



2018 REPORT TO STAKEHOLDERS & COMMUNITIES



**PLAINS
MIDSTREAM**
C A N A D A

Year at a Glance



197

NEW HIRES

1,440

TOTAL
EMPLOYEES

60

STUDENTS
AND INTERNS

\$24

MILLION
INCOME TAX

\$473

MILLION
CONTRACTOR
SPEND

\$3.9

MILLION
SALES TAX



1,850

VENDORS

\$80

MILLION IN
MAINTENANCE



36

SENIOR
MANAGEMENT
SITE VISITS

\$23

MILLION
PROPERTY TAXES

3,766

HAZARDS
IDENTIFIED AND
REPORTED

\$11.1

MILLION
INVESTED IN NEW
TECHNOLOGIES
AND RESEARCH

0.38

TOTAL RECORDABLE
INJURY FREQUENCY
(EMPLOYEES)

22

INVESTMENTS
IN INDIGENOUS
COMMUNITIES



All denominations are in CAD

About This Report

The Plains Midstream Canada (PMC) Report to Stakeholders and Communities, produced since 2014, shares information on our initiatives in a transparent and credible manner. The 2018 report encompasses our commitments and accomplishments in the areas of health and safety, emergency management, environment, asset integrity, community investment, social responsibility and innovation.

This year, our approach is aligned with our operational goals. Everything we do as a company aligns with at least one of the goals:

Protect people, the environment and our assets	8
Maintain socially responsible operations	20
Achieve consistency in execution	28
Apply discipline in planning and managing our business	36
Develop our employee and leader effectiveness	44

In developing this report, we consider our stakeholders and seek to understand what matters most through our interactions and engagement programs. Our stakeholders include community investment partners, community residents, landowners near our pipelines and facilities, customers, joint venture partners, contractors, industry associations, Indigenous groups, emergency responders, employees, government, media and regulators.

We aspire to share information clearly in order to create enhanced awareness of our company and the industry, and how what we do impacts every one of us.

PMC's 2018 Report to Stakeholders and Communities references the Global Reporting Initiative Standards to align with best practice sustainability reporting. To demonstrate transparency and comparability, we have provided key performance indicators in our "Year at a Glance" on the facing page.

We invite you to share your comments about our company, how you think we can improve our performance and what topics are important to you in future reports.

Please send your comments to: stakeholder.relations@plainsmidstream.com

MESSAGE FROM OUR PRESIDENT

Plains Midstream Canada (PMC) has been on a journey of continuous improvement, progressing in both how we conduct business and how we share information with the people vested in what we do. Our fifth annual Report to Stakeholders and Communities is an important part of that journey, as it signifies our consistent commitment to transparency about our economic, environmental, safety and social performance.

Energy and, more specifically, hydrocarbon resources, benefit our lives in many ways, possibly more than any of us realize. The safe, efficient

and environmentally responsible development of hydrocarbons will continue to play a key role in our planet's energy supply for generations – part of an evolving portfolio as we continue to develop new ways of harnessing, storing and using energy. At PMC, we are focused on being involved in this ongoing resource development and strive for continuous improvement in delivering our piece of the energy value chain.

As you read this report, you will see how everything related to our assets in the communities where we live and work is aligned with five overarching



“Growth, innovation and integration were key themes for our company in 2018, and I invite you to read about our journey of continuous improvement in this year’s report.”

operational goals. These goals guide how we do business. The journey to align programs and processes with these five goals has created new opportunities among teams at PMC, resulting in enhanced integration, efficiencies and innovation as we collaborate on shared objectives through a common platform.

In the report, we show you how various departments came together to close out an audit from the Alberta Energy Regulator and how we maximized performance and safety during major maintenance projects at our facilities. You will be introduced to operational teams throughout Canada and the U.S., as well as some of the unique and collaborative work underway in their regions. You will see examples of how safety of the public and our workers, as well as protection of the environment, are pivotal to everything we do and top priorities in any project. All these initiatives represent how we have matured as a company and how we continue to seek out best practices to be a safe operator.

Working closer together as a team is only a glimpse of the integration we achieved in 2018. What really stands out for me is the feedback we have received from our valued stakeholders, including regulators, municipalities, first responders and landowners. It is encouraging to hear regulators say how much we have improved our processes. It is an honour to receive unsolicited kudos from first responders for the way we conduct our emergency exercises and prepare our

employees for unplanned events. It is impactful to learn how and where we have made an imprint through our strategic community investments and initiatives.

Our ability to build these relationships is a direct result of the commitment and dedication of our growing team. I am proud to share that in 2018 we expanded our CARE Program, PMC's employee charitable donation matching program, by implementing a volunteer component. This provides additional opportunities for employees to be active members in communities and participate in charitable work that is meaningful to them. Our team stepped up in a big way, with more than enough volunteers for every initiative, while also organizing their own fundraisers for charitable causes.

I am pleased to share this report and the stories of innovation and hard work that have led to strong operating and safety performance this year. It represents the commitment our team has made to work collaboratively, transparently and proactively to provide a valuable service and economic benefits to the areas where we operate. I hope that by reading this report, you will gain a better understanding of our role in the crude oil and natural gas liquids industry, but more importantly, the role our team plays in safely delivering exceptional results.

JASON BALASCH
PRESIDENT, PLAINS MIDSTREAM CANADA



Our executive team

At PMC, our mission is to connect our network of people and assets to safely deliver exceptional results.

PMC specializes in transportation, storage, processing and marketing solutions for crude oil and natural gas liquids (NGL). We link petroleum producers with refiners, petrochemical producers and various fuel customers via pipeline, truck and rail transportation. We operate strategically located facilities for crude oil and NGL storage, separate NGL from natural gas and fractionate NGL into pure liquid petroleum gas (LPG) products, including propane and butane. With our expertise in marketing, logistics and our asset base, we are positioned to provide our customers with flexible, value-added services.

PMC is headquartered in Calgary, Alberta, and has more than 1,400 employees in Canada and the United States (U.S.). PMC is an indirect subsidiary of Plains All American Pipeline, L.P. which is a publicly-traded master limited partnership headquartered in Houston, Texas. Its common units are traded on the New York Stock Exchange under the symbol "PAA."

