



02-Environmental Protection

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Purpose Environmental inspection and monitoring of the pipeline right-of-way (ROW) and facilities ensures continued compliance with regulatory requirements and protection of personal health and natural resources.

Scope This tab includes the minimum requirements for environmental monitoring undertaken as part of routine maintenance of the pipeline ROW and facilities.

NOTE: For environmental protection involving any aspect of construction, see the Environmental Guidelines for Construction.

Legislation

Canada

National Energy Board (NEB):

- Onshore Pipeline Regulations (OPR), latest edition

Canadian Environmental Assessment Act

Canadian Environment Protection Act

Migratory Birds Convention Act

Fisheries Act

Canada Water Act

Transportation of Dangerous Goods (TDG) Act

Species at Risk Act

Guidelines for Canadian Drinking Water Quality

United States

Code of Federal Regulations (CFR), Title 49 – Transportation:

- Part 195—Transportation of Hazardous Liquids by Pipeline
- Part 192—Transportation of Natural and Other Gas by Pipeline:
Minimum Federal Safety Standards

Area contingency plan/regional contingency plan

Clean Air Act

Clean Water Act

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

Emergency Planning and Community Right to know Act (EPCRA)

Federal, state and local environmental agency regulations

Federal and state natural resource agencies

National Environmental Policy Act (NEPA)

Oil Pollution Act (OPA)

Safe Drinking Water Act

Related Standards

Company

Environmental Guidelines for Construction

Waste Management Plan

Industry

American Society of Mechanical Engineers (ASME):

- B31.4 - Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids

Canadian Council of Ministers of the Environment (CCME):

- PN1326 - Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum Products and Allied Petroleum Products

Canadian Standards Association (CSA):

- CSAZ662 – Oil and Gas Pipeline Systems



Purpose

To identify the pipeline maintenance and repair activities that may require environmental permits, licenses, and approvals before beginning work to ensure regulatory compliance.

Responsibilities

Regions are responsible for:

- identifying activities that may require regulatory approvals during maintenance planning and preparation
- notifying Environment of activities that may require environmental permits and approvals
- ensuring compliance with permit conditions

Environment is responsible for:

- assessing the need to acquire permits and approvals for planned activities
- obtaining necessary permits and approvals from appropriate regulatory authorities

Requirements

Since timing to obtain permits varies by jurisdiction, adequate planning is critical. Apply for licenses, permits, and approvals well in advance. Typical activities that may require environmental permits and or regulatory approvals include:

- construction of new facilities and modifications to existing facilities
- disturbing the soil or vegetation offsite
- disturbance in or adjacent to environmentally sensitive areas (e.g., waterbodies, wetlands, cultural resources, endangered species, parks, nesting/denning areas)
- hazardous waste generation, storage, and disposal
- herbicide application
- changes to equipment (e.g., tanks, engines, generators) that affect air emissions
- entering any land within regional land claims
- water withdrawals for hydrotests/dewatering
- discharging stormwater, hydrotest water, or other wastewater
- burning

NOTE: For lead times for permits and for a list of government agencies, contact Environment.



Purpose

Erosion control is necessary to:

- contain excavated soil onsite
- prevent sediment from entering wetlands or waterbodies
- prevent pipe exposure

Responsibilities

Operations

Operations must notify Environment when work is to be conducted in or around a wetland, waterbody or other environmentally sensitive area.

Environment

Environment must coordinate the necessary environmental work and obtain the appropriate permits to conduct the proposed work.

Requirements

Soil Erosion

By Wind

To minimize drifting soils and loss of topsoil by wind, in areas prone to wind erosion:

- limit the time between topsoil stripping and final cleanup
- suspend topsoil stripping and backfill operations during high winds
- apply a tackifier to the topsoil pile
- install wind barriers (e.g., slat fences, snow fences)
- spread wood chips or straw crimping
- sow a fast growing ground cover
- walk down tree and shrub debris over exposed soils

By Water

Use temporary erosion control measures (e.g., sandbags, logs or straw bales) on undisturbed pasture or well-sodded right-of-way (ROW) during cleanup.

Use permanent erosion control measures on disturbed steep slopes during restoration, especially if heavy runoff, spring breakup or heavy storms are likely and there is a risk of significant soil erosion:

- construct trench breakers
- install cross ditches and diversion berms
- walk down tree and shrub debris over exposed soils
- armor berms and ditches with logs, polyethylene or sandbags
- install netting or filter cloth
- apply tackifier
- install and stake sod
- hydromulch

- hydroseed, spread straw and crimp
- seed an annual crop of barley, fall rye, or oats
- plant native shrubs or willow cuttings

NOTE: For information on installing berms and ditches and stream bank protection, see the Environmental Guidelines for Construction.



Purpose

To control the growth of brush, trees, and noxious weeds on company property and the right-of-way (ROW) in order to:

- facilitate operating and maintenance activities
- ensure regulatory compliance
- ensure clear visibility and access along the ROW
- maintain good public relations with landowners
- minimize fire hazards

Responsibilities

Regional Operations are responsible for:

- selecting vegetation control methods
- coordinating vegetation control activities
- retaining herbicide application records

NOTE: For assistance in evaluating appropriate vegetation control methods, contact Environment.

Requirements

Scheduling

Plan annual vegetation control early in the year.

Plan and schedule vegetation control to suit local conditions considering wildlife, wetlands, and land usage.

