

The new way forward: Innovative Pipeline Strategies and Partners in Resource Excellence

In 2006, an oil and gas pipeline construction problem became a turning point in something remarkable: an effective new way for industry, government and other stakeholders to work together in addressing both pipeline issues and other environmental challenges in Alberta.

Randy Galbreath, the president of Grande Prairie-based Stratus Pipelines, was beginning work on a remedial job where the soil above a pipeline had settled and formed a sunken ditch line in a farmer's field. The farmer had complained to Alberta Environment (AENV), and that meant Doug Kulba was involved in the cleanup job too. Back in 2006, much of Kulba's work at AENV was enforcing environmental regulations.

The two men encountered each other at a demo for a compaction wheel, a tool for returning and packing excavated soil into holes and trenches. At the time, compaction wheels weren't used in Alberta's pipeline industry. Galbreath wanted to test how the compaction wheel would perform on his remedial job. Kulba had been encouraging contractors to try the compaction wheel, so he also turned up at the demo to see how the tool would perform.

Galbreath says that before the compaction wheel demo, his relationship with government regulators was sometimes strained.

"When you saw the government person appearing on-site," says Galbreath, "it was hardly ever a positive experience."

That was because, as Kulba explains, “We had created fear with our compliance process. We were always looking for the bad things. So when Alberta Environment came out, they would cringe.”

But that day at the demo, as Kulba, Galbreath and his Stratus employees experimented with the compaction wheel, it became clear to Galbreath that this wasn’t a typical visit from a government inspector.

“I saw he was trying to make a positive change in the way everything was dealt with,” says Galbreath. “He seemed genuinely concerned with figuring out (how to solve the construction) problems... He just joined in and started talking to the guys.” For what was probably the first time, the two men worked together in earnest to tackle their shared problems. This was after they had known each other for more than a decade.

“In just a matter of an hour or two, our relationship changed,” says Galbreath. “His whole attitude seemed different. And the men really appreciated it, and they all learned from it. And we just took it step by step from there.”

A conscious decision to change

Historically, AENV and resource industries had not worked together to develop solutions for their problems. Kulba had made a conscious decision to change this. His decision was based on years of observing that the traditional command-and-control compliance system does not provide a good framework for solving problems.

In the traditional system, regulators and industry members don't often communicate with each other until there is a problem—a breach of a regulation or a complaint from a landowner, for example.

“We were waiting for problems to occur, and then we would go deal with them,” says Kulba. “That’s more or less a reactive approach as opposed to proactive.”

On top of that, after a problem occurred, and AENV regulators required a company to improve its practices, they would usually leave out the ‘how.’ “Typically the government would say, ‘That’s not our problem. You guys go figure it out,’” says Kulba. This approach created another communication disconnect between industry and regulators.

“A lot of people working in the industry did not know what Alberta Environment’s outcomes were,” says Kulba. “We weren’t communicating in terms of outcomes, and we made the assumption that everyone knew what we desired. A lot of the time we communicated in terms of things we didn’t want.”

It all added up to negative relationships among industry, landowners and government regulators. And in the pipeline industry, construction problems persisted. “The problems kept recurring,” says Kulba. “It appeared there was no way to break the cycle.”

The pipeline construction problems

Several problems often result from conventional pipeline construction practices.

Conventional pipelining typically requires a right-of-way for machinery, vehicles and the installation of the pipeline. Companies usually clear the entire right-of-way of its topsoil,

the nutrient-rich soil that plants need to grow. Next they dig a trench, install the pipeline and return soil they have excavated back into the trench.

The most significant problem related to this practice is that traditional tools allow companies to return only 40-80 per cent of the soil. The soil is difficult to return completely because it expands once it's dug out of the ground. When the soil that has been returned to a trench settles due to moisture from rain or snow, a sunken ditch line forms. On farmland, it used to be that conventional tilling would even out these ditch lines, but many farmers have switched to low- or no-till farming, which leaves the sunken ditch lines in tact. The ditches create brutal bumps that damage farm equipment. It's hard to seed these ditches or apply pesticide properly. Also, the ditch lines often become routes for runoff from rain and snow, and the water carries away the topsoil.

The conventional practice for dealing with the spoil, the leftover soil that is not returned to the trench, is to spread it across the right-of-way. The topsoil that has been removed from the right-of-way is then placed on top of the spoil. Unfortunately, this practice leads to other problems. Topsoil is often lost, and afterwards crops may struggle to grow in these heavily disturbed right-of-way areas.

Another major problem is that pipeline trenches are often much larger than necessary. Companies routinely dig a 1.2-metre-wide trench to install a pipeline that is only eight centimetres wide. Factor in the right-of-way, and the swath of disturbed land can be 20 metres wide—or more.

