



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

October 17, 2007

Mr. Arnie Anselm
Ventura County Watershed Protection District
800 South Victoria Ave
Ventura, CA 93009

Dear Mr. Anselm:


We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, EPA-600/R95/136, 1995. Results were as follows:

CLIENT:	County of Ventura
SAMPLE I.D.:	ME-CC
DATE RECEIVED:	22 Sept - 07
ABC LAB. NO.:	VCF0907.212

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC	=	100.00 %
TU _c	=	1.00
IC ₂₅	=	>100.00 %
IC ₅₀	=	>100.00 %

Yours very truly,


Thomas (Tim) Mikel
Laboratory Director

Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 9/24/2007	Test ID: VCF0907212	Sample ID: CA000000
End Date: 9/24/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 9/22/2007	Protocol: EPA/600/R	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-CC		

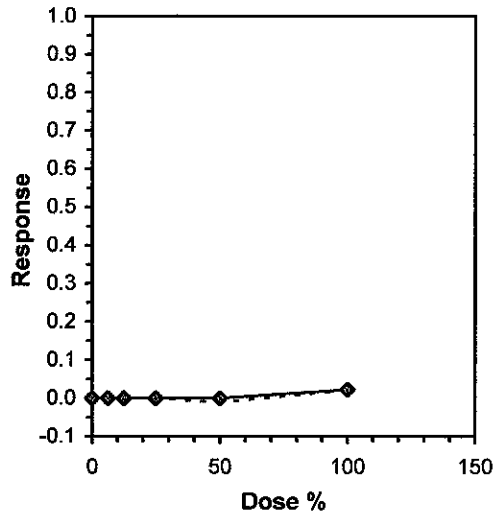
Conc-%	1	2	3	4
N Control	0.9200	0.9100	0.9400	0.9300
6.25	0.9100	0.9200	0.9300	0.9200
12.5	0.9300	0.9200	0.9100	0.9400
25	0.9100	0.9500	0.9300	0.9100
50	0.9400	0.9300	0.9200	0.9500
100	0.9200	0.9100	0.9000	0.8900

Conc-%	Mean	N-Mean	Transform: Arcsin Square Root					N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%	Mean					N-Mean	
N Control	0.9250	1.0000	1.2941	1.2661	1.3233	1.903	4				0.9260	1.0000	
6.25	0.9200	0.9946	1.2843	1.2661	1.3030	1.174	4	0.535	2.410	0.0442	0.9260	1.0000	
12.5	0.9250	1.0000	1.2941	1.2661	1.3233	1.903	4	0.000	2.410	0.0442	0.9260	1.0000	
25	0.9250	1.0000	1.2951	1.2661	1.3453	2.911	4	-0.055	2.410	0.0442	0.9260	1.0000	
50	0.9350	1.0108	1.3139	1.2840	1.3453	2.006	4	-1.078	2.410	0.0442	0.9260	1.0000	
100	0.9050	0.9784	1.2580	1.2327	1.2840	1.755	4	1.969	2.410	0.0442	0.9050	0.9773	

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.93723	0.884	0.34682	-0.7207
Bartlett's Test indicates equal variances (p = 0.81)	2.2436	15.0863		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	100	>100		1	0.02488	0.02689	0.00135	0.00067	0.12636	5, 18
Treatments vs N Control										

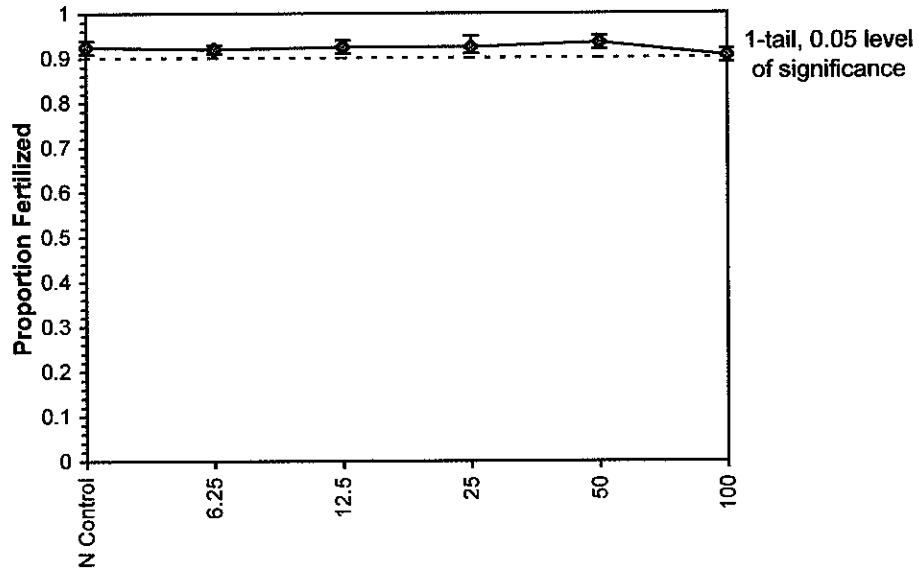
Point	%	SD	Linear Interpolation (200 Resamples)	
			95% CL(Exp)	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 9/24/2007	Test ID: VCF0907212	Sample ID: CA000000
End Date: 9/24/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 9/22/2007	Protocol: EPA/600/R	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-CC		

Dose-Response Plot



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 9/24/2007	Test ID: VCF0907212	Sample ID: CA000000
End Date: 9/24/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 9/22/2007	Protocol: EPA/600/R	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-CC		

Auxiliary Data Summary

Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	15.15	15.00	15.30	0.21	3.04	2
6.5		15.30	15.30	15.30	0.00	0.00	1
6.25		15.00	15.00	15.00	0.00	0.00	1
12.5		15.15	15.00	15.30	0.21	3.04	2
25		15.15	15.00	15.30	0.21	3.04	2
50		15.15	15.00	15.30	0.21	3.04	2
100		15.15	15.00	15.30	0.21	3.04	2
N Control	pH	7.70	7.70	7.70	0.00	0.00	2
6.5		7.70	7.70	7.70	0.00	0.00	1
6.25		7.70	7.70	7.70	0.00	0.00	1
12.5		7.70	7.70	7.70	0.00	0.00	2
25		7.70	7.70	7.70	0.00	0.00	2
50		7.70	7.70	7.70	0.00	0.00	2
100		7.70	7.70	7.70	0.00	0.00	2
N Control	DO mg/L	6.10	5.90	6.30	0.28	8.72	2
6.5		6.50	6.50	6.50	0.00	0.00	1
6.25		5.70	5.70	5.70	0.00	0.00	1
12.5		6.15	5.70	6.60	0.64	12.97	2
25		6.25	5.80	6.70	0.64	12.76	2
50		6.20	5.90	6.50	0.42	10.51	2
100		6.30	5.90	6.70	0.57	11.94	2
N Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2
6.5		34.00	34.00	34.00	0.00	0.00	1
6.25		34.00	34.00	34.00	0.00	0.00	1
12.5		34.00	34.00	34.00	0.00	0.00	2
25		34.00	34.00	34.00	0.00	0.00	2
50		34.00	34.00	34.00	0.00	0.00	2
100		34.00	34.00	34.00	0.00	0.00	2



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Mr. Arnie Anselm
Ventura County Watershed Protection District
800 South Victoria Ave
Ventura, CA 93009

Dear Mr. Anselm:

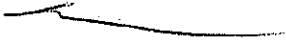
We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, EPA-600/R95/136, 1995. Results were as follows:

CLIENT:	County of Ventura
SAMPLE I.D.:	ME-VR2
DATE RECEIVED:	22 Sept - 07
ABC LAB. NO.:	VCF0907.214

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC	=	<6.25 %
TUc	=	>16.00
IC25	=	60.09 %
IC50	=	76.95 %

Yours very truly,


Thomas (Tim) Mikel
Laboratory Director

Sperm Cell Fertilization Test-Proportion Fertilized

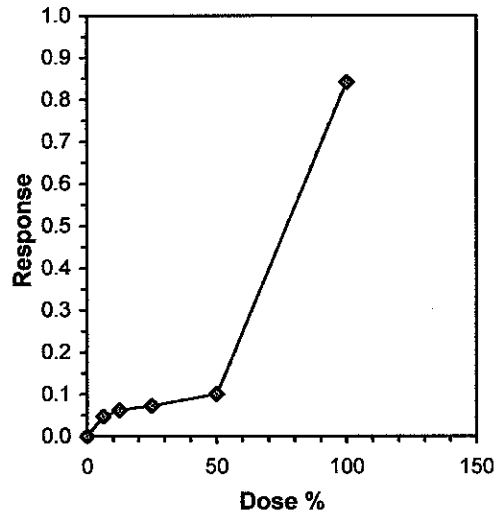
Start Date: 9/24/2007	Test ID: VCF0907214	Sample ID: CA000000
End Date: 9/24/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 9/22/2007	Protocol: EPA/600/R	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-VR2		

Conc-%	1	2	3	4
N Control	0.9800	1.0000	1.0000	1.0000
6.25	0.9500	0.9600	0.9400	0.9400
12.5	0.9400	0.9300	0.9300	0.9300
25	0.9200	0.9400	0.9200	0.9100
50	0.8800	0.9100	0.9000	0.8900
100	0.1200	0.1600	0.1800	0.1700

Conc-%	Transform: Arcsin Square Root						1-Tailed			Isotonic		
	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
N Control	0.9950	1.0000	1.4978	1.4289	1.5208	3.067	4				0.9950	1.0000
*6.25	0.9475	0.9523	1.3403	1.3233	1.3694	1.640	4	7.631	2.410	0.0497	0.9475	0.9523
*12.5	0.9325	0.9372	1.3081	1.3030	1.3233	0.776	4	9.193	2.410	0.0497	0.9325	0.9372
*25	0.9225	0.9271	1.2894	1.2661	1.3233	1.874	4	10.101	2.410	0.0497	0.9225	0.9271
*50	0.8950	0.8995	1.2412	1.2171	1.2661	1.700	4	12.434	2.410	0.0497	0.8950	0.8995
*100	0.1575	0.1583	0.4071	0.3537	0.4381	9.137	4	52.858	2.410	0.0497	0.1575	0.1583

Auxiliary Tests	Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.91594	0.884	-0.997	1.1182						
Bartlett's Test indicates equal variances (p = 0.29)	6.13894	15.0863								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	<6.25	6.25			0.00967	0.00972	0.60497	0.00085	5.2E-20	5, 18
Treatments vs N Control										

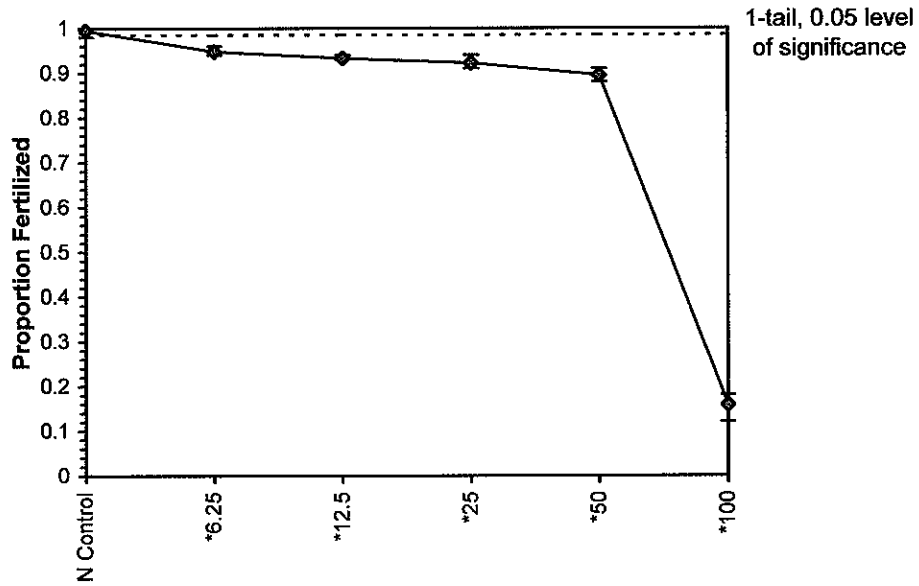
Linear Interpolation (200 Resamples)					
Point	%	SD	95% CL(Exp)		Skew
IC05	7.188	1.998	4.383	13.110	2.3943
IC10	49.545	3.353	34.244	52.020	-1.2516
IC15	53.339	0.483	52.038	55.062	0.1013
IC20	56.712	0.464	55.464	58.359	0.0799
IC25	60.085	0.453	58.864	61.759	0.0368
IC40	70.203	0.467	68.921	71.535	-0.1923
IC50	76.949	0.513	75.404	78.402	-0.3326



