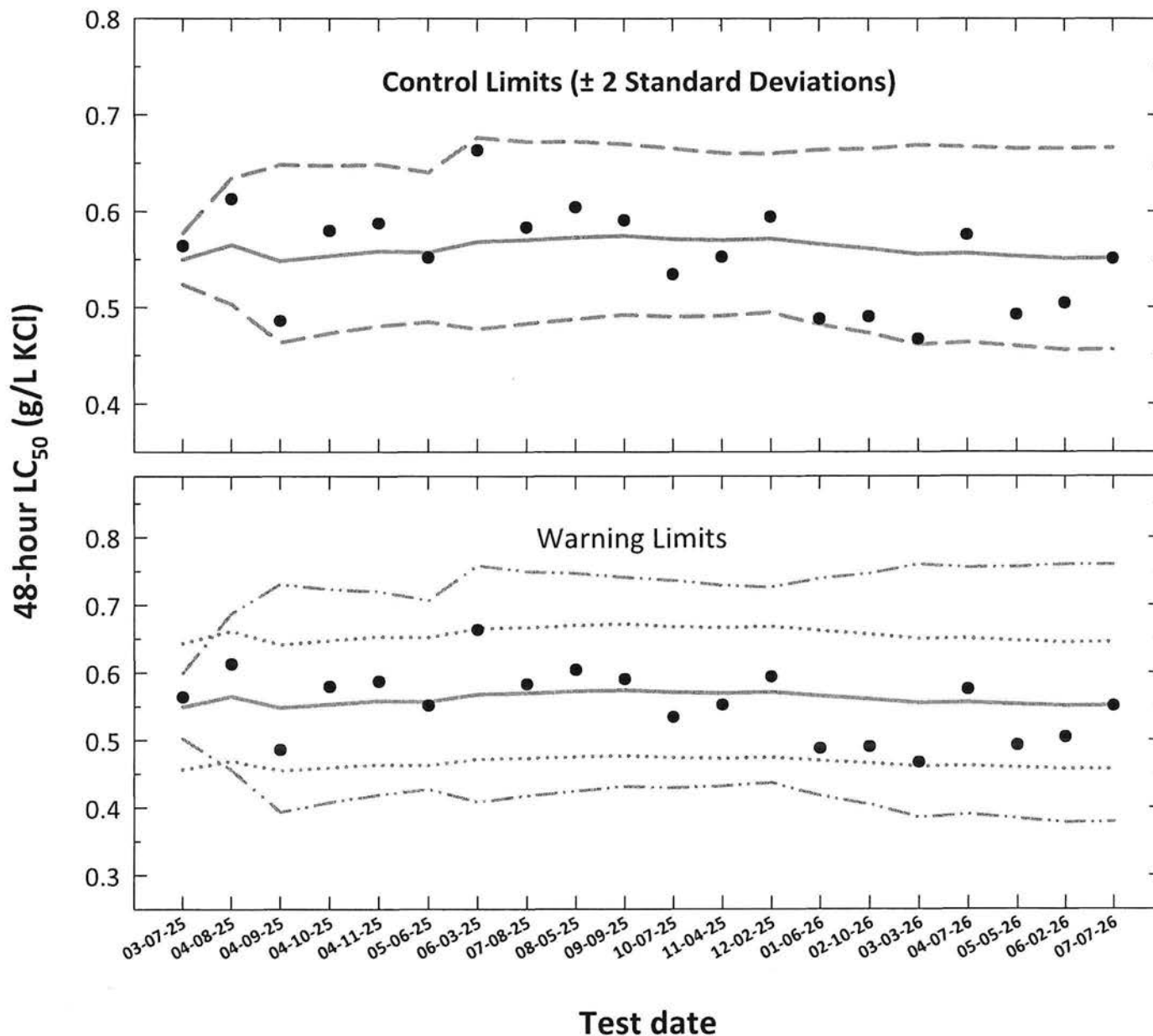


Americamysis (Mysidopsis) bahia

Acute Reference Toxicant Control Chart

Source: Aquatic Indicators, Inc.



- **48-hour LC₅₀** = median lethal concentration. An estimation of the potassium chloride concentration which is lethal to 50% of the test organisms in 48-hours (calculated using ToxCalc).
- **Central Tendency** (mean logarithmic LC₅₀ converted to anti-logarithmic values)
- - - **Control Limits** (mean logarithmic LC₅₀ ± 2 standard deviations converted to anti-logarithmic values)
- . - . - **Laboratory Warning Limits** (mean logarithmic LC₅₀ ± 2 coefficient of variations converted to anti-logarithmic values)
- **USEPA Warning Limits** (mean logarithmic LC₅₀ $\pm S_{A,10}$ converted to anti-logarithmic values, $S_{A,10}$ = 10th percentile of CVs reported nationally by USEPA)

Americamysis (Mysidopsis) bahia
Acute Reference Toxicant Control Chart
Source: Aquatic Indicators, Inc.

Test number	Test date	48-hour LC ₅₀ ToxCal Determination (g/L KCl)	Log ₁₀ Conversion			Anti-logarithmic Values (g/L KCl)					
			48-hour LC ₅₀	CT	S	CT	Control Limits		Laboratory Calculated CV		10th Percentile CV
							CT - 2S	CT + 2S	CT - 2CV	CT + 2CV	CT - S _{A,10} CT + S _{A,10}
1	03-07-25	0.5640	-0.2487	-0.2597	0.0105	0.5499	0.5239	0.5772	0.5026	0.5995	0.4564
2	04-08-25	0.6129	-0.2126	-0.2480	0.0251	0.5650	0.5034	0.6342	0.4559	0.6874	0.4689
3	04-09-25	0.4860	-0.3134	-0.2610	0.0364	0.5482	0.4635	0.6484	0.3937	0.7310	0.4550
4	04-10-25	0.5796	-0.2369	-0.2570	0.0341	0.5533	0.4730	0.6473	0.4082	0.7231	0.4593
5	04-11-25	0.5872	-0.2312	-0.2533	0.0326	0.5581	0.4803	0.6484	0.4187	0.7200	0.4632
6	05-06-25	0.5517	-0.2583	-0.2539	0.0302	0.5573	0.4849	0.6405	0.4273	0.7066	0.4625
7	06-03-25	0.6631	-0.1784	-0.2455	0.0379	0.5681	0.4772	0.6763	0.4082	0.7586	0.4716
8	07-08-25	0.5828	-0.2345	-0.2444	0.0359	0.5696	0.4829	0.6719	0.4174	0.7492	0.4728
9	08-05-25	0.6040	-0.2189	-0.2421	0.0349	0.5726	0.4877	0.6724	0.4242	0.7469	0.4753
10	09-09-25	0.5904	-0.2289	-0.2410	0.0335	0.5741	0.4921	0.6698	0.4312	0.7408	0.4765
11	10-07-25	0.5341	-0.2724	-0.2434	0.0332	0.5709	0.4899	0.6653	0.4291	0.7362	0.4739
12	11-04-25	0.5523	-0.2578	-0.2445	0.0321	0.5696	0.4912	0.6604	0.4320	0.7291	0.4727
13	12-02-25	0.5941	-0.2261	-0.2432	0.0313	0.5712	0.4944	0.6598	0.4368	0.7264	0.4741
14	01-06-26	0.4877	-0.3118	-0.2475	0.0348	0.5656	0.4818	0.6638	0.4175	0.7393	0.4694
15	02-10-26	0.4901	-0.3098	-0.2512	0.0369	0.5608	0.4732	0.6647	0.4045	0.7461	0.4655
16	03-03-26	0.4667	-0.3310	-0.2556	0.0404	0.5551	0.4608	0.6688	0.3852	0.7599	0.4607
17	04-07-26	0.5755	-0.2399	-0.2548	0.0395	0.5562	0.4637	0.6670	0.3900	0.7555	0.4616
18	05-05-26	0.4922	-0.3078	-0.2574	0.0402	0.5528	0.4593	0.6652	0.3837	0.7562	0.4588
19	06-02-26	0.5040	-0.2976	-0.2593	0.0412	0.5505	0.4553	0.6654	0.3776	0.7594	0.4569
20	07-07-26	0.5506	-0.2591	-0.2588	0.0411	0.5511	0.4560	0.6660	0.3786	0.7596	0.4574

Note: 48-hour LC₅₀ = 48-hour median lethal concentration. An estimate of the potassium chloride concentration which is lethal to 50% of the test organisms in 48-hours (calculated using ToxCalc).
CT = Central tendency of the LC₅₀ values.

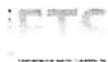
S = Standard deviation of the LC₅₀ values.

Control Limits = Mean logarithmic LC₅₀ ± 2 standard deviations converted to anti-logarithmic values.

Warning Limits = Mean logarithmic LC₅₀ ± 2CV or S_{A,10} converted to anti-logarithmic values.

S_{A,10} = Standard deviation corresponding to the 10th percentile of CVs reported nationally by USEPA. (S_{A,10} = 0.17).

CV = Coefficient of variation.



Acute LC₅₀ Whole Effluent Toxicity Test, Species: *Americamysis bahia*
EPA-821-R-02-012, Method 2007.0

Americamysis bahia Potassium Chloride Acute Reference Toxicant Test

AbKCIAC # 23

Dilution Preparation:

Test concentrations (mg/L KCl)	150	300	450	600	750
mL Stock solution	3.0	6.0	9.0	12	15
mL Dilution water	997	994	991	988	985
Total volume (mL)	1000	1000	1000	1000	1000

A stock solution was prepared by diluting 100 g KCl into 2000 mL deionized water. This 50,000 mg/L KCl stock solution was used to prepare the concentrations evaluated for toxicity.

Stock solution INSS #: 2486

Chemical Analyses:

		Hours		
		0	24	48
Concentration	Analyst	XL	XL	XL
Control, SaltSW	pH (S.U.)	8.07	8.03	7.93
	Dissolved oxygen (mg/L)	8.6	8.0	8.0
	*Salinity (ppt)	25.0	24.9	25.0
	*Alkalinity (mg/L CaCO ₃)	110		
	*Temperature (°C)	24.7	24.8	24.6
150 mg/L	pH (S.U.)	8.02	8.03	7.91
	Dissolved oxygen (mg/L)	8.6	8.0	8.0
	*Salinity (ppt)	25.2	25.1	25.6
	*Temperature (°C)	25.1	25.0	24.3
300 mg/L	pH (S.U.)	8.03	8.02	7.89
	Dissolved oxygen (mg/L)	8.6	8.0	7.9
	*Salinity (ppt)	25.3	25.2	25.4
	*Temperature (°C)	25.6	25.5	24.8
450 mg/L	pH (S.U.)	8.04	8.02	7.89
	Dissolved oxygen (mg/L)	8.6	8.0	7.9
	*Salinity (ppt)	25.5	25.4	25.2
	*Temperature (°C)	25.2	25.1	24.5
600 mg/L	pH (S.U.)	8.04	8.03	7.90
	Dissolved oxygen (mg/L)	8.6	8.0	8.0
	*Salinity (ppt)	25.4	25.4	25.4
	*Temperature (°C)	25.8	25.1	24.5
750 mg/L	pH (S.U.)	8.03	8.03	7.89
	Dissolved oxygen (mg/L)	8.6	7.8	8.0
	*Salinity (ppt)	25.5	25.6	25.3
	*Temperature (°C)	25.6	25.2	24.5

*Analyst identified for each day, performed pH and dissolved oxygen measurements only. Temperature and salinity performed at the time of test initiation or termination by the analyst performing the toxicity test. Alkalinity performed by the analyst identified on the test specific bench sheet and transcribed to this bench sheet.

Chemical analyses:

Parameter	Reporting limit	Method number	Meter	Serial number
pH	0.1 S.U.	SM 4500-H+ B-2021	Accumet AR20	93312452
Dissolved oxygen	1.0 mg/L	SM 4500-O H-2021	HACH HQ430d Flexi	SN250100050300
Salinity	1.0 ppt	SM 2520 B-2021	YSI PRO30	18D104324
Alkalinity	5.0 mg CaCO ₃ /L	SM 2320 B-2021	Accumet AR20	93312452
Temperature	0.1 °C	SM 2550B-2010	Digital Thermometer	130664705

Acute LC₅₀ Whole Effluent Toxicity Test, Species: Americamysis bahia

EPA-821-R-02-012, Method 2007.0

Americamysis bahia Potassium Chloride Acute Reference Toxicant TestAbKCIAC # 23

Hours	Date	Feeding		Test Initiation or Termination		Location Incubator/Shelf	Randomizing Template	SaltSW Batch
		Time	Analyst	Time	Analyst			
0 Initiation	01-08-26	* 1100	JP	1343	JP	1E	PINK	06-30-26A
24	01-08-26			1400	JP			
48 Termination	01-09-26			1754	JP			

*Test organisms were fed in holding 2 to 5 hours prior to test initiation. Test organisms were not fed during the test.

Test Organism Information:

Organism Source:	Aquatic Indicators, Inc.
Batch (AI Batch Ab):	01-06-26
Age (1 to 5 days old):	1-2 DAYS
Date organisms were born:	01-05-26 1200 TO 01-06-26 1130
Average transfer volume:	< 0.25 mL
Transfer bowl information:	pH (S.U.): 8.22
	Temperature (°C): 24.5°C

Survival Data (number of living organisms):

Hours	Control		150 mg/L		300 mg/L		450 mg/L		600 mg/L		750 mg/L	
	Replicate		Replicate		Replicate		Replicate		Replicate		Replicate	
	A	B	C	D	E	F	G	H	I	J	K	L
0 Initiation	10	10	10	10	10	10	10	10	10	10	10	10
24	10	10	10	10	10	10	10	9 ¹²	7 ³²	7 ³²	1 ⁹²	2 ⁸¹
48 Termination	10	10	10	10	10	10	10	9	4 ³²	1 ⁶²	0 ¹²	0 ²²
Mean Survival	100%		100%		100%		95%		25%		0%	

Comment codes: d = dead, u = unhealthy, s = stressed

Statistics:

Method	Probit
Lower 95% confidence limit (mg KCl/L)	513.5
Upper 95% confidence limit (mg KCl/L)	585.7
48-hour LC ₅₀ (mg KCl/L)	550.6

Comments:





Statistical Analyses

Acute Mysid Test-24 Hr Survival			
Start Date: 7/7/2026	Test ID: AbKCIAC	Sample ID: REF-Ref Toxicant	
End Date: 7/9/2026	Lab ID: ETS-Envir. Testing Sol.	Sample Type: DMR-Discharge Monitoring Report	
Sample Date:	Protocol: ACUTE-EPA-821-R-02-012	Test Species: AB-Americanysis bahia	

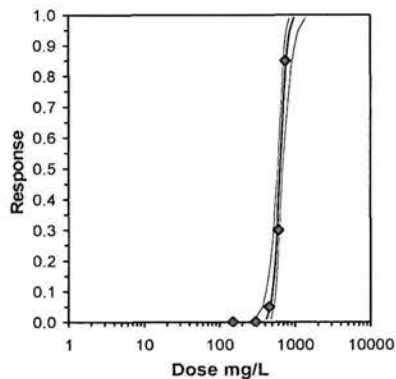
Comments:

Conc-mg/L	1	2
D-Control	1.0000	1.0000
150	1.0000	1.0000
300	1.0000	1.0000
450	1.0000	0.9000
600	0.7000	0.7000
750	0.1000	0.2000

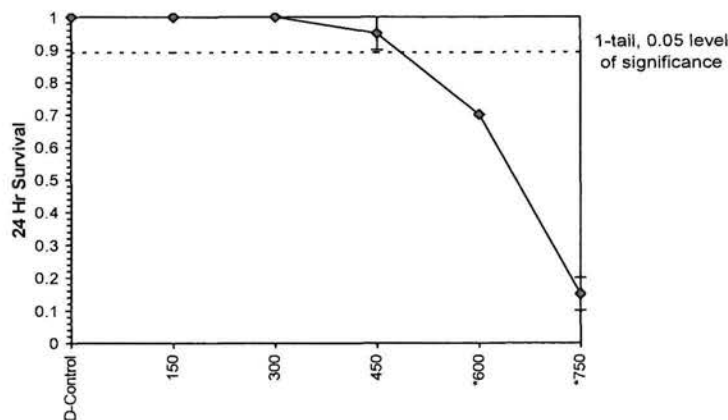
Transform: Arcsin Square Root								1-Tailed			Number	Total
Conc-mg/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Resp	Number
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2				0	20
150	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0.000	2.830	0.1765	0	20
300	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0.000	2.830	0.1765	0	20
450	0.9500	0.9500	1.3305	1.2490	1.4120	8.661	2	1.306	2.830	0.1765	1	20
*600	0.7000	0.7000	0.9912	0.9912	0.9912	0.000	2	6.747	2.830	0.1765	6	20
*750	0.1500	0.1500	0.3927	0.3218	0.4636	25.550	2	16.341	2.830	0.1765	17	20

