



# BC Onsite Sewage Association

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Mr. Tim Lambert  
Executive Director, Health Protection  
4<sup>th</sup> Floor 1515 Blanshard Street  
Victoria BC V8W 3C8

November 5, 2010

Dear Mr. Lambert

## **Re: OIC 476, 2010 Treatment Method and Holding Tank Setbacks**

The recent changes to the Sewerage System Regulation OIC 476 provided for mandatory setbacks of sewerage systems and holding tanks from wells used to supply domestic water. The new section added to the regulation (section 3.1) requires a minimum 30 meter setback from a sewerage system which includes both the “treatment method,” as defined in the regulation and the discharge area. Additionally, the changes require a minimum 15 meter setback from a holding tank.

The BC Onsite Sewage Association appreciates the need to protect public health and the environment, especially our precious ground water resources however, we continue to receive many concerns from our membership regarding the conservative setbacks for treatment methods and conversely inadequate setbacks for holding tanks.

BCOSSA wishes to offer to you the following to assist you in redrafting section 3.1 in a way that meets industry accepted practice and scientific modeling:

### **CSA B65 (Draft)**

The Canadian Standards Association is nearing completion of the B65 standards for design and installation of onsite wastewater systems. The standard development has had input from Canada’s leading onsite experts, representatives from regulatory agencies of many provinces, the federal government and the Assembly of First Nations. The committee also sought expert advice from Dr. Richard Otis and Dr. Jerry Tyler, recognized for their research of the soil based treatment.

As a result of the B65 committee’s deliberations and research, the following setbacks are presented in the draft standard:

### **Horizontal setback distances**

Minimum horizontal setback distances for septic tanks shall be:

- (a) 1.0 m from a property line;
- (b) 1.5 m from a footing drain or foundation wall;
- (c) 10 m from a water course; and
- (d) 10 m from a water source.

## United States Environmental Protection Agency Onsite Wastewater Treatment Manual

The U.S. EPA manual provides in depth discussion related to boundary performance for (soil based) onsite wastewater treatment systems. The manual provides significant rational and references for boundary performance criteria including the following table:

**Table 3-19. Wastewater constituents of concern and representative concentrations in the effluent of various treatment units**

Constituents of concern	Example direct or indirect measures (Units)	Tank-based treatment unit effluent concentrations					SWIS percolate into ground water at 3 to 5 ft depth (% removal)
		Domestic STE <sup>1</sup>	Domestic STE with N-removal recycle <sup>2</sup>	Aerobic unit effluent	Sand filter effluent	Foam or textile filter effluent	
Oxygen demand	BOD <sub>5</sub> (mg/L)	140-200	80-120	5-50	2-15	5-15	>90%
Particulate solids	TSS (mg/L)	50-100	50-80	5-100	5-20	5-10	>90%
Nitrogen	Total N (mg N/L)	40-100	10-30	25-60	10-50	30-60	10-20%
Phosphorus	Total P (mg P/L)	5-15	5-15	4-10	<1-10 <sup>4</sup>	5-15 <sup>4</sup>	0-100%
Bacteria (e.g., <i>Clostridium perfringens</i> , <i>Salmonella</i> , <i>Shigella</i> )	Fecal coliform (organisms per 100 mL)	10 <sup>5</sup> -10 <sup>6</sup>	10 <sup>5</sup> -10 <sup>6</sup>	10 <sup>5</sup> -10 <sup>6</sup>	10 <sup>5</sup> -10 <sup>7</sup>	10 <sup>5</sup> -10 <sup>7</sup>	>99.99%
Virus (e.g., hepatitis, polio, echo, coxsackie, coliphage)	Specific virus (pfu/mL)	0-10 <sup>4</sup> (episodically present at high levels)	0-10 <sup>4</sup> (episodically present at high levels)	0-10 <sup>4</sup> (episodically present at high levels)	0-10 <sup>5</sup> (episodically present at high levels)	0-10 <sup>5</sup> (episodically present at high levels)	>99.9%
Organic chemicals (e.g., solvents, petrochemicals, pesticides)	Specific organics or totals (µg/L)	0 to trace levels (?)	>99%				
Heavy metals (e.g., Pb, Cu, Ag, Hg)	Individual metals (µg/L)	0 to trace levels	>99%				

<sup>1</sup> Septic tank effluent (STE) concentrations given are for domestic wastewater. However, restaurant STE is markedly higher particularly in BOD<sub>5</sub>, COD, and suspended solids while concentrations in graywater STE are noticeably lower in total nitrogen.

<sup>2</sup> N-removal accomplished by recycling STE through a packed bed for nitrification with discharge into the influent end of the septic tank for denitrification.

<sup>3</sup> P-removal by adsorption/precipitation is highly dependent on media capacity, P loading, and system operation.

Source: Siegrist, 2001 (after Siegrist et al., 2000)

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### SPM

The Sewerage System Standard Practice Manual indicates to Authorized Persons that all tanks meet CSA B66 standard for construction, which include water tight requirement. Additionally, the SPM recommends water tightness testing be carried out on all tanks. These standards provide protection for groundwater at the system installation stage.

### Holding tanks:

The current setback for holding tanks does not reflect their risk. Holding tanks are the most expensive mechanism of wastewater disposal regulated under the SSR. Holding tank pump-out costs throughout the province range from \$350.00 to \$500.00 each for 5400- 6750 litres plus disposal fees. Average flow rate calculation from a three bedroom home is app. 675 litres per day which will result in the need for pump out every 8-10 days. With this frequency of pump out the cost will rapidly grow app. \$1050.00 to

\$1500.00 per month or \$12600.00 to \$18000.00 per year. Even if the owner were to reduce the sewage flow by half, the cost is prohibitive.

With the high cost of using a holding tank, owners are tempted to deal with the sewage flow by illegal means such as driving holes in the bottom of the tanks or installing illegal "fields" or pits beside the tank. Health authorities have documented this as an ongoing problem for many years. As a result holding tanks are considered a high risk to groundwater.

BCOSSA hopes that this information is helpful in the redevelopment of section 3.1, further we recommend that the changes take place prior to the 2011 building season preferably by January 2011.

Yours truly,

A handwritten signature in black ink, appearing to read "John Rowse". The signature is fluid and cursive, with a large initial "J" and "R".

John Rowse  
Executive Director  
BCOSSA

cc: John Rustad MLA  
Pat Bell MLA  
Michael Zemanek  
John Leech