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 9/24/2007	Test ID: VCF0907214	Sample ID: CA000000
End Date: 9/24/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 9/22/2007	Protocol: EPA/600/R	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-VR2		

Dose-Response Plot



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 9/24/2007	Test ID: VCF0907214	Sample ID: CA000000
End Date: 9/24/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 9/22/2007	Protocol: EPA/600/R	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-VR2		

Auxiliary Data Summary

Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	15.10	15.00	15.20	0.14	2.49	2
6.5		15.20	15.20	15.20	0.00	0.00	1
6.25		15.00	15.00	15.00	0.00	0.00	1
12.5		15.15	15.00	15.30	0.21	3.04	2
25		15.15	15.00	15.30	0.21	3.04	2
50		15.20	15.00	15.40	0.28	3.50	2
100		15.20	15.00	15.40	0.28	3.50	2
N Control	pH	7.70	7.70	7.70	0.00	0.00	2
6.5		7.70	7.70	7.70	0.00	0.00	1
6.25		7.70	7.70	7.70	0.00	0.00	1
12.5		7.70	7.70	7.70	0.00	0.00	2
25		7.70	7.70	7.70	0.00	0.00	2
50		7.70	7.70	7.70	0.00	0.00	2
100		7.70	7.70	7.70	0.00	0.00	2
N Control	DO mg/L	6.10	5.90	6.30	0.28	8.72	2
6.5		6.30	6.30	6.30	0.00	0.00	1
6.25		6.10	6.10	6.10	0.00	0.00	1
12.5		6.10	6.00	6.20	0.14	6.16	2
25		6.20	6.00	6.40	0.28	8.58	2
50		6.20	5.90	6.50	0.42	10.51	2
100		6.25	6.00	6.50	0.35	9.51	2
N Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2
6.5		34.00	34.00	34.00	0.00	0.00	1
6.25		34.00	34.00	34.00	0.00	0.00	1
12.5		34.00	34.00	34.00	0.00	0.00	2
25		34.00	34.00	34.00	0.00	0.00	2
50		34.00	34.00	34.00	0.00	0.00	2
100		34.00	34.00	34.00	0.00	0.00	2



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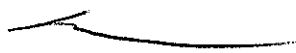
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CLIENT:	County of Ventura
SAMPLE I.D.:	ME-SCR
DATE RECEIVED:	22 Sept - 07
ABC LAB. NO.:	VCF0907.213

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC	=	100.00 %
TU _c	=	1.00
IC25	=	>100.00 %
IC50	=	>100.00 %

Yours very truly,


Thomas (Tim) Mikel
Laboratory Director

Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 9/24/2007	Test ID: VCF0907213	Sample ID: CA000000
End Date: 9/24/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 9/22/2007	Protocol: EPA/600/R	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-SCR		

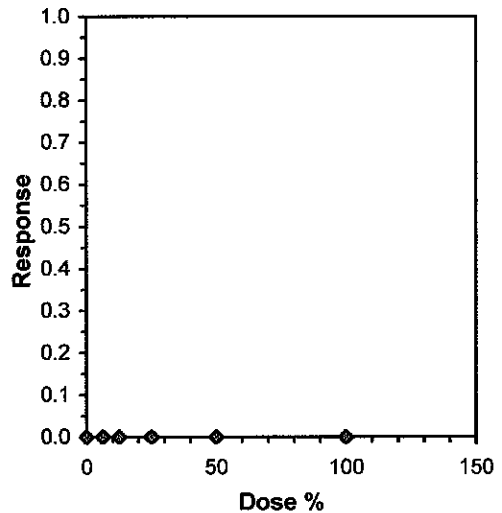
Conc-%	1	2	3	4
N Control	1.0000	1.0000	1.0000	1.0000
6.25	1.0000	1.0000	1.0000	1.0000
12.5	1.0000	1.0000	1.0000	1.0000
25	1.0000	1.0000	1.0000	1.0000
50	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000

Conc-%	Transform: Arcsin Square Root						Rank Sum	1-Tailed Critical	Isotonic		
	Mean	N-Mean	Mean	Min	Max	CV%			Mean	N-Mean	
N Control	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4		1.0000	1.0000	
6.25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
25	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
50	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000
100	1.0000	1.0000	1.5208	1.5208	1.5208	0.000	4	18.00	10.00	1.0000	1.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	1	0.884		
Equality of variance cannot be confirmed				
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	100	>100		1
Treatments vs N Control				

Linear Interpolation (200 Resamples)

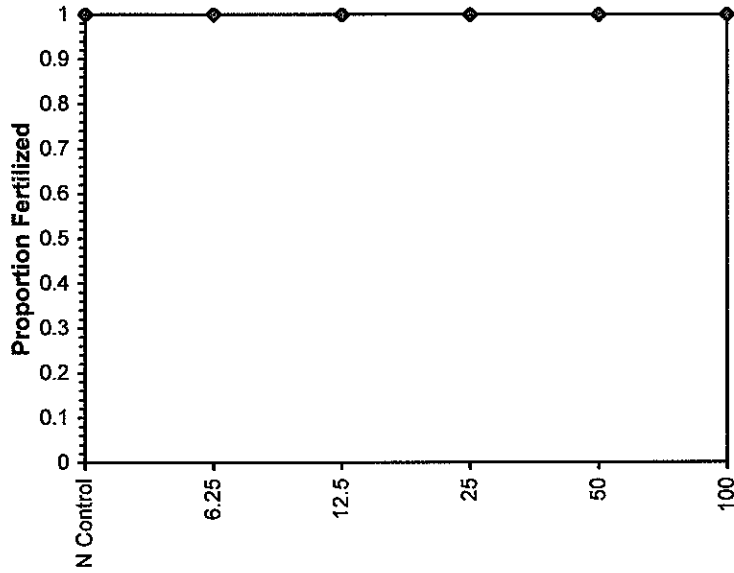
Point	%	SD	95% CL(Exp)	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 9/24/2007	Test ID: VCF0907213	Sample ID: CA000000
End Date: 9/24/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 9/22/2007	Protocol: EPA/600/R	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-SCR		

Dose-Response Plot



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 9/24/2007	Test ID: VCF0907213	Sample ID: CA000000
End Date: 9/24/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 9/22/2007	Protocol: EPA/600/R	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-SCR		

Auxiliary Data Summary

Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	15.10	15.00	15.20	0.14	2.49	2
6.5		15.20	15.20	15.20	0.00	0.00	1
6.25		15.00	15.00	15.00	0.00	0.00	1
12.5		15.10	15.00	15.20	0.14	2.49	2
25		15.10	15.00	15.20	0.14	2.49	2
50		15.10	15.00	15.20	0.14	2.49	2
100		15.10	15.00	15.20	0.14	2.49	2
N Control		pH	7.70	7.70	7.70	0.00	0.00
6.5	7.70		7.70	7.70	0.00	0.00	1
6.25	7.70		7.70	7.70	0.00	0.00	1
12.5	7.70		7.70	7.70	0.00	0.00	2
25	7.70		7.70	7.70	0.00	0.00	2
50	7.70		7.70	7.70	0.00	0.00	2
100	7.70		7.70	7.70	0.00	0.00	2
N Control	DO mg/L		6.10	5.90	6.30	0.28	8.72
6.5		6.70	6.70	6.70	0.00	0.00	1
6.25		6.10	6.10	6.10	0.00	0.00	1
12.5		6.30	6.10	6.50	0.28	8.44	2
25		6.20	6.00	6.40	0.28	8.58	2
50		6.10	5.90	6.30	0.28	8.72	2
100		6.10	5.90	6.30	0.28	8.72	2
N Control		Salinity ppt	34.00	34.00	34.00	0.00	0.00
6.5	34.00		34.00	34.00	0.00	0.00	1
6.25	34.00		34.00	34.00	0.00	0.00	1
12.5	34.00		34.00	34.00	0.00	0.00	2
25	34.00		34.00	34.00	0.00	0.00	2
50	34.00		34.00	34.00	0.00	0.00	2
100	34.00		34.00	34.00	0.00	0.00	2



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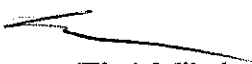
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CLIENT:	Ventura County Watershed Protection District
SAMPLE I.D.:	W-4 Revolon
DATE RECEIVED:	22 Sept - 07
ABC LAB. NO.:	VCF0907.218

ACUTE CERIODAPHNIA SURVIVAL BIOASSAY

Survival = 65 % Survival in 100% Sample
TU (a) = 0.91
LC50 = >100.00 %

Yours very truly,



Thomas (Tim) Mikel
Laboratory Director

Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

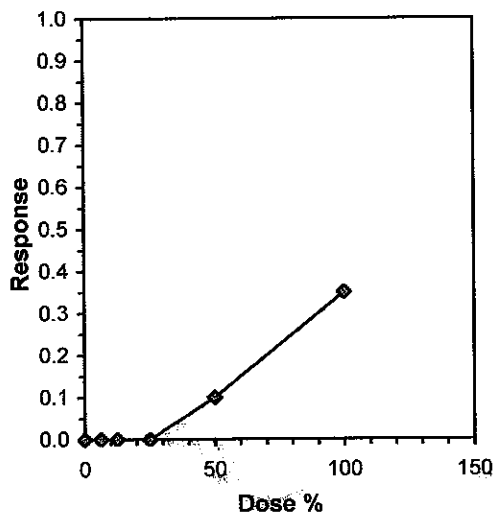
Start Date: 9/22/2007	Test ID: VCF0907218	Sample ID: CA0000000
End Date: 9/26/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 9/22/2007	Protocol: EPAA 85-EPA Acute	Test Species: CD-Ceriodaphnia dubia
Comments: W-4 Revolon		

Conc-%	1	2	3	4
N Control	1.0000	1.0000	1.0000	1.0000
6.25	1.0000	1.0000	1.0000	1.0000
12.5	1.0000	1.0000	1.0000	1.0000
25	1.0000	1.0000	1.0000	1.0000
50	1.0000	1.0000	0.8000	0.8000
100	0.2000	0.6000	0.8000	1.0000

Conc-%	Transform: Arcsin Square Root						Rank Sum	1-Tailed Critical	Isotonic		
	Mean	N-Mean	Mean	Min	Max	CV%			N	Mean	N-Mean
N Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4		1.0000	1.0000	
6.25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
12.5	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
50	0.9000	0.9000	1.2262	1.1071	1.3453	11.212	4	14.00	10.00	0.9000	0.9000
100	0.6500	0.6500	0.9505	0.4636	1.3453	39.437	4	12.00	10.00	0.6500	0.6500

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.70751	0.884	-0.7963	7.25985
Equality of variance cannot be confirmed				
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	100	>100		1
Treatments vs N Control				