Auxiliary Tests					Statistic	Critical	Skew	Kurt		
Normality of the data set cannot be confirmed										
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	450	600	519.615		0.08328	0.08542	0.33474	0.00389	1.7E-05	5, 6
Treatments vs D-Control										

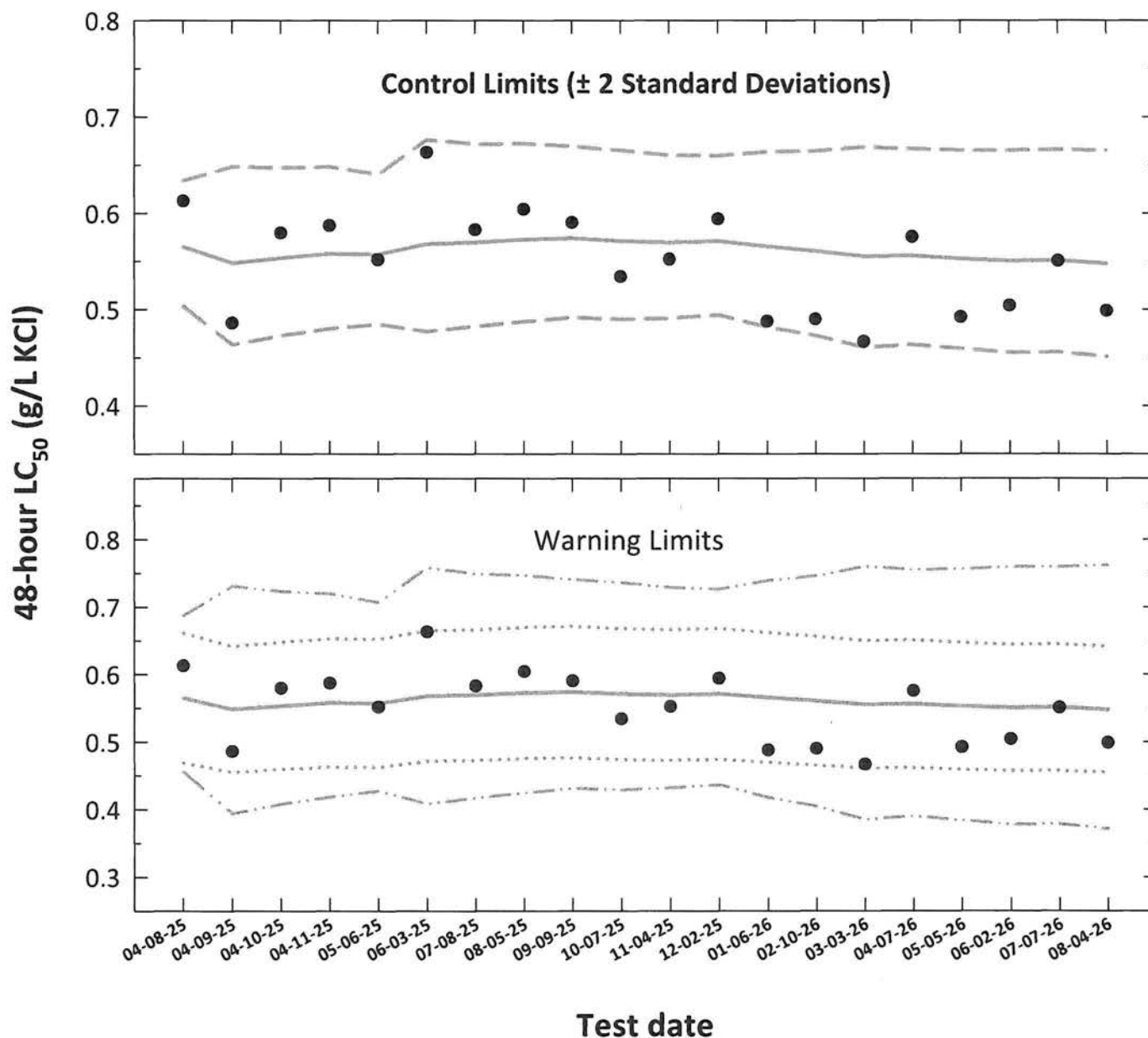
Maximum Likelihood-Probit										
Parameter	Value	SE	95% Fiducial Limits	Control	Chi-Sq	Critical	P-value	Mu	Sigma	Iter
Slope	12.5866	2.8133	7.07247 18.1006	0	0.93868	7.81472	0.81609	2.80431	0.07945	3
Intercept	-30.297	7.87877	-45.739 -14.854							
TSCR	Point	Probits	mg/L	95% Fiducial Limits						
EC01	2.674	416.369	297.177	479.034						
EC05	3.355	471.654	369.011	525.233						
EC10	3.718	504.066	413.336	552.748						
EC15	3.964	527.184	445.557	572.964						
EC20	4.158	546.311	472.315	590.347						
EC25	4.326	563.273	495.87	606.506						
EC40	4.747	608.385	555.567	655.059						
EC50	5.000	637.246	589.587	692.288						
EC60	5.253	667.475	620.926	737.247						
EC75	5.674	720.933	667.963	829.305						
EC80	5.842	743.316	685.601	871.485						
EC85	6.036	770.285	705.845	924.549						
EC90	6.282	805.612	731.171	997.287						
EC95	6.645	860.974	769.009	1117.76						
EC99	7.326	975.293	842.712	1388.7						



Dose-Response Plot



Americamysis (Mysidopsis) bahia Acute Reference Toxicant Control Chart Source: Aquatic Indicators, Inc.



- **48-hour LC₅₀** = median lethal concentration. An estimation of the potassium chloride concentration which is lethal to 50% of the test organisms in 48-hours (calculated using ToxCalc).
- **Central Tendency** (mean logarithmic LC₅₀ converted to anti-logarithmic values)
- **Control Limits** (mean logarithmic LC₅₀ ± 2 standard deviations converted to anti-logarithmic values)
- **Laboratory Warning Limits** (mean logarithmic LC₅₀ ± 2 coefficient of variations converted to anti-logarithmic values)
- **USEPA Warning Limits** (mean logarithmic LC₅₀ $\pm S_{A.10}$ converted to anti-logarithmic values, $S_{A.10}$ = 10th percentile of CVs reported nationally by USEPA)

Americamysis (*Mysidopsis*) bahia
Acute Reference Toxicant Control Chart
Source: Aquatic Indicators, Inc.

Test number	Test date	48-hour LC ₅₀ ToxCal Determination (g/L KCl)	Log ₁₀ Conversion			Anti-logarithmic Values (g/L KCl)						
			48-hour LC ₅₀	CT	S	CT	Control Limits		Laboratory Calculated CV Warning Limits		10th Percentile CV Warning Limits	
1	04-08-25	0.6129	-0.2126	-0.2480	0.0251	0.5650	0.5034	0.6342	0.4559	0.6874	0.4689	0.6610
2	04-09-25	0.4860	-0.3134	-0.2610	0.0364	0.5482	0.4635	0.6484	0.3937	0.7310	0.4550	0.6414
3	04-10-25	0.5796	-0.2369	-0.2570	0.0341	0.5533	0.4730	0.6473	0.4082	0.7231	0.4593	0.6474
4	04-11-25	0.5872	-0.2312	-0.2533	0.0326	0.5581	0.4803	0.6484	0.4187	0.7200	0.4632	0.6529
5	05-06-25	0.5517	-0.2583	-0.2539	0.0302	0.5573	0.4849	0.6405	0.4273	0.7066	0.4625	0.6520
6	06-03-25	0.6631	-0.1784	-0.2455	0.0379	0.5681	0.4772	0.6763	0.4082	0.7586	0.4716	0.6647
7	07-08-25	0.5828	-0.2345	-0.2444	0.0359	0.5696	0.4829	0.6719	0.4174	0.7492	0.4728	0.6664
8	08-05-25	0.6040	-0.2189	-0.2421	0.0349	0.5726	0.4877	0.6724	0.4242	0.7469	0.4753	0.6700
9	09-09-25	0.5904	-0.2289	-0.2410	0.0335	0.5741	0.4921	0.6698	0.4312	0.7408	0.4765	0.6717
10	10-07-25	0.5341	-0.2724	-0.2434	0.0332	0.5709	0.4899	0.6653	0.4291	0.7362	0.4739	0.6680
11	11-04-25	0.5523	-0.2578	-0.2445	0.0321	0.5696	0.4912	0.6604	0.4320	0.7291	0.4727	0.6664
12	12-02-25	0.5941	-0.2261	-0.2432	0.0313	0.5712	0.4944	0.6598	0.4368	0.7264	0.4741	0.6683
13	01-06-26	0.4877	-0.3118	-0.2475	0.0348	0.5656	0.4818	0.6638	0.4175	0.7393	0.4694	0.6617
14	02-10-26	0.4901	-0.3098	-0.2512	0.0369	0.5608	0.4732	0.6647	0.4045	0.7461	0.4655	0.6562
15	03-03-26	0.4667	-0.3310	-0.2556	0.0404	0.5551	0.4608	0.6688	0.3852	0.7599	0.4607	0.6495
16	04-07-26	0.5755	-0.2399	-0.2548	0.0395	0.5562	0.4637	0.6670	0.3900	0.7555	0.4616	0.6507
17	05-05-26	0.4922	-0.3078	-0.2574	0.0402	0.5528	0.4593	0.6652	0.3837	0.7562	0.4588	0.6468
18	06-02-26	0.5040	-0.2976	-0.2593	0.0412	0.5505	0.4553	0.6654	0.3776	0.7594	0.4569	0.6440
19	07-07-26	0.5506	-0.2591	-0.2588	0.0411	0.5511	0.4560	0.6660	0.3786	0.7596	0.4574	0.6448
20	08-04-26	0.4987	-0.3022	-0.2614	0.0422	0.5477	0.4511	0.6651	0.3713	0.7620	0.4546	0.6409

Note: 48-hour LC₅₀ = 48-hour median lethal concentration. An estimate of the potassium chloride concentration which is lethal to 50% of the test organisms in 48-hours (calculated using ToxCalc).

CT = Central tendency of the LC₅₀ values.

S = Standard deviation of the LC₅₀ values.

Control Limits = Mean logarithmic LC₅₀ ± 2 standard deviations converted to anti-logarithmic values.

Warning Limits = Mean logarithmic LC₅₀ ± 2CV or S_{A,10} converted to anti-logarithmic values.

S_{A,10} = Standard deviation corresponding to the 10th percentile of CVs reported nationally by USEPA. (S_{A,10} = 0.17).

CV = Coefficient of variation.



Acute LC₅₀ Whole Effluent Toxicity Test, Species: *Americamysis bahia*
EPA-821-R-02-012, Method 2007.0

Americamysis bahia Potassium Chloride Acute Reference Toxicant Test

AbKCIAC # 24

Dilution Preparation:

Test concentrations (mg/L KCl)	150	300	450	600	750
mL Stock solution	3.0	6.0	9.0	12	15
mL Dilution water	997	994	991	988	985
Total volume (mL)	1000	1000	1000	1000	1000

A stock solution was prepared by diluting 100 g KCl into 2000 mL deionized water. This 50,000 mg/L KCl stock solution was used to prepare the concentrations evaluated for toxicity.

Stock solution INSS #: 2426

Chemical Analyses:

		Hours		
		0	24	48
Concentration	Analyst	XL	XL	XL
Control, SaltSW	pH (S.U.)	8.10	7.97	7.93
	Dissolved oxygen (mg/L)	8.2	7.8	7.9
	*Salinity (ppt)	24.7	25.0	26.3
	*Alkalinity (mg/L CaCO ₃)	110		
	*Temperature (°C)	25.2	25.4	25.3
150 mg/L	pH (S.U.)	8.01	7.97	7.88
	Dissolved oxygen (mg/L)	8.4	7.9	7.9
	*Salinity (ppt)	24.7	25.1	26.0
	*Temperature (°C)	25.2	25.6	25.2
300 mg/L	pH (S.U.)	8.01	7.98	7.89
	Dissolved oxygen (mg/L)	8.4	7.9	7.8
	*Salinity (ppt)	24.9	25.2	26.6
	*Temperature (°C)	25.3	25.2	25.5
450 mg/L	pH (S.U.)	8.01	7.97	7.88
	Dissolved oxygen (mg/L)	8.4	7.9	7.8
	*Salinity (ppt)	25.4	25.6	26.3
	*Temperature (°C)	25.1	25.2	25.5
600 mg/L	pH (S.U.)	8.02	7.96	7.90
	Dissolved oxygen (mg/L)	8.4	7.8	7.7
	*Salinity (ppt)	25.2	25.7	27.0
	*Temperature (°C)	25.3	25.5	25.6
750 mg/L	pH (S.U.)	8.01	7.95	7.90
	Dissolved oxygen (mg/L)	8.4	7.6	7.4
	*Salinity (ppt)	25.6	26.0	27.2
	*Temperature (°C)	25.4	25.5	25.3

*Analyst identified for each day, performed pH and dissolved oxygen measurements only. Temperature and salinity performed at the time of test initiation or termination by the analyst performing the toxicity test. Alkalinity performed by the analyst identified on the test specific bench sheet and transcribed to this bench sheet.

Chemical analyses:

Parameter	Reporting limit	Method number	Meter	Serial number
pH	0.1 S.U.	SM 4500-H+ B-2021	Accumet AR20	93312452
Dissolved oxygen	1.0 mg/L	SM 4500-O H-2021	HACH HQ430d Flexi	SN250100050301
Salinity	1.0 ppt	SM 2520 B-2021	YSI PRO30	180104324
Alkalinity	5.0 mg CaCO ₃ /L	SM 2320 B-2021	Accumet AR20	93312452
Temperature	0.1 °C	SM 2550B-2010	Digital Thermometer	13066468

Acute LC₅₀ Whole Effluent Toxicity Test, Species: Americamysis bahia
EPA-821-R-02-012, Method 2007.0

Americamysis bahia Potassium Chloride Acute Reference Toxicant Test

AbKCIAC # 24

Hours	Date	Feeding		Test Initiation or Termination		Location Incubator/Shelf	Randomizing Template	SaltSW Batch
		Time	Analyst	Time	Analyst			
0 Initiation	08-04-26	1045	H	1250	H	6F	LIGHT BLUE	0730-26A
24	08-05-26			1250	H			
48 Termination	08-06-26			1250	H			

*Test organisms were fed in holding 2 to 5 hours prior to test initiation. Test organisms were not fed during the test.