In the past, trenches were excessively wide because the standard bucket used to dig these trenches was wide, and there were no tools available to dig smaller trenches. Furthermore, no one was taking the initiative to develop tools that would fix the problem. “It’s easy for people to go along doing the same things,” says Galbreath.

As people went along doing the same things, Kulba received scores of complaints from landowners. “Landowners became very frustrated,” says Kulba. “There was a built-up frustration because they wanted things done properly. It got more difficult for the industry to gain access to land, and there was social distrust among landowners for the entire industry.”

Breaking the cycle with Partners in Resource Excellence

The negative relationship between landowners and industry was a challenging situation, but Kulba decided to embrace it as an opportunity to work with industry members and landowners to develop practices that would lead to more successful outcomes. The frustration of one landowner in 2006 even inspired the creation of the Partners in Resource Excellence (PRE) program. The PRE program, which is coordinated by Kulba, offers a framework for bringing government, industry and landowners together to solve and prevent their shared problems.

The incident that sparked PRE involved a landowner and Paramount Resources, an oil and gas company. The landowner had complained to AENV about a Paramount well site. Paramount and the landowner weren’t talking to each other.

Kulba brought a group of Paramount people together to get to the bottom of the issue. In addition to the need to get the two sides communicating to solve their problems, a few other key things came to light.

“What became clear was that Paramount didn’t have a construction policy that would help them achieve the outcome of meeting legislative requirements,” says Kulba.

Also, the company didn’t fully understand its role in the stewardship of the environment. “All of us are responsible for taking care of the environment: landowners, government and industry,” says Kulba. “That’s what I helped to identify for Paramount. I asked, ‘Who’s responsible for maintaining our clean air, land and water that we need to survive?’ It had never been brought out that way to them.”

Armed with a new understanding of their responsibility towards the environment and a new construction policy that helped them aim for specific environmental outcomes, Paramount staff successfully dealt with the issues around the well site. The collaboration between Paramount, Kulba and the landowner was so successful that they came up with the idea of establishing the PRE program. PRE would serve as a means for applying what they had learned about communication, collaboration and outcomes to other environmental challenges facing industry, government and other stakeholders.

“What we really have to do is help all stakeholders focus on going beyond meeting the minimum standards,” says Kulba. “Once they really understand why environmental stewardship is important and how it benefits them, and once they have some outcomes to aim for, that changes their whole attitude and their performance.”

“You do this by having conversations and building relationships,” Kulba says. “That’s something we had never put a lot of effort into before... And I realized that if we wanted others to change, we would have to change ourselves first.”

The new way forward

At the compaction wheel demo, Kulba’s new collaborative PRE approach inspired Galbreath to change his approach as well. The two men began working together to solve the pipeline problems that had been nagging them for years.

It was obvious that the industry needed new tools. Kulba had already approached Lyle Cazes, an inventor in Grande Prairie, to develop the Cameron bucket, a bucket that could dig smaller trenches. Galbreath joined Kulba and Cazes in developing the bucket, and soon Galbreath and his operators were regularly experimenting with new tools. Some, like the Cameron bucket, were developed locally by Cazes, Galbreath and other collaborators. Other tools like the compaction wheel were already being used outside Alberta in different industries.

Galbreath and his operators also started trying new construction practices. Kulba visited them at their jobs not to point out faults but to keep putting their heads together on how to make these new tools and practices work well.

“When we got more comfortable, I’d go out to (Galbreath’s) projects, work with his guys, and come up with ideas,” says Kulba. “For example, I asked, ‘What if we didn’t

strip the full right-of-way?’ So they tried that. It became a process of going back and forth and exchanging ideas, building relationships and building trust.”

“Everything started to change once there was a spirit of cooperation, instead of that attitude of who’s going to carry the bigger stick when they see each other,” says Galbreath.

Like Kulba, Galbreath had wanted to solve the pipeline problems for a long time; he had just been unsure how to go about it. So he responded strongly to Kulba’s new foot forward. But initially he was concerned his staff wouldn’t see it the same way.

“It’s very difficult to admit you could be doing something better,” Galbreath says. “And change is a really hard thing for people to deal with.”

But Galbreath received a reaction from his staff unlike anything he’s experienced since entering the pipeline industry in 1982. “I’ve never had this kind of employee buy-in,” he says. “I’ve got guys coming up with new ideas on every job now. I’ve got a lot of loyalty built in this company in the last two or three years.”

Kulba believes that if you inspire and encourage people to do their best and give them the help they need to do their best, they will rise to that expectation. “There’s this perception that people are only willing to meet minimum standards,” he says. “But we all have this innate desire to do good things.”

