

# The *Flow Informer*

**your resource to eliminate turbulence**

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AUGUST 2005

## Welcome!

Welcome to the first issue of *The Flow Informer*. This newsletter is meant to be an informative tool for you and your company, so we encourage you to share this with your colleagues. Our hope is that by reading this newsletter, you learn something about CSPI's flow improver product line, our services and our people.



This newsletter is truly a product of our people – the name of the publication, *The Flow Informer*, is a creation of Joey Pierce, director, marketing, (pictured right). CSPI held an internal contest to name this publication for our customers and Joey's name beat out 97 other entries. The tagline, "your resource to eliminate turbulence," was built from the idea submitted by Hugo Iglesias, sr. staff engineer, (pictured left). Congrats, Joey & Hugo and thanks for your creativity!

## ***Abracadabra! LiquidPower™ Flow Improvers Work Like Magic***

It seemed like magic. A seemingly small, 8-inch pipeline delivering product to the big New York market achieved a volume increase of 10,000 to 15,000 barrels per day, postponed a pipeline expansion project and the \$8 million capital expenditure associated with it and reduced barging cost by millions. It's proof that although nothing was broken, it can always be fixed.

The East Line, owned by ConocoPhillips and operated by Buckeye Pipe Line Co., carries refined products from the Trainer, Pa. refinery and delivers to Chelsea, Philadelphia and Woodbury terminals, ending in New York City. Volume that can't be moved through the pipeline is being barged out of the refinery into the New York harbor. The pipeline, which runs approximately 20 miles, was capacity constrained and had scheduling issues. This prompted the

ConocoPhillips Regional Strategy Integration Team to look into options, including an expansion project, potentially costing the company \$8 million. Greg Constien, East & Gulf Region Refining Optimization Lead for ConocoPhillips, and Mike Baker, Director, Commercial

See **Abracadabra!** on page 3

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# You Heard it Through the Pipeline

## Meet Ann Oglesby!



**Birthplace:** Fort Smith, Arkansas  
**Education:** B.S., Chemical Engineering, Oklahoma State University  
**Background:** Most recently, Ann led ConocoPhillips' Emerging Technology group.

Ann M. Oglesby joined CSPI in November, 2004 and serves as

Manager, Specialty Products. Ann is responsible for the management of CSPI over all facets, including research and development, engineering, sales, marketing, logistics, quality, finance and safety. Meet Ann by reading her responses to five industry-focused questions and four "get-to-know-Ann" questions.

### What is the business focus for CSPI in 2005?

CSPI will continue to do what it does best: put the maximum focus on our customers. From getting your product to you on time and safely, to offering the most innovative and highest-performing products in the market, everyone at CSPI knows that our customers are our number one priority. As long as we continue to listen to the needs of our customers and respond accordingly, our business objectives will be met.

### What excites you about leading CSPI?

Undoubtedly, I am excited about our people continuing to deliver new flow improver solutions to the marketplace. Our research & development, sales and marketing teams are coming up with some exceptionally innovative product ideas to address the

needs of our customers. Their ideas, hard work and pioneering spirit are making this an exciting time at CSPI.

I also thrive on the passion and dedication of all of the CSPI employees. From our flow improver plant in Bryan, Texas, to our European sales force in Brussels, Belgium, each and every CSPI employee is contributing to making our business a success.

### Do you have a philosophy that guides you in your business life?

Personally, I have learned that if I work hard, surround myself with talented, motivated people and execute sound business judgment, then good things happen.

### What do you see as the most challenging issue facing the flow improver industry today?

When a product delivery is made and the installation of our injection equipment is completed, we want each customer to realize the value of their purchase. At CSPI, we strive to maximize the value for our customers by ensuring proper use of our products and injection equipment to result in the maximum performance of their pipeline. Making sure optimum value is delivered to our customer via our products and injection equipment is continuously top-of-mind. There is huge potential with LiquidPower™ Flow Improvers – unlocking the flow potential of pipelines, increased operational flexibility, throughput capacity and substantial increase in

bottom-line profits. Our challenge is to help customers realize this potential.

### In the 26 years since CSPI invented its innovative flow improver technology, what do you see as the greatest accomplishment in the flow improver industry?

Without a doubt, it has to be CSPI's invention and introduction of suspension-based flow improvers to the marketplace. Our technology set the standard for drag reduction across the board, and we continue to do so.

### More about Ann

**Favorite hobby:** Horseback riding

**Ideal vacation destination:**

The mountains

**Pet peeve:** The traffic on the I-10 Katy Freeway in Houston

**Favorite food or restaurant:** This is hard to pick because I like it all, but since we have just recently relocated to Texas, I am really enjoying the great Tex-Mex!

