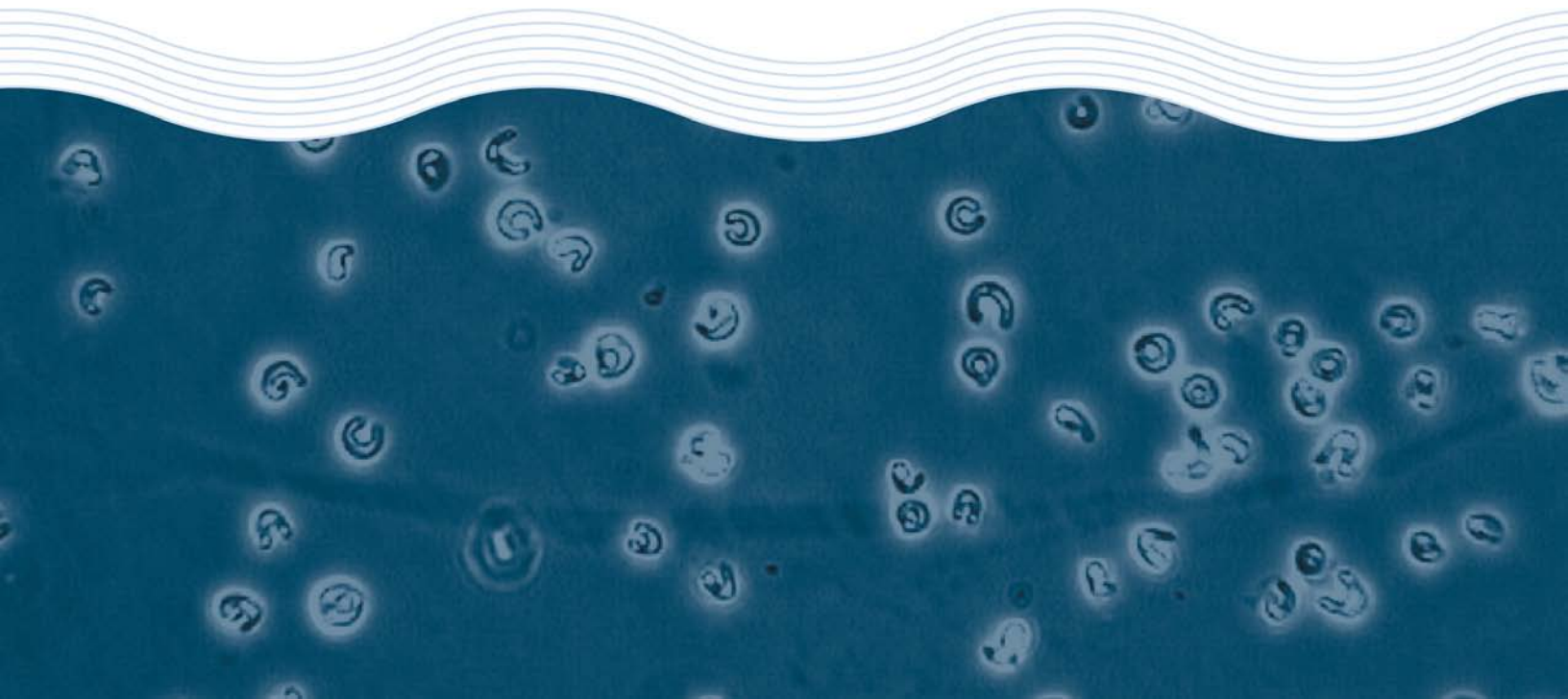


# **Toxicity Assessment of Slickgone NS Dispersant**

**Spill Tech Pty Ltd**

**Test Report**

**February 2012**



# **Toxicity Assessment of Slickgone NS Dispersant**

**Spill Tech Pty Ltd**

**Test Report**

**February 2012**

## Toxicity Test Report: TR0779/1

(page 1 of 2)

This document is issued in accordance with NATA's accreditation requirements

<b>Client:</b>	Spill Tech Pty Ltd PO Box 1451 Noosaville BC, QLD 4566	<b>ESA Job #:</b>	PR0779
<b>Attention:</b>	John Eddy	<b>Date Sampled:</b>	Not applicable
<b>Client Ref:</b>	Not supplied	<b>Date Received:</b>	22 December 2011
		<b>Sampled By:</b>	Client
		<b>ESA Quote #:</b>	PL0779_q01

<b>Lab ID No.:</b>	<b>Sample Name:</b>	<b>Sample Description:</b>
5167	Slickgone NS	Chemical received at room temperature in apparent good condition

<b>Test Performed:</b>	72-hr sea urchin larval development test using <i>Heliocidaris tuberculata</i>
<b>Test Protocol:</b>	ESA SOP 105 (ESA 2010), based on APHA (1998), Simon and Laginestra (1996) and Doyle <i>et al.</i> (2003)
<b>Test Temperature:</b>	The test was performed at 20±1°C.
<b>Deviations from Protocol:</b>	Nil
<b>Comments on Solution Preparation:</b>	The highest test concentration was prepared by adding sample 5167 'Slickgone NS' into filtered seawater (FSW). The remaining test concentrations were achieved by serially diluting the highest test concentration with FSW. A FSW control was tested concurrently with the prepared sample.
<b>Source of Test Organisms:</b>	Field collected from South Maroubra, NSW.
<b>Test Initiated:</b>	12 January 2012 at 1300h


Sample 5167: <i>Slickgone NS</i> Concentration (mg/L)	% Normal larvae (Mean ± SD)	Vacant	Vacant
FSW Control	95.8 ± 1.5		
1.6	83.0 ± 3.4 *		
3.1	76.5 ± 10.8 *		
6.3	72.8 ± 7.6 *		
12.5	63.8 ± 5.7 *		
25	2.0 ± 0.8 *		
50	0.0 ± 0.0		
100	0.0 ± 0.0		
72-hr EC10 = 10.9 (7.9-12.9)mg/L			
72-hr EC50 = 15.2 (12.9-17.6)mg/L			
NOEC = <1.6mg/L			
LOEC = 1.6mg/L			

\*Significantly lower percentage of normally developed larvae compared with the FSW Control (Dunnett's Test, 1-tailed, P=0.05)

## Toxicity Test Report: TR0779/1

(page 2 of 2)

QA/QC Parameter	Criterion	This Test	Criterion met?
Control mean % normal larvae	≥70.0%	95.8%	Yes
Reference Toxicant within cusum chart limits	4.6-24.6µg Cu/L	16.7µg Cu/L	Yes

Test Report Authorised by: 

Dr Rick Krassoi, Director on 22 February 2012

Results are based on the samples in the condition as received by ESA.

### NATA Accredited Laboratory Number: 14709

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### Citations:

APHA (1998) Method 8810 D. Echinoderm Embryo Development Test. In Standard Methods for the Examination of Water and Wastewater, 20th Ed. American Public Health Association, American Water Works Association and the Water Environment Federation, USA.

Doyle, C.J., Pablo, F., Lim, R.P. and Hynes, R.V. (2003) Assessment of metal toxicity in sediment pore water from Lake Macquarie, Australia. *Arch. Environ. Contam. Toxicology*, 44(3): 343-350.

ESA (2010) *ESA SOP 105 - Sea Urchin Larval Development Test*. Issue No. 9. Ecotox Services Australasia, Sydney NSW.

Simon, J. and Laginestra, E.(1997) Bioassay for testing sublethal toxicity in effluents, using gametes of sea urchin *Heliocidaris tuberculata*. National Pulp Mills Research Program Technical Report No. 20. CSIRO, Canberra, ACT.

## Toxicity Test Report: TR0779/2

(page 1 of 2)

This document is issued in accordance with NATA's accreditation requirements

<b>Client:</b>	Spill Tech Pty Ltd PO Box 1451 Noosaville BC, QLD 4566	<b>ESA Job #:</b>	PR0779
<b>Attention:</b>	John Eddy	<b>Date Sampled:</b>	Not applicable
<b>Client Ref:</b>	Not supplied	<b>Date Received:</b>	22 December 2011
		<b>Sampled By:</b>	Client
		<b>ESA Quote #:</b>	PL0779_q01

<b>Lab ID No.:</b>	<b>Sample Name:</b>	<b>Sample Description:</b>
5167	Slickgone NS	Chemical received at room temperature in apparent good condition

<b>Test Performed:</b>	72-hr marine algal growth test using <i>Isochrysis aff. galbana</i>
<b>Test Protocol:</b>	ESA SOP 110 (ESA 2011), based on Stauber <i>et al.</i> (1994)
<b>Test Temperature:</b>	The test was performed at 29±1°C.
<b>Deviations from Protocol:</b>	Nil
<b>Comments on Solution Preparation:</b>	The highest test concentration was prepared by adding sample 5167 'Slickgone NS' into filtered seawater (FSW). The remaining test concentrations were achieved by serially diluting the highest test concentration with FSW. A FSW control was tested concurrently with the prepared sample.
<b>Source of Test Organisms:</b>	In-house culture, originally sourced from CSIRO Microalgae Supply Service, TAS
<b>Test Initiated:</b>	31 January 2012 at 1300h

Sample 5167: <i>Slickgone NS</i> Concentration (mg/L)	Cell Yield (Mean number of cells/mL x10 <sup>4</sup> ± SD)	Vacant	Vacant
FSW Control	31.6 ± 3.4		
0.3	26.7 ± 7.0		
0.6	23.1 ± 4.4 *		
1.3	21.0 ± 6.1 *		
2.5	21.6 ± 3.3 *		
5	21.2 ± 3.0 *		
10	1.6 ± 0.9 *		
72-hr IC10 = <0.3mg/L 72-hr IC50 = 6.4 (5.3-6.9)mg/L NOEC = 0.3mg/L LOEC = 0.6mg/L			

\*Significantly lower cell yield compared with the FSW Control (Dunnett's Test, 1-tailed, P=0.05)

## Toxicity Test Report: TR0779/2

(page 2 of 2)

QA/QC Parameter	Criterion	This Test	Criterion met?
Control mean cell density	$\geq 16.0 \times 10^4$ cells/mL	$32.6 \times 10^4$ cells/mL	Yes
Control coefficient of variation	<20%	10.8%	Yes
Reference Toxicant within cusum chart limits	3.5-98.0 $\mu$ g Cu/L	19.3 $\mu$ g Cu/L	Yes

Test Report Authorised by:



Dr Rick Krassoi, Director on 22 February 2012

Results are based on the samples in the condition as received by ESA.

**NATA Accredited Laboratory Number: 14709**

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**Citations:**

ESA (2011) SOP 110 – *Marine Algal Growth Test*. Issue No. 8. Ecotox Services Australasia, Sydney NSW

Stauber, J.L., Tsai, J., Vaughan, G.T., Peterson, S.M. and Brockbank, C.I. (1994) Algae as indicators of toxicity of the effluent from bleached eucalypt kraft pulp mills. National Pulp Mills Research Program, Technical Report No. 3. CSIRO, Canberra, ACT

## Toxicity Test Report: TR0779/3

(page 1 of 2)

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<b>Client:</b>	Spill Tech Pty Ltd PO Box 1451 Noosaville BC, QLD 4566	<b>ESA Job #:</b>	PR0779
<b>Attention:</b>	John Eddy	<b>Date Sampled:</b>	Not applicable
<b>Client Ref:</b>	Not supplied	<b>Date Received:</b>	22 December 2011
		<b>Sampled By:</b>	Client
		<b>ESA Quote #:</b>	PL0779_q01

<b>Lab ID No.:</b>	<b>Sample Name:</b>	<b>Sample Description:</b>
5167	Slickgone NS	Chemical received at room temperature in apparent good condition

<b>Test Performed:</b>	96-hr acute toxicity test using the amphipod <i>Allorchestes compressa</i>
<b>Test Protocol:</b>	ESA SOP 108 (ESA 2011), based on USEPA (2002) and Department of Transport and Communications (1990)
<b>Test Temperature:</b>	The test was performed at 20±1°C.
<b>Deviations from Protocol:</b>	Nil
<b>Comments on Solution Preparation:</b>	The highest test concentration was prepared by adding sample 5167 'Slickgone NS' into filtered seawater (FSW). The remaining test concentrations were achieved by serially diluting the highest test concentration with FSW. A FSW control was tested concurrently with the prepared sample.
<b>Source of Test Organisms:</b>	In-house culture, originally sourced from Queenscliff, VIC
<b>Test Initiated:</b>	12 January 2012 at 1245h


Sample 5167: <i>Slickgone NS</i>		<i>Vacant</i>	<i>Vacant</i>
Concentration (mg/L)	% Un-affected (Mean ± SD)		
FSW Control	100 ± 0.0		
0.5	95.0 ± 10.0		
1.4	95.0 ± 10.0		
4.1	20.0 ± 16.3 *		
12.3	0.0 ± 0.0		
37.0	0.0 ± 0.0		
111.1	0.0 ± 0.0		
333.3	0.0 ± 0.0		
1000	0.0 ± 0.0		
<b>96-hr EC10 = 1.1 (0.6-1.6)mg/L</b>			
<b>96-hr EC50 = 2.6 (1.9-3.5)mg/L</b>			
<b>NOEC = 1.4mg/L</b>			
<b>LOEC = 4.1mg/L</b>			

\*Significantly lower percent survival compared with the FSW Control (Steel's Many-One Rank Test, 1-tailed, P=0.05)

## Toxicity Test Report: TR0779/3

(page 2 of 2)

QA/QC Parameter	Criterion	This Test	Criterion met?
Control mean % un-affected	≥90.0%	100%	Yes
Reference Toxicant within cusum chart limits	0.6-4.4mg SDS/L	1.4mg SDS/L	Yes

Test Report Authorised by: 

Dr Rick Krassoi, Director on 22 February 2012

Results are based on the samples in the condition as received by ESA.