Test Organism Information:

Organism Source:	Aquatic Indicators, Inc.
Batch (AI Batch Ab):	12 DAYS
Age (1 to 5 days old):	08-03-26
Date organisms were born:	08-02-26 1200 08-03-26 1130
Average transfer volume:	< 0.25 mL
Transfer bowl information:	pH (S.U.): 7.88 Temperature (°C) 24.7

Survival Data (number of living organisms):

Hours	Control		150 mg/L		300 mg/L		450 mg/L		600 mg/L		750 mg/L	
	Replicate		Replicate		Replicate		Replicate		Replicate		Replicate	
	A	B	C	D	E	F	G	H	I	J	K	L
0 Initiation	10	10	10	10	10	10	10	10	10	10	10	10
24	10	10	10	10	10	10	9 ^{id}	9 ^{id}	6 ^{4d}	8 ^{2d}	2 ^{6d}	1 ^{9d}
48 Termination	10	10	10	10	10	9 ^{id}	9	8 ^{id}	2 ^{4d}	1 ^{7d}	0	0
Mean Survival	100%		100%		95%		85%		15%		0%	

Comment codes: d = dead, u = unhealthy, s = stressed

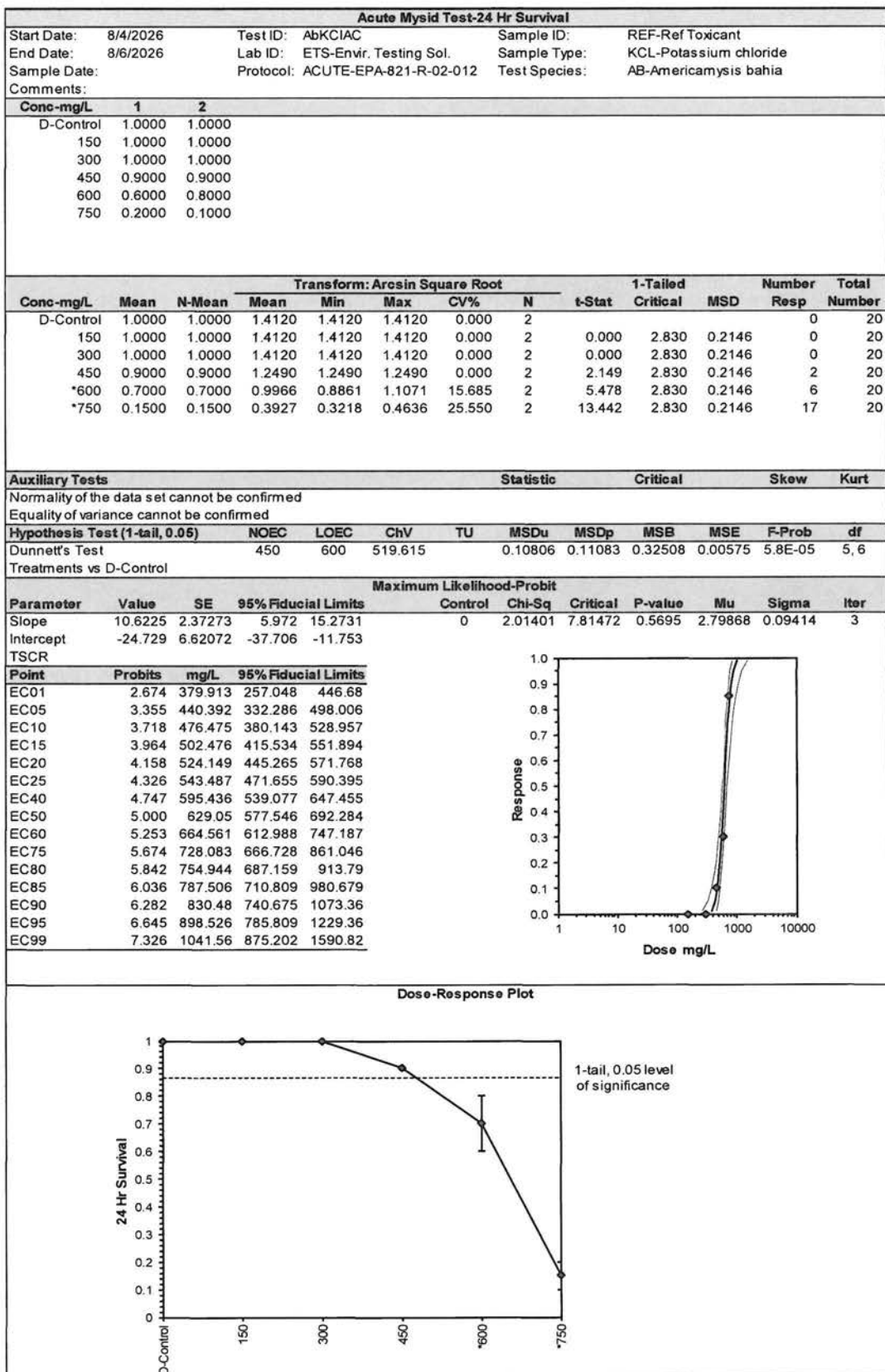
Statistics:

Method	SK
Lower 95% confidence limit (mg KCl/L)	457.1
Upper 95% confidence limit (mg KCl/L)	544.1
48-hour LC ₅₀ (mg KCl/L)	498.7

Comments:

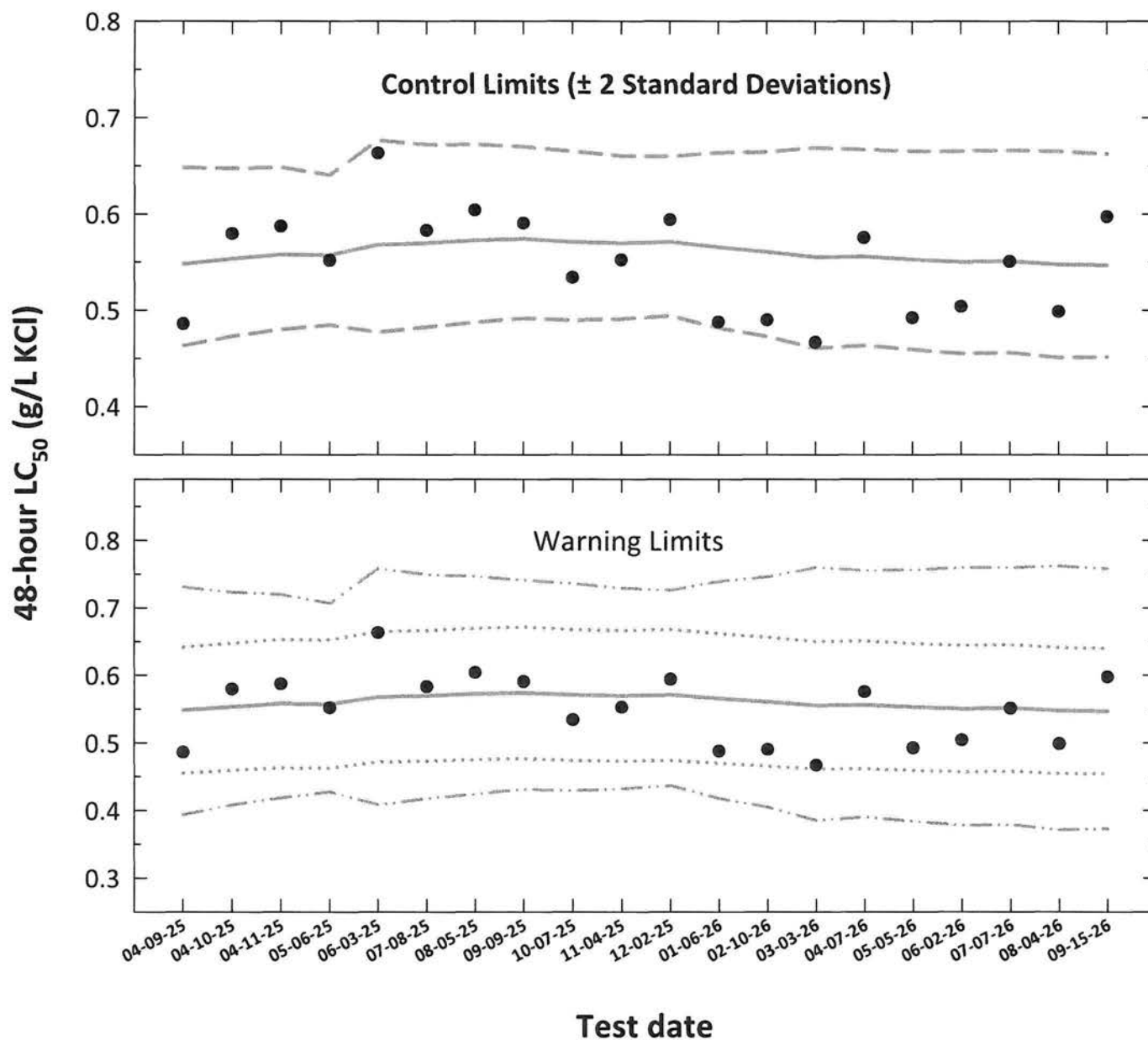


Statistical Analyses



Statistical Analyses

Americamysis (Mysidopsis) bahia Acute Reference Toxicant Control Chart Source: Aquatic Indicators, Inc.



- **48-hour LC₅₀** = median lethal concentration. An estimation of the potassium chloride concentration which is lethal to 50% of the test organisms in 48-hours (calculated using ToxCalc).
- **Central Tendency** (mean logarithmic LC₅₀ converted to anti-logarithmic values)
- - - **Control Limits** (mean logarithmic LC₅₀ ± 2 standard deviations converted to anti-logarithmic values)
- . . . **Laboratory Warning Limits** (mean logarithmic LC₅₀ ± 2 coefficient of variations converted to anti-logarithmic values)
- **USEPA Warning Limits** (mean logarithmic LC₅₀ $\pm S_{A.10}$ converted to anti-logarithmic values, $S_{A.10}$ = 10th percentile of CVs reported nationally by USEPA)

Americamysis (Mysidopsis) bahia
Acute Reference Toxicant Control Chart
Source: Aquatic Indicators, Inc.

Test number	Test date	48-hour LC ₅₀ ToxCat Determination (g/L KCl)	Log ₁₀ Conversion		Anti-logarithmic Values (g/L KCl)					
			48-hour LC ₅₀	CT	S	CT	Control Limits		Laboratory Calculated CV	
							CT - 2S	CT + 2S	CT - 2CV	CT + 2CV
1	04-09-25	0.4860	-0.3134	-0.2610	0.0364	0.5482	0.4635	0.6484	0.3937	0.7310
2	04-10-25	0.5796	-0.2369	-0.2570	0.0341	0.5533	0.4730	0.6473	0.4082	0.7231
3	04-11-25	0.5872	-0.2312	-0.2533	0.0326	0.5581	0.4803	0.6484	0.4187	0.7200
4	05-06-25	0.5517	-0.2583	-0.2539	0.0302	0.5573	0.4849	0.6405	0.4273	0.7066
5	06-03-25	0.6631	-0.1784	-0.2455	0.0379	0.5681	0.4772	0.6763	0.4082	0.7586
6	07-08-25	0.5828	-0.2345	-0.2444	0.0359	0.5696	0.4829	0.6719	0.4174	0.7492
7	08-05-25	0.6040	-0.2189	-0.2421	0.0349	0.5726	0.4877	0.6724	0.4242	0.7469
8	09-09-25	0.5904	-0.2289	-0.2410	0.0335	0.5741	0.4921	0.6698	0.4312	0.7408
9	10-07-25	0.5341	-0.2724	-0.2434	0.0332	0.5709	0.4899	0.6653	0.4291	0.7362
10	11-04-25	0.5523	-0.2578	-0.2445	0.0321	0.5696	0.4912	0.6604	0.4320	0.7291
11	12-02-25	0.5941	-0.2261	-0.2432	0.0313	0.5712	0.4944	0.6598	0.4368	0.7264
12	01-06-26	0.4877	-0.3118	-0.2475	0.0348	0.5656	0.4818	0.6638	0.4175	0.7393
13	02-10-26	0.4901	-0.3098	-0.2512	0.0369	0.5608	0.4732	0.6647	0.4045	0.7461
14	03-03-26	0.4667	-0.3310	-0.2556	0.0404	0.5551	0.4608	0.6688	0.3852	0.7599
15	04-07-26	0.5755	-0.2399	-0.2548	0.0395	0.5562	0.4637	0.6670	0.3900	0.7555
16	05-05-26	0.4922	-0.3078	-0.2574	0.0402	0.5528	0.4593	0.6652	0.3837	0.7562
17	06-02-26	0.5040	-0.2976	-0.2593	0.0412	0.5505	0.4553	0.6654	0.3776	0.7594
18	07-07-26	0.5506	-0.2591	-0.2588	0.0411	0.5511	0.4560	0.6660	0.3786	0.7596
19	08-04-26	0.4987	-0.3022	-0.2614	0.0422	0.5477	0.4511	0.6651	0.3713	0.7620
20	09-15-26	0.5973	-0.2238	-0.2620	0.0416	0.5470	0.4518	0.6624	0.3729	0.7579

Note: 48-hour LC₅₀ = 48-hour median lethal concentration. An estimate of the potassium chloride concentration which is lethal to 50% of the test organisms in 48-hours (calculated using ToxCat).

CT = Central tendency of the LC₅₀ values.

S = Standard deviation of the LC₅₀ values.

Control Limits = Mean logarithmic LC₅₀ ± 2 standard deviations converted to anti-logarithmic values.

Warning Limits = Mean logarithmic LC₅₀ ± 2CV or S_{A,10} converted to anti-logarithmic values.

S_{A,10} = Standard deviation corresponding to the 10th percentile of CVs reported nationally by USEPA. (S_{A,10} = 0.17).

CV = Coefficient of variation.

ETC

Acute LC₅₀ Whole Effluent Toxicity Test, Species: Americamysis bahia
EPA-821-R-02-012, Method 2007.0

Americamysis bahia Potassium Chloride Acute Reference Toxicant Test

AbKCIAC # 25

Dilution Preparation:

Test concentrations (mg/L KCl)	150	300	450	600	750
mL Stock solution	3.0	6.0	9.0	12	15
mL Dilution water	997	994	991	988	985
Total volume (mL)	1000	1000	1000	1000	1000

A stock solution was prepared by diluting 100 g KCl into 2000 mL deionized water. This 50,000 mg/L KCl stock solution was used to prepare the concentrations evaluated for toxicity.

Stock solution INSS #: 2501

Chemical Analyses:

		Hours		
		0	24	48
Concentration	Analyst			
Control, SaltSW	pH (S.U.)	7.99	7.96	7.83
	Dissolved oxygen (mg/L)	8.1	8.1	8.0
	*Salinity (ppt)	25.3	25.1	25.3
	*Alkalinity (mg/L CaCO ₃)	110		
	*Temperature (°C)	24.8	24.6	24.8
150 mg/L	pH (S.U.)	8.01	7.96	7.85
	Dissolved oxygen (mg/L)	8.2	8.1	8.0
	*Salinity (ppt)	25.3	25.6	25.5
	*Temperature (°C)	25.1	24.8	24.6
300 mg/L	pH (S.U.)	8.00	7.97	7.86
	Dissolved oxygen (mg/L)	8.2	8.1	8.0
	*Salinity (ppt)	25.5	25.4	25.8
	*Temperature (°C)	25.6	24.9	24.6
450 mg/L	pH (S.U.)	8.00	7.96	7.86
	Dissolved oxygen (mg/L)	8.2	8.2	8.0
	*Salinity (ppt)	25.5	25.4	25.3
	*Temperature (°C)	25.4	25.1	25.0
600 mg/L	pH (S.U.)	8.00	7.96	7.86
	Dissolved oxygen (mg/L)	8.2	8.1	8.0
	*Salinity (ppt)	25.6	25.5	25.6
	*Temperature (°C)	25.6	25.1	24.7
750 mg/L	pH (S.U.)	8.00	7.96	
	Dissolved oxygen (mg/L)	8.2	8.0	
	*Salinity (ppt)	25.6	25.7	
	*Temperature (°C)	25.4	24.7	

*Analyst identified for each day, performed pH and dissolved oxygen measurements only. Temperature and salinity performed at the time of test initiation or termination by the analyst performing the toxicity test. Alkalinity performed by the analyst identified on the test specific bench sheet and transcribed to this bench sheet.

Chemical analyses:

Parameter	Reporting limit	Method number	Meter	Serial number
pH	0.1 S.U.	SM 4500-H+ B-2021	Accumet AR20	93312452
Dissolved oxygen	1.0 mg/L	SM 4500-O H-2021	HACH HQ430d Flexi	SN250100050300
Salinity	1.0 ppt	SM 2520 B-2021	YSI PRO30	18D104324
Alkalinity	5.0 mg CaCO ₃ /L	SM 2320 B-2021	Accumet AR20	93312452
Temperature	0.1 °C	SM 2550B-2010	Digital Thermometer	130564705

4-16-26

Acute LC₅₀ Whole Effluent Toxicity Test, Species: Americamysis bahia
EPA-821-R-02-012, Method 2007.0

Americamysis bahia Potassium Chloride Acute Reference Toxicant Test

AbKCIAC # 25

Hours	Date	Feeding		Test Initiation or Termination		Location Incubator/Shelf	Randomizing Template	SaltSW Batch
		Time	Analyst	Time	Analyst			
0 Initiation	09-15-26	* 1110	N	1338	JP	1B	orange	09-08-26 A
24	09-16-26			1347	JP			
48 Termination	09-17-26			1347	JP			

*Test organisms were fed in holding 2 to 5 hours prior to test initiation. Test organisms were not fed during the test.

