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Public scrutiny of the energy industry has never been stronger. The global spotlight is on the challenges our industry faces in responsibly developing two key "conventional" supply sources, Canada's oil sands and natural gas from shale. Given this spotlight, our social license to operate— that is, our ability to maintain the ongoing approval of our stakeholders— must be earned every day.

As an energy company in business for more than 130 years, we know that reliable and affordable energy is essential to human progress in Canada and across the world. To sustain long-term progress, we must continue to safely expand the world's energy supplies, reduce our energy consumption, and address the accompanying environmental challenges of energy development.

The industry needs to present a compelling case for addressing its environmental challenges to gain a social licence to grow. While public support for unconventional oil and gas production is improving, many are reluctant to accept that hydrocarbons will continue to be needed for decades to come.

Too often, energy policy debates are framed in "zero-sum" terms, pitting one energy source against another. The world's growing energy requirements make it clear that we must develop all sources of energy. We will need oil, natural gas and coal. We will need nuclear and renewable energy sources like wind, solar and a next generation of biofuels. And we will need more nuclear power. It is not one or the other. It is all of the above.

All energy sources must grow and all are challenged to do so in a way that balances social, economic and environmental responsibilities. As an example, the current renewable fuels technologies have smaller environmental impacts but are much more expensive to produce than fossil fuels. Governments around the world have subsidized these higher costs to date but may be too strained to continue to do so. The rapid progress of technology has pushed off predictions of peak oil and has enabled finding and developing more reliable and affordable energy sources from oil, sands, shale, deep water and Arctic environments. However, their associated environmental risks are greater and must be managed.

We can make a persuasive argument for increasing oil sands and shale gas development for an balancing social, economic and environmental responsibilities. But stakeholders must also be realistic and acknowledge the importance of considering all three responsibilities, not just one. Again, it is not one or the other. It is all the responsibilities.

In terms of social responsibility, we recognize that building and maintaining lasting partnerships with our nearby communities is essential to our progress. We believe our communities have an important role in how we do business. This is highlighted by the consultation work and economic opportunities we are pursuing with our Aboriginal neighbours in the Athabasca region of Alberta. We believe in supporting communities where we work— and live— to address local needs and create long-term benefits. Volunteering is a long-held tradition at Imperial and a key aspect of building stronger communities. (To read more, see "Supporting Imperial’s volunteers" on page 6.)

While visiting East Africa this past September, I saw firsthand how people in developing countries struggle to improve their quality of life. Seeing how much of the Africans’ diet is consumed by obtaining basic needs of food, water and shelter reinforced for me how good it is to live in Canada. Accessible electricity and affordable fuels would lead to better living standards by providing jobs, schools, sanitation and increased food production.

On the economic front, we are developing the oil sands in order to bring benefits to all Canadians through employment and government revenues. The oil sands are the engine of the Canadian economy and will remain so for some time. The Canadian Energy Research Institute estimates that the development of the oil sands will produce government revenues of over $19 billion per year for the next quarter century. That translates into funding for local hospitals, schools, mass transit and energy-efficient buildings that will help maintain the standard of living Canadians enjoy today.

Without question, there are environmental challenges with oil sands and shale gas development (see "The hydraulic fracturing debate" on page 10). We take our responsibility to address these issues seriously. We believe research and innovation will advance technologies that will continue to reduce our footprint. Equally important is the need to communicate broadly the innovations we are working on to deliver these step-change improvements.

We have a good story to tell about our progress to date. Since development began, our industry has made major advances in the reduction of greenhouse gas emissions (GHGs), water conservation and land reclamation. For example, Environment Canada has found that the industry has reduced per barrel GHGs by nearly 30 percent since 1990. Furthermore, in situ oil sands producers now recycle between 80 and 95 percent of water used. At Imperial’s Cold Lake site facility, we reuse about 95 percent of our produced water, an 80 percent reduction in fresh water per barrel since the late 1970s. And some of our new research into bitumen recovery using solvent without steam, called Cyclic Solvent Process, could almost eliminate water use and GHGs where applied.

We are also working to reduce our footprint on land as we develop in situ oil sands and natural gas from shale. Horizontal drilling has led to the development of multi-well pad technology, which allows for one drill rig to include a number of producing wells to access deep reservoirs. These multi-well pads significantly limit our surface impact.

In oil sands mining, tailings management is an industry-wide concern. It is the reason why seven major oil sands mining developers, including Imperial, reached an unprecedented technology-sharing consortium aimed at speeding up the reclamation of tailings ponds and "freeing forces to reduce oil sands tailings ponds" on page 20.

As a member of the consortium, Imperial is sharing its research with industry competitors to ensure the environmental benefits of our work can have the broadest reach. For example, rather than treating all tailings the same way, we have discovered that separating tailings by their physical properties and then tailoring the treatment of each can reduce the volume of tailings ponds and allow reclamation to occur earlier. A pilot based on our research, which could benefit Shell Canada, Teck Resources and Total E&P Canada (they use or plan to use similar tailings treatments to ours), is now being tested at Shell’s Athabasca oil sands project. Early success has encouraged plans for a larger pilot to be conducted at Shell’s site next year. Our other tailings research, currently at the lab testing stage, has the potential to benefit all operators.

On the horizon are other exciting technologies that will deliver a step-change in our environmental footprint. One is a technology we’re developing that will eliminate the need for fresh water during mining and reduce water consumption in the extraction process by more than 90 percent. While still fairly early in its development, "non-aqueous" extraction could significantly reduce the impact of mining operations on water and land.

Finally, our upcoming Kearl oil sands project will put an end to our oil sands mining performance. H2S CERA, a top energy research and analysis firm, noted that a project like ours can only be achieved using advanced mining techniques that allow for the recovery of historical and producing dilated bitumen without an upgrader— will result in about the same lifecycle GHG emissions as average (non-oil sands) U.S. barrel of crude.

We live in an era in which accessing new sources of energy is essential to human progress but is also becoming increasingly difficult. As we employ new technologies to develop these hard-to-reach resources, the need to communicate how we plan to earn our license to grow is critical. We must engage with the public sooner and continue to balance the social, economic and environmental issues related to energy expansion so that we can deliver on both our own and Canadians’ high expectations.
SUPPORTING IMPERIAL'S VOLUNTEERS

Imperial employees, retirees and spouses who volunteer help to make their communities a better place to live By Marcia Kaye

AS we mark the tenth anniversary of the United Nations' International Year of Volunteers, volunteering in this country continues to thrive. More than 12 million Canadians, or almost half the population over age 15, volunteer their services, according to the latest survey from Volunteer Canada. Their contributions to society are massive, representing a total of more than two billion hours of work, equivalent to 1.1 million full-time jobs.

