Elizabeth Nielsen
URS
1333 Broadway Suite 800
Oakland, CA 94612

November 14, 2008

Dear Elizabeth:

I have enclosed one copy of our report *supplemental* "A Toxicity Evaluation of Ambient Waters and Sediment Collected for the San Joaquin River Recirculation Study" for the ambient water samples collected July 28-31, 2008. The report was revised to reflect a few minnow minor errors, including:

- Revision of the number of sample locations from 8 to 2 (i.e., sampled at 4 times);
- Inclusion of Sticklebacks Unlimited as one of the fish vendors;
- Revision of the toxic units from acute (TUa) to chronic (TUc) for *Selenastrum*; and
- Inclusion of monthly reference toxicant data.

The results of this testing are summarized below.

Toxicity summary for San Joaquin River Recirculation Study (SJRRS) water and sediment samples.

Sample Station	Toxicity Present Relative to Lab Control?			
	Selenastrum Growth Test	*Ceriodaphnia* Survival Test	Fathead Minnow Survival Test	*Hyalella azteca* Survival Test
NWDS-001-TOX	no	no	no	
NWDS-002-TOX	no	no	no	
NWDS-003-TOX	**Yes**	no	no	
NWDS-004-TOX	no	no	no	
NWDS-SED-TOX				no
SJRDS-001-TOX	no	no	no	
SJRDS-002-TOX	no	no	no	
SJRDS-003-TOX	no	no	no	
SJRDS-004-TOX	no	no	no	

Chronic Toxicity of SJRRS Ambient Waters to *Selenastrum capricornutum*

There was a significant reduction in algal growth in the NWDS-003-TOX ambient water. There were no significant reductions in algal growth in any of the remaining ambient waters.

Acute Toxicity of SJRRS Ambient Waters to *Ceriodaphnia dubia*
There were no significant reductions in *Ceriodaphnia dubia* survival in any of the ambient waters.

Acute Toxicity of SJRRS Ambient Waters to Fathead Minnow
There were no significant reductions in fish survival in any of the ambient waters.

Acute Toxicity of SJRRS Sediment to *Hyalella azteca*
There was no significant reduction in *Hyalella azteca* survival in the NWDS-SED-TOX sediment sample.

If you have any questions regarding the performance and interpretation of these tests, feel free to contact my colleague Dr. Scott Ogle or myself at (707) 207-7760.

Sincerely,

Stephen L. Clark

Digitally signed by Stephen L. Clark
DN: cn=Stephen L. Clark, o=Pacific EcoRisk, ou, email=slclark@pacificecorisk.com, c=US
Date: 2008.11.21 16:34:03 -08'00'

Stephen L. Clark
Vice President & Special Projects Director

This testing was performed under Lab Order 13489. The test results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report, and only relate to the sample(s) tested. This report shall not be reproduced, except in full, without the written consent of Pacific EcoRisk.

Supplemental Report

A Toxicity Evaluation of Ambient Waters and Sediment Collected for the San Joaquin River Recirculation Study

Samples collected July 28-31, 2008

Submitted To:

URS
1333 Broadway Suite 800
Oakland, CA 94612

Prepared By:

Pacific EcoRisk
2250 Cordelia Road
Fairfield, CA 94534

November 2008

PACIFIC ECORISK
ENVIRONMENTAL CONSULTING & TESTING

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A Toxicity Evaluation of Ambient Waters and Sediment Collected for the San Joaquin River Recirculation Study

Samples collected July 28-30

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Appendices

1. INTRODUCTION

Under contract to URS, Pacific EcoRisk (PER) performed acute and chronic toxicity evaluations of ambient water and sediment samples collected for the San Joaquin River Recirculation Study (SJJRS). The evaluations consist of performing the following US EPA freshwater acute and short-term chronic toxicity tests:

- chronic (96-hr) growth test with the green alga *Selenastrum capricornutum*;
- acute (96-hr) survival test with the crustacean *Ceriodaphnia dubia*;
- acute (96-hr) survival test with larval fathead minnows (*Pimephales promelas*); and
- 10-day sediment toxicity test with the amphipod *Hyalella azteca*.

These toxicity tests were performed on ambient water samples collected on July 29-31, 2008, and on an ambient sediment sample collected on July 28, 2008. This report describes the performance and results of these tests.

2. SAMPLE COLLECTION AND HANDLING

URS staff collected ambient water samples on July 29-31, 2008 from 2 locations at 4 different times, and an ambient sediment sample was collected from one location on July 28, 2008 from within the San Joaquin River watershed (Table 1). The ambient water and sediment samples were transported on ice and under chain-of-custody to the PER laboratory facility in Fairfield. Upon receipt at the testing laboratory, an aliquot of each water sample was removed for analysis of initial water quality characteristics (Table 2). The remainders of the water samples were stored at < 6°C, and were used to initiate testing within 36 hours of collection. The sediment samples were stored at < 6°C, and were used to initiate testing within 14 days of collection. The chain-of-custody records for the collection and delivery of these samples are provided in Appendix A.

Table 1. Collection of the SJRRS ambient water and sediment samples.

Sample ID	Sample Collection Date	
	Ambient Water	Sediment
NWDS-001-TOX	7/29/08	
NWDS-002-TOX	7/29/08	
NWDS-003-TOX	7/30/08	
NWDS-003-TOX-DUP*	7/30/08	
NWDS-004-TOX	7/31/08	
NWDS-SED-TOX		7/28/08
SJRDS-001-TOX	7/29/08	
SJRDS-002-TOX	7/29/08	
SJRDS-003-TOX	7//30/08	
SJRDS-004-TOX	7/31/08	

* - Field duplicate sample.

Table 2. Initial water quality characteristics of the SJRRS ambient water samples.

Sample ID	Temp (°C)	pH	D.O. (mg/L)	Alkalinity (mg/L)	Hardness (mg/L)	Conductivity (μS/cm)	Total Ammonia (mg/L N)
NWDS-001-TOX	12.0	7.83	8.0	262	376	1418	<1.0
NWDS-002-TOX	5.0	7.61	8.3	142	347	1327	<1.0
NWDS-003-TOX	5.0	7.60	9.4	107	198	831	<1.0
NWDS-003-TOX-DUP*	5.0	7.58	9.1	107	200	801	<1.0
NWDS-004-TOX	13.4	7.77	8.0	74	118	485	<1.0
SJRDS-001-TOX	18.1	8.00	8.2	168	339	1723	<1.0
SJRDS-002-TOX	5.0	7.67	8.1	168	298	1307	<1.0
SJRDS-003-TOX	5.0	7.69	9.8	105	201	968	<1.0
SJRDS-004-TOX	15.6	7.70	7.9	98	197	960	<1.0

* - Field duplicate sample.

3. ACUTE AND CHRONIC TOXICITY TEST PROCEDURES

The San Joaquin River Recirculation Study ambient waters were tested for toxicity using the following US EPA freshwater acute and short-term chronic toxicity tests:

- chronic (96-hr) growth test with the green alga *Selenastrum capricornutum*;
- acute (96-hr) survival test with the crustacean *Ceriodaphnia dubia*;
- acute (96-hr) survival test with larval fathead minnows (*Pimephales promelas*); and
- 10-day survival sediment toxicity test with the amphipod *Hyalella azteca*.

The methods used in conducting these tests followed the guidelines established by the following EPA manuals:

- "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012);
- "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013); and
- "Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates" (EPA/600/R-99/064).

3.1 Algal Growth Toxicity Testing with *Selenastrum capricornutum*

The short-term chronic toxicity algal test consists of exposing *Selenastrum capricornutum* to the ambient waters for ~96 hrs, after which the effects on cell growth are evaluated. The specific procedures used in these tests are described below.

The Lab Control/dilution water for these tests consisted of Arrowhead® drinking water. Aliquots of the Control/dilution water and ambient water were filtered (using sterile 0.45 μm filters) and

then spiked with nutrients before use in the algal test, as per EPA guidelines. The filtered, nutrient-amended waters were then used to prepare test solutions at test treatment concentrations of 6.25%, 12.5%, 25%, 50%, and 100% ambient water. "New" water quality characteristics (pH, dissolved oxygen [D.O.], and conductivity) were measured on these test solutions prior to their use in the test.

There were 4 replicates at each test treatment, each replicate consisting of a 250-mL glass Erlenmeyer flask containing 100 mL of test solution; an additional replicate was established at each test treatment in order to monitor the test solution water quality characteristics during the test. Each flask was inoculated to an initial algal cell density of 10,000 cells/mL from a laboratory culture of *Selenastrum* that is maintained in log growth phase. These flasks were loosely-capped and randomly positioned within a temperature-controlled room at 25°C, under continuous cool-white fluorescent illumination. Each replicate flask was gently shaken a minimum of 3 times daily.

Each day, the temperature and pH were determined for the designated "water quality" replicate at each treatment.

After 96 ($\pm$2) hrs exposure, the algal cell density in each replicate flask was determined by spectrophotometric analysis. Algal cell density was also determined microscopically using a hemacytometer for multiple treatments that exhibited resident algae species in the samples at test termination (i.e., in addition to *Selenastrum*). The resulting cell density data were analyzed to evaluate any impairment of algal growth caused by the ambient waters; all statistical analyses were performed using the CETIS® statistical software (Version 1.6.5A, TidePool Scientific, McKinleyville, CA).

3.1.1 Reference Toxicant Testing of the *Selenastrum capricornutum*

In order to assess the sensitivity of the *Selenastrum* to toxic stress, a reference toxicant test was performed. The reference toxicant test was performed similarly to the ambient water tests except that test solutions consisted of Lab Control water spiked with NaCl at concentrations of 0.5, 1, 2, 4, and 8 g/L. The resulting test response data were statistically analyzed to determine key dose-response point estimates (e.g., IC_{50}); all statistical analyses were performed using the CETIS® software. These response endpoints were then compared to the typical response range established by the mean ± 2 SD of the point estimates generated by the most recent previous reference toxicant tests performed by this lab.

3.2 Acute Toxicity Testing with *Ceriodaphnia dubia*

The acute *Ceriodaphnia* test consists of exposing neonate *Ceriodaphnia* to the ambient water for ~96 hrs, after which effects on survival are evaluated. The specific procedures used in these tests are described below.

The Lab Control/dilution water for these tests consisted of a mixture of conditioned commercial spring waters (80% Arrowhead®:20% Evian®). The Control/dilution water and the ambient water samples were used to prepare test solutions at test treatment concentrations of 6.25%, 12.5%, 25%, 50%, and 100% ambient water. New water quality characteristics (pH, D.O., and conductivity) were measured on these test treatment solutions prior to use in the tests.

There were 4 replicates for each test treatment, each replicate consisting of 15 mL of test solution in a 30-mL plastic cup. The acute tests were initiated by allocating 5 neonate (<24 hrs old) *Ceriodaphnia*, from in-house laboratory cultures, into each replicate cup. The replicate cups were placed in a temperature-controlled room at 20˚C, under cool-white fluorescent lighting on a 16L:8D photoperiod.

Routine water quality characteristics (pH, D.O., and conductivity) of the test waters were measured each day and at the end of the test. On Day 2 of the 4-day test, fresh test solutions and test replicates were prepared and characterized as before. At this time, small amounts of the green alga *Selenastrum capricornutum* and yeast-Cerophyll®-trout (YCT) chow food mixture were added to each original test replicate to provide food for the test organisms. Then, after ~48 hrs exposure, each of the test organisms was carefully transferred into a fresh replicate cup containing fresh test solution so as to allow a minimum of 50% renewal of test solution.

After 96 ($\pm$2) hrs, the tests were terminated and the number of surviving organisms in each replicate was determined. The resulting survival data were analyzed to evaluate any impairment due to the ambient waters; all statistical analyses were performed using the CETIS® statistical software.

3.2.1 Reference Toxicant Testing of the *Ceriodaphnia dubia*

In order to assess the sensitivity of the *Ceriodaphnia* test organisms to toxic stress, a reference toxicant test was performed. The reference toxicant test was performed similarly to the ambient water tests, except that test solutions consisted of the Lab Control spring water mixture spiked with NaCl at concentrations of 250, 500, 1000, 1500 and 2000 mg/L. The resulting test response data were statistically analyzed to determine key dose-response point estimates (e.g., IC_{50}); all statistical analyses were performed using the CETIS® software. These response endpoints were then compared to the typical response range established by the mean ± 2 SD of the point estimates generated by the 20 most-recent previous reference toxicant tests performed by this lab.

3.3 Acute Toxicity Testing with Larval Fathead Minnows

The acute fathead minnow test consists of exposing larval fish to the ambient water for ~96 hrs, after which effects on survival are evaluated. The specific procedures used in these tests are described below.

The fathead minnows used in these tests were obtained from two commercial supplier (Sticklebacks Unlimited, Vallejo, CA and Aquatic Biosystems, Fort Collins, CO). These fish were maintained at 20˚C in aerated aquaria containing EPA synthetic moderately-hard water prior to their use in this test. During this pre-test period, the fish were fed brine shrimp nauplii *ad libitum*.

The Lab Control/dilution water for these tests consisted of EPA synthetic "moderately-hard" water, prepared by addition of reagent grade chemicals to RO/DI water. The Control/dilution water and the ambient water samples were used to prepare test solutions at test treatment concentrations of 6.25%, 12.5%, 25%, 50%, and 100% ambient water. Water quality characteristics (pH, D.O., and conductivity) were determined for each test solution prior to the start of the tests.

There were 4 replicates for each test treatment, each replicate consisting of 400 mL of test media in a 600-mL glass beaker. The tests were initiated by randomly allocating 10 larval fathead minnows into each replicate beaker. The beakers were placed in a temperature-controlled room at 20˚C under a 16L:8D photoperiod.

Each replicate container was examined daily, and the number of live fish in each was recorded at this time. Routine water quality characteristics (pH, D.O., and conductivity) of the treatment waters were measured and recorded for one randomly-selected replicate per treatment each day.

On Day 2 of the 4-day test, fresh test solutions were prepared and characterized as before. At this time, the test organisms were fed brine shrimp nauplii. The number of live fish in each replicate was then determined and then approximately 80% of the test media in each beaker was carefully poured out and replaced with fresh test solution. The test beakers were then returned to the room. "Old" water quality characteristics (pH, D.O., and conductivity) were measured on the test solution that had been discarded from one randomly-selected replicate at each test treatment.

After 96 ($\pm$2) hrs, the tests were terminated and the number of surviving organisms was determined. The resulting survival data were analyzed to evaluate any impairment of survival due to the ambient waters; all statistical analyses were performed using the CETIS® statistical software.

3.3.1 Reference Toxicant Testing of the Fathead Minnows

In order to assess the sensitivity of the fathead minnow test organisms to toxic stress, a reference toxicant test was performed. The reference toxicant test was performed similarly to the ambient water tests, except that test solutions consisted of the Lab Control water spiked with NaCl at concentrations of 0.75, 1.5, 3, 6, and 9 g/L. The resulting test response data were statistically analyzed to determine key dose-response point estimates (e.g., IC_{50}); all statistical analyses were performed using the CETIS® software. These response endpoints were then compared to the

typical response range established by the mean ± 2 SD of the point estimates generated by the 20 most-recent previous reference toxicant tests performed by this lab.

3.4 Sediment Toxicity Testing with *Hyalella azteca*

The freshwater sediment toxicity test with *Hyalella azteca* consists of exposing the amphipods to the sediment for 10 days, after which effects on survival are evaluated; note that the growth endpoint was excluded at the request of the client. The specific procedures used in this test are described below.

The *Hyalella azteca* used in this test were obtained from a commercial supplier (Aquatic Biosystems, Fort Collins, CO); upon receipt at the lab, the amphipods were held in tanks of EPA synthetic moderately-hard water (modified for use with *Hyalella* as per the EPA test guidelines) at 23˚C, and were fed YCT food.

The site sediment was tested at the 100% concentration only. The Lab Control treatment sediment consisted of a composite of reference site sediments that has been maintained under culture at the PER lab for >3 months. There were 8 replicates for each test treatment. Each replicate container consisted of a 300-mL tall-form glass beaker with a 3-cm ribbon of 540-μm mesh NITEX attached to the top of the beaker with silicone sealant. Each of the sediment samples was re-homogenized immediately prior to introduction of the sediments into the test replicates. Approximately 100 mL of sediment was loaded into each test replicate container. Each test replicate was then carefully filled with clean overlying water (EPA synthetic moderately-hard water, modified for use with *Hyalella* as per the EPA test guidelines). The replicates with sediments and clean overlying water were established ~24 hrs prior to the introduction of the amphipods, and were placed in a temperature-controlled room at 23˚C under a 16L:8D photoperiod.

After this initial 24 hr period, the overlying water in each replicate was flushed with one volume (approximately 150 mL) of fresh overlying water. A small aliquot of the renewed overlying water in each of the 8 replicates per treatment was then collected and composited for measurement of “initial” water quality characteristics (pH, dissolved oxygen [D.O.], conductivity, alkalinity, hardness, and total ammonia). The tests were initiated with the random allocation of ten 13 day-old amphipods into each replicate, followed by the addition of 1.0 mL of YCT food. The test replicates were then returned to the temperature-controlled room.

Each day, for the following 9 days, the test replicates from each replicate were examined for the presence of any dead amphipods. A small aliquot of the overlying water in each of the 8 replicates was then collected and composited as before for measurement of “old” D.O., after which each replicate was flushed with one volume of fresh water. Another small aliquot of the overlying water in each of the 8 replicates was then collected and composited as before for measurement of “new” D.O., after which each replicate was fed 1.0 mL of YCT.

After 10 days exposure, the replicate containers were pulled from the temperature-controlled room, and an aliquot of overlying water was collected from each replicate and composited for analysis of the "final" water quality characteristics. The sediments in each replicate container were then carefully washed out and sieved using a #40 (425-μm mesh) stainless steel sieve, and the number of surviving amphipods determined. The resulting survival data were analyzed to evaluate any impairments due to the sediments; all statistical analyses were performed using CETIS® statistical software.

3.4.1 Reference Toxicant Testing of the *Hyalella azteca*

In order to assess the sensitivity of the *Hyalella* test organisms to toxic stress, a reference toxicant test was performed. The reference toxicant test was performed similarly to the ambient water tests, except that test solutions consisted of the Lab Control water spiked with KCl at concentrations of 0.1, 0.2, 0.4, 0.8, and 1.6 g/L. The resulting test response data were statistically analyzed to determine key dose-response point estimates (e.g., IC_{50}); all statistical analyses were performed using the CETIS® software. These response endpoints were then compared to the typical response range established by the mean ± 2 SD of the point estimates generated by the 20 most-recent previous reference toxicant tests performed by this lab.

4. RESULTS

4.1 Effects of SJRRS Ambient Waters on *Selenastrum capricornutum*

The results of these tests are summarized below in Tables 3 through 13. The test data and summary of statistical analyses for these tests are presented in Appendix B.

4.1.1 Effects of NWDS-001-TOX on *Selenastrum capricornutum* growth

There were no significant reductions in algal growth in this ambient water sample.

Table 3. Effects of NWDS-001-TOX on *Selenastrum capricornutum* growth.

Test Treatment	Mean Algal Cell Density (cells/mL x 10^6)
Lab Control	2.47
6.25%	3.11
12.5%	3.15
25%	3.81
50%	4.32
100%	4.46
Summary of Statistics	
NOEC =	100% ambient water
IC_{50} =	>100% ambient water
TUc ($100/IC_{50}$) =	<1.0 TUc

4.1.2 Effects of NWDS-002-TOX on *Selenastrum capricornutum* growth

There were no significant reductions in algal growth in this ambient water sample when a spectrophotometer was used to determine cell density. However, a microscopic examination of the ambient water test replicates revealed the presence of other freshwater algal species (i.e., resident species, which were not present in the Lab Control). The presence of resident algal species suggests a quality control problem occurred during sample filtration. There was a significant reduction in *Selenastrum* growth when a microscopic evaluation of cell density was performed. However, the reduction in *Selenastrum* growth could be due to the presence of resident algae species (i.e., competition for nutrients). Therefore, the sample was retested to re-evaluate toxicity and the results are summarized in Table 5. There were no significant reductions in algal growth in the retest of this ambient water sample. A microscopic examination of the test replicates confirmed that resident algal species were not present.

Table 4. Effects of NWDS-002-TOX on *Selenastrum capricornutum* growth.

Test Treatment	Mean Algal Cell Density (cells/mL x 10^6)	
	Spectrophotometer	Microscope
Lab Control	2.74	2.59
6.25%	2.64	1.53
12.5%	1.57	0.763
25%	2.09	**0.868***
50%	2.23	**0.329***
100%	1.41	**0.053***
Summary of Statistics		
NOEC =	100% ambient water	12.5% ambient water
IC_{50} =	>100% ambient water	8.33% ambient water
TUc ($100/IC_{50}$) =	<1.0 TUc	12.0 TUc

* The test response at this treatment was significantly less than the Control treatment response ($p < 0.05$).

Table 5. Retest of effects of NWDS-002-TOX on *Selenastrum capricornutum* growth.

Test Treatment	Mean Algal Cell Density (cells/mL x 10^6)
Lab Control	2.98
6.25%	3.81
12.5%	4.06
25%	4.41
50%	4.72
100%	4.26
Summary of Statistics	
NOEC =	100% ambient water
IC_{50} =	>100% ambient water
TUc ($100/IC_{50}$) =	<1.0 TUc

4.1.3 Effects of NWDS-003-TOX on *Selenastrum capricornutum* growth

There were no significant reductions in algal growth in this ambient water sample when a spectrophotometer was used to determine cell density. However, a microscopic examination of the ambient water test replicates revealed the presence of other freshwater algal species (i.e., resident species, which were not present in the Lab Control). The presence of resident algal species suggests a quality control problem occurred during sample filtration. There was a significant reduction in *Selenastrum* growth when a microscopic evaluation of cell density was performed. However, the reduction in *Selenastrum* growth could be due to the presence of resident algae species (i.e., competition for nutrients). The sample was retested to re-evaluate toxicity and the results are summarized in Table 7. There was a significant reduction in algal growth in 100% treatment of the retest of this ambient water sample. A microscopic examination of the test replicates confirmed that resident algal species were not present.

Table 6. Effects of NWDS-003-TOX on *Selenastrum capricornutum* growth.

Test Treatment	Mean Algal Cell Density (cells/mL x 10^6)	
	Spectrophotometer	Microscope
Lab Control	2.41	3.61
6.25%	3.12	3.49
12.5%	2.94	3.13
25%	1.53	**0.608***
50%	1.53	**0.718***
100%	1.82	**0.850***
Summary of Statistics		
NOEC =	100% ambient water	12.5% ambient water
IC_{50} =	>100% ambient water	19.4% ambient water
TUc ($100/IC_{50}$) =	<1.0 TUc	5.2 TUc

* The test response at this treatment was significantly less than the Control treatment response ($p < 0.05$).

Table 7. Retest of effects of NWDS-003-TOX on *Selenastrum capricornutum* growth.

Test Treatment	Mean Algal Cell Density (cells/mL x 10^6)
Lab Control	2.67
6.25%	2.02
12.5%	1.51
25%	1.94
50%	2.24
100%	**1.75***
Summary of Statistics	
NOEC =	50% ambient water
IC_{50} =	>100% ambient water
TUc ($100/IC_{50}$) =	<1.0 TUc

* The test response at this treatment was significantly less than the Control treatment response ($p < 0.05$).

4.1.4 Effects of NWDS-004-TOX on *Selenastrum capricornutum* growth

There were no significant reductions in algal growth in this ambient water sample.

Table 8. Effects of NWDS-004-TOX on *Selenastrum capricornutum* growth.	
Test Treatment	Mean Algal Cell Density (cells/mL x 10^6)
Lab Control	2.57
6.25%	3.00
12.5%	3.29
25%	3.23
50%	3.42
100%	3.45
Summary of Statistics	
NOEC =	100% ambient water
IC_{50} =	>100% ambient water
TUc ($100/IC_{50}$) =	<1.0 TUc

4.1.5 Effects of SJRDS-001-TOX on *Selenastrum capricornutum* growth

There were no significant reductions in algal growth in this ambient water sample.

Table 9. Effects of SJRDS-001-TOX on *Selenastrum capricornutum* growth.	
Test Treatment	Mean Algal Cell Density (cells/mL x 10^6)
Lab Control	2.16
6.25%	2.81
12.5%	3.09
25%	3.16
50%	3.23
100%	3.60
Summary of Statistics	
NOEC =	100% ambient water
IC_{50} =	>100% ambient water
TUc ($100/IC_{50}$) =	<1.0 TUc

4.1.6 Effects of SJRDS-002-TOX on *Selenastrum capricornutum* growth

There were no significant reductions in algal growth in this ambient water sample when a spectrophotometer was used to determine cell density. However, a microscopic examination of the ambient water test replicates revealed the presence of other freshwater algal species (i.e., resident species, which were not present in the Lab Control). The presence of resident algal species suggests a quality control problem occurred during sample filtration. There was a significant reduction in *Selenastrum* growth when a microscopic evaluation of cell density was performed. However, the reduction in *Selenastrum* growth could be due to the presence of resident algae species (i.e., competition for nutrients). Therefore, the sample was retested to re-evaluate toxicity and the results are summarized in Table 11. There were no significant reductions in algal growth in the retest of this ambient water sample. A microscopic examination of the test replicates confirmed that resident algal species were not present.

Table 10. Effects of SJRDS-002-TOX on *Selenastrum capricornutum* growth.

Test Treatment	Mean Algal Cell Density (cells/mL x 10^6)	
	Spectrophotometer	Microscope
Lab Control	2.35	2.29
6.25%	2.71	1.97
12.5%	2.43	1.57
25%	3.09	1.69
50%	2.53	**1.04***
100%	3.19	**1.10***
Summary of Statistics		
NOEC =	100% ambient water	25% ambient water
IC_{50} =	>100% ambient water	46.8% ambient water
TUc ($100/IC_{50}$) =	<1.0 TUc	2.1 TUc

* The test response at this treatment was significantly less than the Control treatment response ($p < 0.05$).

Table 11. Retest of effects of SJRDS-002-TOX on *Selenastrum capricornutum* growth.

Test Treatment	Mean Algal Cell Density (cells/mL x 10^6)
Lab Control	3.36
6.25%	4.14
12.5%	4.11
25%	4.36
50%	4.79
100%	4.25
Summary of Statistics	
NOEC =	100% ambient water
IC_{50} =	>100% ambient water
TUc ($100/IC_{50}$) =	<1.0 TUc

4.1.7 Effects of SJRDS-003-TOX on *Selenastrum capricornutum* growth

There were no significant reductions in algal growth in this ambient water sample.

Table 12. Effects of SJRDS-003-TOX on *Selenastrum capricornutum* growth.	
Test Treatment	Mean Algal Cell Density (cells/mL x 10^6)
Lab Control	1.80
6.25%	2.44
12.5%	2.90
25%	3.60
50%	4.06
100%	4.73
Summary of Statistics	
NOEC =	100% ambient water
IC_{50} =	>100% ambient water
TUc ($100/IC_{50}$) =	<1.0 TUc

4.1.8 Effects of SJRDS-004-TOX on *Selenastrum capricornutum* growth

There were no significant reductions in algal growth in this ambient water sample.

Table 13. Effects of SJRDS-004-TOX on *Selenastrum capricornutum* growth.	
Test Treatment	Mean Algal Cell Density (cells/mL x 10^6)
Lab Control	2.52
6.25%	3.07
12.5%	3.29
25%	3.20
50%	3.17
100%	3.25
Summary of Statistics	
NOEC =	100% ambient water
IC_{50} =	>100% ambient water
TUc ($100/IC_{50}$) =	<1.0 TUc

4.2 Effects of SJRRS Ambient Waters on *Ceriodaphnia dubia*

The results of these tests are summarized below in Tables 14 through 21. The test data and summary of statistical analyses for these tests are presented in Appendix C.

4.2.1 Effects of NWDS-001-TOX on *Ceriodaphnia dubia*

There were no significant reductions in *Ceriodaphnia dubia* survival in this ambient water sample.

Table 14. Effects of NWDS-001-TOX on *Ceriodaphnia dubia* survival.

Test Treatment	Mean % Survival
Lab Control	100
6.25%	100
12.5%	100
25%	100
50%	100
100%	100
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.2.2 Effects of NWDS-002-TOX on *Ceriodaphnia dubia*

There were no significant reductions in *Ceriodaphnia dubia* survival in this ambient water sample.

Table 15. Effects of NWDS-002-TOX on *Ceriodaphnia dubia* survival.

Test Treatment	Mean % Survival
Lab Control	100
6.25%	95
12.5%	100
25%	95
50%	80
100%	95
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.2.3 Effects of NWDS-003-TOX on *Ceriodaphnia dubia*

There were no significant reductions in *Ceriodaphnia dubia* survival in this ambient water sample.

Table 16. Effects of NWDS-003-TOX on *Ceriodaphnia dubia* survival.	
Test Treatment	Mean % Survival
Lab Control	100
6.25%	100
12.5%	100
25%	100
50%	100
100%	100
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.2.4 Effects of NWDS-004-TOX on *Ceriodaphnia dubia*

There were no significant reductions in *Ceriodaphnia dubia* survival in this ambient water sample.

Table 17. Effects of NWDS-004-TOX on *Ceriodaphnia dubia* survival.	
Test Treatment	Mean % Survival
Lab Control	100
6.25%	100
12.5%	100
25%	95
50%	100
100%	95
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.2.5 Effects of SJRDS-001-TOX on *Ceriodaphnia dubia*

There were no significant reductions in *Ceriodaphnia dubia* survival in this ambient water sample.

Table 18. Effects of SJRDS-001-TOX on *Ceriodaphnia dubia* survival.

Test Treatment	Mean % Survival
Lab Control	100
6.25%	100
12.5%	100
25%	100
50%	100
100%	100
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.2.6 Effects of SJRDS-002-TOX on *Ceriodaphnia dubia*

There were no significant reductions in *Ceriodaphnia dubia* survival in this ambient water sample.

Table 19. Effects of SJRDS-002-TOX on *Ceriodaphnia dubia* survival.

Test Treatment	Mean % Survival
Lab Control	100
6.25%	100
12.5%	90
25%	100
50%	90
100%	100
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.2.7 Effects of SJRDS-003-TOX on *Ceriodaphnia dubia*

There were no significant reductions in *Ceriodaphnia dubia* survival in this ambient water sample.

Table 20. Effects of SJRDS-003-TOX on *Ceriodaphnia dubia* survival.

Test Treatment	Mean % Survival
Lab Control	100
6.25%	100
12.5%	100
25%	100
50%	100
100%	100
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.2.8 Effects of SJRDS-004-TOX on *Ceriodaphnia dubia*

There were no significant reductions in *Ceriodaphnia dubia* survival in this ambient water sample.

Table 21. Effects of SJRDS-004-TOX on *Ceriodaphnia dubia* survival.

Test Treatment	Mean % Survival
Lab Control	100
6.25%	100
12.5%	100
25%	100
50%	100
100%	100
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.3 Effects of SJRRS Ambient Waters on Fathead Minnows

The results of these tests are summarized below in Tables 22 through 29. The test data and summary of statistical analyses for these tests are presented in Appendix D.

4.3.1 Effects of NWDS-001-TOX on Fathead Minnows

There were no significant reductions in fathead minnow survival in this ambient water sample.

Table 22. Effects of NWDS-001-TOX on fathead minnow survival.

Test Treatment	Mean % Survival
Lab Control	97.5
6.25%	100
12.5%	100
25%	97.5
50%	95
100%	97.5
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.3.2 Effects of NWDS-002-TOX on Fathead Minnows

There were no significant reductions in fathead minnow survival in this ambient water sample.

Table 23. Effects of NWDS-002-TOX on fathead minnow survival.

Test Treatment	Mean % Survival
Lab Control	100
6.25%	97.5
12.5%	100
25%	97.5
50%	100
100%	100
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.3.3 Effects of NWDS-003-TOX on Fathead Minnows

There were no significant reductions in fathead minnow survival in this ambient water sample.

Table 24. Effects of NWDS-003-TOX on fathead minnow survival.	
Test Treatment	Mean % Survival
Lab Control	100
6.25%	97.5
12.5%	100
25%	100
50%	100
100%	100
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.3.4 Effects of NWDS-004-TOX on Fathead Minnows

There were no significant reductions in fathead minnow survival in this ambient water sample.

Table 25. Effects of NWDS-004-TOX on fathead minnow survival.	
Test Treatment	Mean % Survival
Lab Control	100
6.25%	97.5
12.5%	100
25%	100
50%	100
100%	97.5
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.3.5 Effects of SJRDS-001-TOX on Fathead Minnows

There were no significant reductions in fathead minnow survival in this ambient water sample.

Table 26. Effects of SJRDS-001-TOX on fathead minnow survival.	
Test Treatment	Mean % Survival
Lab Control	100
6.25%	100
12.5%	100
25%	92.5
50%	97.5
100%	100
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.3.6 Effects of SJRDS-002-TOX on Fathead Minnows

There were no significant reductions in fathead minnow survival in this ambient water sample.

Table 27. Effects of SJRDS-002-TOX on fathead minnow survival.	
Test Treatment	Mean % Survival
Lab Control	100
6.25%	100
12.5%	100
25%	97.5
50%	100
100%	100
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.3.7 Effects of SJRDS-003-TOX on Fathead Minnows

There were no significant reductions in fathead minnow survival in this ambient water sample.

Table 28. Effects of SJRDS-003-TOX on fathead minnow survival.	
Test Treatment	Mean % Survival
Lab Control	100
6.25%	97.5
12.5%	100
25%	100
50%	100
100%	100
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.3.8 Effects of SJRDS-004-TOX on Fathead Minnows

There were no significant reductions in fathead minnow survival in this ambient water sample.

Table 29. Effects of SJRDS-004-TOX on fathead minnow survival.	
Test Treatment	Mean % Survival
Lab Control	100
6.25%	97.5
12.5%	97.5
25%	100
50%	100
100%	100
Summary of Statistics	
NOEC =	100% ambient water
EC_{50} =	>100% ambient water
TUa ($100/EC_{50}$) =	<1.0 TUa

4.4 Effects of SJRRS Sediment on *Hyalella azteca*

The results of this test are summarized below in Table 30. There no significant reductions in *Hyalella azteca* survival in the sediment sample.

The test data and summary of statistical analyses for this test are presented in Appendix E.

Table 30. Effects of NWDS-SED-TOX on *Hyalella azteca* survival.

Test Treatment / Sample ID	Mean % Survival
Lab Control	96.3
NWDS-SED-TOX	97.5

5. AQUATIC TOXICITY DATA QUALITY CONTROL

Three QC measures were assessed during the toxicity testing:

- Maintenance of acceptable test conditions;
- Negative Control testing; and
- Precision assessment testing - measured via analyses of field duplicates.

5.1 Maintenance of Acceptable Test Conditions

Test conditions (pH, D.O., temperature, etc.) were all within acceptable limits for these tests. All analyses were performed according to laboratory Standard Operating Procedures.

Resident organisms (e.g. flagellates and ciliates) were observed in the original tests of the following samples: NWDS-002, NWDS-003, NWDS-003 Dup, and SJRDS-002. The presence of resident algal species suggests a quality control problem occurred during sample filtration; based on how the work area is set up for algae filtration, there is no possibility of unfiltered sample dripping into the filtered solution. These samples were retested and no resident organisms were found in the filtered ambient samples during the re-tests.

Based on these results, it was hypothesized that the faulty filters may be the cause of the presence of resident organisms in the filtered samples. A filter comparison study was performed to determine if the high-capacity GeoTech groundwater cartridge filters used at PER for filtering ambient water samples for algae testing were compromised. The study included a comparison of the NWDS-003 sample filtered with GeoTech, Millipore Stericup disposable, and Pall AcroPak 200 filters. As was the case for the re-tests, there were no resident species in any of the treatments. Although no definitive evidence was obtained as to why resident organisms were in the filtered samples, PER still believes that a batch of structurally faulty filters were obtained from GeoTech.

5.2 Negative Control Testing

All Lab Control treatments were within acceptable limits.

5.3 Positive Control Testing

The results for the reference toxicant tests of the test organisms are summarized below.

5.3.1 Reference Toxicant Toxicity to *Selenastrum capricornutum*

The results of this test are summarized below in Table 31. There was a mean of 2,870,000 cells/mL in the Lab Control treatment. The IC_{50} was 2.06 gm/L NaCl. These reference toxicant test results are consistent with previous *Selenastrum* reference toxicant tests, indicating that these organisms were responding to toxic stress in a typical fashion. The test data and summary of statistical analyses for this test are presented in Appendix F.

Table 31. Reference toxicant testing: effects of NaCl on *Selenastrum capricornutum* growth.	
NaCl Treatment (gm/L)	Mean Algal Cell Density (cells/mL x 10^6)
Lab Control	2.87
0.5	2.62
1	**2.14***
2	**1.48***
4	**0.119***
8	**0.046***
Summary of Statistics	
IC_{50} = 2.06 gm/L NaCl	

* – Significantly less than the Lab Control treatment response ($p < 0.05$).

5.3.2 Reference Toxicant Toxicity to *Ceriodaphnia dubia*

The results of this test are summarized below in Table 32. There was 100% survival and a mean of 28.7 offspring at the Lab Control treatment. The survival EC_{50} was 1670 mg/L NaCl, and the reproduction IC_{50} was 1260 mg/L NaCl. These reference toxicant test results are consistent with previous *Ceriodaphnia* reference toxicant tests, indicating that these organisms were responding to toxic stress in a typical fashion.

The test data and summary of statistical analyses for this test are presented in Appendix G.

Table 32. Reference toxicant testing: effects of sodium chloride on *Ceriodaphnia dubia*.		
NaCl Treatment (mg/L)	% Survival	Reproduction (# neonates/female)
Lab Control	100	28.7
250	100	29.0
500	100	26.9
1000	100	**20.7***
1500	90	**8.8***
2000	**0***	0
Summary of Statistics		
Survival EC_{50} =	1670 mg/L NaCl	
Reproduction IC_{50} =		1260 mg/L NaCl

* – Significantly less than the Lab Control treatment response ($p < 0.05$).

5.3.3 Reference Toxicant Toxicity to Fathead Minnows

The results of this test are summarized below in Table 33. There was 97.5% survival and a mean biomass value of 0.45 mg at the Lab Control treatment. The survival EC_{50} value was 4.04 g/L NaCl and the growth IC_{50} was 2.6 g/L NaCl. These reference toxicant test results are consistent with the database of similar reference toxicant tests previously performed in our laboratory.

The test data and summary of statistical analyses for this test are presented in Appendix H.

Table 33. Reference toxicant testing: effects of sodium chloride on fathead minnows.		
NaCl Treatment (g/L)	% Survival	Mean Fish Biomass Value (mg)
Lab Control	97.5	0.45
0.75	100	0.44
1.5	100	0.40
3	**67.5***	0.16
6	**27.5***	0.09
9	**0***	0
Summary of Statistics		
Survival EC_{50} or Reproduction IC_{50} =	4.04 g/L NaCl	2.6 g/L NaCl

* – Significantly less than the Lab Control treatment response ($p < 0.05$).

5.3.4 Reference Toxicant Toxicity to *Hyalella azteca*

The results of this test are summarized below in Table 34. There was 100% survival at the Lab Control treatment. The survival EC_{50} was 0.53 g/L KCl. These reference toxicant test results are consistent with previous *Hyalella* reference toxicant tests, indicating that these organisms were responding to toxic stress in a typical fashion.

The test data and summary of statistical analyses for this test are presented in Appendix I.

Table 34. Reference toxicant testing: effects of potassium chloride on *Hyalella azteca*.	
KCl Treatment (gm/L)	Mean % Survival
Lab Control	100
0.1	100
0.2	100
0.4	**50***
0.8	**40***
1.6	**0***
Summary of Statistics	
Survival EC_{50} =	0.53 g/L KCl

* – Significantly less than the Lab Control treatment response ($p < 0.05$).

5.4 Precision Assessment Testing – Analyses of Field Duplicates

5.4.1 Toxicity Testing of Field Duplicates with *Selenastrum capricornutum*

The results of the comparative testing of field duplicates with *Selenastrum capricornutum* are presented in Table 35. The relative percent differences (RPDs) for the algal growth responses were within acceptable limits. The test data and summary of statistical analyses for these tests are presented in Appendix J.

Table 35. Toxicity testing of field duplicate samples with *Selenastrum capricornutum*.	
Treatment/Sample ID	Mean Algal Cell Density (cells/mL x 10^6)
NWDS-003-TOX	1.82
NWDS-003-TOX-DUP	2.01
RPD =	9.9%

5.4.2 Toxicity Testing of Field Duplicates with *Ceriodaphnia dubia*

The results of the comparative testing of field duplicates with *Ceriodaphnia dubia* are presented in Table 36. The RPDs for the mean survival responses were within the acceptable limits. The test data and summary of statistical analyses for these tests are presented in Appendix K.

Table 36. Toxicity testing of field duplicate samples with *Ceriodaphnia dubia*.	
Treatment/Sample ID	Mean % Survival
NWDS-003-TOX	100
NWDS-003-TOX-DUP	100
RPD =	0%

5.4.3 Toxicity Testing of Field Duplicates with Fathead Minnows

The results of the comparative testing of field duplicates with fathead minnows are presented in Table 37. The RPDs for the mean survival responses were within acceptable limits. The test data and summary of statistical analyses for these tests are presented in Appendix L.

Table 37. Toxicity testing of field duplicate samples with fathead minnows.	
Treatment	Mean % Survival
NWDS-003-TOX	100
NWDS-003-TOX-DUP	92.5
RPD =	07.8%

6. SUMMARY AND CONCLUSIONS

The results of the toxicity testing of San Joaquin River Recirculation Study ambient waters and sediment are summarized below.

Toxicity summary for San Joaquin River Recirculation Study water and sediment samples.

Sample Station	Toxicity Present Relative to Lab Control?			
	Selenastrum Growth Test	*Ceriodaphnia* Survival Test	Fathead Minnow Survival Test	*Hyalella azteca* Survival Test
NWDS-001-TOX	no	no	no	
NWDS-002-TOX	no	no	no	
NWDS-003-TOX	**Yes**	no	no	
NWDS-004-TOX	no	no	no	
NWDS-SED-TOX				no
SJRDS-001-TOX	no	no	no	
SJRDS-002-TOX	no	no	no	
SJRDS-003-TOX	no	no	no	
SJRDS-004-TOX	no	no	no	

Chronic Toxicity of SJRRS Ambient Waters to *Selenastrum capricornutum*
There was a significant reduction in algal growth in the NWDS-003-TOX ambient water. There were no significant reductions in algal growth in any of the remaining ambient waters.

Acute Toxicity of SJRRS Ambient Waters to *Ceriodaphnia dubia*
There were no significant reductions in *Ceriodaphnia dubia* survival in any of the ambient waters.

Acute Toxicity of SJRRS Ambient Waters to Fathead Minnow
There were no significant reductions in fish survival in any of the ambient waters.

Acute Toxicity of SJRRS Sediment to *Hyalella azteca*
There was no significant reduction in *Hyalella azteca* survival in the NWDS-SED-TOX sediment sample.

Appendix A

Chain-of-Custody Records for the Collection and Delivery of the San Joaquin River Recirculation Study Ambient Water and Sediment Samples

CHAIN OF CUSTODY RECORD

PACIFIC ECORISK
835 Arnold Drive, Suite 104
Martinez, CA 94553
(925)313-8080 fax: (925)313-8089

RESULTS TO:
URS
1333 Broadway, Ste 800
Oakland CA 94612
Attn: Elizabeth Nicka Tel: 510 893-3600

BILL TO:
URS
1333 Broadway, Ste 800
Oakland, CA 94612
Attn: A/P Tel:

PROJECT:
DNC 186001.61

SAMPLE IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	GRAB/ COMP.	# CONTAINERS/TYPE	ANALYSES REQUESTED: Sed Tox	Acute Tox	REMARKS
NWDS-SED-TOX	7/28/08	21:10	SED	G	4 / 1 gal	✓		
NWDS-002-TOX	7/29/08	21:52	W	G	5 / 1 gal		✓	
NWDS-003-TOX	7/30/08	0045	W	G	5 / 1 gal		✓	
NWDS-003-TOX-DUP	7/30/08	0045	W	G	5 / 1 gal		✓	
					/			
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					/			

METHOD OF SHIPMENT: FED X _____ UPS _____ HAND _____ OTHER _____

COMMENTS:

CODES:

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	PAGE #
	7/29/08	2130		7/30	1350	OF
	7/30/08	0200	Y. Khadiyeva	7/30/8	13:52	

White - Return w/sample
Yellow: - Keep for your records

Cooler Temp 12.3

CHAIN OF CUSTODY RECORD

PACIFIC ECORISK
835 Arnold Drive, Suite 104
Martinez, CA 94553
~~(925)313-8080 fax: (925)313-8089~~
707 207-7760

RESULTS TO:
URS
1333 Broadway Ste 800
Oakland, CA 94612
Attn: Elizabeth Nielsen Tel: 510 893-3600

BILL TO:
URS
1333 Broadway Ste 800
Oakland, CA 94612
Attn: A/P Tel:

PROJECT:
DMC 182000161.10005

SAMPLE IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	GRAB/ COMP.	# CONTAINERS/TYPE	ANALYSES REQUESTED: Acute TOX		REMARKS
Temp 18.1								
SJRDS-001-TOX	7/29	08:00	W	G	5 / 1 gal	X		
~~SJRDS-002-TOX~~	~~7/29~~	~~08:00~~	↓	↓	/	~~X~~	EN 7/29/08	
~~SJRDS-003-TOX~~	~~7/29~~	~~00:00~~			/	~~X~~	EN 7/29/08	
~~SJRDS-004-TOX~~	~~7/29~~	~~08:00~~			/	~~X~~	EN 7/29/08	
~~SJRDS-002-TOX~~	EN 7/29				/			
~~SJRDS-003-TOX~~	EN 7/29				/			
~~SJRDS-004-TOX~~	EN 7/29				/			
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METHOD OF SHIPMENT: FED X _____ UPS _____ HAND _____ OTHER _____

COMMENTS:

CODES:

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	PAGE #
	~~7/29~~ 7-29-08	10:23		7-29-08	10:23	OF
	7-29-08	1245	M. Maldonado	7/29/08	1150	

White - Return w/sample Yellow: - Keep for your records

CHAIN OF CUSTODY RECORD

PACIFIC ECORISK
835 Arnold Drive, Suite 104
Martinez, CA 94553
~~(925)313-8080 fax: (925)313-8089~~
707 207-7760

RESULTS TO:
URS
1333 Broadway St 800
Oakland, CA 94612
Attn: Elizabeth Nielsen Tel: 510 893-3600

BILL TO:
URS
1333 Broadway St 800
Oakland, CA 94612
Attn: A/P Tel:

PROJECT:
DMC 18600161.10005

SAMPLE IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	GRAB/ COMP.	# CONTAINERS/TYPE	ANALYSES REQUESTED: Acute Tox	REMARKS
Temp 12.0 NWDS-001-TOX	07-29	0640	W	G	5 / 1 gal	X	
~~NWDS-002-TOX~~ EN 7/29/08					/		
~~NWDS-003-TOX~~ EN 7/29					/		
~~NWDS-004-TOX~~ EN 7/29					/		
					/		
~~NWDS-DUP-003-TOX~~ EN 7/29					/		
$					/		
					/		
					/		
					/		
					/		

METHOD OF SHIPMENT: FED X ____ UPS ____ HAND ____ OTHER X Pickup

COMMENTS:

CODES:

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	PAGE #
	7/29/08	11:05		7/29/08	1105	OF
	7-29-08	1245	M. Maldonado	7/29/08	1150	

White - Return w/sample Yellow: - Keep for your records

CHAIN OF CUSTODY RECORD

PACIFIC ECORISK
835 Arnold Drive, Suite 104
Martinez, CA 94553
~~(925)313-8080 fax: (925)313-8089~~ 2
707 207-7760

RESULTS TO:
URS
1333 Broadway Ste 800
Oakland, CA 94612
Attn: Elizabeth Nielsen Tel: 510 893-3600

BILL TO:
URS
1333 Broadway Ste 800
Oakland, CA 94612
Attn: A/P Tel:

PROJECT:
DMC

SAMPLE IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	GRAB/ COMP.	# CONTAINERS/TYPE	ANALYSES REQUESTED: Acute TOX	REMARKS
~~SJRDS-001-TOX~~	~~7/29/08~~ 7/30		W	G	5 / 1 gal		
SJRDS-002-TOX	~~7/29~~	2338	↓	↓	/	X	
SJRDS-003-TOX	7/30	0315	↓	↓	/	X	
~~SJRDS-004-TOX~~			↓	↓	/		
					/		
					/		
					/		
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					/		
					/		

METHOD OF SHIPMENT: FED X _____ UPS _____ HAND _____ OTHER _____

COMMENTS:

CODES:

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	PAGE #
Sophia Española	7/30	10:30		7/30/8	1030	OF
	7/30	1315	Y. Khadiyeva	7/30/8	13:15	

White - Return w/sample Yellow: - Keep for your records

CHAIN OF CUSTODY RECORD

PACIFIC ECORISK
835 Arnold Drive, Suite 104
Martinez, CA 94553
~~(925)313-8080 fax: (925)313-8089~~
707-207-7760

RESULTS TO:
URS
1333 Broadway Ste 800
Oakland, CA 94612
Attn: Elizabeth Nielsen Tel: 510 893-3600

BILL TO:
URS
1300 Broadway Ste 800
Oakland, CA 94612
Attn: A/P Tel:

PROJECT:
DMC

SAMPLE IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	GRAB/ COMP.	# CONTAINERS/TYPE	ANALYSES REQUESTED: Acute TOX	REMARKS
~~NWDS-001-TOX~~ BFN 7/31			W	G	5 / 1 gal		
~~NWDS-002-TOX~~ BFN 7/31			↓	↓	/		
~~NWDS-003-TOX~~ BFN 7/31					/		
~~NWDS-004-TOX~~ BFN 7/31	~~0640~~				/		
NWDS-004-TOX	07/31/08	0640			/	X	
~~NWDS-DUP-003-TOX~~ BFN 7/31					/		
SJRDS-004-TOX	7/31/08	0910			/	X	
					/		
					/		
					/		
					/		

METHOD OF SHIPMENT: FED X _____ UPS _____ HAND _____ OTHER _____

COMMENTS:

CODES:

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	PAGE #
Benjamin F. Nielsen	0940 BFN	07/31		7/31/08	0940	
	7/31/08	1204	Alvin Rosa	7/31/08	1204	OF

White - Return w/sample Yellow: - Keep for your records

Appendix B

Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of the San Joaquin River Recirculation Study Ambient Waters to *Selenastrum capricornutum*

CETIS Summary Report

Selenastrum Growth Test — Pacific EcoRisk

Test Run No:	09-4618-8644	Test Type:	Cell Growth	Analyst:	John Jirasritumrong
Start Date:	30 Jul-08 10:45	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Not Applicable
Ending Date:	03 Aug-08 10:30	Species:	Selenastrum capricornutum	Brine:	Not Applicable
Duration:	96h	Source:	In-House Culture	Age:	7

Sample No:	09-1745-9873	Code:	NWDS-001	Client:	URS
Sample Date:	29 Jul-08 06:40	Material:	Ambient Water	Project:	13489
Receive Date:	01 Jul-08 11:50	Source:	URS		
Sample Age:	28h (12 °C)	Station:	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
03-8557-0424	Cell Density	100	>100	N/A	11.1%	1	Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
16-6382-1399	Cell Density	IC2.5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		IC5	>100	N/A	N/A	<1	
		IC10	>100	N/A	N/A	<1	
		IC15	>100	N/A	N/A	<1	
		IC20	>100	N/A	N/A	<1	
		IC25	>100	N/A	N/A	<1	
		IC40	>100	N/A	N/A	<1	
		IC50	>100	N/A	N/A	<1	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.47E+6	2.36E+6	2.58E+6	2.10E+6	2.79E+6	5.29E+4	2.90E+5	11.7%	0.0%
6.25		4	3.11E+6	3.04E+6	3.17E+6	2.92E+6	3.35E+6	3.37E+4	1.84E+5	5.94%	-25.7%
12.5		4	3.15E+6	3.11E+6	3.19E+6	3.04E+6	3.30E+6	2.01E+4	1.10E+5	3.49%	-27.5%
25		4	3.81E+6	3.78E+6	3.83E+6	3.72E+6	3.87E+6	1.16E+4	6.34E+4	1.67%	-54.1%
50		4	4.32E+6	4.29E+6	4.35E+6	4.23E+6	4.39E+6	1.46E+4	7.97E+4	1.85%	-74.8%
100		4	4.46E+6	4.41E+6	4.51E+6	4.35E+6	4.63E+6	2.20E+4	1.21E+5	2.7%	-80.6%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.79E+6	2.57E+6	2.10E+6	2.42E+6
6.25		3.02E+6	3.35E+6	2.92E+6	3.13E+6
12.5		3.04E+6	3.11E+6	3.15E+6	3.30E+6
25		3.83E+6	3.81E+6	3.87E+6	3.72E+6
50		4.27E+6	4.39E+6	4.23E+6	4.38E+6
100		4.63E+6	4.41E+6	4.35E+6	4.45E+6

CETIS Analytical Report

Test Code: 13-0475-5329/29449

Selenastrum Growth Test — Pacific EcoRisk

Analysis No:	03-8557-0424	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 15:51	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	100	>100	N/A	1	11.1%

Dunnett's Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	P-Value	Decision(5%)
Lab Water		6.25	-5.59	2.41	274000	1.0000	Non-Significant Effect
		12.5	-5.98	2.41	274000	1.0000	Non-Significant Effect
		25	-11.8	2.41	274000	1.0000	Non-Significant Effect
		50	-16.3	2.41	274000	1.0000	Non-Significant Effect
		100	-17.5	2.41	274000	1.0000	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	1.203148E+13	2.406297E+12	5	93.2	0.0000	Significant Effect
Error	4.6485E+11	25825000000	18			
Total	1.2496333701E+13	2.4321215836E+12	23			

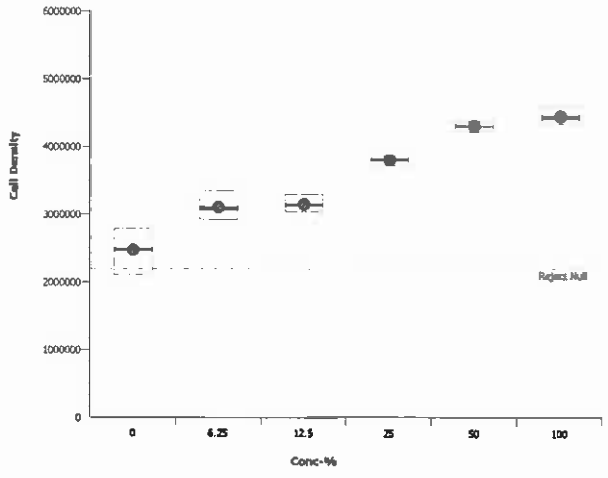
ANOVA Assumptions

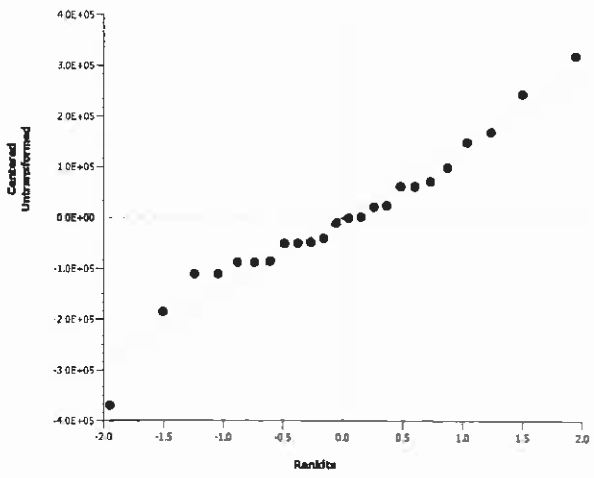
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	8.34	15.1	0.1380	Equal Variances
Distribution	Shapiro-Wilk Normality	0.963		0.5040	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.47E+6	2.36E+6	2.58E+6	2.10E+6	2.79E+6	5.38E+4	2.90E+5	11.7%	0.0%
6.25		4	3.11E+6	3.03E+6	3.18E+6	2.92E+6	3.35E+6	3.43E+4	1.84E+5	5.94%	-25.7%
12.5		4	3.15E+6	3.11E+6	3.19E+6	3.04E+6	3.30E+6	2.04E+4	1.10E+5	3.49%	-27.5%
25		4	3.81E+6	3.78E+6	3.83E+6	3.72E+6	3.87E+6	1.18E+4	6.34E+4	1.67%	-54.1%
50		4	4.32E+6	4.29E+6	4.35E+6	4.23E+6	4.39E+6	1.48E+4	7.97E+4	1.85%	-74.8%
100		4	4.46E+6	4.41E+6	4.51E+6	4.35E+6	4.63E+6	2.24E+4	1.21E+5	2.7%	-80.6%

Graphics





CETIS Analytical Report

Test Code: 13-0475-5329/29449

Selenastrum Growth Test — Pacific EcoRisk

Analysis No:	16-6382-1399	Endpoint:	Cell Density	CETIS Version:	CETISv1.6.5
Analyzed:	04 Sep-08 15:51	Analysis:	Linear Interpolation (ICPIN)	Official Results:	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	2895625	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC2.5	>100	N/A	N/A	<1	N/A	N/A
IC5	>100	N/A	N/A	<1	N/A	N/A
IC10	>100	N/A	N/A	<1	N/A	N/A
IC15	>100	N/A	N/A	<1	N/A	N/A
IC20	>100	N/A	N/A	<1	N/A	N/A
IC25	>100	N/A	N/A	<1	N/A	N/A
IC40	>100	N/A	N/A	<1	N/A	N/A
IC50	>100	N/A	N/A	<1	N/A	N/A

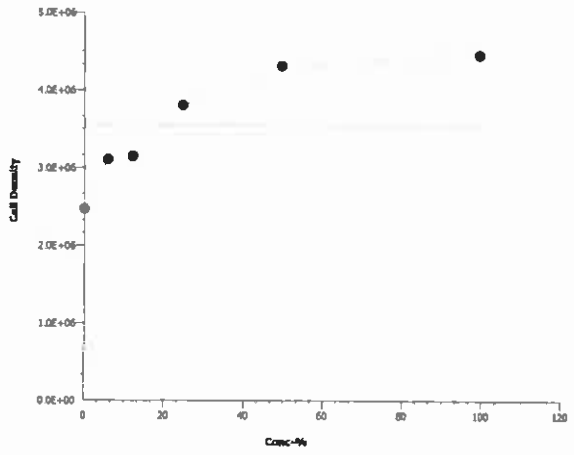
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.47E+6	2.10E+6	2.79E+6	5.29E+4	2.90E+5	11.7%	0.0%
6.25		4	3.11E+6	2.92E+6	3.35E+6	3.37E+4	1.84E+5	5.94%	-25.7%
12.5		4	3.15E+6	3.04E+6	3.30E+6	2.01E+4	1.10E+5	3.49%	-27.5%
25		4	3.81E+6	3.72E+6	3.87E+6	1.16E+4	6.34E+4	1.67%	-54.1%
50		4	4.32E+6	4.23E+6	4.39E+6	1.46E+4	7.97E+4	1.85%	-74.8%
100		4	4.46E+6	4.35E+6	4.63E+6	2.20E+4	1.21E+5	2.7%	-80.6%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.79E+6	2.57E+6	2.10E+6	2.42E+6
6.25		3.02E+6	3.35E+6	2.92E+6	3.13E+6
12.5		3.04E+6	3.11E+6	3.15E+6	3.30E+6
25		3.83E+6	3.81E+6	3.87E+6	3.72E+6
50		4.27E+6	4.39E+6	4.23E+6	4.38E+6
100		4.63E+6	4.41E+6	4.35E+6	4.45E+6

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: **URS: DMC** 26850 ial Count: 10,000 cells/mL

Test Material: NWDS-001-TOX Enumerating Scientist: SK

Test Start Date: 7/30/08 Start Time: 1045 Project #: 13489

Test End Date: 8/3/08 End Time: 1030 Test ID #: 29449

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	2.79	2.57	2.10	2.42	2.47
6.25%	3.02	3.35	2.92	3.13	3.10
12.5%	3.04	3.11	3.15	3.30	3.15
25%	3.83	3.81	3.87	3.72	3.80
50%	4.27	4.39	4.23	4.38	4.32
100%	4.63	4.41	4.35	4.45	4.46
This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	2.47	11.7	8/3/08	15:30	

Selenastrum capricornutum Algal Toxicity Test Water Quality Data

Client: URS: DMC Test ID #: 29449 Test Date: ~~7/30~~ RV 7/30/08

Test Material: NWDS-001-TOX Project #: 13489 Control/Diluent: Algal medium, W/O EDTA

Test Treatment	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Sign-Off
Lab Water Control	24.8	7.60	8.3	95.4	Date 7/30/08
6.25% Sample	24.8	7.91	8.3	~~196~~ ~~156.8~~	Sample ID 20170
12.5% Sample	24.8	7.91	8.4	288.6	Test Solution Prep RV
25% Sample	24.8	7.95	8.4	468	New WQ
50% Sample	24.8	8.01	8.5	~~809~~ ~~804~~	Innoculation Time 1045
100% Sample	24.8	8.01	8.7	1481	Innoculation Signoff: JT/RV
Meter ID:	6	PH03	D010	EC01	
Lab Water Control	24.9	7.97			Date: 7/31/08
6.25% Sample	24.9	7.84			WQ Time: 1505
12.5% Sample	24.9	7.85			WQ Signoff: HTA
25% Sample	24.9	7.96			
50% Sample	24.9	8.18			
100% Sample	24.9	8.36			
Meter ID:	41	PH11			
Lab Water Control	24.6	9.44			Date: 8.01.08
6.25% Sample	24.6	9.20			WQ Time: 1130
12.5% Sample	24.6	9.03			WQ Signoff: AJR
25% Sample	24.6	9.12			
50% Sample	24.6	9.10			
100% Sample	24.6	9.06			
Meter ID:	6	PH11			
Lab Water Control	24.7	9.81			Date: 8/2/08
6.25% Sample	24.7	9.84			WQ Time: 0920
12.5% Sample	24.7	9.59			WQ Signoff: HTA
25% Sample	24.7	9.64			
50% Sample	24.7	9.48			
100% Sample	24.7	9.18			
Meter ID:	41	PH09			
Lab Water Control	24.6	9.89	12.9	104	Date: 8/3/08
6.25% Sample	24.6	10.00	15.0	206	Termination Time: 1030
12.5% Sample	24.6	10.10	17.2	300	Termination Signoff: RV
25% Sample	24.6	10.20	17.8	466	WQ Time 1230
50% Sample	24.6	10.04	19.7	747	WQ Signoff: JW
100% Sample	24.6	9.78	19.6	1265	
Meter ID:	6	PH11	D014	EC01	

Initial Test Conditions	Alkalinity	Hardness	Light Intensity (ftc)
	✓ 267	✓ 405	412

CETIS Summary Report

Selenastrum Growth Test — Pacific EcoRisk

Test Run No:	04-0845-1107	Test Type:	Cell Growth	Analyst:	Rivian Villanueva
Start Date:	30 Jul-08 18:15	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	03 Aug-08 17:30	Species:	Selenastrum capricornutum	Brine:	Not Applicable
Duration:	95h	Source:	In-House Culture	Age:	

Sample No:	07-7753-2107	Code:	NWDS-002	Client:	URS
Sample Date:	29 Jul-08 21:52	Material:	Ambient Water	Project:	13489
Receive Date:	30 Jul-08 13:50	Source:	URS		
Sample Age:	20h (5 °C)	Station:	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
00-5547-6476	Cell Density	100	>100	N/A	50.4%	1	Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
20-3814-7291	Cell Density	IC2.5	4.18	N/A	9.91	23.9	Linear Interpolation (ICPIN)
		IC5	6.57	N/A	11.4	15.2	
		IC10	7.83	N/A	18.7	12.8	
		IC15	9.1	N/A	40.4	11	
		IC20	10.4	0.598	86.1	9.65	
		IC25	11.6	1.54	96.9	8.6	
		IC40	78.6	N/A	97.6	1.27	
		IC50	>100	N/A	N/A	<1	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.74E+6	2.70E+6	2.78E+6	2.63E+6	2.87E+6	1.97E+4	1.08E+5	3.94%	0.0%
6.25		4	2.64E+6	2.30E+6	2.98E+6	1.56E+6	3.63E+6	1.65E+5	9.06E+5	34.3%	3.74%
12.5		4	1.57E+6	1.12E+6	2.02E+6	8.31E+5	3.34E+6	2.18E+5	1.20E+6	76.2%	42.8%
25		4	2.09E+6	1.77E+6	2.40E+6	9.83E+5	2.94E+6	1.54E+5	8.43E+5	40.4%	23.9%
50		4	2.23E+6	1.87E+6	2.59E+6	1.09E+6	3.45E+6	1.77E+5	9.71E+5	43.5%	18.6%
100		4	1.41E+6	1.33E+6	1.48E+6	1.22E+6	1.61E+6	3.58E+4	1.96E+5	13.9%	48.7%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.63E+6	2.87E+6	2.68E+6	2.79E+6
6.25		2.29E+6	3.63E+6	1.56E+6	3.08E+6
12.5		3.34E+6	8.31E+5	1.24E+6	8.65E+5
25		2.49E+6	2.94E+6	9.83E+5	1.93E+6
50		3.45E+6	2.33E+6	1.09E+6	2.06E+6
100		1.26E+6	1.22E+6	1.61E+6	1.54E+6

CETIS Analytical Report

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	00-5547-6476	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Aug-08 8:43	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	100	>100	N/A	1	50.4%

Dunnett's Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	P-Value	Decision(5%)
Lab Water		6.25	0.179	2.41	1380000	0.7750	Non-Significant Effect
		12.5	2.04	2.41	1380000	0.0965	Non-Significant Effect
		25	1.14	2.41	1380000	0.3600	Non-Significant Effect
		50	0.889	2.41	1380000	0.4720	Non-Significant Effect
		100	2.33	2.41	1380000	0.0582	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	5.930753E+12	1.186151E+12	5	1.8	0.1640	Non-Significant Effect
Error	1.185844E+13	6.588024E+11	18			
Total	1.7789196173E+13	1.8449530225E+12	23			

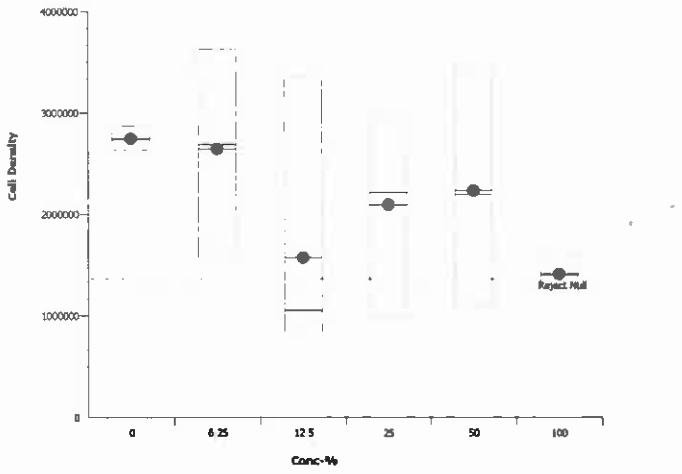
ANOVA Assumptions

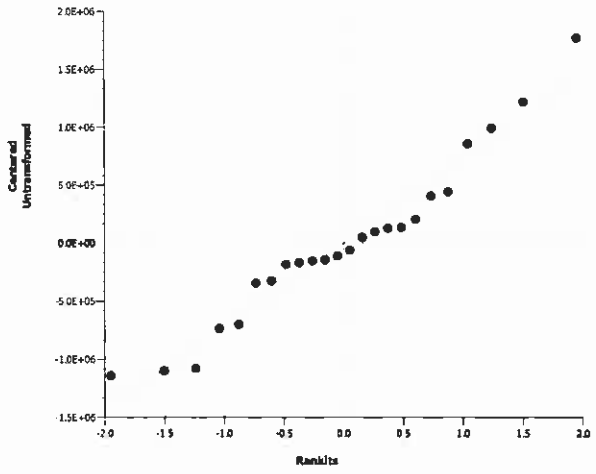
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	14.5	15.1	0.0130	Equal Variances
Distribution	Shapiro-Wilk Normality	0.953		0.3110	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.74E+6	2.70E+6	2.78E+6	2.63E+6	2.87E+6	2.01E+4	1.08E+5	3.94%	0.0%
6.25		4	2.64E+6	2.30E+6	2.98E+6	1.56E+6	3.63E+6	1.68E+5	9.06E+5	34.3%	3.74%
12.5		4	1.57E+6	1.11E+6	2.02E+6	8.31E+5	3.34E+6	2.22E+5	1.20E+6	76.2%	42.8%
25		4	2.09E+6	1.76E+6	2.41E+6	9.83E+5	2.94E+6	1.57E+5	8.43E+5	40.4%	23.9%
50		4	2.23E+6	1.86E+6	2.60E+6	1.09E+6	3.45E+6	1.80E+5	9.71E+5	43.5%	18.6%
100		4	1.41E+6	1.33E+6	1.48E+6	1.22E+6	1.61E+6	3.64E+4	1.96E+5	13.9%	48.7%

Graphics





CETIS Analytical Report

Selenastrum Growth Test — Pacific EcoRisk

Analysis No:	20-3814-7291	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Aug-08 8:43	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	7055475	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC2.5	4.18	N/A	9.91	23.9	10.1	N/A
IC5	6.57	N/A	11.4	15.2	8.81	N/A
IC10	7.83	N/A	18.7	12.8	5.36	N/A
IC15	9.1	N/A	40.4	11	2.47	N/A
IC20	10.4	0.598	86.1	9.65	1.16	167
IC25	11.6	1.54	96.9	8.6	1.03	64.8
IC40	78.6	N/A	97.6	1.27	1.02	N/A
IC50	>100	N/A	N/A	<1	N/A	N/A

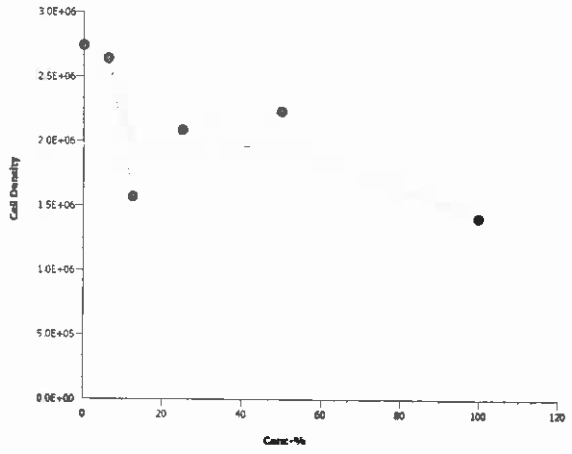
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.74E+6	2.63E+6	2.87E+6	1.97E+4	1.08E+5	3.94%	0.0%
6.25		4	2.64E+6	1.56E+6	3.63E+6	1.65E+5	9.06E+5	34.3%	3.74%
12.5		4	1.57E+6	8.31E+5	3.34E+6	2.18E+5	1.20E+6	76.2%	42.8%
25		4	2.09E+6	9.83E+5	2.94E+6	1.54E+5	8.43E+5	40.4%	23.9%
50		4	2.23E+6	1.09E+6	3.45E+6	1.77E+5	9.71E+5	43.5%	18.6%
100		4	1.41E+6	1.22E+6	1.61E+6	3.58E+4	1.96E+5	13.9%	48.7%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.63E+6	2.87E+6	2.68E+6	2.79E+6
6.25		2.29E+6	3.63E+6	1.56E+6	3.08E+6
12.5		3.34E+6	8.31E+5	1.24E+6	8.65E+5
25		2.49E+6	2.94E+6	9.83E+5	1.93E+6
50		3.45E+6	2.33E+6	1.09E+6	2.06E+6
100		1.26E+6	1.22E+6	1.61E+6	1.54E+6

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: URS: DMC
Initial Count: 10,000 cells/mL
Test Material: NWDS-002-TOX
Enumerating Scientist: SH
Test Start Date: 7/30/08
Start Time: 1815
Project #: 13489
Test End Date: 8/3/08
End Time: 1730
Test ID #: 29450

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	2.63	2.87	2.68	2.79	2.74
6.25%	2.29	3.63	1.56	3.08	2.64
12.5%	3.34	0.831	1.24	0.865	1.57
25%	2.49	2.94	0.983	1.93	2.09
50%	3.45	2.33	1.09	2.06	2.23
100%	1.26	1.22	1.61	1.54	1.41

This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	2.74	3.9	8/3/08	1830	DG

CETIS Summary Report

Selenastrum Growth Test — **Pacific EcoRisk**

Test Run No:	04-0845-1107	**Test Type:**	Cell Growth	**Analyst:**	Rivian Villanueva
Start Date:	30 Jul-08 18:15	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	03 Aug-08 17:30	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Duration:	95h	**Source:**	In-House Culture	**Age:**	6

Sample No:	07-7753-2107	**Code:**	NWDS-002	**Client:**	URS
Sample Date:	29 Jul-08 21:52	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	20h (5 °C)	**Station:**	NWDS		

Comments: Hemacytometer counts.

