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# Transmission Pipelines in Canada

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RELATIONS  
29 JANUARY 2015

# Who is CEPA?

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The **Canadian Energy Pipeline Association** (CEPA) represents Canada's transmission pipeline companies who operate about 130,000 kilometres of pipeline in Canada and the United States.

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## VISION

A safe, socially and environmentally sustainable energy pipeline industry for Canadians.

## MISSION

Continually enhance the operating excellence, business environment and recognized responsibility of the Canadian energy transmission pipeline industry through leadership and credible engagement between member companies, governments, the public and stakeholders.

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# CEPA members



- Access Pipeline Inc.
- Alliance Pipeline Ltd.
- ATCO Pipelines
- Enbridge Pipelines Inc.
- Inter Pipeline Ltd.
- Kinder Morgan Canada
- Pembina Pipeline Corporation
- Plains Midstream Canada
- Spectra Energy
- TransCanada PipeLines Limited
- TransGas Limited
- Trans-Northern Pipelines Inc.



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# Pipeline industry vitals

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Over 60 years in  
Canada



Highly regulated  
industry

97%

Transports 97% of the natural  
gas and onshore crude oil  
produced in Canada

~ 130,000km



~ 130,000 kilometres of  
pipeline in Canada and  
the U.S.



Safe and  
environmentally sound



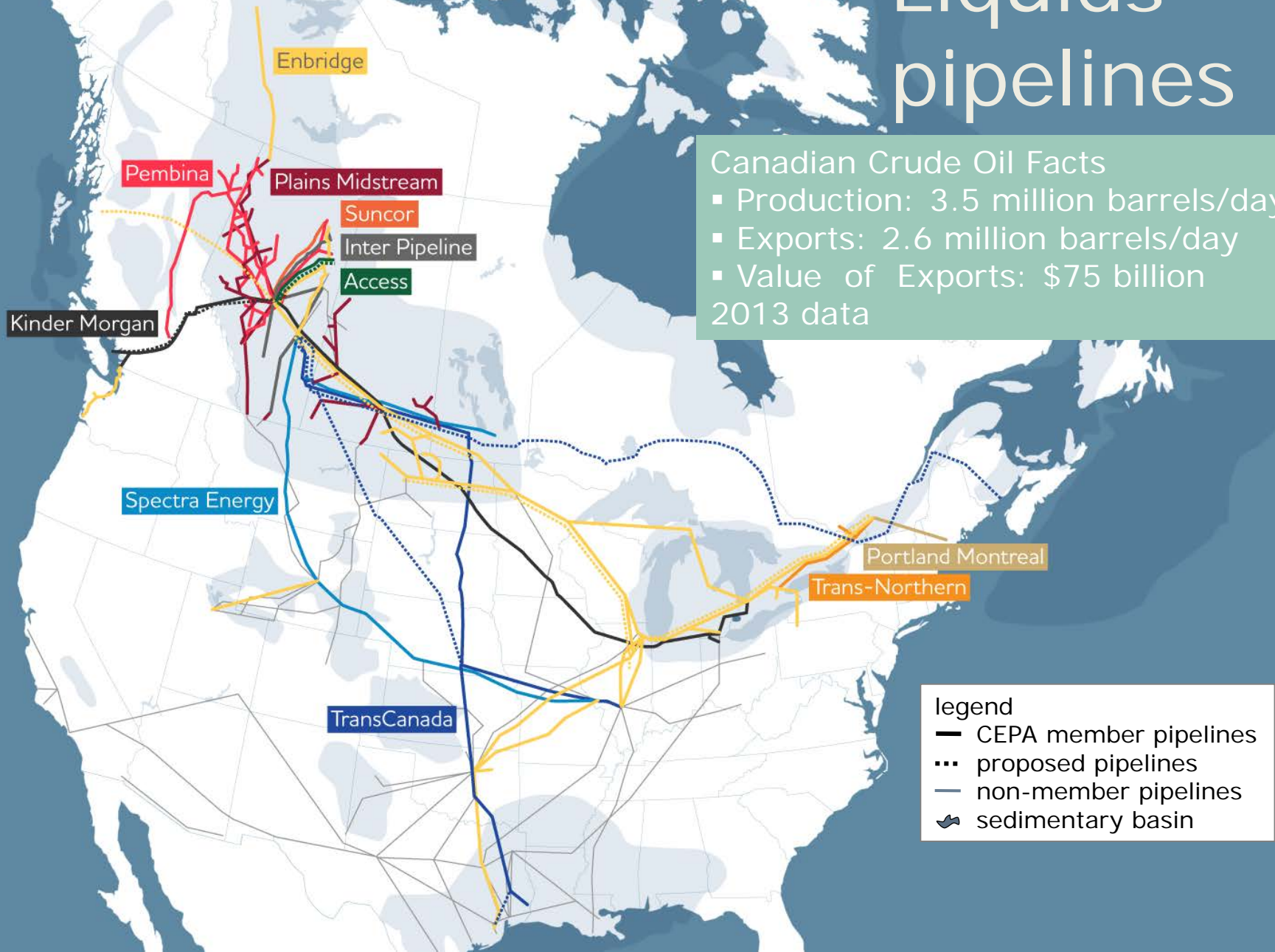
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# Liquids pipelines