The opportunities for involvement are endless, as Imperial folks have found. Among some of their fascinating volunteer projects: searching for evidence, CSI-style, at a crime scene; rehabilitating an injured hummingbird or wolverine for release back into the wild; and mentoring youth at high risk for a life of drug abuse.

Why do volunteers do it? They enjoy using their abilities, sharing their life experiences, exploring their strengths, discovering new areas of interest, filling a need, learning new skills, meeting people and strengthening their communities.

In addition to the myriad benefits, there's a bonus one available at Imperial. Through the company's fast-growing Volunteer Involvement Program, or VIP, Imperial employees, annuitants and spouses who volunteer at least 20 hours a year are eligible to apply for annual grants of up to $1,000 to go directly to their charitable or non-profit organization. "The VIP program recognizes that community involvement has a powerful reciprocal impact," says Marilyn Kandt, vice-president of the Imperial Oil Foundation. "By participating and volunteering with these organizations, we learn as much from them, but they also learn from us. Volunteerism increases all our knowledge and makes us more accountable and responsible for our communities, which benefits everyone."

Here are some of Imperial's own VIPs, all of them helping to make their communities better places to live.
Lochlann Magennis

CALGARY SEARCH AND RESCUE ASSOCIATION

When a person goes missing in the Calgary area or a crucial piece of evidence needs to be located, the police call in the Calgary Search and Rescue Association (CALSARA). The volunteer searchers might find themselves in an alleyway on their hands and knees, hunting for a spent bullet casing, or trudging through snow looking for a missing child.

Five years ago Lochlann Magennis, a geoscience advisor with Imperial Oil Resources, was approached by a colleague to join the organization. Magennis didn’t think he had much to offer search and rescue missions. He’d been using a wheelchair since 1997, when as a 21-year-old undergraduate from Belfast doing geology fieldwork in a remote corner of northwest Scotland, he fell a hundred metres off a series of cliffs and steep slopes and broke his back. He was rescued through the combined efforts of two other students and two salmon fishermen, the volunteer Alyswnt Mountain Rescue Service, and a coast guard search and rescue helicopter. He spent five months in hospital, then went on to complete his bachelor of science in geology, followed by a doctorate. He worked in London, England, and Houston before settling in Calgary, where he’s a specialist in 3-D seismic interpretation, mapping out the location and quantity of underground rocks, oil and gas.

After the accident Magennis had never wanted time feeling sorry for himself — as he says, bad things happen and you just have to “Get on with it!” A colleague’s husband, who was also CALSARA president, asked Magennis to join their organization. He wondered how he could help. When they indicated they needed radio operators, Magennis knew he had the skills they wanted.

He became a two-way radio operator, coordinating searches. Eventually he became the board’s president and is now training to be a search manager. “I wouldn’t be alive if it weren’t for the efforts of the people who found me, so it’s payback time,” he says. He adds that while the work isn’t always glamorous as TV crime shows suggest, nevertheless “it’s pretty cool.” This year’s VIP grant will go toward upgrades of the GPS equipment and maintenance of the all-terrain vehicle.

The Calgary Police Service uses the volunteer group not as a backup, but as the front line for certain types of searches. “The Calgary Search and Rescue volunteers are better trained than police officers in ground searches,” says Sgt. Philip Hoogterp. “Many times the volunteers have found crucial evidence in homicide cases, like weapons, property or identification. Within an hour they found a missing seven-year-old and a nine-year-old in winter temperatures.” He explains that having volunteer searchers frees up police officers for other specialized tasks, such as interviewing witnesses or interrogating suspects.

Hoogterp says that of CALSARA’s 100 or more volunteers, Lochlann Magennis is particularly dedicated. “When we put out the call, Lochlann is one who’s always there, always shows up, day or night, even when he’s on vacation. He’s passionate about it.”

There might be only one or two calls a month, or there might be several on the same day. During Calgary’s 2011 Canada Day events, Magennis helped CALSARA reunite 48 missing children with their anxious parents or grandparents. “On a search the adrenaline is pumping, but you have to remain calm and measured,” Magennis says. Until the happy ending, that is. “When you see a missing person reunited with their family, that’s what it’s all about.”
Jo and Andy Shutek
WILDLIFE RESCUE ASSOCIATION, BURNABY, B.C.

Whether it's an orphaned duckling, a sick wolverine or a beaver with an injured tail, the volunteers at the Wildlife Rescue Association of British Columbia do everything they can to rehabilitate the creatures so they can return to life in the wild. Some of the critters are brought in by animal welfare workers and concerned residents in the Burnaby area, some are picked up by volunteers who've been called in to help, and some wander in of their own accord. "We had a duck recently walk into our centre, which is on Burnaby Lake," says Jo Shutek. "She had eaten a big slug and couldn't open her mouth because of the slime. She walked up to the door, had her mouth cleaned, and walked out."

Jo is an animal health technologist, trained to assist with surgeries and dental and blood work. Most of her professional experience has been with dogs, cats and exotic pets. Working with wildlife is – well, a whole different animal.

"This place is not a sanctuary," explains her husband, Andy, who also volunteers there. "We can't keep the animals. Great care is taken to get them back out into the wild." Since some species, such as geese and gulls, can become too easily imprinted on people, volunteers refrain from talking around the creatures, avoid eye contact and wear costumes such as Halloween ghost-style sheets so they're not recognized as humans. "I have a giant crow outfit," says Andy.

The couple, who live in nearby Belcarra, B.C., have spent an adventurous five years at the centre. Jo volunteered first, followed soon by Andy, an Imperial annuitant who spent much of his career at IOCO refineries in Fort Macmurray, B.C., and was manager of demolition and remediation. The year-round rescue centre takes in more than 3,000 patients a year, representing up to 150 species. It comprises examination and isolation rooms, outdoor aviums, screened pens and a conditioning pool where ducks can get their feathers waterproofed. The Shuteks' tasks include putting medication in raw eggs to give to skunks, picking flowers for hummingbirds, and hiding food for the birds in the avairy to find. "We make sure they forage for their food, which they need to do," Andy explains. They put lonely ducklings together and separate hawks and ravens from the other birds.

"Sometimes when the animals come in they look totally helpless, and it just breaks your heart," Jo says. There was a yellow-bellied marmot that had crawled into a car's engine and burned its feet; a skunk with a plastic six-pack ring embedded in its skin; and another skunk with its head stuck in a beer can and rapidly starving to death. All were successfully rehabilitated.

In fact, more than 40 percent of the creatures return to the wild, says executive director Glen Boyle. Those that can't – for instance, a bird that's been maimed by a cat and can no longer fly – are humanely euthanized. "Jo and Andy are priceless volunteers," Boyle says. "Jo brings her skill set, and Andy is a very handy guy to have around. They're always positive, constructive, helpful – and fun to be around." The centre will use this year's VIP grants for a machine to monitor the patients' vital signs while under anesthesia.