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	Method
01-7542-7406	Cell Density	12.5	25	17.7	51.3%	Steel Many-One Rank Test

Point Estimate Summary

Analysis No	Endpoint	Effect-%	Conc-%	95% LCL	95% UCL	Method
17-7200-0408	Cell Density	2.5	0.383	0.13	1.69	Linear Interpolation (ICPIN)
		5	0.767	0.26	3.38	
		10	1.53	0.52	6.76	
		15	2.3	0.779	8.93	
		20	3.07	1.04	10.4	
		25	3.83	1.3	11.8	
		40	6.13	2.08	23.5	
		50	8.33	2.2	30.3	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.59E+6	2.50E+6	2.68E+6	2.44E+6	2.97E+6	4.64E+4	2.54E+5	9.8%	0.0%
6.25		4	1.53E+6	1.20E+6	1.86E+6	5.87E+5	2.54E+6	1.61E+5	8.84E+5	57.6%	40.8%
12.5		4	7.63E+5	2.31E+5	1.29E+6	4.70E+4	2.90E+6	2.60E+5	1.42E+6	187.0%	70.5%
25		4	8.68E+5	6.22E+5	1.11E+6	5.50E+4	1.49E+6	1.20E+5	6.57E+5	75.7%	66.5%
50		4	3.29E+5	1.07E+5	5.51E+5	1.70E+4	1.22E+6	1.08E+5	5.94E+5	181.0%	87.3%
100		4	5.35E+4	4.31E+4	6.39E+4	3.70E+4	9.50E+4	5.07E+3	2.77E+4	51.9%	97.9%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.47E+6	2.44E+6	2.97E+6	2.48E+6
6.25		1.04E+6	2.54E+6	5.87E+5	1.97E+6
12.5		2.90E+6	5.00E+4	5.50E+4	4.70E+4
25		1.49E+6	1.30E+6	5.50E+4	6.25E+5
50		1.22E+6	2.70E+4	1.70E+4	5.20E+4
100		4.00E+4	4.20E+4	9.50E+4	3.70E+4

CETIS Analytical Report

Link/Link Code: 14-5902-9198/29450

Selenastrum Growth Test — Pacific EcoRisk

Analysis No:	01-7542-7406	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.4
Analyzed:	30 Sep-08 12:30	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	12.5	25	17.7	8	51.3%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	13	10	0	0.2310	Non-Significant Effect
		12.5	13	10	0	0.2310	Non-Significant Effect
		25*	10	10	0	0.0417	Significant Effect
		50*	10	10	0	0.0417	Significant Effect
		100*	10	10	0	0.0417	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	1.692E+13	3.384E+12	5	5.55	0.0029	Significant Effect
Error	1.098E+13	6.100E+11	18			
Total	2.790E+13	3.994E+12	23			

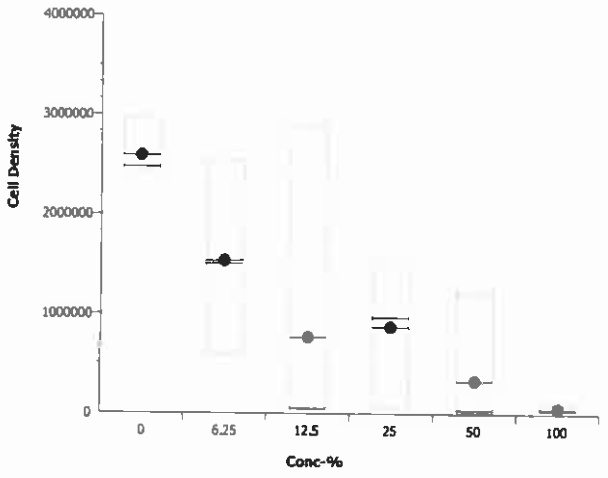
ANOVA Assumptions

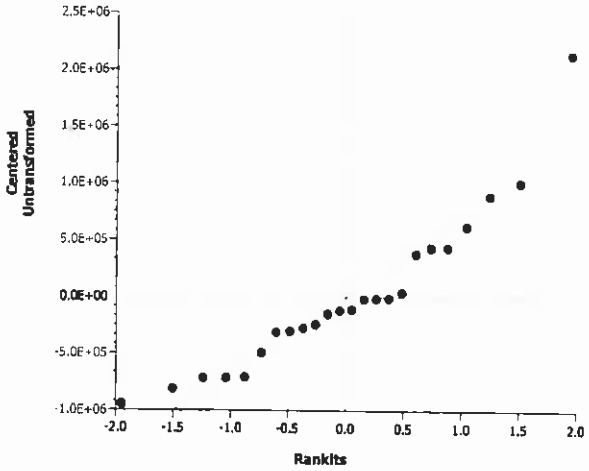
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	22.2	15.1	0.0005	Unequal Variances
Distribution	Shapiro-Wilk Normality	0.903		0.0254	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.59E+6	2.49E+6	2.69E+6	2.44E+6	2.97E+6	4.71E+4	2.54E+5	9.8%	0.0%
6.25		4	1.53E+6	1.20E+6	1.87E+6	5.87E+5	2.54E+6	1.64E+5	8.84E+5	57.6%	40.8%
12.5		4	7.63E+5	2.21E+5	1.30E+6	4.70E+4	2.90E+6	2.65E+5	1.42E+6	187.0%	70.5%
25		4	8.68E+5	6.18E+5	1.12E+6	5.50E+4	1.49E+6	1.22E+5	6.57E+5	75.7%	66.5%
50		4	3.29E+5	1.03E+5	5.55E+5	1.70E+4	1.22E+6	1.10E+5	5.94E+5	181.0%	87.3%
100		4	5.35E+4	4.29E+4	6.41E+4	3.70E+4	9.50E+4	5.15E+3	2.77E+4	51.9%	97.9%

Graphics





CETIS Analytical Report

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	17-7200-0408	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.4
Analyzed:	30 Sep-08 12:30	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	7055475	280	Yes	Two-Point Interpolation

Point Estimates

Effect-%	Conc-%	95% LCL	95% UCL
2.5	0.383	0.13	1.69
5	0.767	0.26	3.38
10	1.53	0.52	6.76
15	2.3	0.779	8.93
20	3.07	1.04	10.4
25	3.83	1.3	11.8
40	6.13	2.08	23.5
50	8.33	2.2	30.3

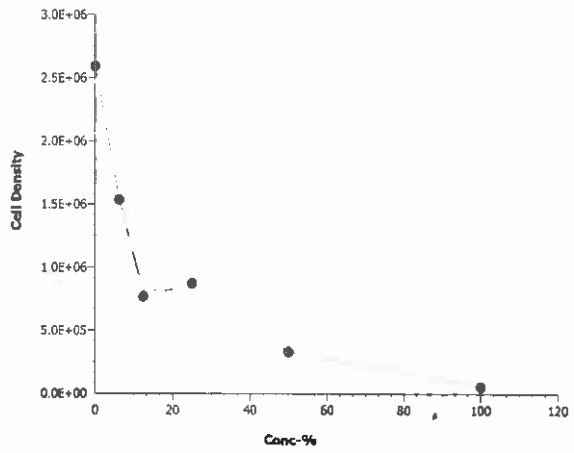
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.59E+6	2.44E+6	2.97E+6	4.64E+4	2.54E+5	9.8%	0.0%
6.25		4	1.53E+6	5.87E+5	2.54E+6	1.61E+5	8.84E+5	57.6%	40.8%
12.5		4	7.63E+5	4.70E+4	2.90E+6	2.60E+5	1.42E+6	187.0%	70.5%
25		4	8.68E+5	5.50E+4	1.49E+6	1.20E+5	6.57E+5	75.7%	66.5%
50		4	3.29E+5	1.70E+4	1.22E+6	1.08E+5	5.94E+5	181.0%	87.3%
100		4	5.35E+4	3.70E+4	9.50E+4	5.07E+3	2.77E+4	51.9%	97.9%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.47E+6	2.44E+6	2.97E+6	2.48E+6
6.25		1.04E+6	2.54E+6	5.87E+5	1.97E+6
12.5		2.90E+6	5.00E+4	5.50E+4	4.70E+4
25		1.49E+6	1.30E+6	5.50E+4	6.25E+5
50		1.22E+6	2.70E+4	1.70E+4	5.20E+4
100		4.00E+4	4.20E+4	9.50E+4	3.70E+4

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: **URS: DMC** Initial Count: 10,000 cells/mL

Test Material: NWDS-002-TOX Enumerating Scientist: SM

Test Start Date: 7/30/08 Start Time: 1815 Project #: 13489

Test End Date: 8/3/08 End Time: 1730 Test ID #: 29450

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	2.47	2.44	2.97	2.48	2.59
6.25%	1.04	2.54	0.587	1.97	1.53
12.5%	2.90	0.050	0.055	0.047	0.763
25%	1.49	1.30	0.055	0.625	0.868 ~~0.867~~
50%	1.22	0.027	0.017	0.052	0.329
100%	0.040	0.042	0.095	0.037	0.053
This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	2.59	9.8	8-7-08	1700	AB

Hemacytometer counts for all Treatments. SM

Selenastrum capricornutum Algal Toxicity Test Water Quality Data

Client: **URS: DMC** Test ID #: 29450 Test Date: 7/30/08

Test Material: NWDS-002-TOX Project #: 13489 Control/Diluent: Algal medium, W/O EDTA

Test Treatment	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Sign-Off
Lab Water Control	25.3	7.57	7.1	142	Date 7/30/08
6.25% Sample	25.3	7.76	7.0	230	Sample ID 20179
12.5% Sample	25.3	7.74	7.1	300	Test Solution Prep: QD
25% Sample	25.3	7.77	7.3	471	New WQ: QD
50% Sample	25.3	7.79	7.5	768	Innoculation Time 1815
100% Sample	25.3	7.83	7.9	1345	Innoculation Signoff: JS
Meter ID:	5	pH #11	DO 12	EC 04	
Lab Water Control	24.9	8.05			Date: 7/31/08
6.25% Sample	24.9	7.96			WQ Time: 1400
12.5% Sample	24.9	7.94			WQ Signoff: HD
25% Sample	24.9	8.12			
50% Sample	24.9	8.24			
100% Sample	24.9	8.36			
Meter ID:	41	PH11			
Lab Water Control	25.2	8.87			Date: 8.01.08
6.25% Sample	25.2	9.01			WQ Time: 1230
12.5% Sample	25.2	9.04			WQ Signoff: AJR
25% Sample	25.2	8.97			
50% Sample	25.2	8.96			
100% Sample	25.2	8.91			
Meter ID:	5	PH 11			
Lab Water Control	24.7	9.56			Date: 8/7/08
6.25% Sample	24.7	9.63			WQ Time: 1050
12.5% Sample	24.7	9.51			WQ Signoff: HD
25% Sample	24.7	HD 9.38 9.47			
50% Sample	24.7	9.38			
100% Sample	24.7	9.12			
Meter ID:	41	PH09			
Lab Water Control	25.3	10.00	13.1	159	Date. 8/13/08
6.25% Sample	25.3	10.06	14.9	246	Termination Time: 1730
12.5% Sample	25.3	9.90	14.6	306	Termination Signoff SK
25% Sample	25.3	9.85	16.3	468	WQ Time: 1115
50% Sample	25.3	9.77	18.3	723	WQ Signoff: JW
100% Sample	25.3	9.39	19.7	1219	
Meter ID:	5	PH11	DO14	EC01	

Initial Test Conditions	Alkalinity	Hardness	Light Intensity (ftc)
	√ 222	√ 343	387

CETIS Summary Report

Selenastrum Growth Test — **Pacific EcoRisk**

Test Run No:	17-1076-3934	**Test Type:**	Cell Growth	**Analyst:**	John Jirasritumrong
Start Date:	04 Aug-08 17:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	08 Aug-08 16:00	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Duration:	95h	**Source:**	In-House Culture	**Age:**	5

Sample No:	07-7753-2107	**Code:**	NWDS-002	**Client:**	URS
Sample Date:	29 Jul-08 21:52	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	5d 19h (5 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
09-3193-6557	Cell Density	100	>100	N/A	7.98%	1	Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
10-5091-2632	Cell Density	IC2.5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		IC5	>100	N/A	N/A	<1	
		IC10	>100	N/A	N/A	<1	
		IC15	>100	N/A	N/A	<1	
		IC20	>100	N/A	N/A	<1	
		IC25	>100	N/A	N/A	<1	
		IC40	>100	N/A	N/A	<1	
		IC50	>100	N/A	N/A	<1	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.98E+6	2.96E+6	3.00E+6	2.91E+6	3.03E+6	9.35E+3	5.12E+4	1.72%	0.0%
6.25		4	3.81E+6	3.75E+6	3.87E+6	3.63E+6	4.00E+6	2.95E+4	1.62E+5	4.24%	-28.0%
12.5		4	4.06E+6	4.03E+6	4.08E+6	3.99E+6	4.15E+6	1.44E+4	7.90E+4	1.95%	-36.2%
25		4	4.41E+6	4.37E+6	4.45E+6	4.29E+6	4.54E+6	1.96E+4	1.08E+5	2.44%	-48.0%
50		4	4.72E+6	4.63E+6	4.82E+6	4.48E+6	5.01E+6	4.72E+4	2.58E+5	5.47%	-58.6%
100		4	4.26E+6	4.24E+6	4.28E+6	4.20E+6	4.34E+6	1.11E+4	6.06E+4	1.42%	-43.1%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	3.03E+6	2.91E+6	2.97E+6	3.00E+6
6.25		3.63E+6	3.88E+6	4.00E+6	3.74E+6
12.5		3.99E+6	4.09E+6	4.15E+6	3.99E+6
25		4.29E+6	4.44E+6	4.36E+6	4.54E+6
50		4.87E+6	5.01E+6	4.53E+6	4.48E+6
100		4.20E+6	4.27E+6	4.34E+6	4.23E+6

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	09-3193-6557	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 18:01	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	100	>100	N/A	1	7.98%

Dunnett's Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	P-Value	Decision(5%)
Lab Water		6.25	-8.46	2.41	238000	1.0000	Non-Significant Effect
		12.5	-10.9	2.41	238000	1.0000	Non-Significant Effect
		25	-14.5	2.41	238000	1.0000	Non-Significant Effect
		50	-17.7	2.41	238000	1.0000	Non-Significant Effect
		100	-13	2.41	238000	1.0000	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	7.320584E+12	1.464117E+12	5	75.1	0.0000	Significant Effect
Error	3.508E+11	19488890000	18			
Total	7.6713835233E+12	1.4836055962E+12	23			

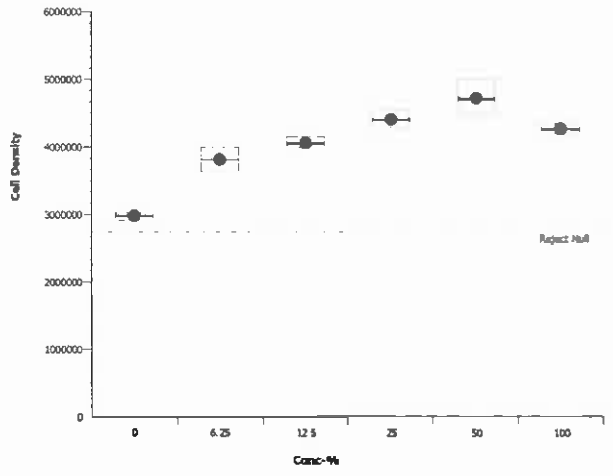
ANOVA Assumptions

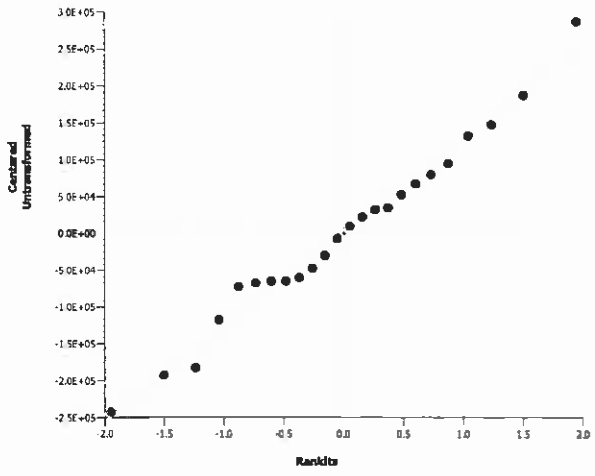
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	10.1	15.1	0.0716	Equal Variances
Distribution	Shapiro-Wilk Normality	0.986		0.9750	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.98E+6	2.96E+6	3.00E+6	2.91E+6	3.03E+6	9.51E+3	5.12E+4	1.72%	0.0%
6.25		4	3.81E+6	3.75E+6	3.87E+6	3.63E+6	4.00E+6	3.00E+4	1.62E+5	4.24%	-28.0%
12.5		4	4.06E+6	4.02E+6	4.09E+6	3.99E+6	4.15E+6	1.47E+4	7.89E+4	1.95%	-36.2%
25		4	4.41E+6	4.37E+6	4.45E+6	4.29E+6	4.54E+6	2.00E+4	1.08E+5	2.44%	-48.0%
50		4	4.72E+6	4.62E+6	4.82E+6	4.48E+6	5.01E+6	4.80E+4	2.58E+5	5.47%	-58.6%
100		4	4.26E+6	4.24E+6	4.28E+6	4.20E+6	4.34E+6	1.12E+4	6.06E+4	1.42%	-43.1%

Graphics





CETIS Analytical Report

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	10-5091-2632	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 18:01	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	8714458	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC2.5	>100	N/A	N/A	<1	N/A	N/A
IC5	>100	N/A	N/A	<1	N/A	N/A
IC10	>100	N/A	N/A	<1	N/A	N/A
IC15	>100	N/A	N/A	<1	N/A	N/A
IC20	>100	N/A	N/A	<1	N/A	N/A
IC25	>100	N/A	N/A	<1	N/A	N/A
IC40	>100	N/A	N/A	<1	N/A	N/A
IC50	>100	N/A	N/A	<1	N/A	N/A

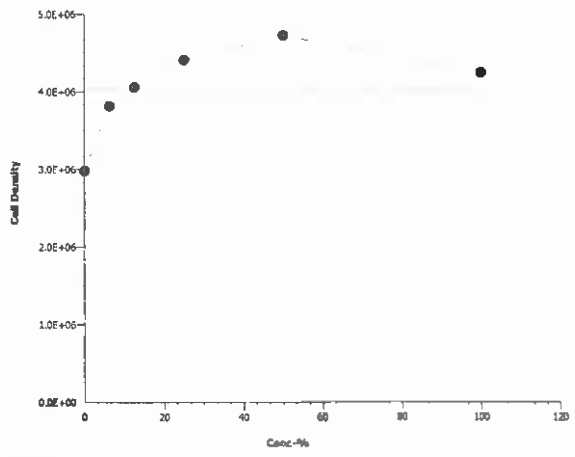
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.98E+6	2.91E+6	3.03E+6	9.35E+3	5.12E+4	1.72%	0.0%
6.25		4	3.81E+6	3.63E+6	4.00E+6	2.95E+4	1.62E+5	4.24%	-28.0%
12.5		4	4.06E+6	3.99E+6	4.15E+6	1.44E+4	7.89E+4	1.95%	-36.2%
25		4	4.41E+6	4.29E+6	4.54E+6	1.96E+4	1.08E+5	2.44%	-48.0%
50		4	4.72E+6	4.48E+6	5.01E+6	4.72E+4	2.58E+5	5.47%	-58.6%
100		4	4.26E+6	4.20E+6	4.34E+6	1.11E+4	6.06E+4	1.42%	-43.1%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	3.03E+6	2.91E+6	2.97E+6	3.00E+6
6.25		3.63E+6	3.88E+6	4.00E+6	3.74E+6
12.5		3.99E+6	4.09E+6	4.15E+6	3.99E+6
25		4.29E+6	4.44E+6	4.36E+6	4.54E+6
50		4.87E+6	5.01E+6	4.53E+6	4.48E+6
100		4.20E+6	4.27E+6	4.34E+6	4.23E+6

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: URS: DMC
Initial Count: 10,000 cells/mL
Test Material: NWDS-002-TOX
Enumerating Scientist: JT
Test Start Date: 8/4/08
Start Time: 1700
Project #: 13489
Test End Date: 8/8/08
End Time: 1600
Test ID #: 29782

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	3.03	2.91	2.97	3.00	2.98
6.25%	3.63	3.88	4.00	3.74	3.81
12.5%	3.99	4.09	4.15	3.99	4.05
25%	4.29	4.44	4.36	4.54	4.41
50%	4.87	5.01	4.53	4.48	4.72
100%	4.20	4.27	4.34	4.23	4.26
This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	2.98	1.72	8/8/08	1745	KB

Selenastrum capricornutum Algal Toxicity Test Water Quality Data

Client: URS: DMC Test ID #: 29781 Test Date: 8/4/08

Test Material: NWDS-002-TOX Project #: 13489 Control/Diluent: Algal medium, W/O EDTA

Test Treatment	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Sign-Off
Lab Water Control	24.8	7.52	8.6	157	Date: 8/4/08
6.25% Sample	24.8	~~7.52~~ 7.64	8.6	266	Sample ID 20179
12.5% Sample	24.8	7.73	8.8	323	Test Solution Prep MR
25% Sample	24.8	7.81	8.7	491	New WQ RN
50% Sample	24.8	7.90	9.0	780	Innoculation Time 1700
100% Sample	24.8	7.86	9.5	1360	Innoculation Signoff MR
Meter ID:	41	PH03	D012	EC01	
Lab Water Control	24.8	7.90			Date: 8/5/08
6.25% Sample	24.8	7.92			WQ Time: 1235
12.5% Sample	24.8	7.92			WQ Signoff: AS
25% Sample	24.8	8.05			
50% Sample	24.8	8.21			
100% Sample	24.8	8.23			
Meter ID:	6	PH09			
Lab Water Control	25.3	8.61			Date: 8/6/08
6.25% Sample	25.3	8.92			WQ Time: 1230
12.5% Sample	25.3	8.88			WQ Signoff: AJR
25% Sample	25.3	8.82			
50% Sample	25.3	8.78			
100% Sample	25.3	8.67			
Meter ID:	6	PH03			
Lab Water Control	25.4	9.91			Date: 8/7/08
6.25% Sample	25.4	9.99			WQ Time: 1113
12.5% Sample	25.4	9.93			WQ Signoff: ~~DAP~~
25% Sample	25.4	9.80			
50% Sample	25.4	9.65			
100% Sample	25.4	~~9.23~~ ~~PH03~~ 9.30			
Meter ID:	6	PH03			
Lab Water Control	25.4	10.22	11.2	171	Date 8/8/08
6.25% Sample	25.4	10.51	12.6	~~350~~ 287	Termination Time 1400
12.5% Sample	25.4	10.52	13.3	~~354~~ 350	Termination Signoff AB
25% Sample	25.4	10.36	11.5	~~287~~ 254	WQ Time 1600 1705
50% Sample	25.4	10.51	12.8	751	WQ Signoff: HTA cy
100% Sample	25.4	9.93	16.3	142	
Meter ID:	6	PH09	D014	EC05	

Initial Test Conditions	Alkalinity	Hardness	Light Intensity (ftc)
	✓ 219	✓ 330	344

CETIS Summary Report

Selenastrum Growth Test — **Pacific EcoRisk**

Test Run No:	10-5186-3457	**Test Type:**	Cell Growth	**Analyst:**	John Jirasritumrong
Start Date:	31 Jul-08 11:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	04 Aug-08 12:30	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Duration:	4d 1h	**Source:**	In-House Culture	**Age:**	7

Sample No:	01-3232-9006	**Code:**	NWDS-003	**Client:**	URS
Sample Date:	30 Jul-08 00:45	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	35h (5 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
07-6291-5247	Cell Density	100	>100	N/A	59.8%	1	Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
01-1157-0727	Cell Density	IC2.5	13.2	2.67	13.8	7.55	Linear Interpolation (ICPIN)
		IC5	14	2.83	15.1	7.15	
		IC10	15.5	3.17	17.7	6.47	
		IC15	16.9	3.5	20.3	5.9	
		IC20	18.4	3.83	22.9	5.43	
		IC25	19.9	4.16	25.7	5.03	
		IC40	24.3	5.16	N/A	4.11	
		IC50	>100	N/A	N/A	<1	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.41E+6	2.35E+6	2.47E+6	2.23E+6	2.63E+6	3.04E+4	1.67E+5	6.92%	0.0%
6.25		4	3.12E+6	3.03E+6	3.20E+6	2.88E+6	3.39E+6	4.19E+4	2.30E+5	7.37%	-29.3%
12.5		4	2.94E+6	2.38E+6	3.50E+6	7.23E+5	3.89E+6	2.74E+5	1.50E+6	51.1%	-21.8%
25		4	1.53E+6	1.34E+6	1.72E+6	1.10E+6	2.25E+6	9.26E+4	5.07E+5	33.1%	36.4%
50		4	1.53E+6	1.15E+6	1.91E+6	7.87E+5	2.95E+6	1.85E+5	1.01E+6	66.2%	36.5%
100		4	1.82E+6	1.51E+6	2.13E+6	1.01E+6	2.98E+6	1.52E+5	8.31E+5	45.6%	24.4%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.63E+6	2.36E+6	2.42E+6	2.23E+6
6.25		2.88E+6	3.39E+6	2.98E+6	3.21E+6
12.5		3.84E+6	3.89E+6	3.29E+6	7.23E+5
25		1.51E+6	1.10E+6	1.27E+6	2.25E+6
50		2.95E+6	8.15E+5	7.87E+5	1.57E+6
100		1.72E+6	1.01E+6	2.98E+6	1.58E+6

CETIS Analytical Report

Test Code: 11-0929-9390/29451

Selenastrum Growth Test — Pacific EcoRisk

Analysis No:	07-6291-5247	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:04	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	100	>100	N/A	1	59.8%

Dunnett's Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	P-Value	Decision(5%)
Lab Water		6.25	-1.18	2.41	1440000	0.9890	Non-Significant Effect
		12.5	-0.878	2.41	1440000	0.9760	Non-Significant Effect
		25	1.47	2.41	1440000	0.2390	Non-Significant Effect
		50	1.47	2.41	1440000	0.2380	Non-Significant Effect
		100	0.981	2.41	1440000	0.4300	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	9.821524E+12	1.964305E+12	5	2.74	0.0521	Non-Significant Effect
Error	1.291334E+13	7.174078E+11	18			
Total	2.2734863073E+13	2.6817125417E+12	23			

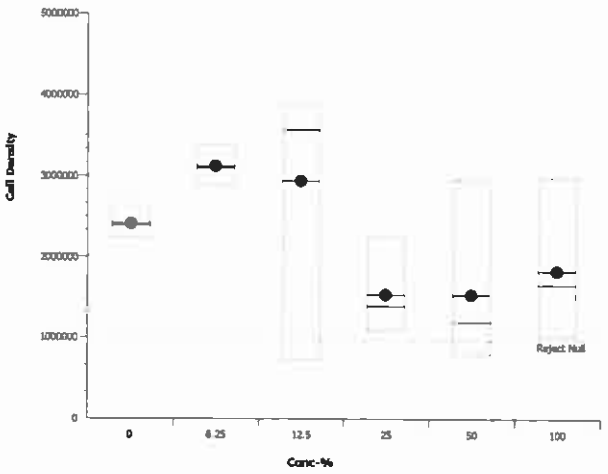
ANOVA Assumptions

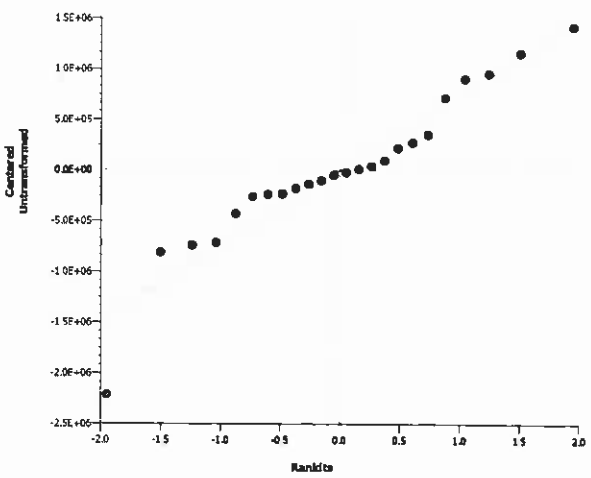
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	14.4	15.1	0.0132	Equal Variances
Distribution	Shapiro-Wilk Normality	0.931		0.1020	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.41E+6	2.35E+6	2.47E+6	2.23E+6	2.63E+6	3.10E+4	1.67E+5	6.92%	0.0%
6.25		4	3.12E+6	3.03E+6	3.20E+6	2.88E+6	3.39E+6	4.26E+4	2.30E+5	7.37%	-29.3%
12.5		4	2.94E+6	2.37E+6	3.51E+6	7.23E+5	3.89E+6	2.79E+5	1.50E+6	51.1%	-21.8%
25		4	1.53E+6	1.34E+6	1.73E+6	1.10E+6	2.25E+6	9.42E+4	5.07E+5	33.1%	36.4%
50		4	1.53E+6	1.15E+6	1.92E+6	7.87E+5	2.95E+6	1.88E+5	1.01E+6	66.2%	36.5%
100		4	1.82E+6	1.51E+6	2.14E+6	1.01E+6	2.98E+6	1.54E+5	8.31E+5	45.6%	24.4%

Graphics





CETIS Analytical Report

Selenastrum Growth Test — Pacific EcoRisk

Analysis No:	01-1157-0727	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:04	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	7747401	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC2.5	13.2	2.67	13.8	7.55	7.25	37.5
IC5	14	2.83	15.1	7.15	6.63	35.3
IC10	15.5	3.17	17.7	6.47	5.66	31.6
IC15	16.9	3.5	20.3	5.9	4.93	28.6
IC20	18.4	3.83	22.9	5.43	4.37	26.1
IC25	19.9	4.16	25.7	5.03	3.89	24
IC40	24.3	5.16	N/A	4.11	N/A	19.4
IC50	>100	N/A	N/A	<1	N/A	N/A

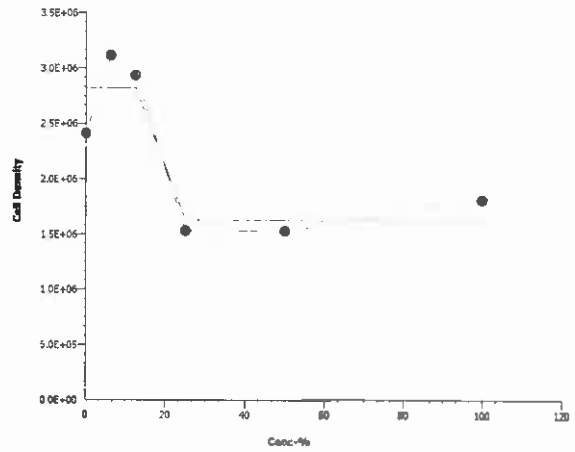
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.41E+6	2.23E+6	2.63E+6	3.04E+4	1.67E+5	6.92%	0.0%
6.25		4	3.12E+6	2.88E+6	3.39E+6	4.19E+4	2.30E+5	7.37%	-29.3%
12.5		4	2.94E+6	7.23E+5	3.89E+6	2.74E+5	1.50E+6	51.1%	-21.8%
25		4	1.53E+6	1.10E+6	2.25E+6	9.26E+4	5.07E+5	33.1%	36.4%
50		4	1.53E+6	7.87E+5	2.95E+6	1.65E+5	1.01E+6	66.2%	36.5%
100		4	1.82E+6	1.01E+6	2.98E+6	1.52E+5	8.31E+5	45.6%	24.4%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.63E+6	2.36E+6	2.42E+6	2.23E+6
6.25		2.88E+6	3.39E+6	2.98E+6	3.21E+6
12.5		3.84E+6	3.89E+6	3.29E+6	7.23E+5
25		1.51E+6	1.10E+6	1.27E+6	2.25E+6
50		2.95E+6	8.15E+5	7.87E+5	1.57E+6
100		1.72E+6	1.01E+6	2.98E+6	1.58E+6

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: URS: DMC
Initial Count: 10.000 cells/mL
Test Material: NWDS-003-TOX
Enumerating Scientist: RVD
Test Start Date: 7/31/08
Start Time: 11:45
Project #: 13489
Test End Date: 8/4/08
End Time: 1230
Test ID #: 29451

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	2.63	2.36	2.42	2.23	2.41
6.25%	2.88	3.39	2.98	3.21	3.11
12.5%	3.84	3.89	3.29	0.723	2.94
25%	1.51	1.10	1.27	2.25	1.53
50%	2.95	0.815	0.787	1.57	1.53
100%	1.72	1.01	2.98	1.58	1.82
This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	2.41	6.9	8-5-08	1700	AB

CETIS Summary Report

Selenastrum Growth Test — **Pacific EcoRisk**

Test Run No:	10-5186-3457	**Test Type:**	Cell Growth	**Analyst:**	John Jirasritumrong
Start Date:	31 Jul-08 11:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	04 Aug-08 12:30	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Duration:	4d 1h	**Source:**	In-House Culture	**Age:**	7

Sample No:	01-3232-9006	**Code:**	NWDS-003	**Client:**	URS
Sample Date:	30 Jul-08 00:45	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	35h (5 °C)	**Station:**	NWDS		

Comments: Hemacytometer counts.

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
17-7483-9475	Cell Density	12.5	25	17.7	42.4%	8	Steel Many-One Rank Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
13-8010-8638	Cell Density	IC2.5	4.7	N/A	17.9	21.3	Linear Interpolation (ICPIN)
		IC5	7.29	N/A	17	13.7	
		IC10	10.4	1.11	16.6	9.61	
		IC15	12.8	3.38	16.5	7.81	
		IC20	13.7	4.09	17.3	7.27	
		IC25	14.7	4.5	18.2	6.81	
		IC40	17.5	5.39	20.7	5.71	
		IC50	19.4	5.88	22.5	5.16	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	3.61E+6	3.52E+6	3.70E+6	3.24E+6	3.80E+6	4.59E+4	2.51E+5	6.96%	0.0%
6.25		4	3.49E+6	3.32E+6	3.66E+6	2.89E+6	3.89E+6	8.10E+4	4.44E+5	12.7%	3.32%
12.5		4	3.13E+6	2.44E+6	3.82E+6	3.70E+5	4.25E+6	3.38E+5	1.85E+6	59.2%	13.4%
25		4	6.08E+5	4.22E+5	7.93E+5	2.00E+5	1.31E+6	9.08E+4	4.97E+5	81.9%	83.2%
50		4	7.18E+5	3.91E+5	1.04E+6	2.10E+5	2.02E+6	1.60E+5	8.74E+5	122.0%	80.1%
100		4	8.50E+5	7.02E+5	9.98E+5	3.70E+5	1.32E+6	7.22E+4	3.96E+5	46.5%	76.5%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	3.80E+6	3.24E+6	3.71E+6	3.69E+6
6.25		2.89E+6	3.89E+6	3.75E+6	3.43E+6
12.5		4.25E+6	4.14E+6	3.75E+6	3.70E+5
25		6.00E+5	2.00E+5	3.20E+5	1.31E+6
50		2.02E+6	2.20E+5	2.10E+5	4.20E+5
100		7.60E+5	3.70E+5	1.32E+6	9.50E+5

CETIS Analytical Report

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	17-7483-9475	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	30 Sep-08 12:45	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	12.5	25	17.7	8	42.4%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	18	10	0	0.8330	Non-Significant Effect
		12.5	21	10	0	0.9780	Non-Significant Effect
		25*	10	10	0	0.0417	Significant Effect
		50*	10	10	0	0.0417	Significant Effect
		100*	10	10	0	0.0417	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	4.385127E+13	8.770254E+12	5	10.8	0.0001	Significant Effect
Error	1.455882E+13	8.088236E+11	18			
Total	5.8410096656E+13	9.579077632E+12	23			

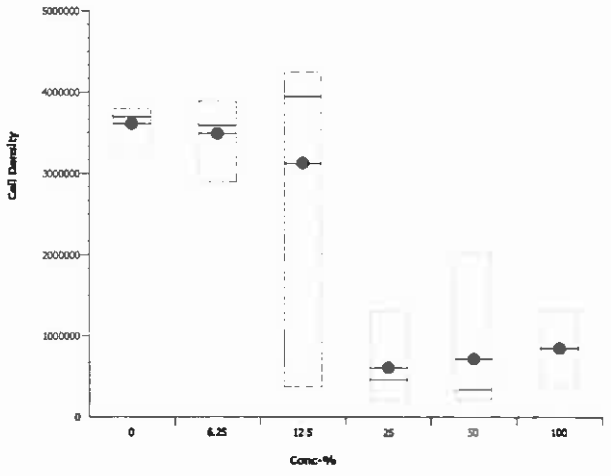
ANOVA Assumptions

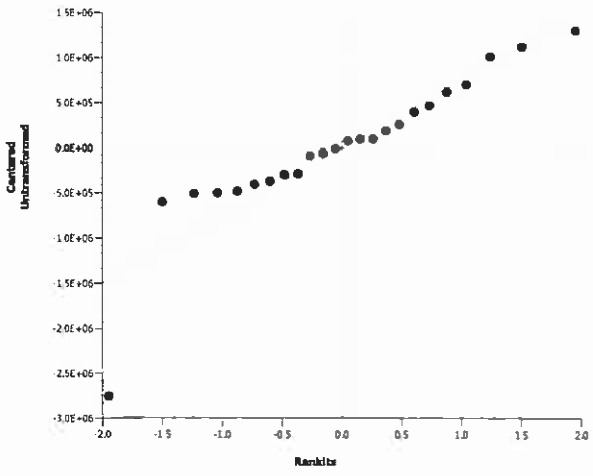
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	14.4	15.1	0.0135	Equal Variances
Distribution	Shapiro-Wilk Normality	0.859		0.0033	Non-normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	3.61E+6	3.51E+6	3.71E+6	3.24E+6	3.80E+6	4.67E+4	2.51E+5	6.96%	0.0%
6.25		4	3.49E+6	3.32E+6	3.66E+6	2.89E+6	3.89E+6	8.24E+4	4.44E+5	12.7%	3.32%
12.5		4	3.13E+6	2.42E+6	3.83E+6	3.70E+5	4.25E+6	3.44E+5	1.85E+6	59.2%	13.4%
25		4	6.08E+5	4.18E+5	7.97E+5	2.00E+5	1.31E+6	9.24E+4	4.97E+5	81.9%	83.2%
50		4	7.18E+5	3.85E+5	1.05E+6	2.10E+5	2.02E+6	1.62E+5	8.74E+5	122.0%	80.1%
100		4	8.50E+5	7.00E+5	1.00E+6	3.70E+5	1.32E+6	7.35E+4	3.96E+5	46.5%	76.5%

Graphics





CETIS Analytical Report

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	13-8010-8638	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	30 Sep-08 12:45	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	5334240	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC2.5	4.7	N/A	17.9	21.3	5.59	N/A
IC5	7.29	N/A	17	13.7	5.87	N/A
IC10	10.4	1.11	16.6	9.61	6.04	90.1
IC15	12.8	3.38	16.5	7.81	6.06	29.6
IC20	13.7	4.09	17.3	7.27	5.76	24.4
IC25	14.7	4.5	18.2	6.81	5.5	22.2
IC40	17.5	5.39	20.7	5.71	4.83	18.5
IC50	19.4	5.88	22.5	5.16	4.45	17

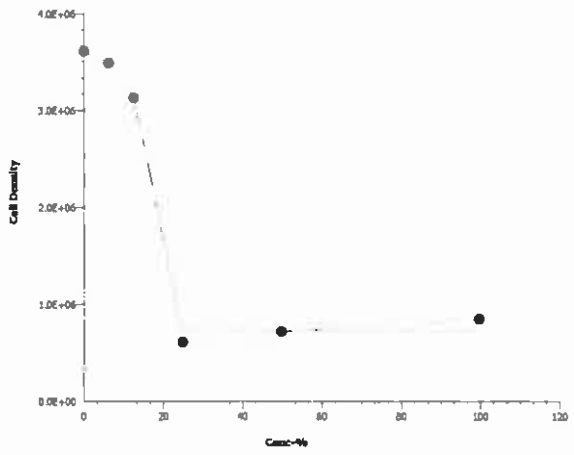
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	3.61E+6	3.24E+6	3.80E+6	4.59E+4	2.51E+5	6.96%	0.0%
6.25		4	3.49E+6	2.89E+6	3.89E+6	8.10E+4	4.44E+5	12.7%	3.32%
12.5		4	3.13E+6	3.70E+5	4.25E+6	3.38E+5	1.85E+6	59.2%	13.4%
25		4	6.08E+5	2.00E+5	1.31E+6	9.08E+4	4.97E+5	81.9%	83.2%
50		4	7.18E+5	2.10E+5	2.02E+6	1.60E+5	8.74E+5	122.0%	80.1%
100		4	8.50E+5	3.70E+5	1.32E+6	7.22E+4	3.96E+5	46.5%	76.5%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	3.80E+6	3.24E+6	3.71E+6	3.69E+6
6.25		2.89E+6	3.89E+6	3.75E+6	3.43E+6
12.5		4.25E+6	4.14E+6	3.75E+6	3.70E+5
25		6.00E+5	2.00E+5	3.20E+5	1.31E+6
50		2.02E+6	2.20E+5	2.10E+5	4.20E+5
100		7.60E+5	3.70E+5	1.32E+6	9.50E+5

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: **URS: DMC** Initial Count: 10,000 cells/mL

Test Material: NWDS-003-TOX Enumerating Scientist: ~~SA~~ KO

Test Start Date: 7/31/08 Start Time: 1145 Project #: 13489

Test End Date: 8/4/08 End Time: 1230 Test ID #: 29451

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	3.80	3.24	3.71	3.69	3.61
6.25%	2.89	3.89	3.75	3.43	3.49
12.5%	4.25	4.14	3.75	0.37	3.128
25%	0.60	0.20	0.32	1.31	0.608
50%	2.02	0.22	0.21	0.42	0.718
100%	0.76	0.37	1.32	0.95	0.850
This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	3.61	6.96	8/07/08	15:50	KO

Hemocytometer Counts

Selenastrum capricornutum Algal Toxicity Test Water Quality Data

Client: URS: DMC Test ID #: 29451 Test Date: 7/31/08

Test Material: NWDS-003-TOX Project #: 13489 Control/Diluent: Algal medium, W/O EDTA

Test Treatment	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Sign-Off
Lab Water Control	25.5	7.45	7.9	134	Date: 7/31/08
6.25% Sample	25.5	7.72	8.0	185	Sample ID: 20180
12.5% Sample	25.5	7.75	8.1	234	Test Solution Prep: QD
25% Sample	25.5	7.85	8.1	342	New WQ: NSM
50% Sample	25.5	7.91	8.2	530	Innoculation Time: 11:45
100% Sample	25.5	7.95	8.4	900	Innoculation Signoff: KO
Meter ID:	19A	pH03	DO10	EC05	
Lab Water Control	24.9	7.82			Date: 8.01.08
6.25% Sample	24.9	7.86			WQ Time: 1200
12.5% Sample	24.9	7.93			WQ Signoff: AJR
25% Sample	24.9	7.99			
50% Sample	24.9	8.05			
100% Sample	24.9	8.10			
Meter ID:	15A	pH11			
Lab Water Control	24.7	8.85			Date: 8/2/08
6.25% Sample	24.7	9.05			WQ Time: 1025
12.5% Sample	24.7	9.13			WQ Signoff: HTA
25% Sample	24.7	8.95			
50% Sample	24.7	8.83			
100% Sample	24.7	8.72			
Meter ID:	41	pH09			
Lab Water Control	24.9	9.56			Date: 8/3/08
6.25% Sample	24.9	9.88			WQ Time: 1045
12.5% Sample	24.9	9.93			WQ Signoff: KW
25% Sample	24.9	9.92			
50% Sample	24.9	9.75			
100% Sample	24.9	9.41			
Meter ID:	~~15A~~ 19A	pH11			
Lab Water Control	24.7	10.00	10.2	150	Date: 8/4/08
6.25% Sample	24.7	10.16	10.4	197	Termination Time: 1230
12.5% Sample	24.7	10.03	10.8	240	Termination Signoff: HA
25% Sample	24.7	9.98	11.1	342	WQ Time: 0946
50% Sample	24.7	10.39	13.7	537	WQ Signoff: HTA
100% Sample	24.7	9.61	12.4	867	
Meter ID:	41	pH09	DO10	EC05	

Initial Test Conditions	Alkalinity	Hardness	Light Intensity (ftc)
	✓ 114	✓ 211	415

CETIS Summary Report

Selenastrum Growth Test — **Pacific EcoRisk**

Test Run No:	19-7777-8161	**Test Type:**	Cell Growth	**Analyst:**	John Jirasritumrong
Start Date:	05 Aug-08 11:05	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	09 Aug-08 12:30	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Duration:	4d 1h	**Source:**	In-House Culture	**Age:**	6

Sample No:	01-3232-9006	**Code:**	NWDS-003	**Client:**	URS
Sample Date:	30 Jul-08 00:45	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	6d 10h (5 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
02-2660-6569	Cell Density	50	100	70.7	33.0%	2	Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
07-5406-8111	Cell Density	IC2.5	0.642	0.357	1.58	156	Linear Interpolation (ICPIN)
		IC5	1.28	0.715	3.17	77.9	
		IC10	2.57	1.43	6.33	39	
		IC15	3.85	2.14	10.5	26	
		IC20	5.13	2.86	90.6	19.5	
		IC25	7.14	3.14	123	14	
		IC40	>100	N/A	N/A	<1	
		IC50	>100	N/A	N/A	<1	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.67E+6	2.60E+6	2.74E+6	2.44E+6	2.85E+6	3.41E+4	1.87E+5	6.99%	0.0%
6.25		4	2.02E+6	1.90E+6	2.14E+6	1.55E+6	2.33E+6	6.06E+4	3.32E+5	16.4%	24.3%
12.5		4	1.51E+6	1.24E+6	1.78E+6	8.50E+5	2.54E+6	1.32E+5	7.22E+5	47.7%	43.4%
25		4	1.94E+6	1.63E+6	2.24E+6	1.24E+6	3.04E+6	1.49E+5	8.18E+5	42.2%	27.4%
50		4	2.24E+6	2.08E+6	2.40E+6	1.68E+6	2.61E+6	7.94E+4	4.35E+5	19.4%	16.0%
100		4	1.75E+6	1.64E+6	1.85E+6	1.39E+6	2.08E+6	5.25E+4	2.88E+5	16.5%	34.6%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.44E+6	2.79E+6	2.60E+6	2.85E+6
6.25		2.09E+6	1.55E+6	2.11E+6	2.33E+6
12.5		2.54E+6	1.37E+6	8.50E+5	1.29E+6
25		1.40E+6	1.24E+6	3.04E+6	2.07E+6
50		2.12E+6	2.61E+6	2.56E+6	1.68E+6
100		2.08E+6	1.69E+6	1.39E+6	1.83E+6

CETIS Analytical Report

Selenastrum Growth Test — Pacific EcoRisk

Analysis No:	02-2660-6569	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:36	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	50	100	70.7	2	33.0%

Dunnett's Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	P-Value	Decision(5%)
Lab Water		6.25	1.78	2.41	881000	0.1510	Non-Significant Effect
		12.5*	3.16	2.41	881000	0.0110	Significant Effect
		25	2	2.41	881000	0.1040	Non-Significant Effect
		50	1.17	2.41	881000	0.3500	Non-Significant Effect
		100*	2.52	2.41	881000	0.0403	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	3.242433E+12	6.484866E+11	5	2.42	0.0761	Non-Significant Effect
Error	4.8233E+12	2.679611E+11	18			
Total	8.0657336238E+12	9.1644775629E+11	23			

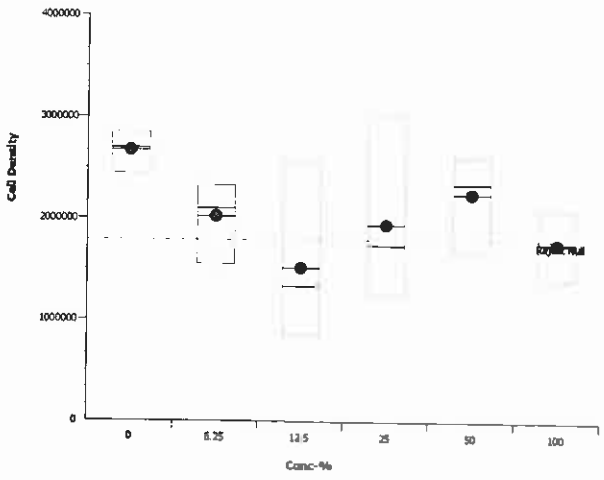
ANOVA Assumptions

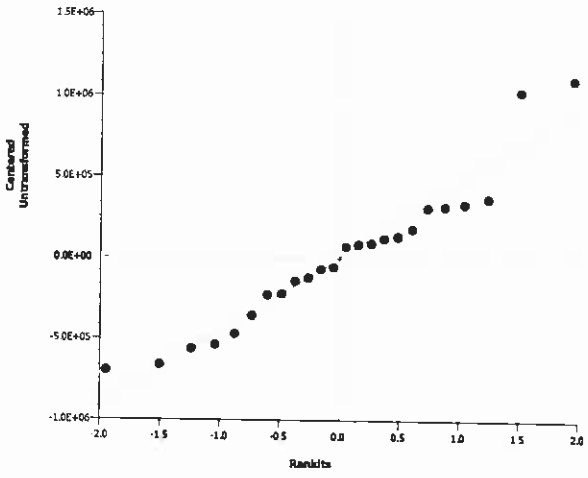
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	7.62	15.1	0.1780	Equal Variances
Distribution	Shapiro-Wilk Normality	0.937		0.1370	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.67E+6	2.60E+6	2.74E+6	2.44E+6	2.85E+6	3.47E+4	1.87E+5	6.99%	0.0%
6.25		4	2.02E+6	1.89E+6	2.15E+6	1.55E+6	2.33E+6	6.16E+4	3.32E+5	16.4%	24.3%
12.5		4	1.51E+6	1.24E+6	1.79E+6	8.50E+5	2.54E+6	1.34E+5	7.22E+5	47.7%	43.4%
25		4	1.94E+6	1.63E+6	2.25E+6	1.24E+6	3.04E+6	1.52E+5	8.18E+5	42.2%	27.4%
50		4	2.24E+6	2.08E+6	2.41E+6	1.68E+6	2.61E+6	8.07E+4	4.35E+5	19.4%	16.0%
100		4	1.75E+6	1.64E+6	1.86E+6	1.39E+6	2.08E+6	5.34E+4	2.88E+5	16.5%	34.6%

Graphics





CETIS Analytical Report

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	07-5406-8111	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:36	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	453528	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC2.5	0.642	0.357	1.58	156	63.2	280
IC5	1.28	0.715	3.17	77.9	31.6	140
IC10	2.57	1.43	6.33	39	15.8	70
IC15	3.85	2.14	10.5	26	9.53	46.6
IC20	5.13	2.86	90.6	19.5	1.1	35
IC25	7.14	3.14	123	14	0.811	31.9
IC40	>100	N/A	N/A	<1	N/A	N/A
IC50	>100	N/A	N/A	<1	N/A	N/A

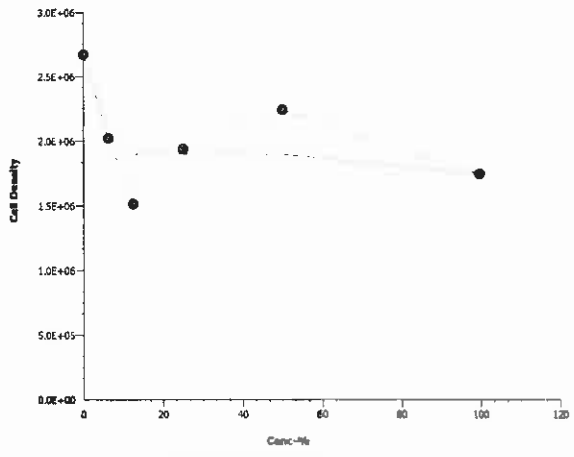
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.67E+6	2.44E+6	2.85E+6	3.41E+4	1.87E+5	6.99%	0.0%
6.25		4	2.02E+6	1.55E+6	2.33E+6	6.06E+4	3.32E+5	16.4%	24.3%
12.5		4	1.51E+6	8.50E+5	2.54E+6	1.32E+5	7.22E+5	47.7%	43.4%
25		4	1.94E+6	1.24E+6	3.04E+6	1.49E+5	8.18E+5	42.2%	27.4%
50		4	2.24E+6	1.68E+6	2.61E+6	7.94E+4	4.35E+5	19.4%	16.0%
100		4	1.75E+6	1.39E+6	2.08E+6	5.25E+4	2.88E+5	16.5%	34.6%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.44E+6	2.79E+6	2.60E+6	2.85E+6
6.25		2.09E+6	1.55E+6	2.11E+6	2.33E+6
12.5		2.54E+6	1.37E+6	8.50E+5	1.29E+6
25		1.40E+6	1.24E+6	3.04E+6	2.07E+6
50		2.12E+6	2.61E+6	2.56E+6	1.68E+6
100		2.08E+6	1.69E+6	1.39E+6	1.83E+6

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: **URS: DMC** Initial Count: 10,000 cells/mL

Test Material: NWDS-003-TOX Enumerating Scientist: ~~SA~~

Test Start Date: 8/5/08 Start Time: 1105 Project #: 13489

Test End Date: 8/6/08 End Time: 1230 Test ID #: ~~29451~~ 29783

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	2.44	2.79	2.60	2.85	2.67
6.25%	2.09	1.55	2.11	2.33	2.02
12.5%	2.54	1.37	0.850	1.29	1.51
25%	1.40	1.24	3.04	2.07	1.94
50%	2.12	2.61	2.56	1.68	2.24
100%	2.08	1.69	1.39	1.83	1.75
This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	2.67	7.0%	8/9/08	1730	

Selenastrum capricornutum Algal Toxicity Test Water Quality Data

Client: URS: DMC Test ID #: ~~29451~~ MB 29783 Test Date: 8/5/08

Test Material: NWDS-003-TOX Project #: 13489 Control/Diluent: Algal medium, W/O EDTA

