminate the growing problem of associated gas flaring which is subject to increasingly stringent federal, state and local regulation.

Regulations targeting methane and / or carbon emissions from the oil and gas sector are on the way as evidenced by a series of Oil and Natural Gas Air Pollution Standard white papers released by the White House. State and federal government regulations are calling for the reduction and elimination of flared gas associated with oil exploration with the potential threat of restricting oil production. In July 2014, The North Dakota Industrial Commission (NDIC) adopted a flaring reduction policy (Order No. 24655) aimed at reducing natural gas flaring in the Bakken and Three Forks Formations. The policy sets aggressive flare gas capture targets of 77% by January 1, 2015, 85% by January 1, 2016 and 90% by October 1, 2020 with the threat of oil production restrictions if targets are not met. Regulators are putting pressure on operators to provide comprehensive plans for flare reduction. Operators are weighing the value of new well development costs with the additional burden of flare reduction.

The problem is most acute in North Dakota as can be seen in Dunn County for example. The top 30 wells in Dunn County with no sales volume flared 176 million scf of gas in March 2014 alone. The top 30 wells selling gas in Dunn County that are still flaring are producing over 11 million scf per day but over half (52%) of that production is flared. Specific operators such as Marathon flared a cumulative 173 million scf from January of 2012 through March of 2014 with no sales of production gases. Burling Resources flared over 50 million scf over the same time period with complimentary sales of just 76 million scf. Clearly, there is an overabundance of flaring without a real commitment to solve a growing environmental problem and a massive waste of natural resources (see Appendix C, D, & F).

Without a viable economic solution, economic expansion and jobs can be put at risk. North Dakota is losing, and stands to lose millions of dollars more in revenues until a well-site technology can collect or remediate the associated gases. The Mini-GTL® provides a real solution to flaring while creating a real additional revenue stream for operators by monetizing waste gas into commercially saleable liquids. The patented GasTechno® process uses an innovative one step technology that eliminates flaring Zero Flare Solution™, reduces CO₂ emissions and meets the goal of North Dakota Governor, Jack Dalrymple, to eliminate wasteful flaring.

Once more, the project fully supports the goals of the North Dakota Oil and Gas Industrial Commission's goals:

- Preserve and create jobs involved with the production and utilization of North Dakota's oil and gas resources.
- Ensure economic stability, growth, and opportunity in the Oil and Gas Industry
- Fulfill Federal and State regulatory requirements
- Encourage, and promote the use of new technologies and ideas that have a positive economic and environmental impact on the oil and gas development and production in North Dakota
- Promote public awareness of the benefits provided by the North Dakota oil and gas industry.

BACKGROUND/QUALIFICATIONS

GasTechno®

GasTechno Energy & Fuels (USA) LLC was created to exclusively license and commercialize the GasTechno process in August of 2013. Gas Technologies LLC, the parent, is a Michigan-based limited liability company founded in 2004 with the objective of addressing the need for a direct, scalable solution that enables the monetization of flared gas and other stranded sources of methane.

The research kinetics and background laboratory data for developing the GasTechno® process took place in the former Soviet Union, Canada, Norway, USA and Japan. This work contributed to the understanding of the complicated kinetics surrounding the gas phase oxidation of methane into useful oxygenates. Decades of laboratory testing led to the development of a representative kinetic model to accurately predict the behavior of the reaction, facilitating the development of the GasTechno® process. See Exhibit B for its patent rating among Michigan companies.

Walter Breidenstein, CEO, Chairman of the Board

Mr. Breidenstein founded GasTechno® in August 2013. With more than 25 years of experience in the fields of oil and gas, renewable energy and management, Mr. Breidenstein has founded 10 companies in three countries, and holds six patents with more pending approval.

Since September 2004, Mr. Breidenstein has served as CEO and General Manager of Gas Technologies LLC where he provided the majority of funding, development and oversight on the realization of GasTechno® process and is currently responsible for management of day-to-day operations.

In January 2005, Mr. Breidenstein joined Sorowell Production Services, a petroleum services company involved in research, development and financing of primary and secondary recovery of oil using advanced oil well technologies. In April, 2007, he received the “Leaders & Innovators” award by Lawrence Technological University for his contributions to Michigan’s advanced technologies. He earned an Associate’s Degree in Petroleum Technology from Northwestern Michigan College in 1985, and a Bachelor’s Degree in Business Administration from Ferris State University in 1987.

Mitch Sremac, Chief Operation Officer

Mr. Sremac was the founder and Chief Operating Officer of Flex Fuel US. His expertise is in automotive emissions management and Powertrain technology. As Chief Operating Officer, he developed and managed product development, warehousing and distribution, and service operations. A career innovator, he holds several patents including the Flex Fuel US patent for alcohol conversions enabling gasoline vehicles to also run on ethanol and methanol in a flex fuel mode. His technology has demonstrated superior performance with the EPA, DOE, and in the field with high profile alternative fuel fleets such as the City of Chicago, the Federal Law Enforcement Training Center, and Iowa Department of Energy. Mr. Sremac managed the Federal Government approval processes for nine EPA certifications, GSA contracts, grant applications and E-Verify procedures.

Scott Morris, Chief Disruption Officer

Mr. Morris invested his early years in the formula racing industry (IndyCar) as an aspiring race driver. In addition to technical experience and first-hand familiarity with methanol as a racing fuel, this gave him valuable experience working with top level executives and corporate sponsors in developing strategic ROI driven partnerships in the sport. Transitioning to the engineering side of the sport, Mr. Morris attended the prestigious Colorado School of Mines for mechanical engineering, accented by the school’s long tradition of geological, petroleum, and materials science. After college, Mr. Morris began to develop business models for promoting the use of methanol as a fuel for vehicles while continuing to serve as a development agent for Sports and Entertainment International, a leading motorsports and reality television agency. His retail model for marketing methanol, known as Crimson Fuel, attracted national media attention. Mr. Morris has founded several companies in varied opportune industries, and is an instinctive business developer, outside-the-box thinker and strategist.

Sean Murray, Director

Sean Murray is an insurance executive with over 25 years of experience operating a variety of insurance organizations. He is also an entrepreneur adept at strategic planning, corporate governance and building marketing and distribution platforms. Mr. Murray's experience includes operating as CEO or President of Saucon Mutual Insurance Company, Midwest Insurance Group, RRG and Caitlin-Morgan Insurance Services.

Sam Price, Director

An electrician by training, Mr. Price has been a serial entrepreneur for 18 years. In 2006, he founded SEI Tech and currently serves as President and CEO. Through a partnership arrangement with Emerson Instrument & Valve Services, SEI Tech supplies services and technicians throughout the US. Prior to SEI Tech, Mr. Price founded Sam's Electrical and Instrumentation where he spent 10 years providing services and technicians to Dow Chemical Company.

MANAGEMENT

The management team will be led by GasTechno Energy & Fuels CEO, Walter Breidenstein. Mr. Breidenstein has over 25 years of experience in oil & gas industry including expertise in research, development and financing of primary and secondary recovery of oil using advanced oil well technologies.

GasTechno® will establish a Zero Flare Solution™ demonstration Steering Committee to set direction for the project and regularly meet on the status of major tasks. GasTechno® welcomes representation from the North Dakota Oil and Gas Research Program on the Steering Committee. Members will include senior executives from GasTechno Energy & Fuels (Walter Breidenstein), Emerson Process Management and SEI Tech Inc., and North Dakota Oil and Gas Research Program (e.g., Karlene Fine or designate), and SM Energy. A Program Office will be set up to produce regular management reports, identify potential tasks and activities at risk of completion and develop recommendations for the Steering Committee to consider and implement.

PARTNERS and SUPPLIERS

SM Energy Company (SM Energy) is an independent energy company and supplier of the site location. The Company is engaged in the acquisition, exploration, development, and production of crude oil, natural gas, and natural gas liquids (referred to as oil, gas, and NGLs) in onshore North America. The Company's operations are focused on five operating areas in the onshore United States. In December 2011, the Company closed on its acquisition and development agreement with Mitsui E&P Texas LP (Mitsui), an indirect subsidiary of Mitsui & Co. Ltd., which transferred 12.5% of its working interest in certain non-operated oil and gas assets in South Texas. In December 2013, SM Energy Co announced that it had closed its previously announced Anadarko Basin divestiture package.

The main drivers of production growth were their Eagle Ford shale and Bakken/Three Forks programs. These record production levels resulted in the Company reporting increased oil, gas, and NGL production revenue in 2012 of \$1.5 billion

The Emerson Electric Company (NYSE: EMR) is a supplier of key equipment to GEF and is an American multinational corporation headquartered in Ferguson, Missouri, United States. This Fortune 500 Company manufactures products and provides engineering services for a wide range of industrial, commercial, and consumer markets. Emerson is one of the largest power equipment manufacturers in the U.S. As of 2010, it has a workforce of approximately 132,000 employees worldwide, with a global presence spanning 150 countries and 230 manufacturing locations worldwide.

SEI Tech Inc. is a partner of GEF and a leader in the instrument service field. Since 2006 SEI has been leading the way in the service of instrumentation for the oil and gas industry. SEI has partnered with Emerson to provide full service support for Emerson products. With over 200 technicians nationwide, SEI has built a reputation for quality and excellence. SEI has committed to providing full support during installation and after startup to ensure long-term durability and reliability.