Volunteering together at the centre has its advantages for the Shutes. "We have good conversations," Jo says. Adds Andy, "And if the skunk sprays, we both smell the same!"
Kai Chan
APPEGA'S ABORIGINAL MENTORING PROGRAM, CALGARY

Kai Chan knows firsthand how valuable it can be for a student to have a mentor. As a 16-year-old from Hong Kong, Chan arrived in Canada by himself on a student visa to do Grade 12 at a boarding school run by a monastery in the village of Moose Jaw, Sask., and then to study engineering at the University of Saskatchewan in Saskatoon. "I had a number of inspiring teachers in math, science and engineering to whom I looked up as role models," he says. "I am always grateful to these people and try to pass on what I learned from them as a mentor myself."

A process engineering advisor for Imperial Oil Resources who specializes in design for oilfield facilities, Chan began volunteering as a classroom mentor earlier this year. He is Imperial's first — and so far, only — mentor in Calgary with the Aboriginal mentoring program run by APPEGA, which stands for the Association of Professional Engineers, Geologists and Geophysicists of Alberta. Once or twice a month, Chan visits urban schools to mentor Aboriginal students in Grades 4 to 8. The kids learn scientific principles through a variety of hands-on activities, including solar-powered toy cars, paper airplanes, and pulleys and gears.

Chan also creates his own activities, such as the Travelling Math game. "The students love travelling and they don't love math," he explains. "So I ask them to divide into groups and design their own trip to Disneyland (or any destination they choose). By planning that trip, checking air and hotel prices and admissions and making a budget, they learn that math is fun and essential."

Chan is one of the most enthusiastic volunteers, says Artlene Lack, the program's mentoring and professional development coordinator. She says promoting students' interests in math and science may encourage them to stay in school. Many of the students receive little educational support from home and drop out by Grade 9, some as early as Grade 6. The mentoring program not only fires up their interest but helps them consider future careers in science and engineering, professions where they're now extremely underrepresented. Lack estimates that of the 80-200 APPEGA members in Alberta, only about 100 are Aboriginal. "But we now have students participating in science fairs, and some are saying things like, 'I'd like to become an structural engineer.'" Lack says. The program will use the VIP grant to purchase more resource kits for students.

A part-time Imperial employee who works three days a week, Chan has been involved in mentoring employees and contractors for many years. But he acknowledges that when he first started mentoring Aboriginal students, they surprised him in their approach to science projects. "They're not prone to listening to lectures, but I had underestimated their ability to do things with their hands," he says. The night before a mentoring session, Chan, who is accustomed to tackling a project in a logical, structured fashion, spent about an hour putting together a gears-and-levers project from the resource kit in preparation for helping students with it. But the following day, to his surprise, many of the students combined their hands-on ability and intuition and finished the task in half the time. "They did it in 20 or 30 minutes," he says, laughing. "From this I'm very encouraged by their potential. Some might be challenged at school in writing or spelling, but given the right opportunities, they can accomplish a great deal."
George Holmans
VICTORIAN ORDER OF NURSES, GREATER HALIFAX

They may start out as clients, but before long they become friends. That's just the effect that George Holmans has on the people he serves through the Victorian Order of Nurses (VON), Greater Halifax. When he attended the funeral of one elderly client, Violet, whom he had to drive to weekly hair appointments, Violet's son said to Holmans, "Oh, so you're the boyfriend. My mother talked about you all the time!"

Holmans began volunteering for VON in 2000, after retiring from Imperial. He'd spent 30 years at Dartmouth waterfront in Halifax, in various areas including process, instrumentation, design, quality control and project management. Retirement freed up both him and his wife, Joyce, a retired school principal, to ramp up their volunteer work. Over their years with VON they've driven seniors to appointments, taken them shopping, helped with caregiver respite programs and done fundraising. Now they focus on delivering Frozen Favourites — single-portion meals — to as many as 20 different addresses in one day, and the Lunch Bunch, which involves taking 30 meals weekly to a senior's building. George drives and does the deliveries, while Joyce stays with the car. On Frozen Favourites delivery days they set out shortly after 8:00 a.m. and they are home by 3:30 p.m. It's a significant commitment, totalling up to 400 hours a year, but George says simply, "It needs to be done!"

Their particular service area covers such a large geographic region that it was always a difficult run to fill, says Kim Henry, coordinator of the Frozen Favourites program. "George and Joyce have just been a godsend to us," she adds. The clients have a responsibility to be home at a designated time to receive the meals, but Henry says that Holmans refuses to take this work lightly or to accommodate people's scheduling conflicts.

Holmans acknowledges that it actually costs him some money in gas, but he says, "It's not about that. It's about helping others, and there's a satisfaction in it." The VIP funds (one through George and one through Joyce, since spouses' volunteer work is eligible to have in past years helped buy freezers, cooler bags and furniture and will go toward a new computer system this year.

Holmans speaks with great fondness of the many people he's met through his VON work. There was Doreen, originally from Gayana, who, during the drive to dialysis appointments, gained great joy from seeing the trees' autumn colours and springtime buds. There were Stan and Doris, with whom the Holmans conversed about a new grandson. "You should have seen the look on her face," George recalls. "She just lit up, giving a little giggle and staring at him the whole time." Joyce says that George enjoys the clients as much as they enjoy him. "He talks about all the time," she says. "I know it makes him feel good." She adds, "And in the meantime he's taking care of me." Joyce has recently completed treatment for a second bout of non-Hodgkin's lymphoma. She is now in remission. But George is quick to add, "Even when she was doing her treatments, she still came out with me to do the deliveries."

Julie Ferguson
SAMA-LAMTON REBOUND YOUTH PROGRAM

Julie Ferguson of Sama, Ont., always arrives half an hour early for her weekly sessions with at-risk youth, because invariably at least one of the teens will already be there, waiting to talk.

"All they want is someone to listen to them without judging them," she says. "When the kids hear that we're volunteers and coming on our own time, they're really impacted by the idea that a stranger could care about them."

Ferguson volunteers for Rebound, a community organization providing support and social skills for young people who have problems with the law, their schools, their families, bulimia or mental health issues. Twice a year she helps lead the 10-week SAFE Choices program for 12- to 17-year-olds. (SAFE stands for Substance Abuse Facts and Education.) The kids come to the program in one of three ways referred by the police or the court, referred by their parents or social agencies, or self-directed. To create a confidential and secure environment, volunteers aren't told which kids come for which reasons. Ferguson and the other "table coaches" provide factual, non-judgmental information and facilitate discussions on legal and illegal drugs including alcohol, marijuana, tobacco and opiates. For their part, the kids must attend all sessions, respect privacy — full caps removed, cell phones off — and actively participate.

