BCTS

BC Timber Sales

Skeena / Babine / Stuart-Nechako / Prince George / Peace-Liard

Project Field Manual

June 2022

BC Timber Sales Project Field Manual

Table of Contents

Documents & Records to be on site: (minimum recommended)

TSLs*:

- eERP
- signed prework
- Project Field Manual
- site plan with maps
- copy of TSL document
- copy of RP document
- LPC self-inspection
- appli a le Material ata Sa ety S eets in printed ele troni or online ormat i ell overage allo s

Contracts*:

- eERP
- signed prework
- copy of contract
- applicable maps
- Project Field Manual
- LPC self-inspection (if applicable)
- applicable Material Data Safety Sheets in printed ele troni or online ormat i ell overage allo s

* Please see "Schedule D" of the TSL Document and "Schedule G" of the Contract to insure you are using the correct version of the EMS Documents on your project. Old BCTS EMS Documents can be found on https://www2.gov.bc.ca/gov/content/industry/forestry/bc-timber-sales/forest-certification/ems-sfm-prev-versions

---

Websites:

https://www2.gov.bc.ca/gov/content/industry/forestry/bc-timber-sales/forest-certification/ems-sfm

Sustainable Forestry Initiative (SFI) Client General Awareness Document

The 2015-2019 SFI Forest Management Standard is based on principles supported by an array of objectives, performance measures and indicators. The purpose of this document is to provide BCTS clients (supervisors/workers) with a general awareness of the principles of the SFI standard, including SFI basic training requirements in a tailgate training format. To learn more about the SFI organization and its standards go to: http://www.sfiprogram.org/

Principles of the SFI Forest Management Standard

Sustainable Forestry

- Forest Management is a balance of social, economic and environmental values now and in the future
- Balancing harvesting with the needs of other values like water, plants, animals, and ecological communities and the capacity of the land to grow trees

Forest Productivity and Health

- Protect soils because productive soils support ecological values including growing trees
- Know the applicable soil disturbance limits and use appropriate methods to avoid excessive soil disturbance
- Become familiar with applicable invasive plants in your area and prevent/minimize their introduction and spread
- Prevent forest fires

Protection of Water Resources

- Protect the ecological integrity of rivers, streams, lakes, wetlands and other riparian areas
- Ensure that forest practices do not degrade water quality values through the introduction of soil/silt; petrochemical products like hydraulic fluid, oil, gas, and diesel; and other chemicals used in forest management activities; e.g., herbicides
- Maintain the water's natural drainage patterns to the fullest extent possible and re-establish natural drainage patterns upon completion of forest management activities
- Follow wet weather shutdown procedures where they exist
- Do not disrupt the natural rate and timing of water flow through road construction or other forest management activities
- Follow BCTS Environmental Field Procedures (EFPs) and any local Water Quality Best Management Practices (BMPs) applicable to your forest management activities

Protection of Biological Diversity

- Know that Species at Risk (SAR) include plants, animals, and ecological communities
- Know what SAR exist, or could exist, in areas associated with your forest management activities
- Become familiar with Project Plans for forest operations to understand how to manage for SAR
- Know about and protect biologically significant sites in or around areas of proposed forest management activities; e.g., parks, ecological reserves, old growth management areas, wildlife habitat areas, etc.
- Maintain Wildlife Tree Retention Areas (WTRAs) and other stand-level retention requirements

Aesthetic Values and Recreation

- Implement Project Plans for forest operations to ensure that visual values on the landscape are maintained
- Prevent or mitigate potential negative impacts to recreational opportunities as a result your activities

Protection of Special Sites

- Know about geologically (i.e. Karst) or culturally (i.e. historic, First Nations traditional use) significant sites in or around areas of proposed forest management activities in order to protect their unique qualities
- EFPs require that operators stop work and contact their project supervisor and the BCTS representative if a previously unidentified resource feature, resource value or sensitive area is found.

Efficient Use of Fiber Resources

- Ensure efficient utilization of harvested timber, minimize waste

Recognize and Respect Indigenous Peoples' Rights

- Understand and respect traditional forest-related knowledge, including non-timber forest products of value to indigenous peoples
- Identify and protect spiritually, historically or culturally important sites

Legal and Regulatory Compliance

- Know the laws applicable to your activities (See http://www.bclaws.ca/legallinks.html)
- Make sure your activities are consistent with Project Plans that guide your forestry management activities
- Follow applicable Safety/Worksafe BC laws and regulations
  - Be familiar with safety hazards in the workplace, your Emergency Response Plan and Safe Work Procedures
  - Use appropriate Personal Protective Equipment
  - Operate machinery within the bounds of manufacturer's specifications and limitations
  - Be aware of the safety of yourself and your fellow workers at all times
  - Know what safety issues to report (hazards, close calls or accidents)
  - Follow-up with safety corrective actions

Training and Education

- Commit to continuous learning in the areas in which you are involved in forestry activities
- Understand what aspects of your job have the greatest environmental impacts and then learn how to implement new procedures, techniques or technology to minimize potential impacts
- Ensure that supervisors have completed BCTS EMS/SFM Awareness training and show documentation to BCTS
- Train your crews and maintain training records

Continuous Improvement

- Monitor and inspect your work
- Follow-up on corrective and preventative actions
- Participate in internal and external audits
- Report project changes and inconsistent forest practices
- Plan-Do-Check-Respond (Principles of our EMS program)
- Follow EFPs and the environmental Emergency Response Plan (eERP)

If you suspect that forest practices are not meeting the SFI principles you are encouraged to submit a complaint as described on the Western Canadian SFI Implementation Committee (WCSIC) Inconsistent Practices website. To learn more about WCSIC, or how to file a complaint, please refer to the WCSIC '*Procedure for Addressing Allegations of SFI Non-Conformance*' at the following web address: http://www.wcsic.ca/inconsistent/allegations/index.php

BC Timber Sales Table 008-1 LPC Training Matrix

	Training Course Name	Target Audience Rationale to support retraining frequency & degree of training recommended	Training Source	Training/Awareness Content
	WHMIS	**Target Audience:** • All worker(s) that handle any hazardous substance	Online or approved course	As per Hazardous Product Act (HPA) and Regulations Workplace Hazardous Materials Information System (WHMIS)
	Road Construction Initiated Slides	**Target Audience:** • All road construction supervisors and equipment operators constructing a road in a forestry operation where a risk of landslide has been identified**.**	BC Forest Safety Council Operator Awareness video: Link	As per BC Forest Safety Councils Construction Initiated Slide Task Team (worker safety, site conditions, construction techniques, operating plans, indicators)
	S100 and S100A	**Target Audience:** • All workers carrying out an industrial activity, when there is a risk of a fire starting, must have current S-100 certification (See BCTS LPC eERP Part C for Forest Fire Preparedness and Response procedures) • For Planting, when there is a risk of fire starting, at a minimum all supervisors must have current S-100 certification, and for every 10 workers an additional S-100 certified person (may be a supervisor) is required. Note: All workers required to carry out fire control must have current S-100 certification. • Consulting services work is generally considered to be a low risk activity. Only supervisors or workers who conduct fire control activities must have current S-100 certification. • NOTE: To conduct fire control activities you must have current S-100 certification	Online or BC Wildfire Service approved trainers	Fire Safety Training and Suppression
	BCTS LPC EMS/SFM Awareness Training	**Target Audience**: Supervisors or designated alternates Rationale: Supervisors are responsible for ensuring they are knowledgeable in the BCTS EMS and SFM programs and are able to provide appropriate direction to LPC staff	BCTS on-line training at Link or Business Area approved trainer (where available).	Formal training, documentation must be supplied to BCTS to verify certification.
	BCTS EMS Tailgate Training	**Target Audience:** Workers Rationale: General awareness of BCTS EMS	Can be delivered by supervisor or worker with BCTS LPC EMS/SFM Awareness Training certificate. Records must be maintained for BCTS verification	Per BCTS training materials
	Transportation of Dangerous Goods	**Target Audience:** Anyone handling or transporting class 3 dangerous goods in quantities greater than 2000 litres (i.e. single or aggregate quantities)	Online or approved course	As per Transportation of Dangerous Goods Act Link and Regulations Link
SFM AWARENESS	**SFI Client General Awareness**	**Target Audience:** Supervisors and workers Rationale: Supervisors to be knowledgeable in BCTS SFM programs and are able to provide appropriate direction to LPC staff. Workers are to understand the basic elements of SFM.	Supplied by local Business Areas to Supervisors. Supervisors to review with Workers	Per BCTS SFM general awareness document or other material
	Species at Risk (SAR) **Invasive Species (IS)** **Migratory Birds**	**Target Audience:** Supervisors and workers Rationale: Supervisors are to be knowledgeable in the BCTS SAR programs, Invasive species strategy and the Migratory Bird program. Workers are to have awareness relevant to their responsibilities in all programs *NOTE: Multi-phase and development contractors may require a higher degree of training (obtained either internally or externally at the BA's discretion) if they are required to identify species and develop management prescriptions for plants and/or animals under these programs	Supplied by local Business Areas to Supervisors Supervisors to review with Workers	* Knowledge of basic legal requirement * Knowledge of SAR, IS, and Migratory Birds relevant (or potentially relevant) to the project area. * Knowledge of applicable management objectives and appropriate measures and practices relevant to the project. * Knowledge of procedures to be followed in the event the operational plan is not clear or does not address a new species or feature. * Local BAs may have other programs or objectives that may require awareness.

Truck Drivers and suppliers are required to have general emergency response awareness (review of the onsite Environmental Emergency Response Plan). No documentation is required.

Date: _____

Contract/License #: _____

LPC Training Summary

Workers and Supervisors (Names)	WHMIS (Date)	Road Construction Initiated Slide Awareness (Date)	S-100 or S- 100A Training (Date)	BCTS LPC EMS/SFM Awareness Training Certification (Date)	BCTS EMS Tailgate Training Trainer:_____ (Date)	Transportation of Dangerous Goods (Date)	SFM Awareness (Dates)				
							SFI Client General Awareness	Species at Risk	Invasive Plants	Migratory Birds	Other ____

WHMIS = Workplace Hazardous Materials Information System

This page intentionally left blank.

Part A *Core Information*

Worksite Details

Project (TSL or Contract)#	
Physical location of activity:	
Latitude:	Longitude:
Latitude:	Longitude:
Latitude:	Longitude:
Duration of Activities:	Date:

Company Contact Information

24 hr Contact Name and Phone (s) #:
Company Name/Email:

Other Key Emergency Contact(s) #:

Environmental Emergency Contact Information

Forest Fire Reporting : **1-800-663-5555** or * **5555** on the Cantel and Telus networks

Spill Reporting and other Environmental Emergencies to Land & Water:
1-800-663-3456 Emergency Management BC (EMBC).

Natural Gas Leaks: Contact EMBC and utility company (if known): FortisBC **1-800-663-9911** (Northeast, Fraser Valley, South), Pacific Northern Gas (Northwest and Northeast) **1-800-663-1173**, Enbridge (Northeast and Fraser Valley) **1-800-663-9931**

CANUTEC (Canadian Transport Emergency Centre): **1-613-996-6666** or ***666** on cell phone

BC Timber Sales Contact:
Daytime Phone #: Emergency Phone #:

Part B *Supplemental Information (Use and content at discretion of local BA)*

General Contact Information

Police:	WorkSafeBC: 1-888-621-7233,after hrs 1-866-922-4357
Ambulance:	Joint Rescue Coordination Centre: 1-800-567-5111 or cell #727
Fire Department:	Hospital:
Poison Control Centre: 1-800-567-8911	Water Taxi / Ferry:
Helicopter / Aircraft:	Wildfire Status Website: Wildfire Status

BC Wildfire Service Phone and Fax # *(Circle Fire Centre in which activities are occurring):*

Coastal:250 951-4201 Fax:250-954-0819 / Southeast:250 365-4001 Fax:250-365-9919 / Kamloops:250 554-7701 Fax 250-376-6549
Cariboo:250 989-2600 Fax 250-989-2672 / Prince George:250-960-2300 Fax:250-562-6210 / Northwest:250-847-6633 Fax 250-847-2737

Part C *Core Information*

FOREST FIRE PREPAREDNESS AND RESPONSE

Initial Fire Response

1. Stop operations and notify the rest of the crew.
2. **Report Forest Fires immediately to the BC Wildfire Service (BCWS) and BCTS.**
3. The person reporting the fire shall remain in contact to communicate details of the fire suppression activities taken and what additional activities may be required.
4. The remaining crew shall begin immediate action to control and extinguish the fire, if practicable and safe to do so, to the extent of their training and competence.
5. The person in charge of a crew taking action to control a fire is responsible for continuing fire control activities until relieved by the licensee/contractor representative or BCWS personnel.

If Alone

- Take immediate action on the fire if you believe you can safely control it yourself. Report the fire to BCWS and the licensee/contractor representative as soon as you feel that the fire can be left alone without spreading out of control.
- If the fire is beyond your ability, notify the BCWS immediately and follow their instructions. DO NOT take action on an intense fire yourself.

☑ **Complete an Incident Report Form (CHK-009 or equivalent) and submit to BCTS.**

Fire Roles and Responsibilities

Prior to Start-Up and During Operations

☑ **For All Industrial Activities**

- Determine fire response equipment for the type of operation and associated fire risk to comply with the Wildfire Regulation: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/11_38_2005
- When conducting an industrial operation, sufficient *firefighting hand tools* must be available on site whenever the area is snow free and there is a risk of a fire starting or spreading.
- Hand tools must be a combination and type to properly equip each person who works at the site with a minimum of one firefighting hand tool per person. Tools may include shovels, mattocks, pulaskis, fire extinguishers and hand tank pumps. The BCTS general rule for assessing the adequacy of firefighting hand tools is:
  # of workers assigned to the site during normal work hours = # of hand tools on site

☑ **For High Risk Industrial Activities**

- Determine if your operations are High Risk as defined in Part 1 of the Wildfire Regulation.
- Determine the danger class, follow danger class restrictions and durations, keep sufficient *firefighting hand tools* plus an adequate *fire suppression system* at the activity site, and maintain fire watcher and communication requirements.
- A fire suppression system means a system for suppressing fire by delivering water, a suppressant, a surfactant, or any combination of these substances.

☑ **Determine Restrictions on High Risk Industrial Activities**

Acquire local weather data to comply with the Wildfire Regulation. Weather station information is available from the BCWS website at Fire Weather - Province of British Columbia (gov.bc.ca)

- Danger class ratings for your site may be higher than those calculated by the BCWS. Consider local conditions when determining applicable weather station and when to restrict activities.

Note: Refer to the BCWS "Interpretative Bulletin on the Application of the Wildfire Regulation for the Forest Industry" for further guidance to the above, including a defined wildfire prevention and response system

(Appendix A) at http://www.bcwildfire.ca/Industry_Stakeholders/Industry/

Fire Roles and Responsibilities continued

☑ **Provide 24hr Contact information**
- Timber Sale License holders must provide an official with a 24 hour a day contact telephone number if the person proposes to carry out an industrial activity on or after March 1 and before November 1 of that year.

☑ **Provide copies of your training records as required.**
☑ **Ensure employees are trained and aware of all fire emergency responsibilities.**
☑ **Complete environmental Emergency Response Plan (eERP) with worksite details and company contact information.**
☑ **List the minimum fire equipment that will be maintained on site for "Industrial" and "High Risk Industrial" activities during Danger Classes III, IV, and V (i.e., water tank(s), pump(s) hoses, accessories etc.):**

During Operations

☑ **Ensure employees are aware of all fire preparedness responsibilities and trained** as to their fire duties in accordance with WorkSafeBC requirements.
☑ **Conduct test(s) and periodic drill(s) of fire preparedness and response.** Tests are to be documented on the BCTS Environmental Emergency Response Test/Drill Report Form CHK-010, records maintained on site and copies of results forwarded to a BCTS representative. Results of drills may be documented on the CHK-010 and maintained on site.

Regularly monitor the appropriate fire weather index information using your representative weather station and determine the appropriate Fire Danger Class for the area. For Danger Class Reports go to; https://www2.gov.bc.ca/gov/content/safety/wildfire-status/wildfire-situation/fire-danger

☑ **Restrict activities during Fire Danger Class III, IV, or V situations.** Implement fire watch, patrol, early shift, and cease activity, as required (see Schedule 3 of the Wildfire Regulation). Monitor activities and changing site/weather conditions. Do not operate solely by the Schedule 3 of the Wildfire Regulation.
☑ **Ensure a copy of the environmental Emergency Response Plan (eERP) is onsite.**
☑ **Conduct regular fire suppression equipment inspections and maintenance.**
☑ **Take action on a forest fire that is within 1 km of the site of the industrial activity.**
☑ **Complete Hazard Assessments and Abatement** at prescribed intervals in accordance with the Wildfire Regulation;
- Keep all debris piles clean, obtain a Burn Registration Number (BRN) by calling 1-888-797-1717, complete hazard abatement and follow requirements including monitoring of burning activities
- For smoke management / venting indices call the Provincial Venting Index Hotline 1-888-281-2992 or visit the BC Environment Venting Index website; http://www.env.gov.bc.ca/epd/epdpa/venting/venting.html
- Extinguish and inspect debris piles by the date specified according to the BRN. Apply to extend

the BRN if additional time is required to extinguish burned debris piles.

Part D *Core Information*

SPILL PREPAREDNESS AND RESPONSE

Initial Spill Response Activity

1. Discovery and Assessment

- ☑ Follow safety procedures and put on appropriate personal protective equipment prior to initiating response plan.
- ☑ If Safe, **STOP THE PRODUCT FLOW!** Halt activities that are causing the spill (e.g. Close valves; elevate leaking hoses, shut off pumps, etc.). **Minimize Impact of Spill.**
- ☑ Prior to taking action complete an incident assessment (spill identification /volume, assess potential safety, and environmental issues).
- ☑ **If you feel that the spill is beyond your level of training and experience to handle, seek assistance from a spill response specialist.**

2. Notification and Documentation

- ☑ Report spills in accordance with spill reporting criteria listed in Table 1 below.