Notification

Notify landowners before beginning any weed or brush control program, or before applying herbicides on the ROW.

Mechanical Control

Mechanical control of weeds and brush (i.e., physically disrupting plant growth by mowing, cutting, tillage, flooding, mulching, hand pulling, or hoeing) is preferred to chemical control.

Use mechanical control for vegetation adjacent to cultivated agricultural land, and waterbodies (e.g., drainage ditches, streams, creeks, wetlands).

Control brush growth by chipping or mulching.

Minimize clearing next to watercourses and wetlands. Hand cut trees and brush close to the ground (leaving roots intact) and leave a 16 m (50 ft) buffer of undisturbed vegetation between the area of disturbance and the watercourse or wetland. A mechanical devise may be considered when ground conditions will allow its use without creating ruts or depressions.

Cut woody vegetation to just above the ground surface (15 cm [6 in.]), leaving the roots intact.

Work within 30 m (100 ft) of a wetland or waterbody that involves soil disturbance may require regulatory notification or approval. Do not conduct work in these areas without determining regulatory requirements.

Frequent shallow tillage (10-15 cm [4-6 in.]) is effective for controlling weeds.

Mow sloping lands or soils subject to erosion.

Chemical Control

Herbicides must be applied by licensed applicators. Retain a copy of the applicator's license at the facility or in the regional office.

Company personnel may use over-the-counter non-residual herbicides (e.g., Roundup) for small spot applications only on company property.

NOTE: Spot applications cover an area no larger than 1m² (10ft²).


For approval to use herbicides other than non-residual, provide Environment with the following information:

- product name
- MSDS sheet(s)
- label information
- distributor's name and contact information
- application rate
- herbicidal characteristics (e.g., selective/nonselective, short term/long term residual)
- location of herbicide use

Select a herbicide that will control only those weeds growing on a particular site, and apply it at the minimum rate needed for effective control.

Alternate the use of herbicides to avoid developing resistance to specific herbicides.

Before applying herbicides, (a) obtain approval from the site supervisor, and (b) review the product label and MSDS information. Follow all manufacturer instructions.

 USA [Before applying herbicides within the boundaries of native reservations, obtain approval from tribal authorities.

Apply herbicides (e.g., weather conditions, application rate) in accordance with the manufacturer's instructions.

Fire Water Ponds

Contact Environment for approval to use herbicides/aquacides to control vegetation and algae in fire water ponds.

Botanical Control

Seed grass is recommended as a vegetative cover to control erosion and provide competition for weeds.

Use Canada or U.S. No.1 seed or equivalent to minimize weed content and ensure good germination and healthy growth.



Use seed approved by the NWT Department of Environment and Natural Resources. Encourage natural re-vegetation as much as possible when erosion is not a concern.

Short grasses are virtually maintenance-free, and are not as much of a fire hazard as taller species.

Physical Control

Use surface cover fabrics (e.g., geotextiles, gravels, concrete, paving) or thermal methods (e.g., controlled burns, flaming, steaming) to protect sites from erosion and to control vegetation growth.

Regional management must approve the use of thermal methods to control vegetation growth.

Noxious Weeds

NOTE: Infestations of noxious weeds are usually identified by local land use authorities or the landowner when notified of upcoming vegetation control activities.

To avoid introducing or to minimize spreading undesirable weed species when working in areas that are or may be affected by invasive noxious vegetation:

- before arriving and leaving the site, ensure equipment is free of soils, vegetation, or debris
- minimize the equipment used, and limit the number of equipment passes through infested areas
- place mats over infested areas to minimize equipment transporting weed or plant material. Before removal from the site, ensure mats are free of vegetation and debris.
- during grading, strip the full ROW width and contain the spoil pile containing noxious weeds to prevent mixing with the surrounding soil during re-grading and cleanup

Records

Herbicide Application Record

Regional Operations must record the type of herbicide, application rate, area of application, and the applicator's certificate number, if applicable, and retain copies of the applicator's license at the facility or in the regional office for a minimum of 5 years.



Purpose	To ensure water is safe for workers, or to provide an alternative source of potable water.
Scope	This standard includes the requirements for monitoring and testing water at facilities that are not connected to a licensed municipal water supply.
Responsibilities	<p>Regions are responsible for coordinating, planning, implementing, and administering water quality testing when:</p> <ul style="list-style-type: none">• an onsite well is used as the water source• water is hauled from an offsite water source• facilities have been identified as having a water source with potential or confirmed health hazard to workers <p>Environment is responsible for:</p> <ul style="list-style-type: none">• identifying annual potable water testing requirements• monitoring water quality testing• analyzing facility water test results• providing direction to facilities with abnormal test results
Requirements	<p>Hauled Water</p> <p>If the water source is hauled water:</p> <ul style="list-style-type: none">• ensure the water hauling company is licensed• confirm that the tank truck is used only for hauling potable water• confirm that the hauler has a tank decontamination/ disinfection program• obtain the most recent water test results from the water hauler or from the municipal water supply at the time of delivery, if possible <p>Test Frequency</p> <p>Sample and test potable water annually unless more frequent testing is warranted, including:</p> <ul style="list-style-type: none">• change in water clarity, color, odor, or taste• spill in the vicinity of a water well• change in the surrounding land use• change in the water hauling company <p>At isolated or remote work areas, regions are responsible for determining frequency of sampling and testing potable water.</p> <p>For water hauled from a licensed municipal supply, obtain source water test results annually from the supply.</p> <p>For water stored in above and below grade water tanks, sample and test water semi-annually.</p>

Test Parameters - CAN

Test potable water for the parameters in Table 1. In addition, test water stored in above and below grade tanks for total coli forms. If the stored water is in a below grade tank, also test for BTEX.