## Canadian Crude Oil Facts

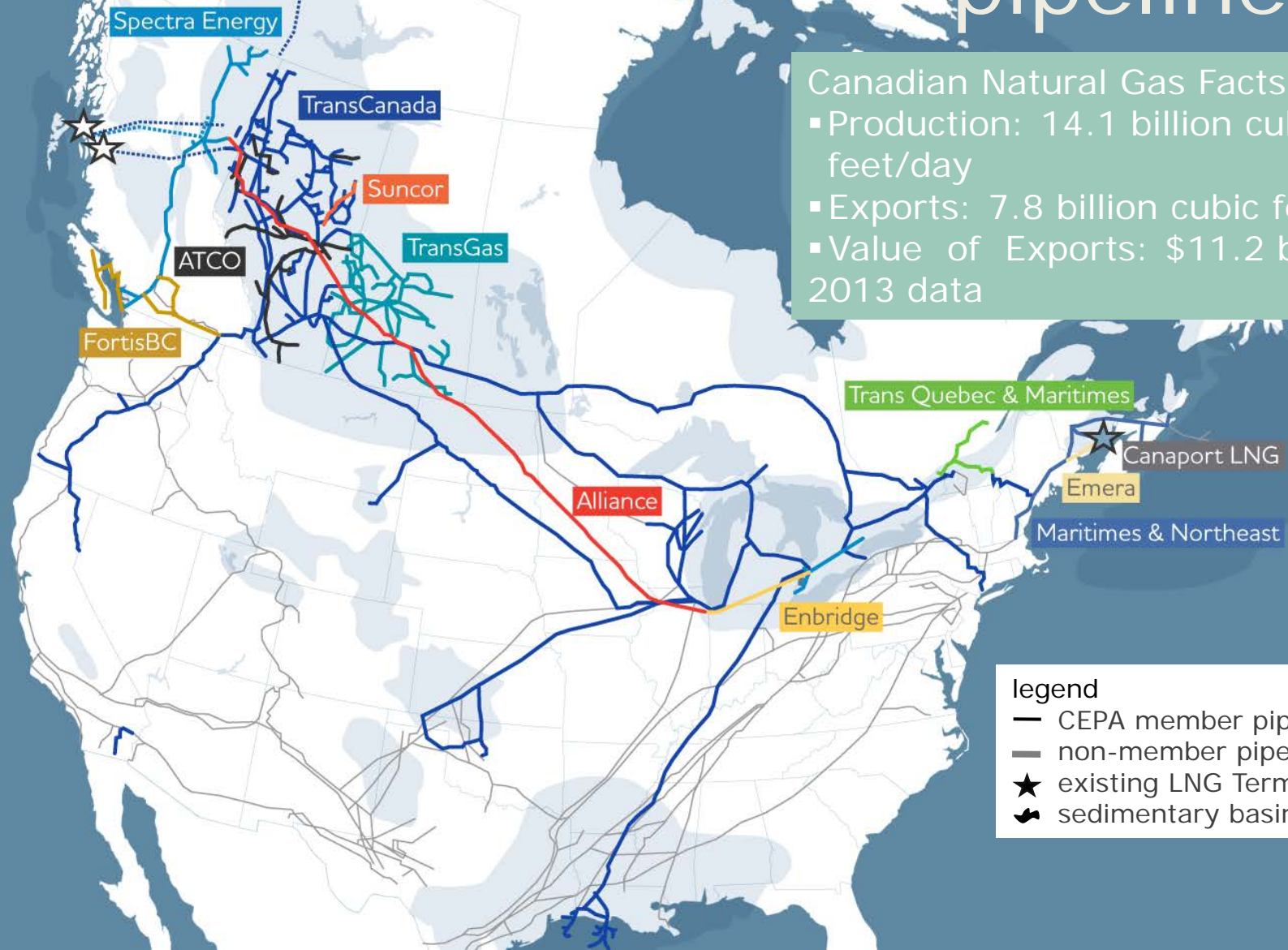
- Production: 3.5 million barrels/day
  - Exports: 2.6 million barrels/day
  - Value of Exports: \$75 billion
- 2013 data



# Natural gas pipelines

## Canadian Natural Gas Facts

- Production: 14.1 billion cubic feet/day
  - Exports: 7.8 billion cubic feet/day
  - Value of Exports: \$11.2 billion
- 2013 data



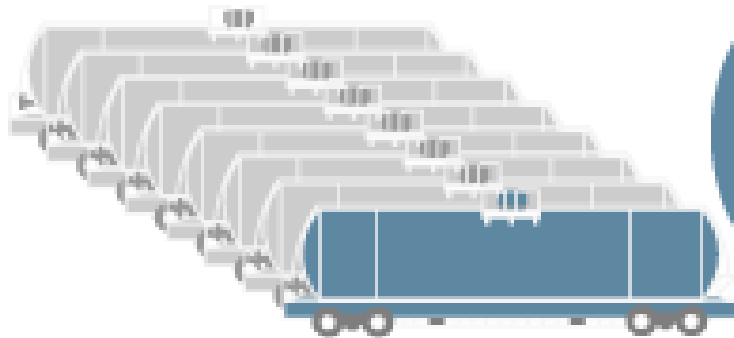
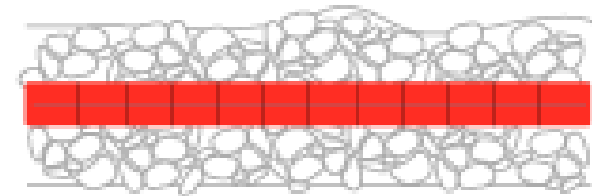
### legend

