

PIPELINE TALES

ISSUE 1: MARCH 2022



A MAGAZINE SUPPORTING & PROMOTING PIPELINES

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EDITORIAL PAGE

When I started with the Canadian pipeline industry some three decades ago, I had no other choice but to fall in love with the industry. The exciting projects, interesting people, and forward-thinking companies made the sector vibrant and colourful. These made us proud, and we wanted to stay in the industry. Lately, our industry has been facing difficulties due to political involvements and interferences.

Piasha Pipelines is venturing out to launch a new pipeline magazine from Canada. This magazine will showcase pipeline projects in Canada and worldwide, promote pipeline-related companies with their stories, encourage individuals to share their personal stories of success, adventures, and failures. The readers will learn that pipelining is no easy task, and it takes smarts, dedication, and hard work.

Our magazine will grow with the pipeline industry and share your wins with over 30,000 subscribers. We request and encourage you to submit your product information, stories, and advertisements for the next issues.

We are starting with a simple vision of promoting the pipeline industry. So please help us to help you. We hope to hear from you soon, and we will publish our next issue in June 2022 and genuinely appreciate your support.

HIRAN GANGULI, P.ENG.

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PIPELINE NEWS

TRANSMOUNTAIN EXPANSION PROJECT

Trans Mountain Expansion Project (TMEP) is one of the iconic projects of the Canadian pipeline industry. The Canadian government approved this project on June 18th, 2019, under Canada Energy Regulators' (CER) jurisdiction, and this project is a pride of the Canadian pipeline industry. Trans Mountain designed this expansion project to add to the Canadian oil pipeline transportation capacities from Strathcona County (near Edmonton, Alberta) to Burnaby, British Columbia (British Columbia).

Trans Mountain, the company, was established on March 21st, 1951. The Parliament of Canada granted the company a charter to build the original 1,150 km of a crude oil Trans Mountain Pipeline (TMPL) with varying pipe diameters of 24", 30", and 36". The pipeline is still operating safely as the vital transportation link between the Alberta oilsands and the west coast of North America since the first shipment of oil reached the Trans Mountain Burnaby Terminal on October 17th, 1953, ushering in a new era of economic growth for the region.

TMEP is essentially a twinning of **TMPL** between Strathcona County and Burnaby, British Columbia. It will create a pipeline system with an increased capacity from approximately 300,000 barrels per day to 890,000 barrels per day.

The engineering, design, and construction of these pipelines are no easy tasks. These pipelines cross some of the world's most rugged, mountainous terrain plus several environmentally sensitive wetlands, waterways, and parklands.

Since its inception, the **TMPL** is now transporting crude oil plus refined products. Burnaby Terminal, the downstream endpoint of the pipeline, consists of 13 tanks with a combined storage capacity of 1.6 million barrels with secondary and tertiary containment. The terminal distributes crude oil and refined products to Parkland refinery and Westridge Marine Terminal in British Columbia.

Trans Mountain planned to expand its system to benefit us Canadians in the following ways:

- ❖ Oil producers will earn more revenue from their products.
- ❖ The Canadian government will collect more tax revenue from oil export.
- ❖ Our only primary oil purchaser, the United States, has been scooping up most of our Western Canadian oil for a discounted price for the last decade. Unless we find more customers, our revenue will be limited.
- ❖ As the Asia Pacific countries develop, we will have more customers to buy our oil at fair market price and earn more revenue.
- ❖ The project will create new short- and long-term jobs, job-related training opportunities, and increased taxes for all three levels of government.



Pipeline workers are installing protection around a pipe section when lowered in to a rocky trench

Here are some of the characteristics of the TMEP:

- ❖ Pipe Outside Diameter (OD): 36 inches.
- ❖ Total pipeline length: 1,150 km (Approx.)
- ❖ New Pipeline length: 980 km (Approx.)
- ❖ Reactivated pipeline length: 193 km (approx.)
- ❖ Pipeline Right of Way (ROW): 73 % will use existing ROW; 16% will use existing ROWs of other utilities; 11% will use new ROW.
- ❖ Using 89% of the current ROW, TMEP will significantly reduce its environmental impacts on the land, soil, and trees.
- ❖ Number of New Pump Stations: 12

- ❖ The existing pipeline (**TMPL**) carries refined products, synthetic crude oils, and light crude oils with the capability for heavy crude oils.
- ❖ The new pipeline (**TMEP**) will transport heavy and light crude oils.
- ❖ Trans Mountain has engaged with the communities, landowners, stakeholders, & Indigenous communities since 2012, listening to and fulfilling their needs.
- ❖ Trans Mountain has developed environmental protection plans along the entire route. They diligently make sure no aspects of ecological/ecological requirements are compromised.
- ❖ In Canada, there are no safety short-cuts. We go through about 15 due-diligence steps from planning to designing to construction to ensure our pipelines are error-free and built to the highest levels of codes, standards, and specifications so that the pipelines can operate safely for the next 35 to 40 years. Trans Mountain has considered all these, and since 1953, its TMPL has been operating safely.
- ❖ For the **TMEP**, Trans Mountain and its contractors have hired approximately 20,000 people working with minimal safety incidents.
- ❖ Trans Mountain will finish the mechanical completion of the construction in the third quarter of 2023.

TMEP has faced many challenges since its approval in June 2019, and this is no surprise. Here are some of the difficulties of **TMEP**:

- ❖ The United States does not want Canada to sell its oil to the Asian countries as it is getting discounted oil from Canada.
- ❖ The other oil-producing countries do not want Canada to be another oil supplier to the Asian countries and take a bite into their business.
- ❖ The existing **TMPL** transports the equivalent of about 1,400 tanker truckloads or 441 tanker railcars of products daily. Expanding the existing **TMPL** will offer a safer, more efficient, and economical oil shipment between Alberta and British Columbia. The railroad or trucking companies will most definitely not endorse this expansion.



