AQUATIC
BIOASSAY &
CONSULTING
LABORATORIES, INC.

TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

June 12, 2006

Mr. David F. Thomas
County of Ventura
Watershed Protection District
800 South Victoria Avenue
Ventura, CA 93009

Dear Mr. Thomas:

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:	31 May - 06
ABC LAB. NO.:	VCF0506.373

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:	6/1/2006	Test ID:	VCF0506373	Sample ID:	CA000000
End Date:	6/1/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	5/31/2006	Protocol:	EPA/600/R	Test Species:	SP-Strongylocentrotus purpuratus
Comments:	ME-CC				

Conc-%	1	2	3	4
N Control	0.9600	1.0000	1.0000	1.0000
6.25	0.9900	1.0000	1.0000	1.0000
12.5	1.0000	0.9800	1.0000	1.0000
25	1.0000	1.0000	0.9900	0.9900
50	1.0000	0.9600	0.9800	0.9000
100	0.9500	1.0000	0.9400	0.8600

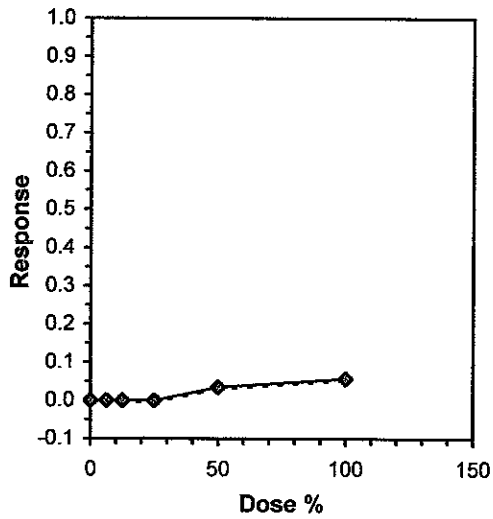
			Transform: Arcsin Square Root						1-Tailed		Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
N Control	0.9900	1.0000	1.4829	1.3694	1.5208	5.103	4				0.9944	1.0000
6.25	0.9975	1.0076	1.5082	1.4706	1.5208	1.662	4	-0.433	2.410	0.1409	0.9944	1.0000
12.5	0.9950	1.0051	1.4978	1.4289	1.5208	3.067	4	-0.254	2.410	0.1409	0.9944	1.0000
25	0.9950	1.0051	1.4957	1.4706	1.5208	1.936	4	-0.218	2.410	0.1409	0.9944	1.0000
50	0.9600	0.9697	1.3920	1.2490	1.5208	8.179	4	1.555	2.410	0.1409	0.9600	0.9654
100	0.9375	0.9470	1.3442	1.1873	1.5208	10.185	4	2.374	2.410	0.1409	0.9375	0.9428

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.90897	0.884	-0.0911	1.44411
Bartlett's Test indicates equal variances (p = 0.05)	11.1228	15.0863		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs N Control	100	>100		1	0.04372	0.04406	0.01867	0.00684	0.05249	5, 18

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL(Exp)	Skew
IC05	84.097			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			

