

The *Flow Informer*

your resource to eliminate turbulence

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Patent Protected

Why buying patented technology is important

As consumers, we often see the words “patent pending” on many of the goods we purchase on a daily basis. Although we are familiar with what a patent is, we sometimes don’t realize what other inherent qualities come with purchasing patent-protected technology.

“The value of patenting our technology is immeasurable. As the original inventors of drag reduction technology, our science has set the standard in the industry for high performing flow improvers,” said Jana Krottinger, Manager of Technology for ConocoPhillips Specialty Products Inc. (CSPI). “Our patents not only give CSPI security from competitors, but also security for our customers in both product performance and continued research and development.”

It is sometimes easy to forget that when you buy patented technology, you’re buying from the inventors of the technology. The inventors have researched, tested and qualified the product under a multitude of environments and potential situations in



the field. Holding patents demonstrates a thorough knowledge of the products and how best to utilize them. The inventors know the parameters in which optimum performance can be achieved and can illustrate this to customers. We all want to get optimum use out of the goods we purchase – patent protection assures us of this.

“When people purchase LiquidPower™ Flow Improvers,

they can be assured that the product they are using in their pipeline has been tested and qualified in a multitude of ways to ensure highest optimum performance and quality,” said Stuart Milligan, Principal Scientist and Intellectual Property Team Lead for CSPI. “CSPI, as the inventor of the product, also knows how the product will perform in various situations and can accurately predict performance prior to product injection in a pipeline.”

Patent holders also have the ability to make advancements and refinements to the technology, ultimately benefiting the consumer. They are dedicated to the long-term

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You Heard it Through the Pipeline

Meet Jana Krottinger!



Birthplace: Hopkins, Missouri

Education: Bachelor of Science in Chemistry, Northwest Missouri State University

Career Background: In her 32-year career with ConocoPhillips, Jana has had a number of roles, including: Analytical Chemist in Gas Chromatography, Group Supervisor of Mass Spectrometry Group, Technical Resource to Analytical Services Section Director and Light Oil Regulatory Oversight Program Specialist. She has been with CSPI since 1996 and has led CSPI's Research & Development since 2001.

I have led CSPI's Research and Development department since February of 2001. In this time, I have seen the technology advancements in drag reduction reach a new level. The drag reduction technology in LiquidPower™ Flow Improvers is a complex science that our team of scientists and engineers have invented, tested and qualified in both laboratory settings and in the field. I am impressed daily by their knowledge and thoughtfulness surrounding our current and future products and by their ability to develop approaches to the most difficult technical challenges.

Several members of CSPI's R&D team have been with the business since Conoco first introduced its heritage drag reducer, CDR®. They have been with the products and the technology practically since inception. In total, our team of scientists, engineers and technicians have more than 200 years of combined drag reduction experience. Their expertise in the sci-

ence of drag reduction and in LiquidPower™ Flow Improvers, in particular, is unprecedented.

Our state-of-the-art facilities in Ponca City, Okla., allow us to create, test and qualify new flow improvement technologies on-site. We also have access to our other technology colleagues within ConocoPhillips, including those from ConocoPhillips Pipe Line Company.

Our team has a sincere dedication to producing new, breakthrough products that will revolutionize the industry. Because of CSPI's technology, DRA customers can solve tomorrow's problems today using LiquidPower™ Flow Improvers. Every day, each team member works to create new products to meet market demands, while also ensuring that our current product offering is performing at full potential. The R&D team is involved in the customer process from product inception to application execution. Our team is there during field tests of new products to ensure optimum performance and is available to any of our customers to consult on any application throughout the contract term.

We have several cross-functional teams within CSPI to ensure that our

business runs efficiently. R&D team members serve on and lead various teams that address product development, quality and raw materials management, to name a few. This allows for regular interaction with CSPI's sales, marketing, logistics and engineering teams to guarantee customer satisfaction during every stage in the commercialization process and leverages the functional excellence of our global team.