**Table 1
Potable Water Quality Parameters**

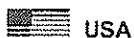


Water Source	Parameters
well water	<ul style="list-style-type: none"> • routine potable water: alkalinity (PP and total), bicarbonate, calcium, CO₃, chloride, conductivity, fluoride, hardness, OH, ion balance, iron, manganese, nitrate, nitrate plus nitrite, nitrite, pH, potassium, sodium, total dissolved solids, SO₄, and turbidity • benzene, toluene, ethyl benzene and xylenes (BTEX) • total and fecal coliform
hauled water from licensed municipal water supply	<ul style="list-style-type: none"> • total and fecal coliform
hauled water from non-licensed municipal water supply (ENB NW)	<ul style="list-style-type: none"> • routine potable water • total and fecal coliform

Test Parameters - USA

At a minimum, test potable water for:

- total coliform bacteria count
- total nitrate
- total petroleum hydrocarbons



NOTE: For additional parameters for testing well water, contact the appropriate state regulatory agency. For testing requirements or recommendations on local groundwater conditions, contact the County Health Department.

For new wells, a certified well installer must test the water for all necessary parameters to ensure it is acceptable in accordance with state or local regulations.

Sampling

For hauled water from a licensed municipal supply, take samples from a tap inside the facility.

Obtain sample bottles, analysis request forms, shipping coolers, and sampling instructions from the laboratory conducting the testing.

Follow sampling instructions from the laboratory closely.

Test Results

Laboratory test results will identify samples that exceed acceptable drinking water levels.

When laboratory test results are received, submit a copy to Environment. Environment will provide a written evaluation of the analytical results.

Interim Health Measures

If potable water test results exceed health-based parameters (i.e., high levels of total and/fecal coliforms):

- Post signs indicating that the water source is contaminated and must not be used for drinking, washing hands, dishes, or foods (e.g., fruit). If possible, shut off valves to sink taps and shower stalls.
- Provide alternative potable water source (e.g., bottled water) for drinking, washing, and cooking.
- Check safety equipment used for emergency purposes (e.g., eye wash stations and bottles) and change out water.
- Retest the water source.
- In conjunction with Environment, investigate to determine the source of contamination.

Before removing interim health measures, retest. If, after retesting, health-based parameters (i.e., total and fecal coliforms) continue to be exceeded, do not use the source as potable water.

Health Investigation

If potable water test results exceed health-based parameters, investigation should be conducted to determine the source of contamination, for example:

- review past records to determine if the abnormal test result has been a recurring problem
- contact local water authority expertise to identify and initiate appropriate actions
- contact appropriate OHS and/or Public Health personnel if required
- investigate possible contamination sources (e.g., spring runoff, septic tanks or systems, old oil spill leak sites, facility or hauler water tank contamination)

Records

Potable Water Laboratory Test Results

Retain laboratory test results and correspondence as follows:

- original at the facility for a minimum of 5 years
- copy in Environment



Purpose Containment structures (e.g., berms, retention ponds) are designed to contain product and to minimize impacts offsite in the event of a release at a facility. This standard includes the requirements for managing and discharging stormwater accumulated in containment structures in a manner that does not adversely affect the environment by releasing pollutants or by causing erosion to receiving lands.

Responsibilities Regions are responsible for managing stormwater, including: inspecting, discharging, sampling (if required), and maintaining records.

NOTE: If stormwater is contaminated, contact Environment for assistance with sampling, testing, and analyzing test results.

Requirements

Prevention

To minimize the risk of surface water contamination:

- keep the site clean and orderly
- store hazardous materials in accordance with the Waste Management Plan
- clean up spills immediately and store wastes in appropriate containers in accordance with the Waste Management Plan

Discharging

Discharge stormwater accumulated in containment structures after significant rainfalls or as often as practical to maximize containment capacity in the event of a release at the facility.

Facility stormwater drain valves should be closed at all times, except when actively discharging stormwater.

Permits

Where facilities have existing permits that regulate discharging stormwater offsite, follow all conditions in the permit.

Visual Inspection

Before discharging accumulated stormwater within a containment structure, visually inspect for (a) an oily sheen, or (b) suspended solids and/or foam.

If visual inspection indicates no evidence of contaminated stormwater (i.e., only precipitation is present), (a) follow the conditions specified in the permit/license, where required, to discharge stormwater offsite; otherwise, (b) open the valves to discharge stormwater offsite, ensuring:

- discharge is conducted in a controlled manner using a slow flow rate to prevent soil erosion and damage to streambanks and streambeds of waterbodies
- the discharge valve is closed after the discharge is complete

For containment structures that automatically discharge stormwater, visually inspect the accumulated stormwater weekly.

Sampling

If visual inspection indicates that stormwater may be contaminated, contact Environment for sampling requirements, including: laboratory contacts, sample bottles, custody transfer forms, and sampling procedures.

Records



Stormwater Logs

Stormwater logs must be retained at the facility for 5 years.