3. Containment and Recovery.

- ☑ Take action within your ability using resources (hand tools, heavy equipment and spill response equipment) at hand to minimize the spread and impact of the spill until additional resources and expertise arrive.
- ☑ **Due to the hazardous nature of <u>gasoline</u>, volatile gases should be allowed to dissipate before attempts are made to contain or mop up a gasoline spill.**

<u>Spills to Land</u>

- ☑ Determine extent of spill. Contain or redirect spills away from watercourses.
- ☑ Mark the perimeter of the spill, dig recovery ditches around the perimeter and recovery pits (sumps) within the spill area.
- ☑ Monitor ditches and recovery pits to ensure the collection system is effective.
- ☑ Recover the product from the containment area, treat or dispose of appropriately.

<u>Spill to Water</u>

- ☑ In a ditch or stream, contain the spill using whatever surface water containment system possible.
- ☑ Divert and corral the spilled product to a spill containment system using absorbent booms or other methods.
- ☑ Continue to sweep and corral the spilled product for recovery.

<u>For Spills less than 25 litres</u>

- ☑ Soak up all free products with absorbent pads, booms, and other materials.
- ☑ Place used absorbent materials in a suitable container (i.e. heavy-duty plastic bag) for disposal or recycling. Mix stained soil with loose absorbents or commercial bioremediation agents.

4. Follow-up, Disposal and Site Restoration

- ☑ Ensure spills have been documented and reported to agencies and BCTS as required.
- ☑ Complete clean-up and required mitigation actions. If required, contact a spill response specialist for assistance.
- ☑ **Complete an Incident Report Form (CHK-009 or equivalent) and submit to BCTS.**

ENVIRONMENTAL EMERGENCY RESPONSE PLAN

For BCTS Client Use

Spill Roles and Responsibilities

- ☑ **Assess risk for potential spills** identify additional preventative and control measures
- ☑ **Ensure all workers understand the environmental emergency response plan** and it is available on site at all times.
- ☑ **Ensure all workers are familiar with potential spill sites, spill kit locations and spill kit requirements.**
- ☑ **Ensure workers are trained/aware** in WHMIS, TDG and Spill response
- ☑ Have available on site appropriate MSDS.
- ☑ **Conduct test(s) and periodic drill(s) of spill preparedness and response.** Tests are to be documented on the BCTS Environmental Emergency Response Test/Drill Report Form CHK-010, records maintained on site and copies of results forwarded to a BCTS representative. Results of drills may be documented on the CHK-010 and maintained on site.
- ☑ **Complete spill kits inspections and maintain spill kits** as necessary
  - For Equipment spill kit content requirements see Fuel Handling Environmental Field Procedure EFP-06.
- ☑ **Respond to all spills** in accordance with the emergency response plan.
  - If you are responsible for a spill of hazardous material, you are then responsible to take appropriate actions to minimize environmental impact.
- ☑ **Report all reportable spills** to the appropriate agencies and to BCTS.

Spill Reporting Criteria (If in Doubt Report the Spill)

- ☑ All spills that are equal to or greater than the EMBC reportable level must be reported to EMBC as soon as possible and within 24hrs.
- ☑ Any spills of deleterious substance to a watercourse must be reported to EMBC as soon as possible and within 24hrs.
- ☑ All spills that are equal to or greater than the BCTS reportable level must be reported to BCTS contact as soon as possible and within 24 hrs.

Table 1: Reportable Levels of Hazardous Materials Spills

Hazardous Material	EMBC Reportable Level (1)	BCTS Reportable Level (2)
Antifreeze	25 litres	25 litres
Diesel fuel	100 litres	25 litres
Gasoline (auto & saw)	100 litres	25 litres
Greases	100 litres	25 litres
Hydraulic Oil	100 litres	25 litres
Lubricating Oils	100 litres	25 litres
Methyl Hydrate	5 litres	5 litres
Paints & Paint Thinners	100 litres	25 litres
Solvents	100 litres	25 litres
Pesticides	1 kilogram or 1 litre	1 kilogram or 1 litre
Explosives	Any	Any

(1) as required by the BC Spill Reporting Regulation

(2) or a spill of ANY quantity that enters a surface water body (e.g.: running ditch, stream, lake)

Part E *Core Information*

LANDSLIDE & EROSION EVENT RESPONSE

Initial Response Activity

1. **Evaluate**. Follow applicable safety procedures and notify supervisor and other workers. If safe to do so, assess situation to determine if activities must be shutdown.
2. **Immediate Remedial Action**. Take steps to control further environmental impacts.
3. **Notification**. Report the erosion event to the BCTS contact within 24 hours or as soon as practical. (Refer to Reporting Criteria). It is also the LPC's responsibility to notify applicable regulatory agencies of an erosion event that may impact resource values such as fish sensitive areas, domestic watersheds, private property etc. (e.g. DFO, EMBC). Notify WorkSafeBC if the slide event relates to a safety incident.
4. **Before Leaving the Site**. Supervisors must account for all workers before leaving the site. If a shutdown is required, park all equipment in an environmentally safe location (i.e. avoid riparian management areas, steep side slopes, steep road sections, areas with excessive soil moisture, areas within reach of standing timber, etc.).
5. **If Environmental Damage Has Occurred**. The BCTS contact must review the situation with the appropriate personnel.
6. **Complete an Incident Report Form (CHK-009 or equivalent) and submit to BCTS.**

Landslide & Erosion Roles and Responsibilities

- ☑ **Verify** that operations are conducted in a manner that minimizes the risk of a landslide and major erosion event occurring.
- ☑ **Ensure all workers understand and are trained** in response procedures and the environmental emergency response plan is available on site at all times.
- ☑ **Supervisor** to ensure all employees are familiar with risk areas.
- ☑ **Conduct test(s) and periodic drill(s) of Landslide/Erosion Emergency Response.** Tests are to be documented on the BCTS Environmental Emergency Response Test/Drill Report Form CHK-010, records maintained on site and copies of results forwarded to a BCTS representative. Results of drills may be documented on the CHK-010 and maintained on site.
- ☑ **Assess** landslides and erosion events, determine reporting requirements, and report to BCTS contact immediately where applicable.
- ☑ **Respond to erosion events** in accordance with this emergency response plan.

Landslide/ Erosion Event Reporting Criteria

Landslides and major erosion events must be reported to BCTS in ANY of the following circumstances:

- Loss or imminent loss of life or property,
- Significant environmental damage,
- Situations which potentially create loss of provincial revenue or funds,
- Abnormal movement has occurred or is actively occurring at a site,
- Abnormal sedimentation,
- A volume of greater than 250 m^3 has moved or is imminent danger of movement,
- A land area greater than 0.25 hectares is disturbed,
- A road or structure is damage and requires structural repairs.

BC TIMBER SALES Environmental Management System (EMS)
EMS Incident Report Form (CHK-009)

EMS INCIDENT DEFINITIONS AND REPORTING REQUIREMENTS

1. **Emergency Response Incidents**
   - *Fire:* Any uncontrolled fire related to BCTS activities
   - *Spills:* Any spill exceeding BCTS reportable levels or any amount spilled into or immediately adjacent to a stream, lake or running water.
   - *Erosion/Landslide events:* Any emergency situations or potential emergency exists, abnormal movement has or is occurring, abnormal sedimentation, a volume of material greater than 250 m3 has moved or is at imminent risk of movement, or a land area greater than 0.25 ha is disturbed through erosion processes.
   - Disruption to domestic/community water supply.
   - Previously unidentified resource feature, resource value or sensitive area is found (e.g., species of management concern, bear den, wildlife habitat feature, culturally modified tree).
2. **Potential Non-compliance**:
   - In the opinion of the person reporting, legislation and regulation has been violated and there may be an agency investigation to determine facts and possible enforcement action.
3. **Significant Non-conformance:**
   - An occurrence or event that has or will likely result in a negative environmental impact and cannot be immediately rectified.
   - Where the EMS program has been severely compromised and or a *"Notice to Comply"* has been issued at the discretion of local management. This includes repeated non-conformances that may become significant.

Reportable Levels for Spills

Substances	**BCTS**	**EMBC**
Antifreeze	25 litres	25 litres
Diesel fuel	25 litres	100 litres
Gasoline (auto & saw)	25 litres	100 litres
Greases	25 litres	100 litres
Hydraulic Oil	25 litres	100 litres
Lubricating Oils	25 litres	100 litres
Methyl Hydrate	5 litres	5 litres
Paints & Paint Thinners	25 litres	100 litres
Solvents	25 litres	100 litres
Pesticides	1 kg or 1 litre	1 kg or 1 litre
Explosives	Any	Any

Part A EMS Initial Incident Report

This section is completed by BCTS clients or staff within 48 hrs of an incident being reported. Forward copy to supervisor/BCTS representative. Grey fields to be completed by BCTS staff only.

PART A - EMS Initial Incident Report

Business Area:	TSL # / Contract # / Road Tenure# / Other Permit #:	
Licensee / Contractor / Other:	On-Site Supervisor or Agent (if applicable):	
Activity Description (Harvesting, Roads, Major Structure, Other):	General Location of Incident (Operating Area, Block, Road):	
Occurrence Date / Time:	Date / Time Reported:	Reported By:
Date Reported to Regulatory Agencies (i.e., C&E): ☐ N/A	Agencies:	
Weather: ☐ N/A ☐ Clear ☐ Cloudy ☐ Light Rain ☐ Heavy Rain ☐ Snowing Temp: ☐ Cool ☐ Warm ☐ Hot	Snow Depth: _____cm	
INITIAL INCIDENT REPORT (description, associated events, weather, contributing factors):		
What actions have been taken to date:		
General comments (add extra sheets or use back side of sheet for more actions or comments):		
Attachments: ☐ Additional Pages ☐ Photos ☐ Maps ☐ Correspondence ☐ Other		
Person submitting report: Signature:		Date submitted to BCTS:
Received by (BCTS staff name):	Field team:	Date received:
Date BCTS manager/supervisor/CSO notified:		

Part B Preliminary Investigation Report.

Complete this section for all incidents within 7 days of initial report. This section is completed jointly with BCTS WS, WM, CSO or designate where possible.

PART B - Preliminary Investigation

BRIEF INCIDENT DESCRIPTION (if there is relevant or new information):

Incident Type: ☐ Fire ☐ Spill ☐ Erosion ☐ Potential Non-Compliance ☐ Significant Non-Conformance ☐ Other

Is investigation Required? Check Yes if any of the following apply:

- *Any reported emergency response events associated to BCTS activities, i.e., Fires/Spills, Erosion/Landslide as identified above and outlined in CHK-009.*
- *Potential non-compliances or significant non-conformances associated in any way to BCTS activities (Roads, Harvesting, Planning/Development, Silviculture).*
- *Situations or occurrences where it has been determined that further investigation would be helpful to support our commitment to improve BCTS practices of forest management and sustainable forestry.*

☐ **YES.** Complete preliminary investigation and move to full investigation under Part C CHK-009.

☐ **NO.** Complete preliminary investigation Part B CHK-009 including rationale section below.

RATIONALE (must be completed if full investigation is not required):

Assigned Investigation Team (i.e., lead, supports, specialists):

Has incident been reported to regulatory agencies (i.e., C&E)? ☐ Yes ☐ No ☐ N/A

Agencies: Date / Time:

Recommendations/Comments:

Preliminary investigation completed by:	Date:
LRM issue ID#:	

Part C – Full Incident Investigation Report. Complete this section when a full investigation is required. To be completed by designated BCTS staff only or assigned investigation team. Best practice is to complete this section within 45 days, rationalize if extended timeline is needed.

PART C - Full Incident Investigation Report

INCIDENT INVESTIGATION DESCRIPTION (complete if different than initial reported description under Part A). Include sequence of events and other relevant information collected from the investigation):

Contributing Causal Factors:

Root Cause Analysis (attach additional pages if necessary):

Recommended Corrective Action: Investigation team to identify recommended actions.
Manager or designate to assign person(s) responsible for implementing actions and establishing target dates.
Completion of actions and associated documentation to be recorded by the person responsible for action plan implementation.

Action Plan ID	Recommended Corrective Action	Person responsible for implementation	Target date	Completion date	Records on file (Y/N)	Completed by
C1						
C2						
C3						
C4						

Recommended Preventative Actions: Investigation team to identify recommended actions.
Manager or designate to assign person(s) responsible for implementing actions and establishing target dates.
Completion of actions and associated documentation to be recorded by the person responsible for action plan implementation.

Action Plan ID	Recommended Preventative Action	Person responsible for implementation	Target date	Completion date	Records on file (Y/N)	Completed by
P1						
P2						
P3						
P4						

Potential Environmental Impacts:

Additional Comments:

Lead investigator signature:	Date investigation completed:
BCTS manager or designate signature:	Date signed:

Guide for Conducting
Environmental Emergency Response Tests/Drills for Fires, Spills and Erosion Events

As per TSL and contract document(s) and environmental Emergency Response Plan (eERP), a licensee / contractor must conduct tests and periodic drills for emergency preparedness, including documenting the results, action taken and follow-up of such tests or drills.

Note: Tests are to be documented on the BCTS "Environmental Emergency Response Test/Drill Report Form CHK-010", records maintained on site and copies of results forwarded to a BCTS representative. Results of drills may be documented on the CHK-010 and maintained on site.

Ensure a copy of the eERP is on hand and reviewed for effectiveness during tests or drill exercises.

Test – a comprehensive testing of the environmental emergency response procedures to ensure that they are adequate to address emergency events. This includes full, hands on scenario testing of equipment, communications, and procedures as outlined in the eERP.

Drill – a due diligence exercise to ensure that onsite personal have adequate levels of comprehension and awareness of environmental emergency preparedness and response procedures. This involves a demonstration of workers level of knowledge and training, this may include:

- Review of eERP procedures,
- Employee interview,
- Equipment testing,
- Review of onsite ER equipment.

Spill Emergency Response Test Example

Record Steps and Sequence on CHK-010

Example Scenario: For Diesel, Hydraulic Material

Scenario: a piece of heavy equipment parked on the side of the road has leaked oil into a nearby ditch. Arriving on the scene, workers see the oil heading toward a nearby stream.

How to set up for a test: explain the scene to the participants and let them give feedback on what response steps should be taken to avoid further contamination**.** Use a pail of water and popcorn - create the spill and let the workers respond accordingly.

	Suggested steps & sequence	
1	**Recognize the problem, & evaluate hazards**	• Identify type of material spilled & volume • Identify & Evaluate potential problems that may be encountered in control, containment & cleanup • Refer to the MSDS for the material spilled • Have fire extinguishers available if there is a risk of fire
2	**Take Control**	• Stop Operations & shut off equipment • If safe, remove any sources of spark or flame • Ensure supervisor & fellow workers are notified • Stop the source of the spill where possible
3	**Contain** the spill	▪ Blocking flow (use spill pads, buckets, booms, absorbents, snow, or soil to make a berm) ▪ Use resources at hand to minimize spread and impact of the spill until additional resources & expertise arrive • Use available equipment to create a barrier or berm
4	**Commence recovery** of the spilled material	• Soak up all free product with available materials • Mix stained soil with loose absorbents or commercial bioremediation agents • *< 25 liters – low risk:* Mop up excess fluids with spill pads/ booms and place in container/plastic bag for disposal • *> 25 liters – high-risk:* Do initial mop up with available materials. Contact Spill specialist for further instructions
5	**Report the Spill** to appropriate personnel	• Low risk spill (< 25L & not in water): report to your immediate supervisor • High risk spill (> 25L or in water): report to supervisor, PEP, (only if greater than 100 liters), Spill Response Specialist, BCTS rep, Gov't agency or other
6	**Complete an Incident Report**	• For the purposes of the exercise review required incident reporting requirements only and copy to your files and BCTS rep.

BCTS BC Timber Sales

Guide for Conducting
Environmental Emergency Response Tests/Drills for Fires, Spills and Erosion Events

Fire Emergency Response Test Example
Record Steps and Sequence on CHK-010

Example Scenario

Scenario: a worker discovers a small fire (lightning strike) at the edge of cut block that has almost spread into the standing timber.
How to set up for a test: explain the scene to the participants and let them give feedback on what response steps should be taken to combat this fire**.** Mark the area that is on "fire" with highly visible flagging tape. Instruct the participants as to the nature of the fire and allow them to respond.

	Suggested steps & sequence	
1	**STOP operations**	• Notify supervisor & all personnel in the immediate area
2	**Report the fire** to appropriate authorities	• BC Wildfire Reporting 1-800-663-5555 as per ERP • Immediate Supervisor • BCTS Rep
3	**Assess** the hazard and the safety risk,	• Consider; fire size, behavior, crew experience, training, available equipment, site and weather conditions
4	**Develop a plan** for initial attack	• The supervisor should determine the method of initial response, equipment, and personnel required
5	**Provide direction/instruction** to the fire fighting crew	• Dispatch personnel to mobilize the equipment • Alert the crew to the potential hazards, and provide any immediate instruction necessary to ensure their safety
6	**Commence initial response** on the fire	• Response level based on: fire size, behavior, crew experience, training and available equipment • The supervisor holder will monitor the fire fighting efforts until relieved by a higher authority or another trained suppression worker
7	**Complete mop up** with appropriate personnel	• Mop up will be performed under the direction of a qualified supervisor or fire official.
8	**Complete an Incident Report**	▪ For the purposes of the exercise review required incident reporting requirements only and copy to your files and BCTS rep.

