B.C. MINISTRY OF TRANSPORTATION

SA11 - LOCAL AREA SPECIFICATION #3

MAINTENANCE OF WATER SYSTEMS AT REST AREAS

1. OBJECTIVE

To ensure a safe drinking water supply.

2. GENERAL PERFORMANCE SPECIFICATIONS

2.1 Routine Maintenance Services

All services for this Local Area Specification are Routine.

2.2 Quantified Maintenance Services

Not applicable to this Local Area Specification.

3. DETAILED PERFORMANCE SPECIFICATIONS

3.1 Routine Maintenance Services

The Contractor must:

a) collect water samples in accordance with the Health Authority sampling instructions at the following locations:

   i) Coy's Rest Area
   ii) Rampart Rest Area

b) perform shocking and flushing of the water systems in accordance with the Health Authority procedures outlined in Appendix 1 as may be revised from time to time;

c) if unacceptable levels or coliforms or E.coli are detected,

   i) post advisory signs, warning the public that the water is not safe to drink;
   ii) identify and eliminate the source of contamination or notify the Ministry if the source cannot be found or eliminated;
   iii) perform shocking and flushing of the water system in accordance with the Health Authority procedures outlined in Appendix 1 as may be revised from time to time;

d) report issues regarding water quality to the Environmental Health Officer and to the Ministry.

3.1.1 Performance Time Frames

The Contractor must:

a) collect and deliver water samples as determined by the Health Authority, and in consultation with the Ministry;

i) Coy's Rest Area: samples are currently taken weekly from May 1st through October 31st and monthly from November 1st to April 30th and delivered to the Interior Health Unit in Cranbrook, BC.

ii) Rampart Rest Area: samples are currently taken weekly from May 1st through October 31st and monthly from November 1st to April 30th and delivered to the Interior Health Unit in Cranbrook, BC.

Note: changes to this specification may arise due to changes in Health Authority regulations;

b) perform routine shocking and flushing of the water systems at least annually, in the spring;

c) if testing results indicate an unsatisfactory level of coliforms or E.coli, perform shocking and flushing of the systems immediately;

c) report issues regarding water quality immediately.

3.2 Quantified Maintenance Services

Not applicable to this Local Area Specification.

3.2.1 Performance Time Frames

Not applicable to this Local Area Specification.

3.3 Materials

The Contractor must use only the sterile bottles, and other materials, as specified by the Health Authority.

4. WARRANTY

Not applicable to this Local Area Specification.

APPENDIX 1

SHOCKING AND FLUSHING PROCEDURES

For routine annual well shocking and flushing, follow steps 1 through 4.

If test results show an unacceptable level of coliforms or E.coli, follow steps 1 through 7.

Materials:

Shocking may be done using unscented household bleach. Table 1 outlines the quantity of bleach required to properly shock/disinfect new and existing wells.

Table 1: Shocking of Welll Water with Unscented Household Bleach (Approximately 5.2% Hypochlorite)

Depth of water in well	Volume of bleach added			
	Casing diameter 15 cm (drilled)		Casing diameter 90 cm (dug)	
	New well*	Existing well*	New well*	Existing well*
1.0 m	100 mL	20 mL	3.2 L	0.6 L
3.0 m	300 mL	60 mL	9.8 L	2.0 L
5.0 m	500 mL	100 mL	16.5 L	3.0 L
10.0 m	1000 mL	200 mL	32.0 L	6.5 L

- New wells require a chlorine concentration of 250 parts per million (ppm) for effective disinfection, whereas existing wells require 50 ppm chlorine.
- Both Rampart and Coy's rest areas are estimated to have 5 to 10 meters of water in the well. The Contractor must verify depths prior to treatment.

Steps:

1. Shut water system down to public use. Add the amount of unscented bleach determined in Table 1 to the bottom of the well and then agitate the water. Wash down the inside wall of the well with fresh clean water. This will ensure thorough mixing of the chlorine and the water throughout the well.

2. Bleed air from the pressure tank (if non bladder style tank) and start the pump. Open each tap and allow the water to run through all taps until a smell of chlorine is detected, then turn off the taps. If a strong smell is not detected, add more bleach to the well.

3. Allow the water to sit in the system for 12-24 hours.

4. Start the pump and run water through the outside hose bib or inside bib until the strong smell of chlorine disappears. Keep hose away from grass, shrubbery and septic fields; ensure no water enters any watercourses. Open the indoor taps until the system is completely flushed. Pressurize the water tank (if non bladder style tank).

If shocking and flushing procedure is as a result of unacceptable level of coliforms or E. coli, the Contractor must continue with steps 5 through 7.

5. Wait 48 hours after flushing then sample the water using the instructions and bottle provided by the laboratory. Repeat water testing in one week.

6. After two consecutive "safe" tests, remove boil water advisory signs and resume water sampling schedule (as per section 3.1.1 a) and ii) of this LAS).

7. If the above steps do result in acceptable testing results, notify the Ministry immediately.