For stormwater discharged offsite, record the date, time, estimated amount of water discharged, and confirmation of water.

If laboratory analysis is required before discharging stormwater, record the sample date and laboratory test results.

For contaminated stormwater, record the date, remediation techniques, and observations.



Purpose To effectively manage contaminated soil in compliance with applicable laws and regulations.

Scope To provide a standardized approach for managing historic or unknown contaminated soil.

Legislation
Canada
Applicable provincial and territorial waste legislation
United States
Applicable state waste legislation
Applicable state environmental waste legislation

Related Standards
Company
Book 2: Safety
• 14-02-02 Portable Gas Detectors
Waste Management Plan

Responsibilities
Regions
Regional operations are responsible for:
• identifying and communicating the presence and location of contaminated soil to Environment
• supervising soil disposal
Environment
Environment is responsible for:
• supporting operations in situation assessment
• providing interpretation of applicable federal, state or provincial regulatory requirements
• mobilizing adequate resources to sample and document the impact area
• supporting or coordinating contaminated soil disposal, including waste characterization sampling, if necessary
• liaising with regulatory authorities
• managing ongoing site remediation

Requirements
Identification
Hydrocarbons
Hydrocarbons are the most common contaminant of concern. Consider soil potentially contaminated with hydrocarbons if:
• free product is present

- the soil is a notably different color than surrounding soil (i.e., black, various shades of grey, blue, green)
- hydrocarbon odors are present
- there is a sheen on excavation water

Other Contaminants

Other potential contaminants (e.g., salts, metals, herbicides) exhibit no visual or olfactory evidence when present in soil.

Consider soils potentially contaminated if:

- a known release has occurred in the area
- there is stressed or poor vegetative growth in areas with otherwise healthy vegetation

Immediate Action

Shut down all equipment in the vicinity and assess the situation.

Determine if the contamination is historic or a new release:

- New release - follow emergency response procedures as per *Book 7: Emergency Response*.
- Historic release - conduct atmospheric testing with a portable gas detector in accordance with *Book 2: Safety, 14-02-02 Portable Gas Detectors*, and ensure there is no risk of a flash fire before proceeding. Contact Health & Safety if there are any concerns.

Soil Segregation

Store contaminated soil and apparently clean soil separately. Do not mix contaminated soil with clean soil.

Storage

Place all contaminated soil within a secure containment area to ensure the contaminants are not spread through erosion or leachate.

At a minimum, the soil containment area will be bermed and lined with an impermeable liner (i.e., polyethylene sheeting, silage tarps).

If the containment area is constructed in an agricultural setting, ensure the topsoil is salvaged and stored for reclamation activities.

All containment areas must be kept at least 100 m (330 ft) from all waterbodies and/or wetlands and covered with a tarp unless authorized by Environment.

Soil Sampling

Contact Environment for direction with landfill characterization/ acceptance or to coordinate third party contractors for soil assessment and confirmatory sampling.

Regulatory Notification

Notification to the applicable environmental regulators may be required if:

- contaminated soils are a result of a new release
- contaminant concentrations exceed a reporting threshold
- contaminant concentrations are causing an adverse effect

Environment will determine if reporting thresholds or adverse effects have triggered regulatory reporting.

Records**Contaminated Site Assessment/Reporting Documentation**

Environment must retain all documents associated with contaminated site assessment and reporting to Environment regulators for 6 years after site remediation/reclamation is complete.

Contaminated Soil Transportation and Disposal Records

Regions must retain records associated with transportation and disposal of contaminated soils at the facility or region office for a minimum of 2 years (CAN) and 3 years (USA) as per the Waste Management Plan.



Purpose To ensure that company and regulatory requirements are met when conducting right-of-way (ROW) maintenance activities involving mechanical excavation.

Scope This provides a standardized approach for the environmental screening and authorization of integrity digs and related routine maintenance activities.

Legislation


Canada
Applicable federal, provincial, territorial and municipal legislation

United States
Applicable federal, tribal, state and local agencies and entities

Related Standards

Company

- Environmental Guidelines for Construction (EGC)
- HCA Program
- Species at Risk Atlas
- Environmental Mitigation Plan (EMP)
- Environmental Dig Program
- National Forest Operation and Maintenance Plans (O&M Plans)

 **USA**

Responsibilities

Project Manager
Project Manager is responsible for:

- being aware of environmental requirements that may be applicable to the project, and that an internal environmental screening is required
- ensuring permit requirements are followed

Environment
Environment is responsible for:

- conducting environmental screenings in a thorough and timely manner
- conducting necessary notifications and obtaining applicable regulatory approvals/permits
- communicating permit requirements to the project manager

Procedure**Obtaining Environmental Clearance**

The following steps must be followed in order to obtain an environmental clearance and execute the project in accordance with regulatory authorizations:

1. Project Manager provides project description (CAN and USA) with a completed environmental screening form (CAN) to Environment.

NOTE: In general, 2 weeks is required for Environment to conduct an environmental review of the applicable requirements. This does not include the time required for permit acquisition which can take up to 6 months.