Ferguson brings a credibility that quickly resonates with the teens. When they ask her, "Did you ever get into trouble as a teen?" she answers honestly, "Yes, I did. We're not here to talk about me, but I've been where you are." Ferguson admits she made some wrong choices in high school but was lucky enough to have loving and supportive parents and a couple of teachers who saw her potential and encouraged her to rethink her decisions. In Grade 12, a work placement with Imperial eventually led to a full-time job. Ferguson now works as community and Aboriginal affairs advisor in Sama. She hopes she can make the kind of difference in kids' lives that those teachers made in hers. Rebound surveys show that 90 percent of youth report positive changes after the program.

Kelly Wilson, Rebound's volunteer coordinator and intake worker, has seen first-hand the impact that Julie Ferguson has. "It's very common for kids to come in earlier and earlier each week and ask, 'Is Julie here yet?'." Wilson says. "She's genuine and real, and she's very quick to gain their trust."

Last year Wilson paired Ferguson with a troubled young woman who was extremely withdrawn at the start of the program. Gradually the girl gained confidence, and on graduation night at the end of the 10 weeks, she proudly supported a homemade paper mache board. Two months later she was a guest speaker at a Rebound fundraising gala, where she publicly thanked Ferguson. "Julie, you were always there for me," she said, moving Ferguson to tears.

Ferguson feels connected to every one of the teens in her sessions over the past 10 years. This year's VIP grant will go toward new educational materials, including the latest information on addictive prescription drugs and drinking and driving. "I volunteer because I love it," she says. "I'm so appreciative that the company supports voluntersism, because these kids are going to grow up to become our neighbours, our co-workers maybe even our leaders."
THE HYDRAULIC FRACTURING DEBATE

Natural gas is projected to be the fastest-growing power-generating fuel, but debate about its responsible development through shale and rock fracturing is on the rise. By Brian Bergman

It has been described as a "game changer" that could revolutionize the global energy industry. Over the past decade, the burgeoning business of extracting natural gas trapped in deep deposits of organic-rich shale has increased gas reserves in the United States and Canada to the point that both countries now boast a century’s or more worth of domestic gas supply at current rates of consumption. And with potentially immense untapped shale gas deposits in Europe, China, India and many other parts of the world, it is estimated that by 2030 natural gas will satisfy more than 25 percent of global energy demand – about twice the amount and just a decade ago.

This new technology comes at a critical time when conventional resources are in decline and demand is increasing for fuels, especially those that produce fewer greenhouse gas emissions. Natural gas is proving to be ideal in this regard, as it burns cleaner and is locally available and abundant, which has also contributed to lower natural gas prices for consumers.

The gas industry has known about the world’s shale deposits, formed in ancient sea basins, for decades (in fact, these organic shales are the source rocks for much of the world’s conventional oil and gas). The challenge was to unlock this resource from openings smaller than the diameter of a human hair in reservoir rocks typically buried between 1,500 and 2,500 metres below ground. The marriage of an old technology (hydraulic fracturing) and a relatively new one (horizontal drilling) made this possible on a commercial basis only within the last decade.

But hydraulic fracturing – also known as “fracking” – has become the subject of increased public concern on the East Coast, much of it focused on the belief that there may be a potential for groundwater contamination.

Andy Teal, Imperial Oil’s Calgary-based manager of Safety, Security, Health and Environment, feels the industry needs to get ahead of the debate in Western Canada. Teal is on the steering committee of the Canadian Association of Petroleum Producers (CAPP) that worked on developing industry principles and standard practices for hydraulic fracturing.

“We are beginning to hear questions about hydraulic fracturing activities even in communities that have grown up with oil and gas drilling for 50 or 60 years,” says Teal. “It is why our industry voluntarily put together principles and practices for hydraulic fracturing – so that we can be transparent with the public about what we are doing and why we are putting our effort and energy into informing people about the facts in the debate.”

Hydraulic fracturing involves injecting a mixture of mostly water (about 99 percent) and sand together with a few chemical additives under high pressure into the reservoir rock. The shale reservoir rocks are brittle and much like a stone cracking a windshield, the pressure produces hairline fractures 80 to 60 metres high and several hundred metres long that are propped open by the injected sand. These pathways allow the natural gas to escape from the tight formations and flow up the well bore. The crude reservoir shales
are encased by a layer of pliable shale that does not crack and, therefore, acts as a fracture barrier. This natural barrier also helps to conserve water and energy by keeping the fracturing confined to the targeted area. Less than half the water then flows back to the surface (along with the gas) and can be reused. In addition to shale gas, this technology is also helping unlock previously inaccessible reserves of right of gas.

Hydraulic fracturing has been used in conventional oil and gas extraction since the late 1940s in a wide range of conditions. Observers Michael E. Parker, technical advisor with ExxonMobil in Houston: "Engineers and geologists have known for many years that some shale formations contain oil or gas, but we just didn't have the technology to produce these formations economically."

In Canada, shale gas development has been concentrated in northeastern British Colum- bia, where more than a dozen companies, including Imperial Oil, are working to develop the Horn River Basin, which shows potential to be one of Canada's large-scale commercial shale gas operation areas. Possible shale gas reservoirs have also been identified in Alberta, Quebec, New Brunswick, Nova Scotia and the Northwest Territories.

Horizontal drilling offers hope to revigor- ize production in older oil-producing areas in Canada as well. For instance, in central Alberta, the Cardium formation has been producing oil by conventional means for more than 50 years and has begun to decline in production. Impe- rial, along with others, has recently initiated work to understand what the potential for right oil production in this area may be in the coming years.

On both sides of the border, opposition to shale gas drilling has been strongest in regions where oil and gas development is a relatively new phenomenon — or where residents haven't seen anything like the level of current drilling for many years, if ever. For example, the Barnett shale gas play core in central Texas encompasses 13,000 square kilometres and provides six percent of U.S. natural gas. The rapidly developing Marcellus play has the potential to be much larger and more straight through the heart of Pennsylvania, New York and West Virginia.

ExxonMobil, the world's largest publicly traded natural gas processor and one of the top three shale gas producers, has shale gas opera- tions in most of those regions. The company also has holdings in Argentina, Germany, Israel, Mexico and the Ukraine.

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HOW LESSONS FROM MACONDO MAY INFLUENCE ARCTIC EXPLORATION

ON April 20, 2010, the Deepwater Horizon semi-submersible drilling rig — under lease to BP to drill the Macondo exploration well in the Gulf of Mexico — exploded, killing 11 and injuring 16 others. It also triggered what would become the largest oil spill in U.S. history. Almost immediately, the U.S. Coast Guard and Minerals Management Service launched an investigation of possible causes. President Obama established a bipartisan national commission to consider the "root causes of the disaster and offer options on what safety and environmental precautions we need to take to prevent a similar disaster from happening again."

In Canada, the National Energy Board (NEB), the federal agency responsible for issuing drilling licences in federal offshore areas, quickly initiated "a review of the safety and environmental requirements for offshore drilling in Canada's unique Arctic environment."

