

## Report of Analysis: Elutriate Test

Submitted To:	Prepared By:
Ms. Jane Warren Warren Environmental, Inc. A & W Maintenance Inc. P.O. Box 1206 Carver, MA 02330	Coastal Bioanalysts, Inc. 6400 Enterprise Court Gloucester, VA 23061 (804) 694-8285 <a href="http://www.coastalbio.com">www.coastalbio.com</a> Contact: Peter F. De Lisle, Technical Director

Acute Test Results*				
Species-Test Method	48-h LC50	95% C.L.	T.U. <sub>Ac</sub>	NOAEC
<i>M. bahia</i> EPA 2007.0	>100	N/A	<1.00	100

\*Note: Although the name of *Mysidopsis bahia* has officially been changed to *Americamysis bahia*, the former name is referenced because of its use in the EPA method manuals. Details regarding test conduct and data analysis provided in attached bench sheets and printouts as applicable.

Acute Test QA/QC	Reference Toxicant: KCl	Units: mg/l	Test Organism Source: CBI Stock Cultures	
Species-Method (Ref. Test Date)	Data Source	% Control Survival	48-h LC50	95% C.L./A.L. for LC50
<i>M. bahia</i> 2007.0 (4/5/16-4/7/16)	RTT	100	410	360-467
	CC	100	485	397-573

Note: RTT = Reference Toxicant Test, CC = Control Chart.

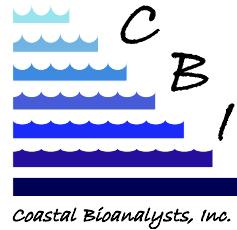
The results of analysis contained within this report relate only to the sample as received in the laboratory. This report shall not be reproduced except in full without written approval from the laboratory. Unless noted below, these test results meet all requirements of NELAP.

APPROVED:

Peter F. De Lisle, Ph.D.  
Technical Director

Date

Deviations from, additions to, or exclusions from the test method, non-standard conditions or data qualifiers and, as appropriate, a statement of compliance/non-compliance: **NONE**



## GLOSSARY OF TERMS AND ABBREVIATIONS

**A.L. (Acceptance Limits):** The results of a given reference toxicant test are compared to the control chart mean value  $\pm$  2 standard deviations. These limits approximate the 95% probability limits for the "true" reference toxicant value.

**Chronic Value (ChrV):** The geometric mean of the NOEC and LOEC. Units are same as test concentration units.

**C.L. (Confidence Limits):** These are the probability limits, based on the data set and statistical model employed, that the "true value" lies within the limits specified. Typically limits are based on 95% or 99% probabilities.

**Control chart:** A cumulative summary chart of results from QC tests with reference toxicants. The results of a given reference toxicant test are compared to the control chart mean value and 95% Acceptance Limits (A.L.) (mean  $\pm$  2 standard deviations).

**IC25:** The concentration of sample or chemical, calculated from the data set using statistical models, causing a 25% reduction in test organism growth, reproduction, etc. The lower the IC25, the more toxic the chemical or sample. Units are same as test concentration units.

**LC50:** The concentration of sample or chemical, calculated from the data set using statistical models, causing a 50% reduction in test organism survival. The lower the LC50, the more toxic the chemical or sample. Units are same as test concentration units. Note: The LC50 value must always be associated with the duration of exposure. Thus 48-h LC50, 96-h LC50, etc. are calculated.

**LOEC:** Lowest-observable-effect-concentration. The lowest concentration of sample or chemical in a chronic test dilution series in which the test organisms exhibit a statistically significant reduction in any of the test end points (e.g. growth, survival, reproduction) compared to control organisms. Units are same as test concentration units.

**PMSD:** Percent Minimum Significant Difference: The minimum difference which can exist between a test treatment and the controls in a particular test and be statistically significant; a measure of test sensitivity. The lower the PMSD the more sensitive the test.