Landslide/Erosion Emergency Response Test Example
Record Steps and Sequence on CHK-010

Example Scenario

Scenario: a landslide has closed the mainline leading to the worksite. It is late afternoon when the road closure is discovered and the crew is stranded.
How to set up for a test: explain the scene to the participants and let them give feedback on what response steps should be taken to evacuate the crew and ensure safety.

	Suggested steps & sequence	
1	**Assess** the hazard and the safety risk	• Evaluate the size and impact of the erosion event • Warn others in the immediate area of any safety hazards and secure the zone from further entry if possible •
2	**Develop a plan** of evacuation	If required the Supervisor ill devise a plan to evacuate the crew in a safe manner • If require; workers to be mustered into a safe zone while awaiting evacuation
3	**Report the event** to appropriate authorities	• Notify your immediate supervisor • Notify your BCTS representative for further instruction
4	**Take remedial action**	• Take steps to control further environmental impacts • Use heavy equipment to remove the slide or to make an emergency access
5	**Complete an Incident Report**	• .For the purposes of the exercise review required incident reporting requirements only and copy to your files and BCTS rep.

BCTS
BC Timber Sales

BCTS Environmental Management System

ENVIRONMENTAL EMERGENCY RESPONSE TEST/DRILL REPORT FORM CHK-010

Administrative Detail

Business Area:	Name of Company conducting Test/Drill:	Name of Project (licence, permit, contract):

Project Activity

☐ Road construction ☐ Deactivation/Rehabilitation ☐ Road/Bridge Maintenance ☐ Harvesting ☐ Silviculture

Location of Test/Drill (operating area, block #, road #)	Participants and Observers (attach separate list if more)	
	1.	6.
	2.	7.
	3.	8.
	4.	9.
	5.	10.

Circle Test / Drill Methodology Conducted

1) provided emergency scenario, 2) workers physically responded to a perceived threat by following emergency response procedures in an acceptable sequence, 3) checked emergency response equipment, 4) checked emergency contact numbers

Complete Checkboxes Indicating Type of Test or Drill Conducted

☐ Test ☐ Drill	☐ Fire	☐ Spill	☐ Erosion/Landslide event

Additional Comments

Details

Fire tools complete: ☐ Yes ☐ No Spill kit complete: ☐ Yes ☐ No Emergency response plan on site: ☐ Yes ☐ No

Steps & Sequence (as described verbally or physically enacted)

1	
2	
3	
4	
5	
6	
7	
8	
9	

Recommendations/Follow up

Results of the Test/Drill Exercise (Copy to BCTS)

☐ All essential steps for the test or drill exercise were completed
☐ The sequence of steps was appropriate to assess response levels
☐ Sufficient emergency equipment was available for response
☐ Communication equipment was sufficient to allow reporting in a timely manner
☐ The Incident Report was completed properly
☐ Participants in the test or drill exercise demonstrated adequate training and response.

Person conducting the Test/Drill:	Date conducted (mm/dd/yy):
BCTS representative:	
Comments/recommendations:	

This page intentionally left blank.

BCTS BC Timber Sales	**BCTS CLIENT SELF INSPECTION REPORT**	**BCTS CHK-011** Complete as per the BCTS LPC Inspection Frequency identified in the BCTS / LPC Prework

Section A			
	Business Area:	Project Number (TSL or Contract)	Date of Inspection:
	Blocks and Roads Inspected:	General Location (operating area)	

Section B		Consideration	Status YES	NO	N/A
	1	Has all training been completed? (BCTS Training matrix)	☐	☐	☐
	2	Have prework meetings been conducted and documented with all on-site workers?	☐	☐	☐
	3	Do all workers understand the project plan? (Specific to their roles and responsibilities) ➢ Site plan, licence document, licence schedules and appendices, road permit, road use permit, project map etc.	☐	☐	☐
	4	Are you following the plan and requirements? ➢ EMS/SFM requirements (EFP's, inspections, fuel handling, local operational controls etc.) ➢ Compliance with legislation (FRPA, Wildfire Act, TDG etc) ➢ Project terms and conditions (contract, license, site plan, permits, etc.)	☐	☐	☐
	5	Are all applicable documents and records on-site, complete, updated as required and available to workers? ➢ Project plan documents and maps, ERP, prework, inspections, training records, EFP's, incidents etc.	☐	☐	☐
	6	Do all workers understand their roles and responsibilities for environmental Emergency Preparedness and Response? (Fires, Spills and Landslides) ➢ Conducting tests/drills, reporting criteria, following ERP etc. ➢ Maintaining emergency response equipment (spill kits, fire tools, fire suppression system, etc.)	☐	☐	☐
	7	Have steps been taken to protect resource features and prevent damage to the environment? ➢ Water, soil productivity, wildlife habitat, fuel handling, chemical handling, clean up and disposal of waste etc.	☐	☐	☐
	8	Have all applicable environmental and safety issues been reported? ➢ Fires, spills, landslides/erosion events, potential legal non-compliances, significant non-conformances (EMS Incidents) ➢ Previously unidentified resource features, changes to the project plan, etc. ➢ Safety incidents and hazards	☐	☐	☐
	9	Have you followed up with all action items from previous inspections and pre-works?	☐	☐	☐
	10	Are there any considerations for improvements to the Project Plan? ➢ Test and drill results, other improvements to the project plan, etc.	☐	☐	☐

Section C	Action #	Correction / Corrective Action	By Who	Due Date	Completed Date

Inspected by (print): _____ Signature: _____

ENVIRONMENTAL FIELD PROCEDURE - 01

GENERAL

Purpose and Scope

This Environmental Field Procedure (EFP) applies to all BC Timber Sales (BCTS) licensees, permittees, and contractors (LPC), including their employees, agents and subcontractors involved in field activities within the scope of the BCTS Environmental Management System (EMS). It describes procedures to reduce the risk of negative impacts on the environment. This EFP does not replace the requirements of legislation, licences, permits, and contracts.

General Procedures

1. Complete a pre-work with your supervisor and/or the BCTS representative.
   a. Obtain and review all project plan documents (e.g., harvest plan, harvest plan map, site plan supporting information, road layout and design and silvicultural treatment plans). Have them readily available during field activities.
   b. Ensure you understand your role in the project plan prior to commencing work.
   c. Know the flagging or field marking standards.
2. Look ahead and make sure that the Project Plan is workable.
   a. View the area to familiarize yourself with the project plan, map contents, and site conditions.
   b. Ensure all resource features, resource values or sensitive areas identified on the project plan documents can be located by you on the ground. Know the associated management strategies.
3. Monitor and inspect your work to ensure the work conforms to the project requirements.
   a. Conduct operations to minimize potential impacts to hazardous or sensitive areas, resource features, resource values, water quality and site productivity.
   b. Operate during favourable weather and site conditions. Know the project shutdown criteria.
   c. Report to the project supervisor any conditions which may adversely affect the environment (e.g., siltation of streams, lakes or other water bodies or deterioration of the road).
4. Know the activity shutdown criteria (e.g., rainfall shutdown, fire hazard) including operational site conditions and timing windows (fisheries windows, community watersheds, migratory birds, wildlife, blasting, stakeholders).
5. Have the project plan map available and know your location at all times.
6. Keep the site clean and be prepared for emergencies, not limited to the following:
   a. Inspect equipment regularly. Repair or maintain equipment as required.
   b. Maintain fire suppression equipment and spill kits. Replace used supplies promptly.
   c. Safely transport, store, and handle industrial waste (e.g., petroleum and chemical products, grease tubes, filters, batteries, coolant, wire rope, used spill pads).
   d. Remove industrial waste regularly and dispose only at appropriate disposal facilities.
   e. Understand the environmental Emergency Response Plan (eERP) and your responsibilities in it.

Incident Reporting

1. Document on CHK-009 and report to site supervisor and BCTS in the event of:
   a. Hazardous material spill, uncontrolled fire or erosion/landslide
   b. Potential non-compliance and significant non-conformance
   c. Safety incidents, accidents, close call or previously unidentified safety hazards

Stop Work – Contact Project Supervisor and BCTS Representative if:

- There is a hazardous material spill, uncontrolled fire or erosion/landslide event
- There is uncertainty about the project plan, the responsibilities or the location of hazardous or sensitive areas.
- A previously unidentified resource feature, resource value or sensitive area is found (e.g., species of management concern, bear den, wildlife habitat feature, culturally modified tree).
- Unfavourable weather or site conditions could cause environmental damage.
- Conditions have the potential for immediate environmental damage.
- There is reason to believe the project plan will not work.

BCTS
BC Timber Sales

ENVIRONMENTAL FIELD PROCEDURE - 02

PROJECT SUPERVISION

Purpose and Scope

This Environmental Field Procedure (EFP) applies to all BC Timber Sales (BCTS) licensees, permittees and contractors (LPC), including their employees, agents and subcontractors, responsible for supervising field activities within the scope of the BCTS Environmental Management System (EMS). It describes the supervisors' responsibilities to prepare and supervise workers in such a manner as to reduce the risk of negative environmental impacts. This EFP does not replace the requirements of legislation, licences, permits and contracts.

Pre-work

1. Complete a pre-work meeting with your supervisor and/or the BCTS representative. Understand the information on the pre-work checklist. Ensure you obtain all relevant project information.
2. Prepare, complete and document a pre-work meeting with all workers involved in the project before the work commences:
    a. Review relevant project information including contract, licence, permit, map, project plan, field marking standards, prescriptions, special conditions, requirements and specifications. Review environmental field procedures, environmental emergency response plans and any resource features, resource values, sensitive areas and stop-work conditions.
    b. Provide copies of project plans and maps to workers.
    c. Emphasize to workers that they must speak with the supervisor before any changes are made to the project plans.
    d. View the site with workers to familiarize them with resource features, resource values, resource objectives, sensitive areas and special conditions, as relevant to their function and activities.
    e. Document pre-work meeting with workers and record the names of attendees. A copy of the completed BCTS Prework Report can be used for this purpose.
    f. Ensure all stakeholders are notified as required (e.g., DFO, affected water licensees or purveyors, trappers, guides, lodges, residents).
    g. Additional pre-works with workers may be required if high risk sites have been identified, a project plan has changed or following a temporary operational shut down.
3. Additional pre-work with a BCTS representative is required after temporary operational shut down (inactive for 90 calendar days or more due to season, fire, operational restrictions, economics, etc.) or as requested.

Supervising and Monitoring Project Plans

1. Have a project plan prepared by a qualified professional as appropriate.
2. Look ahead to make sure that the Project Plan is workable.
    a. Ensure resource features, resource values or sensitive areas are identified on the project plan map can be located on the ground. Communicate the associated management strategies to workers.
    b. Stop work upon discovery of a previously unidentified resource feature, resource value or sensitive area; document and identify the previously unidentified resource feature on the project plan map. Report the discovery to the BCTS representative.
3. Assess the need for changes to the project plan. Licensees and permittees must amend the project plan with a qualified professional before conducting primary forest activities in a way that is different from what is described in the plan; report to the BCTS representative.
4. Know and monitor adherence to all EFP requirements.

Supervisors Must Ensure All Workers:

1. Receive adequate training, orientation, information and instructions;
2. Have relevant EFPs available, and follow the requirements of the EFPs;
3. Have relevant project plans available, and understand their associated requirements.
4. Understand EFP stop-work procedures and incident reporting requirements (EFP-01, CHK-009).

Monitor and Inspect Work:

1. Monitor and inspect current and completed works.
    a. Review relevant items including:
        i. Conformance to the project plan, especially areas with complexity or higher risk e.g., riparian areas or special sites;
        ii. Conformance to EMS and Sustainable Forest Management requirements (e.g., EMS training completed and documented, pre-work(s) completed and documented, eERP completed, implemented and on-site, EFPs followed and onsite, etc.) and the BCTS Sustainable Forest Management Plan;
        iii. Licence, permit and/or contract conditions;
        iv. Compliance with all relevant legislation (e.g., *Forest and Range Practices Act*, *Wildfire Act*, *Forest Act*, *Transportation of Dangerous Goods Act*, *Fisheries Act*); and
        v. Safety requirements.
    b. Report any potential non-compliances to the appropriate agency and BCTS.
    c. Assign corrective and preventative actions to identified non-conformances and potential non-compliances.
    d. Follow-up on any actions identified by BCTS or the LPC inspections. Supervisor to ensure they have been carried out within the noted timelines.
2. Conduct self-inspections of the work at the frequency prescribed by BCTS pre-work or more frequently, if desired**.** The BCTS Client Self-Inspection Report can be used for this purpose.
3. Complete an inspection and notify BCTS prior to demobilization or temporary shutdown (inactive 90 calendar days or more due to seasonal, fire, operational restrictions, economics, etc). Ensure steps have been taken to protect resource features and prevent damage to the environment (e.g., ditches cleaned, culverts installed) prior to the shutdown of operations.

Manage Documentation:

1. Keep required documentation onsite:
    a. BCTS pre-work report, and records of your pre-works with workers,
    b. Project Plans and other materials provided at the pre-work,
    c. Environmental Emergency Response Plan (eERP) available to all workers,
    d. EFPs available to workers as relevant to their activities,
    e. BCTS inspection reports and LPC self-inspection reports,
    f. Completed Incident Report forms for any incidents that have occurred during the work,
    g. Training records
    h. Completed emergency response test reports.
2. Provide records for review upon request by BCTS.

In the Case of an Emergency or Environmental Damage:

1. Follow the eERP, including reporting to BCTS and external agencies.
2. Complete an Incident Report Form (CHK-009 or equivalent) and submit it to BCTS. Ensure corrective and preventative actions taken to address the incident are documented and completed.

Stop Work – Contact Project Supervisor and BCTS Representative if:

- There is a hazardous material spill, uncontrolled fire or erosion/landslide event.
- There is uncertainty about the project lan, the responsibilities or the location of hazardous or sensitive areas.
- Previously unidentified resource feature, resource value or sensitive area is found (e.g., species of management concern, bear den, wildlife habitat feature, culturally modified tree)
- Unfavourable weather or site conditions could cause environmental damage.
- Conditions have the potential for immediate environmental damage.
- There is reason to believe the project plan will not work.

BCTS
BC Timber Sales

ENVIRONMENTAL FIELD PROCEDURE - 03

DEVELOPMENT & PLANNING

Purpose and Scope

This Environmental Field Procedure (EFP) applies to all BC Timber Sales (BCTS) contractors including their employees, agents, and subcontractors involved in development and planning activities within the scope of the BCTS Environmental Management System (EMS). It also applies to BCTS licensees and permittees making changes to a project plan. This EFP describes procedures to reduce the risk of negative impacts of these activities on the environment. This EFP does not replace the requirements of legislation, licences, permits, and contracts.

Preparation

1. Ensure development and planning activities are carried out by an appropriate qualified professional
2. Ensure you have copies of and are familiar with all standards, guidebooks, plans and other information relevant to the scope of work.
3. Ensure all required assessments have been identified.
4. At the pre-work meeting, discuss details of project approach, designs, layouts, or other project plan requirements including professional qualifications to develop a plan or make changes.

Field Work

1. When conducting field work, ensure you:
   a. Are familiar with relevant constraints and plans; understand how resource objectives relate to the project area;
   b. Follow field marking standards; and
   c. Note any discrepancies between the plans or objectives and the conditions in the field; notify the BCTS representative of any discrepancies.
2. Consider potential longer-term implications of the planned work such as providing future access. If you are not sure about possible longer-term requirements, ask the BCTS representative for direction.
3. Look at all options for timber development including roads, bridges, and culverts to ensure they are placed in the best location. Know when you can vary from specifications provided by BCTS, and when you must request approvals.

Plan Completion

1. Ensure the following information and requirements, as applicable, are correctly identified and incorporated into all layout and design work:
   a. Forest Stewardship Plan information, site plan content and any amendments.
   b. Applicable engineering, mapping, boundary, and field marking requirements.
   c. Any key points noted during reconnaissance.
   d. First Nations, stakeholders and other agencies commitments as communicated via BCTS.
   e. Location of streams, terrain and other important features including wildlife tree retention areas and reserves and the related retention or buffer requirements.
   f. Location of adjacent resource values.
   g. Recommendations from professional assessments (e.g., terrain stability, windthrow, soil, watershed, stream).
   h. Any measures to ensure stability of the area during extreme weather events; roads or cutblock boundary(s).

i. Location of end-haul sections, spoil sites and quarry/pits; properly classified soils/rock.
j. Right-of-way design and markings including landing size and location.
k. Any necessary trails.
l. All shut down requirements and timing restrictions.
m. The harvesting system planned to be used and the retention levels for partial cut harvest prescriptions are identified in the harvest plan.
n. Appropriate referencing (photo ties, reference points).

2. Ensure major crossing site plans are identified for, or completed by, a qualified professional.
3. Ensure water and sediment control measures are incorporated into the plan.
4. Ensure all work is in conformance with applicable requirements and standards applicable to the BCTS business area.
5. If you have any concerns about potential environmental impacts relating to this information and the associated prescriptions, contact your supervisor and the BCTS representative.

Stop Work – Contact Project Supervisor and BCTS Representative if:

- There is a hazardous material spill, uncontrolled fire, or erosion/landslide event.
- There is uncertainty about the project plan, the responsibilities, or the location of hazardous or sensitive areas.
- A previously unidentified resource feature, resource value or sensitive area is found (e.g., species of management concern, bear den, wildlife habitat feature, culturally modified tree).
- Unfavourable weather or site conditions could cause environmental damage.
- Conditions have the potential for immediate environmental damage.
- There is reason to believe the project plan will not work.