Trans Mountain planned the expansion project based on the support and long-term commitments they received from the following oil producers:

- ❖ BP Canada Energy Trading Company
- ❖ Canadian Natural Resources Limited
- ❖ Cenovus Energy Inc.
- ❖ Imperial Oil Limited
- ❖ MEG Energy Corp.
- ❖ Parkland Corporation
- ❖ PetroChina Canada Limited
- ❖ Suncor Energy Marketing Inc.
- ❖ Teck Canadian Energy Sales Ltd.
- ❖ Marathon Petroleum Canada Trading & Supply ULC
- ❖ Total E&P Canada Ltd.

Trans Mountain has engaged the following pipeline contractors to build the expansion project. These contractors possess specific experience and expertise for each unique portion of the project.

These seasoned contractors build large and complex pipelines and understand the importance of the high safety standards and environmental protection Trans Mountain set for themselves.

Additionally, these contractors will fulfill Trans Mountain's commitments to the Indigenous communities and stakeholders and Canada's environment and heritage resources.

❖ **MIDWEST PIPELINES INC.**

Midwest Pipelines will construct the construction of Spread 1 and Spread 2 in Alberta's Greater Edmonton and Yellowhead regions.

❖ **SIMPCW LEDCOR**

SimpCW Leducor is responsible for the reactivation of the two deactivated segments:

- 150 km of Jasper to Mount Robson reactivation, from Hinton, AB to Hargreaves, British Columbia, and,
- 42 km of West Barriere reactivation, from Darfield to Black Pines, British Columbia.

❖ **LEDCOR SICIM LIMITED PARTNERSHIP**

The Ledcor Sicim Limited Partnership (LSLP) is responsible for Spread 3 and 4A in the North Thompson region of British Columbia.

❖ **BANISTER**

Banister is responsible for Spread 4B in the North Thompson region of British Columbia between Blue River and Darfield.



Pipeline contractor has strung pipe joints that have cardboard end-caps on them.

❖ **SURERUS MURPHY JOINT VENTURE**

Surerus Murphy Joint Venture (SMJV) is responsible for Spread 5A in the British Columbia Interior, between Black Pines and the Coquihalla Summit.

❖ **KIEWIT BONATTI TRANS MOUNTAIN PARTNERSHIP**

Kiewit Bonatti Trans Mountain Partnership is responsible for Spread 5B in the Coquihalla-Hope region.

❖ **MICHEL'S CANADA**

Michels Canada is responsible for the Spread 6 and Spread 7A in British Columbia's Fraser Valley and Lower Mainland regions.

❖ **KIEWIT LEDCOR TRANS MOUNTAIN PARTNERSHIP**

Kiewit Leducor Trans Mountain Partnership (KLTP) is the general Contractor for a combination of facility and pipeline work in the Lower Mainland. KLTP's scope of work includes Spread 7B pipeline construction in Coquitlam and Burnaby, Sumas Terminal, Burnaby Terminal, Westridge Marine Terminal, and the Burnaby Mountain Tunnel.

❖ **CORD**

Cord is responsible for Edmonton Terminal and all 12 pump stations in the Expansion Project.

❖ **EPCOR**

EPCOR is responsible for designing, constructing, and maintaining specific electrical power interconnection systems, including substations, switchyards, and transmission lines on the Expansion Project.



PIPELINE TALE

I WAS ONCE A ROUGHNECK

BY MIKE STATTERS, P.ENG.

I was working on a drilling rig west of Drayton Valley, Alberta, when we received a call over the radio from our tool push; "Close in the well, drain the lines, lock up and head for the town." It was early afternoon, and we were expected to reach our bottom depth of nearly two miles or just over 10,000 feet that evening or the following day. So, it seemed strange when our company told us to shut in when we were so close.

Shutting in the well required us to stop drilling and pull the drill bit off the bottom of the hole and then continue circulating the drilling mud to clean the well for an additional three or four hours before pulling a few pipe joints out of the hole to ensure that we would not sand off and end up getting stuck in the hole!

As we were circulating the hole to remove the tailings, the smell of sour gas began to fill the air. We checked our mud tanks, manifolds, BOPs (Blow out Preventers), and Christmas tree valves to ensure they were all tight and prepared ourselves for a potential kick that seemed to be headed our way up the hole.

We could smell the rotten egg smell that comes with Hydrogen Sulfide, so to be safe, we pulled out the Scott air packs, donned our personal H₂S meters, checked again for gas in the mud at the mud tanks, checked the manifolds, the pump pressures, etc., but found nothing out of the ordinary, and everything seemed normal.



We finished circulating the hole clean, drained the lines, pumps, hoses, etc. so they wouldn't freeze if it got cold, filled the diesel tanks, chained the valve handles on the Christmas tree and closed the BOP (Blow out Preventer), and secured the rig to prevent tampering.

All were tight and secure, the drill string was dead (no pressure), same on the casing, but the smell of H₂S was getting stronger by the minute. By this time, it was obvious to us that there had been a blowout somewhere upwind of us. We didn't know who's rig it was or where it was, but we knew that we were drilling a "tight hole" into a sour gas reservoir.