PMC VALUE CHAIN



PRODUCERS



Transportation

4,500

KILOMETRES
CRUDE OIL PIPELINES

2,600

KILOMETRES
NGL PIPELINES

830

TRUCK TRAILERS

7,000

RAILCARS



Processing

4

GAS STRADDLE PLANTS
EXTRACT ADDITIONAL
NGL FROM NATURAL
GAS PIPELINES

8

FRACTIONATION PLANTS
SEPARATE NGL INTO
PRODUCTS SUCH AS
ETHANE, PROPANE,
BUTANE AND PENTANES

7.1

**BILLION CUBIC FEET
PER DAY GAS
PROCESSING CAPACITY**

246

**THOUSAND BARRELS
PER DAY GAS PROCESSING
CAPACITY**



Storage

42

**STORAGE AND
TRANSPORTATION
TERMINALS AND FACILITIES**

5.2

**MILLION
BARRELS CRUDE
OIL STORAGE**

31

**MILLION BARRELS
NGL STORAGE**



BULLET



SPHERE



TANK



CAVERN

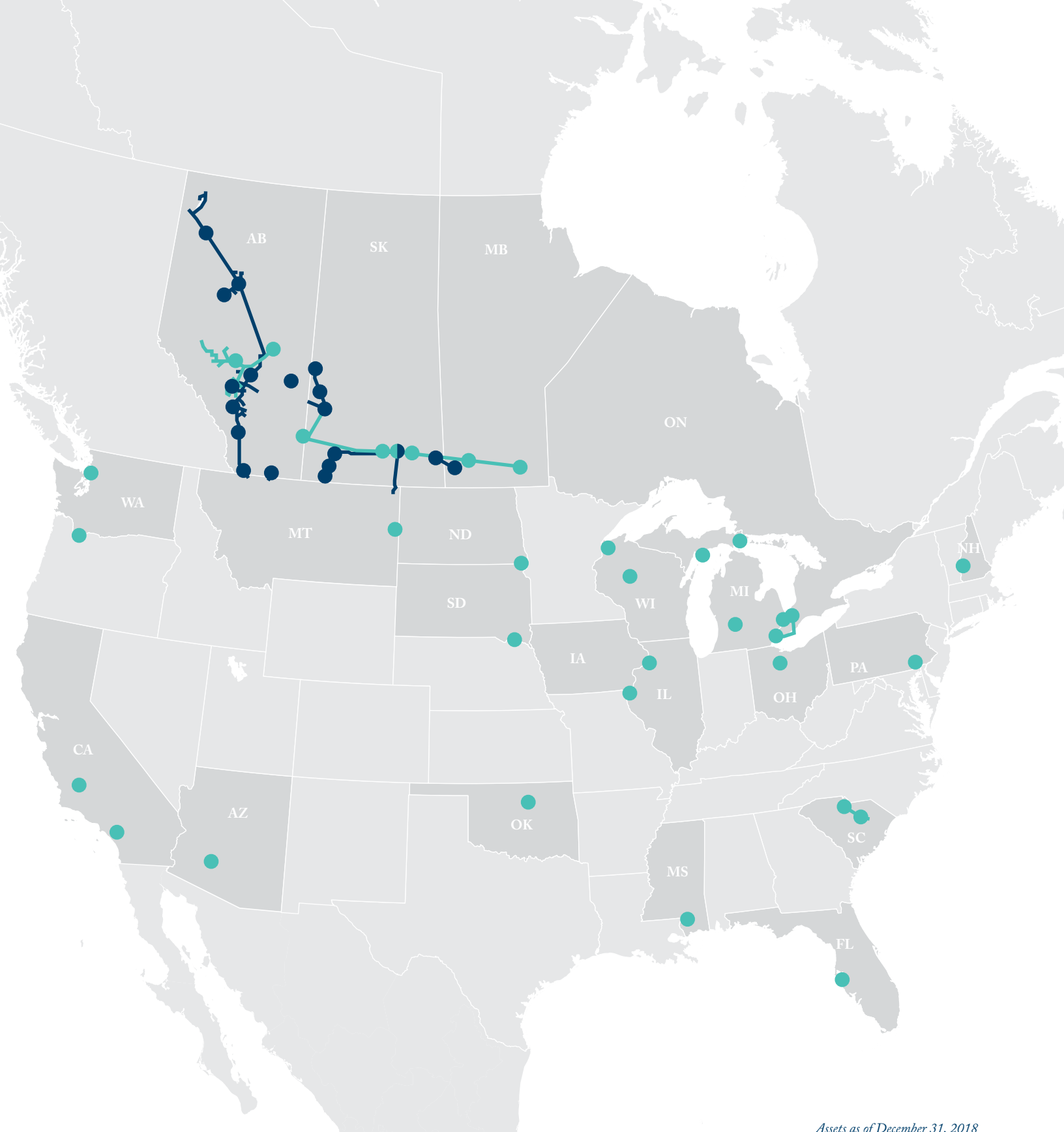
PMC uses bullets, spheres, tanks and underground caverns to temporarily store crude oil, condensate and NGL products. The storage facilities are regularly inspected to support the safety and integrity of our assets.



END USERS

Consumers
Gas stations
Residential and retail distributors
Chemical refineries

Numbers as of December 31, 2018



Assets as of December 31, 2018

- | | |
|-----------------------|----------------------------------|
| — CRUDE OIL PIPELINES | ● CRUDE OIL FACILITIES/TERMINALS |
| — NGL PIPELINES | ● NGL FACILITIES |



Why What We Do Matters

We connect our network of people and assets to safely deliver exceptional results. But what does this really mean? Consider this: according to the Canadian Energy Pipeline Association, Canadians rely on natural gas and products made from crude oil to meet more than two-thirds of their energy needs every day. The role of midstream companies like PMC is to take products from the upstream sector (producers) and get them to the downstream processing facilities and refineries so they can be turned into consumer products that benefit everyone.

When you think about the importance of the oil and natural gas industry, ask yourself, what products could I live without? Gasoline might be the first thing that comes to mind, but it is estimated that more than 6,000 products are made from oil and gas, such as:

- Clothing (rubber boots, yoga pants, dresses, jeans).
- Electronics (cameras, televisions, laptops, cell phones).
- Medical supplies (stethoscopes, heart valves, bandages).
- Household products (utensils, trash cans, cleaning pads, plastic wrap).
- Hygiene products (toothbrushes, soap, shampoo, makeup).
- Sports equipment (golf bags, kayaks, skates, sleeping bags).
- Yard supplies (paint, patio furniture, hoses, lawn mowers).

Many of these petroleum-based products are essential to our daily lives and would be difficult to replace through other means. PMC plays an important role as our transportation, storage, processing and marketing solutions are a vital part of the system that allows everyone to reap the benefits of these products.

PMC also brings economic value to the communities where we live and work by:

- Delivering vital energy resources to meet the needs of communities.
- Generating tax revenues for various levels of government.
- Working with qualified suppliers.
- Providing fair and competitive compensation to our employees.
- Supporting Indigenous communities through business and employment opportunities.
- Donating to charitable organizations.
- Providing funding to community emergency responders.

A large-scale industrial facility, possibly a refinery or chemical plant, with complex piping, storage tanks, and structural steel frameworks. Three workers in blue uniforms and hard hats are in the foreground, looking towards the facility. The sky is blue with some clouds.

1

PROTECT PEOPLE, THE ENVIRONMENT AND OUR ASSETS

*A safety briefing at
one of our facilities*



HEALTH AND SAFETY

PMC conducts operations in a manner designed to maintain the safety and security of the public, employees and contractors; the protection and stewardship of the environment; and the integrity of all our assets. Our Health and Safety Management Program is a reflection of that commitment and enhances our processes through a variety of initiatives. These include Life Rules, Stop Work Authority, Green Hand Program, Management Walk-Around, Plains Incident Notification System, Visitor Visibility Program, Incident Reporting and Investigation Program, and Corrective and Preventative Action Management Program. [LEARN MORE](#)

PMC Life Rules

In 2018, we began to update our Life Rules which will be rolled out in 2019 across PMC and Plains All American. Our Life Rules are a set of values and expectations outlining the key rules every employee and contractor must follow. Awareness and use of these rules enhance our corporate safety culture.



**CONFINED
SPACE ENTRY**



**ENERGY
ISOLATION**



DRIVING



**MECHANICAL
LIFTING**



**WORK
AUTHORIZATION**



**WORKING
AT HEIGHTS**



**SAFETY
CONTROLS AND
OPERATING LIMITS**



**GROUND
DISTURBANCE**



HOT WORK



**HAZARD
ASSESSMENT**



FIT FOR DUTY



**PROCEDURES
AND POLICIES**



Our Emergency Management exercises involve external participants to illustrate realism



EMERGENCY MANAGEMENT

PMC's Emergency Management Program (EMP) identifies hazards and risks so personnel can respond quickly and safely to an unplanned event or incident.

The EMP is built on four integrated pillars:

Prevention and Mitigation: Identify and manage hazards to avoid incidents or minimize their impacts.

Preparedness: Train personnel and other responders on the tools necessary to perform their responsibilities.

Response: Help employees respond safely and effectively to an emergency.

Recovery: Once an incident is over, assist with the recovery of the environment, communities and operations.

[LEARN MORE](#)

Realism in Emergency Preparedness

Being prepared for an emergency involves exercising a wide range of scenarios throughout the year and ensuring that personnel are ready to respond at a moment's notice. What is particularly helpful in preparedness is the aspect of realism in our exercises.

Exercises that are as real as possible benefit all participants, including employees and other stakeholders such as regulators, first responders, local authorities and Indigenous communities.

Some of our noteworthy simulated exercises in 2018 included a suspicious package at a facility, a crude oil release, a propane release at a gas plant and an ethane gas leak.

The participation of emergency response professionals in these exercises adds a dimension of realism to the experience. The practice is valuable for all parties, which was acknowledged by Windsor Police Service after they participated in our security incident exercise.

PMC employees and law enforcement officials practice emergency preparedness

These exercises are critical to the success of our organization in response to any type of low-frequency, high-risk incidents we are faced with.”

**JASON CROWLEY,
SUPERINTENDENT – INVESTIGATIONS,
WINDSOR POLICE SERVICE**

“As the officer in charge of our Critical Incident Command Program, and with a background in emergency response and preparedness, I wanted to express gratitude for including the Windsor Police Service in your exercise,” said Jason Crowley, Superintendent – Investigations, Windsor Police Service. “The exercise was extremely well run and organized, which resulted in a very realistic response in my opinion. I feel that everyone who participated in the exercise took a great deal away from it, thereby fulfilling the goal of the exercise.”

According to Shoki Kanji, PMC’s Manager of Emergency Management and Security, we take tremendous pride in that type of feedback, as it demonstrates we accomplished our goals.

“From a preparedness and training perspective, we ensure the scenarios that are developed for our exercises are realistic,” said Kanji. “This helps the first responders, law enforcement, local authorities, regulators and the company incident commander understand the consequences while setting realistic and achievable objectives, strategies and tactics. This results in all participants walking away with a solid understanding of PMC’s level of preparedness and response capability for a worst case scenario.”

Upon completion of our diverse scenarios, our team assesses the effectiveness of training and response, and the decisions that were made during an exercise, including how they were made and why.

“We then build that information into our training and emergency preparedness and response process to continually improve our training program,” said Kanji.

Learnings are also incorporated into our Emergency Response Plans (ERP), which include critical information like evacuation plans, response procedures, roles and responsibilities, coordination procedures with emergency services and communication processes. We use our ERP to assist with training on a regular basis, through regulated full-scale and table-top exercises. In 2018, we conducted four full-scale exercises and 26 table-top exercises.

