Kootenay Business Area
Supervisor Field Handbook

July 2016
Training
✓ All supervisors must receive EMS/SFM training https://www.for.gov.bc.ca/bcts/forestCertification/LPC.htm.
  • A trained supervisor must be on-site at all times for all TSLs, road construction and other high risk activities.
  • All supervisors must follow roles and responsibilities outlined in Environmental Field procedure #2 and be familiar with the contents of the “Supervisor’s Field book.”

Pre-Work
✓ A BCTS and client pre-work meeting must be completed prior to commencement of operations
✓ Its recommended that site supervisors or sub-contractors attend BCTS pre-work meeting
✓ All workers (including new) must receive a pre-work from supervisor prior to commencement of work. All workers must sign the pre-work form

EMS Binder
✓ Supervisors must maintain the EMS Binder at the worksite at all times while site is active.
✓ All necessary documentation (project plans, pre-works, inspections, incidents, training records etc) to be maintained on site
✓ All workers to be familiar with Environmental Field Procedures, Species at Risk and Invasive Plant booklet provided.
✓ WHMIS stickers are included for auxiliary fuel tank use.

Work signage
✓ A BCTS provided sign must be erected at all entrances to the worksite

Emergency Response
✓ Emergency Response Plan must be completed for each worksite
✓ All workers must know where to find the ERP in the Binder, Supervisor’s or Worker’s field book
✓ A ERP test or drill may be required and will be communicated at the pre-work
✓ Emergency response equipment must be maintained on-site, including fire hand tools or fire suppression equipment as per Wildfire Act and spill response equipment, as required under Environmental Field Procedures# 06
✓ Respond to emergency events in accordance with ERP.

All Workers
✓ Must understand their roles and responsibilities and be familiar project plan details, EFPs and contents of field handbooks.

Inspections
1. Supervisors must complete worksite self inspections at a frequency outlined at the pre-work meeting
2. Supervisors must follow-up with actions noted in self inspection
3. All workers to cooperate with BCTS representatives during site visits and inspections
4. Supervisors to participate in joint inspections with BCTS representatives and follow-up with any action plans agreed upon during inspections

What to Report
• Hazardous Material Spills and Uncontrolled Fires as per ERP
• Erosion / Landslide events or Water Disruptive Events as per ERP
• Alleged non-compliances and significant non-conformances to the project plan
• Unidentified Resource values
• Species at risk sightings and identified invasive plants
• Stop work and changes to the project plan
• Safety Hazards, Close calls or Accidents that affects the public’s safety or a 3rd parties invested interest.

For more information see BCTS EMS website https://www.for.gov.bc.ca/bcts/areas/TKO/TKO_emis.htm or contact Cameron Paterson, Certification Standards Officer at the Kootenay Timber Sales office at (250) 825-1100 or by email at Cam.Paterson@gov.bc.ca.
# Supervisor Field Book
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August 2016
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/Practices.php
### Part A Core Information

#### Worksite Details

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<tr>
<th>Project (TSL or Contract)#</th>
<th>Physical location of activity:</th>
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<table>
<thead>
<tr>
<th>Latitude:</th>
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<thead>
<tr>
<th>Duration of Activities:</th>
<th>Date:</th>
<th>Year</th>
<th>Month</th>
<th>Day</th>
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#### 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:** 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, Spectra Energy (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:** Cameron Paterson CSO 250-551-0364, Russ Laroche 250-551-3925, Nelson Office 250-825-1100

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

#### General Contact Information

<table>
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<tr>
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<tr>
<td>Ambulance: 911</td>
<td>Canadian Coast Guard: 1-800-567-5111 or cell #727</td>
</tr>
<tr>
<td>Fire Department: 911</td>
<td>Hospital:</td>
</tr>
<tr>
<td>Helicopter / Aircraft:</td>
<td>BC Wildfire Service Website: <a href="http://bcwildfire.ca">http://bcwildfire.ca</a></td>
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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:
  
  \[
  \text{# of workers assigned to the site during normal work hours} = \text{# of hand tools on site}
  \]

☑ 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 http://www.bcwildfire.ca/Weather/stations.htm
• 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; http://bcwildfire.ca/Weather/Maps/danger_rating.htm

✓ 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 gasoline, volatile gases should be allowed to dissipate before attempts are made to contain or mop up a gasoline spill.**

   **Spills to Land**
   - 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.

   **Spill to Water**
   - 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.

   **For Spills less than 25 litres**
   - 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.**
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

<table>
<thead>
<tr>
<th>Hazardous Material</th>
<th>EMBC Reportable Level (1)</th>
<th>BCTS Reportable Level (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antifreeze</td>
<td>5 litres</td>
<td>5 litres</td>
</tr>
<tr>
<td>Diesel fuel</td>
<td>100 litres</td>
<td>25 litres</td>
</tr>
<tr>
<td>Gasoline (auto &amp; saw)</td>
<td>100 litres</td>
<td>25 litres</td>
</tr>
<tr>
<td>Greases</td>
<td>100 litres</td>
<td>25 litres</td>
</tr>
<tr>
<td>Hydraulic Oil</td>
<td>100 litres</td>
<td>25 litres</td>
</tr>
<tr>
<td>Lubricating Oils</td>
<td>100 litres</td>
<td>25 litres</td>
</tr>
<tr>
<td>Methyl Hydrate</td>
<td>5 litres</td>
<td>5 litres</td>
</tr>
<tr>
<td>Paints &amp; Paint Thinners</td>
<td>100 litres</td>
<td>25 litres</td>
</tr>
<tr>
<td>Solvents</td>
<td>100 litres</td>
<td>25 litres</td>
</tr>
<tr>
<td>Pesticides</td>
<td>1 kilogram or 1 litre</td>
<td>1 kilogram or 1 litre</td>
</tr>
<tr>
<td>Explosives</td>
<td>Any</td>
<td>Any</td>
</tr>
</tbody>
</table>

(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)
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 a reportable slide (i.e. informing DFO that a slide has entered a fish-bearing stream) and to 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 m³ 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.
Kootenay Business Area WATER DISRUPTION EMERGENCY RESPONSE PLAN FOR Community and Domestic Consumptive Use Watersheds for BCTS Client Use

Scope and Purpose

This ERP applies to BCTS clients (Licensees, Permittees and Contractors) and their workers involved in forest practices within Kootenay BA community and domestic consumptive watersheds. The purpose of this ERP is to prevent and respond to water disruption (from sedimentation, spills, or interrupted flows) resulting from BCTS-authorized activities.

Preparedness Roles and Responsibilities

☑ Know the names of and contact information for water users within the area of active operations. Ensure this information is on site and available to workers (refer to attached contact list).
☑ Know the field location of applicable points of diversion (PODs) and associated infrastructure as identified on project maps, site plans, and assessments.
☑ Be familiar with applicable prescriptions (for example: site plans, road designs, drainage plans, riparian management prescriptions, terrain stability and soil erosion assessments, harvest plans) when working in and around drainage areas connected to PODs including protocols for changing site conditions. Review during office and field pre-work discussions. Minimize soil disturbance.
☑ Ensure adequate sediment control tool kit (e.g. filter fabric, hay bales, rock for armoring etc.) is available on site and workers are aware of their roles and responsibilities for sediment abatement.
☑ Conduct periodic emergency response drill(s) and or test(s) related to disruption of water, based on employee knowledge and experience and seasonal and site conditions.
☑ Monitor activities, site and weather conditions, and water turbidity for possible impacts occurring to water quality and stream conditions associated with PODs.
☑ Ensure potentially-affected water users and BCTS are advised of planned water interruptions or potential sediment increases as a result of activities.
☑ Report to BCTS any amount of unexpected soil movement or any quantity of material spill or equipment fluid leaks within the watershed area.

Initial Response (Water Disruption Events)

2. Take Control: If the disruption is a result of a forest practice, STOP WORK.
3. Take Action: Consider removal of POD intake and/or bypassing POD. Implement sediment abatement measures (sediment control kit).
4. Notification: Contact affected water user(s) and BCTS representatives as soon as possible.
5. Document details of the incident and response measures on CHK-009 Incident Report Form and submit to BCTS.
6. Work Co-operatively with BCTS, other agencies, and water users to investigate incidents and to implement measures to restore disrupted water supply quickly, thereby minimizing impacts on water users.
Purpose and Scope

This EFP applies to all BCTS Licensees, Permittees and Contractors, including their employees, agents, and subcontractors, involved in field activities within the scope of the BCTS 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

- **Complete a pre-work** with your supervisor.
  - 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.
  - Ensure you understand your role in the Project Plan prior to commencing work, and
  - Know the flagging or field marking standards.

- **Look ahead** and make sure that the Project Plan is appropriate.
  - View the area to familiarize yourself with the Project Plan, including map content.

- **Ensure that all resource features, resource values or sensitive areas** identified on the Project Plan map can be located by you on the ground. Know the associated management strategies.

- **Monitor and inspect your work** and ensure that the work conforms to the project requirements.
  - Conduct operations to minimize potential impacts on hazardous or sensitive areas, resource features, resource values, water quality, and site productivity, and
  - Operate during favourable weather conditions.

- **Have the Project Plan map available to you and know your location** at all times. Keep the site clean and be prepared for emergencies.
  - Inspect equipment regularly and repair/maintain equipment as required.
  - Maintain fire suppression equipment and spill kits, replace used supplies promptly.
  - Ensure the safe transportation, storage and handling of industrial waste, (petroleum and chemical products, grease tubes, filters, batteries, coolant, wire rope, used spill pads etc.). Dispose of industrial waste only at appropriate disposal facilities, and
  - Understand the environmental Emergency Response Plan (eERP) and your responsibilities in it.

- **Know the project shutdown criteria.**

**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 unfavourable 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.
Purpose and Scope
This EFP applies to all BCTS Licensees, Permittees and Contractors, including their employees, agents, and subcontractors, who are responsible for supervising field activities within the scope of the BCTS 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** with your supervisor and/or the BCTS representative. Understand the information that is provided on the relevant pre-work checklist. Ensure you obtain all information required to supervise the project and to prepare you for any emergencies.

2. **Prepare for, complete and document a pre-work with all employees, agents and sub-contractors** involved in the project before the work commences:
   - **Review relevant project information** including contract, licence, permit, map, Project Plan, field marking, prescriptions, special conditions, requirements and specifications. Review environmental field procedures, environmental emergency response plans and any resource features, resource values, sensitive areas, and special conditions.
   - **Provide** copies of Project Plans and maps to workers.
   - **View** the site with employees to familiarize them with resource features, resource values, sensitive areas, and special conditions, as relevant to their function and activity.
   - **Document** your pre-work discussion with your workers and record the names of attendees. A copy of the BCTS Prework Report that was completed with you by BCTS can be used for this purpose.
   - **Ensure all stakeholders are notified as required** (e.g. affected water licensees or purveyors, trappers, guides, lodges, residents etc.).
   - **Additional pre-works** may be required if work has been shut down for an extended period of time (90 calendar days or more e.g. seasonal, fire, operational restrictions, economics etc.)

While supervising, ensure you:
1. **Have a Project Plan**.
2. **Look ahead** to make sure Project Plans will work.
   - Ensure that all **resource features, resource values or sensitive areas** identified on the Project Plan map can be located by you on the ground. Know the associated management strategies and communicate those to workers.
   - Document any previously unidentified resource features, resource values or sensitive areas found by you or the workers. Identify them on the Project Plan map and report them to your supervisor and the BCTS representative.
3. **Assess** need for changes to Project Plan(s). Licensees and Permittees must amend Project Plan(s) before conducting primary forest activities in a way that is different from what is described in the plan.
4. **Know and follow** all EFP requirements.

While supervising, ensure all employees:
1. **Understand** their roles and responsibilities and:
   - Have received all necessary information and instructions,
   - Have relevant EFPs available to them, and follow the requirements of the EFPs, and
   - Have relevant Project Plans available to them and understand their associated requirements.
2. **Notify** you of:
   - Any planned works that do not conform to the Project Plan(s), prior to those works being conducted, and
   - Any situations that have caused or have the potential to cause environmental damage.
Monitor and Inspect the Works:

1. Monitor and inspect current and completed works.
   - Review relevant items, including:
     - Conformance to the Project Plan;
     - Conformance to EMS / SFM 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 SFMPs;
     - Licence, permit and/or contract conditions;
     - Compliance with legislation (e.g. Forest and Range Practices Act (FRPA), Wildfire Act, Forest Act, Transportation of Dangerous Goods Act (TDG), etc.); and
     - Safety requirements.
   - Any potential non-compliances are to be reported to the appropriate agency and BCTS,
   - Identified non-conformances and potential non-compliances are to be assigned corrections and corrective action(s), and
   - Follow-up on any corrections and corrective action(s) identified in previous inspection(s) completed by BCTS or the LPC Supervisor to ensure they have been carried out.

2. At a frequency provided at the BCTS pre-work, conduct self-inspections of the work. Document and file the results of the inspection and provide copies, as requested, to BCTS. The BCTS Client Self Inspection Report can be used for this purpose.

3. Complete an inspection(s) and notify BCTS prior to demobilization and prior to any extended periods of shutdown (more than 90 calendar days) such as for seasonal, fire, operational restrictions, economics etc. to ensure that the project area (licence, permit or contract area) is left in a state that the risk of a negative environmental impact is low. If any deficiencies are found such as inadequate water control (e.g. blocked ditches, culverts not installed), ensure corrections and corrective actions are carried out prior to the shutdown of operations.

Manage Documentation:

1. Keep required documentation onsite:
   - BCTS pre-work report, and records of your pre-works with workers,
   - Project Plans and other materials provided at the pre-work,
   - Environmental Emergency Response Plan (eERP) available to all workers,
   - EFPs available to workers as relevant to their activities,
   - BCTS inspection reports and your self-inspection reports,
   - Completed Incident Report forms for any incidents that have occurred during the work, and
   - Training records and 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 provide a copy to BCTS for required types of incidents. Ensure that corrections and corrective actions that are to be taken to address the incident are completed and followed up on.

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 unfavourable 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.
Purpose and Scope

This EFP applies to all BCTS Licensees, Permittees and Contractors, including their employees, agents, and subcontractors, involved in development and planning activities within the scope of the BCTS EMS. It 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

- Ensure that you have copies of and are familiar with all standards, guidebooks, operational plans and other information relevant to the scope of work.
- Ensure that all required assessments have been identified, and that personnel with appropriate qualifications will complete these assessments.
- At the pre-work meeting, discuss details of project approach, designs, layouts, or other Project Plan requirements including the ability to make changes.

Field Work

- When conducting field work, ensure that you:
  - Have copies of any relevant plans that relate to the project area;
  - Consider all comments from First Nations, stakeholders and other agencies;
  - Follow field marking standards; and
  - Note any discrepancies between the plans and the conditions in the field.
- 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 your supervisor for direction.
- Look at all options for roads, bridges, and culverts to ensure that they are placed in the best location. Know when you can vary from specifications provided by BCTS, and when you must request approvals.

Completion

- Ensure the following information and requirements, as applicable, are correctly identified and incorporated into all layout and design work:
  - FSP information, Site Plan content, and any amendments;
  - Applicable engineering, mapping, boundary, and field marking requirements;
  - Any key points noted during reconnaissance;
  - The location of streams, terrain, and other important features including wildlife tree retention areas and reserves;
  - Any measures to ensure the stability of areas having a moderate or high likelihood of landslides;
  - Road or cutblock boundary(s);
  - Location of end-haul sections, spoil sites and quarry/pits; properly classified soils/rock;
  - Right-of-way design and markings, including landing size and location;
  - Any necessary trails;
  - The harvesting system planned to be used; and
  - Appropriate referencing (photo ties, reference points etc.).
• Ensure **major crossing** site plans are identified and/or completed.
• Ensure all work is in conformance with applicable requirements.
• **If you have any concerns** about potential environmental impacts relating to this information and the associated prescriptions, contact your supervisor.

**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 unfavourable 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.
Purpose and Scope

This EFP applies to all BCTS Licensees, Permittees and Contractors, including their employees, agents, and subcontractors, involved in road, bridge and major culvert construction, maintenance, inspection and deactivation within the scope of the BCTS 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, and who is qualified to do them. Only conduct assessments that you are qualified to do.

2. Review all relevant assessments before conducting the inspection. Understand those assessments and their management implications.

3. Review or walk the project area, as well as the surrounding area of influence, to ensure complete collection and reporting/mapping of all relevant field information.

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.

2. 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 can be used safely by industrial users.


4. Minimize the impact on water quality and site productivity:
   - Operate during favourable weather conditions,
   - Utilize sediment control measures as required, including silt fences, hay bales, rock armouring, swales, water bars, or sediment ponds as appropriate,
   - Clean introduced debris from ditches, streams and culverts on an on-going basis before any impact can occur, and
   - Minimize erosion potential of exposed soil surfaces by seeding of disturbed areas.

5. When working on crossings, know the stream classification and prescription, including timing windows and other specifications.

6. Install appropriate water control measures on roads at locations where there is a risk of erosion.

7. Ensure that road surface drainage is directed to drainage structures and is not impeded.

8. Avoid directing water onto unstable slopes or erodible soils; direct water to stable slopes and / or armour outfalls with rock.

9. 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.

10. Control blasting to minimize fly-rock damage and slope instability.

11. Know the locations of end-haul and spoil sites.

12. Ensure signage and notification requirements are followed.
Bridge or Major Culvert Installation, Maintenance and Removal

1. Have a Project Plan.
2. **Construct and maintain** bridges and major culverts associated with the road so that they are structurally sound and safe for use by industrial users.
3. Ensure the work complies with **timing windows** and other specifications.
4. **Know** the stream classification and prescriptions for the watercourses affected by the works.
5. **Minimize** the impact on water quality and site productivity:
   - Operate during **favourable weather conditions**. Know the project shut-down criteria,
   - Utilize **sediment control** measures as required, including silt fences, hay bales, or sediment ponds as appropriate,
   - **Clean** introduced debris from ditches, streams and culverts on an on-going basis, and before any blockages can occur, and
   - **Minimize erosion** potential of exposed soil surfaces by seeding of disturbed areas.
6. Avoid placing **erodible materials** on bridge decks, in stream channels or on flood plains.
7. Avoid **directing water** onto unstable slopes or erodible soils; direct water to stable slopes and / or armour outfalls with rock.
8. **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 % of embedment as designed.
9. **Dispose** of wood culvert/bridge debris in designated sites, outside riparian management areas, or according to pre-work instructions.
10. Prepare professional conformance/assurance statements as required.

Fire Hazard Assessment and Abatement

1. Complete **Hazard Assessments** at prescribed intervals and complete abatement, if required, in accordance with the Wildfire Act and Regulation.
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

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 unfavourable 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.
Purpose and Scope

This EFP applies to all BCTS Licensees, Permittees and Contractors, including their employees, agents, and subcontractors, involved in all phases of harvesting within the scope of the BCTS 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.

Falling

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

Yarding, Skidding and Forwarding

1. **Have a Project Plan.**
2. If yarding or skidding in steep or gullied terrain, ensure that you **implement** yarding/skidding strategies to minimize impacts to soil productivity and water quality.
3. **Use appropriate methods** to minimize damage to reserve trees (e.g. dispersed retention trees, retention tree patches, etc.).
4. **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).
5. **Operate** during favourable weather and site conditions.
6. **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.
7. **Rehabilitate** excavated and bladed trails, temporary roads, landings, etc., as required. Ensure that rehabilitation activities maintain natural drainage patterns.

Loading, Processing and Hauling

1. **Have a Project Plan.**
2. **Minimize** decking impacts to standing timber and riparian management areas.
3. **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).
Fire Hazard Assessment and Abatement

1. **Complete** Hazard Assessments at prescribed intervals and complete abatement, if required, in accordance with the Wildfire Act and Regulation.

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 avoids hazardous or sensitive areas. Monitor burned sites for extinguishment.

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**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 unfavourable 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.
Purpose and Scope

This EFP applies to BCTS Staff, Licensee, Permittee and Contractor workers involved in forest practices within the scope of the BCTS EMS. It describes specific requirements to prevent the introduction or spread of invasive plants. This EFP does not replace the requirements of legislation, licences, permits and contracts.

Identification and Reporting

- Identify using the BCTS information Package and report identified invasive plants by reporting to BCTS staff representative or on line http://www.for.gov.bc.ca/hra/Plants/application.htm and providing a report, when required, containing the invasive plant information.

Inspecting and Cleaning

- Know the presence or absence of invasive plants and the requirements for removal of plant and soil materials from vehicles, mechanized equipment, culverts, bridges and cattle-guards.
- Prior to being transported to or from a BCTS work site, measures will be taken for removal of plant and soil materials from mechanized equipment.