We packed our gear into the crew cab and headed for Drayton Valley. We were only 20 miles from town, so there was no need to stay in a camp. Although the drive took about an hour each way on the winding goat trails, we called roads out towards the Brazeau Dam. We got to town a little after seven in the evening. Once in town, we were directed to meet the tool push and the rest of our crew at one of the local hotels, the Westwinds Motor Inn on the south side of town. They had a huge gravel parking lot out back, and it was almost full! Inside, we met a whole slew of people from town, police, fire, rescue, business people, oilmen, the works! Our Tool Push (company representative) then told us that there had been a major blowout just over two miles to the west of our location.



It was October 17th, 1982, the start of the infamous Lodgepole blowout at an Amoco- Dome well, located in Brazeau River at 13-12-48-12 W5M. The well blew out over thousand tons of sulphur a day, in the form of extremely poisonous hydrogen sulphide gas (H₂S) and condensate, at a rate of approximately 10 million cubic feet per day for the next 67 days until it was brought under control. All of Drayton Valley stunk, and the smell could be smelled for hundreds of miles around. The blowout created a stink across the province. Many people left town for Edmonton, and some with breathing problems had to be evacuated.

For safety reasons, Amoco-Dome, on its own, ignited the blowout to prevent the spread of H₂S and any accidental ignition. The police set a perimeter around the site several miles away from the well. They would not allow anyone to cross it regardless of the reason unless you were directly involved in fighting the blowout. This also meant that we could not go to our rigs since these were inside the perimeter.

Thankfully the weather was cooperating, and there was a fair bit of snow on the ground at the time. Even so, when the well was lit the first time, the fire burnt a good chunk of the surrounding forest. Needless to say, once lit, the six-million-dollar rig was a total write-off.

The light from the flare could be seen in town at night. The rig, now a mangled pile of burned, bent, and buckled steel, had to be pulled



off the hole piece by piece; it was very dangerous work. The original fire-fighting Contractor could not handle the blowout, and Amoco-Dome called in a replacement contractor from Texas called Boots and Coots to deal with the fire. We heard the rumor that they would not come unless Amoco-Dome gave them a blank cheque to cover their costs and expenses.

The "Beast," as it had come to be known to the locals, claimed two lives and injured more than a dozen firefighters.

The fire-fighting Contractor made several attempts to extinguish the blaze once they cleared the debris. On days the well was burning, the fumes were full of SO₂, one of the primary sources of acid rain. The SO₂ would mix with the moisture in the air and drop down to earth as rain or mist in high enough concentrations to blister the paint on your cars, trucks, and houses. If you didn't wear a hat, your skin would react. The top of my ears and nose looked sunburnt because the skin was constantly peeling away. On days when the Contractor could extinguish the fire, the smell was gross, and everything stunk like rotten eggs, your clothes, your car, your house, the food, and anything made with copper grew a layer of a yellow crust of corrosion on it. Every morning you would wake up with a pounding headache and burning eyes and nose.

Eventually, after 67 days, on December 23rd, just before Christmas, Boots, and Coots managed to cap the well. What a welcome gift!

We all learned a lot of lessons from that experience, drilling practices, equipment maintenance, emergency response, safety, inspection, and the list goes on. Some say it was like the Wild West, and in many ways, it was. We worked hard, played hard, and carried our rifles in the back window of our pickups. The fights were fair, and people rarely ended up in hospital. If you didn't like how someone looked at you, you could walk a quarter mile down the road and get hired by the next drilling crew. The money was great, and the crews' men were tough as nails from slinging iron all day long.

Your crew was like a brotherhood, a way of life. You competed against other rigs and crews to see who could drill the fastest and the deepest. When you got off the tower, you would head off to the local saloon for a table full of two-bit beers and some great music. There were always fistfights for "entertainment," especially when one of the well-known Fracing Companies was in town chasing "our women." Those were the days!

Back then, we were hell-bent on glory drilling hole after hole all summer and winter until the spring break up shut us down. Then it was off to wherever for a well-deserved vacation.



The photograph is provided by SMJV

I have a lot of good memories from the early eighties; the whole country needed our oil, and as did the world, we were happy to be the ones providing it. Alberta was well on its way to being an energy superpower. However, many people believe that the National Energy Program negatively impacted when the government of the day brought in the program.

Fast forward forty years to today, so much has changed. The industry has been regulated to the point that it can barely function, and interest groups lobby to shut the industry down altogether. In reality, there are no practical replacements for oil and gas from an energy perspective at this time. Currently, 85% of the world's energy comes from these resources; oil (30%), coal (30%), and gas (25%), with the remaining 15% comprised of solar, hydroelectric, geothermal, wind, nuclear, biomass and others. The bottom line is that our carbon-based world isn't going away any time soon.

A sustainable energy supply has been essential for our way of life, economy, and country for many years. Alberta, along with the rest of Canada, has the resources to fuel this country for generations. It can also export the riches below her soil, on which we all live and play, for others to benefit.

I have seen many changes in the industry, mostly good, some great, and some terrible. One thing is for sure - things change.

I truly hope the best is yet to come, but I fear that maybe it is behind us?

MIKE STATTERS, P.ENG.

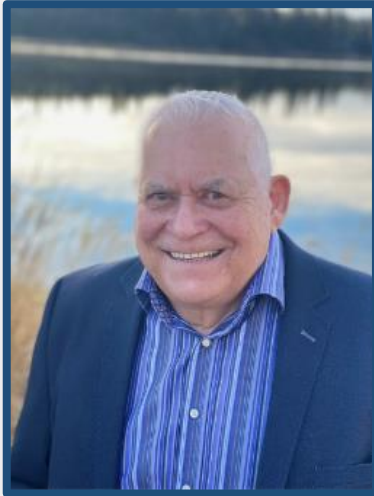
Mike was born and raised in Alberta, graduated from the University of Alberta in 1986 with a Mechanical Engineering degree, and has spent his entire career working in the Oil & Gas industry on projects across western Canada and North East US.