CSPI spends a significant amount of investment into the creation of investment into the creation of new products and technologies. We understand that our business is technology-driven. Without high-performing, quality products that meet current demands, our business fails.

Our commitment to innovation begins and ends with our customers. It's always exciting to see our customers reach the throughput potential they were looking to achieve or save energy costs by eliminating a pump station because of utilizing our product. If we're doing our job well, then our customers are benefiting.

If you have any questions, don't hesitate to contact me at: Jana.L.Krottinger@conocophillips.com.

We hope you enjoy this issue of *The Flow Informer*. If you would like to be added or removed from our distribution list, please contact Monica Silva at Monica.Silva@ConocoPhillips.com. Feel free to also contact Monica with story ideas, feedback or comments. All issues of *The Flow Informer* are available on our Web site, www.LiquidPower.com.

Reaching for the Stars

The CSPI LiquidPower™ Flow Improver plant recently was honored by the United States Occupational Safety and Health Administration (OSHA) as a Voluntary Protection Program (VPP) Star Site.

Approval into the VPP is OSHA's official recognition of the outstanding efforts of employers and employees who have achieved exemplary occupa-

tional safety and health. Injury and illness rates at VPP worksites are more than 50 percent below the averages for their industries.

OSHA sets performance-based criteria for a managed safety and health system, invites sites to apply for VPP status and then assesses applicants against the criteria. OSHA's verification process includes an application

review and a rigorous on-site evaluation by a team of OSHA safety and health experts.



Pictured from left to right are: Ann Oglesby, former President, ConocoPhillips Specialty Products Inc. (CSPI); John Devine, CSPI Health, Safety & Environment Resource; Jim Gallogly, ConocoPhillips Executive Vice President; Gregg Belcheff, CSPI Manufacturing Manager; Greg Goff, President of Specialty Businesses, ConocoPhillips; and Darin Fields, former CSPI Manufacturing Manager.

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development and advancement of the products, including the development of the next generation of products.

CSPI currently holds more than 35 patents and has several patents pending. Not only are CSPI's flow improver products patent protected, but its manufacturing process also is patented. CSPI spends a considerable amount of its annual operating budget on research and development to continually expand on the current patent portfolio.

"Sound and responsible technology is at the heart of our business," Krottinger said. "As CSPI's technology develops and new products enter the marketplace, our patents assure our customers that it is progressive technology from the inventors of the science."

Look for CSPI at this upcoming industry event...

Rio Pipeline 2007 Conference & Exposition

October 2-4, 2007

Rio de Janeiro, Brazil

Tom Dujmovich and Joey Pierce, Business Development, will present at the conference.



For more information on these events, visit our Web site (www.LiquidPower.com) for a direct link to the conference Web sites.

PowerQuestions

Ever had a burning question for CSPI? Here's your chance to ask us. We want your questions! Ask us anything that's on your mind about our products, policies, equipment, quality, service ... the options are endless. We will choose two to three questions per issue to answer and publish right here in *The Flow Informer*. Send us some hard questions – we're up for the challenge.

To submit your question, e-mail us at LiquidPower@conocophillips.com. Put **PowerQuestions** in the subject line.

ConocoPhillips Specialty Products Inc. Proudly Presents:

Drag Reduction in New Applications: The World of Multiphase



Multiphase applications present a complex mission when it comes to drag reduction. This 10-minute DVD will give you the basics when it comes to multiphase pipelines and insight into how CSPI can tackle the challenge. For your FREE copy of this new DVD from CSPI, please e-mail us at LiquidPower@conocophillips.com.

Heavy Oil is Here. How Are You Going to Capture the Value?

ConocoPhillips Specialty Products Inc. (CSPI) has a patent-pending technology for heavy-oil gathering or process lines that is showing promising performance results in the field. Optimum performance is achieved in pipelines where the heavy oil is flowing in turbulent or transition flow.