ENVIRONMENTAL FIELD PROCEDURE - 04

ROADS, BRIDGES AND CULVERTS

Purpose and Scope

This Environmental Field Procedure (EFP) applies to all BC Timber Sales (BCTS) licensees, permittees, and contractors (LPC), including their employees, agents, and subcontractors, involved in permanent and temporary road, bridge and culvert construction, maintenance, inspection, and deactivation within the scope of the BCTS Environmental Management System (EMS). It describes procedures to reduce the risk of negative impacts of these field activities on the environment. This EFP does not replace the requirements of legislation, licences, permits, and contracts.

Road, Bridge and Major Culvert Inspections

1. Understand all applicable inspection and engineering requirements. Know which sites and structures require assessments. Assessments must be done by those trained and professionally competent.
2. Review all relevant assessments prior to inspection. Understand their management implications.
3. Review or walk the project area, as well as the surrounding area of influence, to ensure all relevant field information is collected, complete, reported and mapped.
4. Understand and use the appropriate inspection form. Record all inspection results, identifying any deficiencies or additional inspection requirements and submit to the project supervisor.

Road Construction, Maintenance and Deactivation

1. Have a project plan (e.g., road layout and design, plans and profiles, deactivation, maintenance).
2. Ensure compliance with applicable timing windows and other specifications (e.g., fisheries windows, community watersheds, migratory birds, wildlife, recreation).
3. Ensure safety signage is posted on sites as required.
4. Construct and maintain the road to ensure the structural integrity of the road prism and clearing width are protected, the drainage systems are functional, and the road is safe for industrial use.
5. Report to the project supervisor any road conditions which may adversely affect the environment (e.g., siltation of streams, lakes or other water bodies, or deterioration of the road).
6. Incorporate considerations for extreme weather events and climate change to ensure functionality of roads and protection of the environment.
7. Have appropriate water control measures on roads at locations where there is a risk of erosion, impacts to water quality, classified stream or fish habitat.
8. Before equipment demobilization or prior to temporary or seasonal shutdown, and/or when precipitation is occurring in an amount causing erosion of surface material:
    a. Install back-up cross ditches at culvert locations.
    b. Establish water-bars and breach grader berms to disperse runoff.
    c. Perform site clean-up to ensure water management features (culverts, ditches) are clean of introduced logging debris and functional.
9. Maintain natural surface drainage patterns. Avoid directing water onto unstable slopes or erodible soils; direct water to stable slopes and/or armour outfalls with rock.
10. Minimize the impact on water quality and site productivity:
    a. Operate during favourable weather and site conditions. Know the project shutdown criteria.
    b. Install culverts and other drainage structures concurrently with subgrade construction.
    c. Utilize sediment control measures as required (e.g., silt fences, hay bales, rock armouring, swales, water bars or sediment ponds).

d. Clean introduced debris from ditches, streams and culverts on an on-going basis before any impact can occur.
e. Ensure road surface drainage is directed to drainage structures and is not impeded.
f. Minimize erosion potential of exposed soil surfaces by seeding of disturbed areas.
g. Seeding must be at appropriate times and with an appropriate mix of seed to ensure effectiveness and avoid the spread of invasive species.

11. Control blasting to minimize fly-rock damage and slope instability. Adhere to blasting timing windows.
12. Know the locations of end-haul and spoil sites.
13. Do not remove gravel or other fill from Riparian Management Areas. Avoid constructing pullouts in Riparian Management Areas.
14. When re-establishing natural drainage patterns during road deactivation, the road fill should be removed down to the natural ground level. Cut and fill slopes must be left in a stable condition.
15. Prepare professional conformance and assurance statements if required for road design, construction, maintenance and deactivation.

Bridge or Culvert Installation, Maintenance and Removal

1. Have a project plan deemed appropriate by a qualified professional (e.g., installation, deactivation, maintenance).
2. Bridges and major culverts (greater than or equal to 2000mm) require a coordinating registered professional and professional of record to oversee, design, inspect and sign-off the project.
3. Comply with timing windows, legislation and other specifications (e.g., *DFO Fisheries Act* "projects near water" requirements and guidance, fisheries windows, community watersheds, migratory birds, wildlife, blasting, stakeholders).
4. Construct and maintain bridges and culverts in accordance with the project plan. Ensure bridges and culverts are structurally sound, appropriate and safe for industrial use.
5. When working on crossings, know the stream classification, management zone and associated prescription. During construction of temporary access trails, minimize the impact to water features.
6. Minimize the impact on water quality and site productivity:
   a. Install culverts and other drainage structures concurrently with subgrade construction.
   b. Utilize sediment control measures as required (e.g., silt fences, hay bales, rock armouring, swales, water bars, or sediment ponds).
   c. Clean introduced debris from ditches, streams and culverts on an on-going basis, and before any blockages can occur.
   d. Incorporate considerations for extreme weather events and climate change to ensure functionality of roads and protection of the environment.
   e. Minimize erosion potential of exposed soil surfaces by seeding of disturbed areas.
   f. Seeding must be at appropriate times and with an appropriate mix of seed to ensure effectiveness and avoid the spread of invasive species.
7. Operate during favourable weather and site conditions. Know the project shutdown criteria.
8. Temporary structures such as log bundles must be removed prior to unfavourable conditions.
9. Avoid placing erodible materials on bridge decks, in stream channels or on flood plains. Clean bridge decks and remove erodible materials.
10. Maintain natural surface drainage patterns. Avoid directing water onto unstable slopes or erodible soils; direct water onto stable slopes and/or armour outfalls with rock.
11. Armour culvert inflows, outflows and fill slopes to minimize erosion as required. It is a good practice to pre-mark inlet and outlet culvert locations to ensure appropriate road prism fit. Culvert installation should consider skew, slope and percent of embedment as designed.
12. Dispose of wood culvert/bridge debris in designated sites outside riparian management areas.

13. Ensure professional conformance and assurance statements are prepared for bridges and major culverts by the professional of record (POR).

Fire Hazard Assessment and Abatement

1. Complete hazard assessments at prescribed intervals and complete abatement in accordance with the *Wildfire Act* and Regulation. Submit assessment to BCTS upon request.
2. If burning is part of the plan for abatement, ensure required notification is made, approvals received and conditions followed. Ensure burn area is safe from escape and clear of hazardous or sensitive areas. Monitor burned sites for extinguishment.

Stop Work – Contact Your Project Supervisor and BCTS Representative if:

- There is a hazardous material spill, uncontrolled fire or erosion/landslide event.
- There is uncertainty about the project plan, the responsibilities or the location of hazardous or sensitive areas.
- A previously unidentified resource feature, resource value or sensitive area is found (e.g., species of management concern, bear den, wildlife habitat feature, culturally modified trees).
- Unfavourable weather or site conditions could cause environmental damage.
- Conditions have the potential for immediate environmental damage.
- There is reason to believe the project plan will not work.

ENVIRONMENTAL FIELD PROCEDURE - 05

HARVESTING

Purpose and Scope

This Environmental Field Procedure (EFP) applies to all BC Timber Sales (BCTS) licensees, permittees, and contractors (LPC), including their employees, agents, and subcontractors, involved in all phases of harvesting within the scope of the BCTS Environmental Management System (EMS). It describes procedures to reduce the risk of negative impacts of these field activities on the environment. This EFP does not replace the requirements of legislation, licences, permits, and contracts.

Project Plans

1. Have a project plan prepared by a qualified professional as appropriate. Ensure the project plan is applicable to the phase of operation.
    a. Choose suitable landing and yarder setting locations that are stable and away from water courses.
    b. Pre-mark or at least know existing culvert locations and classified stream locations; ensure they are functional at all times until these structures are removed.
    c. If a change of plan is needed, stop work, then notify project supervisor. Changes to a project plan must be documented, made by a qualified professional, and meet the intended results and strategies for the project area and protect environmental values.

Falling

1. Fall next to boundaries only when boundaries are clearly visible (know where they are).
2. Use extra caution when falling adjacent to boundaries and reserves in order to minimize damage to standing trees and protect resource features, resource values (e.g., cultural) and sensitive areas.
3. Follow stream prescriptions when falling, limbing and bucking adjacent to watercourses.
4. Know which streams and gullies require cleaning of introduced debris.
5. Know leave-tree, stubbing and retention requirements, and monitor your progress to ensure the requirements are met.

Yarding, Skidding, Forwarding, Loading, Processing and Hauling

1. If yarding or skidding in steep or gullied terrain, ensure you implement yarding/skidding strategies to minimize impacts to soil productivity and water quality.
2. Use appropriate methods to minimize damage to reserve trees (e.g., dispersed retention trees, retention tree patches, etc.).
3. Know the applicable soil disturbance limits and use appropriate methods to avoid excessive soil disturbance (e.g., temporary access structures, gouges, ruts, scalps and compacted areas).
4. Minimize the impact on water quality and site productivity:
    a. Take actions to mitigate potential erosion and/or sedimentation from temporary access trails.
    b. Utilize sediment control measures as required (e.g., silt fences, hay bales or sediments ponds).
    c. Clean introduced debris from ditches, streams, and culverts on an on-going basis, and before any blockages can occur.
5. Operate during favourable weather and site conditions. Know the project shutdown criteria.
6. Know the project shutdown criteria including operational site conditions and timing windows (e.g., fisheries windows, community watersheds, migratory birds, wildlife, blasting, recreation).
7. Know the stream classifications and implement riparian management area requirements (e.g., machine free zones, riparian reserve zones, stream cleaning, etc.) for the watercourses identified in the project plan.

8. Rehabilitate excavated and bladed temporary access trails, temporary roads, landings, etc., as required. Ensure rehabilitation activities maintain natural drainage patterns.
9. Temporary structures such as log bundles must be removed prior to unfavourable conditions.
10. Avoid decking wood, processing wood, and piling wood debris in riparian management areas.
11. Minimize decked wood and debris pile impacts to standing timber and reforested areas.
12. Report to the project supervisor any road conditions which may adversely affect the environment (e.g., siltation of streams, lakes or other water bodies or deterioration of the road).
13. Before equipment demobilization or prior to temporary or seasonal shutdown, perform site clean-up to ensure water management features (culverts, ditches) are clean of introduced logging debris and functional.

Fire Hazard Assessment and Abatement

1. Complete hazard assessments at prescribed intervals and complete abatement in accordance with the *Wildfire Act* and Regulation. Submit assessment to BCTS upon request.
2. If burning is part of the plan for abatement, ensure required notification is made, approvals are received, and conditions are followed. Ensure burn area is safe from escape and clear of hazardous or sensitive areas. Monitor burned sites for extinguishment.

Stop Work – Contact Project Supervisor and BCTS Representative if:

- There is a hazardous material spill, uncontrolled fire or erosion/landslide event.
- There is uncertainty about the project plan, the responsibilities, or the location of hazardous or sensitive areas.
- Previously unidentified resource feature, resource value or sensitive area is found (e.g., species of management concern, bear den, wildlife habitat feature, culturally modified tree)
- Unfavourable weather or site conditions could cause environmental damage.
- Conditions have the potential for immediate environmental damage.
- There is reason to believe the project plan will not work.

BC Timber Sales
Environmental Management System

ENVIRONMENTAL FIELD PROCEDURE
EFP 06 FUEL HANDLING

Purpose and Scope

This Environmental Field Procedure (EFP) applies to all BCTS clients (Licensee, Permittee and Contractor workers) and BCTS staff who are responsible for fuel handling within the scope of BCTS EMS program. The purpose of this document is to bring together legislative requirements, industrial standards, and best management practices as it relates to fuel handling, storage, and transportation. The primary fuel used within the forest industry is diesel fuel (UN1202) found under Class 3, Flammable Liquids. This EFP is intended to help promote good fuel management and is not intended to supersede legislative requirements or criteria. Applicable Acts and Regulations include: Transportation of Dangerous Goods Act and Regulations, BC Motor Vehicle Act and Regulations, Environmental Management Act and Regulations, Hazardous Products Act and Regulation, Contaminated Sites Act and Regulations, Workers' Compensation Act and OHS Regulations.

2021 Changes in Red Text

BC Timber Sales
Environmental Management System
ENVIRONMENTAL FIELD PROCEDURE
EFP 06 FUEL HANDLING

TABLE #1 SMALL FUEL CONTAINERS (Volumes <230L) Drums, Jerry Cans, Pails, Canisters

Legend
- ■ Legal Requirement
- ☑ BCTS Requirement

TYPE	*CONDITION, DESIGN & MAINTENANCE*	*STORING & SECURING*	*DISPENSING*	*TRANSPORT (see column 2 for securing details)*	*PREVENTION & RESPONSE*
SMALL FUEL CONTAINERS (Volumes < 230L)	■ Must be designed, constructed, filled, closed, secured and maintained so under normal conditions of handling and transport there will be no accidental release of dangerous goods that would endanger public or worker safety. ☑ Containers must be in good condition – not damaged, rusting or leaking. ■ Jerry cans (<150L) have a lifespan of 60 months from date of manufacture but may be used for 120 months if: --Jerry cans are part of a fleet registered with TC; --Used only for Class 3, PGII or PGIII products; --Not damaged, cracked, deformed or leaking ■ Drums (≥ 150 L) are designed for one-time use & require reconditioning prior to use. Designed, constructed and maintained in good condition to securely contain product. **Construction Standard** ■ TP 14850 (2018) are Small Containers for TDG ≤450L. ■ CSA B376 (2014) are Portable Containers for Gasoline and Other Petroleum ≤ 25 L. ■ ULC/ORD – C30 are Safety Containers >5L and ≤ 25L. ■ Containers <u>less than 30 liters</u> are exempt from TDG requirements but are still governed under WHMIS. **Inspections** ☑ Licensees/ Contractors must self inspect containers on a regular basis. (plastic containers usually every 5 years). Immediately replace containers that are leaking.	☑ Do not store small containers in Riparian Management areas or Marine Environments wherever practicable ☑ Do not smoke where fuel is stored or dispensed **Labeling** ■ Any container over 30 liters must have appropriate safety marks: • Label or Placard as required, • UN number and • Shipping Name ■ TDG safety marks on the outside of an enclosed unit must be visible if containers are stored within an enclosed unit. ■ WHMIS labeling or appropriate <u>Product Identification</u> is required when storing hazardous products **Securing** ■ As per manufacture's recommendations, containers must be secured and kept level to prevent shifting, swaying, damage, escape from the vehicle and accidental release of product. ■ Tie down straps must have safe <u>combined</u> working load ratings *greater* than the secured load.	■ Maintain current MSDS in a location available to worker ☑ Do not dispense fuel in Riparian Management areas or Marine Environments wherever practicable. ☑ Dispense all flammable and combustible substances only from drums in an upright position ☑ Do not fill containers beyond their safe filling level *(approximate safe level – 90%)* ☑ Store the hose above the pump (and drum) to avoid siphoning. ☑ Only transfer fuel with a pump designed for the products being handled. ☑ Check routinely for leaks drips and spills.	■ Drums must be properly arranged by: • Stacking in an upright, vertical position • Separating and Protecting through use of boards, stakes or sides on the vehicle to protect the load from moving ■ If multiple containers of diesel and/ or gasoline are transported and the <u>combined capacity</u> exceeds 2000L, the following conditions apply: • A shipping document must be completed for the goods hauled • The operator must have TDG training and possess a certificate • The load must have placards on all visible sides ■ Empty drum transport are exempt from TDG Regs provided: • Drum residue <10% • If more than 10 drums then DANGER Placards are required on all four sides and include a shipping document outlining: the primary class, 'residue drums' and number of drums.	■ Take reasonable measures to prevent leaks & spills ■ Respond to all fuel spills ☑ Where dispensing and storing fuel in higher risk areas consider utilizing additional Spill Control and Prevention Measures (see Table #6). **Fire Control and Response** ☑ Maintain and self-inspect one suitable B:C-rated fire extinguisher ensuring it's: • not actuated or tampered with • shows no obvious physical damage, (i.e. corrosion, leakage, or clogged nozzle) to prevent its operation • pressure gauge reading or indicator is in operable range • safety seal or pin in place; • product id/WHMIS label in place • located in appropriate location, and • document self-inspections ☑ Maintain a spill kit of suitable size (See Table #7)

TABLE #2 SMALL MOBILE (TRUCK BOX) TANKS (Volumes: ≤450L)