Test Treatment	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Sign-Off
Lab Water Control	24.8	7.59	8.7	156	Date: 8/5/08
6.25% Sample	24.8	7.73	8.7	200	Sample ID: 20180
12.5% Sample	24.8	7.64	8.7	243	Test Solution Prep: MR
25% Sample	24.8	7.60	8.7	357	New WQ: NC
50% Sample	24.8	7.64	8.8	529	Innoculation Time: 1105
100% Sample	24.8	7.66	8.8	890	Innoculation Signoff: MR
Meter ID:	6	pH09	DO12	EC04	
Lab Water Control	25.0	7.47		~~159~~ MR	Date: 8/6/08
6.25% Sample	25.0	7.65		205 AJR	WQ Time: 1300
12.5% Sample	25.0	7.70		248 AJR	WQ Signoff: AJR
25% Sample	25.0	7.90		363 AJR	
50% Sample	25.0	8.05		540 AJR	
100% Sample	25.0	8.15		~~918~~ MR	
Meter ID:	11	PH03		EC05 MR	
Lab Water Control	25.0	8.56			Date: 8/7/08
6.25% Sample	25.0	8.86			WQ Time: 1147
12.5% Sample	25.0	8.92			WQ Signoff: DAP
25% Sample	25.0	8.90			
50% Sample	25.0	8.69			
100% Sample	25.0	8.67			
Meter ID:	11	PH03			
Lab Water Control	24.9	10.14			Date: 8/8/08
6.25% Sample	24.9	10.20			WQ Time: 1650
12.5% Sample	24.9	10.15			WQ Signoff: JJ
25% Sample	24.9	10.03			
50% Sample	24.9	9.94			
100% Sample	24.9	9.71			
Meter ID:	11	pH11			
Lab Water Control	25.1	10.44	9.6	189	Date: 8/9/08
6.25% Sample	25.1	10.09	10.2	208	Termination Time: 1230
12.5% Sample	25.1	9.73	8.6	257	Termination Signoff: SA
25% Sample	25.1	9.93	8.8	345	WQ Time: 1445
50% Sample	25.1	10.33	9.4	536	WQ Signoff: CJ
100% Sample	25.1	9.76	9.3	845	
Meter ID:	11	pH09	DO14	EC05	

Initial Test Conditions	Alkalinity	Hardness	Light Intensity (ftc)
	✓ 112	✓ 200	405

CETIS Summary Report

Selenastrum Growth Test — Pacific EcoRisk

Test Run No:	01-0348-4871	Test Type:	Cell Growth	Analyst:	John Jirasritumrong
Start Date:	01 Aug-08 14:05	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Not Applicable
Ending Date:	05 Aug-08 14:15	Species:	Selenastrum capricornutum	Brine:	Not Applicable
Duration:	4d 0h	Source:	In-House Culture	Age:	7

Sample No:	20-9391-4618	Code:	NWDS-004	Client:	URS
Sample Date:	31 Jul-08 06:40	Material:	Ambient Water	Project:	13489
Receive Date:	31 Jul-08 12:04	Source:	URS		
Sample Age:	31h (13.4 °C)	Station:	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
03-5883-1064	Cell Density	100	>100	N/A	14.8%	1	Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
19-3048-8839	Cell Density	IC2.5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		IC5	>100	N/A	N/A	<1	
		IC10	>100	N/A	N/A	<1	
		IC15	>100	N/A	N/A	<1	
		IC20	>100	N/A	N/A	<1	
		IC25	>100	N/A	N/A	<1	
		IC40	>100	N/A	N/A	<1	
		IC50	>100	N/A	N/A	<1	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.57E+6	2.53E+6	2.61E+6	2.47E+6	2.69E+6	1.92E+4	1.05E+5	4.1%	0.0%
6.25		4	3.00E+6	2.96E+6	3.04E+6	2.88E+6	3.16E+6	2.18E+4	1.19E+5	3.97%	-16.8%
12.5		4	3.29E+6	3.24E+6	3.33E+6	3.16E+6	3.46E+6	2.30E+4	1.26E+5	3.84%	-27.9%
25		4	3.23E+6	3.14E+6	3.32E+6	3.07E+6	3.59E+6	4.47E+4	2.45E+5	7.58%	-25.7%
50		4	3.42E+6	3.33E+6	3.50E+6	3.25E+6	3.73E+6	4.09E+4	2.24E+5	6.56%	-33.1%
100		4	3.45E+6	3.31E+6	3.60E+6	2.91E+6	3.80E+6	7.00E+4	3.84E+5	11.1%	-34.5%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.47E+6	2.49E+6	2.62E+6	2.69E+6
6.25		2.88E+6	3.16E+6	3.01E+6	2.95E+6
12.5		3.27E+6	3.46E+6	3.25E+6	3.16E+6
25		3.59E+6	3.09E+6	3.07E+6	3.16E+6
50		3.25E+6	3.73E+6	3.43E+6	3.26E+6
100		3.61E+6	3.80E+6	3.49E+6	2.91E+6

CETIS Analytical Report

Selenastrum Growth Test — Pacific EcoRisk

Analysis No: 03-5883-1064 | Endpoint: Cell Density | CETIS Version: CETISv1.6.5
Analyzed: 04 Sep-08 16:25 | Analysis: Parametric-Control vs Treatments | Official Results: Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	100	>100	N/A	1	14.8%

Dunnett's Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	P-Value	Decision(5%)
Lab Water		6.25	-2.74	2.41	380000	1.0000	Non-Significant Effect
		12.5	-4.55	2.41	380000	1.0000	Non-Significant Effect
		25	-4.19	2.41	380000	1.0000	Non-Significant Effect
		50	-5.39	2.41	380000	1.0000	Non-Significant Effect
		100	-5.61	2.41	380000	1.0000	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	2.194733E+12	4.389467E+11	5	8.83	0.0002	Significant Effect
Error	8.952E+11	49733330000	18			
Total	3.0899332710E+12	4.8867999334E+11	23			

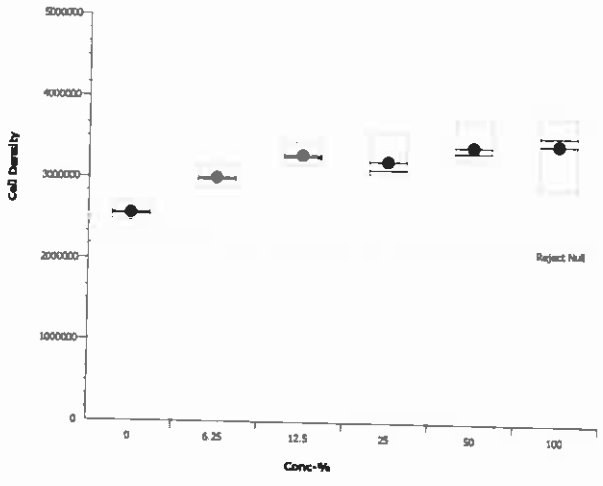
ANOVA Assumptions

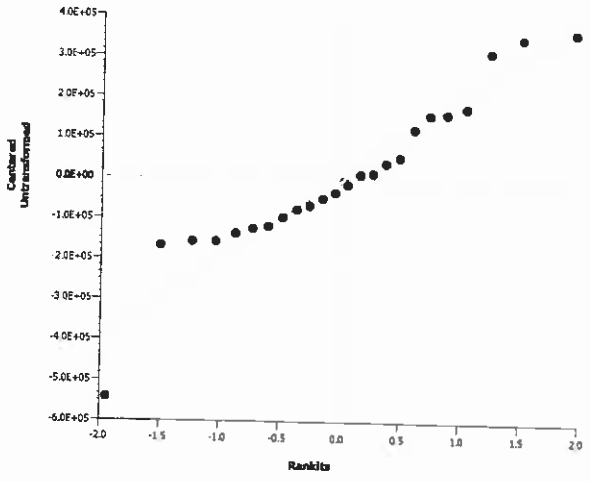
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	6.94	15.1	0.2250	Equal Variances
Distribution	Shapiro-Wilk Normality	0.933		0.1160	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.57E+6	2.53E+6	2.61E+6	2.47E+6	2.69E+6	1.96E+4	1.05E+5	4.1%	0.0%
6.25		4	3.00E+6	2.95E+6	3.05E+6	2.88E+6	3.16E+6	2.21E+4	1.19E+5	3.97%	-16.8%
12.5		4	3.29E+6	3.24E+6	3.33E+6	3.16E+6	3.46E+6	2.34E+4	1.26E+5	3.84%	-27.9%
25		4	3.23E+6	3.13E+6	3.32E+6	3.07E+6	3.59E+6	4.54E+4	2.45E+5	7.58%	-25.7%
50		4	3.42E+6	3.33E+6	3.50E+6	3.25E+6	3.73E+6	4.16E+4	2.24E+5	6.56%	-33.1%
100		4	3.45E+6	3.31E+6	3.60E+6	2.91E+6	3.80E+6	7.12E+4	3.84E+5	11.1%	-34.5%

Graphics





CETIS Analytical Report

Selenastrum Growth Test — Pacific EcoRisk

Analysis No:	19-3048-8839	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:25	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	7090379	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC2.5	>100	N/A	N/A	<1	N/A	N/A
IC5	>100	N/A	N/A	<1	N/A	N/A
IC10	>100	N/A	N/A	<1	N/A	N/A
IC15	>100	N/A	N/A	<1	N/A	N/A
IC20	>100	N/A	N/A	<1	N/A	N/A
IC25	>100	N/A	N/A	<1	N/A	N/A
IC40	>100	N/A	N/A	<1	N/A	N/A
IC50	>100	N/A	N/A	<1	N/A	N/A

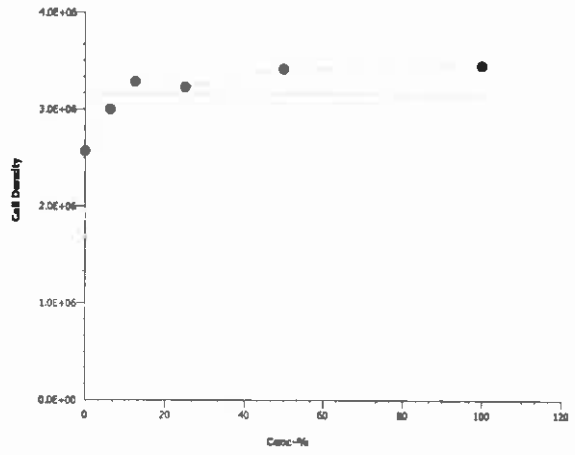
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.57E+6	2.47E+6	2.69E+6	1.92E+4	1.05E+5	4.1%	0.0%
6.25		4	3.00E+6	2.88E+6	3.16E+6	2.18E+4	1.19E+5	3.97%	-16.8%
12.5		4	3.29E+6	3.16E+6	3.46E+6	2.30E+4	1.26E+5	3.84%	-27.9%
25		4	3.23E+6	3.07E+6	3.59E+6	4.47E+4	2.45E+5	7.58%	-25.7%
50		4	3.42E+6	3.25E+6	3.73E+6	4.09E+4	2.24E+5	6.56%	-33.1%
100		4	3.45E+6	2.91E+6	3.80E+6	7.00E+4	3.84E+5	11.1%	-34.5%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.47E+6	2.49E+6	2.62E+6	2.69E+6
6.25		2.88E+6	3.16E+6	3.01E+6	2.95E+6
12.5		3.27E+6	3.46E+6	3.25E+6	3.16E+6
25		3.59E+6	3.09E+6	3.07E+6	3.16E+6
50		3.25E+6	3.73E+6	3.43E+6	3.26E+6
100		3.61E+6	3.80E+6	3.49E+6	2.91E+6

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: **URS: DMC** Initial Count: 10,000 cells/mL

Test Material: NWDS-004-TOX Enumerating Scientist: SAB

Test Start Date: 8/1/08 Start Time: 1405 Project #: 13489

Test End Date: 8/5/08 End Time: 1415 Test ID #: 29452

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	2.47	2.49	2.62	2.69	2.57
6.25%	2.88	3.16	3.01	2.95	3.00
12.5%	3.27	3.46	3.25	3.16	3.28
25%	3.59	3.09	3.07	3.16	3.23
50%	3.25	3.73	3.43	3.26	3.42
100%	3.61	3.80	3.49	2.91	3.45
This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	2.57	4.1	8-5-08	1607	XAB

Selenastrum capricornutum Algal Toxicity Test Water Quality Data

Client: URS: DMC Test ID #: 29452 Test Date: 8/01/08

Test Material: NWDS-004-TOX Project #: 13489 Control/Diluent: Algal medium, W/O EDTA R351

Test Treatment	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Sign-Off
Lab Water Control	24.7	7.55	8.1	161	Date 8/01/08
6.25% Sample	24.7	7.69	8.4	188	Sample ID 20194
12.5% Sample	24.7	7.65	8.4	217	Test Solution Prep. KO
25% Sample	24.7	7.73	8.4	269	New WQ: ~~AT~~
50% Sample	24.7	7.85	8.3	376	Innoculation Time 1405
100% Sample	24.7	8.01	8.4	588	Innoculation Signoff: KO
Meter ID:	12	pH09	DO10	EC05	
Lab Water Control	24.7	8.18			Date: 8/2/08
6.25% Sample	24.7	8.04			WQ Time: 1045
12.5% Sample	24.7	7.97			WQ Signoff: HTA
25% Sample	24.7	7.97			
50% Sample	24.7	8.02			
100% Sample	24.7	8.17			
Meter ID:	41	PH09			
Lab Water Control	25.0	9.57			Date: 8/3/08
6.25% Sample	25.0	8.40			WQ Time: 1015
12.5% Sample	25.0	8.60			WQ Signoff: KW
25% Sample	25.0	8.71			
50% Sample	25.0	8.65			
100% Sample	25.0	8.62			
Meter ID:	12	PH11			
Lab Water Control	24.7	~~9.87~~ 9.87			Date: 8/4/08
6.25% Sample	24.7	9.65			WQ Time: 0925
12.5% Sample	24.7	9.72			WQ Signoff: HTA
25% Sample	24.7	9.63			
50% Sample	24.7	9.57			
100% Sample	24.7	9.33			
Meter ID:	41	PH09			
Lab Water Control	24.8	~~10.10~~ 10.24	13.7	~~184~~ 178	Date: 8/5/08
6.25% Sample	24.8	~~9.90~~ 10.16	12.9	~~283~~ 199	Termination Time: 1415
12.5% Sample	24.8	10.26	~~13.5~~ 15.1	~~296~~ 233	Termination Signoff ~~BH~~
25% Sample	24.8	~~10.26~~ 10.22	~~14~~ 16.5	~~409~~ 280	WQ Time 1245
50% Sample	24.8	~~10.07~~ 10.40	~~15~~ 15.4	~~510~~ 391	WQ Signoff: AS
100% Sample	24.8	~~10.00~~ 10.20	17.9	~~993~~ 569	
Meter ID:	12	PH09	DO12	EC04	

Initial Test Conditions	Alkalinity	Hardness	Light Intensity (ftc)
	87 ✓	209 ✓	401

CETIS Summary Report

Selenastrum Growth Test — **Pacific EcoRisk**

Test Run No:	12-7335-6457	**Test Type:**	Cell Growth	**Analyst:**	John Jirasritumrong
Start Date:	30 Jul-08 10:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	03 Aug-08 11:15	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Duration:	4d 1h	**Source:**	In-House Culture	**Age:**	7

Sample No:	07-9557-0216	**Code:**	SJRDS-001	**Client:**	URS
Sample Date:	29 Jul-08 08:00	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	29 Jul-08 11:50	**Source:**	URS		
Sample Age:	27h (18.1 °C)	**Station:**	SJRDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
06-8245-4183	Cell Density	100	>100	N/A	13.5%	1	Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
00-8942-7099	Cell Density	IC2.5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		IC5	>100	N/A	N/A	<1	
		IC10	>100	N/A	N/A	<1	
		IC15	>100	N/A	N/A	<1	
		IC20	>100	N/A	N/A	<1	
		IC25	>100	N/A	N/A	<1	
		IC40	>100	N/A	N/A	<1	
		IC50	>100	N/A	N/A	<1	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.16E+6	2.13E+6	2.20E+6	2.04E+6	2.27E+6	1.75E+4	9.57E+4	4.43%	0.0%
6.25		4	2.81E+6	2.73E+6	2.89E+6	2.56E+6	3.03E+6	3.91E+4	2.14E+5	7.63%	-29.9%
12.5		4	3.09E+6	3.05E+6	3.13E+6	2.93E+6	3.18E+6	2.03E+4	1.11E+5	3.59%	-43.0%
25		4	3.16E+6	3.08E+6	3.24E+6	2.85E+6	3.33E+6	3.89E+4	2.13E+5	6.74%	-46.0%
50		4	3.23E+6	3.15E+6	3.30E+6	2.95E+6	3.42E+6	3.76E+4	2.06E+5	6.39%	-49.2%
100		4	3.60E+6	3.55E+6	3.66E+6	3.47E+6	3.81E+6	2.66E+4	1.46E+5	4.05%	-66.6%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.19E+6	2.04E+6	2.27E+6	2.15E+6
6.25		2.94E+6	2.71E+6	3.03E+6	2.56E+6
12.5		2.93E+6	3.12E+6	3.14E+6	3.18E+6
25		3.33E+6	3.19E+6	2.85E+6	3.26E+6
50		3.34E+6	2.95E+6	3.42E+6	3.20E+6
100		3.47E+6	3.58E+6	3.55E+6	3.81E+6

CETIS Analytical Report

Report Date: 04 Sep-08 15:45 (p 1 of 1)
Test Code: 08-0022-2318/29454

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	06-8245-4183	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 15:44	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	100	>100	N/A	1	13.5%

Dunnett's Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	P-Value	Decision(5%)
Lab Water		6.25	-5.34	2.41	292000	1.0000	Non-Significant Effect
		12.5	-7.67	2.41	292000	1.0000	Non-Significant Effect
		25	-8.2	2.41	292000	1.0000	Non-Significant Effect
		50	-8.78	2.41	292000	1.0000	Non-Significant Effect
		100	-11.9	2.41	292000	1.0000	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	4.740688E+12	9.481375E+11	5	32.2	0.0000	Significant Effect
Error	5.29575E+11	29420830000	18			
Total	5.2702625792E+12	9.7755832525E+11	23			

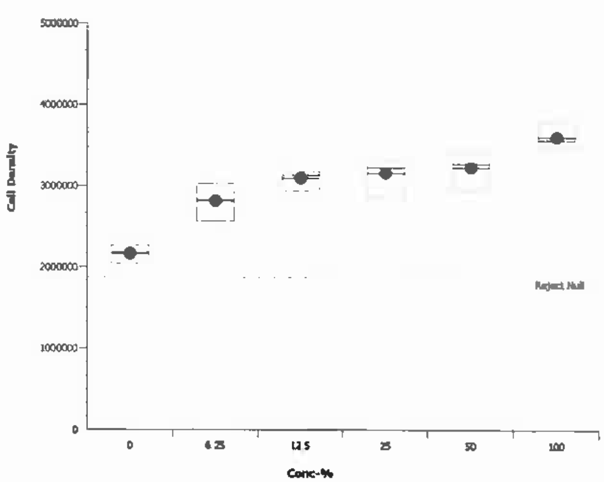
ANOVA Assumptions

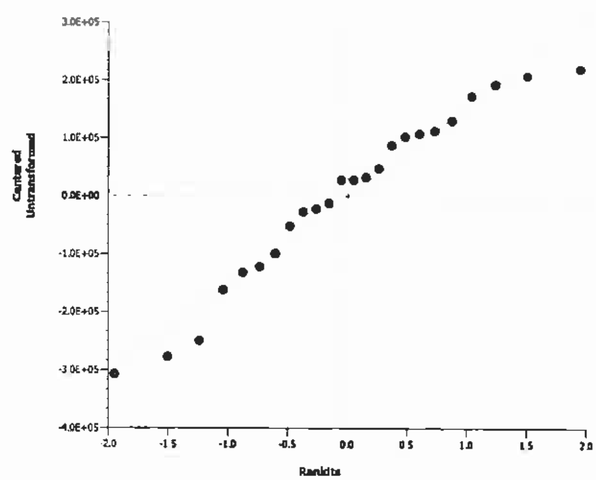
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	2.96	15.1	0.7070	Equal Variances
Distribution	Shapiro-Wilk Normality	0.954		0.3280	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.16E+6	2.13E+6	2.20E+6	2.04E+6	2.27E+6	1.78E+4	9.57E+4	4.43%	0.0%
6.25		4	2.81E+6	2.73E+6	2.89E+6	2.56E+6	3.03E+6	3.98E+4	2.14E+5	7.63%	-29.9%
12.5		4	3.09E+6	3.05E+6	3.13E+6	2.93E+6	3.18E+6	2.06E+4	1.11E+5	3.59%	-43.0%
25		4	3.16E+6	3.08E+6	3.24E+6	2.85E+6	3.33E+6	3.95E+4	2.13E+5	6.74%	-46.0%
50		4	3.23E+6	3.15E+6	3.31E+6	2.95E+6	3.42E+6	3.83E+4	2.06E+5	6.39%	-49.2%
100		4	3.60E+6	3.55E+6	3.66E+6	3.47E+6	3.81E+6	2.71E+4	1.46E+5	4.05%	-66.6%

Graphics





Analyst: [signature] QA: [signature]

CETIS Analytical Report

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	00-8942-7099	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 15:45	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	5795186	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC2.5	>100	N/A	N/A	<1	N/A	N/A
IC5	>100	N/A	N/A	<1	N/A	N/A
IC10	>100	N/A	N/A	<1	N/A	N/A
IC15	>100	N/A	N/A	<1	N/A	N/A
IC20	>100	N/A	N/A	<1	N/A	N/A
IC25	>100	N/A	N/A	<1	N/A	N/A
IC40	>100	N/A	N/A	<1	N/A	N/A
IC50	>100	N/A	N/A	<1	N/A	N/A

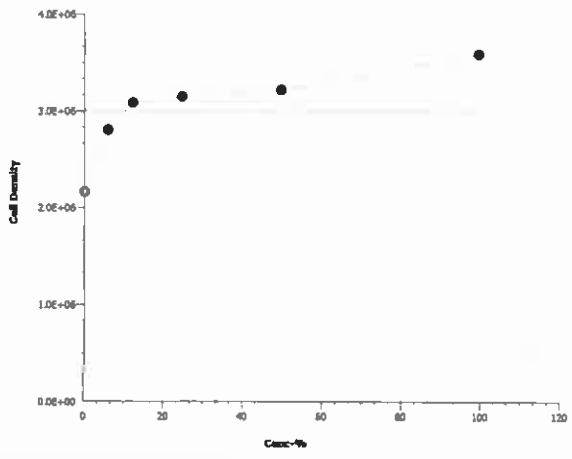
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.16E+6	2.04E+6	2.27E+6	1.75E+4	9.57E+4	4.43%	0.0%
6.25		4	2.81E+6	2.56E+6	3.03E+6	3.91E+4	2.14E+5	7.63%	-29.9%
12.5		4	3.09E+6	2.93E+6	3.18E+6	2.03E+4	1.11E+5	3.59%	-43.0%
25		4	3.16E+6	2.85E+6	3.33E+6	3.89E+4	2.13E+5	6.74%	-46.0%
50		4	3.23E+6	2.95E+6	3.42E+6	3.76E+4	2.06E+5	6.39%	-49.2%
100		4	3.60E+6	3.47E+6	3.81E+6	2.66E+4	1.46E+5	4.05%	-66.6%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.19E+6	2.04E+6	2.27E+6	2.15E+6
6.25		2.94E+6	2.71E+6	3.03E+6	2.56E+6
12.5		2.93E+6	3.12E+6	3.14E+6	3.18E+6
25		3.33E+6	3.19E+6	2.85E+6	3.26E+6
50		3.34E+6	2.95E+6	3.42E+6	3.20E+6
100		3.47E+6	3.58E+6	3.55E+6	3.81E+6

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: **URS: DMC** Initial Count: 10,000 cells/mL

Test Material: SJRDS-001-TOX Enumerating Scientist: SB

Test Start Date: 7/30/08 Start Time: 1045 Project #: 13489

Test End Date: 8/3/08 End Time: 1115 Test ID #: 29454

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	2.19	2.04	2.27	2.15	2.16
6.25%	2.94	2.71	3.03	2.56	2.81
12.5%	2.93	3.12	3.14	3.18	3.09
25%	3.33	3.19	2.85	3.26	3.16
50%	3.34	2.95	3.42	3.20	3.23
100%	3.47	3.58	3.55	3.81	3.60

This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	2.16	4.4	8/3/08	18:30	DC

Selenastrum capricornutum Algal Toxicity Test Water Quality Data

Client: URS: DMC Test ID #: 29454 Test Date: 7/30/08

Test Material: SJRDS-001-TOX Project #: 13489 Control/Diluent: Algal medium, W/O EDTA

Test Treatment	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Sign-Off
Lab Water Control	24.8	7.60	8.5	95	Date: 7/30/08
6.25% Sample	24.8	7.68	8.5	239	Sample ID 2071
12.5% Sample	24.8	7.86	8.5	331	Test Solution Prep RV
25% Sample	24.8	7.98	8.6	545	New WQ: DAP
50% Sample	24.8	8.13	8.8	968	Innoculation Time 1045
100% Sample	24.8	8.16	9.0	1792	Innoculation Signoff JJ/RV
Meter ID:	6	PH09	D010	EC01	
Lab Water Control	24.9	8.06			Date: 7/31/08
6.25% Sample	24.9	7.89			WQ Time: 1420
12.5% Sample	24.9	7.92			WQ Signoff: AJR
25% Sample	24.9	8.07			
50% Sample	24.9	8.29			
100% Sample	24.9	8.48			
Meter ID:	41	PH11			
Lab Water Control	24.6	~~9.18~~ AR → 8.43			Date: 8.01.08
6.25% Sample	24.6	~~9.10~~ AR → 8.94			WQ Time: 1115
12.5% Sample	24.6	~~9.08~~ AR → 9.05			WQ Signoff: AJR
25% Sample	24.6	9.06			
50% Sample	24.6	9.01			
100% Sample	24.6	9.04			
Meter ID:	6	PH11			
Lab Water Control	24.7	9.82			Date: 8/2/08
6.25% Sample	24.7	9.77			WQ Time: 0915
12.5% Sample	24.7	9.78			WQ Signoff: AJR
25% Sample	24.7	9.64			
50% Sample	24.7	9.40			
100% Sample	24.7	9.28			
Meter ID:	41	PH09			
Lab Water Control	24.6	9.85	13.3	107	Date: 8/3/08
6.25% Sample	24.6	9.89	14.5	213	Termination Time 1115
12.5% Sample	24.6	10.11	16.5	333	Termination Signoff: AJR
25% Sample	24.6	10.11	18.0	541	WQ Time: 1245
50% Sample	24.6	9.89	17.4	939	WQ Signoff: RV
100% Sample	24.6	9.64	19.2	1651	
Meter ID:	6	PH11	D014	EC01	

Initial Test Conditions	Alkalinity	Hardness	Light Intensity (ftc)
	✓ 172	✓ 354	412

CETIS Summary Report

Selenastrum Growth Test — **Pacific EcoRisk**

Test Run No:	05-2582-5926	**Test Type:**	Cell Growth	**Analyst:**	John Jirasritumrong
Start Date:	30 Jul-08 18:15	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	03 Aug-08 17:00	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Duration:	95h	**Source:**	In-House Culture	**Age:**	7

Sample No:	20-7608-5873	**Code:**	SJRDS-002	**Client:**	URS
Sample Date:	29 Jul-08 23:38	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	19h (5 °C)	**Station:**	SJRDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
07-3963-8413	Cell Density	100	>100	N/A	36.4%	1	Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
17-1973-2032	Cell Density	IC2.5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		IC5	>100	N/A	N/A	<1	
		IC10	>100	N/A	N/A	<1	
		IC15	>100	N/A	N/A	<1	
		IC20	>100	N/A	N/A	<1	
		IC25	>100	N/A	N/A	<1	
		IC40	>100	N/A	N/A	<1	
		IC50	>100	N/A	N/A	<1	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.35E+6	2.27E+6	2.43E+6	2.18E+6	2.65E+6	3.81E+4	2.09E+5	8.88%	0.0%
6.25		4	2.71E+6	2.65E+6	2.77E+6	2.49E+6	2.84E+6	2.93E+4	1.61E+5	5.92%	-15.5%
12.5		4	2.43E+6	2.15E+6	2.71E+6	1.48E+6	3.26E+6	1.38E+5	7.58E+5	31.2%	-3.51%
25		4	3.09E+6	2.92E+6	3.25E+6	2.59E+6	3.55E+6	8.07E+4	4.42E+5	14.3%	-31.4%
50		4	2.53E+6	2.23E+6	2.83E+6	1.68E+6	3.44E+6	1.46E+5	7.99E+5	31.5%	-7.88%
100		4	3.19E+6	3.11E+6	3.26E+6	2.92E+6	3.36E+6	3.49E+4	1.91E+5	6.01%	-35.7%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.31E+6	2.25E+6	2.65E+6	2.18E+6
6.25		2.82E+6	2.84E+6	2.49E+6	2.70E+6
12.5		2.24E+6	3.26E+6	1.48E+6	2.74E+6
25		3.55E+6	2.85E+6	2.59E+6	3.35E+6
50		3.44E+6	1.68E+6	2.93E+6	2.08E+6
100		2.92E+6	3.36E+6	3.18E+6	3.28E+6

CETIS Analytical Report

Test Code: 00-0034-1958/29455

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	07-3963-8413	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 15:57	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	100	>100	N/A	1	36.4%

Dunnett's Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	P-Value	Decision(5%)
Lab Water		6.25	-1.03	2.41	855000	0.9840	Non-Significant Effect
		12.5	-0.232	2.41	855000	0.8930	Non-Significant Effect
		25	-2.08	2.41	855000	0.9990	Non-Significant Effect
		50	-0.521	2.41	855000	0.9420	Non-Significant Effect
		100	-2.36	2.41	855000	1.0000	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	2.429571E+12	4.859142E+11	5	1.93	0.1400	Non-Significant Effect
Error	4.541225E+12	2.522903E+11	18			
Total	6.9707956224E+12	7.382044672E+11	23			

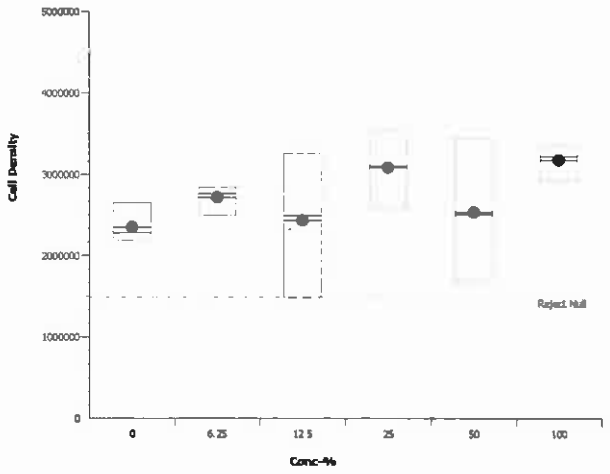
ANOVA Assumptions

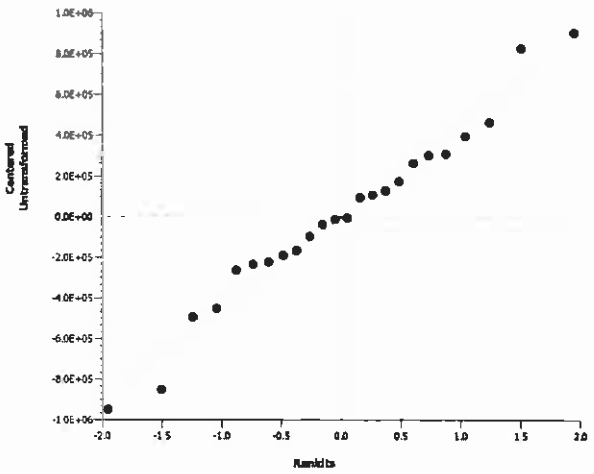
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	11.9	15.1	0.0365	Equal Variances
Distribution	Shapiro-Wilk Normality	0.976		0.8060	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.35E+6	2.27E+6	2.43E+6	2.18E+6	2.65E+6	3.87E+4	2.09E+5	8.88%	0.0%
6.25		4	2.71E+6	2.65E+6	2.77E+6	2.49E+6	2.84E+6	2.98E+4	1.61E+5	5.92%	-15.5%
12.5		4	2.43E+6	2.14E+6	2.72E+6	1.48E+6	3.26E+6	1.41E+5	7.58E+5	31.2%	-3.51%
25		4	3.09E+6	2.92E+6	3.25E+6	2.59E+6	3.55E+6	8.21E+4	4.42E+5	14.3%	-31.4%
50		4	2.53E+6	2.23E+6	2.84E+6	1.68E+6	3.44E+6	1.48E+5	7.99E+5	31.5%	-7.88%
100		4	3.19E+6	3.11E+6	3.26E+6	2.92E+6	3.36E+6	3.55E+4	1.91E+5	6.01%	-35.7%

Graphics





CETIS Analytical Report

Test Code: 00-0034-1958/29455

Selenastrum Growth Test — Pacific EcoRisk

Analysis No:	17-1973-2032	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 15:57	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	3019480	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC2.5	>100	N/A	N/A	<1	N/A	N/A
IC5	>100	N/A	N/A	<1	N/A	N/A
IC10	>100	N/A	N/A	<1	N/A	N/A
IC15	>100	N/A	N/A	<1	N/A	N/A
IC20	>100	N/A	N/A	<1	N/A	N/A
IC25	>100	N/A	N/A	<1	N/A	N/A
IC40	>100	N/A	N/A	<1	N/A	N/A
IC50	>100	N/A	N/A	<1	N/A	N/A

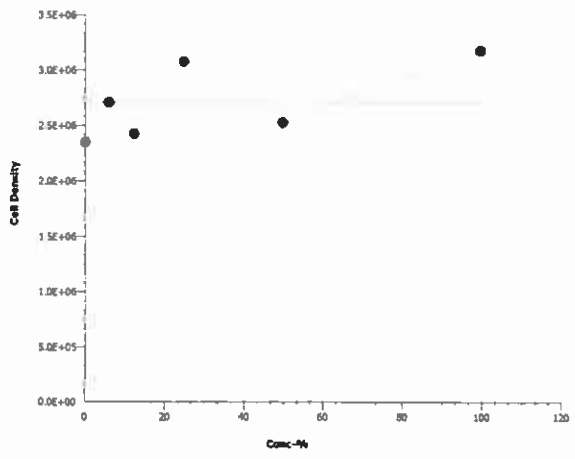
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.35E+6	2.18E+6	2.65E+6	3.81E+4	2.09E+5	8.88%	0.0%
6.25		4	2.71E+6	2.49E+6	2.84E+6	2.93E+4	1.61E+5	5.92%	-15.5%
12.5		4	2.43E+6	1.48E+6	3.26E+6	1.38E+5	7.58E+5	31.2%	-3.51%
25		4	3.09E+6	2.59E+6	3.55E+6	8.07E+4	4.42E+5	14.3%	-31.4%
50		4	2.53E+6	1.68E+6	3.44E+6	1.46E+5	7.99E+5	31.5%	-7.88%
100		4	3.19E+6	2.92E+6	3.36E+6	3.49E+4	1.91E+5	6.01%	-35.7%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.31E+6	2.25E+6	2.65E+6	2.18E+6
6.25		2.82E+6	2.84E+6	2.49E+6	2.70E+6
12.5		2.24E+6	3.26E+6	1.48E+6	2.74E+6
25		3.55E+6	2.85E+6	2.59E+6	3.35E+6
50		3.44E+6	1.68E+6	2.93E+6	2.08E+6
100		2.92E+6	3.36E+6	3.18E+6	3.28E+6

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: **URS: DMC** Initial Count: 10,000 cells/mL

Test Material: SJRDS-002-TOX Enumerating Scientist: SH

Test Start Date: 7/30/08 Start Time: 1815 Project #: 13489

Test End Date: 8/3/08 End Time: 1700 Test ID #: 29455

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	2.31	2.25	2.65	2.18	2.35
6.25%	2.82	2.84	2.49	2.70	2.71
12.5%	2.24	3.26	1.48	2.74	2.43
25%	3.55	2.85	2.59	3.35	3.08
50%	3.44	1.68	2.93	2.08	2.53
100%	2.92	3.36	3.18	3.28	3.18
This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	2.35	8.9	8/3/08	1830	JC

CETIS Summary Report

Selenastrum Growth Test — **Pacific EcoRisk**

Test Run No:	05-2582-5926	**Test Type:**	Cell Growth	**Analyst:**	John Jirasritumrong
Start Date:	30 Jul-08 18:15	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	03 Aug-08 17:00	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Duration:	95h	**Source:**	In-House Culture	**Age:**	7

Sample No:	20-7608-5873	**Code:**	SJRDS-002	**Client:**	URS
Sample Date:	29 Jul-08 23:38	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	19h (5 °C)	**Station:**	SJRDS		

Comments: Hemacytometer counts.

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
07-1468-0049	Cell Density	25	50	35.4	49.5%	4	Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
13-9261-6270	Cell Density	IC2.5	1.14	0.165	14.7	87.5	Linear Interpolation (ICPIN)
		IC5	2.29	0.33	19.6	43.8	
		IC10	4.57	0.661	24.6	21.9	
		IC15	6.8	1.02	35.3	14.7	
		IC20	8.9	1.47	41.7	11.2	
		IC25	11	1.91	48.9	9.1	
		IC40	36.6	N/A	N/A	2.73	
		IC50	46.8	21.1	N/A	2.14	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.29E+6	2.18E+6	2.39E+6	1.87E+6	2.55E+6	5.31E+4	2.91E+5	12.7%	0.0%
6.25		4	1.97E+6	1.78E+6	2.16E+6	1.26E+6	2.35E+6	9.35E+4	5.12E+5	26.0%	13.7%
12.5		4	1.57E+6	1.20E+6	1.94E+6	9.20E+4	2.21E+6	1.81E+5	9.92E+5	63.2%	31.3%
25		4	1.69E+6	1.58E+6	1.80E+6	1.36E+6	2.06E+6	5.27E+4	2.89E+5	17.1%	25.9%
50		4	1.04E+6	7.31E+5	1.34E+6	4.00E+4	1.75E+6	1.50E+5	8.21E+5	79.2%	54.6%
100		4	1.10E+6	8.22E+5	1.38E+6	9.90E+4	1.75E+6	1.37E+5	7.51E+5	68.2%	51.8%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.36E+6	2.36E+6	2.55E+6	1.87E+6
6.25		2.35E+6	1.94E+6	1.26E+6	2.34E+6
12.5		1.94E+6	2.21E+6	9.20E+4	2.04E+6
25		2.06E+6	1.72E+6	1.36E+6	1.63E+6
50		1.75E+6	4.00E+4	1.67E+6	6.90E+5
100		1.60E+6	9.60E+5	9.90E+4	1.75E+6

CETIS Analytical Report

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	07-1468-0049	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	30 Sep-08 14:28	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	25	50	35.4	4	49.5%

Dunnett's Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	P-Value	Decision(5%)
Lab Water		6.25	0.665	2.41	1130000	0.5740	Non-Significant Effect
		12.5	1.52	2.41	1130000	0.2220	Non-Significant Effect
		25	1.26	2.41	1130000	0.3130	Non-Significant Effect
		50*	2.65	2.41	1130000	0.0311	Significant Effect
		100*	2.52	2.41	1130000	0.0407	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	4.723856E+12	9.447712E+11	5	2.14	0.1080	Non-Significant Effect
Error	7.959689E+12	4.422049E+11	18			
Total	1.2683544887E+13	1.3869761823E+12	23			

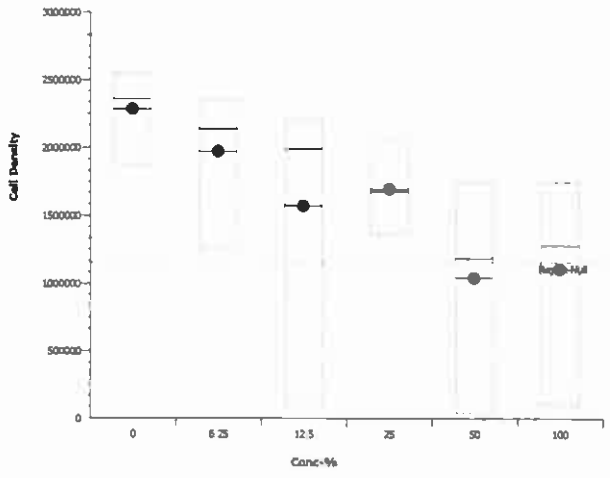
ANOVA Assumptions

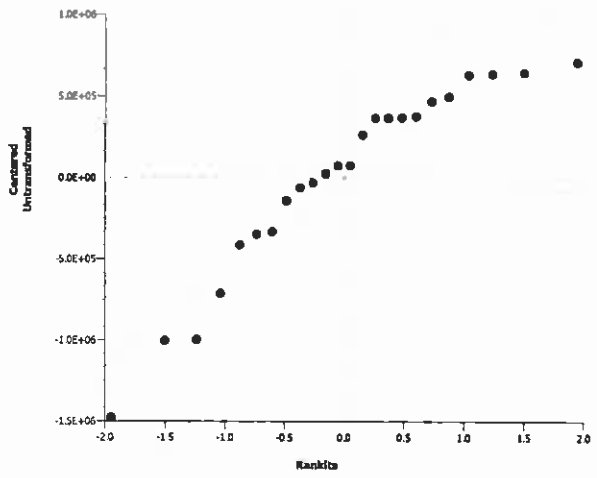
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	6.32	15.1	0.2770	Equal Variances
Distribution	Shapiro-Wilk Normality	0.911		0.0370	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.29E+6	2.17E+6	2.40E+6	1.87E+6	2.55E+6	5.40E+4	2.91E+5	12.7%	0.0%
6.25		4	1.97E+6	1.78E+6	2.17E+6	1.26E+6	2.35E+6	9.51E+4	5.12E+5	26.0%	13.7%
12.5		4	1.57E+6	1.19E+6	1.95E+6	9.20E+4	2.21E+6	1.84E+5	9.92E+5	63.2%	31.3%
25		4	1.69E+6	1.58E+6	1.80E+6	1.36E+6	2.06E+6	5.36E+4	2.89E+5	17.1%	25.9%
50		4	1.04E+6	7.25E+5	1.35E+6	4.00E+4	1.75E+6	1.53E+5	8.21E+5	79.2%	54.6%
100		4	1.10E+6	8.16E+5	1.39E+6	9.90E+4	1.75E+6	1.40E+5	7.51E+5	68.2%	51.8%

Graphics





CETIS Analytical Report

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	13-9261-6270	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	30 Sep-08 14:28	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	7055475	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC2.5	1.14	0.165	14.7	87.5	6.81	605
IC5	2.29	0.33	19.6	43.8	5.11	303
IC10	4.57	0.661	24.6	21.9	4.07	151
IC15	6.8	1.02	35.3	14.7	2.84	97.9
IC20	8.9	1.47	41.7	11.2	2.4	68.2
IC25	11	1.91	48.9	9.1	2.04	52.3
IC40	36.6	N/A	N/A	2.73	N/A	N/A
IC50	46.8	21.1	N/A	2.14	N/A	4.75

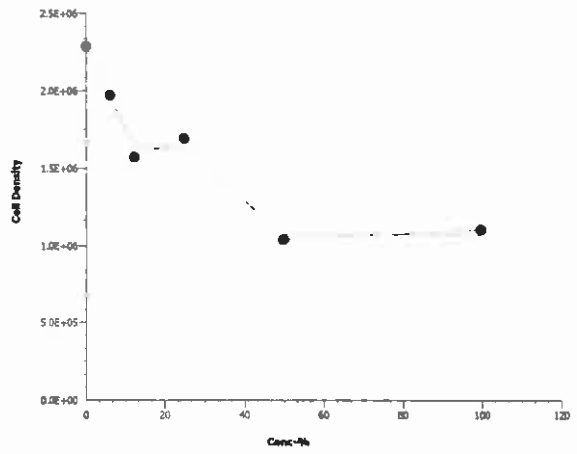
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.29E+6	1.87E+6	2.55E+6	5.31E+4	2.91E+5	12.7%	0.0%
6.25		4	1.97E+6	1.26E+6	2.35E+6	9.35E+4	5.12E+5	26.0%	13.7%
12.5		4	1.57E+6	9.20E+4	2.21E+6	1.81E+5	9.92E+5	63.2%	31.3%
25		4	1.69E+6	1.36E+6	2.06E+6	5.27E+4	2.89E+5	17.1%	25.9%
50		4	1.04E+6	4.00E+4	1.75E+6	1.50E+5	8.21E+5	79.2%	54.6%
100		4	1.10E+6	9.90E+4	1.75E+6	1.37E+5	7.51E+5	68.2%	51.8%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.36E+6	2.36E+6	2.55E+6	1.87E+6
6.25		2.35E+6	1.94E+6	1.26E+6	2.34E+6
12.5		1.94E+6	2.21E+6	9.20E+4	2.04E+6
25		2.06E+6	1.72E+6	1.36E+6	1.63E+6
50		1.75E+6	4.00E+4	1.67E+6	6.90E+5
100		1.60E+6	9.60E+5	9.90E+4	1.75E+6

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: URS: DMC | Initial Count: 10,000 cells/mL

Test Material: SJRDS-002-TOX | Enumerating Scientist: SM

Test Start Date: 7/30/08 | Start Time: 1815 | Project #: 13489

Test End Date: 8/3/08 | End Time: 1700 | Test ID #: 29455

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	2.36	2.36	2.55	1.87	*2.28
6.25%	2.35	1.94	1.26	2.34	1.97
12.5%	1.94	2.21	0.092	2.04	1.57
25%	2.06	1.72	1.36	1.63	1.69
50%	1.75	0.040	1.67	0.69	1.04
100%	1.60	0.96	0.099	1.75	~~1.32~~ @D 1.10
This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	2.28	12.7	8-7-08	1700	AS

*Homacytometer Counts For all Treatments. SM

Selenastrum capricornutum Algal Toxicity Test Water Quality Data

Client: URS: DMC Test ID #: 29455 Test Date: 7/30/08

Test Material: SJRDS-002-TOX Project #: 13489 Control/Diluent: Algal medium, W/O EDTA

Test Treatment	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Sign-Off
Lab Water Control	25.3	7.57	7.2	144	Date: 7/30/08
6.25% Sample	25.3	7.73	7.2	235	Sample ID 20177
12.5% Sample	25.3	7.70	7.3	307	Test Solution Prep: QD
25% Sample	25.3	7.68	7.6	471	New WQ: QD
50% Sample	25.3	7.71	7.4	760	Inoculation Time: 1815
100% Sample	25.3	7.77	7.9	1338	Inoculation Signoff: JS
Meter ID:	5	pH11	DO12	EC04	
Lab Water Control	24.9	7.93			Date: 7/31/08
6.25% Sample	24.9	7.88			WQ Time: 1400
12.5% Sample	24.9	7.88			WQ Signoff: HTA
25% Sample	24.9	8.03			
50% Sample	24.9	8.06			
100% Sample	24.9	8.34			
Meter ID:	41	pH11			
Lab Water Control	25.7	8.85			Date: 8.01.08.
6.25% Sample	25.2	8.78			WQ Time: 1230
12.5% Sample	25.2	8.93			WQ Signoff: AJR
25% Sample	25.2	8.98			
50% Sample	25.2	9.01			
100% Sample	25.2	8.93			
Meter ID:	5	pH11			
Lab Water Control	24.7	9.57			Date: 8/2/08
6.25% Sample	24.7	9.55			WQ Time: 1055
12.5% Sample	24.7	9.46			WQ Signoff: HTA
25% Sample	24.7	9.47			
50% Sample	24.7	9.30			
100% Sample	24.7	9.25			
Meter ID:	41	pH09			
Lab Water Control	25.3	9.84	13.3	158	Date: 8/3/08
6.25% Sample	25.3	9.86	13.4	245	Termination Time: 1700
12.5% Sample	25.3	9.85	14.1	314	Termination Signoff: BA
25% Sample	25.3	9.87	15.1	473	WQ Time: 1130
50% Sample	25.3	9.64	14.1	748	WQ Signoff: MW
100% Sample	25.3	9.66	17.6	1254	
Meter ID:	5	pH11	~~DO14~~ DO11	EC01	

Initial Test Conditions	Alkalinity	Hardness	Light Intensity (ftc)
	✓ 151	✓ 283	387

CETIS Summary Report

Algal Growth Test — **Pacific EcoRisk**

Test Run No:	08-9845-6760	**Test Type:**	Cell Growth	**Analyst:**	John Jirasritumrong
Start Date:	04 Aug-08 17:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	08 Aug-08 16:30	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Duration:	95h	**Source:**	In-House Culture	**Age:**	5

Sample No:	20-7608-5873	**Code:**	SJRDS-002	**Client:**	URS
Sample Date:	29 Jul-08 23:38	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	5d 17h (5 °C)	**Station:**	SJRDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	Method
04-1520-1651	Cell Density	100	> 100	N/A	24.5%	Steel Many-One Rank Test

Point Estimate Summary

Analysis No	Endpoint	Effect-%	Conc-%	95% LCL	95% UCL	Method
19-8777-2890	Cell Density	2.5	> 100	N/A	N/A	Linear Interpolation (ICPIN)
		5	> 100	N/A	N/A	
		10	> 100	N/A	N/A	
		15	> 100	N/A	N/A	
		20	> 100	N/A	N/A	
		25	> 100	N/A	N/A	
		40	> 100	N/A	N/A	
		50	> 100	N/A	N/A	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	3.36E+6	3.33E+6	3.39E+6	3.27E+6	3.47E+6	1.53E+4	8.38E+4	2.5%	0.0%
6.25		4	4.14E+6	4.10E+6	4.18E+6	4.02E+6	4.26E+6	1.89E+4	1.03E+5	2.49%	-23.3%
12.5		4	4.11E+6	4.07E+6	4.15E+6	4.03E+6	4.27E+6	1.98E+4	1.08E+5	2.64%	-22.4%
25		4	4.36E+6	4.17E+6	4.56E+6	3.68E+6	4.85E+6	9.54E+4	5.23E+5	12.0%	-29.9%
50		4	4.79E+6	4.73E+6	4.84E+6	4.64E+6	4.93E+6	2.76E+4	1.51E+5	3.16%	-42.5%
100		4	4.25E+6	3.86E+6	4.64E+6	2.75E+6	5.13E+6	1.90E+5	1.04E+6	24.4%	-26.7%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	3.33E+6	3.47E+6	3.36E+6	3.27E+6
6.25		4.26E+6	4.18E+6	4.02E+6	4.10E+6
12.5		4.27E+6	4.07E+6	4.03E+6	4.07E+6
25		3.68E+6	4.85E+6	4.68E+6	4.24E+6
50		4.93E+6	4.67E+6	4.90E+6	4.64E+6
100		2.75E+6	4.49E+6	4.64E+6	5.13E+6

CETIS Analytical Report

Test Code: 12-1922-7406/29782

Selenastrum Growth Test — Pacific EcoRisk

Analysis No:	04-1520-1651	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 18:05	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	100	>100	N/A	1	24.5%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	26	10	0	1.0000	Non-Significant Effect
		12.5	26	10	0	1.0000	Non-Significant Effect
		25	26	10	0	1.0000	Non-Significant Effect
		50	26	10	0	1.0000	Non-Significant Effect
		100	22	10	0	0.9910	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	4.346871E+12	8.693742E+11	5	3.72	0.0174	Significant Effect
Error	4.210125E+12	2.338958E+11	18			
Total	8.5569956741E+12	1.1032700027E+12	23			

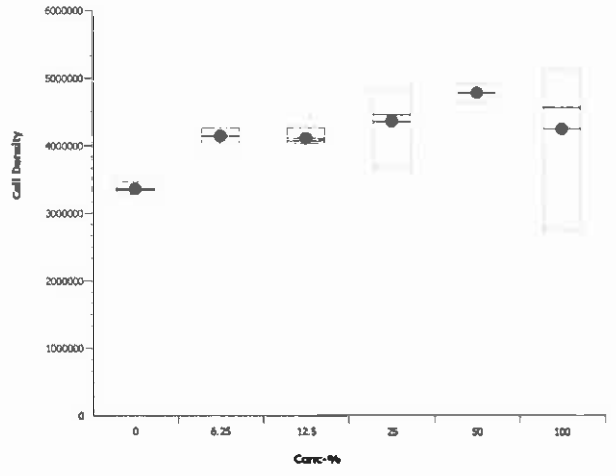
ANOVA Assumptions

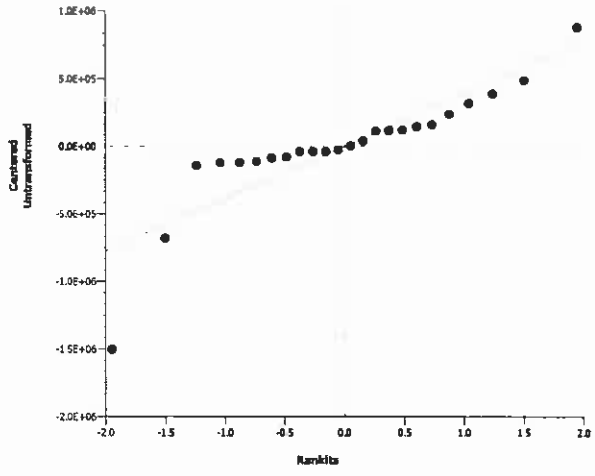
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	27.2	15.1	0.0001	Unequal Variances
Distribution	Shapiro-Wilk Normality	0.804		0.0003	Non-normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	3.36E+6	3.33E+6	3.39E+6	3.27E+6	3.47E+6	1.56E+4	8.38E+4	2.5%	0.0%
6.25		4	4.14E+6	4.10E+6	4.18E+6	4.02E+6	4.26E+6	1.92E+4	1.03E+5	2.49%	-23.3%
12.5		4	4.11E+6	4.07E+6	4.15E+6	4.03E+6	4.27E+6	2.01E+4	1.08E+5	2.64%	-22.4%
25		4	4.36E+6	4.16E+6	4.56E+6	3.68E+6	4.85E+6	9.70E+4	5.23E+5	12.0%	-29.9%
50		4	4.79E+6	4.73E+6	4.84E+6	4.64E+6	4.93E+6	2.81E+4	1.51E+5	3.16%	-42.5%
100		4	4.25E+6	3.86E+6	4.65E+6	2.75E+6	5.13E+6	1.93E+5	1.04E+6	24.4%	-26.7%

Graphics





CETIS Analytical Report

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	19-8777-2890	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 18:05	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	562369	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC2.5	>100	N/A	N/A	<1	N/A	N/A
IC5	>100	N/A	N/A	<1	N/A	N/A
IC10	>100	N/A	N/A	<1	N/A	N/A
IC15	>100	N/A	N/A	<1	N/A	N/A
IC20	>100	N/A	N/A	<1	N/A	N/A
IC25	>100	N/A	N/A	<1	N/A	N/A
IC40	>100	N/A	N/A	<1	N/A	N/A
IC50	>100	N/A	N/A	<1	N/A	N/A

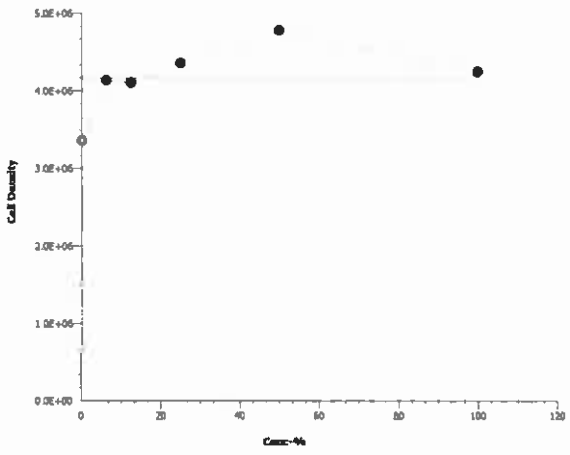
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	3.36E+6	3.27E+6	3.47E+6	1.53E+4	8.38E+4	2.5%	0.0%
6.25		4	4.14E+6	4.02E+6	4.26E+6	1.89E+4	1.03E+5	2.49%	-23.3%
12.5		4	4.11E+6	4.03E+6	4.27E+6	1.98E+4	1.08E+5	2.64%	-22.4%
25		4	4.36E+6	3.68E+6	4.85E+6	9.54E+4	5.23E+5	12.0%	-29.9%
50		4	4.79E+6	4.64E+6	4.93E+6	2.76E+4	1.51E+5	3.16%	-42.5%
100		4	4.25E+6	2.75E+6	5.13E+6	1.90E+5	1.04E+6	24.4%	-26.7%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	3.33E+6	3.47E+6	3.36E+6	3.27E+6
6.25		4.26E+6	4.18E+6	4.02E+6	4.10E+6
12.5		4.27E+6	4.07E+6	4.03E+6	4.07E+6
25		3.68E+6	4.85E+6	4.68E+6	4.24E+6
50		4.93E+6	4.67E+6	4.90E+6	4.64E+6
100		2.75E+6	4.49E+6	4.64E+6	5.13E+6

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: **URS: DMC** Initial Count: 10,000 cells/mL

Test Material: SJRDS-002-TOX Enumerating Scientist: AB

Test Start Date: 8/4/08 Start Time: ~~AB~~ 1700

Test End Date: 8/8/08 End Time: ~~1000~~ AB 1630

Project #: 13489

Test ID #: 21782

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	3.33	3.47	3.36	3.27	~~3.87~~ 3.36
6.25%	4.26	4.18	4.02	4.10	4.14
12.5%	4.27	4.07	4.03	4.07	4.11
25%	3.68	4.85	4.68	4.24	4.36
50%	4.93	4.67	4.90	4.64	4.79
100%	2.75	4.49	4.64	5.13	4.25

This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	3.36	2.50	8/8/08	1745	AB

Selenastrum capricornutum Algal Toxicity Test Water Quality Data

Client: URS: DMC Test ID #: 29782 Test Date: 8/4/08

Test Material: SJRDS-002-TOX Project #: 13489 Control/Diluent: Algal medium, W/O EDTA

Test Treatment	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Sign-Off
Lab Water Control	24.8	~~2657.52~~	8.5	157	Date 8/4/08
6.25% Sample	24.8	7.65	8.7	270	Sample ID 20178
12.5% Sample	24.8	7.70	8.6	330	Test Solution Prep MR
25% Sample	24.8	7.79	8.7	498	New WQ RV
50% Sample	24.8	7.83	9.1	772	Innoculation Time ~~1500~~ 1700
100% Sample	24.8	7.86	9.2	1351	Innoculation Signoff MR
Meter ID:	41	PH03	DO12	EC01	
Lab Water Control	24.8	7.86			Date: 8/5/08
6.25% Sample	24.8	7.91			WQ Time: 12:25
12.5% Sample	24.8	7.88			WQ Signoff: AS
25% Sample	24.8	7.93			
50% Sample	24.8	8.09			
100% Sample	24.8	8.18			
Meter ID:	41	pH09			
Lab Water Control	25.3	8.92			Date: 8/6/08
6.25% Sample	25.3	8.99			WQ Time: 12:30
12.5% Sample	25.3	9.03			WQ Signoff: AJR
25% Sample	25.3	8.90			
50% Sample	25.3	8.86			
100% Sample	25.3	8.68			
Meter ID:	41	PH03			
Lab Water Control	25.6	9.95			Date: 8/7/08
6.25% Sample	25.6	10.05			WQ Time: 11:00 am
12.5% Sample	25.6	10.01			WQ Signoff: DHP
25% Sample	25.6	9.99			
50% Sample	25.6	9.78			
100% Sample	25.6	9.39			
Meter ID:	41	PH03			
Lab Water Control	25.4	10.32	11.7	177	Date 8/8/08
6.25% Sample	25.4	10.57	11.8	307	Termination Time ~~1530~~ 1630
12.5% Sample	25.4	10:54	11.8	354	Termination Signoff AB
25% Sample	25.4	10~~:~~18	12.1	516	WQ Time 1640
50% Sample	25.4	10.30	13.0	775	WQ Signoff:
100% Sample	25.4	10.11	14.8	1276	
Meter ID:	41	pH09	DO14	EC05	

Initial Test Conditions	Alkalinity	Hardness	Light Intensity (ftc)
	✓ 144	✓ 292	394

CETIS Summary Report

Selenastrum Growth Test — **Pacific EcoRisk**

Test Run No:	17-7416-1937	**Test Type:**	Cell Growth	**Analyst:**	John Jirasritumrong
Start Date:	31 Jul-08 11:15	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	04 Aug-08 12:00	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Duration:	4d 1h	**Source:**	In-House Culture	**Age:**	7

Sample No:	20-7133-6523	**Code:**	SJRDS-003	**Client:**	URS
Sample Date:	30 Jul-08 03:15	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	32h (5 °C)	**Station:**	SJRDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
00-7246-3976	Cell Density	100	>100	N/A	18.6%	1	Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
13-1488-8242	Cell Density	IC2.5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		IC5	>100	N/A	N/A	<1	
		IC10	>100	N/A	N/A	<1	
		IC15	>100	N/A	N/A	<1	
		IC20	>100	N/A	N/A	<1	
		IC25	>100	N/A	N/A	<1	
		IC40	>100	N/A	N/A	<1	
		IC50	>100	N/A	N/A	<1	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.80E+6	1.68E+6	1.91E+6	1.39E+6	2.10E+6	5.40E+4	2.96E+5	16.5%	0.0%
6.25		4	2.44E+6	2.37E+6	2.51E+6	2.23E+6	2.60E+6	3.40E+4	1.86E+5	7.65%	-35.8%
12.5		4	2.90E+6	2.82E+6	2.97E+6	2.60E+6	3.05E+6	3.76E+4	2.06E+5	7.11%	-61.4%
25		4	3.60E+6	3.54E+6	3.65E+6	3.47E+6	3.81E+6	2.77E+4	1.52E+5	4.22%	-100.0%
50		4	4.06E+6	4.00E+6	4.12E+6	3.82E+6	4.21E+6	3.08E+4	1.69E+5	4.16%	-126.0%
100		4	4.73E+6	4.68E+6	4.77E+6	4.62E+6	4.87E+6	2.21E+4	1.21E+5	2.57%	-163.0%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.10E+6	1.39E+6	1.86E+6	1.83E+6
6.25		2.23E+6	2.60E+6	2.33E+6	2.59E+6
12.5		3.02E+6	2.60E+6	3.05E+6	2.92E+6
25		3.81E+6	3.59E+6	3.51E+6	3.47E+6
50		3.82E+6	4.08E+6	4.13E+6	4.21E+6
100		4.87E+6	4.78E+6	4.62E+6	4.63E+6

CETIS Analytical Report

Selenastrum Growth Test — Pacific EcoRisk

Analysis No:	00-7246-3976	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:09	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	100	>100	N/A	1	18.6%

Dunnett's Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	P-Value	Decision(5%)
Lab Water		6.25	-4.63	2.41	334000	1.0000	Non-Significant Effect
		12.5	-7.95	2.41	334000	1.0000	Non-Significant Effect
		25	-13	2.41	334000	1.0000	Non-Significant Effect
		50	-16.3	2.41	334000	1.0000	Non-Significant Effect
		100	-21.1	2.41	334000	1.0000	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	2.340868E+13	4.681737E+12	5	122	0.0000	Significant Effect
Error	6.9265E+11	38480560000	18			
Total	2.4101333238E+13	4.7202172068E+12	23			

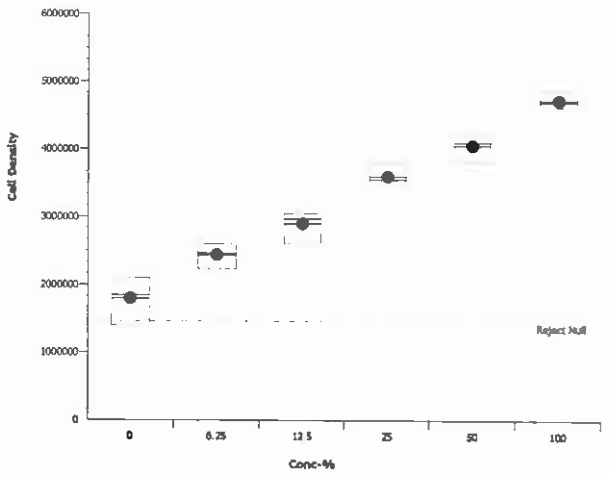
ANOVA Assumptions

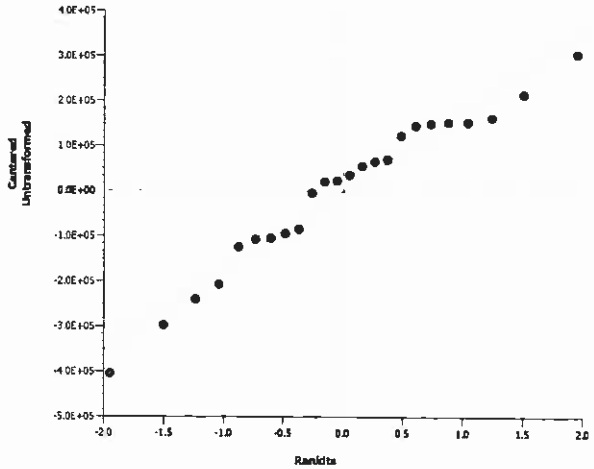
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	2.55	15.1	0.7690	Equal Variances
Distribution	Shapiro-Wilk Normality	0.963		0.4990	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.80E+6	1.68E+6	1.91E+6	1.39E+6	2.10E+6	5.49E+4	2.96E+5	16.5%	0.0%
6.25		4	2.44E+6	2.37E+6	2.51E+6	2.23E+6	2.60E+6	3.46E+4	1.86E+5	7.65%	-35.8%
12.5		4	2.90E+6	2.82E+6	2.98E+6	2.60E+6	3.05E+6	3.82E+4	2.06E+5	7.11%	-61.4%
25		4	3.60E+6	3.54E+6	3.65E+6	3.47E+6	3.81E+6	2.82E+4	1.52E+5	4.22%	-100.0%
50		4	4.06E+6	4.00E+6	4.12E+6	3.82E+6	4.21E+6	3.13E+4	1.69E+5	4.16%	-126.0%
100		4	4.73E+6	4.68E+6	4.77E+6	4.62E+6	4.87E+6	2.25E+4	1.21E+5	2.57%	-163.0%