COMPANY TALE

THE PIPESTONE PROJECTS STORY

BY DAVID HERMANSON SR.

(Principal/and or Founder of Pipestone Projects Inc).



Dave Hermanson Sr. was born and raised in NW Ontario, just east of the Manitoba / Ontario border.

After training and experience as a surveyor, Dave, or "Big Dave" as he is known, broke into the pipeline industry as a Surveyor/Field Engineer with a Drilling & Blasting Contractor in 1981.

We started to establish our Western Canadian roots once we moved west to Calgary in 1990.

Working with various pipeline construction contractors in an employee or consulting role, we established Pipeline Solutions in January 1995 as our first venture into full-fledged business operations for pipeline estimating, scheduling, and planning.

Rebranding and taking on two partners resulted in the incorporation of **Pipestone Projects Inc.** in February 2013.

Pipestone Projects Inc. (Pipestone) has its beginnings in the perceived need for training young professionals.



The image shows a promotional graphic for Pipestone Projects. At the top left is the company logo, a stylized 'P' and 'S' inside a red circle. To the right of the logo, the text reads 'PIPESTONE PROJECTS' in bold black letters, with the tagline 'Confidence to Proceed' in red below it. Below the logo and tagline is a list of services in white text on a blue background:

- ACCURATE, EFFICIENT AND COST EFFECTIVE SOLUTIONS
- PIPELINE & FACILITIES PLANNING
- ESTIMATING & SCHEDULING
- RISK ANALYSES & FEASIBILITY STUDIES
- CONTRACT & CLAIMS MANAGEMENT
- ENVIRONMENTAL SERVICES
- LABOR & INDIGENOUS RELATIONS

The background of the graphic is a photograph of a construction site with several large green pipes laid out on the ground. In the distance, there are mountains and a lake. At the bottom of the graphic, there is a red banner with the website address www.pipestoneprojects.com and the phone number 587-436-2600.

We also created a specialty shop to assist owning companies, engineering companies, and construction contractors.

We offer Pipeline & Facility Estimating, Scheduling, Planning, and other professional deliverables such as Risk Assessment and Grade Planning.

Around the year 2000, it became evident that numerous skilled professionals within the oil & gas industry were looking to retire. The need to fill these shoes became alarming because there was a gap in skills training with the next generation. This was due to the ups and downs experienced during the previous 20 years in the industry. My private thoughts were to assist the training of the next generation in whatever way I could.

Up to about 2012, we achieved this simply by working closely with a small group within the client base of owning companies, engineering companies, and pipeline construction contractors.

The long-term plan for Pipestone was to build an agile and robust team of professionals to support our client base and train interested, hard-working young professionals by mixing skilled, experienced personnel with the "trainees."

Various Pipestone personnel are working to keep up with revised construction techniques, new construction products, crew production rates, and crew sizing in the industry.

Pipestone is very thankful to our large base of clients for supporting the company with exciting and challenging projects within North America and sometimes internationally.

Moving forward, Pipestone will continue with the core business and new markets such as Environmental Services, Labour & Indigenous Relations, and Claims Management.

In its 11th year, Pipestone has grown from its three Founders to a wholly-owned employee company. Pipestone continues to support our client base with a strong team of professionals.



In recent years, Pipestone established www.supportpipelines.com to get the word out that the Canadian pipeline industry is the most competent, safe, and environmentally sensitive pipeline industry worldwide.

A big thank you goes out to the Support Pipelines boosters for purchasing and wearing the Support Pipelines merchandise.

DAVID HERMANSON SR.

January 2022; +1 587 436 2600

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COMPANY AD



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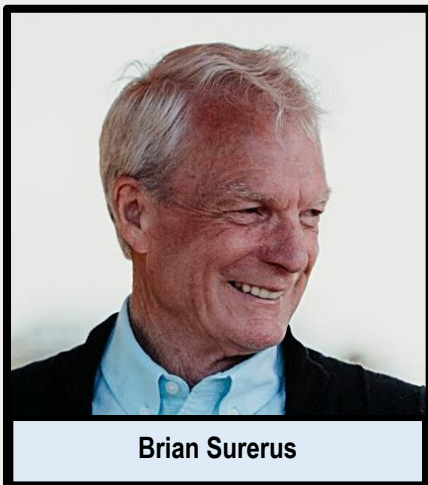
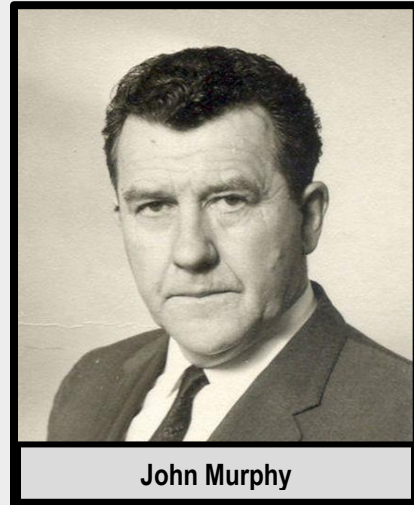
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COMPANY TALE

SURERUS MURPHY ON THEIR LONG FAMILY HISTORY AND PROMISING FUTURE SUPPORTING THE ENERGY TRANSITION

Surerus Murphy Joint Venture (SMJV) is a multi-discipline infrastructure, construction, and delivery organization rich in family values and rooted in decades of complex and specialized technical experience. Led by the core values of Never Harm, Trust, Integrity, and Assured Delivery, SMJV is one team brought together by two companies – Surerus Pipeline Inc. and J. Murphy & Sons Limited.