2. Project Manager provides additional information to Environment based on subsequent field verification and/or scope changes, as needed.
3. Environment reviews project to determine applicable federal, state/provincial and local environmental requirements (e.g., wetland and waterbody crossing permits, stormwater, cultural and heritage areas).
4. Environment provides Project Manager with environmental clearance or communicates that additional environmental approval/permits are required.
5. Environment completes the applicable permit applications and makes necessary agency notifications. Anticipated permitting timeframes must be communicated to Project Manager.
6. Environment reviews specific permit conditions and provides Project Manager with a appropriate guidance (e.g., environmental assessment report, best practices, sensitive area locations, reclamation requirements).
7. Project Manager:
 - ensures applicable permit conditions, best management practices and other environmental requirements are implemented during the project
 - communicates compliance status to Environment
8. Project Manager informs Environment when project is complete and provides relevant documents (e.g., inspection forms, permits, photos).
9. Environment submits any necessary notifications to formally close applicable approvals/permits.

Records

Environmental Screening Form

An Environmental Screening Form is a document designed to flag environmental conditions that trigger environmental notifications and/or permit applications and must be retained by Environment for 7 years.

Environmental Assessment Report (CAN) / Environmental Review Worksheet (USA)

An Environmental Assessment Report/Environmental Review Worksheet is a summary that highlights environmental conditions, obligations and special requirements and must be retained by Environment for 7 years.

Environmental Approvals/Permits

Environmental approvals and permits must be retained at the project site until the project is complete. After project completion, environmental approvals and permits must be retained by Environment for 6 years from the expiration date of the approval/permit.



Purpose To maintain an organized and accessible environmental recordkeeping system at facilities and regional offices.

Scope This applies to electronic or physical records required by law, regulations, permit or company standard to exist at a facility.

Related Standards **Company**
Enbridge Records Classification and Retention Schedule Policy

Responsibilities **Regions**
Regions are responsible for:

- providing a dedicated location for environmental records
- ensuring environmental documents are received and retained in a dedicated filing system at the facility or in the regional office as required
- creating and maintaining records in accordance with the Enbridge Records Policy

Environment
Environment is responsible for:

- supporting and recommending updates to file structures
- providing guidance to regions concerning document retention.

Requirements **File Structure**
Create separate files or folders for the following physical records, as applicable:



- waste manifests, bills of lading and other shipping documents
- air operating and/or construction permits
- air monitoring documents
- air emission inventories
- storm water permits
- storm water release and monitoring records
- potable water sampling results
- Spill Prevention, Control and Countermeasure Plan (SPCC) and inspections
- wildlife management plan
- agency/regulatory inspection reports
- Environment audit reports
- Vegetation management records

Create additional files to address other environmental matters (e.g., spill cleanup) as required.



Purpose	To ensure vehicles, equipment and vessels are fueled and serviced in a manner that protects the environment from spills.
Scope	This applies to fuel storage and handling practices at facilities and on the right-of-way (ROW) for operations and maintenance activities.
Related Standards	<p>Company</p> <p>Book 1: General Reference</p> <ul style="list-style-type: none">• <i>Tab 02 Incident Reporting</i> <p>Book 2: Safety</p> <ul style="list-style-type: none">• <i>05-02-02 Ignition Sources</i>• <i>08-02-01 Hazardous Material Storage and Transportation</i>• <i>14-02-04 Firefighting Equipment</i> <p>Book 7: Emergency Response</p> <ul style="list-style-type: none">• <i>02-02-01 Emergency Notification</i> <p>Industry</p> <p>National Research Council of Canada (NRCC):</p> <ul style="list-style-type: none">• National Fire Code of Canada (NRCC 47667)
Responsibilities	<p>Regions</p> <p>Regional operations are responsible for:</p> <ul style="list-style-type: none">• ensuring workers are trained to contain spills or leakage from equipment• ensuring all fuel handling and storage is done in a safe and proper manner in accordance with this standard• responding to spills
Requirements	<p>Transportation of Fuel</p> <p>Fuel must be delivered to the site by an approved tank vehicle or in an approved portable tank or container in accordance with <i>Book 2: Safety, 08-02-01 Hazardous Materials Storage, Transportation and Disposal</i>.</p> <p>Tank vehicles and vehicles with portable tanks carrying fuel must not access any sections of the ROW where risk of a fuel accident is high. Consider the risk high if:</p> <ul style="list-style-type: none">• there are steep slopes• within 30 m (100 ft) from excavation• there are soft, unfrozen sections

Spill Kits

Fuel storage areas and vehicles transporting fuel to pipeline facilities and/or ROW sites must be equipped with appropriate spill containment materials sufficient to contain and absorb an accidental release. Spill containment supplies must include:

- a polyethylene container (e.g., bucket, pail, drum) with lid
- absorbent socks and pads
- disposable hazmat bags
- nitrile gloves
- 50 lbs-granular absorbent
- impervious tarp
- shovels

NOTE: Pre-packaged spill kits are commercially available.

Include spill contingency materials suitable for use near/on water (e.g., sorbent pads, sorbent boom and rope) if site is within 30 m (100 ft) of a waterbody.

Fuel Storage

Do not store fuel tank, container or stationary equipment within 100 m (330 ft) of a waterbody, including a wetland. If not feasible, secondary containment must be provided regardless of container size. If the fuel tank is double-walled, tertiary containment must be provided. Rain water or snow melt accumulated in the secondary or tertiary containment must be visually inspected in accordance with *02-02-05 Stormwater Management* prior to discharge.

Secondary and tertiary containment must not be used for storage purposes.