DID YOU KNOW?

An exercise is considered full-scale when personnel and/or equipment are deployed and external agencies participate in the response.

Employees test emergency preparedness through regulated table-top and full-scale exercises



238

**EMPLOYEES
PARTICIPATED IN
EMERGENCY MANAGEMENT
TRAINING EXERCISES**

2018 Exercises

SARNIA ETHANE GAS LEAK EXERCISE

In March, PMC conducted a mock full-scale exercise where a third-party line strike simulated an ethane gas leak at our facility in Sarnia, Ontario. A major component of this involved public protection training and isolating the Emergency Planning Zone. Personnel from Ontario and St. Clair, Michigan, were involved when the Incident Command System (ICS) was launched as part of the exercise. Sarnia Fire Rescue also participated in the exercise, providing a great opportunity to strengthen our working relationship with first responders in the area.

CHAIN LAKES CRUDE OIL RELEASE EXERCISE

One of the unique table-top exercises that took place in February involved a crude oil release visible at a frozen body of water in Chain Lakes Provincial

Park in Alberta. In the mock exercise, a fishing derby was scheduled for the weekend, and the campground at the park adjacent to the lake was full. The simulation provided the opportunity to practice Emergency Operations Centre activation, the ICS, Incident Support Team roles and an executive media conference.

SASKATCHEWAN PROPANE RELEASE EXERCISE

In September, PMC tested its ability to respond to a hypothetical scenario where a farm tractor came into contact and damaged an above-ground block valve, causing propane to release from a pipeline. This exercise included role-playing, setting up roadblocks and evacuating nearby stakeholders. First responders from the area, as well as the Saskatchewan Ministry of Energy and Resources, participated in the full-scale exercise that allowed us to test our Empress-Kerrobert Emergency Response Plan.

WINDSOR SECURITY EXERCISE

Two suspicious devices were placed, intentionally inside our Windsor, Ontario, facility, forming the basis for a full-scale exercise to practice security incident training. The Windsor Police Explosive Disposal Unit joined PMC and other participants, including the National Energy Board, in unified command to assess the situation and jointly determine how to respond to the incident. Working through the ICS, the team simulated evacuations and made decisions on how to remove the devices.

TOWN OF LASALLE ETHANE LEAK EXERCISE

A newly developed area of LaSalle, Ontario, was the scene of a mock incident, where a vehicle was actually flipped over to simulate realism for emergency responders. In the scenario, a truck had rolled into a PMC block valve, causing a release of ethane gas. Pyrotechnics were used to simulate the



From left to right: Glenn McGinn, PMC Area Operations Team Lead; Dave Sutton, LaSalle Fire Chief; Ian Forster, PMC Community Relations Advisor

134

**PMC RESPONDERS
TRAINED IN:**

ICS 200/300

ICS 240/39

**SPILL RESPONSE
BOAT HANDLING**

release as fire, police and emergency medical services responded to the scene. Drama students from the local high school participated as evacuees, with representatives from the Red Cross practicing their responsiveness. A total of 55 participants took part in the exercise, including representatives from PMC and the provincial government.

JOINT EMERGENCY MANAGEMENT EXERCISE

In August, PMC participated in an industry-wide emergency preparedness exercise in Ottawa along with other members of the Canadian Energy Pipeline Association and regulatory authorities. The table-top exercise, which involved a severe weather incident, provided an opportunity for member companies to speak transparently with each other and practice activating a mutual aid agreement. Through the exercise, we were able to gain a thorough understanding of what equipment and resources other companies are using and what equipment and personnel are available for support across Canada.

2018 Training

PMC BOAT HANDLING AND SPILL RESPONSE TRAINING

One of PMC's 2018 training exercises was a Boat Handling and Spill Response Training recertification course on the North Saskatchewan River outside of Devon, Alberta, in July. Three PMC response boats, along with one from Western Canadian Spill Services, were deployed for PMC-certified boat operators to practice response manoeuvres and procedures. The fully equipped PMC oil spill containment and recovery response trailer was also transported to the site and included equipment such as booms, skimmers, absorbent pads and pumps. Participants demonstrated their ability to handle response boats and deploy spill containment and recovery equipment, which will aid in responding effectively.

**Taking part in the
Joint Emergency
Management
Exercise was
confidence-
inspiring in that
we are doing all
the right things
in how we deal
with incidents.”**

**IAN FORSTER, PMC COMMUNITY
RELATIONS ADVISOR**



A security training exercise in Ontario

Security Management Reduces Risk

A focus on security management helps PMC reduce the risk of threats that might impact our company, our assets or the communities where we operate. In 2018, PMC established a Security Threat Response Plan Standard that includes security threat levels (low, medium and high). PMC has developed countermeasures to support and improve security based on the threat levels.

One of the specific security concerns in the industry involves an increase in theft and vandalism occurrences. PMC is addressing this, and other security issues, by implementing new procedures and installing new equipment for Calgary personnel and our field locations. These procedures focus on the following areas:

- **Suspicious packages** found or delivered by mail, courier or in person.
- Protection from **workplace violence**.
- Prevention of **theft**.
- Assistance in a safe and measured response by personnel in the event of a **bomb threat**.
- **Terrorism** awareness, provision of insight and instruction on what may be terrorist activities.
- Awareness of roles and responsibilities in the event of an incident of **vandalism**.
- Preparation for the management of **civil disturbance** during public protests or conflict that could occur at facilities or construction projects.
- Assurance against **unauthorized entry** of persons without the appropriate approvals.
- Protection against **control system or information technology attacks** by putting security protocols in place.
- Deterrence of **suspicious activities** by adhering to crime prevention strategies.
- **Search of premise procedures** that offer preventative and deterrent benefits in response to particular threats.

Committed to Safe Transportation

Our truck transportation business plays a major role in the overall PMC value chain by safely transporting crude oil and NGL throughout Western Canada. While our trucks are on the road, we take precautions to make sure other travellers and nearby communities are safe.

We look for new ways to improve, and as part of our responsibility as a safe operator, we recently increased our field staff to help us with driver orientations and conduct random spot inspections. Our PMC trailers are hauled by independent contractors, also known as lease operators, and we work with them to reinforce safety as a top priority.

For example, the lease operator checklist for new hires acts as a proactive reminder of the safety measures drivers need to take to remain prudent and alert while on the road.

In addition, our Emergency Management and Truck Transportation teams worked to offer the internationally-recognized Incident Command System Level 200 training to trucking field staff to better prepare them in the event of an incident.

Finally, we continue to be active members of Emergency Response Assistance Canada and Alberta Motor Transport Association to contribute to the sharing of learnings and industry best practices.

365

**IN-PERSON MEETINGS
WITH TRUCK DRIVERS**

69

**TRUCKING SAFETY
MEETINGS IN
13 LOCATIONS**

140,000

**INDIVIDUAL LOADS
TO TRANSPORT
CRUDE OIL AND NGL
BY TRUCK**

Our Rail Business

PMC promotes safe industrial railway operations through a Rail Safety Management System, which emphasizes proactive risk assessment, management, inspections and employee training.

Safety is of the utmost importance, since PMC operates 26 rail and storage facilities across Canada and the U.S. In 2018, we moved almost 1.8 billion gallons of NGL and 103 million gallons of crude oil by rail. That amounts to about 62,300 railcars headed to over 300 destinations.



All truck drivers must meet stringent safety and first aid training standards



2,975

**AERIAL RIGHT-OF-WAY
PATROLS CONDUCTED**

24,395

**ONE-CALL TICKETS
RECEIVED**

1,142

**THIRD PARTY
AGREEMENTS
(CROSSINGS, PROXIMITY
AND ENCROACHMENTS)**

292

INTEGRITY DIGS

DAMAGE PREVENTION

We have a comprehensive Damage Prevention Program that includes core elements that work together to protect the public, employees, contractors, assets and the environment by proactively preventing damage to underground infrastructure. The core elements include One-Call Management, Crossings and Encroachments, Ground Disturbance, Right-of-Way Surveillance and Monitoring, Class Location and Land Use Monitoring, Unauthorized Activities and Public Awareness. Each element approaches public safety in a different way, with the common goal to increase awareness and change unsafe behaviour in and around our pipelines. [LEARN MORE](#)

A PMC pipeline marker sign in southern Alberta



Preventing Pipeline Strikes

In recent years, PMC has seen a significant decrease in pipeline strikes as a result of excavation activity near our assets.

Pipeline strikes can be caused by a number of contributing factors, such as:

- Not placing a One-Call or following subsequent instructions for working safely once the pipeline(s) have been marked.
- Not gaining permission or failing to follow instructions from buried infrastructure owners before and during ground disturbance work.
- Failing to follow the instructions of an onsite inspector during a project.

PMC's Damage Prevention team works hard to educate our stakeholders, including PMC employees and contractors, landowners and municipalities, to enhance their understanding of our program and its associated processes and procedures. These have been put in place to protect the public, our employees, contractors, underground assets and the environment from potential damage as a result of a pipeline strike.

