North Dakota Association of Oil & Gas Producing Counties

August 29, 2007

Ms. Karlene Fine
Industrial Commission
State Capitol
Bismarck, ND 58505

Dear Ms. Karlene Fine,

This report to the Industrial Commission is part of the grant contract.

We have completed another newsletter for 2007 as part of an ongoing grant with the ND Oil and Gas Research Council. This newsletter provides information specifically on oil and gas safety issues on oil and gas exploration and production sites in North Dakota. The June 2007 newsletter is enclosed in this mailing.

The newsletters are mailed to volunteer firefighters in western North Dakota. They are sent by mail to their home addresses or to their fire chiefs mailing address.

This 2006 grant was originally to produce and mail 4 newsletters. A time extension allows the production of 8 total newsletters.

There are three more to be produced between August and December for the completion of this grant. Your final report will be delivered by December 31, 2007.

Thank you for hard work for the Industrial Commission.

Sincerely,

Vicky Steiner
Executive Director
NDOGPC

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Fighting Oilfield Fires

KEEPING FIREFIGHTERS SAFE

Firefighters practice applying foam on a practice tank prop that is similar to the one designed for the new Williston Basin Oilfield Fire training facility in Dickinson.

Water-Foam-Gel

What's your pick?

Besides the traditional fire-fighting water spray, foam can play an effective role in oil field fire emergencies. However, there is a relatively newer product on the market similar to foam called Thermo-Gel.

Foams are an aggregate of gas-filled bubbles that will float on the surface of a flammable liquid. Foam generally is a mixture of foam concentrate and aerated water solution.

Foams are used principally to form a cohesive floating blanket on the fuel surface that separates and cools the fuel. Foam also prevents re-ignition by suppressing the formation of combustible mixtures of vapor and air above the fuel surface.

Thermo-Gel is a gel concentrate that feels like a thick hair gel and it is sprayed on like foam. The gel concentrate is mixed with water to coat surfaces and protect them from the flames.

Thermo-Gel is a fairly new patent-protected product, headquartered in Bismarck, North Dakota. Thermo-Gel Operations Manager Jon Klein said he taught a class about the gel in February 2007 at the ND State Firefighters school.

Klein said as firefighters become familiar with this gel, he expects it will become a more common weapon on certain fires. The firm sells a mobile unit, the Fire Dos. It dispenses both foam or gel. It can be used in either a fixed installation setting on a fire apparatus such as a fire truck or can be produced to be a mobile unit that can be dropped at the site of the fire. Fire Dos can add any type of foam to water as well as Thermo-Gel and can be sized to produce anywhere from 4 gpm to 5100 gpm of mixed product. Klein said this feature saves time when fighting fires and provides for an easier switch that may make for a safer environment for volunteers. But, it also takes time to educate about what the product can do versus the more common foams. Klein said, "Foam has its uses", he said but the gel can do things foams don't do as well. Gel is initially more expensive but it holds its place where foam will drip down and need to be reinforced.

> ***"The gel can do things foam can't do."***
> ***Jon Klein, Thermo-Gel Operations Manager***

This gel concentrate, when added to water, transforms water into a fire preventing and heat absorbing gel. It adheres to any kind of surface, even to vertical window panes and forms a protective layer of gel that cools and protects objects from heating, charring and flame impingement.

Because the gel is thousands of water bubbles, the product actually evaporates when exposed to flame. It's 98% water. The residuals make up less than 2% and there is barely enough energy set free to cause burning. The polymer gel

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Water-Foam-Gel continued...

decomposes mainly into carbon dioxide, nitrogen oxide and water. No toxic components like cyanides or hydrogen chloride have been found.

Thermo-gel has been used to protect homes in forest fires as a defense barrier on the walls of the home. To create a fire lane, the product specifications require one 5 gallon container of the gel at 2% dilution and that will cover a surface of approximately 5,000 square feet. At 1% dilution, the same amount will cover 10,000 square feet.

This gel works on Class A fires. It does NOT work on Class B pool fires of petroleum or diesel. It can be used to protect mineral oil tanks and similar equipment from fire by coating them and preventing ignition.

For clean-up, the gel can be washed off with a strong stream of water pressure. In case of stubborn residues or large amounts of gel, treatment with regular household salt will help.

Right photo: ***"The gel works as a protection agent", according to Trinity Turnbow, project engineer for Thermo-Gel. In this demonstration, Klein demonostrates the gel's ability to protect the wood as the gel layers evaporate one layer at a time.***

Bottom right photo: ***Used in similar situations as foam, the gel must be mixed with a direct water driven proportioning system.***

Bottom left photo: ***Jon Klein, Operations Manager at Thermo-Gel, uses a mobile system for the gel product that can also be used to dispense foam with the flip of a switch. Foam could be used to blanket a mud pit and gel could be used to coat the adjacent tanks to keep them cool. Their website is www.thermo-gel.com.***

Parshall, N.D. Oil Well Fire

The Occupational Safety and Health Administration said it is still investigating the circumstances around a fire on an EOG Resources well May 27 near Parshall, ND that seriously burned one man and injured six others.

Bruce Beelman, area director for OSHA in Bismarck, said he was told the fire started when workers used jumper cables to start a generator that was to power lights for Zacher #1-24H well site.

A determination has not yet been made if there will be any fines issued because of the accident, Beelman said.

Calvin Grady, 44, who worked for BOS Roustabout Service, remains in Regions Hospital in St. Paul, MN, where he is being treated for second and third degree burns on his face and legs.

Other employees who were treated at area hospitals: Jody Reimisch and Thomas Grady, both employed by BOS; Joshua Reinisch, who works for Power Fuels; Ted Seidler and Darcy Lynne, both from Lynne Pumping Service; and Paul Berger, who is employed by Petroleum Experience, Inc. of Williston.

The fire ignited natural gas vapors on the location and was burning primarily in the drilling mud tank and nearby disposal ditch. Volunteer firemen from Parshall extinguished the blaze in about 15 minutes using foam.

The well was in the final stages of completion, and the service crews were getting ready to begin pumping.

– Courtesy of Dennis Blank, Oil Patch Hotline newsletter, Williston, ND

The Williston Basin Oilfield fire training facility in Dickinson, ND has three props in place. Workers attached the pipes as the crew works to ready the site for a September training. If your fire department crew is interested in training on oil well fire safety, contact **Vicky Steiner, Executive Director, ND Association of Oil and Gas Producing Counties at 290-1339 or Dickinson Fire Chief Bob Sivak.**

Pictured left: ***Dickinson Fire Chief Bob Sivak shows Loren Mathson and Greg Sund, Executive Committee members of the ND Association of Oil Counties, the new training site with the oil tank prop. The prop will be used in the September 2007 training.***

The North Dakota Association of Oil and Gas Producing Counties is a non-profit coalition of counties, cities and school districts that have oil and gas production facilities in western North Dakota. More information is available at www.ndoilgas.govoffice.com.