**N/A:** Not applicable.

**N/D:** Not determined or measured.

**NOAEC:** No-observable-acute-effect-concentration. The highest concentration of sample or chemical in an acute test dilution series in which the test organisms exhibit no statistically significant reduction in the test end point (e.g. survival) compared to control organisms. Units are same as test concentration units.

**NOEC:** No-observable-effect-concentration. The highest concentration of sample or chemical in a chronic test dilution series in which the test organisms exhibit no statistically significant reduction in any of the test end points (e.g. growth, survival, reproduction) compared to control organisms. Some regulatory definitions also require that the NOEC be less than the LOEC. Units are same as test concentration units.

**Q.L.:** Quantitation Limit. Level, concentration, or quantity of a target variable (analyte) that can be reported at a specified degree of confidence.

**T.U.:** Toxic units. Expresses the relative toxicity of an effluent in such a manner that the larger the toxic unit value the more toxic the effluent.  $T.U._{Ac} = 100/LC50$ .  $T.U._{Chr} = 100/NOEC$ . A dimensionless unit.

M. bahia daily biological measurements (EPA 2007.0) Template version AMB-STAT-48h-NOAEC5-061313

TRTMNT. (% Elutriate)	Rep	#Live Day 0	#Live Day 1	#Live Day 2	Final Mean % Live						
	A	10	10	10	100.0						
C	B	10	10	10							
Lab Control	C	10	10	10							
	D	10	10	10							
	A	10	10	10	100.0						
#1	B	10	10	10							
6.25	C	10	10	10							
	D	10	10	10							
	A	10	10	10	100.0						
# 2	B	10	10	10							
12.5	C	10	10	10							
	D	10	10	10							
	A	10	10	10	100.0						
# 3	B	10	10	10							
25.0	C	10	10	10							
	D	10	10	10							
	A	10	10	10	100.0						
# 4	B	10	10	10							
50.0	C	10	10	10							
	D	10	10	10							
	A	10	10	10	100.0						
# 5	B	10	10	10							
100	C	10	10	10		Test Duration:	48h 15m				
	D	10	10	10			TAC 48+-0.5h				
INITIALS:	GB	RCD	PB	% CONTROL SURVIVAL:			100.0				
DATE & TIME:	4/19/16 14:20	4/20/16 9:01	4/21/16 14:36				TAC = 90%				
CHANGES & NOTES (INITIALS, DATE, SPECIFIC CHANGE MADE)											
	SPECIES:	Mysidopsis (Americamysis) Bahia									
	ACCLIMATION WATER:	ASW									
	FEEDING PRIOR TO TEST:	Artemia nauplii ad libitum									
	FEEDING DURING TEST:	Artemia nauplii (ca. 100/mysid/day)									
	SOURCE:	CBI Stock cultures									
	ACCLIMATION TEMP (o C ):	25									
	HARVEST START DATE & TIME:	4/13/16 11:45									
	HARVEST END DATE & TIME:	4/14/16 11:30									
	DATE/TIME WATER ADDED:	4/19/16 14:13									
	DATE/TIME ANIMALS ADDED:	4/19/16 14:20									
	ANIMAL AGE WINDOW:	23h 45m									
	MAX AGE AT TEST START:	5d									
	TEST SET UP BY:	GB									
WARR1601AMB	PEER REVIEW BY (INITIALS/DATE):	PB GB									
		4/21/16 14:56									