Grass Seeding

- Roads, roadside and landing related disturbances and rehabilitation areas will be grass seeded, with prescribed Canada Common No.1 seed mixes, following the timelines and conditions specified.
June 23, 2011

To: All Forest Industry Licensees
    Regional Executive Directors
    District Managers
    Fire Centre Managers

From: Gary Townsend
     Assistant Deputy Minister
     Integrated Resource Operations

Re: Update on Recent Wildfire Regulation Amendments and New Interpretive Bulletin

This letter provides an update to the forest industry on recent amendments to the Wildfire Regulation and includes a revised interpretive bulletin on the application of the wildfire regulation for fire prevention and suppression response.

The regulation amendments specify an option for the use of professional reliance for the purposes of fire hazard assessment and abatement. The Order in Council for the regulation amendment is attached, and the Wildfire Regulation will be updated online to include these amendments.

The revised interpretive bulletin on the application of the Wildfire Regulation for fire prevention and suppression response is also attached and it replaces a previous bulletin that was issued on June 12, 2008.

May 2011 Overview of Regulation Amendments

- The definition of “fire suppression system” has been amended to clarify that a water delivery system may be required as part of an adequate fire suppression system.
- A new definition of “qualified holder” has been established to be able to define the requirements to carry out hazard assessments and hazard abatement by the category of persons.
• A professional reliance option has been recognized for qualified holders to conduct hazard assessments.

• A professional reliance option has been recognized for qualified holders to determine abatement levels based upon hazard assessments. In addition, the abatement period for qualified holders now begins at the start of an industrial activity and is 24 months in prescribed areas (equivalent to interface areas), and 30 months for areas outside of the prescribed areas (equivalent to non interface) from the start of the industrial activity in which to abate. Professional reliance may also be used to prescribed alternative periods for non-interface areas.

Interpretive Bulletin – Forest Industry Guidance

An updated interpretive bulletin (Interpretive Bulletin on the Application of the Wildfire Regulation for the Forest Industry) is intended to bring clarity around a wildfire prevention and suppression response associated with industrial activities as a result of some key issues raised by the forest industry.

This bulletin replaces all previous bulletins and provides guidance to the forest industry on a results based approach and the use of professional reliance for the determination of an appropriate fire prevention and suppression response. In addition an attached Appendix A to the guidance document provides a description of a default wildfire prevention and suppression response system that would apply in most given situations to meet legislative requirements.

The elements of the Wildfire Regulation as discussed have been developed in consultation with industry and we look forward to continuing our ongoing partnership with all stakeholders as we work together in managing the land base.

If you have any questions or concerns, please contact Lyle Gawalko (Lyle.Gawalko@gov.bc.ca) (250-387-5782) or your local Fire Centre.

Sincerely,

[Signature]

For Gary Townsend
Assistant Deputy Minister

Attachment:
cc: Brian Simpson, Director, Wildfire Management Branch
    Lyle Gawalko, Manager, Fire Management, Wildfire Management Branch
WILDFIRE MANAGEMENT BRANCH

Interpretive Bulletin

on the Application of the Wildfire Regulation

for the Forest Industry

June 2011
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Note: This bulletin replaces all previous bulletins on this topic. This guidance is not intended to provide legal advice, nor is it intended to fetter the discretion of the minister or delegated decision-makers in making statutory decisions. The views expressed in this bulletin are those of Wildfire Management Branch, and it is the responsibility of the person carrying out the industrial activity to meet the legislative requirements in all circumstances.

Objective and Scope

This bulletin is intended to provide guidance to forest industry and government staff who are seeking to comply with or assess compliance with provisions of the Wildfire Act and Wildfire Regulation for wildfire prevention and suppression response associated with industrial activities. This bulletin offers guidance on two ways to comply with regulatory requirements either through the use of:

1) a professionally designed wildfire prevention and suppression response; or,
2) a defined prevention and suppression response as set out in the attached Appendix A and based upon the previous Forest Fire Prevention and Suppression Regulation (FFPSR) and the current Wildfire Regulation.

The expected outcome of the Wildfire Act and Regulation is that fire starts are prevented, but, if a person causes a fire, they are required to extinguish it if practicable, or control the fire to limit fire spread and damage until additional resources arrive or the person is relieved by an official. The person must have enough resources available to ensure that the response to a fire is adequate, timely and commensurate with the fire hazard, in accordance with the legislation.

Background

The Wildfire Act and the Wildfire Regulation have provisions for results-based management and they incorporate the concept of professional reliance. The drafting of the Wildfire Regulation moved the legislation to a less prescriptive framework than had been the case under the former Forest Practices Code of British Columbia Act (FPC) and the Forest Fire Prevention and Suppression Regulation (FFPSR). This has resulted in a shift from prescribed requirements for all circumstances under the FPC to a requirement under the regulation to assess the fire hazard and prevent fire starts and if a fire starts, to limit fire spread and damage until additional resources arrive or the person is relieved by an official.

Note that the replacement of the FPC wildfire provisions with the results-based approach of the Wildfire Regulation did not signal that the old provisions were inadequate, but were meant to add flexibility for industrial users to adapt their fire preparedness and suppression response to local conditions and circumstances, so long as fire prevention and suppression results were maintained or improved relative to past practice.

In recognition that not all forest operations wish to utilize a professionally designed wildfire prevention and suppression response, and would instead prefer to use a defined prevention and suppression response option, this information is included in Appendix A (page 12). Appendix A provides guidance on basic fire fighting tools, water delivery systems, equipment and fire prevention that can be used to comply with legislation and fulfill the requirements of the Wildfire Regulation. A wildfire prevention and suppression
response option that varies from Appendix A would be considered to be a results-based approach in which reliance on professional advice and the exercise of due diligence would be key.

For a person responsible for complying with the Wildfire Regulation, the challenge is in determining – in advance and in their particular circumstances – when they have, for example, an ‘adequate fire suppression system’ (sections 6, 21, 22) or a sufficient ‘water delivery system…to effectively fight a fire of reasonably foreseeable size’ (section 1). Similarly the sufficiency of fire fighting hand tools and fuel breaks needs to be considered (sections 5, 7). When making these self-assessments, a person needs to consider the fire hazard and exercise reasonable care. It is intended that this bulletin will bring clarity to such issues.

The requirements of the Wildfire Regulation, such as for fire suppression systems, fire fighting hand tools or fuel breaks, are examined in detail during an inspection or a fire investigation. The examination will determine if the level of prevention is appropriate to limit the risk of a wildfire start (prevention) and extinguish if practicable, or contain the fire and limit fire spread and damage (suppression) in consideration of the fire hazard and the ability to respond.

Further, it is the intention of the WMB to relieve a person from carrying out voluntary firefighting within 48 hours subject to legislated priorities such as fire activity, workload demand and available resources. Voluntary firefighting will be compensated for in accordance with section 17 of the Wildfire Act and policy 9.1.

**Due Diligence**

Even if a fire starts or escapes, two defences may be raised including: due diligence and officially induced error. The concept of “due diligence” is central to the structure of the results-based forest practices legislative regime. Due diligence means exercising all reasonable care commensurate with the fire hazard. Reasonable care is assessed objectively based on what a prudent person acting reasonably would do in the same circumstances.

Under section 29(a) of the Wildfire Act, due diligence is a defence to an alleged contravention of the Act or the Wildfire Regulation. Establishment of a due diligence defence is up to the person conducting an industrial activity and this guidance is not intended to instruct how to do so.

It is recognized that not every fire will be prevented or contained. If a fire starts, or escapes initial attack efforts, an assessment of compliance with the Wildfire Act and Regulation will be conducted. If reasonable precautions were taken to prevent a fire from starting and spreading commensurate with the fire hazard and industrial activity, and those precautions would have been sufficient under normal or reasonably foreseeable circumstances to extinguish or suppress the fire until back-up resources arrived, then those precautions will be important considerations in a determination of compliance. In the event that circumstances that were reasonably unforeseeable (e.g. accident, extreme weather event) occur and allow a fire to escape suppression response, due diligence may be a defence against non compliance if it is determined that the measures in place would normally have prevented fire escape.
Results Based Approach and Professional Reliance

Under a results-based approach, professional reliance can be used by a person carrying out industrial activities to assess the risk of a fire start caused by each activity, the potential fire behaviour at the site of the industrial activity\(^1\) at the times when fire starts are most likely, the expected response times, and the likely consequences should a wildfire occur. In this context, the person or their professional needs to determine what constitutes an adequate and sufficient wildfire prevention and suppression response.

Typically the person would rely on a forest professional to identify adequate and sufficient prevention and suppression response measures. If lacking the knowledge, experience, and expertise to identify and fully assess the relevant factors, the advising professional would be compelled to seek the advice of specialists or experienced peers with knowledge of fire behaviour, fuel management, fire response, etc. Wildfire Management Branch staff may provide assessment and peer review of proposed prevention and suppression response in general terms, however, this should not be interpreted as endorsement. The responsibility of meeting legislated requirements remains with the person carrying out the activity.

A professional may utilize a defined wildfire prevention and suppression response (noted in Appendix A) for some or many activities or circumstances. A professional may also utilize alternate measures to meet operational considerations that are expected to lead to the same or better prevention and suppression outcomes.

When varying from the defined prevention and suppression response, Industry is advised to employ due diligence in the development and deployment of alternate measures commensurate with the risk or degree of variation. Evidence of due diligence might include a written rationale or assessment of factors considered, emergency response plans for wildfire, deployment and inventory of suppression resources, fire weather monitoring activities, the opinions of qualified forest professionals, and other considerations.

In a results-based context, terms like “adequate” and “sufficient” may be satisfied when a person has to the extent practicable:

i. considered and mitigated the circumstances and conditions including the fire hazard that may result in the person’s industrial activity or activities causing a wildfire (prevention), and,

ii. in consideration of the fire hazard and the ability to respond (suppression), for a particular situation, taken reasonable steps to extinguish or control the fire to limit fire spread and damage until additional resources arrive or the person is relieved by an official.

Fire Hazard

For the purposes of this document, fire hazard is defined as:

\(^1\) For a discussion of the “Site of the Industrial Activity” see page 7.
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- **the risk of a fire starting** which relates to the risk conditions associated with fuel condition and weather (moisture content, arrangement, and type of fuel as well as past, current and predicted weather conditions);
- **the hazard associated with an industrial activity** (high risk activities are particularly hazardous but other activities can be hazardous in high risk conditions), and,
- if a fire were to start,
  - **the volatility of the fire’s behaviour** meaning the rate of spread in consideration of the fuel characteristics, topography and weather (slope, aspect, wind, temperature, etc.) and,
  - **the difficulty of controlling the fire** (distance from other fire control resources, depth and arrangement of fuels, weather, etc.) and,
  - **the potential threat to values at risk** (probability and consequence of other values being impacted by the fire including interface, major infrastructure, and other values).

**Hand tools**

Under section 5 of the Wildfire Regulation, “if there is a risk of a fire starting or spreading … a person who carries out an industrial activity…” requires “…hand tools…to properly equip each person…” The intent is that when a fire starts, every worker at the site will actively participate in the suppression of the fire and will be suitably equipped to do so.

For the purposes of section 5 of the Wildfire Regulation, one of the first considerations is identifying that there is a risk of a fire igniting and then spreading to cause damage. If there is no risk of a fire starting or spreading (e.g. snow is covering the cutblock and it does not melt) there would be no need to have fire fighting hand tools on site.

It is intended that the number of tools required would be dictated by the number of workers assigned to the site during normal work. It is not intended that each site must have adequate tools to equip each and every person who may subsequently come on site to undertake fire control actions, since additional resources should arrive with their own tools.

Each worker should have access to a tool with which to carry out fire suppression work. “Fire fighting hand tools” are defined in regulation to include shovels, mattocks, pulaskis, fire extinguishers and hand tank pumps, and the components of a water delivery system can also be considered tools. A person working at the end of a nozzle, pulling hose in support or operating a pump would not require an additional hand tool, whereas a person building hand guard would be expected to have a hand tool such as a shovel, mattock or pulaski suitable for the ground conditions. Other tools such as a McLeod tool, hazel hoe or other effective fire fighting tools might be an effective alternative to a mattock or pulaski, if appropriate for the conditions and type of fire suppression expected.

**Fire suppression system**

The “fire suppression system” obligation does not apply to every industrial activity. The obligation applies to “high risk activities” as defined in section 1(1) of the Wildfire Regulation which are a subset of “industrial activities” as defined in subsection 1(3). In addition to the hand tool requirements, high risk
activities carry additional responsibilities including the obligation under subsection 6(3) (b) (ii) to keep an “adequate fire suppression system” on site when there is a risk of a fire starting or spreading.

Under section 1(1) of the regulation:

"fire suppression system" means a system for suppressing fire by delivering

(a) water,
(b) a suppressant,
(c) a surfactant, or
(d) any combination of the substances listed in paragraphs (a) to (c)
and may include a water delivery system

“water delivery system” means a system that can

(a) deliver a sufficient volume of water to effectively fight a fire of a reasonably foreseeable size, taking all factors into consideration, including the conditions of any area where the water delivery system may need to be used, and
(b) deliver water to any place
   (i) at the site of an industrial activity,
   (ii) on the burn area or site of the high risk activity, or
   (iii) reasonably adjacent to the burn area or the site of a high risk activity;

Note that a water delivery system is a fire suppression system by definition, but that a fire suppression system need not necessarily include a water delivery system. It could be, for example, a system capable of delivering a chemical retardant or even a backhoe capable of covering a fire with soil (a suppressant) for rapid initial attack.

A fire suppression system can potentially take many shapes and forms as dictated by the type of high risk activity and the fire hazard. It may involve any of the application of: water alone, water mixed with a surfactant, a suppressant (e.g. soil, retardant, or foam), or a combination of all three. The system should be practical and reasonable for the activity being carried out, and capable of extinguishing or controlling the fire to limit fire spread and damage until additional resources arrive or the person is relieved by an official. If the fire suppression system involves the delivery of water, it should be nearby, operational and capable of being deployed in a length of time commensurate with current fire hazard.

The proximity and capacity of the fire suppression system should take into consideration the time to arrive to support the operation. As the fire danger rating increases, the available time to deploy a fire suppression system to support the suppression operation decreases. Larger more mobile systems may be located in a central area and serve several high risk activities, while smaller, less mobile fire suppression systems may be located in a strategic position or on the machine itself, for use by the operator.

Along with the fire hazard and values at risk, some other considerations for a fire suppression system may include:

- the ability to be activated quickly;
- the number of high risk activity sites to be serviced;
• the presence or absence of potential fire suppressant materials such as soil

While a fire suppression system could include, for example, a system capable of delivering a chemical retardant or even a backhoe capable of covering a fire with soil (a suppressant) for limited initial attack, for adequate suppression and control as the fire hazard increases, the fire suppression system at the site of the industrial activity should be supported up by a water delivery system that can be quickly deployed to the site to provide a full suppression response if required.

If water is in limited supply, a suppressant or surfactant may be added to the water in a water delivery system to improve its effectiveness. Use of a suppressant or surfactant reduces the rate or volume of water delivery expected from a water delivery system.

A component of a fire suppression system for initial attack may also include an automatic fire suppression system installed in a machine powered by a large engine and designed to extinguish an engine fire if that is the predominant risk of a fire start for that industrial activity. Some mobile logging equipment may have built-in systems for carrying and delivering water; as response is effectively immediate, such systems may be more effective than relying on a larger water delivery system that would be some minutes away and for that situation may be adequate, depending on the fire hazard at the time. As the fire hazard increases, however, it would be expected that an independent water delivery system be available for a full suppression response.

When assessing whether a fire suppression system is adequate, the assessment should focus on whether the system was reasonable for the expected fire hazard of the site. For example, if a gravity-feed water delivery system or a helicopter bucket will provide enough water to effectively extinguish an operations-related fire of the kind that might be reasonably anticipated at the site of the industrial activity, then the system could be considered adequate. In some situations, a backpack water tank may be adequate for the fire hazard. A pump system historically prescribed under the FPC wildfire provisions is considered adequate for low risk situations, although a person carrying out a high risk or any industrial activity should tailor their fire suppression system to suit the expected fire environment for the site.

A reasonable risk of a fire starting and spreading should be assessed based on available information, for example, by using the Canadian Forest Fire Danger Rating System (CFFDRS), probability of ignition models or established local fire history for that industrial activity under the site and environmental conditions present (weather, fuels, topography). For convenience, some Licensees may choose to maintain a prolonged readiness level for a higher fire danger class, rather than consciously escalating or diminishing readiness as circumstances and conditions change.

**Fuel breaks**

Under section 1(1) of the regulation:

> “fuel break” means
> 
> (a) a barrier or a change in fuel type or condition, or
> (b) a strip of land that has been modified or cleared to prevent fire spread;
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It is important to note that a fuel break does not necessarily mean a bladed guard. Anything – natural, engineered or constructed – that alters, modifies or removes the fuel to limit the chance of a fire spreading ought to be sufficient. For example, snow, water, natural bare rock or high fuel moisture could be an adequate fuel break. A temporary fuel break may be created using a sprinkler system to increase the moisture content of the fuel above its ignition point. The complete removal of all fuel to mineral soil would constitute a fuel break, but its adequacy would be measured in context of the width and the fire environment anticipated. When conducting pile burns, the area around the piles would likely be considered a fuel break if the ignition characteristics of the materials surrounding the pile are significantly lower than the materials in the pile, will not support significant fire spread from the pile and will remain that way for the duration of the burn. The fuel break should ensure that fire spread from the pile remains within the fuel break and does not cause damages or require a suppression response. A fuel break should be within a reasonable distance from the intended pile burn, should be maintained for the duration of the burning, be of adequate scope to address the reasonable risk of the burn (e.g.: adjacent fuel, slope, winds) to escape, and should be properly monitored and maintained. Where the intent is to broadcast all or most of the unburned slash in a cutblock, a resource management open burn should be planned.

In a results-based regime, the sufficiency of a fuel break would be assessed as part of an incident, inspection, or investigation where a fire spreads beyond the fuel break. There may be conditions under which a fuel break may not completely prevent a fire from spreading. If a fire does spread, an investigation may be implemented, but, fire spread may not automatically infer non-compliance with the fuel break requirements. A fuel break will be considered insufficient where it is found that a fire would easily spread beyond the intended burn area under reasonably expected fire conditions and current and predicted weather conditions.

**Work Restriction**

“High risk activities” include the obligation under Schedule 3 of the Wildfire Regulation to alter activities during periods of moderate, high, and extreme Fire Danger Class.

The meaning of the term “after 3 consecutive days” in Schedule 3 means after the calendar days in which fire weather indices were calculated. In other words, it is sufficient to implement these provisions on the 4th day. For example, on the 3rd day of DGR III calculated at 1:00pm PDT a fire watcher is not required at the end of a normal daytime shift on the 3rd day, but is required after work on the 4th day. “After the fire danger class falls” on the other hand means as soon as the weather data (e.g. sufficient rain is recorded ahead of the 1:00 pm measurement) permits recalculation of the DGR to below the threshold.

**Fire watcher**

Schedule 3 and subsection 6(4) of the Wildfire Regulation set out the requirements for fire watchers on high risk industrial activities. Note that the fire watcher should not be engaged in other activities that compromise their ability to “actively watch and patrol” or “reasonably see the site of the high risk”. If required, a fire watcher should also be able to carry out fire control activities either with a hand tool or other suppression equipment if practicable.
Site of the industrial activity

The Wildfire Regulation uses terms such as “a site in that area” (section 5); “activity site” (section 6(3)(b)); “site of …activity” (sections 1, 6(4), 11(1)(b)(ii), 12(2), 13(1)); “location of the activity” (section 6(2)); “site of …operation” (section 11(1)(b)(ii)). For convenience the term “site of the industrial activity” is used in this document to refer to the use of all of these terms in the regulation.

The site of the industrial activity is the location where the activity is taking place. It includes both stationary activities (i.e. milling, portable chipping and manufacturing) and mobile activities (i.e. mobile logging equipment).

For stationary activities, the site of the industrial activity would be the area in the immediate proximity of the industrial activity.

For mobile sites, the site of the industrial activity would be assessed in terms of the specific location where the industrial activity is taking place, or where the industrial activity has recently taken place on a given day. It is not intended to be the potential area where the industrial activity could take place.

In some circumstances it may not always be clear what the bounds of the site of the industrial activity actually are for interpretation of the regulation. For example, cutblocks are often broken up into multiple portions for biodiversity, riparian protection, appraisal, fuel management, or other reasons and may contain significant internal fuel breaks such as roads, large streams, and leave strips. A helicopter logging operation may involve dozens of widely separated openings or even single stem extractions.