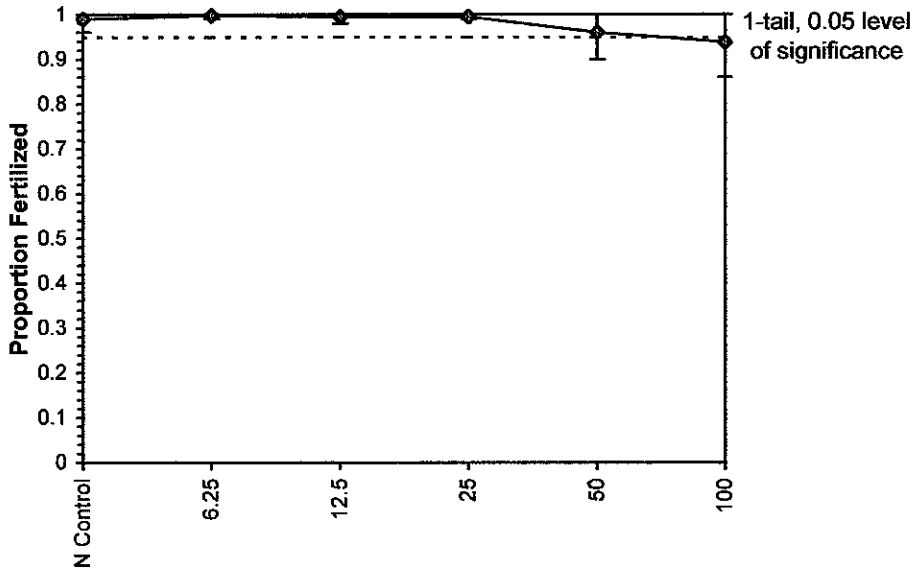


Reviewed by: EW

Sperm Cell Fertilization Test-Proportion Fertilized

Start Date:	6/1/2006	Test ID:	VCF0506373	Sample ID:	CA000000
End Date:	6/1/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	5/31/2006	Protocol:	EPA/600/R	Test Species:	SP-Strongylocentrotus purpuratus
Comments:	ME-CC				

Dose-Response Plot



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date:	6/1/2006	Test ID:	VCF0506373	Sample ID:	CA000000
End Date:	6/1/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	5/31/2006	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	13.80	13.80	13.80	0.00	0.00	2
6.5		13.80	13.80	13.80	0.00	0.00	1
6.25		13.80	13.80	13.80	0.00	0.00	1
12.5		13.80	13.80	13.80	0.00	0.00	2
25		13.80	13.80	13.80	0.00	0.00	2
50		14.20	14.20	14.20	0.00	0.00	2
100		14.20	14.20	14.20	0.00	0.00	2
N Control	pH	8.10	8.10	8.10	0.00	0.00	2
6.5		8.10	8.10	8.10	0.00	0.00	1
6.25		8.10	8.10	8.10	0.00	0.00	1
12.5		8.10	8.10	8.10	0.00	0.00	2
25		8.10	8.10	8.10	0.00	0.00	2
50		8.10	8.10	8.10	0.00	0.00	2
100		8.00	8.00	8.00	0.00	0.00	2
N Control	DO mg/L	9.50	9.50	9.50	0.00	0.00	2
6.5		9.00	9.00	9.00	0.00	0.00	1
6.25		9.00	9.00	9.00	0.00	0.00	1
12.5		9.00	9.00	9.00	0.00	0.00	2
25		9.20	9.20	9.20	0.00	0.00	2
50		9.40	9.40	9.40	0.00	0.00	2
100		8.60	8.60	8.60	0.00	0.00	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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CLIENT:	County of Ventura
SAMPLE I.D.:	ME-SCR
DATE RECEIVED:	31 May - 06
ABC LAB. NO.:	VCF0506.374

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:	6/1/2006	Test ID:	VCF0506374	Sample ID:	CA000000
End Date:	6/1/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	5/31/2006	Protocol:	EPA/600/R	Test Species:	SP-Strongylocentrotus purpuratus
Comments:	ME-SCR				

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

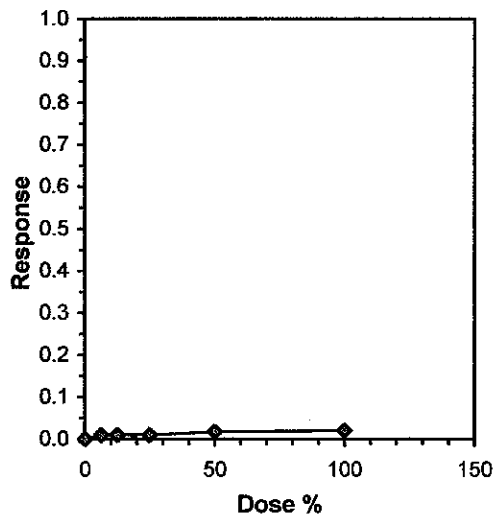
			Transform: Arcsin Square Root						1-Tailed		Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
N Control	0.9950	1.0000	1.4957	1.4706	1.5208	1.936	4				0.9950	1.0000
6.25	0.9750	0.9799	1.4279	1.3233	1.5208	6.046	4	1.618	2.410	0.1011	0.9850	0.9899
12.5	0.9950	1.0000	1.4978	1.4289	1.5208	3.067	4	-0.050	2.410	0.1011	0.9850	0.9899
25	0.9850	0.9899	1.4579	1.3694	1.5208	4.357	4	0.902	2.410	0.1011	0.9850	0.9899
50	0.9775	0.9824	1.4232	1.3967	1.4706	2.463	4	1.728	2.410	0.1011	0.9775	0.9824
100	0.9750	0.9799	1.4229	1.3453	1.5208	5.184	4	1.735	2.410	0.1011	0.9750	0.9799