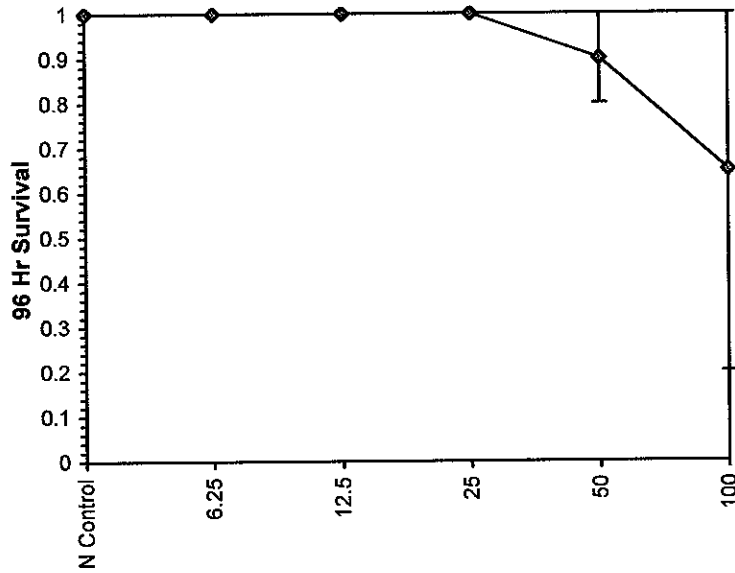
Linear interpolation (200 Resamples)				
Point	%	SD	95% CL(Exp)	Skew
IC05	37.500			
IC10	50.000			
IC15	60.000			
IC20	70.000			
IC25	80.000			
IC40	>100			
IC50	>100			



Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date: 9/22/2007	Test ID: VCF0907218	Sample ID: CA0000000
End Date: 9/26/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 9/22/2007	Protocol: EPAA 85-EPA Acute	Test Species: CD-Ceriodaphnia dubia
Comments: W-4 Revolon		

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date: 9/22/2007	Test ID: VCF0907218	Sample ID: CA0000000
End Date: 9/26/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 9/22/2007	Protocol: EPAA 85-EPA Acute	Test Species: CD-Ceriodaphnia dubia
Comments: W-4 Revolon		

Auxiliary Data Summary

Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.00	24.00	24.00	0.00	0.00	3
6.25		24.00	24.00	24.00	0.00	0.00	3
12.5		24.00	24.00	24.00	0.00	0.00	3
25		24.00	24.00	24.00	0.00	0.00	3
50		24.00	24.00	24.00	0.00	0.00	3
100		24.00	24.00	24.00	0.00	0.00	3
N Control	pH	8.23	8.20	8.30	0.06	2.92	3
6.25		8.23	8.20	8.30	0.06	2.92	3
12.5		8.23	8.20	8.30	0.06	2.92	3
25		8.20	8.20	8.20	0.00	0.00	3
50		8.10	8.10	8.10	0.00	0.00	3
100		8.07	8.00	8.10	0.06	2.98	3
N Control	DO mg/L	6.73	6.30	7.50	0.67	12.12	3
6.25		6.77	6.00	8.10	1.16	15.91	3
12.5		6.70	5.90	8.00	1.14	15.91	3
25		6.70	5.90	8.00	1.14	15.91	3
50		6.73	6.10	8.00	1.10	15.55	3
100		6.70	6.10	7.90	1.04	15.22	3
N Control	Hardness mg/L	93.00	90.00	95.00	2.65	1.75	3
6.25		0.00	0.00	0.00	0.00		0
12.5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
100		250.00	250.00	250.00	0.00	0.00	3
N Control	Alkalinitymg/L	65.00	61.00	69.00	4.00	3.08	3
6.25		0.00	0.00	0.00	0.00		0
12.5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
100		190.00	190.00	190.00	0.00	0.00	3
N Control	Conductivity	360.67	341.00	371.00	17.04	1.14	3
6.25		593.00	591.00	597.00	3.46	0.31	3
12.5		747.00	741.00	755.00	7.21	0.36	3
25		1081.33	1080.00	1083.00	1.53	0.11	3
50		1744.00	1740.00	1751.00	6.08	0.14	3
100		2929.00	2919.00	2937.00	9.17	0.10	3



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

DATE: 24 September - 07

STANDARD TOXICANT: Copper Chloride

NOEC = 56.00 ug/l

IC25 = 88.81 ug/l

IC50 = 138.52 ug/l

Yours very truly,

Thomas (Tim) Mikel
Laboratory Director

Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 9/24/2007	Test ID: URC092407	Sample ID: REF-Ref Toxicant
End Date: 9/24/2007	Lab ID: ABC LABORA	Sample Type: CUCL-Copper chloride
Sample Date: 9/24/2007	Protocol: EPA/600/R	Test Species: SP-Strongylocentrotus purpuratus

Comments: Standard Toxicant

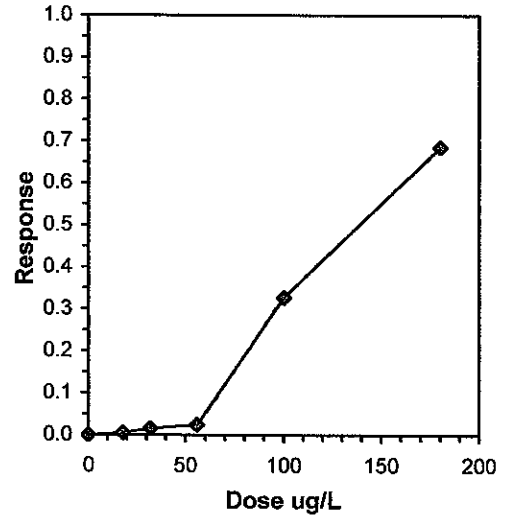
Conc-ug/L	1	2	3	4
Control	1.0000	0.9000	0.9200	0.9400
18	0.9100	0.9600	0.9200	0.9500
32	0.9600	0.8600	0.9400	0.9400
56	0.9200	0.8600	0.9600	0.9300
100	0.6400	0.6100	0.8700	0.4100
180	0.8800	0.0900	0.1200	0.0900

Conc-ug/L	Mean	N-Mean	Transform: Arcsin Square Root					N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%	Mean					N-Mean	
Control	0.9400	1.0000	1.3443	1.2490	1.5208	9.038	4				0.9400	1.0000	
18	0.9350	0.9947	1.3162	1.2661	1.3694	3.728	4	0.186	2.410	0.3640	0.9350	0.9947	
32	0.9250	0.9840	1.3008	1.1873	1.3694	6.054	4	0.288	2.410	0.3640	0.9250	0.9840	
56	0.9175	0.9761	1.2860	1.1873	1.3694	5.853	4	0.386	2.410	0.3640	0.9175	0.9761	
*100	0.6325	0.6729	0.9301	0.6949	1.2019	22.412	4	2.742	2.410	0.3640	0.6325	0.6729	
*180	0.2950	0.3138	0.5450	0.3047	1.2171	82.306	4	5.292	2.410	0.3640	0.2950	0.3138	

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.82227	0.884	1.9591	6.39287
Bartlett's Test indicates unequal variances (p = 3.16E-03)	17.8355	15.0863		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs Control	56	100	74.8331		0.25956	0.27335	0.41255	0.04562	1.9E-04	5, 18

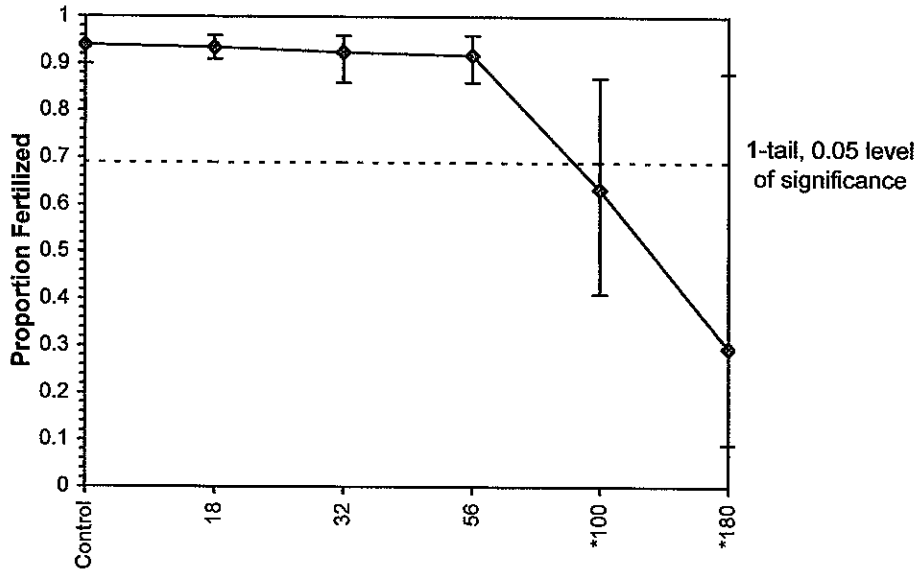
Point	ug/L	SD	Linear Interpolation (200 Resamples)		
			95% CL(Exp)	Skew	
IC05	59.78	10.04	0.36	71.95	-2.1803
IC10	67.04	5.86	54.80	94.79	1.6224
IC15	74.29				
IC20	81.55				
IC25	88.81				
IC40	116.24				
IC50	138.52				



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 9/24/2007	Test ID: URC092407	Sample ID: REF-Ref Toxicant
End Date: 9/24/2007	Lab ID: ABC LABORA	Sample Type: CUCL-Copper chloride
Sample Date: 9/24/2007	Protocol: EPA/600/R	Test Species: SP-Strongylocentrotus purpuratus
Comments: Standard Toxicant		

Dose-Response Plot



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 9/24/2007	Test ID: URC092407	Sample ID: REF-Ref Toxicant
End Date: 9/24/2007	Lab ID: ABC LABORA	Sample Type: CUCL-Copper chloride
Sample Date: 9/24/2007	Protocol: EPA/600/R	Test Species: SP-Strongylocentrotus purpuratus
Comments: Standard Toxicant		

Auxiliary Data Summary

Conc-ug/L	Parameter	Mean	Min	Max	SD	CV%	N
Control	Temp C	15.10	15.00	15.20	0.14	2.49	2
18		15.10	15.00	15.20	0.14	2.49	2
32		15.10	15.00	15.20	0.14	2.49	2
56		15.10	15.00	15.20	0.14	2.49	2
100		15.15	15.00	15.30	0.21	3.04	2
180		15.15	15.00	15.30	0.21	3.04	2
Control	pH	7.70	7.70	7.70	0.00	0.00	2
18		7.70	7.70	7.70	0.00	0.00	2
32		7.70	7.70	7.70	0.00	0.00	2
56		7.70	7.70	7.70	0.00	0.00	2
100		7.70	7.70	7.70	0.00	0.00	2
180		7.70	7.70	7.70	0.00	0.00	2
Control	Diss Oxygen	6.10	5.90	6.30	0.28	8.72	2
18		6.45	5.90	7.00	0.78	13.67	2
32		6.50	6.10	6.90	0.57	11.57	2
56		6.40	6.00	6.80	0.57	11.75	2
100		6.20	5.90	6.50	0.42	10.51	2
180		6.15	5.80	6.50	0.49	11.44	2
Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2
18		34.00	34.00	34.00	0.00	0.00	2
32		34.00	34.00	34.00	0.00	0.00	2
56		34.00	34.00	34.00	0.00	0.00	2
100		34.00	34.00	34.00	0.00	0.00	2
180		34.00	34.00	34.00	0.00	0.00	2



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

CHRONIC CERIODAPHNIA SURVIVAL AND REPRODUCTION BIOASSAY

DATE: 5 September - 07

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 10.00 ug/l

IC25 = 10.71 ug/l

IC50 = 14.29 ug/l

ENDPOINT: REPRODUCTION

NOEC = 5.00 ug/l

IC25 = 7.30 ug/l

IC50 = 10.72 ug/l

Yours very truly,

Thomas (Tim) Mikel
Laboratory Director

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

Start Date: 9/5/2007	Test ID: CER090507	Sample ID: CA0000000
End Date: 9/12/2007	Lab ID: CAABC	Sample Type: CUCL-Copper chloride
Sample Date: 9/5/2007	Protocol: EPAF 91-EPA Freshwater	Test Species: CD-Ceriodaphnia dubia
Comments: Standard Toxicant		