Graphics





CETIS Analytical Report

Test Code: 09-9048-2481/29456

Selenastrum Growth Test — Pacific EcoRisk

Analysis No:	13-1488-8242	Endpoint:	Cell Density	CETIS Version:	CETISv1.6.5
Analyzed:	04 Sep-08 16:09	Analysis:	Linear Interpolation (ICPIN)	Official Results:	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	140176	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC2.5	>100	N/A	N/A	<1	N/A	N/A
IC5	>100	N/A	N/A	<1	N/A	N/A
IC10	>100	N/A	N/A	<1	N/A	N/A
IC15	>100	N/A	N/A	<1	N/A	N/A
IC20	>100	N/A	N/A	<1	N/A	N/A
IC25	>100	N/A	N/A	<1	N/A	N/A
IC40	>100	N/A	N/A	<1	N/A	N/A
IC50	>100	N/A	N/A	<1	N/A	N/A

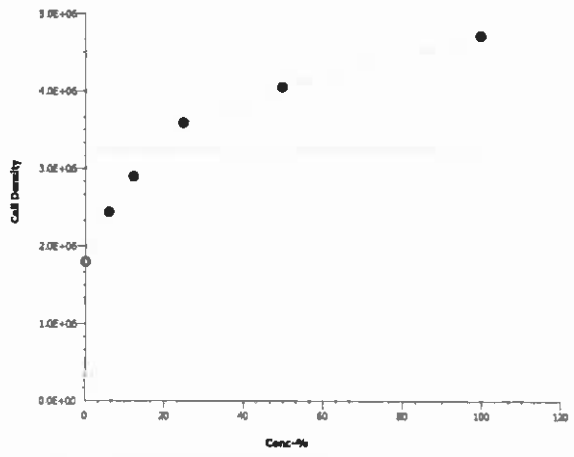
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.80E+6	1.39E+6	2.10E+6	5.40E+4	2.96E+5	16.5%	0.0%
6.25		4	2.44E+6	2.23E+6	2.60E+6	3.40E+4	1.86E+5	7.65%	-35.8%
12.5		4	2.90E+6	2.60E+6	3.05E+6	3.76E+4	2.06E+5	7.11%	-61.4%
25		4	3.60E+6	3.47E+6	3.81E+6	2.77E+4	1.52E+5	4.22%	-100.0%
50		4	4.06E+6	3.82E+6	4.21E+6	3.08E+4	1.69E+5	4.16%	-126.0%
100		4	4.73E+6	4.62E+6	4.87E+6	2.21E+4	1.21E+5	2.57%	-163.0%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.10E+6	1.39E+6	1.86E+6	1.83E+6
6.25		2.23E+6	2.60E+6	2.33E+6	2.59E+6
12.5		3.02E+6	2.60E+6	3.05E+6	2.92E+6
25		3.81E+6	3.59E+6	3.51E+6	3.47E+6
50		3.82E+6	4.08E+6	4.13E+6	4.21E+6
100		4.87E+6	4.78E+6	4.62E+6	4.63E+6

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: **URS: DMC** Initial Count: 10,000 cells/mL

Test Material: SJRDS-003-TOX Enumerating Scientist: ~~SW~~ SK

Test Start Date: 7/31/08 Start Time: 1115 Project #: 13489

Test End Date: 8/4/08 End Time: ~~1230~~ SK 1200 Test ID #: 29456

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	2.10	1.39	1.86	1.83	1.79
6.25%	2.23	2.60	2.33	2.59	2.44
12.5%	3.02	2.60	3.05	2.92	2.90
25%	3.81	3.59	3.51	3.47	3.59
50%	3.82	4.08	4.13	4.21	4.06
100%	4.87	4.78	4.62	4.63	4.72
This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	1.79	16.5	8-5-08	1700	AB

Selenastrum capricornutum Algal Toxicity Test Water Quality Data

Client: **URS: DMC** Test ID #: 29456 Test Date: 7/31/08

Test Material: SJRDS-003-TOX Project #: 13489 Control/Diluent: Algal medium, W/O EDTA

Test Treatment	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Sign-Off
Lab Water Control	25.5	7.45	8.0	144.7	Date: 7/31/08
6.25% Sample	25.5	7.98	8.2	197.3	Sample ID: 20178
12.5% Sample	25.5	7.89	8.1	250.5	Test Solution Prep KO
25% Sample	25.5	7.89	8.1	365	New WQ: N
50% Sample	25.5	7.91	8.4	589	Innoculation Time: 11:15
100% Sample	25.5	7.97	8.7	1015	Innoculation Signoff: KO
Meter ID:	19A	pH11	DO12	EC04	
Lab Water Control	24.9	8.02			Date: 8.01.08
6.25% Sample	24.9	8.05			WQ Time: 1215
12.5% Sample	24.9	8.09			WQ Signoff: AJR
25% Sample	24.9	8.29			
50% Sample	24.9	8.41			
100% Sample	24.9	8.57			
Meter ID:	15A	PH11			
Lab Water Control	24.7	8.61			Date: 8/2/08
6.25% Sample	24.7	8.80			WQ Time: 1105
12.5% Sample	24.7	8.86			WQ Signoff: HTA
25% Sample	24.7	9.03			
50% Sample	24.7	8.91			
100% Sample	24.7	8.79			
Meter ID:	41	pH09			
Lab Water Control	25.0	9.42			Date: 8/3/08
6.25% Sample	25.0	9.66			WQ Time: 0930
12.5% Sample	25.0	9.85			WQ Signoff: JW
25% Sample	25.0	992			
50% Sample	25.0	9.69			
100% Sample	25.0	9.50			
Meter ID:	15A	PH11			
Lab Water Control	24.7	9.96	10.6	150	Date: 8/4/08
6.25% Sample	24.7	10.01	11.0	208	Termination Time: 1200
12.5% Sample	24.7	10.32	12.0	275	Termination Signoff: BA
25% Sample	24.7	10.40	12.8	396	WQ Time: 0955
50% Sample	24.7	10.29	13.6	605	WQ Signoff: HTA
100% Sample	24.7	10.40	13.9	1026	
Meter ID:	41	PH09	DO10	EC05	

Initial Test Conditions	Alkalinity	Hardness	Light Intensity (ftc)
	✓ 112	✓ 448	415

CETIS Summary Report

Selenastrum Growth Test — **Pacific EcoRisk**

Test Run No:	11-1076-0023	**Test Type:**	Cell Growth	**Analyst:**	John Jirasritumrong
Start Date:	01 Aug-08 14:05	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	05 Aug-08 14:45	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Duration:	4d 1h	**Source:**	In-House Culture	**Age:**	7

Sample No:	18-1077-8026	**Code:**	SJRDS-004	**Client:**	URS
Sample Date:	31 Jul-08 09:10	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	31 Jul-08 12:04	**Source:**	URS		
Sample Age:	29h (15.6 °C)	**Station:**	SJRDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
00-7669-6941	Cell Density	100	>100	N/A	12.3%	1	Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
02-7796-7849	Cell Density	IC2.5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		IC5	>100	N/A	N/A	<1	
		IC10	>100	N/A	N/A	<1	
		IC15	>100	N/A	N/A	<1	
		IC20	>100	N/A	N/A	<1	
		IC25	>100	N/A	N/A	<1	
		IC40	>100	N/A	N/A	<1	
		IC50	>100	N/A	N/A	<1	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.52E+6	2.45E+6	2.59E+6	2.28E+6	2.72E+6	3.31E+4	1.82E+5	7.2%	0.0%
6.25		4	3.07E+6	3.02E+6	3.11E+6	2.92E+6	3.22E+6	2.28E+4	1.25E+5	4.08%	-21.5%
12.5		4	3.29E+6	3.25E+6	3.32E+6	3.16E+6	3.39E+6	1.91E+4	1.05E+5	3.19%	-30.2%
25		4	3.20E+6	3.10E+6	3.30E+6	2.94E+6	3.57E+6	4.84E+4	2.65E+5	8.28%	-26.9%
50		4	3.17E+6	3.12E+6	3.22E+6	3.01E+6	3.33E+6	2.50E+4	1.37E+5	4.32%	-25.7%
100		4	3.25E+6	3.16E+6	3.33E+6	2.91E+6	3.39E+6	4.11E+4	2.25E+5	6.94%	-28.6%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.28E+6	2.72E+6	2.54E+6	2.55E+6
6.25		3.09E+6	3.22E+6	3.03E+6	2.92E+6
12.5		3.35E+6	3.39E+6	3.24E+6	3.16E+6
25		3.15E+6	3.14E+6	3.57E+6	2.94E+6
50		3.33E+6	3.01E+6	3.22E+6	3.12E+6
100		3.39E+6	2.91E+6	3.32E+6	3.36E+6

CETIS Analytical Report

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	00-7669-6941	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:21	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	100	>100	N/A	1	12.3%

Dunnett's Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	P-Value	Decision(5%)
Lab Water		6.25	-4.21	2.41	310000	1.0000	Non-Significant Effect
		12.5	-5.92	2.41	310000	1.0000	Non-Significant Effect
		25	-5.26	2.41	310000	1.0000	Non-Significant Effect
		50	-5.03	2.41	310000	1.0000	Non-Significant Effect
		100	-5.61	2.41	310000	1.0000	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	1.611087E+12	3.222175E+11	5	9.71	0.0001	Significant Effect
Error	5.97575E+11	33198610000	18			
Total	2.2086624870E+12	3.554161193E+11	23			

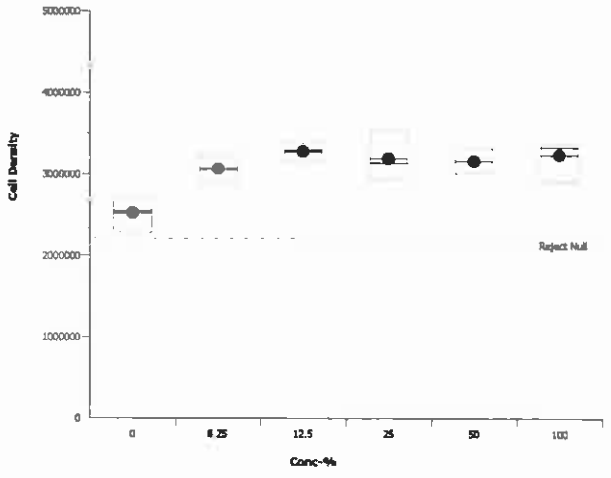
ANOVA Assumptions

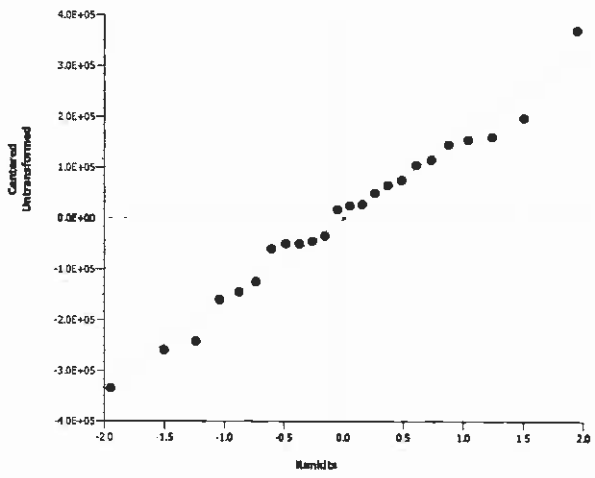
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	3.37	15.1	0.6440	Equal Variances
Distribution	Shapiro-Wilk Normality	0.983		0.9470	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.52E+6	2.45E+6	2.59E+6	2.28E+6	2.72E+6	3.37E+4	1.82E+5	7.2%	0.0%
6.25		4	3.07E+6	3.02E+6	3.11E+6	2.92E+6	3.22E+6	2.32E+4	1.25E+5	4.08%	-21.5%
12.5		4	3.29E+6	3.25E+6	3.32E+6	3.16E+6	3.39E+6	1.94E+4	1.05E+5	3.19%	-30.2%
25		4	3.20E+6	3.10E+6	3.30E+6	2.94E+6	3.57E+6	4.92E+4	2.65E+5	8.28%	-26.9%
50		4	3.17E+6	3.12E+6	3.22E+6	3.01E+6	3.33E+6	2.54E+4	1.37E+5	4.32%	-25.7%
100		4	3.25E+6	3.16E+6	3.33E+6	2.91E+6	3.39E+6	4.18E+4	2.25E+5	6.94%	-28.6%

Graphics





CETIS Analytical Report

Test Code: 02-6946-6336/29457

Selenastrum Growth Test — Pacific EcoRisk

Analysis No:	02-7796-7849	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:21	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	8144900	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC2.5	>100	N/A	N/A	<1	N/A	N/A
IC5	>100	N/A	N/A	<1	N/A	N/A
IC10	>100	N/A	N/A	<1	N/A	N/A
IC15	>100	N/A	N/A	<1	N/A	N/A
IC20	>100	N/A	N/A	<1	N/A	N/A
IC25	>100	N/A	N/A	<1	N/A	N/A
IC40	>100	N/A	N/A	<1	N/A	N/A
IC50	>100	N/A	N/A	<1	N/A	N/A

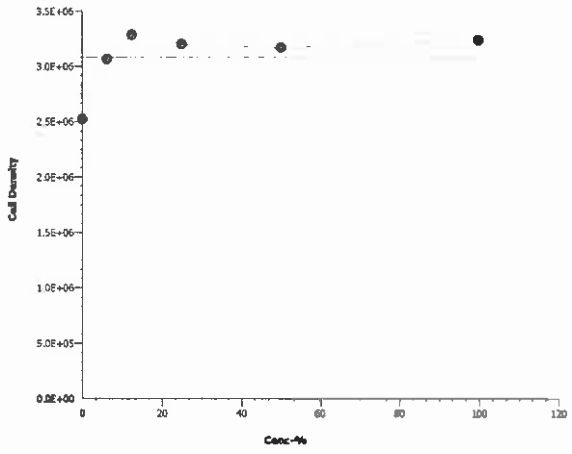
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.52E+6	2.28E+6	2.72E+6	3.31E+4	1.82E+5	7.2%	0.0%
6.25		4	3.07E+6	2.92E+6	3.22E+6	2.28E+4	1.25E+5	4.08%	-21.5%
12.5		4	3.29E+6	3.16E+6	3.39E+6	1.91E+4	1.05E+5	3.19%	-30.2%
25		4	3.20E+6	2.94E+6	3.57E+6	4.84E+4	2.65E+5	8.28%	-26.9%
50		4	3.17E+6	3.01E+6	3.33E+6	2.50E+4	1.37E+5	4.32%	-25.7%
100		4	3.25E+6	2.91E+6	3.39E+6	4.11E+4	2.25E+5	6.94%	-28.6%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.28E+6	2.72E+6	2.54E+6	2.55E+6
6.25		3.09E+6	3.22E+6	3.03E+6	2.92E+6
12.5		3.35E+6	3.39E+6	3.24E+6	3.16E+6
25		3.15E+6	3.14E+6	3.57E+6	2.94E+6
50		3.33E+6	3.01E+6	3.22E+6	3.12E+6
100		3.39E+6	2.91E+6	3.32E+6	3.36E+6

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: **URS: DMC** Initial Count: 10,000 cells/mL

Test Material: SJRDS-004-TOX Enumerating Scientist: SK

Test Start Date: 8/1/08 Start Time: 1405 Project #: 13489

Test End Date: 8/5/08 End Time: 1445 Test ID #: 29457

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	2.28	2.72	2.54	2.55	2.52
6.25%	3.09	3.22	3.03	2.92	3.06
12.5%	3.35	3.39	3.24	3.16	3.28
25%	3.15	3.14	3.57	2.94	3.2
50%	3.33	3.01	3.22	3.12	3.17
100%	3.39	2.91	3.32	3.36	3.24
This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	2.52	7.2	8-5-08	1600	★KS

Selenastrum capricornutum Algal Toxicity Test Water Quality Data

Client: URS: DMC Test ID #: 29457 Test Date: 8/01/08

Test Material: SJRDS-004-TOX Project #: 13489 Control/Diluent: Algal medium, W/O EDTA

R351

Test Treatment	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Sign-Off
Lab Water Control	24.7	7.55	8.1	159	Date: 8/01/08
6.25% Sample	24.7	7.61	8.1	236	Sample ID: 20195
12.5% Sample	24.7	7.68	8.0	279	Test Solution Prep: KO
25% Sample	24.7	7.73	8.1	398	New WQ: AJR.
50% Sample	24.7	7.89	8.1	619	Inoculation Time: 1405
100% Sample	24.7	7.98	8.1	1037	Inoculation Signoff: KO
Meter ID:	12	PH07	DO14	EC01	
Lab Water Control	24.7	7.98			Date: 8/4/08
6.25% Sample	24.7	7.89			WQ Time: ~~10~~ HTA 1040
12.5% Sample	24.7	7.94			WQ Signoff: HTA
25% Sample	24.7	8.03			
50% Sample	24.7	8.04			
100% Sample	24.7	8.21			
Meter ID:	41	PH09			
Lab Water Control	25.0	8.67			Date: 8/3/08
6.25% Sample	25.0	8.37			WQ Time: 1025
12.5% Sample	25.0	~~8.60~~			WQ Signoff: JW
25% Sample	25.0	8.54			
50% Sample	25.0	8.48			
100% Sample	25.0	8.56			
Meter ID:	12	PH11			
Lab Water Control	24.7	9.71			Date: 8/4/08
6.25% Sample	24.7	9.14			WQ Time: 0930
12.5% Sample	24.7	9.64			WQ Signoff: HTA
25% Sample	24.7	9.58			
50% Sample	24.7	9.30			
100% Sample	24.7	9.22			
Meter ID:	41	PH09			
Lab Water Control	24.8	10.10	13.7	184	Date: 8/5/08
6.25% Sample	24.8	9.90	12.9	233	Termination Time: 1445
12.5% Sample	24.8	10.25	13.5	296	Termination Signoff: SH
25% Sample	24.8	10.26	14.6	409	WQ Time: 1245
50% Sample	24.8	10.07	14.4	610	WQ Signoff: AS
100% Sample	24.8	10.00	17.0	993	
Meter ID:	12	pH09	DO12	EC04	

Initial Test Conditions	Alkalinity	Hardness	Light Intensity (ftc)
	107 ✓	124 ✓	401

Appendix C

Test Data and Summary of Statistics for the Evaluation of the Acute Toxicity of the San Joaquin River Recirculation Study Ambient Waters to *Ceriodaphnia dubia*

CETIS Summary Report

Acute Ceriodaphnia Survival Test — Pacific EcoRisk

Test Run No:	10-4457-8305	**Test Type:**	Survival (48h)	**Analyst:**	John Jirasritumrong
Start Date:	30 Jul-08 15:45	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Spring Water
Ending Date:	03 Aug-08 14:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Duration:	95h	**Source:**	In-House Culture	**Age:**	1

Sample No:	09-1745-9873	**Code:**	NWDS-001	**Client:**	URS
Sample Date:	29 Jul-08 06:40	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	01 Jul-08 11:50	**Source:**	URS		
Sample Age:	33h (12 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
03-1050-5907	48h Survival Rate	100	>100	N/A	5.0%	1	Steel Many-One Rank Test

48h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

48h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	1
12.5		1	1	1	1
25		1	1	1	1
50		1	1	1	1
100		1	1	1	1

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Analysis No:	03-1050-5907	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:03	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	5.0%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	18	10	1	0.8330	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	18	10	1	0.8330	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	18	10	1	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0	0	5	65500	0.0000	Significant Effect
Error	0	0	18			
Total	0	0	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	65500	4.25	0.0000	Unequal Variances

48h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

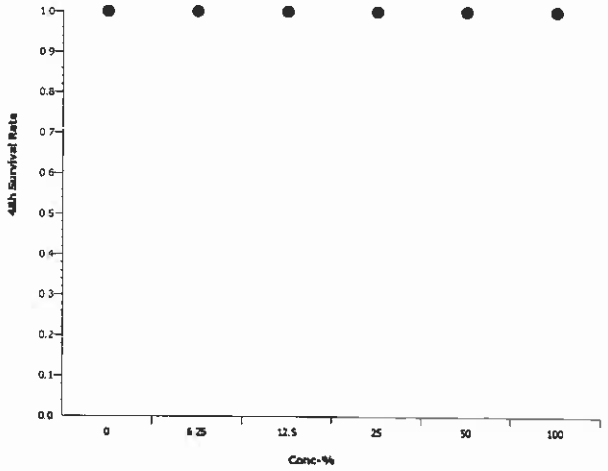
Angular (Corrected) Transformed Summary

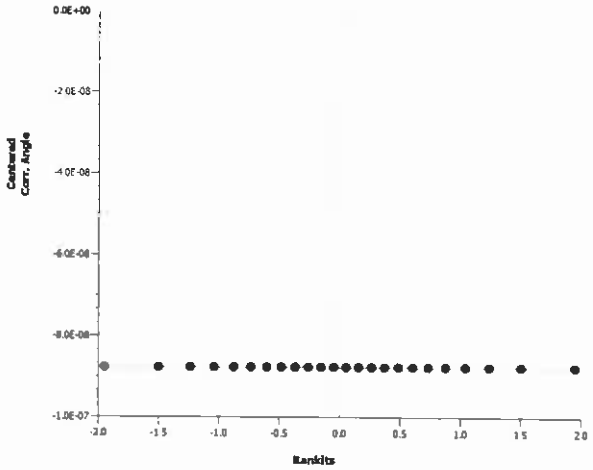
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
6.25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
12.5		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
50		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
100		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Analysis No:	03-1050-5907	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:03	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





96 Hour Acute *Ceriodaphnia dubia* Toxicity Test Data

Client: URS: DMC
Test Date: 7/30/08
Test Material: NWDS-001-TOX
Control/Diluent: Conditioned 80:20
Test ID#: 29459 Project #: 13489
Control Water Batch: Tank #1
Randomization: 4.6.3

Feeding T0 Time: 860 Initials: YC
Feeding T46-hr Time: 0845 Initials: JPC

Treatment	Temp (°C)	pH New	pH Old	D.O. New	D.O. Old	Conductivity (µS/cm)	# Live Animals A	B	C	D	Sign-Off
Control	20.3	8.35		8.3		286.7	5	5	5	5	Date: 7/30/08
6.25%	20.3	8.3		8.4		356	5	5	5	5	Sample ID: 20170
12.5%	20.3	8.25		8.4		418	5	5	5	5	Test Solution Prep: JPC
25%	20.3	8.19		8.8		578	5	5	5	5	New WQ: mf
50%	20.3	8.08		8.8		861	5	5	5	5	Initiation Time: 1545
100%	20.3	7.96		9.4		1431	5	5	5	5	Initiation Signoff: JPC
Meter ID	47	PH03		DO14		EC05					
Control	19.8		8.29		~~272~~ 8.9	272.4	5	5	5	5	Date: 7/31/08
6.25%	19.8		8.41		~~350~~ 8.2	350	5	5	5	5	Count Time: 945
12.5%	19.9		8.42		8.0	486	5	5	5	5	Count Signoff: Q
25%	19.9		8.51		8.1	583	5	5	5	5	Old WQ: mf
50%	19.8		8.60		8.1	852	5	5	5	5	
100%	19.8		8.69		8.0	1446	5	5	5	5	
Meter ID	47		PH03		DO10	EC05					
Control	20.1	8.31	8.19	8.7	8.4	251	5	5	5	5	Date: 8/1/08
6.25%	20.1	8.31	8.28	8.7	8.3	358	5	5	5	5	Sample ID: 20170
12.5%	20.1	~~8.15~~ 8.32	~~8.35~~ 8.48	~~8.9~~ 8.7	8.4	~~1427~~ 438	5	5	5	5	Test Solution Prep: JS
25%	20.1	8.29	8.40	8.7	8.3	586	5	5	5	5	New WQ: JR
50%	20.1	8.24	8.52	8.8	8.3	869	5	5	5	5	Count Time: 1345
100%	20.1	8.20	8.65	9.0	8.2	1414	5	5	5	5	Count Signoff: JS
Meter ID	47	pH09	pH03	DO10	DO14	EC05					Old WQ: mf
Control	19.7		8.36		9.2	349	5	5	5	5	Date: 8/2/08
6.25%	19.7		8.36		9.6	362	5	5	5	5	Count Time: 915
12.5%	19.7		8.43		9.4	442	5	5	5	5	Count Signoff: MM
25%	19.7		8.51		9.5	585	5	5	5	5	Old WQ: JMQ
50%	19.7		8.57		8.7	866	5	5	5	5	
100%	19.7		8.68		8.6	1351	5	5	5	5	
Meter ID	55		pH09		DO12	EC04					
Control	20.4		8.42		8.7	264	5	5	5	5	Date: 8/3/08
6.25%	20.4		8.62		9.3	379	5	5	5	5	Termination Time: 1445
12.5%	20.4		8.53		8.8	153	5	5	5	5	Termination Signoff: RV
25%	20.4		8.63		9.0	575	5	5	5	5	Old WQ: SL
50%	20.4		8.67		8.9	915	5	5	5	5	
100%	20.4		8.73		8.6	1635	5	5	5	5	
Meter ID	47		PH03		DO12	EC04					

CETIS Summary Report

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Test Run No:	03-6394-9623	**Test Type:**	Survival (48h)	**Analyst:**	John Jirasritumrong
Start Date:	30 Jul-08 16:15	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Spring Water
Ending Date:	03 Aug-08 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Duration:	95h	**Source:**	In-House Culture	**Age:**	1

Sample No:	07-7753-2107	**Code:**	NWDS-002	**Client:**	URS
Sample Date:	29 Jul-08 21:52	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	18h (5 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
17-5202-5189	48h Survival Rate	100	>100	N/A	21.7%	1	Steel Many-One Rank Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
00-9398-5095	48h Survival Rate	EC2.5	3.55	N/A	N/A	28.2	Linear Regression (MLE)
		EC10	68.6	N/A	N/A	1.46	
		EC15	200	N/A	N/A	0.5	
		EC20	469	N/A	N/A	0.213	
		EC25	972	N/A	N/A	0.103	
		EC40	6120	N/A	N/A	0.0163	
		EC50	18500	N/A	N/A	0.00541	

48h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	0.95	0.913	0.987	0.8	1	0.0183	0.1	10.5%	5.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	0.95	0.913	0.987	0.8	1	0.0183	0.1	10.5%	5.0%
50		4	0.8	0.694	0.906	0.4	1	0.0516	0.283	35.4%	20.0%
100		4	0.95	0.913	0.987	0.8	1	0.0183	0.1	10.5%	5.0%

48h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		0.8	1	1	1
12.5		1	1	1	1
25		0.8	1	1	1
50		0.8	1	0.4	1
100		1	0.8	1	1

Acute Ceriodaphnia Survival Test				Pacific EcoRisk
Analysis No: 17-5202-5189	**Endpoint:** 48h Survival Rate		**CETIS Version:**	CETISv1.6.5
Analyzed: 04 Sep-08 16:47	**Analysis:** Nonparametric-Control vs Treatments		**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	21.7%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	16	10	1	0.6100	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	16	10	1	0.6100	Non-Significant Effect
		50	14	10	1	0.3450	Non-Significant Effect
		100	16	10	1	0.6100	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.1360249	0.02720497	5	1.17	0.3620	Non-Significant Effect
Error	0.4187306	0.02326281	18			
Total	0.55475547909737	0.05046778358519	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	1.87	4.25	0.1490	Equal Variances
Distribution	Shapiro-Wilk Normality	0.8		0.0003	Non-normal Distribution

48h Survival Rate Summary

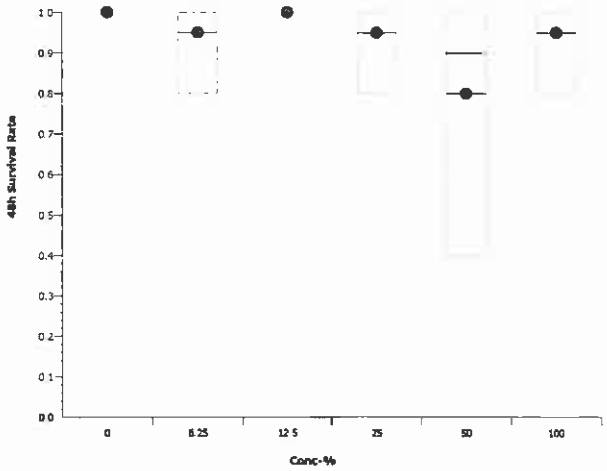
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	0.95	0.912	0.988	0.8	1	0.0186	0.1	10.5%	5.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	0.95	0.912	0.988	0.8	1	0.0186	0.1	10.5%	5.0%
50		4	0.8	0.692	0.908	0.4	1	0.0525	0.283	35.4%	20.0%
100		4	0.95	0.912	0.988	0.8	1	0.0186	0.1	10.5%	5.0%

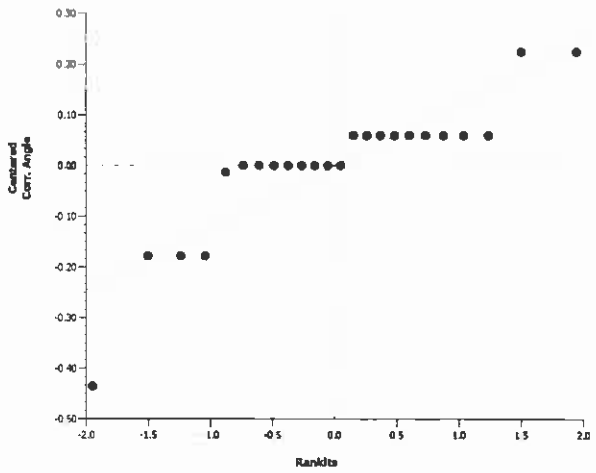
Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
6.25		4	1.29	1.24	1.33	1.11	1.35	0.0221	0.119	9.26%	4.43%
12.5		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
25		4	1.29	1.24	1.33	1.11	1.35	0.0221	0.119	9.26%	4.43%
50		4	1.12	1	1.24	0.685	1.35	0.0578	0.312	27.8%	16.7%
100		4	1.29	1.24	1.33	1.11	1.35	0.0221	0.119	9.26%	4.43%

Acute Ceriodaphnia Survival Test					Pacific EcoRisk
Analysis No:	17-5202-5189	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:47	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Analysis No:	00-9398-5095	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:47	**Analysis:**	Linear Regression (MLE)	**Official Results:**	Yes

Linear Regression Options

Model Function	Threshold Option	Threshold	Optimized	Pooled	Het Corr	Weighted
Log-Normal [NED=A+B*log(X)]	Control Threshold	0	Yes	No	No	Yes

Regression Summary

Iters	LL	AICc	Mu	Sigma	G Stat	Chi-Sq	Critical	P-Value	Decision(5%)
5	-24.7	54.1	5.22	1.9	3.02	28.7	28.9	0.0517	Non-Significant Heterogeneity

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC2.5	3.55	N/A	N/A	28.2	N/A	N/A
EC10	68.6	N/A	N/A	1.46	N/A	N/A
EC15	200	N/A	N/A	0.5	N/A	N/A
EC20	469	N/A	N/A	0.213	N/A	N/A
EC25	972	N/A	N/A	0.103	N/A	N/A
EC40	6120	N/A	N/A	0.0163	N/A	N/A
EC50	18500	N/A	N/A	0.00541	N/A	N/A

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Stat	P-Value	Decision(5%)
Slope	0.527	0.468	-0.389	1.44	1.13	0.2740	Non-Significant Parameter
Intercept	2.75	0.732	1.31	4.19	3.76	0.0014	Significant Parameter

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision(5%)
Variances	Mod Levene Equality of Variance	1.31	3.06	0.3090	Equal Variances
Distribution	Shapiro-Wilk Normality	0.656		0.0000	Non-normal Distribution

48h Survival Rate Summary

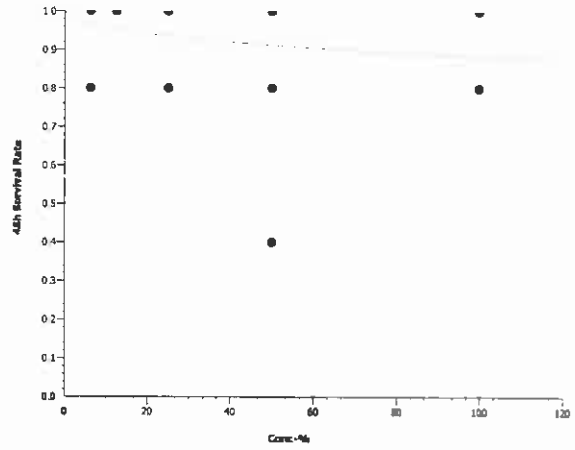
			Calculated Variate(A/B)								
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%	A	B
0	Lab Water	4	1	1	1	0	0	0.0%	0.0%	20	20
6.25		4	0.95	0.8	1	0.0183	0.1	10.5%	5.0%	19	20
12.5		4	1	1	1	0	0	0.0%	0.0%	20	20
25		4	0.95	0.8	1	0.0183	0.1	10.5%	5.0%	19	20
50		4	0.8	0.4	1	0.0516	0.283	35.4%	20.0%	16	20
100		4	0.95	0.8	1	0.0183	0.1	10.5%	5.0%	19	20

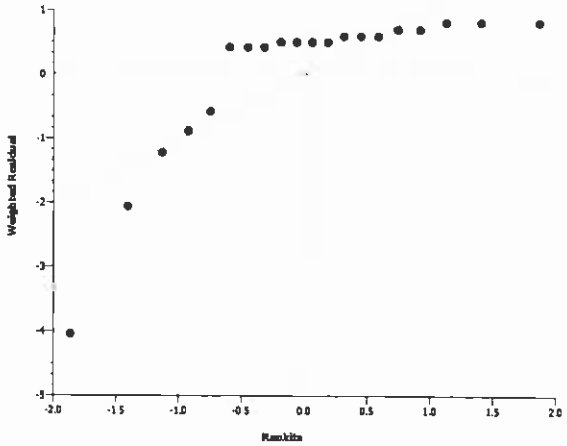
48h Survival Rate Detail

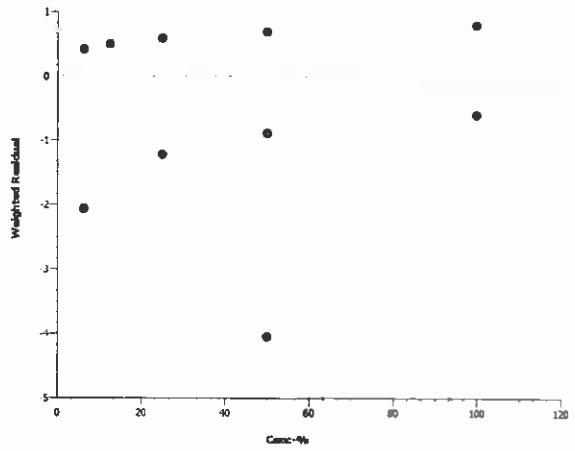
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		0.8	1	1	1
12.5		1	1	1	1
25		0.8	1	1	1
50		0.8	1	0.4	1
100		1	0.8	1	1

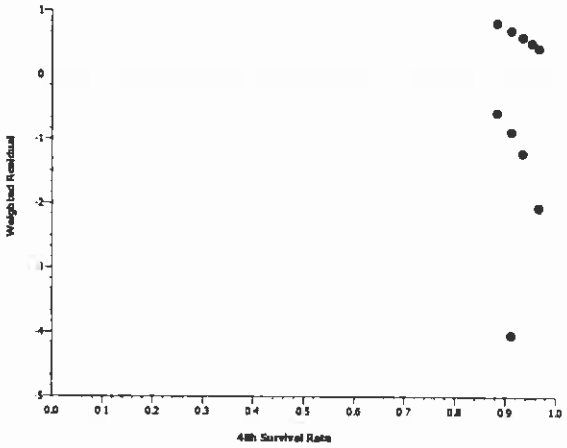
Acute Ceriodaphnia Survival Test					Pacific EcoRisk
Analysis No:	00-9398-5095	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:47	**Analysis:**	Linear Regression (MLE)	**Official Results:**	Yes

Graphics









96 Hour Acute *Ceriodaphnia dubia* Toxicity Test Data

Client: URS: DMC
Test Material: NWDS-002-TOX
Test ID#: 29460 Project # 13489
Randomization: C(1)
Feeding T0 Time: 830 Initials: JL

Test Date: 7/30/08
Control/Diluent: Conditioned 80:20
Control Water Batch: Tank 3
Feeding T46-hr Time: 0845 Initials JPL

Treatment	Temp (°C)	pH New	pH Old	D.O. New	D.O. Old	Conductivity (µS/cm)	# Live Animals A	B	C	D	Sign-Off
Control	20.3	8.46		7.7		251	5	5	5	5	Date: 7/30/08
6.25%	20.3	8.38		7.5		325	5	5	5	5	Sample ID: 20179
12.5%	20.3	8.30		7.5		398	5	5	5	5	Test Solution Prep:
25%	20.3	8.18		7.8		527	5	5	5	5	New WQ: RV
50%	20.3	8.05		7.7		786	5	5	5	5	Initiation Time: 1615
100%	20.3	7.93		7.4		1269	5	5	5	5	Initiation Signoff: JL
Meter ID	47	pH11		DO12		EC04					
Control	19.7		8.28		8.5	275.8	5	5	5	5	Date: 7/31/08
6.25%	19.7		8.35		9.0	334	4	5	5	5	Count Time: 0920
12.5%	19.7		8.39		8.9	404	5	5	5	5	Count Signoff: JPL
25%	19.7		8.44		8.7	531	4	5	5	5	Old WQ: RV
50%	19.7		8.50		8.8	793	5	5	4	5	
100%	19.7		8.60		8.8	1302	5	5	5	5	
Meter ID	55		pH11		DO12	EC04					
Control	20.3	8.20	8.29	8.5	8.0	247.9	5	5	5	5	Date: 8/1/08
6.25%	20.3	8.19	8.30	8.6	7.9	325	4	5	5	5	Sample ID: 20179
12.5%	20.3	8.14	8.33	8.6	7.3	403	5	5	5	5	Test Solution Prep: JL
25%	20.3	8.05	8.40	8.4	7.7	540	4	5	5	5	New WQ: RV
50%	20.3	7.94	8.47	8.6	7.6	803	4	5	2	5	Count Time: JPL 1445 JPL 1715
100%	20.3	7.82	8.62	8.9	7.3	1297	5	4	5	5	Count Signoff: JPL JPL
Meter ID	47	pH03	pH09	DO14	DO12	EC01					Old WQ: JPL
Control	19.6		8.23		9.4	275	5	5	5	5	Date: 8/2/08
6.25%	19.6		8.25		9.1	327	4	5	5	5	Count Time: 930
12.5%	19.6		8.27		9.6	1101	5	5	5	5	Count Signoff: RV
25%	19.6		8.31		9.7	527	4	5	5	5	Old WQ: JPL
50%	19.6		8.40		9.0	742	4	5	2	5	
100%	19.6		8.52		9.7	1299	5	4	5	5	
Meter ID	55		pH03		DO12	EC01					
Control	20.5		8.35		8.7	279	5	5	5	5	Date: 8/3/08
6.25%	20.5		8.32		8.8	366	4	5	5	5	Termination Time: 1545
12.5%	20.5		8.32		8.8	491	5	5	5	5	Termination Signoff: JPL
25%	20.5		8.33		8.8	585	4	5	5	5	Old WQ: JL
50%	20.5		8.45		8.7	878	4	5	2	5	
100%	20.5		8.55		8.7	1427	5	4	5	5	
Meter ID	47		pH11		DO14	EC01					

CETIS Summary Report

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Test Run No:	06-6695-7567	**Test Type:**	Survival (48h)	**Analyst:**	John Jirasritumrong
Start Date:	31 Jul-08 11:45	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Spring Water
Ending Date:	04 Aug-08 10:15	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Duration:	94h	**Source:**	In-House Culture	**Age:**	1

Sample No:	01-3232-9006	**Code:**	NWDS-003	**Client:**	URS
Sample Date:	30 Jul-08 00:45	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	35h (5 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
19-2963-4590	48h Survival Rate	100	>100	N/A	5.0%	1	Steel Many-One Rank Test

48h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

48h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	1
12.5		1	1	1	1
25		1	1	1	1
50		1	1	1	1
100		1	1	1	1

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Analysis No:	19-2963-4590	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:08	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	5.0%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	18	10	1	0.8330	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	18	10	1	0.8330	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	18	10	1	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0	0	5	65500	0.0000	Significant Effect
Error	0	0	18			
Total	0	0	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	65500	4.25	0.0000	Unequal Variances

48h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

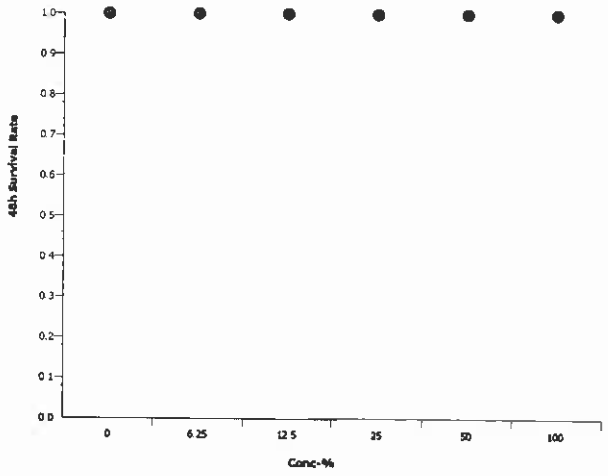
Angular (Corrected) Transformed Summary

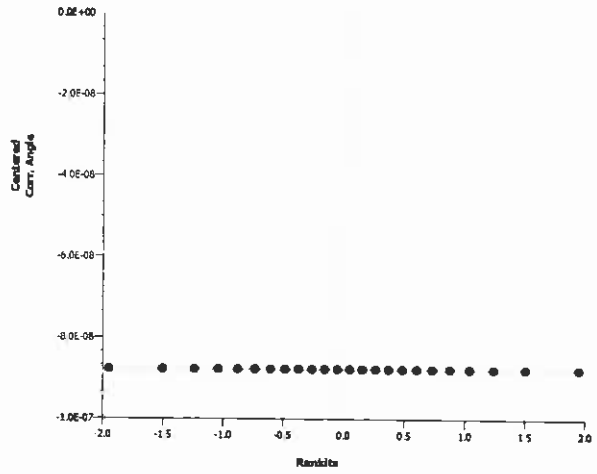
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
6.25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
12.5		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
50		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
100		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%

Acute Ceriodaphnia Survival Test — Pacific EcoRisk

Analysis No:	19-2963-4590	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:08	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





96 Hour Acute *Ceriodaphnia dubia* Toxicity Test Data

Client: URS: DMC
Test Material: NWDS-003-TOX
Test ID#: 29461 Project # 13489
Randomization: C.6.8

Test Date: 7/31/08
Control/Diluent: Conditioned 80:20
Control Water Batch: Tank 1

Feeding T0 Time: ~~YK~~ 800 Initials: YK
Feeding T46-hr Time: 0830 Initials JPC

Treatment	Temp (°C)	pH New	pH Old	D.O. New	D.O. Old	Conductivity (µS/cm)	# Live Animals A	B	C	D	Sign-Off
Control	20.0	8.28		8.8		256	5	5	5	5	Date: 7/31/08
6.25%	20.0	8.25		8.8		295	5	5	5	5	Sample ID: 20180
12.5%	20.0	8.22		8.9		340	5	5	5	5	Test Solution Prep: JPC
25%	20.0	8.14		9.0		404	5	5	5	5	New WQ: SL
50%	20.0	8.01		9.3		550	5	5	5	5	Initiation Time: 1145
100%	20.0	7.78		9.8		826	5	5	5	5	Initiation Signoff: JPC
Meter ID	47	PH 11		DO 12		EC 04					
Control	20.2		8.20		8.2	292	5	5	5	5	Date: 8/1/08
6.25%	20.2		8.16		8.6	305	5	5	5	5	Count Time: 1030
12.5%	20.2		8.19		7.8	341	5	5	5	5	Count Signoff: JL
25%	20.2		8.19		7.8	412	5	5	5	5	Old WQ: AT
50%	20.2		8.20		7.8	556	5	5	5	5	
100%	20.2		8.19		8.0	845	5	5	5	5	
Meter ID	47		PH03		DO14	Ec01					
Control	20.4	8.16	9.23	8.6	9.9	265	5	5	5	5	Date: 8/2/08
6.25%	20.4	8.12	9.14	8.4	9.7	302	5	5	5	5	Sample ID: 20180
12.5%	20.4	8.08	9.25	8.5	9.7	336	5	5	5	5	Test Solution Prep: JL
25%	20.4	8.00	9.22	8.5	8.8	403	5	5	5	5	New WQ: JLR
50%	20.4	7.94	9.21	8.4	8.9	531	5	5	5	5	Count Time: 1515
100%	20.4	7.71	9.18	7.9	9.4	787	5	5	5	5	Count Signoff:
Meter ID	55	pH 11	PH07	DO10	DO12	EC05					Old WQ:
Control	20.2		9.45		9.9	288	5	5	5	5	Date: 8/3/08
6.25%	20.2		8.32		9.7	322	5	5	5	5	Count Time: 0950
12.5%	20.2		8.26		9.5	359	5	5	5	5	Count Signoff: BA
25%	20.2		9.25		9.9	426	5	5	5	5	Old WQ:
50%	20.2		9.14		9.7	514	5	5	5	5	
100%	20.2		9.30		8.7	EC05	5	5	5	5	
Meter ID	47		PH03		DO12						
Control	20.2		8.31		8.6	289	5	5	5	5	Date: 8/4/08
6.25%	20.2		8.33		8.6	343	5	5	5	5	Termination Time: 1015
12.5%	20.2		8.32		8.7	374	5	5	5	5	Termination Signoff: JPC
25%	20.2		8.33		8.6	447	5	5	5	5	Old WQ: JLW
50%	20.2		8.32		8.7	568	5	5	5	5	
100%	20.2		8.31		8.6	EC04	5	5	5	5	
Meter ID	47		PH03		DO12	EC01					

CETIS Summary Report

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Test Run No:	13-3771-8234	**Test Type:**	Survival (48h)	**Analyst:**	John Jirasritumrong
Start Date:	01 Aug-08 15:20	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Spring Water
Ending Date:	05 Aug-08 13:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Duration:	94h	**Source:**	In-House Culture	**Age:**	1

Sample No:	20-9391-4618	**Code:**	NWDS-004	**Client:**	URS
Sample Date:	31 Jul-08 06:40	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	31 Jul-08 12:04	**Source:**	URS		
Sample Age:	33h (13.4 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
11-7809-1374	48h Survival Rate	100	>100	N/A	11.3%	1	Steel Many-One Rank Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
18-4674-1913	48h Survival Rate	EC2.5	45.4	N/A	N/A	2.2	Linear Regression (MLE)
		EC10	320	N/A	N/A	0.312	
		EC15	649	N/A	N/A	0.154	
		EC20	1140	N/A	N/A	0.0879	
		EC25	1840	N/A	N/A	0.0543	
		EC40	6190	N/A	N/A	0.0162	
		EC50	12800	N/A	N/A	0.00779	

48h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	0.95	0.913	0.987	0.8	1	0.0183	0.1	10.5%	5.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	0.95	0.913	0.987	0.8	1	0.0183	0.1	10.5%	5.0%

48h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	1
12.5		1	1	1	1
25		1	1	0.8	1
50		1	1	1	1
100		1	0.8	1	1

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Analysis No:	11-7809-1374	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:15	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	11.3%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	18	10	1	0.8330	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	16	10	1	0.6100	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	16	10	1	0.6100	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.01890263	0.003780527	5	0.8	0.5640	Non-Significant Effect
Error	0.08506185	0.004725658	18			
Total	0.10396448150277	0.00850618490949	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	0.8	4.25	0.5640	Equal Variances
Distribution	Shapiro-Wilk Normality	0.615		0.0000	Non-normal Distribution

48h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	0.95	0.912	0.988	0.8	1	0.0186	0.1	10.5%	5.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	0.95	0.912	0.988	0.8	1	0.0186	0.1	10.5%	5.0%

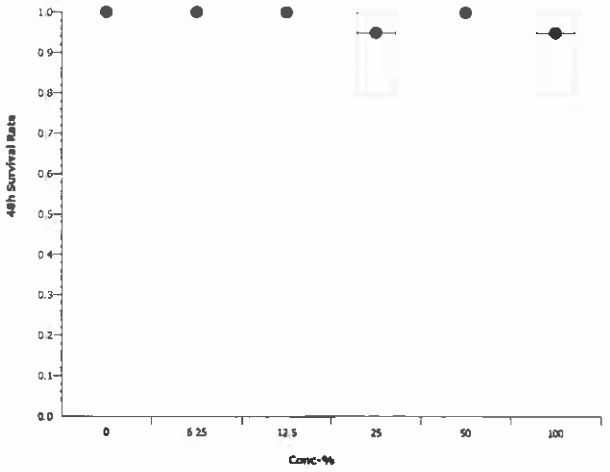
Angular (Corrected) Transformed Summary

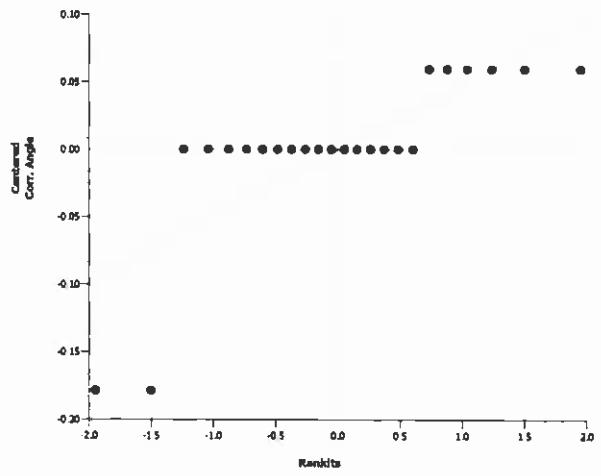
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
6.25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
12.5		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
25		4	1.29	1.24	1.33	1.11	1.35	0.0221	0.119	9.26%	4.43%
50		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
100		4	1.29	1.24	1.33	1.11	1.35	0.0221	0.119	9.26%	4.43%

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Analysis No:	11-7809-1374	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:15	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





Acute Ceriodaphnia Survival Test				Pacific EcoRisk
Analysis No: 18-4674-1913	Endpoint: 48h Survival Rate		CETIS Version:	CETISv1.6.5
Analyzed: 04 Sep-08 17:15	Analysis: Linear Regression (MLE)		Official Results:	Yes

Linear Regression Options

Model Function	Threshold Option	Threshold	Optimized	Pooled	Het Corr	Weighted
Log-Normal [NED=A+B*log(X)]	Control Threshold	0	Yes	No	No	Yes

Regression Summary

Iters	LL	AICc	Mu	Sigma	G Stat	Chi-Sq	Critical	P-Value	Decision(5%)
7	-9.25	23.2	2.15	1.25	3.91	15.9	28.9	0.5970	Non-Significant Heterogeneity

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC2.5	45.4	N/A	N/A	2.2	N/A	N/A
EC10	320	N/A	N/A	0.312	N/A	N/A
EC15	649	N/A	N/A	0.154	N/A	N/A
EC20	1140	N/A	N/A	0.0879	N/A	N/A
EC25	1840	N/A	N/A	0.0543	N/A	N/A
EC40	6190	N/A	N/A	0.0162	N/A	N/A
EC50	12800	N/A	N/A	0.00779	N/A	N/A

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Stat	P-Value	Decision(5%)
Slope	0.799	0.806	-0.781	2.38	0.992	0.3350	Non-Significant Parameter
Intercept	1.72	1.35	-0.938	4.37	1.27	0.2210	Non-Significant Parameter

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision(5%)
Variances	Mod Levene Equality of Variance	0.782	3.06	0.5540	Equal Variances
Distribution	Shapiro-Wilk Normality	0.477		0.0000	Non-normal Distribution

48h Survival Rate Summary

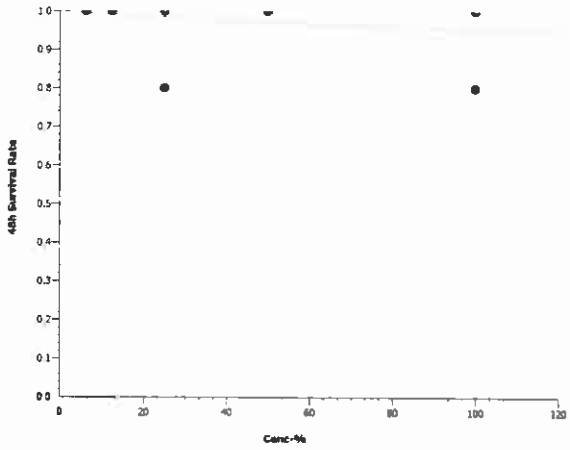
			Calculated Variate(A/B)								
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%	A	B
0	Lab Water	4	1	1	1	0	0	0.0%	0.0%	20	20
6.25		4	1	1	1	0	0	0.0%	0.0%	20	20
12.5		4	1	1	1	0	0	0.0%	0.0%	20	20
25		4	0.95	0.8	1	0.0183	0.1	10.5%	5.0%	19	20
50		4	1	1	1	0	0	0.0%	0.0%	20	20
100		4	0.95	0.8	1	0.0183	0.1	10.5%	5.0%	19	20

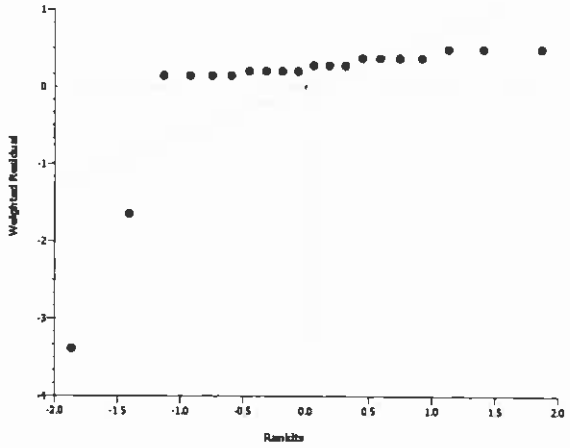
48h Survival Rate Detail

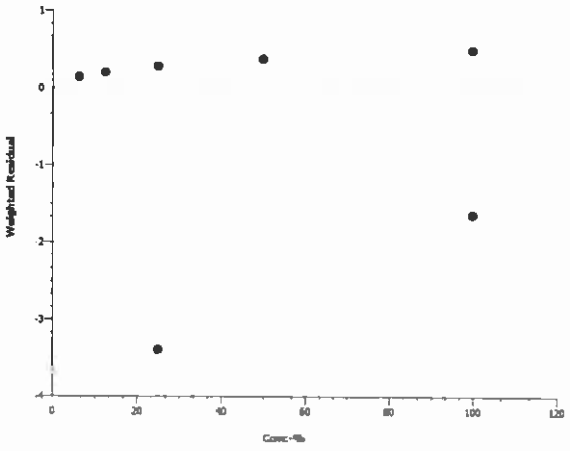
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	1
12.5		1	1	1	1
25		1	1	0.8	1
50		1	1	1	1
100		1	0.8	1	1

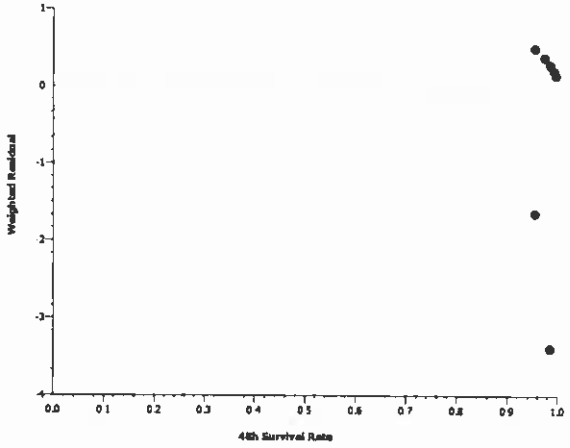
Acute Ceriodaphnia Survival Test					Pacific EcoRisk
Analysis No:	18-4674-1913	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:15	**Analysis:**	Linear Regression (MLE)	**Official Results:**	Yes

Graphics









96 Hour Acute *Ceriodaphnia dubia* Toxicity Test Data

Client: **URS: DMC** Test Date: 8/1/2008

Test Material: NWDS-004-TOX Control/Diluent: Conditioned 80:20

Test ID#: 29462 Project # 13489 Control Water Batch: Tank #3

Randomization: 4.6.5

Feeding T0 Time: 8:30 Initials: YK Feeding T46-hr Time: 8:00 Initials JPW

Treatment	Temp (°C)	pH New	pH Old	D.O. New	D.O. Old	Conductivity (µS/cm)	# Live Animals A	B	C	D	Sign-Off
Control	20.1	8.16		8.7		260	5	5	5	5	Date: 8/1/2008
6.25%	20.1	8.14		8.5		278	5	5	5	5	Sample ID: 20194
12.5%	20.1	8.13		8.6		290	5	5	5	5	Test Solution Prep: AT
25%	20.1	8.09		8.7		379	5	5	5	5	New WQ: AT
50%	20.1	7.99		8.7		376	5	5	5	5	Initiation Time: 1520
100%	20.1	7.81		8.5		491	5	5	5	5	Initiation Signoff: JS
Meter ID	47	PH03		0014		EC01					
Control	19.6		8.29		9.7	295	5	5	5	5	Date: 8/2/2008
6.25%	19.6		8.26		9.7	271	5	5	5	5	Count Time: 930
12.5%	19.6		8.19		8.6	325	5	5	5	5	Count Signoff:
25%	19.6		8.30		8.30	377	5	5	5	5	Old WQ: AMK
50%	19.6		8.17		8.3	417	5	5	5	5	
100%	19.6		8.08		8.0	427	5	4	5	5	
Meter ID	55		DH05		DO12	EC04					
Control	20.3	8.30	8.07	8.8	8.0	261	5	5	5	5	Date: 8/3/2008
6.25%	20.3	8.28	8.08	8.9	8.1	278	5	5	5	5	Sample ID: 20194
12.5%	20.3	8.25	8.09	8.9	8.5	290	5	5	5	5	Test Solution Prep: AT
25%	20.3	8.18	8.13	9.0	8.2	321	5	5	4	5	New WQ: SL
50%	20.3	8.08	8.05	9.2	7.9	373	5	5	5	5	Count Time: 1255
100%	20.3	7.93	8.05	9.4	8.0	484	5	4	5	5	Count Signoff: RV
Meter ID	47	PH03	PH09	DO12	DO10	EC04					Old WQ: AMK
Control	20.2		8.27		8.4	363	5	5	5	5	Date: 8/4/08
6.25%	20.2		8.28		8.5	307	5	5	5	5	Count Time: 09:00
12.5%	20.2		8.27		8.5	321	5	5	5	5	Count Signoff: JS
25%	20.2		8.25		8.5	335	5	5	4	5	Old WQ: SL
50%	20.2		8.24		8.5	409	5	5	5	5	
100%	20.2		8.17		8.3	536	5	4	5	5	
Meter ID	55		pH 03		DO12	EC02					
Control	20.4		8.34		7.2	318	5	5	5	5	Date: 8/5/08
6.25%	20.4		8.40		7.2	318	5	5	5	5	Termination Time: 1345
12.5%	20.4		8.43		7.3	320	5	5	5	5	Termination Signoff: JPW
25%	20.4		8.43		7.3	380	5	5	4	5	Old WQ: SL
50%	20.4		8.42		7.3	498	5	5	5	5	
100%	20.4		8.37		7.3	571	5	4	5	5	
Meter ID	47		pH03		DO10	EC05					

CETIS Summary Report

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Test Run No:	07-5739-3668	**Test Type:**	Survival (48h)	**Analyst:**	John Jirasritumrong
Start Date:	30 Jul-08 16:10	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Spring Water
Ending Date:	03 Aug-08 15:35	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Duration:	95h	**Source:**	In-House Culture	**Age:**	1

Sample No:	07-9557-0216	**Code:**	SJRDS-001	**Client:**	URS
Sample Date:	29 Jul-08 08:00	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	29 Jul-08 11:50	**Source:**	URS		
Sample Age:	32h (18.1 °C)	**Station:**	SJRDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
08-6015-9051	48h Survival Rate	100	>100	N/A	5.0%	1	Steel Many-One Rank Test

48h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

48h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	1
12.5		1	1	1	1
25		1	1	1	1
50		1	1	1	1
100		1	1	1	1

Acute Ceriodaphnia Survival Test				Pacific EcoRisk
Analysis No: 08-6015-9051	Endpoint: 48h Survival Rate	CETIS Version:	CETISv1.6.5	
Analyzed: 04 Sep-08 16:55	Analysis: Nonparametric-Control vs Treatments	Official Results:	Yes	

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	5.0%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	18	10	1	0.8330	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	18	10	1	0.8330	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	18	10	1	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0	0	5	65500	0.0000	Significant Effect
Error	0	0	18			
Total	0	0	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	65500	4.25	0.0000	Unequal Variances

48h Survival Rate Summary

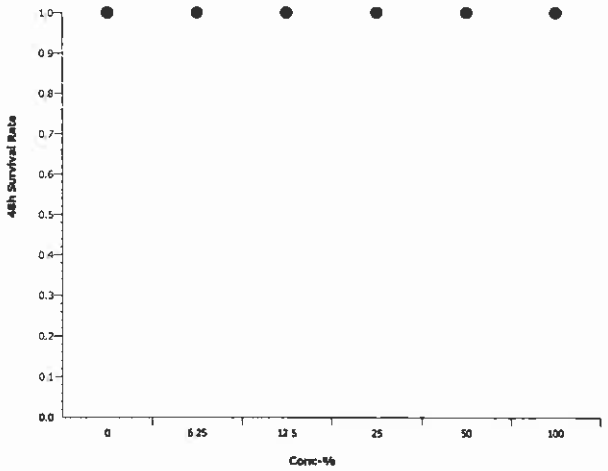
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

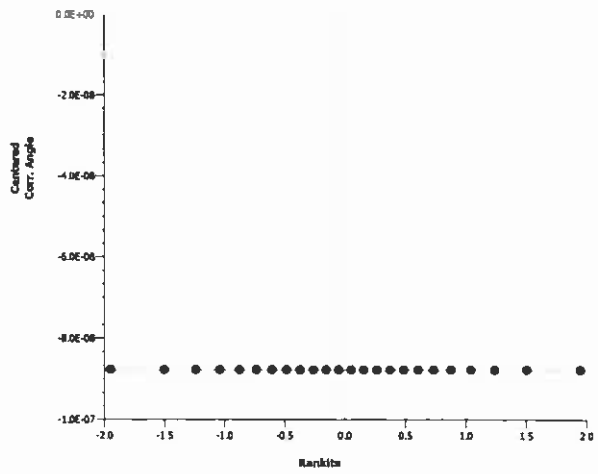
Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
6.25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
12.5		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
50		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
100		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%