TIMETABLE

GasTechno® Energy Flare Reduction Project Timeline

Number	Summary	Estimated Hours	Details	Estimated Start Date	Estimated End Date
1	Mini-GTL Design & Engineering	80	Design and engineer 200K mini-GTL for Bakken Fields, determine component needs and cost out with component lead times.	12/1/2014	12/12/2014
2	Construct & Test Mini-GTL Operation	640	Assemble all components run system tests, confirm all systems operate correctly.	1/3/2015	3/2/2015
3	Deliver & Setup NGL & Mini-GTL on Site	320	Transport mini GTL to Bakken Oil Fields, setup plant, tie in to flare, check system operation - plant fully operational.	3/2/2015	3/31/2015
4	Deliver & Setup liquid storage tanks	240	Purchase and deliver liquid storage tanks to plant site.	3/1/2015	3/15/2015

BUDGET

Project Associated Expense	Total	NDIC's Share	Applicant's Share (cash)	Applicant's Share (in-kind)
NGL & GTL construction	\$ 2,000,000	\$ 430,000	\$ 700,000	\$ 870,000
Plant Transportation and setup	\$ 30,000			\$ 30,000
GTL operation costs	\$ 300,000		\$ 300,000	
Management (15%)	\$ 368,000	\$ 120,000	\$ 248,000	
Public awareness program	\$ 30,000	\$ 20,000	\$ 10,000	
Travel and expenses	\$ 72,000	\$ 30,000	\$ 42,000	
Total Expenses	\$ 2,800,000	\$ 600,000	\$ 1,300,000	\$ 900,000

Request for \$600,000. NDIC OGRP funding; Total Project Cost: \$2,800,000

CONFIDENTIAL INFORMATION

There is no confidential information in the grant.

PATENTS/RIGHTS TO TECHNICAL DATA

There are no additional patent rights wishing to be reserved.

STATUS OF ONGOING PROJECTS

No previous funding from Commission has been received.

AFFIDAVIT OF TAX LIABILITY

GasTechno® Energy and Fuels (USA), LLC does not have any outstanding tax liability owed to the State of North Dakota or any of its political subdivisions.



Walter Breidenstein
GasTechno® CEO

APPENDIX A: LETTERS OF SUPPORT



Process Automation Services

Project Services

Emerson Process Management LLLP
641 Lambert Pointe Drive
Hazelwood, MO 63042-2697
United States
T +1 314 872 9058
F +1 314 872 8617

Walter Breidenstein, CEO
Gas Technologies, LLC
P.O. Box 640
Walloon Lake, Michigan 49796

May 29, 2014

Dear Mr. Breidenstein:

I am writing you today to confirm our continued support of Gas Technologies LLC and the program to provide Mini GTL methane gas conversion process systems.

As you know our Emerson Integration Services provides complete turn-key skids to the process industry. We provide complete fabrication and integration services including structural steel as well as pipe fabrication and installation and complete installation of instrumentation and controls.

Our effort is to support our various Emerson divisions as well as their customers to provide integration of Emerson products into process systems. We understand that the need for the Mini GTL system is great with the possibility of 100 plus units required.

We are well positioned to provide initial fabrication of the Mini GTL units with the ability to ramp up our production as necessary to meet your needs.

We are pleased to continue our support as a member company of Emerson and look forward to working with you on this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Ed Pittman", written over the word "Sincerely,".

Ed Pittman
Senior Industry Sales Development Manager
Emerson Process Management
FABCON



Corey Black
Area Sales Director
North Central Area

Emerson Process Management
2885 Water Tower Place
Chanhassen, MN 55317

P: 612-963-7206
E: Corey.Black@Emerson.com

May 30, 2014

Walter Breidenstein, CEO
GasTechno Energy & Fuels (USA) LLC
2720 E. Broadway
Unit-1
Bismarck, N.D. 58501

Re: Emerson Support of GasTechno Mini-GTL Equipment

Dear Walter;

We are writing at your request this letter of support for your North Dakota grant request.

As you know, Emerson has been working with Gas Technologies since late 2010 and been involved in participation supplying equipment and expertise on the last two plants you have constructed in Michigan, and have awarded your latest commercial scale Mini-GTL plant with approximately \$50,000 worth of equipment from our Rosemount and Micro Motion divisions, on consignment under our testing program to support your efforts.

We are familiar with your progress through Joe Lawson, our Executive Sales Engineer that supports your facility, and recognize the North Dakota flaring problem. Public estimates are that about 35% of the nearly 10,000 wells are flaring some associated gas. Emerson has very active presence in North Dakota currently and are always looking for solutions to help industry reduce the flaring.

As you know, Emerson is one of the world's leading controls and instrument suppliers with a strong presence throughout the world as well as across all North America. Our Process Management Group has unsurpassed expertise and capabilities in all aspects of automation and information systems related to the production, transmission, and processing of oil and gas products. With leading industry and automation expertise, Emerson helps clients optimize their oil and gas operations and ensure the most efficient use of capital and resources and we will be delighted to continue that support as GasTechno's needs grow as well, no matter how large or fast.



Corey Black
Area Sales Director
North Central Area

Emerson Process Management
2885 Water Tower Place
Chanhassen, MN 55317

P: 612-963-7206
E: Corey.Black@Emerson.com

Along with providing instrumentation and control hardware and software, don't forget we have several hundred service and operational support personnel available in the field throughout the US to support you and your operations where ever and whenever your needs require. We can provide 24 hour support, 7 days a week service and support if needed and have done so for years with many other customers.

Should you require further information on our products and services to support you in the North Dakota market, please let us know and we will be happy to supply with whatever you need.

Sincerely yours,

A handwritten signature in cursive script that reads 'Corey Black'.

Corey Black
Area Sales Director - North Central Sales Area

Mauro Insurance Agency
4314 SW 9th St
Des Moines, Iowa 50315

Commercial Insurance
Risk Management Services

May 28, 2014

Walter Breidenstein, CEO

GasTechno Energy & Fuels (USA) LLC

Re: GasTechno Portable Mini-GTL Equipment
Insurance & Coverage for North Dakota Projects

Dear Walt,

We appreciate working with you on the successful demonstration phase of the GasTechno Portable Mini-GTL plant at the oil field site outside Mancelona, Michigan and are writing this letter in support of your North Dakota grant request.

We have outlined the coverages we placed for the Mancelona project below. Please feel free to share this with your North Dakota customers to give them confidence in the insurability of GasTechno's innovative and emerging gas to liquid technology.

Coverage and Limits for the completed Portable Mini-GTL project in Mancelona were:

Commercial General Liability	\$ 1M/\$2M Limits
Pollution Liability	\$ 1M Limit
Commercial Auto Liability	\$ 1M Limit
Excess Liability	\$ 1M
Inland Marine	\$ 600,000

Higher limits are available for all lines of insurance on North Dakota projects as needed.

Phone: 515-287-2257

Email: jharsch@qwestoffice.net

Mauro Insurance Agency

**4314 SW 9th St
Des Moines, Iowa 50315**

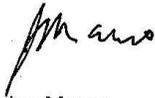
Commercial Insurance

Risk Management Services

We believe there is great value in GasTechno's alternative technology to reduce flaring and are excited to support your efforts. Please feel free to share this letter with your new customers, and let them know we are available if they have any coverage concerns or questions.

Looking forward to providing you competitive rates, coverage, and service in the insurance industry!

Sincerely yours,



Joe Mauro

President

Mauro Insurance Agency



Jeff Harsch

Risk Management & Claims

Mauro Insurance Agency

Phone: 515-287-2257

Email: jharsch@qwestoffice.net



The Instrument and Controls Specialists

Sam Price

President / CEO

880 Whispering Pines
Ithaca, MI 48847

Cellular: 989.289.6597

Fax: 989.875.6028

Email: Sam.Price@seitechinc.com

Email: Sam.Price@Emerson.com

April 19, 2014

Walter Breidenstein, CEO
Gas Technologies LLC
P.O. Box 640
Walloon Lake, Michigan 49796
[231-535-2914](tel:231-535-2914) phone
[231-536-2915](tel:231-536-2915) fax
walterb@gastechno.com
www.gastechno.com

Dear Walter,

I am writing you this letter in reference to the grant you are applying for regarding Tech support for Gas Technologies LLC and the Mini GTL's. As I mentioned, SEI Tech, Inc. and Emerson I&VS are partners together providing calibration, maintenance, installation, and repair services for all types of industry. SEI Tech, Inc. supplies all of Emerson I&VS's contractor I&C Techs all across the USA.

SEI Tech, Inc. has a resource pool of over 200 techs in various regions of the US. Our I&C Techs have a very wide knowledge base and have excellent working, hands on knowledge, of the vast majority of makes, models, and manufactures of process transmitters, valves, and PLC platforms. We call ourselves "The Instrument and Controls Specialists" and indeed, we are. Our Techs and I as well, have over 30+ years experience each in the chemical, petro-chem., oil, gas, paper, pharmaceutical, water treatment, wastewater industries, and more. Currently we have 32 techs working in Oil and Gas fields in Texas, Oklahoma, New Mexico, Utah, Wyoming, and North Dakota. We have also worked in fields in Louisiana, Pennsylvania, and Alaska. Eight of those techs are currently working in the Dickinson, ND area and will be for several months.

In December of 2010 SEI Tech, Inc. came along side GasTechno to provide guidance and control support in their development of the methane conversion process. In less than 3 weeks, we were able to help the GasTechno team achieve a stable process. On December 21, 2010 we achieved the first 4-hour long reaction, which resulted in very good methanol selectivity. Over the next few weeks, we continued to improve the controls and achieved a better understanding of the whole process. From our operational beginnings in your garage until what we have achieved in 2013 and 2014, I am here to support the GasTechno team as we bring this truly revolutionary technology into commercialization.

