

Air Quality Position Statement

Nov 15th, 2019



LIFESAVING SOCIETY®

The Lifeguarding Experts

Lifesaving Society
Alberta and Northwest Territories

Background:

Wildfire smoke is a common, seasonal health hazard in Alberta and the Northwest Territories during the spring, summer and autumn months. The hazardous ingredients of smoke include particulate matter, carbon monoxide, and chemicals such as, aldehydes, polycyclic aromatic hydrocarbons and benzene. Windborne wildfire smoke can be a hazard for people who work at or visit aquatic facilities many miles from evacuation zones.

Background (cont):

Wildfires in Canada are expected to increase in size, severity and duration as a result of the changing climate. The Northwest Territories (NWT) typically experiences 245 wildfires per year on average affecting some 570,000 hectares each year. Wildfire smoke is increasingly recognized as an important health hazard.



▲▼ Photo courtesy GNWT Environment and Natural Resources

Background (cont):

The Society has been approached by Affiliates, members and public with questions about air quality and when to cancel aquatic activities or close aquatic facilities. Owners/Owner's Agents should monitor the Air Quality Health Index (AQHI) and Special Air Quality Statements to determine when to cancel activities or close facilities. In addition, Owners/Owner's Agents should establish an Air Quality Response Plan which includes preventative measures and safety protocols.

Air Quality Position Statement

Outdoor Facilities:

- When the Air Quality Health Index is High Risk (7-10) facilities should consider re-scheduling strenuous activities or closing outdoor facilities
- When the Air Quality Health Index is Very High Risk 10+ it is recommended that outdoor facilities close
- In areas that don't have an AQHI and/or internet access, or as an additional tool, develop a method to identify smoky conditions and changes in visibility before the wildfire season. Designate a specific landmark at various distances that can be used to estimate smoke concentration

Air Quality Health Index

Health Risk	Air Quality Health Index	Health Messages	
		At Risk Population	General Population
Low Risk	1 – 3	Enjoy your usual outdoor activities.	Ideal air quality for outdoor activities.
Moderate Risk	4 – 6	Consider reducing or rescheduling strenuous activities outdoors if you are experiencing symptoms.	No need to modify your usual outdoor activities unless you experience symptoms such as coughing and throat irritation.
High Risk	7 – 10	Reduce or reschedule strenuous activities outdoors. Children and the elderly should also take it easy.	Consider reducing or rescheduling strenuous activities outdoors if you experience symptoms such as coughing and throat irritation.
Very High Risk	Above 10	Avoid strenuous activities outdoors. Children and the elderly should also avoid outdoor physical exertion.	Reduce or reschedule strenuous activities outdoors, especially if you experience symptoms such as coughing and throat irritation.

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Indoor Facilities:

- During prolonged smoky periods, monitor air quality inside the building and consider closing the facility if visibility is affected and/or if staff/customers are experiencing respiratory concerns as a result of the accumulating smoke.
- Owners/Owner's Agents should ensure that the heating, ventilation, and air conditioning (HVAC) systems are inspected by a qualified technician and that the filters are not dirty, damaged, dislodged, or leaking around the edges. Installation of the highest efficiency filters that do not exceed the static pressure limits of the HVAC systems should be considered. Pressure gauges should be installed across the filter to indicate when the filter needs replacing. HVAC systems should be operated continuously while buildings are occupied in order to provide the minimum quantity of outdoor air for ventilation, as required by the standards or building codes to which the building was designed

Staff Considerations

- Employers should educate staff on the importance of drinking water, taking regular breaks and being aware of the signs and symptoms of smoke inhalation.⁸
- When the Air Quality Health Index is High Risk (7-10) re-schedule any non-necessary outdoor work.
- In addition to assessing and if necessary, modifying the function of the HVAC system, employers are encouraged to take other reasonable steps to reduce employee exposure to smoke, including:
 - Alternate work assignments or relocation and telecommuting.
 - In buildings that rely on open windows, doors and vents for outdoor air, or those lacking proper filtration for their ventilation systems, consider relocating employees to safer locations.
 - Employees with asthma, other respiratory diseases, or cardiovascular conditions, should be advised to consult their physician for appropriate measures to minimize health risks.
 - NIOSH-certified disposable respirators (N95 or P100), may provide additional protection to some employees against environmental smoke if they are sized and used properly. One-strap paper masks, surgical masks, or other face coverings are likely to provide far less or no protection.