- CEPA member pipelines
- - - non-member pipelines
- ★ existing LNG Terminal
- ↖ sedimentary basin

# Pipelines — energy highways

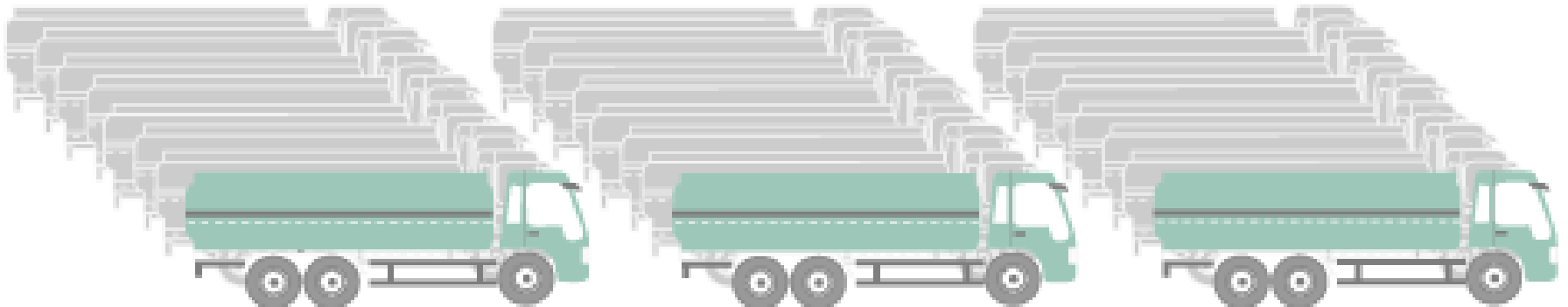
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Transmission pipelines in Canada transport 3.3 million barrels of oil per day