Acute Ceriodaphnia Survival Test					Pacific EcoRisk
Analysis No:	08-6015-9051	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:55	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





96 Hour Acute *Ceriodaphnia dubia* Toxicity Test Data

Client: URS: DMC
Test Material: SJRDS-001-TOX
Test ID#: 29463 Project # 13489
Randomization: C-6-1
Feeding T0 Time: 800 Initials: YK

Test Date: 7/30/08
Control/Diluent: Conditioned 80:20
Control Water Batch: Tank #1
Feeding T46-hr Time: 0845 Initials JPL

Treatment	Temp (°C)	pH New	pH Old	D.O. New	D.O. Old	Conductivity (µS/cm)	# Live Animals A	B	C	D	Sign-Off
Control	20.2	8.34		8.3		253	5	5	5	5	Date: 7/30/08
6.25%	20.2	8.31		8.4		377	5	5	5	5	Sample ID: 20171
12.5%	20.2	8.30		8.6		473	5	5	5	5	Test Solution Prep: JPL
25%	20.2	8.26		8.7		698	5	5	5	5	New WQ: ASR
50%	20.2	8.23		8.8		1030	5	5	5	5	Initiation Time: 1610
100%	20.2	8.19		9.2		1713	5	5	5	5	Initiation Signoff:
Meter ID	47	PH03		DO14		EC05					
Control	19.4		8.30		7.9	291.7	5	5	5	5	Date: 7/31/08
6.25%	19.9		8.34		8.0	385	5	5	5	5	Count Time: 1040
12.5%	19.8		8.39		8.0	481	5	5	5	5	Count Signoff:
25%	19.8		8.41		8.1	655	5	5	5	5	Old WQ:
50%	19.8		8.45		8.3	1046	5	5	5	5	
100%	19.8		8.52		8.3	1797	5	5	5	5	
Meter ID	47		pH03		DO10	EC05					
Control	20.1	8.20	8.05	8.7	8.1	248.2	5	5	5	5	Date: 8/1/08
6.25%	20.1	8.23	8.28	8.6	8.4	340	5	5	5	5	Sample ID: 20171
12.5%	20.1	8.24	8.28	8.7	8.4	384	5	5	5	5	Test Solution Prep: JJ
25%	20.1	8.18	8.39	8.9	8.3	571	5	5	5	5	New WQ:
50%	20.1	8.11	8.45	9.1	8.5	850	5	5	5	5	Count Time: 1430
100%	20.1	8.04	8.51	9.4	8.8	1409	5	5	5	5	Count Signoff: JJ
Meter ID	47	pH03	PH03	DO14	DO14	EC01					Old WQ: HTA
Control	20.1		8.17		8.5	249	5	5	5	5	Date: 8/2/08
6.25%	20.1		8.19		8.4	336	5	5	5	5	Count Time: 1200
12.5%	20.1		8.23		8.2	390	5	5	5	5	Count Signoff:
25%	20.1		8.32		8.01	566	5	5	5	5	Old WQ:
50%	20.1		8.45		8.6	851	5	5	5	5	
100%	20.1		8.57		8.4	1413	5	5	5	5	
Meter ID	55		PH03		DO12	EC04					
Control	20.5		8.25		8.6	323	5	5	5	5	Date: 8/3/08
6.25%	20.5		8.34		8.8	399	5	5	5	5	Termination Time: 1535
12.5%	20.5		8.33		8.8	423	5	5	5	5	Termination Signoff:
25%	20.5		8.41		8.7	653	5	5	5	5	Old WQ: SL
50%	20.5		8.57		9.1	900	5	5	5	5	
100%	20.5		8.64		9.3	1625	5	5	5	5	
Meter ID	47		PH11		DO14	EC01					

CETIS Summary Report

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Test Run No:	10-3951-8980	**Test Type:**	Survival (48h)	**Analyst:**	John Jirasritumrong
Start Date:	30 Jul-08 18:00	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Spring Water
Ending Date:	03 Aug-08 16:15	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Duration:	94h	**Source:**	In-House Culture	**Age:**	1

Sample No:	20-7608-5873	**Code:**	SJRDS-002	**Client:**	URS
Sample Date:	29 Jul-08 23:38	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	18h (5 °C)	**Station:**	SJRDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
16-1052-2145	48h Survival Rate	100	>100	N/A	12.5%	1	Steel Many-One Rank Test

48h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	0.9	0.857	0.943	0.8	1	0.0211	0.115	12.8%	10.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	0.9	0.857	0.943	0.8	1	0.0211	0.115	12.8%	10.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

48h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	1
12.5		1	0.8	0.8	1
25		1	1	1	1
50		0.8	1	1	0.8
100		1	1	1	1

Acute Ceriodaphnia Survival Test				Pacific EcoRisk
Analysis No: 16-1052-2145	Endpoint: 48h Survival Rate	CETIS Version:	CETISv1.6.5	
Analyzed: 04 Sep-08 16:58	Analysis: Nonparametric-Control vs Treatments	Official Results:	Yes	

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	12.5%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	18	10	1	0.8330	Non-Significant Effect
		12.5	14	10	1	0.3450	Non-Significant Effect
		25	18	10	1	0.8330	Non-Significant Effect
		50	14	10	1	0.3450	Non-Significant Effect
		100	18	10	1	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.07561053	0.01512211	5	2.4	0.0780	Non-Significant Effect
Error	0.1134158	0.006300878	18			
Total	0.18902633339167	0.02142298407853	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	65500	4.25	0.0000	Unequal Variances
Distribution	Shapiro-Wilk Normality	0.756		0.0001	Non-normal Distribution

48h Survival Rate Summary

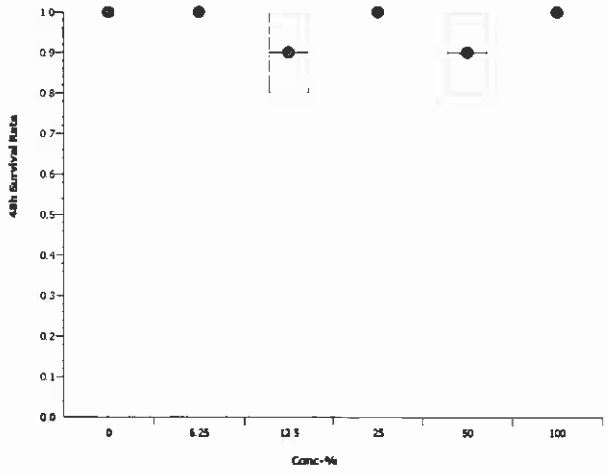
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	0.9	0.856	0.944	0.8	1	0.0214	0.115	12.8%	10.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	0.9	0.856	0.944	0.8	1	0.0214	0.115	12.8%	10.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

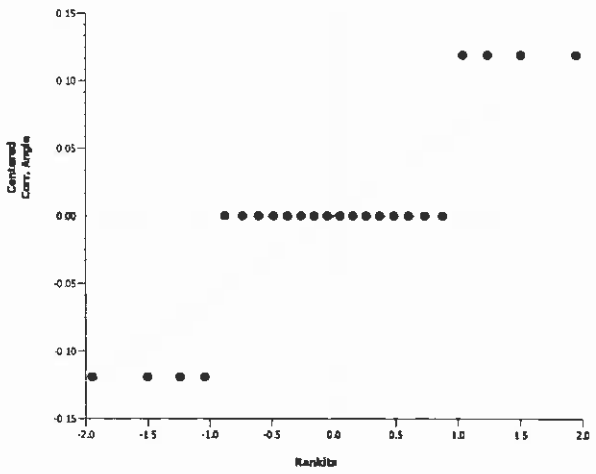
Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
6.25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
12.5		4	1.23	1.17	1.28	1.11	1.35	0.0255	0.137	11.2%	8.85%
25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
50		4	1.23	1.17	1.28	1.11	1.35	0.0255	0.137	11.2%	8.85%
100		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%

Acute Ceriodaphnia Survival Test					Pacific EcoRisk
Analysis No:	16-1052-2145	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:58	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





96 Hour Acute *Ceriodaphnia dubia* Toxicity Test Data

Client: URS: DMC
Test Date: 7/30/08
Test Material: SJRDS-002-TOX
Control/Diluent: Conditioned 80:20
Test ID#: 29464 Project # 13489
Control Water Batch: Tank 1
Randomization: —

Feeding T0 Time: 830 Initials: YK
Feeding T46-hr Time: 0845 Initials JPC

Treatment	Temp (°C)	pH New	pH Old	D.O. New	D.O. Old	Conductivity (µS/cm)	# Live Animals A	B	C	D	Sign-Off
Control	19.7	8.17		7.6		252	5	5	5	5	Date: 7/30/08
6.25%	19.7	8.19		7.6		322	5	5	5	5	Sample ID: 20177
12.5%	19.7	8.18		7.5		370	5	5	5	5	Test Solution Prep: JR
25%	19.7	8.12		7.6		522	5	5	5	5	New WQ:
50%	19.7	8.03		7.3		771	5	5	5	5	Initiation Time: 1800
100%	19.7	7.89		7.8		1254	5	5	5	5	Initiation Signoff:
Meter ID	55	ph11		DO12		EC04					
Control	19.8		8.40		8.1	269	5	5	5	5	Date: 7/31/08
6.25%	19.8		8.41		8.1	337	5	5	5	5	Count Time: 1055
12.5%	19.8		8.42		8.1	383	5	4	5	5	Count Signoff: JR
25%	19.8		8.42		8.2	544	5	5	5	5	Old WQ:
50%	19.8		8.40		8.2	803	5	5	5	5	
100%	19.8		8.40		8.1	1326	5	5	5	5	
Meter ID	47		ph03		DO10	EC05					
Control	19.7	8.19	8.21	8.6	8.3	294	5	5	5	5	Date: 8/1/08
6.25%	19.7	8.21	8.23	8.6	8.3	347	5	5	5	5	Sample ID: 20177
12.5%	19.7	8.20	8.25	8.4	8.4	368	5	4	5	5	Test Solution Prep: JR
25%	19.7	8.14	8.27	8.6	8.3	514	5	5	5	5	New WQ:
50%	19.7	8.10	8.28	8.6	8.4	776	5	5	5	5	Count Time: 1730
100%	19.7	7.93	8.34	8.6	8.3	1297	5	5	5	5	Count Signoff: QD
Meter ID	47	pH03	pH03	DO14	DO14	EC01					Old WQ: JR
Control	19.7		8.38		8.2	290	5	5	5	5	Date: 8/2/08
6.25%	19.7		8.36		8.5	351	5	5	5	5	Count Time: 915
12.5%	19.7		8.37		8.5	406	5	4	4	5	Count Signoff:
25%	19.7		8.37		8.5	529	5	5	5	5	Old WQ:
50%	19.7		8.36		8.5	900	4	5	5	4	
100%	19.7		8.27		8.2	1270	5	5	5	5	
Meter ID	55		pH03		DO12	EC04					
Control	20.5		8.22		8.5	278	5	5	5	5	Date: 8/3/08
6.25%	20.5		8.34		8.6	373	5	5	5	5	Termination Time: 1615
12.5%	20.5		8.35		8.3	393	5	4	4	5	Termination Signoff:
25%	20.5		8.39		8.4	556	5	5	5	5	Old WQ:
50%	20.5		8.41		8.4	854	4	5	5	4	
100%	20.5		8.44		8.3	1437	5	5	5	5	
Meter ID	47		pH09		DO12	EC04					

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Test Run No:	14-6901-1984	**Test Type:**	Survival (48h)	**Analyst:**	John Jirasritumrong
Start Date:	31 Jul-08 12:30	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Spring Water
Ending Date:	04 Aug-08 10:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Duration:	94h	**Source:**	In-House Culture	**Age:**	1

Sample No:	20-7133-6523	**Code:**	SJRDS-003	**Client:**	URS
Sample Date:	30 Jul-08 03:15	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	33h (5 °C)	**Station:**	SJRDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
01-5275-2879	48h Survival Rate	100	>100	N/A	5.0%	1	Steel Many-One Rank Test

48h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

48h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	1
12.5		1	1	1	1
25		1	1	1	1
50		1	1	1	1
100		1	1	1	1

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Analysis No:	01-5275-2879	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:05	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	5.0%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	18	10	1	0.8330	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	18	10	1	0.8330	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	18	10	1	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0	0	5	65500	0.0000	Significant Effect
Error	0	0	18			
Total	0	0	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	65500	4.25	0.0000	Unequal Variances

48h Survival Rate Summary

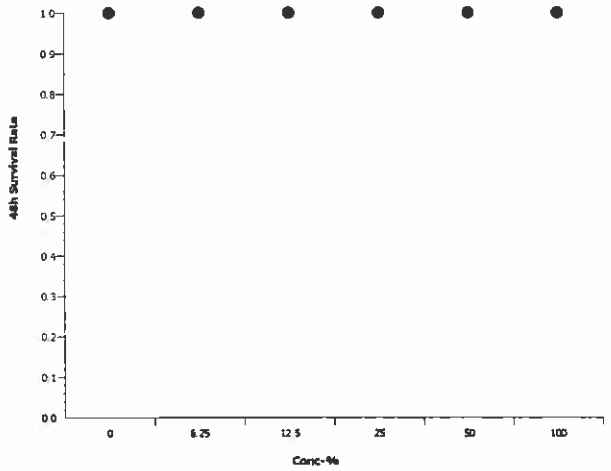
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

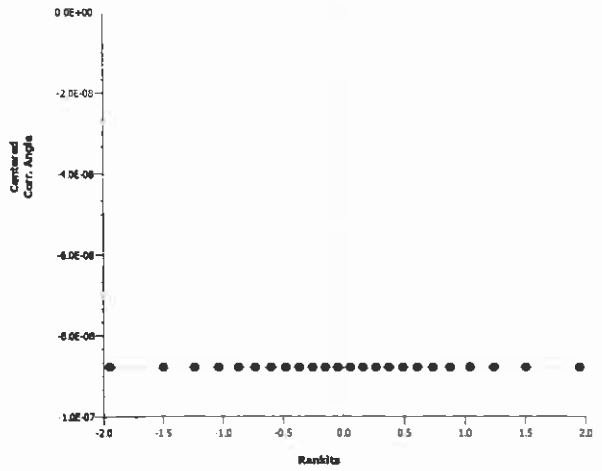
Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
6.25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
12.5		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
50		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
100		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%

Acute Ceriodaphnia Survival Test					Pacific EcoRisk
Analysis No:	01-5275-2879	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:05	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





96 Hour Acute *Ceriodaphnia dubia* Toxicity Test Data

Client: URS: DMC
Test Material: SJRDS-003-TOX
Test ID#: 29465 Project # 13489
Randomization: —

Test Date: 7/31/08
Control/Diluent: Conditioned 80:20
Control Water Batch: Tank H1

Feeding T0 Time: 8:30 Initials: YK

Feeding T46-hr Time: 0830 Initials JPC

Treatment	Temp (°C)	pH New	pH Old	D.O. New	D.O. Old	Conductivity (µS/cm)	# Live Animals A	B	C	D	Sign-Off
Control	19.8	8.31		7.8		283.1	5	5	5	5	Date: 7/31/08
6.25%	19.8	8.28		8.1		310	5	5	5	5	Sample ID: 20178
12.5%	19.8	8.23		8.2		350	5	5	5	5	Test Solution Prep: MR
25%	19.8	8.16		8.3		439	5	5	5	5	New WQ: MR
50%	19.8	8.04		8.4		614	5	5	5	5	Initiation Time: 12:30
100%	19.8	7.86		8.6		961	5	5	5	5	Initiation Signoff: JR
Meter ID	457	PH03		D010		EC05					
Control	19.8		7.92		7.4	276.8	5	5	5	5	Date: 8·1·08
6.25%	19.8		8.12		7.7	327	5	5	5	5	Count Time: 16:40
12.5%	19.8		8.19		7.7	351	5	5	5	5	Count Signoff: MR
25%	19.8		8.22		7.8	344	5	5	5	5	Old WQ: MR
50%	19.8		~~8.25~~	8.29	7.7	~~449~~ 869	5	5	5	5	
100%	19.8		8.31		7.6	976	5	5	5	5	
Meter ID	55		PH09		D012	EC04					
Control	20.5	8.38	~~8.38~~ 8.6		~~8.6~~ 7.9	292	5	5	5	5	Date: 8/2/08
6.25%	20.5	8.33	8.29	8.6	9.9	320	5	5	5	5	Sample ID: 20178
12.5%	20.5	8.25	8.24	8.6	9.5	353	5	5	5	5	Test Solution Prep: JR
25%	20.5	8.06	8.17	8.5	9.6	438	5	5	5	5	New WQ: DAP
50%	20.5	8.04	8.14	8.5	8.5	595	5	5	5	5	Count Time: 1500
100%	20.5	7.84	8.20	8.8	8.6	924	5	5	5	5	Count Signoff: JR
Meter ID	47	PH03	PH03	D017	~~D017~~ D012	EC04					Old WQ: DAP
Control	20.2		8.22		8.3	285	5	5	5	5	Date: 8/3/08
6.25%	20.2		8.21		8.3	373	5	5	5	5	Count Time: 0930
12.5%	20.2		8.24		8.5	359	5	5	5	5	Count Signoff: SH
25%	20.2		8.24		~~8.5~~ 8.2	447	5	5	5	5	Old WQ: SL
50%	20.2		8.23		8.4	614	5	5	5	5	
100%	20.2		8.23		~~8.5~~ 8.4	977	5	5	5	5	
Meter ID	47		PH03		D012	EC04					
Control	20.2		8.29		8.4	325	5	5	5	5	Date: 8/4/08
6.25%	20.2		8.30		8.5	353	5	5	5	5	Termination Time: 1045
12.5%	20.2		8.30		8.6	386	5	5	5	5	Termination Signoff: SH
25%	20.2		8.30		8.5	503	5	5	5	5	Old WQ: SL
50%	20.2		8.26		8.4	684	5	5	5	5	
100%	20.2		8.33		8.5	1079	5	5	5	5	
Meter ID	47		pH 03		D012	EC01					

CETIS Summary Report

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Test Run No:	00-1834-6432	**Test Type:**	Survival (48h)	**Analyst:**	John Jirasritumrong
Start Date:	01 Aug-08 15:50	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Spring Water
Ending Date:	05 Aug-08 14:00	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Duration:	94h	**Source:**	In-House Culture	**Age:**	1

Sample No:	18-1077-8026	**Code:**	SJRDS-004	**Client:**	URS
Sample Date:	31 Jul-08 09:10	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	31 Jul-08 12:04	**Source:**	URS		
Sample Age:	31h (15.6 °C)	**Station:**	SJRDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
09-6668-6690	48h Survival Rate	100	>100	N/A	5.0%	1	Steel Many-One Rank Test

48h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

48h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	1
12.5		1	1	1	1
25		1	1	1	1
50		1	1	1	1
100		1	1	1	1

Acute Ceriodaphnia Survival Test — Pacific EcoRisk

Analysis No: 09-6668-6690 | Endpoint: 48h Survival Rate | CETIS Version: CETISv1.6.5
Analyzed: 04 Sep-08 17:54 | Analysis: Nonparametric-Control vs Treatments | Official Results: Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	5.0%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	18	10	1	0.8330	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	18	10	1	0.8330	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	18	10	1	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0	0	5	65500	0.0000	Significant Effect
Error	0	0	18			
Total	0	0	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	65500	4.25	0.0000	Unequal Variances

48h Survival Rate Summary

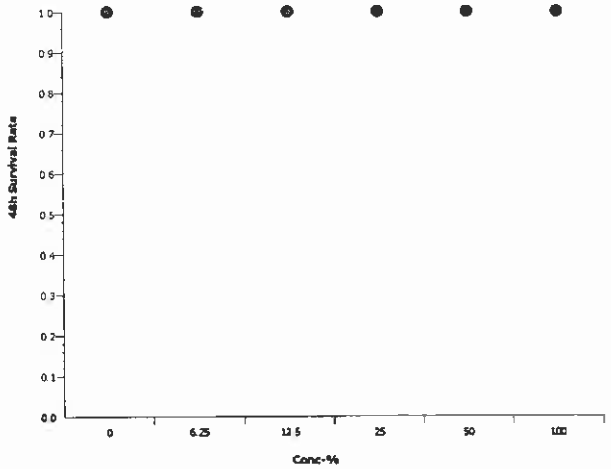
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

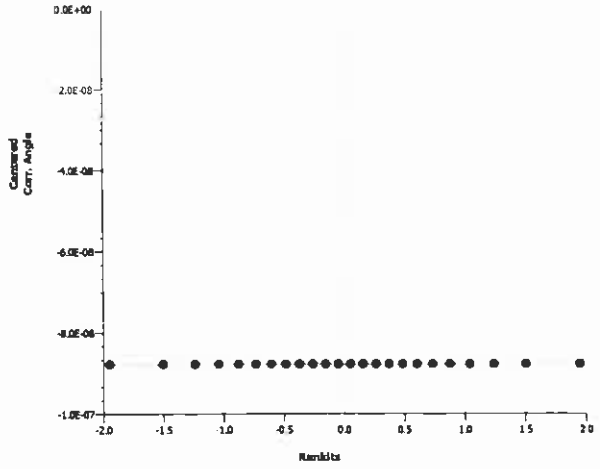
Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
6.25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
12.5		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
50		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
100		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%

Acute Ceriodaphnia Survival Test					Pacific EcoRisk
Analysis No:	09-6668-6690	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:54	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





96 Hour Acute *Ceriodaphnia dubia* Toxicity Test Data

Client: URS: DMC
Test Material: SJRDS-004-TOX
Test ID#: 29466 Project # 13489
Randomization: board 2

Test Date: 8/1/2008
Control/Diluent: Conditioned 80:20
Control Water Batch: Tank #3

Feeding T0 Time: 0830 Initials: YK
Feeding T46-hr Time: 8:00 Initials SPW

Treatment	Temp (°C)	pH New	pH Old	D.O. New	D.O. Old	Conductivity (µS/cm)	# Live Animals A	B	C	D	Sign-Off
Control	20.1	8.05		8.5		266	5	5	5	5	Date: 8/1/2008
6.25%	20.1	8.11		8.6		307	5	5	5	5	Sample ID: 20195
12.5%	20.1	8.07		8.8		353	5	5	5	5	Test Solution Prep: QD
25%	20.1	8.03		8.7		438	5	5	5	5	New WQ: AS
50%	20.1	7.96		8.6		624	5	5	5	5	Initiation Time: 1550
100%	20.1	7.82		8.5		967	5	5	5	5	Initiation Signoff: SS
Meter ID	47	pH03		DO14		ec01					
Control	20.1		8.23		9.1	303	5	5	5	5	Date: 8/2/2008
6.25%	20.1		8.23		9.0	291	5	5	5	5	Count Time: 1430
12.5%	20.1		8.21		8.6	337	5	5	5	5	Count Signoff: JR
25%	20.1		8.17		8.7	432	5	5	5	5	Old WQ: MR
50%	20.1		8.15		8.7	617	5	5	6	5	
100%	20.1		8.11		8.5	966	5	5	5	5	
Meter ID	55		pH03		DO12	EC04					
Control	20.3	8.30	8.07	8.8	8.4	261	5	5	5	5	Date: 8/3/2008
6.25%	20.3	8.30	7.18	8.0	8.3	310	5	5	5	5	Sample ID: 20195
12.5%	20.3	8.22	8.02	8.2	8.2	351	5	5	5	5	Test Solution Prep: QD
25%	20.3	8.20	8.09	8.2	8.4	448	5	5	5	5	New WQ: AS 1100
50%	20.3	7.98	8.08	8.6	8.4	622	5	5	5	5	Count Time: 1200
100%	20.3	7.92	8.09	8.7	8.3	965	5	5	5	5	Count Signoff: QD
Meter ID	47	pH03	pH09	DO12	DO10	EC04					Old WQ: MR
Control	20.2		8.28		9.2	278	5	5	5	5	Date: 8/4/08
6.25%	20.2		8.30		8.9	327	5	5	5	5	Count Time: 09:30
12.5%	20.2		8.32		8.8	362	5	5	5	5	Count Signoff: JR
25%	20.2		8.30		8.8	469	5	5	5	5	Old WQ: HTA
50%	20.2		8.28		8.8	659	5	5	5	5	
100%	20.2		8.28		8.7	1046	5	5	5	5	
Meter ID	55		pH09		DO10	EC05					
Control	20.4		8.48		8.6	297	5	5	5	5	Date: 8/5/08
6.25%	20.4		8.56		8.5	350	5	5	5	5	Termination Time: 1400
12.5%	20.4		8.54		8.6	421	5	5	5	5	Termination Signoff: JPW
25%	20.4		851		8.6	520	5	5	5	5	Old WQ: MR
50%	20.4		850		8.6	695	5	5	5	5	
100%	20.4		8.47		8.6	1093	5	5	5	5	
Meter ID	47		pH09		DO12	EC04					

Appendix D

Test Data and Summary of Statistics for the Evaluation of the Acute Toxicity of the San Joaquin River Recirculation Study Ambient Waters to Fathead Minnows

CETIS Summary Report

Acute Fish Survival Test — Pacific EcoRisk

Test Run No:	13-3820-0563	**Test Type:**	Survival (96h)	**Analyst:**	John Jirasritumrong
Start Date:	30 Jul-08 15:50	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	03 Aug-08 15:10	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	95h	**Source:**	Aquatic Biosystems, CO	**Age:**	9

Sample No:	09-1745-9873	**Code:**	NWDS-001	**Client:**	URS
Sample Date:	29 Jul-08 06:40	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	01 Jul-08 11:50	**Source:**	URS		
Sample Age:	33h (12 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
12-1770-2851	96h Survival Rate	100	>100	N/A	7.43%	1	Steel Many-One Rank Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
03-2186-2339	96h Survival Rate	EC2.5	31.2	17.9	193	3.2	Linear Regression (MLE)
		EC10	274	73.9	19800	0.365	
		EC15	601	123	106000	0.166	
		EC20	1120	185	400000	0.0891	
		EC25	1920	263	1250000	0.0522	
		EC40	7380	635	22200000	0.0135	
		EC50	16600	1080	125000000	0.00602	

96h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	0.975	0.956	0.994	0.9	1	0.00913	0.05	5.13%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	-2.56%
12.5		4	1	1	1	1	1	0	0	0.0%	-2.56%
25		4	0.975	0.956	0.994	0.9	1	0.00913	0.05	5.13%	0.0%
50		4	0.95	0.928	0.972	0.9	1	0.0105	0.0577	6.08%	2.56%
100		4	0.975	0.956	0.994	0.9	1	0.00913	0.05	5.13%	0.0%

96h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	0.9	1
6.25		1	1	1	1
12.5		1	1	1	1
25		1	1	0.9	1
50		0.9	0.9	1	1
100		1	1	0.9	1

Acute Fish Survival Test — **Pacific EcoRisk**

Analysis No:	12-1770-2851	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:33	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	7.43%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	20	10	1	0.9520	Non-Significant Effect
		12.5	20	10	1	0.9520	Non-Significant Effect
		25	18	10	2	0.8330	Non-Significant Effect
		50	16	10	2	0.6100	Non-Significant Effect
		100	18	10	2	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.01881286	0.003762572	5	0.785	0.5740	Non-Significant Effect
Error	0.08631783	0.004795435	18			
Total	0.10513068921864	0.00855800695717	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	1.13	4.25	0.3790	Equal Variances
Distribution	Shapiro-Wilk Normality	0.824		0.0007	Non-normal Distribution

96h Survival Rate Summary

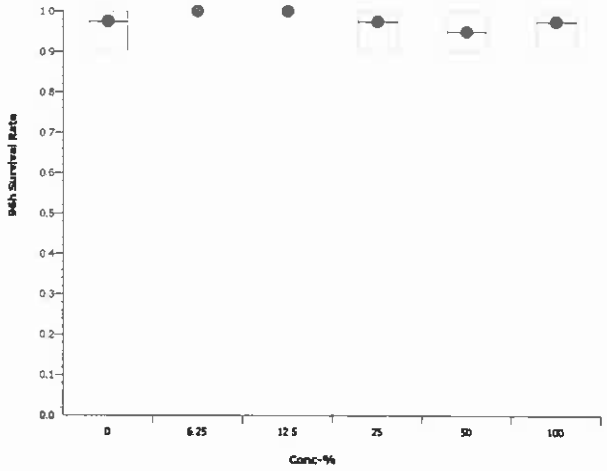
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	0.975	0.956	0.994	0.9	1	0.00928	0.05	5.13%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	-2.56%
12.5		4	1	1	1	1	1	0	0	0.0%	-2.56%
25		4	0.975	0.956	0.994	0.9	1	0.00928	0.05	5.13%	0.0%
50		4	0.95	0.928	0.972	0.9	1	0.0107	0.0577	6.08%	2.56%
100		4	0.975	0.956	0.994	0.9	1	0.00928	0.05	5.13%	0.0%

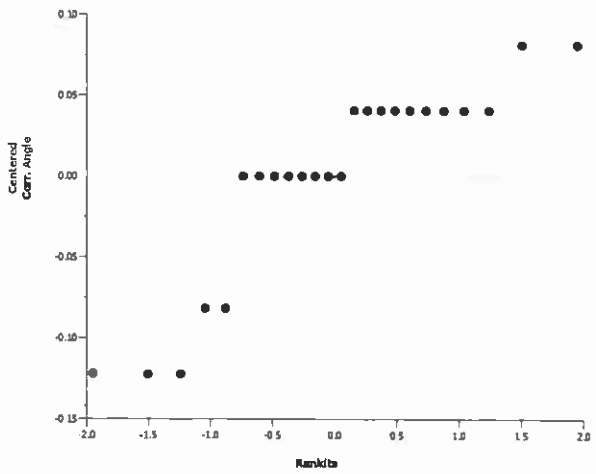
Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.37	1.34	1.4	1.25	1.41	0.0151	0.0815	5.94%	0.0%
6.25		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	-2.97%
12.5		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	-2.97%
25		4	1.37	1.34	1.4	1.25	1.41	0.0151	0.0815	5.94%	0.0%
50		4	1.33	1.29	1.37	1.25	1.41	0.0175	0.0941	7.07%	2.97%
100		4	1.37	1.34	1.4	1.25	1.41	0.0151	0.0815	5.94%	0.0%

Acute Fish Survival Test					Pacific EcoRisk
Analysis No:	12-1770-2851	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:33	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





Acute Fish Survival Test — Pacific EcoRisk

Analysis No:	03-2186-2339	Endpoint:	96h Survival Rate	CETIS Version:	CETISv1.6.5
Analyzed:	04 Sep-08 17:33	Analysis:	Linear Regression (MLE)	Official Results:	Yes

Linear Regression Options

Model Function	Threshold Option	Threshold	Optimized	Pooled	Het Corr	Weighted
Log-Normal [NED=A+B*log(X)]	Control Threshold	0.025	Yes	No	No	Yes

Regression Summary

Iters	LL	AICc	Mu	Sigma	G Stat	Chi-Sq	Critical	P-Value	Decision(5%)
37	-23.9	52.5	2.73	1.39	0.282	12.3	28.9	0.8330	Non-Significant Heterogeneity

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC2.5	31.2	17.9	193	3.2	0.518	5.59
EC10	274	73.9	19800	0.365	0.00504	1.35
EC15	601	123	106000	0.166	0.000946	0.81
EC20	1120	185	400000	0.0891	0.00025	0.539
EC25	1920	263	1250000	0.0522	0.0000799	0.38
EC40	7380	635	22200000	0.0135	4.51E-06	0.158
EC50	16600	1080	125000000	0.00602	0.0000008	0.0927

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Stat	P-Value	Decision(5%)
Slope	0.719	0.195	0.337	1.1	3.69	0.0017	Significant Parameter
Intercept	1.97	0.155	1.66	2.27	12.7	0.0000	Significant Parameter

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision(5%)
Variances	Mod Levene Equality of Variance	1.52	3.06	0.2470	Equal Variances
Distribution	Shapiro-Wilk Normality	0.782		0.0005	Non-normal Distribution

96h Survival Rate Summary

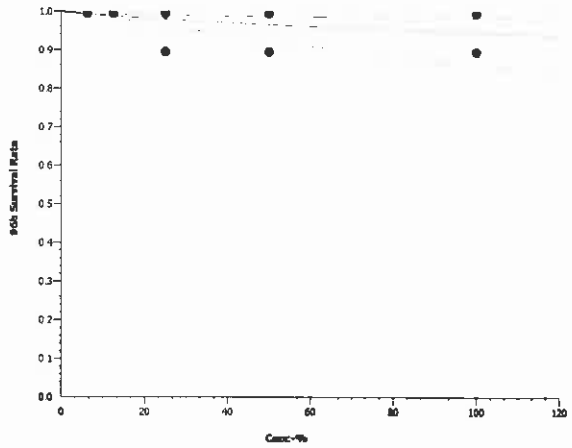
			Calculated Variate(A/B)								
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%	A	B
0	Lab Water	4	0.975	0.9	1	0.00913	0.05	5.13%	0.0%	39	40
6.25		4	1	1	1	0	0	0.0%	-2.56%	40	40
12.5		4	1	1	1	0	0	0.0%	-2.56%	40	40
25		4	0.975	0.9	1	0.00913	0.05	5.13%	0.0%	39	40
50		4	0.95	0.9	1	0.0105	0.0577	6.08%	2.56%	38	40
100		4	0.975	0.9	1	0.00913	0.05	5.13%	0.0%	39	40

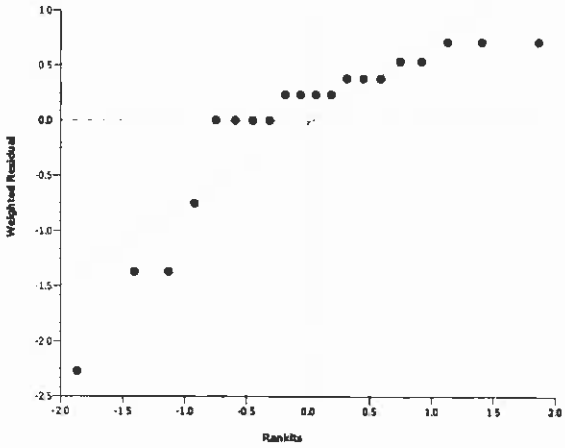
96h Survival Rate Detail

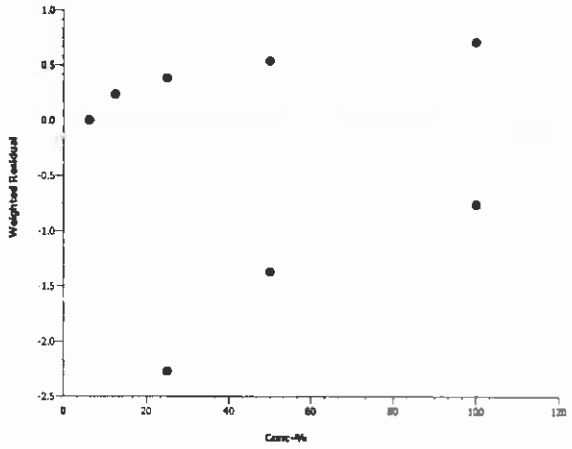
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	0.9	1
6.25		1	1	1	1
12.5		1	1	1	1
25		1	1	0.9	1
50		0.9	0.9	1	1
100		1	1	0.9	1

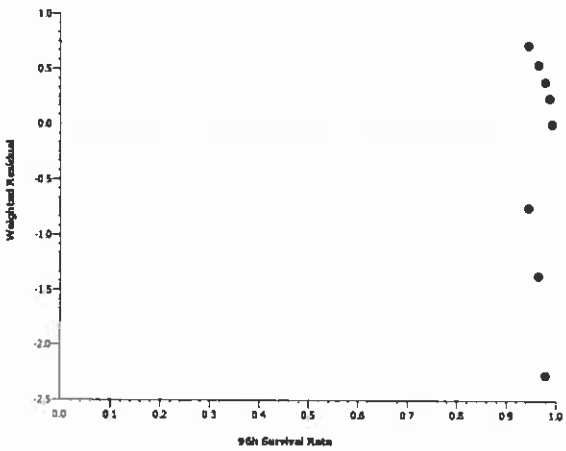
Acute Fish Survival Test					Pacific EcoRisk
Analysis No:	03-2186-2339	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:33	**Analysis:**	Linear Regression (MLE)	**Official Results:**	Yes

Graphics









96 Hour Acute Fathead Minnow Toxicity Test

Client: URS: DMC
Test Material: NWDS-001-TOX
Test ID#: 29468 Project # 13489
Test Date: 7/30/08 Randomization: 4.6.5
Feeding T0 Time: 0830 Initials: JPW

Organism Log #: 4034 Age: 9 days
Organism Supplier: ABS
Control/Diluent: EPAMH
Control Water Batch: 1124
Feeding T46-hr Time: 0845 Initials JPL

Treatment	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Conductivity (µS/cm) new	Conductivity (µS/cm) old	# Live Organisms Rep A	Rep B	Rep C	Rep D	SIGN-OFF
Control	20.2	8.22		8.3		319		10	10	10	10	Date: 7/30/08
6.25%	20.2	8.16		8.3		384		10	10	10	10	Sample ID: 20170
12.5%	20.2	8.12		8.5		453		10	10	10	10	Test Solution Prep: JPL
25%	20.2	8.07		8.6		599		10	10	10	10	New WQ: JPL
50%	20.2	8.01		8.9		890		10	10	10	10	Initiation Time: 1550
100%	20.2	7.94		9.8		1430		10	10	10	10	Initiation Sign-off: JPC
Meter ID:	47	pH03		DO14		EC05						
Control	19.7		~~8.08~~ 8.13		9.9		303	10	10	10	10	Date: 7/31/08
6.25%	19.7		8.02		9.9		389	10	10	10	10	Count Time: 1030
12.5%	19.7		8.19		9.7		465	10	10	10	10	Count Signoff: JPL
25%	19.7		8.27		9.9		602	10	10	10	10	Old WQ: SL
50%	19.7		8.44		9.8		880	10	9	10	10	
100%	19.7		8.53		9.2		1398	10	10	10	10	
Meter ID:	55		PH11	~~6.8~~	DO12	8.2	EC04					
Control	20.1	8.21	7.90	~~8.38~~	~~8.35~~	301	308	10	10	10	10	Date: 8/1/08
6.25%	20.1	8.23	8.01	8.9	~~8.38~~	390	391	10	10	10	10	Sample ID: 20170
12.5%	20.1	8.23	8.15	8.8	8.1	435	465	10	10	10	10	Test Solution Prep: JJ
25%	20.1	8.25	8.26	8.9	8.0	582	608	10	10	10	10	New WQ: SLR
50%	20.1	8.27	8.44	8.9	8.0	866	901	10	9	10	10	Renewal Time: 1310
100%	20.1	8.25	8.65	9.0	8.0	1429	1435	10	10	10	10	Renewal Signoff: JPC
Meter ID:	47	pH09	PH09	DO10	DO10	EC05	EC05					Old WQ AMR
Control	20.0		7.99		9.2		314	10	10	9	10	Date: 8/2/08
6.25%	20.0		7.99		9.4		~~387~~	10	10	10	10	Count Time: 0957
12.5%	20.0		8.05		9.1		446	10	10	10	10	Count Signoff: KO
25%	20.0		8.17		9.5		~~598~~	10	10	10	10	Old WQ: AMR
50%	20.0		8.30		9.1		865	10	9	10	10	
100%	20.0		8.45		9.1		1407	10	10	10	10	
Meter ID:	47		PH03		DO12		EC04					
Control	20.5		8.01		8.2		311	10	10	9	10	Date: 8/3/08
6.25%	20.5		8.06		8.3		391	10	10	10	10	Termination Time: 1510
12.5%	20.5		8.09		8.2		438	10	10	10	10	Termination Signoff: RV
25%	20.5		8.22		8.2		579	10	10	9	10	Old WQ: SL
50%	20.5		8.39		8.1		863	9	9	10	10	
100%	20.5		8.57		8.2		1428	10	10	9	10	
Meter ID:	47		PH03		DO12		EC09					

CETIS Summary Report

Acute Fish Survival Test — Pacific EcoRisk

Test Run No:	18-5666-3789	**Test Type:**	Survival (96h)	**Analyst:**	John Jirasritumrong
Start Date:	30 Jul-08 18:15	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	03 Aug-08 16:25	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	94h	**Source:**	Aquatic Biosystems, CO	**Age:**	9

Sample No:	07-7753-2107	**Code:**	NWDS-002	**Client:**	URS
Sample Date:	29 Jul-08 21:52	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	20h (5 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
04-5071-5418	96h Survival Rate	100	>100	N/A	5.6%	1	Steel Many-One Rank Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
03-5238-7928	96h Survival Rate	EC2.5	5.58	N/A	N/A	17.9	Linear Regression (MLE)
		EC10	0.643	N/A	N/A	155	
		EC15	0.295	N/A	N/A	339	
		EC20	0.159	N/A	N/A	631	
		EC25	0.0931	N/A	N/A	1070	
		EC40	0.0244	N/A	N/A	4100	
		EC50	0.0109	N/A	N/A	9200	

96h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	0.975	0.956	0.994	0.9	1	0.00913	0.05	5.13%	2.5%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	0.975	0.956	0.994	0.9	1	0.00913	0.05	5.13%	2.5%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

96h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	0.9	1	1
12.5		1	1	1	1
25		1	1	1	0.9
50		1	1	1	1
100		1	1	1	1

Acute Fish Survival Test — Pacific EcoRisk

Analysis No:	04-5071-5418	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:19	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	5.6%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	16	10	1	0.6100	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	16	10	1	0.6100	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	18	10	1	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.00885311	0.001770622	5	0.8	0.5640	Non-Significant Effect
Error	0.039839	0.002213278	18			
Total	0.0486921062693	0.00398389971815	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	0.8	4.25	0.5640	Equal Variances
Distribution	Shapiro-Wilk Normality	0.615		0.0000	Non-normal Distribution

96h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	0.975	0.956	0.994	0.9	1	0.00928	0.05	5.13%	2.5%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	0.975	0.956	0.994	0.9	1	0.00928	0.05	5.13%	2.5%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

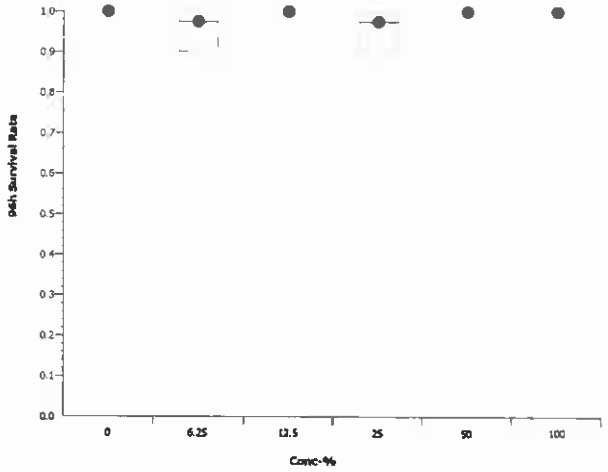
Angular (Corrected) Transformed Summary

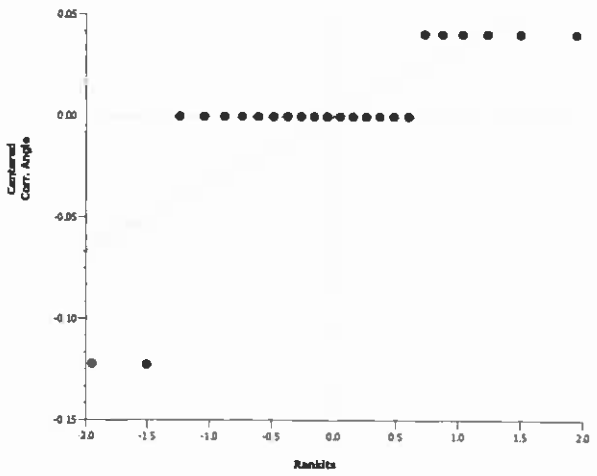
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
6.25		4	1.37	1.34	1.4	1.25	1.41	0.0151	0.0815	5.94%	2.89%
12.5		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
25		4	1.37	1.34	1.4	1.25	1.41	0.0151	0.0815	5.94%	2.89%
50		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
100		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%

Acute Fish Survival Test — **Pacific EcoRisk**

Analysis No:	04-5071-5418	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:19	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





Acute Fish Survival Test — **Pacific EcoRisk**

Analysis No:	03-5238-7928	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:20	**Analysis:**	Linear Regression (MLE)	**Official Results:**	Yes

Linear Regression Options

Model Function	Threshold Option	Threshold	Optimized	Pooled	Het Corr	Weighted
Log-Normal [NED=A+B*log(X)]	Control Threshold	0	Yes	No	No	Yes

Regression Summary

Iters	LL	AICc	Mu	Sigma	G Stat	Chi-Sq	Critical	P-Value	Decision(5%)
7	-10.6	26	-4.95	-1.38	3.99	15.8	28.9	0.6060	Non-Significant Heterogeneity

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC2.5	5.58	N/A	N/A	17.9	N/A	N/A
EC10	0.643	N/A	N/A	155	N/A	N/A
EC15	0.295	N/A	N/A	339	N/A	N/A
EC20	0.159	N/A	N/A	631	N/A	N/A
EC25	0.0931	N/A	N/A	1070	N/A	N/A
EC40	0.0244	N/A	N/A	4100	N/A	N/A
EC50	0.0109	N/A	N/A	9200	N/A	N/A

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Stat	P-Value	Decision(5%)
Slope	-0.723	0.737	-2.17	0.721	-0.982	0.3390	Non-Significant Parameter
Intercept	3.58	0.89	1.84	5.32	4.02	0.0008	Significant Parameter

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision(5%)
Variances	Mod Levene Equality of Variance	0.784	3.06	0.5530	Equal Variances
Distribution	Shapiro-Wilk Normality	0.474		0.0000	Non-normal Distribution

96h Survival Rate Summary

			Calculated Variate(A/B)								
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%	A	B
0	Lab Water	4	1	1	1	0	0	0.0%	0.0%	40	40
6.25		4	0.975	0.9	1	0.00913	0.05	5.13%	2.5%	39	40
12.5		4	1	1	1	0	0	0.0%	0.0%	40	40
25		4	0.975	0.9	1	0.00913	0.05	5.13%	2.5%	39	40
50		4	1	1	1	0	0	0.0%	0.0%	40	40
100		4	1	1	1	0	0	0.0%	0.0%	40	40

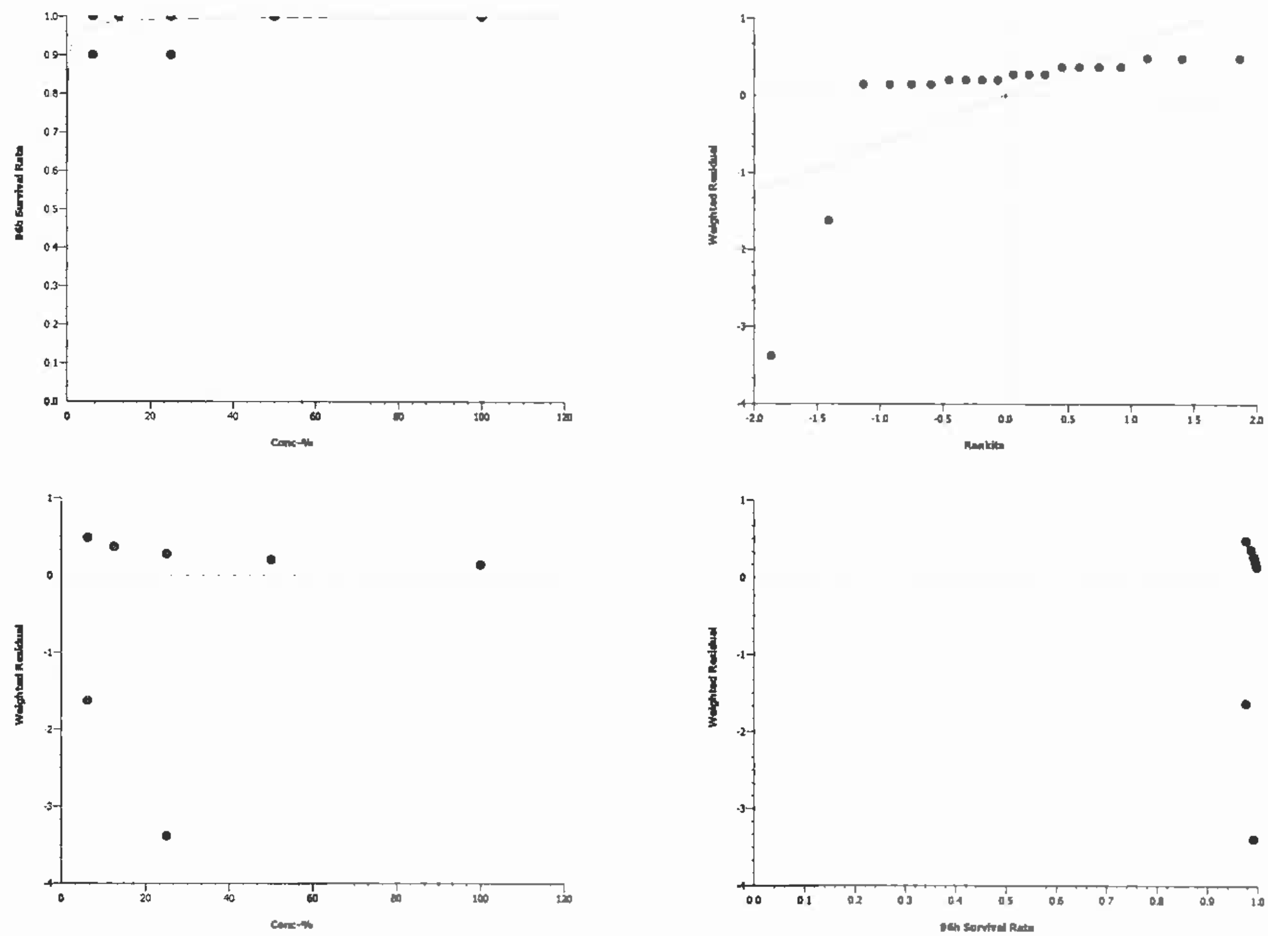
96h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	0.9	1	1
12.5		1	1	1	1
25		1	1	1	0.9
50		1	1	1	1
100		1	1	1	1

Acute Fish Survival Test	**Pacific EcoRisk**

Analysis No:	03-5238-7928	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:20	**Analysis:**	Linear Regression (MLE)	**Official Results:**	Yes

Graphics



96 Hour Acute Fathead Minnow Toxicity Test

Client: URS: DMC
Test Material: NWDS-002-TOX
Test ID#: 29469 Project # 13489
Test Date: 7/30/08 Randomization: 4-6-8
Feeding To Time: 800 Initials: JPW

Organism Log #: 4034 Age: 9 days
Organism Supplier: ABS ABS
Control/Diluent: EPAMH
Control Water Batch: 1124 ~~1124~~ RV
Feeding T46-hr Time: 0845 Initials JPL

Treatment	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Conductivity (µS/cm) new	Conductivity (µS/cm) old	# Live Organisms Rep A	Rep B	Rep C	Rep D	SIGN-OFF
Control	20.2	8.00		8.0		296		10	10	10	10	Date: 7/30/08
6.25%	20.2	7.97		7.5		380		10	10	10	10	Sample ID: 20179
12.5%	20.2	7.93		7.2		433		10	10	10	10	Test Solution Prep:
25%	20.2	7.87		7.7		557		10	10	10	10	New WQ: RV
50%	20.2	7.79		7.5		795		10	10	10	10	Initiation Time: 1815
100%	20.2	7.69		7.5		1276		10	10	10	10	Initiation Sign-off: JPL/RV
Meter ID:	47	pH11		DO12		EC04						
Control	19.7		8.00		8.8		329	10	10	10	10	Date: 7/31/08
6.25%	19.7		7.87		~~7.0~~ 8.7		413	10	10	10	10	Count Time: 845
12.5%	19.7		8.12		8.8		553	10	10	10	10	Count Signoff:
25%	19.7		8.21		8.5		577	10	10	10	10	Old WQ: SL
50%	19.7		8.27		9.0		816	10	10	10	10	
100%	19.7		8.36		8.8		1313	10	10	10	10	
Meter ID:	55		PH 11		DO 12		EC04					
Control	20.3	8.15	7.75	8.3	7.6	302	306	10	10	10	10	Date: 8/1/08
6.25%	20.3	8.16	7.82	8.5	7.6	359	393	10	9	10	10	Sample ID: 20179
12.5%	20.3	8.11	7.94	8.7	7.6	417	449	10	10	10	10	Test Solution Prep: JJ
25%	20.3	8.07	8.01	8.8	7.7	547	580	10	10	10	10	New WQ: JR
50%	20.3	8.0	8.15	8.7	7.6	823	814	10	10	10	10	Renewal Time: 1445
100%	20.3	8.21	8.36	9.0	7.5	1324	1480	10	10	10	10	Renewal Signoff: JPL
Meter ID:	47	pH09	pH03	DO10	DO14	EC05	EC07					Old WQ: JMR
Control	20.0		7.97		9.8		378	10	10	10	10	Date: 8/2/08
6.25%	20.0		7.92		9.4		361	10	9	10	10	Count Time: 1005
12.5%	20.0		7.93		9.5		419	10	10	10	10	Count Signoff: KO
25%	20.0		8.05		9.2		542	10	10	10	10	Old WQ: JMR
50%	20.0		8.17		9.7		901	10	10	10	10	
100%	20.0		8.21		9.3		1307	10	10	10	10	
Meter ID:	47		pH03		DO12		EC04					
Control	20.5		7.94		8.7		300	10	10	10	10	Date: 8/3/08
6.25%	20.5		7.94		8.2		368	10	9	10	10	Termination Time: 1625
12.5%	20.5		8.06		8.3		419	10	10	10	10	Termination Signoff:
25%	20.5		8.14		8.4		563	10	10	10	9	Old WQ: JMR
50%	20.5		8.29		8.3		819	10	10	10	10	
100%	20.5		8.46		8.1		1343	10	10	10	10	
Meter ID:	47		pH09		DO12		EC04					

CETIS Summary Report

Acute Fish Survival Test — **Pacific EcoRisk**

Test Run No:	02-8510-4975	**Test Type:**	Survival (96h)	**Analyst:**	John Jirasritumrong
Start Date:	31 Jul-08 12:15	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	04 Aug-08 10:30	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	94h	**Source:**	Sticklebacks Unlimited	**Age:**	13

Sample No:	01-3232-9006	**Code:**	NWDS-003	**Client:**	URS
Sample Date:	30 Jul-08 00:45	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	35h (5 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
11-8975-5860	96h Survival Rate	100	>100	N/A	4.57%	1	Steel Many-One Rank Test

96h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	0.975	0.956	0.994	0.9	1	0.00913	0.05	5.13%	2.5%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

96h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	0.9	1	1
12.5		1	1	1	1
25		1	1	1	1
50		1	1	1	1
100		1	1	1	1

Acute Fish Survival Test — Pacific EcoRisk

Analysis No:	11-8975-5860	Endpoint:	96h Survival Rate	CETIS Version:	CETISv1.6.5
Analyzed:	04 Sep-08 17:43	Analysis:	Nonparametric-Control vs Treatments	Official Results:	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	4.57%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	16	10	1	0.6100	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	18	10	1	0.8330	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	18	10	1	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.005533194	0.001106639	5	1	0.4460	Non-Significant Effect
Error	0.0199195	0.001106639	18			
Total	0.02545269206166	0.00221327762119	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	1	4.25	0.4460	Equal Variances
Distribution	Shapiro-Wilk Normality	0.463		0.0000	Non-normal Distribution

96h Survival Rate Summary

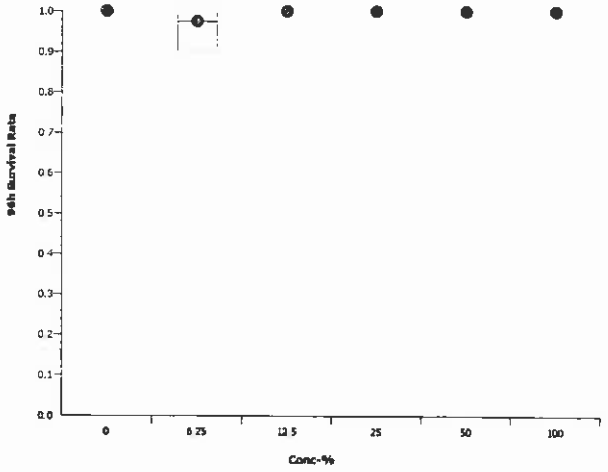
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	0.975	0.956	0.994	0.9	1	0.00928	0.05	5.13%	2.5%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

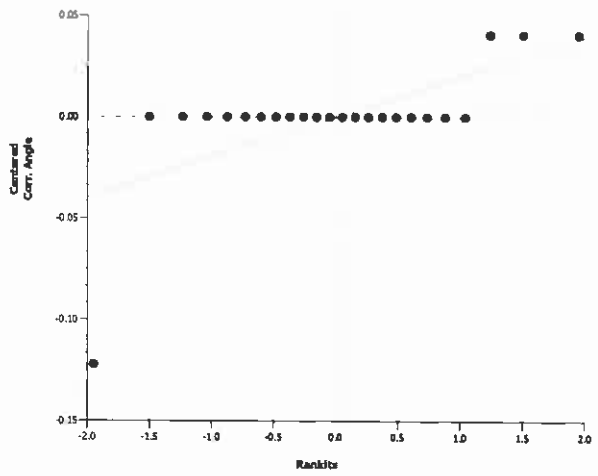
Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
6.25		4	1.37	1.34	1.4	1.25	1.41	0.0151	0.0815	5.94%	2.89%
12.5		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
25		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
50		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
100		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%

Acute Fish Survival Test					Pacific EcoRisk
Analysis No:	11-8975-5860	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:43	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





96 Hour Acute Fathead Minnow Toxicity Test

Client: URS: DMC
Test Material: NWDS-003-TOX
Test ID#: 29470 Project # 13489
Test Date: 7/31/09 Randomization: 4.6.2
Feeding Tu Time: ~~1~~ 1130 Initials: JPW

Organism Log #: 4047 Age: 13 days
Organism Supplier: Sticklebacks
Control/Diluent: EPAMH
Control Water Batch: 1124
Feeding T46-hr Time: 0830 Initials JPC

Treatment	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Conductivity (µS/cm) new	Conductivity (µS/cm) old	# Live Organisms Rep A	Rep B	Rep C	Rep D	SIGN-OFF
Control	20.0	8.21		9.0		278		10	10	10	10	Date: 7/31/08
6.25%	20.0	8.13		9.0		314		10	10	10	10	Sample ID: 20180
12.5%	20.0	8.06		8.8		349		10	10	10	10	Test Solution Prep: JPW
25%	20.0	7.96		8.8		409		10	10	10	10	New WQ: SL
50%	20.0	7.84		9.1		545		10	10	10	10	Initiation Time: 1215
100%	20.0	7.68		9.0		819		10	10	10	10	Initiation Signoff: JPW
Meter ID:	47	PH 11		DO12		EC09						
Control	20.2		7.85		7.2		285	10	10	10	10	Date: 8/1/08
6.25%	20.2		7.91		7.0		314	10	10	10	10	Count Time: 1450, 1650
12.5%	20.2		7.96		7.1		354	10	10	10	10	Count Signoff: JPC
25%	20.2		7.98		7.1		421	10	10	10	10	Old WQ: JPC
50%	20.2		8.07		6.9		555	10	10	10	10	
100%	20.2		8.11		6.9		815	10	10	10	10	
Meter ID:	47		PH09		DO12		EC04					
Control	20.2	4.17	7.94	8.8	8.6	219	290	10	10	10	10	Date: 8/2/08
6.25%	20.2	4.07	7.90	9.1	9.9	307	318	10	9	10	10	Sample ID: 20180
12.5%	20.2	4.02	7.89	9.0	9.9	378	355	10	10	10	10	Test Solution Prep: JPC
25%	20.2	7.90	7.94	8.0	8.7	408	423	10	10	10	10	New WQ:
50%	20.2	7.79	7.99	9.1	8.6	583	555	10	10	10	10	Renewal Time: 1220
100%	20.2	7.66	7.89	9.7	8.6	804	820	10	10	10	10	Renewal Signoff: KO
Meter ID:	47	PH09	PH03	DO12	DO12	EC04	EC04					Old WQ
Control	20.1		7.89		8.9		278	10	10	10	10	Date: 8/3/08
6.25%	20.1		7.96		8.5		312	10	9	10	10	Count Time: 0925
12.5%	20.1		7.90		8.3		345	10	10	10	10	Count Signoff: PV
25%	20.1		7.98		8.3		413	10	10	10	10	Old WQ: SL
50%	20.1		8.04		8.3		550	10	10	10	10	
100%	20.1		8.11		8.1		813	10	10	10	10	
Meter ID:	47		PH03		DO12		EC04					
Control	20.2		8.27		8.6		296	10	10	10	10	Date: 8/4/08
6.25%	20.2		8.09		8.4		323	10	9	10	10	Termination Time: 1030
12.5%	20.2		8.04		8.5		361	10	10	10	10	Termination Signoff: JPC
25%	20.2		8.00		8.5		432	10	10	10	10	Old WQ: HTA
50%	20.2		8.06		8.3		574	10	10	10	10	
100%	20.2		8.02		8.2		860	10	10	10	10	
Meter ID:	47		PH09		DO10		573					

CETIS Summary Report

Acute Fish Survival Test — **Pacific EcoRisk**

Test Run No:	01-2486-3053	**Test Type:**	Survival (96h)	**Analyst:**	John Jirasritumrong
Start Date:	01 Aug-08 14:00	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	05 Aug-08 13:10	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	95h	**Source:**	Aquatic Biosystems, CO	**Age:**	8

Sample No:	20-9391-4618	**Code:**	NWDS-004	**Client:**	URS
Sample Date:	31 Jul-08 06:40	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	31 Jul-08 12:04	**Source:**	URS		
Sample Age:	31h (13.4 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
06-8328-2240	96h Survival Rate	100	>100	N/A	5.6%	1	Steel Many-One Rank Test

96h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	0.975	0.956	0.994	0.9	1	0.00913	0.05	5.13%	2.5%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	0.975	0.956	0.994	0.9	1	0.00913	0.05	5.13%	2.5%

96h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		0.9	1	1	1
12.5		1	1	1	1
25		1	1	1	1
50		1	1	1	1
100		0.9	1	1	1

Acute Fish Survival Test — **Pacific EcoRisk**

Analysis No:	06-8328-2240	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	05 Sep-08 8:16	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	5.6%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	16	10	1	0.6100	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	18	10	1	0.8330	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	16	10	1	0.6100	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.00885311	0.001770622	5	0.8	0.5640	Non-Significant Effect
Error	0.039839	0.002213278	18			
Total	0.0486921062693	0.00398389971815	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	0.8	4.25	0.5640	Equal Variances
Distribution	Shapiro-Wilk Normality	0.615		0.0000	Non-normal Distribution

96h Survival Rate Summary

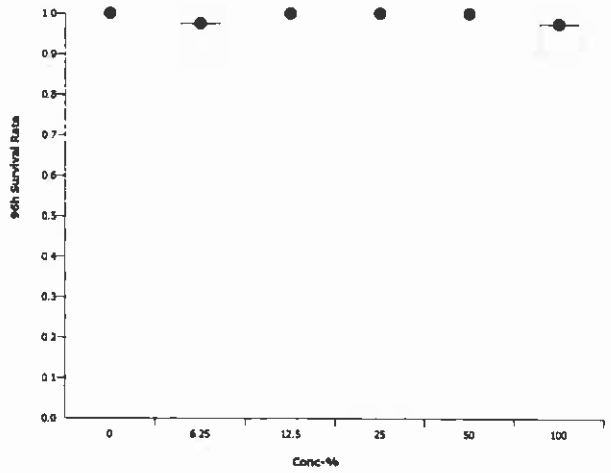
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	0.975	0.956	0.994	0.9	1	0.00928	0.05	5.13%	2.5%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	0.975	0.956	0.994	0.9	1	0.00928	0.05	5.13%	2.5%