Legend
- ■ Legal Requirement
- ☑ BCTS Requirement

TYPE	CONDITION, DESIGN, & MAINTENANCE	STORING & SECURING	DISPENSING	TRANSPORT (see column 2 for securing details)	PREVENTION & RESPONSE
SMALL MOBILE (TRUCK BOX) TANKS (Volumes: <450L)	■ Must be designed, constructed, filled, closed, secured and maintained so under normal conditions of handling and transport there will be no accidental release of dangerous goods that would endanger public or worker safety. ☑ Containers must be in good condition – not damaged, rusting, or leaking. **Construction Standard** ■ **Diesel:** a spec or non-spec tank may be used. Tanks used for diesel are exempt from being built to an engineering standard but must not pose a danger to public safety. ■ **Gasoline:** An IBC Portable Tank CAN/CGSB 43.146 spec tank is required and must bear a visible and legible Spec Plate. ■ All Gasoline spec tanks must be tested and inspected by a Transport Canada (TC) Registered facility every 5 years. Proof that tests and inspections were conducted by a TC Registered facility within the last 5 years must be available upon request. **Inspections** ☑ Licensees/ Contractors must self inspect tanks on a regular basis. Immediately replace containers that are leaking.	■ Use a pressure relief cap that meets manufacturers design specifications ■ Do not store small mobile tanks in riparian management areas or marine environments wherever practicable ■ Do not smoke where fuel is stored or dispensed ☑ If a mobile tank (>230L) is removed from the vehicle and placed on the ground, then secondary containment is required. **Securing** ■ As per manufacture's recommendations, ensure mobile fuel tanks are secured on a solid foundation and remains level to prevent shifting, swaying, damage, escape from the vehicle and accidental release of product. ■ Protect the fuel tank from wear or damage (i.e. rubber belting or mat). ■ Tie down straps must have safe combined working load ratings *greater* than the secured load	■ Use dispensing pumps designed for the products being handled ☑ Use an appropriate hose and nozzle (in accordance with ULC standards) for dispensing fuel ☑ Make sure there is suitable bonding between tank and vehicle to prevent static charges when dispensing gasoline. ■ Maintain current MSDS in a location available to workers ■ Hoses and nozzles must be maintained and not leak. ■ Do not dispense fuel in riparian management areas or marine environments wherever practicable. ■ Nozzles must be store in drip containment after use or in an upright position so that it's above the tank. ☑ Operators must stay with the nozzle at all times while dispensing fuel ☑ Close valves when finished dispensing ☑ Store hose in a safe manner to prevent damage and leaks (i.e. coiled on top of tank) ☑ Do not fill tanks beyond their safe filling level *(approximate safe level – 90%)* ☑ Keep fuel and equipment on level ground	■ Mobile containers do not require secondary containment. ■ If multiple tanks of diesel and/or gasoline are complete and carried on the vehicle and the combined capacity exceeds 2000 liters, the following conditions apply: • A shipping document must be completed for the goods hauled • The operator must have a TDG training and possess a valid certificate • The load must be placarded on all visible sides. **Safety Labeling & Spec Plates** ■ WHMIS labeling or appropriate Product Identification is required when storing hazardous products ■ Maintain visible safety marks: • Label or placard • UN number and • Shipping name ■ TDG safety marks must be visible on the tank or any enclosed storage unit ■ Spec plates, decals or associated documentation--(ensuring paperwork is linked to the specific tank) must identify the following: • Container Type & Standard • Manufacturer and Date • Re-certification Date and TC Registered Facility	■ Take reasonable measures to prevent leaks & spills ■ Respond to all fuel spills ☑ Where dispensing and storing fuel in higher risk areas consider utilizing additional Spill Control and Prevention Measures (see Table #6). ☑ Where tanks are stored on the ground, collision protection is required. (see Table #6) **Fire Control and Response** ☑ Maintain and self-inspect one suitable B:C-rated fire extinguisher ensuring it's: • not actuated or tampered with • shows no obvious physical damage, (i.e. corrosion, leakage, or clogged nozzle) to prevent its operation • pressure gauge reading or indicator is in operable range • safety seal or pin in place; • product id/WHMIS label in place • located in appropriate location, and • document self-inspections ☑ Maintain a spill kit of suitable size (See Table #7)

BC Timber Sales
Environmental Management System
ENVIRONMENTAL FIELD PROCEDURE
EFP 06 FUEL HANDLING

TABLE #3 LARGE MOBILE TANKS (Volumes: >450L – ≤3000L)

Legend
- ■ **Legal Requirement**
- ☑ **BCTS Requirement**

TYPE	*CONDITION, DESIGN, & MAINTENANCE*	*STORING AND SECURING*	*DISPENSING*	*TRANSPORT (see column 2 for securing details)*	*PREVENTION & RESPONSE*
LARGE MOBILE TANKS (Volumes: >450L – 3000L)	■ Must be designed, constructed, filled, closed, secured and maintained so under normal conditions of handling and transport there will be no accidental release of dangerous goods that would endanger public or worker safety. ☑ Containers must be in good condition – not damaged, rusting, or leaking **Construction Standard** ■ **All Tanks:** used to transport fuel (regardless of volume) must be designed, and constructed to a mobile tank standard and display a spec plate. ■ **Spec Tanks:** used for diesel and gasoline may have one of the following spec plates: • UN 31A/B IBC Portable Tank and • TC57 Portable Tanks as per CAN/CGSB 43.146 (2016) • UN Portable Tanks as per CSA B625-14 (2018) >450L • ULC/ORD 142.13 ■ Non-Spec Tanks may no longer be used. Any tank without a spec plate is non-spec. **Inspections** ■ All Spec tanks (listed above) must be tested and inspected by a Transport Canada (TC) Registered facility every 5 years. Proof that tests and inspections were conducted by a TC Registered facility within the last 5 years must be available upon request. ☑ Licensees/ Contractors must self inspect tanks on a regular basis. Immediately replace containers that are leaking.	■ Use a pressure relief cap that meets manufacturers design specifications ■ Do not leave vehicles carrying auxiliary fuel in riparian management areas or marine environments wherever practicable. ☑ Do not smoke where fuel is stored or dispensed ☑ If a mobile tank (>230L) is removed from the vehicle and placed on the ground, then secondary containment is required. **Securing** ■ As per manufacture's recommendations, ensure mobile fuel tanks are secured on a solid foundation and remains level to prevent shifting, swaying, damage, escape from the vehicle and accidental release of product. ■ Protect the fuel tank from wear or damage (i.e. rubber belting or mat). ■ Tie down straps must have safe <u>combined</u> working load ratings *greater* than the secured load to ensure the tank is integrally mounted	☑ Use an appropriate hose and nozzle (in accordance with ULC Standards) for dispensing fuel ■ Use dispensing pumps designed for the products being handled. ■ Make sure there is suitable bonding between tank and vehicle to prevent static charges when dispensing gasoline. ■ Maintain current MSDS in a location available to workers ■ Hoses and nozzles must be maintained and not leak. ■ Do not dispense fuel in riparian management areas or marine environments wherever practicable. ■ Nozzles must be secured in drip containment after use or in an upright position so that it's above the tank. ☑ Operators must stay with the nozzle <u>at all times</u> while dispensing fuel ☑ Keep fuel and equipment on level ground ☑ Close valves when finished dispensing ☑ Store hose in a safe manner to prevent damage and leaks (i.e. coiled on top of tank) ☑ Do not fill tanks beyond their safe filling level *(approximate safe level – 90%)*	■ Mobile containers do not require secondary containment ■ If multiple tanks of diesel and/or gasoline are carried on the vehicle and the <u>combined capacity</u> exceeds >2000 liters, the following conditions apply: • A shipping document must be completed and carried for the goods hauled • The operator must have a TDG training and possess a certificate • The load must be placarded on all visible sides. ■ If large mobile tanks are transported on a trailer, the trailer must meet Motor Vehicle Requirements, (GVW, brakes, lights and axels etc.). ■ An *Equivalent Level of Safety Permit* must be obtained from Transport Canada prior to moving non-spec IBC's and Portable Tanks greater than ≥450L that contain *dangerous goods* in any quantity-including "residual" tanks. The *Equivalency Permit* will outline applicable use of tank, training and inspection requirements. **Safety Labeling & Spec Plates** ■ Maintain visible safety marks: • Label or placard, (placard if exceeding 500 kg) • UN number and Shipping name ■ TDG Placards must be visible ■ Spec plates, decals or associated documentation--(ensuring paperwork is linked to the specific tank) must identify the following: • Container Type & Standard • Manufacturer and Date • Re-certification Date and TC Registered Facility **Labeling** ■ WHMIS labeling or appropriate <u>Product Identification</u> is required when storing hazardous products.	■ Take reasonable measures to prevent leaks & spills ■ Respond to all fuel spills ☑ Where dispensing and storing fuel in higher risk areas consider utilizing additional Spill Control and Prevention Measures (see Table #6). ☑ Where tanks are stored on the ground, collision protection is required. (see Table #6) **Fire Control and Response** ☑ Maintain and self-inspect one suitable B:C- rated fire extinguisher ensuring it's: • not actuated or tampered with • shows no obvious physical damage, (i.e. corrosion, leakage, or clogged nozzle) to prevent its operation • pressure gauge reading or indicator is in operable range • safety seal or pin in place; • product id/WHMIS label in place • located in appropriate location, and • document self-inspections ☑ Maintain a spill kit of suitable size (See Table #7)

TABLE #4 HIGHWAY & TC PORTABLE TANKS
(Fuel Trucks & Pup-Trailers with Volumes > 3000L)

Legend
- ■ Legal Requirement
- ☑ BCTS Requirement

TYPE	CONDITION, DESIGN & MAINTENANCE	STORING AND SECURING	DISPENSING	TRANSPORT (see column 2 for securing details)	PREVENTION & RESPONSE
HIGHWAY & TC PORTABLE TANKS (Volume > 3000L)	■ Must be designed, constructed, filled, closed, secured and maintained so under normal conditions of handling and transport there will be no accidental release of dangerous goods that would endanger public or worker safety. **Construction Standard** ■ **All Tanks:** used to transport fuel and sometimes to store and dispense fuel. Tanks must be designed, constructed and/or tested to a design standard specification and display a visible and legible spec plate to that standard. ■ **Spec Tanks:** used for diesel and gasoline may have one of the following spec plates: • UN 31A/B IBC Portable Tank and • TC57 Portable Tanks as per CAN/CGSB 43.146 (2016) • UN Portable Tanks as per CSA B625-14 (2018) • TC44 Portable Tanks as per CSA B626-09 (R2015) >3000L only • ULC/ORD 142.13 ■ Non-Spec Tanks may no longer be used. Any tank without a spec plate is non-spec. **Inspections** ■ All Highway and Transport Canada (TC), Portable Tanks must be tested and inspected by a TC Registered facility every five years. Proof that tank tests and inspections were conducted by a TC Registered Facility must be available upon request. ☑ Licensees/ Contractors must self inspect tanks on a regular basis. Immediately replace containers that are leaking.	■ Use a pressure relief hatch that meets manufacturers design specifications ■ Do not leave fuel truck or pup trailer in riparian management areas or marine environments wherever practicable. ☑ Do not smoke where fuel is stored or dispensed **Securing** ■ Fuel truck tanks must be integrally mounted to the unit. ■ Ensure tank is secure, stable and remains level to prevent accidental release of product. **Labeling** ■ Product identification is an acceptable substitute for supplier or workplace labels and may be affixed to the sides of the tank compartments and piping. ■ All Portable Tanks must have appropriate TDG safety marks including: • Label or placard; • UN Number; • Shipping Name ■ Spec Plates must identify the following: • Container Type & Standard; • Manufacturer & Date; • Recertification Date & TC Registered Facility	■ Use an appropriate hose and nozzle (in accordance with ULC standards) for dispensing fuel ■ Use dispensing pumps designed for the products being handled ☑ Check routinely for leaks drips and spills. ■ Make sure there is suitable bonding between tank and vehicle to prevent static charges when dispensing gasoline. ■ Maintain current MSDS in a location available to workers ■ Do not dispense fuel in riparian management areas or marine environments wherever practicable. ■ Hoses and nozzles must be maintained and not leak. ■ Store hose in a safe manner to prevent damage and leaks (i.e. coiled on top of tank). ☑ Dispensing **gasoline** fuel directly from a fuel truck into the equipment is **NOT** permitted ☑ Close valves when finished dispensing ☑ Operators must stay with the nozzle <u>at all times</u> while dispensing fuel ☑ Do not fill containers beyond their safe filling level *(approximate safe level – 90%)* ☑ Keep fuel and equipment on level ground	■ Fuel trucks and pup-trailers used to transport products on public roads must meet Motor Vehicle requirements (i.e. GVW, brakes, lights, axles, etc.) and TDG requirements (Placards & Documentation) ■ When the total capacity of a fuel tank exceeds 2000 liters, the shipper/driver is required to: -Complete a shipping document for the goods hauled or residue last contained -Maintain a valid TDG training certificate -Visible spec plate ■ Placard the load on all four sides ■ Non-Spec tanks may no longer be used. ■ An *Equivalent Level of Safety Permit* must be obtained from Transport Canada prior to moving non-spec IBC's and Portable Tanks greater than ≥450L that contain *dangerous goods* in any quantity-including "residual" tanks. The *Equivalency Permit* will outline applicable use of tank, training and inspection requirements.	■ Take reasonable measures to prevent leaks & spills ■ Respond to all fuel spills ☑ Where dispensing and storing fuel in higher risk areas consider utilizing additional Spill Control and Prevention Measures (see Table #6). **Fire Control and Response** ☑ Maintain and self-inspect one suitable B:C-rated fire extinguisher ensuring it's: • not actuated or tampered with • shows no obvious physical damage, (i.e. corrosion, leakage, or clogged nozzle) to prevent its operation • pressure gauge reading or indicator is in operable range • safety seal or pin in place • product id/WHMIS label in place • located in appropriate location, and • document self-inspections ☑ Maintain a spill kit of suitable size (See Table #7)

BC Timber Sales
Environmental Management System
ENVIRONMENTAL FIELD PROCEDURE
EFP 06 FUEL HANDLING

TABLE #5 LARGE STATIONARY SKID TANKS (Generally Volumes > than >3000L)

Legend
- ■ Legal Requirement
- ☑ BCTS Requirement

TYPE	CONDITION, DESIGN & MAINTENANCE	STORING AND SECURING	DISPENSING	TRANSPORT (see column 2 for securing details)	PREVENTION & RESPONSE
LARGE STATIONARY SKID TANKS (Volume >3000L)	■ Stationary Tanks are not designed to transport fuel and must be emptied prior to moving. TC has designated the CAN/ULC-601 as a Utility tank and may be relocated (empty) with an *Equivalent Level of Safety Permit.* ☑ **All Tanks:** must be designed, constructed, and tested to a design standard specification and must bear a visible and legible Spec Plate to that standard ■ **Spec Steel Tanks:** used to store flammamble and combustable liquids (diesel or gas) and will generally have one of the following markings: • ULC-S601 Shop Fabricated AST for • ULC-S602 AST Steel Tanks • ULC-S630 AST Vertical Tanks • ULC-S643 AST Vertical Tank; • ULC-S653/S655 AST Steel Tanks Assembly • All tanks must be constructed and maintained to conform to a ULC specification for stationary above ground tanks. ■ **Non-Spec Tanks:** All non-spec tanks must be taken out of operation. Any tank without a spec plate is non-spec. **Inspections** ■ Licensees/ Contractors must self inspect tanks on a regular basis. Immediately replace containers that are leaking.	☑ All stationary tanks must have secondary containment. Options include: • Tank-in-tank (vacuum monitored, visible access port or visible access hatch). • Tank-in-box (visible access hatch) • Tank in berm with geotextile liner (orequivalent) ☑ Skid Tank shall be equipped with overfill protection. ☑ Use a pressure relief cap that meets manufacturers design specifications ☑ Store nozzle & hose in a safe manner to prevent damage and leaks (i.e. on a retractor, hose reel or coiled) ■ Do not place stationary skid tanks in riparian management areas or marine environments, unless no other area is practicable. ☑ Ensure All stationary tanks are properly grounded; ☑ Do not smoke where fuel is stored or dispensed ☑ Ensure physical protection against collision damage. **Storage** ☑ Large stationary skid tanks must be: • Above ground, doubled wall with a positive containment monitoring leak protection feature, (vacuum gauge, visual port or dipstick); **Securing** ■ As per manufacture's recommendations, tanks must be appropriately secured to the skid and kept level to prevent shifting, swaying, damage escape and accidental release of product. ■ Tanks must be mounted to a fire-resistant cradle and skid.	■ Use dispensing pumps designed for the products being handled ☑ Use an appropriate hose and nozzle (in accordance with ULC standards) for dispensing fuel. ■ Make sure there is suitable bonding to prevent static charges when dispensing gasoline ■ Maintain current MSDS in a location available to workers ■ Hoses and nozzles must be maintained and not leak ■ Do not dispense fuel in riparian management areas or marine environments wherever practicable. ■ Maintain a record of inventory ☑ Operators must stay with the nozzle <u>at all times</u> while dispensing fuel. ☑ Written and posted SOPs ☑ Store nozzle & hose in a safe manner to prevent damage and leaks (i.e. on a retractor, hose reel, coiled or above the tank to prevent siphoning) ☑ Close valves when finished dispensing ☑ Do not fill tanks beyond their safe filling level *(approximate safe level – 90%* ☑ Keep fuel and equipment on level ground	■ Stationary Tanks (>450L) must never be used to transfer fuel. **TDG Transport** ■ Prior to moving a stationary fuel (diesel or gas) tank with a capacity >450L and <2000 ensure: • Tank is pumped empty (5% or less); • Obtain an *Equivalent Level of Safety Permit* from TC; • The AST is placarded on all four sides with TDG Classification and Shipping Name; ■ When relocating an empty stationary AST with a total capacity >2000L, the following TDG Regulations must be implemented: • Tank must be emptied to <5% and/or contain <500L; • *Obtain an Equivalent Level of Safety Permit* from TC; • A shipping document must be completed for the *Residual Last Contained*; • The hauler/operator must possess a valid TDG training certificate; • The skid tank must be placarded on all four sides displaying TDG Classification, Shipping Name and UN number. ■ WHMIS labeling or appropriate <u>Product Identification</u> is required when storing hazardous products	■ Take reasonable measures to prevent leaks & spills ■ Respond to all fuel spills ☑ Where dispensing and storing fuel in higher risk areas consider utilizing additional Spill Control and Prevention Measures (see Table #6). ☑ Where tanks are stored on the ground, collision protection is required. (see Table #6) **Fire Control and Response** ☑ Maintain and self-inspect one suitable B:C-rated fire extinguisher ensuring it's: • not actuated or tampered with • shows no obvious physical damage, (i.e. corrosion, leakage, or clogged nozzle) to prevent its operation • pressure gauge reading or indicator is in operable range • safety seal or pin in place; • product id/WHMIS label in place • located in appropriate location, and • document self-inspections ☑ Maintain a spill kit of suitable size (See Table #7)