We, SEI Tech, Inc., know our business and we have a working knowledge of your business and the GasTechno process. Add to this SEI Tech, Inc. partners with Emerson I&VS, we can provide operational, programming, maintenance, calibration, and repair support for the GasTechno process.

Sincerely,

A handwritten signature in black ink, appearing to read "Sam Price", written over a horizontal line.

Sam Price - President/CEO



Steven P. Kohler

Engineering Consultant
3059 Lake Meadows Circle
Traverse City, MI 49685
phone: (231) 421-8266 fax: (231) 421-8266
e-mail: stevenpkohler@gmail.com

May 31, 2014

Walter Breidenstein, CEO
Gas Technologies LLC
P.O. Box 640
Walloon Lake, Michigan 49796

Dear Walter,

I am writing this letter today to encourage you to continue Gas Technologies LLC's pursuit of opportunities to install your Mini GTL systems in order to reduce natural gas venting and flaring around the United States, and even around the world. You have my continued support in attempting to locate optimal locations for installation at producing wellheads or central production facilities which have the potential to maximize the impact of your technology – both in terms of reducing gas emissions and in creating a new profitable cash stream for the well operator and royalty owners from what was previously considered waste gas.

As a petroleum and natural gas production and reservoir engineering consultant with 37 years of industry experience, I believe there is a need for this type of new technology and realize that very few companies or individual even know it exists. I applaud any venue which will increase exposure of this groundbreaking technology to a larger audience, and show them that the environmental benefits of such a system can be paid for by a new cashflow stream from products which are currently being flared.

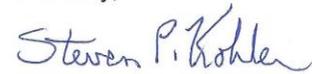
In my career I have worked on projects in various parts of the United States, and have studied both conventional reservoirs (primary and fractured porosity) and unconventional reservoirs (tight sandstones, coalbed methane, shale gas, and now shale oil). My studies have included reservoirs exhibiting primary recovery (solution gas drive, primary gas cap expansion, water drive, and gravity drainage) as well as secondary waterflood recovery and CO2 flood implementation and operations. But in addition to knowing the technical side of the industry, I am also a father and grandfather who personally loves the outdoors and enjoys hiking, biking, and kayaking, and I would like to keep our environment verdant and clean for generations to come. I believe sound industry practices such as the GTL technology can go a long way in allowing the profitable extraction of minerals to mesh with the appropriate stewardship of our soil, air,

and water. That is why I am proud to offer my continued support in utilizing my experience to identify reservoirs which would support the use of your technology.

Although I was aware of the Mini GTL process for generating methanol, ethanol, and formalin, I just recently learned of your new efforts to formulate the GT101 fuel for fleet vehicles. This is a very ingenious idea which should prove attractive to many producing companies (if they have opportunity to learn of it), and one which I believe very much needs to have confirmation testing in order to gain the serious attention of industry.

I wish you great success in these endeavors and would be happy to work with you in the future on implementation of these technologies.

Sincerely,

A handwritten signature in blue ink that reads "Steven P. Kohler". The signature is written in a cursive style with a large, stylized 'S' and 'K'.

Steven P. Kohler

May 29, 2014

Walter Breidenstein, CEO
GasTechno Energy & Fuels (USA) LLC
2720 E. Broadway
Unit-1
Bismarck, N.D. 58501

Re: WRI Support of Gas Technologies' Mini-GTL Equipment and Testing

Dear Walter:

Western Research Institute (WRI) is pleased to collaborate with Gas Technologies LLC with the development and commercialization of its Gas-to-Liquids technology. In that regard, we specifically support your grant application to North Dakota and will make available our expertise and facilities to support the Mini GTL demonstration, as needed.

As you know, WRI is a not for profit 501 (c) 3 company engaged in energy and related environmental research. Over the years we have acquired considerable experience and expertise in the coal and biomass upgrading, coal and biomass gasification, combustion, liquid fuels synthesis, and related utilization technologies. Our scientists and engineers are developing proprietary technologies for the production of hydrogen and liquid fuels from renewable and fossil resources. In that regard, participation in this proposal is aligned with our future goals and research directions.

We look forward to a successful collaboration.

Sincerely,



Vijay Sethi, Ph. D.
Sr. Vice President
Energy Production and Generation



P.O. Box 7168 • Billings, Montana 59103-7168
550 N. 31st Street, Suite 500 • Billings, Montana 59101
406.245.6248 • 406.245.9106 fax
SM-Energy.com

August 27, 2014

By Email (walterb@gastechno.com)

Mr. Walter Breidenstein
Chief Executive Officer
GasTechno Energy & Fuels (USA) LLC
2720 E. Broadway
Unit-1
Bismarck, N.D. 58501

Re: GasTechno Mini-GTL Equipment

Dear Mr. Breidenstein:

I am writing, at your request, to further demonstrate SM Energy's continued interest in GasTechno's Mini-GTL Equipment technology. SM Energy is committed to seriously reviewing and considering GasTechno's technology and, if the parties can come to mutually agreeable terms, hopes to test it on one of its well site locations. SM Energy will further be willing to share its proprietary and confidential information – as necessary to the development of GasTechno's technology specific to one of SM Energy's well sites – subject to a mutually agreeable confidentiality agreement that, among other things, such information shall remain the exclusive property of SM Energy and that GasTechno will keep all such information strictly confidential, limiting access to it to those of its representatives who have a need to review such information for the purpose of evaluating and implementing GasTechno's Mini-GTL Equipment technology for SM Energy. Please let me know if you need additional information from SM Energy, and how I may assist in moving our companies' potentially mutually beneficial transaction forward.

Sincerely,

A handwritten signature in blue ink that reads "Bobby Balcer".

Bobby Balcer
Sr. Operations Engineer

Special report: The Michigan Innovation Index | Crain's Detroit Business <http://www.crainsdetroit.com/print/article/20130728/NEWS/30728998...>



CRAIN'S DETROIT BUSINESS

Detroit and Southeast Michigan's premier business news and information website

Originally Published: July 28, 2013 8:00 AM Modified: August 03, 2013 10:40 AM

Special report: The Michigan Innovation Index

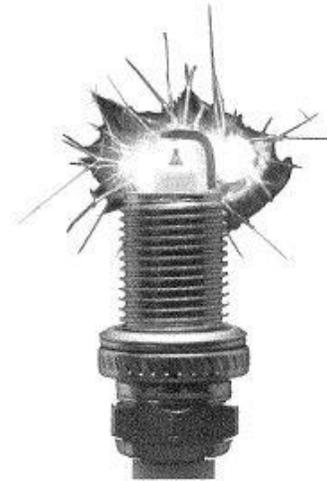
Michigan companies are innovating in a big way, particularly in nonautomotive segments.

ISTOCK PHOTO

* Take **Gas Technologies LLC**, ranked No. 1 on the *Crain's* list for its innovations centered on gas-to-liquid technology that creates methanol. Because the Walloon Lake company's patents are potential game-changers, its patents rank high on the value meter with a score of 156.57 (anything over 100 is considered good). IP valuation services firm **Ocean Tomo LLC** conducted the Michigan Innovation Index research exclusively for *Crain's Detroit Business*.

Life sciences is another hot spot in the *Crain's* report, with companies like Ann Arbor-based **Accuri Cytometers** earning a fourth-place ranking for patents related to a device to automate cell analysis.

The following list details the top 100 Michigan companies, from automotive suppliers to defense contractors. All told, high-value patents from Michigan corporations numbered more than 3,874 last year, an important part of the more than 250,000 patents issued in 2012 by the U.S. Patent and Trademark Office. [Chad Halcom's story in this package](#) provides additional analysis on statewide brainpower at work.



In addition, *Crain's* editors and reporters selected the following companies to showcase the breadth and depth of innovation connected to Southeast Michigan:

- **[Accuri Cytometers Inc.](#)**
- **[EcoMotors International](#)**
- **[Federal-Mogul Corp.](#)**
- **[Magna Electronics](#) and [Magna Mirrors](#)**
- **[Roush Life Sciences](#)**
- **[Trijicon Inc.](#)**

Michigan Innovations Index

Ocean Tomo LLC assigns patents granted a value relative to a median score of 100, based on analysis of about 50 factors.

including references to past patents, the number of citations and references made in subsequent patents, presence or absence of limiting claim language and likelihood a company will seek to renew or defend the patent it obtained.