Smoke Exposure from Wildfire Guidelines for Protecting Community Health and Wellbeing



Government of Northwest Territories
Gouvernement des Territoires du Nord-Ouest

Working When There is Wildland Fire Smoke: OHS information for workers and employers

WHAT I NEED TO KNOW

- Wildland fire smoke is a hazard that can impact workers anywhere in Alberta

- Outdoor workers doing strenuous work close to the source are most exposed

- Hazardous substances are typically associated with wildland fire smoke

THE HAZARD: What is wildland fire smoke?

Wildland fire smoke is a common, seasonal health hazard in Alberta during the spring, summer and autumn months. The hazardous ingredients of smoke include particulate matter, carbon monoxide, and chemicals such as, aldehydes, polycyclic aromatic hydrocarbons and benzene.

THE EFFECT: What are potential health effects of exposure?

The health effects can range from eye, nose and throat irritation to reduced lung function, bronchitis, exacerbation of asthmas and even risk of death.

- Particulate matter exposure may result in irritated or increased mucous production in the nose or throat, coughing or difficulty breathing, especially during work. People with existing respiratory or cardiac conditions may experience aggravation of these effects.
- Carbon monoxide exposure may have symptoms of carbon monoxide poisoning, including headache, weakness, dizziness, visual impairment, Profound symptoms include coma and death.

Working in smoky environments

OHS information for employers and workers

Smoke from wildfires is common in Alberta in the spring, summer and autumn months. If you work outdoors in these months, read this bulletin to learn about exposure risks and hazard control.



However, outdoor workers may still be at risk, especially if they:

- Perform strenuous physical work.
- Have existing health risks, including but not limited to respiratory or cardiac health conditions.
- Are elderly.
- Are pregnant.

Key information

Smoke in the air can be a health hazard, even if you are not close to the fire.

Minimize exposure to smoke when working outdoors.

Health Risks

Smoke can be harmful because it carries particulate matter and chemicals that can cause eye irritation, coughing or difficulty breathing, especially for sensitive populations or at-risk workers.

Carbon monoxide exposure is typically only a risk for workers who are close to fires.

Workers should follow Alberta Health Services (AHS) guidelines for smoke exposure risks.

Smoke Risks

Disturbances in the air are likely to occur when locations are smoky.

Hazard assessment and control

As per Part 2 of the Alberta Occupational Health and Safety (OHS) Code, employers must identify hazards in the workplace and implement controls, following the hierarchy of controls set out in section 9. For example:



- Eliminate the hazard, by relocating or rescheduling work, until smoke has cleared.
- Engineering controls may include moving work indoors to clean air work areas where ventilation reduces the exposure to smoke.
- Administrative controls are another option. Some examples are:
 - Work in short shifts to limit exposures.
 - Take breaks in clean air, such as a vehicle with closed windows and air set on recirculate, or an air-conditioned building.
- Use personal protective equipment including respiratory protection equipment (RPE). Workers must be trained on selection, use, maintenance and must be respiratory fit tested when using RPE.

References

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Public Aquatic Facility Safety Standards Up-date

Nov 15th, 2019



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Province of Alberta

Resources

- Public Pool Safety Standards – National
- 19 Lifesaving Society Safety Standards
- Alberta Health Pool Standards (Up-dated 2018)
- Alberta Swimming Pool Regulation
- Alberta Building Code (2019)
- Alberta Fire Code
- Occupational Health and Safety Code
- Model Aquatic Health Code (2018)
- FINA
- And many more...

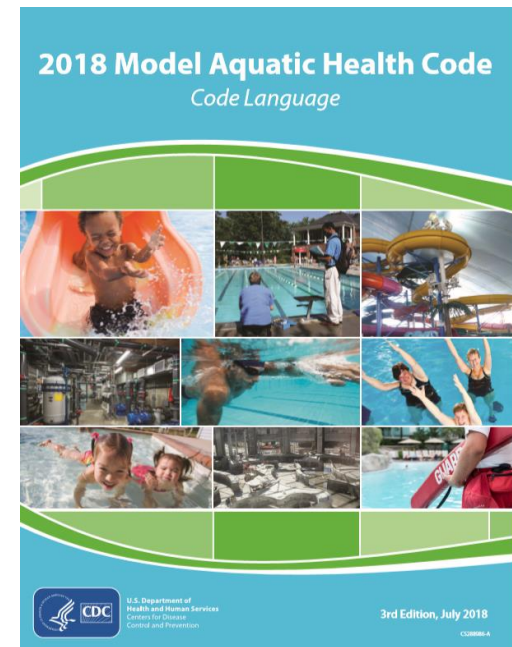
OCCUPATIONAL HEALTH AND SAFETY ACT

OCCUPATIONAL HEALTH AND SAFETY CODE

Alberta Regulation 87/2009

With amendments up to and including Alberta Regulation 213/2018
Current as of January 1, 2019