It is important to keep in mind that the rules for industrial activities are intended to ensure that the person conducting the activity is able to provide an effective fire suppression system that extinguishes or contains the fire and limits fire spread and damage until additional resources arrive. It is not intended that the person be responsible for other fire starts in the vicinity not directly related to their own industrial activity (e.g. lightning, public, unrelated industrial activities). In this context, the site of the industrial activity should be thought of as the area in the immediately vicinity of the potential ignition sources (machinery, running cables, workers) associated with the activity.

The intent is that a person can extinguish a fire start quickly, or contain it until additional resources arrive. The minimum resources must be sufficient to carry out this fire suppression response, but does not need to be so robust as to ensure, for example, water delivery to the farthest corner of a large cutblock, unless that is where industrial activities are actually being conducted that day.

For a cable yarding operation, the site of the industrial activity should be thought of a relatively confined bubble zone or buffer area around the potential ignition sources into which fire spread could be anticipated so that fire suppression efforts can deliver a sufficient volume of water and/or suppressant to extinguish or control the fire to limit fire spread and damage until additional resources arrive or the person is relieved by an official. Whatever the activity, the site should be thought of in the context of the potential ignition point(s) and the initial attack of a fire growing from that ignition point with consideration of the conditions (slope, fuel, anticipated fire weather) at and adjacent to that ignition point.

Based upon the fire hazard, a professional may determine that a water delivery system can be shared between activity sites in close proximity to one another. Larger more mobile systems may be located in a
central area and serve several high risk activities, while smaller less mobile systems may be located in strategic positions or on the machine itself for use by the operator. Nevertheless, when covering two (or more) activities with a single system, a key consideration remains that as the fire danger rating increases, the available time to deploy a fire suppression system to any of the activity sites must meet the objective of extinguishing a fire if practicable, or, controlling the fire to limit fire spread and damage until additional resources arrive or the person is relieved by an official.

**Representative Weather Data**

Subsection 6(2) of the Wildfire Regulation requires the person conducting a high risk activity to determine the Fire Danger Class for the site of the industrial activity during the “fire season” period from March 1 to October 31, except for the days when the ground is covered by snow. The determination of Fire Danger Class relies on calculation of fire weather indices based on representative weather data, with reference to tables appended as Schedules 1 and 2 to the Wildfire Regulation that indicate the Fire Danger Class.

Outside of the fire season period, representative weather data is not generally available from field weather stations, so calculation of Fire Danger Class and related indices for the purposes confirming the assumption of no “risk of a fire starting or spreading” under subsection 1(5) is neither practicable nor expected unless WMB provides general notification that it is a year with unusual weather patterns. Thus neither are the provisions in section 6 for hand tools, fire suppression systems, fire watchers, or work restrictions necessary outside of the fire season.

During the fire season, persons conducting a high risk activity are required to use “representative” weather data for the area to determine the Fire Danger Class for their site of the industrial activity. The onus is on the person carrying out the activity to determine what the representative weather station is for the area. The source of this data could be from the person’s own weather station(s), government weather stations, or from third party weather stations.

A person may need to adjust or adapt the available Fire Danger Class (DGR) estimates from an established weather station for the conditions specific to the site of the activity. If conditions at the site of the activity are similar to a reference weather station then no adjustment or adaptation should be needed. Major factors to consider when judging representativeness could include distance, BEC variant, and large elevation changes. Other potential considerations may include differences in prevailing wind direction and force (exposure), date of snow melt, aspect, or relative proximity to bodies of water (humidity).

Persons conducting high risk activities may wish to establish a portable weather station at or near the site of the industrial activity to determine the Fire Danger Class for the specific area. More information on the establishment of a portable weather station is available from a free publication entitled, “*Weather Guide for the Canadian Forest Fire Danger Rating System*”.

Due to concerns with ongoing maintenance, theft, vandalism, maintaining data integrity, and management and initial calibration of stations following frequently re-located activities, it may be impractical for persons conducting multiple high risk activities in the same locale or vicinity to maintain a portable weather station at the specific site of each and every activity. Nonetheless, if intending to conduct high risk activities during prolonged periods of higher Fire Danger Class, it is a requirement to have accurate
weather information and to ensure FWI and DGR calculations are representative of the site of the industrial activity. This could include using hand held weather monitoring equipment to verify local FWI and DGR levels.

Where weather stations or instruments are temporarily located at a site of the industrial activity, DGR adjustments would be made by a professional, or a person under the guidance of a professional, in response to changing conditions at the site. When in an adjustment situation, the main condition to be aware of is the possibility that the DGR of the site of the industrial activity needs to be bumped up a Class relative to the reference weather station(s) due to more severe conditions (e.g. temperature, wind or RH) at the site of the industrial activity. An understanding of the effects of weather input data on fire weather indices and DGR is essential.

Periodic weather observations from the site of the industrial activity may be used to correlate with observations at the representative weather station to confirm its representativeness for the site of the industrial activity, or make DGR adjustments. If a professional, or a person under the guidance of a professional, conducting an industrial activity has access to FWI and DGR calculations for their operating area and can demonstrate awareness of the relative appropriateness of the DGR estimate to their site of the industrial activity(s) then the “representativeness” test should be met.

Fire Danger Class for government forestry weather stations is found under the heading ‘Danger Class Report’. Accurate locations and elevations of the stations are to be found under ‘Weather Stations’. Note that the government’s forestry weather network was designed to support fire preparedness for the government’s fire operations. This weather network was not designed or intended to accurately describe all potential, site-specific fire environments across the province.

More detailed information on fire weather codes and indices of the Canadian Forest Fire Danger Rating System, along with other weather information and fire weather forecast details are available through subscription. Important reference material is contained in the publication entitled “Weather Guide for the Canadian Forest Fire Danger Rating System (Armitage, 2008).

**Log forwarding**

“Log forwarding” is included as a high risk activity (section 1(1)), and should be interpreted as the use of a self-propelled machine designed to transport or move logs or trees across the ground of a cutblock to roadside. Often this is a self-loading, off-road transporter but may also include a backhoe swinging logs towards a road by “hoe forwarding” or “shovel logging”.

The description of log forwarding contained within the definition of “high risk activity” in the Wildfire Regulation specifically excludes a logging truck being loaded or hauling on a road. Therefore, a self-loading logging truck on a road or landing would not be considered log forwarding. If however the self-loading logging truck drives off the road out into the cutblock, it could be considered log forwarding.

Forwarding (or skidding) operations that are conducted using puncheon or on thick forest floors, where sparks caused by metal parts of the equipment contacting rocks in or on the ground of the running surface are unlikely to occur, are not considered high risk.
Log loading

A log loader operating at roadside is not considered a high risk activity. A loader operating at roadside includes loaders that may be positioned over the roadside ditch, on debris, slash, or operating on undisturbed forest floor material adjacent to the road. Movements of the loader, such as from log deck to log deck, or repositioning between loading trucks, would not be considered a high risk activity.

Where a person decides to operate a tracked machine loading logs off the road in slash, there is an overarching obligation for the person to be duly diligent regarding section 6 of the Wildfire Act, which specifies that a person must do so “at a time and in a manner that can reasonably be expected to prevent fires from starting”.

Resources Available

For the purposes of section 13(1)(a) of the Wildfire Regulation, it is important to note that a person conducting the industrial activity is required to make available the person’s workers who are working within 30km by road and the person’s fire fighting tools and heavy equipment if those resources are within 30km by road of the site of the industrial activity. The definition of “worker” in Section 1(1) specifically excludes from this requirement those working at a non-portable timber processing facility (e.g. sawmill), in a clerical or administrative capacity, or on a tug or barge. Note that it is not expected that all available resources be dispatched immediately on a report of a wildfire, but that such resources will be deployed ‘as appropriate given the circumstances and conditions…’ (section 13(2)) until the fire is extinguished, or it becomes impracticable to continue with fire control, or an official relieves the person in writing (Wildfire Act, section 6(3)(b)).

The intention of this provision is not to impact stationary processing facilities (mining operations or otherwise). Barge camps, the barge and its employees are not resources that the person must make available for fire control activity. If these facilities, other employees or equipment are required, section 16 of the Wildfire Act allows for an official to issue a requisition order that requires a person to supply facilities and equipment that the person owns or has use of and the person’s direct employees for fire control.

Fire Hazard Assessment and Abatement

Fire hazard assessments and fire hazard abatement are key activities in preventing potential wildfire threats arising from fuels left on the land base from harvesting operations. It is essential to carry out assessment and abatement to reduce the risk of wildfires, not only to reduce the impact in the harvested area, but also the impact on adjacent or nearby interface areas, infrastructures, and other values at risk.

The Wildfire Act requires persons conducting an industrial activity or a prescribed activity (s. 7) on forest or grass land or within one kilometre of forest land or grass land to conduct fire hazard assessments and abate if required.

The Wildfire Regulation sets out the prescribed activity or industrial activity and states that if a hazard is made, it must be abated (s. 11 and s. 12).
Wildfire Regulation amendments now allow for professional reliance options for hazard assessments and abatement for a specific category or persons: “qualified holders”. A qualified holder is a person who has a valid cost sharing or service agreement in place with Wildfire Branch or is the holder of a specified licence under the Forest Act and is required to pay annual rent under the Annual Rent Regulation.

The existing section 12 hazard abatement requirements will continue to apply for all persons who do not meet qualified holder requirements. Those persons will be required to abate to the extent prescribed in the Regulation.

To assist persons who have fire hazard assessment and abatement obligations, Wildfire Management Branch is preparing A Guide to Fire Hazard Assessment and Abatement that will specify how to assess hazards and when to conduct abatement. This guide can assist forest professionals in assessing fire hazards associated with industrial or prescribed activities, and in creating hazard assessment and abatement strategies for a forest licensee or other stakeholder that has an obligation to assess and abate. Note that the due diligence defence of a person that carries out the industrial or prescribed activity may hinge on having followed the professional’s advice, direction and recommendations.

A forest professional working for a qualified holder may choose to use the guide to derive abatement recommendations, or may provide alternate recommendations based on professional consideration of the relevant factors and local application of them to the site of an industrial or prescribed activity. Professional recommendations would include due diligence such as a rationale supporting either an alternate recommendation or an alternate hazard assessment procedure and abatement approach.

**Hazard Assessment Period**

Section 11(3.1) of the Wildfire Regulation allows a “qualified holder” who carries out an industrial activity or prescribed activity to rely upon a forest professional to specify alternative interval periods for hazard assessments. A professional would consider the type of activity being carried out, the fire hazard and associated risks, the intervals in which the assessments must be completed and the time frames within which to abate once a fire hazard has been identified.

For persons that are not qualified holders assessment time periods specified by Section 11 apply.

**Hazard Abatement Period**

Section 12.1 of the Wildfire Regulation specifies an abatement period beginning from the date of commencement harvest of 24 months (for interface) and 30 months (for non interface) for a “qualified holder” or as specified by a forest professional for non interface areas. Professional reliance is also used to determine the extent in which to abate.

For persons that are not qualified holders Section 12 abatement time periods and extents apply.

Wildland urban interface areas are required to be assessed and abated in shorter time periods than that of non-interface areas because of the higher values at risk.
References:


APPENDIX A: DEFINED WILDFIRE PREVENTION AND RESPONSE SYSTEM

Part 1: Purpose

This document provides guidance on a wildfire prevention and fire response system that would apply in most given situations, to meet the requirements of the Wildfire Act and the Wildfire Regulation. This guidance is based upon many of the requirements specified in the now repealed Forest Fire Prevention and Suppression Regulation (FFPSR) of the Forest Practices Code of British Columbia Act and the current Wildfire Regulation.

Some industrial operators may not have the capacity or resources to professionally design a prevention and suppression response system. The objective of this guidance document is to assist a person conducting industrial activities by providing a description of a default prevention and suppression response that could be used to meet the requirements of a fire preparedness and fire response system for levels of fire hazard typically encountered when conducting an industrial activity during the fire season.

Note that all persons using this guidance document are not relieved of the responsibility and obligations set out in the Wildfire Act and Regulation and any other relevant statutes that apply. This wildfire prevention and suppression response guidance should be used in consideration of the fire hazard and a person should consider all of the material factors to be considered when there is a high risk of a fire starting or spreading. For typical operations, these factors include:

- the foreseeable size of the fire, given the fuels, fire danger rating, weather, etc.,
- the quantity of water required to extinguish a fire at a site of the industrial activity;
- the delivery method, effectiveness and deployment time of fire suppression and water delivery systems;
- access considerations to the site of the fire;
- conditions in the area where the water may be used;
- an adequate quantity of water at the site of the industrial activity.

The expected outcome of the Wildfire Act and Regulation is that fire starts are prevented, but if a person causes a fire, they are required to extinguish it if practicable, or control the fire to limit fire spread and damage until additional resources arrive or the person is relieved by an official. The person must have enough resources available to ensure that the response to a fire is adequate, timely and commensurate with anticipated fire hazards. If conducting a high risk industrial activity a person needs to monitor Fire Danger Class, maintain a fire watch and an adequate fire suppression system, and to follow work restrictions as required by regulation.

Note: Important definitions are included in Part 6 below and they should be reviewed and thoroughly understood.

Part 2: General Requirements

Prior to each fire season there is a requirement to provide contact details to the local Fire Centre.

Before March 1 of each year, a person who, under the Forest Act, is the holder of
(a) a major licence,
(b) a timber sale licence that is not a major licence,
(c) a community forest agreement, or
(d) a woodlot licence
(e) First Nations Woodland License

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.

Fire Centre Contact Information:

<table>
<thead>
<tr>
<th>Fire Centre</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cariboo Fire Centre, Williams Lake</td>
<td>250-989-2600</td>
</tr>
<tr>
<td>Coastal Fire Centre, Parksville</td>
<td>250-951-4222</td>
</tr>
<tr>
<td>Kamloops Fire Centre, Kamloops</td>
<td>250-554-5500</td>
</tr>
<tr>
<td>Northwest Fire Centre, Smithers</td>
<td>250-847-6600</td>
</tr>
<tr>
<td>Prince George Fire Centre, Prince George</td>
<td>250-565-6124</td>
</tr>
<tr>
<td>Southeast Fire Centre, Castlegar</td>
<td>250-365-4040</td>
</tr>
</tbody>
</table>

Part 3: Industrial Activities

“industrial activity” is listed in section 1(3) of the Wildfire Regulation and includes:

(a) land clearing,
(b) high risk activities;
(c) operating equipment or machinery in relation to forest management during
   (i) road construction, road maintenance and road deactivation,
   (ii) timber harvesting, including sorting logs,
   (iii) mechanical modification of forest debris and debris piling,
   (iv) silviculture treatments, or
   (v) portable wood chipping, milling, processing or manufacturing;
(d) operating equipment or machinery in relation to activities other than forest management during
   (i) debris piling,
   (ii) road construction, road maintenance or road deactivation,
   (iii) rock drilling,
   (iv) mining operations,
   (v) railway operations,
   (vi) utility transmission operations, or
   (vii) portable wood chipping, milling, processing or manufacturing.

1. Fire fighting tools must be available on site

When conducting an industrial operation, sufficient fire fighting hand tools must be available on site during the fire season on or after March 1 and before November 1, if the area is snow free.

If there is a risk of a fire starting or spreading on an area that is
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(a) forest land or grass land, or
(b) within 300 m of forest land or grass land,

A person who carries out an industrial activity at a site in that area must ensure that fire fighting hand tools are available at that site in a combination and type to properly equip each person who works at the site with a minimum of one fire fighting hand tool per person:

- one round-nosed shovel;
- one pulaski tool or mattock; or
- one hand-tank pump containing at least 18 litres of water.

2. Operation of engines must be done safely

All engines should be operated and maintained in accordance with the manufacturer’s specifications in a manner that prevents fires from starting.

**Operation of large engine** (greater than 7.5 kw or 10 hp)
The person carrying out an industrial activity should provide and ensure that every large engine used in an industrial activity has attached to it, at least the following fire fighting tools:

- one round-nosed shovel; and
- one pulaski tool or mattock; and
- one fire extinguisher with a ULC rating of at least 3A 10BC or an integral vehicle fire suppression system for any engine fires; and
- one fire extinguisher with a ULC rating of at least 1A 5BC for any fire suppression required near the large engine at the activity site,

A person should not operate a large engine unless all of the following conditions are met:

- It is equipped with a safe and effective device for arresting sparks that is an integral part of the exhaust system, and is in good repair.
- A person should not operate a large engine that operates in a stationary capacity unless the site has a fuel break or it has been cleared of combustible material for a distance of at least 3 m in each direction from the large engine.

**Small Engines** (less than or equal to 7.5 kw or 10 hp):
A person should not operate a small engine unless all of the following conditions are met:

- The muffler has an adequate spark arrester; and,
- The engine or the hot carbon emission being produced by the engine are prevented from coming in contact with combustible material, and there is available at the times when the engine is operated, a fire extinguisher charged with at least 0.225kg (0.5lb.) of fire extinguishing chemical.
Part 4: High Risk Activities

“high risk activity” as defined in section 1 of the Wildfire Regulation includes:

(a) mechanical brushing;
(b) disk trenching;
(c) preparation or use of explosives;
(d) using fire- or spark-producing tools, including cutting tools;
(e) using or preparing fireworks or pyrotechnics;
(f) grinding, including rail grinding;
(g) mechanical land clearing;
(h) clearing and maintaining rights of way, including grass mowing;
(i) any of the following activities carried out in a cutblock excluding a road, landing, roadside work area or log sort area in the cutblock:
   (i) operating a power saw;
   (ii) mechanical tree felling, woody debris piling or tree processing, including de-liming;
   (iii) welding;
   (iv) portable wood chipping, milling, processing or manufacturing;
   (v) skidding logs or log forwarding unless it is improbable that the skidding or forwarding will result in the equipment contacting rock;
   (vi) yarding logs using cable systems;”

Requirements for High Risk Activities:

1. Determine Danger Class

A person who carries out a high risk activity on or within 300 m of forest land or grass land on or after March 1 and before November 1, unless the area is snow covered, must determine the Fire Danger Class.

(See Below - Part 5: Determination of Restriction on High Risk Activities).

2. Follow Danger Class Restrictions and Durations

(See Below - Part 5: Determination of Restriction on High Risk Activities).

3. Keep Fire Fighting Tools and An Adequate Fire Suppression System At The Activity Site

If there is a risk of a fire starting or spreading then fire fighting tools and an adequate fire suppression system must be kept at the activity site. During the fire season on or after March 1 and before November 1, this may occur anytime that an area is snow free.

A “fire suppression system” means a system for suppressing fire by delivering

(a) water,
(b) a suppressant,
(c) a surfactant, or
(d) any combination of the substances listed in paragraphs (a) to (c), and may include a water delivery system [section 1, Wildfire Regulation]
Water Delivery System – ground based: a "water delivery system" is defined in section 1 of the Wildfire Regulation and means a system that can:

(a) deliver a sufficient volume of water to effectively fight a fire, taking all factors into consideration, including the conditions of any area where the water delivery system may need to be used, and,

(b) deliver water to any place
   (i) at the site of the industrial activity,
   (ii) on the burn area or site of the industrial activity, or
   (iii) adjacent to the burn area or the site of an industrial activity

The water delivery system should be able to deliver water at a sufficient volume and pressure to effectively fight a fire of a reasonably foreseeable size, taking all factors into consideration, including conditions of any activity site where the fire suppression system may need to be used.

For the purposes of this guidance document, a water delivery system consists of a water supply, a water pump or equivalent means of pressurizing water plus the ancillary hoses, attachments and tools necessary for the operation and maintenance of the system if these can deliver, to any place on a worksite:

- water at an effective nozzle pressure of a minimum of 25 psi through a standard 9.50 mm straight bore nozzle opening for 50 minutes, or
- 2,500 litres of liquid, of which 0.5 per cent is a liquid surfactant concentrate that, when added to water and used with a pump, hose and nozzle, is capable of producing foam that will extinguish a fire in ordinary combustibles such as wood, paper or forest products.

A person carrying out an industrial activity that is a saw mill or dryland log sort should provide at least one water delivery system at the saw mill or log sort site.

If it is unreasonable to provide the water delivery system because of the terrain, or lack of available surface water on site, a portable pump unit and a water source of at least 4,500 litres or equivalent (aka use of a liquid surfactant noted above) may be substituted. Note that this could include the cumulative capacity of several smaller water sources, relay and/or other tanks, as alternative options.

"Pump Unit" means water pump including a gravity system that is capable of maintaining a minimum effective nozzle pressure of 25 psi from a standard 9.5 mm nozzle at any place on the site of the industrial activity.

Hand falling/Motor manual (i.e. brush saws) brushing: For hand falling and brush saw operation, each faller or operator should have, at a minimum, a personal fire extinguisher.

