

B.C. GUIDELINES FOR INDUSTRIAL CAMPS REGULATION

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**HEALTH PROTECTION BRANCH
MINISTRY OF HEALTH**



INTRODUCTION

The B.C. Guidelines for Industrial Camps Regulation (guidelines) supports and are intended to help industrial camp operators and regulators interpret the Industrial Camps Regulation. The standards set out in the guidelines represent generally accepted minimum standards of safe practices.

The primary intent of the Industrial Camps Regulation (ICR) and the guidelines is to establish minimum camp conditions essential to good health and make accommodations for workers safe, sanitary and fit for human habitation.

The ICR states that the operation of an industrial camp is prescribed as a regulated activity. This means that, pursuant to Section 18 of the *Public Health Act*, the employer/operator (or an operator working for the employer) of an industrial camp must:

- Take reasonable care to prevent health hazards (something that endangers or may endanger public health) from arising.
- Respond to health hazards that do arise, including mitigating their harmful effects.
- Ensure camp operations employees are adequately trained and sufficiently equipped to recognize, prevent and respond to health hazards.

The guidelines also incorporate information that was provided by the health authorities in industrial camps related consultations.

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GENERAL

1. OVERVIEW

The B.C. Guidelines for Industrial Camps Regulation (guidelines) provide interpretation for the Industrial Camps Regulation (ICR). For convenience, the content in this document is organized by sections, which correspond to the sections of the ICR. Where appropriate, this document also provides supplemental guidance in the form of best practices.

NOTE: Please note that best practices provided in this document are recommendations and some may not be mandatory or enforceable under the ICR. Consult your health authority if you have any questions in specific situations.

The ICR applies in situations where industrial camp accommodations (i.e., structures used for accommodation by industrial camp residents) or amenities (see definition in Appendix A - Glossary) are provided by an employer in connection with a logging, sawmill, mining, oil or gas operation, a railway construction project, a cannery or a similar industry, such as agriculture work camps and tree planting camps.

Given the restricted definition of camps in the ICR, the various forms of accommodations fall in a grey area and there may be a need to review each case, if required. For the purpose of guidance to the health authorities, if the accommodations and amenities are provided by the employer as stated above, the camp provides accommodation and services only to employees, and the general public is not able to stay there, it should be considered as an industrial camp.

The ICR does not apply to the following camps:

1. Accommodation or amenities provided by a third party, for a fee, to a wide range of clientele on a “drop in” basis. For example, accommodations such as large “hotel-like” accommodations that are constructed and managed by a third party, and resource companies or “employers” rent out blocks of rooms at these facilities for their employees who work in the area. Third party-provided accommodations that are not established by an employer in the resource sector are subject to other public health regulations in the same way as any hotel accommodation.
2. Occupied by five persons or less,
3. Established to meet emergency situations and occupied for not more than seven days.

Although the ICR does not apply to small or emergency industrial camps, the guidelines can be used as a reference guide for them.

There is other legislation and codes that pertain to industrial camps. A list of related legislation and codes pertaining to industrial camps is included in Appendix B. In addition, other provisions of the *Public Health Act* may apply to communicable diseases and environmental health hazards in industrial camps that may impact public health.

2. LEGISLATION / REGULATIONS APPLICABLE TO INDUSTRIAL CAMPS

1. Ministry of Health

- a. *Public Health Act*, Industrial Camps Regulation

- b. *Drinking Water Protection Act*

2. Ministry of Environment

- a. *Environmental Management Act, Waste Discharge Regulation*
- b. *Integrated Pest Management Act (pesticide storage)*

3. Ministry of Technology, Innovation and Citizen Services

- a. *The Manufactured Home Act*

4. BC Codes:

It is the owner's responsibility to ensure that all construction is in compliance with the following BC Codes. This document does not identify all applicable provisions of all the BC Codes. Contact the appropriate municipal building department or the Regional District in your area for additional information.

- a. **BC Building Codes** - applies to the construction of buildings, including extensions, substantial alterations, and buildings undergoing a change for occupancy, "green" building specifications, or upgrading of buildings to remove an unacceptable hazard. It applies the core concepts of the National Building Code, combined with elements specific to BC's unique needs.
- b. **BC Fire Code** - contains technical requirements designed to provide an acceptable level of fire safety within a community. It applies the core concepts of the National Fire Code, combined with elements specific to BC's unique needs.
- c. **BC Plumbing Code** - applies the core concepts of the National Plumbing Code, combined with elements specific to BC's unique needs and sets out technical provisions for the design and installation of new plumbing systems. It also applies to the extension, alteration, renewal and repair of existing plumbing systems.

Note: the [BC CODES](#) can be accessed online (through a fee for service) or at a public library.

3. NOTIFICATION OF INDUSTRIAL CAMP OPERATION

The health authorities require each industrial camp operator to notify the health authority before building or operating a camp. The following information is required when completing the health authority process for approval:

1. Name of camp	<i>Provide the name of the industrial camp and the organization responsible for operating the camp.</i>
2. Contact information	<i>Provide the name and contact information of the person in charge of the day-to-day operation of the industrial camp (e.g., direct phone, cell phone and email). This is the person who will deal primarily with the health authority.</i>
3. Location of camp	<i>Provide the location of the camp site (e.g., address, co-ordinates, lot numbers, etc.)</i>

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4. Camp access directions	<i>Provide the directions for access to the camp site and any access restrictions.</i>
5. Camp purpose	<i>Provide the camp purpose (e.g., oil and gas, mining, forestry, etc.)</i>
6. Permanent or short term	<i>Indicate if the camp is a permanent or short term industrial camp.</i>
7. Camp duration	<i>Provide the camp duration: timeline for occupancy, including the start date of camp construction, and start and closure dates of operation.</i>
8. Maximum number of residents	<i>Provide the maximum number of residents at the industrial camp, during construction and operation, broken out by camp workers and camp staff.</i>

PART 1 – DEFINITIONS AND INDUSTRIAL CAMPS

Definitions: in the ICR:

Approved means approved in writing by a health officer.

Bedroom includes a structure used solely for the purpose of sleeping.

Common use means the use of a thing by more than one person without its being thoroughly cleaned and, if applicable, sterilized, after each person's use.

Dwelling includes an apartment and a housekeeping suite.

Industrial camp means land or premises on which an employer, in connection with a logging, sawmill, mining, oil or gas operation, a railway construction project, a cannery, or a similar thing, owns, operates or maintains, or has established, permanent or temporary structures for use, with or without charge, by employees as living quarters. Accommodation types on industrial camps may be of the following types:

- **Apartment** – structure built as per building code for multifamily residential use.
- **Dormitory** – purpose built/renovated structure, that has separate eating, sleeping and living areas. This includes portable structures that used in remote mining, gas and lumber industrial camps.
- **Hotel/hotel style** – purpose built structures built to building code requirements. Hotel style accommodations differ from other accommodations in that the sleeping quarters do not have to be separated from the other living spaces.
- **Converted storage area** – a repurposed structure that has been converted into a multi-person accommodation.
- **Float homes** – barges, ships or other structures that are constructed or modified to house and accommodate industrial camp workers. For the purpose of guidance to the health authorities, if the accommodations and amenities are provided exclusively for the employees by the employer, then float homes are considered industrial camps and subject to the ICR.
- **Mobile home** – as defined by the *Manufactured Home Act of BC*. The Ministry of Agriculture does not approve of travel or tourist trailers, campers, park model trailers as acceptable accommodation structures for Temporary Foreign Workers.
- **Tent** - a portable shelter made of cloth or another fabric, supported by a solid frame or poles and stretched tight by cords or loops attached to pegs driven into the ground. Tents must meet the requirements outlined in section 5 of the ICR. Subsection (1) (d) of section 5 does not apply to temporary tents used for industrial camp purposes.

Note: The ICR does not apply where accommodation or amenities are provided by a third party supplier, such as large accommodations that are constructed and managed by a third party, and resource companies or “employers” rent out blocks of rooms at these facilities for their employees who work in the area. In terms of achieving the necessary public health goals, these types of accommodation are regulated in the same manner as hotels.

Pest means animals, including insects that may carry an infectious agent or endanger the safety of residents.

Sanitary facility means a structure containing a toilet, washbasin and ancillary equipment and includes a privy, shower or urinal.

Short term industrial camp means an industrial camp that operates for 5 months or less in any 12-month period.

Prescribed regulated activity

The operation of an industrial camp is prescribed as a regulated activity. This means that all activities discussed in the ICR and this guide are governed by the *Public Health Act* and/or other applicable legislation and associated regulations.

Parts 2 and 3 do not apply to small or emergency camps

Parts 2 [*Construction and Facilities*] and 3 [*Operation*] of the ICR do not apply to an industrial camp that is occupied by fewer than five persons, or is established to meet emergency conditions and occupied for a period of not more than 7 days.

PART 2 – CONSTRUCTION AND FACILITIES

DIVISION 1 – LOCATION AND CONSTRUCTION

SECTION 4 – SITE OF INDUSTRIAL CAMP

Industrial camps and all areas within them must be well drained. The camps should be located on sites where there is good natural drainage or providing adequate drainage where natural drainage is not sufficient. In no instance should the drainage contaminate, or have the potential to contaminate any water supply in the vicinity of the industrial camp, either surface or ground water, including the water source that provides domestic use water to the camp.

Industrial camp construction must also comply with all requirements of the *B.C. Wildfire Act* and *Wildfire Regulation*, particularly with respect to fuel breaks, hazard assessment and abatement.