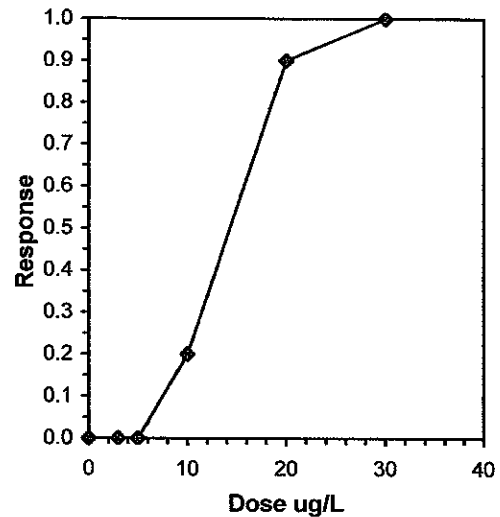
Conc-ug/L	1	2	3	4	5	6	7	8	9	10
N Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10	0.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
20	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-ug/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's 1-Tailed		Isotonic	
							Exact P	Critical	Mean	N-Mean
N Control	1.0000	1.0000	0	10	10	10			1.0000	1.0000
3	1.0000	1.0000	0	10	10	10	1.0000	0.0500	1.0000	1.0000
5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	1.0000	1.0000
10	0.8000	0.8000	2	8	10	10	0.2368	0.0500	0.8000	0.8000
*20	0.1000	0.1000	9	1	10	10	0.0001	0.0500	0.1000	0.1000
30	0.0000	0.0000	10	0	10	10			0.0000	0.0000

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	10	20	14.1421	
Treatments vs N Control				

Linear Interpolation (200 Resamples)

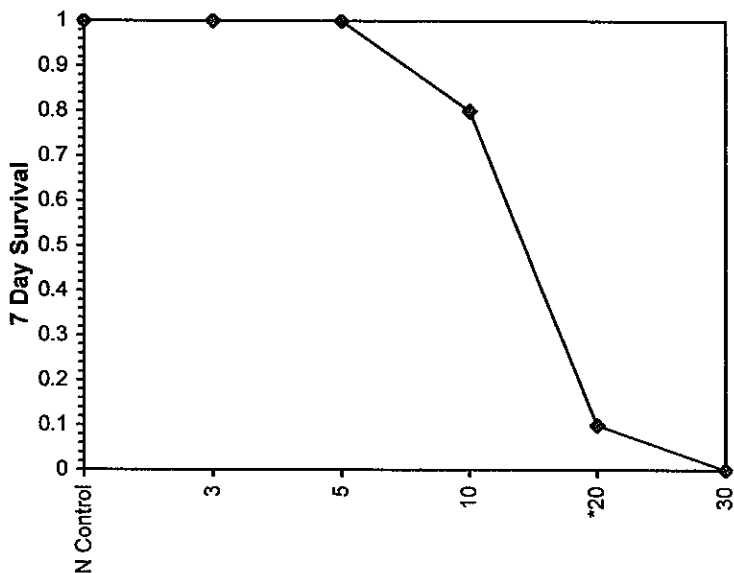
Point	ug/L	SD	95% CL		Skew
IC05	6.250	1.429	5.625	10.625	1.4289
IC10	7.500	1.691	6.250	11.250	0.1024
IC15	8.750	1.558	6.875	11.875	-0.1222
IC20	10.000	1.466	7.500	12.500	-0.4560
IC25	10.714	1.421	8.125	13.125	-0.5313
IC40	12.857	1.348	10.000	15.000	-0.7351
IC50	14.286	1.287	11.667	16.667	-0.5811



Ceriodaphnia Survival and Reproduction Test-7 Day Survival

Start Date: 9/5/2007	Test ID: CER090507	Sample ID: CA0000000
End Date: 9/12/2007	Lab ID: CAABC	Sample Type: CUCL-Copper chloride
Sample Date: 9/5/2007	Protocol: EPAF 91-EPA Freshwater	Test Species: CD-Ceriodaphnia dubia
Comments: Standard Toxicant		

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-Reproduction

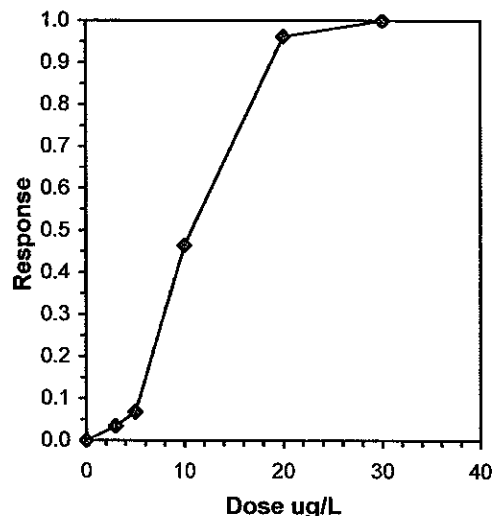
Start Date: 9/5/2007	Test ID: CER090507	Sample ID: CA0000000
End Date: 9/12/2007	Lab ID: CAABC	Sample Type: CUCL-Copper chloride
Sample Date: 9/5/2007	Protocol: EPAF 91-EPA Freshwater	Test Species: CD-Ceriodaphnia dubia
Comments: Standard Toxicant		

Conc-ug/L	1	2	3	4	5	6	7	8	9	10
N Control	33.000	36.000	35.000	26.000	31.000	23.000	29.000	29.000	30.000	21.000
3	25.000	28.000	29.000	28.000	22.000	27.000	30.000	30.000	35.000	29.000
5	28.000	24.000	32.000	34.000	32.000	38.000	29.000	15.000	24.000	17.000
10	0.000	0.000	20.000	23.000	23.000	19.000	16.000	19.000	25.000	12.000
20	0.000	0.000	0.000	11.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-ug/L	Mean	N-Mean	Transform: Untransformed				N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%					Mean	N-Mean
N Control	29.300	1.0000	29.300	21.000	36.000	16.646	10				29.300	1.0000
3	28.300	0.9659	28.300	22.000	35.000	12.018	10	0.369	2.223	6.027	28.300	0.9659
5	27.300	0.9317	27.300	15.000	38.000	26.920	10	0.738	2.223	6.027	27.300	0.9317
*10	15.700	0.5358	15.700	0.000	25.000	57.760	10	5.017	2.223	6.027	15.700	0.5358
*20	1.100	0.0375	1.100	0.000	11.000	316.228	10	10.403	2.223	6.027	1.100	0.0375
30	0.000	0.0000	0.000	0.000	0.000	0.000	10				0.000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.93728	0.93	-0.7243	1.04174						
Bartlett's Test indicates equal variances (p = 0.01)	13.0119	13.2767								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	5	10	7.07107		6.02683	0.20569	1459.48	36.74	3.2E-14	4, 45
Treatments vs N Control										

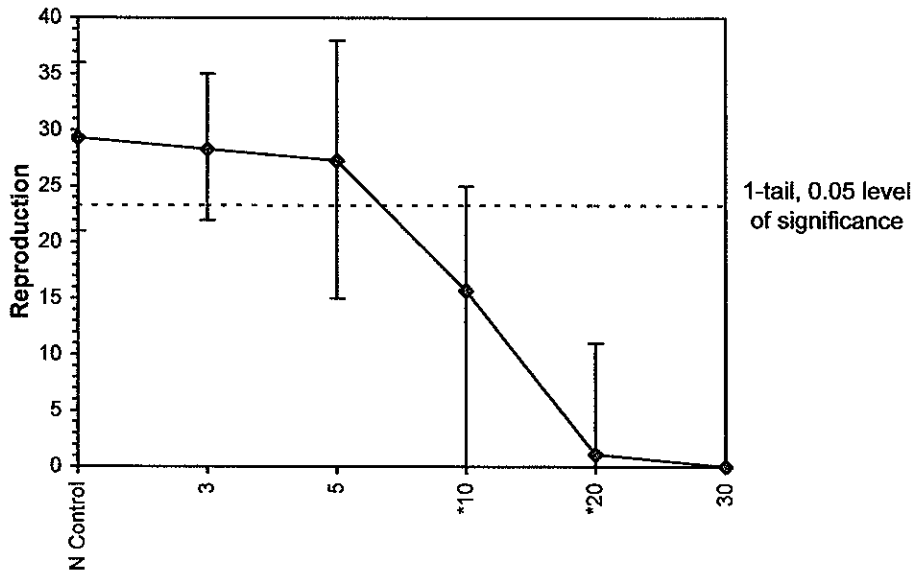
Point	ug/L	SD	Linear Interpolation (200 Resamples)		
			95% CL	Skew	
IC05	3.930	1.572	1.156	5.638	-0.0968
IC10	5.401	1.272	2.312	6.297	-0.5083
IC15	6.032	1.053	3.401	6.972	-0.3758
IC20	6.664	1.032	4.363	7.631	0.0560
IC25	7.295	1.050	4.871	8.923	0.1363
IC40	9.190	1.124	7.510	11.551	0.4894
IC50	10.719	1.305	8.682	13.056	0.0998



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 9/5/2007 Test ID: CER090507 Sample ID: CA0000000
End Date: 9/12/2007 Lab ID: CAABC Sample Type: CUCL-Copper chloride
Sample Date: 9/5/2007 Protocol: EPAF 91-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
Comments: Standard Toxicant

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 9/5/2007	Test ID: CER090507	Sample ID: CA0000000
End Date: 9/12/2007	Lab ID: CAABC	Sample Type: CUCL-Copper chloride
Sample Date: 9/5/2007	Protocol: EPAF 91-EPA Freshwater	Test Species: CD-Ceriodaphnia dubia
Comments: Standard Toxicant		

Auxiliary Data Summary

Conc-ug/L	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.48	24.00	25.80	0.70	3.42	8
3		24.48	24.00	25.80	0.70	3.42	8
5		24.48	24.00	25.80	0.70	3.42	8
10		24.48	24.00	25.80	0.70	3.42	8
20		24.48	24.00	25.80	0.70	3.42	8
30		24.48	24.00	25.80	0.70	3.42	8
N Control	pH	8.29	8.20	8.30	0.04	2.27	8
3		8.23	7.80	8.30	0.18	5.09	8
5		8.21	7.80	8.30	0.17	5.06	8
10		8.21	7.80	8.30	0.17	5.06	8
20		8.21	7.80	8.30	0.17	5.06	8
30		8.21	7.80	8.30	0.17	5.06	8
N Control	DO mg/L	7.26	5.80	7.70	0.61	10.79	8
3		6.89	6.20	7.60	0.48	10.08	8
5		6.86	6.30	7.50	0.40	9.25	8
10		6.88	6.30	7.50	0.39	9.11	8
20		6.86	6.20	7.50	0.40	9.25	8
30		6.88	6.20	7.50	0.40	9.19	8
N Control	Hardness mg/L	93.88	92.00	95.00	1.55	1.33	8
3		0.00	0.00	0.00	0.00		0
5		0.00	0.00	0.00	0.00		0
10		0.00	0.00	0.00	0.00		0
20		0.00	0.00	0.00	0.00		0
30		94.00	94.00	94.00	0.00	0.00	8
N Control	Cond umhos	346.75	338.00	359.00	6.30	0.72	8
3		346.88	341.00	357.00	5.33	0.67	8
5		338.25	337.00	341.00	1.39	0.35	8
10		336.63	333.00	341.00	2.45	0.46	8
20		336.25	334.00	338.00	1.75	0.39	8
30		335.63	331.00	338.00	2.20	0.44	8
N Control	Alkalinity mg/L	63.13	60.00	68.00	3.31	2.88	8
3		0.00	0.00	0.00	0.00		0
5		0.00	0.00	0.00	0.00		0
10		0.00	0.00	0.00	0.00		0
20		0.00	0.00	0.00	0.00		0
30		68.00	68.00	68.00	0.00	0.00	8



Ventura County Watershed Protection District
NPDES Stormwater Monitoring Program

Grab Toxicity Samples - ABC

CHAIN-OF-CUSTODY RECORD

1 OF 1

CLIENT: Ventura County Watershed Protection District

SAMPLING DATE: _____ EVENT #1 (Wet)

SAMPLERS: _____

SAMPLE INFORMATION FOR GRAB SAMPLES

SAMPLE ID	DATE/TIME COLLECTED	Acute Ceriodaphnia - 6.25, 12.5, 25, 50, 100%	Chronic Echinoderm Fertilization - 6.25, 12.5, 25, 50, 100%							NOTES	Field H ₂ O Temp
ME-CC	9-22-07 8:15	X								See Note 1	19.2°C
ME-SCR	9:00	X								See Note 1	19.6°C
ME-VR2	10:00	X								See Note 1	17.6°C
A-1 Wood	DRY	X								See Note 2	
W-3 La Vista	DRY	X								See Note 2	
W-4 Revolon	9-22-07 11:45	X								See Note 2	19.6°C

Signature	Relinquished By: <i>David F Thomas</i>	Date/Time	9-22-07 10:20
Printed Name	DAVID F THOMAS	Date/Time	9-22-07 12:38 W-4
Affiliation	VCWPD		

Printed Name	Received By: <i>Arnel Ramos</i>	Date/Time	9/22/07 10:20
Affiliation	Arnel Ramos	Date/Time	9-22-07 12:30 W-4
	Agentic Bioss		

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.): _____

1. Mass Emission: No TIE for Chronic Samples.
2. Land Use: Run TIE if Tua (Acute) is >1 for any wet or dry weather event.