TABLE #6 Definition of Terms

Additional Spill Control Prevention	• Re-assess the environmental risk and implement additional control measures • Review the BCTS Fuel Handling Environmental Field Procedure 06 to ensure procedures address the risk factors • Review Spill Response awareness and preparedness, conduct a spill drill and increase monitoring of dispensing area locations • Enhance minimum Spill Kit requirements as outlined in Table #7 • Move the fuel storage to a lower risk location • Add secondary containment or double-walled containers • Breakaway valves on hoses • Collision Protection e.g. guard logs • Tanks located more than 6 meters from a building • Tarps for containment • Materials to block culverts when needed • Sandbags and PVC pipe for underflow containment • Sandbags for diversions and upstream eddy containment
B:C Fire Extinguisher	The number represents the size of fire the extinguisher will put out under normal use (non-expert) • An 80 rated fire extinguisher will cover 15.25 square meters • A 40 rated fire extinguisher will cover 9.15 square meters. Therefore two 40 rated fire extinguishers will cover the same area as one 80 rated fire extinguisher • The B:C represents the type of fires: “B” fire is for flammable liquids, while a “C” fire is for electrical
Bioremediation Product	Any form of nutrients, bacteria or enzymes that when added and mixed with the soil, will enhance the biological breakdown of petroleum hydrocarbon contaminated soil. This product is intended for small leaks, drips and spills that are below the reportable quantities and not impacting surface water or groundwater.
Breakaway valve	An in-line device containing a flutter valve that, upon accidental separation of the hose, will automatically close and prevent fuel from being discharged
Collision Protection	A barrier sufficient to alert the operator and prevent accidental damage to the container and release of the product.
Enclosed space	Any structure enclosed by three sides
Equivalent Level of Safety (Permit) issued by Transport Canada	Permits for Equivalent Level of Safety allows the handling, offering for transport or transporting of dangerous goods in a manner that does not necessarily comply with the Transportation of Dangerous Goods (TDG) Regulations. Permits are only issued if the risk to health, safety and the environment are mitigated reasonably. It is not necessary to obtain a permit to handle, offer for transport or transport dangerous goods if the TDG Act and Regulations are fully complied with. Note: Some organzitions such as the Forest Products Association of Canada, have an Equivalent Level of Safety Permit authorized for their members. https://wwwapps.tc.gc.ca/Saf-Sec-Sur/3/approvals-approbations/SearchCertificates.aspx To Apply for an Equivalency Certificate (Permit of Equivalent Level of Safety). Please go to TC link below: https://tc.canada.ca/en/dangerous-goods/how-apply-equivalency-certificate-permit-equivalent-level-safety
Fuel Storage Facility	Any location where fuel in excess of 500 litres is stored on a BCTS tenure
Equivalent Spill Response Equipment	In an attempt to provide some flexibility in the minimum requirements of a spill kit, the following equivalent standards are listed. The intention of this equivalent list is to provide alternatives where conditions might be warranted: • 2L of Sphag Sorb (peat moss) = 5 Absorbent pads • One large heavy duty plastic bag = One five (5) gallon pail • Plug-N-Dike = Bentonite clay or “drillers clay” • Containment boom = log boom with tarp “skirt”

TABLE #6 Definition of Terms

Large Means of Containment	A means of containment with a capacity greater than 450 litres. For example, a highway cargo tank, large slip tank etc.
Material Safety Data Sheets (MSDS)	MSDS--are summary documents that provide information about the hazards of a product and advice about safety precautions under the Workplace Hazardous Materials Information System (WHMIS).
Plug-N-Dike	Commercial product name for bentonite clay also known as “drillers clay”. It is not the intention for BCTS to endorse a single product name over other products of a similar and equal nature.
Small Means of Containment	A means of containment with a capacity less than or equal to <230 litres. For example, a drum, jerry cans, or intermediate bulk container.
Spec Tank	A "Spec Tank" or "Specification Tank" is a means of containment that complies with one of the specifications set out in one of the Safety Standards referred to in Part 5 of the TDG regulations. An example of a "spec tank" would be a TC406 highway tank meeting all of the TC406 specification requirements described in CSA Standard B620-03 *Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods*.
TC	Transport Canada: Federal Agency that oversees the transportation of dangerous goods on land, sea and air
TDG	Transportation of Dangerous Goods Regulation
ULC	Underwriters Laboratory of Canada (Engineering Standards) Mobile tanks built to ULC Standards (142.13) have been replaced by the Canadian General Standards Board (CGSB) Standard (43.146)
UN Number	United Nations Number: Used to identify a specific dangerous good. Diesel: UN 1202; Gasoline UN 1203

Workplace Hazardous Materials Information System (WHMIS) Labelling & product identification	Hazardous products in the workplace must be identified through one of the following means:
	• Supplier label
	• Workplace Label (attached when no supplier label was provided or the supplier label is lost or removed)
	  ○ Name of the product
	  ○ Safety precautions
	  ○ Reference to SDS
	• Product Identifier (name of the product, color coding, etc.)

TRANSPORT CANADA CONTACT INFORMATION

Transport Canada welcomes your questions, comments and suggestions. For You can contact them by e-mail, mail or telephone and they will address your concerns as quickly as possible. See website link below for details!
http://www.tc.gc.ca/eng/contact-us.htm

Leak Test and Inspection Facilities for Highway and TC Portable Tanks, (Registered per Standard CSA B620) can be found at the Transport Canada website link below!
http://wwwapps.tc.gc.ca/saf-sec-sur/3/fdr-rici/highway/tanks.aspx

TABLE #7 SPILL KIT (Minimum Requirements)

In Equipment / Machinery (excavators, skidders)	Vehicles carrying auxiliary fuel (e.g. pick-up truck box tanks or multiple small containers)	Stationary or Mobile Fuel Storage & dispensing (tanks or multiple-drum caches)

Spill kits must be present on equipment, (appropriate for type and potential size of spill).
• Spill kits must include:
  ○ One large heavy duty plastic bag or other suitable container
  ○ Absorbent pads (or equivalent absorbent material), appropriate for the type of spill,
• Personal protective safety gear as required for the type of spill
	Spill kits must be present in vehicles transporting and dispensing fuels
	• Spill kits must include a minimum of:
	  ○ 3 - Heavy duty plastic bags or suitable container(s),
	  ○ 10 - absorbent pads (or equivalent absorbent material) appropriate for the type of spill,
	  ○ 3 – 3”x 48” absorbent booms/ socks,
	  ○ bioremediation product,
	  ○ One shovel
	  ○ A container of emergency tank sealant (i.e. Plug-N-Dike, Seal-it or equivalent)
	• Personal protective safety gear as required for the type of spill
		Spill kits must be present at points where fuel is dispensed.
		• Spill kits must include a minimum of:
		  ○ Five large heavy duty plastic bags, or one open topped containment drum (or equivalent),
		  ○ 20 absorbent pads (or equivalent absorbent material) appropriate for the type of spill,
		  ○ 6 – 3”x 48” absorbent booms/ socks,
		  ○ Two 10’ linkable marine booms (if near marine operations),
		  ○ bioremediation product,
		  ○ One container of emergency tank sealant (i.e. Plug-N-Dike or equivalent),
		  ○ One shovel
		• Personal protective safety gear as required for the type of spill

STOP WORK

and contact your project supervisor and the BCTS representative if:

- You are uncertain of the project plan, your responsibilities, or the location of hazardous/sensitive areas.
- A previously unidentified resource feature, resource value (e.g. cultural) or sensitive area is found.
- You experience unfavorable weather or site conditions that could cause environmental damage.
- You observe conditions that have the potential for immediate environmental damage.

You believe the project plan will not work.

BC Timber Sales Fuel Handling

A pictorial of key requirements of the BCTS FUEL HANDLING ENVIRONMENTAL FIELD PROCEDURE 06

BCTS

BC Timber Sales

Fuel Handling

Purpose

- The purpose of this pictorial is to support the BCTS EMS Fuel Handling Environmental Field Procedure #06, (EFP 06) by displaying requirements of commonly utilized tanks by BCTS Licensees, Permittees and Contractors (LPC's) to help prevent and minimize impacts of fuel on the environment.

- EFP 06 brings together legislative requirements, forest industry standards and best management practices as it relates to fuel handling, storage and transportation.

- EFP 06 applies to all BCTS LPC's and their workers involved in fuel handling within the scope of the EMS Program.

Key Sections of EFP-06

- Truck Box (Slip Tanks) and other large portable tanks--230 to 3000 liters (EFP-06 Table #2 and #3)

  -non-specification tanks can only be used for diesel in the 230L to 450L volume range and;

  -tanks for diesel and gasoline in the >450L to 3000L volume range must be specification containers and tested by a Transport Canada Registered Facility every 5 years;

- Large (double walled) Stationary Skid Tanks

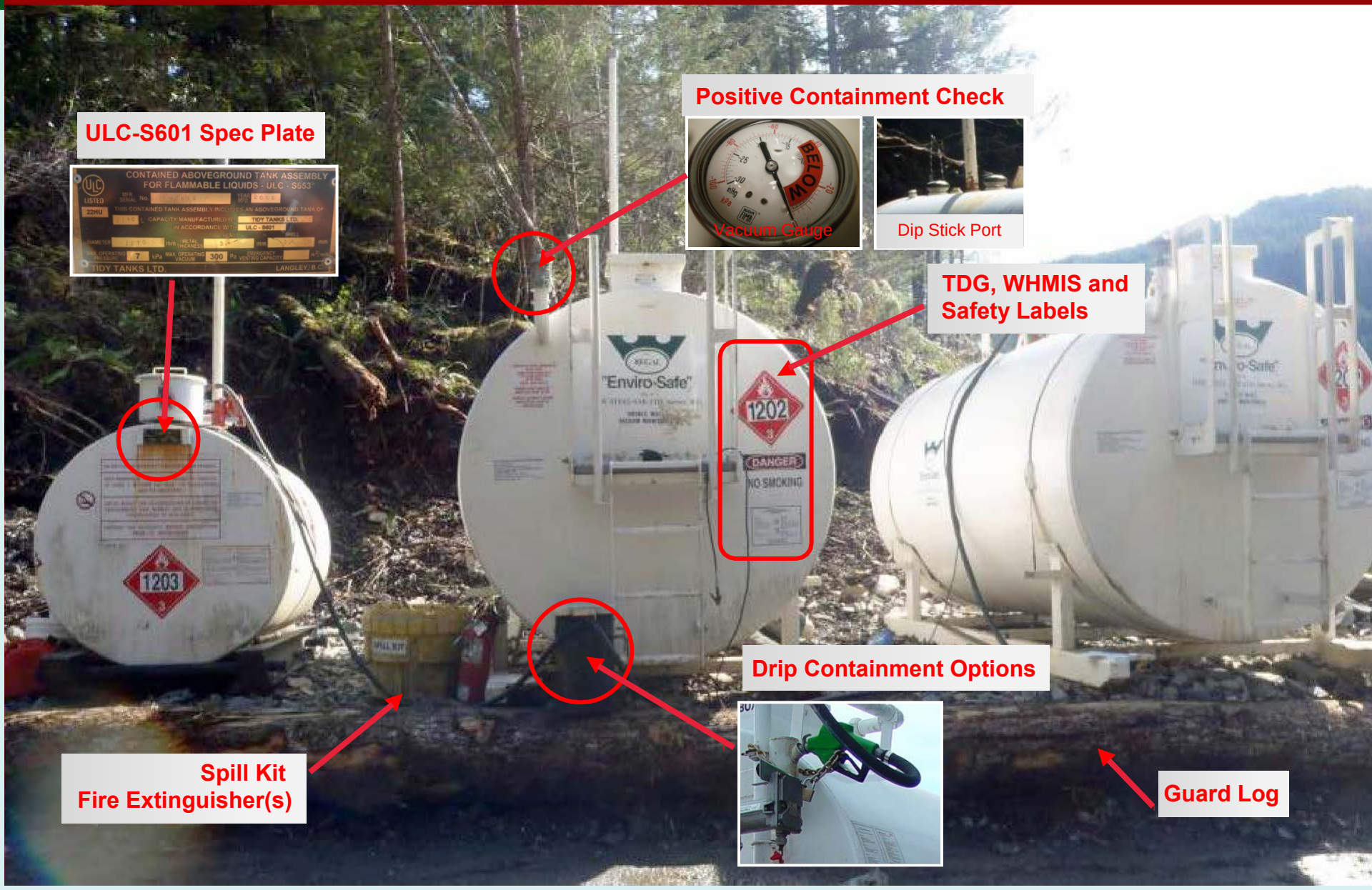
  -EFP-06 Table #5

- Spill Kits

  -EFP-06 Table #7

Truck Box Slip Tanks

Large Double Walled Stationary Skid Tanks

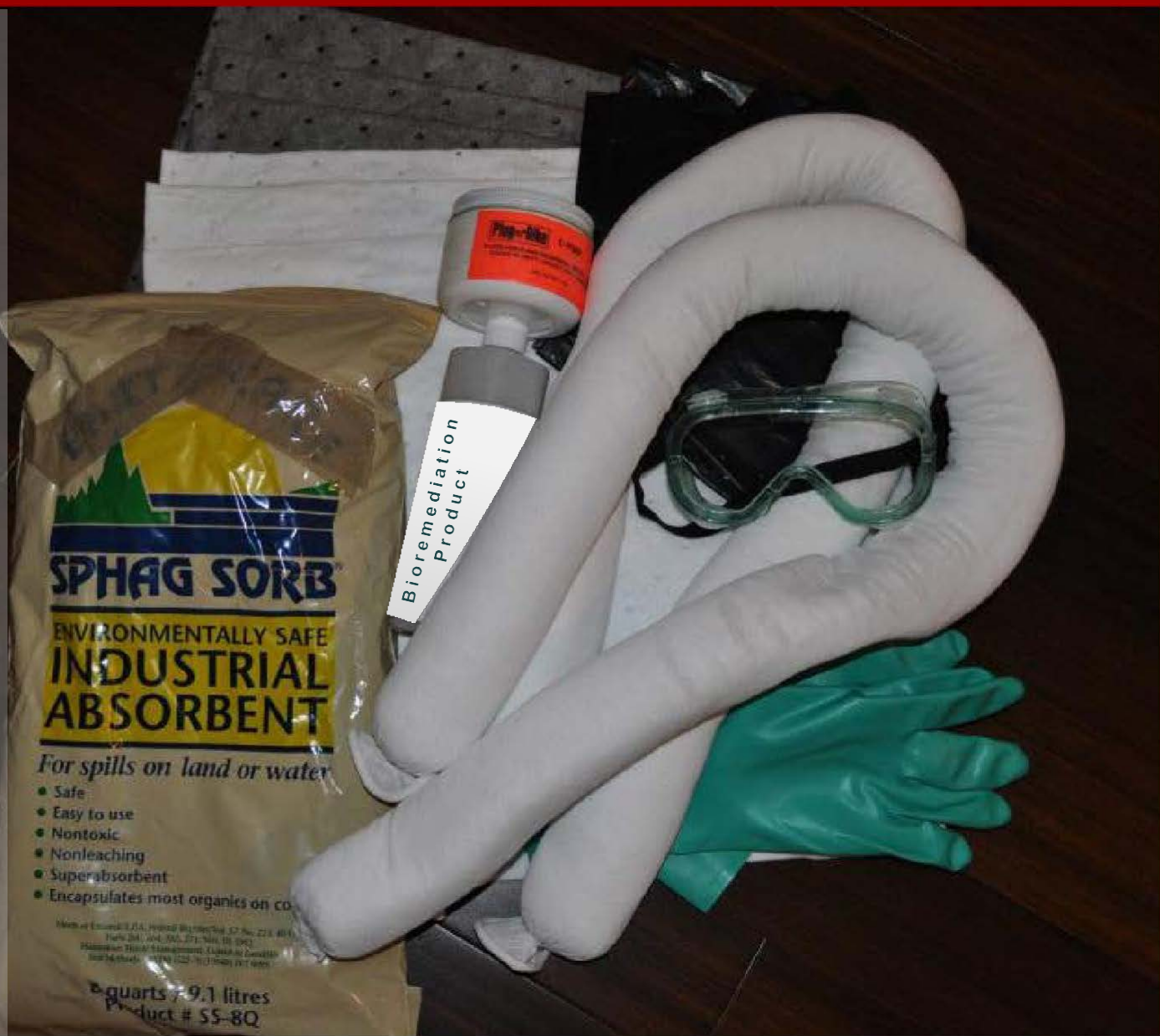


Spill Kits

Spill kits must be present in all equipment, vehicles transporting and dispensing fuel, near stationary tanks and mobile fuel storage and dispensing areas.

- Spill kits must include a minimum of:
  - o heavy duty plastic bags or suitable container(s),
  - o absorbent pads (or equivalent absorbent material) appropriate for the type of spill,
  - o absorbent booms/ socks,
  - o bioremediation product,
  - o a shovel
  - o a container of emergency tank sealant (i.e. Plug-N-Dike, Seal-it or equivalent)
- personal protective safety gear as required for the type of spill

See Fuel Handling Environmental Field Procedure 06, (Table #7) for details regarding spill kit requirements.



Prince George Business Area Guidance Documents

BCTS
BC Timber Sales

Project Risk Rating (EMS/SFM/Safety)

Use the information below to determine the project risk ranking and record the risk ranking and inspection frequency in section B of the appropriate pre-work report.