PMC has a reporting culture that is driven by leadership. When an incident occurs, we take the opportunity to share lessons learned with applicable stakeholders and strive to further educate accountable parties in the way we operate and our expectations for working around our pipelines.



Call or Click Before You Dig

Are you planning work that will disturb the ground? Visit clickbeforeyoudig.com for the One-Call Centre information you need before working near a pipeline.

An employee marks our pipeline right-of-way



ENVIRONMENT

PMC's Environmental Protection Program outlines a framework to safeguard the environment when we plan and execute work activities. We identify environmental sensitivities during project planning and develop strategies to minimize or avoid potential impacts. Site sensitivities include the following disciplines: soil, vegetation, wildlife and habitat, water bodies, aquatic studies and historical resources (i.e., archaeology or paleontology).

PMC's commitment to the protection of the environment extends through all phases of project design and construction, and complies with all provincial and federal acts and regulations to minimize or avoid adverse environmental effects.

[LEARN MORE](#)

Embracing Energy Efficiency

PMC embraced an opportunity in 2018 to learn more about how we can reduce greenhouse gas (GHG) emissions and increase energy efficiency.

Along with many companies in Alberta, we have been subject to increasing costs through the carbon tax implemented in 2017. By working with Energy Efficiency Alberta and an environmental consultant, PMC identified opportunities for reduced carbon emissions.

We evaluated three facilities as part of the Custom Energy Solutions Program. The evaluation reports provided a number of energy efficiency measures for each facility, along with estimated expenditures and annual cost savings.

Examples of energy efficiency measures identified at PMC facilities ranged from reduced

flaring duration through enhanced monitoring capabilities, reduced compressor and pump seal leakage, and optimization of process heaters.

PMC will review the identified opportunities to determine which upgrades would be feasible and best suited for the asset locations.

In addition to reduced GHG emissions and the associated savings from lower carbon levy payments, PMC could also see benefits in the reduction of overall electricity costs annually at the plants being assessed as part of the program.

We are looking to expand the energy efficiency assessment to some of our other larger facilities to identify similar energy and cost savings as well as GHG reduction opportunities.

A PMC facility in central Alberta

Reducing Environmental Impacts

When a 150-metre section of our Rangeland pipeline crossing the Waterton River in Alberta required replacement in the summer of 2018, we took precautions to lessen the environmental impact of our activities.

When our pipelines cross water bodies like rivers, PMC often completes construction activities using a method known as horizontal directional drilling, which has less impact on riverbeds and banks than other methods. However, in this case geological conditions proved to be unfavourable, so another approach was required.

After careful consideration and in consultation with regulators and stakeholders, our experts decided to use a method that involved digging an in-stream trench across the river, known as a staged isolation. Undertaking the isolation required careful planning to ensure it would have the least impact on water quality, fish habitat, soil, vegetation and wildlife.

We isolated and diverted the flow of the river around the area where we excavated a seven-metre-deep trench, which crossed a 200-metre-wide section of the Waterton River. To divert the flow, crews erected temporary dams, used several high-volume pumps and inserted a flume (an artificial

channel). This enabled fish to bypass the worksite, kept sedimentation at a level that would not harm fish habitat downstream of the worksite and provided a safe place for workers to do their job.

Timing was targeted outside of the restricted activity period for the river. During that time, we worked closely with aquatics specialists to move fish from isolated areas to safer areas downstream. Another safeguard involved using vegetable oil in the hydraulic systems of the construction equipment for the in-stream work to ensure there would be no impact on the environment if there was a malfunction.

After replacing the pipeline, crews covered it and removed the pumps, dams and flume to allow for normal river flow. We continue to remediate impacts on riverbanks and other locations from construction.

As a condition of the Department of Fisheries and Oceans authorization for the project, we also completed a habitat enhancement initiative on a tributary of the Waterton River. This involved bank restoration, livestock exclusion measures and offsite water access for riparian area improvements, and placement of coarse woody debris for habitat enhancement.



Crews work on the Waterton River in Alberta

Undertaking the isolation required careful planning by our team to ensure it would have the least impact on water quality, fish habitat, soil, vegetation and wildlife.”

DALE SCHWARTZ, MANAGER, EXPANSION PROJECTS AND ENGINEERING AT PMC

2

MAINTAIN SOCIALY RESPONSIBLE OPERATIONS

PMC continues to find opportunities to work with those communities where we operate in a mutually beneficial manner

Being a Good Neighbour

At PMC, we understand and appreciate the importance of being a good neighbour. We value the positive relationships we have developed with communities and stakeholders who are in proximity to our pipelines and facilities.

With assets located in four provinces and 17 states, we have neighbours in more than 175 municipalities, Indigenous communities, counties and townships. We contribute to these areas economically through tax contributions, purchasing of local goods and services, and employment of local people. We also invest in local community programs, charities and emergency services through donations and grants.

For instance, in Mountain View County, Alberta, we work with the governing authorities to ensure stakeholders are aware of our Rangeland pipeline and understand how to contact us in an emergency. We employ 43 area residents at our Operational Control Centre, invest in community causes like the local arena and contribute about \$540,000 annually in taxes.

According to the county, municipal tax revenues allow it to provide a high level of service for residents, including road maintenance, permitting and planning services, agricultural programs and annual transfers to urban partners to fund recreational and social opportunities.

“Overall, Mountain View County has been impressed with the way PMC has conducted their business operations within the county and the transparent, communicative and open relationships they have chosen to have with property owners affected by their business: a great company to do business with,” said County Reeve Bruce Beattie.

At our facility in Fort Saskatchewan, Alberta, we employ 75 workers and contribute significant tax revenue to local and regional governments annually.

We are also involved in community groups like the Northeast Region Community Awareness Emergency Response (NRCAER). As part of NRCAER, we contribute resources to emergency situations and offer opportunities for training and emergency response planning. We also provided the city’s Emergency and Protective Services Department with grants to help ensure it has the best available equipment to respond to emergencies.

“Having a recognizable company like PMC within our city helps us grow and attract new business and industry,” said Mark Morrissey, Director of Economic Development, City of Fort Saskatchewan. “Their presence helps validate the fact that Fort Saskatchewan is a great place to invest and that large industrial companies can be successful here, not to mention the support they provide to local businesses through procurement of goods and services.”

Participation in industry events also demonstrates our willingness to engage in conversations with a diverse range of stakeholders. In 2018, we attended events hosted by Alberta’s Industrial Heartland, Economic Developers Alberta, Saskatchewan Association of Rural Municipalities and Economic Developers Council of Ontario, to name a few. We work with industry leaders, influencers, associations and peers to share information and improve best practices through collaboration, transparency and knowledge transfer.

PMC is proud of the positive relationships we have established in the communities where we operate, and we look forward to continued opportunities to make a difference.



PMC employees in the communities where we operate



STAKEHOLDER AND INDIGENOUS RELATIONS

PMC believes the foundation of long-term and mutually beneficial relationships is trust and respect, which is achieved through clear communication, transparency of objectives and a shared sense of responsibility. PMC engages stakeholders and communities near our rights-of-way and facilities who may be affected by our operations, including Indigenous communities, landowners, governments, regulatory agencies, municipal associations, customers, employees, contractors, business partners, environmental organizations and other special-interest groups. We respect local cultures and regional values, and recognize that seeking feedback from stakeholders is essential to building long-term relationships.

PMC’s commitment to environmental leadership, health and safety, and regional partnerships helps ensure that the City of Fort Saskatchewan and the entire Industrial Heartland region will continue to grow and prosper. The city is proud to have PMC in our community and appreciates that they are socially responsible within the community they call home.”

GALE KATCHUR, MAYOR, CITY OF FORT SASKATCHEWAN

Educating our Stakeholders on Pipeline Safety

Our public awareness efforts revolve around educating our stakeholders who live and work near buried infrastructure on the role they play in preventing harm to themselves, the public and the environment.

We strive to stimulate a positive behavioural change in landowners, contractors, municipalities and others who may face a potential impact or risk related to the safety of underground utilities while completing ground disturbance activities.

As part of our commitment to ensure our programs are effective, our Damage Prevention team participates in a public awareness effectiveness study, administered by the Canadian Energy Pipeline Association (CEPA).

CEPA member companies also took part in a survey last year, focusing primarily on public awareness activities on pipelines regulated by the National Energy Board. About 18,000 people were surveyed, and results indicated that people who reside along PMC's rights-of-way have the second-highest level of comprehension about how to

live safely near pipelines, compared to those who live near other pipelines.

For the overall industry scores, Alberta landowners had the greatest Pipeline Safety Index rankings in Canada, meaning that more landowners in the province have better awareness of pipelines on their property than elsewhere in the country.

Moving forward, PMC plans to increase awareness efforts with our stakeholders in the areas where we operate with a focus on provincially and nationally regulated systems and assets.