### NATA Accredited Laboratory Number: 14709

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### Citations:

Department of Transport and Communications (1990) Guidelines for Acceptance of Oil Spill Dispersants in Australian Waters. Pollution Prevention Section, Department of Transport and Communications, Canberra ACT.

ESA (2011) SOP 108 – *Amphipod Acute Toxicity Test*. Issue No 8. Ecotox Services Australasia, Sydney, NSW.

USEPA (2002) Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms. Fifth Edition. United States Environmental Protection Agency, Office of Research and Development, Washington DC, EPA/600/4-90/027F.



## Toxicity Test Report: TR0779/4

(page 1 of 2)

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<b>Client:</b>	Spill Tech Pty Ltd PO Box 1451 Noosaville BC, QLD 4566	<b>ESA Job #:</b>	PR0779
<b>Attention:</b>	John Eddy	<b>Date Sampled:</b>	Not applicable
<b>Client Ref:</b>	Not supplied	<b>Date Received:</b>	22 December 2011
		<b>Sampled By:</b>	Client
		<b>ESA Quote #:</b>	PL0779_q01

<b>Lab ID No.:</b>	<b>Sample Name:</b>	<b>Sample Description:</b>
5167	Slickgone NS	Chemical received at room temperature in apparent good condition


<b>Test Performed:</b>	72-hr macroalgal germination success test using <i>Hormosira banksii</i>
<b>Test Protocol:</b>	ESA SOP 116 (ESA 2010), based on Kevekordes and Clayton (1996) and Gunthorpe <i>et al.</i> (1997)
<b>Test Temperature:</b>	The test was performed at 19±1°C.
<b>Deviations from Protocol:</b>	The test was performed at 19±1°C, not 18±1°C.
<b>Comments on Solution Preparation:</b>	The highest test concentration was prepared by adding sample 5167 'Slickgone NS' into filtered seawater (FSW). The remaining test concentrations were achieved by serially diluting the highest test concentration with FSW. A FSW control was tested concurrently with the prepared sample.
<b>Source of Test Organisms:</b>	Field collected from Bilgola, NSW.
<b>Test Initiated:</b>	8 February 2012 at 1330h

Sample 5167: <i>Slickgone NS</i>			
Concentration (mg/L)	% Germination (Mean ± SD)	Vacant	Vacant
FSW Control	96.0 ± 1.6		
3.1	95.3 ± 2.5		
6.3	95.0 ± 1.8		
12.5	95.5 ± 2.9		
25	97.5 ± 2.1		
50	96.0 ± 2.2		
100	93.0 ± 6.5		
<b>72-hr EC10 = &gt;100mg/L</b>			
<b>72-hr EC50 = &gt;100mg/L</b>			
<b>NOEC = 100mg/L</b>			
<b>LOEC = &gt;100mg/L</b>			

## Toxicity Test Report: TR0779/4

(page 2 of 2)

QA/QC Parameter	Criterion	This Test	Criterion met?
Control mean % germination	≥70.0%	96.0%	Yes
Reference Toxicant within cusum chart limits	57.5-433.9µg Cu/L	137.0µg Cu/L	Yes

Test Report Authorised by: 

Dr Rick Krassoi, Director on 22 February 2012

Results are based on the samples in the condition as received by ESA.

### NATA Accredited Laboratory Number: 14709

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### Citations:

ESA (2010) *SOP 116 – Macroalgal Germination Success Test*. Issue No. 11. Ecotox Services Australasia, Sydney.

Gunthorpe L, Nottage M, Palmer D, and Wu R (1997) *Testing for Sublethal Toxicity Using Gametes of Hormosira banksii: protocol*. National Pulp Mills Research Program Technical Report No. 22, CSIRO, Canberra.

Kevekordes K and Clayton MN (1996) Using developing embryos of *Hormosira banksii* (Phaeophyta) as a marine bioassay system. *International Journal of Plant Science*, 157: 582-585.

## Toxicity Test Report: TR0779/5

(page 1 of 2)

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<b>Client:</b>	Spill Tech Pty Ltd PO Box 1451 Noosaville BC, QLD 4566	<b>ESA Job #:</b>	PR0779
<b>Attention:</b>	John Eddy	<b>Date Sampled:</b>	Not applicable
<b>Client Ref:</b>	Not supplied	<b>Date Received:</b>	22 December 2011
		<b>Sampled By:</b>	Client
		<b>ESA Quote #:</b>	PL0779_q01

<b>Lab ID No.:</b>	<b>Sample Name:</b>	<b>Sample Description:</b>
5167	Slickgone NS	Chemical received at room temperature in apparent good condition

<b>Test Performed:</b>	96-hr fish imbalance toxicity test using barramundi <i>Lates calcarifer</i>
<b>Test Protocol:</b>	ESA SOP 117 (ESA 2011), based on USEPA (2002)
<b>Test Temperature:</b>	The test was performed at 25±2°C.
<b>Deviations from Protocol:</b>	The test temperature deviated from 25±2°C. The temperature range was 23.5-27.9°C.
<b>Comments on Solution Preparation:</b>	The highest test concentration was prepared by adding sample 5167 'Slickgone NS' into filtered seawater (FSW). The remaining test concentrations were achieved by serially diluting the highest test concentration with FSW. A FSW control was tested concurrently with the prepared sample.
<b>Source of Test Organisms:</b>	Hatchery reared, SA
<b>Test Initiated:</b>	2 February 2012 at 1330h


Sample 5167: <i>Slickgone NS</i>	Vacant		Vacant	
Concentration (mg/L)	% Un-affected (Mean ± SD)			
FSW Control	100 ± 0.0			
6.3	100 ± 0.0			
12.5	100 ± 0.0			
25	100 ± 0.0			
50	25.0 ± 25.2 *			
100	0.0 ± 0.0			
<b>96-hr IC10 = 40.1 (37.3-43.8)mg/L</b> <b>96-hr EC50 = 42.0 (36.8-48.1)mg/L</b> <b>NOEC = 25mg/L</b> <b>LOEC = 50mg/L</b>				

\*Significantly lower percentage of un-affected fish compared with the FSW Control (Steel's Many-One Rank Test, 1-tailed, P=0.05)

## Toxicity Test Report: TR0779/5

(page 2 of 2)

QA/QC Parameter	Criterion	This Test	Criterion met?
Control mean % un-affected	≥80.0%	100%	Yes
Reference Toxicant within cusum chart limits	685.5-2721.4µg Cu/L	1545.6µg Cu/L	Yes

Test Report Authorised by: 

Dr Rick Krassoi, Director on 22 February 2012

Results are based on the samples in the condition as received by ESA.

### NATA Accredited Laboratory Number: 14709

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### Citations:

ESA (2011) SOP 117 –*Freshwater and Marine Fish Imbalance Test*. Issue No 7. Ecotox Services Australasia, Sydney, NSW

USEPA (2002) Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms. Fifth edition EPA-821-R-02-012. United States Environmental Protection Agency, Office of Research and Development, Washington FC, USA

## Toxicity Test Report: TR0779/6

(page 1 of 2)

<b>Client:</b>	Spill Tech Pty Ltd PO Box 1451 Noosaville BC, QLD 4566	<b>ESA Job #:</b>	PR0779
<b>Attention:</b>	John Eddy	<b>Date Sampled:</b>	Not applicable
<b>Client Ref:</b>	Not supplied	<b>Date Received:</b>	22 December 2011
		<b>Sampled By:</b>	Client
		<b>ESA Quote #:</b>	PL0779_q01

<b>Lab ID No.:</b>	<b>Sample Name:</b>	<b>Sample Description:</b>
5167	Slickgone NS	Chemical received at room temperature in apparent good condition

<b>Test Performed:</b>	96-hr fish imbalance toxicity test using Yellow-tail kingfish <i>Seriola lalandi</i>
<b>Test Protocol:</b>	ESA SOP 117 (ESA 2011), based on USEPA (2002)
<b>Test Temperature:</b>	The test was performed at 20±1°C.
<b>Deviations from Protocol:</b>	Nil
<b>Comments on Solution Preparation:</b>	The highest test concentration was prepared by adding sample 5167 'Slickgone NS' into filtered seawater (FSW). The remaining test concentrations were achieved by serially diluting the highest test concentration with FSW. A FSW control was tested concurrently with the prepared sample.
<b>Source of Test Organisms:</b>	Hatchery reared, Fremantle WA
<b>Test Initiated:</b>	16 February 2012 at 1430h

Sample 5167: <i>Slickgone NS</i>			
Concentration (mg/L)	% Un-affected (Mean ± SD)	Vacant	Vacant
FSW Control	85.0 ± 19.2		
2.3	100 ± 0.0		
4.7	100 ± 0.0		
9.4	95.0 ± 10.0		
18.8	80.0 ± 28.3		
37.5	0.0 ± 0.0		
75	0.0 ± 0.0		
150	0.0 ± 0.0		
<b>96-hr IC10 = 15.8 (5.5-22.7)mg/L</b> <b>96-hr EC50 = 23.8 (21.2-26.6)mg/L</b> <b>NOEC = 18.8mg/L</b> <b>LOEC = 37.5mg/L</b>			

# Toxicity Test Report: TR0779/6

(page 2 of 2)

QA/QC Parameter	Criterion	This Test	Criterion met?
Control mean % un-affected	≥80.0%	85.0%	Yes
Reference Toxicant within cusum chart limits	Not available*	254.4µg Cu/L	n/a

\*Reference toxicant cusum charts are not available for *Seriola lalandi* due to limited testing with this species



Test Report Authorised by:

Dr Rick Krassoi, Director on 22 February 2012

Results are based on the samples in the condition as received by ESA. This document shall not be reproduced except in full.

**Citations:**

ESA (2011) SOP 117 –*Freshwater and Marine Fish Imbalance Test*. Issue No 7. Ecotox Services Australasia, Sydney, NSW

USEPA (2002) Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms. Fifth edition EPA-821-R-02-012. United States Environmental Protection Agency, Office of Research and Development, Washington FC, USA



## Toxicity Test Report: TR0779/7

(page 1 of 2)

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<b>Client:</b>	Spill Tech Pty Ltd PO Box 1451 Noosaville BC, QLD 4566	<b>ESA Job #:</b>	PR0779
<b>Attention:</b>	John Eddy	<b>Date Sampled:</b>	Not applicable
<b>Client Ref:</b>	Not supplied	<b>Date Received:</b>	22 December 2011
		<b>Sampled By:</b>	Client
		<b>ESA Quote #:</b>	PL0779_q01

<b>Lab ID No.:</b>	<b>Sample Name:</b>	<b>Sample Description:</b>
5167	Slickgone NS	Chemical received at room temperature in apparent good condition

<b>Test Performed:</b>	96-hr acute survival test using the tiger prawn <i>Penaeus monodon</i>
<b>Test Protocol:</b>	ESA SOP 107 (ESA 2011), based on methods described by the USEPA (1996) and the Department of Transport and Communications (1990)
<b>Test Temperature:</b>	The test was performed at 25±1°C.
<b>Deviations from Protocol:</b>	Nil
<b>Comments on Solution Preparation:</b>	The highest test concentration was prepared by adding sample 5167 'Slickgone NS' into filtered seawater (FSW). The remaining test concentrations were achieved by serially diluting the highest test concentration with FSW. A FSW control was tested concurrently with the prepared sample.
<b>Source of Test Organisms:</b>	Hatchery reared, QLD
<b>Test Initiated:</b>	10 January 2012 at 1200h

Sample 5167: <i>Slickgone NS</i>	<i>Vacant</i>	<i>Vacant</i>
Concentration (mg/L)	% Un-affected (Mean ± SD)	
FSW Control	85.0 ± 10.0	
0.5	85.0 ± 19.2	
1.4	65.0 ± 19.2	
4.1	70.0 ± 11.6	
12.3	95.0 ± 10.0	
37.0	25.0 ± 25.2 *	
111.1	10.0 ± 11.6 *	
333.3	15.0 ± 10.0 *	
1000	0.0 ± 0.0	
<b>96-hr IC10 = 12.4mg/L**</b>		
<b>96-hr EC50 = 29.7 (19.6-44.9)mg/L</b>		
<b>NOEC = 12.3mg/L</b>		
<b>LOEC = 37mg/L</b>		


\*Significantly lower percentage of un-affected prawns compared with the FSW Control (Dunnett's Test, 1-tailed, P=0.05)

\*\* 95% confidence limits are not available

QA/QC Parameter	Criterion	This Test	Criterion met?
Control mean % un-affected	≥80.0%	85.0%	Yes
Reference Toxicant within cusum chart limits	2.0-24.4mg SDS/L	20.3mg SDS/L	Yes

## Toxicity Test Report: TR0779/7

(page 2 of 2)

Test Report Authorised by:  Dr Rick Krassoi, Director on 22 February 2012

Results are based on the samples in the condition as received by ESA.

**NATA Accredited Laboratory Number: 14709**

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**Citations:**

ESA (2011) SOP 107 –*Juvenile Tiger Prawn Toxicity Test*. Issue No 7. Ecotox Services Australasia, Sydney, NSW

Department of Transport and Communications (1990) Guidelines for Acceptance of Oil Spill Dispersants in Australian Waters. Pollution Prevention Section, Department of Transport and Communications, Canberra ACT.

USEPA (1996) Ecological Effects Test Guidelines, OPPTS 850.1045, Penaeid Acute Toxicity Test. Public Draft. United States Environmental Protection Agency, Washington DC.



