



lochend industry producers group



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# COMMUNITY UPDATE

## message to the community

Welcome to the second edition of the Lochend Industry Producers Group (LIPG) newsletter, in which we share information on our operations, activities and details of our plans going forward. We trust you will find it informative and interesting.

**LIPG IS A COLLECTIVE OF FOUR INDEPENDENT COMPANIES OPERATING IN THE LOCHEND AREA THAT COLLABORATE TO SHARE COMMON INFRASTRUCTURE AND ALIGN PLANS TO REDUCE THE IMPACT ON RESIDENTS AND COMMUNICATE IN A TIMELY MANNER. WE ARE COMMITTED TO INTEGRITY, SAFE AND FAIR PRACTICES AND PARTNERING WITH THE COMMUNITY FOR RESPONSIBLE RESOURCE DEVELOPMENT.**

LIPG collectively added to the Operational Excellence Commitments shared in our last newsletter. These include developing a LIPG Hydraulic Fracturing Protocol, which exceeds the governmental requirements outlined in Alberta Energy Regulator (AER) Directive 83.

We also strengthened our commitment to protect water wells by standardizing our testing procedures. In addition to offering to test water wells that are 400m from a proposed oil and gas well, we also initiated work on a comprehensive database to access all baseline water well and spring testing records. These procedures will determine baseline conditions before development.



Regarding our activities, our members have built more than 70km of pipelines in the Lochend area to conserve our sweet solution gas and to transport the oil.

To understand more about the community and address concerns regarding industry operations and activity, we launched a “Lochend Area Residents Survey” in May this year. The results are summarized in the insert. We appreciate all of the valuable feedback and input received, which will guide our communications efforts going forward.

We are also featuring an employee who lives and works in the Lochend area. This is a story that is familiar to many people who live in the community and also work in the oil and gas industry. They, as well as the LIPG, have a vested interest in ensuring that energy development enhances their livelihoods and their lives, while protecting the community and environment for future generations.

We hope you enjoy this edition of our newsletter.

## living and working in the Cochrane area

Brian Corry has lived and worked in the Lochend area for just over two years – and doesn't see himself leaving any time soon. “I grew up in Hanna so am comfortable with farm life and small, close-knit communities,” he shared. A Field Operator for Pengrowth Energy Corporation, one of the LIPG member companies, Brian is responsible for the day-to-day operations of its wells. “We check every well every day to ensure machinery is operating properly on the sites. We also have a mandate to act immediately if we see anything that needs attention,” he explained. “Although it's been very busy this year, everything has been running smoothly.” When he's not on well sites, Brian can be found playing slow pitch in summer months or hockey in the winter.



# water protection during hydraulic fracturing

Alberta has used hydraulic fracturing for oil and gas recovery since the 1950s. Since then, approximately 171,000 wells have been drilled in Alberta using this technology<sup>1</sup>, with a proven safety record based on 60 years of experience and a comprehensive regulatory system in place<sup>2</sup>.

The Alberta Energy Regulator (AER) continually reviews its regulations and updates as required.<sup>3</sup> There has not been a documented case of water well contamination resulting from hydraulic fracturing operations in Alberta.

In the Lochend area, each horizontal well has multiple fracs – with an average of 15 to 20 in each horizontal well bore. LIPG has developed its own Hydraulic Fracturing Protocol that is specific to the Lochend area that incorporates and exceeds the Alberta Energy Regulator (AER) Directive 83: Hydraulic Fracturing-Subsurface Integrity.

## A SAFE DISTANCE

Hydraulic fracturing is conducted at safe distances from fresh water aquifers. In the Lochend area, water wells typically produce water from an average depth of 45m. The average depth of the oil target zone, known as the Cardium zone is 2,200m. In compliance with AER Directive 8, minimum surface casing depth required in the Lochend area is between 265m and 290m. The industry average casing depth for this area is 283m with some LIPG member companies setting casing at up to 600m in depth. The difference between the aquifer and oil and gas formation is equivalent to almost 22 football fields. (See diagram below.)