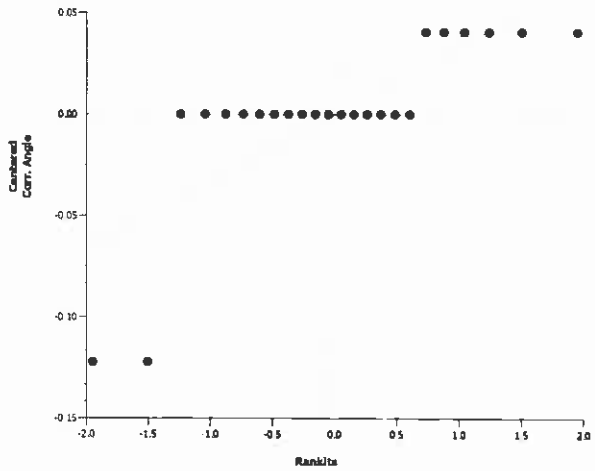
Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
6.25		4	1.37	1.34	1.4	1.25	1.41	0.0151	0.0815	5.94%	2.89%
12.5		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
25		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
50		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
100		4	1.37	1.34	1.4	1.25	1.41	0.0151	0.0815	5.94%	2.89%

Acute Fish Survival Test					Pacific EcoRisk
Analysis No:	06-8328-2240	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	05 Sep-08 8:16	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





96 Hour Acute Fathead Minnow Toxicity Test

Client: URS: DMC
Test Material: NWDS-004-TOX
Test ID#: 29471 Project # 13489
Test Date: 8/1/08 Randomization: 466
Feeding T0 Time: 1200 Initials: QD

Organism Log #: 4067 Age: 8 days
Organism Supplier: ABS
Control/Diluent: EPAMH
Control Water Batch: 1125
Feeding T46-hr Time: 800 Initials: JPL

Treatment	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Conductivity (µS/cm) new	Conductivity (µS/cm) old	# Live Organisms Rep A	Rep B	Rep C	Rep D	SIGN-OFF
Control	20.3	8.21		8.5		278		10	10	10	10	Date: 8/1/08
6.25%	20.3	8.19		8.5		294		10	10	10	10	Sample ID: 20134
12.5%	20.3	8.17		8.6		306		10	10	10	10	Test Solution Prep: QD
25%	20.3	8.14		8.7		332		10	10	10	10	New WQ: AT
50%	20.3	8.08		8.5		385		10	10	10	10	Initiation Time: 1400
100%	20.3	8.01		8.5		493		10	10	10	10	Initiation Sign-off: JL
Meter ID:	47	pH09		DO10		EC05						
Control	20.0		7.87		8.3		286	10	10	10	10	Date: 8/2/08
6.25%	20.0		7.84		8.2		299	10	10	10	10	Count Time: 945
12.5%	20.0		7.84		8.2		313	10	10	10	10	Count Signoff: KO
25%	20.0		7.85		8.2		340	10	10	10	10	Old WQ: JLR
50%	20.0		7.85		8.0		394	10	10	10	10	
100%	20.0		7.85		7.7		506	10	10	10	10	
Meter ID:	47		pH11		DO10		EC05					
Control	20.2	8.32	7.76	9.1	9.4	281	446	10	10	10	10	Date: 8/3/08
6.25%	20.2	8.32	7.71	8.9	8.6	292	372	9	10	10	10	Sample ID: 20134
12.5%	20.2	8.31	7.41	8.9	9.3	307	486	10	10	10	10	Test Solution Prep: QD
25%	20.2	8.27	7.72	8.8	8.6	335	356	10	10	10	10	New WQ: AS
50%	20.2	8.21	7.88	8.9	8.7	388	496	10	10	10	10	Renewal Time: 1115
100%	20.2	8.11	8.03	9.1	8.7	494	503	10	10	10	10	Renewal Signoff: JPL
Meter ID:	47	pH09	0409	DO10	DO10	EC05	EC05					Old WQ: JLR
Control	20.1		7.87		8.5		281	10	10	10	10	Date: 8/4/08
6.25%	20.1		7.86		8.5		297	9	10	10	10	Count Time: 945
12.5%	20.1		7.89		8.6		308	10	10	10	10	Count Signoff: RV
25%	20.1		7.96		8.5		390	10	10	10	10	Old WQ: SL
50%	20.1		7.93		8.4		335	10	10	10	10	
100%	20.1		8.02		8.4		498	9	10	10	10	
Meter ID:	47		pH03		DO12		EC01					
Control	20.4		8.17		7.2		287	10	10	10	10	Date: 8/5/08
6.25%	20.4		8.08		7.1		305	9	10	10	10	Termination Time: 1310
12.5%	20.4		8.07		7.0		323	10	10	10	10	Termination Signoff: JPL
25%	20.4		8.09		6.9		349	10	10	10	10	Old WQ:
50%	20.4		8.14		7.0		402	10	10	10	10	
100%	20.4		8.20		7.0		517	9	10	10	10	
Meter ID:	47		pH03		DO10		EC05					

CETIS Summary Report

Acute Fish Survival Test — **Pacific EcoRisk**

Test Run No:	07-1263-9001	**Test Type:**	Survival (96h)	**Analyst:**	John Jirasritumrong
Start Date:	30 Jul-08 16:15	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	03 Aug-08 15:30	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	95h	**Source:**	Aquatic Biosystems, CO	**Age:**	9

Sample No:	07-9557-0216	**Code:**	SJRDS-001	**Client:**	URS
Sample Date:	29 Jul-08 08:00	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	29 Jul-08 11:50	**Source:**	URS		
Sample Age:	32h (18.1 °C)	**Station:**	SJRDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
07-2608-5430	96h Survival Rate	100	>100	N/A	7.4%	1	Steel Many-One Rank Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
15-0145-2135	96h Survival Rate	EC2.5	81.8	N/A	N/A	1.22	Linear Regression (MLE)
		EC10	239000	N/A	N/A	0.000418	
		EC15	4270000	N/A	N/A	0.0000234	
		EC20	4.22E+07	N/A	N/A	2.37E-06	
		EC25	3.02E+08	N/A	N/A	3.32E-07	
		EC40	4.27E+10	N/A	N/A	2.34E-09	
		EC50	8.42E+11	N/A	N/A	1.19E-10	

96h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	0.925	0.889	0.961	0.8	1	0.0175	0.0957	10.4%	7.5%
50		4	0.975	0.956	0.994	0.9	1	0.00913	0.05	5.13%	2.5%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

96h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	1
12.5		1	1	1	1
25		0.8	1	1	0.9
50		0.9	1	1	1
100		1	1	1	1

Acute Fish Survival Test — **Pacific EcoRisk**

Analysis No:	07-2608-5430	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:26	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	7.4%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	18	10	1	0.8330	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	14	10	1	0.3450	Non-Significant Effect
		50	16	10	1	0.6100	Non-Significant Effect
		100	18	10	1	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.04477792	0.008955584	5	1.9	0.1440	Non-Significant Effect
Error	0.08470492	0.004705829	18			
Total	0.12948283925653	0.01366141298786	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	4.6	4.25	0.0070	Unequal Variances
Distribution	Shapiro-Wilk Normality	0.735		0.0000	Non-normal Distribution

96h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	0.925	0.889	0.961	0.8	1	0.0178	0.0957	10.4%	7.5%
50		4	0.975	0.956	0.994	0.9	1	0.00928	0.05	5.13%	2.5%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

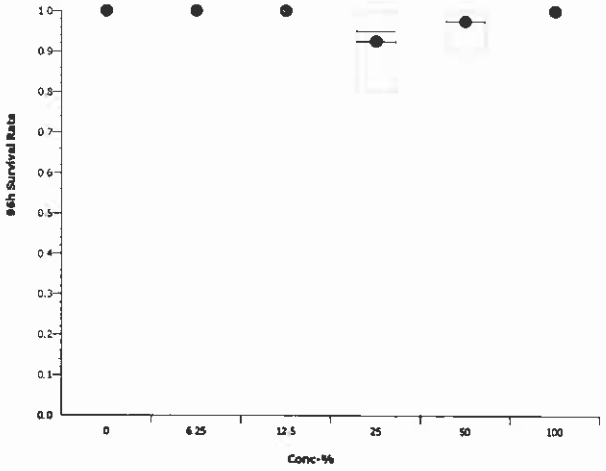
Angular (Corrected) Transformed Summary

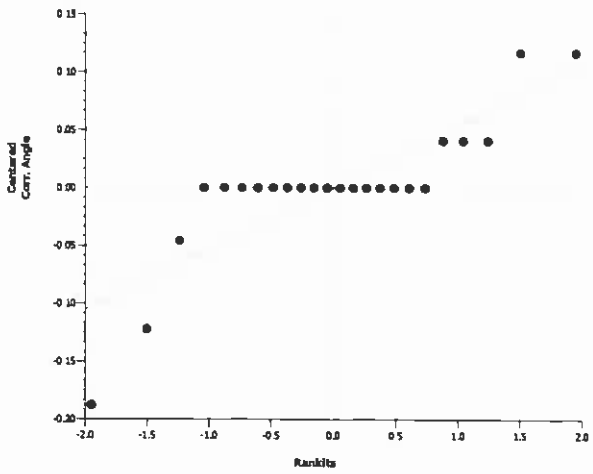
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
6.25		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
12.5		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
25		4	1.3	1.24	1.35	1.11	1.41	0.0273	0.147	11.3%	8.28%
50		4	1.37	1.34	1.4	1.25	1.41	0.0151	0.0815	5.94%	2.89%
100		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%

Acute Fish Survival Test — **Pacific EcoRisk**

Analysis No:	07-2608-5430	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:26	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





Acute Fish Survival Test — **Pacific EcoRisk**

Analysis No:	15-0145-2135	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:26	**Analysis:**	Linear Regression (MLE)	**Official Results:**	Yes

Linear Regression Options

Model Function	Threshold Option	Threshold	Optimized	Pooled	Het Corr	Weighted
Log-Normal [NED=A+B*log(X)]	Control Threshold	0	Yes	No	No	Yes

Regression Summary

Iters	LL	AICc	Mu	Sigma	G Stat	Chi-Sq	Critical	P-Value	Decision(5%)
7	-19.5	43.8	13.6	5.11	23.6	26.4	28.9	0.0915	Non-Significant Heterogeneity

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC2.5	81.8	N/A	N/A	1.22	N/A	N/A
EC10	239000	N/A	N/A	0.000418	N/A	N/A
EC15	4270000	N/A	N/A	0.0000234	N/A	N/A
EC20	4.22E+07	N/A	N/A	2.37E-06	N/A	N/A
EC25	3.02E+08	N/A	N/A	3.32E-07	N/A	N/A
EC40	4.27E+10	N/A	N/A	2.34E-09	N/A	N/A
EC50	8.42E+11	N/A	N/A	1.19E-10	N/A	N/A

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Stat	P-Value	Decision(5%)
Slope	0.196	0.485	-0.756	1.15	0.403	0.6910	Non-Significant Parameter
Intercept	2.67	0.737	1.22	4.11	3.62	0.0020	Significant Parameter

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision(5%)
Variances	Mod Levene Equality of Variance	4.53	3.06	0.0134	Unequal Variances
Distribution	Shapiro-Wilk Normality	0.482		0.0000	Non-normal Distribution

96h Survival Rate Summary

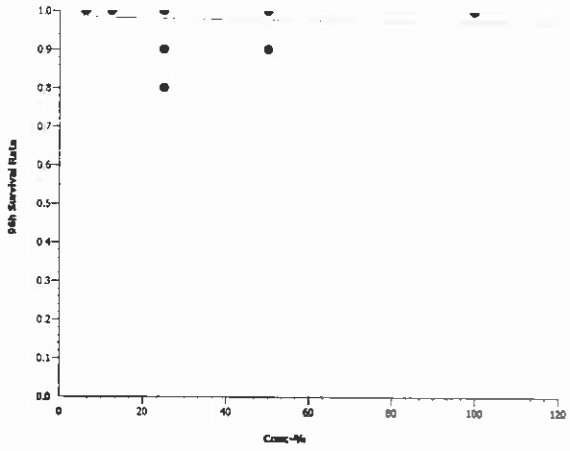
			Calculated Variate(A/B)								
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%	A	B
0	Lab Water	4	1	1	1	0	0	0.0%	0.0%	40	40
6.25		4	1	1	1	0	0	0.0%	0.0%	40	40
12.5		4	1	1	1	0	0	0.0%	0.0%	40	40
25		4	0.925	0.8	1	0.0175	0.0957	10.4%	7.5%	37	40
50		4	0.975	0.9	1	0.00913	0.05	5.13%	2.5%	39	40
100		4	1	1	1	0	0	0.0%	0.0%	40	40

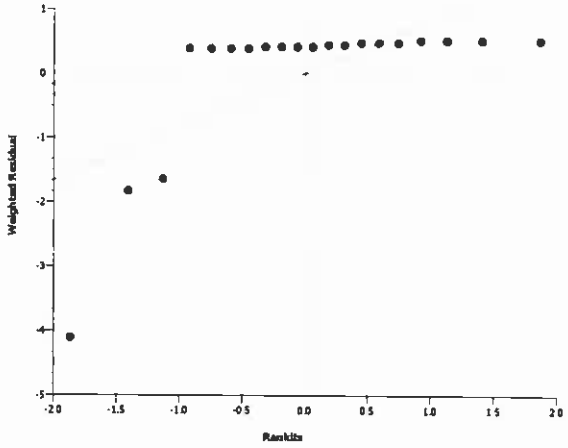
96h Survival Rate Detail

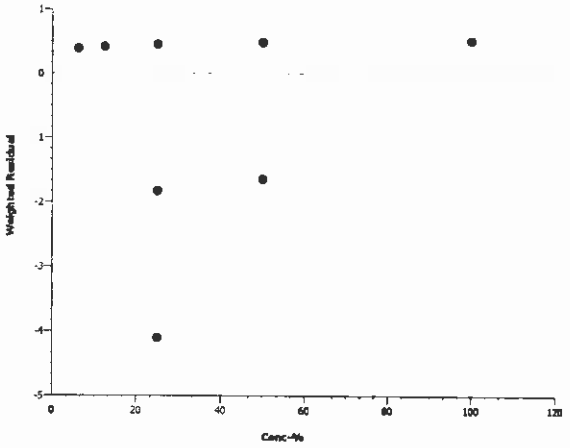
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	1
12.5		1	1	1	1
25		0.8	1	1	0.9
50		0.9	1	1	1
100		1	1	1	1

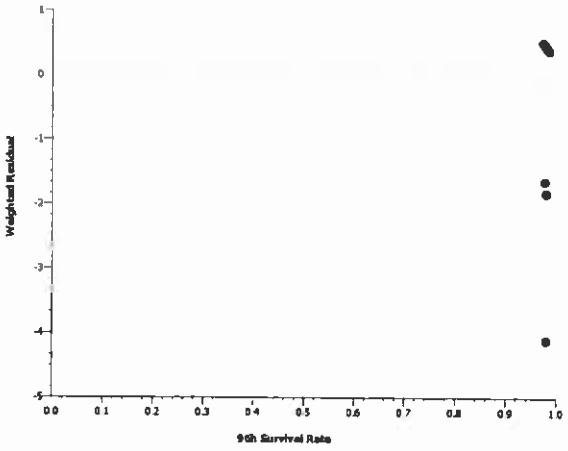
Acute Fish Survival Test				Pacific EcoRisk	
Analysis No:	15-0145-2135	Endpoint:	96h Survival Rate	CETIS Version:	CETISv1.6.5
Analyzed:	04 Sep-08 17:26	Analysis:	Linear Regression (MLE)	Official Results:	Yes

Graphics









96 Hour Acute Fathead Minnow Toxicity Test

Client: URS: DMC
Test Material: SJRDS-001-TOX
Test ID#: 29472 Project # 13489
Test Date: 7/30/08 Randomization: 4.6.4
Feeding T0 Time: 830 Initials: JPW

Organism Log #: 4034 Age: 9 days
Organism Supplier: ABS
Control/Diluent: EPAMH
Control Water Batch: 1124
Feeding T46-hr Time: 0845 Initials JPC

Treatment	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Conductivity (µS/cm) new	Conductivity (µS/cm) old	# Live Organisms Rep A	Rep B	Rep C	Rep D	SIGN-OFF
Control	19.8	8.19		8.3		300		10	10	10	10	Date: 7/30/08
6.25%	19.8	8.19		8.5		414		10	10	10	10	Sample ID: 20171
12.5%	19.8	8.20		8.5		496		10	10	10	10	Test Solution Prep: JPC
25%	19.8	8.20		8.4		681		10	10	10	10	New WQ: 4
50%	19.8	8.20		8.4		1032		10	10	10	10	Initiation Time: 1615
100%	19.8	8.20		8.4		1709		10	10	10	10	Initiation Sign-off: JPC
Meter ID:	55	PH03		DO14		EC05						
Control	19.7		8.15		7.8		336	10	10	10	10	Date: 7/31/08
6.25%	19.7		8.12		7.9		417	10	10	10	10	Count Time: 1015
12.5%	19.7		8.13		7.7		500	10	10	10	10	Count Signoff: JPC
25%	19.7		8.20		7.6		681	10	10	10	10	Old WQ: 3
50%	19.7		8.21		7.4		1040	10	10	10	10	
100%	19.7		8.39		7.6		1722	10	10	10	10	
Meter ID:	47		PH03		DO14		EC05					
Control	20.1	8.08	8.22	8.7	8.7	334	311	10	10	10	10	Date: 8/1/08
6.25%	20.1	8.11	8.08	8.5	8.3	363	418	10	10	10	10	Sample ID: 20171
12.5%	20.1	8.14	8.07	8.5	8.4	470	505	10	10	10	10	Test Solution Prep: JJ
25%	20.1	8.16	8.16	8.6	8.2	654	705	8	10	10	10	New WQ: 4
50%	20.1	8.18	8.16	8.9	8.1	1002	1030	10	10	10	10	Renewal Time: 1355
100%	20.1	8.14	8.35	9.8	8.1	1702	1752	10	10	10	10	Renewal Signoff: JPC
Meter ID:	47	PH03	PH09	DO14	DO14	EC01	EC05					Old WQ HTA
Control	20.5		7.91		6.7		308	10	10	10	10	Date: 8/2/08
6.25%	20.5		7.94		8.6		376	10	10	10	10	Count Time: 1500
12.5%	20.5		7.87		8.5		469	10	10	10	10	Count Signoff: MM
25%	20.5		7.95		8.7		665	8	10	10	9	Old WQ: MM
50%	20.5		8.12		6.7		1016	9	10	10	10	
100%	20.5		8.37		6.8		1716	10	10	10	10	
Meter ID:	55		PH03		DO12		EC04					
Control	20.5		8.06		8.6		305	10	10	10	10	Date: 8/3/08
6.25%	20.5		7.99		8.5		377	10	10	10	10	Termination Time: 1530
12.5%	20.5		7.99		8.7		479	10	10	10	10	Termination Signoff: JPC
25%	20.5		8.01		8.6		670	8	10	10	9	Old WQ: SL
50%	20.5		8.12		8.6		1031	9	10	10	10	
100%	20.5		8.28		8.4		1731	10	10	10	10	
Meter ID:	47		PH 11		DO14		EC01					

CETIS Summary Report

Acute Fish Survival Test					Pacific EcoRisk
Test Run No:	06-8052-7081	**Test Type:**	Survival (96h)	**Analyst:**	John Jirasritumrong
Start Date:	30 Jul-08 18:15	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	03 Aug-08 16:35	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	94h	**Source:**	Aquatic Biosystems, CO	**Age:**	9

Sample No:	20-7608-5873	**Code:**	SJRDS-002	**Client:**	URS
Sample Date:	29 Jul-08 23:38	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	19h (5 °C)	**Station:**	SJRDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
15-1557-0845	96h Survival Rate	100	>100	N/A	4.57%	1	Steel Many-One Rank Test

96h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	0.975	0.956	0.994	0.9	1	0.00913	0.05	5.13%	2.5%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

96h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	1
12.5		1	1	1	1
25		0.9	1	1	1
50		1	1	1	1
100		1	1	1	1

Acute Fish Survival Test — **Pacific EcoRisk**

Analysis No:	15-1557-0845	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:29	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	4.57%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	18	10	1	0.8330	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	16	10	1	0.6100	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	18	10	1	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.005533194	0.001106639	5	1	0.4460	Non-Significant Effect
Error	0.0199195	0.001106639	18			
Total	0.02545269206166	0.00221327762119	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	1	4.25	0.4460	Equal Variances
Distribution	Shapiro-Wilk Normality	0.463		0.0000	Non-normal Distribution

96h Survival Rate Summary

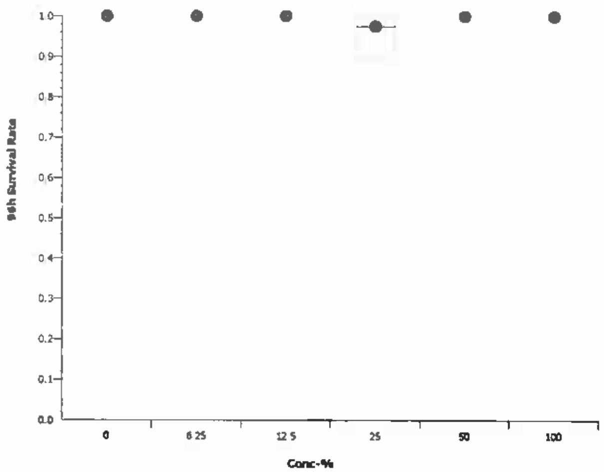
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	0.975	0.956	0.994	0.9	1	0.00928	0.05	5.13%	2.5%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

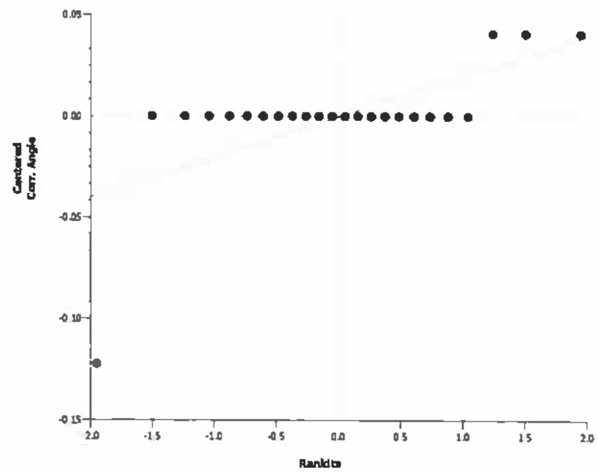
Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
6.25		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
12.5		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
25		4	1.37	1.34	1.4	1.25	1.41	0.0151	0.0815	5.94%	2.89%
50		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
100		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%

Acute Fish Survival Test					Pacific EcoRisk
Analysis No: 15-1557-0845		**Endpoint:** 96h Survival Rate		**CETIS Version:** CETISv1.6.5	
Analyzed: 04 Sep-08 17:29		**Analysis:** Nonparametric-Control vs Treatments		**Official Results:** Yes	

Graphics





96 Hour Acute Fathead Minnow Toxicity Test

Client: URS: DMC
Test Material: SJRDS-002-TOX
Test ID#: 29473 Project # 13489
Test Date: 7/30/08 Randomization: 4.6.1
Feeding T0 Time: 800 Initials: JPW

Organism Log #: 4034 Age: 9 days
Organism Supplier: ABS
Control/Diluent: EPAMH
Control Water Batch: 1124
Feeding T46-hr Time: 0845 Initials JPC

Treatment	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Conductivity (µS/cm) new	Conductivity (µS/cm) old	# Live Organisms Rep A	Rep B	Rep C	Rep D	SIGN-OFF
Control	20.2	8.24		7.3		293		10	10	10	10	Date: 7/30/08
6.25%	20.2	8.10		7.4		350		10	10	10	10	Sample ID: 20177
12.5%	20.2	8.04		7.4		414		10	10	10	10	Test Solution Prep: W
25%	20.2	7.97		7.1		543		10	10	10	10	New WQ: RV
50%	20.2	7.88		7.5		789		10	10	10	10	Initiation Time: 1315
100%	20.2	7.79		7.8		1261		10	10	10	10	Initiation Sign-off: JPW
Meter ID:	47	pH11		DO12		EC04						
Control	19.8		7.94		7.0		303	10	10	10	10	Date: 7/31/08
6.25%	19.8		7.96		7.1		359	10	10	10	10	Count Time: 1430
12.5%	19.8		7.98		7.2		423	10	10	10	10	Count Signoff: JPC
25%	19.8		8.02		7.1		555	10	10	10	10	Old WQ: W
50%	19.8		8.05		7.1		806	10	10	10	10	
100%	19.8		8.10		7.0		1282	10	10	10	10	
Meter ID:	S5		pH09		DO14		EC01					
Control	20.3	8.09	7.78	9.0	8.9	331	307	10	10	10	10	Date: 8/1/08
6.25%	20.3	8.08	7.78	8.4	8.2	366	360	10	10	10	10	Sample ID: 20177
12.5%	20.3	8.04	7.81	8.5	8.1	427	431	10	10	10	10	Test Solution Prep: W
25%	20.3	7.99	7.94	8.4	8.1	543	555	9	10	10	10	New WQ: W
50%	20.3	7.90	8.00	8.6	8.1	791	813	10	10	10	10	Renewal Time: 1530
100%	20.3	7.84	8.11	8.9	8.1	1295	1307	10	10	10	10	Renewal Signoff: JPC
Meter ID:	47	pH03	pH03	DO14	DO14	EC01	EC01					Old WQ AJR
Control	20.4		7.90		8.0		300	10	10	10	10	Date: 8/2/08
6.25%	20.4		7.79		8.2		366	10	10	10	10	Count Time: 1510
12.5%	20.4		7.89		8.3		425	10	10	10	10	Count Signoff: JPC
25%	20.4		7.84		8.3		547	9	10	10	10	Old WQ:
50%	20.4		7.95		8.3		794	10	10	10	10	
100%	20.4		8.06		8.0		1289	10	10	10	10	
Meter ID:	55		pH03		DO 14		EC04					
Control	20.5		7.87		8.1		298	10	10	10	10	Date: 8/3/08
6.25%	20.5		7.91		8.3		371	10	10	10	10	Termination Time: 1635
12.5%	20.5		7.96		8.1		486	10	10	10	10	Termination Signoff: JPC
25%	20.5		8.01		8.3		556	9	10	10	10	Old WQ: AS
50%	20.5		8.07		8.1		802	10	10	10	10	
100%	20.5		8.18		7.9		1319	10	10	10	10	
Meter ID:	47		pH09		DO12		EC04					

CETIS Summary Report

Acute Fish Survival Test — **Pacific EcoRisk**

Test Run No:	18-3050-1790	**Test Type:**	Survival (96h)	**Analyst:**	John Jirasritumrong
Start Date:	31 Jul-08 13:30	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	04 Aug-08 11:50	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	94h	**Source:**	Sticklebacks Unlimited	**Age:**	10

Sample No:	20-7133-6523	**Code:**	SJRDS-003	**Client:**	URS
Sample Date:	30 Jul-08 03:15	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	34h (5 °C)	**Station:**	SJRDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
07-9329-8210	96h Survival Rate	100	>100	N/A	4.57%	1	Steel Many-One Rank Test

96h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	0.975	0.956	0.994	0.9	1	0.00913	0.05	5.13%	2.5%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

96h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	0.9
12.5		1	1	1	1
25		1	1	1	1
50		1	1	1	1
100		1	1	1	1

CETIS Analytical Report

Acute Fish Survival Test			Pacific EcoRisk
Analysis No: 07-9329-8210	**Endpoint:** 96h Survival Rate	**CETIS Version:** CETISv1.6.5	
Analyzed: 04 Sep-08 17:35	**Analysis:** Nonparametric-Control vs Treatments	**Official Results:** Yes	

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	4.57%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	16	10	1	0.6100	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	18	10	1	0.8330	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	18	10	1	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.005533194	0.001106639	5	1	0.4460	Non-Significant Effect
Error	0.0199195	0.001106639	18			
Total	0.02545269206166	0.00221327762119	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	1	4.25	0.4460	Equal Variances
Distribution	Shapiro-Wilk Normality	0.463		0.0000	Non-normal Distribution

96h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	0.975	0.956	0.994	0.9	1	0.00928	0.05	5.13%	2.5%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

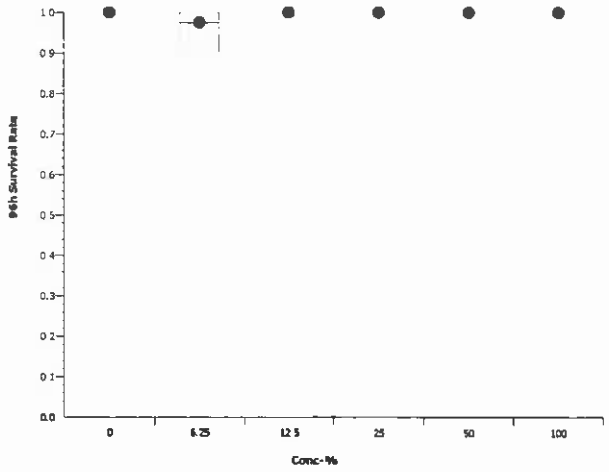
Angular (Corrected) Transformed Summary

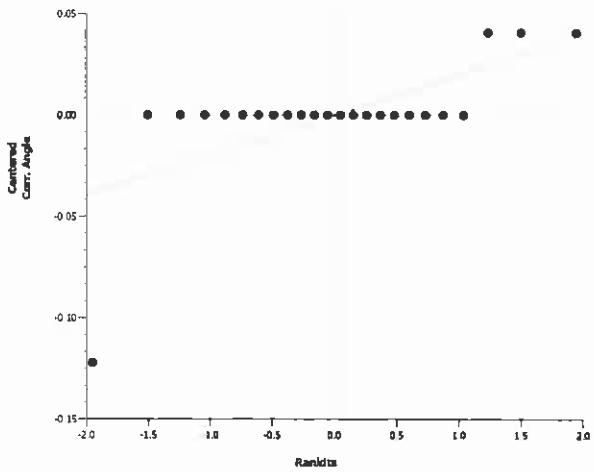
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
6.25		4	1.37	1.34	1.4	1.25	1.41	0.0151	0.0815	5.94%	2.89%
12.5		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
25		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
50		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
100		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%

Acute Fish Survival Test — **Pacific EcoRisk**

Analysis No:	07-9329-8210	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:35	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





96 Hour Acute Fathead Minnow Toxicity Test

Client: URS: DMC
Test Material: SJRDS-003-TOX
Test ID#: 29474 Project # 13489
Test Date: 7/31/08 Randomization: 4.6.9
Feeding T0 Time: 0830 Initials: JPW

Organism Log #: 4043 Age: 10 days
Organism Supplier: Sticklebacks unltd.
Control/Diluent: EPAMH
Control Water Batch: 1124
Feeding T46-hr Time: 0830 Initials JPW

Treatment	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Conductivity (µS/cm) new	Conductivity (µS/cm) old	# Live Organisms Rep A	Rep B	Rep C	Rep D	SIGN-OFF
Control	19.7	~~7.83~~ 7.84		7.8		302		10	10	10	10	Date: 7/31/08
6.25%	19.7	8.18		7.7		347		10	10	10	10	Sample ID: 20178
12.5%	19.7	8.14		7.8		383		10	10	10	10	Test Solution Prep: MR
25%	19.7	8.07		8.0		465		10	10	10	10	New WQ: JR
50%	19.7	7.96		8.2		627		10	10	10	10	Initiation Time: 1330
100%	19.7	7.83		8.6		960		10	10	10	10	Initiation Sign-off: JPC
Meter ID:	55	pH03		D010		EC05						
Control	20.2		7.95		6.8		300	10	10	10	10	Date: 8/1/08
6.25%	20.2		8.01		7.1		344	10	10	10	10	Count Time: 1600
12.5%	20.2		8.03		7.1		381	10	10	10	10	Count Signoff: JR
25%	20.2		8.07		7.0		461	10	10	10	10	Old WQ: JPC
50%	20.2		8.11		6.9		626	10	10	10	10	
100%	20.2		8.19		6.9		954	10	10	10	10	
Meter ID:	47		pH09		D012		EC04					
Control	20.1	8.01	~~7.93~~ 7.94	8.7	8.6	278	~~278~~ 280	10	10	10	10	Date: 8/2/08
6.25%	20.1	~~8.03~~ 8.04	7.93	8.7	9.0	327	348	10	10	10	10	Sample ID: 20178
12.5%	20.1	8.00	7.97	8.7	8.9	369	383	10	10	10	10	Test Solution Prep: JPC
25%	20.1	7.94	7.92	8.9	8.9	456	469	10	10	10	10	New WQ: JLR
50%	20.1	7.86	8.01	9.3	9.8	620	624	10	10	10	10	Renewal Time: 1155
100%	20.1	7.76	8.09	9.9	9.7	941	968	10	10	10	10	Renewal Signoff: JPC
Meter ID:	55	pH11	pH03	D010	D012	EC05	~~EC05~~ EC04					Old WQ
Control	20.2		7.94		8.4		304	10	10	10	10	Date: 8/3/08
6.25%	20.2		7.97		8.4		330	10	10	10	9	Count Time: 0945
12.5%	20.2		7.97		8.4		369	10	10	10	10	Count Signoff: JPC
25%	20.2		8.01		8.4		457	10	10	10	10	Old WQ: SL
50%	20.2		8.08		8.4		625	10	10	10	10	
100%	20.2		8.17		8.3		961	10	10	10	10	
Meter ID:	55		pH03		D012		EC04					
Control	20.2		8.14		8.5		295	10	10	10	10	Date: 8/4/08
6.25%	20.2		8.05		8.7		338	10	10	10	9	Termination Time: 1150
12.5%	20.2		8.06		8.7		379	10	10	10	10	Termination Signoff: JPC
25%	20.3		8.04		8.6		468	10	10	10	10	Old WQ: AS
50%	20.2		8.08		8.8		643	10	10	10	10	
100%	20.2		8.15		8.4		985	10	10	10	10	
Meter ID:	47		pH 11		D014		EC04					

CETIS Summary Report

Report Date:	04 Sep-08 17:58 (p 1 of 1)
Test Code:	06-1604-4052/29475

Acute Fish Survival Test — **Pacific EcoRisk**

Test Run No:	05-5632-5617	**Test Type:**	Survival (96h)	**Analyst:**	John Jirasritumrong
Start Date:	01 Aug-08 14:30	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	05 Aug-08 13:20	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	95h	**Source:**	Aquatic Biosystems, CO	**Age:**	8

Sample No:	18-1077-8026	**Code:**	SJRDS-004	**Client:**	URS
Sample Date:	31 Jul-08 09:10	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	31 Jul-08 12:04	**Source:**	URS		
Sample Age:	29h (15.6 °C)	**Station:**	SJRDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
10-5325-5878	96h Survival Rate	100	>100	N/A	5.6%	1	Steel Many-One Rank Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
11-4803-0095	96h Survival Rate	EC2.5	7.7	N/A	N/A	13	Linear Regression (MLE)
		EC10	2.55	N/A	N/A	39.2	
		EC15	1.71	N/A	N/A	58.3	
		EC20	1.25	N/A	N/A	80.1	
		EC25	0.952	N/A	N/A	105	
		EC40	0.48	N/A	N/A	208	
		EC50	0.318	N/A	N/A	315	

96h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	0.975	0.956	0.994	0.9	1	0.00913	0.05	5.13%	2.5%
12.5		4	0.975	0.956	0.994	0.9	1	0.00913	0.05	5.13%	2.5%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

96h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	0.9
12.5		0.9	1	1	1
25		1	1	1	1
50		1	1	1	1
100		1	1	1	1

Acute Fish Survival Test — **Pacific EcoRisk**

Analysis No:	10-5325-5878	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:57	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	5.6%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	16	10	1	0.6100	Non-Significant Effect
		12.5	16	10	1	0.6100	Non-Significant Effect
		25	18	10	1	0.8330	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	18	10	1	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.00885311	0.001770622	5	0.8	0.5640	Non-Significant Effect
Error	0.039839	0.002213278	18			
Total	0.0486921062693	0.00398389971815	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	0.8	4.25	0.5640	Equal Variances
Distribution	Shapiro-Wilk Normality	0.615		0.0000	Non-normal Distribution

96h Survival Rate Summary

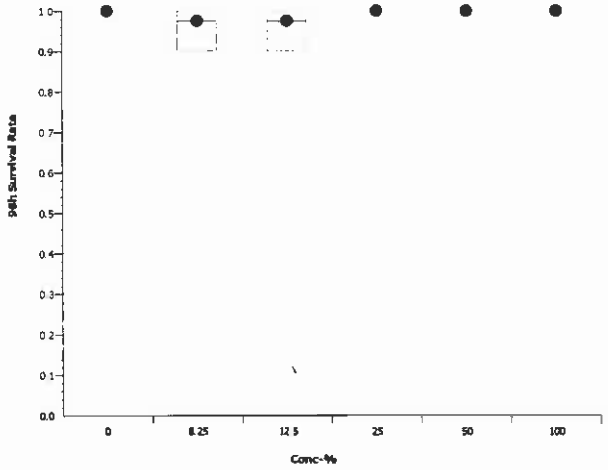
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	0.975	0.956	0.994	0.9	1	0.00928	0.05	5.13%	2.5%
12.5		4	0.975	0.956	0.994	0.9	1	0.00928	0.05	5.13%	2.5%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

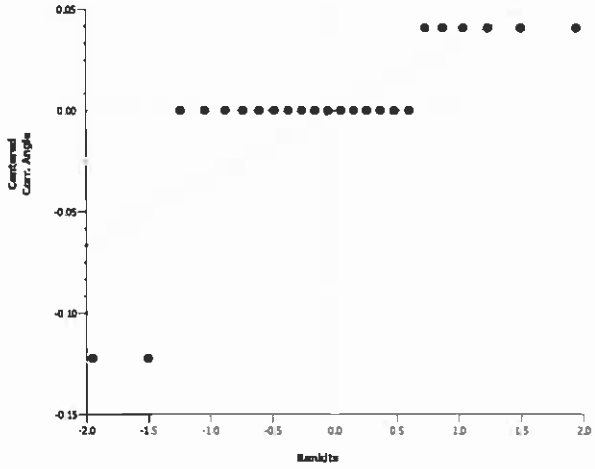
Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
6.25		4	1.37	1.34	1.4	1.25	1.41	0.0151	0.0815	5.94%	2.89%
12.5		4	1.37	1.34	1.4	1.25	1.41	0.0151	0.0815	5.94%	2.89%
25		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
50		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
100		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%

Acute Fish Survival Test					Pacific EcoRisk
Analysis No:	10-5325-5878	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:57	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





Acute Fish Survival Test				Pacific EcoRisk
Analysis No: 11-4803-0095	Endpoint: 96h Survival Rate		CETIS Version:	CETISv1.6.5
Analyzed: 04 Sep-08 17:57	Analysis: Linear Regression (MLE)		Official Results:	Yes

Linear Regression Options

Model Function	Threshold Option	Threshold	Optimized	Pooled	Het Corr	Weighted
Log-Normal [NED=A+B*log(X)]	Control Threshold	0	Yes	No	No	Yes

Regression Summary

Iters	LL	AICc	Mu	Sigma	G Stat	Chi-Sq	Critical	P-Value	Decision(5%)
9	-9.81	24.3	-3.03	-0.706	2.26	9.52	28.9	0.9470	Non-Significant Heterogeneity

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC2.5	7.7	N/A	N/A	13	N/A	N/A
EC10	2.55	N/A	N/A	39.2	N/A	N/A
EC15	1.71	N/A	N/A	58.3	N/A	N/A
EC20	1.25	N/A	N/A	80.1	N/A	N/A
EC25	0.952	N/A	N/A	105	N/A	N/A
EC40	0.48	N/A	N/A	208	N/A	N/A
EC50	0.318	N/A	N/A	315	N/A	N/A

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Stat	P-Value	Decision(5%)
Slope	-1.42	1.09	-3.55	0.714	-1.3	0.2090	Non-Significant Parameter
Intercept	4.3	1.11	2.12	6.47	3.86	0.0011	Significant Parameter

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision(5%)
Variances	Mod Levene Equality of Variance	0.779	3.06	0.5560	Equal Variances
Distribution	Shapiro-Wilk Normality	0.591		0.0000	Non-normal Distribution

96h Survival Rate Summary

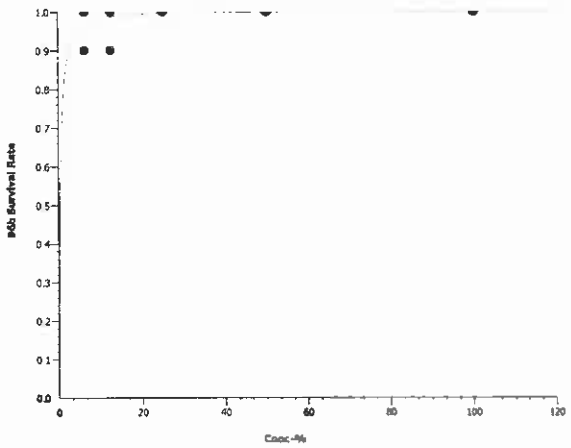
			Calculated Variate(A/B)								
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%	A	B
0	Lab Water	4	1	1	1	0	0	0.0%	0.0%	40	40
6.25		4	0.975	0.9	1	0.00913	0.05	5.13%	2.5%	39	40
12.5		4	0.975	0.9	1	0.00913	0.05	5.13%	2.5%	39	40
25		4	1	1	1	0	0	0.0%	0.0%	40	40
50		4	1	1	1	0	0	0.0%	0.0%	40	40
100		4	1	1	1	0	0	0.0%	0.0%	40	40

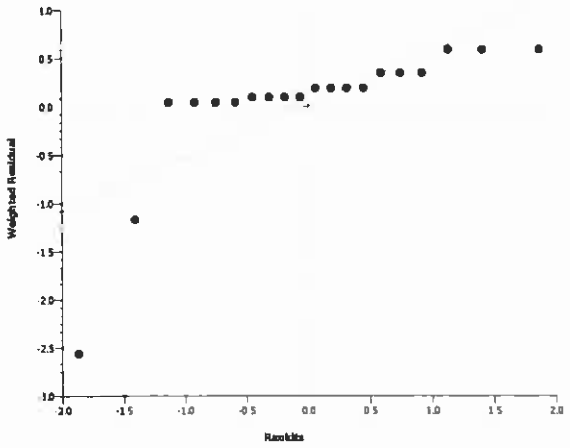
96h Survival Rate Detail

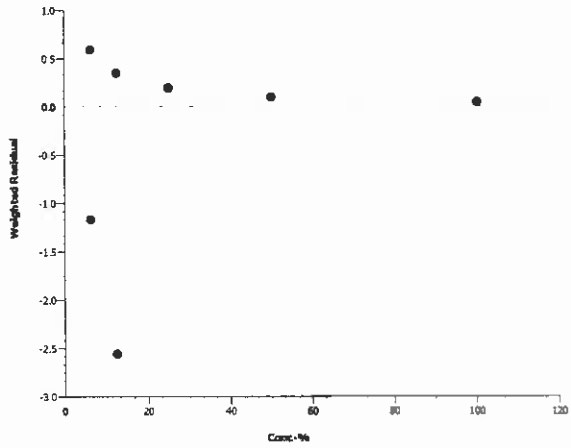
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	0.9
12.5		0.9	1	1	1
25		1	1	1	1
50		1	1	1	1
100		1	1	1	1

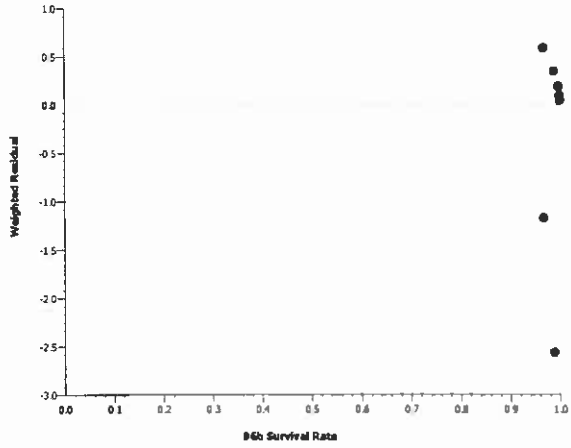
Acute Fish Survival Test					Pacific EcoRisk
Analysis No:	11-4803-0095	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:57	**Analysis:**	Linear Regression (MLE)	**Official Results:**	Yes

Graphics









96 Hour Acute Fathead Minnow Toxicity Test

Client: URS: DMC
Test Material: SJRDS-004-TOX
Test ID#: 29475 Project # 13489
Test Date: 8/1/08 Randomization: 4.6.8
Feeding T0 Time: 200 Initials: QD

Organism Log #: 4051 Age: 8 days
Organism Supplier: ABS
Control/Diluent: EPAMH
Control Water Batch: 1125
Feeding T46-hr Time: 860 Initials JPW

Treatment	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Conductivity (µS/cm) new	Conductivity (µS/cm) old	# Live Organisms Rep A	Rep B	Rep C	Rep D	SIGN-OFF
Control	20.3	8.07		8.6		282		10	10	10	10	Date: 8/1/08
6.25%	20.3	8.12		8.6		325		10	10	10	10	Sample ID: 20195
12.5%	20.3	8.15		8.7		368		10	10	10	10	Test Solution Prep: QD
25%	20.3	8.16		8.7		454		10	10	10	10	New WQ: AT
50%	20.3	8.10		8.8		633		10	10	10	10	Initiation Time: 1430
100%	20.3	8.03		8.7		973		10	10	10	10	Initiation Sign-off:
Meter ID:	47	pH09		0010		EC05						
Control	20.0	JPW 7.76			7.9		288	10	10	10	10	Date: 8/2/08
6.25%	20.0		7.76		7.6		335	10	10	10	10	Count Time: 1145
12.5%	20.0		7.76		7.6		378	10	10	10	10	Count Signoff:
25%	20.0		7.84		7.7		469	10	10	10	10	Old WQ: SLR
50%	20.0		7.87		7.4		646	10	10	10	10	
100%	20.0		8.01		7.5		1180	10	10	10	10	
Meter ID:	55		pH11		D010		EC05					
Control	20.2	8.32	7.83	8.8	8.5	278	350	10	10	10	10	Date: 8/3/08
6.25%	20.2	8.30	7.83	8.8	8.6	324	410	10	10	10	10	Sample ID: 20195
12.5%	20.2	8.27	7.89	8.8	8.5	373	440	10	10	10	10	Test Solution Prep: QD
25%	20.2	8.21	7.94	8.9	8.7	459	505	10	10	10	10	New WQ: KS
50%	20.2	8.15	7.96	9.0	8.5	632	718	10	10	10	10	Renewal Time: 1035
100%	20.2	8.05	8.16 pH09	9.2	8.4 pH09	973	1190	10	10	10	10	Renewal Signoff: JPW
Meter ID:	47	pH09	pH09	D010	D010	EC05	EC05					Old WQ KS
Control	20.1		8.20		8.7		290	10	10	10	10	Date: 8/4/08
6.25%	20.1		8.11		8.4		342	10	10	10	9	Count Time: 0930
12.5%	20.1		8.08		8.4		384	10	10	10	10	Count Signoff: PA
25%	20.1		RA 8.07		8.4		473	10	10	10	10	Old WQ: HA
50%	20.1		8.23		8.9		625	10	10	10	10	
100%	20.1		8.15		8.4		995	10	10	10	10	
Meter ID:	47		PH09		D010		EC05					
Control	20.4		7.52		8.4		293	10	10	10	10	Date: 8/5/08
6.25%	20.4		7.62		8.1		335	10	10	10	9	Termination Time: 1320
12.5%	20.4		7.69		8.2		381	9	10	10	10	Termination Signoff: JPW
25%	20.4		7.79		8.2		465	10	10	10	10	Old WQ: KS
50%	20.4		7.91		8.3		648	10	10	10	10	
100%	20.4		8.04		8.2		1022	10	10	10	10	
Meter ID:	47		PH11		D014		EC01					

Appendix E

Test Data and Summary of Statistics for the Evaluation of the Acute Toxicity of the San Joaquin River Recirculation Study Sediment to *Hyalella azteca*

CETIS Summary Report

Hyalella 10-d Survival and Growth Sediment Test — **Pacific EcoRisk**

Test Run No:	00-8489-3177	**Test Type:**	Survival	**Analyst:**	John Jirasritumrong
Start Date:	01 Aug-08	**Protocol:**	EPA/600/R-99/064 (2000)	**Diluent:**	Hyalella water
Ending Date:	11 Aug-08	**Species:**	Hyalella azteca	**Brine:**	Not Applicable
Duration:	10d 0h	**Source:**	Aquatic Biosystems, CO	**Age:**	13

Sample No:	01-8114-8891	**Code:**	NWDS-SED-TOX	**Client:**	URS
Sample Date:	28 Jul-08 21:10	**Material:**	Sediment	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	75h (0.1 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
16-1016-8635	Survival Rate	100	>100	N/A	5.34%	1	Wilcoxon Rank Sum Two-Sample Test

Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	8	0.963	0.935	0.99	0.8	1	0.0136	0.0744	7.73%	0.0%
100		8	0.975	0.958	0.992	0.9	1	0.00845	0.0463	4.75%	-1.3%

Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	Lab Water	1	0.9	0.8	1	1	1	1	1
100		0.9	1	0.9	1	1	1	1	1

Hyalella 10-d Survival and Growth Sediment Test — **Pacific EcoRisk**

Analysis No:	16-1016-8635	**Endpoint:**	Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:50	**Analysis:**	Nonparametric-Two Sample	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	5.34%

Wilcoxon Rank Sum Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		100	69		2	0.5200	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.001258423	0.001258423	1	0.133	0.7200	Non-Significant Effect
Error	0.1319834	0.009427388	14			
Total	0.13324186753016	0.01068581163418	15			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Variance Ratio F	2.31	8.89	0.2910	Equal Variances
Distribution	Shapiro-Wilk Normality	0.66		0.0001	Non-normal Distribution

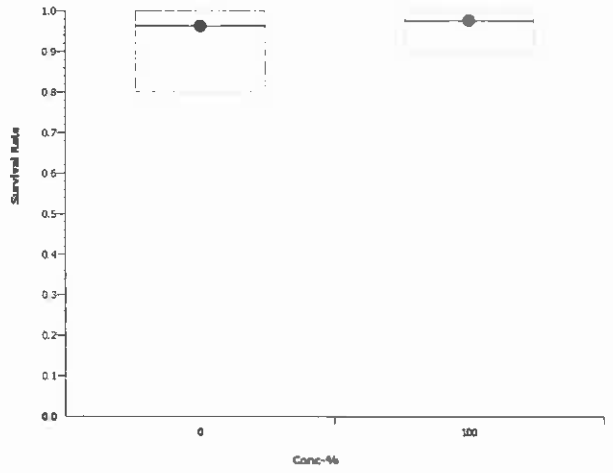
Survival Rate Summary

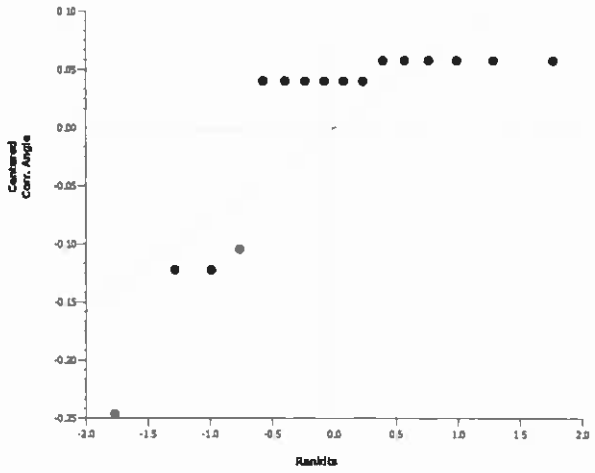
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	8	0.963	0.934	0.991	0.8	1	0.0138	0.0744	7.73%	0.0%
100		8	0.975	0.957	0.993	0.9	1	0.0086	0.0463	4.75%	-1.3%

Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	8	1.35	1.31	1.4	1.11	1.41	0.0213	0.115	8.48%	0.0%
100		8	1.37	1.34	1.4	1.25	1.41	0.014	0.0754	5.5%	-1.31%

Graphics





10-Day Freshwater Sediment Toxicity Test Data

Client: **URS: DMC** Project #: 13489 Organism Log Number: 4035

Species: *Hyalella azteca* Test ID#: 29476 Organism Age/Size: 13 d.o.

Day	Date	Temp. (°C)	Control D.O. (Old)	Control D.O. (New)	NWOS-SED-TOX D.O. (Old)	NWOS-SED-TOX D.O. (New)	Sign-off:
0	8.1.08	22.4 ~~12.3~~		8.6		8.3	AM Change: ASR
			A 10 B 10 C 10 D 10		A 10 B 10 C 10 D 10		WQ: ASR
			E 10 F 10 G 10 H 10		E 10 F 10 G 10 H 10		Initiation Counts: ~~NAR~~
	Meter ID	~~SA~~ 13		D01 1			Confirmation Counts: ~~NAR~~
1	8-2-08	22.7	6.8	8.0	6.3	7.8	AM Change: DAP
			A O B O C O D O		A O B O C O D O		WQ: DAP
			E O F O G O H O		E O F O G O H O		PM Change: YK
	Meter ID	13	DO 14	DO 14			Mortality Counts: DAP
2	8-3-08	21.6	7.0	8.1	6.7	7.7	AM Change: AS
			A O B O C O D O		A O B O C O D O		WQ: AS
			E O F O G O H O		E O F O G O H O		PM Change: MK
	Meter ID	13	DO10	DO 10			Mortality Counts: AS
3	8/4/08	22.1	7.4	8.6	7.3	7.7	AM Change: KW
			A O B O C O D O		A I B O C O D O		WQ: KW
			E O F O G O H O		E O F O G O H O		PM Change: KW
	Meter ID	13	DO 14	DO 14			Mortality Counts: KW
4	8/5/08	22.2	6.9	7.9	6.4	7.5	AM Change: [illegible]
			A O B O C O D O		A O B O C O D O		WQ: [illegible]
			E O F O G O H O		E O F O G O H O		PM Change: SL
	Meter ID	18	DO 12	DO12			Mortality Counts: [illegible]
5	8-6-08	22.6	7.1	5.3	7.2	7.5	AM Change: YK
			A O B O C O D O		A O B O C O D O		WQ: YK
			E O F O G O H O		E O F O G O H O		PM Change: [illegible]
	Meter ID	18	DO 14	DO14	—	—	Mortality Counts: YK
6	8/7/08	22.8	6.5	7.4	5.0	7.0	AM Change: DAP
			A O B O C O D O		A O B O C O D O		WQ: DAP
			E O F O G O H O		E O F O G O H O		PM Change: [illegible]
	Meter ID	13	DO14	DO14			Mortality Counts: DAP
7	8-8-08	22.5	6.6	5.2	7.2	6.5	AM Change: YK
			A O B O C O D O		A O B O C O D O		WQ: YK
			E O F O G O H O		E O F O G O H O		PM Change: AT
	Meter ID	13	DO 14	DO14			Mortality Counts: YK
8	8-9-08	22.5	7.1	8.1	5.3	7.1	AM Change: DAP
			A O B O C O D O		A O B O C O D O		WQ: DAP
			E O F O G O H O		E O F O G O H O		PM Change: DAP
	Meter ID	13	DO12	DO12			Mortality Counts: DAP
9	8-10-08	23.0	6.6	7.7	5.6	7.0	AM Change: [illegible]
			A O B O C O D O		A O B O C O D O		WQ: [illegible]
			E O F O G O H O		E O F O G O H O		PM Change: [illegible]
	Meter ID	13	DO10	DO10			Mortality Counts: [illegible]
10	8-11-08	23.6	# Alive/Replicate		# Alive/Replicate		Termination Counts: AB
			A 10 B 9 C 8 D 10		A 9 B 10 C 9 D 10		
			E 10 F 10 G 10 H 10		E 10 F 10 G 10 H 10		
	Meter ID	13					

Freshwater Sediment Test Water Quality Characteristics

Client: URS: DMC **Species:** *Hyallela azteca*

Initial Water Quality Characteristics for Overlying Water

Date: 8-1-08

Site	pH	D.O. (mg/L)	Conductivity (µS/cm)	Alkalinity	Hardness	Total Ammonia	Test ID #
Control	8.08	8.6	MF ~~510~~ 460	✓59	117 ✓	<1.0 ✓	
NWQS-SED-TOX	8.05	8.3	MF ~~477~~ 443	✓68	136 ✓	<1.0 ✓	29476
Meter ID	PH09	DO14	EC05	—	—	—	
Sign-off	AJR	AJR	AJR	AJR	AJR	AJR	

Final Water Quality Characteristics for Overlying Water

Date: 8-11-08

Site	pH	D.O. (mg/L)	Conductivity (µS/cm)	Alkalinity	Hardness	Total Ammonia	
Control	8.30	4.7	478	✓ 66	✓ 112	✓ <1.0	
NWQS-SED-TOX	8.08	6.9	418	✓ 112	✓ 150	✓ 1.35	
Meter ID	PH09	DO14	EC05	—	—	—	
Sign-off	YK	YK	YK	~~~	~~~	~~~	

Appendix F

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the *Selenastrum capricornutum*

Selenastrum Growth Test — Pacific EcoRisk

Test Run No:	12-3144-0051	Test Type:	Cell Growth	Analyst:	John Jirasritumrong
Start Date:	22 Jul-08 15:40	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	26 Jul-08 15:30	Species:	Selenastrum capricornutum	Brine:	Not Applicable
Duration:	96h	Source:	In-House Culture	Age:	6

Sample No:	19-4822-9422	Code:	13479	Client:	Reference Toxicant
Sample Date:	22 Jul-08 15:40	Material:	Sodium chloride	Project:	13479
Receive Date:	22 Jul-08 15:40	Source:	Reference Toxicant		
Sample Age:	N/A (25 °C)	Station:	In House		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
14-1284-1890	Cell Density	0.5	1	0.707	5.28%		Steel Many-One Rank Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-g/L	95% LCL	95% UCL	TU	Method
15-1365-5885	Cell Density	IC2.5	0.144	0.0686	0.421		Linear Interpolation (ICPIN)
		IC5	0.287	0.137	0.673		
		IC10	0.538	0.296	0.721		
		IC15	0.686	0.502	0.858		
		IC20	0.834	0.662	0.988		
		IC25	0.982	0.803	1.19		
		IC40	1.63	1.43	1.88		
		IC50	2.06	1.85	2.29		

Cell Density Summary

Conc-g/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.87E+6	2.82E+6	2.92E+6	2.76E+6	3.04E+6	2.26E+4	1.24E+5	4.31%	0.0%
0.5		4	2.62E+6	2.58E+6	2.66E+6	2.54E+6	2.79E+6	2.09E+4	1.15E+5	4.37%	8.71%
1		4	2.14E+6	2.10E+6	2.17E+6	2.03E+6	2.23E+6	1.56E+4	8.54E+4	4.0%	25.6%
2		4	1.48E+6	1.44E+6	1.52E+6	1.33E+6	1.58E+6	1.97E+4	1.08E+5	7.32%	48.5%
4		4	1.19E+5	1.17E+5	1.21E+5	1.10E+5	1.23E+5	1.11E+3	6.06E+3	5.09%	95.9%
8		4	4.65E+4	4.29E+4	5.01E+4	3.70E+4	6.00E+4	1.77E+3	9.68E+3	20.8%	98.4%

Cell Density Detail

Conc-g/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.76E+6	3.04E+6	2.88E+6	2.80E+6
0.5		2.57E+6	2.54E+6	2.58E+6	2.79E+6
1		2.23E+6	2.03E+6	2.11E+6	2.17E+6
2		1.33E+6	1.58E+6	1.53E+6	1.47E+6
4		1.23E+5	1.22E+5	1.21E+5	1.10E+5
8		3.70E+4	6.00E+4	4.40E+4	4.50E+4

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	14-1284-1890	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	06 Aug-08 12:11	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	0.5	1	0.707		5.28%

Steel Many-One Rank Test

Control	vs	Conc-g/L	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		0.5	11	10	0	0.0805	Non-Significant Effect
		1*	10	10	0	0.0417	Significant Effect
		2*	10	10	0	0.0417	Significant Effect
		4*	10	10	0	0.0417	Significant Effect
		8*	10	10	0	0.0417	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	3.017153E+13	6.034307E+12	5	761	0.0000	Significant Effect
Error	1.42766E+11	7931444000	18			
Total	3.0314300981E+13	6.042238336E+12	23			

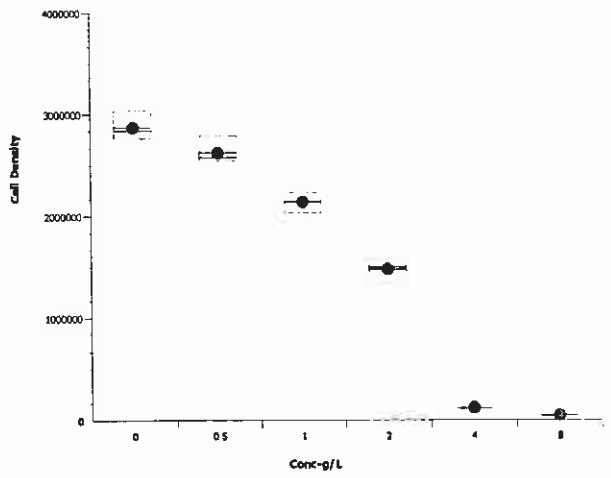
ANOVA Assumptions

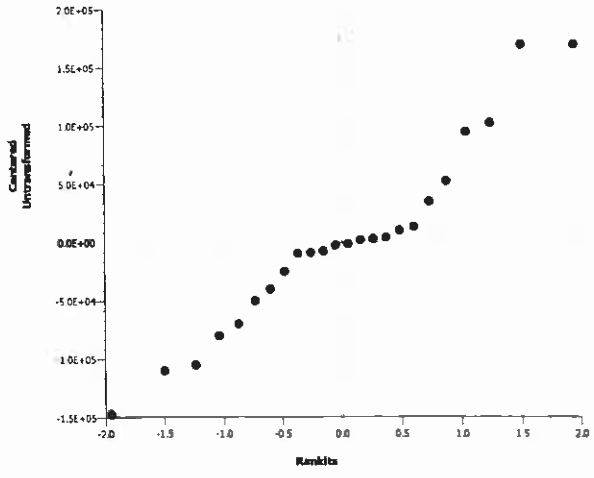
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	22.2	15.1	0.0005	Unequal Variances
Distribution	Shapiro-Wilk Normality	0.945		0.2090	Normal Distribution

Cell Density Summary

Conc-g/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.87E+6	2.82E+6	2.92E+6	2.76E+6	3.04E+6	2.30E+4	1.24E+5	4.31%	0.0%
0.5		4	2.62E+6	2.58E+6	2.66E+6	2.54E+6	2.79E+6	2.13E+4	1.15E+5	4.37%	8.71%
1		4	2.14E+6	2.10E+6	2.17E+6	2.03E+6	2.23E+6	1.59E+4	8.54E+4	4.0%	25.6%
2		4	1.48E+6	1.44E+6	1.52E+6	1.33E+6	1.58E+6	2.01E+4	1.08E+5	7.32%	48.5%
4		4	1.19E+5	1.17E+5	1.21E+5	1.10E+5	1.23E+5	1.12E+3	6.06E+3	5.09%	95.9%
8		4	4.65E+4	4.28E+4	5.02E+4	3.70E+4	6.00E+4	1.80E+3	9.68E+3	20.8%	98.4%

Graphics





Selenastrum Growth Test — Pacific EcoRisk

Analysis No:	15-1365-5885	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	06 Aug-08 12:11	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	7607236	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-g/L	95% LCL	95% UCL
IC2.5	0.144	0.0686	0.421
IC5	0.287	0.137	0.673
IC10	0.538	0.296	0.721
IC15	0.686	0.502	0.858
IC20	0.834	0.662	0.988
IC25	0.982	0.803	1.19
IC40	1.63	1.43	1.88
IC50	2.06	1.85	2.29