"We fully supported the NEB's decision to conduct the review," says Mike Peacock, Imperial Oil's exploration manager. "It was the right thing to do."

Imperial's interest in the deliberations of the NEB is far from academic. In 2007, after analyzing third-party seismic data from areas of the Beaufort Sea farther offshore than the company's earlier exploration efforts, Imperial and ExxonMobil Canada obtained exclusive rights from the federal government to explore a 300,000-acre block, in water depths ranging from 60 to 1,200 metres, in return for a commitment to spend $585 million on exploration activities over a nine-year period. In 2009, Imperial and ExxonMobil Canada began negotiating with BP, which had successfully bid for rights on an adjacent Beaufort Sea block, to form a joint venture to evaluate the petroleum potential of more than one million acres of geologically attractive, untapped territory. Imperial has a 25 percent interest in the resulting joint venture.

"Given the challenging conditions, equipment requirements and remote location, any wells drilled on these leases are going to be very expensive, multi-season exploration efforts," says Glen Scott, senior vice-president of Imperial's resources division. "So you want to make sure that you drill the best well first. This joint venture allows us to pick the most promising prospect on a million acres and share the cost and reward with more companies."

The joint venture participants have agreed that Imperial or ExxonMobil will be the operator for any wells drilled on the two exploration leases.

To date, about $250 million has been spent gathering information about the lease areas. In 2008, after an extensive consultation process that involved hiring professional wildlife biologists and traditional knowledge experts from local Aboriginal communities to ensure protection of marine mammals, a 3-D seismic program was completed on Imperial and ExxonMobil's 300,000-acre block. The following year, the company undertook a research program with Cornell University on acoustic monitoring of whales in the region, and worked with the federal Department of Fisheries and Oceans, the Geological Survey of Canada and ArcticNet to study the physical and biological environment of the exploration area.

In addition to its goal of environmental protection, the company is also committed to ensuring that northern residents share in the economic benefits of petroleum exploration in the Beaufort Sea.

"Companies from the Inuvialuit region helped design the field collection program in 2009," notes Peacock. "Inuvialuit community members have also been key members in the marine mammal observation program to protect these animals during project operations and to understand their distribution through the exploration leases."

The joint venture is also studying the establishment of advance training programs that will equip local residents with the skills needed to participate in the employment opportunities that will accompany the exploration program and any subsequent petroleum development. An active consultation program with local communities is another important element of the joint venture's planning process. More than 50 consultation visits have been made to communities in the region to provide updates on project plans and to listen to concerns about exploration activities to avoid interference with traditional practices. Workshops have also been held on topics of specific interest to the company and communities, including waste management, wildlife harvesting and oil spill response.

During the months following the Macondo incident, various groups studying the disaster issued their reports. One committee of investigators said they could not attribute the blast to any one decision made by BP, or anyone else, but found that the focus on speed over safety, given that the well was behind schedule, helped lead to the accident.

As Imperial looks to continue its Arctic exploration program, company executives maintain that the Gulf of Mexico tragedy emphasizes what they have known for years: offshore drilling should only take place if regulators and operators are wholly focused on incident prevention. By Paul Miller
"We believe very strongly that the best way to deal with an offshore blowout is to make sure it never happens in the first place. That requires an intense focus on risk management and operating safety."

Mike Peacock, Imperial’s exploration manager

William K. Reilly, a former administrator of the Environmental Protection Agency and co-chair of President Obama’s national oil spill commission, concluded that there appeared to be a "sink to completion" on the Macondo well. "There was not a culture of safety on that rig." Peacock, who has been carefully absorbing the lessons from Macondo, concludes that "there is considerable evidence, based on reviews and analysis by a wide range of government, academic and industry observers, that if standard industry safety practices had been followed, the Macondo incident would never have happened."

The unrelenting focus of both operators and regulators in a challenging deepwater environment such as the Beatont Sea must be incident prevention, says Peacock. "We believe very strongly that the best way to deal with an offshore blowout is to make sure it never happens in the first place. That requires an intense focus on risk management and operating safety. Wells must be designed for the full range of anticipated risks. The drilling equipment must have the required redundancy - or backup controls and capabilities - as well as being properly inspected and maintained. Personnel at all levels must be trained, with tests and drills conducted regularly. And established procedures must be followed to the letter, with any changes rigorously vetted and managed."

As Scott points out, Imperial, more than most other companies, understands the challenges of operating in Arctic conditions. "Since the 1960s we have drilled 107 exploration wells in the Mackenzie Delta and Beaufort Sea - far more than any other company. All of those wells have been drilled safely and without an environmental incident."

Thirty-one of those wells have been drilled offshore, in the shallow waters of the Beaufort Sea, where nature poses some special challenges. Ice covers the shallow waters for many months of the year, building to several metres in thickness and forming pressure ridges with keels as deep as 30 metres, which scour the seabed. This pack ice is highly mobile, able to travel hundreds of kilometres in a day and develop intense pressure on anything in its path. How did Imperial overcome these challenges in the late 1960s to drill in such an environment? Taking a page from nature's book, Imperial's research group in Calgary came up with the idea of creating islands where the central drilling area was protected from ice and waves by gently sloping beaches. For deeper wells, the company developed the world's first submersible and rotatable drilling rigs, 110 metres in diameter and weighing 8,000 tonnes, which could be towed to a drilling location, sunk onto a base of sand and filled with dredged material to provide a secure drilling platform. Over the course of several years, Imperial constructed 23 of these islands, each costing between $50 million and $60 million.

In September 2011, as part of its Arctic drilling review, the NERB embarked on a five-month roundtable in Iqaluit aimed at answering the question: "What do other Canadians want to see in future applications for Arctic offshore drilling?" Peacock, along with other Imperial employees, attended the roundtable to lend his expertise to participants, make a presentation and answer questions. In his presentation, Peacock supported the advancement by the NERB of a new geological-based regulation:

"Goal based regulation places full accountability on the operator to achieve safety objectives, based on analysis of the most recent evidence and requiring the regulator to prescribe a specific approach or technology, goal-based regulation allows and encourages operators to use the best available tool to solve the problem and go beyond the mandate."

For organizations like Imperial, with strong environmental performance, this approach also provides opportunities to quickly adopt demonstrated best practices from around the globe.

In his interview with The Review, Scott says that Imperial has a "long-standing commitment to developing and implementing the best available technologies and environmental protection."

"Imperial's safety and environmental performance is consistently among the best in the Canadian oil and gas industry," says Peacock. "During 2010 and the year before, Imperial's global incident and Brownfield accident results, with the notable exception of the Beaufort Sea, showed the company's commitment and ability to avoid incidents, and has resulted in no lost-time injuries. We have also achieved no lost-time incidents during four years of operations related to our Beaufort exploration effort, as well as no spills or regulatory exceedances."