A PMC Community Advisor meets with a landowner in southern Alberta



PMC President Jason Balasch (right) receives the Dean's Award for Corporate Leadership by the Schulich School of Engineering, presented to organizations that demonstrate significant leadership and support for research and education

\$1,016,649

INVESTED IN THE COMMUNITY

446

VOLUNTEER HOURS

308

COMMUNITY
INITIATIVES SUPPORTED

COMMUNITY INVESTMENT PROGRAM

PMC's Community Investment Program supports long-term strategic involvement in the communities where we operate. We form partnerships with organizations to address social issues in the areas of health and safety, education, environment and capacity building. [LEARN MORE](#)



Health and Safety: We invest in programs that support the health and safety of our employees, contractors and local communities.



Education: We believe knowledge is a building block for the success of future generations.



Environment: As a responsible operator, we support organizations that protect and conserve the environment.



Capacity Building: Our entrepreneurial spirit recognizes the importance of business skill development, training and economic development.

Supporting SAIT in Indigenous Training

Sixty Indigenous students completed Pipeline Monitoring training in 2018 thanks in part to a PMC donation to the Southern Alberta Institute of Technology (SAIT) in 2014.

PMC's gift of \$125,000 provided anchor funding that allowed SAIT to secure additional funding to add Indigenous content to its Pipeline Operations Certificate Program in 2018.

SAIT used five courses from the program to pilot a three-week Pipeline Monitoring Training Program in the spring of 2018, providing the opportunity for members of Indigenous communities to learn about pipeline design, construction and maintenance.

By the end of June, all 60 students had completed their in-class training. The final component of the Pipeline Monitoring Program was for students to experience

an industry practicum or participate in a final project. Over half of the students were placed in practicum roles with a variety of energy companies.

Students who successfully completed this pilot were eligible to complete the broader Pipeline Operations Certificate at no cost.

The Pipeline Operations Certificate Program was created to advance competency, ensure job safety and increase positive public perceptions

of the industry. The program benefits the pipeline industry through standardization of knowledge and helps meet regulatory requirements.

PMC recognizes that building capacity within Indigenous communities around pipeline monitoring can lead to better leak detection and response times, provide employment opportunities for local communities and result in increased environmental protection.

Our goal is to create a program where all learners can personally relate to the content and then benefit from it. We know from our industry partners that increasing Indigenous participation in the workforce is top of mind.”

SARAH IMRAN, ASSOCIATE DEAN OF THE MACPHAIL SCHOOL OF ENERGY, SAIT



Students of the 2018 Pipeline Monitoring Training Program graduating class

Giving Back to the Community

HEALTH AND SAFETY



Shock Trauma Air Rescue Service (STARS)

STARS provides time, hope and life-saving transport to critically ill and injured patients in Western Canada.

PMC is donating a total of \$200,000 to STARS as part of a four-year commitment.

Alberta and Saskatchewan Fire Associations

PMC partnered with both the Alberta Fire Chiefs Association and the Saskatchewan Volunteer Firefighters Association in support of education, training, research and advocacy for firefighter safety.

Alberta Children's Hospital Foundation

More than 102,000 children and their families need the Alberta Children's Hospital each year. PMC supported initiatives designed to reduce anxiety and promote healthy development for kids and their families.

ENVIRONMENT



Ducks Unlimited Canada (DUC)

PMC sponsored DUC to provide wetland expertise and support to students, industry partners and municipalities so they are better informed about the value of wetlands and their ecological benefits.

Inside Education Navigate 2018

Inside Education's nationally-recognized youth summit, Navigate 2018, focused on water and environmental leadership. PMC was proud to sponsor the summit, which had 200 student and teacher attendees.



EDUCATION



Classroom Champions

Classroom Champions builds citizenship and leadership skills in children, while encouraging individual academic achievement. PMC sponsored two classrooms in Calgary, Alberta, and one in Windsor, Ontario.



University of Calgary

PMC has a longstanding relationship with the University of Calgary, providing \$400,000 each year for the past four years to the post-secondary institute. In 2018, PMC supported the Schulich Racing team, promoting engineering, science and business students' entrepreneurial spirit.



CAPACITY BUILDING



Council for the Advancement of Native Development Officers (Cando)

PMC proudly supported capacity-building, skill development, training and job placement for Indigenous communities in our operating areas through the Cando annual conference.

4-H Alberta

PMC partnered with 4-H Alberta, which inspires, educates and develops rural and urban youth to become future leaders and outstanding citizens. The 4-H Alberta motto is "Learn to Do by Doing" and its youth programs are designed to teach technical, project and life skills.



3

ACHIEVE CONSISTENCY IN EXECUTION

Walk-arounds are part of our safety culture

Contributing to Industry Standards

The maintenance and development of industry standards is vital to the protection of people, the environment and property. Many standards and guidelines for the midstream industry are developed by the Canadian Standards Association (CSA) or the American Petroleum Institute (API).

In 2018, experts from PMC participated alongside others in the industry in the development of the following standards and guidelines:

CSA Z663 Land Use Planning in the Vicinity of Pipeline Systems:

PMC's Damage Prevention team was involved in addressing challenges faced by the continual development of lands near pipelines in Canada. The standard, published in September 2018, provides minimum requirements, guidance and best practices for all parties involved in and affected by land use planning and development in proximity to pipelines. It also addresses roles and responsibilities of all stakeholders to establish a proactive consultative approach.

CSA Z341 Storage of Hydrocarbons in Underground Formations:

PMC's Asset Integrity team assisted in the development of CSA Z341 Revision 2018, which was published in the spring of 2018 to update previous standards on storage of hydrocarbons in naturally formed geological reservoirs and solution-mined salt caverns. The intention of this document is to establish requirements and minimum standards for the design, construction, operation, maintenance, abandonment and safety of underground storage systems.

API RP 1115 Design and Operation of Solution-mined Salt Caverns

Used for Liquid Hydrocarbon Storage: These guidelines are similar to CSA Z341, but with an American perspective. PMC's Asset Integrity team assisted in developing API's recommended practice on the operation of solution-mined underground storage facilities, which was published in November 2018.

CSA Z260 Pipeline Systems Metrics:

With involvement from PMC's Asset Integrity and Process Safety Management teams, this new standard can be used across the pipeline industry and regulatory jurisdictions for classification of the pipelines and associated facility releases, as well as developing leading and lagging indicators. This standard will enable industry members and regulators to benchmark pipeline performance and discover ways to improve processes and performance. CSA Z260 will be published in the spring of 2019.



Industry standards are crucial to maintaining safe operations

DID YOU KNOW?

PMC employees are active participants in many industry working groups and associations, including the Solution Mining Research Institute, the Pipeline Research Council International, the Association of Oil Pipe Lines and NACE International Institute.

PMC is also one of 11 member companies committed to the Canadian Energy Pipeline Association Integrity First Program, which helps pipeline companies share and implement leading practices, keeping pipelines safe and communities protected.

AER Audit Closure

PMC's journey of continuous improvement was acknowledged in September 2018, when the Alberta Energy Regulator (AER) closed out a comprehensive audit that began in 2013.

The audit was precipitated by two pipeline incidents that occurred in 2011 and 2012 on our Rainbow and Rangeland pipelines. As a result of the incidents, the AER outlined 54 criteria that needed to be met for full compliance.

Over the past four years, we have worked diligently to achieve our goal of meeting operational excellence, while ensuring that outstanding compliance gaps have been addressed to the satisfaction of the AER.

This involved cooperation between many PMC teams, including Asset Integrity, Health and Safety, Operations, Emergency Management, Damage Prevention, Environment and Regulatory.

"Meeting the criteria required tremendous cooperation and drew upon expertise from across PMC, including field staff not regularly engaged on these types of situations," said Chris Horne, Director, Environment, Regulatory, Emergency Management and Security at PMC. "The AER report shows the significant progress made over the past four years in our management system processes and recognizes the differences from where we were to where we presently are."

In its final report, the AER referred to the development and ongoing maturity of our Operations Management System (OMS) as a contributing factor to the improvements. The OMS helps to guide and standardize our operational activities to adhere to requirements and effective management of operational risks.

TIMELINE

July 2013:

AER issues order against PMC, which includes an audit of company operations

December 2013 – June 2014:

Audit field work, documentation, interviews, management progress meetings

August 2014:

AER issues audit report, order is rescinded, AER commits to followup on audit findings

February 2015 –

May 2018: AER assesses progress on closing audit findings

August 2018:

AER reports that all findings have been completed, audit closed





OPERATIONS MANAGEMENT SYSTEM

At the core of our mission, to safely deliver exceptional results, is a clear, aligned, process-driven Operations Management System (OMS). Our OMS helps us conduct and coordinate operations in a way that is systematically planned and supports the execution of our strategy. It has 40 sub-elements focused on Leadership and Organization, Risk and Compliance, Asset Lifecycle, Operational Controls, Enabling Processes, and Performance and Improvement.