SECTION 5 – CONSTRUCTION OF STRUCTURES

The British Columbia Building Code (BCBC) applies to all new construction, renovations or additions to existing structures, including factory constructed trailers, even in areas where there is no building inspection.

The only structures exempt from the BCBC are temporary structures (e.g., used for construction-site offices, storage and emergency facilities), structures that are under 10 m² (107 sq. ft.) that do not create a hazard, and factory-constructed buildings that meet the Canadian Standards Association (CSA) Z240 MH (mobile home) standard. Industrial camp structures that do not fall within these exemptions must meet the BCBC.

It is the employer's responsibility to ensure compliance with the BCBC. These guidelines do not identify all applicable provisions of the BCBC. Contact the local government office in area where the camp is located for more information.

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Any structures established or maintained as dwellings in an industrial camp must be structurally sound, effectively protected against entry by pests, maintained in good repair, and in a sanitary and weatherproof condition.

A person who establishes or maintains a structure used for living quarters in an industrial camp must ensure that all of the following conditions are met:

- (a) floors not built on solid concrete or a rodent-proof foundation have a clearance of at least 30 cm between the surface of the ground and the underside of the floor joists;
- (b) the structure is wind and weather proof;
- (c) living quarters and bedrooms have heating arrangements that will ensure a temperature of at least 18°C (64°F) during the season in which the structure is to be occupied;
- (d) living rooms, bedrooms, dining rooms, kitchens and sanitary facilities have adequate artificial or natural lighting; and,
- (e) the floors and walls of rooms used for living, sleeping or eating are of a smooth, easily cleanable finish and are kept clean.

A. Best Practice – Permanent Structures

The builder and operator should ensure that:

- For smaller buildings, there are at least 10 m (33 ft.) between dwellings, or between dwellings and any other structures, unless the applicable spatial separation provisions of the BCBC are met (as required by the BCBC. There are different requirements for larger buildings – please refer to the BCBC for more information.)
- Dwellings have heating arrangements capable of maintaining a temperature of at least 18°C (64°F) during occupancy (as required by the BCBC).
- Heating system fuels and combustible gases are stored and dealt with appropriately, for example, as required by the BCBC, the BC Fire Code or the Canadian Standards Association (CSA). Oil burning appliances and ancillary equipment (e.g., storage tanks, pipes, etc.) fall under CSA B139. For more information, see <http://shop.csa.ca/> or contact the Canadian Standards Association.
- Walls extend at least 2.1 m (7 ft.) above floor level. Walls may be more than 2.7 m (9 ft.) tall, but a maximum height of 2.7 m (9 ft.) will be used for calculating airspace in the sleeping areas. Closets, storage areas etc., may be less than 2.1 m (7 ft.), but these areas are not included in area or volume calculations.
- Walls fit tightly together and should be of sound structure (for example, solid behind wall tiles).
- The surface of the interior walls is smooth, and painted or covered with a treated material that can be easily maintained.
- Floors are made of materials that can withstand regular wet washing.
- If residents prepare their own meals, the rooms used for food preparation and cooking have walls and floors made of materials that are durable, moisture-proof and easy to clean.
- All windows and doors are screened from the outside from May 1 to November 1.

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- Living areas, bedrooms, dining rooms, kitchens and sanitary facilities have adequate artificial or natural light for the intended purposes. Light switches should be located in such a way as to minimize the need to move into a dark room.
- Rooms are adequately ventilated to prevent the accumulation of moisture, disagreeable odours and mould.
- All camp residents are provided with individual storage space for their possessions and clothing. This storage space must be pest-resistant, moisture-proof and lockable.
- All accommodations must, at a minimum, have dual exits leading directly to the exterior of the building. Secondary exits must meet the specification of the Fire Code (i.e. use of rope ladders).
- Dual purpose buildings storing highly flammable material or hazardous goods are not acceptable accommodations. Empty pesticide, fertilizer, fuel containers etc. are considered hazardous.

B. Best Practice – Tents or Other Temporary, Membrane Structures

For industrial camps that provide tents (or other temporary, membrane structures) as accommodations, the operator must ensure that the structures:

- Have sufficient ventilation to prevent the accumulation of disagreeable odours and condensation.
- Are fully enclosed and weather-proof.
- Provide adequate artificial or natural lighting.
- Can maintain a temperature that is comfortable for residents to engage in the activities for which the tent is intended to be used.
- Are made of flame-resistant materials.
- Have floors that are kept clean and have an easily cleanable surface.
- Have an unobstructed clearance of at least 1 m (3 ft.) from every other bed, whether measured from the side or the end, and 1 m (3 ft.) over each bed.
- Where double bunk beds are used, have a minimum space between the lower and upper bunk of not less than 0.7 m (27 in.).
- Have at least 3 m (10 ft.) between tents or between a tent and another structure.
- Have a moisture barrier (ground sheet) where the bedding is not elevated 30 cm (1 ft.) or more above the ground.
- Provide all camp residents with individual storage space for their possessions and clothing. This storage space must be pest-resistant, moisture-proof and lockable.

SECTION 6 – VENTILATION

The operator must ensure that the rooms are adequately ventilated to prevent the accumulation of moisture, disagreeable odours and mold.

SECTION 7 – PESTS

All industrial camp structures must be constructed and maintained in a manner that will deter pests. This includes insects, rodents and other animals that may present a risk to human health. In situations where an operator becomes aware of the presence of pests, he/she must take appropriate steps to keep the premises free of them (e.g., use of professional pest-control technicians).

DIVISION 2 – DWELLINGS AND BEDROOMS

SECTION 8 – DWELLINGS

A person who constructs a dwelling in an industrial camp must ensure that the following conditions are met:

- (a) The dwelling has at least a living room and a kitchen.
- (b) The living room has a net floor area of at least 11 m² (118 sq. ft.).
- (c) The kitchen has a net floor area of at least 7 m² (75 sq. ft.).
- (d) The bedroom has a net floor area of at least 9 m² (97 sq. ft.).

SECTION 9 – OVERCROWDING

An operator, tenant or occupier of a dwelling in an industrial camp must ensure that the dwelling is not overcrowded. A dwelling is considered overcrowded if:

- (a) two persons, 10 years of age or older, of opposite sex and not married or cohabiting, are required to sleep in the same room, or
- (b) the number of persons sleeping in the dwelling is more than that permitted under Schedule 1 (see Box 1: *Industrial Camps Regulation: Schedule 1 - Overcrowding*).

Box 1: Industrial Camps Regulation: Schedule 1 - Overcrowding

A dwelling is overcrowded for the purposes of section 9 (2) (b) if there are more persons sleeping in it than the number permitted under Column 2 in the table below, opposite the number of bedrooms in the dwelling as set out in Column 1. In determining the number of permitted persons,

- (a) children under the age of one year are to be counted as 0,
- (b) children aged one year or more but less than 10 years are to be counted as 1/2, and
- (c) persons who are 10 or more years of age are to be counted as one.

Column 1 - Number of bedrooms in dwelling	Column 2 - Number of persons permitted in dwelling
2	3
3	5
4	7 1/2
5	10
Each additional bedroom over 5	An additional 2 persons

SECTION 10 – BEDROOMS IN INDUSTRIAL CAMPS GENERALLY

Section 10 does not apply to operators of short term camps. For information related to bedrooms in short term camps, see Section 11.

An operator must ensure all bedrooms have adequate heat, ventilation, light, space and a means of egress. In addition, the operator is to ensure that:

- Each bedroom (other than a bedroom in a factory constructed trailer) which is used to accommodate 2 or more persons has:
 - ▶ A total floor space for the bedroom (excluding space for sanitary facilities) of at least 9 m² (96 sq. ft.) a cubic air space of at least 21.5 m³. This is an equivalent of 4.5 m² (48 sq. ft.) of floor space per resident.
 - ▶ If more than 2 persons are occupying one bedroom, an additional net floor area of at least 5.5 m² (59 sq. ft.) and an additional cubic air space of at least 13.5 m³ for each additional person.
- Each bedroom in a factory-constructed trailer has a net floor area of at least 4.5 m² (48 sq. ft.) and a cubic air space of at least 9.5 m³ for each person.
- Each employee has a separate bed that is not part of a system or arrangement of double deck or multiple tier bunks.

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- An operator must ensure that suitcases and other articles are not stored under beds unless the bed has built in drawers, and clothes are not dried in bedrooms.
- An operator must ensure that:
 - ▶ Clean, laundered sheets and pillow cases are supplied to each employee on arrival and at least once each week after arriving.
 - ▶ All mattresses, sheets, pillows, pillow cases, blankets and bed covers are kept in a sanitary condition.
 - ▶ Employees do not use their own blankets in a bedroom.

SECTION 11 – BEDROOMS IN SHORT TERM INDUSTRIAL CAMPS

An operator of a short term industrial camp must ensure that:

- Each bedroom has an unobstructed clearance of at least 0.6 m (2 ft.) between beds, and 1 m (3 ft.) between each bed and the ceiling.
- Individual dry storage space for personal possessions and clothes is provided for each employee using the bedroom.
- Clothes are not dried in a bedroom.
- All mattresses, sheets, pillow cases, blankets and bed covers are kept in a sanitary condition.