# **Statistical Printouts for the Sea Urchin Larval Development Test**

**Sea Urchin Larval Development Test-Proportion Normal**

Start Date:	12/01/2012 13:00	Test ID:	PR0779/04	Sample ID:	SlickgoneNS
End Date:	15/01/2012 13:00	Lab ID:	5167	Sample Type:	CP-Chemical product
Sample Date:		Protocol:	ESA 105	Test Species:	HT-Heliocidaris tuberculata

Conc-mg/L	1	2	3	4
FSW Control	0.9500	0.9700	0.9700	0.9400
1.6	0.8200	0.8400	0.8700	0.7900
3.1	0.8500	0.7100	0.8600	0.6400
6.3	0.7000	0.7000	0.6700	0.8400
12.5	0.6900	0.6300	0.5600	0.6700
25	0.0200	0.0200	0.0300	0.0100
50	0.0000	0.0000	0.0000	0.0000
100	0.0000	0.0000	0.0000	0.0000

Conc-mg/L	Mean	N-Mean	Transform: Arcsin Square Root					t-Stat	1-Tailed Critical	MSD	Number Resp	Total Number
			Mean	Min	Max	CV%	N					
FSW Control	0.9575	1.0000	1.3655	1.3233	1.3967	2.719	4				17	400
*1.6	0.8300	0.8668	1.1472	1.0948	1.2019	3.932	4	4.193	2.410	0.1255	68	400
*3.1	0.7650	0.7990	1.0725	0.9273	1.1873	11.958	4	5.628	2.410	0.1255	94	400
*6.3	0.7275	0.7598	1.0251	0.9589	1.1593	8.851	4	6.537	2.410	0.1255	109	400
*12.5	0.6375	0.6658	0.9254	0.8455	0.9803	6.418	4	8.452	2.410	0.1255	145	400
*25	0.0200	0.0209	0.1395	0.1002	0.1741	21.720	4	23.545	2.410	0.1255	392	400
50	0.0000	0.0000	0.0500	0.0500	0.0500	0.000	4				400	400
100	0.0000	0.0000	0.0500	0.0500	0.0500	0.000	4				400	400

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.980647	0.916	0.144769	0.225709
Bartlett's Test indicates equal variances (p = 0.15)	8.044328	15.08627		

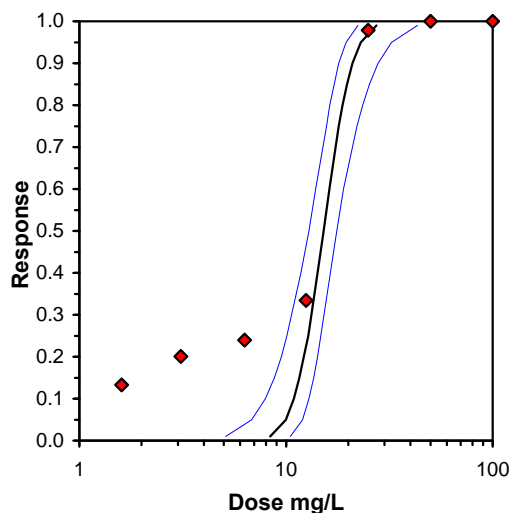
  

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnnett's Test	<1.6	1.6			0.063927	0.066698	0.71164	0.005423	1.6E-13	5, 18

Parameter	Value	SE	95% Fiducial Limits		Maximum Likelihood-Probit						
					Control	Chi-Sq	Critical	P-value	Mu	Sigma	Iter
Slope	9.052196	1.504061	5.185885	12.91851	0.0425	31.69838	11.0705	6.8E-06	1.180748	0.11047	11
Intercept	-5.68836	1.799964	-10.3153	-1.06141							
TSCR	0.179802	0.024207	0.117575	0.242028							

Point	Probits	mg/L	95% Fiducial Limits	
EC01	2.674	8.389865	5.096082	10.46505
EC05	3.355	9.977918	6.818043	11.95321
EC10	3.718	10.94395	7.936254	12.87382
EC15	3.964	11.64803	8.773738	13.56372
EC20	4.158	12.23977	9.485574	14.16269
EC25	4.326	12.77134	10.12619	14.72071
EC40	4.747	14.21544	11.83374	16.37051
EC50	5.000	15.16169	12.89303	17.59113
EC60	5.253	16.17093	13.94717	19.03824
EC75	5.674	17.99943	15.6519	22.04729
EC80	5.842	18.78114	16.3121	23.47351
EC85	6.036	19.73526	17.07506	25.31463
EC90	6.282	21.00493	18.03297	27.91946
EC95	6.645	23.03856	19.46859	32.4204
EC99	7.326	27.39935	22.29198	43.26841

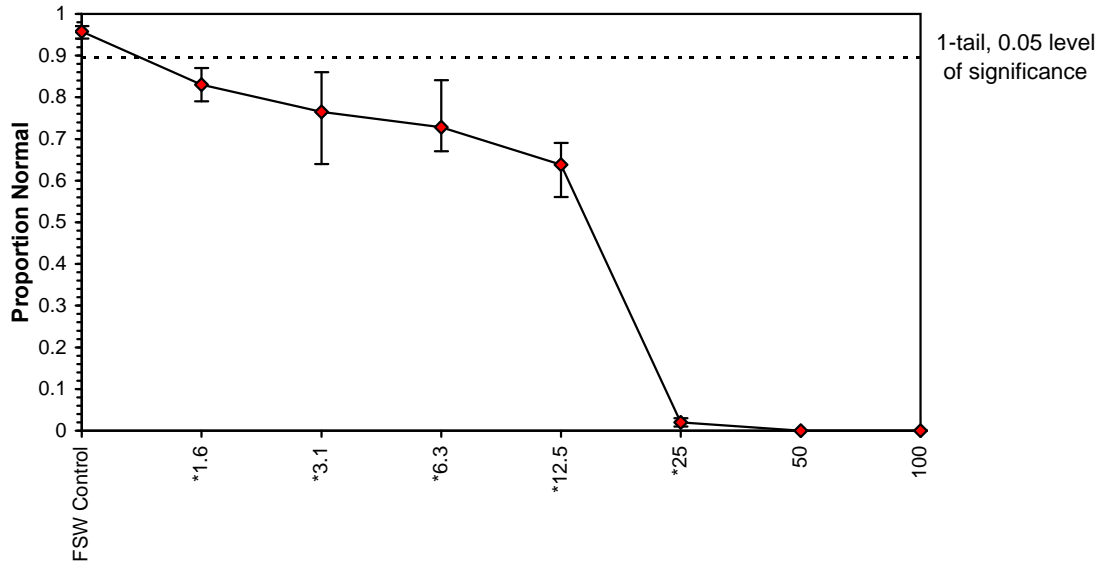


Significant heterogeneity detected (p = 6.82E-06)

**Sea Urchin Larval Development Test-Proportion Normal**

Start Date: 12/01/2012 13:00 Test ID: PR0779/04 Sample ID: SlickgoneNS  
End Date: 15/01/2012 13:00 Lab ID: 5167 Sample Type: CP-Chemical product  
Sample Date: Protocol: ESA 105 Test Species: HT-Heliocidaris tuberculata  
Comments:

**Dose-Response Plot**



**Sea Urchin Larval Development Test-Proportion Normal**

Start Date:	12/01/2012 13:00	Test ID:	PR0779/04	Sample ID:	SlickgoneNS
End Date:	15/01/2012 13:00	Lab ID:	5167	Sample Type:	CP-Chemical product
Sample Date:		Protocol:	ESA 105	Test Species:	HT-Heliocidaris tuberculata
Comments:					

**Auxiliary Data Summary**

Conc-mg/L	Parameter	Mean	Min	Max	SD	CV%	N
FSW Control	% Normal	95.75	94.00	97.00	1.50	1.28	4
1.6		83.00	79.00	87.00	3.37	2.21	4
3.1		76.50	64.00	86.00	10.79	4.29	4
6.3		72.75	67.00	84.00	7.63	3.80	4
12.5		63.75	56.00	69.00	5.74	3.76	4
25		2.00	1.00	3.00	0.82	45.18	4
50		0.00	0.00	0.00	0.00		4
100		0.00	0.00	0.00	0.00		4
FSW Control	pH	8.10	8.10	8.10	0.00	0.00	1
1.6		8.10	8.10	8.10	0.00	0.00	1
3.1		8.10	8.10	8.10	0.00	0.00	1
6.3		8.10	8.10	8.10	0.00	0.00	1
12.5		8.10	8.10	8.10	0.00	0.00	1
25		8.10	8.10	8.10	0.00	0.00	1
50		8.10	8.10	8.10	0.00	0.00	1
100		8.10	8.10	8.10	0.00	0.00	1
FSW Control	Salinity ppt	34.40	34.40	34.40	0.00	0.00	1
1.6		34.30	34.30	34.30	0.00	0.00	1
3.1		34.30	34.30	34.30	0.00	0.00	1
6.3		34.40	34.40	34.40	0.00	0.00	1
12.5		34.40	34.40	34.40	0.00	0.00	1
25		34.40	34.40	34.40	0.00	0.00	1
50		34.20	34.20	34.20	0.00	0.00	1
100		33.80	33.80	33.80	0.00	0.00	1
FSW Control	DO %	99.20	99.20	99.20	0.00	0.00	1
1.6		97.60	97.60	97.60	0.00	0.00	1
3.1		97.10	97.10	97.10	0.00	0.00	1
6.3		97.50	97.50	97.50	0.00	0.00	1
12.5		97.70	97.70	97.70	0.00	0.00	1
25		98.00	98.00	98.00	0.00	0.00	1
50		98.20	98.20	98.20	0.00	0.00	1
100		98.50	98.50	98.50	0.00	0.00	1

**Statistical Printouts for the  
*Isochrysis* Growth Inhibition  
Tests**

**Microalgal Cell Yield-Cell Yield**

Start Date:	31/01/2012 13:00	Test ID:	PR0779/02	Sample ID:	Slickgone NS
End Date:	3/02/2012 13:00	Lab ID:	5167	Sample Type:	CP-Chemical product
Sample Date:		Protocol:	ESA 110	Test Species:	IG-isochrysis cf galbana

Conc-mg/L	1	2	3	4
FSW Control	31.492	28.892	29.692	36.492
0.3	28.292	35.892	22.492	20.292
0.6	17.492	25.892	21.692	27.292
1.3	27.492	24.492	17.892	14.092
2.5	22.892	17.292	21.092	25.092
5	23.292	16.892	23.092	21.492
10	2.092	0.492	2.492	1.492

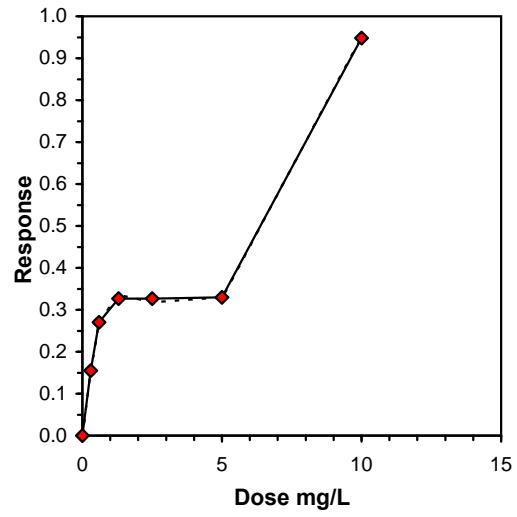
Conc-mg/L	Transform: Untransformed							1-Tailed			Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
FSW Control	31.642	1.0000	31.642	28.892	36.492	10.781	4				31.642	1.0000
0.3	26.742	0.8451	26.742	20.292	35.892	26.068	4	1.563	2.451	7.685	26.742	0.8451
*0.6	23.092	0.7298	23.092	17.492	27.292	19.172	4	2.727	2.451	7.685	23.092	0.7298
*1.3	20.992	0.6634	20.992	14.092	27.492	29.070	4	3.397	2.451	7.685	21.292	0.6729
*2.5	21.592	0.6824	21.592	17.292	25.092	15.285	4	3.206	2.451	7.685	21.292	0.6729
*5	21.192	0.6697	21.192	16.892	23.292	14.051	4	3.333	2.451	7.685	21.192	0.6697
*10	1.642	0.0519	1.642	0.492	2.492	52.963	4	9.570	2.451	7.685	1.642	0.0519

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.984474	0.924	0.192637	-0.15304
Bartlett's Test indicates equal variances (p = 0.14)	9.653189	16.81189		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs FSW Control	0.3	0.6	0.424264		7.685085	0.242873	350.4781	19.65571	3.0E-07	6, 21

Linear Interpolation (200 Resamples)					
Point	mg/L	SD	95% CL(Exp)		Skew
IC05*	0.0969	0.1118	0.0186	0.5351	0.9871
IC10*	0.1937	0.1236	0.0371	0.6162	0.6762
IC15*	0.2906	0.1435	0.0557	0.7225	0.7541
IC20	0.4174	0.2922	0.0563	1.4484	3.8325
IC25	0.5474	0.7567	0.0549	4.7878	2.8745
IC40	5.5644	1.0309	0.0000	6.2427	-3.0856
IC50	6.3737	0.2755	5.2719	6.9370	-0.7922