Compliance to Operational Assurance

To follow through on our promise to meet regulatory standards, PMC developed an Assurance Program as part of our OMS, in addition to our Regulatory Program. Assurance at PMC answers the question, **“How do we know our programs and processes are working?”**

The Assurance Program provides line of sight, confirming that regulatory requirements across all sub-elements of our OMS are met through a long-range, rotating schedule of audits.

We complete regular assurance activities to compare our performance against internal and external regulatory requirements, and confirm that programs, processes and procedures are precisely followed.

We believe in strong regulatory oversight. Our third-party audits, independent internal audits and self-audits reaffirm that our governance through OMS meets commitments to the integrity of our assets and protection of the environment.



A PMC storage and rail facility



AREA MANAGEMENT TEAMS

Area Management Teams (AMTs) were formally introduced at PMC to further enable effective governance and management of operations. PMC has eight AMTs across Canada and the U.S., each with different objectives based on their unique operations, as well as common strategic objectives across our operations.

Focused on Three Shared Objectives

Every AMT has the same overarching organizational goals and strategic objectives, which is what drives consistency across all operations. Discipline has been further strengthened through implementation of additional opportunities for communication across AMTs, as sharing successes and failures leads to positive change across the entire company.

In 2018, the AMTs prioritized integrated asset management, information management and leadership/governance as their strategic and shared objectives.

- Integrated asset management encompassed several areas, including the Integrity Management Program and the Pressure Equipment Integrity Management (PEIM) Program, which focused on a standardized approach to ensure the integrity of our pressure vessels. An Operations Integrity Committee was created to execute and drive the program changes efficiently through operations and maintenance representatives of each AMT. This objective also included the Process Safety Management (PSM) Program and overall work management. One of the deliverables was building PMC's computerized maintenance management system to create a more organized and hierarchical way for operations to perform maintenance on our assets.
- Information management provided each site with a consistent approach to organizing and managing site-specific documentation and records. Information technology enabled an accessible single-source of truth for site workers.
- Leadership/governance goals included training programs on leader-led change through better management, effective communications and business rationale.

Some of the significant achievements of each of our AMTs are highlighted on pages 33 to 35.

“Efficiencies and productivity are being realized, more centralized governance is being implemented and sharing of best practices has been healthy for our organization.”

SCOTT SILL, SENIOR VICE PRESIDENT, OPERATIONS AT PMC



U.S. LPG WEST DISTRICT

Our Quest for Zero Incidents

Our U.S. LPG West District celebrated a significant accomplishment in reducing its Total Recordable Injury Frequency (TRIF) from nine in 2017 to zero in 2018.

A TRIF is the ratio of injuries of a certain severity to hours worked. TRIFs calculate the number of fatalities, lost-time injuries, substitute work and other injuries requiring treatment by a medical professional per million hours worked.

Reducing the TRIF was a major focal point of discussions during monthly facility meetings, as well as through safety meetings conducted by frontline supervisors with direct reports.

One of the major factors that went into the TRIF reduction was a new risk identification initiative that resulted in redesigned equipment being installed in facilities to help manage those risks.



U.S. LPG EAST DISTRICT

Spearheading New Technology

Our facility in Wisconsin became one of the first in North America to use an innovative new technology for inspections and repair access in 2018.

The technology enhances access for the internal inspection of spheres, which are used to store NGL. Spheres use the lowest amount of land space for pressurized storage.

Traditionally, to do an internal inspection of a sphere, thousands of pieces of scaffolding must be assembled internally after being inserted through a small-diameter man-way. PMC used a new innovation called the HEX system, which is more portable and hangs from the top of the sphere, rotating as needed. The HEX system reduces the amount of time required for maintenance and inspections, and more importantly, it significantly reduces the risk to workers.

The technology came from the United Kingdom and may be used for future inspections of the spheres, which are required every five to 10 years.



CENTRAL DISTRICT

Installation of Fire Suppression System

Our Central District successfully completed a fire suppression system at our Sarnia, Ontario, facility in 2018, marking the end of a three-year collaborative initiative with Sarnia Fire Rescue Services.

In the rare event a fire breaks out, the upgraded system is designed to neutralize the situation, thanks to high-tech detection equipment and an amplified flow of fire-snuffing water and foam.

The new system uses pumps that can flow upwards of 8,000 U.S. gallons per minute. With reserves of 1.5 million U.S. gallons in a firewater pond, the new system has pumps that provide the ability to supply four hours of water at full capacity.



NORTHWEST DISTRICT

Working With Cities in Urban Development

When the City of Edmonton announced plans to construct a Light Rail Transit (LRT) system, our local AMT entered into discussions to address changes required to our existing pipeline systems through the city.

To accommodate the new LRT, PMC lowered parts of our pipeline that would be impacted by the installation through an area in the city's southeast quadrant.

As part of the stakeholder consultation process for this initiative, PMC met with numerous community groups, including Alberta Health Services, businesses, church groups, golf course representatives, municipal officials and residents directly affected by the work. The objective was to minimize negative impacts such as noise or traffic disruptions.



SOUTHWEST DISTRICT

Trialing New Technologies

Maintaining the integrity of our assets is a top priority for PMC, which is why we seek opportunities to trial new technologies that may enhance our safety standards.

One such technology that our Southwest District explored in 2018 was called Magnetic Tomography Method (MTM). MTM is an emerging technology that has the potential to identify circumferential cracks in pipelines.

PMC typically uses in-line inspection tools, also known as smart pigs, that travel inside the pipeline and use sensors to identify inconsistencies or anomalies. MTM technology is less intrusive and is optimal for non-piggable pipelines that might have limited access.

PMC is currently collaborating with research institutions to understand the technology better and determine whether it would be feasible to implement across our organization.



EAST DISTRICT

Flexibility in Meeting Changing Market Needs

PMC strives to be flexible and offer optionality to meet changing market needs. In January 2018, our team in Kerrobert, Saskatchewan demonstrated how to accomplish a major deliverable in record time.

A decision was made in late 2017 to re-commission the Kerrobert Unit Train Terminal to improve the access of Saskatchewan crude oil for local producers to markets in the U.S.

In order to meet an aggressive 90-day target date, our local team inspected the track, sourced two locomotives and re-commissioned every device in the facility. The first train was loaded on January 18, 2018, incident-free and on time.

A total of 38 trains were loaded from Kerrobert, transporting an estimated 2.275 million barrels of crude oil to the U.S. in 2018.



EMPRESS/PPTC DISTRICT

Many Initiatives Underway at Empress to Enhance Safety

Starting with two major turnarounds and rounding off with a \$1 million upgrade to our cooling water towers, 2018 was a busy year for our Empress/Plains Petroleum Transmission Company (PPTC) District.

Cooling water towers are necessary to remove heat in the cooling water circuit. The tower upgrade replaced a wood structure that had reached the end of its estimated lifespan.

Fibreglass replacements were used and are expected to double the towers' life expectancy due to their superior strength properties (designed not to warp, decay or rot from exposure to moisture).

Fibreglass is resistant to insects, mold and mildew, which should reduce the amount of chemical additives required, resulting in additional annual savings.

Another successful initiative involved the implementation of a regulator-approved Quality Management System, which allows experts at our facilities to perform repair activities on heat exchangers and mechanically assembled pipe.

This is a safer, more consistent approach across all assets, returning equipment to service more quickly and resulting in less down time. PMC is adopting this system across all operations.

“Not only are our Area Management Teams achieving efficiencies in each of the districts where they operate, but they have also demonstrated their commitment to communities by contributing over \$200,000 to worthy causes in 2018.”

JUSTIN ANDERSON, DIRECTOR, OPERATIONS AT PMC



CONTROL CENTRE DISTRICT

Sharing Expertise With Industry Peers

The Operational Control Centre (OCC) in southwest Alberta is comprised of a communication system (utilizing satellite and cellular coverage) and a Supervisory Control And Data Acquisition (SCADA) system to monitor our pipeline network 24 hours a day, 365 days a year.

The OCC is an integral part of PMC operations as consoles are dedicated to monitoring and controlling pipelines across Alberta, Saskatchewan and Manitoba. In addition, the OCC monitors certain LPG facilities in Canada and the U.S.

At PMC, we believe there is no higher priority than safety, which is why the OCC collaborates with the pipeline industry and other organizations to share best practices and help make control rooms safer and more efficient. This includes meeting with other industry control rooms, such as the Calgary Airport (NAV Canada), Energy Alberta Corporation and Calgary Transit, to share learnings across disciplines. The OCC hosted industry peers from Canada, U.S., China and Brazil in 2018.



