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SCOPE

This standard applies to all research, teaching, operational activities and persons handling, transporting, using, disposing and/or storing potentially environmentally hazardous materials under the auspices of or on any property owned or controlled by the University of Calgary.

Contractors and other employers operating on the property of the University of Calgary must meet or exceed the requirements of this standard.

PURPOSE

Spills of hazardous materials may cause unwanted exposure to the possibility of personal injury and/or damage to University of Calgary property. In addition, spills have the potential to cause damage to the environment, which can subsequently lead to negative impact on the University's reputation and community standing. A potential financial risk may also exist from civil action or regulatory enforcement.

This document outlines the necessary elements of a program for the prevention and control of spills involving environmentally hazardous substances. This standard includes an internal process for identifying an environmental release, and the requirements pertaining to subsequent reporting of the incident.

RESPONSIBILITIES

Environment, Health & Safety

- Develop, implement, and review this document.
- Assist departments with interpretation and methods of compliance with this standard.
- Review all reports to regulatory agencies required under federal, provincial, and municipal legislation.

Facilities Management

- Develop and implement mitigation strategies, spill response and control procedures for areas such as mechanical rooms, heating/cooling plants, fuel storage and filling facilities, hazardous product use areas, etc.
- Maintain emergency spill response supplies in each identified area, including but not limited to absorbent materials, drain plugs, emergency pipe repair materials, and any personal protective equipment identified in the hazard assessment for the area.
- Where the possibility of discharge to any drainage system is identified maintain a record on site indicating the system connectivity of all drains and sumps in the space. If the system feeds into a drain in an adjacent space, that drain connectivity shall be included on the record document.

Supervisors

- Ensure that conditions or system malfunctions identified as having an increased potential

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- for release are repaired immediately.
- When external influences such as weather prevent immediate permanent repairs, isolate all modes of release such as drains, sumps, etc. until permanent repairs are made.
 - Ensure that all workers under their supervision are adequately trained to use the response supplies provided.
 - Ensure that a current copy of a Material Safety Data Sheet (MSDS) for each hazardous substance is immediately accessible by all workers in either print or electronic form.
 - Ensure that all reports required by regulation or this standard are filed within the time frame specified.

Workers

- Follow the requirements set out in this standard and any additional requirements established by the area supervisor.
- Report any conditions that may result in a spill or release to their supervisor.

ELEMENTS:

1. Prevention

1.1 Risk Assessment

An assessment of the risk of spill or release must be conducted considering the following criteria:

- The severity of any potential release within the space and (or) a release into the environment based on the volume, hazard characteristics of the material and potential for escape into the environment.
- The potential for a release based on factors such as the historical record of similar releases on campus.
- Activities performed within the space which could cause a release in an otherwise unrelated system or process. This could include for example a mechanical process, the failure of which could result in physical damage to a nearby container or system.

1.2 Spill Prevention

Measures to reduce or eliminate the possibility of a spill or release to the environment must be conducted in the following order of preference:

- Engineering Controls – secondary containment, dikes, berms, drain plugs or covers, etc.
- Administrative Controls – procedures and schedules for repairs and maintenance to reduce the probability of a release due to aging buildings, equipment, or outdated processes, spill response plans, inspections, etc.

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2 Emergency Response / Risk Mitigation

Where the risk of a spill or release has been identified as outlined in Section 1.1 equipment and supplies must be readily available to control the release and make emergency repairs to equipment if it is safe to do so. A partial list of equipment commonly found in a spill control kit is available in [Appendix 1](#). Further guidance for laboratory spill response is available in the [Spill Response](#) section of the Laboratory Safety Manual. Spill response must at all times be conducted in compliance with the Hazard Assessment for the area.

3 Reporting

If the spill/release meets any of the criteria outlined in [Appendix 2](#) it must be reported to the appropriate authorities. Reporting contacts are provided in the Appendix. Although not specifically addressed in Appendix 2, any release that causes significant property damage must be reported to Campus Security immediately, followed by an OARS report.

Occurrences involving Biohazardous or Radioactive materials have additional requirements. See either the Radiation Safety or BioSafety manual as appropriate.

A reporting flowchart is provided in [Appendix 3](#) of this document and a worksheet is available in [Appendix 4](#) to help insure all required information is gathered for a report.