M. bahia daily water quality bench sheet (EPA METHOD 2007.0) Template version AMB-STAT-NOAEC5-061313

	TRTMNT	Day 0 Initial	Day 1	Day 2 Final	SUMMARY WATER QUALITY DATA							
					MEAN	S.D.	MIN.	MAX.				
pH (S.U.)	C	8.02	7.66	7.87	7.85	0.18	7.66	8.02				
	1	8.02	7.77	7.83	7.87	0.13	7.77	8.02				
	2	8.02	7.80	7.77	7.86	0.14	7.77	8.02				
	3	8.04	7.73	7.70	7.82	0.19	7.70	8.04				
	4	8.06	7.81	7.71	7.86	0.18	7.71	8.06				
	5	8.09	7.75	7.64	7.83	0.23	7.64	8.09				
Temp. (o C)	C	25	25	25	25	0.0	25	25				
	1	25	25	25	25	0.0	25	25				
	2	25	25	25	25	0.0	25	25				
	3	25	25	25	25	0.0	25	25				
	4	25	25	25	25	0.0	25	25				
	5	25	25	25	25	0.0	25	25				
Diss. Oxygen (mg/l)	C	7.3	5.6	6.6	6.5	0.9	5.6	7.3				
	1	7.3	5.6	6.3	6.4	0.9	5.6	7.3				
	2	7.3	5.9	5.8	6.3	0.8	5.8	7.3				
	3	7.3	5.2	5.9	6.1	1.1	5.2	7.3				
	4	7.3	5.4	5.4	6.0	1.1	5.4	7.3				
	5	7.2	5.1	4.8	5.7	1.3	4.8	7.2				
Salinity (g/kg)	C	20		20	20	0.0	20	20				
	1											
	2											
	3											
	4											
	5	20	20	20	20	0.0	20	20				
Replicate measured		B	D	A								
Initials		Gb	RCD	RCD								
		TRC (mg/l) in highest conc. at end of test:										
Changes & Notes (Initials, date, specific change or notes)		Added 200g material to 2L ASW and shook at 100 rpm on orbital shaker table for 1 hr. Allowed to settle and decanted off water for testing.										
TEST ID		Test chamber:	400 ml Tri-pour bkr:	<input checked="" type="checkbox"/>								
					Other:							
		Test solution vol. (200 ml min):	200 ml:	<input checked="" type="checkbox"/>								
				Other (ml):								
		Illumination & photoperiod:	50-100 ft-c 16L:8D									
			Number of replicates/treatment:	4								
			Initial number animals/replicate:	5								
			Test Aerated?	No	Date & Time Air Start:							
		TRT ID:	1	2	3	4	5	D.O. Highest conc. @ aeration:				
WARR1601AMB		CONC (%):	6.25	12.5	25.0	50.0	100	Total live highest conc. @ aeration				

# NSF International

789 N. Dixboro Road, Ann Arbor, MI 48105 USA

RECOGNIZES

## Warren Environmental and Coatings, LLC Facility: Middleborough, MA

AS COMPLYING WITH NSF/ANSI/CAN 61 AND ALL APPLICABLE REQUIREMENTS.  
PRODUCTS APPEARING IN THE NSF OFFICIAL LISTING ARE  
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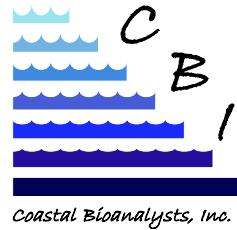
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A handwritten signature in black ink that reads "Theresa Bellish".

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August 9, 2021  
Certificate# 0C272 - 02