Cable logging
Cable logging is also included under the definition contained in section 1 of the Wildfire regulation of a “high risk activity”

A person carrying out an industrial activity that is a cable logging system should
June, 2011

(a) layout all running lines in straight lines,
(b) remove branches, brush and shrubs to a width of at least 75 cm on each side of the running line for a minimum distance of 4 m in either direction from each corner block, and
(c) and provide a hand-tank pump containing at least 18 litres of water and keep it immediately adjacent to each corner block that is in use.

Fire fighting tools - helicopters
If one or more helicopters are normally used in a timber harvesting operation to move personnel and equipment to and from the site of the industrial activity, the person carrying out the timber harvesting operation should keep at a landing spot near the site of the industrial activity, for the exclusive use of each helicopter, a water bucket that is

• of a type designed and adapted for aerial firefighting,
• capable of being attached to a helicopter,
• capable of being both filled and emptied from a helicopter while the helicopter is airborne
• of a capacity near the normal operating load for the type of helicopter used

4. Maintain Fire Watcher and Communication Requirements

Fire watcher
A person who, in accordance with section 6(4), section 6(3)(a) and Schedule 3 of the Wildfire Regulation, is required to maintain a fire watcher, must ensure that the fire watcher:

(a) can reasonably see the site of the high risk activity during the time the fire watcher is required,
(b) has at least one fire fighting hand tool,
(c) actively watches and patrols for sparks and fires on the site of the high risk activity,
(d) immediately carries out fire control and extinguishes the fire, if practicable, and
(e) has the means on site to report the fire.

(2) If the fire watcher reports a fire to a person carrying out an industrial activity, the person should immediately report the forest fire to a Fire Centre Manager or delegate, district manager, a designated forest official, peace officer or person answering a forest fire reporting number in accordance with the Wildfire Act and regulation.

Communications Equipment

A person who carries out an industrial activity, or who is a fire watcher, should have either an operational two-way radio or telephone so that if a fire starts, assistance may be immediately requested.
5. **Other Types of High Risk Industrial Activities**

**Hot work - welding, cutting or using any other tool that may cause a fire or spark:** Hot work activities are included under the definition contained in section 1 of the Wildfire regulation of “high risk activity” in the Wildfire regulation.

- Where there is a reasonable risk of a fire starting and spreading, a person should not perform hot work unless a fire watcher is present.
- Minimum fire watcher requirements following completion of the hot work are outlined in Schedule 3 of the Wildfire regulation.

**Fire fighting tools - hot work and use of explosives**

A person should provide the following fire fighting tools at each activity site where hot work is performed, or if explosives are used at the place from which the blast will be controlled:

- 2 fire extinguishers each with a ULC rating of at least 3A 10BC;
- one round-nosed shovel;
- 2 hand-tank pumps containing at least 18 litres of water each.

Hot work is a “high risk activity” under section 1(1) of the Wildfire Regulation and where there is a risk of a fire starting and spreading, a person should not perform hot work unless a fire watcher is present. Minimum fire watcher requirements are outlined in Column 2 of Schedule 3 of the Wildfire regulation.

**Part 5: Determination of Restrictions on High Risk Activities**

1. **Acquire Local Weather Data**

Acquiring local weather data to comply with the Wildfire Regulation is the responsibility of the person conducting the high risk activity and is considered a cost of doing business. With the exception of the Danger Class, WMB does not provide unrestricted access to the weather data from government fire weather stations.

Weather data must be acquired from a representative weather station, whether established by the operator or another party.

The WMB weather network was not designed explicitly to support industrial operations. If in doubt, a person should consult a forest professional or other qualified person in order to determine whether or not a particular station is applicable to the work site, or whether adjustments should be made when considering a number of potential differences and the significance of each, including:

- distance from the weather station;
- elevation;
- date of snowmelt;
- aspect, etc.
For due diligence, persons conducting high risk industrial operations may wish to document how a particular station is and continues to be representative.

2. **Weather Resources available:**


Weather station information is available on the WMB website that provides the latitude and longitude of each weather station and also includes a map of the province showing the location of each weather station. Go to Weather Station page.

Finally, if a person does not possess weather monitoring equipment, then:
- This equipment may be purchased; or
- Weather data information can be provided by WMB by subscription. Weather data and calculated Fire Weather Index values are available from this service. A BCeID will be required, [https://www.bceid.ca/](https://www.bceid.ca/). Please contact the nearest Fire Centre for more information.

3. **Determining the Restrictions on high risk activities**

Follow the steps on pages 24-28 below to determine the restrictions on high risk activities for your site:

A. Determine Fire Danger Region;
B. Determine Danger Class;
C. Follow the Applicable Restrictions on High Risk Activities
A. Determine Fire Danger Region

1. First determining the Danger Region from Schedule 1 noted below:

Schedule 1 - Danger Regions
B. Determine the Danger Class:

Identify the buildup index and fire weather index and cross reference these for the applicable Danger Region under schedule 2 to determine the Fire Danger Class.

**Schedule 2**

**Fire Danger Class**

**Danger Region 1**

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**Danger Region 3**

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</table>
C. Follow the Applicable Restrictions on High Risk Activities

**Schedule 3: Restrictions on High Risk Activities**

<table>
<thead>
<tr>
<th>Column 1 Fire Danger Class (DGR)</th>
<th>Column 2 Restriction</th>
<th>Column 3 Duration</th>
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</thead>
<tbody>
<tr>
<td>III (moderate)</td>
<td>After 3 consecutive days of DGR III or greater, maintain a fire watcher after work for a minimum of one hour</td>
<td>Until after the fire danger class falls below DGR III</td>
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<td>IV (high)</td>
<td>Maintain a fire watcher after work for a minimum of 2 hours</td>
<td>Until after the fire danger class falls below DGR III</td>
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<td>After 3 consecutive days of DGR IV, cease activity between 1 p.m. PDT (Pacific Daylight Saving Time) and sunset each day</td>
<td>Until after the fire danger class falls to DGR III for 2 or more consecutive days, or falls below DGR III</td>
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<td>V (extreme)</td>
<td>Cease activity between 1 p.m. PDT (Pacific Daylight Saving Time) and sunset each day and maintain a fire watcher after work for a minimum of 2 hours</td>
<td>Until after the fire danger class falls below DGR IV for 3 or more consecutive days, or falls below DGR IV</td>
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<tr>
<td></td>
<td>After 3 consecutive days of DGR V, cease activity all day</td>
<td>Until after the danger class falls below DGR V for 3 or more consecutive days, or falls below DGR IV</td>
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</table>
Part 6: Definitions

“Risk of a Fire Starting or Spreading” Fire risk can occur anytime that the area is snow free, however, more precise fire risk calculations can be defined as the fine fuel moisture code exceeding 75, the duff moisture code exceeding 6 or the drought code exceeding 15. As calculation of Fire Danger Class and determination of fire weather indices are not undertaken over the winter months, fire risk is only considered during the fire season March 1 to October 31.

“activity site” The site of the industrial activity is the location where the activity is taking place. It includes both stationary activities (i.e. milling, portable chipping and manufacturing) and mobile activities (i.e. mobile logging equipment).

For stationary activities, the site of the industrial activity would be the area in the immediate proximity of the site of the industrial activity.

For mobile sites, the site of the industrial activity would be assessed in terms of the specific location where the industrial activity is taking place, or where the industrial activity has recently taken place on a given day. It is not intended to be the potential area where the industrial activity could take place.

"fire extinguisher" means a fully charged and operable fire extinguisher bearing the Underwriters’ Laboratories of Canada label that rates the extinguisher as suitable for use on class A, B or C fires;

"fuel break" means
(a) a barrier or a change in fuel type or condition, or
(b) a strip of land that has been modified or cleared to prevent fire spread;

Note: the intention of the fuel break is so that it can act as a buffer to prevent the spread of fire beyond the fuel break.

"heavy equipment" means crawler tractors, skidders, excavators or other suitable mechanized firefighting equipment;

“hot work” means any work generating significant amounts of heat and includes the cutting, grinding, welding and heating of metals.

“large engine” means an engine having a power greater than 7.5 kw (10 hp) used in an industrial activity but does not include

(a) an engine on or in a watercraft that is in the water,
(b) an engine in or on a vehicle which is primarily used for the transportation of people, or
(c) an engine in an aircraft

“multiple activity site” means the location where several industrial activities are taking place. This could include stationary and / or mobile activities.

• For stationary industrial activities, the area is in the immediate proximity.
• For mobile industrial activities, the area is the specific location where the industrial activity is taking place or where the industrial activity took place that day.
• For the purpose of this guidance, the number of persons working at the multiple activity site is considered to be the sum of the number of persons normally working at each activity.
• It is acceptable to have a centrally located water delivery system at a multiple activity site, provided that all of the conditions are met as defined in the water delivery system section below.

“small engine” means an internal combustion engine having a power of 7.5 kw (10 hp) or less but does not include
   (a) an engine on or in a watercraft that is in the water,
   (b) an engine in or on a vehicle which is primarily used for the transportation of people, or
   (c) an engine in an aircraft
PROVINCE OF BRITISH COLUMBIA

ORDER OF THE LIEUTENANT GOVERNOR IN COUNCIL

Order in Council No. 193

Approved and Ordered MAY 26 2011

Executive Council Chambers, Victoria

Administrator

On the recommendation of the undersigned, the Honourable Steve Thomson, by and with the advice and consent of the Executive Council, orders that the Wildfire Regulation, B.C. Reg. 38/2005, is amended as set out in the attached Schedule.

Minister of Forests, Lands and Natural Resource Operations
Steve Thomson

Presiding Member of the Executive Council

Authority under which Order is made:

Wildfire Act, S.B.C. 2004, c. 31, s. 72 (2) (f) and (g)

Other: GIC 94/2005

May 11, 2011
SCHEDULE

1 Section 1 (1) of the Wildfire Regulation, B.C. Reg. 38/2005, is amended

(a) in the definition of “fire suppression system” by striking out “and includes a water delivery system;” and substituting “and may include a water delivery system;”, and

(b) by adding the following definition:

“qualified holder” means a person, other than the government,

(a) who is a party to a cost sharing agreement or service agreement, as defined in section 28 of this regulation, or

(b) who

(i) is the holder of an agreement or licence referred to in section 12 (1) (a), (c), (d), (e) and (g) and (2) (a) of the Forest Act, and

(ii) is not in arrears under the Annual Rent Regulation for the annual rent payable respecting the agreement or licence;

2 Section 13 is amended

(a) in subsections (2) and (3) by striking out “The prescribed intervals,” and substituting “Subject to subsection (3.1) of this section, the prescribed intervals,”, and

(b) by adding the following subsection:

(3.1) The prescribed intervals, at which a person described in section 7 (1) of the Act who is a qualified holder must conduct fire hazard assessments, are the intervals

(a) set out in subsection (2) or (3) of this section, as applicable, or

(b) specified by a professional forester or a registered forest technologist.

3 Section 12 is amended

(a) in subsection (1) by striking out “the persons are aware,” and substituting “the persons are aware or ought reasonably to be aware;”, and

(b) by adding the following subsection:

(3) This section does not apply to a person who is a qualified holder.

4 The following section is added to Division 2 of Part 2:

Hazard statement: qualified holders

12.1 (1) In this section, “abatement area” means each area within which the industrial activity or prescribed activity takes place in each consecutive 12 month period that occurs after the date the activity begins.

(2) The following periods are prescribed as the periods in which a person described in section 7 (2) of the Act who is a qualified holder must abate fire hazards of which the person is aware or ought reasonably to be aware:
(a) for each abatement area within an area described in section 11 (2) (a) of this regulation, a period of 24 months, beginning on the date the industrial activity or prescribed activity begins in the abatement area.

(b) for each abatement area within an area other than an area described in section 11 (2) (a) of this regulation,

(i) a period of 30 months, beginning on the date the industrial activity or prescribed activity begins in the abatement area, or

(ii) the period specified by a professional forester or registered forest technologist under the Foresters Act.

(3) A person required to abate a fire hazard under section 7 (2) of the Act who is a qualified holder must reduce the fuel hazard on the site of the industrial activity or prescribed activity

(a) as necessary to ensure that carrying out the activity

(i) does not increase the risk of a fire starting on the site, and

(ii) if a fire were to start, would not increase the fire behavior or fire suppression associated with the fire, or

(b) as specified by a professional forester or registered forest technologist under the Foresters Act.
The Ministry of Forests and Range, Wildfire Management Branch operates approximately 260 hourly weather stations, listed below. These hourly weather observations, supplemented by data from other agency stations, also listed, are used to support fire weather forecasting and the Canadian Forest Fire Danger Rating System (CFFDRS). The computer-based CFFDRS is the primary fire management decision aid in Canada. With it, fire managers can assess the potential for ignition, spread and burning intensity. This information is used for making fire prevention, preparedness and suppression decisions, as well as other general fire management decisions.

Southeast Fire Centre [Map](http://bcwildfire.ca/Weather/stations.htm)

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<td>WHITE RIVER</td>
<td>50 11 06</td>
<td>115 15 58</td>
<td>1357</td>
<td>1989</td>
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</tbody>
</table>

Updated 8 August 2016
Suggestions for being diligent about fire preparedness:

General

Consider developing standard operating procedures and checklists. These clearly communicate a licensee’s expectations around fire preparedness, and provide a record of inspections. Regular on-site monitoring further helps to demonstrate that a licensee has taken reasonable steps to ensure that its contractors or crews are taking reasonable steps to prevent fires.

Contact details

Provide 24-hour contact information to the fire centre before March 31 each year. Information about active operating areas and what equipment is on site is also useful to the fire centre.

Sufficient fire tools

Attach hand tools directly to machines and equip pick-ups with a shovel, Pulaski and a full and functional hand tank pump to ensure that there will always be enough tools for each worker even if individual tools are lost or broken.

Selecting a representative weather station

When determining whether or not a weather station is representative of a work site, consider slope, aspect, elevation (is the station at a similar or lower elevation than the work site), date of snow melt, distance from the weather station and topographical considerations (e.g., is the work site sheltered or subject to high winds?). The wildfire guidelines committee further suggests considering stand conditions, forest health, fuel type and fuel loading. If accessible, also consider the weather station maps previously available from the government. Selecting a number of nearby weather stations and averaging the danger classes is not recommended.

Document the reasons for selecting the representative weather station.
Operating in accordance with danger class restrictions

Operating according to the danger class restrictions is the law, but it should be viewed as a minimum requirement. Consider modifying activities as the danger class increases, for example:

- move to early shift before it is legally required;
- avoid tracked or chained equipment on rocky ground in high and extreme danger class; and
- avoid conducting high-risk activities when only one worker is present, when the danger class is very high or extreme.

Adequate suppression system

Before work begins, consider the size and topography of the work site to ensure that the suppression system can provide water to any part of the block should hand tools and fire extinguishers become ineffective. Identify on-site water sources and make sure everyone knows where they are.

Conduct a pre-work meeting to check fire preparedness, with weekly checks afterwards. Test equipment, including starting up the pump(s) and ensuring that parts are compatible and in good repair. Hold regular fire-suppression drills to test response time. Document these activities.

Consider having more than one water source on site, placed so as to be near different activities. Move the water around the site to keep it closest to the highest-risk activity.

Maintaining a fire watch

A fire watch must actively patrol the work site and be able to see the area where work took place. Performing other duties, such as maintaining a machine or processing wood while on fire watch does not satisfy the legal requirements for a fire watch. Ensure that the fire watch has the ability to call for help.

Document the fire watch start and finish times, areas patrolled, and the weather conditions.

Engines

Ensure all equipment has a spark arrestor, that the exhaust system and muffler are in good repair and that the machine is operating within manufacturer’s specifications. Clean machines daily to remove needles, branches and other debris so as to reduce the risk of a fire.
Board Bulletin, Volume 18
Fire Hazard Assessment

July 2016

Introduction

Logging and most other industrial activities on forested land can create or contribute to an existing fire hazard. In British Columbia, the Wildfire Act requires a person carrying out an industrial activity such as logging to assess and abate fire hazards.

A fire hazard assessment considers the risk of a fire starting, the hazard associated with the industrial activity, the difficulty in controlling a fire and the potential threat to values. A fire hazard assessment must also include an assessment of the fuel hazard, which is the potential behavior of a fire based on the arrangement, condition and amount of forest fuels such as branches, leaves and stems.

Why is fire hazard assessment important?

Assessing fire hazard is the law and therefore it must be done. But fire hazard assessment is also a critical step in demonstrating due diligence. Due diligence means taking all reasonable steps to comply with the law. Section 29 of the Wildfire Act states that a person may not be found to have contravened the Act if they can demonstrate due diligence. If a fire were to start on a cutblock and a licensee cannot demonstrate that it has assessed the fire hazard and abated any hazards identified, a contravention could prove difficult to defend.

For example, in 2012 a licensee in northwest BC chose not to assess or abate the fire hazard on its cutblocks. An arsonist started a fire that eventually burned two hectares. In 2014 the fire centre manager determined that "It is critical that persons conduct hazard assessments in a timely manner and abate known hazards before they can start or contribute to the spread of a wildfire." He levied a $9500 penalty because the licensee did not comply with the fire hazard assessment and abatement requirements of the Wildfire Act.

Recent Board Audit Findings

As fire hazard assessments are legally required, Board auditors routinely ask to see them when they conduct compliance audits. In the past three years, Board audits found 16 licensees of all sizes that did not complete fire hazard assessments as required by the Wildfire Act.

Fourteen of the licensees abated the fire hazard by piling and burning slash as a standard practice. Even though the fire hazard was abated, the Board concluded that these licensees needed to improve their assessment practices to ensure they comply with the Wildfire Act. The remaining two licensees neither assessed nor abated the fire hazard and the Board concluded that they did not comply with the Wildfire Act.
Fire Hazard Assessment FAQs

When is a fire hazard assessment required?

A fire hazard assessment is required when carrying out an industrial activity such as land clearing or other prescribed activity\(^1\) that is likely to create or increase a fire hazard within one kilometre of forest or grassland (Wildfire Act s.7), or when an official notifies a person carrying out an industrial activity that a fire hazard exists (Wildfire Regulation 11(1)(b)(ii)).

How often must fire hazard be assessed?

**Every 3 months** if the activity is inside or within two kilometres of a local government area or a regional district fire protection district (Wildfire Regulation 11(2)(a)).

**Every 6 months** for all other areas (Wildfire Regulation 11(3)).

If operations are going to be inactive for more than 3 or 6 months as applicable, a fire hazard assessment must be done at shutdown. "Qualified Holders\(^2\) may vary from these requirements if specified by a forest professional (Wildfire Regulation 11(3.1)).

What is required in a fire hazard assessment?

Fire hazard assessments must include an assessment of the fuel hazard and its associated risk of a fire starting or spreading (Wildfire Regulation 11(4)). Fuel hazard is the potential behavior of a fire based on the arrangement, condition and amount of forest fuels.

Where can I get information about fire hazard assessment?

The BC Wildfire Service’s “**Guide to Fuel Hazard Assessment and Abatement in British Columbia**” is available on their website and is being updated in 2016.

Fire hazard assessment is one aspect of the practice of professional forestry, and the Association of BC Forest Professionals has provided guidance to its members. Guidelines for Fire and Fuel Management are available to members through its website www.abcfp.ca

Links to the Wildfire Act and Wildfire Regulation are available at http://bcwildfire.ca/LegReg/

What do Board auditors look for?

Auditors confirm that fire hazard assessments have been completed and documented when and where required. Auditors review assessments to ensure that they include an assessment of the fuel hazard and its associated risk of a fire starting or spreading.

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\(^1\) Section 11(1) of the Wildfire Regulation defines prescribed activities as operating a waste disposal site, dry land sort, a camp associated with an industrial activity, or an industrial activity that is likely to create or increase a fire hazard.

\(^2\) A qualified holder is either: a party to a cost sharing agreement; or the holder of a forest licence, timber licence, tree farm licence, community forest agreement, woodlot licence or timber sale licence who has paid its annual rent.
**INDUSTRIAL & RESOURCE MANAGEMENT BURNING**

**A Guide to Category 3 and Resource Management Open Fires**

In British Columbia, the Wildfire Act and regulation specify your legal obligations when using fire in, or within, one kilometre of forest land or grassland. A Category 3 open fire is defined as a fire that burns:

- material at the same time in three or more piles each not exceeding 2 metres in height and 3 metres in width; or
- material in one or more piles each exceeding 2 metres in height or 3 metres in width; or
- one or more windrows; or
- stubble or grass over an area exceeding 0.2 hectares (more than 2,000 square metres).

