

# Integrity Dig:

## Excavating a section of pipeline for inspection



### What is an Integrity Dig?

As part of our comprehensive integrity management program, Enbridge periodically uses internal inspection tools that travel inside our pipelines to collect data and evaluate the condition of the pipeline.



**If the Integrity Dig inspection determines a repair is required, the pipe section will be replaced or a pipe sleeve will be welded over the identified portion of the pipe to restore its integrity.**

In some cases, the inspection tool locates a feature that requires a visual inspection to determine if a repair or other action is required. This is called an Integrity Dig.

### Does this mean the pipeline isn't safe?

Enbridge has safely operated in this area for many decades. Underground pipelines transport essential crude oil to make petroleum products used every day across North America from asphalt for roads to jet fuel and gasoline for our vehicles. According to government data, pipelines are, by far, the safest way to transport crude oil and other petroleum products.

Enbridge transports as much as 1.6 million barrels (about 67 billion gallons) of North American crude oil every day through an extensive

underground pipeline system. Enbridge has many procedures in place to ensure safe transportation of that crude oil beginning with the materials and special coatings used to manufacture our pipelines, cathodic protection measures to prevent corrosion, 24-hour computerized pressure monitoring of the crude oil being transported, routine aerial monitoring, internal pipeline inspection tools to periodically monitor integrity and an integrity dig program.

Enbridge takes the safe operation of our pipelines very seriously. Our integrity dig program is one example of our effort to prevent a pipeline incident.



**Internal pipeline inspection tools are inserted into the pipeline to collect data on the integrity of the pipe. The data collected helps determine the need to excavate a section of the pipeline for further inspection.**

### What will the excavation work involve?

Using temporary markers, Enbridge will stake out the access route and location of the excavation on the right-of-way. Typically, the area of the excavation is then stripped of topsoil, which is stored separately from the subsoil. After the pipeline is excavated, the pipe coating is

removed so the pipeline can be inspected. In some cases, the pipe is cleaned and coating repaired so early signs of corrosion are stopped. In other cases, the pipe section will be replaced or a permanent repair is done by installing a sleeve over the identified portion of the pipe to restore its integrity. Welds are tested, and the section is inspected to ensure repairs meet standards.



**Enbridge works with landowners to ensure property is restored after construction activity.**

Once the pipeline is repaired, the pipe's coating is replaced and the excavation is backfilled. Marking stakes are then removed, and the affected landscape is restored. Depending on the time of year when the work is completed, restoration may have to be delayed until the next spring season.

Enbridge will work with landowners ahead of time to communicate the schedule, identify special considerations and adjust or add remediation steps as appropriate. The affected site will be checked again later in the year to ensure restoration of the area has been completed satisfactorily.

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## How does Enbridge notify landowners?

An Enbridge representative will make reasonable efforts to contact landowners several days to one week in advance of required pipeline work. Then, an Enbridge representative will work with the landowner to arrange for land access, discuss estimated compensation for potential damages, determine a preferred work schedule, review environmental and safety considerations, provide Enbridge contact information, and address other questions and property-specific concerns.



**Enbridge compensates landowners using established guidelines. Payments vary according to fair market value of the crop loss incurred and the area of damage.**

In certain areas, temporary workspace next to the permanent easement may be required for equipment or soil storage. In such instances, Enbridge will discuss and make arrangements with the landowner in advance of work activities.

In situations where the pipeline requires immediate attention, attempts to contact landowners in advance will be made; however, if the attempts to make contact are unsuccessful, access and work will proceed in order to minimize potential hazards.

## How does Enbridge protect the environment?

Protecting the environment, compliance with regulatory requirements, and maintaining good landowner relations are important to Enbridge. All integrity dig sites are assessed to determine environmental issues or restrictions. Work within environmentally sensitive areas must be planned on a site-specific basis and special mitigation measures will be used to minimize potential impacts. Enbridge must obtain all necessary licenses, permits and approvals before work begins.

Enbridge's environmental management practices include a review of soil conditions and land use prior to starting work. On cultivated lands, topsoil stripping techniques vary depending on local conditions and the time of year that an excavation may be required as well as landowner requests. Options can be discussed with an Enbridge representative.

## What about safety?

Enbridge adheres to government regulations for all maintenance and construction activities, and is committed to the safety of landowners, employees, contractors and the neighboring public. An Enbridge representative will monitor all excavation activity occurring on the right-of-way to ensure employees and contractors abide by all safety and environmental requirements.

### Enbridge is committed to:

- Ensuring landowners are treated fairly and consistently;
- Identifying special considerations with landowners ahead of time;
- Minimizing landowner inconvenience;
- Maintaining landowner contact to address concerns and provide updates;
- Ensuring safety; and,
- Respecting the environment by complying with regulatory requirements and Company Environmental Policies and Procedures.