When storing fuel ensure:

- containers and tanks are in good condition (i.e., not damaged, rusting or leaking)
- containers are sealed properly with proper fitting lids, caps, bungs or valves.

Keep hoses off the ground and close valves on fuel tanks. If fuel tank is not located in a secure facility, the valve must also be locked.

Fuel dispensing hoses must be stored inside the containment berm, where applicable.

Ensure fixed aboveground storage tanks containing fuel are physically protected against collision damage (e.g., posts, guardrails) [NRCC 4.6.2.1] and fire extinguishers must be available in accordance with *Book 2: Safety, 14-02-04 Firefighting Equipment*.

Signage

Temporary or weather-resistant signs, indicating that ignition sources must be turned off and smoking not permitted in the vicinity of the dispenser must be posted in fuel storage and dispensing areas. The sign is permitted to display the international 'No Smoking – Ignition Off' symbol not less than 100 mm in diameter. [NRCC 4.6.8.8]

Fuel storage tanks and portable containers must be clearly labeled indicating the contents as per WHMIS/TDG requirements. Fixed fuel storage tanks must be labeled on 2 sides.

Spill/Overfill Protection

Aboveground storage tank systems must have spill containment devices (e.g., catch basins or spill boxes) at the fill/delivery connection or have tertiary containment to minimize spills while filling the tank.

For fuel systems that deliver through a hose, a spill control device (e.g., tray, trough or pan) must be installed underneath to collect any releases. The fuel system must be designed to minimize any releases.

Dispensing/Transferring Fuel

The following requirements apply when dispensing/transferring fuel:

- Refuel in a designated safe area where smoking is prohibited.
- Suspend operation of moving equipment within 5 m of the fueling operation.
- Shut down engines of small equipment and let cool prior to refueling operation. Refuel diesel-powered equipment with the engine running only if this is in accordance with the manufacturer's specification.
- Identify product transfer points for tank-truck loading and unloading to prevent errors in product handling (e.g., interstitial space port from tank port).
- Confirm fuel levels (i.e., dipstick, gauge, fuel delivery records) to ensure the volume available in the tank is greater than the volume of product to be transferred when dispensing to a tank. Do not rely solely on automated overfill and spill prevention devices.
- Verify that there is a proper connection between the fuel fill hose and the fill pipe of the tank vehicle, tank or equipment being filled. Verify that the fill valve is open, where applicable.
- Monitor the transfer operation constantly to prevent overfilling and spilling. Ensure that the delivery person never leaves the site unattended.
- Ensure that static electrical charges are controlled in accordance with *Book 2: Safety, 05-02-02 Ignition Sources*.

Bonding is required between the fuel source and the vehicle or equipment being refueled. Never fill a gas can in the bed of a truck that has a bed liner in it. The liner may build up static electricity causing an ignition of the gas can.

- Scan the area adjacent to the fueling operation for possible leaks or spills.
- Leave room for expansion. Tanks, containers and equipment must not be overfilled. Do not fill beyond a safe-filling level corresponding to approximately 90% capacity.
- Where stationary equipment is required to operate within 100 m (330 ft) of a waterbody including wetlands, ensure that:
 - all fuel nozzles are equipped with automatic shutoffs
 - operators are stationed at both ends of the hose during fueling unless the ends are accessible by one operator
 - fuel remaining in the hose is returned to the storage container or tank

Monitoring and Servicing Equipment

Inspect hydraulic, fuel and lubrication systems of equipment in accordance with the schedule identified in *Book 2: Safety, 01-02-02 Field EH&S Inspections* to ensure systems are in good condition. Hoses, nozzles and fittings for fuel transfer must be maintained in serviceable condition.

Inspect piping systems (e.g., fittings, valves, joints, flanges) and storage tank systems in accordance with the schedule identified in *Book 2: Safety, 01-02-02 Field EH&S Inspections*. Transfer lines and hoses must be compatible with the material transferred and have leak-proof connections.

Place an impervious tarp with edges raised as required to produce secondary containment, or use an appropriate drip pan when servicing equipment and vehicles with the potential for accidental spills (e.g., oil changes, servicing of hydraulic systems).

Incident Reporting and Emergency Notification

Report all leaks and spills to regional management and follow the emergency notification process.

NOTE: For more information on incident reporting requirements, see *Book 1: General Reference, Tab 02 Incident Reporting* and for more information on emergency notification, see *Book 7: Emergency Response, 02-02-01 Emergency Notification*.

Contact Environment for guidance and assistance with contaminated soil and/or water characterization and disposal.



Purpose	To identify appropriate waste storage requirements.
Scope	This applies to both hazardous and non-hazardous waste generated at facilities and on the right-of-way (ROW).
Legislation	<p>Canada Applicable provincial/territorial waste legislation</p> <p>United States Code of Federal Regulations (CFR), Title 40 – Protection of Environment: <ul style="list-style-type: none">• Part 262 – Standards Applicable to Generators of Hazardous Waste</p> <p>Applicable state waste legislation</p>
Related Standards	<p>Company Book 1: General Reference <ul style="list-style-type: none">• <i>Tab 02 Incident Reporting</i></p> <p>Book 2: Safety <ul style="list-style-type: none">• <i>01-02-02 Field EH&S Inspections</i></p> <p>Book 7: Emergency Response <ul style="list-style-type: none">• <i>02-02-01 Emergency Notification</i></p> <p>Engineering Equipment Specifications: <ul style="list-style-type: none">• EES53 - Skid Mounted, Self Framing Hazardous Waste Storage Buildings</p> <p>Waste Management Plan</p>
Responsibilities	<p>Regions Regional operations, inspectors and contractors are responsible for:</p> <ul style="list-style-type: none">• identifying, collecting and storing waste in appropriate labeled containers• taking adequate health, safety and environmental precautions during the handling and storage of waste• reporting incidents related to waste storage to the appropriate regional operations personnel• maintaining good housekeeping practices at waste storage areas