4

APPLY DISCIPLINE IN PLANNING AND MANAGING OUR BUSINESS

PMC employee ascends a sphere in southern Alberta



ASSET INTEGRITY

Asset Integrity at PMC is made up of a variety of programs and processes for maintenance and operational assurance of our pipelines, processing and fractionation plants, storage tanks and caverns. Maintaining the integrity of our assets is a priority, and our responsibility as a safe operator. Striving to adhere to stringent regulations and industry best practices helps to protect the health and safety of the communities where we operate. [LEARN MORE](#)

Process Safety Critical to Incident Prevention

Our Process Safety Management (PSM) Program is critical to addressing risks associated with hydrocarbon processing equipment by striving to ensure that hazardous materials and energy remain contained within facility equipment. The PSM Program includes:

- Facility evaluations to identify risks and implement administrative and engineered safeguards (i.e., creating or revising operating procedures, adding pressure relief or introducing alarms and programmable shutdown logic).
- A Management of Change (MOC) process that empowers employees to identify, vet and communicate upcoming changes within a facility. These may include assessment of risks, pre-startup safety reviews and authorization to address technical, administrative and organizational changes.
- Investigating process safety related incidents, the corrective actions and “lessons learned.” These are frequently communicated to staff to reduce future occurrences and foster a culture of continuous improvement.

By applying process safety elements to a large number of our assets, including pipelines, the program is gaining momentum, and the number of process safety related events has declined.”

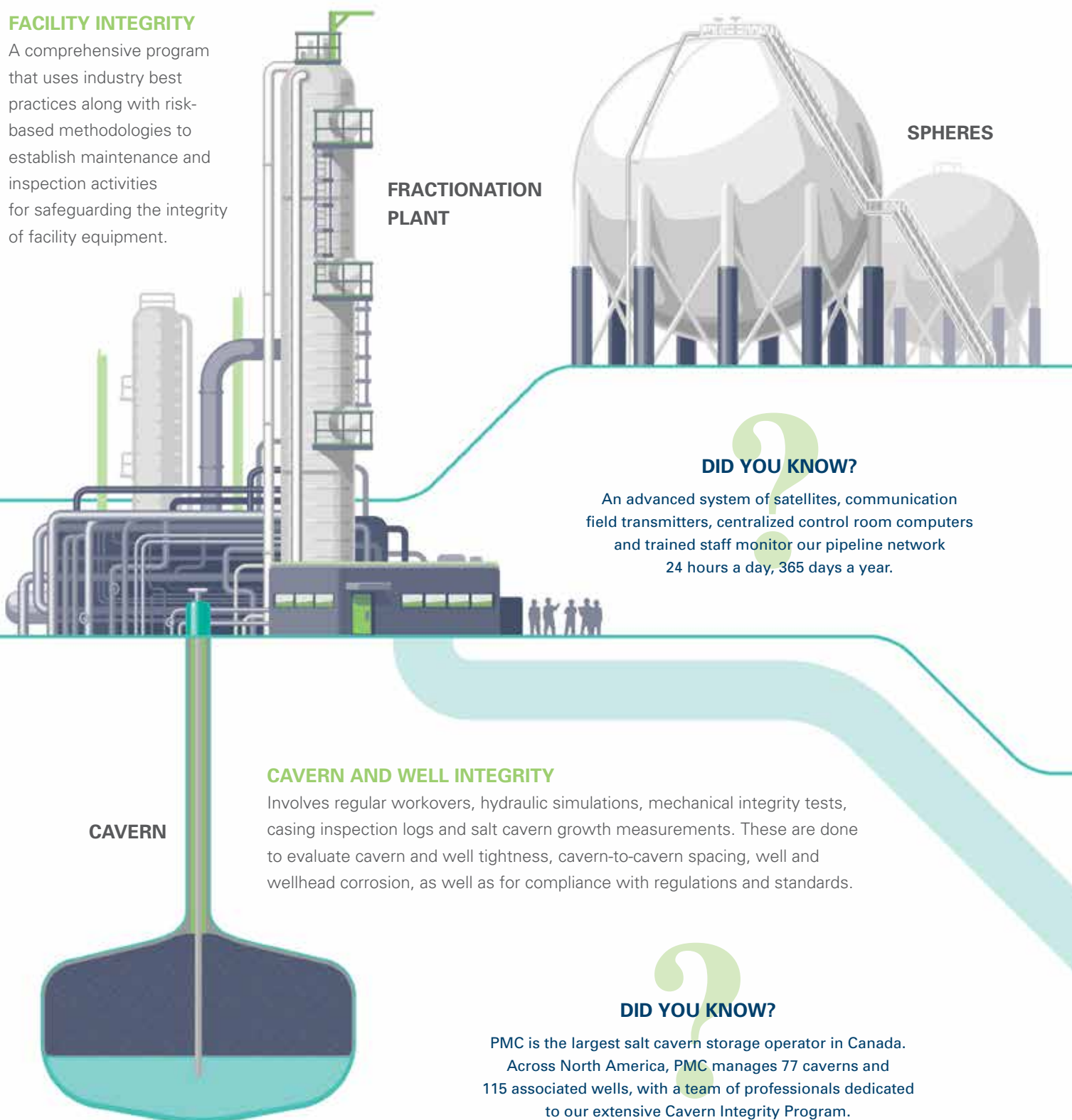
ADAM SHELLEY, DIRECTOR, OPERATIONS ASSET MANAGEMENT AT PMC

Maintaining Our Assets

Maintaining the integrity of our assets is a top priority, and our responsibility as a safe operator.

FACILITY INTEGRITY

A comprehensive program that uses industry best practices along with risk-based methodologies to establish maintenance and inspection activities for safeguarding the integrity of facility equipment.



DID YOU KNOW?

An advanced system of satellites, communication field transmitters, centralized control room computers and trained staff monitor our pipeline network 24 hours a day, 365 days a year.

CAVERN AND WELL INTEGRITY

Involves regular workovers, hydraulic simulations, mechanical integrity tests, casing inspection logs and salt cavern growth measurements. These are done to evaluate cavern and well tightness, cavern-to-cavern spacing, well and wellhead corrosion, as well as for compliance with regulations and standards.

DID YOU KNOW?

PMC is the largest salt cavern storage operator in Canada. Across North America, PMC manages 77 caverns and 115 associated wells, with a team of professionals dedicated to our extensive Cavern Integrity Program.

PROCESS SAFETY MANAGEMENT

Identifies and mitigates risks associated with operations processes so that the release of hazardous substances or energy can be prevented. Process hazard analysis (PHA) studies are conducted at each facility every five years to assess risks. In 2018, we conducted 19 PHA studies.

PREVENTATIVE PLANT TURNAROUNDS

A regularly scheduled shutdown focuses on maintenance-related activities, as well as cleaning, inspection and repair of facility equipment.

BULLETS

STORAGE TANKS

PRESSURE EQUIPMENT INTEGRITY MANAGEMENT

PMC works to ensure safe and effective operation and maintenance of our pressure equipment in accordance with multi-jurisdictional requirements.

PIPELINE INTEGRITY

Includes cathodic protection, integrity digs, depth-of-cover mitigation and in-line inspections.

WHAT IS AN IN-LINE INSPECTION?

Preventative maintenance using tools that travel inside the pipeline with sensors to identify any deviations or anomalies.

PIPELINE

● Turnarounds Are Vital to Maintaining Safe Operations

A plant turnaround, also known as a shutdown, is a scheduled window during which day-to-day operations cease, either in part or in full, for maintenance-related activities, as well as cleaning, inspection and repair.

The goal is to get the facility returned to service as safely and efficiently as possible, while ensuring future uninterrupted operations.

Planning is required in advance of a turnaround to minimize impacts.

For instance, due to various complexities, planning began over two years in advance for two turnarounds at our Empress plants in southeastern Alberta. The turnarounds were among the most significant in 2018, with the first concluding in July and the second in October.

Jason Carter, District Manager of the Empress/PPTC District, said by the end of the second phase, PMC had recorded just shy of 110,000 hours of direct labour work, with 495 people on site at the peak period and with no lost-time accidents or reportable spills.

"The temporary shutdown of any plant is developed with the utmost planning and coordination to achieve desired goals in

terms of safety, schedule and cost," he said. "Turnarounds carry inherent safety risks and are complex, but they lead to improvements and provide insight into future equipment needs."

A turnaround involves personnel from across the company, including Operations, Engineering, Health and Safety, Environment, Finance, Quality Assurance, Maintenance and Administration. Since the activities are not normal operating procedures, it is imperative to consider safety in every aspect.

The ultimate goal is to conduct a safe turnaround, which is why PMC's Health and Safety team is intricately involved in the planning and execution.

"Serious accidents can occur when you are doing a turnaround," said Paul Kelly, Director of Health and Safety at PMC. "We put a lot of emphasis on getting prepared from an operations perspective."

At the conclusion of both turnarounds, the key goals were met. Work was executed efficiently and safely, with zero recordable incidents. Strategic decisions related to timing, as well as staggering the event into two phases, contributed to the successful turnarounds.



“The intent of these complex projects is to ensure the long life of our assets and to maintain world class reliability and service availability for our customers. Thanks to everyone for supporting those objectives safely and professionally.”

DON LACEY, VICE PRESIDENT
OPERATIONS AT PMC



Our Empress plants both underwent significant turnarounds in 2018

PMC's Digital Change Journey

Digital change at PMC is designed to modernize, simplify and establish efficient business processes supported by effective business systems as a core part of the current PMC Information Systems strategy.