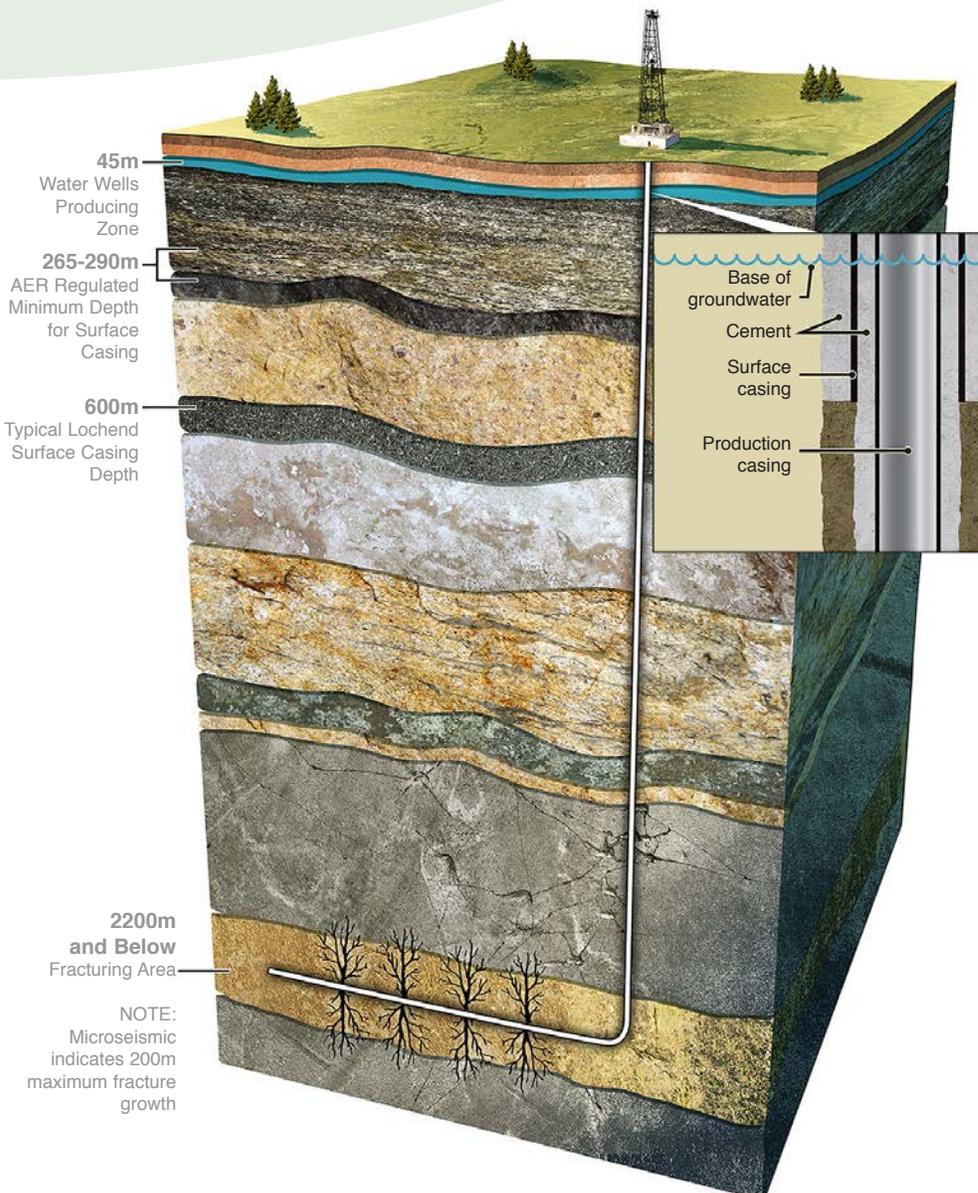
LIPG member companies continue to strengthen our commitment to protection of water wells by standardizing our water well testing procedures. Each company offers baseline testing for water

wells up to 400m from their operations and considers requests for water testing on a case-by-case basis beyond this distance.