Kulba, Galbreath and the others who got involved eventually named their pipeline work Innovative Pipeline Strategies (IPS). IPS led the growing stable of projects operating as

part of the PRE program. In May 2007, Kulba moved into the position he is in today: resource assurance specialist. The position encompasses the way his work has expanded beyond regulation as well as his role as coordinator of PRE.

Solving the pipeline construction problems

In the spring of 2007, after Kulba and Galbreath had begun to transform pipelining tools and practices, sunken ditch lines in the Grande Prairie region became a major concern for Devon Canada, which owns an extensive network of pipelines in the area. Devon was receiving a deluge of complaints from farmers and in turn began spending significant capital replacing farmers' equipment and repairing sunken ditch lines.

"It was coming back to us, because we are fully accountable for our practices on the land," says Marc LaBerge, leader of facilities construction for Devon Canada.

LaBerge was asked to fix the problem. At a loss for where to start, he asked colleagues at Devon for advice, and they said he should call an AENV official named Doug Kulba.

"So I gave him a call," says LaBerge, "and I was a little bit astounded that he was fully open to working with us and that it wasn't a confrontational discussion." When LaBerge headed up to Grande Prairie to visit problem fields with Kulba, "Not only was (Kulba) there, but (Galbreath) and his operators were there, and our construction supervisor, and we all tried to understand what was going on," says LaBerge. "It was a complete day of in-the-field learning."

After that day, they continued working together, and eventually they made an important discovery. “The big secret was getting the soil back in,” says LaBerge. Getting as much of the soil back in the ground as they could was the key to preventing sunken ditch lines.

Compaction wheels allowed them to return 100 per cent of the soil in many cases, a considerable improvement on the 40-80 per cent soil return that conventional tools and practices accomplished. And using smaller tools like the Cameron Bucket allowed them to dig up far less soil to begin with and reduce the width of pipeline trenches by as much as 75 per cent. Overall, the disturbance of the right-of-way could be reduced by as much as 90 per cent.

The environmental, economic and social benefits of Innovative Pipeline Strategies

The IPS tools and practices conserve more topsoil, and they allow land to recover more quickly and support crops with the same success as before pipeline construction.

Further down the line, there will likely be far fewer repairs and cleanups needed. And on forested land, IPS saves trees because the width of the right-of-way is usually reduced, and it’s no longer necessary to cut down as many trees to make room for the right-of-way.

In addition to being more environmentally friendly, IPS tools and practices are cost-effective—in fact, they even save money by moving less soil, cutting down on cleanup costs and reducing liabilities that arise from problems like sunken ditch lines. Yes, initial investments in new tools and employee training are required, but the savings can still be

substantial. When Devon tested IPS on forested land with its Jackfish project in 2009, the company saved \$1.4 million.

“You can have a healthy environment and be economically sustainable at the same time,” says Kulba.

“When you look at the overall impact of pipelines, IPS makes sense,” says LaBerge. “It makes economic and environmental sense, and it falls within Devon’s corporate attribute of being a good neighbour.”

IPS is bringing about positive social results as well. In addition to relationships between industry members and government regulators improving vastly, companies that use IPS are getting a considerably different reaction from landowners than they used to.

LaBerge says a landowner in the Rocky Mountain House area recently wrote, “Fantastic job. Best ever,” on the paperwork for a Devon pipeline constructed on his land.

“What’s also really encouraging is that landowners are requesting that these practices be used,” says LaBerge.

The various successes of IPS have demonstrated that environmental, economic and social benefits are intimately connected. “You can’t really have true success without all three,” says Kulba. “We’ve seen that companies achieve short-term economic success, but they may fail to achieve environmental and social success. And eventually environmental problems catch up to them in the form of economic and social liabilities.”

In May 2008, Devon Canada made it policy that all pipeline contractors working for them must use IPS on farmland Canada-wide. In October 2009, the company extended this policy to all pipeline work on forested land in Canada as well. The policy came about in no small part because of LaBerge’s work with Kulba and Galbreath. Devon is the first company in Canada to adopt such a policy.

Since 2008, Kulba, Galbreath and LaBerge have been presenting the advantages of IPS and PRE to various stakeholder groups such as landowners, oil and gas companies, contractors and government groups. PRE is also developing IPS education modules for industry members and forest officers with the Woodland Operations Learning Foundation (WOLF).

“All these accomplishments came about from open communication and realizing that regulators aren’t out to get us and vice versa,” says LaBerge. “We just needed to change the way we communicate and focus on excellence rather than minimum requirements.”

“This fundamental shift in understanding is essential to improvement,” adds Kulba.

“AENV can only compel minimum standards. However, what all stakeholders really want is only achieved by voluntary actions and not the legislative process. Standards as they are created in government are primarily in place to support legislation, which in turn is intended to determine when an unacceptable outcome has occurred. In light of this, it is important to realize standards do not foster environmental excellence.”