Company	City	Patents granted	Quality index
1. Gas Technologies LLC	Walloon Lake	3	156.57
2. HandyLab Inc.*	Ann Arbor	12	151.6
3. Donnelly Corp.	Holland	55	147.97
4. Accuri Cytometers Inc.	Ann Arbor	7	142.34
5. Roush Life Sciences LLC	Livonia	4	139.73
6. EcoMotors International	Allen Park	3	137.6
7. eLumigen LLC	Auburn Hills	4	133.78
8. Ovonix Inc.	Rochester Hills	22	130.6
9. Clarity Technologies Inc.	Troy	5	129.26
10. Imra America Inc.	Ann Arbor	24	128.8
11. ANXeBusiness Corp.	Southfield	3	126.17
12. Magna Mirrors of America Inc.	Holland	14	125.66
13. Michigan Aerospace Corp.	Ann Arbor	3	125.4
14. Fleetwood Group Inc.	Holland	3	124.67
15. Michigan State University	East Lansing	28	122.24
16. Twin Bay Medical Inc.	Williamsburg	3	119.77
17. Stryker Corp.	Kalamazoo	50	119.05
18. Numatics Inc.	Novi	4	118.05
19. NeuroNexus Technologies Inc.	Ann Arbor	3	117.67
20. Adaptive Materials Inc.	Ann Arbor	4	117.37
21. Magna Electronics Inc.	Rochester Hills	6	117.16
22. Fraunhofer USA Inc.	Plymouth	5	115.96
23. Gentex Corp.	Zeeland	23	115.88
24. Mac Valves Inc.	Wixom	3	115.67
25. Access Business Group International LLC	Ada	28	114.84
26. Whirlpool Corp.	Benton Harbor	135	113.41
27. Trijicon Inc.	Wixom	5	113
28. Guardian Industries Corp.	Auburn Hills	51	112.92
29. Ovshinsky Innovation LLC	Bloomfield Hills	5	112.38

APPENDIX C: TOP 30 FLARES – NO GAS SALES, DUNN COUNTY

DUNN COUNTY, ND -- TOP 30 GAS FLARE RATE WELLS WHICH HAVE NO SALES GAS VOLUMES (3/2014)										
[SORTED BY FLARED GAS RATE]										
<u>FileNumber</u>	<u>Operator</u>	<u>GAS</u>	<u>FLARED 3/1/14</u>	<u>FIELD NAME</u>	<u>DAYS</u>	<u>FLARED</u>	<u>QQ</u>	<u>SEC</u>	<u>TWP</u>	<u>RNG</u>
					<u>PROD 3/1/14</u>	<u>MCF/PROD DAY</u>				
25821	BURLINGTON RESOURCES OIL & GAS COMPANY LP		25116	CORRAL CREEK	12	2093	SWSW	36	147	94
25910	BURLINGTON RESOURCES OIL & GAS COMPANY LP		5210	CORRAL CREEK	6	868	NWSE	1	146	94
25908	BURLINGTON RESOURCES OIL & GAS COMPANY LP		10376	CORRAL CREEK	15	692	NWSE	1	146	94
17082	BURLINGTON RESOURCES OIL & GAS COMPANY LP		4680	CORRAL CREEK	9	520	SWSW	32	147	95
25927	PETRO-HUNT, L.L.C.		2659	LITTLE KNIFE	6	443	NENE	17	145	97
24798	MARATHON OIL COMPANY		11560	MURPHY CREEK	30	385	SENW	18	146	92
25907	BURLINGTON RESOURCES OIL & GAS COMPANY LP		6288	CORRAL CREEK	18	349	NWSE	1	146	94
21708	BURLINGTON RESOURCES OIL & GAS COMPANY LP		9771	LITTLE KNIFE	31	315	SESE	36	147	97
23693	XTO ENERGY INC.		9560	HEART BUTTE	31	308	SESW	8	149	91
24735	HESS BAKKEN INVESTMENTS II, LLC		7711	CEDAR COULEE	27	286	SESE	9	147	96
21702	XTO ENERGY INC.		7589	LOST BRIDGE	29	262	NWSW	5	148	96
25928	PETRO-HUNT, L.L.C.		2344	LITTLE KNIFE	9	260	NENE	17	145	97
23694	XTO ENERGY INC.		7453	HEART BUTTE	31	240	SESW	8	149	91
24734	HESS BAKKEN INVESTMENTS II, LLC		3495	CEDAR COULEE	15	233	SESE	9	147	96
23933	XTO ENERGY INC.		6428	HEART BUTTE	31	207	SESW	8	149	91
25822	BURLINGTON RESOURCES OIL & GAS COMPANY LP		5477	CORRAL CREEK	31	177	SESW	36	147	94
20824	MARATHON OIL COMPANY		4971	MCGREGORY BUTTES	30	166	NWNE	4	147	94
21707	BURLINGTON RESOURCES OIL & GAS COMPANY LP		4978	LITTLE KNIFE	31	161	SESE	35	147	97
24467	MARATHON OIL COMPANY		4327	WOLF BAY	31	140	NENW	16	146	92
22238	ENERPLUS RESOURCES USA CORPORATION		4175	HEART BUTTE	31	135	SESW	19	149	92
25429	XTO ENERGY INC.		1840	HEART BUTTE	14	131	NWNE	9	148	92
23949	KODIAK OIL & GAS (USA) INC.		3273	TWIN BUTTES	26	126	SWSE	21	147	92
21349	MARATHON OIL COMPANY		3696	MCGREGORY BUTTES	31	119	NWNE	4	147	94
23950	KODIAK OIL & GAS (USA) INC.		3685	TWIN BUTTES	31	119	SWSE	21	147	92
23169	WPX ENERGY WILLISTON, LLC		3445	HEART BUTTE	31	111	NENW	22	149	91
23948	KODIAK OIL & GAS (USA) INC.		3179	TWIN BUTTES	29	110	SWSE	21	147	92
24429	MARATHON OIL COMPANY		3385	WOLF BAY	31	109	NESE	26	147	92
19505	KODIAK OIL & GAS (USA) INC.		3256	TWIN BUTTES	31	105	SWSE	14	147	92
18809	ENERPLUS RESOURCES USA CORPORATION		2987	HEART BUTTE	30	100	SWSE	20	149	92
19269	SINCLAIR OIL AND GAS COMPANY		3037	LITTLE KNIFE	31	98	SESW	19	146	97
			175,951	TOTAL FLARED PRODUCING RATE :		9,368				

APPENDIX D: TOP 30 FLARES – WITH GAS SALES, DUNN COUNTY

DUNN COUNTY, ND -- TOP 30 GAS FLARE RATE WELLS WHICH ALSO HAVE SALES GAS VOLUMES (3/2014)														
FileNumber	Operator	FIELD NAME	DAYS		SALES		FLARED		TOTAL		QQ	SEC	TWP	RNG
			PROD	3/1/14	MCF/PROD DAY	MCF/PROD DAY	MCF/PROD DAY	MCF/PROD DAY	MCF/PROD DAY	MCF/PROD DAY				
25909	BURLINGTON RESOURCES OIL & GAS COMPANY LP	CORRAL CREEK	11	22	22	1064	1086	NWSE	1	146	94			
24784	HESS BAKKEN INVESTMENTS II, LLC	BIG GULCH	31	434	306	740	SWSE	12	147	97				
26721	CONTINENTAL RESOURCES, INC.	BEAR CREEK	18	553	170	723	NWNE	23	147	96				
26132	HESS BAKKEN INVESTMENTS II, LLC	BIG GULCH	31	650	68	718	LOTI	7	147	96				
23680	WPX ENERGY WILLUSTON, LLC	MANDAREE	31	491	205	696	SESW	20	149	93				
26131	HESS BAKKEN INVESTMENTS II, LLC	BIG GULCH	31	529	155	683	LOTI	7	147	96				
25095	HESS BAKKEN INVESTMENTS II, LLC	BIG GULCH	31	419	233	651	SWSE	12	147	97				
24783	HESS BAKKEN INVESTMENTS II, LLC	BIG GULCH	31	350	228	578	SWSE	12	147	97				
23787	XTO ENERGY INC.	LITTLE KNIFE	26	414	98	512	NWNN	28	148	97				
24648	MARATHON OIL COMPANY	MCGREGORY BUTTES	28	399	74	473	NWNN	15	147	94				
23678	WPX ENERGY WILLUSTON, LLC	MANDAREE	31	358	95	453	SESW	20	149	93				
23679	WPX ENERGY WILLUSTON, LLC	MANDAREE	31	385	65	450	SESW	20	149	93				
23788	XTO ENERGY INC.	LITTLE KNIFE	19	260	158	419	NWNN	28	148	97				
24431	CONTINENTAL RESOURCES, INC.	BEAR CREEK	25	231	181	412	SWNE	23	147	96				
24982	BURLINGTON RESOURCES OIL & GAS COMPANY LP	CORRAL CREEK	20	290	120	409	SESE	21	147	95				
26287	MARATHON OIL COMPANY	MURPHY CREEK	30	27	356	383	SWSE	33	145	96				
26289	MARATHON OIL COMPANY	MURPHY CREEK	30	37	333	370	SWSE	33	145	96				
26016	MARATHON OIL COMPANY	CHIMNEY BUTTE	26	179	184	362	SWSE	23	146	95				
23093	QEP ENERGY COMPANY	HEART BUTTE	31	151	197	348	SWSE	6	149	92				
23383	HRC OPERATING, LLC	MCGREGORY BUTTES	31	230	115	345	NWNN	1	147	94				
23097	QEP ENERGY COMPANY	HEART BUTTE	31	132	173	306	SWSE	6	149	92				
23382	HRC OPERATING, LLC	MCGREGORY BUTTES	31	130	173	303	NWNN	1	147	94				
25406	QEP ENERGY COMPANY	HEART BUTTE	31	98	198	296	SWNN	10	149	91				
19801	XTO ENERGY INC.	HEART BUTTE	28	185	91	275	SESW	8	149	91				
20143	XTO ENERGY INC.	HEART BUTTE	31	144	101	245	SESW	26	149	92				
19566	XTO ENERGY INC.	LOST BRIDGE	31	5	231	236	NESE	5	148	96				
24037	XTO ENERGY INC.	HEART BUTTE	31	105	122	227	SWSE	14	148	92				
25403	QEP ENERGY COMPANY	HEART BUTTE	31	73	149	222	SWNN	10	149	91				
20036	XTO ENERGY INC.	HEART BUTTE	31	106	89	195	NWNN	10	149	92				
23883	XTO ENERGY INC.	HEART BUTTE	31	91	103	194	NWNE	19	149	91				
				7,477	5,835	13,312								
				FLARED GAS =		44% OF TOTAL GAS								