References

Canadian Environmental Protection Act, 1999:

<http://laws.justice.gc.ca/en/C-15.31/text.html>

Fisheries Act:

http://laws.justice.gc.ca/en/showdoc/cs/F-14/20090415/en?command=home&caller=SI&search_type=all&shorttitle=Fisheries%20Act&day=15&month=4&year=2009&search_domain=cs&showall=L&statuteyear=all&lengthannual=50&length=50

Alberta Environmental Protection And Enhancement Act:

http://www.qp.alberta.ca/574.cfm?page=E12.cfm&leg_type=Acts&isbncln=9780779735495

Water Act

http://www.qp.alberta.ca/574.cfm?page=w03.cfm&leg_type=Acts&isbncln=9780779733651

Release Reporting Regulation:

http://www.qp.alberta.ca/574.cfm?page=1993_117.cfm&leg_type=Regs&isbncln=0779727460

Ozone-Depleting Substances and Halocarbons Regulation:

http://www.qp.alberta.ca/574.cfm?page=2000_181.cfm&leg_type=Regs&isbncln=0779732650

City of Calgary Sewer Service Bylaw 24M96:

<http://www.calgary.ca/DocGallery/BU/cityclerks/24m96.pdf>

Radiation Safety and Procedures Manual:

http://www.ucalgary.ca/safety/manual_radiation

BioSafety and Procedures Manual:

http://www.ucalgary.ca/safety/biosafety_manual

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APPENDIX 1

Common Spill Response Supplies:

Absorbent	Broom	Dustpan
Acid / Base Neutralizer	Dust Mask	Gloves
Garbage Bags	Drain Plugs / Mats	Coveralls
Duct Tape	Spill Pillows	Safety Glasses / Goggles
Rubber Shoe Covers	Caution / Barrier Tape	Shovel

APPENDIX 2

Release Reporting Guideline:

Transportation of Dangerous Goods (TDG) Requirements

TDG Class	Description	Reportable Quantity
1	Explosives	<ul style="list-style-type: none"> Any quantity that could pose a danger to public safety or More than 10 kg in divisions 1.1, 1.2, 1.3, 1.5 or More than 50 kg.
2	Compressed Gases	<ul style="list-style-type: none"> Any quantity that could pose a danger to public safety or Any sustained release of 10 minutes or more.
3	Flammable Liquids	<ul style="list-style-type: none"> More than 200 L
4	Flammable Solids, Spontaneously Combustible, Dangerous When Wet	<ul style="list-style-type: none"> More than 25 kg
5.1	Oxidizers	<ul style="list-style-type: none"> More than 50 kg or 50 L
5.2	Organic Peroxides	<ul style="list-style-type: none"> More than 1 kg or 1 L
6.1	Toxic	<ul style="list-style-type: none"> More than 5 kg or 5 L
6.2	Infectious	<ul style="list-style-type: none"> Any quantity
7	Radioactive	<ul style="list-style-type: none"> Any quantity that could pose a danger to public safety or More than 2 mSv/h on the external surface of a package or 0.1 mSv/h at a distance of 1 m from the package.
8	Corrosive	<ul style="list-style-type: none"> More than 5 kg or 5 L
9	Miscellaneous	<ul style="list-style-type: none"> More than 25 kg or 25 L

The person who has possession of the dangerous goods at the time of the accidental release must make an immediate report to Campus Security (403-220-5333). Campus Security must report the release to Calgary Police and Alberta Transportation (1-800-272-9600). Any reportable release in Classes 1 or 6.2, and any release in Class 2 caused by catastrophic failure of a cylinder must also be reported to CANUTEC (1-613-996-6666).

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City of Calgary Requirements

Substance	Reportable
Any	Any release that may cause an adverse effect
Prohibited Materials (unless authorized by the City of Calgary)	<ul style="list-style-type: none"> • BOD (biological oxygen demand) or TSS (total suspended solids) > 1200 mg/L; • COD (chemical oxygen demand) > 2400 mg/L; • Oil and Grease > 450 mg/L; • Any flammable liquid or explosive material; • Any material, other than domestic wastewater, that is capable of creating odours; • pH < 5.5 or > 10.0; • Radioactive materials with activity > 10 KBq; • Hazardous wastes or hazardous materials; • Wastewater > 75 °C; • Biological wastes.