John Murphy established J. Murphy & Sons Limited (Murphy) in 1950 in the United Kingdom. The business venture started with a goal of supporting construction efforts around post-war regeneration and the growing General Post Office (GPO) telephone cable network within the UK. As Murphy grew, so did its project capabilities. Throughout the



1960s and 1970s, the team expanded its project scope into road expansions, pipeline design and construction, and a combination of projects within the civil and mechanical engineering disciplines.

In Canada in 1963, a teenaged Brian Surerus followed his older brother from Roseneath, Ontario to Fort St. John, British Columbia. Six years later, in 1969, Brian traded in his Ford Ranger pickup truck for a dump truck and incorporated as Groundhog Enterprises – working on road maintenance for the Department of Highways.

In 1971 Groundhog Enterprises completed its first pipeline project for Union Oil near Fort St. John. This project inspired Brian to re-route the direction of the organization – focusing more on

pipeline installation and officially changing the company name to Surerus Construction & Development Ltd. (until 1982, when Surerus Pipeline Inc. was officially incorporated).

"At Surerus Pipeline, we had really established a name for ourselves in the Canadian Energy Industry," says Sean Surerus, President, Surerus Pipeline. "2014 came around, and several international contractors were approaching us to create a joint venture agreement – with J. Murphy & Sons, we found a real partner that shared our values and work ethic."

The joint venture of these two leading infrastructure companies came together in 2014. Both organizations recognized that together, Surerus and Murphy offered unmatched expertise for LNG and energy project owners, combining over 100 years of combined experience in pipeline construction and infrastructure heritage.

"One of the key drivers behind bringing together both family-owned and operated companies, Surerus and Murphy, was to take advantage of the major LNG and oil projects proposed in Canada," says Mick Fitzpatrick, President, SMJV. "SMJV signed two of the largest pipeline projects in Canada early into the joint venture's inception – Coastal GasLink for TC Energy and the Trans Mountain Expansion Project. Both projects have, and will, continue to keep us busy well into 2023."

A notable aspect of these projects has been the rural, steep geography of the right-of-ways. With Surerus Murphy's technical expertise and local knowledge, the company has made a name for itself as a go-to contractor for challenging projects.

"We're working in our own backyards in western Canada. We know the terrain, geography, and the unexpected weather patterns that come with the projects we handle," says Sean. "Our capacity enables us to deliver multiple projects simultaneously across the spectrum of diameter ranges, resourced by subject matter experts and extensive specialized pipeline equipment holdings."

Other projects, like the North Montney Mainline Project (NMML), allowed SMJV to showcase its wide range of capabilities. The NMML, which wrapped-up in late 2020, consisted of 206 KMs of NPS 42 pipe, of which SMJV was responsible for 52 km, and required the completion of a major trenchless crossing underneath major waterways, sensitive environmental areas, and places with restricted workspaces.

SMJV engaged with industry specialists to plan and execute Horizontal Directional Drill (HDD) and Direct Pipe Installation (DPI) applications. The project consisted of a 1,707 m HDD crossing under the Peace River, one of the largest HDD crossings in Canada.

The project also showcased SMJV's ability to traverse major steep slopes and had three such slopes totalling over 2,600 m of the route.

"As we continue to grow, so do our capabilities," says Todd Anderson, Vice President, Business Development.

"Over the last year, the team has been hard at work growing our Infrastructure Division, which focuses on delivering sustainable infrastructure solutions for some of the largest and most challenging industry projects."



As Canada transitions into a low-carbon future, SMJV is leading the way, with a new infrastructure team steeped in the 'how-to' technical knowledge to build infrastructure and facilities that support carbon capture utilization and storage (CCUS) and hydrogen energy projects.

With help from industry experts, Mark Atchison (Operations Director, Infrastructure), Blaire MacNeil (Senior Construction Manager, Infrastructure), Kevin MacDonald (Quality Manager, Infrastructure), and Sheldon Stachiw (HSE Manager), SMJV is rapidly growing its team and suite of low-carbon energy projects. In addition to pipeline construction, SMJV's infrastructure team enables the organization to work on compressor stations, heavy oil facilities, power stations, tank farms, well sites/facilities, and more.

In October, SMJV's infrastructure team commenced its first assignment for TC Energy's Groundbirch and Wilde Lake Connector Project, building a three-kilometer connector pipeline at the Wilde Lake Compressor Station. SMJV took roughly three months to complete the construction with zero incidents, causing no harm to people, the environment, or materials.

In early November, the team also completed its first heavy-lift installation at a receiver station. This project showed SMJV's capabilities in adverse weather – starting with no snow on the ground, and winter had arrived as soon as the installation began.

"When completing large-scale infrastructure projects, it is critical to have a team that understands the challenges and seriousness of the project," says Mick. "Surerus Murphy's infrastructure team comes prepared with decades of combined experience."

From conception to completion, SMJV's primary goal is to ensure all projects are delivered successfully, within budget, and on time while maintaining a health and safety culture.

At SMJV, quality, trust, and assured delivery in a safe environment reflect the success of our operations. This directly reflects the talented people who fuel the company, positioning SMJV as a contractor of choice.

"Our employees are the backbone of our organization, and our work is never so urgent or important that we cannot take the time to do it safely," says Sean. "As an organization and a team, we are committed to developing our people into leaders in safety and creating a culture that supports that."