## FRESHWATER PROTECTION FROM COMPETENT OIL WELL CONSTRUCTION AND OPERATION

Near the surface, the well is encased in multiple layers of steel and cement. Strict regulations are enforced in Canada for monitoring and maintenance of the well, even after it is in production. Numerous protective measures are in place, including storage tanks with secondary containment measure and barriers to control any potential run-off at the site. Spill prevention, response and cleanup procedures are implemented before drilling begins and are continually updated as operations progress.

In addition to protecting fresh water, industry continues to work at reducing the amount of water used in its oil recovery activities. The drilling and completing of a typical horizontal Cardium well in West Central Alberta utilizes approximately 2,200m<sup>3</sup> - 3,300m<sup>3</sup> per well – about the amount of water in an Olympic-sized swimming pool.



**“ WE WORK CLOSELY WITH REGULATORS, COMMUNITY LEADERS AND IMPACTED LANDOWNERS TO ENSURE WE COMPLY WITH REGULATIONS AND ADDRESS CONCERNS IN AN HONEST AND TIMELY MANNER. ”**

Currently, most of the water used is excess surface water collected from area sloughs and Lochend area member companies work together to share water that is recovered during the hydraulic fracturing operation. Water recovered can be recycled up to four times. Efforts to reduce the amount of fresh water used include pursuing the use of saline water or recycled municipal waste water. The industry has advanced technologies that enable the recycling and reuse of water from drilling and completions activities and continues to work with government, landowners and the public to develop additional best practices and advancement in research and technology to protect the environment for future generations.

1. Alberta Environment and Sustainable Resources Development website: <http://environment.alberta.ca/04131.html>  
2. Alberta Environment and Sustainable Resources Development website <http://aesrd.wordpress.com/2013/03/04/water-use-in-hydraulic-fracturing/>  
3. <http://www.aer.ca/about-aer/spotlight-on/unconventional-regulatory-framework/how-will-the-aer-ensure-this-activity-is-safe> )

*\*Diagram supplied by Pengrowth Energy Corporation. NOT TO SCALE.*

# lipg infrastructure and activity update

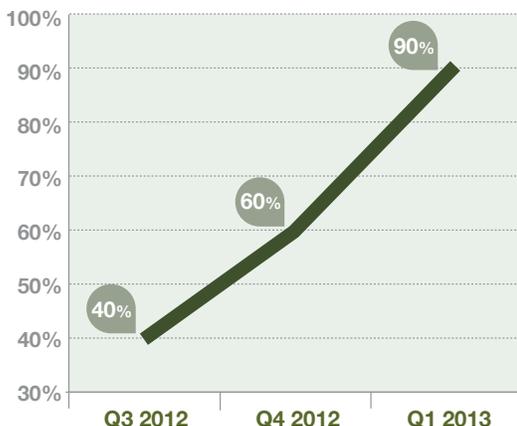
- ▶ THE LIPG ADDED MORE THAN 28% MORE GAS CONSERVATION PIPELINES IN THE FIRST HALF OF 2013.
- ▶ AN ADDITIONAL 50% INCREASE COULD BE IN PLACE BY Q2 2014 (WITH LANDOWNER CONSENT).
- ▶ 2011 OIL & GAS PIPELINE LENGTH = 21.0 KM  
2012 OIL & GAS PIPELINE LENGTH = 33.91 KM  
2013 OIL & GAS PIPELINE LENGTH = 15.25 KM  
TOTAL OIL & GAS PIPELINE LENGTH = 70.16 KM
- ▶ 2013 TO Q2 2014 PROPOSED OIL & GAS PIPELINE LENGTH = 40 KM