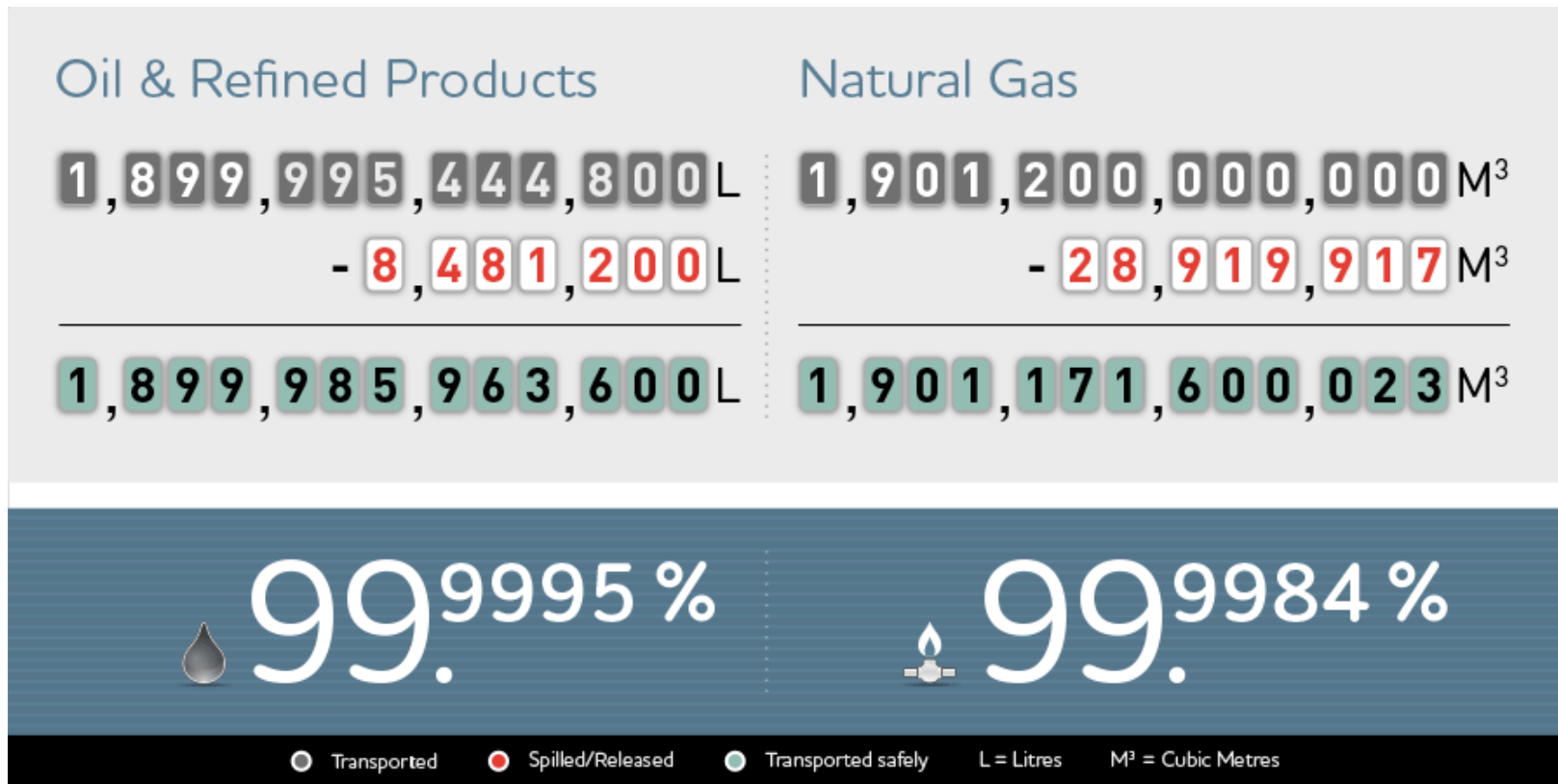


equivalent  
to 4,200  
rail cars

equivalent  
to 15,000  
tanker trucks



# Product arrives safely



Source: CEPA member data

\*Between 2002 - 2013



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# Pipelines - critical infrastructure

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# Current economic context

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Market access, trade are drivers of pipeline infrastructure development



Access to new markets will position Canada as a strategic, international oil supplier



Oil and gas, utilities industries represents over 23% of the Equity Capital raised on the TSX(V) (2013)



Only 20% of total world oil reserves are accessible for private sector investment



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# Socio-political context

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Unprecedented public and stakeholder interest, resistance and mistrust



Frustration and misinformation as a result of global challenges: climate change, population and energy needs



Heightened public sensitivity



Concerns about risk and environmental impact about industrial facilities



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# Trust – a critical cornerstone

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$$\text{CREDIBILITY} + \text{RELIABILITY} + \text{INTIMACY} \\ \hline \text{SELF INTEREST}$$

CREDIBILITY = Technical competence/expertise

RELIABILITY = Perceptions of dependability, consistency and predictability

INTIMACY = Closeness & depth of the relationship/mutual understanding

SELF-INTEREST = Perceived or real: focus on personal gain/power/glory



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# CEPA Integrity First®

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IMPROVE TRUST AND CONFIDENCE IN THE INDUSTRY



1

PERFORMANCE



2

ZERO INCIDENTS



3

ACCOUNTABILITY



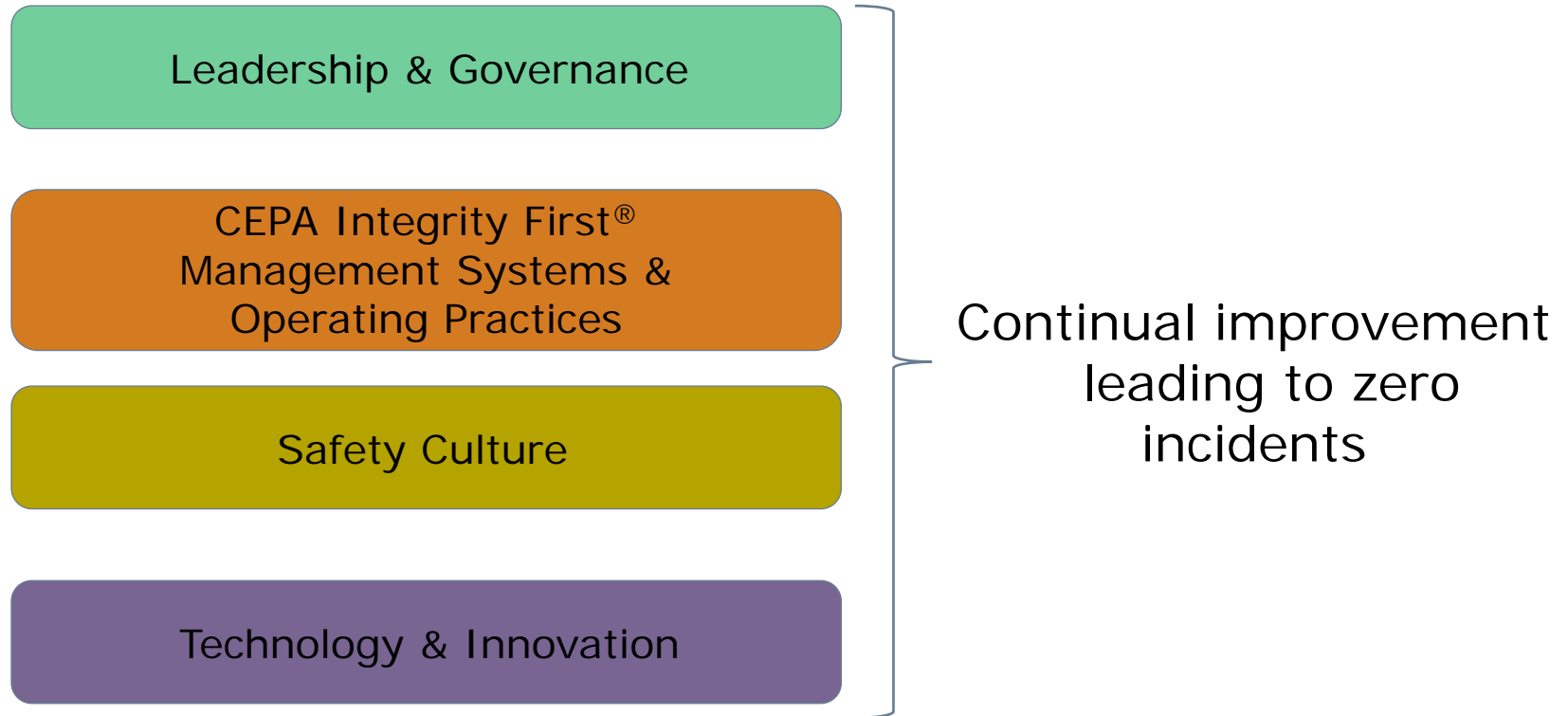
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# Getting to zero incidents