C. Best Practice – Bedrooms in Industrial Camps

The operator should ensure the following:

- A separate bed for each person accommodated in the bedroom (or for people who are married or co-habiting).
- Beds are at least 30 cm (12 in.) above the floor and have an unobstructed clearance of at least 1 m (3 ft.) from every other bed, whether measured from the side or the end, and 1 m (3 ft.) over each bed.
- Where double bunk beds are used in short term camps, the minimum space between the lower and upper bunk is not less than 0.7 m (27 in.). Under the ICR, bunk beds are not permitted in permanent camps. Triple bunk beds are not allowed in any camps.
- Clean bedding is provided for each industrial camp resident on arrival. The bedding and mattresses should be kept in sanitary condition. Bedding is laundered as required and before each new user. Sufficient natural or indoor lighting is provided to ensure resident safety.
- A safe and adequate means of egress (exit) are provided in the bedroom in the event of fire or other evacuation emergency (as required by the BCBC).
- The bedroom should have windows that, when opened, are big enough allow a way to get out in the event of fire.
- Except where the suite has sprinklers, the bedroom should have at least one outside window or exterior door in each bedroom that can be opened from the inside without keys, tools or special knowledge, or removing sashes or hardware. The window must provide an unobstructed opening of not less than 0.35 m² (3.7 sq. ft.) in area, with no dimension less than 380 mm (15 in.). The window should be constructed so it can maintain the required opening, during an emergency, without additional support (as required by the BCBC for smaller buildings. There are different requirements for larger buildings – please refer to the BCBC for more information). The bedroom

should have working smoke alarms in all bedrooms, as required by the BC Fire Code. See the Office of the Fire Commissioner's *Smoke Alarm Bulletin* at:
http://embc.gov.bc.ca/ofc/services/bulletins/pdf/smoke_alarm.pdf.

DIVISION 3 – SANITARY, LAUNDRY AND OTHER FACILITIES

SECTION 12 – SANITARY FACILITIES

The operator must ensure that all of the following requirements are met.

Toilets: an industrial camp must have the minimum number of fixtures required under Schedule 2 (see Box 2: *Industrial Camps Regulation: Schedule 2 – Fixtures*).

Any toilets in a permanent industrial camp dwelling with rooms used for sleeping, eating or other living purposes must be flush toilets. Toilets must be located within 30 m (100 ft.) from any bedroom. Toilets are to be enclosed in a manner that provides privacy to the user.

Typical best practice requires water flush toilets to be connected to a wastewater facility under the Municipal Wastewater Regulation, or a sewerage system, holding tank or to a properly designed and constructed septic tank and ground absorption system as specified under the Sewerage System Regulation (SSR). Rooms with toilets must have screened vents, windows and doors. Self-closing (also called soft-close or slow-close) seat covers must be provided and should be in operation at all times.

All toilets, other than water flush toilets, must be constructed and maintained to ensure that pests and small domestic animals cannot access waste materials, and that surface or ground water cannot enter the pit or vault. The construction and placement of toilets must ensure that waste material cannot contaminate any water supply.

All sewage disposal system must be approved in writing by a health officer. A sanitary pit privy, chemical closet or frost-proof closet should not be installed within any building used for human occupancy, or within 3 m (10 ft.) of any dwelling.

BOX 2: Industrial Camps Regulation: Schedule 2 - Fixtures

1. An operator must ensure that an industrial camp providing accommodation for the number of persons set out in Column 1 has at least the fixtures set out in Columns 2 to 4 opposite the number of persons.
2. In making a determination under this Schedule, if an industrial camp is for the exclusive use of males, urinals may be substituted for half of the required number of toilets.

Column 1	Column 2	Column 3	Column 4
No. of persons for whom accommodation is available	Minimum no. of toilets or privy seats	Minimum no. of showers	Minimum no. of wash basins
1-7	1	1	1
8-15	2	1	3
16-30	3	2	6
31-45	4	3	9
46-60	5	4	12
61-75	6	5	15
76-100	7	6	20
Each additional 6 persons over 100			One additional
Each additional 20 persons over 100	One additional	One additional	

Sanitary facilities must be kept in good repair and in a sanitary condition. They must be vented to the outside air to allow for proper air circulation and air exchange. All facilities must be maintained with adequate supplies of toilet tissue and hand soap and a single-service towels or air dryers for hand washing/drying. An operator must not permit towels including roller towels to be in common (shared) use. Sanitary facility floors must be constructed of durable material such as concrete, wood or other suitable material and finished with a smooth, watertight surface and preferably with a light-coloured surface that can be easily sanitized, cleaned and dried so as to not cause a health hazard or an accident.

SECTION 13 – SEPARATE TOILETS

If more than one toilet or bathing unit is installed in a single room, other than in a private dwelling unit, the operator must restrict the use of the room to persons of the same sex. This means that a single room with two or more toilets or showers has to be gender specific. Where separate sanitary facilities are provided for men and women, an operator must ensure that each sanitary facility is clearly and properly marked and is closed by full-sized doors to ensure privacy. An operator may provide urinals for use only in sanitary facilities that are provided for the exclusive use of males.

D. Best Practice – Pit Privies and Holding Tanks

If approved in writing by a health officer, pit privies or holding tanks may be used in industrial camps where the camp is not equipped with a sewerage disposal system.

PIT PRIVIES

Pit privies, including latrines, are typically intended to be used mainly for camps where installing permanent or long-term sewerage infrastructure is impractical (e.g., short term camps with relatively few residents, i.e. 20 or fewer, no running water, spring/summer camps, and where the camps are readily moveable).

Contact the health authority to find out if privies are an approved option for your camp. If pit privies are an option, the following are the minimum requirements for construction and maintenance, in addition to any specific requirements that the health authority may have. Appendix C provides examples of technical/construction specifications for plywood and concrete vault privies.

Construction: Pit privies must be constructed and maintained so that:

- They do not create a health hazard.
- Domestic sewage will not contaminate a source of water to be used for domestic purposes.
- They are located a minimum of:
 - i. 30 m (100 ft.) from any water source used for domestic purposes.
 - ii. 30 m (100 ft.) from any stream, lake or other body of water.
 - iii. 10 m (30 ft.) from any area used to prepare or provide food to residents.

Pit privies should also be constructed and maintained so that:

- Pests are prevented from gaining access to the waste materials in the pit.
- Surface or ground water will not enter the pit.
- The enclosure is vented.
- The vault area is vented, using a screened cap or downturn on the pipe to avoid precipitation entering the vault area.
- They are not located within any building used for human occupancy or within 3 m (10 ft.) of any dwelling.
- They are constructed to ensure the base of the pit remains at least 0.9 m (3 ft.) above the seasonal high water table.
- They are enclosed and provide privacy to the user.
- Ensure that hand-washing facilities and/or sanitizer are provided.
- Waste material will not contaminate a water supply.

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Latrines: The construction guidelines for pit privies noted above also apply to latrines with the exception of the 'enclosure' as latrines are not covered by a structure. Latrines are typically considered a 'temporary' means of disposal as they are covered over after use with the excavated material. The excavation dimensions of latrines usually are similar to those used for outhouses. Trench latrines can be constructed for multiple use and may extend laterally up to 20 feet, depending on the area available.

Soil Type: Pit privies and latrines should only be constructed in suitable soils which will not contaminate the water table due to high permeability (i.e. very sandy or gravelly soils). If the soil percolation rate is 5 minutes per inch or less, the excavated pit should be lined with approximately 1 foot of loamy soil (with a percolation rate between 10 and 20 minutes per inch) to provide suitable treatment.

Pumping: The operator must maintain the privies to meet the following requirements:

- Privies are to be pumped out as necessary to ensure proper function.
- Where privies are watertight vaults, the pumping requirements will be as specified on the permit issued by the health authority and/or any local bylaw requirements that may exist for vault privies.
- Where privies are used and depending on soil conditions, regular pump outs may be required to prevent overflow.
- Whenever a pump out is performed, disposal of contents must be to a permitted wastewater facility. A written record should be maintained of all pump out dates, volumes, and hauler name and contact information.

The camp operator is responsible for providing sufficient information/evidence to the health officer to ensure these requirements are met.

HOLDING TANKS

Holding tanks should:

- (a) Be located at least 15 m from any water body or domestic water source.
- (b) Be watertight and constructed of concrete or other corrosive-resistant material in accordance with good engineering practice, and recognized standards (CSA, NSF, etc.). A health officer may require a water test. It is preferable that holding tanks used on floating structures are double-walled.
- (c) Be constructed such that pests and animals are deterred from gaining access to the waste materials;
- (d) Be sized to the design peak flow (2 times the estimated daily sewage flow times the desired number of days the effluent is to be held before pumping out) of the camp operation and for the maximum anticipated number of occupants. The daily flow can be estimated as below:
 - For grey water, 200 litres/day per worker
 - For black water, 27 litres/day per worker
- (e) Include risers and access covers - when the top of the tank is greater than 75 cm below the surface grade.
- (f) Not be buried deeper than the maximum depth marked on the tank by the manufacturer.
- (g) Incorporate additional precautions as needed to prevent intrusion of water/floating of tank in areas where there is a high water table.
- (h) Be monitored daily and maintained as required. This includes regular pump outs as required.

Note: Holding tank operators need to have written confirmation that an approved waste facility has agreed to accept the holding tank liquid waste, along with a copy of the contract with the hauler.

SPRAY IRRIGATION

Spray irrigation systems may only be used to disperse grey water and only if the use has been approved by the health authority. They should be constructed and maintained so that liquid waste:

- (a) Is spread over an area with a minimum soil depth of 50 cm to ground water (water table) or hardpan.
- (b) Does not spread within 30 m (100 ft.) of a stream, lake, or source of water for domestic purposes, i.e., water used for human consumption, food preparation or sanitation.