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Process

- Gathered Research / New Publications
- PFASS Stakeholder Meeting
 - Took place Sept 17th, 2019
- Revise the PFASS
- Final Design of the PFASS



Key Formatting Changes:

- Re-structured to align with Alberta Health Pool Standards and 'standards' documents, by breaking Standards into clearly numbered sections
- Key minimum requirements are outlined for owner's/owner's agents
- Clarified current definitions



New Definitions:

- Non-bather
- Instructional Period
- Recreational Swim
- Active Supervision
- Lifeguard-on-duty
- Assistant Lifeguard
- Instructor
- Anti-entrapment device
- And many more...



Safety Standards

- 1.0 – Personnel
- 2.0 – Supervision Systems
- 3.0 – Safety Systems
- 4.0 – Emergency Procedures
- 5.0 – Pool Operation
- 6.0 – Specialized Equipment

1.0 - Personnel

- Added in requirements for:
 - Assistant Lifeguard
 - Amenity Attendant
 - Shallow Water Attendant
 - Pool Operator, and
 - Facility Manager
- Added requirements for retaining training documents
- The Health and Safety section was expanded to include PPE and footwear requirements



1.0 – Personnel (cont.)

- Requirements for staff communication and resources were updated to include:
 - Safety and Supervision Plan
 - Anti-entrapment Plan
 - General Sanitation Plan
 - Pool Operating Documents
 - Personnel Manual

Alberta Health Services
Anti-Entrapment Compliance Plan for Public Swimming Pools

Please refer to the [information to complete this form](https://www.albertahealthservices.ca/assets/info/hif/afh-eph-info-complete-anti-entrapment-compliance-form.pdf), available at <https://www.albertahealthservices.ca/assets/info/hif/afh-eph-info-complete-anti-entrapment-compliance-form.pdf>

Any reference to Appendices in the form below are located in the Information to Complete Anti-Entrapment Compliance Plan for Public Swimming Pools.

Part I – Facility Information

Name of Facility: _____
 Owner / Owner's Agent: _____
 Site Address: _____
 City/Municipality: _____
 Date Assessment Completed (YYYY-MM-DD): _____
 Person Conducting Assessment: _____
 Job Title: _____ Company: _____

Part II – Public Swimming Pool Information

Pool Location: Indoor Pool Outdoor Pool
 Pool Type: Swimming Pool Whirlpool (~4000L) Whirlpool (~4000L) Waterslide Receiving Pool Other _____
 Swimmaged Suction Outlet Connected To: Spray Feature Hydro-Jet Slide Recirculation Other _____

Part III – Suction Outlet Entrapment Assessment Information (See Part A of Flowchart)

Detail	Response	Additional Information
How many pumps does the outlet(s) serve?		If 2 or more pumps are connected to one set of outlets then the maximum system flow rate will be the added flows (combination) of all pumps connected to it.
Pump manufacturer, make, model number, horsepower of pump		If available you may include manufacturer's specifications such as pump curve and manual.
What is the minimum flow rate? Refer to Appendix B for details		Include any photos of flow meter, gauges and devices used for calculation.
How was the maximum flow rate determined? (please circle one) Refer to Appendix B for details	<input type="checkbox"/> Pump method 1 – flow meter <input type="checkbox"/> Pump method 2 – pressure/ vacuum gauge (TDH) <input type="checkbox"/> Maximum pump flow according to the pump curve <input type="checkbox"/> Ultrasonic flowmeter	

2/2019 (v19.02)



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AQUATIC PROCEDURE MANUAL AQUATIC SAFETY & SUPERVISION MODULE

This is the (ORGANIZATION) aquatic safety and supervision plan for the safe operation of (FACILITY). This plan was developed using the Lifesaving Society's Safety & Supervision Plan Template.