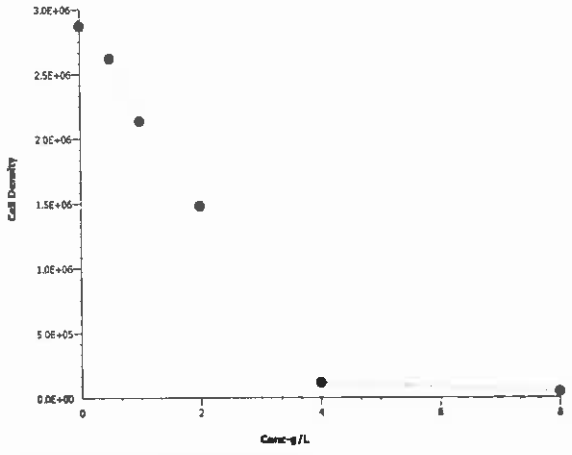
Cell Density Summary

			Calculated Variate						
Conc-g/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.87E+6	2.76E+6	3.04E+6	2.26E+4	1.24E+5	4.31%	0.0%
0.5		4	2.62E+6	2.54E+6	2.79E+6	2.09E+4	1.15E+5	4.37%	8.71%
1		4	2.14E+6	2.03E+6	2.23E+6	1.56E+4	8.54E+4	4.0%	25.6%
2		4	1.48E+6	1.33E+6	1.58E+6	1.97E+4	1.08E+5	7.32%	48.5%
4		4	1.19E+5	1.10E+5	1.23E+5	1.11E+3	6.06E+3	5.09%	95.9%
8		4	4.65E+4	3.70E+4	6.00E+4	1.77E+3	9.68E+3	20.8%	98.4%

Cell Density Detail

Conc-g/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.76E+6	3.04E+6	2.88E+6	2.80E+6
0.5		2.57E+6	2.54E+6	2.58E+6	2.79E+6
1		2.23E+6	2.03E+6	2.11E+6	2.17E+6
2		1.33E+6	1.58E+6	1.53E+6	1.47E+6
4		1.23E+5	1.22E+5	1.21E+5	1.10E+5
8		3.70E+4	6.00E+4	4.40E+4	4.50E+4

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: **Reference Toxicant** Initial Count: 10,000 cells/ml

Test Material: NaCl Enumerating Scientist: SH

Test Start Date: 7/22/08 Start Time: 1540 Test ID #: 29346

Test End Date: 7/26/08 End Time: 1530 Project #: 13479

Treatment	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control (W/EDTA)	2.76	3.04	2.88	2.80	2.87
0.5	2.57	2.54	2.58	2.79	2.62
1	2.23	2.03	2.11	2.17	2.14
2	1.33	1.58	1.53	1.47	1.48
4	0.123	0.122	0.121	0.11	0.119
8	0.037	0.06	0.044	0.045	0.047

This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	2.87	4.31	7/26/08	17:28	

Selenastrum capricornutum Algal Toxicity Test Water Quality Data

Client: **Reference Toxicant** Test ID #: 29346 Test Date: 7/22/08

Test Material: NaCl Project #: 13479 Control/Diluent: Algal Medium-w/ EDTA

Reference Toxicant Test Treatment (g/L NaCl)	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Sign-Off
Lab Water Control	25.1	7.49	6.7	96	Date: 7/22/08
0.5	25.1	7.38	6.8	1174	Test Solution Prep: MR
1	25.1	7.37	6.9	2213	New WQ: AJR
2	25.1	7.32	6.9	3,990	Innoculation Time: 1540
4	25.1	7.28	6.8	7,690	Innoculation Signoff: KO
8	25.1	7.20	6.9	14,320	
Meter ID:	6	PH11	DO12	EC05	
Lab Water Control	25.0	7.64			Date: 7/23/08
0.5	25.0	7.54			WQ Time: 0835
1	25.0	7.47			WQ Signoff: MNM
2	25.0	7.40			
4	25.0	7.37			
8	25.0	7.29			
Meter ID:	6	PH09			
Lab Water Control	25.2	8.46			Date: 7/24/08
0.5	25.2	8.36			WQ Time: 1355
1	25.2	8.25			WQ Signoff: MNJ
2	25.2	8.14			
4	25.2	7.90			
8	25.2	7.70			
Meter ID:	41	PH11			
Lab Water Control	25.0	9.72			Date: 7/25/08
0.5	25.0	9.46			WQ Time: 0935
1	25.0	9.26			WQ Signoff: HM
2	25.0	9.07			
4	25.0	8.61			
8	25.0	7.84			
Meter ID:	41	PH03			
Lab Water Control	24.8	9.84	11.2	106	Date: 7/26/08
0.5	24.8	9.87	12.0	1180	Termination Time: 1530
1	24.8	9.70	12.3	2228	Termination Signoff: MR
2	24.8	9.46	11.3	4000	WQ Time: 1250
4	24.8	9.01	9.4	7700	WQ Signoff: HM
8	24.8	8.47	8.0	14370	
Meter ID:	41	PH11	DO14	EC05	

Initial Test Conditions			
Target: 16g NaCl in 2 L	**Alkalinity**	**Hardness**	**Light Intensity (ftc)**
Actual:	✓ 10	✓ 18	394

Appendix G

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the *Ceriodaphnia dubia*

Ceriodaphnia 7-d Survival and Reproduction Test — **Pacific EcoRisk**

Test Run No:	19-6241-6846	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Mike McElroy
Start Date:	08 Jul-08 17:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	15 Jul-08 14:00	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Duration:	6d 21h	**Source:**	In-House Culture	**Age:**	1

Sample No:	15-4704-5283	**Code:**	13423	**Client:**	Pacific Ecorisk
Sample Date:	08 Jul-08 17:30	**Material:**	Sodium chloride	**Project:**	13423
Receive Date:	08 Jul-08 17:30	**Source:**	Reference Toxicant		
Sample Age:	N/A (24.2 °C)	**Station:**	In House		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	Method
18-4993-4275	7d Survival Rate	1500	2000	1730	N/A	Fisher Exact/Bonferroni-Holm Test
15-3110-2743	Reproduction	500	1000	707	12.4%	Steel Many-One Rank Test

Point Estimate Summary

Analysis No	Endpoint	Effect-%	Conc-mg/L	95% LCL	95% UCL	Method
03-2306-7762	7d Survival Rate	50	1670	1570	1790	Spearman-Kärber
14-0636-6504	Reproduction	2.5	342	75	554	Linear Interpolation (ICPIN)
		5	435	150	608	
		10	575	316	720	
		15	692	479	843	
		20	808	631	985	
		25	924	741	1040	
		40	1140	1060	1200	
		50	1260	1200	1330	

7d Survival Rate Summary

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	10	1	1	1	1	1	0	0	0.0%	0.0%
250		10	1	1	1	1	1	0	0	0.0%	0.0%
500		10	1	1	1	1	1	0	0	0.0%	0.0%
1000		10	1	1	1	1	1	0	0	0.0%	0.0%
1500		10	0.9	0.782	1	0	1	0.0577	0.316	35.1%	10.0%
2000		10	0	0	0	0	0	0	0		100.0%

Reproduction Summary

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	10	28.7	26.7	30.7	16	34	0.985	5.4	18.8%	0.0%
250		10	29	28.4	29.6	26	31	0.272	1.49	5.14%	-1.05%
500		10	26.9	26	27.8	23	31	0.417	2.28	8.49%	6.27%
1000		10	20.7	19.5	21.9	16	26	0.597	3.27	15.8%	27.9%
1500		10	8.8	7.29	10.3	0	12	0.739	4.05	46.0%	69.3%
2000		10	0	0	0	0	0	0	0		100.0%

Ceriodaphnia 7-d Survival and Reproduction Test — Pacific EcoRisk

7d Survival Rate Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Lab Water	1	1	1	1	1	1	1	1	1	1
250		1	1	1	1	1	1	1	1	1	1
500		1	1	1	1	1	1	1	1	1	1
1000		1	1	1	1	1	1	1	1	1	1
1500		1	1	1	1	1	1	1	1	1	0
2000		0	0	0	0	0	0	0	0	0	0

Reproduction Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Lab Water	34	16	32	32	32	29	30	28	31	23
250		29	30	29	30	31	26	27	29	30	29
500		27	27	30	23	26	27	26	27	25	31
1000		24	21	26	16	16	22	19	23	19	21
1500		3	10	11	12	11	11	9	12	9	0
2000		0	0	0	0	0	0	0	0	0	0

Ceriodaphnia 7-d Survival and Reproduction Test — Pacific EcoRisk

Analysis No:	15-3110-2743	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.6.4
Analyzed:	02 Aug-08 14:12	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	500	1000	707	0.2	12.4%

Steel Many-One Rank Test

Control	vs	Conc-mg/L	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		250	92	76	3	0.3810	Non-Significant Effect
		500	80.5	76	3	0.0973	Non-Significant Effect
		1000*	66.5	76	2	0.0066	Significant Effect
		1500*	55	76	0	0.0003	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	2904.68	726.17	4	57.1	0.0000	Significant Effect
Error	572.7	12.72667	45			
Total	3477.38	738.8967	49			

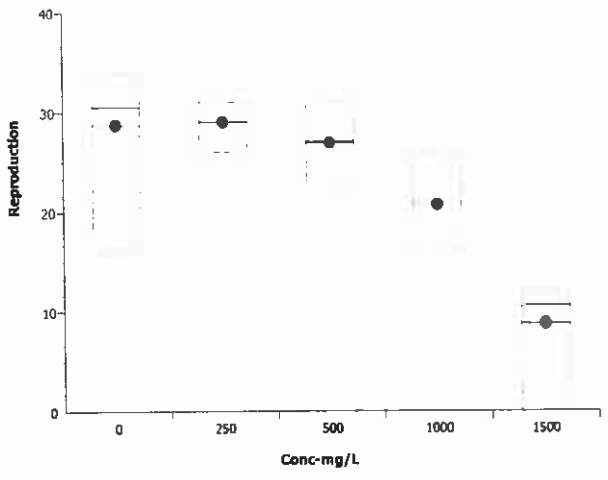
ANOVA Assumptions

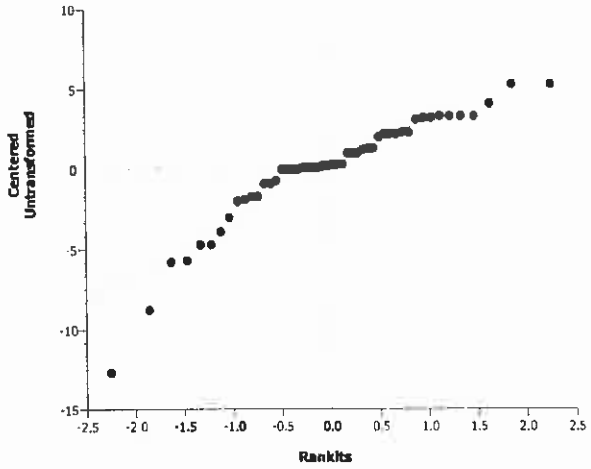
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	14.9	13.3	0.0049	Unequal Variances
Distribution	Shapiro-Wilk Normality	0.891		0.0002	Non-normal Distribution

Reproduction Summary

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	10	28.7	26.6	30.8	16	34	1	5.4	18.8%	0.0%
250		10	29	28.4	29.6	26	31	0.277	1.49	5.14%	-1.05%
500		10	26.9	26	27.8	23	31	0.424	2.28	8.49%	6.27%
1000		10	20.7	19.5	21.9	16	26	0.607	3.27	15.8%	27.9%
1500		10	8.8	7.26	10.3	0	12	0.752	4.05	46.0%	69.3%

Graphics





Ceriodaphnia 7-d Survival and Reproduction Test — **Pacific EcoRisk**

Analysis No:	14-0636-6504	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv1.6.4
Analyzed:	02 Aug-08 14:12	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	5334240	280	Yes	Two-Point Interpolation

Point Estimates

Effect-%	Conc-mg/L	95% LCL	95% UCL
2.5	342	75	554
5	435	150	608
10	575	316	720
15	692	479	843
20	808	631	985
25	924	741	1040
40	1140	1060	1200
50	1260	1200	1330

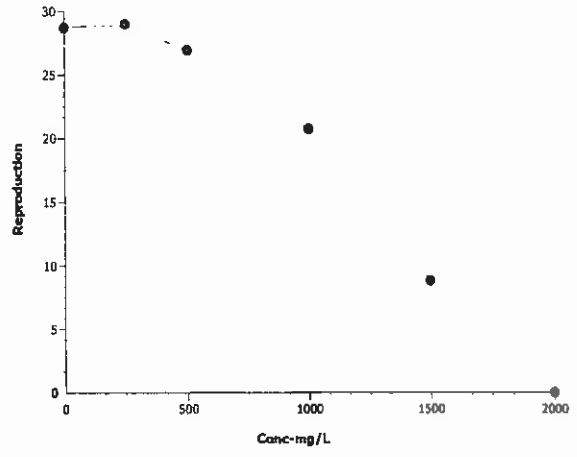
Reproduction Summary

			Calculated Variate						
Conc-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	10	28.7	16	34	0.985	5.4	18.8%	0.0%
250		10	29	26	31	0.272	1.49	5.14%	-1.05%
500		10	26.9	23	31	0.417	2.28	8.49%	6.27%
1000		10	20.7	16	26	0.597	3.27	15.8%	27.9%
1500		10	8.8	0	12	0.739	4.05	46.0%	69.3%
2000		10	0	0	0	0	0		100.0%

Reproduction Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Lab Water	34	16	32	32	32	29	30	28	31	23
250		29	30	29	30	31	26	27	29	30	29
500		27	27	30	23	26	27	26	27	25	31
1000		24	21	26	16	16	22	19	23	19	21
1500		3	10	11	12	11	11	9	12	9	0
2000		0	0	0	0	0	0	0	0	0	0

Graphics



Ceriodaphnia 7-d Survival and Reproduction Test

Pacific EcoRisk

Analysis No:	03-2306-7762	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.6.4
Analyzed:	02 Aug-08 14:13	**Analysis:**	Untrimmed Spearman-Kärber	**Official Results:**	Yes

Spearman-Kärber Estimates

Threshold Option	Threshold	Trim	Mu	Sigma	EC/LC50	95% LCL	95% UCL
Control Threshold	0	0.00%	3.22	0.0143	1670	1570	1790

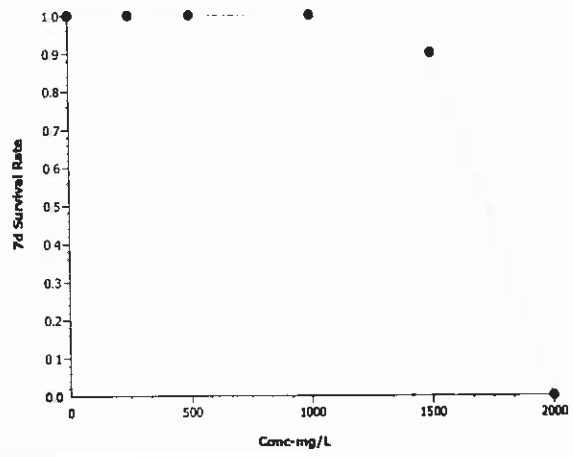
7d Survival Rate Summary

			Calculated Variate(A/B)								
Conc-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%	A	B
0	Lab Water	10	1	1	1	0	0	0.0%	0.0%	10	10
250		10	1	1	1	0	0	0.0%	0.0%	10	10
500		10	1	1	1	0	0	0.0%	0.0%	10	10
1000		10	1	1	1	0	0	0.0%	0.0%	10	10
1500		10	0.9	0	1	0.0577	0.316	35.1%	10.0%	9	10
2000		10	0	0	0	0	0		100.0%	0	10

7d Survival Rate Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Lab Water	1	1	1	1	1	1	1	1	1	1
250		1	1	1	1	1	1	1	1	1	1
500		1	1	1	1	1	1	1	1	1	1
1000		1	1	1	1	1	1	1	1	1	1
1500		1	1	1	1	1	1	1	1	1	0
2000		0	0	0	0	0	0	0	0	0	0

Graphics



CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Pacific EcoRisk**

Analysis No:	18-4993-4275	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.6.4
Analyzed:	02 Aug-08 14:12	**Analysis:**	STP 2x2 Contingency Tables	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	1500	2000	1730	0.0667	N/A

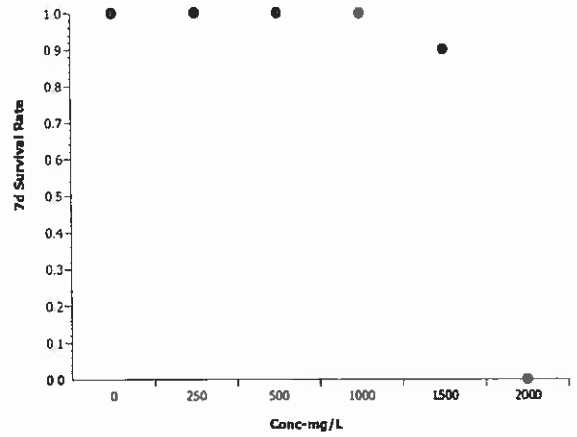
Fisher Exact/Bonferroni-Holm Test

Control	vs	Conc-mg/L	Test Stat	P-Value	Decision(0.05)
Lab Water		250	1	1	Non-Significant Effect
		500	1	1	Non-Significant Effect
		1000	1	1	Non-Significant Effect
		1500	0.5	1	Non-Significant Effect
		2000	5.41E-06	0.0000271	Significant Effect

Data Summary

Conc-mg/L	Control Type	No-Resp	Resp	Total
0	Lab Water	10	0	10
250		10	0	10
500		10	0	10
1000		10	0	10
1500		9	1	10
2000		0	10	10

Graphics



Short-Term Chronic 3-Brood *Ceriodaphnia dubia* Survival & Reproduction Test Data

Client: **Reference Toxicant** Material: Sodium Chloride Test Date: 7/8/08

Project #: 13423 Test ID #: 29101 Control Water / Diluent: Lab Water (80:20)

	Day	pH New	pH Old	D.O. New	D.O. Old	Cond. (µS/cm)	Temp (°C)	Survival / Reproduction A	B	C	D	E	F	G	H	I	J	SIGN-OFF
Lab Control	0	8.08		7.7		223	24.2	0	0	0	0	0	0	0	0	0	0	Date: 7/8/08 Time: 1730 Sol'n Prep: MM New WQ: MR Test Loading: MR
	1	9.03	8.08	8.8	6.9	220	24.3	0	0	0	0	0	0	0	0	0	0	Date: 7/9/08 Time: 1100 Sol'n Prep: MM New WQ: AD Old WQ: MR Counts: MW
	2	8.20	8.31	8.2	8.6	229	24.2	0	0	0	0	0	0	0	0	0	0	Date: 7/10/08 Time: 1030 Sol'n Prep: RV New WQ: MM Old WQ: AD Counts: JPW
	3	7.97	8.12	8.9	7.0	221	24.2	0	0	0	0	0	0	0	0	0	0	Date: 7-11-08 Time: 1830 Sol'n Prep: MM New WQ: MC Old WQ: AT Counts: MM
	4	7.75	8.15	7.5	8.5	211	24.4	0	3	0	6	7	0	0	7	0	3	Date: 7-12-08 Time: 1450 Sol'n Prep: W New WQ: AD Old WQ: MM Counts: SH
	5	8.35	7.97	8.3	7.9	237	24.2	8	3	7	0	0	5	7	0	8	8	Date: 7/13/08 Time: 1045 Sol'n Prep: RV New WQ: MM Old WQ: MM Counts: RV
	6	8.18	8.27	8.2	8.0	234	24.2	12	10	10	9	10	10	11	9	9	12	Date: 7/14/08 Time: 1200 Sol'n Prep: RV New WQ: MC Old WQ: MC Counts: RV
	7	—	8.23	—	7.6	233	24.6	14	~~12~~ 10	15	17	15	14	12	12	14	0	Date: 7/15/08 Time: 1400 Sol'n Prep: — New WQ: — Old WQ: MM Counts: AD
	8																	Date: Time: Sol'n Prep: New WQ: Old WQ: Counts:
							Total =	~~34~~	16	22	32	32	29	30	28	31	23	X = 28.7

	Day	pH New	pH Old	D.O. New	D.O. Old	Cond. (µS/cm)		Survival / Reproduction A	B	C	D	E	F	G	H	I	J
250 mg/L	0	8.07		7.6		749		0	0	0	0	0	0	0	0	0	0
	1	9.13	8.05	8.5	6.7	507		0	0	0	0	0	0	0	0	0	0
	2	8.25	8.35	8.0	~~8.0~~ 8.6	731		0	0	0	0	0	0	0	0	0	0
	3	8.07	8.03	8.2	6.9	707		0	0	0	0	0	0	0	0	0	0
	4	7.90	8.23	8.1	8.5	693		0	7	0	0	5	5	6	6	5	0
	5	8.20	8.12	8.5	7.9	735		7	0	6	6	0	0	0	0	0	7
	6	8.16	8.25	8.4	7.4	728		10	8	12	10	11	9	9	10	10	10
	7	—	8.18	—	7.1	757		12	15	11	14	15	12	12	13	15	12
	8																
							Total =	29	30	29	30	31	26	27	29	30	29	X = 29.0

Short-Term Chronic 3-Brood *Ceriodaphnia dubia* Survival & Reproduction Test Data

Client: **Reference Toxicant** Material: Sodium Chloride Test Date: 7/8/08

Project #: 13423 Test ID #: 29101 Control Water / Diluent: Lab Water (80:20)

	Day	pH New	pH Old	D.O. New	D.O. Old	Cond. (µS/cm)		Survival / Reproduction A	B	C	D	E	F	G	H	I	J	
500 mg/L	0	8.03		7.7		1236		0	0	0	0	0	0	0	0	0	0	
	1	9.12	8.03	8.6	7.1	1164		0	0	0	0	0	0	0	0	0	0	
	2	8.24	8.30	8.2	8.2	1240		0	0	0	0	0	0	0	0	0	0	
	3	8.10	8.08	8.2	7.0	1205		0	0	0	0	0	0	0	0	0	0	
	4	7.94	8.25	8.2	8.7	1124		0	4	0	0	4	4	6	4	5	0	
	5	8.11	8.16	8.7	7.9	1202		5	0	7	2	0	0	0	0	0	8	
	6	8.13	8.25	8.7	7.5	1245		10	9	11	7	8	8	7	9	8	10	
	7	—	8.15	—	7.3	1303		12	14	12	14	14	15	13	14	12	13	
	8																	
							Total =	27	27	30	23	26	27	26	27	25	31	X = 26.9

	Day	pH New	pH Old	D.O. New	D.O. Old	Cond. (µS/cm)		Survival / Reproduction A	B	C	D	E	F	G	H	I	J	
1000 mg/L	0	7.97		8.1		2137		0	0	0	0	0	0	0	0	0	0	
	1	9.11	8.07	9.2	7.3	2169		0	0	0	0	0	0	0	0	0	0	
	2	8.19	8.28	8.5	8.6	2182		0	0	0	0	0	0	0	0	0	0	
	3	8.07	7.95	8.6	7.1	2140		0	0	0	0	0	0	0	0	0	0	
	4	7.95	8.14	8.2	8.2	2063		0	0	0	3	5	5	3	5	3	0	
	5	8.00	8.18	8.9	8.0	2132		6	3	6	0	0	0	0	0	0	5	
	6	8.08	8.21	8.8	7.0	2208		10	7	8	6	5	7	6	6	6	8	
	7	—	8.12	—	7.3	2303		8	11	12	7	6	10	10	12	10	8	
	8																	
							Total =	24	21	26	16	16	22	19	23	19	21	X = 20.7

Short-Term Chronic 3-Brood *Ceriodaphnia dubia* Survival & Reproduction Test Data

Client: **Reference Toxicant** Material: Sodium Chloride Test Date: 7/8/08

Project #: 13423 Test ID #: 29101 Control Water / Diluent: Lab Water (80:20)

	Day	pH New	pH Old	D.O. New	D.O. Old	Cond. (µS/cm)		Survival / Reproduction A	B	C	D	E	F	G	H	I	J	
1500 mg/L	0	7.99		8.4		3080		0	0	0	0	0	0	0	0	0	0	
	1	9.08	8.03	9.4	7.5	2983		0	0	0	0	0	0	Ø	0	0	X/0	
	2	8.12	8.25	9.6	8.5	3120		0	0	0	0	0	0	0	0	0	-	
	3	8.00	8.06	8.8	7.0	3060		0	0	0	0	0	0	0	0	0	-	
	4	7.95	8.22	8.1	8.2	3050		0	0	0	0	3	0	0	3	0	-	
	5	7.92	8.17	9.8	8.0	3080		2	4	2	2	0	3	2	0	2	-	
	6	8.02	8.16	8.5	7.6	3180		0	4	6	5	4	6	5	6	5	-	
	7	/	8.11	/	7.3	3320		1	2	3	5	4	2	2	3	2	-	
	8																-	
							Total =	3	10	11	12	11	11	9	12	9	X/0	X = 8.8

	Day	pH New	pH Old	D.O. New	D.O. Old	Cond. (µS/cm)		Survival / Reproduction A	B	C	D	E	F	G	H	I	J	
2000 mg/L	0	7.83		8.3		4030		0	0	0	0	0	0	0	0	0	0	
	1	9.06	7.89	9.6	6.8	3990		0	0	X/0	0	0	0	0	X/0	0	0	
	2	8.08	8.22	9.0	8.7	3990		X/0	0	-	0	0	0	0	-	0	0	
	3	7.96	8.02	9.1	7.3	3960		-	X/0	-	0	X/0	0	X/0	/	0	X/0	
	4	7.93	8.20	8.3	8.2	3980		-	-	-	X/0	-	0	-	-	0	-	
	5	7.87	8.17	10.4	7.9	4030		-	-	-	-	-	0	-	-	0	-	
	6	7.99	8.18	9.3	7.9	4110		-	-	-	-	-	0	-	-	0	-	
	7	/	8.07	/	7.4	4380		-	-	-	-	-	X/0	-	-	X/0	-	
	8							-	-	-	-	-		-	-		-	
							Total =	X/0	X/0	X/0	X/0	X/0	X/0	X/0	X/0	X/0	X/0	X = 0.0

Appendix H

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the Fathead Minnows

Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Test Run No:	12-9965-7222	**Test Type:**	Growth-Survival (7d)	**Analyst:**	John Jirasritumrong
Start Date:	22 Jul-08 17:15	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Mod-Hard Synthetic Water
Ending Date:	29 Jul-08 11:55	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	6d 19h	**Source:**	Aquatic Biosystems, CO	**Age:**	2

Sample No:	03-6983-7628	**Code:**	13409	**Client:**	Reference Toxicant
Sample Date:	22 Jul-08 17:15	**Material:**	Sodium chloride	**Project:**	13409
Receive Date:	22 Jul-08 17:15	**Source:**	Reference Toxicant		
Sample Age:	N/A (25 °C)	**Station:**	In House		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
01-8958-5600	7d Survival Rate	1.5	3	2.12	11.3%		Dunnett's Multiple Comparison Test
02-1323-2223	Mean Dry Biomass-mg	1.5	3	2.12	18.4%		Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-g/L	95% LCL	95% UCL	TU	Method
02-3792-0899	7d Survival Rate	EC2.5	1.7	1.14	2.16		Linear Regression (MLE)
		EC10	2.29	1.7	2.76		
		EC15	2.56	1.97	3.03		
		EC20	2.79	2.2	3.26		
		EC25	3	2.42	3.47		
		EC40	3.61	3.06	4.11		
		EC50	4.04	3.5	4.59		
14-7376-1869	Mean Dry Biomass-mg	IC2.5	0.908	N/A	1.94		Linear Interpolation (ICPIN)
		IC5	1.09	N/A	1.93		
		IC10	1.44	0.0237	1.9		
		IC15	1.62	0.582	1.98		
		IC20	1.76	0.995	2.08		
		IC25	1.9	1.19	2.18		
		IC40	2.32	1.84	2.52		
		IC50	2.6	2.24	2.83		

7d Survival Rate Summary

Conc-g/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	0.975	0.956	0.994	0.9	1	0.00913	0.05	5.13%	0.0%
0.75		4	1	1	1	1	1	0	0	0.0%	-2.56%
1.5		4	1	1	1	1	1	0	0	0.0%	-2.56%
3		4	0.675	0.619	0.731	0.5	0.8	0.0274	0.15	22.2%	30.8%
6		4	0.275	0.228	0.322	0.1	0.4	0.023	0.126	45.8%	71.8%
9		4	0	0	0	0	0	0	0		100.0%

Mean Dry Biomass-mg Summary

Conc-g/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	0.446	0.433	0.46	0.424	0.499	0.00643	0.0352	7.88%	0.0%
0.75		4	0.445	0.421	0.469	0.354	0.505	0.0117	0.0643	14.4%	0.28%
1.5		4	0.398	0.373	0.424	0.316	0.463	0.0125	0.0687	17.2%	10.8%
3		4	0.159	0.147	0.17	0.124	0.19	0.00551	0.0302	19.0%	64.4%
6		4	0.0903	0.0773	0.103	0.052	0.127	0.00634	0.0347	38.5%	79.8%
9		4	0	0	0	0	0	0	0		100.0%

Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

7d Survival Rate Detail

Conc-g/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	0.9	1	1
0.75		1	1	1	1
1.5		1	1	1	1
3		0.5	0.8	0.8	0.6
6		0.3	0.3	0.4	0.1
9		0	0	0	0

Mean Dry Biomass-mg Detail

Conc-g/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	0.43	0.433	0.424	0.499
0.75		0.354	0.505	0.461	0.461
1.5		0.316	0.368	0.463	0.446
3		0.124	0.177	0.19	0.144
6		0.071	0.111	0.127	0.052
9		0	0	0	0

Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

Analysis No: 02-1323-2223 | Endpoint: Mean Dry Biomass-mg | CETIS Version: CETISv1.6.5
Analyzed: 06 Aug-08 13:59 | Analysis: Parametric-Control vs Treatments | Official Results: Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	1.5	3	2.12		18.4%

Dunnett's Multiple Comparison Test

Control	vs	Conc-g/L	Test Stat	Critical	MSD	P-Value	Decision(5%)
Lab Water		0.75	0.0358	2.36	0.0823	0.7880	Non-Significant Effect
		1.5	1.38	2.36	0.0823	0.2400	Non-Significant Effect
		3*	8.24	2.36	0.0823	0.0000	Significant Effect
		6*	10.2	2.36	0.0823	0.0000	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.4634201	0.115855	4	47.5	0.0000	Significant Effect
Error	0.0366121	0.002440807	15			
Total	0.50003219395876	0.11829582997598	19			

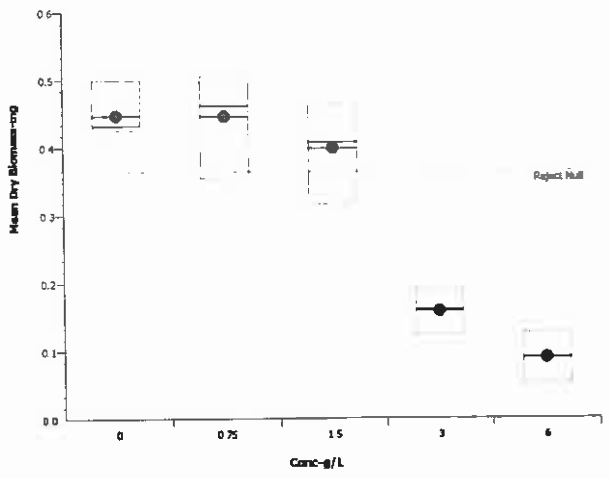
ANOVA Assumptions

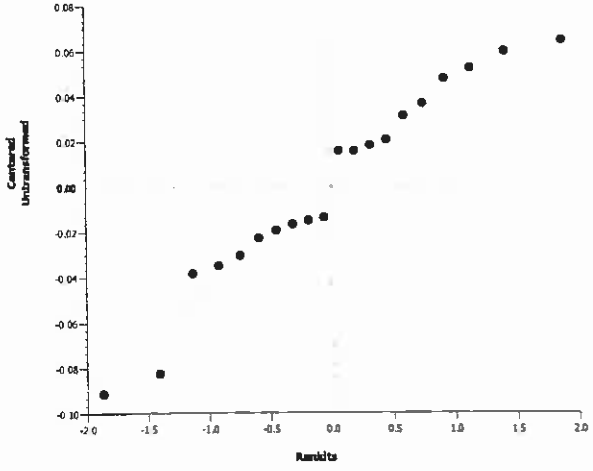
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	3.13	13.3	0.5360	Equal Variances
Distribution	Shapiro-Wilk Normality	0.951		0.3890	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-g/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	0.446	0.433	0.46	0.424	0.499	0.00654	0.0352	7.88%	0.0%
0.75		4	0.445	0.421	0.47	0.354	0.505	0.0119	0.0643	14.4%	0.28%
1.5		4	0.398	0.372	0.424	0.316	0.463	0.0128	0.0687	17.2%	10.8%
3		4	0.159	0.147	0.17	0.124	0.19	0.00561	0.0302	19.0%	64.4%
6		4	0.0903	0.077	0.103	0.052	0.127	0.00645	0.0347	38.5%	79.8%

Graphics





Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

Analysis No: 01-8958-5600 Endpoint: 7d Survival Rate CETIS Version: CETISv1.6.5
Analyzed: 06 Aug-08 13:59 Analysis: Parametric-Control vs Treatments Official Results: Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	1.5	3	2.12		11.3%

Dunnett's Multiple Comparison Test

Control	vs	Conc-g/L	Test Stat	Critical	MSD	P-Value	Decision(5%)
Lab Water		0.75	-0.541	2.36	0.178	0.9280	Non-Significant Effect
		1.5	-0.541	2.36	0.178	0.9280	Non-Significant Effect
		3*	5.31	2.36	0.178	0.0002	Significant Effect
		6*	11	2.36	0.178	0.0000	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	2.352593	0.5881483	4	51.8	0.0000	Significant Effect
Error	0.1703624	0.01135749	15			
Total	2.52295559644699	0.59950579050928	19			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	2.92	4.89	0.0571	Equal Variances
Distribution	Shapiro-Wilk Normality	0.877		0.0154	Normal Distribution

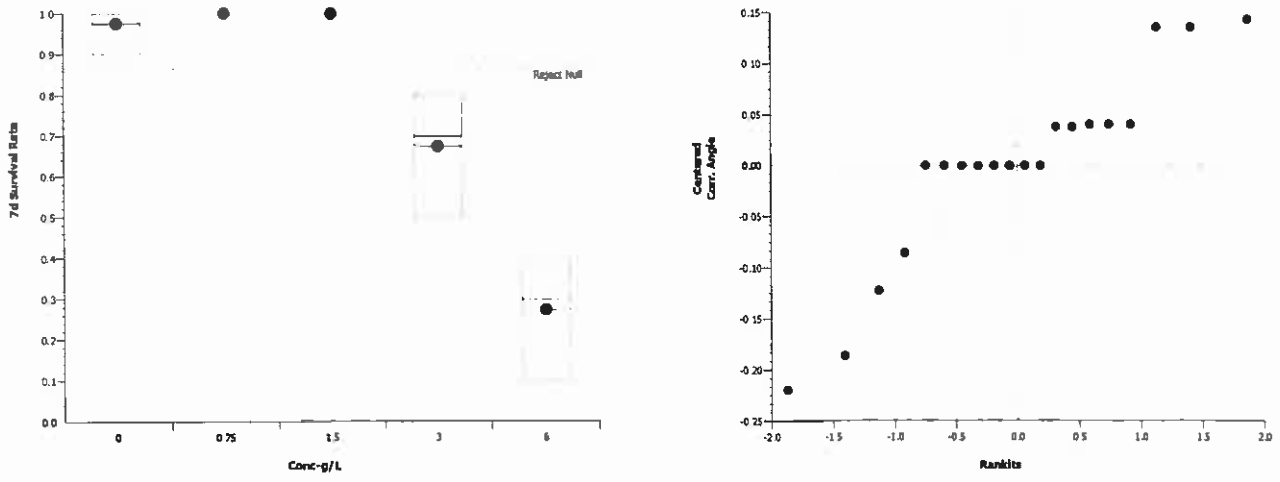
7d Survival Rate Summary

Conc-g/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	0.975	0.956	0.994	0.9	1	0.00928	0.05	5.13%	0.0%
0.75		4	1	1	1	1	1	0	0	0.0%	-2.56%
1.5		4	1	1	1	1	1	0	0	0.0%	-2.56%
3		4	0.675	0.618	0.732	0.5	0.8	0.0279	0.15	22.2%	30.8%
6		4	0.275	0.227	0.323	0.1	0.4	0.0234	0.126	45.8%	71.8%

Angular (Corrected) Transformed Summary

Conc-g/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.37	1.34	1.4	1.25	1.41	0.0151	0.0815	5.94%	0.0%
0.75		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	-2.97%
1.5		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	-2.97%
3		4	0.971	0.91	1.03	0.785	1.11	0.0301	0.162	16.7%	29.2%
6		4	0.541	0.483	0.6	0.322	0.685	0.0287	0.155	28.6%	60.5%

Graphics



Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

Analysis No: 02-3792-0899 | Endpoint: 7d Survival Rate | CETIS Version: CETISv1.6.5
Analyzed: 06 Aug-08 13:59 | Analysis: Linear Regression (MLE) | Official Results: Yes

Linear Regression Options

Model Function	Threshold Option	Threshold	Optimized	Pooled	Het Corr	Weighted
Log-Normal [NED=A+B*log(X)]	Control Threshold	0.025	Yes	No	No	Yes

Regression Summary

Iters	LL	AICc	Mu	Sigma	G Stat	Chi-Sq	Critical	P-Value	Decision(5%)
22	-47.1	98.8	0.354	0.192	0.0744	11.6	28.9	0.8670	Non-Significant Heterogeneity

Point Estimates

Level	Conc-g/L	95% LCL	95% UCL
EC2.5	1.7	1.14	2.16
EC10	2.29	1.7	2.76
EC15	2.56	1.97	3.03
EC20	2.79	2.2	3.26
EC25	3	2.42	3.47
EC40	3.61	3.06	4.11
EC50	4.04	3.5	4.59

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Stat	P-Value	Decision(5%)
Threshold	0.0089	0.00997	-0.0106	0.0284	0.893	0.3840	Non-Significant Parameter
Slope	5.21	0.725	3.79	6.63	7.18	0.0000	Significant Parameter
Intercept	1.84	0.493	0.875	2.81	3.73	0.0015	Significant Parameter

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision(5%)
Variances	Mod Levene Equality of Variance	4.95	3.06	0.0095	Unequal Variances
Distribution	Shapiro-Wilk Normality	0.924		0.1200	Normal Distribution

7d Survival Rate Summary

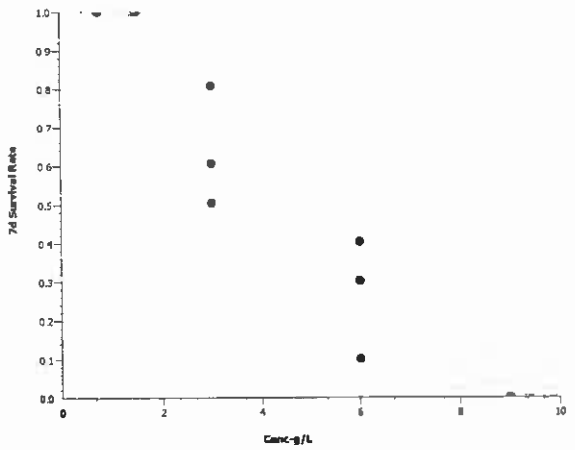
			Calculated Variate(A/B)								
Conc-g/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%	A	B
0	Lab Water	4	0.975	0.9	1	0.00913	0.05	5.13%	0.0%	39	40
0.75		4	1	1	1	0	0	0.0%	-2.56%	40	40
1.5		4	1	1	1	0	0	0.0%	-2.56%	40	40
3		4	0.675	0.5	0.8	0.0274	0.15	22.2%	30.8%	27	40
6		4	0.275	0.1	0.4	0.023	0.126	45.8%	71.8%	11	40
9		4	0	0	0	0	0		100.0%	0	40

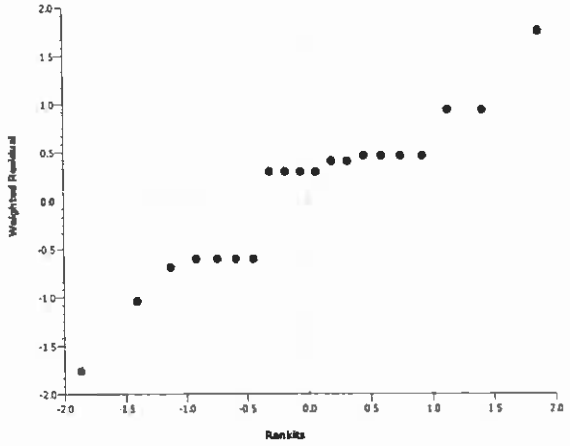
7d Survival Rate Detail

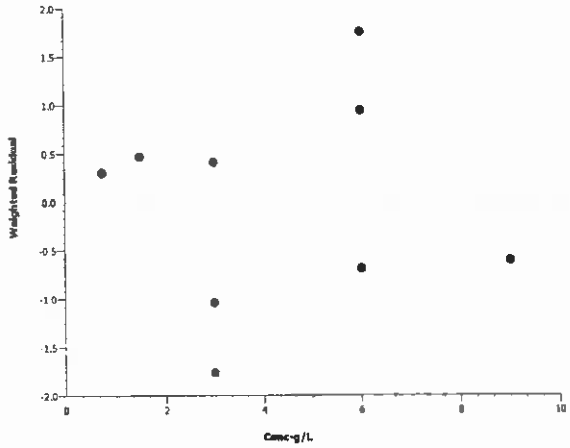
Conc-g/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	0.9	1	1
0.75		1	1	1	1
1.5		1	1	1	1
3		0.5	0.8	0.8	0.6
6		0.3	0.3	0.4	0.1
9		0	0	0	0

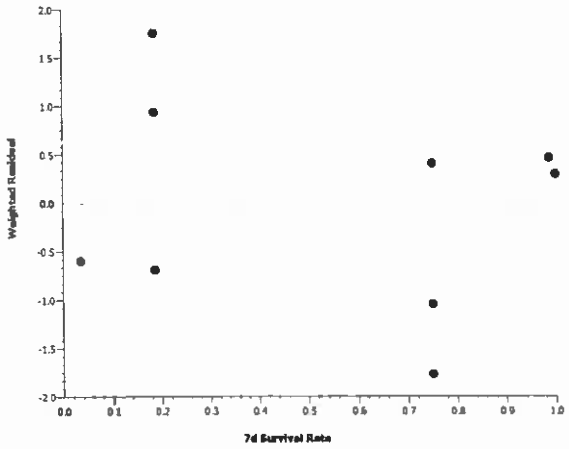
Chronic Larval Fish Survival and Growth Test					Pacific EcoRisk
Analysis No:	02-3792-0899	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	06 Aug-08 13:59	**Analysis:**	Linear Regression (MLE)	**Official Results:**	Yes

Graphics









Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

Analysis No:	14-7376-1869	Endpoint:	Mean Dry Biomass-mg	CETIS Version:	CETISv1.6.5
Analyzed:	06 Aug-08 14:00	Analysis:	Linear Interpolation (ICPIN)	Official Results:	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	453528	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-g/L	95% LCL	95% UCL
IC2.5	0.908	N/A	1.94
IC5	1.09	N/A	1.93
IC10	1.44	0.0237	1.9
IC15	1.62	0.582	1.98
IC20	1.76	0.995	2.08
IC25	1.9	1.19	2.18
IC40	2.32	1.84	2.52
IC50	2.6	2.24	2.83

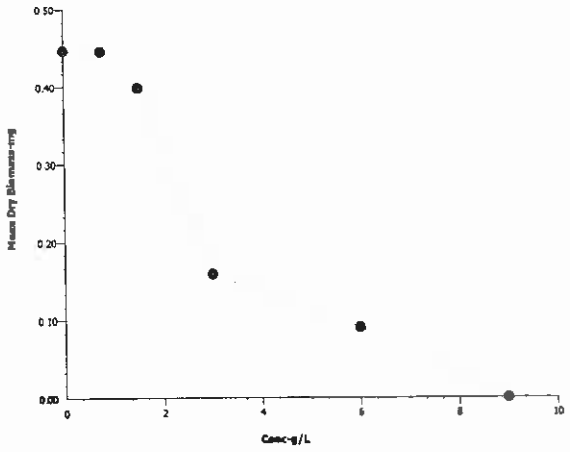
Mean Dry Biomass-mg Summary

			Calculated Variate						
Conc-g/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	0.446	0.424	0.499	0.00643	0.0352	7.88%	0.0%
0.75		4	0.445	0.354	0.505	0.0117	0.0643	14.4%	0.28%
1.5		4	0.398	0.316	0.463	0.0125	0.0687	17.2%	10.8%
3		4	0.159	0.124	0.19	0.00551	0.0302	19.0%	64.4%
6		4	0.0903	0.052	0.127	0.00634	0.0347	38.5%	79.8%
9		4	0	0	0	0	0		100.0%

Mean Dry Biomass-mg Detail

Conc-g/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	0.43	0.433	0.424	0.499
0.75		0.461	0.354	0.505	0.461
1.5		0.316	0.368	0.463	0.446
3		0.124	0.177	0.19	0.144
6		0.071	0.111	0.127	0.052
9		0	0	0	0

Graphics



7 Day Chronic Fathead Minnow Reference Toxicant Test Data

Client: **Reference Toxicant** Organism Log#: 4021 Age: <48 hrs

Test Material: Sodium Chloride (g/L) Organism Supplier: ABS

Test ID#: 29066 Project #: 13409 Control/Diluent: EPAMH

Test Date: 7/22/08 Randomization: 4.6.1 Control Water Batch: 1127

Treatment	Temp (°C)	pH New	pH Old	D.O. (mg/L) New	D.O. (mg/L) Old	Conductivity (µs/cm)	# Live Organisms A	B	C	D	SIGN-OFF
Control	25.5	7.97		8.1		282	10	10	10	10	Date 7/22/08
0.75	25.5	7.97		8.0		1863	10	10	10	10	Test Solution Prep JPL
1.5	25.5	7.96		7.9		3300	10	10	10	10	New WQ SB
3	25.5	7.95		8.0		6140	10	10	10	10	Initiation Time 1715
6	25.5	7.93		8.0		11350	10	10	10	10	Initiation Signoff JPL/JL
9	25.5	7.88		7.9		16390	10	10	10	10	
Meter ID	17A	PH11		DO12		EC05					
Control	25.7	7.98	7.82	8.4	7.2	350 280	10	10	10	10	Date 7/23/08
0.75	25.7	8.03	7.85	8.3	7.5	1843	10	10	10	10	Test Solution Prep RV
1.5	25.7	8.02	7.75	8.3	7.0	3140	10	10	10	10	New WQ AJR
3	25.7	8.00	7.63	8.3	6.6	5980	10	10	10	10	Renewal Time 1005
6	25.7	7.97	7.59	8.3	6.6	11,360	10	10	10	10	Renewal Signoff KO
9	25.7	7.94	7.64	8.3	6.9	17,290	3	6	3	3	Old WQ DAP
Meter ID	17A	PH03	PH09	DO10	DO14	EC05					
Control	25.7	7.94	8.09	9.1	8.1	279	10	10	10	10	Date 7/24/08
0.75	25.7	8.02	~~7.83~~ 7.89 DO	~~9.0~~ 8.9 DO	~~7.7~~ 7.0 DO	1751	10	10	10	10	Test Solution Prep JL
1.5	25.7	8.02	7.89	9.0	7.0	3160	10	10	10	10	New WQ DAP
3	25.7	7.98	7.74	8.9	7.0	5900	10	10	10	10	Renewal Time: 1005
6	25.7	7.92	7.68	9.0	6.9	11070	10	8	8	9	Renewal Signoff: JPC
9	25.7	7.91	7.67	9.2	6.9	16260	0	0	0	0	Old WQ DAP
Meter ID	17A	PH09	PH09	DO14	DO14	EC04					
Control	25.9	8.19	8.10	8.4	7.4	285	10	10	10	10	Date 7/25/08
0.75	25.9	8.13	7.93	8.3	7.2	1740	10	10	10	10	Test Solution Prep JL
1.5	25.9	8.14	7.87	8.3	7.4	3140	10	10	10	10	New WQ MM
3	25.9	8.08	7.77	8.3	7.3	6050	10	10	10	10	Renewal Time: 1105
6	25.9	8.04	7.80	8.4	6.7	11390	4	7	5	7	Renewal Signoff: JPC
9 JPC	~~25.4~~	—	—	—	—	—	—	—	—	—	Old WQ MM
Meter ID	~~55~~ 17A JPC	PH09	PH03	DO12	DO14	EC05					

7 Day Chronic Fathead Minnow Reference Toxicant Test Data

Client: **Reference Toxicant** Organism Log#: 4021 Age: 24 hrs

Test Material: Sodium Chloride Organism Supplier: ABS

Test ID#: 29066 Project #: 13409 Control/Diluent: EPAMH

Test Date: 7/27/08 Randomization: 4.6.1 Control Water Batch: 1122

Treatment	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Conductivity (µs/cm)	# Live Organisms A	B	C	D	SIGN-OFF
Control	25.7	8.16	7.85	8.2	7.0	286	10	10	10	10	Date: 7/26/08
0.75	25.7	8.06	7.73	8.0	7.0	1733	10	10	10	10	Test Solution Prep: MM
1.5	25.7	8.03	7.68	8.1	6.8	3230	10	10	10	10	New WQ JLR
3	25.7	7.98	7.60	8.1	7.0	5990	10	10	10	10	Renewal Time 1340
6	25.7	7.93	7.58	8.1	7.1	11210	4	4	5	6	Renewal Signoff RV
9	–	–	–	–	–	–	–	–	–	–	Old WQ AT
Meter ID	17A	pH03	pH11	DO10	DO14	EC01					
Control	25.7	8.11	7.87	8.0	7.5	299	10	9	10	10	Date: 7/27/08
0.75	25.7	8.03	7.81	8.0	7.3	1704	10	10	10	10	Test Solution Prep: KO
1.5	25.7	8.00	7.81	8.1	7.5	3120	10	10	10	10	New WQ ML
3	25.7	7.94	7.78	8.1	7.3	5860	10	8	10	10	Renewal Time 0945
6	25.7	7.90	7.70	8.0	7.6	11140	3	4	4	6	Renewal Signoff RV
9	–	–	–	–	–	–	–	–	–	–	Old WQ HM
Meter ID	17A	pH03	pH09	DO10	DO14	EC01					
Control	25.7	8.14	7.84	8.8	6.3	301	10	9	10	10	Date 7/28/08
0.75	25.7	8.10	7.84	8.7	6.2	1539	10	10	10	10	Test Solution Prep. RV
1.5	25.7	8.10	7.81	8.6	6.1	2730	10	10	10	10	New WQ MDM
3	25.7	8.07	7.77	8.6	5.9	5200	5	8	8	8	Renewal Time 1115
6	25.7	8.04	7.72	8.6	5.9	9830	3	4	4	6	Renewal Signoff JPW
9	–	–	–	–	–	–	–	–	–	–	Old WQ ~~HH~~ MDM
Meter ID	17A	pH09	pH03	DO14	DO10	EC05					
Control	25.7		7.73		6.6	310	10	9	10	10	Date: 7/29/08
0.75	25.7		7.67		(6.7	1653	10	10	10	10	Termination Time: 1155
1.5	25.7		7.66		6.7	2850	10	10	10	10	Termination Signoff JL
3	25.7		7.66		6.8	5380	5	8	8	6	Old WQ JPW
6	25.7		7.61		6.8	11070	3	3	4	1	
9	–		–		–	–	–	–	–	–	
Meter ID	17A		pH03		DO10	EC01					

Fathead Minnow Dry Weight Data Sheet

Client: **Reference Toxicant** Test ID #: 29066 Project # 13409

Sample: Sodium Chloride Tare Weight Date: 7-22-08 Sign-off: MC

Test Date: 7-22-08 Final Weight Date: 7-30-08 Sign-off: MC

Pan ID	Concentration	Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
1	Control	A	115.58	119.88	10	0.430
2		B	126.25	130.58	10	0.433
3		C	150.71	154.95	10	0.424
4		D	145.86	150.85	10	0.499
5	0.75	A	118.26	121.80	10	0.354
6		B	144.23	149.28	10	0.505
7		C	149.32	153.93	10	0.461
8		D	135.35	139.96	10	0.461
9	1.5	A	119.62	122.78	10	0.316
10		B	122.96	126.64	10	0.368
11		C	138.27	142.90	10	0.463
12		D	171.24	175.70	10	0.446
13	3	A	139.44	140.68	10	0.124
14		B	156.81	158.58	10	0.177
15		C	141.20	143.10	10	0.190
16		D	129.26	130.70	10	0.144
17	6	A	138.77	139.48	10	0.071
18		B	192.83	193.94	10	0.111
19		C	204.23	205.50	10	0.127
20		D	145.44	145.96	10	0.052
21	9	A	117.30	—	10	—
22		B	130.06	—	10	—
23		C	118.38	—	10	—
24		D	169.24	—	10	—
QA1			169.01	169.01		
QA2			139.28	139.27		
QA3			180.87	180.86		
Balance ID:			1	1		

Appendix I

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the *Hyalella azteca*

Hyalella Survival and Growth Test — Pacific EcoRisk

Test Run No:	17-8327-9851	**Test Type:**	Survival	**Analyst:**	Mike McElroy
Start Date:	17 Jul-08 11:55	**Protocol:**	USEPA Freshwater Sediment (2000)	**Diluent:**	Hyalella water
Ending Date:	21 Jul-08 10:45	**Species:**	Hyalella azteca	**Brine:**	Not Applicable
Duration:	95h	**Source:**	Aquatic Indicators, FL	**Age:**	11

Sample No:	03-7925-3714	**Code:**	13466	**Client:**	Reference Toxicant
Sample Date:	17 Jul-08 11:55	**Material:**	Potassium chloride	**Project:**	13466
Receive Date:	17 Jul-08 11:55	**Source:**	Reference Toxicant		
Sample Age:	N/A (22.8 °C)	**Station:**	In House		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
06-5600-1061	Survival Rate	0.2	0.4	0.283	N/A		Fisher Exact/Bonferroni-Holm Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-g/L	95% LCL	95% UCL	TU	Method
04-5878-8982	Survival Rate	EC2.5	0.167	0.0565	0.26		Linear Regression (MLE)
		EC10	0.25	0.116	0.354		
		EC15	0.289	0.149	0.399		
		EC20	0.324	0.181	0.44		
		EC25	0.357	0.213	0.482		
		EC40	0.458	0.312	0.623		
		EC50	0.532	0.382	0.747		

Survival Rate Summary

Conc-g/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	10	1	1	1	1	1	0	0	0.0%	0.0%
0.1		10	1	1	1	1	1	0	0	0.0%	0.0%
0.2		10	1	1	1	1	1	0	0	0.0%	0.0%
0.4		10	0.5	0.303	0.697	0	1	0.0962	0.527	105.0%	50.0%
0.8		10	0.4	0.207	0.593	0	1	0.0943	0.516	129.0%	60.0%
1.6		10	0	0	0	0	0	0	0		100.0%

Survival Rate Detail

Conc-g/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Lab Water	1	1	1	1	1	1	1	1	1	1
0.1		1	1	1	1	1	1	1	1	1	1
0.2		1	1	1	1	1	1	1	1	1	1
0.4		0	1	1	0	1	0	0	1	0	1
0.8		1	0	1	0	0	1	1	0	0	0
1.6		0	0	0	0	0	0	0	0	0	0

Hyalella Survival and Growth Test — **Pacific EcoRisk**

Analysis No:	04-5878-8982	**Endpoint:**	Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	23 Jul-08 11:09	**Analysis:**	Linear Regression (MLE)	**Official Results:**	Yes

Linear Regression Options

Model Function	Threshold Option	Threshold	Optimized	Pooled	Het Corr	Weighted
Log-Normal [NED=A+B*log(X)]	Control Threshold	0	Yes	Yes	No	Yes

Regression Summary

Iters	LL	AICc	Mu	Sigma	G Stat	Chi-Sq	Critical	P-Value	Decision(5%)
7	-15.8	41.6	1.55	0.256	0.22	3.76	7.81	0.2890	Non-Significant Heterogeneity

Point Estimates

Level	Conc-g/L	95% LCL	95% UCL
EC2.5	0.167	0.0565	0.26
EC10	0.25	0.116	0.354
EC15	0.289	0.149	0.399
EC20	0.324	0.181	0.44
EC25	0.357	0.213	0.482
EC40	0.458	0.312	0.623
EC50	0.532	0.382	0.747

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Stat	P-Value	Decision(5%)
Slope	3.9	0.935	2.07	5.74	4.18	0.0250	Significant Parameter
Intercept	6.07	0.367	5.35	6.79	16.6	0.0005	Significant Parameter

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision(5%)
Distribution	Shapiro-Wilk Normality	0.971		0.8840	Normal Distribution

Survival Rate Summary

			Calculated Variate(A/B)								
Conc-g/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%	A	B
0	Lab Water	10	1	1	1	0	0	0.0%	0.0%	10	10
0.1		10	1	1	1	0	0	0.0%	0.0%	10	10
0.2		10	1	1	1	0	0	0.0%	0.0%	10	10
0.4		10	0.5	0	1	0.0962	0.527	105.0%	50.0%	5	10
0.8		10	0.4	0	1	0.0943	0.516	129.0%	60.0%	4	10
1.6		10	0	0	0	0	0		100.0%	0	10

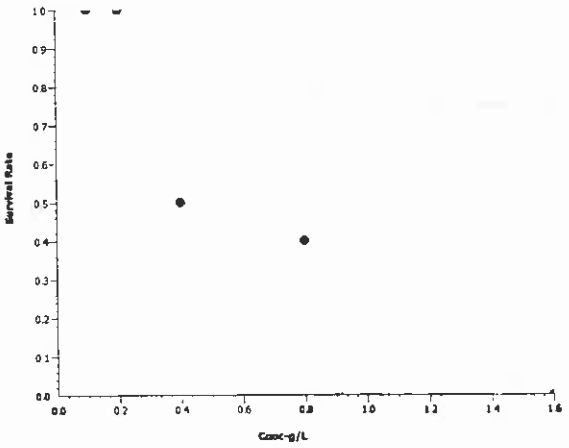
Survival Rate Detail

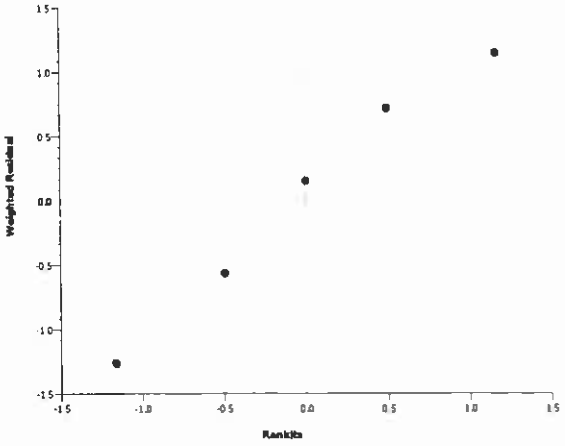
Conc-g/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Lab Water	1	1	1	1	1	1	1	1	1	1
0.1		1	1	1	1	1	1	1	1	1	1
0.2		1	1	1	1	1	1	1	1	1	1
0.4		0	1	1	0	1	0	0	1	0	1
0.8		1	0	1	0	0	1	1	0	0	0
1.6		0	0	0	0	0	0	0	0	0	0

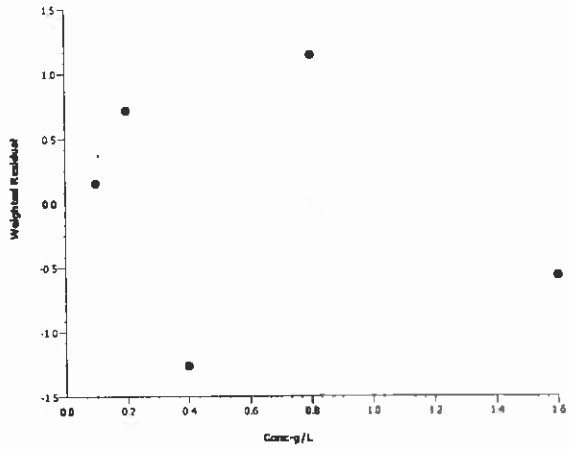
Hyalella Survival and Growth Test — Pacific EcoRisk

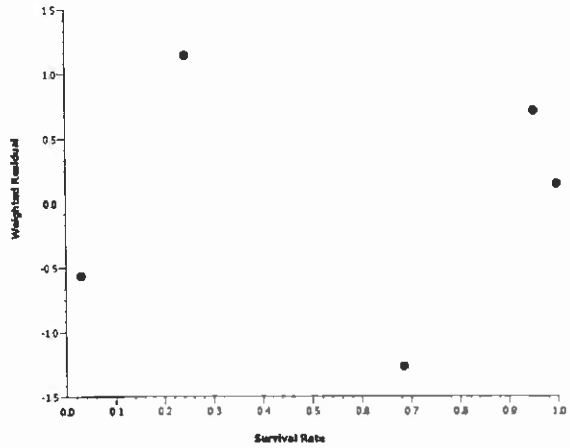
Analysis No:	04-5878-8982	Endpoint:	Survival Rate	CETIS Version:	CETISv1.6.5
Analyzed:	23 Jul-08 11:09	Analysis:	Linear Regression (MLE)	Official Results:	Yes

Graphics









Hyalella Survival and Growth Test — Pacific EcoRisk

Analysis No:	06-5600-1061	**Endpoint:**	Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	23 Jul-08 11:09	**Analysis:**	STP 2x2 Contingency Tables	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	0.2	0.4	0.283		N/A

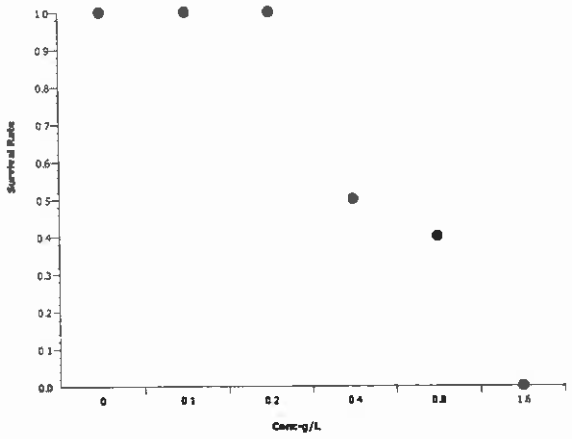
Fisher Exact/Bonferroni-Holm Test

Control	vs	Conc-g/L	Test Stat	P-Value	Decision(0.05)
Lab Water		0.1	1	1	Non-Significant Effect
		0.2	1	1	Non-Significant Effect
		0.4	0.0163	0.0488	Significant Effect
		0.8	0.00542	0.0217	Significant Effect
		1.6	5.41E-06	0.0000271	Significant Effect

Data Summary

Conc-g/L	Control Type	No-Resp	Resp	Total
0	Lab Water	10	0	10
0.1		10	0	10
0.2		10	0	10
0.4		5	5	10
0.8		4	6	10
1.6		0	10	10

Graphics



96 Hour *Hyalella azteca* Reference Toxicant Test Data

Client: **Reference Toxicant**
Test Material: Potassium Chloride
Test ID#: 29333 Project # 13466
Randomization: C-6-8

Test Date: 7/17/08
Control/Diluent: Hyalella Water
Control Water Batch: 315
Feeding To Time: 930 Initials: MM