Theresa Bellish  
Senior Director Water Commercial



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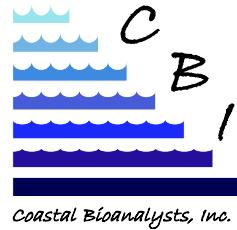
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Lab Control	C	10	10	10							
	D	10	10	10							
	A	10	10	10	100.0						
#1	B	10	10	10							
6.25	C	10	10	10							
	D	10	10	10							
	A	10	10	10	100.0						
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12.5	C	10	10	10							
	D	10	10	10							
	A	10	10	10	100.0						
# 3	B	10	10	10							
25.0	C	10	10	10							
	D	10	10	10							
	A	10	10	10	100.0						
# 4	B	10	10	10							
50.0	C	10	10	10							
	D	10	10	10							
	A	10	10	10	100.0						
# 5	B	10	10	10							
100	C	10	10	10		Test Duration:	48h 15m				
	D	10	10	10			TAC 48+-0.5h				
INITIALS:	GB	RCD	PB	% CONTROL SURVIVAL:			100.0				
DATE & TIME:	4/19/16 14:20	4/20/16 9:01	4/21/16 14:36				TAC = 90%				
CHANGES & NOTES (INITIALS, DATE, SPECIFIC CHANGE MADE)											
	SPECIES:	Mysidopsis (Americamysis) Bahia									
	ACCLIMATION WATER:	ASW									
	FEEDING PRIOR TO TEST:	Artemia nauplii ad libitum									
	FEEDING DURING TEST:	Artemia nauplii (ca. 100/mysid/day)									
	SOURCE:	CBI Stock cultures									
	ACCLIMATION TEMP (o C ):	25									
	HARVEST START DATE & TIME:	4/13/16 11:45									
	HARVEST END DATE & TIME:	4/14/16 11:30									
	DATE/TIME WATER ADDED:	4/19/16 14:13									
	DATE/TIME ANIMALS ADDED:	4/19/16 14:20									
	ANIMAL AGE WINDOW:	23h 45m									
	MAX AGE AT TEST START:	5d									
	TEST SET UP BY:	GB									
WARR1601AMB	PEER REVIEW BY (INITIALS/DATE):	PB GB									
		4/21/16 14:56									

M. bahia daily water quality bench sheet (EPA METHOD 2007.0) Template version AMB-STAT-NOAEC5-061313

	TRTMNT	Day 0 Initial	Day 1	Day 2 Final	SUMMARY WATER QUALITY DATA							
					MEAN	S.D.	MIN.	MAX.				
pH (S.U.)	C	8.02	7.66	7.87	7.85	0.18	7.66	8.02				
	1	8.02	7.77	7.83	7.87	0.13	7.77	8.02				
	2	8.02	7.80	7.77	7.86	0.14	7.77	8.02				
	3	8.04	7.73	7.70	7.82	0.19	7.70	8.04				
	4	8.06	7.81	7.71	7.86	0.18	7.71	8.06				
	5	8.09	7.75	7.64	7.83	0.23	7.64	8.09				
Temp. (o C)	C	25	25	25	25	0.0	25	25				
	1	25	25	25	25	0.0	25	25				
	2	25	25	25	25	0.0	25	25				
	3	25	25	25	25	0.0	25	25				
	4	25	25	25	25	0.0	25	25				
	5	25	25	25	25	0.0	25	25				
Diss. Oxygen (mg/l)	C	7.3	5.6	6.6	6.5	0.9	5.6	7.3				
	1	7.3	5.6	6.3	6.4	0.9	5.6	7.3				
	2	7.3	5.9	5.8	6.3	0.8	5.8	7.3				
	3	7.3	5.2	5.9	6.1	1.1	5.2	7.3				
	4	7.3	5.4	5.4	6.0	1.1	5.4	7.3				
	5	7.2	5.1	4.8	5.7	1.3	4.8	7.2				
Salinity (g/kg)	C	20		20	20	0.0	20	20				
	1											
	2											
	3											
	4											
	5	20	20	20	20	0.0	20	20				
Replicate measured		B	D	A								
Initials		Gb	RCD	RCD								
		TRC (mg/l) in highest conc. at end of test:										
Changes & Notes (Initials, date, specific change or notes)		Added 200g material to 2L ASW and shook at 100 rpm on orbital shaker table for 1 hr. Allowed to settle and decanted off water for testing.										
TEST ID		Test chamber:	400 ml Tri-pour bkr:	<input checked="" type="checkbox"/>								
					Other:							
		Test solution vol. (200 ml min):	200 ml:	<input checked="" type="checkbox"/>								
				Other (ml):								
		Illumination & photoperiod:	50-100 ft-c 16L:8D									
			Number of replicates/treatment:	4								
			Initial number animals/replicate:	5								
			Test Aerated?	No	Date & Time Air Start:							
		TRT ID:	1	2	3	4	5	D.O. Highest conc. @ aeration:				
WARR1601AMB		CONC (%):	6.25	12.5	25.0	50.0	100	Total live highest conc. @ aeration				