

New Brunswick Board of
Commissioners of Public Utilities
15 Market Square, Suite 1400
Saint John, NB
E2L 4Y9



Guidelines For Excavations In The Vicinity Of Pipelines

January 2007



**Call before you dig:
It's the law!**

Definitions

Boundary Limits means the volume of soil contained by vertical planes placed 1 meter each side of the centerline of the pipeline.

Contractor or Excavator means the individual, partnership, corporation, public agency or other entity including homeowner that dig, bore, trench, grade, excavate or break ground with mechanical equipment or explosives in the vicinity of a pipeline.

Pipeline Operator means the individual, partnership, corporation, public agency, or other entity that operates the pipeline system.

Pipeline means those facilities operated by a Company through which gas or oil is conveyed and includes pipe, components, and appurtenances attached to the pipe such as valves and fittings.

Locate means identification of the position of the pipeline on the ground by the use of labeled or painted stakes, flags, and/or high visible paint marks based on records or electronic locating equipment.

Mechanical Equipment means any powered excavator, earthmover, earth piercing equipment or any other device that may damage the pipeline.

Pipeline Locating Services

- City of Saint John*
1-866-344-5463 (1-866-DIG-LINE)

- All other areas of New Brunswick

Enbridge Gas New Brunswick
1-800-994-2762

Maritimes & Northeast Pipeline
1-888-444-6677

Corridor Resources Inc.
1-800-880-5705

* The City of Saint John number is a one-call system to a Locating Service provider for the following organizations: Irving Oil, Enbridge Gas New Brunswick, Aliant, Maritimes & Northeast Pipeline, City of Saint John and Saint John Energy.

1.0 General Conditions

- 1.1 All work shall be carried out in accordance with:
 - a) The Occupational Health and Safety Act and Regulation 91-191 which applies under this Act; and
 - b) The Pipeline Act, 2005 and Regulation 2006-2 which applies under this Act.
- 1.2 The procedures described herein are prepared in the interest of safety to the general public, the workers carrying out the excavation, and the prevention of damage to pipelines and property.
- 1.3 These procedures are to be followed for all ground disturbance work on both private and public lands.

2.0 Notification

- 2.1 Prior to excavation, the contractor responsible for the work shall contact the Locating Services, the Pipeline Operator or the equivalent in the service area, as the case may be, and request Locates of the pipelines in the areas where excavation will be taking place. The contractor must receive the Locates as described in section 3.0 prior to commencing any excavation.
- 2.2 If removing asphalt but not road base, or removing sidewalk but not sidewalk base or curb, a Locate is not required.
- 2.3 The notification shall include the location where the work will take place, the expected time when the work will begin, the scope of the work, the expected duration, the name, address and telephone number of the contractor, and the name of the contractor's site representative.
- 2.4 The request may be made verbally to the Locating Service, the Pipeline Operator, or the equivalent in the service area.
- 2.5 Except in emergency situations, requests for Locates should be made at least 48 hours (two full working days) in advance, but not more than 30 days before any excavation commences.
- 2.6 Except in cases of emergency or in extremely remote rural areas, the Pipeline Operator, will endeavor to respond to notification requests and provide Locates where applicable within 48 hours (two full working days) of the notification. Given sufficient lead-time, the Pipeline Operator, will co-ordinate with the contractor's time schedule to provide the Locate.

3.0 Locates

- 3.1 The Locate, using labeled or painted stakes, flags, and/or high visible paint marks, should indicate the centre line of the pipeline in the defined area of the proposed excavation.
- 3.2 When requested, a diagram with measurements describing the Locate information in section 3.1 should be provided to the contractor's site representative if present at the time of Locate; otherwise, sent to the person who requested the Locate. The diagram should indicate in clear legible terms the Locate information and may be qualified by words regarding scale or orientation.
- 3.3 Where no pipelines are in the defined area of the proposed excavation, the Pipeline Operator must provide an "All Clear" verbal confirmation including a reference number to the contractor. Written confirmation will be provided on request.