## number of wells

	Drilled to end of 2012	Planned 2013
Lightstream	20	11
Pengrowth	33	23
Tamarack	4	3
TriOil	15	8
<b>TOTALS</b>	<b>72</b>	<b>45</b>

## solution gas conservation

LIPG GAS CONSERVATION TREND (%)



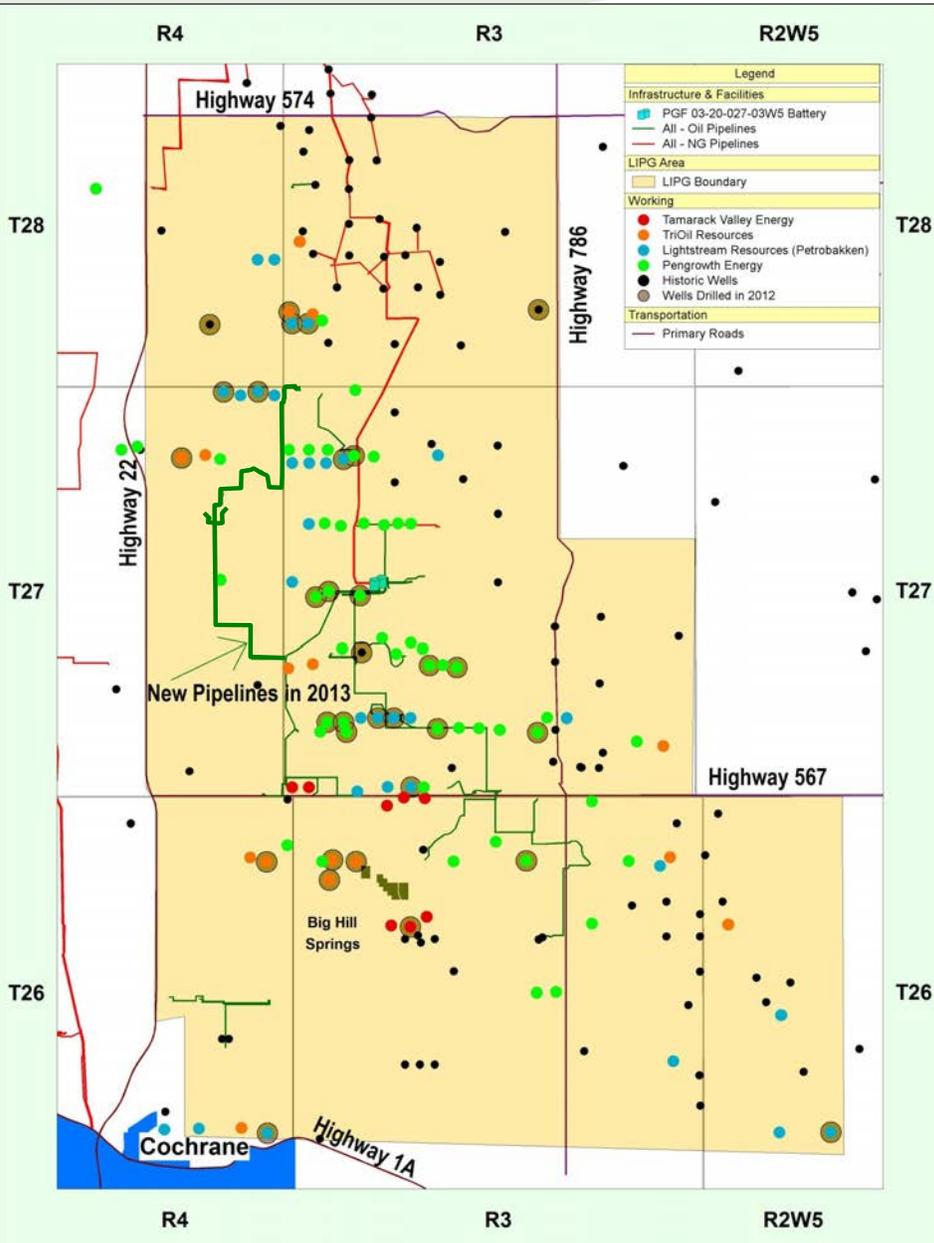
“ LIPG MEMBER COMPANIES ARE PLEASED TO REPORT WE ARE CONSERVING CLOSE TO 90% OF THE PRODUCED GAS IN THE LOCHEND AREA. ”