GasTechno Energy & Fuels (USA) LLC
 +1 (231) 535-2914
 walterb@gastechno.com
 www.gastechno.com

Associated Gas **Natural Gas** **Bio Gas**

Methanol in a Box™
GTL in a Box™

Gastechno®

NO MIDSTREAM COSTS™



Methanol • Ethanol • Diesel
 NGLs • Gasoline

**Leasing terms available for Methanol in a Box™ and
 GTL in a Box™ with affordable monthly payments.**

End Products: 2-5X Higher Profit Yields Than Natural Gas

Retail Fuel Fleet Trucking Bunker Fuel Mining Industrial Chemical Fertilizer Rig/Onsite

Copyright 2014 © GasTechno Energy and Fuels

MINI-GTL PLANTS: OPERATING CONDITIONS

Estimated CAPEX	GAS FEED RATES			RAW LIQUIDS PRODUCTION					
	Nominal (MSCFD)	Min (MSCFD)	Max (MSCFD)	Gal/Day	Gal/Year	Liters/Day	Barrels/Day	MT/Day	MT/Year
\$500,000	25	15	50	170	61,200	640	4	0.5	190
\$750,000	75	45	150	480	172,800	1,820	11	1.5	540
\$1,500,000	300	150	500	1,900	684,000	7,190	45	6.0	2,160
\$2,500,000	750	400	1,500	5,100	1,836,000	19,310	121	16.0	5,760

Assumptions:

- Liquid market prices based on methanol = \$1.38 per gal, formalin = \$0.70 per gal and ethanol = \$3.30 per gal; surfactants marketed at \$5.00 per gal.
- Natural gas purchased at \$2.5 per mscfd
- Oxygen purchased in all cases at \$4.0 per mscfd
- CAPEX numbers are based on oxygen purchase instead of generation

FULL-SCALE PLANTS: OPERATING CONDITIONS

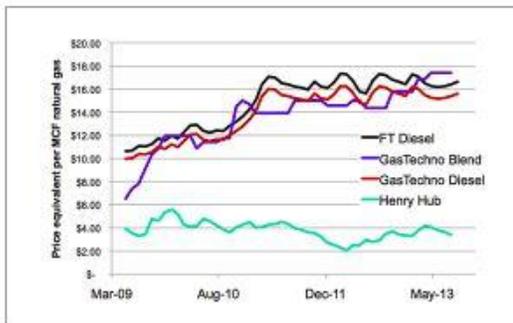
Estimated CAPEX	GAS FEED RATES			RAW LIQUIDS PRODUCTION					
	Nominal (MMSCFD)	Min (MMSCFD)	Max (MMSCFD)	Gal/Day	Gal/Year	Liters/Day	Barrels/Day	MT/Day	MT/Year
\$15MIL	2	1	4	16,700	6,012,000	63,200	400	53	19,100
\$20MIL	3	1.5	6	25,100	9,036,000	95,000	600	79	28,400
\$25MIL	5	2.5	10	44,800	16,128,000	169,600	1,070	140	50,400
\$43MIL	10	5	20	88,000	31,680,000	333,100	2,100	276	99,400
\$60MIL	15	7.5	30	132,600	47,736,000	501,900	3,160	416	149,800

Assumptions:

- Liquid market prices based on methanol = \$1.38 per gal, formalin = \$0.70 per gal and ethanol = \$3.30 per gal; surfactants marketed at \$5.00 per gal.
- Natural gas purchased at \$2.5 per mscfd
- CAPEX values include costs for on-site oxygen generation

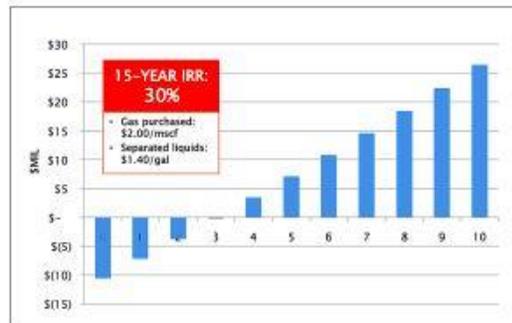
HISTORICAL PRICE COMPARISON

GasTechno Price Equivalent vs Natural Gas



CUMULATIVE EBITDA

1 MMSCFD Flare Reduction Project



GasTechno process is catalyst-free, capable of processing a wide range of off-spec feed gases without costly pre-treatment.

APPENDIX F: PROOF “PIPELINE ONLY” IS NOT EFFECTIVE

Table A

MONTH	SALES	FLARED	CUML.	CUML.
	MCF	MCF	MCF	MCF
2012	0	5,717	0	5,717
February	0	14,682	0	20,399
March	0	12,251	0	32,650
April	0	8,715	0	41,365
May	0	9,325	0	50,690
June	0	8,922	0	59,612
July	0	9,436	0	69,048
August	0	8,973	0	78,021
September	0	1,008	0	79,029
October	0	2,237	0	81,266
November	0	6,520	0	87,786
December	0	7,578	0	95,364
2013	0	6,961	0	102,325
February	0	5,987	0	108,312
March	0	8,059	0	116,371
April	0	6,456	0	122,827
May	0	5,769	0	128,596
June	0	6,763	0	135,359
July	0	6,935	0	142,294
August	0	5,994	0	148,288
September	0	5,576	0	153,864
October	0	5,229	0	159,093
November	0	4,641	0	163,734
December	0	2,142	0	165,876
2014	0	0	0	165,876
February	0	1,849	0	167,725
March	0	4,971	0	172,696

Table B

MONTH	SALES	FLARED	CUML.	CUML.
	MCF	MCF	MCF	MCF
2012	6,046	1,754	6046	10,496
February	12,021	431	18,067	10,927
March	8,996	593	27,063	11,520
April	6,660	487	33,723	12,007
May	4,404	942	38,127	12,949
June	4,333	453	42,460	13,402
July	2,926	916	45,386	14,318
August	2,175	770	47,561	15,088
September	2,349	516	49,910	15,604
October	4,449	872	54,359	16,476
November	1,903	844	56,262	17,320
December	2,372	606	58,634	17,926
2013	5,666	425	64,300	18,351
February	108	39	64,408	18,390
March	1,184	72	65,592	18,462
April	2,512	679	68,104	19,141
May	6,061	1,321	74,165	20,462
June	1,409	4,113	75,574	24,575
July	871	2,403	76,445	26,978
August	0	4,101	76,445	31,079
September	0	4,723	76,445	35,802
October	0	5,007	76,445	40,809
November	0	1,711	76,445	42,520
December	0	1,133	76,445	43,653
2014	0	2,767	76,445	46,420
February	0	1,456	76,445	47,876
March	0	2,889	76,445	50,765

APPENDIX G: SM ENERGY TEST SITE INFORMATION

Well: HOLM 14-12HB

Monthly projection data

GET Monthly Production Data								
NDIC File No: 22975 Well No: 99-033-01244-00-00 CTB No: 222975								
Well Type: OG Well Status: A Status Date: 12/9/2012 Wellbore type: Horizontal								
Location: SESW 12-150-99 Footages: 335 FSL 2570 FWL Latitude: 47.820063 Longitude: -103.293534								
Current Operator: SM ENERGY COMPANY								
Current Well Name: HOLM 14-12HB								
Elevation(s): 2196 KB 2179 GR 2188 GL Total Depth: 21240 Field: SIVERSTON								
Spud Date(s): 6/13/2012								
Casing String(s): 9.625" 2237' 7" 11448'								
Completion Data								
Pool: BAKKEN Perfs: 11448-21240 Comp: 12/9/2012 Status: AL Date: 6/8/2013								
Spacing: 2SEC								
Cumulative Production Data								
Pool: BAKKEN Cum Oil: 152189 Cum MCF Gas: 317760 Cum Water: 71815								
[Interactive Performance Curve] [PDF Curve]								
Production Test Data								
IP Test Date: 12/21/2012 Pool: BAKKEN IP Oil: 951 IP MCF: 1617 IP Water: 407								
Monthly Production Data								
Pool	Date	Days	BBLs Oil	Runs	BBLs Water	MCF Prod	MCF Sold	Vent/Flare
BAKKEN	Dec-12	22	19541	19101	7249	32972	28365	4607
BAKKEN	Jan-13	23	18552	18520	5947	36085	29252	6833
BAKKEN	Feb-13	28	12895	12981	5418	29948	27538	2201
BAKKEN	Mar-13	31	13370	13406	4414	24875	24745	109
BAKKEN	Apr-13	30	13446	13468	3633	20669	20245	410
BAKKEN	May-13	23	6612	6736	2999	24218	19377	4837
BAKKEN	Jun-13	16	3522	3451	4110	6203	4921	1282
BAKKEN	Jul-13	31	9590	9489	4118	23519	3744	19474
BAKKEN	Aug-13	31	7403	7383	3245	17742	13163	4351
BAKKEN	Sep-13	30	5836	5866	2236	11792	11591	18
BAKKEN	Oct-13	30	6015	5897	2373	12466	11508	804
BAKKEN	Nov-13	28	4836	5041	2081	10061	9309	632
BAKKEN	Dec-13	31	5305	5263	2448	15237	14241	889
BAKKEN	Jan-14	30	4694	4743	2224	13189	12883	205
BAKKEN	Feb-14	27	3995	4006	1801	10052	9754	213
BAKKEN	Mar-14	31	0	98	0	99	1	0
BAKKEN	Apr-14	9	649	625	2025	1260	22	1238
BAKKEN	May-14	3	495	481	720	706	704	2
BAKKEN	Jun-14	28	5167	5117	7148	9164	5831	3276
BAKKEN	Jul-14	31	5102	5104	4030	8680	6842	1786
BAKKEN	Aug-14	30	5164	5160	3596	8823	7339	1406