Despite Imperial's lengthy history of operation and exploration in the North, as well as its demonstrated safety and environmental performance, expectations are high. In September 2011, the NERB roundtable expressed concern about future drilling. Dennis Smith, president of the Inuit Circumpolar Council (Canada), an international organization representing Inuit across many countries around the Arctic Circle, pointed out that virtually all Inuit communities in Canada and other parts of the world are located on a coast. "Our culture and our identity are a part of the sustainability of the marine ecosystem," said Smith. "Inuit do not see themselves apart from it, we see ourselves as a part of the ecosystem. Anything that's going to affect the ecosystem is going to affect who we are as a people as well."

While allowing that "the Inuit welcome the opportunity to work in full partnership with resource developers," Smith also concluded that "we have the one opportunity to make this right, to supply the highest and most stringent standards for any resource exploration so that we can conduct that activity and demonstrate to the world that we are capable of doing it. This is in close line with us getting to make it as perfect as possible."

Imperial's Glenn Scott agrees that any future activity must be undertaken with the utmost care to protect an ecosystem that is at the same time fragile and fragile. He also cites efforts by the industry to improve the way we operate. "We have found a way to do the work that we do in the deepwater. We're drilling deeper than we've ever drilled before. We keep improving the way we do the job. It is in close line with getting to make it as perfect as possible."

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"It is our intent to have equipment and procedures for responding to a spill or for capsing a blowout during the same drilling season," says Scott. "Imperial has the financial capacity to compensate people in the event of a major environmental incident. But the ultimate protection for the people of this region, whose lives are so closely tied to the sea, is our commitment that if we don't genuinely believe that we can drill safely and with full environmental safeguards on our Beaufort licences or anywhere else, we will not drill. It's as simple as that."
Many Canadians enjoy having a home to call their own. But for Canada’s First Nations communities, owning a home on a reserve can be a challenge. However, thanks to students from the University of Calgary, that may no longer be the case.

Over the last two years, a team of 100 U of C students designed and built a solar-powered, energy-efficient home for southern Alberta’s First Nations communities. One of those students was Chris Fry, who works in Imperial Oil’s Aboriginal relations group. Fry co-chaired the Native Cultural Advisory Council, a group of community and academic supporters who provided cultural input on the design of the home, protocols and communication.

"Not only does the house use the latest technologies to improve energy efficiency, but its features and form respond to cultural values and traditional wisdom," says Fry. Called TRTL (pronounced "turtle"), short for Technological Residence, Traditional Living, the structure features an east-facing entrance to pay homage to the sunrise, a low, rounded profile for passive solar energy, and west-facing windows that allow natural light and passive heat gain during the winter. It is also known as Spi’te, which means "turtle" in Blackfoot.
"Members of my own family and my fiancée’s live on-reserve so we know the difficulties that they encounter in terms of home ownership and poor living conditions."

– Chris Fry, Imperial’s Aboriginal relations advisor

The innovative, energy-efficient house was developed as Canada’s entry in the 2011 Solar Decathlon, an international competition to promote clean energy homes. Hosted by the U.S. Department of Energy’s National Renewable Energy Laboratory, the competition took place in Washington, D.C., this past September. Entries were judged on 10 criteria, including architecture, engineering, affordability and market appeal. TRTL finished 10th and it was the second time the university represented Canada in the prestigious competition. The first was in 2009 when the team pitched it with another project. It has been a busy two years for Fry. Besides his full-time job, he was working on a master of science in sustainable energy development at the University of Calgary and also took part in the construction of the home. But he was committed to the project because of its personal significance. As a member of Kwélil’ Dän First Nations in Whitehorse, Yukon, Fry says he is acutely aware of on-reserve housing challenges.

"Members of my own family and my fiancée’s live on-reserve so we know the difficulties that they encounter in terms of home ownership and poor living conditions."

Fry explains that the members of the team saw their entry into the Solar Decathlon competition as an opportunity to create a structure that was both environmentally responsible and culturally relevant: "We felt there was a great need in First Nations communities for safe, durable and energy-efficient homes. Many of the competition requirements are aligned well with the needs of First Nations on-reserve housing."

Dr. Reg Crowshoe, a Pikani Blackfoot elder who acted as the cultural advisor for TRTL, agrees that housing is one of the biggest issues for First Nations. Pride of home ownership on reserves is lacking for the most part. "When we were moved from tepees onto reserves, there was never a transition," he points out. "So today, you drive through First Nations communities and you see homes in rough shape. Part of the TRTL project involves looking at an educational concept for our people to culturally interpret the value of a home and home ownership."

The ongoing relationship with the Treaty 7 First Nations of southern Alberta and the direction they have given to the project are critical, says John Kneser, a U of C master’s degree candidate in environmental design and TRTL’s Aboriginal relations manager. "From the start, this collaboration represents a very important improvement in the process of housing design. Community decision-making has often been absent in the design process since contemporary housing was introduced in Aboriginal communities."

"Many communities experience high rates of mould and fire, and short building lifespans," she says. "There is a nationwide need for as many as 80,000 new units, and 50,000 significant repairs. Bands may spend anywhere from $75,000 to $115,000 per home, which may last as little as five years."

TRTL’s building choices address both cultural preferences and reserve conditions. The house is constructed of local, sustainable materials resistant to mould and fire and brings the outdoors in with a color palette based on the four elements of earth, air, fire and water. The kitchen is the central gathering area and materials such as cork flooring and glass tile were selected for their durability and ease of maintenance.

The potential for home ownership that TRTL offers could be a real game changer for First Nations communities. "The home is not a fixed structure," says Fry. "If a house on-reserve is fixed to the ground, then it is considered to be owned by the band [or the Crown] and therefore cannot be mortgaged or owned by individuals. The TRTL house can be moved and mortgaged, so this provides an opportunity for individuals to build equity in their home."

In December 2010, Crowshoe performed a traditional blessing on the almost 1,000-square-foot home, which is also the culmination of successful partnerships between various disciplines at the university (engineering, environmental design and business) as well as with the Treaty 7 First Nations and industry sponsors such as CanWest Energy, ConocoPhillips Canada, Enbridge and Imperial Oil.

"The value of this project lies in the opportunities it affords our students for learning that is experiential in nature and within an interdisciplinary context," says Loraine Footlow, faculty advisor for TRTL and an associate professor at the University of Calgary’s faculty of environmental design. "Students are working with colleagues from different disciplines on real-life challenges that test their ingenuity and creativity."

A send-off event was held last August, when the completed house was blessed again for its journey to Washington, D.C. A traditional tepee was also on-site to demonstrate the parallels with TRTL. The solar house was then dismantled, shipped and reassembled for public display beside the National Mall in Washington’s West Potomac Park, where it was judged against 19 competing entries from around the world.