Test Organism Information:

Organism Source:	Aquatic Indicators, Inc.
Batch (AI Batch Ab):	09-14-26
Age (1 to 5 days old):	1-2 DAYS
Date organisms were born:	09-13-26 1200 TO 09-14-26 1130
Average transfer volume:	< 0.25 mL
Transfer bowl information:	pH (S.U.): 8.15 Temperature (°C): 24.9°C

Survival Data (number of living organisms):

Hours	Control		150 mg/L		300 mg/L		450 mg/L		600 mg/L		750 mg/L	
	Replicate		Replicate		Replicate		Replicate		Replicate		Replicate	
	A	B	C	D	E	F	G	H	I	J	K	L
0 Initiation	10	10	10	10	10	10	10	10	10	10	10	10
24	10	10	10	10	10	10	10	9 ^{1d}	8 ^{1d} 6 ^{1d}	7 ^{1d}	0 ^{1d}	0 ^{1d}
48 Termination	10	10	10	10	10	10	10	9	6	6 ^{1d}	0	0
Mean Survival	100%		100%		100%		95%		60%		0%	

Comment codes: d = dead, u = unhealthy, s = stressed

Statistics:

Method	Probit
Lower 95% confidence limit (mg KCl/L)	555.7
Upper 95% confidence limit (mg KCl/L)	636.2
48-hour LC ₅₀ (mg KCl/L)	597.3

Comments:



Statistical Analyses

Acute Mysid Test-24 Hr Survival

Start Date: 9/15/2026 Test ID: AbKCIAC Sample ID: REF-Ref Toxicant
End Date: 9/17/2026 Lab ID: ETS-Envir. Testing Sol. Sample Type: DMR-Discharge Monitoring Report
Sample Date: Protocol: ACUTE-EPA-821-R-02-012 Test Species: AB-Americanysis bahia
Comments:

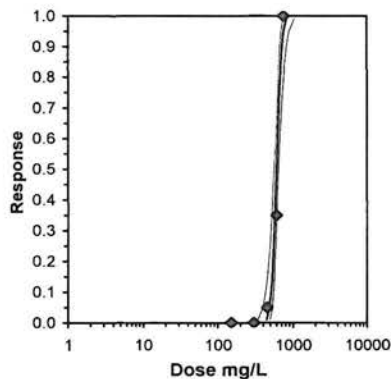
Conc-mg/L	1	2
D-Control	1.0000	1.0000
150	1.0000	1.0000
300	1.0000	1.0000
450	1.0000	0.9000
600	0.6000	0.7000
750	0.0000	0.0000

Conc-mg/L	Transform: Arcsin Square Root							t-Stat	1-Tailed Critical	MSD	Number Resp	Total Number
	Mean	N-Mean	Mean	Min	Max	CV%	N					
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2				0	20
150	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0.000	2.850	0.1748	0	20
300	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0.000	2.850	0.1748	0	20
450	0.9500	0.9500	1.3305	1.2490	1.4120	8.661	2	1.329	2.850	0.1748	1	20
*600	0.6500	0.6500	0.9386	0.8861	0.9912	7.916	2	7.720	2.850	0.1748	7	20
750	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2				20	20

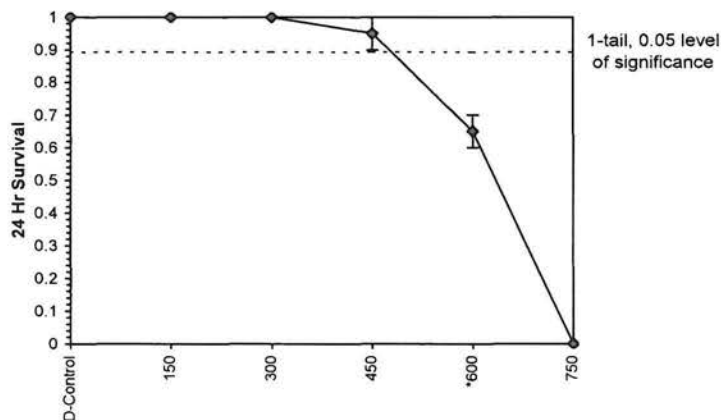
Auxiliary Tests					Statistic		Critical	Skew	Kurt		
Normality of the data set cannot be confirmed											
Equality of variance cannot be confirmed											
Hypothesis Test (1-tail, 0.05)		NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test		450	600	519.615		0.08218	0.08429	0.08458	0.00376	0.00214	4, 5
Treatments vs D-Control											

Parameter	Value	SE	95% Fiducial Limits		Maximum Likelihood-Probit						
			Control	Chi-Sq	Critical	P-value	Mu	Sigma	Iter		
Slope	17.0394	3.72878	9.73103	24.3478	0	4.23386	7.81472	0.23729	2.78107	0.05869	5
Intercept	-42.388	10.4041	-62.78	-21.996							
TSCR											

Point	Probits	mg/L	95% Fiducial Limits	
EC01	2.674	441.107	339.103	493.6
EC05	3.355	483.659	396.779	528.665
EC10	3.718	507.996	430.869	549.086
EC15	3.964	525.105	455.098	563.815
EC20	4.158	539.112	474.958	576.246
EC25	4.326	551.426	492.319	587.565
EC40	4.747	583.718	536.436	619.954
EC50	5.000	604.048	562.203	643.317
EC60	5.253	625.086	586.49	670.652
EC75	5.674	661.691	622.935	725.923
EC80	5.842	676.806	636.276	751.151
EC85	6.036	694.86	651.296	782.736
EC90	6.282	718.261	669.676	825.631
EC95	6.645	754.403	696.432	895.421
EC99	7.326	827.178	746.813	1046.45



Dose-Response Plot



Statistical Analyses

Acute Mysid Test-48 Hr Survival

Start Date: 9/15/2026 Test ID: AbKCIAC Sample ID: REF-Ref Toxicant
End Date: 9/17/2026 Lab ID: ETS-Envir. Testing Sol. Sample Type: DMR-Discharge Monitoring Report
Sample Date: Protocol: ACUTE-EPA-821-R-02-012 Test Species: AB-Americanysis bahia
Comments:

Conc-mg/L	1	2
D-Control	1.0000	1.0000
150	1.0000	1.0000
300	1.0000	1.0000
450	1.0000	0.9000
600	0.6000	0.6000
750	0.0000	0.0000

Conc-mg/L	Mean	N-Mean	Transform: Arcsin Square Root					t-Stat	1-Tailed Critical	MSD	Number Resp	Total Number
			Mean	Min	Max	CV%	N					
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2				0	20
150	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0.000	2.850	0.1469	0	20
300	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0.000	2.850	0.1469	0	20
450	0.9500	0.9500	1.3305	1.2490	1.4120	8.661	2	1.581	2.850	0.1469	1	20
*600	0.6000	0.6000	0.8861	0.8861	0.8861	0.000	2	10.205	2.850	0.1469	8	20
750	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2				20	20

Auxiliary Tests

Normality of the data set cannot be confirmed

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 450 600 519.615 0.06555 0.06723 0.10473 0.00266 5.7E-04 4, 5

Treatments vs D-Control

Maximum Likelihood-Probit

Parameter Value SE 95% Fiducial Limits Control Chi-Sq Critical P-value Mu Sigma Iter

Slope 16.9915 3.66816 9.80191 24.1811 0 3.11544 7.81472 0.37417 2.77617 0.05885 5

Intercept -42.171 10.2186 -62.2 -22.143

TSCR

Point Probits mg/L 95% Fiducial Limits

EC01 2.674 435.77 336.438 487.547

EC05 3.355 477.932 393.181 522.442

EC10 3.718 502.05 426.684 542.767

EC15 3.964 519.007 450.481 557.425

EC20 4.158 532.891 469.98 569.79

EC25 4.326 545.098 487.023 581.042

EC40 4.747 577.112 530.353 613.16

EC50 5.000 597.269 555.717 636.222

EC60 5.253 618.131 579.709 663.096

EC75 5.674 654.434 615.895 717.235

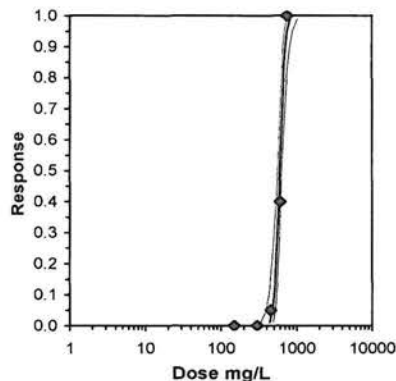
EC80 5.842 669.425 629.183 741.914

EC85 6.036 687.333 644.158 772.803

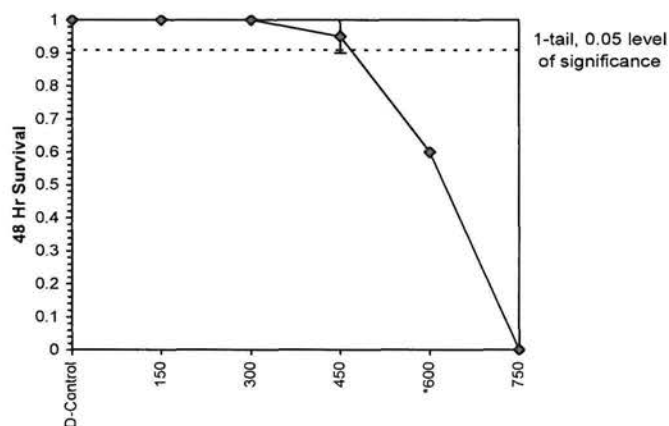
EC90 6.282 710.548 662.493 814.749

EC95 6.645 746.405 689.192 882.985

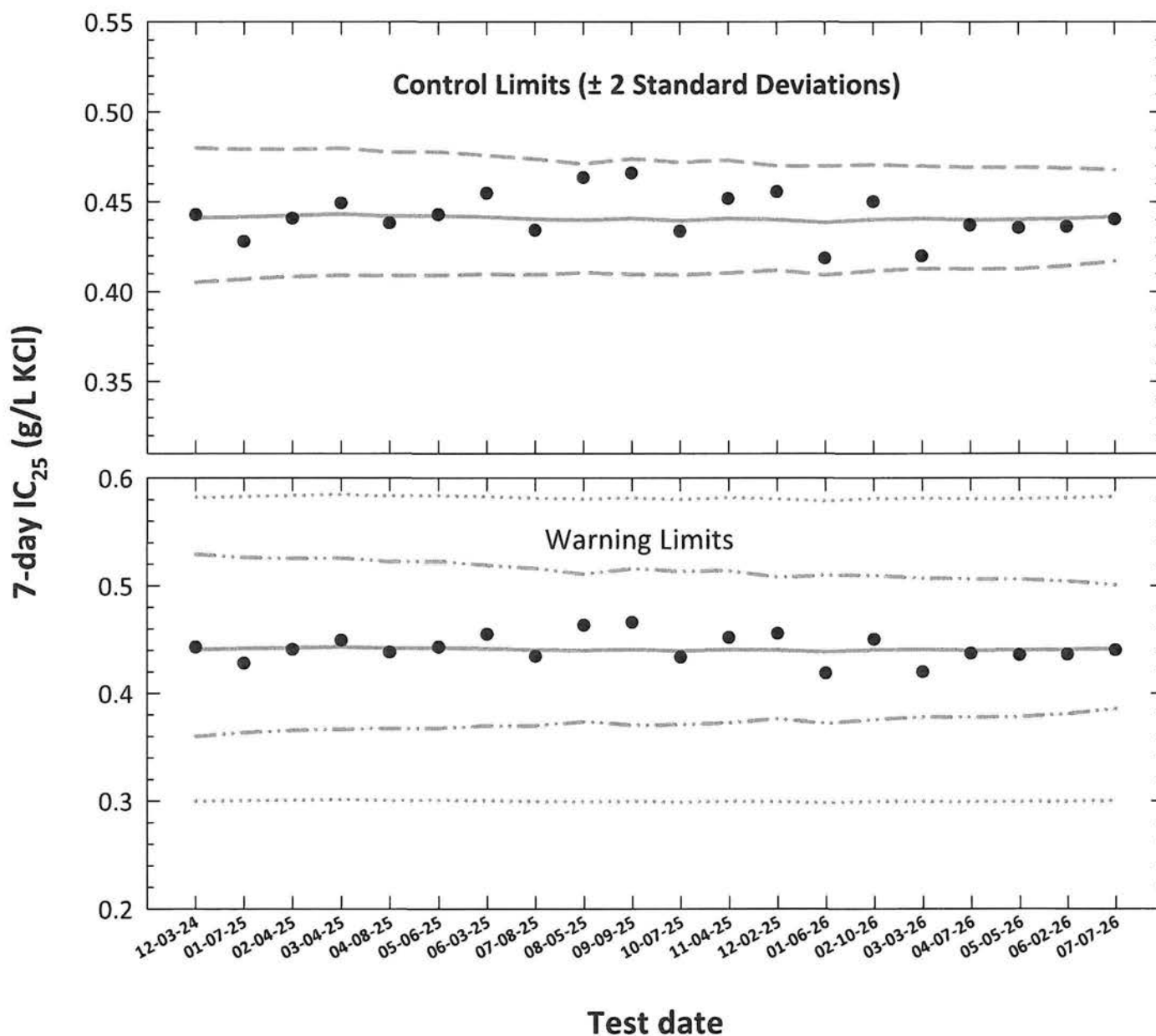
EC99 7.326 818.62 739.469 1030.58



Dose-Response Plot



Americamysis (Mysidopsis) bahia Chronic Reference Toxicant Control Chart Source: Aquatic Indicators, Inc.



- **7-day IC_{25}** = 25% inhibition concentration. An estimation of the potassium chloride concentration which would cause a 25% reduction in *Americamysis* growth (calculated using ToxCalc).
- **Central Tendency** (mean logarithmic IC_{25} converted to anti-logarithmic values)
- - - **Control Limits** (mean logarithmic $IC_{25} \pm 2$ standard deviations converted to anti-logarithmic values)
- . . - **Laboratory Warning Limits** (mean logarithmic $IC_{25} \pm 2$ coefficient of variations converted to anti-logarithmic values)
- **USEPA Warning Limits** (mean logarithmic $IC_{25} \pm S_{A.75}$ converted to anti-logarithmic values, $S_{A.75}$ = 75th percentile of CVs reported nationally by USEPA)

Americamysis (Mysidopsis) bahia

Chronic Reference Toxicant Control Chart

Source: Aquatic Indicators, Inc.

