



**Stantec**

## *Ceriodaphnia dubia* Survival and Reproduction Test

**Biological Test Method EPA 821-R-02-013  
 October 2002, Fourth Edition**

<b>Client:</b>	Sea To Sky Innovations Ltd. Coquitlam, BC	<b>Date</b>	
		<b>Sample Received:</b>	03-Dec-05
<b>Sample Name:</b>	SPC-909 Neutral	<b>Date Initiated:</b>	03-Dec-08
<b>Test Item:</b>	chemical	<b>Time Initiated:</b>	17:15
<b>Test Number:</b>	20031227-0	<b>Initiated by:</b>	R. Dorosz

### TEST RESULTS

<i>*Results expressed in percentage</i>				<i>*all values reported as nominal</i>	
	%v/v	95% CI	Method of Calculation	MSD (%)	Software Packages
<b>IC25</b>	>100	na	Linear Interpolation	na	The ICp Approach
<b>IC50</b>	>100	na			Version 2.0, 1993
<b>LC50</b>	>100	na	na	na	LC50 Program C.E.Stephen, 1986
<i>*Results expressed in parts per million</i>					
	ppm	95% CI	Method of Calculation	MSD (%)	Software Packages
<b>IC25</b>	>5.0	na	Linear Interpolation	na	The ICp Approach
<b>IC50</b>	>5.0	na			Version 2.0, 1993
<b>LC50</b>	>5.0	na	na	na	LC50 Program C.E.Stephen, 1986

### QUALITY ASSURANCE INFORMATION: Reference Toxicant Test #20031202-0

<b>Chemical Used:</b>	Sodium Chloride		
<b>Date of Test:</b>	03-December-09		
<b>3 brood LC50:</b>	2180 mg/L	<b>3 brood IC50:</b>	875 mg/L
<b>95% Confidence Interval:</b>	1780-2660	<b>95% Confidence Interval:</b>	669-995
<b>Historical Warning Limits (LC50):</b>	1080-2720	<b>Historical Warning Limits (IC50):</b>	574-1770
<b>Historical Control Limits (LC50):</b>	853-3420	<b>Historical Control Limits (IC50):</b>	433-2340

#### Acronyms

LC50	median lethal concentration (concentration that causes mortality in 50% of the test organisms)
IC25	inhibition concentration (concentration at which response is impaired by 25% )
IC50	inhibition concentration (concentration at which response is impaired by 50% )
na	not applicable
MSD	minimum significant difference (difference between groups that is necessary to conclude that that they are significantly different).

Buildings  
 Environment  
 Industrial  
 Transportation  
 Urban Land

**TEST DATA**

**Total Number of Neonates Produced per Adult After 5 Days of Testing**

replicate	concentration % (ppm)					
	(control)	(0.05)	(0.313)	(0.625)	(1.25)	(5.0)
	control	1.0	6.25	12.5	25	100
1	25	10	22	19	22	18
2	25	32	29	23	26	24
3	28	28	29	30	23	17
4	24	35	32	16	28	25
5	24	31	34	23	25	25
6	9	30	30	26	26	29
7	25	20	30	30	35	25
8	28	10	33	28	35	18
9	33	32	26	26	31	23
10	21	24	28	30	26	30
mean/conc.	24	25	29	25	28	23
% mortality / conc.	0	0	0	0	0	0

**Sample Preparation:** The highest test concentration and all dilutions were prepared fresh on a daily basis.

**Test Organism**

**Test Organism:** Ceriodaphnia dubia

**Organism Source:** In House Monoculture

**Organism Production:** mean =  $\geq 15$  young per adult, 7 days prior to testing.

**Organism Age:** < 24 hours, within 8 hours of each other

**Organism Health:** no ephippia detected in culture, mortality in culture <20%

**Test Conditions**

**Test Type:** Static renewal

**Test Duration:**  $\leq 8$  days; end when 60% of control organisms have 3 broods

**Test Temperature:**  $25 \pm 1^\circ\text{C}$

**Lighting:** 16 hours light/8 hours dark, 500-1000 lux

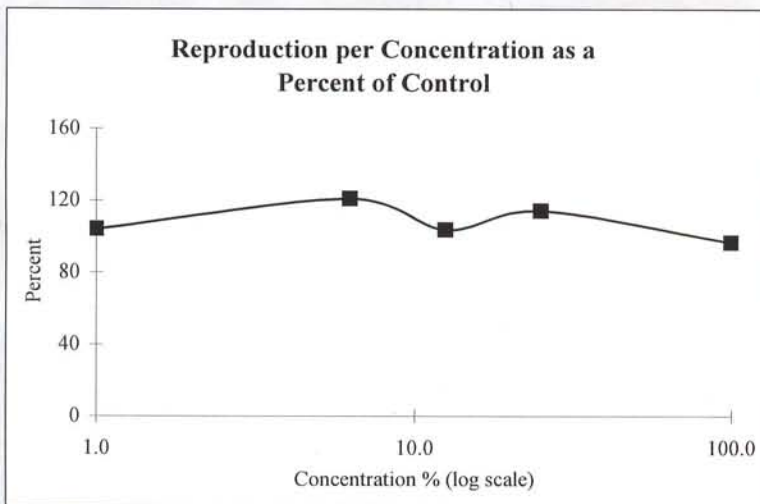
**Control/Dilution Water:** 3/4 Reconstituted Water + 1/4

Dechlorinated Tap Water

**Test Volume:** 15ml per replicate, 10 replicates per concentration

**Test Vessels:** 22 ml disposable polystyrene cylindrical containers

**Test Solution Depth:** 4.5 cm



**Stantec**

Reported by:

*[Handwritten signature]*

Date:

*04-01-05*