Regional operations are responsible for:

- characterizing and classifying waste so that the components and volumes are known and the environmental and safety hazards are identified
- providing adequate waste handling and storage facilities at facilities and field locations
- providing the required occupational health and safety information (WHMIS/NFPA)
- managing waste storage areas (e.g., housekeeping, labeling, conducting/documenting required inspections)
- retaining adequate records (e.g., manifests, bills of lading, scale tickets, inspection logs) in the facility environmental file of all necessary waste information

Environment is responsible for:

- reviewing and commenting on waste characterization data
- providing guidance regarding waste storage and disposal

Requirements

Storage Area Location and Design

A dedicated waste storage area must be provided at facilities and at locations along the ROW.

The storage area must be at least 100 m (330 ft) from any waterbody including wetlands, ditches and drainage channels.

Whenever practical, transport wastes to a secure facility that is equipped with a waste storage building.

NOTE: For more information on design requirements for hazardous waste storage buildings, see EES53.

Provide secondary spill containment under all containers and tanks containing waste liquids.

If possible, provide overhead protection for storage containers.

Provide litter fencing, as appropriate, to minimize windblown litter.

Segregation

Segregate waste types to ensure non-hazardous wastes are not contaminated by hazardous wastes. Do not mix waste types.

Identification

Post signs that identify the storage area, safety warnings and any general storage instructions.

Label all non-hazardous waste containers with descriptive names of contents, and start date of accumulation.

When storing hazardous waste containers, identify the containers with (a) appropriate transportation safety marks, or (b) descriptive name of contents and a warning sign with “Caution – Hazardous Waste” and (c) start date of waste accumulation.

Storage Time Limits and Quantities

Extended storage of waste should be avoided. Some jurisdictions have specific limits on the length of time wastes can be stored.

NOTE: For more information, see the Waste Management Plan or contact Environment.

Monitoring and Inspection

Waste storage areas are a part of active operating areas and must be inspected at least monthly. Inspect waste storage areas for:

- leaking and corroded containers
- signs of spills, overflows or release
- proper identification and labeling of containers
- accurate and current waste storage inventories
- use of appropriate storage containers
- adequate secondary containment, including closed valves and secure drain plugs
- hazardous waste storage building damage
- improper segregation

Incident Reporting and Emergency Notification

Report all leaks and spills to regional management and follow the emergency notification process.

NOTE: For more information on incident reporting requirements, see *Book 1: General Reference, Tab 02 Incident Reporting* and for more information on emergency notification, see *Book 7: Emergency Response, 02-02-01 Emergency Notification*.

Records

Waste Storage Record Form

Regional operations must track the storage of all waste using the Waste Storage Record Form (CAN) or equivalent (US). Retain onsite for a minimum of 2 years (CAN) and 3 years (USA) as per the Waste Management Plan.

Waste Storage Area Inspections

Record completion of waste storage area inspections in Maximo. If a corrective action is required, record the action taken and the date the action was completed in Maximo.



Purpose To ensure that waste shipments are handled in a manner that meets all regulatory requirements, prevents spills and releases and poses no threat to the health and safety of employees, the public or the environment.

Scope This applies to both hazardous and non-hazardous waste generated at facilities and on the right-of-way (ROW) during operations and maintenance activities and identifies only the general requirements that employees must follow when transporting waste.

NOTE: For more detailed information, contact Environment.

Legislation **Canada**
Transportation of Dangerous Goods (TDG) Regulations

Applicable provincial and territorial waste legislation

United States
Code of Federal Regulations (CFR), Title 49 - Transportation:

- Part 100-185 Pipeline and hazardous Materials Safety Administration

Applicable state waste legislation

Related Standards **Company**
Waste Management Plan

Responsibilities **Regions**
Regional operations are responsible for:

- characterizing waste with support from Environment, as required
- retaining adequate records (e.g., manifests, bills of lading, scale tickets, inspection logs) in the facility environmental file of all necessary waste information
- providing employees with appropriate training on requirements for hazardous and non-hazardous waste (e.g., TDG, HAZMAT, etc) shipments. Maintaining training records.
- taking immediate action in the case of a discharge to protect human health and the environment.

Environment
Environment is responsible for:

- assisting regional operations as needed in the event of a release
- providing guidance and coordinating characterization, transport and disposal of wastes

Requirements

Classification

Classify the waste as hazardous or non-hazardous by using waste information sheets supplied in the Waste Management Plan or support from Environment.

Characterization

If the waste is made up of unknown contaminant levels (i.e., contaminated soil, contaminated groundwater, used drilling mud), have a sample of the waste sent to a certified laboratory for the applicable analysis. Contact Environment for guidance and assistance.

Packaging and Labeling

Package all wastes properly and in accordance with TDG and/or DOT regulations. If the waste is not a dangerous good or hazardous waste, label the container with a descriptive name of the contents.