EMS Inspection Risk Rating

Activity:	Risk Ranking	Minimum BCTS Inspection Frequency
Harvesting	High	Pre-work, Initial, Progress, Final
Access (Engineering), Silviculture Herbicide Treatment, Mechanical Site Prep	High	Pre-work, Initial, Progress, Final
Planting, Brushing, Stand Tending	Medium	Pre-work, Initial, Progress
Consulting Services: Multiphase, Cruising, Silviculture Surveys, Planning Assessments and Development Contracts	Low	Pre-work, Initial

FOR CONTRACTS ONLY

Safety Inspection Risk Rating

Activities that involve:	Risk Ranking	Minimum BCTS Inspection Frequency
Tree Falling, Topping or Limbing Blasting Heavy Equipment Log bucking, Yarding	High	Pre-work and safety inspection within two weeks of start of field operations. Inspect monthly thereafter for the life of the contract.
Tree Planting, Brushing or Survey Work in isolated locations*	Moderate	Pre-work and safety inspection within two weeks of start of field operations. Inspect every three months thereafter for the life of the contract.
Survey Work in non-isolated locations	Low	Pre-work and safety inspection within first two weeks of start of field operations.

* Isolated location – working in an area where assistance would not be readily available to the worker in case of emergency, injury or illness and may require specialized transportation such as a boat or aircraft to facilitate medical aid.

One LPC self-inspection per project for high risk activities.

Inspection/Monitoring Plan (frequency/timing of inspections/monitoring)

Inspection Type	**Timing of inspection / monitoring**	**Focus**
Pre-work	When requested by LPC	TSL/Contract Highlights, EMS / SFM Conformance, Safety.
Initial – documentation on a CHK form	ASAP after start up (within the first two weeks)	Emergency Preparedness, Training & Awareness, EMS / SFM Conformance, Contractual Requirements, Legislative Compliance, and Safety.
Progress inspection – documentation on a CHK form Monitoring – less formal documentation (email, Word document)	As required	Consistency with project plans, EMS / SFM Conformance, Safety, Legislative Compliance and Resolution of previously-identified Issues. **Consider monitoring in place of progress inspections, where appropriate.** The intention is not to discourage field presence but rather to reduce/streamline administrative effort (i.e. data entry).
Harvesting- Final (snow-free) – documentation on CHK form Contracts- Final – documentation on a CHK form, email, Word document	End of Project	Review of Final Obligations- Timber Sale Licence / Road Permit. Review of EMS / SFM Conformance. Review of Project Completion and EMS / SFM Conformance.

*Adjustments to the minimum inspection frequency must have a rationale documented on the EMS file.

Moderate or **High** risk EMS projects require one Test Drill most suited to the highest EMS risk of the project. Completed Test Drills from other forestry companies can be accepted if done within the same geographic region and within the same operational season.

Migratory Birds for LPCs

Canada's diverse landscapes support a great abundance and variety of birds. More than 450 native bird species regularly make use of Canada's natural and human-modified landscapes for at least part of their annual cycle. Most of these species are protected under the **Migratory Birds Convention Act, 1994** (MBCA) and so are collectively referred to as "migratory birds". Birds are an integral part of our Canadian heritage. Through bird-watching, and recreational and subsistence hunting, birds make a significant contribution to our quality of life and our economy. They also play important ecological and biological roles in our environment by eating insects, dispersing seeds, and pollinating plants, to name a few. Bird populations are important environmental indicators - the health of our birds tells us much about the health of our planet.
BCTS is working to manage and protect Migratory Birds, their habitat, nests and eggs as a part of our planning and project layout.

Trumpeter Swan
Photo Credit - Nathan Voth, FLNRO

HOW DOES THE MIGRATORY BIRDS CONVENTION ACT, 1994 PROTECT MIGRATORY BIRDS?

Most native bird species in Canada are protected under the **Migratory Birds Convention Act, 1994** (MBCA), and are collectively referred to as "migratory birds". It is the responsibility of Environment and Climate Change Canada to develop and implement policies and regulations to ensure the protection and conservation of migratory birds.
General prohibitions under the Act and its regulations protect migratory birds, their nests and eggs anywhere they are found in Canada, regardless of land ownership, and including surrounding ocean waters; and prohibit the dumping of substances harmful to birds in waters or areas frequented by them.
Additional protection may be provided through other federal Acts and Regulations, in particular the **Species at Risk Act**, for migratory bird species that have been found to be extirpated, endangered, threatened or of special concern and listed under that Act.
The BC Wildlife Act (Sec. 34) also makes it an offence to molest or destroy a nest occupied by a bird or its eggs.

Redpoll
Photo Credit - Nathan Voth, FLNRO

WHAT TYPE OF BIRDS ARE PROTECTED?

People often think of Migratory Birds as Ducks, Swans and other waterfowl, and although this is true, the list of Migratory Birds in Canada is much larger.

The Migratory Bird Convention Act also includes protection of Geese, Cranes, Rails, Shorebirds, Pigeons, Doves, Chickadees, Flickers, Flycatchers, Hummingbirds, Martins, Meadowlarks, Woodpeckers, Wrens, Grebes, Herons, Loons and Terns… And this is by no means a complete list.

Blue Heron
Photo Credit - Nathan Voth, FLNRO

WHEN SHOULD I BE MOST OBSERVANT?

The MBCA applies to birds and nests all year but due to their migratory nature you are more likely to see them in the spring and summer. In our region the critical nesting period has been determined as April 18th to August 24th annually. During this period you are more likely to see migratory birds and their young nesting.

BCTS uses a process of analysing ecosystems and forest cover to determine the likelihood and concentration of migratory birds that may use an area for nesting. This process may have resulted in area's being excluded from your project or having timing restrictions on when operations can be active.

HOW DO I KNOW A NEST IS NEAR ME?

Different species of migratory birds will nest in trees, in shrubs, on the ground or even in burrows.

1) Look on the ground for concentrations of white coloured droppings, and then check the vegetation above for nests.

2) As you walk or operate in an area look for birds flying out of vegetation and flying close to you or scolding you, some birds will even feign an injury in an effort to draw you away. These activities may indicate a nest is nearby.

3) Watch for birds bringing nest materials or food repeatedly to one place. Birds tend to build their nests on the underside of the tree canopy where branches join together. Some birds nest in tree cavities, under a flap of bark, in shrubs or on the ground.

Black-capped Chickadee
Photo Credit - Nathan Voth, FLNRO

WHAT IF I SEE AN ACTIVE NEST?

Stop if your work could disturb or destroy the nest. Keep 30 metres away from the nest and consider a greater distance if the bird continues to scold you or seems agitated.

Larger birds such as Heron's and Cranes require a greater distance of minimal disturbance; however their usual nesting patterns are close to marshes or wetlands which normally allows for a greater distance from forestry operations.

Report the nest location to your supervisor. Your supervisor will report it to BCTS staff who will advise of next steps prior to resuming operations near the nest again.

Do not attempt to move or relocate the nest. Ideally nests should be left undisturbed until the young have left on their own. The Parent birds choose a nest location for specific reasons such as proximity to food and water, and protection from predators and the elements. If the nest is disturbed parents may abandon it along with their eggs or young.

The Migratory Bird Convention Act does not differentiate between an occupied or unoccupied nest, nor does it consider the condition of the nest, only that it (and its potential occupants) need to be protected. If you see an empty nest with no sign of feathers, down, fresh droppings or eggs then make every effort to not molest or damage the feature.

Loon
Photo Credit - Nathan Voth, FLNRO

HOW ELSE CAN I HELP CONSERVE MIGRATORY BIRDS?

All Canadians have a role to play in protecting migratory birds, their nests and young. As a business, you can:
1) Operate according to your plan;
2) Be observant and stop work in the immediate area if you see a nest;
3) Participate and encourage colleagues to participate in public consultations.

FURTHER INFORMATION:

Migratory Birds Convention Act, 1994:
http://laws-lois.justice.gc.ca/eng/acts/M-7.01/

Environment and Climate Change Canada – Migratory Birds:
http://www.ec.gc.ca/nature/default.asp?lang=En&n=FDF836EF-1

List of Migratory Birds protected in Canada under the MBCA:
https://www.ec.gc.ca/nature/421B7A9D-3A9A-4D90-83FC-C23D2C1D2487/English_byTaxonomicOrder.pdf

BC wildlife Act:
http://www.bclaws.ca/civix/document/id/complete/statreg/96488_01

Species At Risk for LPCs

British Columbia is home to thousands of species and ecosystems – some of these are at risk of disappearing from B.C. Working together at a federal, provincial and local level is essential to protect them.
BCTS works to manage and protect Species at Risk (SAR) and their critical habitat through the Species at Risk Act, the Wildlife Act and the Forest and Range Practices Act.

HOW DOES THE SPECIES AT RISK ACT (SARA) PROTECT SPECIES AT RISK?

To ensure the protection of species at risk, SARA contains general prohibitions that make it an offence to:

- kill, harm, harass, capture, or take an individual of a species listed in Schedule 1 of SARA as endangered, threatened or extirpated;
- possess, collect, buy, sell or trade an individual of a species listed in Schedule 1 of SARA as endangered, threatened or extirpated;
- damage or destroy the residence (e.g. nest or den) of one or more individuals of a species listed in Schedule 1 of SARA as an endangered or threatened species or as an extirpated species if a recovery strategy has recommended the reintroduction of the extirpated species into the wild in Canada.

SARA also protects migratory birds listed in the *Migratory Birds Convention Act, 1994* that are also listed as endangered, threatened or extirpated in Schedule 1 of SARA.

To view the Species on the Schedule 1 of SARA visit: http://www.sararegistry.gc.ca/species/schedules_e.cfm?id=1

Caribou – special concern
Pixabay.com-Free source photo

Grizzly Bear – Special Concern
Pixabay.com-free source photo

AT RISK SPECIES CLASSES:

Endangered species:
Species facing imminent extirpation or extinction.
Threatened species:
Species which are likely to become endangered if nothing is done to reverse the factors leading to their extirpation or extinction.
Special concern species:
Species which may become threatened or endangered because of a combination of biological characteristics and identified threats.
Extirpated species:
Species which no longer exist in the wild in Canada but exist elsewhere in the wild.

Common nighthawk – Some Concern
Pixabay.com-Free source photo

WHAT IS CRITICAL HABITAT?

Critical habitat is the living environment necessary for the survival or recovery of a listed endangered, threatened or extirpated species. If known Critical habitat occurs in or near your project area it will be incorporated into the project plan. SARA contains a prohibition against destroying any part of critical habitat of endangered, threatened or extirpated species (if a recovery strategy has recommended the reintroduction of that extirpated species into the wild in Canada), but also provides other options for protection. SARA recognizes that protecting the critical habitat of species at risk is key to their conservation. The intent of SARA is to protect critical habitat as much as possible through voluntary actions and stewardship measures. If these measures are unable to protect the critical habitat, the SARA's critical habitat prohibition may come into play.

Wolverine – Special Concern
Photo Credit: Zefram, free-source photo

HOW CAN I FIND OUT IF THERE COULD BE SPECIES AT RISK IN THE AREAS I AM OPERATING IN?

There are a number of resources that may be able to assist you in finding out whether species at risk, their residences or critical habitat may be present in the areas in which you are operating:

- Know sites or habitat identified by BCTS staff during the planning stage of your project will have management strategies incorporated into your project plan.
- Information on SAR that may occur or be seen in your project area may be provided by BCTS staff.
- The SARA Public Registry has an "Advanced Search" tool that allows you to search for species listed under SARA based on their distribution, taxonomic group and risk category;
- Environment Canada's species at risk website (www.speciesatrisk.gc.ca) offers general biological information about species at risk in Canada, including their distribution and habitat requirements;
- Environment Canada's Canadian Wildlife Service (CWS) regional offices can access databanks on species at risk found on federal lands. If your business is located near federal land, CWS may be able to assist you;

Keep in mind that while a species may be found within a certain geographical range, the species may not be present in the particular area you operate because the habitat may not be suitable.

Sharptailed Grouse – Imperiled
Photo Credit: Nathan Voth, FLNRO

WHAT DO I DO IF I SEE A SPECIES AT RISK?

- Stop! Are you going to harm, disturb or harass the species by continuing operations? If so, cease activity in the immediate area!
- Attempt to photograph the species
- Take notes on specific location, number observed, were there young, any nests or dens etc.
- Report the sighting to your supervisor
- Supervisor reports to BCTS

HOW ELSE CAN I HELP CONSERVE SPECIES AT RISK?

All Canadians have a role to play in protecting and recovering species at risk. As a business, you can:

- operate according to your plan;
- be observant and report sightings of known species at risk to your supervisor;
- direct activities toward less sensitive areas and time projects to avoid or minimize impacts to species at risk; and
- participate and encourage colleagues to participate in public consultations.

FURTHER INFORMATION:

BC government species at risk:
http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/species-ecosystems-at-risk

BC Conservation data centre:
http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre

Reporting sightings of SAR:
http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre/submit-data

The Northwest Invasive Plant Council is comprised of contributing partners and volunteer members representing government, private & public agencies and other organizations. Members of the Council are dedicated to increasing awareness of invasive plants and associated losses caused to the natural & domestic resources of our region. The goals of the Council are:

EDUCATE – landowners and managers about invasive plants' impacts on the natural diversity of the environment

PROMOTE – Integrated Plant Management for the prevention, control, containment and eradication of invasive plant species

ENCOURAGE – expanded support for local invasive plant control programs and initiatives

ASSIST – with management efforts of invasive plants on public, private and First Nation land

INVENTORY – invasive plants on private & public lands in the North Central Region of BC

INVASIVE PLANTS (WEEDS)

Invasive plants are non-native plant species that are difficult to control. In the absence of their natural predators and diseases, these weeds aggressively compete with native plants for sunlight, water & nutrients.

To prevent weeds from establishing:

PULL – isolated plants

CLIP – seed heads, placing them in a sealed bag

BURY – or burn the plants & seed heads

REPORT – invasive plant locations to the NWIPC by calling 1-866-44-WEEDS

ECONOMIC IMPACTS

Invasive plants threaten the health of our resources as well as the viability of the industries they support. Invasive plant infestations can negatively affect the agriculture, forestry and recreation & tourism industries because they:

- Reduce forage quality & yield
- Are expensive to control
- Reduce tree seedling vigour
- Reduce property & aesthetic value
- Restrict recreation opportunities when poisonous and thorny weed infestations are present

INTEGRATED PLANT MANAGEMENT

Integrated Plant Management focuses on environmentally sound and sustainable management of our resources. One of the most important components of IPM includes control of undesirable plants through improved management practices. Basic principles include:

1] Preventing invasion
2] Identification & knowledge of invasive plant species
3] Inventory, mapping & monitoring of invasive plant populations and damage caused
4] Choosing from mechanical, cultural, chemical, and biological control methods
5] Using a combination of control methods to reduce infestation
6] Evaluating the effectiveness & results of your management decisions

Education, prevention & early identification of invasive plants is the first step to controlling them.

More details about IPM strategies are available through the Weed Hotline.

ECOLOGICAL THREATS

Invasive plants aggressively compete with native plants for nutrients, light, water and growing space. Competition from invasive plants can result in:

- Suppressed native plant and seedling growth
- Reduced forage for livestock and wildlife
- Less palatable and sometimes poisonous plant species within the plant community
- Increased fire hazard as unpalatable plant material builds up
- Future plant communities being threatened by invasive plant seeds that remain viable in the soil for decades

WEBSITES

www.nwipc.org
www.agf.gov.bc.ca/cropprot/weeds.htm
www.weedsbc.ca
www.invasiveplantcouncilbc.ca
http://www.env.gov.bc.ca/epd/ipmp
http://www.agf.gov.bc.ca/cropprot/weedguid/weedguid.htm

HOW TO GET INVOLVED

Learn to recognize invasive plants
Remove weeds from equipment, pets & clothing
Dispose of plants & seeds in a sealed plastic bag
Share this information with friends & neighbours
Adopt an area for volunteers to control invasive plants
Educate children about invasive plants
Be conscious of your actions when travelling

FOR MORE INFORMATION AND TO REPORT INVASIVE PLANTS

Northwest Invasive Plant Council Hotline
1-866-44-WEEDS (1-866-449-3337)

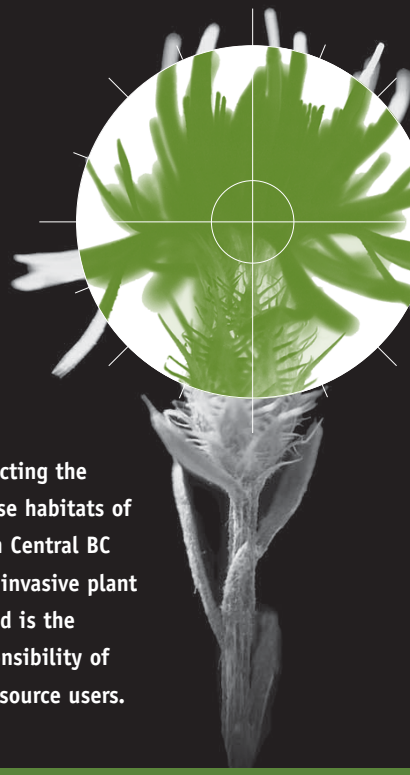
Northwest INVASIVE PLANT COUNCIL
WEED HOTLINE
TOLL FREE 1-866-44WEEDS
www.nwipc.org

Printed in partnership with the Province of British Columbia

PRINTED BY WAYSIDE PRINTERS

A GUIDE TO INVASIVE PLANTS

NORTHWEST INVASIVE PLANT COUNCIL



Protecting the diverse habitats of North Central BC from invasive plant spread is the responsibility of all resource users.

"BE WISE ABOUT WEEDS"

INVASIVE PLANT OR WEED?

The terms "invasive plant" and "noxious weed" mean the same thing and can be used interchangeably. However, the term invasive plant is considered to better describe the plants in question and the problems they cause.