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.96352	0.884	-0.1644	-0.1973
Bartlett's Test indicates equal variances (p = 0.49)	4.4436	15.0863		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs N Control	100	>100		1	0.02509	0.02523	0.00501	0.00352	0.26259	5, 18

Linear Interpolation (200 Resamples)

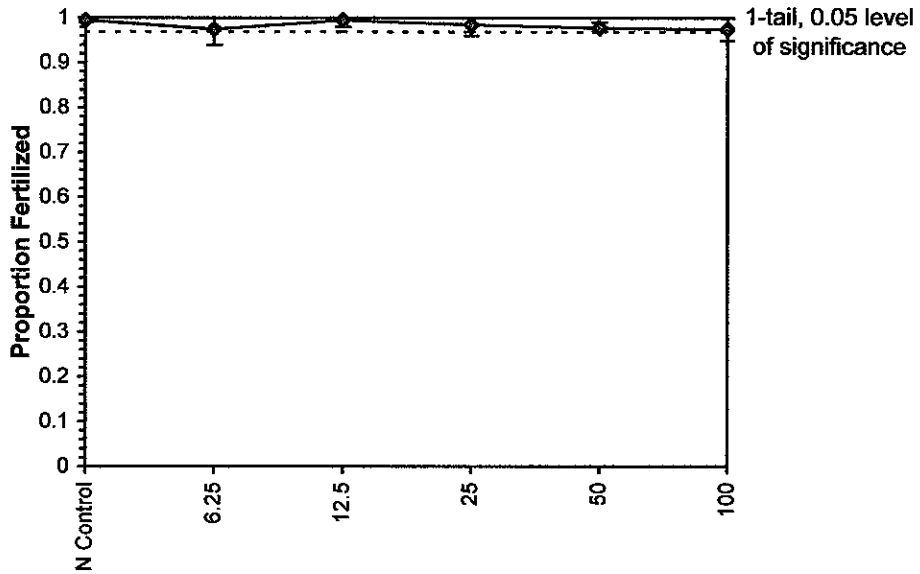
Point	%	SD	95% CL(Exp)	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date:	6/1/2006	Test ID:	VCF0506374	Sample ID:	CA000000
End Date:	6/1/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	5/31/2006	Protocol:	EPA/600/R	Test Species:	SP-Strongylocentrotus purpuratus
Comments:	ME-SCR				

Dose-Response Plot



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Start Date:	6/1/2006	Test ID:	VCF0506374	Sample ID:	CA000000
End Date:	6/1/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	5/31/2006	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	13.80	13.80	13.80	0.00	0.00	2
6.5		14.00	14.00	14.00	0.00	0.00	1
6.25		14.00	14.00	14.00	0.00	0.00	1
12.5		14.00	14.00	14.00	0.00	0.00	2
25		14.00	14.00	14.00	0.00	0.00	2
50		14.30	14.30	14.30	0.00	0.00	2
100		14.20	14.20	14.20	0.00	0.00	2
N Control	pH	8.10	8.10	8.10	0.00	0.00	2
6.5		8.10	8.10	8.10	0.00	0.00	1
6.25		8.10	8.10	8.10	0.00	0.00	1
12.5		8.10	8.10	8.10	0.00	0.00	2
25		8.10	8.10	8.10	0.00	0.00	2
50		8.15	8.10	8.20	0.07	3.26	2
100		8.15	8.10	8.20	0.07	3.26	2
N Control	DO mg/L	9.50	9.50	9.50	0.00	0.00	2
6.5		9.10	9.10	9.10	0.00	0.00	1
6.25		9.10	9.10	9.10	0.00	0.00	1
12.5		9.10	9.10	9.10	0.00	0.00	2
25		9.10	9.10	9.10	0.00	0.00	2
50		8.50	8.50	8.50	0.00	0.00	2
100		8.50	8.50	8.50	0.00	0.00	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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CLIENT:	County of Ventura
SAMPLE I.D.:	ME-VR2
DATE RECEIVED:	31 May - 06
ABC LAB. NO.:	VCF0506.375