Test number	Test date	7-day IC ₂₅ ToxCal Determination (g/L KCl)	Log ₁₀ Conversion		CT	Anti-logarithmic Values (g/L KCl)		75th Percentile CV Warning Limits	
			7-day IC ₂₅	CT		Control Limits	Laboratory Calculated CV	CT - S _{A,75}	CT + S _{A,75}
1	12-03-24	0.4428	-0.3538	-0.3555	0.4411	0.4053	0.3600	0.2999	0.5822
2	01-07-25	0.4280	-0.3686	-0.3549	0.4417	0.4071	0.3634	0.3003	0.5830
3	02-04-25	0.4408	-0.3558	-0.3542	0.4424	0.4085	0.3657	0.3008	0.5840
4	03-04-25	0.4493	-0.3474	-0.3534	0.4432	0.4093	0.3667	0.3014	0.5850
5	04-08-25	0.4382	-0.3583	-0.3545	0.4421	0.4091	0.3674	0.3006	0.5835
6	05-06-25	0.4428	-0.3538	-0.3545	0.4421	0.4091	0.3674	0.3006	0.5836
7	06-03-25	0.4548	-0.3422	-0.3550	0.4415	0.4098	0.3696	0.3002	0.5828
8	07-08-25	0.4342	-0.3624	-0.3562	0.4404	0.4093	0.3699	0.2995	0.5813
9	08-05-25	0.4634	-0.3340	-0.3567	0.4398	0.4107	0.3736	0.2991	0.5806
10	09-09-25	0.4660	-0.3316	-0.3559	0.4407	0.4097	0.3705	0.2997	0.5817
11	10-07-25	0.4336	-0.3629	-0.3570	0.4396	0.4093	0.3708	0.2989	0.5802
12	11-04-25	0.4518	-0.3451	-0.3557	0.4408	0.4107	0.3724	0.2998	0.5819
13	12-02-25	0.4557	-0.3414	-0.3564	0.4401	0.4121	0.3764	0.2993	0.5810
14	01-06-26	0.4187	-0.3781	-0.3579	0.4387	0.4094	0.3720	0.2983	0.5790
15	02-10-26	0.4500	-0.3468	-0.3564	0.4401	0.4116	0.3753	0.2993	0.5809
16	03-03-26	0.4198	-0.3770	-0.3561	0.4404	0.4129	0.3779	0.2995	0.5814
17	04-07-26	0.4370	-0.3595	-0.3566	0.4400	0.4126	0.3777	0.2992	0.5807
18	05-05-26	0.4356	-0.3609	-0.3564	0.4401	0.4128	0.3781	0.2993	0.5810
19	06-02-26	0.4362	-0.3603	-0.3558	0.4408	0.4144	0.3809	0.2997	0.5818
20	07-07-26	0.4402	-0.3563	-0.3548	0.4418	0.4170	0.3858	0.3004	0.5831

Note: 7-day IC₂₅ = 25% inhibition concentration. An estimation of the potassium chloride concentration that would cause a 25% reduction in *Americamysis* growth (calculated using ToxCal).

CT = Central tendency of the IC₂₅ values.

S = Standard deviation of the IC₂₅ values.

Control Limits = Mean logarithmic IC₂₅ ± 2 standard deviations converted to anti-logarithmic values.

Warning Limits = Mean logarithmic IC₂₅ ± 2CV or S_{A,75} converted to anti-logarithmic values.

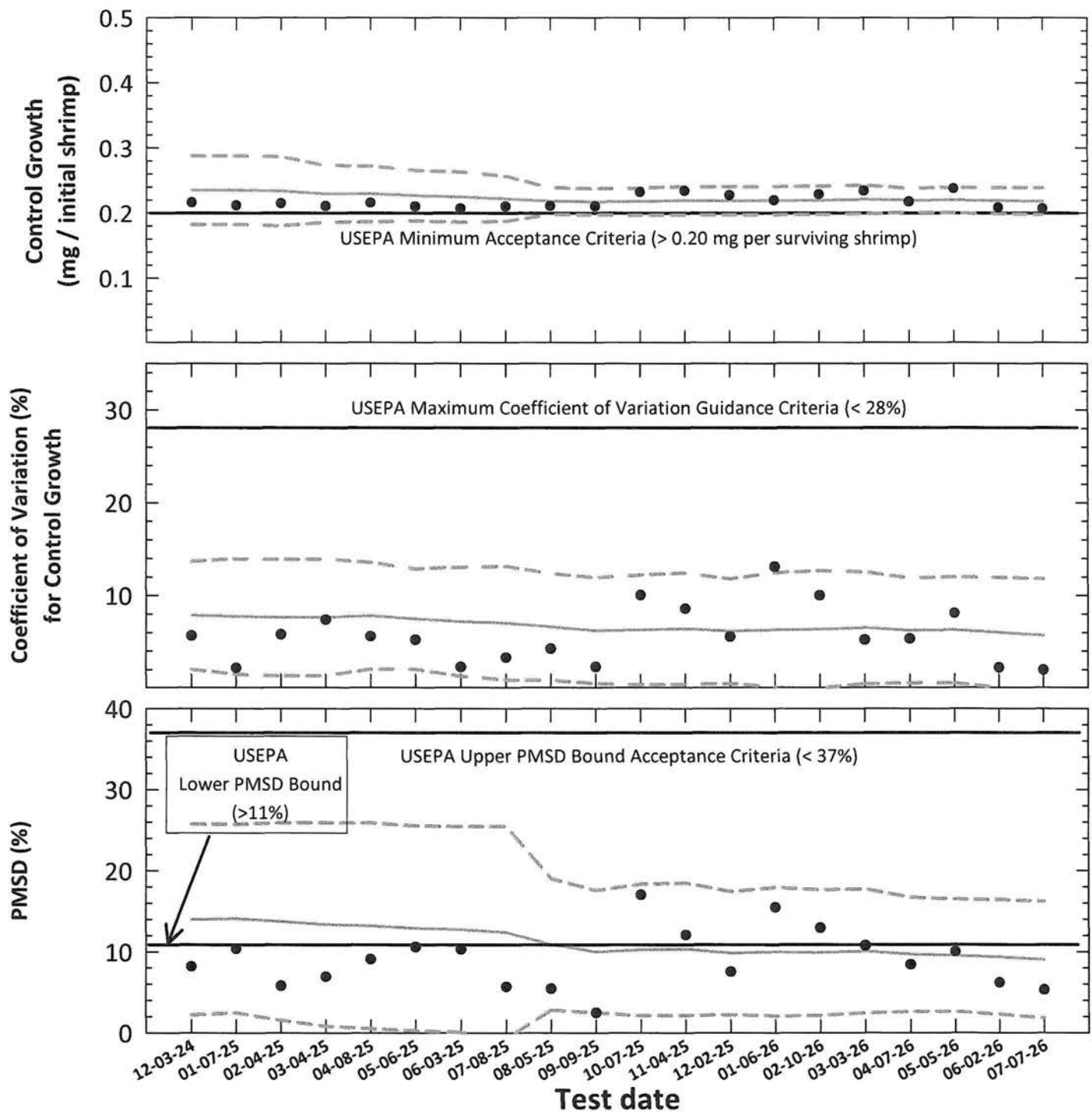
S_{A,75} = Standard deviation corresponding to the 75th percentile of CVs reported nationally by USEPA (S_{A,75} = 0.32).

CV = Coefficient of variation.

Americamysis (Mysidopsis) bahia

Chronic Reference Toxicant Testing, Test Acceptability Criteria

Organism Source: Aquatic Indicators, Inc.



- **Control Growth, Coefficient of Variation (CV) or Percent Minimum Significant Difference (PMSD)**
PMSD is the percent minimum significant difference between the control and treatment that can be declared statistically significant. The lower PMSD bound represents a practical limit to the sensitivity of the test method and is not a minimum acceptance criteria.
- **Central Tendency** (mean Control Growth, CV or PMSD)
- - - **95% Confidence Interval** (mean Control Growth, CV or PMSD $\pm$ 2 Standard Deviations)

Americamysis (Mysidopsis) bahia
Chronic Reference Toxicant Testing, Test Acceptability Criteria
Source: Aquatic Indicators, Inc.

Test number	Test date	ToxCal Determination					Control Growth		Test		Control Growth		Control Growth CV		Test PMSD	
		Control Survival (%)	Control Growth		CV (%)	MSD	PMSD (%)	CT	95% Confidence Interval CT - 2S	CT + 2S	CT	95% Confidence Interval CT - 2S	CT + 2S	CT	95% Confidence Interval CT - 2S	CT + 2S
			Mean (mg/initial shrimp)													
1	12-03-24	100	0.216	5.7	0.0177	8.2	0.235	0.182	0.288	0.288	7.9	2.0	13.7	14.0	2.2	25.8
2	01-07-25	100	0.212	2.2	0.0219	10.4	0.235	0.183	0.288	0.288	7.7	1.5	14.0	14.1	2.5	25.7
3	02-04-25	100	0.215	5.8	0.0125	5.8	0.234	0.181	0.287	0.287	7.6	1.3	13.9	13.7	1.5	25.9
4	03-04-25	100	0.211	7.4	0.0146	6.9	0.229	0.185	0.273	0.273	7.6	1.3	13.9	13.3	0.8	25.9
5	04-08-25	100	0.216	5.6	0.0196	9.1	0.230	0.187	0.273	0.273	7.8	2.1	13.6	13.2	0.5	25.9
6	05-06-25	100	0.210	5.2	0.0222	10.6	0.227	0.188	0.265	0.265	7.5	2.0	12.9	12.9	0.3	25.5
7	06-03-25	100	0.207	2.3	0.0213	10.3	0.225	0.186	0.264	0.264	7.2	1.3	13.1	12.8	0.1	25.4
8	07-08-25	100	0.210	3.3	0.0119	5.7	0.222	0.188	0.257	0.257	7.0	0.9	13.2	12.4	-0.7	25.5
9	08-05-25	100	0.211	4.3	0.0115	5.5	0.219	0.198	0.239	0.239	6.6	0.9	12.4	10.9	2.8	19.0
10	09-09-25	100	0.210	2.3	0.0052	2.5	0.218	0.198	0.237	0.237	6.2	0.5	11.9	10.0	2.5	17.5
11	10-07-25	100	0.232	10.0	0.0395	17.0	0.218	0.197	0.239	0.239	6.3	0.4	12.2	10.2	2.1	18.4
12	11-04-25	100	0.234	8.6	0.0282	12.1	0.219	0.197	0.241	0.241	6.4	0.4	12.4	10.3	2.1	18.4
13	12-02-25	100	0.228	5.6	0.0171	7.5	0.219	0.197	0.241	0.241	6.2	0.5	11.8	9.8	2.2	17.4
14	01-06-26	100	0.220	13.1	0.0339	15.4	0.219	0.198	0.241	0.241	6.3	0.1	12.5	10.0	2.0	17.9
15	02-10-26	100	0.229	10.0	0.0296	12.9	0.220	0.198	0.242	0.242	6.4	0.0	12.7	9.9	2.1	17.6
16	03-03-26	100	0.234	5.2	0.0252	10.8	0.221	0.199	0.243	0.243	6.5	0.5	12.6	10.1	2.4	17.7
17	04-07-26	100	0.218	5.3	0.0183	8.4	0.220	0.201	0.238	0.238	6.2	0.6	11.9	9.7	2.6	16.7
18	05-05-26	100	0.238	8.1	0.0238	10.0	0.220	0.200	0.240	0.240	6.3	0.6	12.0	9.5	2.6	16.5
19	06-02-26	100	0.209	2.2	0.0129	6.2	0.219	0.199	0.239	0.239	6.0	0.1	12.0	9.3	2.3	16.4
20	07-07-26	100	0.207	2.0	0.0110	5.3	0.218	0.198	0.239	0.239	5.7	-0.4	11.8	9.0	1.8	16.2

Note:
Control Survival = USEPA minimum test acceptability criteria $\geq 80\%$ survival.
Control Mean Growth = USEPA minimum test acceptability criteria ≥ 0.20 mg/surviving shrimp.
CV = Coefficient of variation for control growth.
MSD = Minimum significant difference.
PMSD = Percent minimum significant difference.
PMSD is a measure of test precision. The PMSD is the minimum percent difference between the control and treatment that can be declared statistically significant in a whole effluent toxicity test.
Lower PMSD bound determined by USEPA (10th percentile) > 11%.
Upper PMSD bound acceptance criteria determined by USEPA (90th percentile) < 37%.
CT = Central tendency of the growth, CV or PMSD values.
S = Standard deviation of the growth, CV or PMSD values.

Potassium Chloride Chronic Reference Toxicant Test (EPA-821-R-02-014, Method 1007.0)

Species: *Americamysis (Mysidopsis) bahia*

AbKCICR Test Number: **277**

Dilution preparation information:						Comments:
KCl Stock INSS number:	INSS 2486					
Stock preparation:	50 g KCl/L: Dissolve 50 g KCl in 1-L Deionized water					
Dilution prep (mg/L)	250	375	500	750	1000	
Stock volume (mL)	10	15	20	30	40	
Diluent volume (mL)	1990	1985	1980	1970	1960	
Total volume (mL)	2000	2000	2000	2000	2000	

Test organism information:			Test information:	
Organism age:	7-days old		Randomizing template:	ORANGE
Date and times organisms were born between:	06-30-26 1200 to 07-01-26 1130		Incubator number and shelf location:	6B
Organism source:	AI Batch Ab: 07-01-26		Artemia CHM number:	CHM1432
Transfer bowl information:	pH = 8.08 S.U. Temperature = 25.1 °C	Drying information for weight determination:		
		Date / Time in oven:	07-14-26 1100	
Average transfer volume:	< 0.25 mL	*Initial oven temperature:	60 °C	
		Date / Time out of oven:	07-15-26 1100	
		*Final oven temperature:	60 °C	
		Total drying time:	21-HOURS	

Daily feeding and renewal information:

*60°C Oven, Thermometer SN: 14-985B5

Day	Date	Morning feeding		Afternoon feeding		Test initiation, renewal, or termination		Salt SW batch used
		Time	Analyst	Time	Analyst	Time	Analyst	
0	07-07-26	1100	H	1420	H	1150	A	06-30-26 A
1	07-08-26	0500	H	1325	H	0750	H	07-06-26
2	07-09-26	0500	H	1230	H	0950 ~~0750~~	H	06-30-26 B ~~07-06-26~~
3	07-10-26	0500	H	1100	H	0750	H	↓
4	07-11-26	0700	H	1200	H	0911	H	07-10-26
5	07-12-26	0600	H	1100	H	0820	H	↓
6	07-13-26	0600	H	1200	H	0830	H	↓
7	07-14-26					0950	H	

Chemical analyses:

Parameter	Reporting Limit	Method number	Meter	Serial number
pH	0.1 S.U.	SM 4500-H+ B-2021	Accumet AR20	93312452
Dissolved Oxygen (D.O.)	1.0 mg/L	SM 4500-O H-2021	HACH HQ430d Flexi	SN250100050300
Salinity	1.0 ppt	SM 2520 B-2021	YSI PRO30	18D104324
Alkalinity	5.0 mg CaCO ₃ /L	SM 2320 B-2021	Accumet AR20	93312452
Temperature	0.1°C	SM 2550B-2010	Digital Thermometer	130664685

Control information:		Acceptance criteria	Summary of test endpoints:	
% Mortality:	0%	≤ 20%	7-day LC ₅₀ (mg/L KCl)	498.4
Average weight per initial shrimp:	0.207		NOEC (mg/L KCl)	375
Average weight per surviving shrimp:	0.207	≥ 0.20 mg/shrimp	LOEC (mg/L KCl)	500
			ChV (mg/L KCl)	433.0
			IC ₂₅ (mg/L KCl)	440.2

AbKCICR Test Number: **277**

Survival and Growth Data

Day	CONTROL								250 mg KCl/L							
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
2	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
3	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
4	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
5	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
6	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
7	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
# females with eggs in brood sac																
# females with developing ova in oviducts																
# immature females																
# males																
*A = Pan weight (mg) Tray color code: <u>purple</u> Analyst: <u>XL</u> Date: <u>06-22-24</u>	13.28	11.88	12.84	12.16	11.37	13.48	13.98	13.34	13.46	12.20	14.05	12.63	12.85	13.54	13.26	12.31
*B = Pan + Shrimp weight (mg) Analyst: <u>jl</u> Date: <u>06-14-24</u>	14.31	12.91	13.90	13.19	12.42	14.48	15.00	14.40	14.55	13.20	15.11	13.71	13.90	14.68	14.27	13.36
C = Shrimp weight (mg) = B - A Hand calculated: <u>jl</u> Analyst: <u>jl</u>	1.03	1.03	1.06	1.03	1.05	1.00	1.02	1.06	1.09	1.00	1.06	1.08	1.05	1.04	1.01	1.05
Weight per initial number of shrimp (mg) = C / Initial number of shrimp Hand calculated: <u>jl</u> Analyst: <u>jl</u>	0.206	0.206	0.212	0.206	0.210	0.200	0.204	0.212	0.218	0.200	0.212	0.216	0.210	0.208	0.202	0.216
Average weight per initial number of shrimp (mg) 0.207								Average weight per initial number of shrimp (mg) 0.210				Percent reduction from control (%) - 1.67.				

*Weight measurements performed using Cahn 28 Automatic Electrobalance, SN 41520.