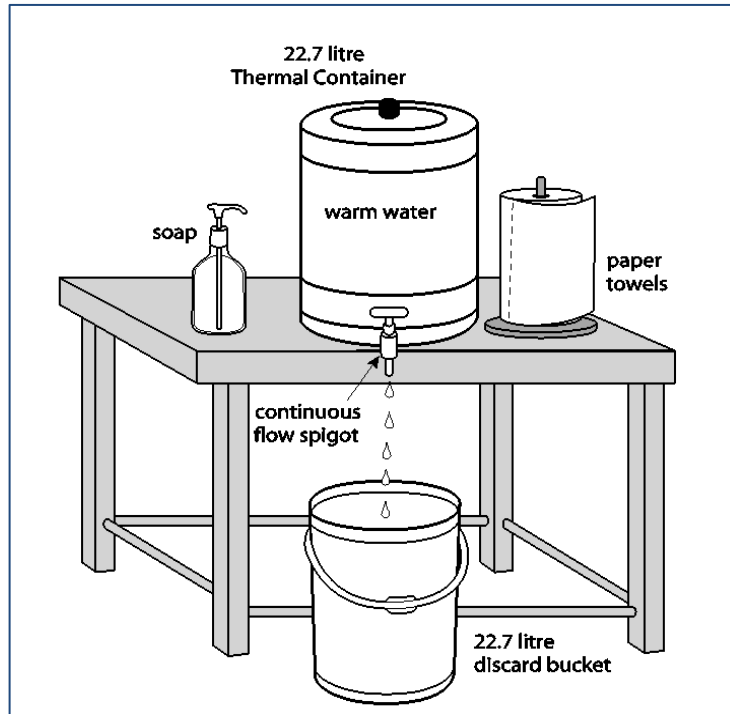
Note: Due to the risk of aerosols and potential contamination of water supplies, spray irrigation should be implemented only in an area approved by the health officer, and after the fire emergency has subsided (unless the health officer determines a suitable area for placement during the fire where risks are minimal).

SECTION 14 – WASHING, BATHING AND LAUNDRY FACILITIES

An operator must provide a room or building with hot and cold water for washing, bathing and laundering purposes. The camp must be provided with hand-washing and bathing/ showering facilities in a number and manner sufficient to meet the needs of residents working or residing at the camp (see the *Industrial Camps Regulation: Schedule 2 – Fixtures* in section 12 of this guide). The operator should ensure the following:

- Hand-washing and showering facilities must be kept in good repair and sanitary condition.
- There must be an adequate supply of soap in dispensers and single-service towels or air dryers for hand washing/drying. An operator must not permit towels including roller towels to be in common (shared) use.
- Hot and cold water must be provided for washing and showering facilities.
- For privacy purposes, showering facilities must be enclosed so they are screened from view.
- Each shower should have access to an adequate dressing space that is private and dry.
- Bathing/ showering facilities should be constructed with smooth, impervious and easily cleanable floors and walls.
- In industrial camps where there is a lack of pressurized water, portable showers can be used as well as hand-washing stations (e.g., at privies), similar to the one shown below. (Hand-washing stations can be supplemented with waterless hand sanitizers where appropriate.)

Figure 1: Hand-washing Stations



Source: MarketSafe © Province of British Columbia

Laundry service or laundry facilities must be available onsite or offsite and should meet the following requirements:

- Laundry operations must not be carried out in a stream, lake or other water body.
- Laundry facilities must be reasonably accessible and enable residents to launder their personal items as required.
- Onsite laundry facilities should be large enough for one shift of workers to use at a time, and have drying facilities that will allow the clothes to dry by the start of the next shift.
- Adequate laundry supplies should be available in onsite laundry facilities (e.g., provided by the operator either free of charge or sold in packets via vending machines). Only phosphate-free detergents should be used.
- For all industrial camps, discharge of grey water to an infiltration pit may be allowed if approved in writing by the health officer, as per section 21 of the ICR.

SECTION 15 – DRY ROOM

In industrial camps where there are ordinarily more than 10 residents, an area must be provided in which residents may change out of their wet work clothes and leave them to dry. This room must be separate from the food preparation/serving and sleeping areas, and located in or near the washrooms/shower areas.

PART 3 – OPERATION

DIVISION 1 - SUPERVISION AND MAINTENANCE

SECTION 16 – SUPERVISION AND MAINTENANCE

The operator must ensure the industrial camp is under continuous supervision and an individual must be designated to be in charge and responsible for industrial camp operations at all times. The operator must also make sure that the camp complies with all requirements of the ICR, including:

- All camp equipment is maintained in good repair.
- All structures, facilities, furnishing, appliances and bedding are maintained in good repair and in a sanitary condition.

The operator must post the following information in a prominent and accessible place. The information posted must be in English, as well as any other language the camp residents speak:

- Industrial Camps Regulation.
- B.C. Guidelines for Industrial Camps Regulation.
- Contact information for the health authority with jurisdiction over the industrial camp (name, phone number and email address).

DIVISION 2 - WATER

SECTION 17 - WATER SUPPLY, QUALITY AND SOURCE

Public water supply is regulated by local health authorities. The health authorities' drinking water officers are responsible for providing the oversight to ensure compliance and drinking water safety. Drinking water officers are mandated to apply and enforce the *Drinking Water Protection Act* and Drinking Water Protection Regulation. They monitor the operations of drinking water systems and act on any notices of threats to drinking water quality. Drinking water officers are responsible for issuing operating permits, and will work with water suppliers to help them achieve compliance with the legislation and the conditions on their permits.

B.C. GUIDELINES FOR INDUSTRIAL CAMPS REGULATION

- (1) The operator must ensure that an adequate supply of safe, uncontaminated water is available at all times for drinking and domestic purposes.

Industrial camps must meet the requirements of the *Drinking Water Protection Act* and the Drinking Water Protection Regulation with regard to supplying potable and nonpotable water for domestic purposes to a camp.

Under section 1 of the *Drinking Water Protection Act*, **potable water** is defined as water provided by a domestic water system that meets the standards prescribed by regulation, and is safe to drink and fit for domestic purposes without further treatment. Domestic purpose is defined in the *Drinking Water Protection Act* to mean the use of water for human consumption, food preparation or sanitation, some household purposes, and other prescribed purposes.

Non-potable water includes all water from an ambient source, such as lakes, rivers, streams, springs and groundwater that does not meet the definition for potability as per the *Drinking Water Protection Act*. Non-potable water may be used for purposes such as sanitation activities and other household purposes aside from human consumption, food preparation and sanitation.

See:

- *Drinking Water Protection Act*:
http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_01009_01
- Drinking Water Protection Regulation:
http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/200_2003

Under the *Drinking Water Protection Act*, the operator must obtain a construction permit or construction permit waiver and an operating permit from the health authority for all industrial camp water supply systems before camp operation, with exceptions noted below. Water supply systems include systems providing water for human consumption, food preparation, sanitation and household purposes. Each health authority has a process/package for approval of water systems. Contact the local health authority for information on this topic.

In instances where a water supply system has not previously been named on an operating permit, a water source assessment will generally be required before the issuance of a construction permit or waiver. Source assessments will be considered by the health officer upon review of submitted water analysis results, as well as any other information required by the health authority.

- (2) Some industrial camps may get water from another source (e.g., bottled water and trucked water) if a safe public water supply is not available. This safe water must be available for all purposes that require potable water. These other sources must be approved in writing by the health officer.

For additional information please contact your local Authority:

<http://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/drinking-water-quality/health-authority-contacts>

- (3) An operator must not use a well as a source of water unless the water obtained from it is free from contamination. For more information on contaminants in ground and well water, see:

- (a) *Guidance Document for Determining Ground Water at Risk of Containing Pathogens (GARP)*
http://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/documents/garp_assessment_v2_dec1_2015_final.pdf

B.C. GUIDELINES FOR INDUSTRIAL CAMPS REGULATION

(b) *Drinking Water Officers' Guide, Part B- Best Practices and Technical Assistance* provides supplemental guidance for drinking water officer (DWO) decisions on monitoring water for various chemical and physical parameters.

<http://www2.gov.bc.ca/assets/gov/environment/air-land-water/dwog-part-b.pdf>

Wells: For camps that use wells as a drinking water source, the Health Hazards Regulation (Section 8) (http://www.bclaws.ca/civix/document/id/complete/statreg/216_2011) requires that any well be located at a minimum distance of:

- 30 m (100 ft.) from a probable source of contamination.
- 6 m (20 ft.) from a private dwelling.
- 120 m (400 ft.) from a cemetery or dumping ground (e.g., landfills and garbage dumps).

In accordance with the SSR, all components of a sewerage system including tanks and treatment facilities must be at least 30 m (100 ft.) from any drinking water well. Also, all new wells must comply with the Ground Water Protection Regulation:

http://www.bclaws.ca/Recon/document/ID/freeside/11_299_2004

The Canadian Drinking Water Quality Guidelines may be used for reference:

<http://hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index-eng.php>

SECTION 18 - WATER STORAGE CONTAINERS

All portable drinking water containers/coolers must be sanitized when they are changed or refilled. They must be kept in a sanitary condition and equipped with a sanitary water-dispensing device.