Persons may light or make use of this type of open fire if:

- There are no other restrictions in place for doing so;
- Doing so is, and will continue to be, safe;
- The person obtains a burn registration number for the fire;
- The person takes all necessary precautions to ensure the fire is contained in the burn area;
- A fuel break (sometimes called a fire break—a change in fuel type or condition, typically a strip of land cleared to mineral soil to reduce the likelihood of the fire spreading) is established around:
  - the burn area; or
  - each debris pile or windrow;
- While the fire is burning and there is risk of escape, the person
  - maintains the fuel break;
  - has an adequate fire suppression system available at the burn area;
  - ensures the fire is watched and patrolled by a person equipped with at least one fire fighting hand tool in order to prevent the fire from escaping;
- A fuel break (sometimes called a fire break—a change in fuel type or condition, typically a strip of land cleared to mineral soil to reduce the likelihood of the fire spreading) is established around:
  - the burn area; or
  - each debris pile or windrow;
- While the fire is burning and there is risk of escape, the person
  - maintains the fuel break;
  - has an adequate fire suppression system available at the burn area;
  - ensures the fire is watched and patrolled by a person equipped with at least one fire fighting hand tool in order to prevent the fire from escaping;

- ensures fire does not exceed the capacity of the persons, fire fighting tools and heavy equipment on site for timely action to prevent any fire from escaping, and
- The person carries out fire control, and extinguishes the fire if practicable, if the fire spreads beyond the burn area. The person must also report the fire.

- two pieces of heavy equipment, two fire suppression systems and 11 workers each equipped with at least one fire fighting hand tool; and
- all workers, fire suppression systems, heavy equipment and fire fighting hand tools within 30 km by road if on Crown land or all resources working on the land if on land other than Crown land.

Anyone who lights, fuels or makes use of a Category 3 open fire **must** comply with the Environmental Management Act and Open Burning Smoke Control Regulation (OBSCR). The Regulation requires individuals to check local venting conditions prior to ignition and to ensure that no air quality burning bans are in place. Burning anything other than clean woody debris requires a permit or approval from the Ministry of Environment. The OBSCR also contains clauses on setback distances and smoke release periods. For more information, see www.bcairquality.ca/regulatory/index.html or call your local Ministry of Environment office.

For details regarding Resource Management Open Fires, please see reverse.
About the Wildfire Act

The Wildfire Act specifies your legal obligations when using fire for campfires, backyard burning, industrial/agricultural burning and resource management purposes. It reflects a new approach to wildfire prevention and control in British Columbia that puts the onus on those persons using open fire to ensure their activities do not lead to wildfires.

Contravention of the Wildfire Act is an offense. A person who contravenes the Wildfire Act may be liable for an administrative penalty, a fine upon conviction, and/or fire fighting and rehabilitation costs as specified in the Wildfire Act.

Where the Act applies

The Wildfire Act applies on both public (Crown) and private land throughout B.C. Check with your local fire department, municipality, improvement district or regional district to determine if there are local bylaws that pertain to open fires. If there are local bylaws in place, these agencies will provide further information.
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 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.

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<thead>
<tr>
<th>Table</th>
<th>Contents</th>
<th>Page #</th>
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<td>1</td>
<td>Small Fuel Containers &lt;230 L Includes drums, pails and canisters typically used to transport, store and dispense small quantities of fuel, oil, solvents and antifreeze</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Small Mobile (Truck Box) Tanks &lt;450L Ancillary tank located in the box of a pickup truck used to transport, store and dispense fuel</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Large Mobile Tanks &gt;450 L to 3000L Ancillary tank typically located in the box of a pickup truck used to transport, store and dispense fuel</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Highway Tanks &amp; TC Portable Tanks, Generally &gt;3000L Used to transport fuel. Sometimes used to store and dispense fuel.</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Large Stationary Skid Tanks &gt;3000L Used to store and dispense fuel, rarely used to transport fuel</td>
<td>6</td>
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<tr>
<td>6</td>
<td>Definition of Terms In an effort to keep this document short and to the point, some terms and clauses were used that may require further explanation or interpretation. The Definition of Terms is also used to provide examples. Transport Canada contact information</td>
<td>7 to 9</td>
</tr>
<tr>
<td>7</td>
<td>Spill Kit Requirements This section outlines minimum spill kit content requirements for BCTS clients</td>
<td>10</td>
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TABLE #1 SMALL FUEL CONTAINERS (Volumes <230L) Drums, Jerry Cans, Pails, Canisters

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CONDITION, DESIGN &amp; MAINTENANCE</th>
<th>STORING &amp; SECURING</th>
<th>DISPENSING</th>
<th>TRANSPORT (see column 2 for securing details)</th>
<th>PREVENTION &amp; RESPONSE</th>
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<tbody>
<tr>
<td></td>
<td><strong>LEGAL REQUIREMENT</strong></td>
<td></td>
<td><strong>BCTS REQUIREMENT</strong></td>
<td><strong>INFORMATION</strong></td>
<td><strong>SMALL FUEL CONTAINERS</strong></td>
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<tr>
<td></td>
<td>■ Must be filled and capped so that under normal conditions there will be no leakage that would endanger public or worker safety</td>
<td>□ Do not store small containers in Riparian Management areas or Marine Environments wherever practicable</td>
<td>■ Drums must be properly arranged by:</td>
<td>■ Take reasonable measures to prevent leaks &amp; spills</td>
<td>☑ Where dispensing fuel in higher risk areas consider utilizing additional Spill Control and Prevention Measures (see Table #6).</td>
</tr>
<tr>
<td></td>
<td>□ Containers must be in good condition – not damaged, rusting or leaking.</td>
<td>□ Do not smoke where fuel is stored or dispensed</td>
<td>□ Do not dispense fuel in Riparian Management areas or Marine Environments wherever practicable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>CONSTRUCTION STANDARD</strong></td>
<td>□ Containers must be specifically designed for the product.</td>
<td>□ Dispense all flammable and combustible substances only from drums in an upright position</td>
<td></td>
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<tr>
<td></td>
<td>☑ Containers less than 30 liters are exempt from TDG requirements but are still governed under WHMIS.</td>
<td></td>
<td>□ Do not fill containers beyond their safe filling level (approximate safe level – 90%)</td>
<td></td>
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</tr>
<tr>
<td></td>
<td><strong>INspeCTION</strong></td>
<td>□ WHMIS labeling or appropriate Product Identification is required when storing hazardous products</td>
<td>□ Store the hose above the pump (and drum) to avoid siphoning.</td>
<td></td>
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<tr>
<td></td>
<td>☑ Licensees/ Contractors must self inspect containers on a regular basis, (plastic containers usually every 5 years), and replace fatigued containers immediately and document.</td>
<td></td>
<td>□ Maintain current Safety Data Sheets (SDS) in a location available to worker</td>
<td></td>
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</tr>
<tr>
<td></td>
<td><strong>SNUCING</strong></td>
<td>□ As per manufactures recommendations, containers must be secured to prevent shifting, swaying, damage or escape from the vehicle</td>
<td>□ Do not dispense fuel in Riparian Management areas or Marine Environments wherever practicable.</td>
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<td></td>
<td></td>
<td>□ Tie down straps must have safe combined working load ratings greater than the secured load.</td>
<td>□ Do not fill containers beyond their safe filling level (approximate safe level – 90%)</td>
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<td></td>
<td><strong>LABELING</strong></td>
<td>□ Any container over 30 liters must have appropriate safety marks:</td>
<td>□ Do not fill containers beyond their safe filling level (approximate safe level – 90%)</td>
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<td></td>
<td></td>
<td>• Label or Placard as required,</td>
<td>□ Maintain current Safety Data Sheets (SDS) in a location available to worker</td>
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<td></td>
<td></td>
<td>• UN number and</td>
<td>□ Do not dispense fuel in Riparian Management areas or Marine Environments wherever practicable.</td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td>• Shipping Name</td>
<td>□ Dispense all flammable and combustible substances only from drums in an upright position</td>
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<td></td>
</tr>
<tr>
<td></td>
<td><strong>SECURING</strong></td>
<td>□ TDG safety marks on the outside of an enclosed unit must be visible if containers are stored within an enclosed unit.</td>
<td>□ Do not fill containers beyond their safe filling level (approximate safe level – 90%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• WHMIS labeling or appropriate Product Identification is required when storing hazardous products</td>
<td>□ Store the hose above the pump (and drum) to avoid siphoning.</td>
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<tr>
<td></td>
<td></td>
<td>□ DRUMS transport are exempt from TDG Regs Parts 2, 3, 4 &amp; 7 provided:</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Drum residue &lt;10%</td>
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<td></td>
<td></td>
<td>• If more than 10 drums then DANGER Placards are required on all four sides</td>
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<td></td>
<td></td>
<td>• Document the primary class, 'residue drums', and number of drums</td>
<td></td>
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</tbody>
</table>

April 1, 2016
**BC Timber Sales**

**Environmental Management System**

**ENVIRONMENTAL FIELD PROCEDURE**

**EFP 06 FUEL HANDLING**

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**Legend**

- **R** BCTS Requirement
- **n** Information
- **+** Legal Requirement

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

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CONDITION, DESIGN &amp; MAINTENANCE</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>STORING &amp; SECURING</td>
</tr>
<tr>
<td></td>
<td>DISPENSING</td>
</tr>
</tbody>
</table>

**STORING & SECURING**

- Must be filled and capped so that under normal conditions there will be no leakage.
- Containers must be in good condition - not damaged, rusting, or leaking.
- As per manufacturers’ specifications, tanks must be appropriately secured to prevent shifting, swaying, damage, or escape from the vehicle.
- Tie down straps must have safe working load ratings greater than the secured load.
- Operator must have a valid certificate.
- TDG safety marks must be visible on the tank or any enclosed storage unit.
- Maintained visible safety marks: UN number and shipping name.
- Maintain and self-inspect every 5 years.
- Gasoline: Spec tanks may include: UN Standard BC U4A and UN Standard UN186 BC Portable Tanks as per UO, CAN/CGSB 43.412 (2002) and UO, CAN/CGSB 43.413 (2002).
- Diesel: A spec or non-spec tank may be used. The tank capacity (GAL) or L must be less than 2000 liters, the tank is not actuated or tampered with.
- Take reasonable measures to prevent leaks & spills.
- Codes valves when finished dispensing fuel.
- Do not dispense fuel in riparian areas.

**DISPENSING**

- Use dispensing pumps designed for Class 3 products (diesel or gasoline) to prevent leaks & spills.
- Use dispensing pumps designed for Class 3 products (diesel or gasoline) to prevent leaks & spills.
- Use an appropriate hose and nozzle at all times while dispensing gasoline.
- Nozzles must be secured to prevent damage.
- As per manufacturers’ recommendations, tanks must be appropriately secured to prevent shifting, swaying, damage or escape from the vehicle.
- Tie down straps must have a safe working load rating greater than the secured load.
- Take reasonable measures to prevent leaks & spills.
- Maintain and self-inspect every 5 years.
- The operator must have a TDG training and possess a valid certificate.
- Tank capacity (GAL) or L must be less than 2000 liters, the tank is not actuated or tampered with.
- Take reasonable measures to prevent leaks & spills.

**Legend**

- **R** BCTS Requirement
- **n** Information
- **+** Legal Requirement

**PREVENTION & RESPONSE**

- Where dispensing fuel in riparian areas, operators must have a valid certificate.
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- As per manufacturers’ recommendations, tanks must be appropriately secured to prevent shifting, swaying, damage or escape from the vehicle.
- Tie down straps must have a safe working load rating greater than the secured load.
- Take reasonable measures to prevent leaks & spills.
- Maintain and self-inspect every 5 years.
- Gasoline: Spec tanks may include: UN Standard BC U4A and UN Standard UN186 BC Portable Tanks as per UO, CAN/CGSB 43.412 (2002) and UO, CAN/CGSB 43.413 (2002).
- Diesel: A spec or non-spec tank may be used. The tank capacity (GAL) or L must be less than 2000 liters, the tank is not actuated or tampered with.
- Take reasonable measures to prevent leaks & spills.
- Codes valves when finished dispensing fuel.
- Do not dispense fuel in riparian areas.

---

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

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CONDITION, DESIGN &amp; MAINTENANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>STORING &amp; SECURING</td>
</tr>
<tr>
<td></td>
<td>DISPENSING</td>
</tr>
</tbody>
</table>

**STORING & SECURING**

- Must be filled and capped so that under normal conditions there will be no leakage.
- Containers must be in good condition - not damaged, rusting, or leaking.
- As per manufacturers’ specifications, tanks must be appropriately secured to prevent shifting, swaying, damage, or escape from the vehicle.
- Tie down straps must have a safe working load rating greater than the secured load.
- Operator must have a valid certificate.
- TDG safety marks must be visible on the tank or any enclosed storage unit.
- Maintained visible safety marks: UN number and shipping name.
- Maintain and self-inspect every 5 years.
- Gasoline: Spec tanks may include: UN Standard BC U4A and UN Standard UN186 BC Portable Tanks as per UO, CAN/CGSB 43.412 (2002) and UO, CAN/CGSB 43.413 (2002).
- Diesel: A spec or non-spec tank may be used. The tank capacity (GAL) or L must be less than 2000 liters, the tank is not actuated or tampered with.
- Take reasonable measures to prevent leaks & spills.
- Codes valves when finished dispensing fuel.
- Do not dispense fuel in riparian areas.

**DISPENSING**

- Use dispensing pumps designed for Class 3 products (diesel or gasoline) to prevent leaks & spills.
- Use dispensing pumps designed for Class 3 products (diesel or gasoline) to prevent leaks & spills.
- Use an appropriate hose and nozzle at all times while dispensing gasoline.
- Nozzles must be secured to prevent damage.
- As per manufacturers’ recommendations, tanks must be appropriately secured to prevent shifting, swaying, damage or escape from the vehicle.
- Tie down straps must have a safe working load rating greater than the secured load.
- Take reasonable measures to prevent leaks & spills.
- Maintain and self-inspect every 5 years.
- Gasoline: Spec tanks may include: UN Standard BC U4A and UN Standard UN186 BC Portable Tanks as per UO, CAN/CGSB 43.412 (2002) and UO, CAN/CGSB 43.413 (2002).
- Diesel: A spec or non-spec tank may be used. The tank capacity (GAL) or L must be less than 2000 liters, the tank is not actuated or tampered with.
- Take reasonable measures to prevent leaks & spills.
- Codes valves when finished dispensing fuel.
- Do not dispense fuel in riparian areas.
# Environmental Field Procedure: EFP 06 Fuel Handling

## Table 3: Large Mobile Tanks (Volumes: >450L – 3000L)

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CONDITION, DESIGN, &amp; MAINTENANCE</th>
<th>STORING AND SECURING</th>
<th>DISPENSING</th>
<th>TRANSPORT (see column 2 for securing details)</th>
<th>PREVENTION &amp; RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Must be filled and capped so that under normal conditions there will be no leakage that would endanger public or worker safety</td>
<td>Use a pressure relief cap that meets manufacturers design specifications</td>
<td>Use an appropriate hose and nozzle (in accordance with ULC Standards) for dispensing fuel</td>
<td>If multiple tanks of Class 3 product (diesel or gasoline) are carried on the vehicle and the combined capacity exceeds 2000 liters, the following conditions apply:</td>
<td>Take reasonable measures to prevent leaks &amp; spills</td>
</tr>
<tr>
<td></td>
<td>Containers must be in good condition – not damaged, rusting, or leaking</td>
<td>Do not leave vehicles carrying auxiliary fuel in riparian management areas or marine environments wherever practicable.</td>
<td>Use dispensing pumps designed for the products being handled.</td>
<td>• A shipping document must be completed for the goods hauled</td>
<td>Where dispensing fuel in higher risk areas consider utilizing additional Spill Control and Prevention Measures (see Table #6).</td>
</tr>
<tr>
<td></td>
<td>Construction Standard</td>
<td>Do not smoke where fuel is stored or dispensed</td>
<td>Make sure there is suitable bonding (i.e. wire lined hose) to prevent static charges when dispensing gasoline</td>
<td>• The operator must have a TDG training and possess a certificate</td>
<td>Where tanks are stored on the ground, collision protection is required. (see Table #6).</td>
</tr>
<tr>
<td></td>
<td>■ All Tanks: used to transport fuel (regardless of volume) must be designed, and constructed to a mobile tank standard and display a spec plate.</td>
<td>Securing</td>
<td>Maintain current SDS in a location available to workers</td>
<td>• The load must be placarded on all visible sides.</td>
<td>Fire Control and Response</td>
</tr>
</tbody>
</table>
|      | ■ Spec Tanks: used for diesel and gasoline may have one of the following specifications: | ■ As per manufactures recommendations, tanks must be appropriately-secured to prevent shifting, swaying, damage or escape from the vehicle or trailer | Hoses and nozzles must be maintained and not leak | • If large mobile tanks are transported on a trailer, the trailer must be Motor Vehicle Requirements, (GVW, brakes, lights and axels etc.). | Maintain and self-inspect one suitable B:C-rated fire extinguisher ensuring its:
|      | ■ UN Standard B C UN 31A and UN31B IBC Portable Tanks as per CAN/CGSB 43.146 (2002) | ■ Tie down straps must have safe combined working load ratings greater than the secured load to ensure the tank is integrally mounted | Do not disperse fuel in riparian management areas or marine environments wherever practicable. | • Safety Labeling & Spec Plates | • not actuated or tampered with |
|      | ■ ULC/ORD 142.13 | ■ Maintain current SDS in a location available to workers | Operators must stay with the nozzle at all times while dispensing fuel | ■ Maintain visible safety marks: | • shows no obvious physical damage, (i.e. corrosion, leakage, or clogged nozzle) to prevent its operation |
|      | ■ Non-Spec Tanks may no longer be used. Any tank without a spec plate is non-spec. | ■ Do not smoke where fuel is stored or dispensed | Nozzles must be secured in drip containment after use or in an upright position so that it’s above the tank. | ■ Label or placard, (placard if exceeding 500 kg) | • pressure gauge reading or indicator is in operable range |
|      | Inspections | ■ Do not smoke where fuel is stored or dispensed | Keep fuel and equipment on level ground | • UN number and Shipping name | • safety seal or pin in place; |
|      | ■ 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. | ■ Close valves when finished dispensing | ■ TDG Placards must be visible | ■ Spec plates, decals or associated documentation – (ensuring paperwork is linked to the specific tank) must identify the following: | • product id/WHMIS label in place |
|      | ■ Licenses/ Contractors must self inspect tanks on a regular basis, and replace fatigued tanks immediately and document. | ■ Store hose in a safe manner to prevent damage and leaks (i.e. coiled on top of tank) | ■ TDG Placards must be visible | • Container Type & Standard | • located in appropriate location, and |
|      |      | ■ Do not fill tanks beyond their safe filling level (approximate safe level – 90%) | ■ One suitable B:C-rated fire extinguisher shows no obvious physical damage, (i.e. corrosion, leakage, or clogged nozzle) to prevent its operation | ■ Manufacturer and Date | • document self-inspections |

## Legal Requirement

- A shipping document must be completed 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 be Motor Vehicle Requirements, (GVW, brakes, lights and axels etc.).
- 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

## BCTS Requirement

- Where dispensing 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 its:
  - 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

## Information

- WHMIS labeling or appropriate Product Identification is required when storing hazardous products.
## TABLE #4 HIGHWAY & TC PORTABLE TANKS
(Fuel Trucks & Pup-Trailers with Volumes > 3000L)