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2.0 - Supervision Systems

- This is a new section that branched out of Personnel with expanded information on Lifeguard and Instructor Supervision Systems
- Lifeguard-to-Bather Ratios have been up-dated to reflect the National Standard of 1:40
- Clarification around the square footage of facilities and how this impacts Lifeguard surveillance has been added in
- Instructional Program Supervision has been clarified and expanded upon
- A section on Public Group Supervision has been added in to reflect our Caregiver guidelines

3.0 - Safety Systems

- This section was revised to include information on creating a 'Public Education Plan' and was updated according to Part 11 of the Alberta Health Pool Standards
- Required Emergency Equipment was up-dated



4.0 - Emergency Procedures

- The difference between ‘General Emergency Procedures’ and ‘Specialized Emergency Procedures’ was clarified
- A section on Naloxone Training and DNR orders was added in
- Requirements for contacting emergency services was up-dated

5.0 - Pool Operation

- The Water Quality Incident Response Plan was up-dated to follow the Alberta Health Pool Standards
- The Pool lighting section was expanded to reference Alberta Building Code minimums, emergency lighting and underwater lighting
- The Anti-entrapment section was up-dated
- Added sections: facility access control, deck clearance, pool basin colour, depth markings, fire extinguishers, and air quality

6.0 - Specialized Equipment

- Requirements for rope swings was added
- Up-dated requirements for starting blocks, diving boards, and waterslides



Photo courtesy of Repsol Sport Centre

Standards Journal

- Legal Reports and Recommendations
 - Inquest Findings
- Legally Speaking Articles
 - Occupiers Liability
 - Risk Management
- Position Statements
 - Alberta and Northwest Territories

LIFESAVING SOCIETY AB/NWT
STANDARDS JOURNAL
2012



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Next Steps

- Public Aquatic Facility Safety Standards
 - Stay posted for the Publication January 2020
- Standards Journal
 - Stay posted for the Publication in 2020

Safety Services

- Comprehensive Aquatic Safety Audits
- Lifeguard Positioning Analysis
- Safety and Supervision Plan Review
- Facility Signage Consultation
- Facility Design Consultation
- Incident Analysis

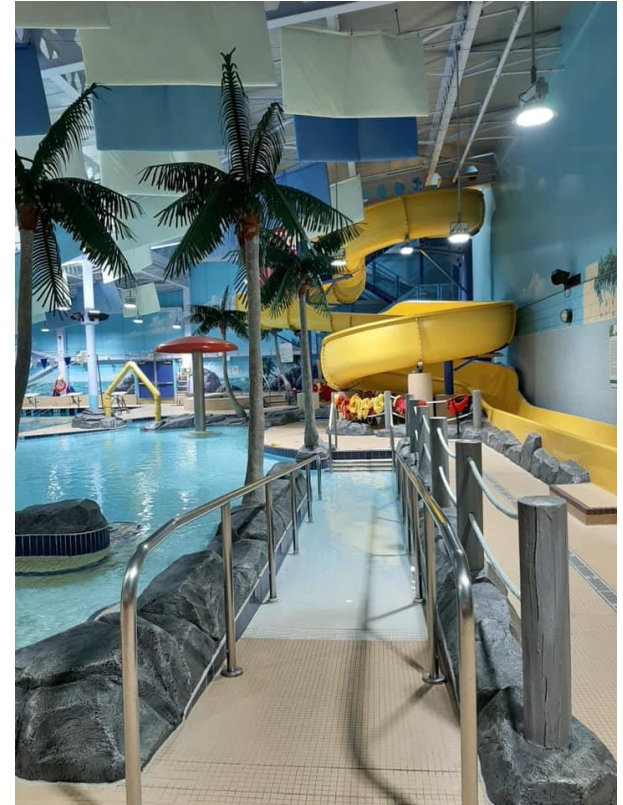


Photo courtesy of Town of Inuvik

Support?

- What other Alberta/NWT Standards would you like to see to support your communities?
- What other Safety Services resources would you like to see?
- How else can we help?



Thank you! Any Questions?

Website: www.lifesaving.org

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Email: experts@lifesaving.org

Follow and like our Facebook and Instagram pages for more information and upcoming events!



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The Lifesaving Society logo, featuring a stylized blue figure of a person swimming or floating.