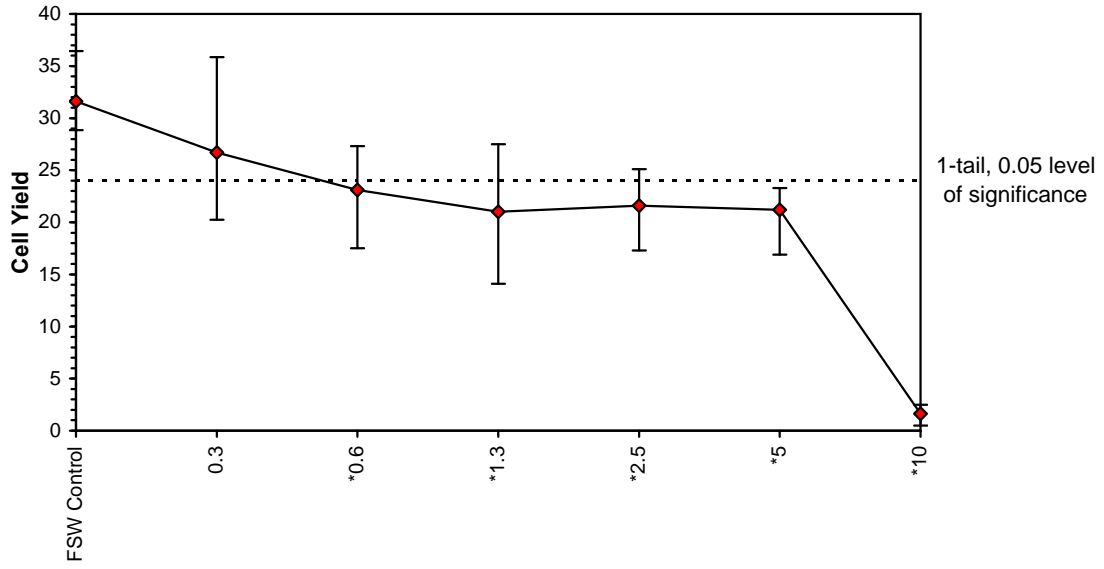
\* indicates IC estimate less than the lowest concentration



**Microalgal Cell Yield-Cell Yield**

Start Date: 31/01/2012 13:00 Test ID: PR0779/02 Sample ID: Slickgone NS  
End Date: 3/02/2012 13:00 Lab ID: 5167 Sample Type: CP-Chemical product  
Sample Date: Protocol: ESA 110 Test Species: IG-isochrysis cf galbana  
Comments:

**Dose-Response Plot**



**Microalgal Cell Yield-Cell Yield**

Start Date:	31/01/2012 13:00	Test ID:	PR0779/02	Sample ID:	Slickgone NS
End Date:	3/02/2012 13:00	Lab ID:	5167	Sample Type:	CP-Chemical product
Sample Date:		Protocol:	ESA 110	Test Species:	IG-isochrysis cf galbana
Comments:					

**Auxiliary Data Summary**

Conc-mg/L	Parameter	Mean	Min	Max	SD	CV%	N
FSW Control	Cell Yield	31.64	28.89	36.49	3.41	5.84	4
0.3		26.74	20.29	35.89	6.97	9.87	4
0.6		23.09	17.49	27.29	4.43	9.11	4
1.3		20.99	14.09	27.49	6.10	11.77	4
2.5		21.59	17.29	25.09	3.30	8.41	4
5		21.19	16.89	23.29	2.98	8.14	4
10		1.64	0.49	2.49	0.87	56.79	4
FSW Control		pH	8.20	8.20	8.20	0.00	0.00
0.3	8.20		8.20	8.20	0.00	0.00	1
0.6	8.20		8.20	8.20	0.00	0.00	1
1.3	8.20		8.20	8.20	0.00	0.00	1
2.5	8.20		8.20	8.20	0.00	0.00	1
5	8.20		8.20	8.20	0.00	0.00	1
10	8.20		8.20	8.20	0.00	0.00	1
FSW Control	Salinity ppt		34.70	34.70	34.70	0.00	0.00
0.3		34.80	34.80	34.80	0.00	0.00	1
0.6		34.50	34.50	34.50	0.00	0.00	1
1.3		34.60	34.60	34.60	0.00	0.00	1
2.5		34.70	34.70	34.70	0.00	0.00	1
5		34.70	34.70	34.70	0.00	0.00	1
10		34.80	34.80	34.80	0.00	0.00	1



**Statistical Printouts for the Acute  
*Allorchestes* Toxicity Test**

**Amphipod Acute Toxicity Test-96 hr survival**

Start Date:	12/01/2012 12:45	Test ID:	PR0779/02	Sample ID:	Slickgone NS
End Date:	16/01/2012 12:45	Lab ID:	5167	Sample Type:	CP-Chemical product
Sample Date:		Protocol:	ESA 108	Test Species:	AC-Allorchestes compressa

Conc-mg/L	1	2	3	4
FSW Control	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	0.8000	1.0000	1.0000
1.4	1.0000	0.8000	1.0000	1.0000
4.1	0.0000	0.2000	0.4000	0.2000
12.3	0.0000	0.0000	0.0000	0.0000
37	0.0000	0.0000	0.0000	0.0000
111.1	0.0000	0.0000	0.0000	0.0000
333.3	0.0000	0.0000	0.0000	0.0000
1000	0.0000	0.0000	0.0000	0.0000

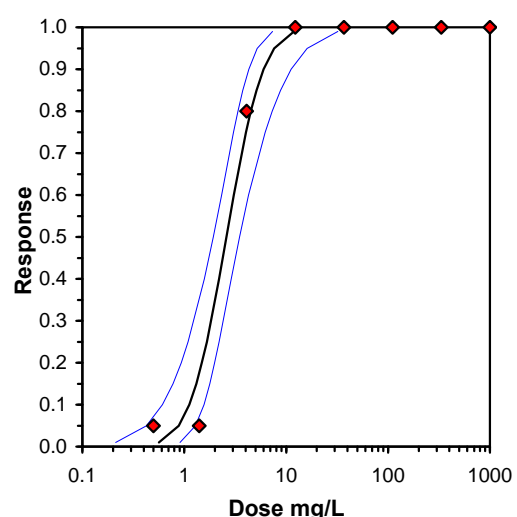
Conc-mg/L	Mean	N-Mean	Transform: Arcsin Square Root					Rank Sum	1-Tailed Critical	Number Resp	Total Number
			Mean	Min	Max	CV%	N				
FSW Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			0	20
0.5	0.9500	0.9500	1.2857	1.1071	1.3453	9.261	4	16.00	10.00	1	20
1.4	0.9500	0.9500	1.2857	1.1071	1.3453	9.261	4	16.00	10.00	1	20
*4.1	0.2000	0.2000	0.4594	0.2255	0.6847	40.823	4	10.00	10.00	16	20
12.3	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			20	20
37	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			20	20
111.1	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			20	20
333.3	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			20	20
1000	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			20	20

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.840536	0.887	-0.61066	1.031997
Equality of variance cannot be confirmed				

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	1.4	4.1	2.39583	
Treatments vs FSW Control				

Parameter	Value	SE	95% Fiducial Limits	Maximum Likelihood-Probit				Iter		
				Control	Chi-Sq	Critical	P-value		Mu	Sigma
Slope	3.514303	0.677623	2.186161 4.842445	0	8.982836	12.59159	0.17	0.413651	0.284551	4
Intercept	3.546305	0.348536	2.863175 4.229435							
TSCR										

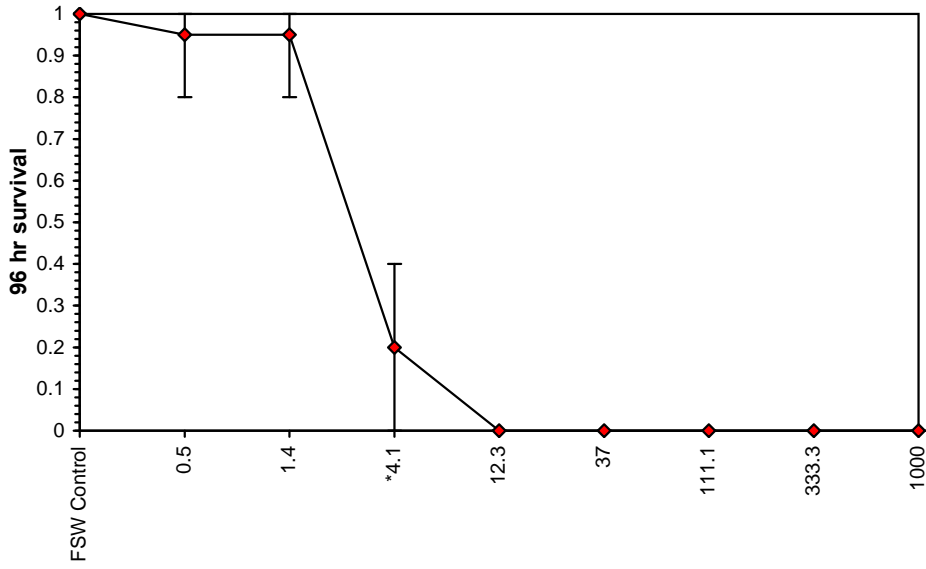
Point	Probits	mg/L	95% Fiducial Limits
EC01	2.674	0.564528	0.211941 0.909207
EC05	3.355	0.882278	0.424711 1.286021
EC10	3.718	1.119396	0.610675 1.558614
EC15	3.964	1.314415	0.776279 1.783496
EC20	4.158	1.493367	0.935378 1.993629
EC25	4.326	1.666188	1.093211 2.202375
EC40	4.747	2.195638	1.581835 2.897633
EC50	5.000	2.592096	1.934067 3.490904
EC60	5.253	3.06014	2.322867 4.281438
EC75	5.674	4.032534	3.044015 6.219801
EC80	5.842	4.499203	3.359082 7.277235
EC85	6.036	5.111751	3.751171 8.777317
EC90	6.282	6.002309	4.288559 11.16757
EC95	6.645	7.615466	5.193081 16.07134
EC99	7.326	11.90191	7.339082 32.23297



**Amphipod Acute Toxicity Test-96 hr survival**

Start Date: 12/01/2012 12:45    Test ID: PR0779/02    Sample ID: Slickgone NS  
End Date: 16/01/2012 12:45    Lab ID: 5167    Sample Type: CP-Chemical product  
Sample Date:    Protocol: ESA 108    Test Species: AC-Allorchestes compressa  
Comments:

**Dose-Response Plot**



**Amphipod Acute Toxicity Test-96 hr survival**

Start Date:	12/01/2012 12:45	Test ID:	PR0779/02	Sample ID:	Slickgone NS
End Date:	16/01/2012 12:45	Lab ID:	5167	Sample Type:	CP-Chemical product
Sample Date:		Protocol:	ESA 108	Test Species:	AC-Allorchestes compressa

Comments:

**Auxiliary Data Summary**

Conc-mg/L	Parameter	Mean	Min	Max	SD	CV%	N
FSW Control	% Non-immobilised	100.00	100.00	100.00	0.00	0.00	4
0.5		95.00	80.00	100.00	10.00	3.33	4
1.4		95.00	80.00	100.00	10.00	3.33	4
4.1		20.00	0.00	40.00	16.33	20.21	4
12.3		0.00	0.00	0.00	0.00		4
37		0.00	0.00	0.00	0.00		4
111.1		0.00	0.00	0.00	0.00		4
333.3		0.00	0.00	0.00	0.00		4
1000		0.00	0.00	0.00	0.00		4
FSW Control	pH	8.10	8.10	8.10	0.00	0.00	1
0.5		8.10	8.10	8.10	0.00	0.00	1
1.4		8.10	8.10	8.10	0.00	0.00	1
4.1		8.10	8.10	8.10	0.00	0.00	1
12.3		8.10	8.10	8.10	0.00	0.00	1
37		8.10	8.10	8.10	0.00	0.00	1
111.1		8.10	8.10	8.10	0.00	0.00	1
333.3		8.10	8.10	8.10	0.00	0.00	1
1000		8.00	8.00	8.00	0.00	0.00	1
FSW Control	Salinity ppt	34.40	34.40	34.40	0.00	0.00	1
0.5		34.40	34.40	34.40	0.00	0.00	1
1.4		34.40	34.40	34.40	0.00	0.00	1
4.1		34.40	34.40	34.40	0.00	0.00	1
12.3		34.40	34.40	34.40	0.00	0.00	1
37		34.40	34.40	34.40	0.00	0.00	1
111.1		34.40	34.40	34.40	0.00	0.00	1
333.3		34.40	34.40	34.40	0.00	0.00	1
1000		34.10	34.10	34.10	0.00	0.00	1
FSW Control	DO %	97.60	97.60	97.60	0.00	0.00	1
0.5		97.90	97.90	97.90	0.00	0.00	1
1.4		97.70	97.70	97.70	0.00	0.00	1
4.1		98.10	98.10	98.10	0.00	0.00	1
12.3		98.00	98.00	98.00	0.00	0.00	1
37		98.00	98.00	98.00	0.00	0.00	1
111.1		97.80	97.80	97.80	0.00	0.00	1
333.3		97.90	97.90	97.90	0.00	0.00	1
1000		97.10	97.10	97.10	0.00	0.00	1

**Statistical Printouts for the Acute  
*Hormosira* Cell Germination Test**

**Macroalgal Germination Success Test-Proportion Germinated**

Start Date: 8/02/2012 13:30	Test ID: PR0779/03	Sample ID: Slickgone NS
End Date: 11/02/2012 13:30	Lab ID: 5167	Sample Type: CP-Chemical product
Sample Date:	Protocol: ESA 116	Test Species: HB-Hormosira banksii

