



May 15, 2015

## Chief Inspector's Directive

### Hydrocarbon Spills

To: All Inspectors and Mine Managers

#### Objectives

- To reinforce the requirements for hydrocarbon spill prevention, response and reporting.
- To eliminate preventable hydrocarbon spills.
- To reduce the occurrence of spills related to mining equipment failure.

#### Background

**Operating mining equipment has an inherent risk of equipment failure that can result in a spill.**

Good maintenance practices, such as using quality replacement parts and replacing worn hoses, will reduce mobile equipment spills. Incorporating these practices will reduce both unscheduled equipment downtime and time-consuming clean-up efforts.

**Storing, transporting, handling and transferring fuels and other hydrocarbons can also pose a spill risk.**

A well-designed storage, transfer and handling location will reduce the risk of spills. Keeping equipment and safety devices in good working order and properly training supervisors and fueling operators in their responsibilities will also help reduce spills.

**Should a spill occur, the Mine Manager is responsible for controlling, cleaning up and reporting the spill.**

The amount of preparation and planning that has gone into a mine's spill response procedure influences the effectiveness of the control/cleanup efforts.

## **Observations and Recommendations**

### **Managing equipment-related risks:**

Maintenance practices that can help reduce the number or severity of spills include:

- Replacing worn hoses and "O" rings, instead of running them to failure;
- Using replacement parts that meet the manufacturer's specifications for the given application;
- Ensuring that hoses are properly routed and frame clamped; and
- Using catch trays to prevent oil spills during field repairs and immediately collecting any spilled oils.

### **Managing fuel storage, handling and transfer risks:**

The storage, handling and transfer of fuels are subject to many regulations designed to reduce or eliminate fuel spills and their consequences. A partial list of these regulations is appended to this Directive. Following the applicable regulations reduces risks associated with fuel storage, handling and transfer. Reducing risks associated with spills starts with properly trained operators, well-designed fuel stations (see **Figure 1**) and good equipment maintenance.

**Figure 1:**



**Key features to note in Figure 1:**

1. Emergency stop button
2. Grounding/bonding device
3. Flow meter to aid with fuel reconciliation
4. Self-sealing breakaway fittings on delivery hose
5. Sign reminding operator to attend the nozzle during fuel transfer
6. Automatic shut-off nozzle with holster for catching drips
7. Good ground maintenance to prevent slips and falls
8. Collision barriers to protect fuel tanks
9. Secondary containment berm as well as double-hulled tanks
10. Product-identifier placards
11. Drain in pad to collect any spillage; fluids are directed to the oil-water separator
12. Not seen in this photo but also present at this fuel station: fire extinguishers; “no smoking” signs; good stairs and walkway to access top of tanks; spill kits; lighting; tank-level gauges; anti-syphon devices; and suitable approved electrical equipment for this type of installation

**Figure 2:**



**Figure 2** shows an outdated fuel tank that does not satisfy regulatory requirements or demonstrate best practices. This fuel storage, handling and transfer location does not have any of the required devices or equipment. Note the unsafe ladder, bent support structure, large fuel stain on the ground, and lack of placarding, fire extinguishers and breakaway fittings. When it was discovered, the Ministry ordered the fuel station to be removed from service and the contaminated ground to be cleaned up.

### **Spill response**

Part 2.3.7 of the Health, Safety and Reclamation Code for Mines in British Columbia requires that spills are cleaned up as soon as possible by trained persons wearing any necessary protective clothing. The Mine Manager must promptly report any spill that triggers the reporting requirements of the Ministry of Environment. In addition, all mines in British Columbia must have a Mine Emergency Response Plan (MERP), which contains elements that apply to spill response and prevention (see **Appendix B**). The following components are essential for ensuring adequate spill response:

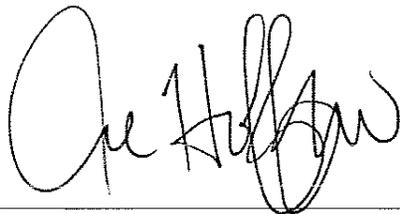
- suitable type and quantity of containment and absorbing materials;
- suitable number of workers trained in spill response;
- ability to call on additional resources if the site cannot safely manage a given spill;
- easily accessible personal protective equipment (PPE) that is suitable for the material spilled;

- impervious containers to store contaminated materials while awaiting disposal that can be labeled to clearly identify the contents and nature of the hazardous material; and
- suitable location to store and/or send contaminated materials for disposal.