Treatment (g/L)	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	# Live Animals A	B	C	D	E	F	G	H	I	J	Sign-Off
Control	22.8	7.85	8.7	381	1	1	1	1	1	1	1	1	1	1	Test Solution Prep: MM
0.1	22.8	7.81	8.6	577	1	1	1	1	1	1	1	1	1	1	New WQ: AD
0.2	22.8	7.92	8.4	734	1	1	1	1	1	1	1	1	1	1	Initiation Date: 7/17/08
0.4	22.8	7.93	8.3	1132	1	1	1	1	1	1	1	1	1	1	Initiation Time: 1155
0.8	22.8	7.95	8.3	1904	1	1	1	1	1	1	1	1	1	1	Initiation Signoff: MM
1.6	22.8	7.95	8.2	3320	1	1	1	1	1	1	1	1	1	1	
Meter ID	13	PH09	DO10	EC01											
Control	23.4				1	1	1	1	1	1	1	1	1	1	Count Date: 7/18/08
0.1	23.4				1	1	1	1	1	1	1	1	1	1	Count Time: 0910
0.2	23.4				1	1	1	1	1	1	1	1	1	1	Count Signoff: W
0.4	23.4				1	1	1	1	1	1	1	1	1	1	
0.8	23.4				1	1	1	1	1	1	1	1	1	1	
1.6	23.4				1	1	1	1	1	1	1	1	1	1	
Meter ID	13														
Control	23.5				1	1	1	1	1	1	1	1	1	1	Count Date: 7/19/08
0.1	23.5				1	1	1	1	1	1	1	1	1	1	Count Time: 930
0.2	23.5				1	1	1	1	1	1	1	1	1	1	Count Signoff: AD
0.4	23.5				1	1	1	0	1	0	0	1	1	1	
0.8	23.5				1	0	1	0	0	1	1	0	0	0	
1.6	23.5				0	0	0	0	0	0	0	0	0	0	
Meter ID	13														
Control	23.5				1	1	1	1	1	1	1	1	1	1	Count Date: 7/20/08
0.1	23.5				1	1	1	1	1	1	1	1	1	1	Count Time: 9:45
0.2	23.5				1	1	1	1	1	1	1	1	1	1	Count Signoff: QD
0.4	23.5				1	1	1	–	1	–	–	1	0	1	
0.8	23.5				1	–	1	–	–	1	1	–	–	–	
1.6	23.5				–	–	–	–	–	–	–	–	–	–	
Meter ID	13														
Control	22.3	8.37	7.3	440	1	1	1	1	1	1	1	1	1	1	Termination Date: 7/24/08
0.1	22.3	8.20	7.8	633	1	1	1	1	1	1	1	1	1	1	Termination Time: 1045
0.2	22.3	8.17	7.3	784	1	1	1	1	1	1	1	1	1	1	Termination Signoff: MR
0.4	22.3	NM	NM	NM	0	1	1	–	1	–	–	1	–	1	Old WQ: YK
0.8	22.3	8.09	7.3	2078	1	–	1	–	–	1	1	–	–	–	
1.6	22.3	8.08	7.5	3440	–	–	–	–	–	–	–	–	–	–	
Meter ID	13	PH09	DO12	EC01											

Appendix J

Test Data and Summary of Statistics for the Evaluation of Ambient Water Toxicity to *Selenastrum capricornutum* – Field Duplicate Toxicity Assessment

Selenastrum Growth Test — Pacific EcoRisk

Test Run No:	10-5186-3457	Test Type:	Cell Growth	Analyst:	John Jirasritumrong
Start Date:	31 Jul-08 11:45	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Not Applicable
Ending Date:	04 Aug-08 12:30	Species:	Selenastrum capricornutum	Brine:	Not Applicable
Duration:	4d 1h	Source:	In-House Culture	Age:	7

Sample No:	01-3232-9006	Code:	NWDS-003	Client:	URS
Sample Date:	30 Jul-08 00:45	Material:	Ambient Water	Project:	13489
Receive Date:	30 Jul-08 13:50	Source:	URS		
Sample Age:	35h (5 °C)	Station:	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
07-6291-5247	Cell Density	100	>100	N/A	59.8%	1	Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
01-1157-0727	Cell Density	IC2.5	13.2	2.67	13.8	7.55	Linear Interpolation (ICPIN)
		IC5	14	2.83	15.1	7.15	
		IC10	15.5	3.17	17.7	6.47	
		IC15	16.9	3.5	20.3	5.9	
		IC20	18.4	3.83	22.9	5.43	
		IC25	19.9	4.16	25.7	5.03	
		IC40	24.3	5.16	N/A	4.11	
		IC50	>100	N/A	N/A	<1	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.41E+6	2.35E+6	2.47E+6	2.23E+6	2.63E+6	3.04E+4	1.67E+5	6.92%	0.0%
6.25		4	3.12E+6	3.03E+6	3.20E+6	2.88E+6	3.39E+6	4.19E+4	2.30E+5	7.37%	-29.3%
12.5		4	2.94E+6	2.38E+6	3.50E+6	7.23E+5	3.89E+6	2.74E+5	1.50E+6	51.1%	-21.8%
25		4	1.53E+6	1.34E+6	1.72E+6	1.10E+6	2.25E+6	9.26E+4	5.07E+5	33.1%	36.4%
50		4	1.53E+6	1.15E+6	1.91E+6	7.87E+5	2.95E+6	1.85E+5	1.01E+6	66.2%	36.5%
100		4	1.82E+6	1.51E+6	2.13E+6	1.01E+6	2.98E+6	1.52E+5	8.31E+5	45.6%	24.4%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.63E+6	2.36E+6	2.42E+6	2.23E+6
6.25		2.88E+6	3.39E+6	2.98E+6	3.21E+6
12.5		3.84E+6	3.89E+6	3.29E+6	7.23E+5
25		1.51E+6	1.10E+6	1.27E+6	2.25E+6
50		2.95E+6	8.15E+5	7.87E+5	1.57E+6
100		1.72E+6	1.01E+6	2.98E+6	1.58E+6

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	07-6291-5247	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:04	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	100	>100	N/A	1	59.8%

Dunnett's Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	P-Value	Decision(5%)
Lab Water		6.25	-1.18	2.41	1440000	0.9890	Non-Significant Effect
		12.5	-0.878	2.41	1440000	0.9760	Non-Significant Effect
		25	1.47	2.41	1440000	0.2390	Non-Significant Effect
		50	1.47	2.41	1440000	0.2380	Non-Significant Effect
		100	0.981	2.41	1440000	0.4300	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	9.821524E+12	1.964305E+12	5	2.74	0.0521	Non-Significant Effect
Error	1.291334E+13	7.174078E+11	18			
Total	2.2734863073E+13	2.6817125417E+12	23			

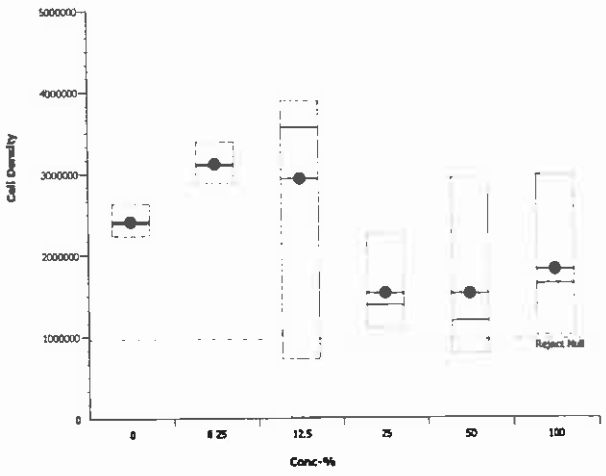
ANOVA Assumptions

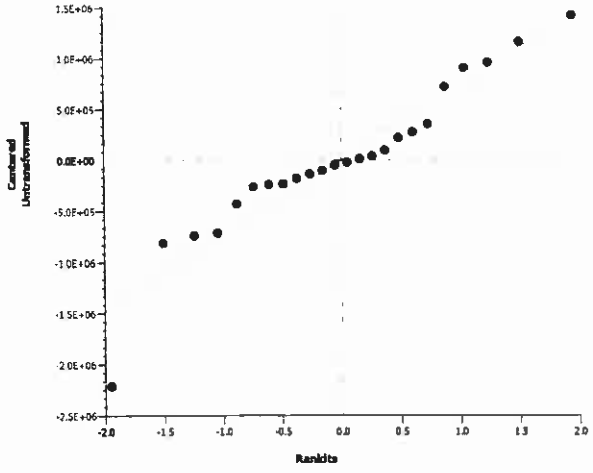
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	14.4	15.1	0.0132	Equal Variances
Distribution	Shapiro-Wilk Normality	0.931		0.1020	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.41E+6	2.35E+6	2.47E+6	2.23E+6	2.63E+6	3.10E+4	1.67E+5	6.92%	0.0%
6.25		4	3.12E+6	3.03E+6	3.20E+6	2.88E+6	3.39E+6	4.26E+4	2.30E+5	7.37%	-29.3%
12.5		4	2.94E+6	2.37E+6	3.51E+6	7.23E+5	3.89E+6	2.79E+5	1.50E+6	51.1%	-21.8%
25		4	1.53E+6	1.34E+6	1.73E+6	1.10E+6	2.25E+6	9.42E+4	5.07E+5	33.1%	36.4%
50		4	1.53E+6	1.15E+6	1.92E+6	7.87E+5	2.95E+6	1.88E+5	1.01E+6	66.2%	36.5%
100		4	1.82E+6	1.51E+6	2.14E+6	1.01E+6	2.98E+6	1.54E+5	8.31E+5	45.6%	24.4%

Graphics





Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	01-1157-0727	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:04	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	7747401	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC2.5	13.2	2.67	13.8	7.55	7.25	37.5
IC5	14	2.83	15.1	7.15	6.63	35.3
IC10	15.5	3.17	17.7	6.47	5.66	31.6
IC15	16.9	3.5	20.3	5.9	4.93	28.6
IC20	18.4	3.83	22.9	5.43	4.37	26.1
IC25	19.9	4.16	25.7	5.03	3.89	24
IC40	24.3	5.16	N/A	4.11	N/A	19.4
IC50	>100	N/A	N/A	<1	N/A	N/A

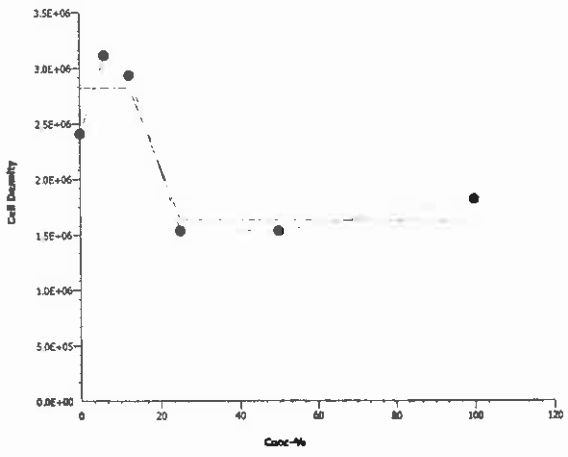
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	2.41E+6	2.23E+6	2.63E+6	3.04E+4	1.67E+5	6.92%	0.0%
6.25		4	3.12E+6	2.88E+6	3.39E+6	4.19E+4	2.30E+5	7.37%	-29.3%
12.5		4	2.94E+6	7.23E+5	3.89E+6	2.74E+5	1.50E+6	51.1%	-21.8%
25		4	1.53E+6	1.10E+6	2.25E+6	9.26E+4	5.07E+5	33.1%	36.4%
50		4	1.53E+6	7.87E+5	2.95E+6	1.85E+5	1.01E+6	66.2%	36.5%
100		4	1.82E+6	1.01E+6	2.98E+6	1.52E+5	8.31E+5	45.6%	24.4%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	2.63E+6	2.36E+6	2.42E+6	2.23E+6
6.25		2.88E+6	3.39E+6	2.98E+6	3.21E+6
12.5		3.84E+6	3.89E+6	3.29E+6	7.23E+5
25		1.51E+6	1.10E+6	1.27E+6	2.25E+6
50		2.95E+6	8.15E+5	7.87E+5	1.57E+6
100		1.72E+6	1.01E+6	2.98E+6	1.58E+6

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: **URS: DMC** Initial Count: 10,000 cells/mL

Test Material: NWDS-003-TOX Enumerating Scientist: CW

Test Start Date: 7/31/08 Start Time: 11:45 Project #: 13489

Test End Date: 8/4/08 End Time: 1230 Test ID #: 29451

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	2.63	2.36	2.42	2.23	2.41
6.25%	2.88	3.39	2.98	3.21	3.11
12.5%	3.84	3.89	3.29	0.723	2.94
25%	1.51	1.10	1.27	2.25	1.53
50%	2.95	0.815	0.787	1.57	1.53
100%	1.72	1.01	2.98	1.58	1.82

This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	% CV	**Date:**	**Time:**	**Signoff:**
	2.41	6.9	8-5-08	1700	AB

Selenastrum capricornutum Algal Toxicity Test Water Quality Data

Client: URS: DMC Test ID #: 29451 Test Date: 7/31/08

Test Material: NWDS-003-TOX Project #: 13489 Control/Diluent: Algal medium, W/O EDTA

Test Treatment	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Sign-Off
Lab Water Control	25.5	7.45	7.9	134	Date: 7/31/08
6.25% Sample	25.5	7.72	8.0	185	Sample ID 20180
12.5% Sample	25.5	7.75	8.1	234	Test Solution Prep QD
25% Sample	25.5	7.85	8.1	342	New WQ: MM
50% Sample	25.5	7.91	8.2	530	Innoculation Time: 11:45
100% Sample	25.5	7.95	8.4	900	Innoculation Signoff: KO
Meter ID:	19A	pH03	D010	EC05	
Lab Water Control	24.9	7.82			Date: 8.01.08
6.25% Sample	24.9	7.86			WQ Time: 1200
12.5% Sample	24.9	7.93			WQ Signoff: AJR
25% Sample	24.9	7.99			
50% Sample	24.9	8.05			
100% Sample	24.9	8.10			
Meter ID:	15A	PH11			
Lab Water Control	24.7	8.85			Date: 8/4/08
6.25% Sample	24.7	9.05			WQ Time: 1025
12.5% Sample	24.7	9.13			WQ Signoff: HTA
25% Sample	24.7	8.95			
50% Sample	24.7	8.83			
100% Sample	24.7	8.72			
Meter ID:	41	PH09			
Lab Water Control	24.9	9.56			Date: 8/3/08
6.25% Sample	24.9	9.88			WQ Time: 1045
12.5% Sample	24.9	9.93			WQ Signoff: ZW
25% Sample	24.9	9.92			
50% Sample	24.9	9.75			
100% Sample	24.9	9.41			
Meter ID:	~~15A 37~~	PH 11			
Lab Water Control	24.7	10.00	10.2	156	Date 8/4/08
6.25% Sample	24.7	10.16	16.4	197	Termination Time 1230
12.5% Sample	24.7	10.03	16.8	246	Termination Signoff: HA
25% Sample	24.7	9.98	11.1	342	WQ Time: 0940
50% Sample	24.7	10.39	13.7	537	WQ Signoff: HTA
100% Sample	24.7	9.61	12.4	867	
Meter ID:	41	PH09	D010	EC05	

Initial Test Conditions	Alkalinity	Hardness	Light Intensity (ftc)
	✓ 114	✓ 211	415

CETIS Summary Report

Selenastrum Growth Test — **Pacific EcoRisk**

Test Run No:	10-8544-5530	**Test Type:**	Cell Growth	**Analyst:**	John Jirasritumrong
Start Date:	31 Jul-08 11:45	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	04 Aug-08 13:45	**Species:**	Selenastrum capricornutum	**Brine:**	Not Applicable
Duration:	4d 2h	**Source:**	In-House Culture	**Age:**	7

Sample No:	00-0311-9157	**Code:**	NWDS-003-DUP	**Client:**	URS
Sample Date:	30 Jul-08 00:45	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	35h (5 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
17-1772-7175	Cell Density	100	>100	N/A	46.9%	1	Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
15-4594-9589	Cell Density	IC2.5	27.4	11.5	70.8	3.65	Linear Interpolation (ICPIN)
		IC5	29.8	18	76.7	3.35	
		IC10	34.7	24.1	95.1	2.88	
		IC15	39.5	28	N/A	2.53	
		IC20	44.3	30.5	N/A	2.25	
		IC25	49.2	33.2	N/A	2.03	
		IC40	>100	N/A	N/A	<1	
		IC50	>100	N/A	N/A	<1	

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.99E+6	1.80E+6	2.18E+6	1.61E+6	2.72E+6	9.11E+4	4.99E+5	25.1%	0.0%
6.25		4	3.14E+6	2.99E+6	3.28E+6	2.61E+6	3.51E+6	7.12E+4	3.90E+5	12.4%	-57.5%
12.5		4	2.98E+6	2.87E+6	3.09E+6	2.66E+6	3.38E+6	5.56E+4	3.05E+5	10.2%	-49.7%
25		4	2.75E+6	2.67E+6	2.83E+6	2.58E+6	3.05E+6	3.77E+4	2.06E+5	7.51%	-38.2%
50		4	2.01E+6	1.63E+6	2.39E+6	1.22E+6	3.51E+6	1.86E+5	1.02E+6	50.7%	-1.13%
100		4	2.01E+6	1.83E+6	2.19E+6	1.52E+6	2.65E+6	8.71E+4	4.77E+5	23.8%	-0.88%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1.61E+6	1.75E+6	1.88E+6	2.72E+6
6.25		2.61E+6	3.33E+6	3.51E+6	3.09E+6
12.5		2.86E+6	3.02E+6	2.66E+6	3.38E+6
25		2.70E+6	2.67E+6	2.58E+6	3.05E+6
50		1.22E+6	1.70E+6	1.62E+6	3.51E+6
100		1.52E+6	2.03E+6	1.83E+6	2.65E+6

CETIS Analytical Report

Test Code: 14-4300-7476/29453

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	17-1772-7175	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:14	**Analysis:**	Parametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T	Not Run	100	>100	N/A	1	46.9%

Dunnett's Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	P-Value	Decision(5%)
Lab Water		6.25	-2.95	2.41	933000	1.0000	Non-Significant Effect
		12.5	-2.55	2.41	933000	1.0000	Non-Significant Effect
		25	-1.96	2.41	933000	0.9990	Non-Significant Effect
		50	-0.058	2.41	933000	0.8500	Non-Significant Effect
		100	-0.0451	2.41	933000	0.8460	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	5.735333E+12	1.147067E+12	5	3.81	0.0157	Significant Effect
Error	5.41425E+12	3.007917E+11	18			
Total	1.1149583057E+13	1.4478583071E+12	23			

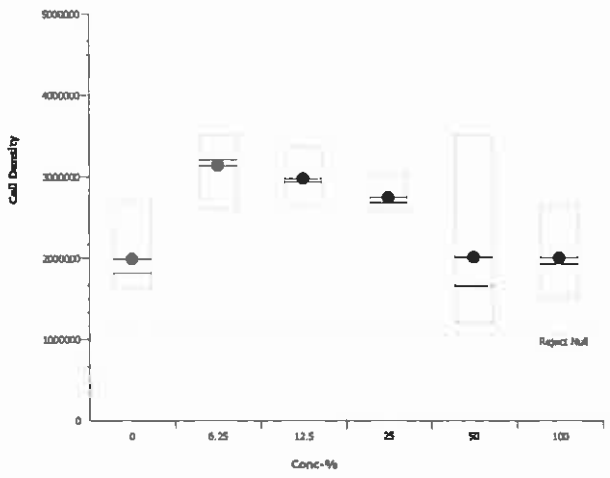
ANOVA Assumptions

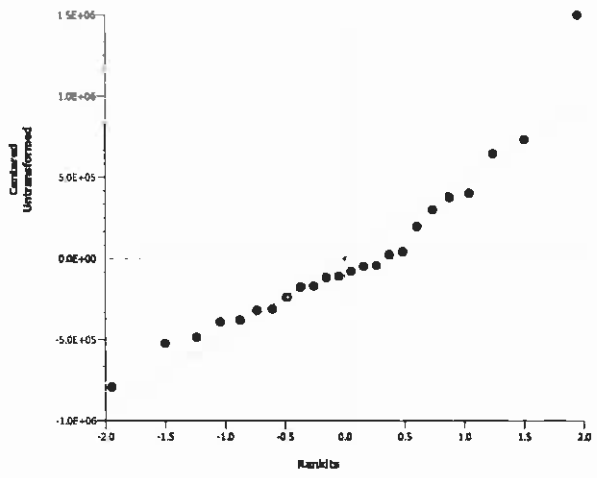
Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	8.07	15.1	0.1520	Equal Variances
Distribution	Shapiro-Wilk Normality	0.911		0.0379	Normal Distribution

Cell Density Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.99E+6	1.80E+6	2.18E+6	1.61E+6	2.72E+6	9.27E+4	4.99E+5	25.1%	0.0%
6.25		4	3.14E+6	2.99E+6	3.28E+6	2.61E+6	3.51E+6	7.24E+4	3.90E+5	12.4%	-57.5%
12.5		4	2.98E+6	2.86E+6	3.10E+6	2.66E+6	3.38E+6	5.66E+4	3.05E+5	10.2%	-49.7%
25		4	2.75E+6	2.67E+6	2.83E+6	2.58E+6	3.05E+6	3.83E+4	2.06E+5	7.51%	-38.2%
50		4	2.01E+6	1.62E+6	2.40E+6	1.22E+6	3.51E+6	1.89E+5	1.02E+6	50.7%	-1.13%
100		4	2.01E+6	1.83E+6	2.19E+6	1.52E+6	2.65E+6	8.86E+4	4.77E+5	23.8%	-0.88%

Graphics





CETIS Analytical Report

Selenastrum Growth Test — **Pacific EcoRisk**

Analysis No:	15-4594-9589	**Endpoint:**	Cell Density	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 16:14	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	7607236	280	Yes	Two-Point Interpolation

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC2.5	27.4	11.5	70.8	3.65	1.41	8.68
IC5	29.8	18	76.7	3.35	1.3	5.54
IC10	34.7	24.1	95.1	2.88	1.05	4.15
IC15	39.5	28	N/A	2.53	N/A	3.57
IC20	44.3	30.5	N/A	2.25	N/A	3.28
IC25	49.2	33.2	N/A	2.03	N/A	3.02
IC40	>100	N/A	N/A	<1	N/A	N/A
IC50	>100	N/A	N/A	<1	N/A	N/A

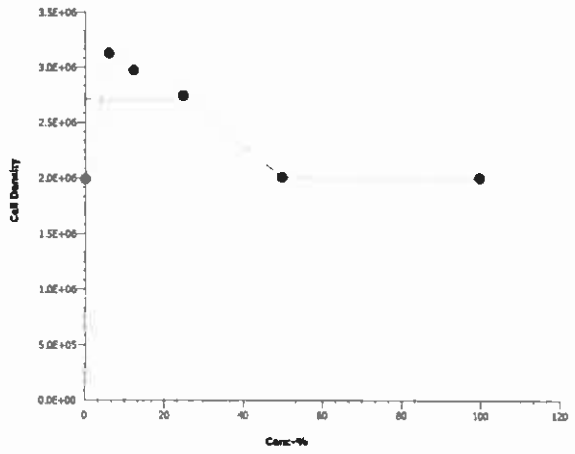
Cell Density Summary

			Calculated Variate						
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.99E+6	1.61E+6	2.72E+6	9.11E+4	4.99E+5	25.1%	0.0%
6.25		4	3.14E+6	2.61E+6	3.51E+6	7.12E+4	3.90E+5	12.4%	-57.5%
12.5		4	2.98E+6	2.66E+6	3.38E+6	5.56E+4	3.05E+5	10.2%	-49.7%
25		4	2.75E+6	2.58E+6	3.05E+6	3.77E+4	2.06E+5	7.51%	-38.2%
50		4	2.01E+6	1.22E+6	3.51E+6	1.86E+5	1.02E+6	50.7%	-1.13%
100		4	2.01E+6	1.52E+6	2.65E+6	8.71E+4	4.77E+5	23.8%	-0.88%

Cell Density Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1.61E+6	1.75E+6	1.88E+6	2.72E+6
6.25		2.61E+6	3.33E+6	3.51E+6	3.09E+6
12.5		2.86E+6	3.02E+6	2.66E+6	3.38E+6
25		2.70E+6	2.67E+6	2.58E+6	3.05E+6
50		1.22E+6	1.70E+6	1.62E+6	3.51E+6
100		1.52E+6	2.03E+6	1.83E+6	2.65E+6

Graphics



Selenastrum capricornutum Cell Density Enumeration Data

Client: **URS: DMC** Initial Count: 10,000 cells/mL

Test Material: NWDS-003-TOX-DUP Enumerating Scientist: SM

Test Start Date: 7/31/08 Start Time: 1115 Project #: 13489

Test End Date: 8/4/08 End Time: 1345 Test ID #: 29453

Treatment	Cell Density (cells/ml x 10^6)				
	Rep A	Rep B	Rep C	Rep D	Mean
Lab Water Control	1.61	1.75	1.88	2.72	1.99
6.25%	2.61	3.33	3.51	3.09	3.13
12.5%	2.86	3.02	2.66	3.38	2.98
25%	2.70	2.67	2.58	3.05	2.75
50%	1.22	1.70	1.62	3.51	2.01
100%	1.52	2.03	1.83	2.65	2.00
This datasheet has been reviewed for completeness and consistency with Test Acceptability Criteria and/or other issues of concern.	**Control Mean Density (cells/mL x 10^6)**	**% CV**	**Date:**	**Time:**	**Signoff:**
	1.99	25.1	8-5-08	1700	MB

Selenastrum capricornutum Algal Toxicity Test Water Quality Data

Client: URS: DMC Test ID #: 29453 Test Date: 7/31/08

Test Material: NWDS-003-TOX-DUP Project #: 13489 Control/Diluent: Algal medium, W/O EDTA

Test Treatment	Temp (°C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Sign-Off
Lab Water Control	25.5	7.45	8.2	168	Date: 7/31/08
6.25% Sample	25.5	7.65	8.1	199	Sample ID: 20183
12.5% Sample	25.5	7.70	8.2	250	Test Solution Prep. QD
25% Sample	25.5	7.77	8.3	361	New WQ: SL
50% Sample	25.5	7.81	8.3	525	Inoculation Time: 11:45
100% Sample	25.5	7.92	8.4	899	Inoculation Signoff: KO
Meter ID:	19A	pH 03	DO10	EC05	
Lab Water Control	25.1	7.98			Date: 8.01.08
6.25% Sample	25.1	8.09			WQ Time: 1200
12.5% Sample	25.1	8.17			WQ Signoff: AJR
25% Sample	25.1	8.17			
50% Sample	25.1	8.16			
100% Sample	~~MB~~ 25.1	8.36			
Meter ID:	31	PH11			
Lab Water Control	24.7	8.70			Date: 8/2/08
6.25% Sample	24.7	8.97			WQ Time: 1020
12.5% Sample	24.7	9.11			WQ Signoff: HTA
25% Sample	24.7	8.95			
50% Sample	24.7	8.83			
100% Sample	24.7	8.70			
Meter ID:	41	PH09			
Lab Water Control	~~24.9~~ 25.1	~~9.59~~ 9.61			Date: 8/3/08
6.25% Sample	~~24.9~~ 25.1	~~9.87~~ 9.89			WQ Time: 0945
12.5% Sample	~~24.9~~ 25.1	~~9.95~~ 9.96			WQ Signoff: JW
25% Sample	~~24.9~~ 25.1	~~9.82~~ 9.84			
50% Sample	~~24.9~~ 25.1	~~9.79~~ 9.81			
100% Sample	~~24.9~~ 25.1	~~9.44~~ 9.55			
Meter ID:	~~19A~~ 31	PH11			
Lab Water Control	24.7	10.15	11.4	157	Date: 8/4/08
6.25% Sample	24.7	10.29	10.4	213	Termination Time: 1345
12.5% Sample	24.7	10.37	10.9	264	Termination Signoff: [illegible]
25% Sample	24.7	10.44	11.3	365	WQ Time: 0950
50% Sample	24.7	10.52	12.7	546	WQ Signoff: HTA
100% Sample	24.7	10.33	12.9	853	
Meter ID:	41	PH09	DO16	EC05	

Initial Test Conditions	Alkalinity	Hardness	Light Intensity (ftc)
	✓ 113	✓ 197	390

Appendix K

Test Data and Summary of Statistics for the Evaluation of Ambient Water Toxicity to *Ceriodaphnia dubia* – Field Duplicate Toxicity Assessment

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Test Run No:	06-6695-7567	**Test Type:**	Survival (48h)	**Analyst:**	John Jirasritumrong
Start Date:	31 Jul-08 11:45	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Spring Water
Ending Date:	04 Aug-08 10:15	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Duration:	94h	**Source:**	In-House Culture	**Age:**	1

Sample No:	01-3232-9006	**Code:**	NWDS-003	**Client:**	URS
Sample Date:	30 Jul-08 00:45	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	35h (5 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
19-2963-4590	48h Survival Rate	100	>100	N/A	5.0%	1	Steel Many-One Rank Test

48h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

48h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	1
12.5		1	1	1	1
25		1	1	1	1
50		1	1	1	1
100		1	1	1	1

Acute Ceriodaphnia Survival Test				Pacific EcoRisk
Analysis No: 19-2963-4590	Endpoint: 48h Survival Rate		CETIS Version:	CETISv1.6.5
Analyzed: 04 Sep-08 17:08	Analysis: Nonparametric-Control vs Treatments		Official Results:	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	5.0%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	18	10	1	0.8330	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	18	10	1	0.8330	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	18	10	1	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0	0	5	65500	0.0000	Significant Effect
Error	0	0	18			
Total	0	0	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	65500	4.25	0.0000	Unequal Variances

48h Survival Rate Summary

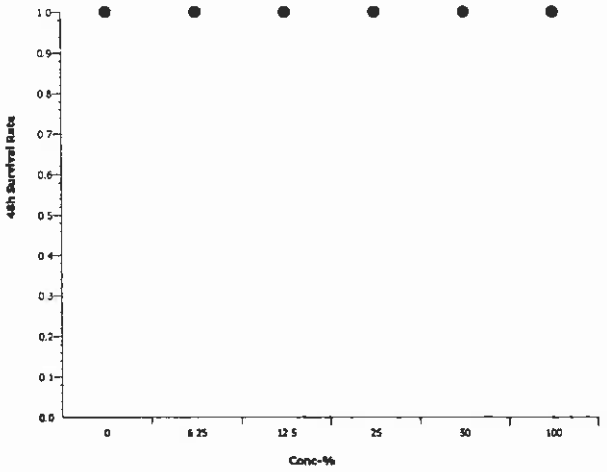
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

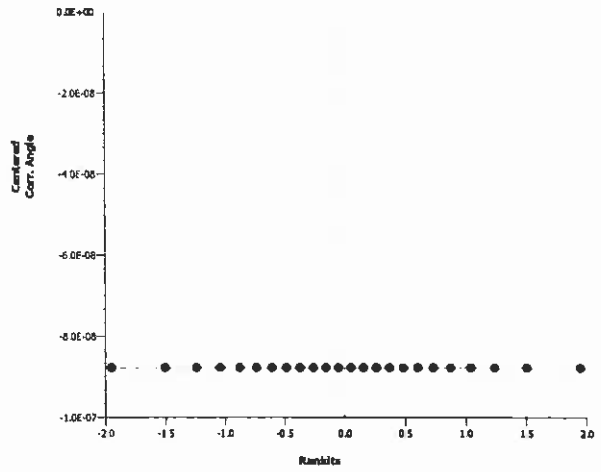
Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
6.25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
12.5		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
50		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
100		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%

Acute Ceriodaphnia Survival Test					Pacific EcoRisk
Analysis No:	19-2963-4590	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:08	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





96 Hour Acute *Ceriodaphnia dubia* Toxicity Test Data

Client: URS: DMC
Test Material: NWDS-003-TOX
Test ID#: 29461 Project # 13489
Randomization: C.6.8
Test Date: 7/31/08
Control/Diluent: Conditioned 80:20
Control Water Batch: Tank 1
Feeding T0 Time: ~~VK~~ 800 Initials: VK
Feeding T46-hr Time: 0830 Initials JPC

Treatment	Temp (°C)	pH New	pH Old	D.O. New	D.O. Old	Conductivity (µS/cm)	# Live Animals A	B	C	D	Sign-Off
Control	20.0	8.28		8.8		256	5	5	5	5	Date: 7/31/08
6.25%	20.0	8.25		8.8		295	5	5	5	5	Sample ID: 20180
12.5%	20.0	8.22		8.9		340	5	5	5	5	Test Solution Prep: JPC
25%	20.0	8.19		9.0		404	5	5	5	5	New WQ: SL
50%	20.0	8.01		9.3		550	5	5	5	5	Initiation Time: 1145
100%	20.0	7.78		9.8		826	5	5	5	5	Initiation Signoff: JPC
Meter ID	47	PH 11		DO12		EC09					
Control	20.2		8.20		8.2	292	5	5	5	5	Date: 8/1/08
6.25%	20.2		8.16		8.6	305	5	5	5	5	Count Time: 1030
12.5%	20.2		8.19		7.8	341	5	5	5	5	Count Signoff: JL
25%	20.2		8.19		7.8	412	5	5	5	5	Old WQ: AT
50%	20.2		8.20		7.8	556	5	5	5	5	
100%	20.2		8.19		8.0	845	5	5	5	5	
Meter ID	47		PH03		DO14	EC01					
Control	20.4	8.16	9.23	8.6	9.9	265	5	5	5	5	Date: 8/2/08
6.25%	20.4	8.12	9.24	8.4	9.7	302	5	5	5	5	Sample ID: 20180
12.5%	20.4	8.08	9.25	8.5	9.7	336	5	5	5	5	Test Solution Prep: JL
25%	20.4	8.00	9.22	8.5	8.8	403	5	5	5	5	New WQ: JLR
50%	20.4	7.94	9.21	8.4	8.9	531	5	5	5	5	Count Time: 1515
100%	20.4	7.71	9.18	7.9	9.4	787	5	5	5	5	Count Signoff:
Meter ID	55	pH11	PH07	DO10	DO12	EC05					Old WQ:
Control	20.2		9.45		9.9	288	5	5	5	5	Date: 8/3/08
6.25%	20.2		9.52		9.7	322	5	5	5	4	Count Time: 0950
12.5%	20.2		9.26		9.5	354	5	5	5	5	Count Signoff: SM
25%	20.2		9.25		9.9	426	5	5	5	5	Old WQ:
50%	20.2		9.24		9.7	514	5	5	6	5	
100%	20.2		9.30		9.7	~~857~~ 851	5	5	5	5	
Meter ID	47		PH03		DO10	EC05					
Control	20.2		9.31		8.6	289	5	5	5	5	Date: 8/4/08
6.25%	20.2		9.33		8.6	343	5	5	5	5	Termination Time: 1015
12.5%	20.2		9.32		9.7	374	5	5	5	5	Termination Signoff: JPC
25%	20.2		9.33		9.6	447	5	5	5	5	Old WQ: JW
50%	20.2		9.32		9.7	566	5	5	5	5	
100%	20.2		9.31		8.6	806	5	5	5	5	
Meter ID	47		PH03		DO12	EC01					

CETIS Summary Report

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Test Run No:	16-7492-7469	**Test Type:**	Survival (48h)	**Analyst:**	John Jirasritumrong
Start Date:	31 Jul-08 11:30	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Spring Water
Ending Date:	04 Aug-08 09:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Duration:	94h	**Source:**	In-House Culture	**Age:**	1

Sample No:	00-0311-9157	**Code:**	NWDS-003-DUP	**Client:**	URS
Sample Date:	30 Jul-08 00:45	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	35h (5 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
07-5970-6014	48h Survival Rate	100	>100	N/A	5.0%	1	Steel Many-One Rank Test

48h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

48h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	1
12.5		1	1	1	1
25		1	1	1	1
50		1	1	1	1
100		1	1	1	1

Acute Ceriodaphnia Survival Test — **Pacific EcoRisk**

Analysis No: 07-5970-6014 **Endpoint:** 48h Survival Rate **CETIS Version:** CETISv1.6.5
Analyzed: 04 Sep-08 17:11 **Analysis:** Nonparametric-Control vs Treatments **Official Results:** Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	5.0%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	18	10	1	0.8330	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	18	10	1	0.8330	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	18	10	1	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0	0	5	65500	0.0000	Significant Effect
Error	0	0	18			
Total	0	0	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	65500	4.25	0.0000	Unequal Variances

48h Survival Rate Summary

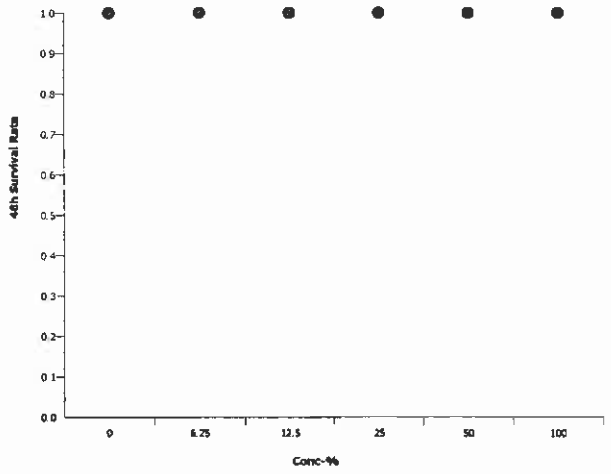
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

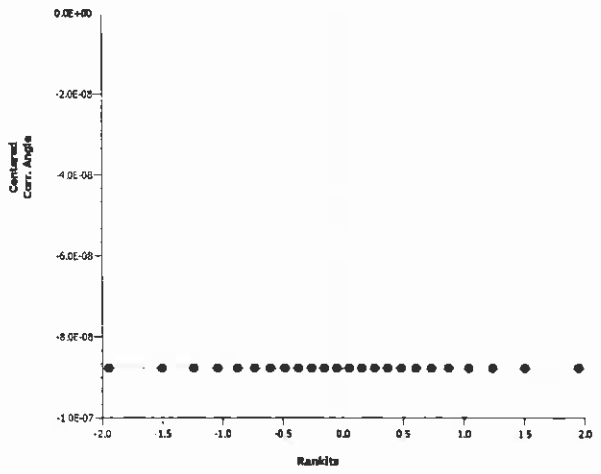
Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
6.25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
12.5		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
25		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
50		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%
100		4	1.35	1.35	1.35	1.35	1.35	0	0	0.0%	0.0%

Acute Ceriodaphnia Survival Test					Pacific EcoRisk
Analysis No:	07-5970-6014	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:11	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





96 Hour Acute *Ceriodaphnia dubia* Toxicity Test Data

Client: URS: DMC
Test Material: NWDS-003-TOX-DUP
Test ID#: 29458 Project # 13489
Randomization: C.6.4

Test Date: 7/31/08
Control/Diluent: Conditioned 80:20
Control Water Batch: Tank #1

Feeding T0 Time: 09:00 Initials: YK

Feeding T46 hr Time: 0830 Initials JPL

Treatment	Temp (°C)	pH New	pH Old	D.O. New	D.O. Old	Conductivity (µS/cm)	# Live Animals A	B	C	D	Sign-Off
Control	20.1	8.22		10.0		271	5	5	5	5	Date: 7/31/08
6.25%	20.1	8.18		10.1		316	5	5	5	5	Sample ID: 20183
12.5%	20.1	8.15		10.1		336	5	5	5	5	Test Solution Prep: 20183 JPL
25%	20.1	8.07		10.2		409	5	5	5	5	New WQ: SL
50%	20.1	7.96		9.6		538	5	5	5	5	Initiation Time: 11:30
100%	20.1	7.80		9.3		788	5	5	5	5	Initiation Signoff:
Meter ID	47	PH11		DO12		EC04					
Control	20.2		8.18		8.6	261	5	5	5	5	Date: 8/1/08
6.25%	20.2		8.18		8.5	301	5	5	5	5	Count Time: 1030
12.5%	20.2		8.22		8.6	332	5	5	5	5	Count Signoff: JL
25%	20.2		8.21		8.6	400	5	5	5	5	Old WQ: DAM
50%	20.2		8.22		8.5	549	5	5	5	5	
100%	20.2		8.17		8.4	769	5	5	5	5	
Meter ID	47		PH03		DO14	EC01					
Control	20.4	9.21	8.03	9.2	8.1	256	5	5	5	5	Date: 8/2/08
6.25%	20.4	9.13	8.09	9.1	7.8	296	5	5	5	5	Sample ID: 20183
12.5%	20.4	9.09	8.12	9.0	7.7	324	5	5	5	5	Test Solution Prep: SL
25%	20.4	7.94	8.11	8.9	7.8	392	5	5	5	5	New WQ:
50%	20.4	7.95	8.11	8.7	7.7	529	5	5	5	5	Count Time: 1600
100%	20.4	7.74	8.07	9.0	7.6	927	5	5	5	5	Count Signoff: JPL
Meter ID	55	PH03	PH11	DO12	DO16	EC04					Old WQ: AT
Control	20.2		8.28		8.6	298	5	5	5	5	Date: 8/3/08
6.25%	20.2		8.31		9.0	374	5	5	5	5	Count Time: 1015
12.5%	20.2		8.32		8.7	414	5	5	5	5	Count Signoff: JPW
25%	20.2		8.32		8.7	400	5	5	5	5	Old WQ: SL
50%	20.2		8.32		8.8	558	5	5	5	5	
100%	20.2		8.32		8.6	805	5	5	5	5	
Meter ID	55		PH03		DO12	EC04					
Control	20.2		8.33		8.8	291	5	5	5	5	Date: 8/4/08
6.25%	20.2		8.32		8.7	316	5	5	5	5	Termination Time: 0945
12.5%	20.2		8.30		8.8	362	5	5	5	5	Termination Signoff: JPW
25%	20.2		8.33		8.7	453	5	5	5	5	Old WQ: AS
50%	20.2		8.31		8.7	613	5	5	5	5	
100%	20.2		8.27		8.6	927	5	5	5	5	
Meter ID	47		pH11		DO14	EC04					

Appendix L

Test Data and Summary of Statistics for the Evaluation of Ambient Water Toxicity to Fathead Minnows – Field Duplicate Toxicity Assessment

CETIS Summary Report

Acute Fish Survival Test — **Pacific EcoRisk**

Test Run No:	02-8510-4975	**Test Type:**	Survival (96h)	**Analyst:**	John Jirasritumrong
Start Date:	31 Jul-08 12:15	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	04 Aug-08 10:30	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	94h	**Source:**	Sticklebacks Unlimited	**Age:**	13

Sample No:	01-3232-9006	**Code:**	NWDS-003	**Client:**	URS
Sample Date:	30 Jul-08 00:45	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	35h (5 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
11-8975-5860	96h Survival Rate	100	>100	N/A	4.57%	1	Steel Many-One Rank Test

96h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	0.975	0.956	0.994	0.9	1	0.00913	0.05	5.13%	2.5%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

96h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	0.9	1	1
12.5		1	1	1	1
25		1	1	1	1
50		1	1	1	1
100		1	1	1	1

Acute Fish Survival Test — **Pacific EcoRisk**

Analysis No:	11-8975-5860	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:43	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	4.57%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	16	10	1	0.6100	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	18	10	1	0.8330	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	18	10	1	0.8330	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.005533194	0.001106639	5	1	0.4460	Non-Significant Effect
Error	0.0199195	0.001106639	18			
Total	0.02545269206166	0.00221327762119	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	1	4.25	0.4460	Equal Variances
Distribution	Shapiro-Wilk Normality	0.463		0.0000	Non-normal Distribution

96h Survival Rate Summary

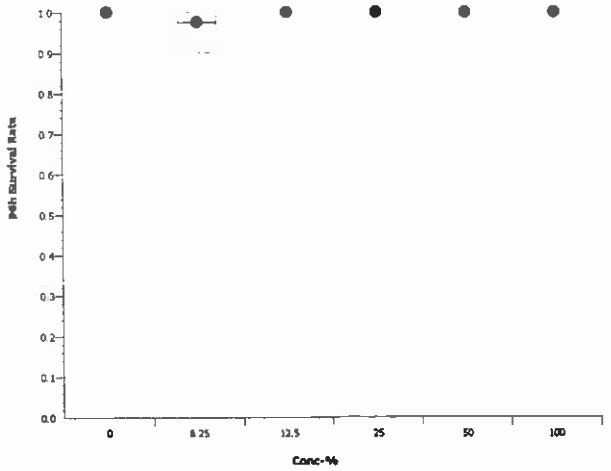
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	0.975	0.956	0.994	0.9	1	0.00928	0.05	5.13%	2.5%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	1	1	1	1	1	0	0	0.0%	0.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%

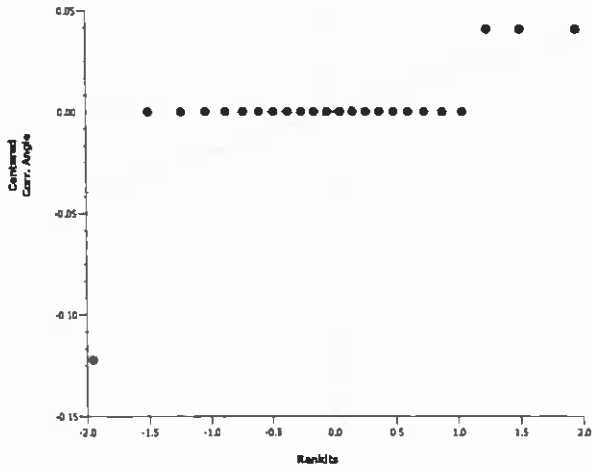
Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
6.25		4	1.37	1.34	1.4	1.25	1.41	0.0151	0.0815	5.94%	2.89%
12.5		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
25		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
50		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
100		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%

Acute Fish Survival Test					Pacific EcoRisk
Analysis No:	11-8975-5860	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:43	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





96 Hour Acute Fathead Minnow Toxicity Test

Client: URS: DMC
Test Material: NWDS-003-TOX
Test ID#: 29470 Project # 13489
Test Date: 7/31/09 Randomization: 4.6.2
Feeding T0 Time: ~1130 Initials: JPW

Organism Log #: 4047 Age: 13 days
Organism Supplier: Sticklebacks
Control/Diluent: EPAMH
Control Water Batch: 1124
Feeding T46-hr Time: 0830 Initials JPC

Treatment	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Conductivity (µS/cm) new	Conductivity (µS/cm) old	# Live Organisms Rep A	Rep B	Rep C	Rep D	SIGN-OFF
Control	20.0	8.21		9.0		278		10	10	10	10	Date: 7/31/08
6.25%	20.0	8.13		9.0		314		10	10	10	10	Sample ID: 20180
12.5%	20.0	8.06		8.8		344		10	10	10	10	Test Solution Prep: JPC
25%	20.0	7.96		8.8		409		10	10	10	10	New WQ: SL
50%	20.0	7.84		9.1		545		10	10	10	10	Initiation Time: 1215
100%	20.0	7.68		9.0		819		10	10	10	10	Initiation Signoff: JPW
Meter ID:	47	pH 11		DO12		EC09						
Control	20.2		7.85		7.2		285	10	10	10	10	Date: 8/1/08
6.25%	20.2		7.91		7.0		314	10	10	10	10	Count Time: ~~1450~~ 1050
12.5%	20.2		7.96		7.1		354	10	10	10	10	Count Signoff: JL
25%	20.2		7.98		7.1		421	10	10	10	10	Old WQ: JPC
50%	20.2		8.07		6.9		555	10	10	10	10	
100%	20.2		8.11		6.9		815	10	10	10	10	
Meter ID:	47		pH09		DO12		EC04					
Control	20.2	4.17	7.94	9.8	9.6	289	290	10	10	10	10	Date: 8/2/08
6.25%	20.2	4.07	7.90	9.1	9.9	307	318	10	9	10	10	Sample ID: 20180
12.5%	20.2	4.02	7.89	9.0	9.9	328	355	10	10	10	10	Test Solution Prep: JPC
25%	20.2	7.90	7.94	9.0	9.7	408	423	10	10	10	10	New WQ:
50%	20.2	7.79	7.99	9.1	9.6	543	555	10	10	10	10	Renewal Time: 1220
100%	20.2	7.66	8.09	9.7	9.6	804	820	10	10	10	10	Renewal Signoff: KO
Meter ID:	47	pH10	pH03	DO12	DO12	EC04	EC04					Old WQ
Control	20.1		7.88		8.9		278	10	10	10	10	Date: 8/3/08
6.25%	20.1		7.96		8.5		312	10	9	10	10	Count Time: 0925
12.5%	20.1		7.90		8.3		345	10	10	10	10	Count Signoff: pV
25%	20.1		7.98		8.3		413	10	10	10	10	Old WQ: SL
50%	20.1		8.04		8.3		550	10	10	10	10	
100%	20.1		8.11		8.1		813	10	10	10	10	
Meter ID:	47		pH03		DO12		EC04					
Control	20.2		8.27		8.6		296	10	10	10	10	Date: 8/4/08
6.25%	20.2		8.09		8.4		323	10	9	10	10	Termination Time: 1030
12.5%	20.2		8.04		8.5		361	10	10	10	10	Termination Signoff: JPC
25%	20.2		8.00		8.5		432	10	10	10	10	Old WQ: HTA
50%	20.2		8.06		8.3		574	10	10	10	10	
100%	20.2		8.02		8.2		860	10	10	10	10	
Meter ID:	47		pH04		DO10		573					

CETIS Summary Report

Acute Fish Survival Test — **Pacific EcoRisk**

Test Run No:	05-5703-6856	**Test Type:**	Survival (96h)	**Analyst:**	John Jirasritumrong
Start Date:	31 Jul-08 11:35	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Laboratory Water
Ending Date:	04 Aug-08 09:55	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	94h	**Source:**	Sticklebacks Unlimited	**Age:**	14

Sample No:	00-0311-9157	**Code:**	NWDS-003-DUP	**Client:**	URS
Sample Date:	30 Jul-08 00:45	**Material:**	Ambient Water	**Project:**	13489
Receive Date:	30 Jul-08 13:50	**Source:**	URS		
Sample Age:	35h (5 °C)	**Station:**	NWDS		

Comparison Summary

Analysis No	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
03-4007-9828	96h Survival Rate	100	>100	N/A	5.9%	1	Steel Many-One Rank Test

Point Estimate Summary

Analysis No	Endpoint	Level	Conc-%	95% LCL	95% UCL	TU	Method
17-7223-1439	96h Survival Rate	EC2.5	37.2	N/A	N/A	2.69	Linear Regression (MLE)
		EC10	166	N/A	N/A	0.601	
		EC15	286	N/A	N/A	0.35	
		EC20	440	N/A	N/A	0.227	
		EC25	636	N/A	N/A	0.157	
		EC40	1610	N/A	N/A	0.0621	
		EC50	2820	N/A	N/A	0.0355	

96h Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	0.95	0.928	0.972	0.9	1	0.0105	0.0577	6.08%	5.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	0.925	0.906	0.944	0.9	1	0.00913	0.05	5.41%	7.5%

96h Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	1
12.5		1	1	1	1
25		0.9	1	1	0.9
50		1	1	1	1
100		0.9	0.9	0.9	1

Acute Fish Survival Test				Pacific EcoRisk
Analysis No: 03-4007-9828	Endpoint: 96h Survival Rate		CETIS Version:	CETISv1.6.5
Analyzed: 04 Sep-08 17:40	Analysis: Nonparametric-Control vs Treatments		Official Results:	Yes

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)		C > T	Not Run	100	>100	N/A	1	5.9%

Steel Many-One Rank Test

Control	vs	Conc-%	Test Stat	Critical	Ties	P-Value	Decision(5%)
Lab Water		6.25	18	10	1	0.8330	Non-Significant Effect
		12.5	18	10	1	0.8330	Non-Significant Effect
		25	14	10	1	0.3450	Non-Significant Effect
		50	18	10	1	0.8330	Non-Significant Effect
		100	12	10	1	0.1420	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.05865186	0.01173037	5	4.54	0.0074	Significant Effect
Error	0.04647883	0.002582157	18			
Total	0.105130687356	0.01431252830662	23			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Mod Levene Equality of Variance	4.2	4.25	0.0105	Equal Variances
Distribution	Shapiro-Wilk Normality	0.772		0.0001	Non-normal Distribution

96h Survival Rate Summary

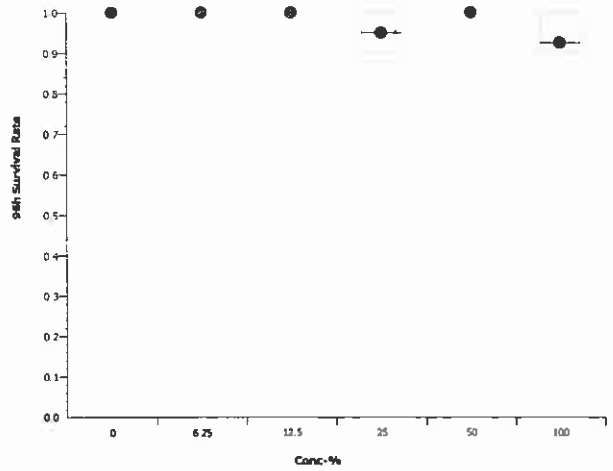
Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1	1	1	1	1	0	0	0.0%	0.0%
6.25		4	1	1	1	1	1	0	0	0.0%	0.0%
12.5		4	1	1	1	1	1	0	0	0.0%	0.0%
25		4	0.95	0.928	0.972	0.9	1	0.0107	0.0577	6.08%	5.0%
50		4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	0.925	0.906	0.944	0.9	1	0.00928	0.05	5.41%	7.5%

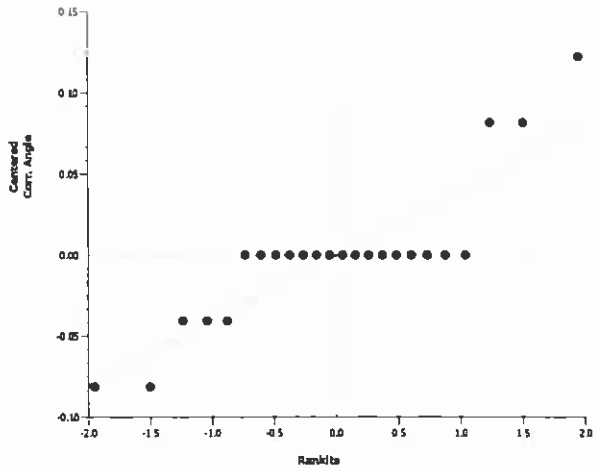
Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Lab Water	4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
6.25		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
12.5		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
25		4	1.33	1.29	1.37	1.25	1.41	0.0175	0.0941	7.07%	5.77%
50		4	1.41	1.41	1.41	1.41	1.41	0	0	0.0%	0.0%
100		4	1.29	1.26	1.32	1.25	1.41	0.0151	0.0815	6.32%	8.66%

Acute Fish Survival Test					Pacific EcoRisk
Analysis No:	03-4007-9828	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:40	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

Graphics





CETIS Analytical Report

Acute Fish Survival Test — Pacific EcoRisk

Analysis No:	17-7223-1439	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:40	**Analysis:**	Linear Regression (MLE)	**Official Results:**	Yes

Linear Regression Options

Model Function	Threshold Option	Threshold	Optimized	Pooled	Het Corr	Weighted
Log-Normal [NED=A+B*log(X)]	Control Threshold	0	Yes	No	No	Yes

Regression Summary

Iters	LL	AICc	Mu	Sigma	G Stat	Chi-Sq	Critical	P-Value	Decision(5%)
6	-21.3	47.4	1.34	0.959	1.18	12.3	28.9	0.8330	Non-Significant Heterogeneity

Point Estimates

Level	Conc-%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC2.5	37.2	N/A	N/A	2.69	N/A	N/A
EC10	166	N/A	N/A	0.601	N/A	N/A
EC15	286	N/A	N/A	0.35	N/A	N/A
EC20	440	N/A	N/A	0.227	N/A	N/A
EC25	636	N/A	N/A	0.157	N/A	N/A
EC40	1610	N/A	N/A	0.0621	N/A	N/A
EC50	2820	N/A	N/A	0.0355	N/A	N/A

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Stat	P-Value	Decision(5%)
Slope	1.04	0.578	-0.0897	2.18	1.8	0.0879	Non-Significant Parameter
Intercept	1.4	0.995	-0.548	3.35	1.41	0.1760	Non-Significant Parameter

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision(5%)
Variances	Mod Levene Equality of Variance	14.4	3.06	0.0001	Unequal Variances
Distribution	Shapiro-Wilk Normality	0.725		0.0001	Non-normal Distribution

96h Survival Rate Summary

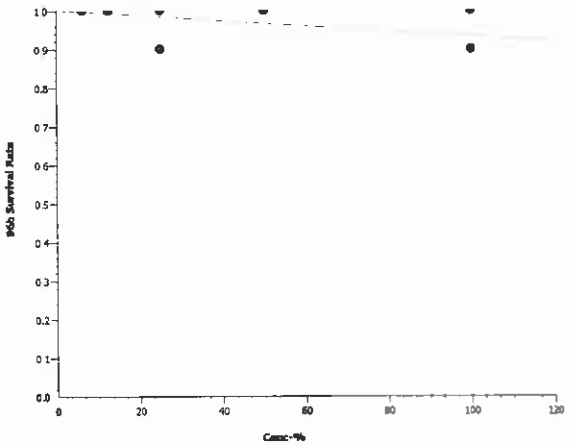
			Calculated Variate(A/B)								
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%	A	B
0	Lab Water	4	1	1	1	0	0	0.0%	0.0%	40	40
6.25		4	1	1	1	0	0	0.0%	0.0%	40	40
12.5		4	1	1	1	0	0	0.0%	0.0%	40	40
25		4	0.95	0.9	1	0.0105	0.0577	6.08%	5.0%	38	40
50		4	1	1	1	0	0	0.0%	0.0%	40	40
100		4	0.925	0.9	1	0.00913	0.05	5.41%	7.5%	37	40

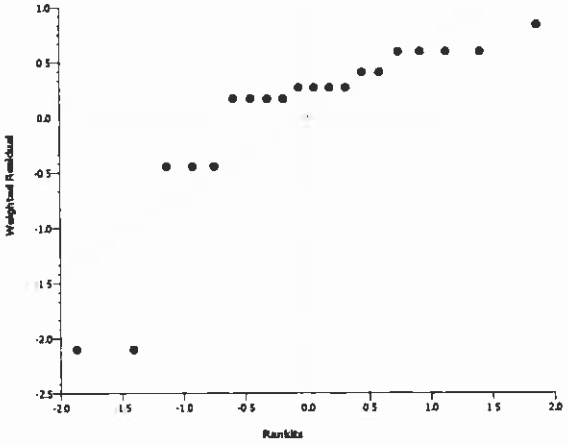
96h Survival Rate Detail

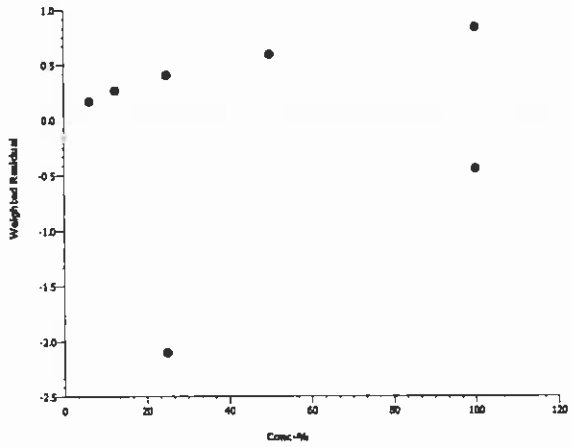
Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Lab Water	1	1	1	1
6.25		1	1	1	1
12.5		1	1	1	1
25		0.9	1	1	0.9
50		1	1	1	1
100		0.9	0.9	0.9	1

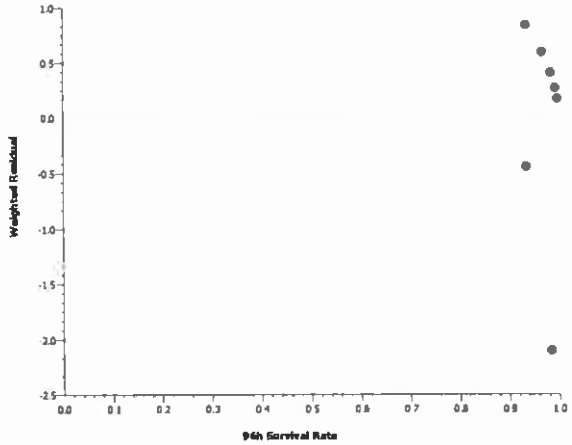
Acute Fish Survival Test					Pacific EcoRisk
Analysis No:	17-7223-1439	**Endpoint:**	96h Survival Rate	**CETIS Version:**	CETISv1.6.5
Analyzed:	04 Sep-08 17:40	**Analysis:**	Linear Regression (MLE)	**Official Results:**	Yes

Graphics









96 Hour Acute Fathead Minnow Toxicity Test

Client: URS: DMC
Test Material: NWDS-003-TOX-DUP
Test ID#: 29467 Project # 13489
Test Date: ~~7/30/08~~ 7/31/08 Randomization: 4.6.4
Feeding T0 Time: 0830 Initials: JPW

Organism Log #: 4046 Age: 14 days
Organism Supplier: Sticklebacks unltd.
Control/Diluent: EPAMH
Control Water Batch: 1124
Feeding T46-hr Time: 0830 Initials: JPC

Treatment	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Conductivity (µS/cm) new	Conductivity (µS/cm) old	# Live Organisms Rep A	Rep B	Rep C	Rep D	SIGN-OFF
Control	19.7	8.35		9.9		284		10	10	10	10	Date: 7/31/08
6.25%	19.7	8.20		9.3		319		10	10	10	10	Sample ID: 20183
12.5%	19.7	8.10		9.3		345		10	10	10	10	Test Solution Prep: JPC
25%	19.7	7.99		10.2		419		10	10	10	10	New WQ: SL
50%	19.7	7.84		~~9.9~~ 10.5		537		10	10	10	10	Initiation Time: 1135
100%	19.7	7.68		10.5		782		10	10	10	10	Initiation Sign-off: JPC
Meter ID:	55	PH 11		DO12		EC04						
Control	20.2		7.98		7.1		276	10	10	10	10	Date: 8/1/08
6.25%	20.2		8.02		6.9		309	10	10	10	10	Count Time: ~~1445~~ 1645
12.5%	20.2		8.04		6.9		342	10	10	10	10	Count Signoff: OL
25%	20.2		8.05		7.0		407	10	10	10	10	Old WQ: JPC
50%	20.2		8.11		7.0		538	10	10	10	10	
100%	20.2		8.18		6.9		787	10	10	10	10	
Meter ID:	47		pH09		DO12		EC04					
Control	20.1	8.17	7.41	9.4	7.9	240	~~240~~ 250	10	10	10	10	Date: 8/2/08
6.25%	20.1	7.98	7.75	9.0	8.5	304	312	10	10	10	10	Sample ID: 20183
12.5%	20.1	7.94	7.85	9.5	8.7	336	351	10	10	10	10	Test Solution Prep: JPC
25%	20.1	7.88	7.96	8.5	8.6	398	414	9	10	10	10	New WQ: JM
50%	20.1	7.79	7.96	8.6	8.7	525	546	10	10	10	10	Renewal Time: 1215
100%	20.1	7.56	8.04	8.8	9.5	770	797	10	9	9	10	Renewal Signoff: JM
Meter ID:	55	pH03	pH03	DO12	DO12	EC04	EC04					Old WQ: JM
Control	20.2		7.94		8.5		278	10	10	10	10	Date: 8/3/08
6.25%	20.2		7.94		8.4		312	10	10	10	10	Count Time: 0930
12.5%	20.2		7.96		8.4		345	10	10	10	10	Count Signoff: JPW
25%	20.2		7.98		8.4		406	9	10	10	10	Old WQ: SL
50%	20.2		8.01		8.3		535	10	10	10	10	
100%	20.2		8.10		8.2		795	10	9	9	10	
Meter ID:	47		pH03		DO12		EC04					
Control	20.2		7.99 NM		8.5 NM		1333 NM	10	10	10	10	Date: 8/4/08
6.25%	20.2		7.99		8.5		333	10	10	10	10	Termination Time: 0955
12.5%	20.2		8.00		8.5		357	10	10	10	10	Termination Signoff: JPL
25%	20.2		8.01		8.4		412	9	10	10	9	Old WQ: SL
50%	20.2		8.08		8.6		550	10	10	10	10	
100%	20.2		8.16		8.3		811	9	9	9	10	
Meter ID:	47		pH03		DO12		EC01					