Competition aside, TRTL clearly makes an impact in green building as well as community building. "It shows that First Nations culture, both traditional and contemporary, can be integrated into the design of homes," says Fry. "Many First Nations communities face challenges getting access to efficient energy sources, and in some instances, solar power may be a viable solution to address this."

The hope is that TRTL will act as a model for future initiatives, highlighting the importance not just of consultation but of meaningful partnership with Aboriginal peoples," says Kneser. "Their support is integral to achieving sustainable housing, planning and development."

Crowshoe is of the same mind. "In First Nations culture, we believe the creator is represented in the sun. The solar home incorporates our belief system. The future will see more of this type of independent solar home. Right now, housing is inadequate for First Nations across Canada. This project is shedding light on something we can start looking at solutions together."

"Whether the issues are mounding, fire, unsafe water or lack of access to reliable energy sources," adds Fry, referring to the reserves he has visited, "they all affect quality of life for families. I think that when quality of life is impacted, the happiness and cohesiveness of families are also affected."

With TRTL laying the groundwork for a new standard of reserve housing, it may only be a matter of time before such homes become the norm for reserves across the country. ■
JOINING FORCES
TO REDUCE OIL SANDS TAILINGS PONDS

Seven oil sands companies formed a research coalition in an industry first – an agreement to share proprietary technology aimed at improving the environmental footprint of oil sands mining.

By Russell Felton

In late 2010, after a series of meetings that had begun earlier in the year, representatives of seven oil companies strike an agreement unique for their industry not only in Canada but the world.

All seven companies — Canadian Natural Resources Limited, Imperial Oil, Shell Canada, Suncor Energy, Syncrude Canada Ltd., Teck Resources and Torel ECPCanada — are, or will be, engaged in mining the vast reserves of crude oil that are deposited as tarlike bitumens in the oil sands of western Canada. Their agreement established a new entity known as the Oil Sands Tailings Consortium, or CSTC. Its purpose is to allow the seven corporate partners to share research, knowledge and technologies related to tailings — the mixture of water, sand, clay and other residual material that remains after the bitumen has been extracted via "washing" with hot water.

The partner companies have agreed to remove monetary and intellectual property barriers regarding tailings research and development, extending free-use rights to all partners. This is unprecedented in the industry, says Ron Myers, manager of facilities and environmental research at Imperial Oil's research centre in Calgary and chair of the company's representatives in the consortium. "Oil companies compete fiercely for such things as technical and management expertise, labour, equipment, materials and so on, but especially when it comes to developing, commercializing and licensing new technologies," Myers says. "The agreement to share tailings research results and technologies indicates how serious all the companies are about collaborating and developing better, more efficient solutions faster. By sharing what we're doing, what works and what doesn't, we can avoid duplication and wasted effort while gaining the leverage that comes from joining forces."

While all mining operations produce tailings, two factors make them especially problematic in oil sands mining.

First, when the tailings are transferred to a settling basin, or "tailings pond," the sand and larger particle clays settle quickly, allowing most of the water — 85 to 95 percent on average — to be recycled back through the extraction plant for reuse. However, a middle layer of water cannot be recycled because it contains tiny suspended particles of clay known as fine tailings. Over a period of many years, these fluid fine tailings settle to form a thick sludge (with a solids content of 10 to 20 percent). And this is the crux of the problem. Before tailings can be reclaimed, they must first be dewatered and dried. Hence, tailings ponds tend to appear as permanent "lakes" made from industrial waste water and mud.

"In effect," Myers says, "tailings ponds are holding vessels, where produced water is allowed to clarify before recycling, which is integral to the extraction process. Without recycling, we would have to use huge amounts of fresh water, which is clearly not sustainable. These ponds are a necessary feature for operating mining.

"The aim has always been to re-establish the land, using the sand and tailings material," he adds. "One example of a mine-affected area that has been reclaimed is Syncrude's Croteau Way Hill, which has been certified by the government of Alberta as environmentally and ecologically sound. As well, Suncor has successfully reclaimed the surface of a former tailings pond. The challenge is to accelerate the settling and dewatering process and increase the pace of reclamation."

The second critical factor is that the tailings also contain a small amount of residual bitumen, along with organic compounds that are naturally present in the ore that is mined, and these materials can rise and float on the surface of the pond. They will eventually biodegrade, but until then, they can pose risks to wildlife.

In 2009, the Alberta Energy Resources Conservation Board (ERCB) issued Directive 74, requiring companies to increase the rate of fine tailings capture and to speed up the process of reclaiming tailings ponds.

Meeting the requirements of Directive 74 will be difficult, not least because of the sheer magnitude of tailings in the region. At present there are more than a dozen tailings ponds in the Athabasca region, covering more than 100 square kilometres. Additional tailings ponds are expected as relatively young projects expand, new projects come on stream (such as Imperial's major development project at Kearl, some 70 kilometres northwest of Fort McMurray), and planned future projects get under way.

In total, approximately $120 billion is expected to be invested in future oil sands development. Alan Fair, executive director of the CSTC and former manager of research and development with Syncrude Canada, says these investments could be at risk if the tailings issue is not resolved expeditiously. "At stake is what is often referred to as our social license to operate," he says. "Without public support, approval for future development projects could be next to impossible to obtain. Because of the value of the oil sands to Canada and the world's continuing need for hydrogen energy, curtailing development of this 170 billion barrel resource — the third largest in the world — would be a mistake, in my view."

The seven CSTC partner companies will spend about $90 million in 2011 on tailings
"The agreement to share tailings research results and technologies indicates how seriously all the companies are about collaborating and developing better, more efficient solutions faster."

— Ron Myers

Fair and Myers agree that finding one overarching tailings reduction or fines settling technology — a "magic bullet" — is unlikely. Rather, a variety of new or improved technologies or processes will likely come to the fore as a result of consortium partners pursuing solutions. For Imperial's Kent oil sands project, thicker technology is being evaluated to speed up the separation of fine tailings from water before entering a tailings pond, which will allow greater recycling of water, reduce freshwater demand and allow earlier reclamation than has been achieved in the past. Also, drilling an exciting technology that Imperial is developing with Syncrude for its tailings management research centre that will enable the disposal of froth water and reduce water consumption in the extraction process by more than 90 percent. This process is a potentially game-changing advancement that could eliminate the need for tailings ponds altogether, producing "dry" tailings that would enable more progressive reclamation.

Other OSTC member companies are also actively meeting the tailings challenge. For example, Syncrude has spent $1 billion over three years on the commercialization of its TRO Tailing Management Process, which it expects will reduce the volume and number of its tailings ponds from eight to one. Individual companies and the industry continue to support extensive oil sands research at Canadian universities. Programs conducted by the not-for-profit Canadian Oil Sands Network for Research and Development (CONRAD) and the Centre for Oil Sands Innovation (COSI) at the University of Alberta are just two examples. In fact, the OSTC was established under the auspices of CONRAD, of which Imperial's Ron Myers is currently co-chair.