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Accountability, performance and execution



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# Integrity First

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## Principles and Priorities



Ensuring safe communities and workplaces

### PRIORITIES

- Worker safety
- Damage prevention
- Emergency management
- Pipeline integrity
- Control room management



Minimizing our impact on the environment and biodiversity throughout every phase of pipeline operations

### PRIORITIES

- Land management
- Air emissions
- Water impacts
- Wildlife
- Noise



Creating lasting social and economic benefits to communities, regions where we operate

### PRIORITIES

- Land use and access
- Economic benefits
- Aboriginal relations
- Workforce

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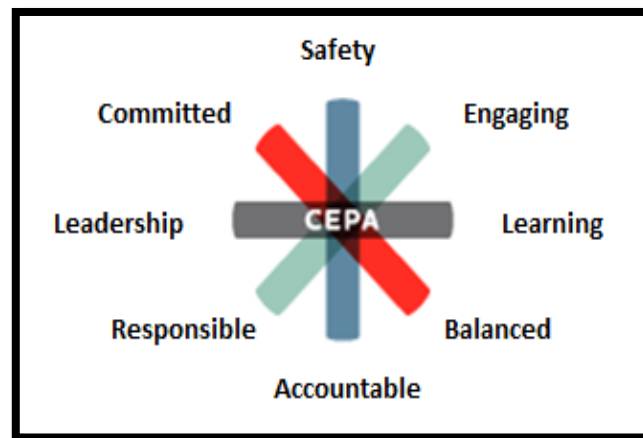
**Engagement:** Engage stakeholders in proactive, respectful and responsive dialogue on our plans and operations

**Communication:** Communicate openly, proactively and in a transparent manner about our industry and its performance.

# CEPA is committed to:

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We are committed to advancing a **safety culture** throughout our industry based on a strong **foundation of leadership and continual improvement** leading to **zero incidents**



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Prevention, Preparedness and Response



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# Industry focus is pipeline safety

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# Pipeline integrity management

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The goal is safe, environmentally responsible, reliable service.



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# CEPA focus

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- Mutual Emergency Assistance Agreement signed
- Adoption of Incident Command System (ICS) to ensure interoperability
- CEPA Industry Emergency Response Exercise
- New CSA Standards for Emergency Management
- Upcoming new CSA Standard for buried infrastructure



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# Current projects

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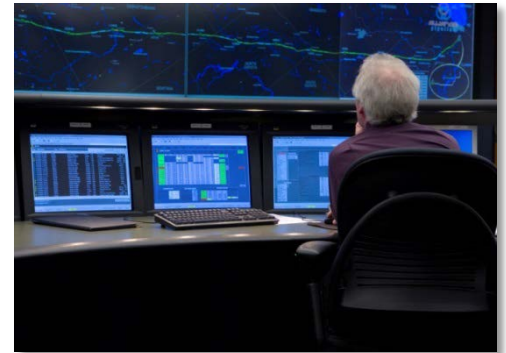
Guidance documents and management practices completed/underway:

- Pipeline Integrity\*
- Emergency Management\*
- Control Room Management\*\*
- Watercourse Impact & Damage Prevention
- Land Agent Code of Conduct

\* Initial Self-assessments completed

\*\* Self-assessments to be completed in 2015

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# Watercourse Crossing Guidelines

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- 5<sup>th</sup> edition is currently under review to reflect changes to Fisheries Act of November 2013
- NEB responsible for assessing potential impacts on fisheries for NEB regulated projects
- Guidelines (PAWC) applies to new crossings under DFO authority.
- New guidelines will reflect requirements under the new Act
- New guidelines will improve self-assessment process by providing science-based guidance for pipeline industry



# Concluding thoughts

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- Pipelines are critical infrastructure
- Safe and reliable pipeline operations are essential elements of the public interest
- Pipeline industry is committed to reaching zero incidents
- Collaboration, transparency and credible engagement are critical factors to our success



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# Questions?