## **Directive**

- 1) Mine Managers shall take all reasonable and practical measures to reduce spills that are the result of day-to-day equipment failures.
- 2) Mine Managers shall ensure that all fuel storage, handling and transfer locations meet the requirements of the codes and standards applicable to these locations.
- 3) Mine Managers shall ensure that an effective spill response plan is in place and adhered to in the event of a spill.
- 4) Mine Managers shall ensure that fuel station operators (i.e., workers who have fuel-transfer duties) are properly trained in the operation of the fuel station and aware of their duties while supervising fuel-transfer activities.

Sincerely,

A handwritten signature in black ink, appearing to read "Al Hoffman", written over a horizontal line.

Al Hoffman, P.Eng.  
Chief Inspector of Mines

## Appendix A: Regulations

This list of regulations is not exhaustive. It is the Manager's responsibility to ensure that the mine complies with all regulations, codes and standards that may apply to any activity taking place on the mine site.

- Mines Act and Health, Safety and Reclamation Code for Mines in British Columbia: [http://www2.gov.bc.ca/gov/DownloadAsset?assetId=318C27C47FE14F228E47B9E5C836A173&filename=health\\_safety\\_and\\_reclamation\\_code\\_2008.pdf](http://www2.gov.bc.ca/gov/DownloadAsset?assetId=318C27C47FE14F228E47B9E5C836A173&filename=health_safety_and_reclamation_code_2008.pdf)
- British Columbia Building and Fire Codes (these codes reference many other codes and standards, such as the ULC and NFPA). Most regulations regarding fuel storage, handling and transfer can be found in the B.C. Fire Code Division "B", parts 4.1 through 4.12. <http://www.bccodes.ca/>
- Environmental Management Act, Petroleum Storage and Distribution Facilities Storm Water Regulation: [http://www.bclaws.ca/Recon/document/ID/freeside/38\\_168\\_94](http://www.bclaws.ca/Recon/document/ID/freeside/38_168_94)
- Federal Transportation of Dangerous Goods (TDG) Regulations: <https://www.tc.gc.ca/eng/tdg/clear-menu-497.htm>
- Workplace Hazardous Materials Information Systems (WHMIS), Part 2.13 of the Health, Safety and Reclamation Code for Mines in British Columbia <http://www.whmis.ca/>
- The Spill Reporting Regulation of the Environmental Management Act includes information on reporting requirements: [http://www.bclaws.ca/EPLibraries/bclaws\\_new/document/ID/freeside/46\\_263\\_90](http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/46_263_90)
- To report a spill, phone Emergency Management BC's 24-hour spill line at 1-800-663-3456

## Appendix B: Guidance Sources

When installing a fuel storage, handling and transfer station, the Mine Manager should consult with persons familiar with the requirements for such installations.

- A good source of guidance and information is the Province's Field Guide to Fuel Handling, Transportation & Storage. This guide covers many aspects of fuel handling, transportation and storage, from small fuel stations to large fuel storage locations. The guide will also direct you to applicable regulations, codes and standards and is available online:  
[http://www2.gov.bc.ca/gov/DownloadAsset?assetId=520793AF081F4F5DBD6BAE39BC79BC7F&filename=fuel\\_handle\\_guide.pdf](http://www2.gov.bc.ca/gov/DownloadAsset?assetId=520793AF081F4F5DBD6BAE39BC79BC7F&filename=fuel_handle_guide.pdf)
- The Province's Mine Emergency Response Plan (MERP) Guidelines for the Mining Industry should be followed by Mine Managers as they contain elements that apply to spill response and prevention. Element C: Emergency Identification, Prevention and Protection and Element I: Action Plans are of particular importance. The MERP guidelines are available online:  
<http://www2.gov.bc.ca/gov/DownloadAsset?assetId=AA61F45BC6824AD8BD94B7186B69204A&filename=merpguidelines.pdf>