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CONDITION, DESIGN &amp; MAINTENANCE</th>
<th>STORING AND SECURING</th>
<th>DISPENSING</th>
<th>TRANSPORT (see column 2 for securing details)</th>
<th>PREVENTION &amp; RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Legal Requirement</strong></td>
<td><strong>BCTS Requirement</strong></td>
<td><strong>Information</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Construction Standard" /></td>
<td><img src="image" alt="Securing" /></td>
<td><img src="image" alt="Dispensing" /></td>
<td><img src="image" alt="Transport" /></td>
<td><img src="image" alt="Prevention" /></td>
</tr>
<tr>
<td><img src="image" alt="Must be filled and capped so that under normal conditions there will be no leakage that would endanger public or worker safety" /></td>
<td><img src="image" alt="Use a pressure relief hatch that meets manufacturers design specifications" /></td>
<td><img src="image" alt="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 &amp; Documentation)" /></td>
<td><img src="image" alt="Take reasonable measures to prevent leaks &amp; spills" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Construction Standard" /></td>
<td><img src="image" alt="Do not leave fuel truck or pup trailer in riparian management areas or marine environments wherever practicable." /></td>
<td><img src="image" alt="When the total capacity of a fuel tank exceeds 2000 liters, the shipper/driver is required to:" /></td>
<td><img src="image" alt="Where dispensing fuel in higher risk areas consider utilizing additional Spill Control and Prevention Measures (see Table #6)." /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Fuel Trucks must meet the following:" /></td>
<td><img src="image" alt="Do not smoke where fuel is stored or dispensed" /></td>
<td><img src="image" alt="Complete a shipping document for the goods hauled or residue last contained" /></td>
<td><img src="image" alt="Fire Control and Response" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Non-Spec Tanks may no longer be used. Any tank without a spec plate is non-spec." /></td>
<td><img src="image" alt="Dispensing gasoline fuel directly from a fuel truck into the equipment is NOT permitted." /></td>
<td><img src="image" alt="Maintain a valid TDG training certificate" /></td>
<td><img src="image" alt="Maintain and self-inspect one suitable B:C-rated fire extinguisher ensuring it’s:" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Inspections" /></td>
<td><img src="image" alt="Close valves when finished dispensing" /></td>
<td><img src="image" alt="Placard the load on all four sides" /></td>
<td><img src="image" alt="• not actuated or tampered with" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="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." /></td>
<td><img src="image" alt="Operators must stay with the nozzle at all times while dispensing fuel" /></td>
<td><img src="image" alt="Non-Spec tanks may no longer be used." /></td>
<td><img src="image" alt="• shows no obvious physical damage, (i.e. corrosion, leakage, or clogged nozzle) to prevent its operation" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Licensees/Contractors must self-inspect tanks on a regular basis, and replace fatigued tanks immediately and document." /></td>
<td><img src="image" alt="Store hose in a safe manner to prevent damage and leaks (i.e. coiled on top of tank)" /></td>
<td><img src="image" alt="TDG Placards must be visible on all four sides" /></td>
<td><img src="image" alt="• pressure gauge reading or indicator is in operable range" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Tanks must be in good condition—not damaged, rusting or leaking" /></td>
<td><img src="image" alt="Do not fill containers beyond their safe filling level (approximate safe level – 90%)" /></td>
<td><img src="image" alt="Spec plates, decals or associated documentation (ensuring paperwork is linked to the specific tank) must identify the following:" /></td>
<td><img src="image" alt="• safety seal or pin in place" /></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend: **□** Legal Requirement, **☑** BCTS Requirement, **□** Information
TABLE #5  LARGE STATIONARY SKID TANKS (Generally Volumes > than 3000L)

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CONDITION, DESIGN &amp; MAINTENANCE</th>
<th>STORING AND SECURING</th>
<th>DISPENSING</th>
<th>TRANSPORT (see column 2 for securing details)</th>
<th>PREVENTION &amp; RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spec Tanks:</td>
<td>used for diesel or gas and will generally have one of the following markings:</td>
<td>Use a pressure relief cap that meets manufacturers design specifications</td>
<td>Use dispensing pumps designed for the products being handled</td>
<td>When moving a skid tank (with or without fuel) having a total capacity of diesel greater than 2000 liters you must follow TDG Regulations</td>
<td>Take reasonable measures to prevent leaks &amp; spills</td>
</tr>
<tr>
<td>ULC-S601 AST Horizontal Tanks</td>
<td>Store nozzle &amp; hose in a safe manner to prevent damage and leaks (i.e. on a retractor, hose reel or coiled)</td>
<td>Use an appropriate hose and nozzle (in accordance with ULC standards) for dispensing fuel</td>
<td>Complete a shipping document for the goods hauled or remaining in the tank</td>
<td>Where dispensing fuel in higher risk areas consider utilizing additional Spill Control and Prevention Measures (see Table #6)</td>
<td></td>
</tr>
<tr>
<td>ULC-S633 AST Steel Tanks</td>
<td>Do not place stationary skid tanks in riparian management areas or marine environments, unless no other area is practicable.</td>
<td>Make sure there is suitable bonding to prevent static charges when dispensing gasoline</td>
<td>Maintain a valid TDG training certificate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ULC-S602 AST Steel Tanks</td>
<td>Do not smoke where fuel is stored or dispensed</td>
<td>Maintain current SDS in a location available to workers</td>
<td>Ensure that all conditions of the Equivalent Level of Safety Permit are met (see Table #6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAN-ULC-S643-M</td>
<td>Spec Tanks:</td>
<td>Securing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ULC-C142.18 Rectangular Steel Tank</td>
<td>As per manufacturers recommendations, tanks must be appropriately secured to the skid to prevent shifting, swaying, damage or escape and</td>
<td>Store nozzle &amp; 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)</td>
<td>Operators must stay with the nozzle at all times while dispensing fuel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ULC-C142.17 Vertical Steel Tank</td>
<td>Tanks must be mounted to a fire-resistant cradle and skid</td>
<td>Store nozzle &amp; 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)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Spec Tanks:</td>
<td>All non-spec tanks must be taken out of operation. Any tank without a spec label is non-spec.</td>
<td>Securing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>All tanks must be designed, constructed to a design standard specification and must bear a visible and legible specification plate to that standard.</td>
<td>As per manufactures recommendations, tanks must be appropriately secured to the skid to prevent shifting, swaying, damage or escape and</td>
<td>Store nozzle &amp; 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)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stationary Tanks are not designed as mobile tanks. Prior to moving, the tank usually a ULCS-601 spec tank must be emptied to the maximum extent in accordance with the Equivalent Level of Safety Permit (see Table #6 for details).</td>
<td></td>
<td>Close valves when finished dispensing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tanks must be in good condition – not damaged, rusting, or leaking.</td>
<td>Inspections</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Licensees/Contractors must inspect tanks on a regular basis, and replace fatigued tanks immediately and document.</td>
<td></td>
<td>Do not fill tanks beyond their safe filling level (approximate safe level = 90%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legend</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Legal Requirement</td>
<td>BCTS Requirement</td>
<td>Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large Stationary Skid Tanks (Volume &gt; 3000L)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

April 1, 2016
Table #6 Definition of Terms

<table>
<thead>
<tr>
<th>Additional Spill Control Prevention</th>
<th>Re-assess the environmental risk and implement additional control measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Review the BCTS Fuel Handling Environmental Field Procedure 06 to ensure procedures address the risk factors</td>
</tr>
<tr>
<td></td>
<td>Review Spill Response awareness and preparedness, conduct a spill drill and increase monitoring of dispensing area locations</td>
</tr>
<tr>
<td></td>
<td>Enhance minimum Spill Kit requirements as outlined in Table #7</td>
</tr>
<tr>
<td></td>
<td>Move the fuel storage to a lower risk location</td>
</tr>
<tr>
<td></td>
<td>Add secondary containment or double-walled containers</td>
</tr>
<tr>
<td></td>
<td>Collision Protection e.g. guard logs</td>
</tr>
<tr>
<td></td>
<td>Tarps for containment</td>
</tr>
<tr>
<td></td>
<td>Materials to block culverts when needed</td>
</tr>
<tr>
<td></td>
<td>Sandbags and PVC pipe for underflow containment</td>
</tr>
<tr>
<td></td>
<td>Sandbags for diversions and upstream eddy containment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B:C Fire Extinguisher</th>
<th>The number represents the size of fire the extinguisher will put out under normal use (non-expert)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>An 80 rated fire extinguisher will cover 15.25 square meters</td>
</tr>
<tr>
<td></td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>The B:C represents the type of fires: “B” fire is for flammable liquids, while a “C” fire is for electrical</td>
</tr>
</tbody>
</table>

| 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 |
|               | |

<table>
<thead>
<tr>
<th>Equivalent Spill Response Equipment</th>
<th>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:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 Absorbent pads (for petroleum hydrocarbons) = 2L of Sphag Sorb (peat moss)</td>
</tr>
<tr>
<td></td>
<td>5 Absorbent pads (for antifreeze) = 2L of Sphag Sorb (peat moss)</td>
</tr>
<tr>
<td></td>
<td>5 Absorbent pads (for solvents) = 2L of Sphag Sorb (peat moss)</td>
</tr>
<tr>
<td></td>
<td>Plug-N-Dike = Bentonite clay or “drillers clay”</td>
</tr>
<tr>
<td></td>
<td>One large heavy duty plastic bag = One five (5) gallon pail</td>
</tr>
<tr>
<td></td>
<td>Containment boom = log boom with tarp “skirt”</td>
</tr>
</tbody>
</table>
# Table #6 Definition of Terms

<table>
<thead>
<tr>
<th>Equivalent Level of Safety (Permit) issued by Transport Canada</th>
<th>Permit No.: SH7544 (Ren 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permit Holder: The valid members of The Forest Products Association of Canada</td>
<td></td>
</tr>
<tr>
<td>Mode of Transport: Road</td>
<td></td>
</tr>
<tr>
<td>Issue Date:</td>
<td></td>
</tr>
<tr>
<td>Expiry Date:</td>
<td></td>
</tr>
</tbody>
</table>

**CONDITIONS**

This Permit for Equivalent Level of Safety authorizes the valid members of The Forest Products Association of Canada to handle, offer for transport and transport and authorizes any person to handle or transport on behalf of the permit holder, by road vehicle, dangerous goods that are Class 3, Packing Group II or Packing Group III in means of containment that do not comply with Part 5 of the Transportation of Dangerous Goods (TDG) Regulations if:

(a) The means of containment:
   - (i) is not intended for the transportation of dangerous goods and the presence of dangerous goods is due only to the use of the means of containment for the processing, storage, or use of the dangerous goods at fixed locations;
   - (ii) prior to moving, is emptied to the maximum extent possible, and the residual amount of the dangerous goods never exceeds the lesser of the following volume in content when in transport:
     - (A) 500 liters or
     - (B) 5% of the capacity of the means of containment;
   - (iii) is designed, constructed, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of dangerous goods that could endanger public safety; and,
   - (iv) when inverted, will not release dangerous goods;

(b) The means of containment is loaded and secured on the means of transport in such a way as to prevent, under normal conditions of transport, damage to the means of containment or to the means of transport that could lead to an accidental release of the dangerous goods;

(c) The permanent shipping document that accompanies the dangerous goods includes the following information legibly and indelibly printed:
   - "Dangerous Goods Permit No. by road vehicle or its French equivalent;

(d) Equipment used to heat and circulate production fluids such as petroleum crude oil, in oilfield applications are excluded from the application of this permit.

*Note: The issuance of this Permit for Equivalent Level of Safety in no way reduces the permit holder's responsibility to comply with any other requirements of the Transportation of Dangerous Goods Regulations not specifically addressed in this Permit.*

<table>
<thead>
<tr>
<th>Fuel Storage Facility</th>
<th>Any location where fuel in excess of 500 litres is stored on a BCTS tenure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Means of Containment</td>
<td>A means of containment with a capacity greater than 450 litres. For example, a highway cargo tank, large slip tank etc.</td>
</tr>
</tbody>
</table>
### Table #6 Definition of Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Safety Data Sheets (SDS)—formerly MSDS</strong></td>
<td>SDS—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).</td>
</tr>
<tr>
<td><strong>Plug-N-Dike</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Small Means of Containment</strong></td>
<td>A means of containment with a capacity less than or equal to 450 litres. For example, a drum, jerry cans, or intermediate bulk container.</td>
</tr>
<tr>
<td><strong>Spec Tank</strong></td>
<td>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 <em>Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods</em>.</td>
</tr>
<tr>
<td><strong>TC</strong></td>
<td>Transport Canada: Federal Agency that oversees the transportation of dangerous goods on land, sea and air</td>
</tr>
<tr>
<td><strong>TDG</strong></td>
<td>Transportation of Dangerous Goods Regulation</td>
</tr>
<tr>
<td><strong>ULC</strong></td>
<td>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)</td>
</tr>
<tr>
<td><strong>UN Number</strong></td>
<td>United Nations Number: Used to identify a specific dangerous good. Diesel: UN 1202; Gasoline UN 1203</td>
</tr>
</tbody>
</table>
| **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. 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](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!  
### Table #7

#### SPILL KIT
(Minimum Requirements)

<table>
<thead>
<tr>
<th>In Equipment / Machinery (excavators, skidders)</th>
<th>Vehicles carrying auxiliary fuel (e.g. pick-up truck box tanks or multiple small containers)</th>
<th>Stationary or Mobile Fuel Storage &amp; dispensing (tanks or multiple-drum caches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spill kits must be present on equipment, (appropriate for type and potential size of spill).</td>
<td>Spill kits must be present in vehicles transporting and dispensing fuels</td>
<td>Spill kits must be present at points where fuel is dispensed.</td>
</tr>
<tr>
<td>• Spill kits must include:</td>
<td>• Spill kits must include a minimum of:</td>
<td>• Spill kits must include a minimum of:</td>
</tr>
<tr>
<td>o One large heavy duty plastic bag or other suitable container</td>
<td>o 3 - Heavy duty plastic bags or suitable container(s),</td>
<td>o Five large heavy duty plastic bags, or one open topped containment drum (or equivalent),</td>
</tr>
<tr>
<td>o Absorbent pads (or equivalent absorbent material)</td>
<td>o 10 - absorbent pads (or equivalent absorbent material) appropriate for the type of spill,</td>
<td>o 20 absorbent pads (or equivalent absorbent material) appropriate for the type of spill,</td>
</tr>
<tr>
<td>• Personal protective safety gear as required for the type of spill</td>
<td>o 3 – 3”x 48” absorbent booms/ socks,</td>
<td>o 6 – 3”x 48” absorbent booms/ socks,</td>
</tr>
<tr>
<td></td>
<td>o bioremediation product,</td>
<td>o Two 10’ linkable marine booms (if near marine operations),</td>
</tr>
<tr>
<td></td>
<td>o One shovel</td>
<td>o bioremediation product,</td>
</tr>
<tr>
<td></td>
<td>o A container of emergency tank sealant (i.e. Plug-N-Dike, Seal-it or equivalent)</td>
<td>o One container of emergency tank sealant (i.e. Plug-N-Dike or equivalent),</td>
</tr>
<tr>
<td></td>
<td>• Personal protective safety gear as required for the type of spill</td>
<td>o One shovel</td>
</tr>
</tbody>
</table>

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

- Fire Extinguisher
- Spec. Plate
- WHMIS Label
- Drip Containment Options
- Proper fuel dispensing pump
- TDG Label
- Spill Kit

- Tank secured to prevent movement
- All tanks >450L must be tested by a Transport Canada Registered Facility every 5 years.
Large Double Walled Stationary Skid Tanks

- ULC-S601 Spec Plate
- Positive Containment Check
  - Vacuum Gauge
  - Dip Stick Port
- TDG, WHMIS and Safety Labels
- Drip Containment Options
- Spill Kit
- Fire Extinguisher(s)
- Guard Log
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:

- heavy duty plastic bags or suitable container(s),
- absorbent pads (or equivalent absorbent material) appropriate for the type of spill,
- absorbent booms/ socks,
- bioremediation product,
- a 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.

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

Conclusion

• Conformance to this EFP pictorial will assist LPC’s to achieve a balance between their operational needs and requirements of the BCTS EMS-EFP 06 to help reduce significant risk to the environment.

• For a copy of this fuel management pictorial please contact your local BCTS Certification Standards Officer.
Purpose
This Fuel Handling Supplement is a guide used in conjunction with Fuel Handling EFP-06 to promote appropriate fuel handling within the scope of BCTS EMS Program. The supplement includes a risk assessment method that identifies associated risks to various fuel management situations and provides additional preventative and control measures for BCTS clients to consider in reducing risks.

TABLE A. RISK ASSESSMENT

<table>
<thead>
<tr>
<th>Risk Identification</th>
<th>HIGH</th>
<th>MEDIUM</th>
<th>LOW</th>
<th>Assigned Numerical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental Factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance to nearest watercourse or water body</td>
<td>&lt; 50m</td>
<td>50m-100m</td>
<td>&gt; 100m</td>
<td></td>
</tr>
<tr>
<td>Soil characteristics at or around the Fuel Facility</td>
<td>Porous or unknown</td>
<td>Semi-porous</td>
<td>Non-porous (i.e. clay/bedrock)</td>
<td></td>
</tr>
<tr>
<td>Terrain slope at or around the Fuel Facility</td>
<td>&gt; 6% slope</td>
<td>2%-6% slope</td>
<td>&lt; 2% slope</td>
<td></td>
</tr>
<tr>
<td><strong>Operational Factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site designation or description</td>
<td>High traffic logging road (Main Line)</td>
<td>Low traffic logging road (Side Spur)</td>
<td>No through traffic logging road</td>
<td></td>
</tr>
<tr>
<td>Duration of operation of the Fuel Facility</td>
<td>&gt; 6 days</td>
<td>2-6 days</td>
<td>&lt; 2 days</td>
<td></td>
</tr>
<tr>
<td>Volume of fuel stored at the Fuel Facility</td>
<td>&gt;4500L</td>
<td>500L-4500L</td>
<td>&lt; 500L</td>
<td></td>
</tr>
<tr>
<td>Number of times the Fuel Facility is accessed</td>
<td>&gt; 12x per day</td>
<td>6-12x per day</td>
<td>&lt; 6x per day</td>
<td></td>
</tr>
<tr>
<td>Amount of traffic around the Fuel Facility</td>
<td>&gt; 15 personnel on site</td>
<td>5-15 personnel on site</td>
<td>&lt; 5 personnel on site</td>
<td></td>
</tr>
<tr>
<td><strong>Prevention &amp; Preparedness Factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance to additional spill response cache or equipment</td>
<td>&gt; 60 minutes</td>
<td>15-60 minutes</td>
<td>&lt; 15 minutes</td>
<td></td>
</tr>
<tr>
<td>Additional Spill Control measures</td>
<td>Tank with no secondary containment</td>
<td>Tank with secondary containment</td>
<td>Tank with secondary containment and additional spill controls (i.e. berms, sloped to a sump)</td>
<td></td>
</tr>
</tbody>
</table>

Risk Value = (Add the Assigned Numerical Values)

TABLE B. RISK RANKING: LOW

<table>
<thead>
<tr>
<th>Numerical Value</th>
<th>Risk Ranking</th>
<th>Preventative Measures</th>
<th>Control Measures</th>
</tr>
</thead>
</table>
| <12             | LOW          | • To extend the life of a mobile tank: Use a rubber mat or a piece of plywood between the mobile tank and the truck box or support system  
• To minimize spillage and leakage from the fill cap: Use a stem pipe to extend the filling bung of the mobile tank | • Must meet minimum Spill Kit Requirements  
• Locating containers or caches where potential spills would not reach waterways or watercourses |
### TABLE C. RISK RANKING: MEDIUM

<table>
<thead>
<tr>
<th>Numerical Value</th>
<th>Risk Ranking</th>
<th>Preventative Measures</th>
<th>Control Measures</th>
</tr>
</thead>
</table>
| 12-23           | MEDIUM       | TAKE IMMEDIATE PREVENTATIVE MEASURES:  
                      - Re-assess all the risk factors to determine if one or more ratings can be reduced  
                      - Re-assess the environmental impact that a spill may have on the environment  
                      - Review additional spill response equipment that may be required for containment and recovery  
                      - Review the BCTS Fuel Handling Environmental Field Procedure #6 to ensure procedures address the risk factors.  |
|                 |              | TAKE IMMEDIATE CONTROL MEASURES:  
                      - Moving fuel storage to a lower risk location  
                      - Add secondary containment or double walled containers  |

### TABLE D. RISK RANKING: HIGH

<table>
<thead>
<tr>
<th>Numerical Value</th>
<th>Risk Ranking</th>
<th>Preventative Measures</th>
<th>Control Measures</th>
</tr>
</thead>
</table>
| >23             | HIGH         | TAKE IMMEDIATE PREVENTION MEASURES:  
                      - Re-assess all the risk factors to determine if one or more ratings can be reduced  
                      - Re-assess the environmental impact that a spill may have on the environment and implement preventative measures  
                      - Review the BCTS Fuel Handling Environmental Field Procedure 06 to ensure procedures address the risk factors.  
                      - Be Prepared! Store additional spill response equipment on-site for containment and recovery  
                      - Complete an Environmental Emergency Response Plan (ERP) at the start of every operation  
                      - Conduct an Emergency Response Drill with the crew, (see BCTS guide) and record on Checklist CHK- 010.  |
|                 |              | TAKE IMMEDIATE CONTROL MEASURES:  
                      - Move the fuel storage to a lower risk location  
                      - Add secondary containment or double-walled containers  
                      - Review Spill Response awareness and preparedness  |

STORE ADDITIONAL SPILL CONTROL EQUIPMENT:  
- Tarps for tarp containment  
- Plywood for culvert blocks  

ENSURE COLLISION PROTECTION:  
- A barrier sufficient to alert the operator and prevent accidental damage to the container and release of the product or,  
- Placement of the container in a location where the potential of collision has been minimized or eliminated.
This supplement has been developed in support of the BCTS Kootenay Business Area Environmental Management System. It is to be used solely as a reference guide and is not intended to replace BCTS Site Plans. BCTS staff, Employees, Contractors and Licensees is asked to ensure that a Prework as been completed prior to the commencement of work and to ensure that they are familiar with both the Site Plans and the applicable Environmental Field Procedures.