As for potential technological solutions, solutions aimed at their own particular operations and unique site challenges.

"Factors such as terrain, topography, ore quality and local soil composition all make for different challenges and potentially different solutions," says Fair. "Also, the tailings issues faced by Syncrude and Suncor after four decades of operation are very different from those faced by the first generation of tailings management operations at places such as Canadian Natural Resources' Horizon project or Imperial's pending Kent operation."

Certainly, the individual partners are pursuing different avenues of research and development. For example, in addition to enhanced gravity technology, researchers at Syncrude are investigating what is called water-cupping technology, which may help tailings ponds return to an acceptable environmental state more quickly. At Syncrude, tailings are working on using thickener foams to thicken fines settling and recovering water from extraction waste before it is sent to the collection area. Canadian Natural Resources is injecting carbon dioxide (CO₂) into tailings, which makes solids settle more quickly, and is employing a fines dewatering process.

In addition to its own and academic research, the OSTC is co-sponsoring a joint industry-government Tailing Road Map Study aimed at identifying all current technologies related to tailings management. So far, some 450 possibilities have been reviewed and narrowed down to about 100 technologies with at least some potential," says Alan Fair. "We think that goes a long way beyond lip service."

The OSTC is also trying to ensure that the public is made aware of the industry's efforts, which is an area that Fair agrees needs attention. "The industry has explained how complex the issues are and how we are tackling them," he says. "As a result, we may have ceded an advantage to our critics."

In July 2011, OSTC members including Fair, Myers and John Broadhurst, OSTC chairman and vice-president of oil sands development for Shell Canada, took 13 western Canadian mayors on a tour of several tailings facilities in the Fort McMurray area. Representing newspapers, magazines and radio and television stations, the journalists reviewed Suncor's TRO process, Shell's tailings thickening plant and other facilities, Syncrude's water-cupping ponds and large-scale water-nutrient reclamation site, and Canadian Natural Resources' CO₂ injection and Mature Tailing Facilities site.

The resulting media coverage was fair and balanced, and the journalists expressed appreciation for the tour. Shawn Polier, the North American editor of the London-based magazine Petroleum Economist, says he gained a "better understanding of the industry's efforts and the progress being made: "My sense was that tailings are being actively managed and gradually brought under control, and that the tailings are not the government's and the industry's only problem. There will be a need for patience, but I came away optimist about the long-term prospects."

Polier also praised what he called the openness, transparency and "absence of fudging" on the part of the industry representatives. Similarly, Claudio Carranco, western business services manager for the National Paper, said it was clear that senior industry executives devoted two days to the tour and responded "without filters" to questions from the media.

However, Carranco also felt that, in response to questions and in prepared material, the industry representatives provided too much detail and less information at the expense of clarity. "I think they need to simplify the message for the benefit of the media and the public, with the minimum of technical jargon," he said.

Alan Fair concurs. "I think as an industry and as individual companies, we need to state our message to the public as simply and clearly as possible. Simply and clearly, the message should be that we know tailings are a problem, we know it's serious, and we're doing everything we can to solve it. The formation of the OSTC bears testament to what the industry will achieve through this collaborative effort, and we will provide further proof."

In a military wing of a Toronto convalescent hospital, members of the "Imperial Good Cheer Club" set a tradition of volunteer service by Imperial employees that goes on this day.

It was 1917, and the group of about 50 employees held fundraisers and volunteered on Saturday afternoons — a significant donation of time in an era before the standard five-day work week. In its first year of operation, the club raised more than $170, to enough to convince the hospital to rename the ward the "Imperial Good Cheer Ward."

Even then, their work didn't go unrecognized by the company. In a 1918 issue of The Imperial Oil Review, it was reported that members of the club were "entitled to a great deal of credit. Although the Imperial Good Cheer Club prefers to go on doing this good work without publicity or ostentation, we feel that it is just and fair that we should make some comment on it."

Back then and today, people have chosen to volunteer for many reasons, to all in teaching their lives to meet and help others, or to bring sport or cultural activities to a community. However, those who volunteer (for whatever reason) benefit from their altruism by enhancing their own lives. The act of volunteering is considered an indicator of well-being. It is said to strengthen an individual's sense of belonging, build social networks and increase one's trust in others. The sense of belonging it inspires is positively associated with better self-reported physical and mental health.

According to the International survey on volunteering, 45 percent of Canadians ages 15 and over volunteered some time with charitable and non-profit organizations. The house people committed to volunteer were equivalent to more than one million full-time jobs — almost as many full-time jobs as there are in Edmonton and Calgary combined.

Over the past year, the United Nations marked the 10-year anniversary of the International Year of Volunteers, which raises awareness of the importance of volunteering. Supporting volunteering makes good sense as a proactive way to help keep peace. It is an extension of being a good neighbour, and as more people become involved in helping others, the quality of life in a community improves.

Volunteering is also a fundamental act of citizenship and may be the reason many Canadian companies are increasingly becoming involved in their local communities by supporting employees' volunteer efforts. By combining community work with employee development, companies help relieve social problems, strengthen local economies and build goodwill, which in turn help them to achieve their business goals.

That sense of pride for employees who give back appears throughout Imperial's history. Perhaps the most remarkable coming together of company pride and employee altruism happened in 1950, the beginning of the Great Depression. To mark Imperial's 50th anniversary, employees contributed $37,000 to establish a fund to help finance philanthropic initiatives outside the company. For 22 years, interest from the fund was used to support various worthwhile causes selected by employees. In 1952, the fund was liquidated and shared by charities across Canada.

The company's support for ad hoc volunteering gave way to a more formal program with the start of Imperial's relationship with the United Way in 1985. More than a decade later, Imperial's United Way campaign helped develop and launch the organization's Day of Caring program, an initiative that encourages employees to volunteer one of their local United Way charities. The program has since established itself nationally with most Canadian corporations taking part. (In 2011, more than 30 projects and 12 agencies were supported by more than 4,000 volunteer hours from Imperial employees.)

It is no wonder that in 1990 Imperial chose to establish its Volunteer Involvement Program (VIP) as a means to encourage, recognize and assist employees and retirees who serve the community through volunteer work. The VIP helps local charities and non-profits by providing financial grants for items and activities that the organizations might otherwise not have funds for. The cash grants are offered to organizations with which Imperial employees, retirees and their spouses are involved. Last year 365 employees, retirees and spouses logged more than 62,000 hours of volunteer time, and about $280,000 in grants was issued to more than 100 organizations.

The program is just one example of how Imperial shows its respect and support of these volunteer efforts.

Another is in this issue of The Review. We are proud to profile some of the volunteers who have worked to make their community a better place to live. Carrying on the tradition of supporting Canadian communities and helping them to meet important social needs has not only established Imperial as a good neighbour but has also played a significant role in shaping and enriching Canadian life.

— Catherine Tondiak

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