CALLED 9-19-07 @ 09:50 x10 (BETH) = LEFT MESSAGE ; x12 (ARNEL) TALK w/ HIM.



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

December 27, 2007

Mr. Arnie Anselm
Ventura County Watershed Protection District
800 South Victoria Ave
Ventura, CA 93009

Dear Mr. Anselm:

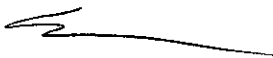
We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, EPA-600/R95/136, 1995. Results were as follows:

CLIENT:	County of Ventura
SAMPLE I.D.:	ME-CC
DATE RECEIVED:	19 Dec - 07
ABC LAB. NO.:	VCF1207.299

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC	=	100.00 %
TU _c	=	1.00
IC ₂₅	=	>100.00 %
IC ₅₀	=	>100.00 %

Yours very truly,



Thomas (Tim) Mikel
Laboratory Director

Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 12/19/2007	Test ID: VCF1207299	Sample ID: CA000000
End Date: 12/19/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 12/18/2007	Protocol: EPA600/R95/136 1995	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-CC		

Conc-%	1	2	3	4
N Control	0.9900	0.9500	1.0000	0.9700
6.25	0.9900	0.9800	0.9600	0.9500
12.5	0.9800	0.9700	0.9800	1.0000
25	0.9800	0.9200	0.9600	0.9300
50	0.9300	0.9100	0.9400	0.9900
100	0.9200	0.9800	0.9400	0.9100

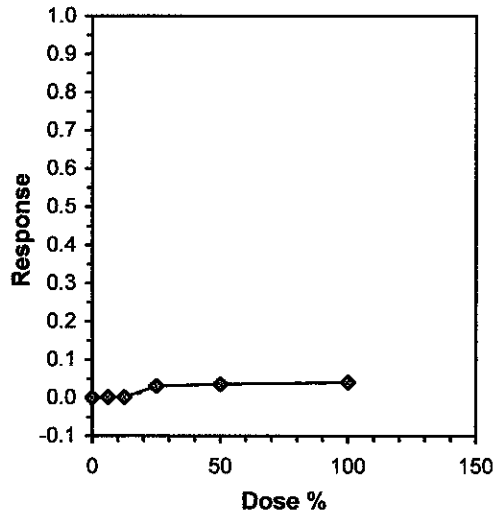
Conc-%	Mean	N-Mean	Transform: Arcsin Square Root					N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%	Mean					N-Mean	
N Control	0.9775	1.0000	1.4334	1.3453	1.5208	5.424	4				0.9775	1.0000	
6.25	0.9700	0.9923	1.4036	1.3453	1.4706	4.051	4	0.597	2.410	0.1203	0.9763	0.9987	
12.5	0.9825	1.0051	1.4438	1.3967	1.5208	3.705	4	-0.210	2.410	0.1203	0.9763	0.9987	
25	0.9475	0.9693	1.3464	1.2840	1.4289	4.909	4	1.743	2.410	0.1203	0.9475	0.9693	
50	0.9425	0.9642	1.3408	1.2661	1.4706	6.694	4	1.855	2.410	0.1203	0.9425	0.9642	
100	0.9375	0.9591	1.3256	1.2661	1.4289	5.499	4	2.160	2.410	0.1203	0.9375	0.9591	

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.92091	0.884	0.62359	-0.8021
Bartlett's Test indicates equal variances (p = 0.96)	1.00058	15.0863		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	100	>100		1	0.04618	0.04706	0.01046	0.00498	0.11246	5, 18
Treatments vs N Control										

Linear Interpolation (200 Resamples)

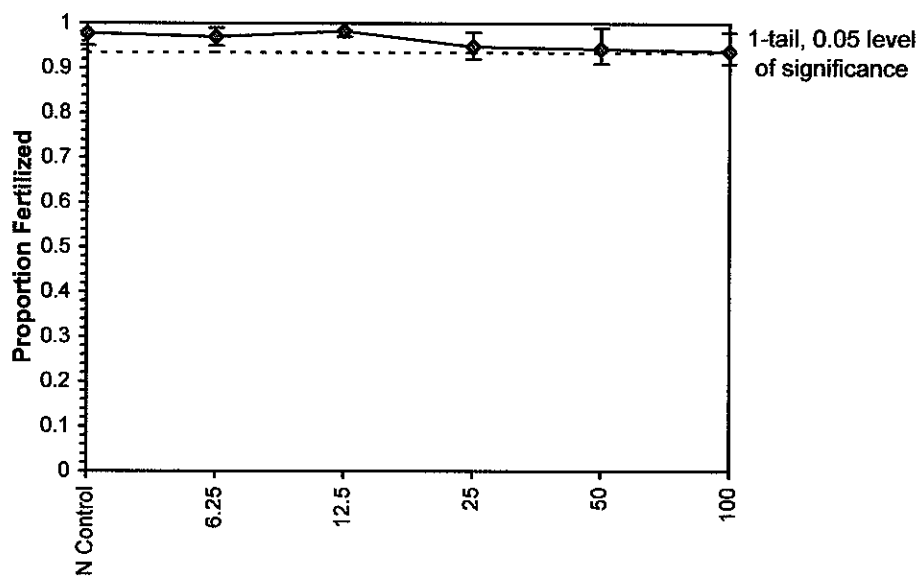
Point	%	SD	95% CL(Exp)	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 12/19/2007	Test ID: VCF1207299	Sample ID: CA000000
End Date: 12/19/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 12/18/2007	Protocol: EPA600/R95/136 1995	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-CC		

Dose-Response Plot



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 12/19/2007	Test ID: VCF1207299	Sample ID: CA000000
End Date: 12/19/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 12/18/2007	Protocol: EPA600/R95/136 1995	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-CC		

Auxiliary Data Summary

Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	15.10	15.00	15.20	0.14	2.49	2
6.5		15.20	15.20	15.20	0.00	0.00	1
6.25		15.00	15.00	15.00	0.00	0.00	1
12.5		15.15	15.00	15.30	0.21	3.04	2
25		15.15	15.00	15.30	0.21	3.04	2
50		15.20	15.00	15.40	0.28	3.50	2
100		15.20	15.00	15.40	0.28	3.50	2
N Control	pH	7.70	7.70	7.70	0.00	0.00	2
6.5		7.70	7.70	7.70	0.00	0.00	1
6.25		7.70	7.70	7.70	0.00	0.00	1
12.5		7.70	7.70	7.70	0.00	0.00	2
25		7.70	7.70	7.70	0.00	0.00	2
50		7.70	7.70	7.70	0.00	0.00	2
100		7.70	7.70	7.70	0.00	0.00	2
N Control	DO mg/L	6.05	5.80	6.30	0.35	9.83	2
6.5		6.20	6.20	6.20	0.00	0.00	1
6.25		5.20	5.20	5.20	0.00	0.00	1
12.5		5.70	5.20	6.20	0.71	14.75	2
25		5.70	5.10	6.30	0.85	16.16	2
50		5.65	5.00	6.30	0.92	16.97	2
100		5.70	5.10	6.30	0.85	16.16	2
N Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2
6.5		34.00	34.00	34.00	0.00	0.00	1
6.25		34.00	34.00	34.00	0.00	0.00	1
12.5		34.00	34.00	34.00	0.00	0.00	2
25		34.00	34.00	34.00	0.00	0.00	2
50		34.00	34.00	34.00	0.00	0.00	2
100		34.00	34.00	34.00	0.00	0.00	2



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

December 27, 2007

Mr. Arnie Anselm
Ventura County Watershed Protection District
800 South Victoria Ave
Ventura, CA 93009

Dear Mr. Anselm:


We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA-600/R95/136, 1995*. Results were as follows:

CLIENT:	County of Ventura
SAMPLE I.D.:	ME-SCR
DATE RECEIVED:	19 Dec - 07
ABC LAB. NO.:	VCF1207.300

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC	=	100.00 %
TU _c	=	1.00
IC ₂₅	=	>100.00 %
IC ₅₀	=	>100.00 %

Yours very truly,


Thomas (Tim) Mikel
Laboratory Director

Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 12/19/2007	Test ID: VCF1207300	Sample ID: CA000000
End Date: 12/19/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 12/18/2007	Protocol: EPA600/R95/136 1995	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-SCR		

Conc-%	1	2	3	4
N Control	0.9800	0.9900	1.0000	0.9900
6.25	1.0000	0.1000	0.9800	0.9700
12.5	0.9900	0.9900	0.9900	0.9900
25	1.0000	1.0000	1.0000	0.9100
50	1.0000	0.9600	0.9100	0.9300
100	0.9700	1.0000	0.9800	0.9800

Conc-%	Transform: Arcsin Square Root							t-Stat	1-Tailed Critical	MSD	Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N				Mean	N-Mean
N Control	0.9900	1.0000	1.4727	1.4289	1.5208	2.552	4				0.9900	1.0000
6.25	0.7625	0.7702	1.1670	0.3218	1.5208	48.496	4	1.781	2.410	0.4136	0.9325	0.9419
12.5	0.9900	1.0000	1.4706	1.4706	1.4706	0.000	4	0.012	2.410	0.4136	0.9325	0.9419
25	0.9775	0.9874	1.4571	1.2661	1.5208	8.739	4	0.091	2.410	0.4136	0.9325	0.9419
50	0.9500	0.9596	1.3648	1.2661	1.5208	8.236	4	0.629	2.410	0.4136	0.9325	0.9419
100	0.9825	0.9924	1.4438	1.3967	1.5208	3.705	4	0.168	2.410	0.4136	0.9325	0.9419

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.71397	0.884	-2.5532	10.7995

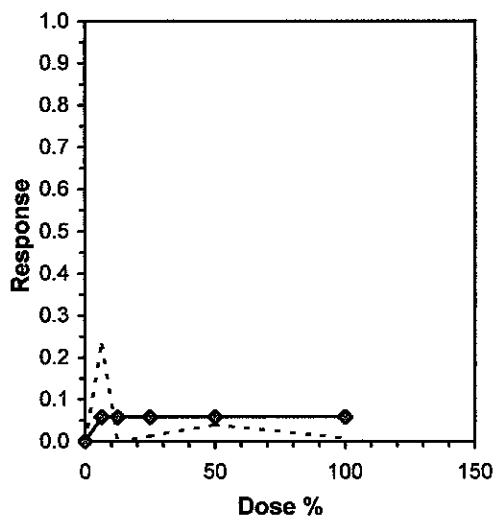
Equality of variance cannot be confirmed