Comment codes: c = clear, d = dead, fg = fungus, k = killed, m = missing, sk = sick, sm = unusually small, lg = unusually large, d&r = decanted and returned, w = wounded.

Comments:

AbKCICR Test Number: **277**

Survival and Growth Data

Day	375 mg KCl/L								500 mg KCl/L							
	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF
0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
2	S	S	S	S	S	S	S	S	S	4 ^{1d}	4 ^{1d}	S	S	4 ^{1d}	S	S
3	S	S	S	S	S	S	S	S	3 ^{2d}	4	4	3 ^{2d}	S	4	S	4 ^{1d}
4	S	S	S	S	4 ^{1d}	S	S	S	2 ^{1d}	3 ^{1d}	3 ^{1d}	3	4 ^{1d}	3 ^{1d}	3 ^{2d}	3 ^{1d}
5	S	S	S	S	4	S	S	S	2	3	3	3	3	2 ^{1d}	2 ^{1d}	2 ^{1d}
6	S	S	S	S	4	S	S	S	2	3	3	3	3	2	2	2
7	S	S	S	S	4	S	S	S	2	3	3	3	3	2	2	2
# females with eggs in brood sac																
# females with developing ova in oviducts																
# immature females																
# males																
*A = Pan weight (mg) Tray color code: <u>blue</u> Analyst: <u>XL</u> Date: <u>06-22-26</u>	14.41	13.93	14.65	11.94	14.09	12.21	13.61	13.02	13.42	15.01	11.83	13.78	12.93	11.93	14.94	12.33
*B = Pan + Shrimp weight (mg) Analyst: <u>HL</u> Date: <u>07-16-26</u>	15.53	15.00	15.66	12.99	15.16	13.31	14.80	14.06	15.74	15.61	12.61	14.41	13.72	12.43	15.31	12.77
C = Shrimp weight (mg) = B - A Hand calculated: <u>HL</u> Analyst: <u>HL</u>	1.12	1.07	1.01	1.05	1.07	1.10	1.19	1.04	0.32	0.60	0.78	0.63	0.79	0.50	0.37	0.41
Weight per initial number of shrimp (mg) = C / Initial number of shrimp Hand calculated: <u>HL</u> Analyst: <u>HL</u>	0.224	0.214	0.202	0.210	0.214	0.220	0.238	0.208	0.064	0.120	0.156	0.126	0.158	0.100	0.074	0.081
	Average weight per initial number of shrimp (mg) 0.216				Percent reduction from control (%) -4.57				Average weight per initial number of shrimp (mg) 0.110				Percent reduction from control (%) 46.97			

*Weight measurements performed using Cahn 28 Automatic Electrobalance, SN 41520.

Comment codes: c = clear, d = dead, fg = fungus, k = killed, m = missing, sk = sick, sm = unusually small, lg = unusually large, d&r = decanted and returned, w = wounded.

Comments:

AbKCICR Test Number: 277

Survival and Growth Data

Day	750 mg KCl/L								1000 mg KCl/L							
	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV
0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1	0 sd	0 sd	0 sd	0 sd	0 sd	0 sd	0 sd	0 sd	0 sd	0 sd	0 sd	0 sd	0 sd	0 sd	0 sd	0 sd
2																
3																
4																
5																
6																
7																
# females with eggs in brood sac																
# females with developing ova in oviducts																
# immature females																
# males																
*A = Pan weight (mg) Tray color code:																
Analyst: _____ Date: _____																
*B = Pan + Shrimp weight (mg) Analyst: _____ Date: _____																
C = Shrimp weight (mg) = B - A Hand calculated Analyst: _____																
Weight per initial number of shrimp (mg) = C / Initial number of shrimp Hand calculated Analyst: _____	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average weight per initial number of shrimp (mg)	0								0							
Percent reduction from control (%)	100%								100%							

*Weight measurements performed using Cahn 28 Automatic Electrobalance, SN 41520.

Comment codes: c = clear, d = dead, fg = fungus, k = killed, m = missing, sk = sick, sm = unusually small, lg = unusually large, d&r = decanted and returned, w = wounded.

Comments:

Americamysis bahia Chronic Reference Toxicant Test
EPA-821-R-02-014, Method 1007.0

Quality Control
Verification of Data Entry, Calculations, and Statistical Analyses

Test number: 27

Test dates: July 07-14, 202

Concentration (mg/L KCl)	Replicate	Initial number of larvae	Final number of larvae	A = Pan weight (mg)	B = Pan + Larvae weight (mg)	Larvae weight (mg) = B - A	Weight / Initial number of larvae (mg)	Mean survival (%)	Mean weight (mg)	Coefficient of variation (%)	Percent reduction from control (%)
Control	A	5	5	13.28	14.31	1.03	0.206	100.0	0.207	2.0	Not applicable
	B	5	5	11.88	12.91	1.03	0.206				
	C	5	5	12.84	13.90	1.06	0.212				
	D	5	5	12.16	13.19	1.03	0.206				
	E	5	5	11.37	12.42	1.05	0.210				
	F	5	5	13.48	14.48	1.00	0.200				
	G	5	5	13.98	15.00	1.02	0.204				
	H	5	5	13.34	14.40	1.06	0.212				
250	I	5	5	13.46	14.55	1.09	0.218	100.0	0.210	3.2	-1.6
	J	5	5	12.20	13.20	1.00	0.200				
	K	5	5	14.05	15.11	1.06	0.212				
	L	5	5	12.63	13.71	1.08	0.216				
	M	5	5	12.85	13.90	1.05	0.210				
	N	5	5	13.54	14.58	1.04	0.208				
	O	5	5	13.26	14.27	1.01	0.202				
	P	5	5	12.31	13.39	1.08	0.216				
375	Q	5	5	14.41	15.53	1.12	0.224	97.5	0.216	5.1	-4.5
	R	5	5	13.93	15.00	1.07	0.214				
	S	5	5	14.65	15.66	1.01	0.202				
	T	5	5	11.94	12.99	1.05	0.210				
	U	5	4	14.09	15.16	1.07	0.214				
	V	5	5	12.21	13.31	1.10	0.220				
	W	5	5	13.61	14.80	1.19	0.238				
	X	5	5	13.02	14.06	1.04	0.208				
500	Y	5	2	13.42	13.74	0.32	0.064	50.0	0.110	32.7	46.9
	Z	5	3	15.01	15.61	0.60	0.120				
	AA	5	3	11.83	12.61	0.78	0.156				
	BB	5	3	13.78	14.41	0.63	0.126				
	CC	5	3	12.93	13.72	0.79	0.158				
	DD	5	2	11.93	12.43	0.50	0.100				
	EE	5	2	14.94	15.31	0.37	0.074				
	FF	5	2	12.33	12.74	0.41	0.082				
750	GG	5	0	0.00	0.00	0.00	0.000	0.0	0.000	0.0	100.0
	HH	5	0	0.00	0.00	0.00	0.000				
	II	5	0	0.00	0.00	0.00	0.000				
	JJ	5	0	0.00	0.00	0.00	0.000				
	KK	5	0	0.00	0.00	0.00	0.000				
	LL	5	0	0.00	0.00	0.00	0.000				
	MM	5	0	0.00	0.00	0.00	0.000				
	NN	5	0	0.00	0.00	0.00	0.000				
1000	OO	5	0	0.00	0.00	0.00	0.000	0.0	0.000	0.0	100.0
	PP	5	0	0.00	0.00	0.00	0.000				
	QQ	5	0	0.00	0.00	0.00	0.000				
	RR	5	0	0.00	0.00	0.00	0.000				
	SS	5	0	0.00	0.00	0.00	0.000				
	TT	5	0	0.00	0.00	0.00	0.000				
	UU	5	0	0.00	0.00	0.00	0.000				
	VV	5	0	0.00	0.00	0.00	0.000				

Dunnett's MSD value: 0.0110
PMSD: 5.3

MSD = Minimum Significant Difference
PMSD = Percent Minimum Significant Difference

PMSD is a measure of test precision. The PMSD is the minimum percent difference between the control and treatment that can be declared statistically significant in a whole effluent toxicity test.

Lower PMSD bound determined by USEPA (10th percentile) = 11%.

Upper PMSD bound determined by USEPA (90th percentile) = 37%.

Lower and upper PMSD bounds were determined from the 10th and 90th percentile, respectively, of PMSD data from EPA's WET Interlaboratory Variability Study (USEPA, 2001a; USEPA, 2001b). The lower PMSD bound represents a practical limit to the sensitivity of the test method and is not a minimum acceptance criteria.

Start Date:	7/7/2026	Test ID:	AbKCICR	Sample ID:	REF-Ref Toxicant
End Date:	7/14/2026	Lab ID:	ETS-Envir. Testing Sol.	Sample Type:	KCL-Potassium chloride
Sample Date:		Protocol:	SWCHR-EPA-821-R-02-014	Test Species:	AB-Americamysis bahia
Comments:					

Conc-mg/L	1	2	3	4	5	6	7	8
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
250	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
375	1.0000	1.0000	1.0000	1.0000	0.8000	1.0000	1.0000	1.0000
500	0.4000	0.6000	0.6000	0.6000	0.6000	0.4000	0.4000	0.4000
750	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-mg/L	Mean	N-Mean	Transform: Arcsin Square Root					Rank Sum	1-Tailed Critical	Number Resp	Total Number
			Mean	Min	Max	CV%	N				
D-Control	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	8			0	40
250	1.0000	1.0000	1.3453	1.3453	1.3453	0.000	8	68.00	48.00	0	40
375	0.9750	0.9750	1.3155	1.1071	1.3453	6.400	8	64.00	48.00	1	40
*500	0.5000	0.5000	0.7854	0.6847	0.8861	13.704	8	36.00	48.00	20	40
750	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	8			40	40
1000	0.0000	0.0000	0.2255	0.2255	0.2255	0.000	8			40	40

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.81455	0.904	-1.1137	2.66012
Equality of variance cannot be confirmed				

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	375	500	433.013	
Treatments vs D-Control				

Parameter	Value	SE	95% Fiducial Limits	Maximum Likelihood-Probit						
				Control	Chi-Sq	Critical	P-value	Mu	Sigma	Iter
Slope	16.3619	3.25399	9.9841 22.7397	0	0.10855	7.81472	0.99079	2.6976	0.06112	3
Intercept	-39.138	8.73235	-56.253 -22.023							
TSCR										

Point	Probits	mg/L	95% Fiducial Limits
EC01	2.674	359.272	294.76 394.145
EC05	3.355	395.434	343.425 424.151
EC10	3.718	416.178	371.919 441.843
EC15	3.964	430.784	391.941 454.805
EC20	4.158	442.758	408.119 465.95
EC25	4.326	453.295	422.007 476.316
EC40	4.747	480.972	455.715 507.252
EC50	5.000	498.43	474.251 530.181
EC60	5.253	516.521	491.38 556.585
EC75	5.674	548.059	517.844 607.368
EC80	5.842	561.102	528.002 629.658
EC85	6.036	576.698	539.761 657.079
EC90	6.282	596.938	554.558 693.749
EC95	6.645	628.251	576.714 752.581
EC99	7.326	691.488	619.663 878.184

Mysid Survival and Growth Test-Growth-Weight													
Start Date:	7/7/2026		Test ID:	AbKCICR		Sample ID:	REF-Ref Toxicant						
End Date:	7/14/2026		Lab ID:	ETS-Envir. Testing Sol.		Sample Type:	KCL-Potassium chloride						
Sample Date:			Protocol:	SWCHR-EPA-821-R-02-014		Test Species:	AB-Americanmysis bahia						
Comments:													
Conc-mg/L	1	2	3	4	5	6	7	8					
D-Control	0.2060	0.2060	0.2120	0.2060	0.2100	0.2000	0.2040	0.2120					
250	0.2180	0.2000	0.2120	0.2160	0.2100	0.2080	0.2020	0.2160					
375	0.2240	0.2140	0.2020	0.2100	0.2140	0.2200	0.2380	0.2080					
500	0.0640	0.1200	0.1560	0.1260	0.1580	0.1000	0.0740	0.0820					
750	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000					
1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000					

Conc-mg/L	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%	Mean					N-Mean	
D-Control	0.2070	1.0000	0.2070	0.2000	0.2120	2.000	8					0.2112	1.0000
250	0.2103	1.0157	0.2103	0.2000	0.2180	3.152	8	-0.828	2.799	0.0110		0.2112	1.0000
375	0.2163	1.0447	0.2163	0.2020	0.2380	5.148	8	-2.356	2.799	0.0110		0.2112	1.0000
500	0.1100	0.5314	0.1100	0.0640	0.1580	32.727	8					0.1100	0.5209
750	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	8					0.0000	0.0000
1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	8					0.0000	0.0000

Auxiliary Tests					Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$)					0.9503	0.884	0.69498	1.91463
Bartlett's Test indicates equal variances ($p = 0.05$)					6.0646	9.21035		

Hypothesis Test (1-tail, 0.01)		NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test		375	>375			0.01099	0.05308	0.00018	6.2E-05	0.07991	2, 21
Treatments vs D-Control											

Linear Interpolation (200 Resamples)					
Point	mg/L	SD	95%CL	Skew	
IC05	388.05	1.59	385.53	391.82	0.6671
IC10	401.09	3.17	396.40	408.63	0.6733
IC15	414.14	4.75	407.10	425.45	0.6713
IC20	427.18	6.33	417.80	442.27	0.6699
IC25	440.23	7.92	428.50	459.08	0.6689
IC40	479.37	12.87	460.60	511.28	0.7194
IC50	510.04	19.17	482.00	551.06	0.2858

Dose-Response Plot

Growth-Weight Plot

1-tail, 0.01 level of significance

AbKCICR Test Number: **277**

Daily Chemistry:

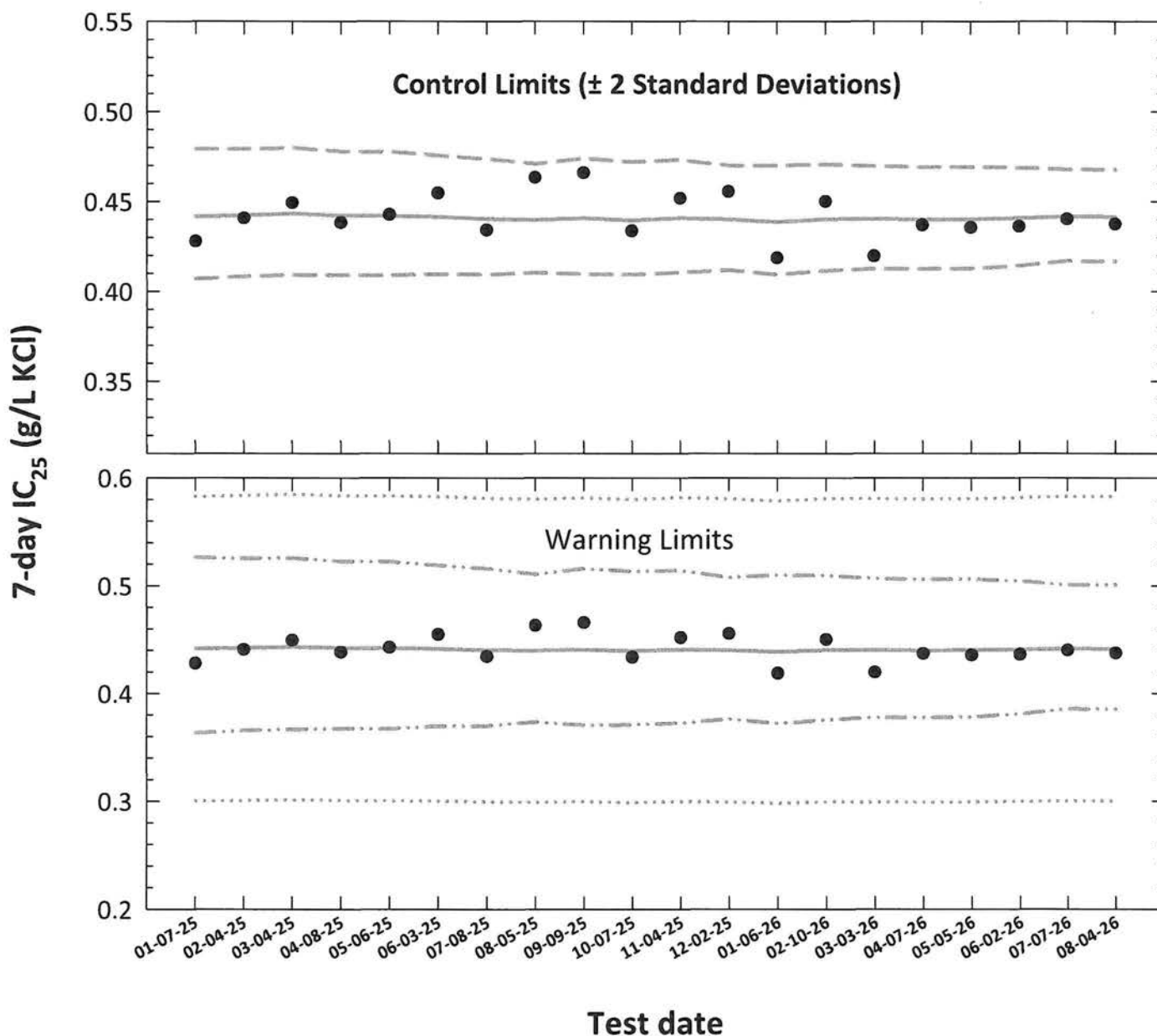
Temperatures performed at the time of test initiation, renewal or termination by the analyst identified in the Daily Renewal Information table located on Page 1. Alkalinity performed by the analyst identified on the bench sheet specific for this analysis and transcribed to this bench sheet.