What sets SMJV apart is the combination of collaborative spirit, family values, and the wide range of collective work experience. "Many of our people call the areas in which we work home, and as a result, we have a strong give-back attitude that influences how we work with communities and Indigenous Partners," reflects Todd.

SMJV continues to grow in employee count, project reach, and the number of its communities, and it leaves a positive impact in all these areas. The land on and around SMJV project sites is crucial concerning the environment. SMJV recognizes that the organization is a guest of the land and a guest in the local communities. SMJV is responsible for respecting the environment and the Indigenous communities it touches.

"Looking forward, we have seen an increase, in both interest and opportunity, in the infrastructure space with several key project requests," says Mick. "We believe this will be fundamental to providing a more balanced and sustainable workflow in the coming years, and SMJV will be an important partner to our clients as they develop their energy transition strategies."



SMJV is growing in talent, projects, and ability to partner in energy transition opportunities. As it grows, it continues to focus on safe operations, forging collaborative partnerships, and strengthening its culture of caring. Its values of Never Harm, Trust, Integrity, and Assured Delivery grounded the organization in 2014 when the two families met and embarked on this venture. These values still ground the organization today. Year after year, SMJV has reported strong engagement and satisfaction ratings. Beyond client accolades and community recognition, the employees of SMJV are ready to embrace the future.

An anonymous employee recently filled out a feedback card that sums up the organizational mood, saying, "I'm here for the long-term. SMJV is making its move into the low-carbon energy future, and I can't wait for the opportunities to come."

PIPELINE TALE

IS A PIPELINER BORN OR BRED?

BY DAVID HERMANSON, JUNIOR

Pipeliners - The first 50 years of childhood are the hardest.

Listen, I'm a normal, everyday kind of guy and put on my pants like everyone else. The difference is that I'm lucky enough to build pipelines immediately once they are on.

So how did my parents know my siblings and I were destined for life on the pipeline? I'm not sure, but I can share some questions you can ask yourself as you think about your children. Are they task-oriented and like to get 'er done? Do they care about the environment? Safety? Do they like seeing hills and trees and then more hills and trees in an exotic location like Fox Creek, Chetwynd, or Zama? If you've answered yes to any of these questions, then let me be the first to congratulate you; you may have a future pipeliner on your hands. Well done.

As an adult, I realize that my parents may have known quite early that I was meant to be a pipeliner. How did they know? There were subtle hints and whispers that I can now see more clearly through the lens of time.

I remember my parents discussing my Halloween costume in 2nd grade. I heard my dad say to my mom, "Listen, I meet these guys every day at work, and if we dress up this kid as a welder, he won't even get out of the truck."

Then I would eventually attempt to navigate the uncertain waters of romance for the first time with my father. My awkward birds and the bee's conversation consisted of my father sitting me down, looking me in the eye, and telling me, "Listen, man, just wine 'em, dine 'em, pipeline 'em. Now get out there and smoke some darts and break some hearts, you crazy kid". Looking back, I suppose that would have been a confusing chat for any 8-year-old.

I recall after getting my heart broken the first time, my older brother, concerned, sat with me and "are you ok? You haven't talked about pipelines once today."



David Hermanson, Junior

My mom was speaking at my wedding, with her glass raised and her eyes welling with tears, told of the day she knew for sure I was a pipeliner. I was only 12 working in the garage one winter, and I hit my finger with a hammer, and she heard my colorful weave tapestry of profanity so large that it could have blanketed the community in its warmth that day.

Now I know what you're thinking. Hearing my story is just like listening to someone read you from a book about your own. Why is that? Because the bonds kids create at summer camps are the same ones forged on in the Pipeline Industry. The only difference is that these bonds of friendship don't last a summer; they last years and decades in many cases. Even when we have never met, these are my pipeline brothers and sisters.



Well, in an industry that has embraced me like an extended family, I would like to share some parting advice for any considering a career in the pipeline. My granma passed these to me; now, I share them with you with love. Anytime you find yourself lost and wonder what to be in a sometimes unkind and even cruel world, and when you can choose to be anything, choose to be a Pipeliner.

TECHNICAL ARTICLE

PIPELINE DRYING – METHANOL WASH

BY HIRAN GANGULI, P.ENG.

A **new pipeline needs** to be dried after being pressure-tested using water. Such pressure testing is also called hydrostatic pressure testing or simply hydrotesting a pipeline. Here, drying means removing any residual water left in the pipeline after hydrotesting, for the following reasons, especially for natural gas pipelines:

❖ Hydrate Formation

A hydrate is a compound that has absorbed water molecules and included them in its structure. There are three hydrates: **inorganic, organic, and gas (or clathrate) hydrates.**

- **Inorganic hydrates** form when water molecules loosely bond to the compound without chemical reaction. One can heat the blend to remove the water molecule(s). Examples of inorganic hydrates are Epsom Salts, Washing Soda, Borax, Copper Sulfate, etc.
- **Organic hydrates** form by adding water molecules to a carbonyl group of aldehyde or ketone; the water molecules chemically react and bond to the compound.
- **Gas hydrates** form when water molecules form a loose framework around the gas molecule, usually methane, the most significant ingredient of natural gas. Therefore, the residual water in a natural gas pipeline can form hydrates when the product starts flowing in the pipeline. The hydrates stick to the internal wall of the pipeline, reducing the inner diameter and flow efficiency. The hydrates can also clog the instruments in the metering and compressor stations, requiring shutdown of the pipeline operation.