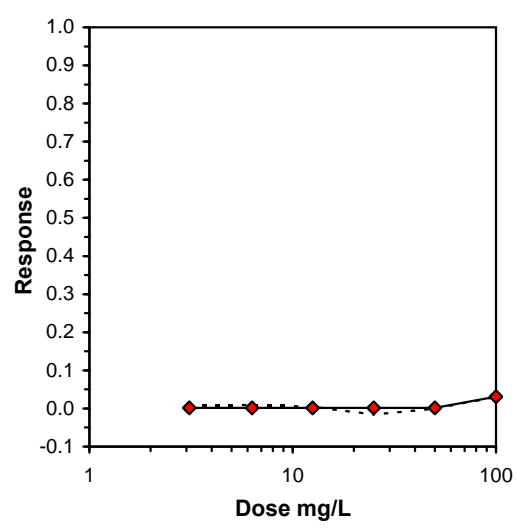
Conc-mg/L	1	2	3	4
FSW Control	0.9600	0.9400	0.9800	0.9600
3.1	0.9500	0.9600	0.9200	0.9800
6.3	0.9400	0.9700	0.9600	0.9300
12.5	0.9900	0.9200	0.9500	0.9600
25	1.0000	0.9700	0.9500	0.9800
50	0.9600	0.9900	0.9400	0.9500
100	0.8900	0.8600	0.9900	0.9800

Conc-mg/L	Mean	N-Mean	Transform: Arcsin Square Root					t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%	N				Mean	N-Mean
FSW Control	0.9600	1.0000	1.3728	1.3233	1.4289	3.152	4				0.9600	1.0000
3.1	0.9525	0.9922	1.3569	1.2840	1.4289	4.419	4	0.287	2.451	0.1355	0.9585	0.9984
6.3	0.9500	0.9896	1.3481	1.3030	1.3967	3.165	4	0.446	2.451	0.1355	0.9585	0.9984
12.5	0.9550	0.9948	1.3673	1.2840	1.4706	5.680	4	0.098	2.451	0.1355	0.9585	0.9984
25	0.9750	1.0156	1.4229	1.3453	1.5208	5.184	4	-0.907	2.451	0.1355	0.9585	0.9984
50	0.9600	1.0000	1.3772	1.3233	1.4706	4.726	4	-0.079	2.451	0.1355	0.9585	0.9984
100	0.9300	0.9688	1.3299	1.1873	1.4706	10.579	4	0.776	2.451	0.1355	0.9300	0.9688

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.974842	0.924	0.193804	-0.40002
Bartlett's Test indicates equal variances (p = 0.43)	5.980761	16.81189		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	100	>100			0.06849	0.071248	0.003396	0.006113	0.760444	6, 21

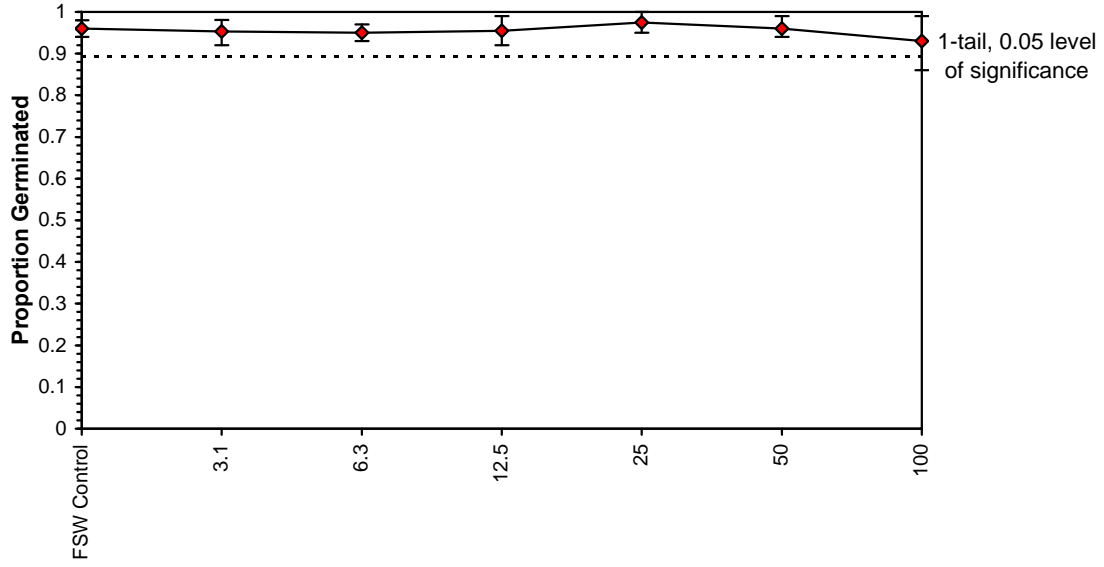
Log-Logit Interpolation (200 Resamples)				
Point	mg/L	SD	95% CL(Exp)	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



**Macroalgal Germination Success Test-Proportion Germinated**

Start Date: 8/02/2012 13:30    Test ID: PR0779/03    Sample ID: Slickgone NS  
End Date: 11/02/2012 13:30    Lab ID: 5167    Sample Type: CP-Chemical product  
Sample Date:    Protocol: ESA 116    Test Species: HB-Hormosira banksii  
Comments:

**Dose-Response Plot**



**Macroalgal Germination Success Test-Proportion Germinated**

Start Date: 8/02/2012 13:30	Test ID: PR0779/03	Sample ID: Slickgone NS
End Date: 11/02/2012 13:30	Lab ID: 5167	Sample Type: CP-Chemical product
Sample Date:	Protocol: ESA 116	Test Species: HB-Hormosira banksii

Comments:

**Auxiliary Data Summary**

Conc-mg/L	Parameter	Mean	Min	Max	SD	CV%	N
FSW Control	Germination, %	96.00	94.00	98.00	1.63	1.33	4
3.1		95.25	92.00	98.00	2.50	1.66	4
6.3		95.00	93.00	97.00	1.83	1.42	4
12.5		95.50	92.00	99.00	2.89	1.78	4
25		97.50	95.00	100.00	2.08	1.48	4
50		96.00	94.00	99.00	2.16	1.53	4
100		93.00	86.00	99.00	6.48	2.74	4
FSW Control		pH	8.00	8.00	8.00	0.00	0.00
3.1	8.10		8.10	8.10	0.00	0.00	1
6.3	8.10		8.10	8.10	0.00	0.00	1
12.5	8.10		8.10	8.10	0.00	0.00	1
25	8.10		8.10	8.10	0.00	0.00	1
50	8.10		8.10	8.10	0.00	0.00	1
100	8.10		8.10	8.10	0.00	0.00	1
FSW Control	Salinity ppt		34.50	34.50	34.50	0.00	0.00
3.1		34.40	34.40	34.40	0.00	0.00	1
6.3		34.30	34.30	34.30	0.00	0.00	1
12.5		34.30	34.30	34.30	0.00	0.00	1
25		34.40	34.40	34.40	0.00	0.00	1
50		34.40	34.40	34.40	0.00	0.00	1
100		34.40	34.40	34.40	0.00	0.00	1
FSW Control		DO %	97.80	97.80	97.80	0.00	0.00
3.1	99.40		99.40	99.40	0.00	0.00	1
6.3	98.80		98.80	98.80	0.00	0.00	1
12.5	98.80		98.80	98.80	0.00	0.00	1
25	100.70		100.70	100.70	0.00	0.00	1
50	98.30		98.30	98.30	0.00	0.00	1
100	98.90		98.90	98.90	0.00	0.00	1



# **Statistical Printouts for the Fish Imbalance Tests**

**Fish Imbalance Test-96 hr Imbalance**

Start Date:	2/02/2012 13:30	Test ID:	PR0779/02	Sample ID:	Slickgone NS
End Date:	6/02/2012 13:30	Lab ID:	5167	Sample Type:	CP-Chemical product
Sample Date:		Protocol:	ESA 117	Test Species:	LT-Lates calcarifer

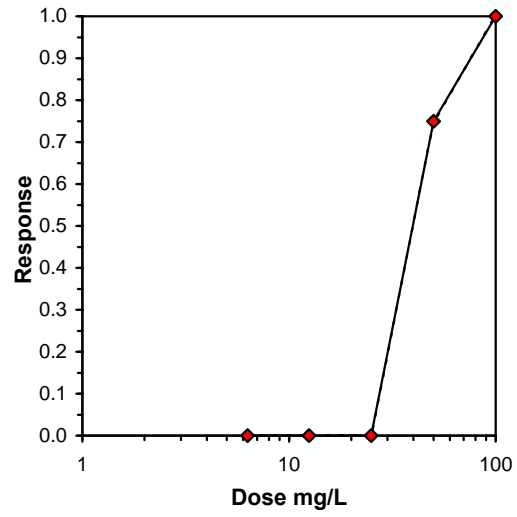
Conc-mg/L	1	2	3	4
FSW Control	1.0000	1.0000	1.0000	1.0000
6.3	1.0000	1.0000	1.0000	1.0000
12.5	1.0000	1.0000	1.0000	1.0000
25	1.0000	1.0000	1.0000	1.0000
50	0.6000	0.2000	0.2000	0.0000
100	0.0000	0.0000	0.0000	0.0000

Conc-mg/L	Mean	N-Mean	Transform: Arcsin Square Root				Rank Sum	1-Tailed Critical	Number Resp	Total Number	
			Mean	Min	Max	CV%					
FSW Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4		0	20	
6.3	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	0	20
12.5	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	0	20
25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	0	20
*50	0.2500	0.2500	0.5097	0.2255	0.8861	53.926	4	10.00	10.00	15	20
100	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			20	20

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05) Equality of variance cannot be confirmed	0.507979	0.905	1.353434	9.961022

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test Treatments vs FSW Control	25	50	35.35534	

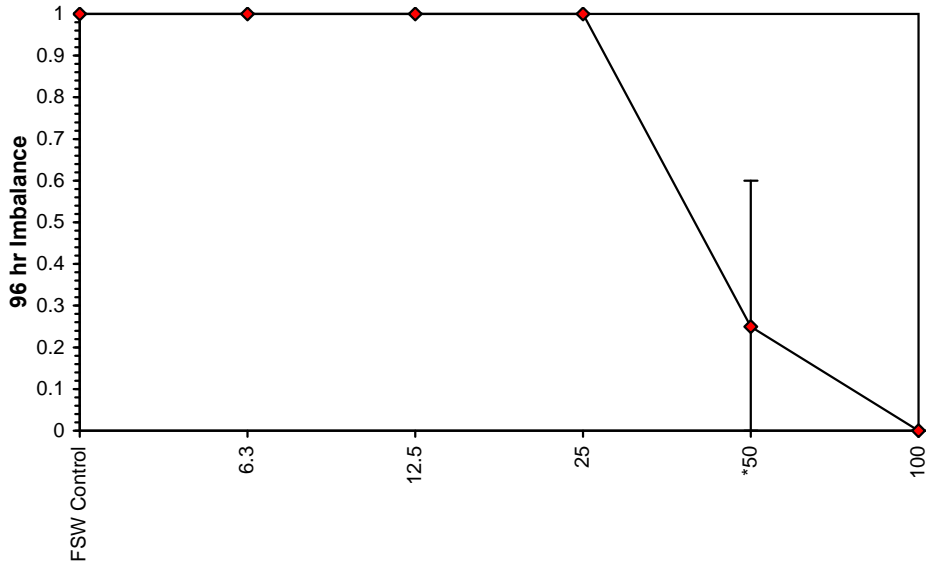
Trimmed Spearman-Kärber			
Trim Level	EC50	95% CL	
0.0%	42.045	36.764	48.085
5.0%	41.349	35.715	47.872
10.0%	40.730	34.852	47.599
20.0%	39.838	33.945	46.754
Auto-0.0%	42.045	36.764	48.085



**Fish Imbalance Test-96 hr Imbalance**

Start Date: 2/02/2012 13:30    Test ID: PR0779/02    Sample ID: Slickgone NS  
End Date: 6/02/2012 13:30    Lab ID: 5167    Sample Type: CP-Chemical product  
Sample Date:    Protocol: ESA 117    Test Species: LT-Lates calcarifer  
Comments:

**Dose-Response Plot**



**Fish Imbalance Test-96 hr Imbalance**

Start Date: 2/02/2012 13:30	Test ID: PR0779/02	Sample ID: Slickgone NS
End Date: 6/02/2012 13:30	Lab ID: 5167	Sample Type: CP-Chemical product
Sample Date:	Protocol: ESA 117	Test Species: LT-Lates calcarifer

Comments:

**Auxiliary Data Summary**

Conc-mg/L	Parameter	Mean	Min	Max	SD	CV%	N
FSW Control	% Un-affected	100.00	100.00	100.00	0.00	0.00	4
6.3		100.00	100.00	100.00	0.00	0.00	4
12.5		100.00	100.00	100.00	0.00	0.00	4
25		100.00	100.00	100.00	0.00	0.00	4
50		25.00	0.00	60.00	25.17	20.07	4
100		0.00	0.00	0.00	0.00		4
FSW Control		Biomass (mg)	0.00	0.00	0.00	0.00	
6.3	0.00		0.00	0.00	0.00		0
12.5	0.00		0.00	0.00	0.00		0
25	0.00		0.00	0.00	0.00		0
50	0.00		0.00	0.00	0.00		0
100	0.00		0.00	0.00	0.00		0
FSW Control	pH		8.10	8.10	8.10	0.00	0.00
6.3		8.10	8.10	8.10	0.00	0.00	1
12.5		8.10	8.10	8.10	0.00	0.00	1
25		8.10	8.10	8.10	0.00	0.00	1
50		8.10	8.10	8.10	0.00	0.00	1
100		8.10	8.10	8.10	0.00	0.00	1
FSW Control		Salinity ppt	34.70	34.70	34.70	0.00	0.00
6.3	35.00		35.00	35.00	0.00	0.00	1
12.5	35.00		35.00	35.00	0.00	0.00	1
25	35.00		35.00	35.00	0.00	0.00	1
50	35.00		35.00	35.00	0.00	0.00	1
100	34.90		34.90	34.90	0.00	0.00	1
FSW Control	DO %		98.20	98.20	98.20	0.00	0.00
6.3		98.80	98.80	98.80	0.00	0.00	1
12.5		98.70	98.70	98.70	0.00	0.00	1
25		99.30	99.30	99.30	0.00	0.00	1
50		99.40	99.40	99.40	0.00	0.00	1
100		97.90	97.90	97.90	0.00	0.00	1