If the spill results an immediate danger to health or safety call Campus Security (403-220-5333). Campus Security will activate the City's emergency response system. If there is no immediate danger the university representative on scene or the supervisor in charge of the area will report to the city immediately by calling 311. Immediately is defined as 'the first opportunity', in other words, when the release is controlled. It does not mean 'tomorrow or when it is convenient'.

Alberta Environment (AENV) Reporting Requirements

TDG Class or Substance	Reportable
Any (glycols, oils, and other substances not regulated by TDG are included)	<ul style="list-style-type: none"> • Any release that has caused or may cause an adverse effect. • Any release ≥ 5 kg or 5L
Any (glycols, oils, and other substances not regulated by TDG are included)	<ul style="list-style-type: none"> • The release is into a watercourse, groundwater or surface water in any quantity.
Any	<ul style="list-style-type: none"> • Approval, License or Code of Practice contravention.
Ozone Depleting Substance including: <ul style="list-style-type: none"> • chlorofluorocarbons (CFCs); • halons; • chlorocarbons; • hydrochlorofluorocarbons (HCFCs). 	<ul style="list-style-type: none"> • Any amount ≥ 10 kg
Polychlorinated Biphenyl (PCBs)	<ul style="list-style-type: none"> • Any release containing concentrations > 50 parts per million.
2.1 Compressed Gases, Flammable	<ul style="list-style-type: none"> • Any quantity that could pose a danger to public safety or • Any release of 100 L (liquid container capacity) or more.
2.2 Compressed Gases, Non-flammable, Non-Toxic	<ul style="list-style-type: none"> • Any quantity that could pose a danger to public safety or • Any release of 100 L (liquid container capacity) or more.
2.3 Compressed Gases, Toxic	<ul style="list-style-type: none"> • Any quantity
3 Flammable Liquids	<ul style="list-style-type: none"> • More than 200 L
4 Flammable Solids, Spontaneously Combustible, Dangerous When Wet	<ul style="list-style-type: none"> • More than 25 kg
5.1 Oxidizers	<ul style="list-style-type: none"> • More than 50 kg or 50 L
5.2 Organic Peroxides	<ul style="list-style-type: none"> • More than 1 kg or 1 L

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TDG Class or Substance		Reportable
6.1	Toxic	<ul style="list-style-type: none"> • More than 5 kg or 5 L
6.2	Infectious	<ul style="list-style-type: none"> • Any quantity
8	Corrosive	<ul style="list-style-type: none"> • More than 5 kg or 5 L
9	Miscellaneous	<ul style="list-style-type: none"> • More than 25 kg or 25 L

If the spill results an immediate danger to health or safety call Campus Security (403-220-5333). Campus Security will activate the City's emergency response system. If there is no immediate danger the university representative on scene or the supervisor in charge of the area will report to the Alberta Environment (1-800-222-6514). Immediately is defined as 'the first opportunity', in other words, when the release is controlled. It does not mean 'tomorrow or when it is convenient'. Within seven days a written report must be filed by fax (1-780-427-3178). Retain the fax confirmation as proof of filing.