WHAT YOU CAN DO

- Learn to recognize & identify invasive plants
- Prevent infestation of new areas
- Pull isolated or new patches of weeds
- Removing weeds from vehicle undercarriage reduces spread to uninfested areas
- Check yourself, pets, horses and livestock hair & feet for weed seeds prior to leaving an infested area
- Report sightings to the Northwest Invasive Plant Council at 1-866-44-WEEDS

AGRICULTURE

- Plant "certified" seed because it contains no noxious weed seeds
- Check hay bales for invasive plants before purchasing & transporting
- Practice sound range and pasture management to maintain a healthy plant community that is more resistant to weed invasion
- Keep areas around cattleguards, gates, irrigation ditches and livestock facilities free of weeds to reduce the spread to new areas

HORTICULTURE

- Do not grow invasive plants
- Do not plant "wild flower" seed mixes that contain invasive plant seeds (most do)
- Dried flower arrangements containing weeds can spread seeds to new areas

RECREATION

- Obey posted signs
- Vehicle & bicycle tires can disturb soil providing an ideal seedbed for weeds to grow. **Keep to established roads & trails**
- Keep recreation equipment clean & weed free

INDUSTRY

- Wash soil & plant material from heavy machinery before transporting to new locations to reduce the spread of weeds
- Reseed all sites disturbed by machinery & industrial equipment to prevent the establishment of new invasive plants
- Vacant or undeveloped land should be actively managed to prevent weeds from establishing

INVASIVE PLANTS IN CENTRAL BRITISH COLUMBIA

WEEDS THREATEN OUR RESOURCES. LEARN TO IDENTIFY THEM.

DALMATIAN TOADFLAX

- Perennial introduced from southeastern Europe
- Spreads by seeds and creeping roots
- Waxy leaves are pale green & clasp stem
- Yellow snapdragon-like flowers

CANADIAN THISTLE

- Creeping rooted perennial growing to 1.2 metres
- Stalkless dark green leaves
- Flowerheads spineless and small compared to other thistles
- Flowers variable in colour from rose-purple to pink to white
- This is the only thistle with male and female flowers on separate plants

SPOTTED KNAPWEED

- Perennial introduced from Eurasia
- Purple flowers
- Black tipped bracts on flowerhead are easy to "spot"
- Prolific seed producer

DIFFUSE KNAPWEED

- Biennial to perennial introduced from the Mediterranean
- White flowers (often pink)
- Short, sharp spines on flower head bracts
- Seeds spread from tumbling plants

ORANGE HAWKWEED

- Perennial introduced from Europe
- Orange/red flowers
- Basal rosette of leaves
- Bristly-hairy stems that exude a milky juice when broken

LEAFY SPURGE

- Perennial introduced from Europe
- Reproduces by seeds & deep vigorous roots
- Yellow-green flower clusters with heart shaped bracts
- Exudes a white latex juice that irritates skin

SCENTLESS CHAMOMILE

- Annual/Short lived perennial
- White daisy-like flower
- Multiple flowerheads per stem
- Leaves are fern-like
- Can produce up to 300,000 seeds per plant
- Plant is odourless when crushed

HOUND'S-TONGUE

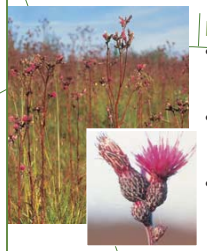
- Biennial introduced from Europe
- Soft & hairy basal leaves
- Red-purple flowers
- Teardrop seed burrs
- Toxic to livestock
- Seed attach to people & animals

Photographs provided by the Ministry of Agriculture and Lands and Robert Needham

FIELD SCABIOUS

- Taprooted perennial from Eurasia & North Africa
- Violet-blue flowers
- Leaves reduced near tip of stem
- Hairy stems & leaves
- Very similar to many ornamental species

MARSH PLUME THISTLE

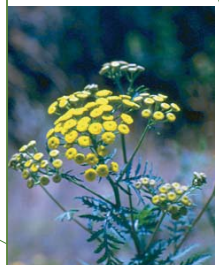


- Introduced from Europe. Biennial that germinates in the first year. Up to 2m tall
- Typically in a single, slender unbranched stem with a cluster of purple flowers at the top
- The upright stem is evenly covered in spiny wings

OXEYE DAISY

- Short-lived perennial. Introduced from Eurasia. Mature plants are 20-80cm in height
- Often confused with the ornamental Shasta Daisy
- White daisy-like flowers on stem ends and narrow, divided, upper leaves clasping the stem
- Spreads by seed and creeping underground stems

COMMON TANSY



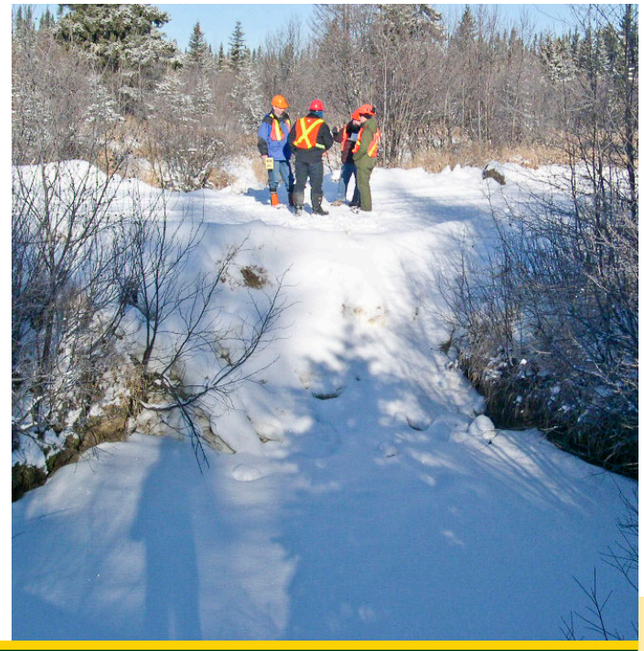
- Perennial, spread by seeds and roots
- Numerous small, yellow button-shaped flowers in flat-topped clusters at the tops of the plants
- Leaves are deeply divided, almost fern-like
- Mature plants grow 0.4 - 1.5m tall with upright stems that are often purplish red
- May be toxic

FPInnovations prepared this guide in order to provide forest workers with information on winter stream crossings. FPInnovations worked in close cooperation with BC Timber Sales, Stuart-Nechako Business Area during the development of this guide. Reference material for this guide included the *Reduced Risk Timing Windows and Measures for the Conservation of Fish Habitat for the Omineca Region* (BC Ministry of Water, Lands and Air Protection, 2004).

For more information about the use or intent of this guide,
please contact:
Carol Byers, RFT
carol.byers@gov.bc.ca

For more information about the development of this guide,
Please contact:
Clayton Gillies, RPF, RPBio
FPInnovations
Tel.: 604 224 3221
clayton.gillies@fpinnovations.ca

This guide can be downloaded and printed from **www.fpinnovations.ca**



FPInnovations

follow us on:

FPInnovations

Temporary Winter Stream Crossings

A PRACTICAL GUIDE FOR FOREST WORKERS

fpinnovations.ca

The essence of a temporary crossing is that it will be utilized for a short period of time. This guide will help forest workers choose preventative measures that will help maintain stream and stream bank integrity.

Best practices

Goal is to minimize any damage to the stream channel, banks or vegetation in the vicinity of the work area

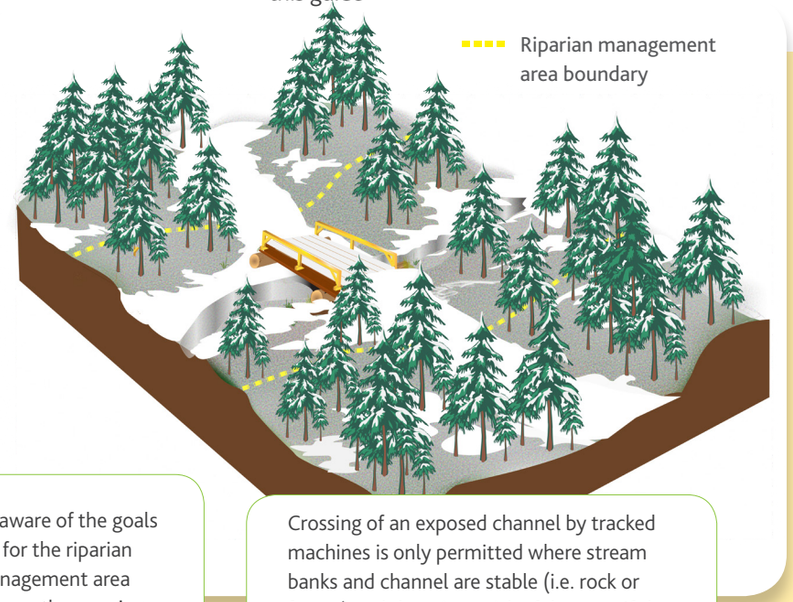
Plan your work

Choose a crossing location with the following characteristics:

- Narrow stream width
- Straight section of stream; not meandering or braided
- Solid, stable stream banks and bed that are less susceptible to erosion or degradation

Crossing structures

- Temporary clearspan is desirable in all cases for protection of stream channel
- A log bundle can be used during frozen conditions or where there is no flow
- A culvert can be used if there is flowing water
- Other structures may be considered provided they adhere to the same principles outlined in this guide



Avoid crossing at wide, braided or meandering section.

Wheeled equipment is not permitted to cross exposed channels. All refueling and servicing must be done outside of the riparian management area.

Choice of allowable crossing structure will depend on stream classification and flow characteristics.

Be aware of the goals set for the riparian management area at/near the crossing.

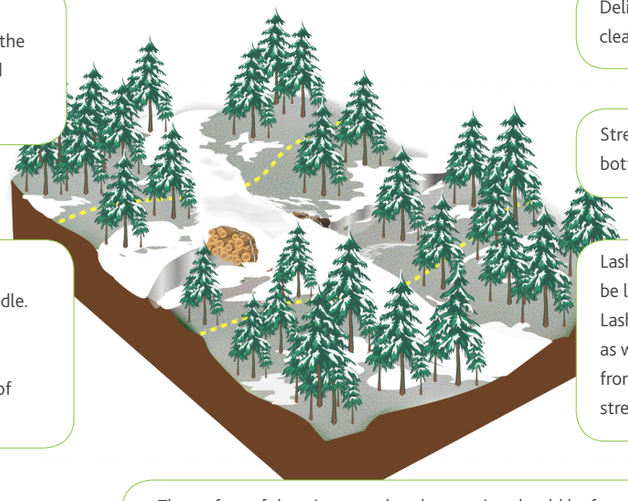
Crossing of an exposed channel by tracked machines is only permitted where stream banks and channel are stable (i.e. rock or frozen) and there is no risk of damage. If these conditions are met, tracked machines may cross the exposed stream in order to aid with construction of the crossing (see crossing consideration section).

CONSTRUCTION AND INSTALLATION OF A LOG BUNDLE

Place a protective layer (typically geotextile) over the stream banks, channel and bundle.

Delimb and top bundled logs, and clean them of excess soil and debris.

Stream must be frozen to bottom of channel with no flow.



Use clean snow to fill the channel above the log bundle. Mineral soil should not be mixed with snow which is used for the construction of the crossing.

Lash logs together so bundle can be lifted into place as a single unit. Lashed logs will aid in deactivation as well as prevent any single log from becoming embedded in the stream bank or channel.

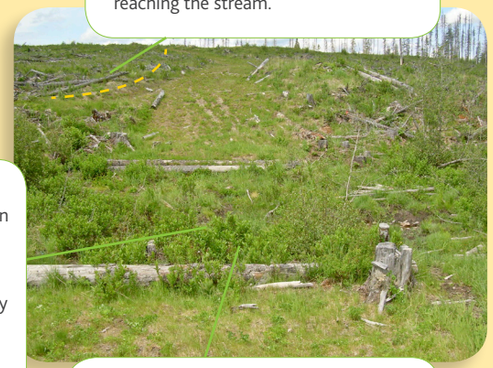
The surface of the winter road at the crossing should be frozen and well-compacted to withstand the anticipated traffic and to prevent any exposure of the underlying structure. Compaction of snow may reduce its thickness up to 70%.

Deactivation

- Remove crossing when no longer needed. Structure must be removed before stream thaws and develops any water flow, or by April 15th, whichever is first.
- At all times damage to the stream channel and banks must be minimized. Vegetation in the vicinity of the work should be conserved as much as possible.
- Stabilize exposed soils at the crossing site and along the approaches.
- All permanent foreign (non-biodegradable) material is to be collected and removed from the site.
- To aid in the complete removal of geotextile used as a separations layer, it should be specified that the material be of a high grab tensile strength in order to be pulled and gathered without ripping. Grab tensile strength is measured in newtons (N) and for woven geotextile has a typical range of 700 to 1400 N.
- A separation layer made of biodegradable material which can be left in place to degrade may be appropriate for use where retrieval is especially difficult.

All foreign material is to be collected and removed from the site

Redirect ditch or surface flows from reaching the stream.



Preserving the natural vegetation next to the stream helps to protect this highly vulnerable area from erosion and sedimentation.

Cribbing or logs used as abutments which are stable or embedded into the ground may be left in place.

CROSSING CONSIDERATIONS

Stream and riparian classification

STREAM WIDTH	STREAM AND RIPARIAN CLASS
Stream is a fish stream or in a community watershed	
>20 m	S1
>5 – 20 m	S2
1.5 – 5 m	S3
<1.5 m	S4
Stream is not a fish stream and not in a community watershed	
>3 m	S5
<3 m	S6

Note that S3 and S4 streams are the primary focus for this winter crossing guide.

***Number of stream channel crossings by tracked equipment during construction of crossing**

- S4: Up to three one-way crossings
- S3: Up to two one-way crossings

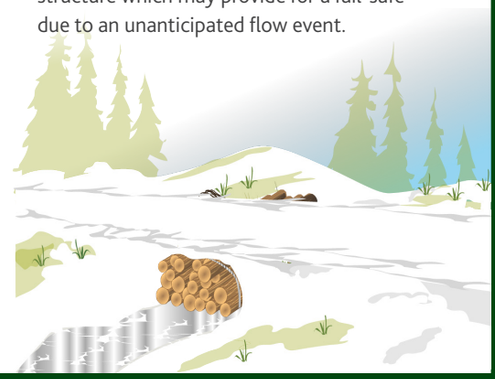
*Only allowed if stream banks and channel are stable (i.e. rock or frozen) and there is no risk of damage to the stream banks or channel.

TEMPORARY CLEARSPAN

- Can be used to cross S3 or S4 streams.
- Can be used to cross streams with flowing water
- Can be installed without encroaching on stream channel
- Open bottom provides for debris passage
- Clearspan can provide best protection to stream banks and channel, and helps to preserve riparian vegetation / features
- Remove structure prior to spring melt

LOG BUNDLE

- Can only be used to cross S4 and S6 streams that have no flowing water
- Installation may only occur once the water course has frozen solid to the bottom
- Bundle must be tightly lashed so as to prevent any loose logs from being placed within the channel
- Lift bundle into place, which will aid to preserve the stream bank from any gouging due to rolling or dragging
- A separation layer is required for use over the banks, channel and bundle
- Use clean snow to place in channel and over entire crossing location
- Logs are the typical choice for use in a bundle; PVC pipe may be considered as an alternative
- Remove structure prior to spring melt
- A culvert amongst a log bundle allows for a larger conduit to be incorporated in the structure which may provide for a fail-safe due to an unanticipated flow event.



CLOSED BOTTOM CULVERT

- Can only be used for S4 and S6 streams
- Culvert needs to conform to the shape of the channel at crossing location–typically a straight stream reach is chosen.
- Separation layer is required for use over the banks, channel and culvert.
- Use clean snow to place in channel and over entire crossing location.
- Remove structure prior to spring melt.

BCTS
BC Timber Sales

BCTS Environmental Management System
EMS Tailgate Training

Field Card use for LPC supervisors to support worker EMS tailgate training

BEFORE STARTING WORK KNOW ABOUT:

1. **Environmental and Sustainable Forest Management Policies**
   - Complying with the law.
   - Prevent / minimize impacts on the environment.
   - Practice of sustainable forestry.
   - Continual improvement.

2. **Emergency Response Plan**
   - Know your eERP roles and responsibilities.
   - Be prepared for emergencies i.e. fire, spills and erosion events**.**
   - Know location of applicable ER equipment (spill kit, hand tools, fire suppression).

3. **Environmental Field Procedures**
   - EFP #1 "General" applies to all workers.
   - EFP #2 "Supervisors" applies to project and/or onsite supervisors.
   - EFP #3 "Developing & Planning" applies to planning & development activities.
   - EFP #4 "Roads Bridges and Major Culverts" applies road construction, maintenance, inspections and deactivation activities.
   - EFP #5 "Harvesting" applies to all phases of harvesting activities.
   - EFP #6 "Fuel Handling" applies to fuel handling activities.
   - EFP #7 "Dryland Sort" applies to dryland sort activities.
   - EFP #8 "Marine Log Handling Facilities" applies to construction & operations of log dumps, helicopter water drop zones, and direct barge-loading facilities.

Know which EFPs apply to your job, and review them on your own and with your supervisor before starting work. Copies available from your supervisor or BCTS representative.

4. **Stop Work Procedures (See EFPs)**

If not sure, Stop Work and contact your project supervisor or BCTS representative.

5. **What to report to Supervisor and BCTS**
   - Hazardous Material Spills, Uncontrolled Fires & Erosion / Landslide Events.
   - Potential non-compliances and non-conformances.
   - Unidentified resource features, values or sensitive areas.
   - Species at Risk sightings.
   - Changes to project plan.
   - Safety hazards, close calls/near misses or accidents.