If you haven't had the opportunity to meet Ann in person, she encourages e-mails and phone calls from customers and friends of the business. You can reach Ann at: [Ann.M.Oglesby@ConocoPhillips.com](mailto:Ann.M.Oglesby@ConocoPhillips.com) or at 1-800-897-2774 or locally in Houston, 832-486-2834.

*In later issues of The Flow Informer, Ann or a member of the CSPI Leadership Team will contribute a recurring message in "You Heard it Through the Pipeline." Look for it in the next issue!*

# Abracadabra!

*continued from page 1*

Development and Asset Utilization, identified the constraint and set some research in action.

“The first thought was to see if we were running drag reducing agent (DRA) on the line, and it turned out we were using a gel product,” said Constien. “From experience, I’ve seen that suspension flow improver products have a better performance than gel products, so I knew we had an opportunity for improvement by using CSPI’s suspension flow improvers.”

Once ConocoPhillips Energy Management personnel found out about the potential switch to LiquidPower™ Flow Improvers, the answer was clear. “It’s common knowledge in the industry that suspension technology is inherently better than gel technology in DRAs,” said Richard Jewell, Director of Energy Management for ConocoPhillips Pipeline. “Time and again we’ve seen that LiquidPower™ Flow Improvers can achieve higher drag reduction performance within the accepted polymer limit guidelines, making its value per dollar quite higher.”

Constien and Jewell called in CSPI to create a hydraulics model,

simulating RP™ II Flow Improver utilization on the line. The results were enough to convince the entire team that switching drag reducing agents was the answer. “CSPI came right in and found the solution that was the best fit for this line and everyone involved,” said Constien.

CSPI installed two LiquidPower™ Flow Improver injection skids on the line – one at the Chel-



The East Line, an 8-inch diameter pipeline, delivers refined products to the New York City market.

sea pump station and one at the Trainer refinery.

“The result is an extra 10,000 to 15,000 barrels per day, and this is only the beginning; I see an even greater improvement to this result in the very near future. Running RP™ II Flow Improver on this line has led us to even more constraint improvement opportunities, and has opened everyone’s eyes to the

possibilities LiquidPower™ Flow Improvers can bring to a constrained pipeline,” said Baker.

The additional barrels moved generated a hefty cost savings from reducing the amount of product being barged. This switch is saving the company approximately \$2.3 million a year, and presented a viable alternative to the \$8 million pipeline expansion project. The reduced barg-

ing also reduced environmental exposure by moving more products through the pipeline rather than over water.

“RP™ II Flow Improver is overall more effective in achieving drag reduction performance,” said Baker. “In this case, using fewer gallons of RP™ II Flow Improver gave superior performance than using a substantially greater amount of the gel product it replaced. This switch saved our pipeline operators money by using fewer gallons of flow

improver and it moved more barrels out of the refinery because of the dramatic improvement in flow performance – a win-win for all involved.”

The East Line operators also saw a relief with CSPI’s injection equipment. “The ease of CSPI’s flow improver injection brought a sigh of relief to the operators at the pump station who were struggling

*See Abracadabra! on page 6*

## Do you remember? CSPI made history in 1979 with the introduction

### 1940-1960

Research on drag reduction in water begins

### 1970

Conoco begins work on drag reduction technology for pipelines

### 1973

Conoco commenced patent protection for first generation gel flow improver

### 1974

Construction begins on the Trans Alaska Pipeline System

### 1979

Commercialization of a gel flow improver – CDR® Flow Improver is used in Trans-Alaska Pipeline System on July 1, 1979

### 1985

CDR® Flow Improver has been used by many major operators, worldwide, offshore and onshore

### 1992

The first water soluble flow improver is introduced, today called LP™ H2O Flow Improver

## Leading the Pack

In the mid 1970s, the oil and gas industry was facing an issue that seemed like an inevitable element of liquid pipelines. Turbulent flow in the pipeline was an issue many pipeline operators thought was “the nature of the beast.” That is, until a company now known as Conoco-Phillips Specialty Products Inc. (CSPI) introduced its pioneering flow improver technology for pipelines. Since then, CSPI’s drag reducers have changed the way the industry looks at pipelines.

Drag reduction technology actually began in the 1940s and continued through the 1960s with researchers looking to reduce turbulent friction on ships and other marine vessels passing through water. The leap to pipelines didn’t take effect until the early 1970s when Conoco integrated the technology into a potential drag

reducing agent for use in crude oil pipelines. Scientists were confident that the technology of a flow improver additive to reduce the frictional and energy loss of pipelines by easing turbulence could work. Conoco began its work on a test product and ran an actual test in 1970. It was then that the potential impact on

**The Trans Alaska Pipeline was 800 miles in length and 48 inches in diameter.**

the pipeline industry was realized. The pipeline got a moderate level of drag reduction, encouraging Conoco to file a patent for the technology.