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CANADIAN ENERGY PIPELINE  
ASSOCIATION

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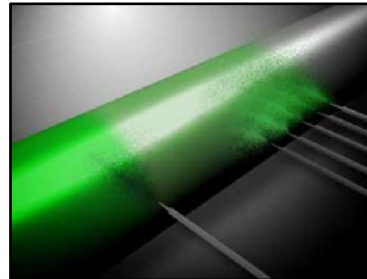
# Advancement in coatings



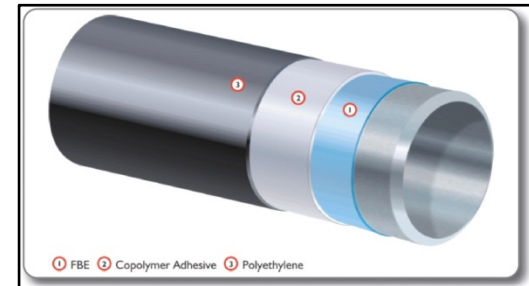
Coal tar and petroleum asphalt



Tape coat and tape wrap



Fusion bonded epoxy



Three layer systems

1950

1960

1970

1980

1990

2000



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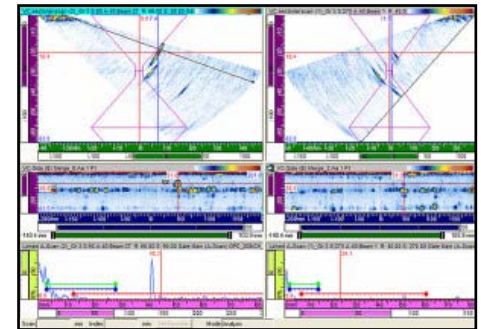
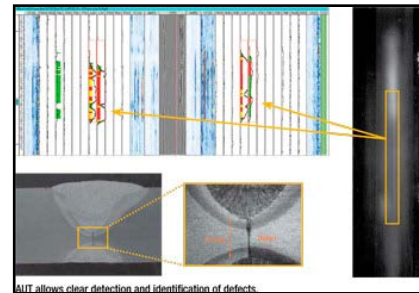
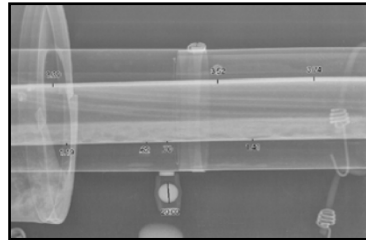
# Advancement in testing

Gamma ray

X-rays

Automated ultrasonic testing

Phased array ultrasonic testing



1950

1960

1970

1980

1990

2000



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# Pipeline inspection

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- Smart in-line inspection tools
- Visual surveys
  - Aerial
  - Ground patrols



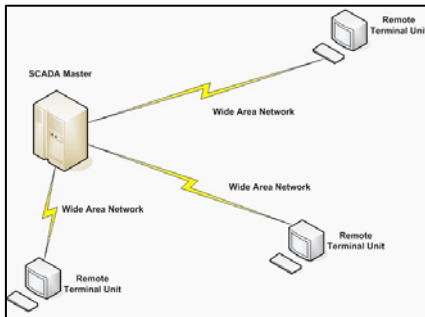
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# Advancement in monitoring

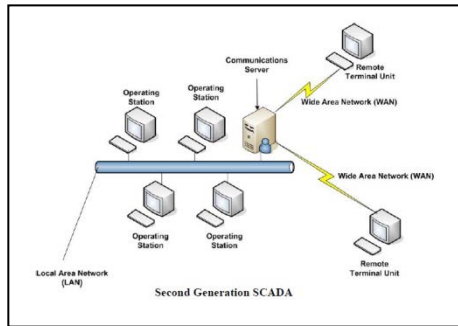
Four generations of SCADA systems:

Monolithic



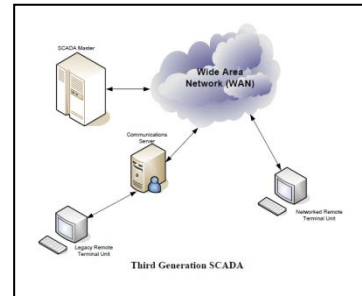
1970

Distributed



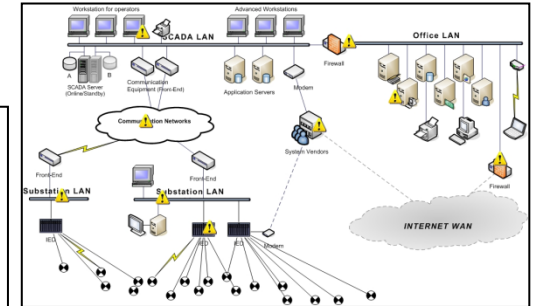
1980

Networks



1990

Internet



2000

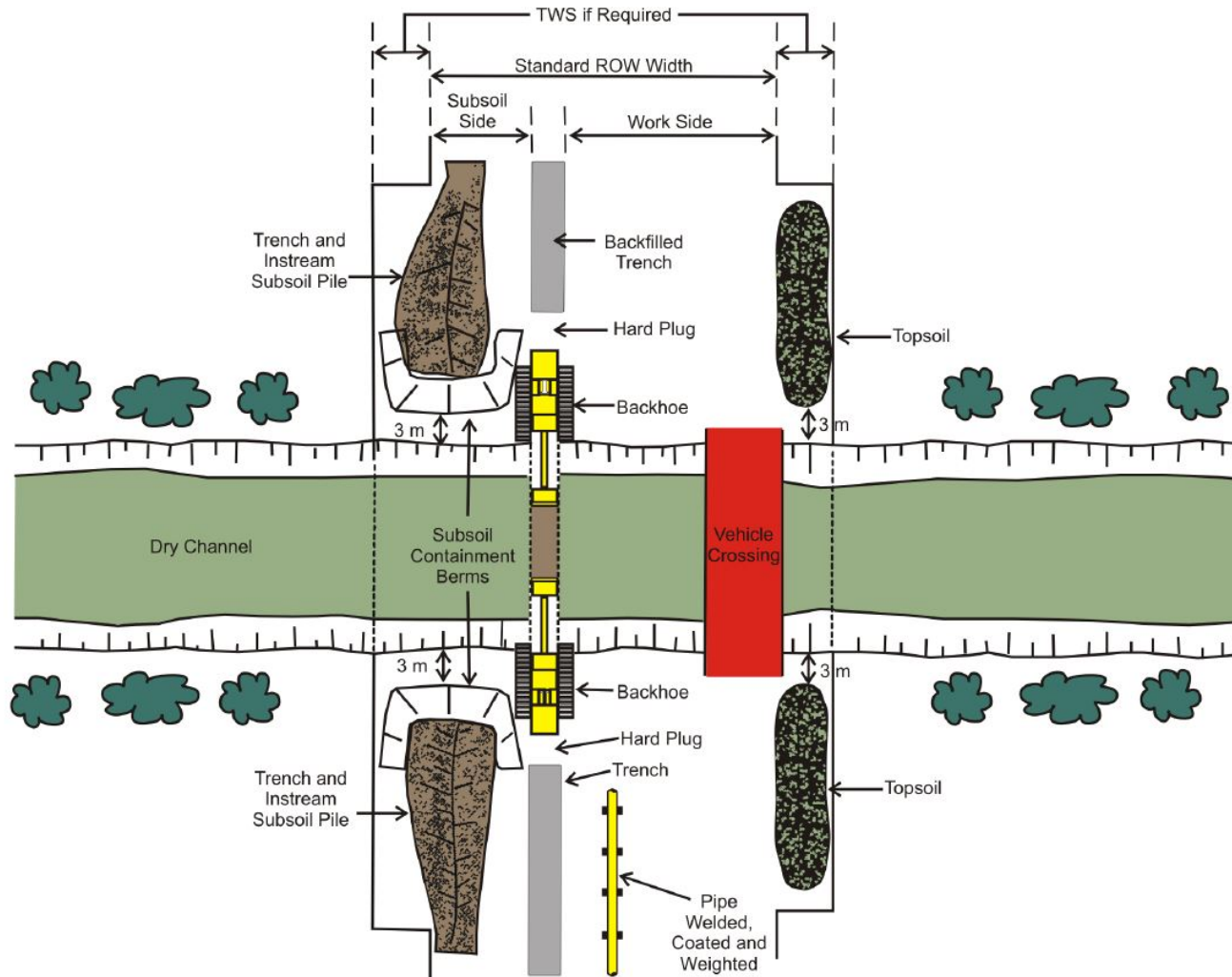
2010



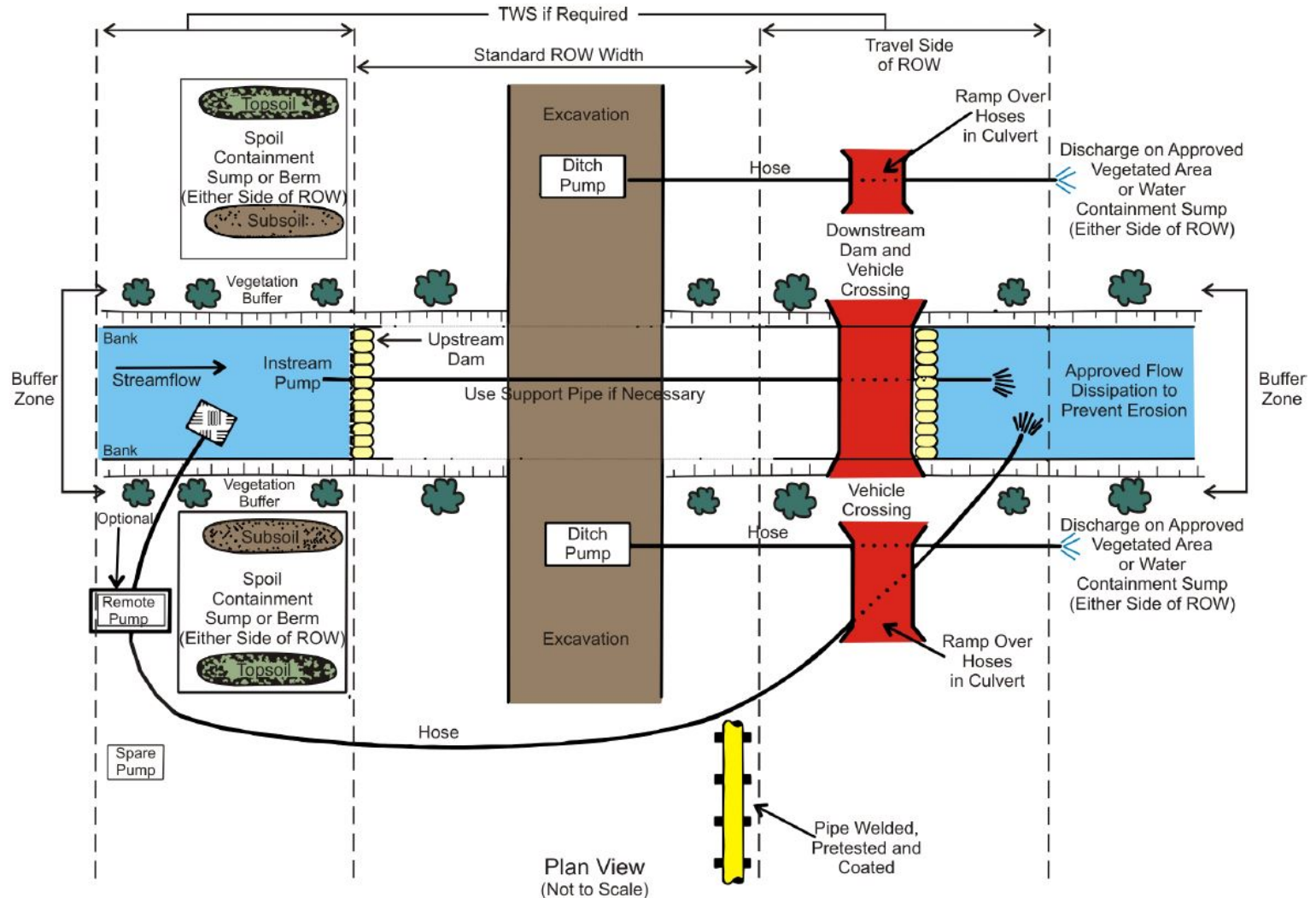