❖ Corrosion

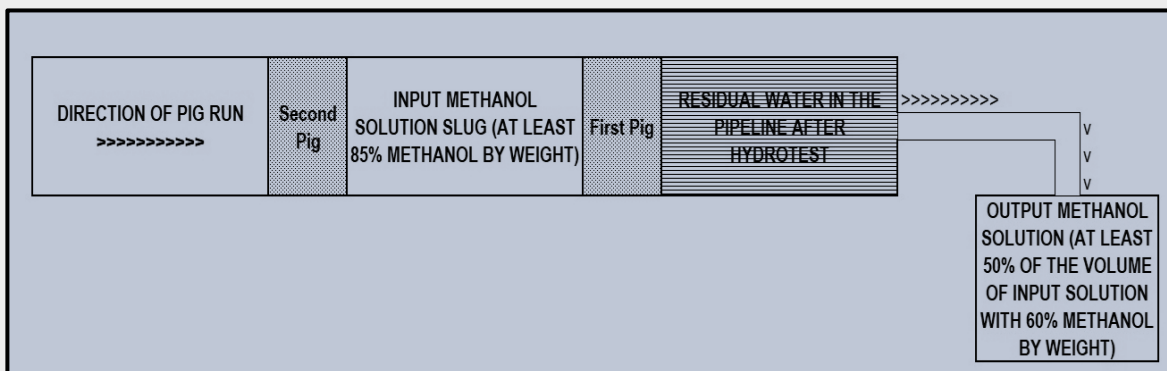
The residual water will result in corrosion inside the pipeline.

❖ Water / Natural Gas Ratio

The Water / Natural Gas ratio may exceed the minimum specifications prescribed by the customer at the downstream end of the pipeline.

There are three methods of drying a pipeline, Dry Runs, Methanol Wash, and Air Drying. We will discuss Methanol Wash here.

In Methanol Wash, the Pipeline Contractor runs a specified amount of methanol with specified purity (**Input Solution**) as a slug between a set of two pigs inside the new pipeline. The volume of the Input Solution is a function of the pipe diameter and length of the pipeline. The Contractor measures and records the solution's temperature, specific gravity, and volume before injecting it into the pipeline to determine the methanol / water ratio of the Injected Solution.



Specifications of the Input Solution

The minimum percentage of methanol (CH₃OH) will be 85% by weight. This translates that the Maximum specific gravities of the Injected Solution will have to be equal to or less than:

0.851 at 0 deg C; 0.842 at 10 deg C; 0.837 at 15 deg C; 0.834 at 20 Deg C

The Minimum Volumes of the Input Solution are:

Pipe Nominal Size (NPS)	Pipe Outside Diameter (mm)	Injected Solution Volume (litres / km)
NPS 4	114.3	85
NPS 6	168.3	100
NPS 8	219.1	125
NPS 10	273.1	155
NPS 12	323.9	180
NPS 16	406.4	225
NPS 20	508.0	255
NPS 24	610.0	285
NPS 30	762.0	405
NPS 36	914.0	510
NPS 42	1067.0	680
NPS 48	1219.0	850

The Contractor controls the back-pressure inside the pipeline to ensure that the methanol slug and pigs move along the pipeline at a constant maximum speed of 8.0 km/hour.



The front pig pushes the **Residual water** left behind inside the pipeline. Any water that passes around the first pig gets mixed with the methanol slug, and any water that passes the second pig remains in the pipeline. Behind the second pig, this **Leftover Solution** will have an increasing percentage of water as the pigs move towards the other end of the pipeline.

Specifications of the Recovered Solution

The Contractor collects and measures the Recovered solution's volume, specific gravity, and temperature to meet the specifications. The Recovered Solution Specifications are:

The Minimum Volume = 50% of the volume of Injected Solution.

Minimum Concentration of pure methanol = 60% by weight. This translates that the Maximum specific gravities of the Recovered Solution will have to be equal to or less than:

0.909 at 0 deg C; 0.902 at 10 deg C; 0.898 at 15 deg C; 0.895 at 20 Deg C

Specifications of the Leftover Solution

The Injected and Recovered solutions are analyzed to determine that the Leftover solution in the pipeline has enough methanol not to freeze, not build hydrates when the natural gas starts flowing, and have a minimum film thickness inside the pipe wall of 0.12 mm.

If this specification is not met, the Contractor will run a second methanol wash.

COMPANY AD

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COMEDY CORNER

SIGN IN A MACHINE SHOP

"Ladies, if you are wearing loose-fitting clothes, beware of the machines.

If you are wearing tight-fitting clothes, beware of the machinists!"

----- XXXXX -----

An immigrant doctor can't find a job in a hospital in the US, so he opens a clinic and puts a sign outside 'GET TREATMENT FOR \$20 - IF NOT CURED GET BACK \$100.

A lawyer thinks this is an excellent opportunity to earn \$100 and goes to the clinic.

Lawyer: "I have lost my sense of taste."

Immigrant doctor: "Nurse, bring medicine from box no. 22 and put three drops in patient's mouth"

Lawyer: "Ugh; this is kerosene."

Immigrant doctor: "Congrats, your sense of taste is restored. Give me \$20."

The annoyed lawyer goes back after a few days to recover his money.

Lawyer: "I have lost my memory. I cannot remember anything."

Immigrant doctor: "Nurse, bring medicine from box no. 22 and put three drops in his mouth"

Lawyer (annoyed): "This is kerosene. You gave this to me last time for restoring my taste."

Immigrant doctor: "Congrats, you got your memory back. Give me \$20."

The fuming lawyer pays him and then comes back a week later determined to get back \$100.

Lawyer: "My eyesight has become very weak. I can't see at all."

Immigrant doctor: "Well, I don't have any medicine for that, so take this \$100."