As shown on the graph, we have made significant progress, increasing conservation from approximately 40% in September 2012 to almost 90% currently. LIPG member companies continue their efforts to conserve sweet gas in the Lochend area by adding more than 28% additional gas conservation pipelines, as detailed above (see Activity Update).

A well is completed using hydraulic fracturing technics where over 98.8% of the completion is done with water, sand and nitrogen with less than 1.2% additives being used to assist in the completion. To help in the flow-back or clean-up stage of a well, we use nitrogen (an inert gas that makes up 78% of the earth's atmosphere) to create energy, much like the

fizz in pop drinks. To lower the concentration of nitrogen, before conserving the gas into pipelines, we need to burn the returning gas in high efficiency incinerators. Some LIPG members have, in a number of cases, been able to reduce this flow back period from 1-2 weeks to one week.

In late 2011, member companies voluntarily replaced flare stacks with incinerators, which combust more than 98% of all solution gas. In an incinerator, gas and air are mixed and ignited in an enclosed chamber resulting in higher combustion temperatures and improved combustion efficiency, without the presence of a visible flame. These incinerators exceed the requirements of government regulations.





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Please contact us if you have any questions.

**403.801.8028**

website: [www.lipg.ca](http://www.lipg.ca) | e-mail: [info@lipg.ca](mailto:info@lipg.ca)

## KEY CONTACTS



**E. Chas Filipski Jr.**  
Manager,  
Stakeholder  
Relations  
**Lightstream  
Resources**



**Pary Weiler**  
Manager,  
Surface Land  
**Pengrowth  
Energy  
Corporation**



**Kevin Screen**  
Vice President  
Production and  
Operations  
**Tamarack Valley  
Energy Ltd.**



**Laurie Agate**  
Surface Land  
Manager  
**TriOil  
Resources  
Ltd.**

“ WE ARE ACCOUNTABLE FOR OUR ACTIONS AND OPERATE IN A SAFE AND RESPONSIBLE MANNER TO PROTECT THE ENVIRONMENT AND MITIGATE DISTURBANCE TO STAKEHOLDERS. ”



Cochrane & Area Humane Society staff, volunteers and animals in front of the shelter.

## community investment

The LIPG donated to four organizations in thanks to respondents who completed the LIPG community survey (see insert):

- **WESTBROOK SCHOOL** – funds were used to buy an iPad for the school
- **COCHRANE HIGH SCHOOL** – the donation went to the Sustainability Club
- **COCHRANE & AREA HUMANE SOCIETY** – the donation will go towards operating costs
- **4-H CLUB** – funds went toward youth development efforts



2012 Cochrane Lions Club Rodeo



## rodeo 2013

**AUGUST 31 – SEPTEMBER 2**

The LIPG is a proud sponsor of the Cochrane Lions Club 2013 Rodeo. Funds raised from the rodeo go to support a large number of local community groups and assist in building various facilities in Cochrane.

## spring clean-up

Well sites and work areas often end up with debris and loose garbage especially due to high winds in the spring. To ensure well sites in the Lochend area are kept tidy, various LIPG member companies employed students to clean-up on and around surface leases. Ongoing maintenance will continue. If you have any concerns with clean-up efforts, please give us a call at 403.801.8028.

## resources



[www.csur.com](http://www.csur.com)



[www.capp.ca](http://www.capp.ca)



[www.psac.ca](http://www.psac.ca)



[www.aer.ca](http://www.aer.ca)



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