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	100	>100		1	0.23016	0.23238	0.0567	0.05891	0.46626	5, 18

Treatments vs N Control

Point	%	SD	Linear Interpolation (200 Resamples)	
			95% CL(Exp)	Skew
IC05*	5.3804			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			

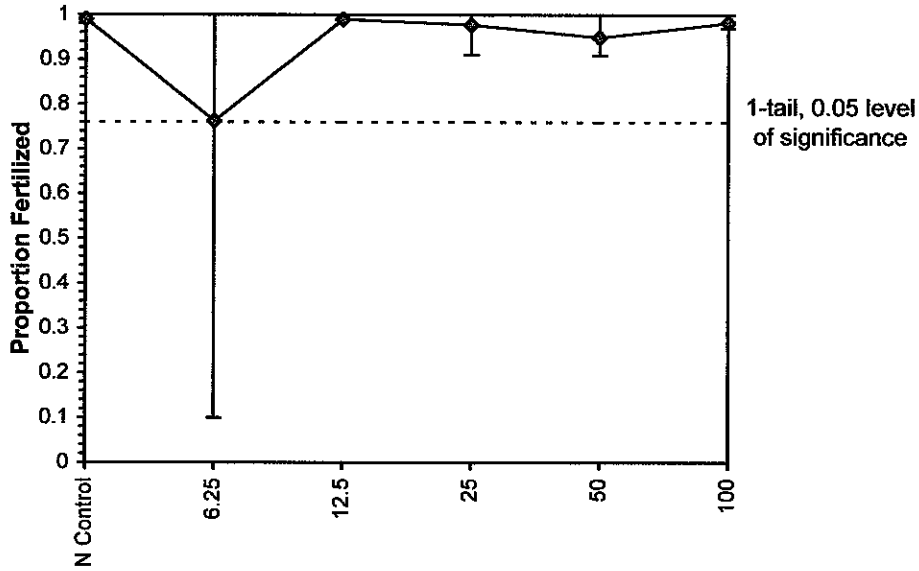
* indicates IC estimate less than the lowest concentration



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 12/19/2007	Test ID: VCF1207300	Sample ID: CA000000
End Date: 12/19/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 12/18/2007	Protocol: EPA600/R95/136 1995	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-SCR		

Dose-Response Plot

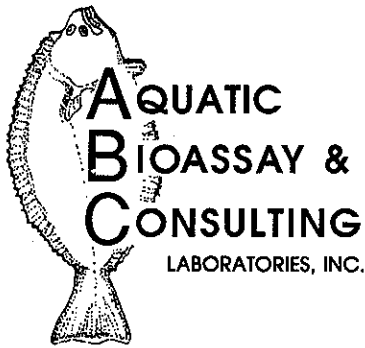


Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 12/19/2007	Test ID: VCF1207300	Sample ID: CA000000
End Date: 12/19/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 12/18/2007	Protocol: EPA600/R95/136 1995	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-SCR		

Auxiliary Data Summary

Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	15.10	15.00	15.20	0.14	2.49	2
6.5		15.20	15.20	15.20	0.00	0.00	1
6.25		15.00	15.00	15.00	0.00	0.00	1
12.5		15.15	15.00	15.30	0.21	3.04	2
25		15.15	15.00	15.30	0.21	3.04	2
50		15.20	15.00	15.40	0.28	3.50	2
100		15.20	15.00	15.40	0.28	3.50	2
N Control	pH	7.70	7.70	7.70	0.00	0.00	2
6.5		7.70	7.70	7.70	0.00	0.00	1
6.25		7.70	7.70	7.70	0.00	0.00	1
12.5		7.70	7.70	7.70	0.00	0.00	2
25		7.70	7.70	7.70	0.00	0.00	2
50		7.70	7.70	7.70	0.00	0.00	2
100		7.70	7.70	7.70	0.00	0.00	2
N Control	DO mg/L	6.05	5.80	6.30	0.35	9.83	2
6.5		6.30	6.30	6.30	0.00	0.00	1
6.25		5.50	5.50	5.50	0.00	0.00	1
12.5		5.95	5.60	6.30	0.49	11.82	2
25		6.00	5.70	6.30	0.42	10.86	2
50		6.05	5.70	6.40	0.49	11.63	2
100		6.10	5.90	6.30	0.28	8.72	2
N Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2
6.5		34.00	34.00	34.00	0.00	0.00	1
6.25		34.00	34.00	34.00	0.00	0.00	1
12.5		34.00	34.00	34.00	0.00	0.00	2
25		34.00	34.00	34.00	0.00	0.00	2
50		34.00	34.00	34.00	0.00	0.00	2
100		34.00	34.00	34.00	0.00	0.00	2



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

December 27, 2007

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Ventura County Watershed Protection District
800 South Victoria Ave
Ventura, CA 93009

Dear Mr. Anselm:

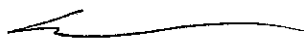
We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, EPA-600/R95/136, 1995. Results were as follows:

CLIENT:	County of Ventura
SAMPLE I.D.:	ME-VR2
DATE RECEIVED:	19 Dec - 07
ABC LAB. NO.:	VCF1207.301

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

NOEC	=	100.00 %
TUc	=	1.00
IC25	=	>100.00 %
IC50	=	>100.00 %

Yours very truly,



Thomas (Tim) Mikel
Laboratory Director

Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 12/19/2007	Test ID: VCF1207301	Sample ID: CA000000
End Date: 12/19/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 12/18/2007	Protocol: EPA600/R95/136 1995	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-VR2		

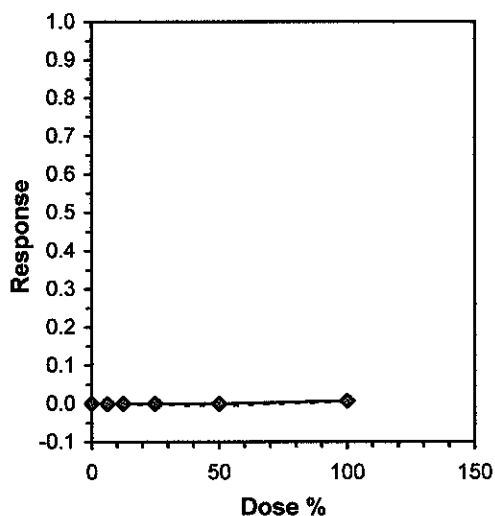
Conc-%	1	2	3	4
N Control	1.0000	0.9900	0.9800	0.9900
6.25	0.9900	1.0000	0.9900	0.9900
12.5	1.0000	0.9700	1.0000	1.0000
25	1.0000	0.9800	1.0000	0.9900
50	1.0000	1.0000	0.9900	0.9900
100	0.9800	1.0000	1.0000	0.9600

Conc-%	Mean	N-Mean	Transform: Arcsin Square Root				N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%					Mean	N-Mean
N Control	0.9900	1.0000	1.4727	1.4289	1.5208	2.552	4				0.9925	1.0000
6.25	0.9925	1.0025	1.4832	1.4706	1.5208	1.691	4	-0.303	2.410	0.0830	0.9925	1.0000
12.5	0.9925	1.0025	1.4898	1.3967	1.5208	4.164	4	-0.495	2.410	0.0830	0.9925	1.0000
25	0.9925	1.0025	1.4853	1.4289	1.5208	2.989	4	-0.364	2.410	0.0830	0.9925	1.0000
50	0.9950	1.0051	1.4957	1.4706	1.5208	1.936	4	-0.667	2.410	0.0830	0.9925	1.0000
100	0.9850	0.9949	1.4600	1.3694	1.5208	5.088	4	0.371	2.410	0.0830	0.9850	0.9924

Auxiliary Tests	Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.93251	0.884	-0.628	-0.1647						
Bartlett's Test indicates equal variances (p = 0.46)	4.61305	15.0863								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	100	>100		1	0.02283	0.02305	0.00066	0.00237	0.91862	5, 18
Treatments vs N Control										

Linear Interpolation (200 Resamples)

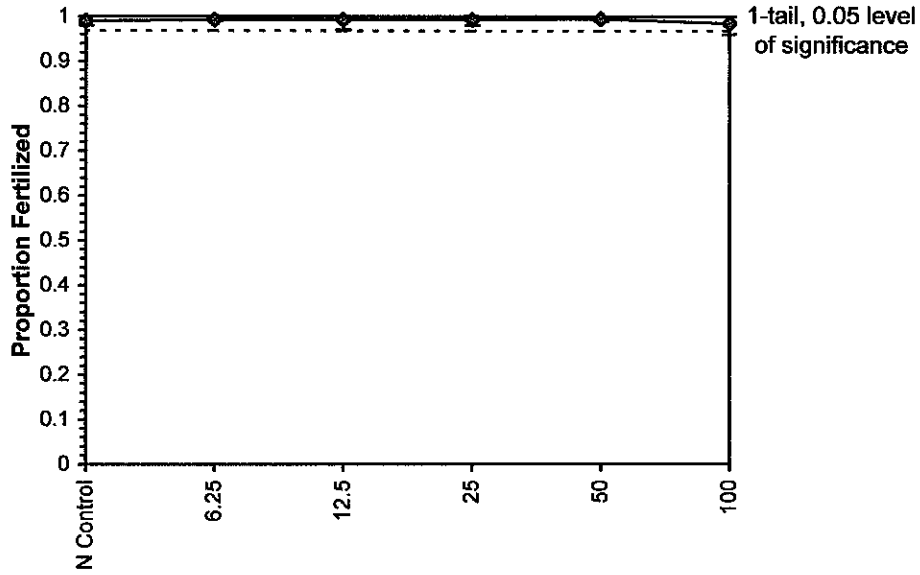
Point	%	SD	95% CL(Exp)	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 12/19/2007	Test ID: VCF1207301	Sample ID: CA000000
End Date: 12/19/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 12/18/2007	Protocol: EPA600/R95/136 1995	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-VR2		

Dose-Response Plot



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 12/19/2007	Test ID: VCF1207301	Sample ID: CA000000
End Date: 12/19/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 12/18/2007	Protocol: EPA600/R95/136 1995	Test Species: SP-Strongylocentrotus purpuratus
Comments: ME-VR2		

Auxiliary Data Summary

Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	15.10	15.00	15.20	0.14	2.49	2
6.5		15.20	15.20	15.20	0.00	0.00	1
6.25		15.00	15.00	15.00	0.00	0.00	1
12.5		15.15	15.00	15.30	0.21	3.04	2
25		15.15	15.00	15.30	0.21	3.04	2
50		15.20	15.00	15.40	0.28	3.50	2
100		15.20	15.00	15.40	0.28	3.50	2
N Control	pH	7.70	7.70	7.70	0.00	0.00	2
6.5		7.70	7.70	7.70	0.00	0.00	1
6.25		7.70	7.70	7.70	0.00	0.00	1
12.5		7.70	7.70	7.70	0.00	0.00	2
25		7.70	7.70	7.70	0.00	0.00	2
50		7.70	7.70	7.70	0.00	0.00	2
100		7.70	7.70	7.70	0.00	0.00	2
N Control	DO mg/L	6.05	5.80	6.30	0.35	9.83	2
6.5		6.20	6.20	6.20	0.00	0.00	1
6.25		5.50	5.50	5.50	0.00	0.00	1
12.5		5.70	5.20	6.20	0.71	14.75	2
25		5.55	5.00	6.10	0.78	15.89	2
50		5.60	5.10	6.10	0.71	15.02	2
100		5.60	5.10	6.10	0.71	15.02	2
N Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2
6.5		34.00	34.00	34.00	0.00	0.00	1
6.25		34.00	34.00	34.00	0.00	0.00	1
12.5		34.00	34.00	34.00	0.00	0.00	2
25		34.00	34.00	34.00	0.00	0.00	2
50		34.00	34.00	34.00	0.00	0.00	2
100		34.00	34.00	34.00	0.00	0.00	2