**Fish Imbalance Test-96 hr Imbalance**

Start Date:	2/02/2012 13:30	Test ID:	PR0779/02	Sample ID:	SLICKGONE NS
End Date:	6/02/2012 13:30	Lab ID:	5167	Sample Type:	CP-Chemical product
Sample Date:		Protocol:	ESA 117	Test Species:	LT-Lates calcarifer

Comments:

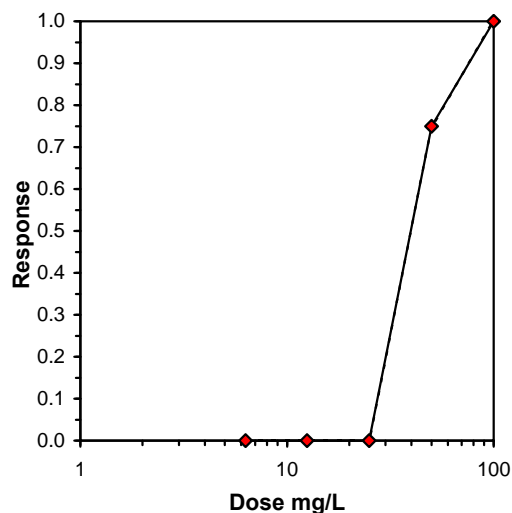
Conc-mg/L	1	2	3	4
FSW Control	1.0000	1.0000	1.0000	1.0000
6.3	1.0000	1.0000	1.0000	1.0000
12.5	1.0000	1.0000	1.0000	1.0000
25	1.0000	1.0000	1.0000	1.0000
50	0.6000	0.2000	0.2000	0.0000
100	0.0000	0.0000	0.0000	0.0000

Conc-mg/L	Mean	N-Mean	Transform: Arcsin Square Root					Rank Sum	1-Tailed Critical	Isotonic	
			Mean	Min	Max	CV%	N			Mean	N-Mean
FSW Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
6.3	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
*50	0.2500	0.2500	0.5097	0.2255	0.8861	53.926	4	10.00	10.00	0.2500	0.2500
100	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			0.0000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05) Equality of variance cannot be confirmed	0.507979	0.905	1.353434	9.961022

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test Treatments vs FSW Control	25	50	35.35534	

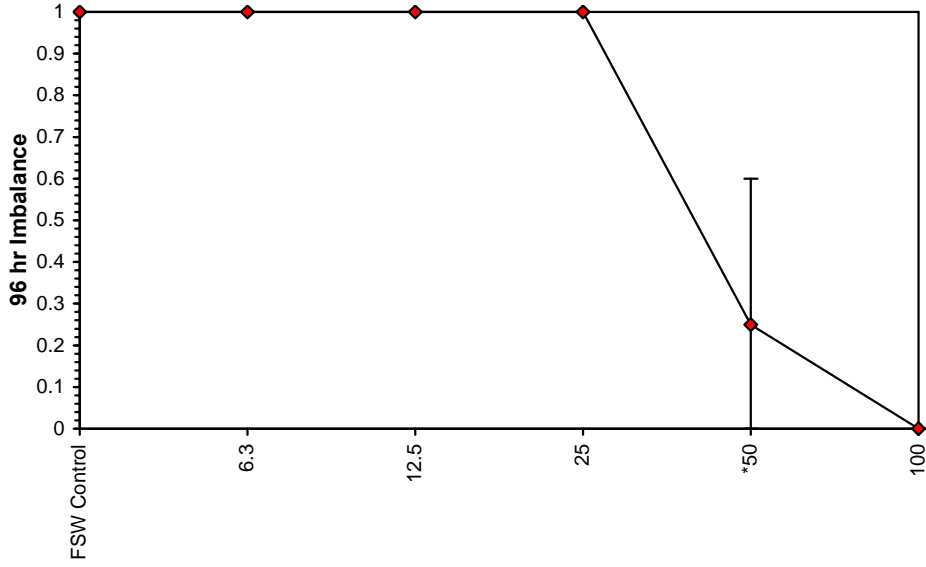
Log-Logit Interpolation (200 Resamples)					
Point	mg/L	SD	95% CL(Exp)		Skew
IC05	38.158	0.971	35.735	41.294	0.3214
IC10	40.117	1.141	37.277	43.814	0.3304
IC15	41.379	1.254	38.263	45.448	0.3360
IC20	42.355	1.343	39.022	46.718	0.3402
IC25	43.178	1.418	39.660	47.792	0.3437
IC40	45.225	1.611	41.238	50.480	0.3521
IC50	46.467	1.727	42.189	52.120	0.3415



**Fish Imbalance Test-96 hr Imbalance**

Start Date: 2/02/2012 13:30    Test ID: PR0779/02    Sample ID: SLICKGONE NS  
End Date: 6/02/2012 13:30    Lab ID: 5167    Sample Type: CP-Chemical product  
Sample Date:    Protocol: ESA 117    Test Species: LT-Lates calcarifer  
Comments:

**Dose-Response Plot**



**Fish Imbalance Test-96 hr Imbalance**

Start Date:	2/02/2012 13:30	Test ID:	PR0779/02	Sample ID:	SLICKGONE NS
End Date:	6/02/2012 13:30	Lab ID:	5167	Sample Type:	CP-Chemical product
Sample Date:		Protocol:	ESA 117	Test Species:	LT-Lates calcarifer
Comments:					

**Auxiliary Data Summary**

Conc-mg/L	Parameter	Mean	Min	Max	SD	CV%	N
FSW Control	% Un-affected	100.00	100.00	100.00	0.00	0.00	4
6.3		100.00	100.00	100.00	0.00	0.00	4
12.5		100.00	100.00	100.00	0.00	0.00	4
25		100.00	100.00	100.00	0.00	0.00	4
50		25.00	0.00	60.00	25.17	20.07	4
100		0.00	0.00	0.00	0.00		4
FSW Control	Biomass (mg)	0.00	0.00	0.00	0.00		0
6.3		0.00	0.00	0.00	0.00		0
12.5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
100		0.00	0.00	0.00	0.00		0
FSW Control	pH	8.10	8.10	8.10	0.00	0.00	1
6.3		8.10	8.10	8.10	0.00	0.00	1
12.5		8.10	8.10	8.10	0.00	0.00	1
25		8.10	8.10	8.10	0.00	0.00	1
50		8.10	8.10	8.10	0.00	0.00	1
100		8.10	8.10	8.10	0.00	0.00	1
FSW Control	Salinity ppt	34.70	34.70	34.70	0.00	0.00	1
6.3		35.00	35.00	35.00	0.00	0.00	1
12.5		35.00	35.00	35.00	0.00	0.00	1
25		35.00	35.00	35.00	0.00	0.00	1
50		35.00	35.00	35.00	0.00	0.00	1
100		34.90	34.90	34.90	0.00	0.00	1
FSW Control	DO %	98.20	98.20	98.20	0.00	0.00	1
6.3		98.80	98.80	98.80	0.00	0.00	1
12.5		98.70	98.70	98.70	0.00	0.00	1
25		99.30	99.30	99.30	0.00	0.00	1
50		99.40	99.40	99.40	0.00	0.00	1
100		97.90	97.90	97.90	0.00	0.00	1

# **Statistical Printouts for the Larval Fish Imbalance Tests**



**Fish Imbalance Test-96 hr Imbalance**

Start Date:	16/02/2012 14:30	Test ID:	PR0779/10	Sample ID:	Slickgone NS
End Date:	20/02/2012 14:30	Lab ID:	5167	Sample Type:	CP-Chemical product
Sample Date:		Protocol:	ESA 117	Test Species:	SL-Seriola lalandi

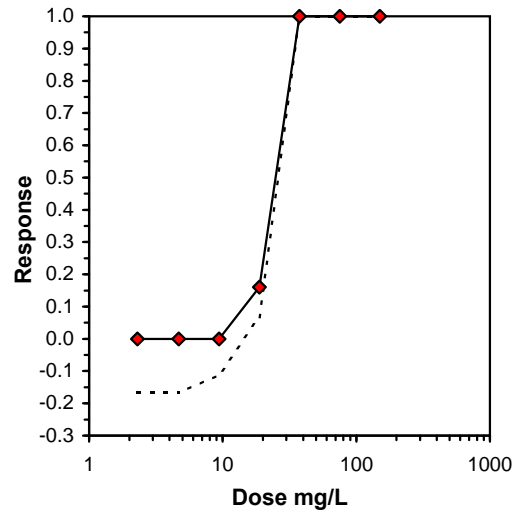
Conc-mg/L	1	2	3	4
FSW Control	1.0000	0.8000	1.0000	0.6000
2.3	1.0000	1.0000	1.0000	1.0000
4.7	1.0000	1.0000	1.0000	1.0000
9.4	1.0000	1.0000	0.8000	1.0000
18.8	0.4000	0.8000	1.0000	1.0000
37.5	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000
150	0.0000	0.0000	0.0000	0.0000

Conc-mg/L	Transform: Arcsin Square Root							Rank Sum	1-Tailed Critical	Number Resp	Total Number
	Mean	N-Mean	Mean	Min	Max	CV%	N				
FSW Control	0.8500	1.0000	1.1759	0.8861	1.3652	19.221	4			3	21
2.3	1.0000	1.1765	1.3453	1.3453	1.3453	0.000	4	20.00	10.00	0	20
4.7	1.0000	1.1765	1.3453	1.3453	1.3453	0.000	4	20.00	10.00	0	20
9.4	0.9500	1.1176	1.2907	1.1071	1.3652	9.510	4	20.00	10.00	1	21
18.8	0.8000	0.9412	1.1206	0.6847	1.3453	27.799	4	16.50	10.00	4	20
37.5	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			20	20
75	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			20	20
150	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			20	20

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05) Equality of variance cannot be confirmed	0.865212	0.905	-1.11159	2.070976

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test Treatments vs FSW Control	18.8	37.5	26.55184	

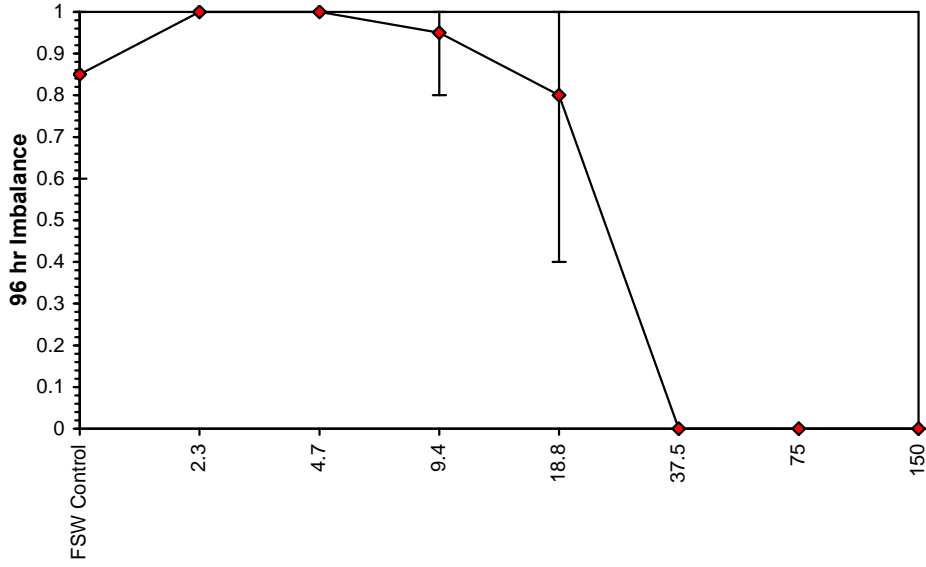
Trimmed Spearman-Kärber			
Trim Level	EC50	95% CL	
0.0%	23.770	21.221	26.625
5.0%	24.282	21.280	27.708
10.0%	24.666	20.841	29.194
20.0%	24.862	22.945	26.939
Auto-0.0%	23.770	21.221	26.625



**Fish Imbalance Test-96 hr Imbalance**

Start Date: 16/02/2012 14:30 Test ID: PR0779/10 Sample ID: Slickgone NS  
End Date: 20/02/2012 14:30 Lab ID: 5167 Sample Type: CP-Chemical product  
Sample Date: Protocol: ESA 117 Test Species: SL-Seriola lalandi  
Comments:

**Dose-Response Plot**



**Fish Imbalance Test-96 hr Imbalance**

Start Date: 16/02/2012 14:30	Test ID: PR0779/10	Sample ID: Slickgone NS
End Date: 20/02/2012 14:30	Lab ID: 5167	Sample Type: CP-Chemical product
Sample Date:	Protocol: ESA 117	Test Species: SL-Seriola lalandi

Comments:

**Auxiliary Data Summary**

Conc-mg/L	Parameter	Mean	Min	Max	SD	CV%	N
FSW Control	% Un-affected	85.00	60.00	100.00	19.15	5.15	4
2.3		100.00	100.00	100.00	0.00	0.00	4
4.7		100.00	100.00	100.00	0.00	0.00	4
9.4		95.00	80.00	100.00	10.00	3.33	4
18.8		80.00	40.00	100.00	28.28	6.65	4
37.5		0.00	0.00	0.00	0.00		4
75		0.00	0.00	0.00	0.00		4
150		0.00	0.00	0.00	0.00		4
FSW Control	pH	8.20	8.20	8.20	0.00	0.00	1
2.3		8.20	8.20	8.20	0.00	0.00	1
4.7		8.20	8.20	8.20	0.00	0.00	1
9.4		8.20	8.20	8.20	0.00	0.00	1
18.8		8.20	8.20	8.20	0.00	0.00	1
37.5		8.20	8.20	8.20	0.00	0.00	1
75		8.20	8.20	8.20	0.00	0.00	1
150		8.20	8.20	8.20	0.00	0.00	1
FSW Control	Salinity ppt	34.20	34.20	34.20	0.00	0.00	1
2.3		34.30	34.30	34.30	0.00	0.00	1
4.7		34.30	34.30	34.30	0.00	0.00	1
9.4		34.30	34.30	34.30	0.00	0.00	1
18.8		34.40	34.40	34.40	0.00	0.00	1
37.5		34.30	34.30	34.30	0.00	0.00	1
75		34.30	34.30	34.30	0.00	0.00	1
150		34.30	34.30	34.30	0.00	0.00	1
FSW Control	DO %	103.40	103.40	103.40	0.00	0.00	1
2.3		99.00	99.00	99.00	0.00	0.00	1
4.7		99.70	99.70	99.70	0.00	0.00	1
9.4		100.20	100.20	100.20	0.00	0.00	1
18.8		100.20	100.20	100.20	0.00	0.00	1
37.5		100.10	100.10	100.10	0.00	0.00	1
75		100.50	100.50	100.50	0.00	0.00	1
150		102.00	102.00	102.00	0.00	0.00	1

**Fish Imbalance Test-96 hr Imbalance**

Start Date: 16/02/2012 14:30	Test ID: PR0779/10	Sample ID: Slickgone NS
End Date: 20/02/2012 14:30	Lab ID: 5167	Sample Type: CP-Chemical product
Sample Date:	Protocol: ESA 117	Test Species: SL-Seriola lalandi

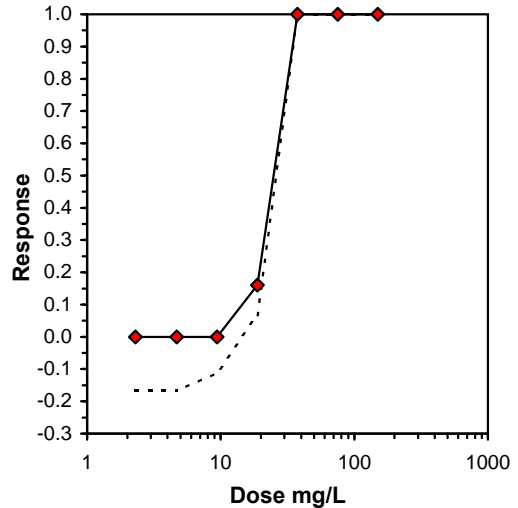
Conc-mg/L	1	2	3	4
FSW Control	1.0000	0.8000	1.0000	0.6000
2.3	1.0000	1.0000	1.0000	1.0000
4.7	1.0000	1.0000	1.0000	1.0000
9.4	1.0000	1.0000	0.8000	1.0000
18.8	0.4000	0.8000	1.0000	1.0000
37.5	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000
150	0.0000	0.0000	0.0000	0.0000

Conc-mg/L	Transform: Arcsin Square Root							Rank Sum	1-Tailed Critical	Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N			Mean	N-Mean
FSW Control	0.8500	1.0000	1.1759	0.8861	1.3652	19.221	4			0.9524	1.0000
2.3	1.0000	1.1765	1.3453	1.3453	1.3453	0.000	4	20.00	10.00	0.9524	1.0000
4.7	1.0000	1.1765	1.3453	1.3453	1.3453	0.000	4	20.00	10.00	0.9524	1.0000
9.4	0.9500	1.1176	1.2907	1.1071	1.3652	9.510	4	20.00	10.00	0.9524	1.0000
18.8	0.8000	0.9412	1.1206	0.6847	1.3453	27.799	4	16.50	10.00	0.8000	0.8400
37.5	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			0.0000	0.0000
75	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			0.0000	0.0000
150	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			0.0000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05) Equality of variance cannot be confirmed	0.865212	0.905	-1.11159	2.070976

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test Treatments vs FSW Control	18.8	37.5	26.55184	

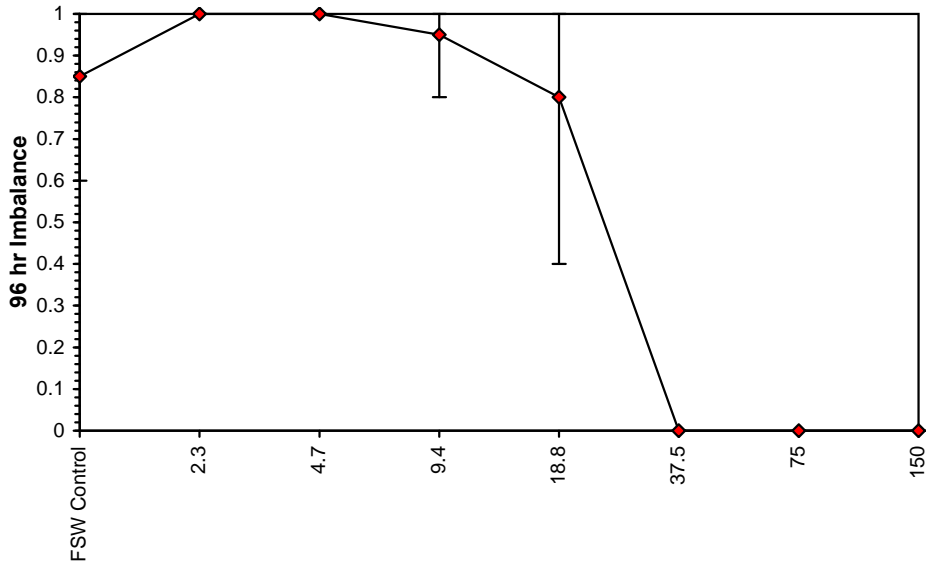
Log-Logit Interpolation (200 Resamples)					
Point	mg/L	SD	95% CL(Exp)		Skew
IC05	13.008	3.798	4.017	23.546	0.2722
IC10	15.835	3.234	5.531	22.673	-0.3222
IC15	18.326	2.622	8.555	21.814	-0.6604
IC20	19.079	2.085	10.530	21.895	-0.9676
IC25	19.393	1.719	12.039	22.179	-1.1407
IC40	20.213	1.204	15.510	22.920	-0.9499
IC50	20.729	1.068	17.677	23.384	-0.4750



**Fish Imbalance Test-96 hr Imbalance**

Start Date: 16/02/2012 14:30 Test ID: PR0779/10 Sample ID: Slickgone NS  
End Date: 20/02/2012 14:30 Lab ID: 5167 Sample Type: CP-Chemical product  
Sample Date: Protocol: ESA 117 Test Species: SL-Seriola lalandi  
Comments:

**Dose-Response Plot**



**Fish Imbalance Test-96 hr Imbalance**

Start Date: 16/02/2012 14:30	Test ID: PR0779/10	Sample ID: Slickgone NS
End Date: 20/02/2012 14:30	Lab ID: 5167	Sample Type: CP-Chemical product
Sample Date:	Protocol: ESA 117	Test Species: SL-Seriola lalandi

Comments:

**Auxiliary Data Summary**

Conc-mg/L	Parameter	Mean	Min	Max	SD	CV%	N
FSW Control	% Un-affected	85.00	60.00	100.00	19.15	5.15	4
2.3		100.00	100.00	100.00	0.00	0.00	4
4.7		100.00	100.00	100.00	0.00	0.00	4
9.4		95.00	80.00	100.00	10.00	3.33	4
18.8		80.00	40.00	100.00	28.28	6.65	4
37.5		0.00	0.00	0.00	0.00		4
75		0.00	0.00	0.00	0.00		4
150		0.00	0.00	0.00	0.00		4
FSW Control	pH	8.20	8.20	8.20	0.00	0.00	1
2.3		8.20	8.20	8.20	0.00	0.00	1
4.7		8.20	8.20	8.20	0.00	0.00	1
9.4		8.20	8.20	8.20	0.00	0.00	1
18.8		8.20	8.20	8.20	0.00	0.00	1
37.5		8.20	8.20	8.20	0.00	0.00	1
75		8.20	8.20	8.20	0.00	0.00	1
150		8.20	8.20	8.20	0.00	0.00	1
FSW Control	Salinity ppt	34.20	34.20	34.20	0.00	0.00	1
2.3		34.30	34.30	34.30	0.00	0.00	1
4.7		34.30	34.30	34.30	0.00	0.00	1
9.4		34.30	34.30	34.30	0.00	0.00	1
18.8		34.40	34.40	34.40	0.00	0.00	1
37.5		34.30	34.30	34.30	0.00	0.00	1
75		34.30	34.30	34.30	0.00	0.00	1
150		34.30	34.30	34.30	0.00	0.00	1
FSW Control	DO %	103.40	103.40	103.40	0.00	0.00	1
2.3		99.00	99.00	99.00	0.00	0.00	1
4.7		99.70	99.70	99.70	0.00	0.00	1
9.4		100.20	100.20	100.20	0.00	0.00	1
18.8		100.20	100.20	100.20	0.00	0.00	1
37.5		100.10	100.10	100.10	0.00	0.00	1
75		100.50	100.50	100.50	0.00	0.00	1
150		102.00	102.00	102.00	0.00	0.00	1

# **Statistical Printouts for the Juvenile Tiger Prawn Tests**

**Juvenile Tiger Prawn Acute Test-96 hr Survival**

Start Date:	10/01/2012 12:00	Test ID:	PR0779/07	Sample ID:	Slickgone NS
End Date:	14/01/2012 12:00	Lab ID:	5167	Sample Type:	CP-Chemical product
Sample Date:		Protocol:	ESA 107	Test Species:	PM-Penaeus monodon

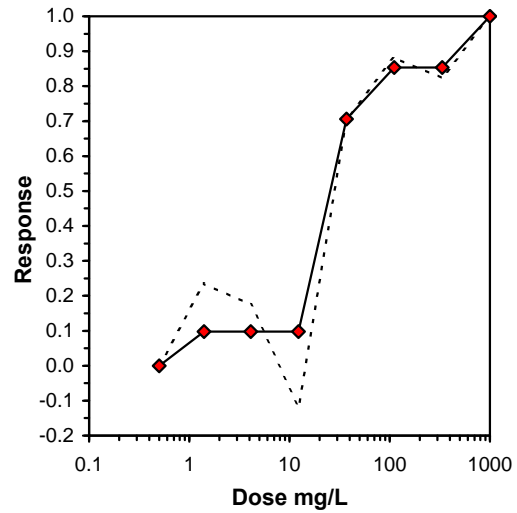
Conc-mg/L	1	2	3	4
FSW Control	0.8000	1.0000	0.8000	0.8000
0.5	0.6000	0.8000	1.0000	1.0000
1.4	0.6000	0.8000	0.4000	0.8000
4.1	0.8000	0.6000	0.8000	0.6000
12.3	0.8000	1.0000	1.0000	1.0000
37	0.2000	0.6000	0.2000	0.0000
111.1	0.2000	0.2000	0.0000	0.0000
333.3	0.2000	0.2000	0.2000	0.0000
1000	0.0000	0.0000	0.0000	0.0000

Conc-mg/L	Mean	N-Mean	Transform: Arcsin Square Root				N	t-Stat	1-Tailed Critical	MSD	Number Resp	Total Number
			Mean	Min	Max	CV%						
FSW Control	0.8500	1.0000	1.1667	1.1071	1.3453	10.206	4				3	20
0.5	0.8500	1.0000	1.1709	0.8861	1.3453	18.840	4	-0.035	2.480	0.3058	3	20
1.4	0.6500	0.7647	0.9463	0.6847	1.1071	21.467	4	1.788	2.480	0.3058	7	20
4.1	0.7000	0.8235	0.9966	0.8861	1.1071	12.807	4	1.379	2.480	0.3058	6	20
12.3	0.9500	1.1176	1.2857	1.1071	1.3453	9.261	4	-0.966	2.480	0.3058	1	20
*37	0.2500	0.2941	0.5097	0.2255	0.8861	53.926	4	5.329	2.480	0.3058	15	20
*111.1	0.1000	0.1176	0.3446	0.2255	0.4636	39.900	4	6.668	2.480	0.3058	18	20
*333.3	0.1500	0.1765	0.4041	0.2255	0.4636	29.464	4	6.185	2.480	0.3058	17	20
1000	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4				20	20

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.961066	0.93	0.024086	-0.08763
Bartlett's Test indicates equal variances (p = 0.72)	4.536782	18.47531		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	12.3	37	21.33307		0.270156	0.319564	0.56795	0.030402	2.8E-08	7, 24

Trimmed Spearman-Kärber			
Trim Level	EC50	95% CL	
0.0%	29.654	19.570	44.934
5.0%	30.470	19.412	47.828
10.0%	31.060	20.765	46.460
20.0%	26.568	18.360	38.445
Auto-0.0%	29.654	19.570	44.934





**Juvenile Tiger Prawn Acute Test-96 hr Survival**

Start Date:	10/01/2012 12:00	Test ID:	PR0779/07	Sample ID:	Slickgone NS
End Date:	14/01/2012 12:00	Lab ID:	5167	Sample Type:	CP-Chemical product
Sample Date:		Protocol:	ESA 107	Test Species:	PM-Penaeus monodon
Comments:					