Environment Canada Requirements

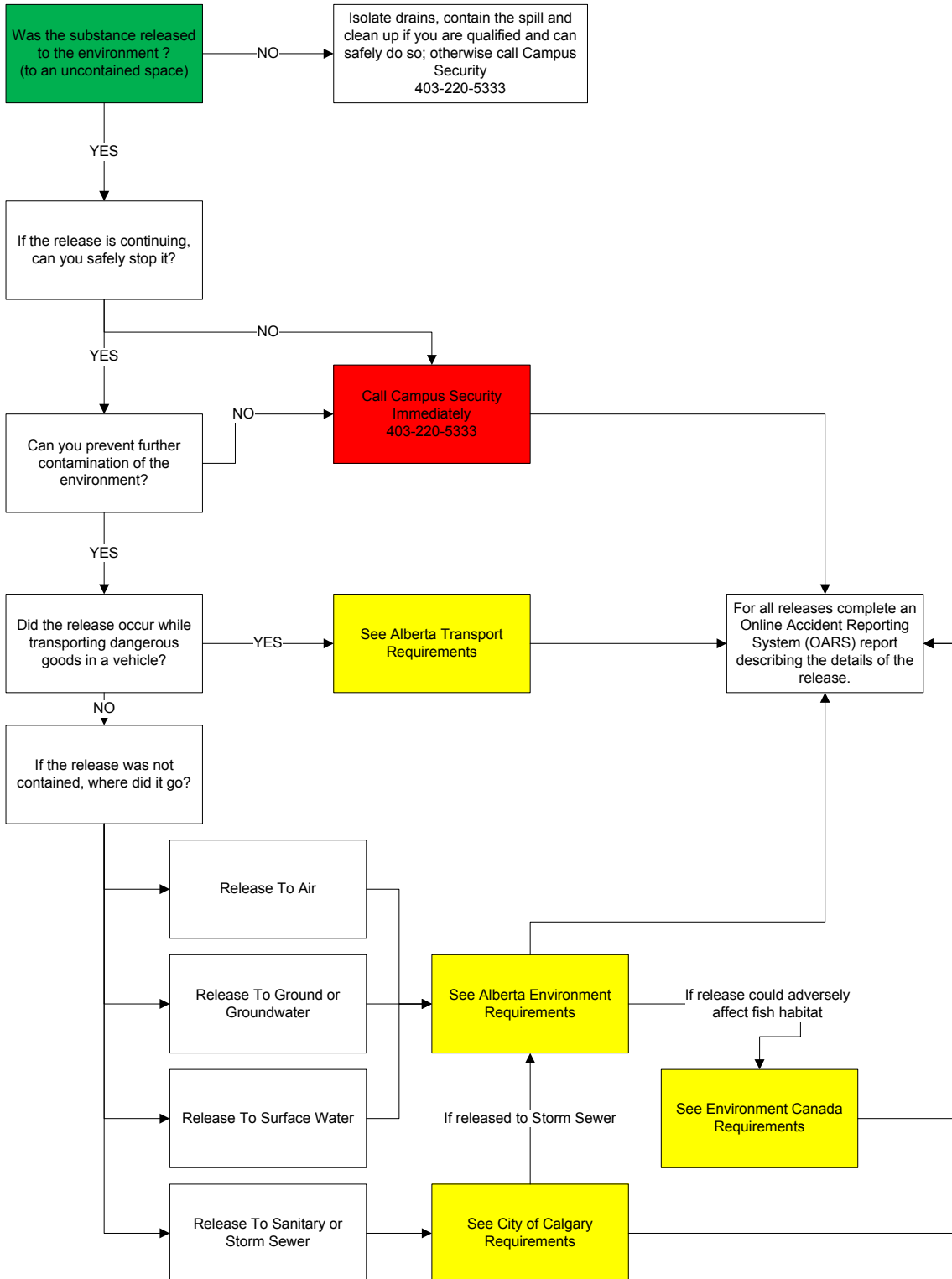
Substance	Reportable
Any substance that may have a deleterious effect on fish <u>or</u> fish habitat (any water that <u>could</u> contain fish, even if no fish are present).	<ul style="list-style-type: none"> • Any quantity that could have a deleterious effect.

If there is any possibility a release of this nature has occurred immediately contact Environment Canada to notify the Department of Fisheries and Oceans (1-780-499-2432). Note: if a report is required under this section a report to Alberta Environment will also be required, and a report to the City of Calgary may be required.

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APPENDIX 3

Environmental Release Reporting Guidelines



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RELEASE REPORTING WORKSHEET	
FOR IMMEDIATE REPORT	
Location of Release: (be as specific as possible)	
Time of Release:	
Circumstances Leading To Release:	
Type & Quantity of Substance Released:	
Describe Where Substance Was Released: (drain, soil, air, etc.)	
Details of Actions Taken or Proposed at Release Site:	
Description of Immediate Surrounding Area:	
FOLLOW UP REPORT (written report)	
Steps Taken to Control, Minimize, or Stop Release:	
Steps or Procedures to Prevent Recurrence:	
<u>REPORT REFERENCE NUMBER:</u> (required for all reports)	
<ol style="list-style-type: none"> 1. If possible take pictures of the release and surrounding area. 2. Complete an OARS report. Include all information on this page, pictures, scanned copies of written reports made to a regulator and a fax confirmation if the written report was submitted by fax. 	