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:	6/1/2006	Test ID:	VCF0506375	Sample ID:	CA000000
End Date:	6/1/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	5/31/2006	Protocol:	EPA/600/R	Test Species:	SP-Strongylocentrotus purpuratus
Comments:	ME-VR2				

Conc-%	1	2	3	4
N Control	1.0000	1.0000	0.9800	0.9700
6.25	0.9900	0.9900	1.0000	0.9700
12.5	1.0000	1.0000	0.9900	0.9900
25	1.0000	1.0000	0.9900	1.0000
50	0.9800	0.9800	0.9800	1.0000
100	0.9800	0.9900	0.9700	0.9400

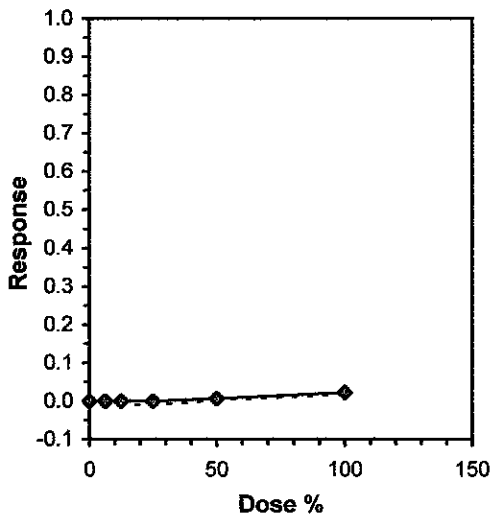
			Transform: Arcsin Square Root					1-Tailed			Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
N Control	0.9875	1.0000	1.4668	1.3967	1.5208	4.343	4				0.9919	1.0000
6.25	0.9875	1.0000	1.4647	1.3967	1.5208	3.490	4	0.061	2.410	0.0827	0.9919	1.0000
12.5	0.9950	1.0076	1.4957	1.4706	1.5208	1.936	4	-0.843	2.410	0.0827	0.9919	1.0000
25	0.9975	1.0101	1.5082	1.4706	1.5208	1.662	4	-1.208	2.410	0.0827	0.9919	1.0000
50	0.9850	0.9975	1.4519	1.4289	1.5208	3.164	4	0.435	2.410	0.0827	0.9850	0.9931
100	0.9700	0.9823	1.4049	1.3233	1.4706	4.429	4	1.804	2.410	0.0827	0.9700	0.9779

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.95778	0.884	-0.1337	-0.6932
Bartlett's Test indicates equal variances (p = 0.62)	3.48968	15.0863		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs N Control	100	>100		1	0.02367	0.02392	0.00528	0.00235	0.09431	5, 18

Linear Interpolation (200 Resamples)