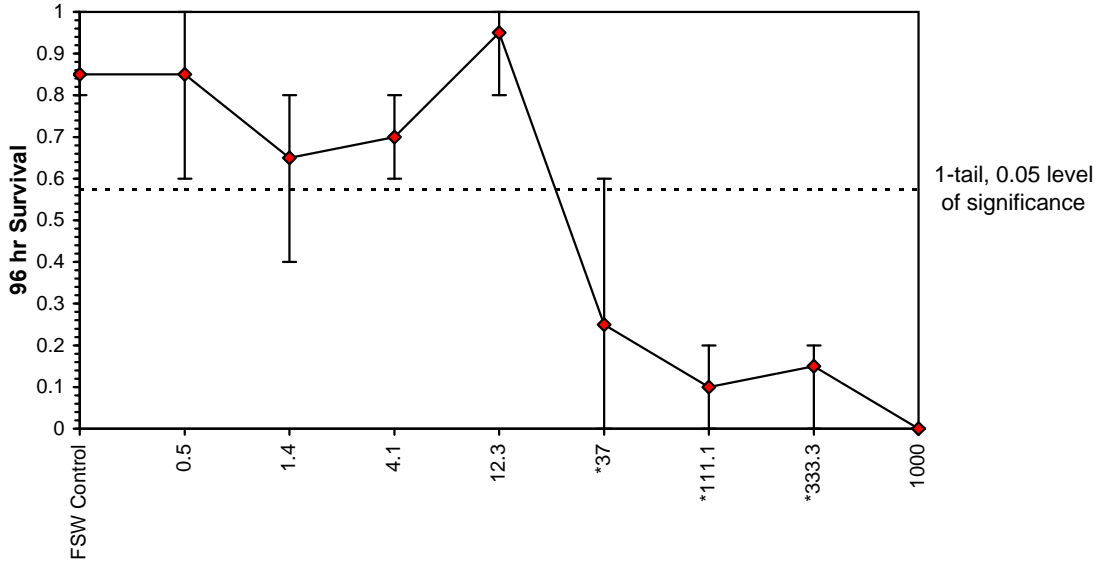
**Auxiliary Data Summary**

Conc-mg/L	Parameter	Mean	Min	Max	SD	CV%	N
FSW Control	% Survival	85.00	80.00	100.00	10.00	3.72	4
0.5		85.00	60.00	100.00	19.15	5.15	4
1.4		65.00	40.00	80.00	19.15	6.73	4
4.1		70.00	60.00	80.00	11.55	4.85	4
12.3		95.00	80.00	100.00	10.00	3.33	4
37		25.00	0.00	60.00	25.17	20.07	4
111.1		10.00	0.00	20.00	11.55	33.98	4
333.3		15.00	0.00	20.00	10.00	21.08	4
1000		0.00	0.00	0.00	0.00	0.00	4
FSW Control		pH	8.10	8.10	8.10	0.00	0.00
0.5	8.10		8.10	8.10	0.00	0.00	1
1.4	8.10		8.10	8.10	0.00	0.00	1
4.1	8.10		8.10	8.10	0.00	0.00	1
12.3	8.10		8.10	8.10	0.00	0.00	1
37	8.10		8.10	8.10	0.00	0.00	1
111.1	8.10		8.10	8.10	0.00	0.00	1
333.3	8.10		8.10	8.10	0.00	0.00	1
1000	8.00		8.00	8.00	0.00	0.00	1
FSW Control	Salinity ppt		34.40	34.40	34.40	0.00	0.00
0.5		34.40	34.40	34.40	0.00	0.00	1
1.4		34.40	34.40	34.40	0.00	0.00	1
4.1		34.40	34.40	34.40	0.00	0.00	1
12.3		34.40	34.40	34.40	0.00	0.00	1
37		34.40	34.40	34.40	0.00	0.00	1
111.1		34.40	34.40	34.40	0.00	0.00	1
333.3		34.40	34.40	34.40	0.00	0.00	1
1000		34.40	34.40	34.40	0.00	0.00	1
FSW Control		DO %	99.40	99.40	99.40	0.00	0.00
0.5	100.30		100.30	100.30	0.00	0.00	1
1.4	100.40		100.40	100.40	0.00	0.00	1
4.1	99.80		99.80	99.80	0.00	0.00	1
12.3	99.30		99.30	99.30	0.00	0.00	1
37	99.90		99.90	99.90	0.00	0.00	1
111.1	99.40		99.40	99.40	0.00	0.00	1
333.3	98.50		98.50	98.50	0.00	0.00	1
1000	98.80		98.80	98.80	0.00	0.00	1

**Juvenile Tiger Prawn Acute Test-96 hr Survival**

Start Date: 10/01/2012 12:00    Test ID: PR0779/07    Sample ID: Slickgone NS  
End Date: 14/01/2012 12:00    Lab ID: 5167    Sample Type: CP-Chemical product  
Sample Date:    Protocol: ESA 107    Test Species: PM-Penaeus monodon  
Comments:

**Dose-Response Plot**



**Juvenile Tiger Prawn Acute Test-96 hr Survival**

Start Date:	10/01/2012 12:00	Test ID:	PR0779/07	Sample ID:	Slickgone NS
End Date:	14/01/2012 12:00	Lab ID:	5167	Sample Type:	CP-Chemical product
Sample Date:		Protocol:	ESA 107	Test Species:	PM-Penaeus monodon

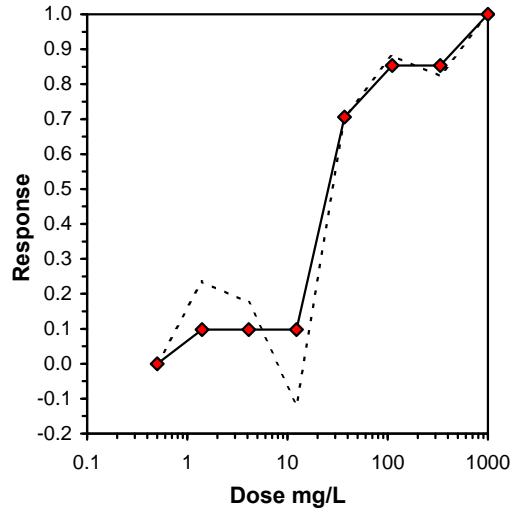
Conc-mg/L	1	2	3	4
FSW Control	0.8000	1.0000	0.8000	0.8000
0.5	0.6000	0.8000	1.0000	1.0000
1.4	0.6000	0.8000	0.4000	0.8000
4.1	0.8000	0.6000	0.8000	0.6000
12.3	0.8000	1.0000	1.0000	1.0000
37	0.2000	0.6000	0.2000	0.0000
111.1	0.2000	0.2000	0.0000	0.0000
333.3	0.2000	0.2000	0.2000	0.0000
1000	0.0000	0.0000	0.0000	0.0000

Conc-mg/L	Transform: Arcsin Square Root							1-Tailed			Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
FSW Control	0.8500	1.0000	1.1667	1.1071	1.3453	10.206	4				0.8500	1.0000
0.5	0.8500	1.0000	1.1709	0.8861	1.3453	18.840	4	-0.035	2.480	0.3058	0.8500	1.0000
1.4	0.6500	0.7647	0.9463	0.6847	1.1071	21.467	4	1.788	2.480	0.3058	0.7667	0.9020
4.1	0.7000	0.8235	0.9966	0.8861	1.1071	12.807	4	1.379	2.480	0.3058	0.7667	0.9020
12.3	0.9500	1.1176	1.2857	1.1071	1.3453	9.261	4	-0.966	2.480	0.3058	0.7667	0.9020
*37	0.2500	0.2941	0.5097	0.2255	0.8861	53.926	4	5.329	2.480	0.3058	0.2500	0.2941
*111.1	0.1000	0.1176	0.3446	0.2255	0.4636	39.900	4	6.668	2.480	0.3058	0.1250	0.1471
*333.3	0.1500	0.1765	0.4041	0.2255	0.4636	29.464	4	6.185	2.480	0.3058	0.1250	0.1471
1000	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4				0.0000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.961066	0.93	0.024086	-0.08763
Bartlett's Test indicates equal variances (p = 0.72)	4.536782	18.47531		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	12.3	37	21.33307		0.270156	0.319564	0.56795	0.030402	2.8E-08	7, 24

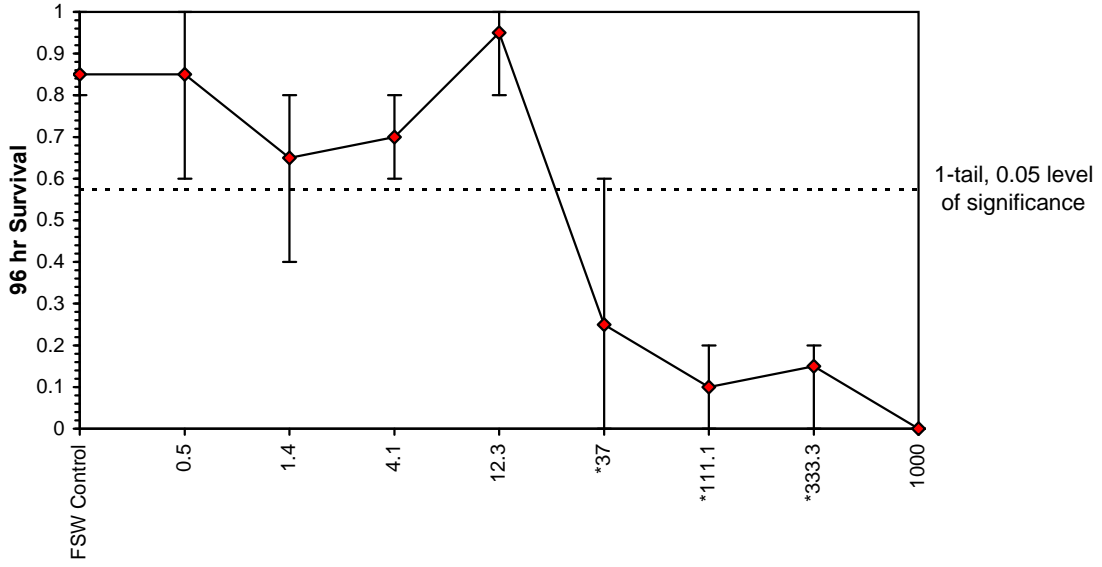
Log-Logit Interpolation (200 Resamples)					
Point	mg/L	SD	95% CL(Exp)	Skew	
IC05	0.944	4.298	0.000	20.948	2.0789
IC10	12.357	6.157	0.000	17.283	0.5890
IC15	13.798	6.037	0.000	19.114	-0.8150
IC20	15.244	3.987	0.000	22.106	-2.1532
IC25	16.717	2.289	11.182	26.024	1.1815
IC40	21.538	4.198	14.600	40.347	1.5991
IC50	25.370	5.834	16.110	53.122	1.3521



**Juvenile Tiger Prawn Acute Test-96 hr Survival**

Start Date: 10/01/2012 12:00 Test ID: PR0779/07 Sample ID: Slickgone NS  
End Date: 14/01/2012 12:00 Lab ID: 5167 Sample Type: CP-Chemical product  
Sample Date: Protocol: ESA 107 Test Species: PM-Penaeus monodon  
Comments:

**Dose-Response Plot**



**Juvenile Tiger Prawn Acute Test-96 hr Survival**

Start Date:	10/01/2012 12:00	Test ID:	PR0779/07	Sample ID:	Slickgone NS
End Date:	14/01/2012 12:00	Lab ID:	5167	Sample Type:	CP-Chemical product
Sample Date:		Protocol:	ESA 107	Test Species:	PM-Penaeus monodon
Comments:					

**Auxiliary Data Summary**

Conc-mg/L	Parameter	Mean	Min	Max	SD	CV%	N
FSW Control	% Survival	85.00	80.00	100.00	10.00	3.72	4
0.5		85.00	60.00	100.00	19.15	5.15	4
1.4		65.00	40.00	80.00	19.15	6.73	4
4.1		70.00	60.00	80.00	11.55	4.85	4
12.3		95.00	80.00	100.00	10.00	3.33	4
37		25.00	0.00	60.00	25.17	20.07	4
111.1		10.00	0.00	20.00	11.55	33.98	4
333.3		15.00	0.00	20.00	10.00	21.08	4
1000		0.00	0.00	0.00	0.00	0.00	4
FSW Control		pH	8.10	8.10	8.10	0.00	0.00
0.5	8.10		8.10	8.10	0.00	0.00	1
1.4	8.10		8.10	8.10	0.00	0.00	1
4.1	8.10		8.10	8.10	0.00	0.00	1
12.3	8.10		8.10	8.10	0.00	0.00	1
37	8.10		8.10	8.10	0.00	0.00	1
111.1	8.10		8.10	8.10	0.00	0.00	1
333.3	8.10		8.10	8.10	0.00	0.00	1
1000	8.00		8.00	8.00	0.00	0.00	1
FSW Control	Salinity ppt		34.40	34.40	34.40	0.00	0.00
0.5		34.40	34.40	34.40	0.00	0.00	1
1.4		34.40	34.40	34.40	0.00	0.00	1
4.1		34.40	34.40	34.40	0.00	0.00	1
12.3		34.40	34.40	34.40	0.00	0.00	1
37		34.40	34.40	34.40	0.00	0.00	1
111.1		34.40	34.40	34.40	0.00	0.00	1
333.3		34.40	34.40	34.40	0.00	0.00	1
1000		34.40	34.40	34.40	0.00	0.00	1
FSW Control		DO %	99.40	99.40	99.40	0.00	0.00
0.5	100.30		100.30	100.30	0.00	0.00	1
1.4	100.40		100.40	100.40	0.00	0.00	1
4.1	99.80		99.80	99.80	0.00	0.00	1
12.3	99.30		99.30	99.30	0.00	0.00	1
37	99.90		99.90	99.90	0.00	0.00	1
111.1	99.40		99.40	99.40	0.00	0.00	1
333.3	98.50		98.50	98.50	0.00	0.00	1
1000	98.80		98.80	98.80	0.00	0.00	1