It was around this time that the world was buzzing about the construction of The Trans-Alaska Pipeline System, designed and constructed to move oil from the North

Slope of Alaska to the northern most ice-free port – Valdez, Alaska. The Trans-Alaska Pipeline was 800 miles in length and 48 inches in diameter.

It was when a pump station on the Trans-Alaska Pipeline fell out of commission that one of the pipeline operators recalled a trade journal publication of a technical article regarding drag reducing agents (DRAs) for pipelines, that the idea of using DRA on the pipeline became a viable option. The article called the flow improvers “CDR” for Conoco Drag Reducer. Although the technology was not implemented into a pipeline at the time, the tests had shown significant results. Conoco set up a pilot plant and began shipping what it was now calling CDR® 101 Flow Improver to Alaska.

“Once the injection of the product began, it was noticed that the DRA

### Songs at the top of the charts:

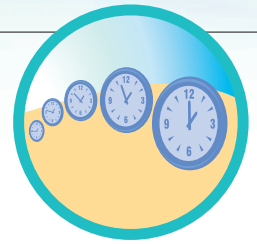
1. *My Sharona*, The Knack
2. *Le Freak*, Chic
3. *Bad Girls*, Donna Summer
4. *Do Ya Think I'm Sexy*, Rod Stewart
5. *Reunited*, Peaches & Herb

### Popular movies of 1979:

- Alien*, starring Sigourney Weaver
- The Jerk*, starring Steve Martin
- Mad Max*, starring Mel Gibson
- Apocalypse Now*, starring Martin Sheen
- Kramer vs. Kramer*, starring Dustin Hoffman

### Top TV shows of 1979:

- All In The Family* (1971-1979)
- Charlie's Angels* (1976-1981)
- Happy Days* (1974-1984)
- Hawaii Five-0* (1968-1980)
- Mork & Mindy* (1978-1982)



## of CDR® Flow Improvers. What were you doing in 1979?

**1994**

The second generation flow improver technology, LiquidPower™ Flow Improver is introduced by CSPI

**1995**

LP™ Winter Flow Improver is commercialized

**1997**

LPRP™ Flow Improver, the first suspension flow improver for refined product pipeline applications is commercialized, as well as LP™ Arctic Flow Improver

**2001**

LP™ 300 Flow Improver for crude applications is commercialized, as well as LP™ Arctic Grade Flow Improver

**2002**

RP™ II, Flow Improver the latest generation of flow improvers for refined product pipeline applications is commercialized

**2002 cont.**

Conoco and Phillips merge to form ConocoPhillips, changing Conoco Specialty Products Inc. to ConocoPhillips Specialty Products Inc.

**2003**

LP™ 400 Flow Improver for crude applications is commercialized

**2004**

LP™ 111 Flow Improver is commercialized, a high performance flow improver

was allowing greater flow without the number of pump stations,” said Ray Johnston, principal engineer and 25-year veteran of CSPI, “Its success was exceptional, taking the pipeline system from transporting 1.5 million barrels of oil per day to nearly 2.1 million barrels of oil per day.”

Once the industry caught on and valued the innovative product CSPI brought to the marketplace, the business continued to invest in polymer technology, extending its CDR® gel technology through two generations of development. The new products achieved up to four times the performance increase from the original CDR® Flow Improver product. In the mid-1980s, the business even began to inject its flow improvers into refined product pipelines and began work on developing water soluble drag reducers for commercial use in oil fields.

“We continued to pursue advancements to the technology,” said Johnston. “We were never satisfied with the status quo – if our products were able to progress, we would find it and bring it to market.”

In the early 1990s, CSPI embar-

“Our extensive product portfolio is the result of our goal to be leaders ...”

ked on improving the delivery and handling of drag reducers. As a result, the new generation of suspension-based flow improvers was offered under the LiquidPower™ Flow Improvers brand name. The marketplace thrived on the fact that using LiquidPower™ Flow Improvers in their pipelines was reducing energy costs and increasing profits.

CSPI continued to invest in new

product development, and in 1997, the first suspension flow improver for refined product pipeline applications was commercialized. Since then, CSPI has developed special flow improvers for heavy crude and for arctic conditions.

CSPI continues to improve upon the already outstanding polymer technology. The global team continuously works to produce better and higher performing products, while maintaining superior customer service.

“Our extensive product portfolio is the result of our goal to be leaders in flow improver technology for the oil and gas industry,” said Johnston. “We are dedicated to providing the most technologically advanced products on the market – this hasn’t changed in the 25 years I’ve been with CSPI and I don’t see it ever changing.”