What is Soil Disturbance?

- Includes compaction, rutting, gouging, scalping and the construction of trails, roads, landings, pits and quarries.
- It is caused mainly by moving machinery and logs
- Excessive soil disturbance is that which is beyond what is necessary under the right combination of equipment and site conditions. This is caused by excessive random (unplanned) traffic over sensitive terrain or under wet conditions, commencing or continuing to work in poor (wet) soil conditions, or by heavily concentrated activity outside of road side work areas. This is to be avoided through proper planning, familiarity with Site Plans and recognizing these situations before they become problems.

<table>
<thead>
<tr>
<th>Compaction</th>
<th>Rutting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keys to identification:</td>
<td>Keys to identification:</td>
</tr>
<tr>
<td>Caused by felling, skidding, and forwarding routes with repeat traffic. Compacted mineral soil, puddled mineral soil (soil that has liquefied then hardens), and compacted deposits of slash and organic debris. Compacted soils reduce drainage, aeration and reduce root growth and forest productivity. Also reduces water infiltration which can lead to off-site drainage problems.</td>
<td>Ruts or impressions into the soil from wheels and tracks. On sensitive soils these are of concern when only 5 cm deep. On all sites be concerned about ruts that are, 2 m long and over 15 cm deep. Rutting can occur from just one pass and cause compaction which decreases drainage, aeration and damage shallow feeder roots.</td>
</tr>
<tr>
<td>Gouging, Scalping and Scraping</td>
<td>Trails (Bladed or Excavated)</td>
</tr>
<tr>
<td>Keys to identification:</td>
<td>Keys to identification:</td>
</tr>
<tr>
<td>Forest floor (surface organic layer) has been removed, exposing the mineral soil, or where organics are absent, top soil has been excavated 5 cm or more. Mainly a concern if over 30 cm deep or to bedrock, or wider than 1m. Gouging and Scalping displaces nutrients and increases erosion potential as the topsoil contains large reserves of nutrients and contains the majority of roots.</td>
<td>Trails excavated into side slopes, either along the contour of the slope or at an angle to the slope. Excavation exposes subsurface seepage and creates drainage paths during runoff events (thunderstorms). Soils under trails become very compacted. Excavated cuts and fills expose subsoils with few nutrients and steep, exposed surfaces that can erode and deliver sediments to streams.</td>
</tr>
</tbody>
</table>

**General Soil Disturbance Guidelines**

- **PREWORKS:** Review Site Plan soil disturbance limits. Identify sensitive or difficult harvesting areas during Prework. And areas identified with sensitive soils, low lying drainage and receiving areas
- **PLAN:** Identify and plan felling and skidding routes ahead of time. Designating main trails, a herring bone pattern may reduce overall trafficked area. Consider manual treatments such as hand felling, especially in ecologically sensitive areas.
- **WEIGHT:** Reduce loads carried by logging equipment
- **DEPRESSIONS:** and wetter more sensitive areas, Avoid traveling through these areas, if unavoidable, designate and design a crossing to reduce impacts.
- **ORGANIC SOILS:** Avoid disturbing predominantly organic wet soils. Utilize slash for traction and padding (puncheon). Maintain soil organic matter, litter, and slash in place when harvesting.
- **TURNING:** Creates the most disturbance off main trails. Avoid sharp turns with loaded equipment, especially at the base of hills. Use trails and road surfaces to turn where possible.
- **SOIL MOISTURE:** Monitor soil moisture and frost. Dry or frozen soils do not compact as easily. Soils lose strength as the moisture level increases
- **GROUND PRESSURE:** Use low ground pressure equipment
- **SLASH PLACEMENT:** Avoid piling slash on good high spots and other good growing sites
- **MONITOR WEATHER:** Shift harvest operations to upland areas of a timber sale if weather conditions deteriorate. Shut down when soil disturbance objectives are threatened.

**Contact your Supervisor Should you feel excessive Soil Disturbance has occurred**
Operating Techniques

<table>
<thead>
<tr>
<th>Excavated or Bladed Trails</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where bladed or excavated trails are planned:</td>
</tr>
<tr>
<td>- Keep the excavated area as small as necessary</td>
</tr>
<tr>
<td>- Avoid excavating the cut slope into the subsoil layers. Maintain organic debris and productive soil for re-contouring and rehabilitation later. Scatter slash and organic debris onto exposed mineral soil.</td>
</tr>
<tr>
<td>- Use excavators to build trails, where possible</td>
</tr>
<tr>
<td>- Maintain the natural drainage pattern for all identifiable watercourses</td>
</tr>
<tr>
<td>- Where conditions change over the length of the trail, be prepared to modify techniques</td>
</tr>
<tr>
<td>- Control drainage and erosion on excavated trails to reduce the likelihood of landslides, mass wasting events or stream sedimentation</td>
</tr>
<tr>
<td>- Where the forest floor is sufficiently thick, remove it separately from the topsoil and stockpile in mounds. Avoid mixing this material with unproductive soils</td>
</tr>
<tr>
<td>- Where forest floors are too thin to be easily separated, keep these materials with salvaged topsoil</td>
</tr>
<tr>
<td>- When building trail sections with deeper cuts and fills, place the excavated material down in the fill bank in the following order: topsoil, intermediate soils, then subsoils on top. The outer track of the running surface will run on the excavated subsoil, preserving the topsoil at the bottom of the fill.</td>
</tr>
<tr>
<td>- To minimize the amount of side cast required and for rehabilitation, use stumps and logs to create a crib to fill.</td>
</tr>
<tr>
<td>- Long machine trails on steep slopes should be placed so there are grade breaks and run-offs to prevent water channeling.</td>
</tr>
</tbody>
</table>

Winter Harvesting

<table>
<thead>
<tr>
<th>Winter Harvesting</th>
</tr>
</thead>
<tbody>
<tr>
<td>When harvesting in Winter:</td>
</tr>
<tr>
<td>- Use compacted snow trails from harvesting equipment to skid or forward. Skid one or two turns in sensitive areas and then allow frost to penetrate compacted snow. Soil frozen to a depth of 15 cm offers maximum strength and protection.</td>
</tr>
<tr>
<td>- Soil frost begins to disappear after snowfall covers the soil and/or night temperatures stay above freezing for three or four days.</td>
</tr>
<tr>
<td>- When building excavated trails in the snow, avoid piling topsoil on top of snow or mixing the two.</td>
</tr>
<tr>
<td>- When building excavated trails in snow, excavate the snow on the inside, compact it on top of the snow on the fill side, cut out the soil on the inside and lay it on top of the snow and compact it. Cover this with snow and compact it to form the running surface. Operators rehabilitating the trail will recognize the bottom of the stockpile is at the lower layer of snow.</td>
</tr>
</tbody>
</table>

Rehabilitation (Debuilding)

<table>
<thead>
<tr>
<th>Rehabilitation (Debuilding)</th>
</tr>
</thead>
<tbody>
<tr>
<td>When building and rehabilitating bladed trails along a hill slope:</td>
</tr>
<tr>
<td>- Rehabilitation and mitigation should be conducted under the best soil and weather conditions possible.</td>
</tr>
<tr>
<td>- Outslope the trail surfaces to avoid collecting water. Decompact the running surface to a greater depth on the outer portion of the trail to avoid creating a subsurface water trap next to the cut.</td>
</tr>
<tr>
<td>- Decompact all compacted soils on running surfaces.</td>
</tr>
<tr>
<td>- Restore slopes to natural contours. Place slash on exposed soils.</td>
</tr>
<tr>
<td>- Deconstruct all corduroyed trails (puncheon) and scatter slash material away from drainage courses</td>
</tr>
<tr>
<td>- Ruts may be rehabilitated by restoring natural drainage, loosening the soil at the bottom of the rut and gently distributing berm material into the depression. Create an even soil layer for rooting while not exposing poor soils.</td>
</tr>
<tr>
<td>- Avoid mixing woody debris with top soil. Avoid handling top soil under wet conditions. When stockpiling top soil, develop standard methods to aid in finding and re-using the material. Avoid burying top soil with slash and protect it from water runoff and traffic. Avoid stockpiling top soil in wet areas.</td>
</tr>
<tr>
<td>- Cover exposed subsoils as well as organic matter with scattered slash to provide protection from erosion.</td>
</tr>
</tbody>
</table>

Contact your Supervisor Should you feel excessive Soil Disturbance has occurred
BCTS Supplement
Soil Disturbance Definitions

Excavated or bladed trails

*Excavated or bladed trails* are constructed trails that have:

- a mineral soil cutbank height greater than 30 cm, and
- an excavated width greater than 1.5 m.

Corduroyed trails

*Corduroyed trails* are constructed using logs and woody debris placed side by side to form a surface greater than 2 m in length and capable of supporting equipment traffic.

Compacted areas

Compacted areas are areas on which there is evidence of compaction at the survey point and on 100% of a portion that is both greater than 100 m² in area and greater than 5 m wide.

Can also be compacted mineral soil, puddle mineral soil, and compacted slash and organic debris. Mineral soil compaction compare to condition of adjacent undisturbed soil.

Contact your Supervisor Should you feel excessive Soil Disturbance has occurred
Contact your Supervisor Should you feel excessive Soil Disturbance has occurred

Dispersed trail: wheel or track ruts

Wheel or track ruts 15cm deep X 30cm wide and 2m long are counted as soil disturbance on all sites.

Wheel or track ruts 5cm deep X 30cm wide X 2m long are counted as soil disturbance on sites with high or very high soil compaction hazard or where compaction hazard has not been assessed.

Dispersed trail: repeated machine traffic

Repeated machine traffic must be counted as soil disturbance where there is 100% evidence of compaction in a 1m X 2m area on all sites, except those with low compaction hazard. Where the compaction hazard has not been assessed, repeated machine traffic must be counted as soil disturbance.
Deep gouges are excavations into mineral soil that are deeper than 30 cm or to bedrock at the survey point.

Wide gouges are excavations into mineral soil that are a) deeper than 5 cm at the survey point and b) deeper than 5 cm or to bedrock, on at least 80% of an area 1.8 x 1.8 m.

Long gouges are excavations into mineral soil that are a) deeper than 5 cm at the survey point and b) deeper than 5 cm or to bedrock on 100% of an area 1 x 3 m.
Very wide scalps

*Very wide scalps* are areas where the forest floor has been removed at the survey point and from over 80% of an area 3 x 3 m.

Wide scalps

*Wide scalps* are areas where the forest floor has been removed at the survey point and from over 80% of an area 1.8 x 1.8 m.
<table>
<thead>
<tr>
<th>Road Construction Task</th>
<th>Recommended Best Practise</th>
<th>Recommended Shut Down Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>R/W Felling</td>
<td>- Fell timber in specific direction so as to minimize future piece handling &amp; therefore minimize machine use and subsequent soil disturbance.</td>
<td>- Felling of r/w timber can proceed during all typical wet weather conditions subject to judgement of safety.</td>
</tr>
</tbody>
</table>
| Pilot Trail Construction | - Place pilot trail to minimize over-all excavation and to optimize material use  
- Maintain drainage at all draws and seeps throughout the construction and use of the trail by way of cross ditches or wood puncheon  
- In the case of significant section of wet ground, pre-construct this section with excavator (ie: install geotextile, rock ballast etc)  
- Ensure that ruts are cross ditched to allow drainage;  
- Back blade to remove ruts and hasten dry material when conditions allow | All Sites  
- Material does not hold its shape when excavated (minimum coarse fragment content) |
| Skidding of R/W Timber | - If road side decks, place strategically to avoid wet areas, culvert locations etc | Low Risk Sites (no water within 200m)  
- Trail ruts quickly; ruts quickly deform and mud slurries form  
High Risk Sites (running water within 200m)  
- Terminate operations when mud ruts greater than 15cm form in sections of road within 200m of running water.  
Stop BEFORE mud slurries threaten to occur. |
| Excavation & Placement of Road Material | - Optimize the use of materials; sort concurrent with construction  
- Utilize well drained material and rock for construction of fills/embankments  
- Where possible, schedule excavation of fine textured soils for dry or cold weather  
- Utilize END HAUL movements of better material to address wet sections as early as possible | - Material does not hold its shape when excavated and threatens to become viscous when handled |
<table>
<thead>
<tr>
<th>Culvert Installations</th>
<th>Bridge Installations</th>
<th>Road Maintenance, Deactivation</th>
<th>Hauling</th>
</tr>
</thead>
<tbody>
<tr>
<td>• End Haul superior bedding materials as required</td>
<td>All practises above apply to bridge and footing works</td>
<td>• Schedule road works required in fine textured soils during best weather condition ie: summer/fall dry.</td>
<td>• Schedule Hauling to optimize driest possible road condition: ie: dry or frozen conditions</td>
</tr>
<tr>
<td>• By pass flow and install culvert in dry conditions; protect stream as necessary based on risk utilizing sediment basins, bales or other means to achieve interim stream protection from sediment delivery</td>
<td></td>
<td>• Material does not hold intended shape or achieve desired compaction when handled</td>
<td>• If hauling during marginal conditions, prolong haul window and minimize road damage by daily tending of the road surface.</td>
</tr>
<tr>
<td>• Ensure sediment basins are constructed and armoured prior to pipe placement</td>
<td>• As above</td>
<td>• Proceed with grading only under dry or slightly damp conditions.</td>
<td>• Eliminate accumulation of moisture to the surface – ie: keep road in dry as possible condition by back blading daily, installing temporary waterbars, spot surfacing of short sections which punch prematurely</td>
</tr>
<tr>
<td>• Depending on pipe size, strategize pipe placement</td>
<td></td>
<td>• Terminate hauling/road use before surface becomes viscous. Rutting of the road surface is acceptable however, if ruts become sloppy and deformed themselves, then road use must be suspended.</td>
<td>• Depth of ruts acceptable is subject to discretion, however, in general, pick-up truck access should be un-impeded, and pulling of haul trucks, even on adverse grades, not necessary.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The intent of deactivation is to place the road in a self-maintaining state that will indefinitely protect adjacent resources at risk. The purpose of a cross-ditch is to intercept road surface and ditchline water and convey it across the road onto stable, non-erodible slopes below the road.

A well-compacted ditch block will be installed immediately downgrade of the cross-ditch inlet. The ditch block is usually higher than the road surface. The ditch block should be non-erodible, relatively impermeable, and large enough to divert all expected flows into the cross-ditch. Where ditchwater converges at low points in the road, no ditch block or berm is required, as the cross-ditch should be constructed as a broad gentle swale.

- Armour the base of the cross-ditch if erosion or rutting of the subgrade is expected to cause a problem for future road access. Armour the outlet of the cross-ditch, unless noted in the prescriptions. Size and placement of the armour will depend on the anticipated flows and downstream consequences.
• Use angular rock large enough to protect exposed soil, but small enough so as not to divert or obstruct flows. Where coarse rock is unavailable, other methods of protecting the outlet area may include revegetation, erosion control mats, sandbags, soil bioengineering, or appropriately sized and placed woody debris.
• The resulting cross ditch or ford will allow for easy 4 wheel drive, pickup truck access.

A ford is a dip in a road constructed to cross a perennial or ephemeral stream. It is usually designed and built as a permanent feature during original road construction, or road deactivation.

Example of a ford installed on a non–fish-bearing stream.
Introduction
Species of Management Concern are identified as potential environmental impacts associated with various Kootenay Business Area activities under its Environmental Management System (EMS). In addition certification under the Sustainable Forestry Initiative standard requires a program to promote biological diversity such as species at risk. Apart from the certification programs, BCTS and its Timber Sale Licensees, Permits and Contractors are required to meet various federal and provincial legislative requirements, such as the Canadian Species at Risk Act, BC Wildlife Act and Forest and Range Practices Act, which relate to the management of wildlife and ecosystems. This document provides guidance to LPCs in managing the species of management concern.

Procedures
Pre-work (BCTS staff and LPC personnel)
- Review any operational requirements/constraints specific to the activity/location as identified in the Site Plan.
- Review wildlife (bird, mammal & amphibian) species listed in the 2014 Species of Management Concern in the Kootenay Business Area field guide. (It was decided to focus identification and management on only wildlife species at the operational level as these are the species more likely to be observed by forest workers.)
- Review notification requirements under the Notification section.

Inspections (BCTS Field Team staff)
- Were any Species of Management Concern identified during operations? If yes, follow procedures under Notification.
- Check client awareness/conformance to specific operational requirements/constraints.

Notification of sightings of wildlife species of concern (all staff and LPC personnel)
Where a Species of Management Concern is sighted in the field:
- Notify BCTS Project Supervisor ASAP.
- For observations, note (at the minimum):
  - Location (gps coordinates or sufficient information to locate on a map) of observation
  - Date of observation
  - Species
  - Number of individuals seen or heard.
- Other information that is useful is:
  - Name and contact (phone/email) information of observer
  - Habitat (plant or special features of observation location),
  - Land status of observation (e.g. crown, federal, private)
  - Adjacent landscape (e.g. disturbance, roads)
  - Condition of habitat (measure of the quality of habitat of observation)
  - Health of species (e.g. live, dead, injured/sick). If possible take a picture of the species and make field notes.
- This information is then forwarded to BCTS Project Supervisor.
- BCTS Project supervisor and Field Team/Planning staff will recommend appropriate site level measures, which may involve engaging a Qualified Professional to assess and indicate a course of action.

BCTS Project Supervisor will submit the information collected to the BC Conservation Data Centre through the following website: www.env.gov.bc.ca/wildlife/wsi/incidental_obs.htm. Please print a copy of the report pages, scan to .pdf with the date (e.g. Western Toad_Aug8-2016.pdf) and file it into the following directory for our records: K:\TSO\Forest Certification\Certification_General\SAR\Wildlife Incidental Observation Forms.
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*

**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 scenario 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.

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

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

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**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**

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

The 3-step snapshot to understanding
WHMIS

- Understand the symbols
  - The symbol is a visual reminder of what type of substance you will be handling
  - Symbols are found on Labels and MSDS.
  - Some examples of the classes you might encounter in the forest industry are:
    o Oxygen and Acetylene (Compressed Gas)
    o Gasoline and Diesel (Flammable/Combustible)
    o H2S gas from Sour Gas wells (Poisonous material)
    o Battery Acid (corrosive materials)

- Recognizing Labels
  - Labeling (by Suppliers or Employers) is required on hazardous substances
  - Labels are the first indicator to the worker that they are dealing with a hazardous substance
  - Labels must contain the following information:
    o Identification of the substance (eg. Diesel Fuel)
    o Hazard symbol of the substance
    o Precautionary and First Aid measures
    o Reference to Material Safety Data Sheets (MSDS)
  - Types of Labels
    o Supplier – generally an adhesive label attached before shipment
    o Workplace – often a plastic tag attached by a wire or plastic tie to the container by the employer
    o Hand written – writing of the product name by the worker when the substance is dispensed for their individual use.