Conc.	Parameter	Day (Analyst identified for each day, performed pH, D.O. and salinity measurements only.)						
		0		1		2		
		Analyst		XL	XL	XL	XL	XL
CONTROL, Salt SW	pH (S.U.)	8.07	7.98	8.06	7.91	8.03	7.95	
	DO (mg/L)	8.6	8.0	8.2	7.9	8.4	7.9	
	Salinity (ppt)	25.0	25.1	25.0	25.1	24.8	24.8	
	Alkalinity (mg CaCO ₃ /L)	110		—	12.24.11	120		
	Temperature (°C)	25.2	25.7	25.2	25.7	25.1	25.6	
250 mg KCl/L	pH (S.U.)	8.03	7.98	8.03	7.88	8.00	7.91	
	DO (mg/L)	8.7	8.0	8.2	7.9	8.4	7.8	
	Salinity (ppt)	25.2	25.2	25.2	25.1	24.9	25.0	
	Temperature (°C)	25.2	25.5	25.2	25.3	25.1	25.4	
375 mg KCl/L	pH (S.U.)	8.03	7.99	8.03	7.89	7.99	7.91	
	DO (mg/L)	8.6	8.0	8.2	7.9	8.4	7.8	
	Salinity (ppt)	25.3	25.4	25.2	25.1	25.1	25.2	
	Temperature (°C)	25.3	25.5	25.2	25.2	25.1	25.4	
500 mg KCl/L	pH (S.U.)	8.03	7.95	8.03	7.88	7.99	7.91	
	DO (mg/L)	8.6	7.9	8.2	7.9	8.4	7.8	
	Salinity (ppt)	25.4	25.6	25.3	25.3	25.2	25.3	
	Temperature (°C)	25.1	25.2	25.2	25.2	25.1	25.3	
750 mg KCl/L	pH (S.U.)	8.02	7.96					
	DO (mg/L)	8.5	7.8					
	Salinity (ppt)	25.6	25.7					
	Temperature (°C)	25.2	25.7					
1000 mg KCl/L	pH (S.U.)	8.03	7.97					
	DO (mg/L)	8.5	7.8					
	Salinity (ppt)	25.6	25.9					
	Temperature (°C)	25.2	25.7					
		Initial	Final		Initial	Final	Initial	Final

AbKCICR Test Number: 277

Conc.	Parameter	Day (Analyst identified for each day, performed pH, D.O. and salinity measurements only.)							
		3		4		5		6	
		Analyst	XL	BSL	BSL	BSL	BSL	XL	BSL
CONTROL, Salt SW	pH (S.U.)		8.02	7.85	7.93	7.87	8.16	7.93	8.04
	DO (mg/L)		8.2	8.3	8.4	8.0	8.4	7.8	8.2
	Salinity (ppt)		24.8	24.9	24.0	24.0	24.9	25.2	25.0
	Alkalinity (mg CaCO ₃ /L)			130					
	Temperature (°C)		25.3	25.6	25.2	25.6	25.2	25.6	25.1
250 mg KCl/L	pH (S.U.)		8.02	7.94	8.06	7.93	8.01	7.79	7.90
	DO (mg/L)		8.1	8.1	8.4	7.9	8.4	7.8	8.2
	Salinity (ppt)		25.1	25.0	25.0	24.9	25.1	25.3	25.2
	Temperature (°C)		25.1	25.5	25.3	25.4	25.3	25.6	25.2
375 mg KCl/L	pH (S.U.)		8.01	7.93	8.07	7.93	8.01	7.75	7.88
	DO (mg/L)		8.1	8.1	8.5	7.9	8.4	7.8	8.2
	Salinity (ppt)		25.1	25.1	25.1	25.1	25.1	25.4	25.4
	Temperature (°C)		25.1	25.4	25.3	25.7	25.3	25.5	25.1
500 mg KCl/L	pH (S.U.)		8.01	7.93	8.07	7.98	8.00	7.74	7.88
	DO (mg/L)		8.1	8.1	8.5	7.8	8.4	7.7	8.2
	Salinity (ppt)		25.2	25.2	25.2	25.3	25.2	25.5	25.4
	Temperature (°C)		25.2	25.6	25.3	25.7	25.2	25.4	25.1
750 mg KCl/L	pH (S.U.)								
	DO (mg/L)								
	Salinity (ppt)								
	Temperature (°C)								
1000 mg KCl/L	pH (S.U.)								
	DO (mg/L)								
	Salinity (ppt)								
	Temperature (°C)								
		Initial	Final	Initial	Final	Initial	Final	Initial	Final

Americamysis (Mysidopsis) bahia Chronic Reference Toxicant Control Chart Source: Aquatic Indicators, Inc.



- **7-day IC_{25}** = 25% inhibition concentration. An estimation of the potassium chloride concentration which would cause a 25% reduction in *Americamysis* growth (calculated using ToxCalc).
- **Central Tendency** (mean logarithmic IC_{25} converted to anti-logarithmic values)
- - - **Control Limits** (mean logarithmic $IC_{25} \pm 2$ standard deviations converted to anti-logarithmic values)
- . - . - **Laboratory Warning Limits** (mean logarithmic $IC_{25} \pm 2$ coefficient of variations converted to anti-logarithmic values)
- **USEPA Warning Limits** (mean logarithmic $IC_{25} \pm S_{A.75}$ converted to anti-logarithmic values,
 $S_{A.75}$ = 75th percentile of CVs reported nationally by USEPA)

Americamysis (Mysidopsis) bahia Chronic Reference Toxicant Control Chart Source: Aquatic Indicators, Inc.

Test number	Test date	7-day IC ₂₅ ToxCal Determination (g/L KCl)	Log ₁₀ Conversion			Anti-logarithmic Values (g/L KCl)						
			7-day IC ₂₅	CT	S	CT	Control Limits		Laboratory Calculated CV Warning Limits		75th Percentile CV Warning Limits	
							CT - 2S	CT + 2S	CT - 2CV	CT + 2CV	CT - S _{A,75}	CT + S _{A,75}
1	01-07-25	0.4280	-0.3686	-0.3549	0.0177	0.4417	0.4071	0.4792	0.3634	0.5266	0.3003	0.5830
2	02-04-25	0.4408	-0.3558	-0.3542	0.0173	0.4424	0.4085	0.4792	0.3657	0.5255	0.3008	0.5840
3	03-04-25	0.4493	-0.3474	-0.3534	0.0173	0.4432	0.4093	0.4799	0.3667	0.5260	0.3014	0.5850
4	04-08-25	0.4382	-0.3583	-0.3545	0.0169	0.4421	0.4091	0.4777	0.3674	0.5228	0.3006	0.5835
5	05-06-25	0.4428	-0.3538	-0.3545	0.0169	0.4421	0.4091	0.4778	0.3674	0.5228	0.3006	0.5836
6	06-03-25	0.4548	-0.3422	-0.3550	0.0162	0.4415	0.4098	0.4757	0.3696	0.5190	0.3002	0.5828
7	07-08-25	0.4342	-0.3624	-0.3562	0.0159	0.4404	0.4093	0.4738	0.3699	0.5162	0.2995	0.5813
8	08-05-25	0.4634	-0.3340	-0.3567	0.0149	0.4398	0.4107	0.4710	0.3736	0.5108	0.2991	0.5806
9	09-09-25	0.4660	-0.3316	-0.3559	0.0158	0.4407	0.4097	0.4740	0.3705	0.5162	0.2997	0.5817
10	10-07-25	0.4336	-0.3629	-0.3570	0.0155	0.4396	0.4093	0.4721	0.3708	0.5135	0.2989	0.5802
11	11-04-25	0.4518	-0.3451	-0.3557	0.0154	0.4408	0.4107	0.4732	0.3724	0.5143	0.2998	0.5819
12	12-02-25	0.4557	-0.3414	-0.3564	0.0143	0.4401	0.4121	0.4701	0.3764	0.5082	0.2993	0.5810
13	01-06-26	0.4187	-0.3781	-0.3579	0.0150	0.4387	0.4094	0.4700	0.3720	0.5100	0.2983	0.5790
14	02-10-26	0.4500	-0.3468	-0.3564	0.0146	0.4401	0.4116	0.4706	0.3753	0.5094	0.2993	0.5809
15	03-03-26	0.4198	-0.3770	-0.3561	0.0140	0.4404	0.4129	0.4698	0.3779	0.5071	0.2995	0.5814
16	04-07-26	0.4370	-0.3595	-0.3566	0.0140	0.4400	0.4126	0.4692	0.3777	0.5064	0.2992	0.5807
17	05-05-26	0.4356	-0.3609	-0.3564	0.0139	0.4401	0.4128	0.4692	0.3781	0.5062	0.2993	0.5810
18	06-02-26	0.4362	-0.3603	-0.3558	0.0134	0.4408	0.4144	0.4688	0.3809	0.5044	0.2997	0.5818
19	07-07-26	0.4402	-0.3563	-0.3548	0.0125	0.4418	0.4170	0.4680	0.3858	0.5011	0.3004	0.5831
20	08-04-26	0.4375	-0.3591	-0.3551	0.0125	0.4415	0.4167	0.4677	0.3853	0.5010	0.3002	0.5828

Note: 7-day IC₂₅ = 25% inhibition concentration. An estimation of the potassium chloride concentration that would cause a 25% reduction in *Americamysis* growth (calculated using ToxCalc).

CT = Central tendency of the IC₂₅ values.

S = Standard deviation of the IC₂₅ values.

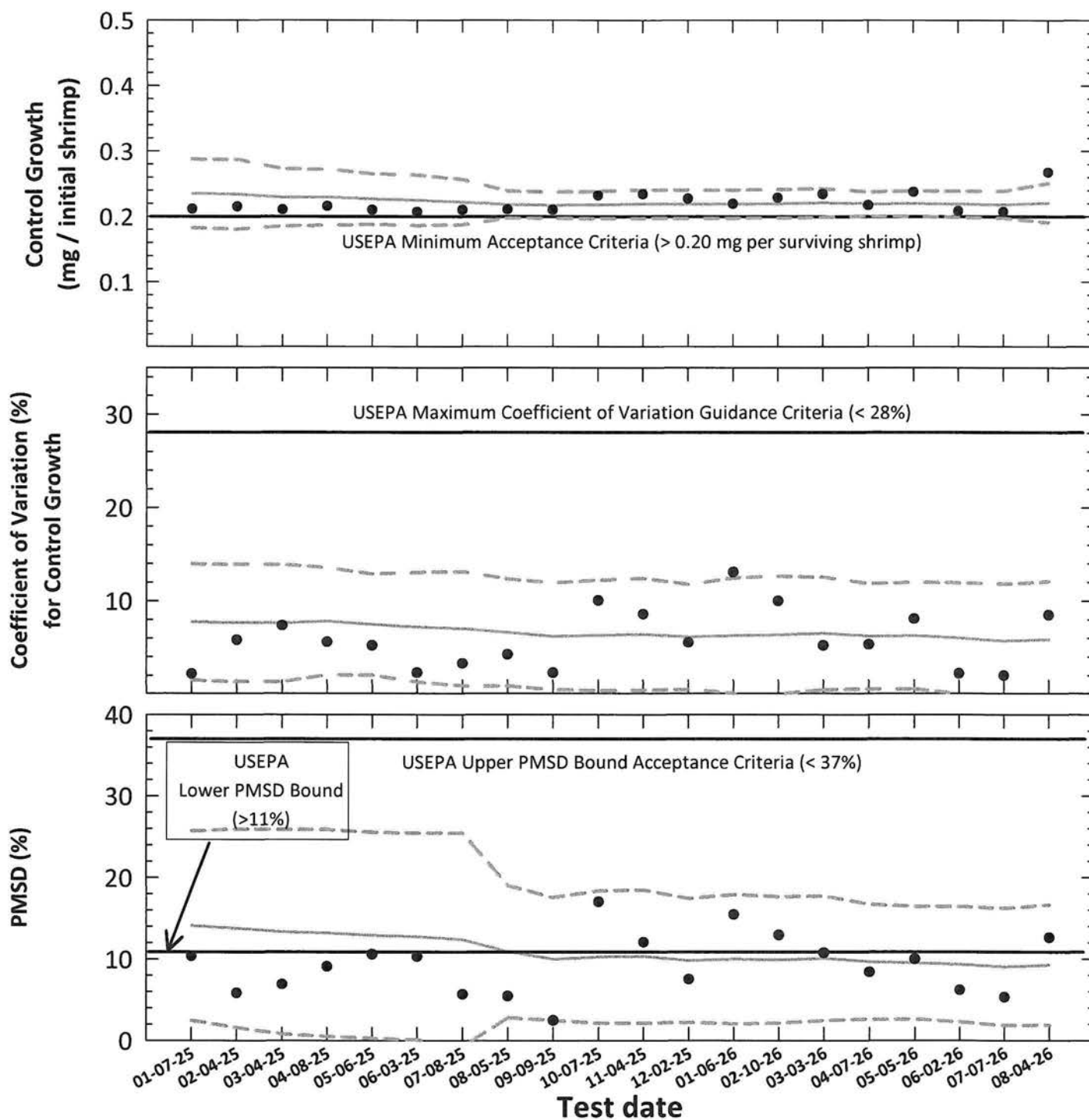
Control Limits = Mean logarithmic IC₂₅ ± 2 standard deviations converted to anti-logarithmic values.

Warning Limits = Mean logarithmic IC₂₅ ± 2CV or S_{A,75} converted to anti-logarithmic values.

S_{A,75} = Standard deviation corresponding to the 75th percentile of CVs reported nationally by USEPA (S_{A,75} = 0.32).

CV = Coefficient of variation.

Americamysis (Mysidopsis) bahia
Chronic Reference Toxicant Testing, Test Acceptability Criteria
Organism Source: Aquatic Indicators, Inc.



- **Control Growth, Coefficient of Variation (CV) or Percent Minimum Significant Difference (PMSD)**
PMSD is the percent minimum significant difference between the control and treatment that can be declared statistically significant. The lower PMSD bound represents a practical limit to the sensitivity of the test method and is not a minimum acceptance criteria.
- **Central Tendency** (mean Control Growth, CV or PMSD)
- - - **95% Confidence Interval** (mean Control Growth, CV or PMSD $\pm$ 2 Standard Deviations)

Americamysis (Mysidopsis) bahia
Chronic Reference Toxicant Testing, Test Acceptability Criteria
Source: Aquatic Indicators, Inc.