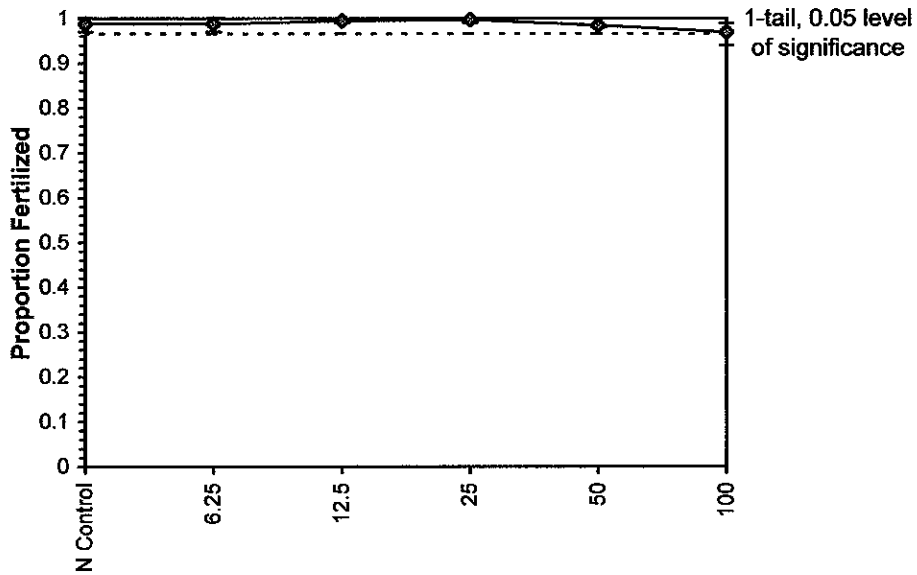
Point	%	SD	95% CL(Exp)	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Sperm Cell Fertilization Test-Proportion Fertilized

Start Date:	6/1/2006	Test ID:	VCF0506375	Sample ID:	CA000000
End Date:	6/1/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	5/31/2006	Protocol:	EPA/600/R	Test Species:	SP-Strongylocentrotus purpuratus
Comments:	ME-VR2				

Dose-Response Plot



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End Date:	6/1/2006	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	5/31/2006	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	13.80	13.80	13.80	0.00	0.00	2
6.5		14.10	14.10	14.10	0.00	0.00	1
6.25		14.10	14.10	14.10	0.00	0.00	1
12.5		14.10	14.10	14.10	0.00	0.00	2
25		14.10	14.10	14.10	0.00	0.00	2
50		14.30	14.30	14.30	0.00	0.00	2
100		14.40	14.40	14.40	0.00	0.00	2
N Control	pH	8.10	8.10	8.10	0.00	0.00	2
6.5		8.10	8.10	8.10	0.00	0.00	1
6.25		8.10	8.10	8.10	0.00	0.00	1
12.5		8.10	8.10	8.10	0.00	0.00	2
25		8.10	8.10	8.10	0.00	0.00	2
50		8.10	8.10	8.10	0.00	0.00	2
100		8.10	8.10	8.10	0.00	0.00	2
N Control	DO mg/L	9.50	9.50	9.50	0.00	0.00	2
6.5		9.20	9.20	9.20	0.00	0.00	1
6.25		9.20	9.20	9.20	0.00	0.00	1
12.5		9.40	9.40	9.40	0.00	0.00	2
25		9.40	9.40	9.40	0.00	0.00	2
50		9.30	9.30	9.30	0.00	0.00	2
100		8.70	8.70	8.70	0.00	0.00	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

Ventura CountyWatershed Protection District
NPDES Stormwater Monitoing Program

Grab Toxicity Samples - ABC

CHAIN-OF-CUSTODY RECORD 1 OF 1

CLIENT: Ventura County Watershed Protection District - Project Manager: David F. Thomas 650-4086

SAMPLING DATE: 31-May-06 **EVENT #5 (Dry)**

SAMPLERS: David F. Thomas, Tommy Liddell, Debi McAlpine

SAMPLE INFORMATION FOR GRAB SAMPLES

SAMPLE ID	DATE/TIME COLLECTED	Chronic Echinoderm Fertilization - 6.25, 12.5, 25, 50							No. of 5 gal Buckets	NOTES	Field H_2O Temp
ME-CC	5/31/06 1050	X							1	See Note 1	25.2 °C
ME-SCR	5/31/06 1215	X							1	See Note 1	24.0 °C
ME-VR 2	5/31/06 0910	X							1	See Note 1	17.4 °C

	Relinquished By	Date/Time
Signature	Tommy Liddell	5/31/06 1331
Printed Name	Tommy LIDDELL	
Affiliation	VCWPD	

	Received By	Date/Time
Signature	Karin J. Wisenbaker	5/31/06 1331
Printed Name	Karin J. Wisenbaker	
Affiliation		

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

1. Mass Emission : Run TIE if Tuc (Chronic) is > 1 for any 2 consecutive wet weather events or 1 dry weather event.