4.0 Locate Boundaries/Accuracy

- 4.1 The excavator must not work outside of the area covered by the Locate Information without obtaining a further Locate.
- 4.2 Locate accuracy should be considered to be 1 metre on either side of the surface centre line of the Locate unless the Locate instructions specifically indicate other boundary limits.
- 4.3 Pipelines are usually found within 1.5 metres of the surface. Where the Pipeline Operator, knows that the pipeline is deeper than 1.5 metres, the Pipeline Operator, must so indicate to the excavator. However, this information does not permit the excavator to use mechanical equipment to dig within the boundary limits to expose the pipeline.
- 4.4 Where the pipeline cannot be exposed using the procedures described in section 6.0, the contractor must contact the Pipeline Operator, and the Pipeline Operator, must assist with the Locate.

5.0 Duration

- 5.1 The Contractor is responsible to maintain the Locate markings provided by the Pipeline Operator. Spoil piles or other construction debris must not cover the Locate markings.

- 5.2 Additional Locate requests must be made if any of the following occur;
- a) The Locate markings become unclear.
 - b) The work is to be extended beyond the original proposed work area.
 - c) The work is to continue beyond the specified period stated in section 5.3.
 - d) The contractor who requested the original Locate leaves the site.

5.3 Where a Locate is valid for a specified period of time the deadline must be indicated on the Locate form or diagram.

6.0 Initial Exposure of the Pipeline

6.1 At no time, with the exception of section 2.2, should a contractor or their sub-contractors use mechanical equipment within the boundary limits of the Locate without first digging test hole(s) as outlined in this section to determine the pipeline's exact centre line and depth of cover.

6.2 Test holes should be excavated by one of the following methods:

- a) mechanical equipment could be used immediately outside of the boundary lines and then hand dug laterally until the pipeline is found; or
- b)
 - (1) hand excavation between the boundary limits of the Locate in cuts of at least 0.3 metre (1 foot) in depth,
 - (2) mechanical equipment could then be used to widen the hand dug trench to within 0.3 metre (1 foot) in depth of the hand excavation,
 - (3) repeat steps (1) and (2) until the pipeline is Located,
 - (4) with prior agreement of the Pipeline Operator, machines using vacuum, water or air as the cutting method may be used to Locate and expose pipelines as an alternative to hand digging.

6.3

- a) Concrete saws, jackhammers, hand tools or other similar equipment may be used to break concrete or asphalt on a road or sidewalk surface.
- b) With the exception of sections 2.2, 6.2(a) and 6.2(b), mechanical equipment should only be used to remove broken asphalt or concrete.

- c) Concrete below the road surface layers should not be removed without consultation with the Pipeline Operator that may have pipelines encased therein.

6.4 Additional test holes should be dug where:

- a) alignment changes are identified by the Pipeline Operator representatives, or
- b) changes in elevation are identified by the Pipeline Operator representatives.

7.0 Excavation After Test Holes Are Complete

7.1 Where test holes in an area have been completed and the pipeline exposed, excavation using mechanical equipment may take place provided the following procedures are used:

- a) Wherever possible, mechanical excavating equipment should be operated parallel to the direction of the pipeline when the excavation is within 1.0 metre of the pipeline; and
- b) Mechanical equipment must not be used closer than 0.3 metre (1 foot) to the pipeline;
- c) Excavation within 0.3 metre (1 foot) of the pipeline must be carried out by hand equipment and tools;
- d) Where the proposed excavation is closer than 0.3 metre (1 foot) to the pipeline, the line shall be exposed:
 - (1) by mechanical equipment up to 0.3 meter (1 foot) above the pipeline.
 - (2) by hand equipment and tools within 0.3 meter (1 foot) of the top of the pipeline.
- e) as an alternative to hand equipment and tools, with prior agreement of the Pipeline Operator, machines using vacuum, water or air systems as the cutting method may be used to Locate and expose the pipeline.

7.2 Guidelines for blasting close to pipelines must be obtained from the Pipeline Operator.

7.3 Guidelines for pipelines needing support must be obtained from the Pipeline Operator.

8.0 Backfilling

8.1 Where trenches are to be backfilled, the following requirements should be followed:

- a) Backfilling should be performed in such a manner as to provide firm support under the pipe; and
- b) Trench must be backfilled with clean fill or granular material free of material injurious to the pipe coating and pipe; the Pipeline Operator, must be contacted for the selection of other backfill material; and
- c) Where flooding of trenches is done to consolidate the backfill, care must be exercised so that the pipe is not floated from its firm bearing on the ditch bottom.