MyHealthAlberta.ca has information on cleaning water coolers on its website:

<https://myhealth.alberta.ca/alberta/pages/water-coolers.aspx>

If water needs to be transported, the operator must ensure that the water containers are sanitized, are properly and securely capped or covered so no contaminants can get in, and are only used to carry water. Drinking water storage containers should be bacteriologically safe, clean, sanitary, covered and equipped with a sanitary dispensing device such as a tap.

SECTION 19 - DISPENSING WATER

An operator must ensure that:

- (a) Where drinking water is made available upon the premises, individual drinking cups/vessels should not be used by more than one person (each employee has an individual cup or glass) to prevent health risks or cross contamination.
- (b) The cups should be stored in such a manner that protects them from contamination and use. Disposable paper cups can also be used.
- (c) Drinking water should not be collected by dipping from open springs, wells or water containers. Cup or other utensils used to collect drinking water from open springs, wells or from water containers cannot be re-dipped or reused as this might contaminate the supply.
- (d) If installed, drinking fountains should conform to standards guidelines. The nozzle should be made of non-oxidizing impervious material with a non-oxidizing guard to prevent the mouths and noses of persons using the fountain from coming in contact with the nozzle. The fountain should

issue a slanting jet of water. The jet of water should not touch the guard and should be discharged at such an angle that the water can neither fall back nor be forced back to the nozzle. The drinking fountain should have its own receiving bowl with a strainer over the waste water opening. The fountain should not be installed over sink used for hand washing or other purposes.

SECTION 20 - CROSS CONNECTIONS

The operator must ensure that the approved drinking water supply is not cross contaminated. If a non-potable water supply is used for the purpose of fire protection or for industrial purposes, it is the operator's responsibility to ensure that suitable warning signs are posted at all outlets providing nonpotable water. In addition, an operator must ensure there is no physical connection between a nonpotable water supply and an approved drinking water supply. Nonpotable drinking lines must be clearly marked at all outlets.

DIVISION 3 – SEWAGE AND GARBAGE DISPOSAL

SECTION 21 – SEWAGE DISPOSAL

Plans to treat and disperse sewage in industrial camps must be approved by the health officer in writing before the camp operations begin.

E. Best Practice - Sewage Disposal in Permanent Industrial Camps

Systems with total sewage design flows of less than 22,700 litres/day:

Section 21 of the ICR requires health officer ‘approval’ of the means of sewage disposal utilized by the camp. At the discretion of the health officer, the SSR may apply to the discharge of sewage to land (e.g., septic dispersal field) with total sewage design flows of less than 22,700 litres/day, and to holding tanks.

- Permanent industrial camps may be constructed and maintained in compliance with the SSR: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/22_326_2004
- Discharges to surface water or any use of reclaimed water are prohibited under the SSR and can only be authorized by the Ministry of Environment under the *Environmental Management Act’s* Municipal Wastewater Regulation or in writing by a health officer.
- For systems that fall under the SSR, contact your local health authority.

Systems with total sewage design flows of 22,700 litres/day or more:

The Municipal Wastewater Regulation applies to the discharge of sewage to land and all discharges to surface water or reclaimed water (e.g., re-use of treated effluent for irrigation) with total sewage design flows of 22,700 litres/day or more.

- Authorization is required under the Municipal Wastewater Regulation: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/87_2012
- See the Ministry of Environment’s Municipal Waster Regulation website to learn about the regulation, registration process and required documentation (e.g., environmental impact study, operating plan, and closure plan)
- A pre-registration meeting with the Ministry of Environment should be held at least 60 days before registration.
- All reclaimed water uses must be authorized by the Ministry of Environment under the Municipal Wastewater Regulation. The discharge may also be subject to additional conditions specified by the health officer.
- Permanent industrial camps with an average annual effluent discharge of greater than 100 cubic m/day (100,000 litres) to surface water (streams, lakes, rivers) must comply with the federal Wastewater System Effluent Regulation. Information on this regulation on Environment Canada’s Wastewater website: <http://www.ec.gc.ca/eu-ww/default.asp?lang=En&n=BC799641-1>

F. Best Practice - Sewage Disposal in Short-term Industrial Camps

Systems with total sewage design flows of less than 22,700 litres/day:

The Sewerage System Regulation (SSR) applies to the discharge of sewage to land (e.g., septic dispersal field) with total sewage design flows of less than 22,700 litres/day, and to holding tanks.

Section 21 of the ICR states:

“An operator must ensure that sewage in an industrial camp is disposed of in an approved manner that does not

- (a) create a health hazard or nuisance,*
- (b) contaminate any stream, lake or other body of water, or*
- (c) contaminate a shellfish growing area.”*

Section 21 of the ICR requires health officer ‘approval’ of the means of sewage disposal utilized by the camp. Accordingly, the approval of sewage systems for industrial camps is at the discretion of Health Authority health officers. Health officers may require that all provisions of the SSR be achieved, may waive certain requirements, or may attach specific conditions to the operation of the sewage system. For example, for less complex systems used in temporary camps (such as tree planting camps), the health officer may not require that the industrial camp be designed and constructed by an authorized person, as per SSR section 6.

- Typically, short-term or small scale (e.g., 20 people or less) industrial camps may propose alternative means for:
 - Disposal of human waste (black water) into above-ground sewerage systems, privies, holding tanks or latrines (for definition see: D. Best Practice – Pit Privies).
 - Disposal of effluent from kitchens, showers, laundry and hand-washing facilities (grey water) into infiltration pits.
 - Disposal of sewage via appropriate sewage system designs and technologies, as covered in the BC Standard Practice Manual - version 3 (e.g. ‘at grade systems’).
- A health officer may attach terms and conditions to the sewage system approval, which may include requiring the operator to comply with the SSR.
- Where latrines are used, the operator must ensure camp residents are trained to dig and cover them in a manner that prevents health hazards from arising.
- Infiltration pits must be constructed and maintained so that:
 - They will not create a health hazard.
 - Domestic sewage will not contaminate a source of water to be used for domestic purposes.
 - They are located a minimum of:
 - 30 m (100 ft.) from any water source used for domestic purposes.
 - 30 m (100 ft.) from any stream, lake or other body of water or a drinking water source.
 - 10 m (30 ft.) from any area used to prepare or provide food to residents.
- Infiltration pits also should be constructed and maintained so that they:
 - Are more than 30 m (100 ft.) from any water body or drinking water source.
 - Are adequately sized and not be permitted to overflow or accumulate onto the soil surface.

B.C. GUIDELINES FOR INDUSTRIAL CAMPS REGULATION

- Do not cause water quality guidelines or established water quality objectives of nearby water bodies to be exceeded. For details, see:
Water Quality Guidelines: http://www.env.gov.bc.ca/wat/wq/wg_guidelines.html
- Are more than 15 m (50 ft.) from any dwelling, property lines or a dining/cooking facility.
- Are allowed to infiltrate or evaporate completely (if achievable within a reasonable time period) or pumped out when necessary and filled in with earth when an industrial camp is moved. Pumped out effluent must be disposed of in an approved facility. It is not to be pumped out over the ground.
- Are constructed so there is a minimum of 90 cm (3 ft.) of vertical separation between the top of the seasonal high water table and the bottom of the pit.
- Good practice for infiltration pits includes ensuring they are:
 - Located on level ground and, wherever possible, the maximum slope is less than 10%.
 - Constructed with sloped sides (45 degree angle) if deeper than 1.2 m (4 ft.) to minimize sloughing.
 - Located down slope from any water intake to minimize the risk of contamination.
 - Located in a contained area (natural or constructed) such that there is at least 30 cm (1 ft.) freeboard between the surface of any accumulating water and the top edge of the pit at all times. Overflow must not occur.
 - Sized to provide at least 5 m² (542 sq. ft.) of disposal area for every 1 m³/per day of grey water being discharged into it.
 - Covered where possible.
 - Constructed with barriers (flagging/fencing where available) to prevent entry.
 - Constructed with a means of egress if a resident or animal falls in.
Monitored daily and maintained as required by a designated industrial camp supervisor (person in charge of the day-to-day operation of the camp), including regular pump out.
 - Constructed so that natural runoff does not enter and overflow the pit.
 - Receiving kitchen wastewater that has fats, oils and grease reduced or removed.

Systems with total sewage design flows of 22,700 litres/day or more:

Requirements for sewage treatment for short-term industrial camps where the total sewage design flow is 22,700 litres/day or more is the same as for permanent industrial camps.

SECTION 22 – GARBAGE DISPOSAL

All garbage (refuse) must be disposed of in accordance with the *Environmental Management Act* and associated regulations (e.g., the Waste Discharge Regulation). Garbage must be managed in a manner that does not contribute to a health hazard.

B.C. GUIDELINES FOR INDUSTRIAL CAMPS REGULATION

At an industrial camp, the operator must:

- Provide leak-proof, pest-proof, durable containers with tight-fitting tops or contained within an electric fence (or other suitable means) capable of excluding bears and other wildlife. There should be an adequate number and size of containers for buildings to store all garbage accumulated between collections and these should be located in a convenient location.
- Label clearly all containers in English and the language of the workers.
- Maintain garbage containers so that they do not become foul-smelling, unsightly or a breeding place for pests. All containers must have sealable lids.
- Take steps to prevent the camp site from being littered with garbage or other waste. Dispose of all garbage and other waste by burial, incineration or an approved method.