Waste containment must be designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release.

Special packaging requirements may apply to certain waste types (e.g., PCBs, asbestos).

Small Containers

If it is a dangerous good, each container should have a hazard label, the shipping name and UN number, unless otherwise specified in the regulations. Put these safety marks on at least one side of each small container (e.g., drums, pails, cans, aerosols, cylinders).



Large Containers

Use proper placards prior to vehicle loading. Ensure that all 4 sides of large containers (e.g., transport trailers, portable and bulk tanks, bins) have placards. If a large container with placards is loaded on a vehicle and the placards are not visible, the vehicle must be placarded as well.

Handling, Loading and Unloading

Handle all wastes in a manner that prevents spills or releases.

Ensure all vehicles are secured prior to loading, and that the load is secured within or on the vehicle prior to transport.

Waste Generator/Carrier/Receiver Identification Numbers

A waste generator number must be used for the shipment of all hazardous wastes. Consult the Waste Management Plan for the appropriate waste generator number. If one is not available, contact Environment for assistance in obtaining a new one.

Ensure that companies collecting, storing, recycling, transporting or disposing of waste are appropriately permitted to manage the waste type.

Documenting a Waste Transfer

All transfers of non-hazardous and hazardous wastes for treatment, disposal or recycling must be appropriately documented and tracked.

Non-Hazardous Wastes

All non-hazardous wastes can be transported using a standard truck ticket, waybill, non-hazardous manifest, bill of lading or pro-bill.



CAN

Wastes that meet the definition of a dangerous good but are classified as non-hazardous waste (i.e., waste asbestos) according to local legislation still need to meet all TDG requirements.

Hazardous Wastes

Special shipping documents (e.g., hazardous waste manifest, movement document/manifest, oilfield waste manifest) are required when transporting hazardous waste. Special waste documents meet the requirements of a TDG shipping document (CAN).

Records

Waste Documentation

Accurate waste records must be retained onsite for a minimum of 2 years (CAN) and 3 years (USA). These records may include:

- TDG shipping documents, hazardous waste manifests or oilfield waste manifests
- non-hazardous waste shipping documents
- waste storage records
- waste contractor correspondence and contracts
- liability and indemnification forms
- waste production records
- waste audit/inspection reports



Purpose	To effectively manage water washed soil in compliance with applicable laws and regulations.
Scope	This applies to water washed soil generated at facilities and on the right-of-way (ROW) during operations and maintenance activities.
Legislation	Canada Canadian Environmental Protection Act Applicable provincial and territorial waste legislation United States Applicable state waste legislation Applicable state environmental waste legislation
Related Standards	Company Book 2: Safety <ul style="list-style-type: none">• 14-02-02 Portable Gas Detectors Book 3: Pipeline Facilities <ul style="list-style-type: none">• 02-02-06 Contaminated Soil Identification and Temporary Storage Waste Management Plan
Responsibilities	Regions Regional operations are responsible for: <ul style="list-style-type: none">• identifying high and low risk areas• coordinating storage area construction• segregating contaminated and uncontaminated material• communicating the presence and location of contaminated materials to Environment. Environment Environment is responsible for: <ul style="list-style-type: none">• supporting operations in situation assessment• providing interpretation of applicable federal, state or provincial regulatory requirements• mobilizing adequate resources to sample and document the impact area• supporting or coordinating contaminated soil disposal, including waste characterization sampling, if necessary• liaising with regulatory authorities

Requirements**Low Risk Area**

The work area is identified as a low risk area if there are limited underground facilities and a low potential for historical contamination (e.g., ROW locations with no known historical releases, buried electrical facilities).

If the work area is identified as a low risk area, the likelihood of finding contamination is low. In this situation, construct an unlined but bermed containment area or identify comparable containment (e.g., open top tank) to hold the water washed soil in an upland area. Once the soil is drained and dry, it may be reused as fill.

If contamination is encountered, construct the containment area as per the High Risk Area Guidance and contact Environment.

NOTE: Do not discharge water washed soil on to topsoil. The soil contained in the slurry will degrade the quality of the topsoil and potentially affect vegetative growth.

High Risk Area

The work area is identified as a high risk area if there are a significant number of underground facilities and a high potential for historical contamination (e.g., manifolds, tank lot, underground storage tanks).

If the work area is identified as a high risk area, contain the water washed soil in a bermed and lined containment area or comparable containment structure (e.g., open top tank). Segregate the apparently clean and contaminated materials.

High risk areas have the potential for exposure to atmospheric hazards. Use a portable gas detector in accordance with *Book 2: Safety, 14-02-02 Portable Gas Detectors*.

If there is hydrocarbon odor, staining or sheen, consider the water washed soil contaminated and contact Environment for direction with sampling and disposal.

If there is no hydrocarbon odor, staining or sheen, consider the water washed soil uncontaminated and reuse onsite. Do not transport water washed soil off site for any purpose other than disposal at an approved facility.

NOTE: If water washed soil requires disposal as a waste, it is most economical to allow the soils to dry and dispose of them as a solid. Disposal of water washed soil as slurry can be significantly more expensive than disposal as dry soil.

Records

Contaminated Soil Transportation and Disposal Records

Regions must retain records associated with transportation and disposal of contaminated water washed soil at the facility or region office for a minimum of 2 years (CAN) and 3 years (USA) as per the Waste Management Plan.