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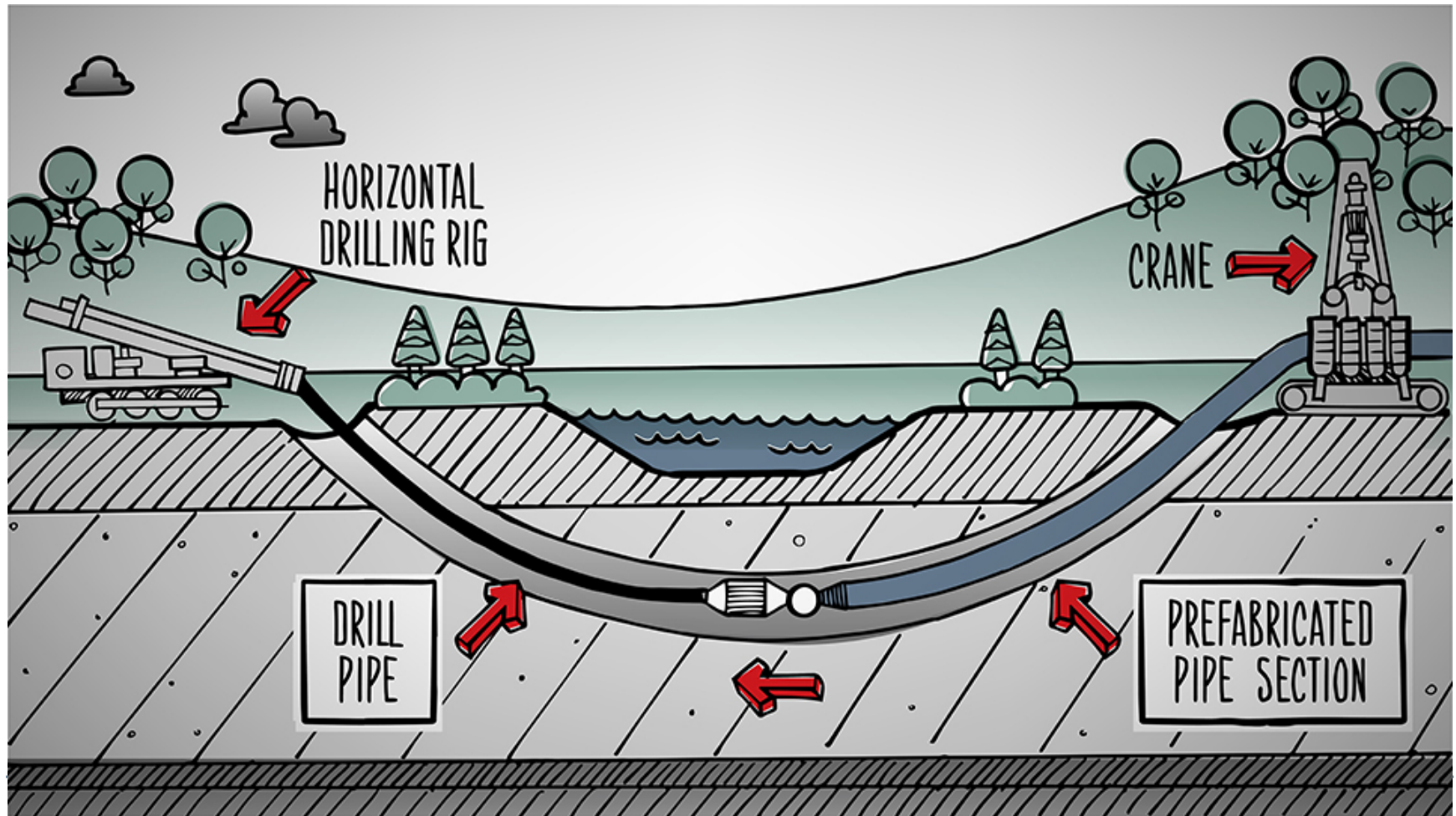
# Open cut method



# Isolated method



# Horizontal directional drilling



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