Garbage should be removed after each meal from any room in which food is prepared, served or stored. It should be collected daily and stored appropriately until final disposal. Garbage must be removed for sanitary disposal at least once every week. Refuse incineration, and disposal to land at industrial camp sites, are within the jurisdiction of the Ministry of Environment. Sorting and recycling where possible is encouraged before sending the solid waste for disposal.

For more information on refuse handling and disposal, as well as dealing with hazardous waste, see Industrial Camps: Waste Authorizations and Best Practices:

<http://www2.gov.bc.ca/gov/DownloadAsset?assetId=8AD4271AC17644EC802204174C1FB20E&filename=workcampsfs.pdf>

If there are wildlife concerns, contact the Conservation Officer Service at 1-877-952-7277 (available 24/7).

DIVISION 4 – REPORTING ILLNESS

SECTION 23 – DUTY TO REPORT ILLNESS

Industrial camp operators, have the following obligation under the ICR:

An operator must notify a medical health officer within 24 hours after it comes to the attention of the operator that there is an outbreak or occurrence of illness, above the incident level that is normally expected, at an industrial camp.

Outbreaks can be respiratory e.g. coughing illness such as influenza, gastrointestinal illnesses with vomiting and/or diarrhea, or skin rashes such as caused by scabies. Outbreaks may spread quickly and affect a substantial proportion of the worker population. In a healthy industrial camp population there will be occasional incidents of these diseases i.e. “the incident level that is normally expected”, but if the operator notices more people are getting sick than usual, and often over a short period of time, there is likely an outbreak developing and they must notify the medical health officer. This will enable the medical health officer to provide advice on what to do to control the outbreak, and whether additional measures are needed to investigate the source of the outbreak.

Industrial camps should establish emergency procedures to deal with such events as medical emergencies, facility emergencies and natural disasters. These include isolation, prevention and control procedures, and a written resident case log for reporting purposes. Specific requirements can be provided by the local health authority.

Facilities must not exceed design or approved capacity. Overcrowding fosters the spread of communicable diseases and increases the risk of outbreaks (For details see Section 9 – Overcrowding.)

PART 4 – ABANDONING INDUSTRIAL CAMPS

SECTION 24 – ABANDONED INDUSTRIAL CAMPS

If an industrial camp is to be temporarily decommissioned or abandoned, the operator must leave the grounds, structures, equipment and infrastructure in a safe and sanitary condition.

G. Best Practice - Temporary Closure of Industrial Camps

- (a) An operator should notify the health authority at least 10 business days before an industrial camp ceases operation (i.e., the date and length of closure).
- (b) An industrial camp is deemed to have ceased operation as of the date in the notification.
- (c) If an industrial camp is to be temporarily decommissioned and subject to the land owner's requirements, the operator must leave the grounds, structures, equipment and infrastructure in a safe and sanitary condition.
- (d) The operator may also have responsibilities to notify the land owner or the agency responsible if a special-use permit or a permit of Crown land occupation was issued.
- (e) If a new operator will be assuming control of the industrial camp, he/she must notify all agencies before occupation. The operator must also submit a notification of any new construction or improvements to be completed to the health authority.
- (f) Sewage and refuse collection and treatment locations (e.g., the location of refuse bins, onsite sewage discharge areas, lagoons, infiltration pits and dispersal fields), as approved by the *Environmental Management Act* must be remediated to a sanitary state.
- (g) Operators should not fill in or remove tanks in the case of temporary camp closures. Sewage storage tanks should be emptied and inspected by the operator to ensure contamination will not occur. For a temporary closure, the tanks are suitable for future use in the same location. Filling them or breaking them up renders them unusable. Also, they should not be emptied if they are to be used again. If the tank is pumped out, there is greater risk of unintentional collapse.
- (h) Privies, latrines and infiltration pits should be properly secured to prevent human use and the entry of pests, and block surface water from entering or overflowing the pit.
- (i) Drinking water systems must be properly deactivated to avoid contaminating the treatment, storage and delivery infrastructure.
- (j) The Ground Water Protection Regulation has a requirement for all ground water wells to be properly deactivated and ultimately closed at the end of their service. See the Ground Water Protection Regulation http://www.bclaws.ca/civix/document/id/complete/statreg/39_2016 or contact the Ministry of Environment for more information.
- (k) If an industrial camp is to be left unoccupied over winter, all steps should be taken to ensure that heavy rain, snow load and cold temperatures do not cause infrastructure and structural damage or contamination events at the site.

H. Best Practice - Permanent Closure of Industrial Camps

- (a) An operator should notify the health authority at least 10 business days before an industrial camp ceases to operate (i.e., the date of closure).
- (b) An industrial camp is deemed to have ceased to operate as of the date in the notification.
- (c) In most cases, and subject to the land owner's requirements, if an industrial camp is to be permanently decommissioned, the operator will remove all structures, including foundations, equipment and infrastructure. In addition, the operator must leave the grounds and any remaining structures, equipment and infrastructure in a safe and sanitary condition.
- (d) The operator may also have responsibilities to notify the land owner or the agency responsible if a special-use permit or a permit of Crown land occupation was issued. All areas occupied by the industrial camp should be remediated according to the permit specifications and the permitting bodies' satisfaction or, where private land has been occupied, to the land owner's satisfaction.
- (e) The operator should also be aware of the site profile requirements when a facility/camp is decommissioned, as per Section 40 of *Environmental Management Act*.
- (f) Sewage and refuse collection and treatment locations (e.g., the location of refuse bins, onsite sewage-discharge areas, lagoons, infiltration pits and dispersal fields) should be fully decommissioned and the land remediated to the satisfaction of the appropriate regulatory authority.
- (g) All garbage (refuse), sewage and sludge must be removed and disposed of at an approved waste-treatment facility as authorized under the *Environmental Management Act*. If this facility is registered under the Municipal Wastewater Regulation, the closure plan submitted with registration, which describes the procedures for decommissioning the system, is to be followed.
- (h) When a septic tank or other subsurface treatment tank is abandoned one of the following procedures should be taken in order to prevent future health and safety hazards:
 - The contents of the tank should be pumped out and the tank, if structurally sound, should be filled with inorganic material such as soil or rock; or,
 - The tank should be removed or broken up, and the resulting excavation should be filled with soil or rock. Filling the tank will prevent caving in, collapse and floatation. Organic materials should not to be used for this purpose as they can decay; possibly leading to caving in or collapse and can produce toxic and possibly explosive gases.
- (i) All water system intake-and-delivery infrastructures must be removed. Where a ground water well was used, it must be deactivated or closed, as per Section 9 of the Ground Water Protection Regulation

FOOD SAFETY

PUBLIC HEALTH ACT

The *Public Health Act* (PHA) requires that the operator of an industrial camp (a regulated activity) must take reasonable care to prevent health hazards from arising and respond to any health hazards that arise, including mitigating harmful effects of the health hazard. It further requires that the operator of the camp must ensure that employees are adequately trained and sufficiently equipped to recognize, prevent and respond to health hazards that may arise during the time when the industrial camp is in operation.

The food safety practices outlined in this section provide guidance to camp operators in complying with the requirements of section 18 of the PHA. An operator's failure to comply with the guideline could cause an Environmental Health officer (EHO) to form the reasonable belief that the food related practices of the operator present a significant risk of causing a health hazard, under section 30 of the PHA. In such instances, the EHO could issue an order to the operator under section 31 requiring the operator to comply with the guideline in order to prevent a health hazard.

FOOD PREMISES REGULATION

The Food Premises Regulation (FPR) under the *Public Health Act* outlines public health requirements for businesses supplying and serving food to the public. The health authorities are responsible for licensing, inspecting and responding to complaints about food facilities.

A **food premises**, as defined in the FPR, refers to any place where food intended for public consumption is sold, offered for sale, supplied, handled, prepared, packaged, displayed, served, processed, stored, transported or dispensed.

There is a wide range of 'accommodation' options that are currently being used to serve the purpose of an industrial camp. These include onsite short-term or permanent camps to situations where large accommodations are constructed and managed by a third party, and resource companies/ employers rent out blocks of rooms at these facilities for their employees. Whether or not a particular operation includes a 'food premises' will depend on aspects of the operation. For example, the definition of a food premises applies if a camp provides meals to people other than their employees (i.e., the public). In this case, the camp's "food premises" would be considered a "food service establishment" and would have to comply with the requirements of the FPR (e.g., obtaining an operating permit). If, however, the camp is available only to employers for the accommodation of employees, rather than to anyone seeking lodging on an individual and short term basis, an argument could be made that it is serving or dispensing food to its residents only, rather than to the public, as contemplated by the FPR.

Regardless of the applicability of the FPR to a particular establishment, the overarching provisions of the *Public Health Act* apply to all industrial camps, and operators must manage food services in their facilities in an approved manner to prevent a health hazard.

This appropriate and supportable approach is in the interest of the residents of the camps. Although the kitchens in most camps may not serve or dispense food to the public, they are not located in private dwellings and the residents do not have control over the source or the handling of the food

that is provided to them. Consequently, camp residents are entitled to be protected from preventable health hazards by the camp operators who do have control over the source and handling of the food.

The following section provides food safety practices for safe food handling, food storage and preparation.

FOOD SAFETY PRACTICES

As a good practice, the industrial camp operator should create and follow a food safety plan and sanitation plan for his/her food premises. Your local health authority may have templates for specific purposes that it will want industrial camps to use. The following can provide guidance on these topics.