9.0 Abandoned Pipelines

9.1 Where a line is found during excavation that was not Located by the Pipeline Operator, but within the area covered by the Locate, never assume the line is abandoned. The Pipeline Operator should be notified immediately to determine if the line is abandoned.

9.2 Abandoned pipelines are defined as lines that have been disconnected and purged in accordance with the CSA Z662 Standard. Excavations in the vicinity of abandoned pipelines shall not be subject to the guidelines in Section 7.0.

10.0 Colour Coding

10.1 Locate markings must conform to the Uniform Color Code using ANSI standard Z53.1 Safety Colours.

11.0 Procedure Where Damage Occurs

11.1 If damage to the coating or pipe occurs and no gas or oil is escaping, leave the pipe exposed and contact the Pipeline Operator.

11.2 If gas or oil is escaping, shut off vehicles or equipment, remove or extinguish all ignition sources, barricade the area off, keep public and workers away. No attempt should be made to control escaping gas.

11.3 Notify the Fire Department, Police and the Pipeline Operator.

12.0 Acts and Regulations

12.1 Relevant sections of the Occupational Health and Safety Act and Pipeline Act must be complied with. See Appendix 1.

APPENDIX I

REGULATION 91-191 UNDER OCCUPATIONAL HEALTH & SAFETY ACT,

Sections 180 (1) states;

180 (1) “Before beginning an excavation or trench, an employer shall ensure that the location of any underground utility line or piping is determined”.

OCCUPATIONAL HEALTH & SAFETY ACT - ENFORCEMENT,

Section 47(1) states;

47(1) Every person who violates or fails to comply with any provision of this Act or the regulations or fails to comply with an order made under this Act or the regulations, commits an offence and is liable on summary conviction

- (a) to a fine of not more than fifty thousand dollars and in default of payment is liable to the procedures laid down in the Provincial Offences Procedure Act in the event of default of payment of a fine, or
- (b) to a term of imprisonment not exceeding six months,

or to both.

PIPELINE ACT, 2005

Section 29 states;

29(1) Any person proposing to undertake or undertaking a ground disturbance shall, before commencing any work, operation or activity,

(a) take all precautions reasonably necessary

(i) to ascertain whether a pipeline exists within

(A) the area in which the person proposes to undertake or undertakes the ground disturbance, and

(B) the distance, prescribed in the regulations, from the area referred to in clause (A), and

(ii) to determine which permittee or licensee owns or operates any pipeline in existence within the area or distance referred to in subparagraph (a)(i), and

(b) notify the permittee or licensee of the nature of the proposed ground disturbance and the proposed schedule for undertaking it.

29(2) When requested by a person proposing to undertake a ground disturbance, a permittee or licensee shall provide that person with any information about a pipeline in existence within the area or distance referred to in subparagraph (1)(a)(i) that is contained in its records and that is required by the person in order to comply with subsection (1) and the regulations.

29(3) A permittee or licensee that may be or is affected by a ground disturbance shall provide the person proposing to undertake the ground disturbance with any assistance that the person may reasonably require to enable that person to comply with this Act and the regulations.

29(4) Where contact is made with a pipeline during any ground disturbance, resulting in a puncture of or crack in the pipeline, or in a scratch, gouge, flattening or dent on the surface of the pipeline, or in damage to its protective coating, the person who is carrying out the ground disturbance shall stop the activity and shall immediately advise the permittee or licensee of the location where the contact occurred and the kind of damage that resulted from the contact.

29(5) Where a ground disturbance has been stopped under subsection (4), no person shall recommence it without the approval of the permittee or licensee or, if approval cannot be reasonably obtained from the permittee or licensee, without the approval of the Board.

29(6) When damage to a pipeline occurs as a result of a contact described in subsection (4), the Board may require the submission of reports in writing from such persons as it may specify, and those persons shall submit the reports required by the Board.

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