Well: HOLM 14X-12H

Monthly projection data

Get Monthly Production Data								
NDIC File No: 22975 Well No: 33-033-01245-00-00 CTB No: 222975								
Well Type: OG Well Status: A Status Date: 12/10/2012 Wellbore type: Horizontal								
Location: SESW 12-150-99 Footages: 335 FSL 2475 FWL Latitude: 47.820066 Longitude: -103.293921								
Current Operator: SM ENERGY COMPANY								
Current Well Name: HOLM 14X-12H								
Elevation(s): 2196 KB 2179 GR 2193 GL Total Depth: 21525 Field: SIVERSTON								
Spud Date(s): 6/17/2012								
Casing String(s): 9.625" 2256' 7" 11487'								
Completion Data								
Pool: BAKKEN Perfs: 11487-21525 Comp: 12/21/2012 Status: AL Date: 3/25/2013								
Spacing: 2SEC								
Cumulative Production Data								
Pool: BAKKEN Cum Oil: 108915 Cum MCF Gas: 195266 Cum Water: 95193								
[Interactive Performance Curve] [PDF Curve]								
Production Test Data								
IP Test Date: 12/21/2012 Pool: BAKKEN IP Oil: 665 IP MCF: 1112 IP Water: 598								
Monthly Production Data								
Pool	Date	Days	BBLs Oil	Runs	BBLs Water	MCF Prod	MCF Sold	Vent/Flare
BAKKEN	Dec-12	21	12288	11890	11398	22332	19315	3017
BAKKEN	Jan-13	19	10713	10697	10306	18990	18324	666
BAKKEN	Feb-13	27	11265	11321	9138	20564	18911	1394
BAKKEN	Mar-13	9	3568	3607	2822	6151	5964	82
BAKKEN	Apr-13	29	8888	8964	6500	14035	13735	194
BAKKEN	May-13	31	8138	8095	5967	14361	13377	959
BAKKEN	Jun-13	29	6024	6070	4621	11223	11181	33
BAKKEN	Jul-13	30	5039	4979	4427	10889	8548	2285
BAKKEN	Aug-13	29	5168	5127	3894	9132	8364	757
BAKKEN	Sep-13	30	4315	4346	3164	7636	7415	3
BAKKEN	Oct-13	30	4654	4291	3429	7865	7670	32
BAKKEN	Nov-13	30	4113	4600	2863	6173	5874	172
BAKKEN	Dec-13	31	3705	3648	2713	6300	5618	559
BAKKEN	Jan-14	31	3735	3775	2631	6687	6480	89
BAKKEN	Feb-14	28	3312	3298	2509	7638	7347	194
BAKKEN	Mar-14	4	685	519	151	731	621	4
BAKKEN	Apr-14	18	1327	1210	4639	1921	1399	522
BAKKEN	May-14	29	3462	3604	5476	5773	3287	2387
BAKKEN	Jun-14	28	2938	2877	3458	5724	3846	1783
BAKKEN	Jul-14	30	2872	2912	2823	5700	4429	1153
BAKKEN	Aug-14	30	2706	2710	2264	5441	4600	703

Well: HOLM 14-12HA

Monthly projection data

Get Monthly Production Data								
NDIC File No: 22977 Well No: 33-033-01246-00-00 CTB No: 222975								
Well Type: OG Well Status: A Status Date: 12/10/2012 Wellbore type: Horizontal								
Location: SESW 12-150-99 Footages: 335 FSL 2380 FWL Latitude: 47.820069 Longitude: -103.294308								
Current Operator: SM ENERGY COMPANY								
Current Well Name: HOLM 14-12HA								
Elevation(s): 2196 KB 2179 GR 2188 GL Total Depth: 21440 Field: SIVERSTON								
Spud Date(s): 6/11/2012								
Casing String(s): 9.625" 2243' 7" 11400'								
Completion Data								
Pool: BAKKEN Perfs: 11400-21440 Comp: 12/10/2012 Status: AL Date: 10/24/2013								
Spacing: 2SEC								
Cumulative Production Data								
Pool: BAKKEN Cum Oil: 173937 Cum MCF Gas: 273217 Cum Water: 66761								
[Interactive Performance Curve] [PDF Curve]								
Production Test Data								
IP Test Date: 12/27/2012 Pool: BAKKEN IP Oil: 944 IP MCF: 1693 IP Water: 361								
Monthly Production Data								
Pool	Date	Days	BBLs Oil	Runs	BBLs Water	MCF Prod	MCF Sold	Vent/Flare
BAKKEN	Dec-12	21	17497	17055	8009	28240	25179	3061
BAKKEN	Jan-13	19	14981	15132	5784	26415	20793	5622
BAKKEN	Feb-13	11	8272	8172	605	675	217	271
BAKKEN	Mar-13	31	21065	21092	8719	32825	32021	600
BAKKEN	Apr-13	30	14118	14155	4970	23926	23346	399
BAKKEN	May-13	31	14974	14959	4048	20275	19104	1058
BAKKEN	Jun-13	30	12288	12363	3235	17322	16520	737
BAKKEN	Jul-13	31	8584	8513	2882	7660	4111	3526
BAKKEN	Aug-13	31	7224	7190	2619	11555	10675	591
BAKKEN	Sep-13	30	6070	6112	2276	10949	10740	5
BAKKEN	Oct-13	21	4559	4171	2020	7597	6919	499
BAKKEN	Nov-13	29	6508	6992	2674	11977	10994	861
BAKKEN	Dec-13	31	5885	5830	2346	12865	12061	694
BAKKEN	Jan-14	28	4786	4835	1807	8261	8077	83
BAKKEN	Feb-14	28	4422	4395	1769	8633	8467	77
BAKKEN	Mar-14	12	1778	1718	841	4095	3991	1
BAKKEN	Apr-14	22	3592	3652	2766	4927	4095	832
BAKKEN	May-14	29	4961	5051	2689	8441	5013	3303
BAKKEN	Jun-14	28	4061	4006	1845	9037	5755	3159
BAKKEN	Jul-14	30	4504	4540	2041	9196	6164	2898
BAKKEN	Aug-14	29	3808	3816	2816	8346	6150	2060

Well: HOLM 14X-12HA

Monthly projection data

NDIC File: XXXXXXXXXXXX 92-00-00 CTB No: 222975								
Well Type: OG Well Status: A Status Date: 2/1/2013 Wellbore type: Horizontal								
Location: SESW 12-150-99 Footages: 315 FSL 1325 FWL Latitude: 47.820049 Longitude: -103.298607								
Current Operator: SM ENERGY COMPANY								
Current Well Name: HOLM 14X-12HA								
Elevation(s): 2156 KB 2135 GR 2138 GL Total Depth: 21170 Field: SIVERSTON								
Spud Date(s): 7/3/2012								
Casing String(s): 9.625" 2267' 7" 11420' 7" 11425'								
Completion Data								
Pool: BAKKEN Perfs: 11420-21170 Comp: 2/1/2013 Status: AL Date: 4/17/2013								
Spacing: 2SEC								
Cumulative Production Data								
Pool: BAKKEN Cum Oil: 99062 Cum MCF Gas: 175514 Cum Water: 75786 [Interactive Performance Curve] [PDF Curve]								
Production Test Data								
IP Test Date: 2/3/2013 Pool: BAKKEN IP Oil: 758 IP MCF: 1040 IP Water: 728								
Monthly Production Data								
Pool	Date	Days	BBLs Oil	Runs	BBLs Water	MCF Prod	MCF Sold	Vent/Flare
BAKKEN	Feb-13	28	16892	16544	16147	25411	23562	1849
BAKKEN	Mar-13	31	14821	14859	9528	25180	24720	460
BAKKEN	Apr-13	20	6558	6594	4763	12575	11533	826
BAKKEN	May-13	31	8723	8726	5233	15021	14010	898
BAKKEN	Jun-13	29	6008	6048	4187	11260	11117	106
BAKKEN	Jul-13	30	5870	5823	3622	9778	3844	5890
BAKKEN	Aug-13	31	5091	5018	3508	10040	8578	1437
BAKKEN	Sep-13	30	4221	4268	2956	8205	8174	8
BAKKEN	Oct-13	29	4405	4038	2564	7054	6556	278
BAKKEN	Nov-13	29	3496	3967	2442	6220	5993	63
BAKKEN	Dec-13	31	3403	3382	2420	7347	7045	153
BAKKEN	Jan-14	31	3101	3123	2287	7078	6955	1
BAKKEN	Feb-14	28	2784	2769	1964	6115	6018	1
BAKKEN	Mar-14	6	390	580	351	1176	1070	12
BAKKEN	Apr-14	22	3023	2983	2409	4065	3911	154
BAKKEN	May-14	29	3282	3280	3370	5519	3871	1564
BAKKEN	Jun-14	28	2515	2438	2925	5644	4624	934
BAKKEN	Jul-14	30	2640	2640	2682	4668	4452	115
BAKKEN	Aug-14	22	1839	1839	2428	3158	3008	36