- *Ensuring Food Safety – Writing your own Food Safety Plan* (BC Centre for Disease Control) provides guidance on developing a food safety plan: <http://www.bccdc.ca/NR/rdonlyres/1A068D5D-3350-4D1C-A356-D8C6D62B7DB9/0/EnsuringFoodSafetyHACCPWay.pdf>
- *Food Protection – Vital to your Business* (BC Centre for Disease Control) provides guidance on developing a food sanitation plan: http://www.bccdc.ca/NR/rdonlyres/29845061-1E80-4768-B278-A245E70368BE/0/FoodProtectionVitaltoBusiness_Mar2010.pdf

Wastewater

High organic-strength, greasy wastewater from food preparation will need special considerations for the sewerage system design (i.e. involvement of a professional wastewater engineer). Commercial kitchens can produce significant quantities oil and grease (e.g., exceeding 150 mg/L in the effluent). They must be equipped with appropriately sized and configured grease interceptors (grease traps) to protect the septic system from excessive oil and grease loading.

Additional sewerage systems design considerations may be needed for operations discharging high organic-strength waste or those that use significant quantities of kitchen sanitizers (e.g., through the use of a commercial dishwashers) which may impact the treatment efficacy of the sewerage system.

Kitchen Facilities, Food Storage Areas and Meals

The operator should ensure:

- The kitchen or food preparation area is separate from any other room.
- This area is constructed so that it deters the entry of pests. Pets must be kept out of the kitchen and food preparation area.
- Walls and floors are smooth, durable, and non-absorbent and maintained in a sanitary condition.
- An adequate supply of hot and cold water that meets the needs of the kitchen.
- All sinks be plumbed with hot and cold running water under pressure, and drains connected to an approved waste disposal system.
- Hand basins with hot and cold water, liquid soap and disposable towels are in a location convenient to the kitchen area for food handlers' use.
- Eating/drinking utensils and dishware are thoroughly cleaned and sanitized after each use, as follows:
 - ▶ First sink: Wash in warm water (43°C/109°F) with detergent.
 - ▶ Second sink: Rinse in clear warm water (45°C/113°F).

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- ▶ Third sink: Sanitize by immersion in warm clean water (45°C/113°F) containing 100-200 ppm chlorine (1-2 tablespoons) of unscented bleach per 4 litres (1 gallon) of water for at least two minutes – or use another sanitizer with equivalent efficacy.
- ▶ Have a method in place to determine the adequate sanitizer concentration (e.g., chlorine test strips).
- ▶ Air dry utensils and dishware on a clean, non-absorbent surface.
- A commercial dishwasher is recommended for industrial camps of 50 persons or more. The commercial dishwasher should meet the NSF/ANSI Standard 3 for Commercial Warewashing Equipment, or equivalent. For guidance on commercial mechanical warewashing, visit: <http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/EH/FPS/Food/GuidelinesMechanicalWarewashinginFoodServiceEstablishmentswebformatJan2013.pdf>.
- A domestic dishwasher, certified to NSF Standard, may be appropriate for industrial camps of less than 50 persons.
- Except for camps where people live in housekeeping units (single-family dwellings), the kitchen is considered a commercial cooking operation. Therefore, it needs to be equipped with an NFPA 96 compliant ventilation system and UL or ULC compliant fire protection. (See the BC Building Code, Div. B, Article 6.2.2.7.)
- Ventilation and fire-protection systems must be maintained in conformance with NFPA 96. (See the BC Fire Code, Div. B, Article 2.6.1.9.) Also, visit the National Fire Protection Association's website: <http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=96>

Dining Rooms

A dining room large enough to effectively accommodate serving and eating meals for one shift must be provided. The room must be separate from the kitchen and kept in a sanitary condition.

Food Handlers

Safe steps in food handling, cooking, and storage are essential to prevent foodborne illness. The operator must ensure that:

- No person suspected of having (or being a carrier of) a disease communicable through food comes in contact with any food, equipment, utensils and dishware, or food contact surfaces.
- Food handlers have a designated washroom to prevent the spread of illness.
- Food handlers always wash their hands thoroughly before handling food, clean dishware and utensils, and after using the toilet.
- Food handlers always wash their hands thoroughly after handling raw foods, using the toilet or performing any other task by which the hands could potentially be contaminated (e.g., taking out the garbage or smoking).
- Food handlers with infected cuts on their hands or arms (including sores, burns, lesions, etc.) not handle food or utensils unless the cuts are properly covered (e.g. waterproof bandage covered with a non-latex glove or finger cot).
- Food handlers should, where possible, avoid direct hand contact with food especially ready-to-eat foods (e.g. use utensils plastic or non-latex gloves).
- Food handlers wear clean clothes, keep hair restrained, and keep fingernails short and clean.

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- The food premises operator holds a valid FOODSAFE¹ certificate or its equivalent.
- At least one person with a valid FOODSAFE certificate is present when the operator is absent from the food premises.

Food

The operator must ensure:

- All food is obtained from an approved source.
- All food is protected from contamination at all times
- The availability of a probe thermometer to monitor the safe internal cooking temperature of food.
- Special care is taken to ensure that “potentially hazardous foods,” which will not be cooked before eating, are not exposed to contamination (e.g., from unwashed hands or dirty equipment). The Food Premises Regulation defines potentially hazardous foods (PHFs) as: “Food in a form or state that is capable of supporting the growth of disease-causing micro-organisms or the production of toxins.” Examples are meat, fish, milk, eggs, sprouts, cut melons and cooked rice.
- Refrigeration equipment is provided that has enough space to store all potentially hazardous foods kept at the industrial camp (e.g., food that can support disease causing micro-organisms or the production of toxins).
- Each refrigeration unit has a thermometer that is accurate within 1°C to regularly monitor its operability.
- Refrigeration unit temperatures are checked and recorded at least twice per day, and written records are maintained and kept on site.
- Leftover cooked foods are cooled promptly and reach 4°C within 6 hours.
- Foods requiring cooking or reheating are brought up to 74°C before serving or hot holding.
- Hot holding equipment maintains food temperatures at 60°C or hotter.
- Ice is made of potable water.
- All food supplies are dated, labeled, covered and stored off the floor so they are protected from dirt and contaminants.
- Foods are protected in a sanitary manner while being transported to the camp, and potentially hazardous foods have safe temperature control (i.e., hot foods are kept at temperature greater than 60°C, and cold foods are kept at 4°C or less.)

Food Equipment

Containers used for food storage (including leftovers) are of food grade quality. Such containers are used whenever stored food is at risk from water, insects, vermin, or other sources of contamination.

- All food service equipment and utensils/dishware are:
 - ▶ Food grade quality.
 - ▶ Free from breaks, corrosion, cracks, open seams and chips.
 - ▶ Kept clean and sanitized.

¹ FOODSAFE is a comprehensive food safety training program in British Columbia. It provides foodservice workers with the knowledge and skills to apply proper food handling and preparation techniques and to follow appropriate safety measures to prevent food-borne illness. For more information, see: <http://www.foodsafe.ca/>

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- Refrigeration must be mechanical.
- When not in use, utensils, dishware and kitchenware are stored off the floor and protected from dirt and contaminants.
- All kitchen or dining room structures are constructed so as to be easily cleaned and sanitized.

Fire Safety Plan

A fire safety plan may be required under the BC Fire Code. Please consult the BC Fire Code

Regulation: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/263_2012

For more information, see:

- Office of the Fire Commissioner's website: The Office of the Fire Commissioner is a leader in fire safety awareness and prevention in British Columbia.
<http://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/fire-safety>

APPENDIX A: GLOSSARY

Accommodation: A room, group of rooms, or building in which someone may live or stay.

Amenities: Includes beds, bedding, food, tents, sanitary facilities, soap, towels, laundry facilities, drinking water and furnishings.

Bedding: Includes sheets, blankets, pillows and pillowcases.

Bedroom: Structure, or part of a structure, intended to be used for sleeping.

Black Water: Human waste from toilets.

Camp Workers: People working directly in the industry of the camp.

Camp Staff: People employed to support the camp workers (e.g., kitchen staff).

Common Use: Use of a thing by more than one person without it being thoroughly cleaned and, if applicable, sterilized after each use.

Contaminate: to expose to conditions that permit (a) the introduction of foreign matter including filth, a poisonous substance or a pest, (b) the introduction or multiplication of disease-causing microorganisms or parasites, or (c) the introduction or production of toxins.

Domestic Purposes (Water): means the use of water for human consumption, food preparation, sanitation, or other household purposes.

Drinking Water: means water used or intended to be used for domestic purposes.

Dwelling: A house or other structure such as an apartment or a housekeeping suite in which a person or persons live.

Egress (means of): Continuous path of travel provided for people's escape from any point in a structure or contained open space to a separate structure, an open public thoroughfare or an exterior open space protected from fire exposure from the structure and having access to an open public thoroughfare and includes exits and access to exits.

Emergency Industrial Camp: Industrial camp established as a result of any situation that constitutes an imminent and serious threat to human safety, Crown land or resources or private property or otherwise has the imminent potential to result in significant loss.

Employer: A person or company in connection with an industry that owns, operates, maintains or has established permanent or temporary structures intended for use as living quarters by the workers employed in their industry.

Food Premise: means any place where food intended for public consumption is sold, offered for sale, supplied, handled, prepared, packaged, displayed, served, processed, stored, transported or dispensed.

Furnishings: Includes beds, tables, chairs, furniture, lamps, lockers or recreational equipment, or similar materials.