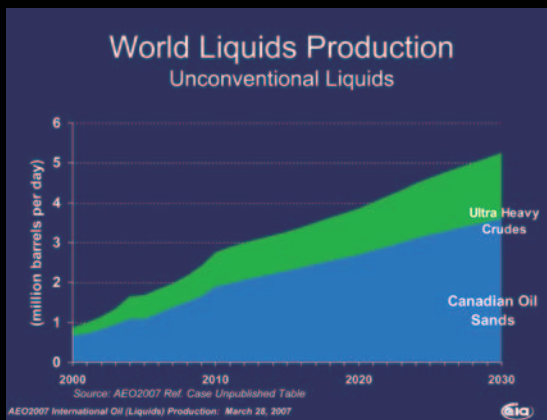
Right now, CSPI is actively engaged in validating the product's performance in the field. If you would like to be a part of the validation process and get a sneak peek at how the newest innovation from CSPI can bring your pipeline system value, then please call us.

Are you ready for increased throughput, improved flow and maximum value?

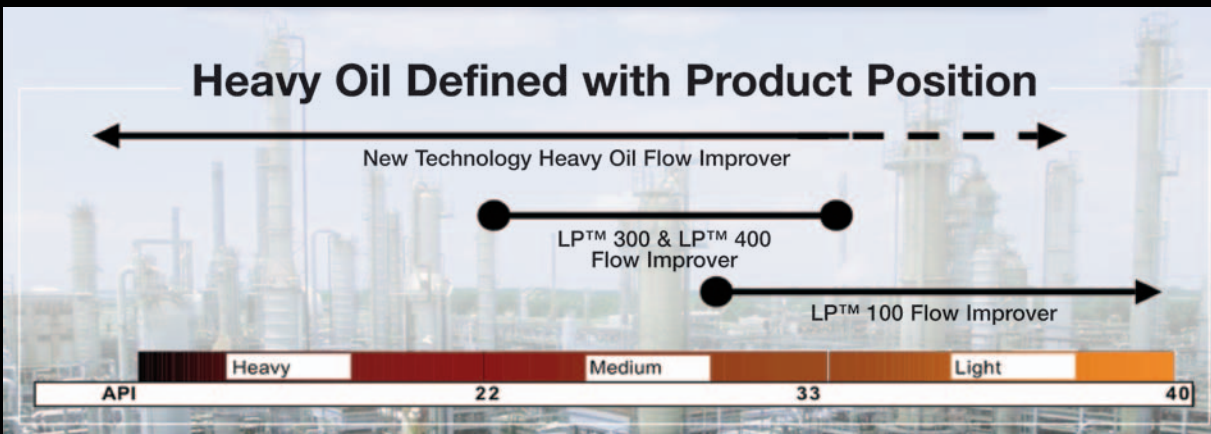
For questions or comments, or to discuss your unique pipeline system, please contact your sales representative.

Year	2006	2008	2010	2020
Light	1.1	1.1	1.1	2.0
Heavy	1.3	1.6	2.1	2.6
Total	2.4	2.7	3.2	4.6

Source: Canadian Association of Petroleum Producers



Source: Energy Information Administration Energy Outlook, Modeling and Data Conference





Skid Spot

Customer Daily Checklist

1. Is **DRA leaking** or is there evidence of a **spill**?
2. Is **oil leaking** from any equipment? (Remove injection pump covers to check.)*
3. Is the **heater/air-conditioner** malfunctioning?*
4. Is the **mixer** malfunctioning? (Turn mixer to **ON**, listen/look, then return to **AUTO**.)
5. Is there any **unusual noise** from the operating equipment?
6. Is the **feed pump** discharge pressure under **10 psi**?
7. Is the **injection pump lubrication** timing outside the recommendation? (See log.)

*Not applicable to Eastern Hemisphere injection skids.

If any of the above problems are observed, please notify your trained area technician or contact your ConocoPhillips Field Service Representative (FSR).

Area Technicians: For detailed maintenance guidance, please contact your ConocoPhillips FSR and review the Injection Skid and Product Troubleshooting Guide and Injection Skid Preventative Maintenance Manual included in your Injection Skid Manual.