- Knowing how to use Material Safety Data Sheets (MSDS)
  - An MSDS is a written bulletin issued by the supplier providing specific information about the hazardous substance
  - MSDS will contain the following information
    o Product Name
    o Hazardous ingredients
    o Physical data
    o Fire and Explosion hazard
    o Reactivity data
    o Toxicological properties
    o Preventative measures
    o First Aid measures
    o Preparation information
  - An employer must make the Material Safety Data sheets available to the workers, and provide time for them to read the information before commencing work
The 4-step snapshot to understanding TDG

Symbols
- The symbol is a visual reminder of what type of substance is being transported
- Symbols are found on Labels & Placards
- Some examples of the classes you might encounter in the forest industry are:
  - Class 1 – Blasting materials (Explosives)
  - Class 2 – Oxygen, Acetylene, Propane (Gases)
  - Class 3 – Diesel, Gasoline, Solvents (Flammable & Combustible liquids)
  - Class 6 – Solvent compounds, paint removers (Poisonous substances)
  - Class 8 – Battery acids (Corrosive substances)

Safety Marks
- Safety Marks are the first indicator to the worker that they are dealing with a dangerous good when approaching a container or vehicle load
- Types of Safety Marks
  - Labels – small diamond shaped marks generally found on smaller containers (i.e. oxygen bottles)
  - Placards – large diamond shaped marks generally found on larger containers or on loaded vehicles transporting dangerous goods
- Safety Marks will contain the following information:
  - Symbol of the dangerous good (i.e. a flame)
  - Class of the substance (i.e. Class 3)
  - Shipping Name (i.e. Gasoline)
  - PIN (product identification) number (i.e. UN 1203)
- Use of Safety Marks
  - Whenever a dangerous good is transported
  - When used on larger loads, placards are generally attached at 4 corners of the load vehicle
  - Placards are even required when containers or tanks are empty

Documentation
- Class 3 substances (Diesel, Gasoline) generally do not require a shipping document unless the container size is 2000 liters or larger
- Used oils (generated by the contractor) are not classified under TDG regulation
- If a shipping document is used, it must contain the following information:
  - Document number
  - Date of shipment
  - Signature of the shipper
  - Shippers name and address and 24 hour contact number
  - Receivers name and address
  - Carriers name
  - Name, Class, PIN, Packing group, and volume of product being shipped
  - Type and number of placards used

Emergency Response
- When spills or leaks exceed the quantities listed, it must be reported to:
  - The Police
  - The Employer
  - The Vehicle owner
- The owner of the goods

Rules to remember for TDG
1. Use the right container
2. Keep the container capped
3. Label the container
4. Secure the container in an upright position when in transport
5. When unloaded, protect from collision
OIL RECYCLING
BCUOMA (BC Used Oil Management Association) Used Oil, Oil Containers,
Oil Filters Drop Off Facilities – January 2008

Nelson

Midas Auto Services
618 Lake St.
Nelson, BC V1L 4C8
Tel.: (250) 354-4866
Hours: Call for hours

Nelson Ford
623 Nelson Street
Nelson, BC V1L 1H5
Tel.: (250) 352-7202
Hours: Call for hours

Will’s Auto Repair
2757 Highway 3A
Nelson, BC V1L 6L2
Tel.: 250-825-2220
Hours: Mon - Fri 8AM to 5PM

Bill’s Motor-Inn Ltd.
213 Baker Street
Nelson, BC V1L 4E3
Tel.: 250-352-5304
Hours: Tues - Sat 8AM to 5PM

Lakeside Lube and Exhaust
206 Lakeside Drive
Nelson, BC V1L 6B9
Tel.: 250-352-1758
Hours: Mon - Sat 8AM to 5PM

Cranbrook

Canadian Tire (Cranbrook)
1100 Victoria Avenue N.
Cranbrook, BC V1C 6G7
Tel.: 250-489-3300
Hours: M-F 9am-9pm, Sat 9am-6pm, Sun/Holidays 10am-5pm

Millennium Ford Sales Ltd.
1126 Cranbrook St.
Cranbrook, BC V1C 2S5
Tel.: 250-426-6645
Hours: Call for hours

Newalta Cranbrook Service Centre
2101 Theatre Rd.
Cranbrook, BC V1C 7G6
Tel.: (250) 426-2073
Hours: Mon - Fri 7:30am - 4:30pm

Petro Canada Bulk Oil
814 Theatre Road
Cranbrook, BC V1C 7C1
Tel.: 250-426-6669
Hours: Mon - Fri, 7am - 5pm

Nakusp

Nakusp Shell Service
301 Broadway St.
Nakusp, BC V0G 1R0
Tel.: 250-265-3355

Pinengrove Auto and Small Engine Repair
2091 Central Ave
Grand Forks, BC V0H 1H2
Tel.: 250-442-8204
Hours: Call for hours

Radium Hot Springs Esso
7507 Main Street West
Radium Hot Springs, BC V0A 1M0
Tel.: 250-347-9726
Hours: Weds - Sun, 8AM to 4:30PM

Slocan Park Service
2976 Highway 6
Slocan Park, BC V0G 2E0
Tel.: 250-226-7266
Hours: Tues - Sat 8AM to 5PM

Castlegar

Canadian Tire
2000 Columbia Avenue
Castlegar, BC V1W 2W7
Tel.: 250-365-7737
Hours: Call for hours

Ernie’s Used Auto Parts
4801 Minto Road
Castlegar, BC V1N 4C1
Tel.: 250-365-6225
Hours: Call for hours

Glacier Honda
1602 Columbia Ave.
Castlegar, BC V1N 1H9
Tel.: 250-365-4845
Hours: Mon - Sat 8AM to 5PM

Kalawsky Pontiac Buick GMC 1989 Ltd.
1700 Columbia Avenue
Castlegar, BC V1N 2W4
Tel.: 250-365-2155
Hours: Mon - Sat 8AM to 4:30PM

OK Tire and Auto Service
2141 Columbia Avenue
Castlegar, BC V1N 2W9
Tel.: 250-365-5111
Hours: Mon - Fri 8AM to 5PM

Invermere

OK Tire and Auto Service
Lot 150 Industrial Road #2
Invermere, BC V0A 1K5
Tel.: 250-342-0800
Hours: Mon - Sat

Petro Canada Bulk Oil
410 Panorama Drive
Invermere, BC V0A 1K0
Tel.: 250-342-9915
Hours: Mon - Fri, 8AM - 5PM

Walkers” Repair Centre Ltd.
141 Industrial No. 2 Avenue
Invermere, BC V0A 1K0
Tel.: 250-342-9424
Hours: Mon - Sat, 8:30am - 5:30pm

Trail

Canadian Tire
8238 Highway 3B
Trail, BC V1R 4W4
Tel.: (250) 364-3333
Hours: Call for Hours

J. Mota Truck and Auto Repair
8023B Old Waneta Road
Trail, BC V1R 2Y8
Tel.: (250) 364-1720
Hours: Call for hours

Storms Auto Repair and Petro-Can Gas Bar
705 Victoria Street
Trail, BC V1R 3T1
Tel.: (250) 364-3297
Hours: Mon - Fri 8AM to 6PM

Warfield Shell
800 Schofield Highway
Trail, BC V1R 2G9
Tel.: 250-364-2500
Hours: Mon - Fri 8:30AM to 4PM

Greenwood

Greenwood Auto Centre Ltd.
494 Silver Street
Greenwood, BC V0H 1J0
Tel.: 250-445-9911
Hours: 9AM to 5PM; Open 7 Days A Week

Greenwood Saw Two Truck Repairs
893 North Government Street
Greenwood, BC V0H 1J0
Tel.: 250-445-9909
Hours: Call for hours

Hartech Industries Inc.
8845 Highway 31
Kaslo, BC V0G 1M0
Tel.: 250-353-2800
Hours: Call for hours

The Kaslo Pump
4116 Highway 31
Kaslo, BC V0G 1M0
Tel.: 250-353-2533
Hours: Call for hours

Kaslo

Creston Brake and Muffler
132 Northwest Blvd
Creston, BC V0B 1G6
Tel.: 250-428-7403
Hours: Call for hours

ESSO (Imperial Oil)
120 Collis Street
Creston, BC V0B 1G6
Tel.: (250) 428-7464
Hours: Call for hours

Granton Motors
3335 Highway 3
Rock Creek, BC V0H 1Y0
Tel.: 250-446-2311
Hours: Call for hours

Pick Up Services

Enviro West Inc. Kelowna, Phone: 250-766-1124
Will pick up oil, containers and rags throughout BA in all quantities for a fee and certain amounts of various wastes for no fee. Work on a travel schedule.

Newalta - Cranbrook Centre, Cranbrook, Phone: 250-426-2073
Will travel as far as Kootenay lake for >45Gallon drums of oil, containers and filters, and pay a return incentive.
KOOTENAY BUSINESS AREA LANDFILL SITES

REGIONAL DISTRICT OF EAST KOOTENAY

Accepts: Contaminated soil (needs to be analysed by Environmental Consultant). Cost: $100/tonne

<table>
<thead>
<tr>
<th>Landfill</th>
<th>Address</th>
<th>Hours of Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Subregion Landfill</td>
<td>12 km North of Cranbrook on Highway 93/95</td>
<td>9am-6pm seven days a week (closed Christmas and New Years Day)</td>
</tr>
<tr>
<td>Columbia Valley Landfill</td>
<td>Windermere Loop Road</td>
<td>9am-6pm seven days a week (closed Christmas and New Years Day)</td>
</tr>
</tbody>
</table>

REGIONAL DISTRICT OF CENTRAL KOOTENAYS

Accepts: Contaminated soil (needs to be analysed by Environmental Consultant). Cost: $50-$90/tonne

<table>
<thead>
<tr>
<th>Landfill</th>
<th>Address</th>
<th>Hours of Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creston Landfill</td>
<td>2206 Highway 21</td>
<td>Tues- Sat, 9am-4pm</td>
</tr>
<tr>
<td>Castlegar Landfill</td>
<td>Ootischenia</td>
<td>Mon-Sat, 8:30am-4pm</td>
</tr>
<tr>
<td>Nakusp Landfill</td>
<td>1420 Hot Springs Road</td>
<td>Mon. 9-12:30, Wed. &amp; Sat. 9am-4pm</td>
</tr>
<tr>
<td>Central Landfill</td>
<td>550 Emerald Mine Road</td>
<td>Wed &amp; Sat 10-2</td>
</tr>
</tbody>
</table>

REGIONAL DISTRICT OF KOOTENAY BOUNDARY

Accepts: Needs to be analysed by Environmental Consultant.

<table>
<thead>
<tr>
<th>Landfill</th>
<th>Address</th>
<th>Hours of Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>McKelvey Creek Regional Landfill</td>
<td>1900 Highway 3B, Trail</td>
<td>Mon. – Thurs. 10:00am – 5:00pm</td>
</tr>
<tr>
<td>Grand Forks Regional Landfill</td>
<td>8798 Granby Road</td>
<td>Tue. – Sat. 8:30 – 4:00; Sun. 12:00 – 4:00</td>
</tr>
<tr>
<td>West Boundary (Greenwood)</td>
<td>Deadwood Road, 3km from Hwy 3</td>
<td>Tuesday – Friday 9:00am – 4:00pm</td>
</tr>
</tbody>
</table>

HAZCO ENVIRONMENTAL & DECOMMISSIONING SERVICES

201 – 2307 Enterprise Way, Kelowna B.C. Phone: 250-762-5380, Gord Allan, Manager

Provides Bioremediation facilities accepting various hazardous waste (requiring analysis by Environmental Consultant) at the following Regional District Landfill Sites as noted above:

Castlegar Landfill; Creston Landfill; Grand Forks Landfill; Greenwood Landfill; Nakusp Landfill; Salmo Landfill. Additional facility located at the Regional District of Central Okanagan Landfill site in Westbank.

ENVIRONMENTAL CONSULTANTS – SPILL RESPONSE SPECIALISTS

The following Companies are available to respond to hazardous spills and have the expertise to assess, contain analyse and advise on disposition of spills:

SNC-LAVALIN (Morrow Environmental)

Cranbrook Office – 901 B Industrial Road #2 Cranbrook, B.C. V1C 4C9, Phone: 250-426-9070 (cell - 250-489-9733), Contact – Michelle Unger (B.Sc.)


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GOLDER ASSOCIATES

Castlegar Office – 201 Columbia Ave. Castlegar, B.C., Phone 250-365-0344
<table>
<thead>
<tr>
<th>Training Course Name</th>
<th>Target Audience</th>
<th>Training Source</th>
<th>Training Content</th>
</tr>
</thead>
</table>
| **BCTS LPC EMS/SFM Awareness Training** | **Target Audience:** Supervisors  
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 [http://www.for.gov.bc.ca/bcts/forestCertification/LPC.htm](http://www.for.gov.bc.ca/bcts/forestCertification/LPC.htm) 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 |
| **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 |
| **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) |
| **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 [http://www.tc.gc.ca/eng/tdg/act-menu-130.htm](http://www.tc.gc.ca/eng/tdg/act-menu-130.htm) and Regulations [http://www.tc.gc.ca/eng/tdg/clear-menu-497.htm](http://www.tc.gc.ca/eng/tdg/clear-menu-497.htm) |
| **SFM Training** | **Target Audience:** Supervisors  
Rationale: Supervisors are responsible for ensuring they are knowledgeable in BCTS SFM programs and are able to provide appropriate direction to LPC staff | Supplied by local Business Areas | As required provincially and by the Business Area e.g. SFI Client General Awareness, Species at Risk, Invasive Species. |

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

April 1, 2016
## EMS INCIDENT 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 or potential emergency situation, including; abnormal soil movement or sedimentation creating a significant risk to the environment or public safety, movement or an imminent risk of movement of a volume of material greater than 250 m³, or disturbance through erosion processes of a land area greater than 0.25 ha.

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 fact 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.
   - When 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.

### PROCEDURE:

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Review and follow-up</strong> any reported or identified EMS incidents as defined above.</td>
<td>Staff &amp; clients</td>
</tr>
<tr>
<td>Field Tech receives spill report and reports incident to their supervisor as soon as possible. Complete Part A CHK-009 and/or enter incident into EMS Issue Tracking System (ITS). Refer to the Certification Module Supplementary User Guide for additional information.</td>
<td>Staff</td>
</tr>
<tr>
<td>If Emergency Response Incident, ensure appropriate agencies have been notified and ensure the reporting Licensee / Permittee / Contractor or BCTS staff member has followed the requirements of the eERP such as: initial response action, agency reporting and follow-up.</td>
<td>Staff &amp; clients</td>
</tr>
<tr>
<td>Determine if further investigation is necessary from reported information. If a decision is made not to conduct an incident investigation, provide rationale on EMS Incident Report Form CHK-009 or in ITS. Rationale must be supported by supervisor or CSO. Incidents that don’t have a significant impact on the environment, (i.e. Timber Transport and Marking) or incidents that can be immediately rectified (i.e. industrial waste left on site or a blocked cross drain culvert) don’t require root cause investigation but one may be initiated if it is a repeat or chronic issue.</td>
<td>Staff</td>
</tr>
<tr>
<td>Determine who should conduct the investigation based on severity of event, risk and consequence.</td>
<td>Staff</td>
</tr>
<tr>
<td><strong>Level 1:</strong> Includes most reported EMS incidents, investigation usually conducted by BCTS staff that are administering and or supervising the applicable project. <strong>Level 2:</strong> This type of investigation is more complex requiring additional time, experienced personnel, knowledge, or resources to complete, and may involve BCTS staff and/or external experts. Usually associated with incidents when there is a significant impact to environment, social and economic values.</td>
<td>Staff</td>
</tr>
<tr>
<td>Conduct Incident Investigation to determine root cause and assess:</td>
<td>Staff &amp; clients</td>
</tr>
<tr>
<td>Immediate actions undertaken and proposed to be undertaken to address impacts.</td>
<td>Staff &amp; clients</td>
</tr>
<tr>
<td>Details of the incident including a timeline, contributing factors and root cause(s).</td>
<td>Staff &amp; clients</td>
</tr>
<tr>
<td>Adequacy of response measures, including training, equipment capabilities, procedures, etc.</td>
<td>Staff &amp; clients</td>
</tr>
<tr>
<td>Licensee, Permittee, Contractor, and company conformance to procedures or instructions.</td>
<td>Staff &amp; clients</td>
</tr>
<tr>
<td>Control of impact, including timeliness of response.</td>
<td>Staff &amp; clients</td>
</tr>
<tr>
<td>Develop recommendations for corrections and corrective actions and appropriate action plans identifying:</td>
<td>Staff &amp; clients</td>
</tr>
<tr>
<td>Immediate actions to be undertaken to address impacts.</td>
<td>Staff &amp; clients</td>
</tr>
<tr>
<td>Additional actions required to address root cause(s).</td>
<td>Staff &amp; clients</td>
</tr>
<tr>
<td>Responsibilities, timelines, and verification of completion of actions.</td>
<td>Staff &amp; clients</td>
</tr>
<tr>
<td>Ensure details of investigation are documented in the EMS Issue Tracking System (ITS) and/or complete Part B of the Incident Report Form CHK-009 and file appropriately. Refer to the Certification Module Supplementary User Guide for additional information.</td>
<td>Staff</td>
</tr>
<tr>
<td>Obtain Timber Sales Manager or designate approval, document on CHK-009 or in ITS.</td>
<td>Staff</td>
</tr>
<tr>
<td>Implement corrections and corrective actions, follow-up, update and close ITS and action plans.</td>
<td>Staff &amp; clients</td>
</tr>
</tbody>
</table>
## Section A

<table>
<thead>
<tr>
<th>Business Area:</th>
<th>Project Number (TSL or Contract)</th>
<th>Date of Inspection:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Blocks and Roads Inspected:</th>
<th>General Location (operating area)</th>
</tr>
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<tbody>
<tr>
<td></td>
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</tbody>
</table>

## Section B

### Consideration

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Has all training been completed? (BCTS Training matrix)</td>
<td>YES NO N/A</td>
</tr>
<tr>
<td>2</td>
<td>Have prework meetings been conducted and documented with all on-site workers?</td>
<td>YES NO N/A</td>
</tr>
<tr>
<td>3</td>
<td>Do all workers understand the project plan? (Specific to their roles and responsibilities)</td>
<td>YES NO N/A</td>
</tr>
<tr>
<td>4</td>
<td>Are you following the plan and requirements?</td>
<td>YES NO N/A</td>
</tr>
<tr>
<td>5</td>
<td>Are all applicable documents and records on-site, complete, updated as required and available to workers?</td>
<td>YES NO N/A</td>
</tr>
<tr>
<td>6</td>
<td>Do all workers understand their roles and responsibilities for environmental Emergency Preparedness and Response? (Fires, Spills and Landslides)</td>
<td>YES NO N/A</td>
</tr>
<tr>
<td>7</td>
<td>Have steps been taken to protect resource features and prevent damage to the environment?</td>
<td>YES NO N/A</td>
</tr>
<tr>
<td>8</td>
<td>Have all applicable environmental and safety issues been reported?</td>
<td>YES NO N/A</td>
</tr>
<tr>
<td>9</td>
<td>Have you followed up with all action items from previous inspections and pre-works?</td>
<td>YES NO N/A</td>
</tr>
<tr>
<td>10</td>
<td>Are there any considerations for improvements to the Project Plan?</td>
<td>YES NO N/A</td>
</tr>
</tbody>
</table>

## Section C

### Action #

<table>
<thead>
<tr>
<th>Correction / Corrective Action</th>
<th>By Who</th>
<th>Due Date</th>
<th>Completed Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Inspected by (print): ___________________________ Signature: ___________________________
EMS INCIDENT REPORTING REQUIREMENTS

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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 fact and possible enforcement action.

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   - 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.

<table>
<thead>
<tr>
<th>Substances</th>
<th>BCTS</th>
<th>PEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antifreeze</td>
<td>5 litres</td>
<td>5 kilograms</td>
</tr>
<tr>
<td>Diesel fuel</td>
<td>25 litres</td>
<td>100 litres</td>
</tr>
<tr>
<td>Gasoline (auto &amp; saw)</td>
<td>25 litres</td>
<td>100 litres</td>
</tr>
<tr>
<td>Greases</td>
<td>25 litres</td>
<td>100 litres</td>
</tr>
<tr>
<td>Hydraulic Oil</td>
<td>25 litres</td>
<td>100 litres</td>
</tr>
<tr>
<td>Lubricating Oils</td>
<td>25 litres</td>
<td>100 litres</td>
</tr>
<tr>
<td>Methyl Hydrate</td>
<td>5 litres</td>
<td>5 kilograms</td>
</tr>
<tr>
<td>Paints &amp; Paint Thinners</td>
<td>25 litres</td>
<td>100 litres</td>
</tr>
<tr>
<td>Solvents</td>
<td>25 litres</td>
<td>100 litres</td>
</tr>
<tr>
<td>Pesticides</td>
<td>Any</td>
<td>Any</td>
</tr>
<tr>
<td>Explosives</td>
<td>Any</td>
<td>Any</td>
</tr>
</tbody>
</table>
BC Timber Sales Sustainable Forest Management System
- Allows BCTS to be certified to the ISO 14001 and SFI standards

Before starting work know about:

1. Sustainable Forest Management Policy.
   - complying with the law,
   - continual improvement
   - preventing or minimizing environmental impacts
   - practice sustainable forestry (social, economic, environmental)

2. Significant Environmental Aspects for your work area
   - riparian areas, fuel spills, soil, fire, water, forest health, habitat, species at risk, leave tree, sensitive areas

3. Environmental Field Procedures (EFP’s)
   - Know where they are and which EFP’s apply to your task
   - EFP #1 for all workers
   - EFP #2 for supervisors
   - EFP#3 Planning and Development
   - EFP#4 Roads Bridges and Major Culverts
   - EFP#5 Harvesting
   - EFP#6 Fuel Handling

4. Emergency Response Plan (ERP)
   - Your ERP roles and responsibilities
   - Be prepared to for emergencies i.e fire, spills, erosion and water disruption events
   - Know where it is on the job site and how to respond

5. Stop Work Procedures
   - If not sure Stop Work and ask (see EFPs)

6. What to Report
   - Hazardous Material Spills and Uncontrolled Fires
   - Erosion / Landslide and Water disruption Events
   - Alleged non-compliances and significant non-conformances
   - Unidentified Resource Features
   - Species at risk sightings and identified invasive plants
   - Changes to Project Plan
   - Safety Hazards, Close calls or Accidents