Aiming for excellence

As PRE grew, Kulba and his collaborators realized that the overarching outcome they were after was excellence. The PRE strategic plan outlines criteria for excellence in eight areas of PRE work. For example, excellence in the area of innovation is defined as developing or modifying technology and processes that significantly improve environmental outcomes. What all the criteria for excellence have in common is that they strive to define the best outcomes possible.

Excellence is such an important principle of the PRE program that several PRE partners including Alberta Sustainable Resource Development (SRD) and Devon Canada came together to found the Evergreen Centre for Resource Excellence and Innovation in 2009. The centre, which is in Grande Prairie, offers facilities for showcasing, researching and educating people about environmental best practices for various industries.

“Getting away from minimum standards and going for excellence instead—that inspires a completely different way of approaching each and every project,” says LaBerge.

It has become second nature for LaBerge, Kulba and Galbreath to continually evaluate and improve tools and practices. Their progress with buckets and compaction wheels is a good example. “We started with the 56-centimetre Cameron Bucket,” says Galbreath. “We can now put a 20-centimetre compaction wheel inside a 30-centimetre trench (dug by an even smaller Cameron Bucket).” Also, Devon Canada is experimenting with a trenchless construction practice called horizontal directional drilling to install entire pipeline segments. This practice is an additional option for industry to further reduce the environmental impact of pipeline construction.

Kulba says the pursuit of excellence requires focusing on outcomes and cultivating a supportive atmosphere where people feel comfortable trying new things and making mistakes. “Knowing they can try innovative things without fear of reprisal, that’s a big thing,” says Kulba. “One of the biggest things.”

How do you create a supportive atmosphere? Kulba says it’s actually pretty simple. He emphasizes being helpful over being critical, and he gives people recognition for the good things they do. For example, PRE offers formal recognition of excellent work with stickers, plaques and an annual awards ceremony.

“The interesting thing is that we can’t force companies and stakeholders to do things,” says Kulba. “We have to inspire and educate and motivate them.”

“Doug’s approach has been one of cooperation,” says LaBerge. “That sponsors trust that goes both ways. It builds relationships, and we need that... to discuss our strengths and weaknesses. That has never been available to either side before.”

“It’s not a problem to have issues,” LaBerge says. “What’s a problem is ignoring issues.”

The decisions of LaBerge, Kulba, Galbreath and many others to address their shared issues together have added up to the PRE approach, an approach that inspires excellence and embraces collaboration and communication among stakeholders as its foundation for success. And what does this add up to? Says Galbreath, “The possibilities of this partnering process are endless.”

SIDEBARS

Oil and gas pipelines in Alberta: The big picture

- Since 2000, an average of 13,000 km of oil and gas pipelines has been installed in Alberta each year. This is slightly farther than driving from Vancouver to Halifax and back.
- In total, there are more than 400,000 km of oil and gas pipelines buried underneath the forests and farmland of Alberta. In comparison, B.C. has more than 35,000 km.
- Alberta's pipelines constitute one of the largest industrial disturbances of land in the province.
- In the next 15 years, pipeline infrastructure in Alberta is expected to double.

Sources: Energy Resources Conservation Board, Canadian Energy Pipeline Association, B.C. Ministry of Energy, Mines and Petroleum Resources

CEMS in motion: How Partners in Resource Excellence makes CEMS happen on the ground

Key CEMS elements required to support the development and delivery of outcomes	Corresponding elements of Partners in Resource Excellence (PRE)
Clearly defined outcomes	A fundamental requirement of the PRE process is that stakeholders work together to clearly define and achieve environmental, economic and social outcomes.
Collaboration	In its short history, PRE has been enormously successful in building relationships of trust among stakeholders, particularly government regulators and industry. The keys to building these partnerships are open, regular communication, a spirit of cooperation and a focus on achieving outcomes that are agreed upon and understood by all stakeholders.
Place-based planning	PRE is place-based by design, as the outcomes for any project must also relate to the place where the project is occurring. The outcomes and improved environmental practices developed for one place and project can often be applied to other similar places and projects.
Regulatory and non-regulatory tools	PRE is a non-regulatory tool that helps stakeholders work together to achieve outcomes through proactive action. This collaborative, outcomes-oriented process provides a framework for industry and other stakeholders to move beyond mere compliance and achieve excellence in their business. PRE also plans to develop more non-regulatory tools that will offer incentives to government regulators and industry to exceed minimum standards and pursue excellence in their work.
Adaptation	PRE inspires stakeholders to pursue excellence. This culture of excellence has motivated stakeholders to continually evaluate, adapt and improve environmental practices.