Garbage/Refuse: Discarded organic matter (such as animal or vegetable matter, as from a kitchen) or inorganic matter, such as plastic or metal, but does not include garbage that is classified as being hazardous, toxic or noxious.

Grey Water: Water-borne waste from bathing, showering, hand-basin washing, food preparation and laundry.

Handwashing Station: a hand basin provided with hot and cold running water, soap in a dispenser, and a method of hand drying that uses single service products.

Health Official: means an environmental health officer or a medical health officer as defined in the *Public Health Act*.

Holding Tank: A watertight container for holding domestic sewage until the domestic sewage is removed for treatment.

Industrial Camp: Place that is owned, operated or maintained in conjunction with an industry, with one or more structures intended for use by or for the residents employed in an industry. Industrial camps include places developed for such industries as mining, forestry, construction, drilling, oil and gas, and agriculture.

Infiltration Pit: Excavated area designed to accommodate liquid waste from an industrial camp kitchen, showers and hand washing.

Latrine: Pit dug into the ground for the purpose of urination or defecation by a single person, not covered by a structure and covered over after use.

Liquid Waste: Cumulative water-borne waste effluent that may include grey water and/or black water components.

Operator: A manager, owner or lessor of an industrial camp or an operator contracted to operate the industrial camp or a food premises.

Permanent Camp: Permanent camp means an industrial camp that operates for more than 5 months in any 12-month period, and having a structure that is not intended to be removed from the structure's location for at least one year whether or not the industrial camp is in continuous operation. An industrial camp might not operate every month of the year, but if the structures are present for 12 months or more, it is considered permanent.

Pests: Animals, including insects and rodents, which may carry an infectious agent or endanger the safety of residents.

Potable Water: Water provided by a public water system that meets the standards prescribed in the Drinking Water Protection Regulation and is safe to drink and fit for domestic purposes without further treatment.

Potentially Hazardous Foods (PHFs): The BC Centre for Disease Control defines potentially hazardous foods as: "... Foods that ... will spoil or 'go bad' if left out at room temperature. PHFs are foods or food ingredients that support the growth or survival of disease-causing bacteria (called "pathogens") or foods that may be contaminated by pathogens." Examples are meat, fish, milk, eggs, sprouts, cut melons and cooked rice.

Pit Privy: Outhouse toilet where human waste and toilet paper is released to an excavated pit.

Refuse/Garbage: Discarded organic matter (such as animal or vegetable matter, as from a kitchen) or inorganic matter, such as plastic or metal, but does not include garbage that is classified as being hazardous, toxic or noxious.

Resident: Person provided accommodation at an industrial camp by the operator (e.g., camp employee, contractor).

Sanitary Facility: Structure containing a toilet, wash basin and ancillary equipment and includes a privy, shower or urinal.

Sanitize: Treat by a process that effectively destroys micro-organisms, including pathogens.

Short-term Camp: Short term industrial camp means an industrial camp that operates for 5 months or less in any 12-month period, where the structures are removed at the end of the camp operation and that operates in the same location for less than one year.

Septic Tank: A watertight container for receiving, treating and settling domestic sewage.

Sewerage: Human excreta, and waterborne waste from the preparation and consumption of food and drink, dishwashing, bathing, showering, and general household cleaning and laundry-

Sewerage System: System for treating sewage that uses one or more treatment methods and a discharge area, but does not include a holding tank or a privy (referred to as a wastewater facility under the Municipal Wastewater Regulation).

Structure: Includes a building, vehicle, vessel and tent (permanently or temporarily established) intended for the accommodation of people working and residing at an industrial camp for daily living activities (e.g., sleeping, eating, washing and showering).

Surface Water: A natural watercourse or source of fresh water, whether usually containing water or not, and includes a lake, river, creek, spring, ravine, stream, swamp, gulch and brook or a ditch into which a natural watercourse or source of fresh water has been diverted. It does not include ground water or water in a culvert that is constructed to prevent the contamination of a watercourse by domestic sewage or effluent.

APPENDIX B: RELATED LEGISLATION AND CODES**MINISTRY OF HEALTH**

Drinking Water Protection Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_01009_01

Drinking Water Protection Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/200_2003

Food Premises Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/11_210_99

Health Hazards Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/216_2011

Public Health Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_08028_01

Public Health Impediments Regulation (Trans Fats):

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/19_50_2009

Sewerage System Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/22_326_2004

Tobacco Control Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96451_01

Tobacco Control Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/10_232_2007

MINISTRY OF ENVIRONMENT

Environmental Management Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/03053_00

Municipal Wastewater Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/87_2012

Spill Reporting Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/46_263_90

MINISTRY OF FORESTS, LANDS AND NATURAL RESOURCE OPERATIONS

British Columbia Fire Code Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/263_2012

Fire Services Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96144_01

Ground Water Protection Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/11_299_2004

National Fire Protection Association, Codes and Standards:

<http://www.nfpa.org/codes-and-standards/free-access>

Water Sustainability Act:

<http://www.bclaws.ca/civix/document/id/complete/statreg/14015>

Wildfire Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_04031_01

Wildfire Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/11_38_2005

MINISTRY OF JOBS, TOURISM AND SKILLS TRAINING AND RESPONSIBLE FOR LABOUR

Employment Standards Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96113_01

Employment Standards Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/396_95

Occupational Health and Safety Regulation:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/296_97_00

Workers Compensation Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/96492_00

WorkSafe BC:

<http://www.worksafebc.com/>

MINISTRY OF NATURAL GAS DEVELOPMENT AND RESPONSIBLE FOR HOUSING

BC Building Code:

http://www.bccodes.ca/default.aspx?vid=QPLEGALEZE:bccodes_2012_view

BC Fire Code:

http://www.bccodes.ca/default.aspx?vid=QPLEGALEZE:bccodes_2012_view

Canadian Electrical Code, as amended by British Columbia:

<http://shop.csa.ca/en/canada/landing-pages/c221-12-canadian-electrical-code/page/cecode?gclid=CPuvobOzw8ECFcaCfgodjHkAxA>

MINISTRY OF ADVANCED EDUCATION

Applied Science Technologists and Technicians Act:

<http://www.asttbc.org/about/docs/ASTTActRegs.pdf>

Architects Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96017_01

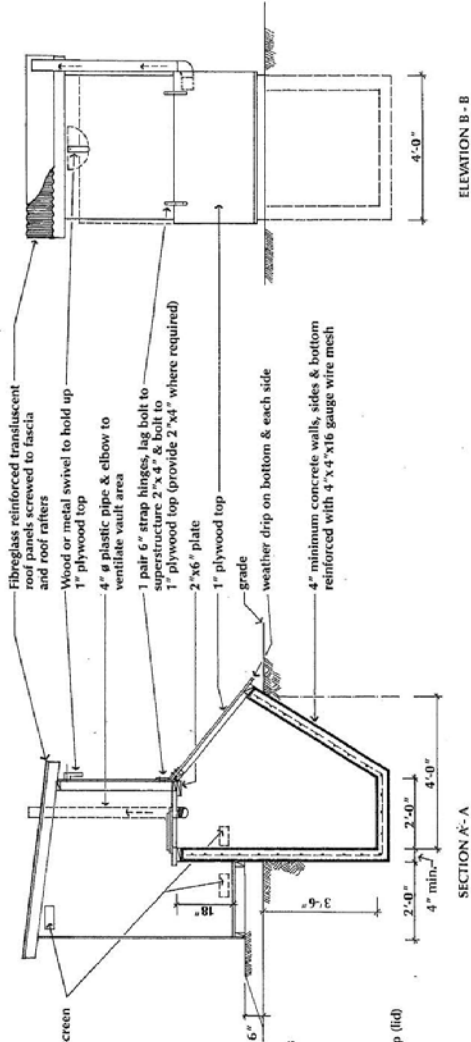
Engineers and Geoscientists Act:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96116_01

APPENDIX C: PRIVIES – TECHNICAL SPECIFICATIONS

CONCRETE VAULT PRIVY

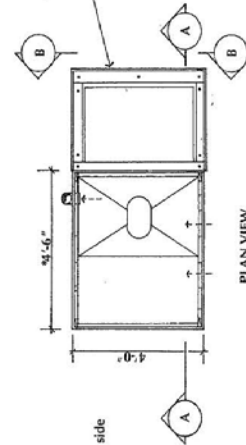
Concrete Vault Privy



ELEVATION B - B

SECTION A - A

*This dimension is 6" longer than for plywood pit toilet. (See: Private Pit Privy)



PLAN VIEW

See: Private Pit Privy for all superstructure sizes, details & material list.

ADDITIONAL MATERIAL LIST FOR THIS PLATE

- Superstructure
 1 pc. 2"x6" x 4'-0" - main plate
 4 pcs. 2"x4" x 4'-0" - frame for plywood top
 1 pc. 1"x4" x 4'-0" plywood - vault opening top (lid)
- Hardware
 1 pair 6" strap hinges
 4 of 3/8"x2" lag bolts - hinges
 4 of 3/8"x4" carriage bolts - hinges
 1 lb. 1/2" washers - glue
 9 of 1/2"x4" carriage bolts - 2"x4" frame
- Concrete
 concrete forming may be T&G, sheathing or 3/4" plywood. With 2"x4" bracing.
 Bottom & all four sides are to be poured in one continuous pour.
- Plywood Forming
 4 pcs. 3/4" x 4'-0" x 8'-0" plywood, good one side
 12 pcs. 2"x4" x 8'-0" undressed lumber
 6 lbs. 4" wire nails
 8 pcs. 2"x4" x 4'-0" undressed lumber