Lawyer (staring at the note): "But this is \$20, not \$100."

Immigrant doctor: "Congrats, your eyesight is restored. Give me \$20."

You can't beat the Immigrants!!!! Be careful.

PIPELINE QUIZ

1. **True or False?** Stripping has nothing to do with taking your clothes off on the Pipeline Right of way?
2. **True or False?** When we mix one ounce of whisky with two ounces of soda, we get three ounces of cocktail?
3. **What does LNG stand for?**
 - a. Liquefied Natural Gas
 - b. Limited Natural Gas
 - c. Leftover Natural Gas
4. **True or False?** Swamp weights are used to sink a dead body in the rivers.
5. **True or False?** A joint is a stick of cannabis.
6. **Yes, or No?** Do Governments own Freehold lands?
7. **True or False?** Grubbing means eating lunch on the pipeline job site.
8. **True or False?** Shrink Sleeves are found on short sleeve shirts.
9. **True or False?** Pigging means to bar-b-quing a pig on the pipeline Right of Way.
10. **True or False?** The endcap is the last drink before going to bed.

COMPANY AD

PIASHA PIPELINES

COMPANY PROFILE

Piasha Pipelines was established in Calgary in 2001 with the vision of offering consulting and training services to the Canadian Pipeline industry. Piasha has:

- ❖ Consulted with many pipeline owners, consulting, and construction companies.
- ❖ Developed and provided pipeline-related training courses to over 1,000 students.
- ❖ Certified over 70 pipeline inspectors.
- ❖ Developed numerous procedures, standards, training courses.



PIPELINE CONSULTANCY

Project Management
Cost Estimate Review

Pipeline Engineering
Employee Mentoring

Project Advisory
Project Proposals

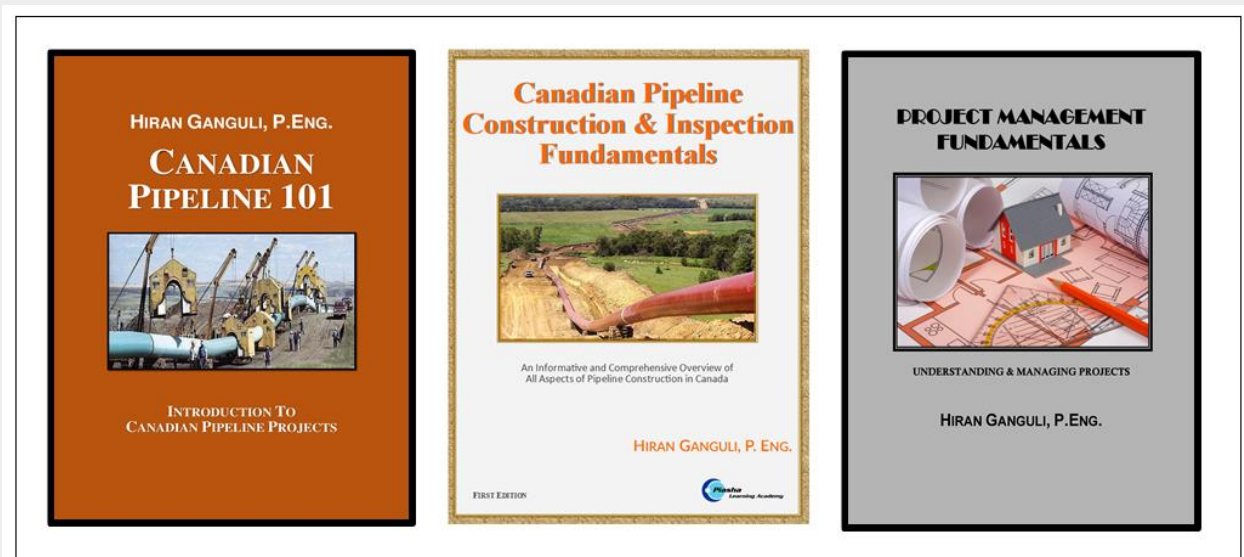
TECHNICAL DOCUMENT DEVELOPMENT

Pipeline Playbooks
Pipeline Hydrotest Specifications
Pipeline Construction Standards

Pipeline Construction Specifications
Pipeline Inspection Training Modules
Quality Management Standards

BOOKS

- ❖ Canadian Pipeline 101 – Introduction to Canadian Pipeline Projects by Hiran Ganguli.
- ❖ Canadian Pipeline Construction & Inspection Fundamentals by Hiran Ganguli.
- ❖ Project Management Fundamentals by Hiran Ganguli.



Training Courses

1. CANADIAN PIPELINE PROJECT EXECUTION 101

It is a full-day certified course designed to train participants to execute a Canadian Pipeline project from Feasibility to Planning to Design to Construction to In-service.

2. CANADIAN PIPELINE CONSTRUCTION 101

It is a half-day certified course designed to train participants to construct Canadian Pipelines from Clearing to Final Clean-up.

3. HYDROSTATIC PRESSURE TESTING OF CANADIAN PIPELINES

It is a full-day certified course designed to train the participants with the pressure testing of Canadian pipelines. Through hands-on exercises, the students learn how to calculate hydrotest pressures based on CSA and NEB codes & standards, pressurizing, yield plotting, leak detection, and Test acceptance through a mock in-class hydrotesting exercise.

4. INSPECTOR TRAINING FOR PIPELINE CONSTRUCTION

A six-month in-home 28-module correspondence course with certificates to train individuals about inspecting Canadian pipelines during their construction: the students write multiple-choice exams at the end of each module to receive a certificate of completion.

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