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

December 27, 2007

Mr. Arnie Anselm
Ventura County Watershed Protection District
800 South Victoria Avenue
Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012*. Results were as follows:

CLIENT:	Ventura County Watershed Protection District
SAMPLE I.D.:	A-1 Wood
DATE RECEIVED:	19 Dec - 07
ABC LAB. NO.:	VCF1207.302

ACUTE CERIODAPHNIA SURVIVAL BIOASSAY

Survival = 100 % Survival in 100% Sample
TU (a) = 0.00
LC50 = >100.00 %

Yours very truly,



Thomas (Tim) Mikel
Laboratory Director

Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

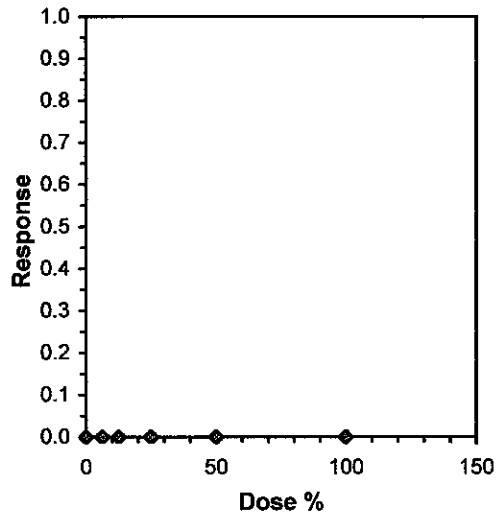
Start Date: 12/19/2007	Test ID: VCF1207302	Sample ID: CA0000000
End Date: 12/23/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 12/18/2007	Protocol: EPA-821-R-02-012	Test Species: CD-Ceriodaphnia dubia
Comments: A-Wood		

Conc-%	1	2	3	4
N Control	1.0000	1.0000	1.0000	1.0000
6.25	1.0000	1.0000	1.0000	1.0000
12.5	1.0000	1.0000	1.0000	1.0000
25	1.0000	1.0000	1.0000	1.0000
50	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000

Conc-%	Mean	N-Mean	Transform: Arcsin Square Root					Rank Sum	1-Tailed Critical	Isotonic	
			Mean	Min	Max	CV%	N			Mean	N-Mean
N Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	10.00	1.0000	1.0000
6.25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
12.5	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
50	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
100	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	1	0.884		
Equality of variance cannot be confirmed				
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	100	>100		1
Treatments vs N Control				

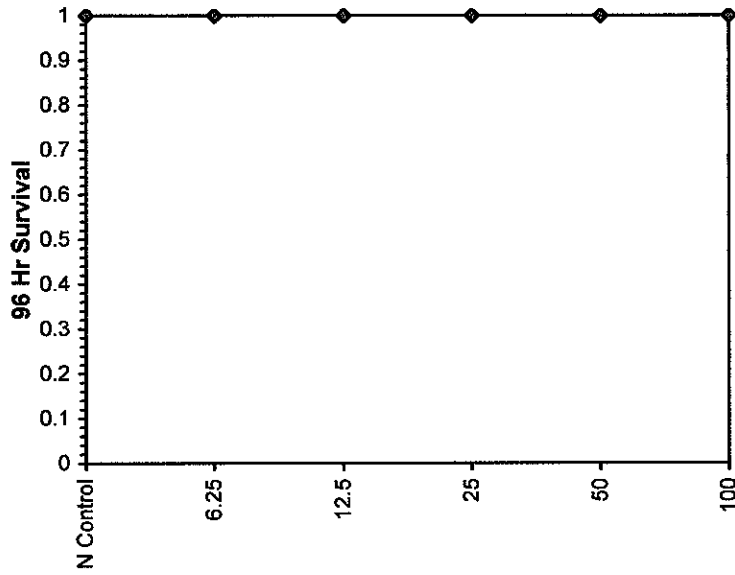
Point	%	SD	Linear Interpolation (200 Resamples)	
			95% CL(Exp)	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date: 12/19/2007	Test ID: VCF1207302	Sample ID: CA000000
End Date: 12/23/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 12/18/2007	Protocol: EPA-821-R-02-012	Test Species: CD-Ceriodaphnia dubia
Comments: A-Wood		

Dose-Response Plot

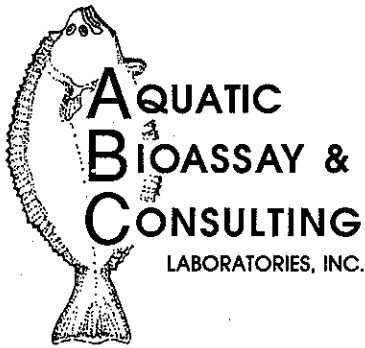


Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date: 12/19/2007	Test ID: VCF1207302	Sample ID: CA0000000
End Date: 12/23/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 12/18/2007	Protocol: EPA-821-R-02-012	Test Species: CD-Ceriodaphnia dubia
Comments: A-Wood		

Auxiliary Data Summary

Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.13	24.00	24.40	0.23	1.99	3
6.25		24.13	24.00	24.40	0.23	1.99	3
12.5		24.10	24.00	24.30	0.17	1.73	3
25		24.17	24.00	24.50	0.29	2.22	3
50		24.13	24.00	24.40	0.23	1.99	3
100		24.17	24.00	24.50	0.29	2.22	3
N Control	pH	8.30	8.30	8.30	0.00	0.00	3
6.25		7.93	7.90	8.00	0.06	3.03	3
12.5		7.93	7.90	8.00	0.06	3.03	3
25		7.90	7.80	8.00	0.10	4.00	3
50		7.90	7.80	8.00	0.10	4.00	3
100		7.90	7.80	8.00	0.10	4.00	3
N Control	DO mg/L	6.93	6.20	7.30	0.64	11.49	3
6.25		6.67	6.10	7.60	0.81	13.54	3
12.5		6.90	6.00	7.60	0.82	13.11	3
25		6.90	6.00	7.50	0.79	12.91	3
50		6.83	6.00	7.30	0.72	12.45	3
100		6.80	6.00	7.30	0.70	12.30	3
N Control	Hardness mg/L	92.33	92.00	93.00	0.58	0.82	3
6.25		0.00	0.00	0.00	0.00		0
12.5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
100		250.00	250.00	250.00	0.00	0.00	3
N Control	Alkalinitymg/L	64.33	63.00	65.00	1.15	1.67	3
6.25		0.00	0.00	0.00	0.00		0
12.5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
100		193.00	193.00	193.00	0.00	0.00	3
N Control	Conductivity	337.67	334.00	345.00	6.35	0.75	3
6.25		587.33	582.00	595.00	6.81	0.44	3
12.5		748.00	743.00	752.00	4.58	0.29	3
25		1133.00	1126.00	1145.00	10.44	0.29	3
50		1883.00	1853.00	1905.00	26.91	0.28	3
100		3219.67	3198.00	3245.00	23.71	0.15	3



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

December 27, 2007

Mr. Arnie Anselm
Ventura County Watershed Protection District
800 South Victoria Avenue
Ventura, CA 93009

Dear Mr. Anselm:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012*. Results were as follows:

CLIENT:	Ventura County Watershed Protection District
SAMPLE I.D.:	W-3 La Vista
DATE RECEIVED:	19 Dec - 07
ABC LAB. NO.:	VCF1207.303

ACUTE CERIODAPHNIA SURVIVAL BIOASSAY

Survival = 0 % Survival in 100% Sample
TU (a) = 8.00
LC50 = 12.50 %

Yours very truly,



Thomas (Tim) Mikel
Laboratory Director

Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date: 12/19/2007	Test ID: VCF1207303	Sample ID: CA0000000
End Date: 12/23/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 12/18/2007	Protocol: EPA-821-R-02-012	Test Species: CD-Ceriodaphnia dubia
Comments: W-3 La Vista		

Conc-%	1	2	3	4
N Control	1.0000	1.0000	1.0000	1.0000
6.25	1.0000	1.0000	1.0000	1.0000
12.5	0.2000	1.0000	0.8000	0.0000
25	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.0000	0.0000
100	0.0000	0.0000	0.0000	0.0000

Conc-%	Transform: Arcsin Square Root							Rank Sum	1-Tailed Critical	Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N			Mean	N-Mean
N Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4			1.0000	1.0000
6.25	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	4	18.00	11.00	1.0000	1.0000
12.5	0.5000	0.5000	0.7854	0.2255	1.3453	67.132	4	12.00	11.00	0.5000	0.5000
25	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			0.0000	0.0000
50	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			0.0000	0.0000
100	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	4			0.0000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.82015	0.805	6E-15	1.94164

Equality of variance cannot be confirmed

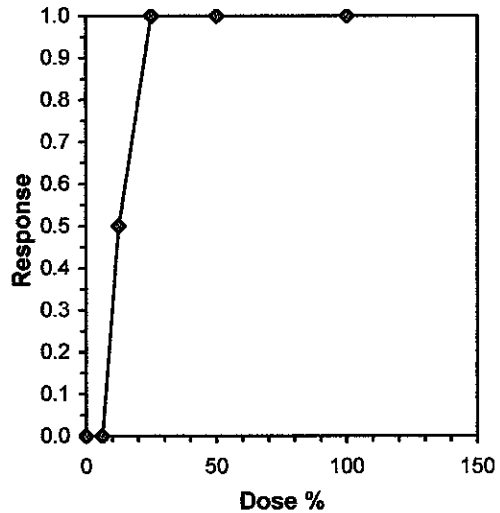
Hypothesis Test (1-tail, 0.05) **NOEC** **LOEC** **ChV** **TU**

Steel's Many-One Rank Test 12.5 25 17.6777 8

Treatments vs N Control!

Linear Interpolation (200 Resamples)

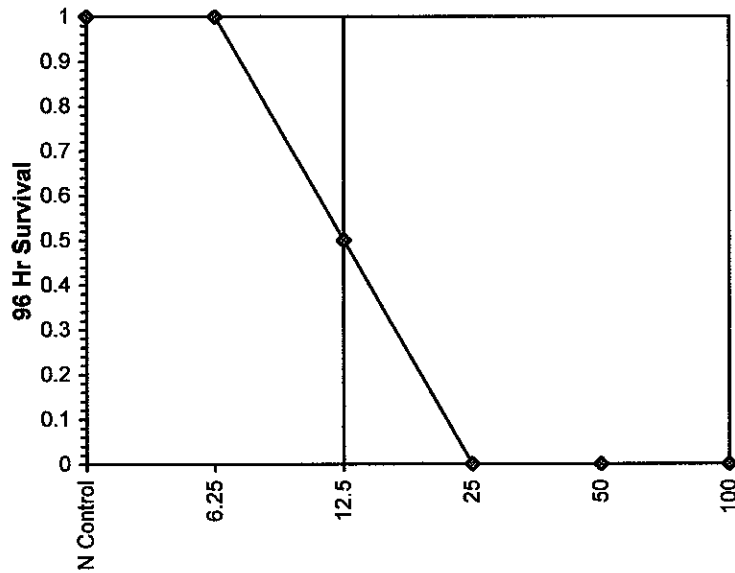
Point	%	SD	95% CL(Exp)		Skew
IC05	6.875	1.033	6.401	15.875	4.3242
IC10	7.500	1.260	6.553	16.553	2.9846
IC15	8.125	1.432	6.704	17.230	2.1831
IC20	8.750	1.588	6.855	17.908	1.6143
IC25	9.375	1.760	7.007	18.586	1.2118
IC40	11.250	2.200	7.461	20.618	0.6187
IC50	12.500	2.529	7.763	21.974	0.3310



Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date: 12/19/2007	Test ID: VCF1207303	Sample ID: CA0000000
End Date: 12/23/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 12/18/2007	Protocol: EPA-821-R-02-012	Test Species: CD-Ceriodaphnia dubia
Comments: W-3 La Vista		

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-96 Hr Survival

Start Date: 12/19/2007	Test ID: VCF1207303	Sample ID: CA0000000
End Date: 12/23/2007	Lab ID: CAABC	Sample Type: EFF1-POTW
Sample Date: 12/18/2007	Protocol: EPA-821-R-02-012	Test Species: CD-Ceriodaphnia dubia
Comments: W-3 La Vista		

Auxiliary Data Summary

Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.07	24.00	24.20	0.12	1.41	3
6.25		24.00	24.00	24.00	0.00	0.00	3
12.5		24.00	24.00	24.00	0.00	0.00	3
25		24.05	24.00	24.10	0.07	1.11	2
50		24.10	24.00	24.20	0.14	1.56	2
100		24.10	24.00	24.20	0.14	1.56	2
N Control	pH	8.30	8.30	8.30	0.00	0.00	3
6.25		8.07	8.00	8.10	0.06	2.98	3
12.5		8.10	8.10	8.10	0.00	0.00	3
25		8.05	8.00	8.10	0.07	3.30	2
50		8.05	8.00	8.10	0.07	3.30	2
100		8.05	8.00	8.10	0.07	3.30	2
N Control	DO mg/L	6.93	6.20	7.30	0.64	11.49	3
6.25		7.13	6.10	7.70	0.90	13.27	3
12.5		6.97	6.10	7.60	0.78	12.65	3
25		6.75	6.00	7.50	1.06	15.26	2
50		6.75	6.00	7.50	1.06	15.26	2
100		6.70	5.90	7.50	1.13	15.88	2
N Control	Hardness mg/L	92.33	92.00	93.00	0.58	0.82	3
6.25		0.00	0.00	0.00	0.00		0
12.5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
100		218.00	218.00	218.00	0.00	0.00	2
N Control	Alkalinitymg/L	64.33	63.00	65.00	1.15	1.67	3
6.25		0.00	0.00	0.00	0.00		0
12.5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
100		51.00	51.00	51.00	0.00	0.00	2
N Control	Conductivity	337.67	334.00	345.00	6.35	0.75	3
6.25		474.33	470.00	482.00	6.66	0.54	3
12.5		388.67	376.00	399.00	11.68	0.88	3
25		409.00	409.00	409.00	0.00	0.00	2
50		478.00	478.00	478.00	0.00	0.00	2
100		613.00	613.00	613.00	0.00	0.00	2



Ventura County Watershed Protection District
NPDES Stormwater Monitoring Program

Grab Toxicity Samples - ABC

CHAIN-OF-CUSTODY RECORD

1 OF 1

CLIENT: Ventura County Watershed Protection District

SAMPLING DATE: 12-18-07 EVENT #2 (Wet)

SAMPLERS: D. THOMAS T. LIDDELL

SAMPLE INFORMATION FOR GRAB SAMPLES

SAMPLE ID	DATE/TIME COLLECTED	Acute Ceriodaphnia	Chronic Echinoderm Fertilization							NOTES	Field H ₂ O Temp
ME-CC	12-18-07 18:30	X								See Note 1	15.4°C
ME-SCR	20:30	X								See Note 1	14.2°C
ME-VR2	21:30	X								See Note 1	13.5°C
A-1 Wood	18:00	X								See Note 2	15.4°C
W-3 La Vista	" 17:15	X								See Note 2	13.7°C

Signature	Relinquished By: <i>David F. Thomas</i>	Date/Time	12-19-07 09:10
Printed Name	DAVID F. THOMAS		
Affiliation	VCWPD		

Signature	Received By: <i>Elizabeth Matwind</i>	Date/Time	12-19-07 09:10
Printed Name	ELIZABETH MATWIND		
Affiliation	AQUATIC BIOLASSAY		

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):
1. Mass Emmission: Run TIE if Tuc (Chronic) is >1 for two consecutive wet weather events or 1 dry weather event.

TEMP @ RECEIPT = 2.1°C
 CHROMIUM = < 0.1



TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

CHRONIC SEA URCHIN FERTILIZATION BIOASSAY

DATE: 19 December - 07

STANDARD TOXICANT: Copper Chloride

NOEC = 32.00 ug/l

IC25 = 39.66 ug/l

IC50 = 48.64 ug/l

Yours very truly,

Thomas (Tim) Mikel
Laboratory Director

Sperm Cell Fertilization Test-Proportion Fertilized

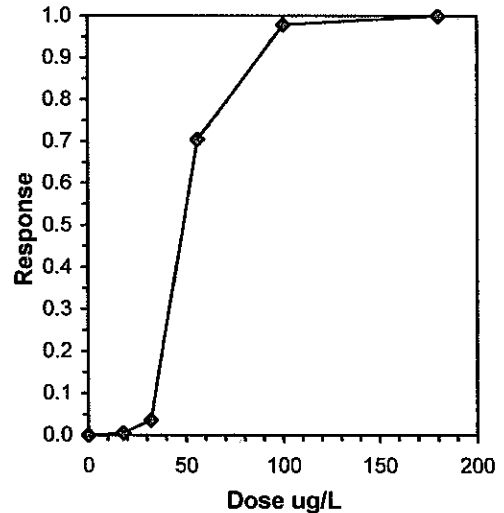
Start Date: 12/19/2007	Test ID: URC121907	Sample ID: REF-Ref Toxicant
End Date: 12/19/2007	Lab ID: ABC LABORA	Sample Type: CUCL-Copper chloride
Sample Date: 12/19/2007	Protocol: EPA600/R95/136 1995	Test Species: SP-Strongylocentrotus purpuratus
Comments: Standard Toxicant		

Conc-ug/L	1	2	3	4
Control	0.9900	0.9300	0.9400	0.9700
18	0.9600	0.9800	0.9700	0.9000
32	0.9700	0.8600	0.9700	0.8900
56	0.2000	0.1100	0.7400	0.0800
100	0.0300	0.0000	0.0100	0.0400
180	0.0000	0.0000	0.0000	0.0000

Conc-ug/L	Transform: Arcsin Square Root							1-Tailed			Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
Control	0.9575	1.0000	1.3734	1.3030	1.4706	5.554	4				0.9575	1.0000
18	0.9525	0.9948	1.3610	1.2490	1.4289	5.768	4	0.102	2.360	0.2866	0.9525	0.9948
32	0.9225	0.9634	1.3034	1.1873	1.3967	8.392	4	0.577	2.360	0.2866	0.9225	0.9634
*56	0.2825	0.2950	0.5310	0.2868	1.0357	64.883	4	6.938	2.360	0.2866	0.2825	0.2950
*100	0.0200	0.0209	0.1314	0.0500	0.2014	52.565	4	10.229	2.360	0.2866	0.0200	0.0209
180	0.0000	0.0000	0.0500	0.0500	0.0500	0.000	4				0.0000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.84318	0.868	1.736	5.86785						
Bartlett's Test indicates equal variances (p = 0.02)	11.9618	13.2767								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	32	56	42.332		0.17802	0.18514	1.31822	0.02949	3.7E-08	4, 15
Treatments vs Control										

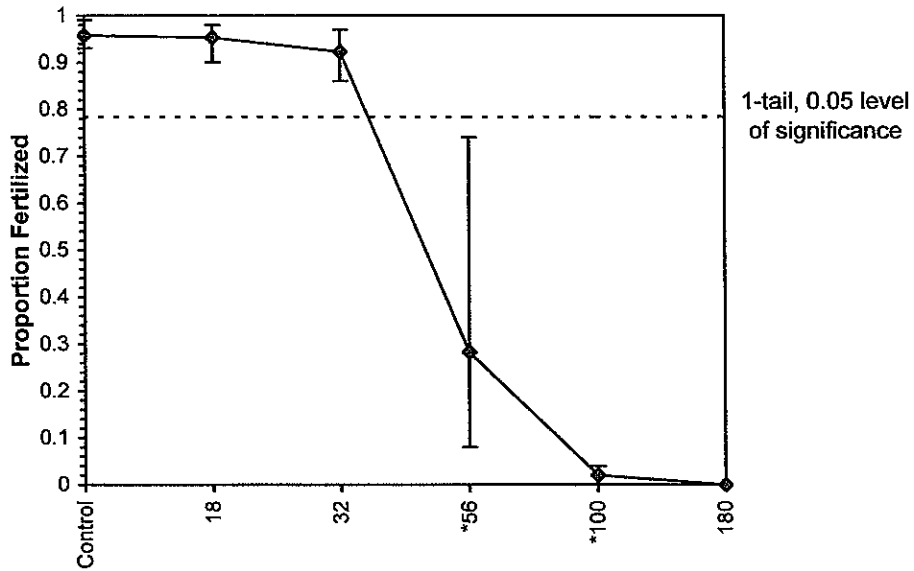
Point	Linear Interpolation (200 Resamples)				
	ug/L	SD	95% CL(Exp)		Skew
IC05	32.483	3.372	16.196	35.081	-1.8929
IC10	34.278	1.194	31.336	37.524	1.7983
IC15	36.073	1.648	33.194	40.603	3.4015
IC20	37.869	2.236	34.695	45.093	3.7516
IC25	39.664	2.712	35.988	50.125	3.2791
IC40	45.050	4.078	39.828	64.764	2.2031
IC50	48.641	5.090	42.434	74.130	1.9647



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 12/19/2007 Test ID: URC121907 Sample ID: REF-Ref Toxicant
End Date: 12/19/2007 Lab ID: ABC LABORA Sample Type: CUCL-Copper chloride
Sample Date: 12/19/2007 Protocol: EPA600/R95/136 1995 Test Species: SP-Strongylocentrotus purpuratus
Comments: Standard Toxicant

Dose-Response Plot



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date: 12/19/2007	Test ID: URC121907	Sample ID: REF-Ref Toxicant
End Date: 12/19/2007	Lab ID: ABC LABORA	Sample Type: CUCL-Copper chloride
Sample Date: 12/19/2007	Protocol: EPA600/R95/136 1995	Test Species: SP-Strongylocentrotus purpuratus
Comments: Standard Toxicant		

Auxiliary Data Summary

Conc-ug/L	Parameter	Mean	Min	Max	SD	CV%	N
Control	Temp C	15.10	15.00	15.20	0.14	2.49	2
18		15.10	15.00	15.20	0.14	2.49	2
32		15.10	15.00	15.20	0.14	2.49	2
56		15.10	15.00	15.20	0.14	2.49	2
100		15.10	15.00	15.20	0.14	2.49	2
180		15.10	15.00	15.20	0.14	2.49	2
Control	pH	7.70	7.70	7.70	0.00	0.00	2
18		7.70	7.70	7.70	0.00	0.00	2
32		7.70	7.70	7.70	0.00	0.00	2
56		7.70	7.70	7.70	0.00	0.00	2
100		7.70	7.70	7.70	0.00	0.00	2
180		7.70	7.70	7.70	0.00	0.00	2
Control	Diss Oxygen	34.40	5.80	63.00	40.45	18.49	2
18		6.00	5.50	6.50	0.71	14.01	2
32		6.10	5.60	6.60	0.71	13.79	2
56		6.10	5.60	6.60	0.71	13.79	2
100		6.00	5.50	6.50	0.71	14.01	2
180		6.00	5.50	6.50	0.71	14.01	2
Control	Salinity ppt	34.00	34.00	34.00	0.00	0.00	2
18		34.00	34.00	34.00	0.00	0.00	2
32		34.00	34.00	34.00	0.00	0.00	2
56		34.00	34.00	34.00	0.00	0.00	2
100		34.00	34.00	34.00	0.00	0.00	2
180		34.00	34.00	34.00	0.00	0.00	2