### Top news stories of 1979:

- Convicted bank robber Patty Hearst is released from prison after her sentence was commuted by President Jimmy Carter.
- Nuclear leak at Three Mile Island, Pennsylvania causes alarm in the U.S. and intensifies the national argument over the safety of nuclear energy.
- The first fully functional space shuttle orbiter,

Columbia, was delivered to the John F. Kennedy Space Center to be prepared for its first launch.

- Conservatives win the British election; Margaret Thatcher becomes the new prime minister.
- After orbiting the earth for six years, the space laboratory, SkyLab, tumbles back to earth scattering debris across the southern Indian Ocean and sparsely populated Western

Australia. There had been mounting speculation over where the spacecraft would come down.

### Interesting Facts about 1979:

- Mother Theresa won the Nobel Peace Prize
- The board game Trivial Pursuit, created by two Canadian journalists, became an instant craze.
- The Sony Walkman, Rubik’s Cube and Post-it Notes were all introduced in the U.S. in 1979.

## Abracadabra!

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with the gel product's injection system," said Baker. The former gel injection system required a period of downtime with each instance of product refill. With CSPI's injection system, there is no loss of injection time at deliveries; making the flow improver injection continuous. "CSPI offers such customer-friendly equipment that the switch was effortless. Martin Guillory and his team came in and trained our people on the equipment and upkeep, but also about DRA in general, which gave our operators peace of mind for the change and an eagerness to try something new." Guillory, Senior Technical Representative for CSPI, visited the Trainer refinery and explained how

the DRA would work, addressed concerns about achieving the desired flow rate within polymer limit guidelines, trained the team on equipment maintenance and advised on the replacement of the gel product and equipment with CSPI's suite of RP™ II Flow Improver and equipment.

The entire project team then joined together for a wrap-up session to share goals, concerns and the path forward to get the results necessary. It was at this meeting that the project team committed to move forward with scheduling the greater number of barrels. "We were confident that we would see the increased performance immedi-

ately, so it was really just a question of 'What are we waiting for?'" said Baker. "Having Martin (Guillory) at the meeting to answer questions from across the board was reassuring at that point in the game. It was just one more instance of how CSPI joined our efforts as a true team member, working to get the results in the most streamlined and cost efficient way possible," said Baker.

"The results from this effort are changing the way constraints are looked at; people are no longer assuming that DRA helps 'just a little bit' – it's amazing the magnitude of impact the right DRA can make," said Baker.



The CSPI injection equipment injects RP II™ Flow Improver into the ConocoPhillips East Line at the Chelsea terminal in Trainer, Pa.



## We Did It ... Again!

CSPI's ISO 9001:2000 quality certification has been renewed for another three years! The audit, conducted by BVQI, was administered at our Houston, Texas, Bryan, Texas, and Brussels, Belgium, sites in May.

"Both of the BVQI auditors were impressed by the maturity of our sys-

tem and most importantly by the commitment and knowledge demonstrated by our people," said Tanya Niu, quality director, CSPI.

For questions about CSPI's commitment to quality and our rigorous quality guidelines, please contact Tanya at [Tanyan.Niu@ConocoPhillips.com](mailto:Tanyan.Niu@ConocoPhillips.com), or by phone at 1-800-897-2774 or locally in Houston, 832-486-2834.

## Skid Spot

### Tips for optimal performance of CSPI injection equipment

#### 1) Do a quick check!

When you're inside a CSPI skid, do a quick check on the product and the injection system. Check especially for leaks. Tighten packing on the injection pumps as necessary, but do not over-tighten. Over-tightening packing can dramatically decrease packing life.

#### 2) Keep Spare Parts.

Keep spare parts in inventory. When you replace a part in the skid, call a member of your Customer Focus Team to replenish your inventory. This way, you'll have the parts on-hand when you need them.

#### 3) Report and Inform.

Inform a member of your Customer Focus Team about any maintenance and trouble reports you manage so we can track and assist as necessary.

***We're always here to help. Questions, comments or concerns about CSPI injection equipment?***  
***Contact a member of your Customer Focus Team!***



Our publication is also available online at our Web site [www.LiquidPower.com](http://www.LiquidPower.com). Visit today!



We welcome and encourage your feedback. For story ideas and reader responses, please contact Monica Silva at [Monica.Silva@ConocoPhillips.com](mailto:Monica.Silva@ConocoPhillips.com).

Enjoy!

## Did you make the list?

Thanks for your interest in *The Flow Informer*, a publication from ConocoPhillips Specialty Products Inc. If you would like to be added to our distribution list, please send an e-mail to Monica Silva at [Monica.Silva@ConocoPhillips.com](mailto:Monica.Silva@ConocoPhillips.com) with your mailing information, or call her at 1-800-897-2774 or locally in Houston, 832-486-2834. If you feel you have received this publication in error and would like to be removed from the mailing list, then contact Monica and your name will be removed from the list.