Well: ARNOLD 16X-12H

Monthly projection data

Get Monthly Production Data								
NDIC File No: 14-00-00 CTB No: 222975								
Well Type: OG Well Status: A Status Date: 4/6/2014 Wellbore type: Horizontal								
Location: SESE 12-150-99 Footages: 250 FSL 1295 FEL Latitude: 47.819783 Longitude: -103.287776								
Current Operator: SM ENERGY COMPANY								
Current Well Name: ARNOLD 16X-12H								
Elevation(s): 2171 KB 2154 GR 2153 GL Total Depth: 21540 Field: SIVERSTON								
Spud Date(s): 10/21/2013								
Casing String(s): 9.625" 2249' 7" 11506'								
Completion Data								
Pool: BAKKEN Perfs: 11506-21540 Comp: 4/6/2014 Status: F Date: 4/20/2014								
Spacing: 2SEC								
Cumulative Production Data								
Pool: BAKKEN Cum Oil: 44233 Cum MCF Gas: 98589 Cum Water: 52827 [Interactive Performance Curve] [PDF Curve]								
Production Test Data								
IP Test Date: 4/20/2014 Pool: BAKKEN IP Oil: 642 IP MCF: 1445 IP Water: 828								
Monthly Production Data								
Pool	Date	Days	BBLS Oil	Runs	BBLS Water	MCF Prod	MCF Sold	Vent/Flare
BAKKEN	Apr-14	23	10200	9901	14849	16208	11284	4924
BAKKEN	May-14	26	10561	10672	15312	24786	9019	15767
BAKKEN	Jun-14	17	7208	7049	7680	19354	4175	15179
BAKKEN	Jul-14	31	10689	10745	9800	27179	10592	16587
BAKKEN	Aug-14	30	5575	5601	5186	11062	6515	4547

Well: DOROTHY 16-12H

Monthly projection data

Get Monthly Production Data									
NDIC File No: 22297 Well No: 15-00-00 CTB No: 222975									
Well Type: OG Well Status: A Status Date: 4/6/2014 Wellbore type: Horizontal									
Location: SESE 12-150-99 Footages: 250 FSL 1200 FEL Latitude: 47.819780 Longitude: -103.287389									
Current Operator: SM ENERGY COMPANY									
Current Well Name: DOROTHY 16-12H									
Elevation(s): 2171 KB 2154 GR 2147 GL Total Depth: 21475 Field: SIVERSTON									
Spud Date(s): 10/25/2013									
Casing String(s): 9.625" 2256' 7" 11483'									
Completion Data									
Pool: BAKKEN Perfs: 11483-21475 Comp: 4/6/2014 Status: F Date: 4/10/2014									
Spacing: 2SEC									
Cumulative Production Data									
Pool: BAKKEN Cum Oil: 80056 Cum MCF Gas: 202611 Cum Water: 37399 [Interactive Performance Curve] [PDF Curve]									
Production Test Data									
IP Test Date: 4/10/2014 Pool: BAKKEN IP Oil: 776 IP MCF: 1845 IP Water: 696									
Monthly Production Data									
Pool	Date	Days	BBLS Oil	Runs	BBLS Water	MCF Prod	MCF Sold	Vent/Flare	
BAKKEN	Apr-14	24	17814	17515	9157	30133	15556	14577	
BAKKEN	May-14	28	19444	19375	8903	48968	13307	35661	
BAKKEN	Jun-14	30	18186	18207	9158	54482	16790	37692	
BAKKEN	Jul-14	31	14096	14134	5064	40446	17725	22721	
BAKKEN	Aug-14	31	10516	10507	5117	28582	16561	12021	

Well: HOLM 13-12H

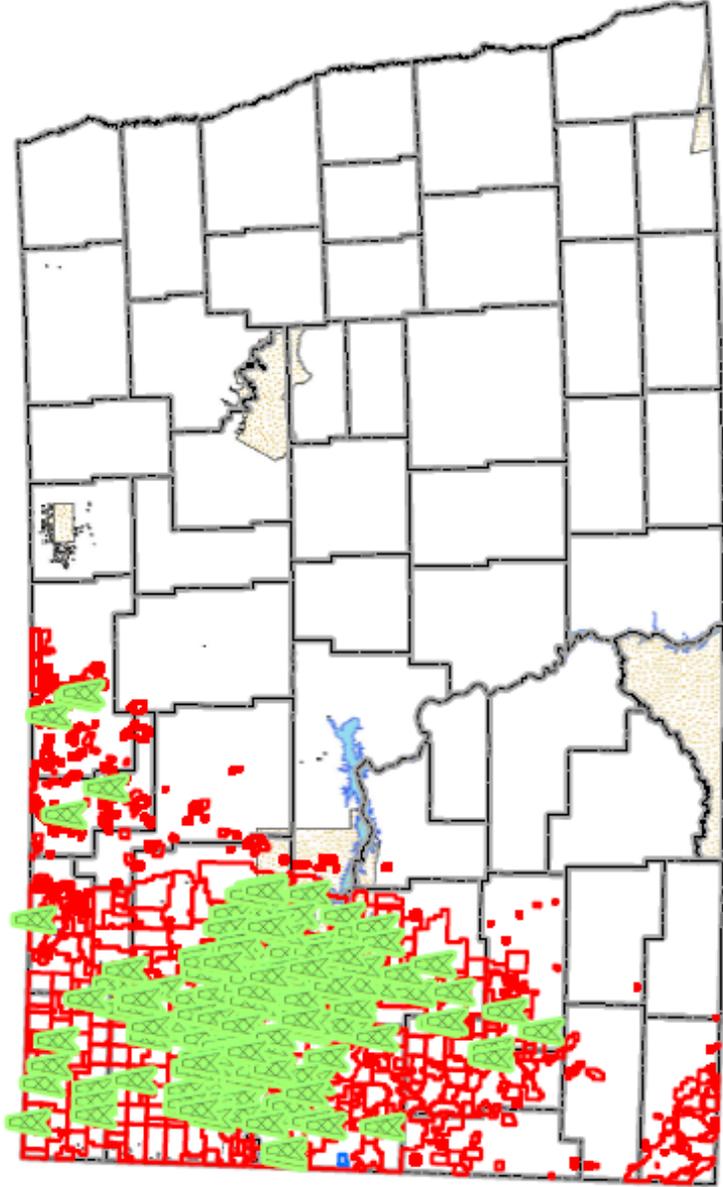
Monthly projection data

Monthly Projection Data									
NDIC File No: 2012-111 No: 99-09-01293-00-00 CTB No: 222975									
Well Type: OG Well Status: A Status Date: 2/1/2013 Wellbore type: Horizontal									
Location: SWSW 12-150-99 Footages: 315 FSL 1230 FWL Latitude: 47.820053 Longitude: -103.298994									
Current Operator: SM ENERGY COMPANY									
Current Well Name: HOLM 13-12H									
Elevation(s): 2156 KB 2135 GR 2133 GL Total Depth: 21300 Field: SIVERSTON									
Spud Date(s): 7/5/2012									
Casing String(s): 9.625" 2258' 7" 11324'									
Completion Data									
Pool: BAKKEN Perfs: 11324-21300 Comp: 2/1/2013 Status: AL Date: 6/4/2014									
Spacing: 2SEC									
Cumulative Production Data									
Pool: BAKKEN Cum Oil: 139058 Cum MCF Gas: 257855 Cum Water: 57005 [Interactive Performance Curve] [PDF Curve]									
Production Test Data									
IP Test Date: 2/6/2013 Pool: BAKKEN IP Oil: 791 IP MCF: 1447 IP Water: 430									
Monthly Production Data									
Pool	Date	Days	BBLs Oil	Runs	BBLs Water	MCF Prod	MCF Sold	Vent/Flare	
BAKKEN	Feb-13	28	13943	13610	8900	27902	25286	2616	
BAKKEN	Mar-13	31	12651	12685	4684	20473	20416	57	
BAKKEN	Apr-13	18	7045	7025	2044	11696	11491	143	
BAKKEN	May-13	31	15951	15939	6379	30851	28978	1840	
BAKKEN	Jun-13	30	10500	10580	4322	23906	22638	986	
BAKKEN	Jul-13	31	10253	10176	3610	21988	9059	12610	
BAKKEN	Aug-13	31	8766	8735	3097	17914	15186	2430	
BAKKEN	Sep-13	30	7581	7620	2606	14588	14294	31	
BAKKEN	Oct-13	31	6361	5679	2434	12284	11925	139	
BAKKEN	Nov-13	30	6081	6859	2088	9396	9083	124	
BAKKEN	Dec-13	31	5884	5849	1817	7054	6740	129	
BAKKEN	Jan-14	31	5970	5986	1910	7130	6925	57	
BAKKEN	Feb-14	21	4637	4596	1552	7301	6766	420	
BAKKEN	Mar-14	3	0	204	0	314	202	0	
BAKKEN	Apr-14	25	7630	7523	2982	17144	13925	3219	
BAKKEN	May-14	20	3660	3658	1453	12011	4549	7368	
BAKKEN	Jun-14	24	4131	4082	2130	5056	3975	1081	
BAKKEN	Jul-14	29	5254	5253	2657	7052	6162	769	
BAKKEN	Aug-14	21	2760	2762	2340	3795	3444	213	

