### **GN-DOE WATER DISINFECTION GUIDELINES**

APPENDIX-H



| Iqaluit, NU Δ° Δ° Δ°, Δ° ΧΟΑ ΟΗΟ | Phone: Ν° Εργί Fonia (867) 975-4800

Fax: /bb dc: Faxkot:(867) 975-4833 or (867) 975-4830

**Environmental Health** 

# WATER SAMPLING

- Samples must be submitted at least once per month. Please send a sample from each water truck, one from the water storage tank(if applicable), a raw water sample, and one from any public building (school, health center etc.)
- When sampling, be careful not to let the mouth of the bottle or lid touch anything including the sampler's <u>fingers</u> as they are often contaminated with bacteria.
- 3. Fill the bottle to the 200 mL line from a water tap, valve, or water truck delivery hose nozzle. When sampling from a water tap, remove screen, aerator, or other attachment from tap and allow the cold water to run for 2-3 minutes before collecting. Do not dip into the filled water truck tank to take a sample.
- Do not <u>overfill</u> the bottle or <u>rinse it out</u> as it has been treated with sodium thiosulphate that will spill out with excess water. This chemical combines with your free chlorine – disabling it and preserving any bacteria present.
- 5. Ensure each attached sample form includes:
  - a. Date and time sample was taken.
  - b. Sample point location (e.g. Community X water truck # 3).
  - c. Name of person who took the sample.
  - d. Where to send sample results.
- 6. Sample <u>must be kept cold but not frozen</u> and may be sent via the health centre lab box if they can spare the space. You will have to discuss this possibility with the Nurse In Charge to obtain approval for this. Otherwise, it is the water plant operator's responsibility to ensure the samples are transported under refrigeration to:

Environmental Health Department Health and Social Services, Baffin P.O. Box 1000, Station 1046 Iqaluit, NU X0A 0H0

 Samples <u>must</u> arrive at the Environmental Health Office within 24 hours of sampling otherwise the results may not be accurate. Please fax or phone notice to the Environmental Health Officer when you are sending samples.

20/67



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# **Drinking Water Disinfection**

If you are drinking **raw water** from a lake, stream, or river, you should disinfect the water to kill any disease causing bacteria.

There are two simple ways to kill the bacteria:

### **Boiling and Chlorination**

- Boiling: Water must be heated to a rolling boil for at least 1 minute. If there is a flat taste, pouring the water back and forth between two clean containers will put air back into the water and make it taste better.
- 2. Chlorination: Mix household chlorine bleach with water.
  - Make sure your container is clean
  - · Clear water is the best to use

	CONVE	RSIONS	
WATER		CHLORINE BLEACH	
4.5 litres (L)	1 gallons (U.K.)	0.25 mL	5 drops
22.5 L	5 gal	1.25 mL	25 drops
45 L	10 gal	3 mL	0.5 tsp.
450 L	100 gal	25 mL	5 tsp.
2250 L	500 gal	125 mL	0.5 cup
4500 L	1000 gal	250 mL	1 cup
5625 L	1250 gal	313 mL	1.25 cups
6750 L	1500 gal	375 mL	1.5 cups
7875 L	1750 gal	438 mL	1.75 cups
9000 L	2000 gal	500 mL	2 cups

#### How to mix:

- 1. Add the bleach to the container.
- 2. Add water and mix well.
- 3. Let it sit for at least 20 minutes to allow the chlorine to kill any harmful organisms.

Chlorine smell: A chlorine <u>smell</u> indicates that the disinfectant is working. Leaving the water in a refrigerator for a few hours will remove the smell.

Chlorine taste: If after 20-30 minutes the water has a definite chlorine <u>taste</u>, you may have added too much chlorine bleach. For cloudy water containing sediment, increase the above amounts of bleach by one half.

For more information on drinking water disinfection, Please contact an Environmental Health Officer at (867) 975-4800.

22/61

# CHLORINE MIXING INSTRUCTIONS FOR CALCIUM HYPOCHLORITE 65 %

- 1. Put on rubber apron, rubber gloves, and face shelld.
- 2. Read manufacturer's safety data sheet for Calciun Hypochlorite.
- 3. Close valves on tanks.
- 4. Fill mix tank on work bench with (120) litres of water.
- 5. Add four (4) kilo-gram (bottles) of calcium hypochlorite 65% to water.
- 6. Mix solution for two (2) hours.
- 7. Fill feed tank by opening valve at bottom of mix tank.
- 8. Rinse mix tank and agitator with water.
- 9. Reintroduce clear one inche pipe from mix tank in feed tank.
- 10. Test first truck of day for adequate chlorination by using HATCH Colorimeter test kit. Let the sample sit for 20 minutes then test for FREE CHLORINE per the manual. The chlorine dosage should read between 0.5 and and 1.0 mg/litres before delivery.
- 11. Adjust the stroke and/or rate of the injection pump to either increase or decrease the chlorine dosage if required. Retest FREE CHLORINE after adjusting the stroke and/or rate.



# CLEANING AND DISINFECTING WATER STORAGE TANKS

# **Instructions:**

- 1. Drain any water from the tank.
- 2. Close any drains and add <u>5 gallons</u> of warm water to the tank.
- 3. Add <u>2 cups</u> of liquid household bleach (i.e. javex) for disinfection.
- Using a new or clean brush (mop or long handled brush is recommended), thoroughly <u>clean</u> the entire inside.
- Drain the tank and flush the interior with fresh (treated) water. Ensure all dirt, etc. has been removed.
- 6. Refill tank with treated water for storage and use.

## NOTE:

Tank cleaning and disinfection is recommended once per year or more often if necessary.

2467