The intent is to create measurable enterprise business value by introducing modern technology platforms, unified systems and advanced decision support. The key will be our ever-increasing focus on cybersecurity as we incrementally take advantage of new technologies.


To help us navigate the digital waters, we have regularly engaged strategic technology vendors to leverage world-class expertise.

"We partnered with several leading industry experts to look at how best to plan our work, to realize our strategic goals and focus on business needs," said Chris Leonard, Director of Strategy and Digital Transformation at PMC. This has helped us understand other industry technology trends

and where lessons can be identified and then implemented in the midstream segment. "There is huge potential to modernize our work practices while empowering our workforce to deliver even greater results," said Leonard.

Our company effectively plans all associated work activities through a digital transformation roadmap. By better understanding relationships and interdependencies between projects, we are able to make better investment decisions, undertaking the right work at the right time.

To accelerate some of the initiatives already identified in our roadmap, PMC is providing greater analytical support to business units within the Commercial and Operations business areas. Partnering with industry experts has helped leverage deep data analytics and the power of artificial intelligence, while also developing in-house expertise to maximize the use of business intelligence, with the intent to realize future business value.



PMC is amongst the leading companies in Calgary thinking about digital and its impact on their business. They are at the forefront of digital innovation, and I am excited to see the results of the work they are doing in their transformation roadmap."

GEOFFREY CANN, DIGITAL STRATEGIST, THIRD PARTY CONSULTANT

Introducing Business Intelligence

Part of PMC's focus on continuous improvement and digital transformation is to implement innovative technology to increase efficiencies and enable more informed decision-making. One such initiative was the introduction of a business intelligence (BI) analytics tool that enables organizations to visualize complex data and share insights with their teams.

This tool has provided consistent and easier access to data, as it can instantly connect cross-functional teams to numerous data systems from core sources. It simplifies the presentation of results, which facilitates the efficient review of data and supports the decision-making process.

The system is useful across the organization, but particularly for our Supply Chain Management (SCM) team, who were quick to adopt the new technology. Describing BI as "a giant warehouse of data where people can pull from different data sources," SCM uses it to quickly track information like vendor spending and invoicing, which is updated daily.

BI has also been integrated into Operations, which uses an operations dashboard to detail performance in the areas of production, health and safety, environment, maintenance, risk management, inspection compliance and finance.

As personnel in the organization become aware of the potential efficiency benefits from BI, we believe there will be greater demand to incorporate it more broadly.



PMC employees embrace innovations in technology



Our storage sphere and tanks in southern Alberta



5

**DEVELOP OUR
EMPLOYEE
AND LEADER
EFFECTIVENESS**

*PMC has over 1,400 employees in
Canada and the U.S.*



OUR PEOPLE

At PMC we connect our network of people and assets to safely deliver exceptional results. Our people are analytical, connected, creative, entrepreneurial and passionate about everything they do. [LEARN MORE](#)

We rely on our core values and beliefs to inspire and guide our team. These values include:

Safety: We conduct our operations and business in a manner that is safe for employees, contractors and the environment.

Ethics and Integrity: In our dealings within and outside of the company, we do the right thing, obey the law and act with the highest levels of honesty, ethics and integrity.

Accountability: In conducting our business, we are accountable to each other, our unit holders, our customers and other stakeholders, including the communities where we live and work.

Respect and Fairness: We treat each other and our stakeholders fairly and with respect.



Employees participate in a Crude Oil 101 training session in Calgary

Employee Learning Series

In 2018, PMC's Commercial leadership team dedicated time to develop and deliver a training series on our commercial business to our Calgary-based employees.

The series focused on North American crude oil and NGL markets, as well as the PMC departments, processes and systems that generate revenue from those markets.

About 400 employees from Calgary participated. Each series was broken

down into five one-hour segments, amounting to over 4,000 hours of employee development.

We are exploring ways to deliver this content to our field employees in the future. PMC will continue to seek feedback from employees on what learning and development opportunities they would benefit from, and identify strategies to deliver this professional development.

“Not only did the NGL/Crude Learning Series enhance my knowledge of the fundamentals, I gained an in-depth understanding of the NGL/crude operations at PMC. The presenters and the organizers delivered on two great topics, and I am looking forward to future learning opportunities.”

SUSAN KWAN, PMC EMPLOYEE



PMC volunteers get a briefing before planting trees in Okotoks, Alberta with Tree Canada

CARE Program Supports Charitable Causes

The Create a Real Effect (CARE) Program supports charities close to the hearts of our employees. Through CARE, our employees can donate to registered charities of their choice, and PMC is proud to match overall contributions up to \$10,000 per employee, per year. In 2018, employees pooled resources to support causes including the Movember Foundation, Ride to Conquer Cancer, Run for the Cure and the Saskatoon Community Foundation.

HIGHLIGHTS

Yankton United Way Campaign: PMC's staff in Yankton, South Dakota, came together to raise about \$5,500 for the United Way, including a matched company donation through our CARE Program for education, financial stability and healthcare initiatives.

Movember Team: In November, several PMC employees took part in the international Movember fundraiser, which involves growing moustaches to raise awareness of men's health issues. The campaign has been increasingly successful, and in 2018, a total of \$23,000 was raised, including company-matched donations.

It's thanks to the support of enthusiastic volunteers and strong partnerships with communities that these initiatives come to life."

**SARAH QUANN, PROGRAM
MANAGER, TREE CANADA**

Employee Volunteer Program Launch

Employees volunteered over 400 hours of their time in 2018, with three charitable organizations as part of our new Volunteer Program, which is an extension of PMC's existing CARE Program.

"Every event that we organized this year reached capacity because our team members were so enthusiastic about giving back to the communities where we live and work," said Sterling Koch, Vice President, Health, Safety, Environment and Regulatory at PMC.

PMC launched the program in September with a tree planting event in support of Tree Canada, when 29 volunteers planted 131 trees to create a new grove for the Town of Okotoks.

In October, another environmental initiative with Trout Unlimited Canada, saw 30 volunteers travel to Granum, Alberta, to assist with a fish rescue. The day-long activity was at the Lethbridge Northern Headworks Canal, where hundreds of fish needed to be diverted from the irrigation canal back into the Old Man River in order to survive winter.

This involved sectioning off a portion of the canal to round up schools of fish. PMC employees put on waders and scooped the fish into buckets. Other volunteers were tasked with identifying, measuring and tracking all the species rescued from the canal. Afterwards, the fish were put into a large transfer tank for transport.

"This event reinforced the importance of the protection of wildlife, which is a fundamental driver of PMC's environmental programs," said Kyle Hofseth, PMC volunteer.

The first two events demonstrated our commitment to address environmental issues while enabling employees across departments to work together, building our culture and a more integrated team.

In December, PMC got into the holiday spirit by working with the Calgary Food Bank, supporting less fortunate members of the community. PMC volunteers spent three evenings sorting, organizing and packaging food for holiday hampers. We also donated \$10,000 to the organization as part of our volunteer campaign.

With the success of our Volunteer Program in 2018, PMC plans to expand the program in 2019 to offer more opportunities, as well as extend it to employees in our field locations.



Top: Employees plant 131 trees in Okotoks, Alberta

Bottom: Employees rescue fish with Trout Unlimited Canada in Granum, Alberta

I am very proud to work for a company that encourages its employees to volunteer and to get involved with local communities."

COREY ANNE DRUGMAND, PMC EMPLOYEE VOLUNTEER



The JHSC reinforces safety as a core value

Joint Health and Safety Committees Enhance Safety Culture

Supporting a safety culture is paramount at PMC, and one of the key activities for the Calgary, Alberta, office in 2018 was establishing a Joint Health and Safety Committee (JHSC).

While PMC already had JHSCs in place at its major facilities, this was the first time a committee was formed at head office, where employees had been participating in annual office safety week activities. Since safety is a core value and an integral part of PMC's culture, employees embraced the opportunity to participate in JHSCs.

Employees volunteered for positions on the committee, with the goal of raising awareness

of health and safety issues, as well as promoting cooperation between management and workers to reduce incidents.

The committee members are responsible for hazard identification, incident investigations and safety inspections. Members communicate concerns from workers to leaders so that the organization develops health and safety policies, safe work procedures and training programs to address potential risks.

In Alberta, JHSCs are regulated by the Alberta Occupational Health and Safety Act for the purpose of supporting the three basic rights of workers: the right to know, the right to participate and the right to refuse dangerous work.

12,285
HOURS OF
SAFETY TRAINING
ACROSS
OPERATIONS

The JHSCs address real concerns and result in changes because people recognized hazards that hadn't really been thought of before in an office environment."

NOLAN STILL, CO-CHAIR PMC JHSC EMPLOYEE REPRESENTATIVE



We invite you to share your comments about our company, how you think we can improve our performance and what topics are important to you in future reports.

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