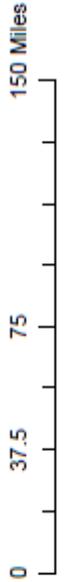
Well: RICK 16X-12H

Monthly projection data

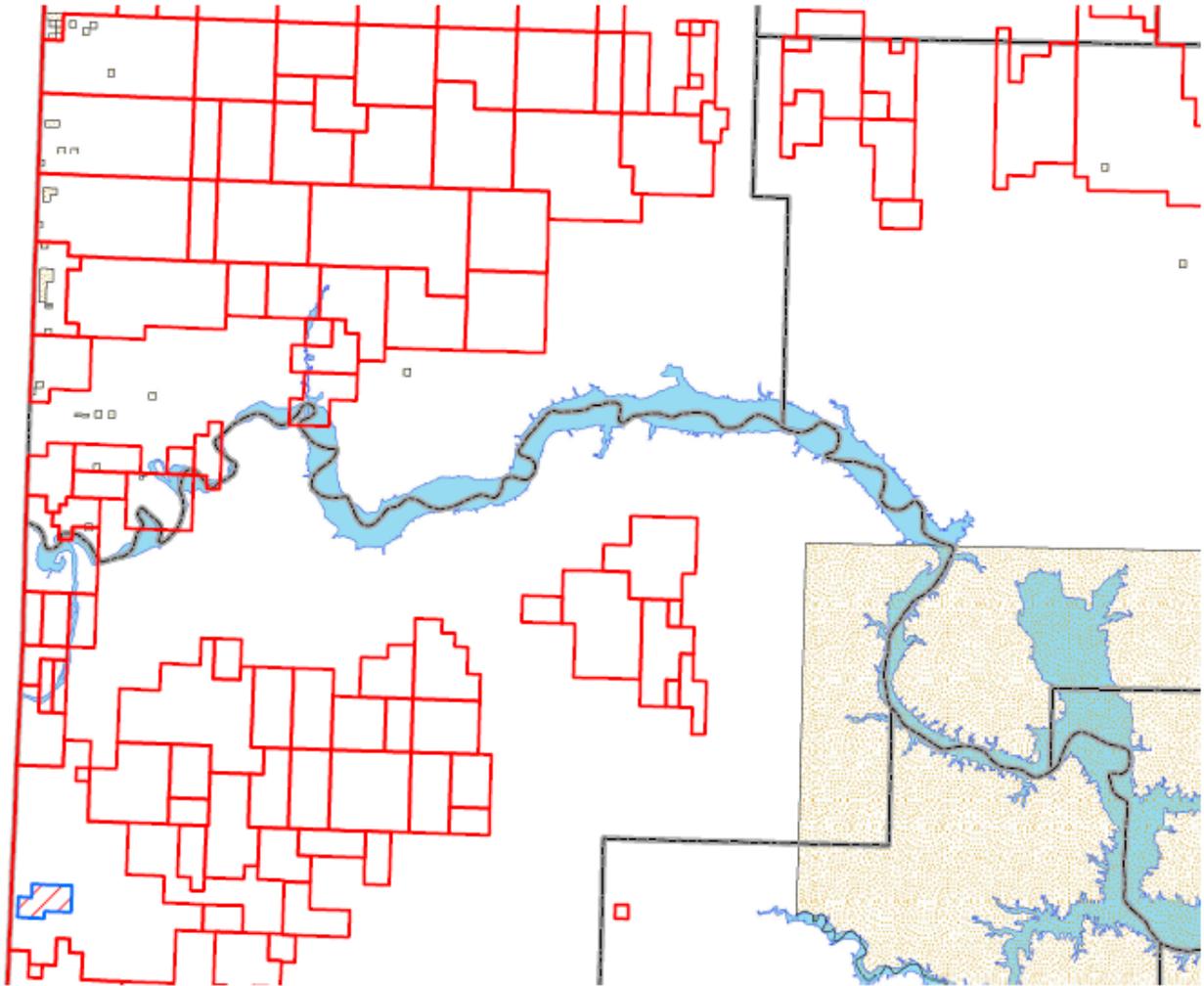
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NDIC File No: 20730 Well No: 00-000-00087-00-00 CTB No: 222975									
Well Type: OG Well Status: A Status Date: 4/6/2014 Wellbore type: Horizontal									
Location: SESE 12-150-99 Footages: 250 FSL 1248 FEL Latitude: 47.819781 Longitude: -103.287585									
Current Operator: SM ENERGY COMPANY									
Current Well Name: RICK 16X-12H									
Elevation(s): 2171 KB 2154 GR 2149 GL Total Depth: 21608 Field: SIVERSTON									
Spud Date(s): 10/23/2013 12/25/2013									
Casing String(s): 9.625" 2256' 7" 11568'									
Completion Data									
Pool: BAKKEN Perfs: 11568-21608 Comp: 4/6/2014 Status: F Date: 4/24/2014									
Spacing: 2SEC									
Cumulative Production Data									
Pool: BAKKEN Cum Oil: 40749 Cum MCF Gas: 65835 Cum Water: 55746 [Interactive Performance Curve] [PDF Curve]									
Production Test Data									
IP Test Date: 4/24/2014 Pool: BAKKEN IP Oil: 615 IP MCF: 1318 IP Water: 902									
Monthly Production Data									
Pool	Date	Days	BBLs Oil	Runs	BBLs Water	MCF Prod	MCF Sold	Vent/Flare	
BAKKEN	Apr-14	23	10367	10085	14771	15499	12080	3419	
BAKKEN	May-14	26	9883	9997	15948	14451	10774	3677	
BAKKEN	Jun-14	17	5592	5441	7734	7064	4647	2417	
BAKKEN	Jul-14	31	8272	8348	9495	14625	12773	1852	
BAKKEN	Aug-14	30	6635	6632	7798	14196	13358	838	

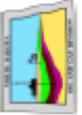
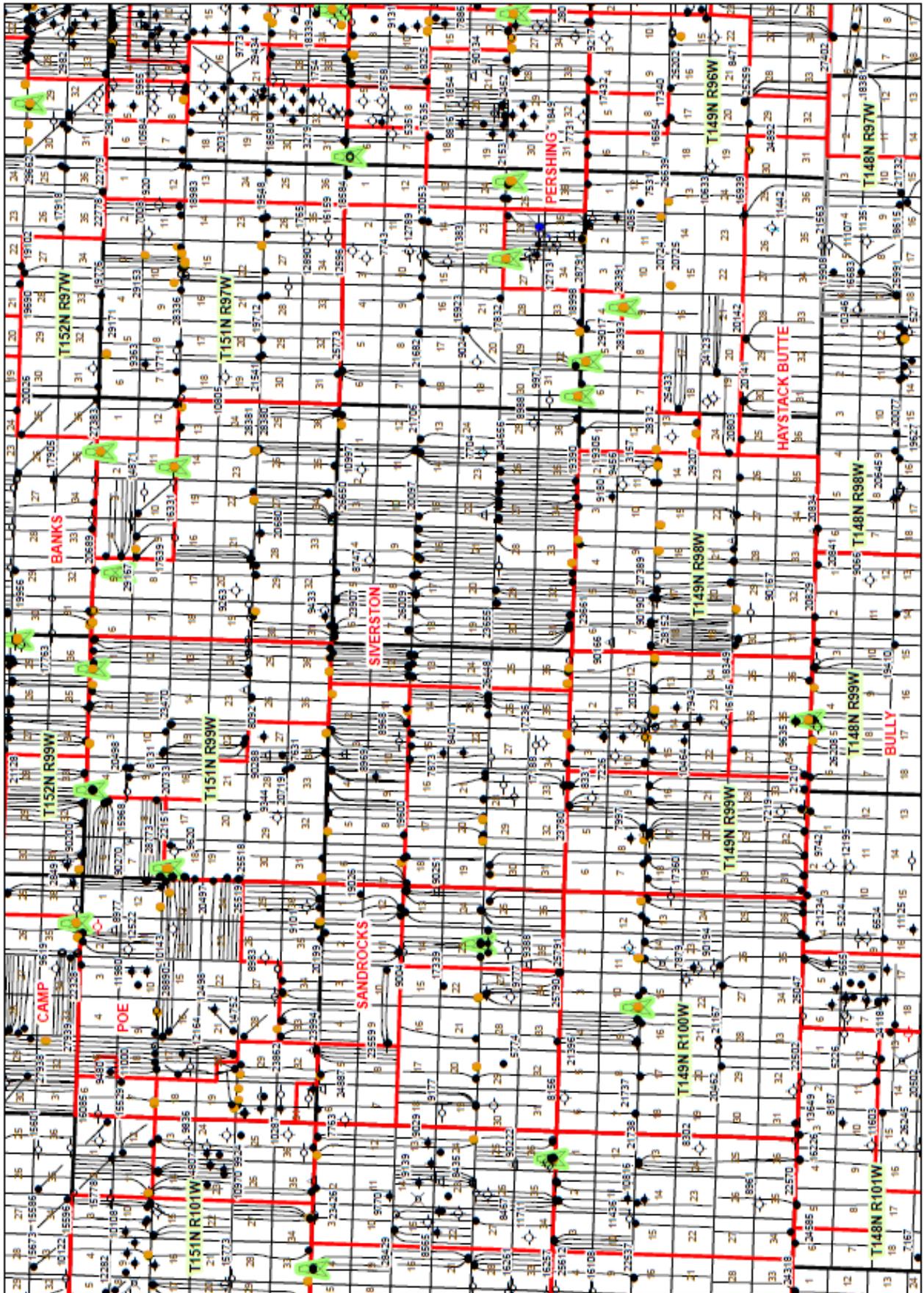


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