Test number	Test date	ToxCal Determination						Control Growth		Control Growth CV		Test PMSD			
		Control Survival (%)	Control Growth			Test PMSD (%)	CT	95% Confidence Interval CT -2S	95% Confidence Interval CT +2S	CT	95% Confidence Interval CT -2S	95% Confidence Interval CT +2S	CT	95% Confidence Interval CT -2S	95% Confidence Interval CT +2S
			Mean (mg/initial shrimp)	CV (%)	MSD										
1	01-07-25	100	0.212	2.2	0.0219	10.4	0.235	0.183	0.288	7.7	1.5	14.0	14.1	2.5	25.7
2	02-04-25	100	0.215	5.8	0.0125	5.8	0.234	0.181	0.287	7.6	1.3	13.9	13.7	1.5	25.9
3	03-04-25	100	0.211	7.4	0.0146	6.9	0.229	0.185	0.273	7.6	1.3	13.9	13.3	0.8	25.9
4	04-08-25	100	0.216	5.6	0.0196	9.1	0.230	0.187	0.273	7.8	2.1	13.6	13.2	0.5	25.9
5	05-06-25	100	0.210	5.2	0.0222	10.6	0.227	0.188	0.265	7.5	2.0	12.9	12.9	0.3	25.5
6	06-03-25	100	0.207	2.3	0.0213	10.3	0.225	0.186	0.264	7.2	1.3	13.1	12.8	0.1	25.4
7	07-08-25	100	0.210	3.3	0.0119	5.7	0.222	0.188	0.257	7.0	0.9	13.2	12.4	-0.7	25.5
8	08-05-25	100	0.211	4.3	0.0115	5.5	0.219	0.198	0.239	6.6	0.9	12.4	10.9	2.8	19.0
9	09-09-25	100	0.210	2.3	0.0052	2.5	0.218	0.198	0.237	6.2	0.5	11.9	10.0	2.5	17.5
10	10-07-25	100	0.232	10.0	0.0395	17.0	0.218	0.197	0.239	6.3	0.4	12.2	10.2	2.1	18.4
11	11-04-25	100	0.234	8.6	0.0282	12.1	0.219	0.197	0.241	6.4	0.4	12.4	10.3	2.1	18.4
12	12-02-25	100	0.228	5.6	0.0171	7.5	0.219	0.197	0.241	6.2	0.5	11.8	9.8	2.2	17.4
13	01-06-26	100	0.220	13.1	0.0339	15.4	0.219	0.198	0.241	6.3	0.1	12.5	10.0	2.0	17.9
14	02-10-26	100	0.229	10.0	0.0296	12.9	0.220	0.198	0.242	6.4	0.0	12.7	9.9	2.1	17.6
15	03-03-26	100	0.234	5.2	0.0252	10.8	0.221	0.199	0.243	6.5	0.5	12.6	10.1	2.4	17.7
16	04-07-26	100	0.218	5.3	0.0183	8.4	0.220	0.201	0.238	6.2	0.6	11.9	9.7	2.6	16.7
17	05-05-26	100	0.238	8.1	0.0238	10.0	0.220	0.200	0.240	6.3	0.6	12.0	9.5	2.6	16.5
18	06-02-26	100	0.209	2.2	0.0129	6.2	0.219	0.199	0.239	6.0	0.1	12.0	9.3	2.3	16.4
19	07-07-26	100	0.207	2.0	0.0110	5.3	0.218	0.198	0.239	5.7	-0.4	11.8	9.0	1.8	16.2
20	08-04-26	100	0.267	8.5	0.0337	12.6	0.221	0.191	0.251	5.8	-0.4	12.1	9.2	1.9	16.6

Note:
Control Survival = USEPA minimum test acceptability criteria ≥ 80% survival.
Control Mean Growth = USEPA minimum test acceptability criteria ≥ 0.20 mg/surviving shrimp.
CV = Coefficient of variation for control growth.
USEPA maximum CV guidance criteria (90th percentile) < 28%
MSD = Minimum significant difference.
PMSD = Percent minimum significant difference.
PMSD is a measure of test precision. The PMSD is the minimum percent difference between the control and treatment that can be declared statistically significant in a whole effluent toxicity test.
Lower PMSD bound determined by USEPA (10th percentile) > 11%.
The lower PMSD bound represents a practical limit to the sensitivity of the test method and is not a minimum acceptance criteria.
Upper PMSD bound acceptance criteria determined by USEPA (90th percentile) < 37%.
CT = Central tendency of the growth, CV or PMSD values.
S = Standard deviation of the growth, CV or PMSD values.

Potassium Chloride Chronic Reference Toxicant Test (EPA-821-R-02-014, Method 1007.0)

Species: *Americamysis (Mysidopsis) bahia*

AbKCICR Test Number: **278**

Dilution preparation information:						Comments:
KCl Stock INSS number:	INSS 2486					
Stock preparation:	50 g KCl/L: Dissolve 50 g KCl in 1-L Deionized water					
Dilution prep (mg/L)	250	375	500	750	1000	
Stock volume (mL)	10	15	20	30	40	
Diluent volume (mL)	1990	1985	1980	1970	1960	
Total volume (mL)	2000	2000	2000	2000	2000	

Test organism information:			Test information:	
Organism age:	7-days old		Randomizing template:	ORANGE
Date and times organisms were born between:	07-28-26 1200 to 07-29-26 1130		Incubator number and shelf location:	6B
Organism source:	AI Batch Ab: 07-29-26		Artemia CHM number:	CHM1432
			Drying information for weight determination:	
Transfer bowl information:	pH = 7.81 S.U.		Date / Time in oven:	08-11-26 1107
	Temperature = 25.1 °C		*Initial oven temperature:	60 °C
Average transfer volume:	< 0.25 mL		Date / Time out of oven:	08-12-26 1110
			*Final oven temperature:	60 °C
			Total drying time:	24-HOURS

Daily feeding and renewal information:

*60°C Oven, Thermometer SN: 14-98585

Day	Date	Morning feeding		Afternoon feeding		Test initiation, renewal, or termination		Salt SW batch used
		Time	Analyst	Time	Analyst	Time	Analyst	
0	08-04-26	1045	K	1330	K	1232	K	01-30-26 A
1	08-05-26	0500	A	1100	K	0850	K	↓
2	08-06-26	0500	K	1130	K	0900	K	08-03-26
3	08-07-26	0500	K	1100	K	0813	K	↓
4	08-08-26	0600	K	1200	K	0915	K	08-06-26
5	08-09-26	0600	K	1200	K	0910	K	↓
6	08-10-26	0500	K	1100	K	0857	K	↓
7	08-11-26					1035	K	

Chemical analyses:

Parameter	Reporting Limit	Method number	Meter	Serial number
pH	0.1 S.U.	SM 4500-H+ B-2021	Accumet AR20	93312452
Dissolved Oxygen (D.O.)	1.0 mg/L	SM 4500-O H-2021	HACH HQ430d Flexi	SN250100050300
Salinity	1.0 ppt	SM 2520 B-2021	YSI PRO30	18D104324
Alkalinity	5.0 mg CaCO ₃ /L	SM 2320 B-2021	Accumet AR20	93312452
Temperature	0.1 °C	SM 2550B-2010	Digital Thermometer	130664685

Control information:		Acceptance criteria	Summary of test endpoints:	
% Mortality:	01	≤ 20%	7-day LC ₅₀ (mg/L KCl)	528.5
Average weight per initial shrimp:	0.267		NOEC (mg/L KCl)	375
Average weight per surviving shrimp:	0.267	≥ 0.20 mg/shrimp	LOEC (mg/L KCl)	500
			ChV (mg/L KCl)	438.0
			IC ₂₅ (mg/L KCl)	437.5

AbKCICR Test Number: **278**

Survival and Growth Data

Day	CONTROL								250 mg KCl/L							
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
2	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
3	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
4	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
5	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
6	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
7	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
# females with eggs in brood sac																
# females with developing ova in oviducts																
# immature females																
# males																
*A = Pan weight (mg) Tray color code: Analyst: Date:	9.76	9.26	8.92	9.30	10.09	8.69	9.29	10.09	10.56	10.16	10.34	9.92	11.89	14.05	13.34	12.32
*B = Pan + Shrimp weight (mg) Analyst: Date:	11.11	10.76	10.38	10.54	11.24	9.98	10.62	11.46	12.07	11.53	11.54	11.41	13.44	15.58	14.75	13.71
C = Shrimp weight (mg) = B - A Hand calculated Analyst:	1.35	1.50	1.46	1.24	1.15	1.29	1.33	1.37	1.51	1.37	1.20	1.49	1.55	1.53	1.41	1.41
Weight per initial number of shrimp (mg) = C / Initial number of shrimp Hand calculated Analyst:	0.270	0.300	0.292	0.248	0.230	0.258	0.266	0.274	0.302	0.274	0.240	0.298	0.310	0.306	0.282	0.288
Average weight per initial number of shrimp (mg) 0.267								Average weight per initial number of shrimp (mg) 0.268								Percent reduction from control (%) -7.67.

*Weight measurements performed using Cahn 28 Automatic Electrobalance, SN 41520.

Comment codes: c = clear, d = dead, fg = fungus, k = killed, m = missing, sk = sick, sm = unusually small, lg = unusually large, d&r = decanted and returned, w = wounded.

Comments:

AbKCICR Test Number: **278****Survival and Growth Data**

Day	375 mg KCl/L								500 mg KCl/L							
	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF
0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
2	5	5	5	5	5	5	5	5	5	4 ^{1d}	5	4 ^{1d}	4 ^{1d}	5	5	5
3	5	5	5	5	5	5	5	5	5	2 ^{2d}	4 ^{1d}	3 ^{1d}	3 ^{1d}	5	5	4 ^{1d}
4	5	5	5	5	5	5	5	5	4 ^{1d}	2	3 ^{1d}	3	3	4 ^{1d}	5	4
5	5	5	5	5	5	5	5	5	3 ^{1d}	2	3	2	3	4	3 ^{2d}	4
6	5	5	5	5	5	5	5	5	3	2	3	2	3	4	3	4
7	5	5	5	5	5	5	5	5	3	2	3	2	3	5 ^{1d}	3	4
# females with eggs in brood sac																
# females with developing ova in oviducts																
# immature females																
# males																
*A = Pan weight (mg) Tray color code: <u>Forest Green</u> Analyst: <u>XL</u> Date: <u>03/24/20</u>	11.98	13.07	13.15	13.00	13.56	14.90	12.04	11.72	12.94	12.73	11.49	13.37	9.68	11.48	12.13	11.66
*B = Pan + Shrimp weight (mg) Analyst: <u>H</u> Date: <u>03-13-20</u>	13.37	14.22	14.64	14.51	14.81	16.43	13.38	13.11	13.44	13.29	12.08	13.94	10.47	12.30	12.99	12.51
C = Shrimp weight (mg) = B - A Hand calculated Analyst:	1.39	1.15	1.49	1.51	1.25	1.53	1.34	1.39	0.50	0.56	0.59	0.62	0.79	0.82	0.86	0.85
Weight per initial number of shrimp (mg) = C / Initial number of shrimp Hand calculated Analyst:	0.278	0.230	0.298	0.302	0.250	0.306	0.268	0.278	0.100	0.112	0.118	0.124	0.158	0.164	0.172	0.170
	Average weight per initial number of shrimp (mg) 0.276				Percent reduction from control (%) -3.47				Average weight per initial number of shrimp (mg) 0.140				Percent reduction from control (%) 47.77			

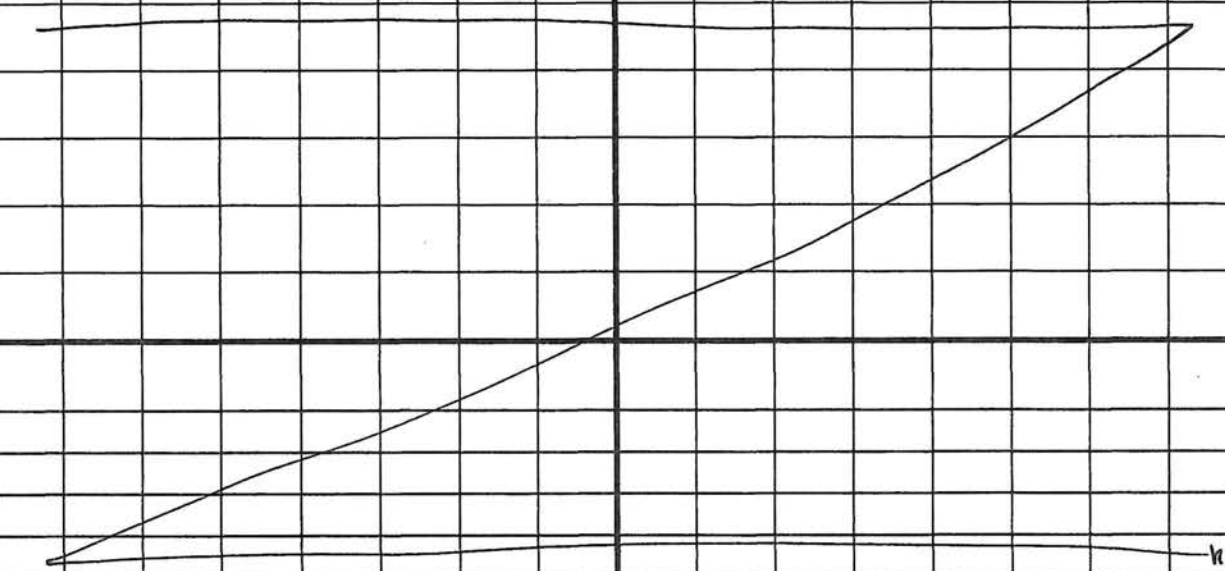
*Weight measurements performed using Cahn 28 Automatic Electrobalance, SN 41520.

Comment codes: c = clear, d = dead, fg = fungus, k = killed, m = missing, sk = sick, sm = unusually small, lg = unusually large, d&r = decanted and returned, w = wounded.

Comments:

AbKCICR Test Number: **278**

Survival and Growth Data

Day	750 mg KCl/L								1000 mg KCl/L							
	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV
0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}
2	 The graph shows survival and growth data over 7 days for two concentrations of KCl/L (750 mg and 1000 mg). The y-axis represents the number of shrimp (0 to 5). The x-axis represents the day (0 to 7). The 750 mg KCl/L group (left side) shows a steady decline in survival from 5 to 0 by day 1, with no further data points. The 1000 mg KCl/L group (right side) shows a steady decline in survival from 5 to 0 by day 7. The graph also includes lines for the number of females with eggs in brood sac, females with developing ova in oviducts, immature females, and males, all of which remain at 0 throughout the 7-day period.															
3																
4																
5																
6																
7																
# females with eggs in brood sac																
# females with developing ova in oviducts																
# immature females																
# males																
*A = Pan weight (mg) Tray color code: _____																
Analyst: _____																
Date: _____																
*B = Pan + Shrimp weight (mg)																
Analyst: _____																
Date: _____																
C = Shrimp weight (mg) = B - A																
Hand calculated																
Analyst: _____																
Weight per initial number of shrimp (mg) = C / initial number of shrimp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hand calculated																
Analyst: _____																
Average weight per initial number of shrimp (mg)	0								0							
Percent reduction from control (%)	100?								100?							

*Weight measurements performed using Cahn 28 Automatic Electrobalance, SN 41520.

Comment codes: c = clear, d = dead, fg = fungus, k = killed, m = missing, sk = sick, sm = unusually small, lg = unusually large, d&r = decanted and returned, w = wounded.

Comments:

Americamysis bahia Chronic Reference Toxicant Test
EPA-821-R-02-014, Method 1007.0

Quality Control
Verification of Data Entry, Calculations, and Statistical Analyses

Test number: _____ 27:
Test dates: _____ August 04-11, 202

Concentration (mg/L KCl)	Replicate	Initial number of larvae	Final number of larvae	A = Pan weight (mg)	B = Pan + Larvae weight (mg)	Larvae weight (mg) = B - A	Weight / Initial number of larvae (mg)	Mean survival (%)	Mean weight (mg)	Coefficient of variation (%)	Percent reduction from control (%)
Control	A	5	5	9.76	11.11	1.35	0.270	100.0	0.267	8.5	Not applicable
	B	5	5	9.26	10.76	1.50	0.300				
	C	5	5	8.92	10.38	1.46	0.292				
	D	5	5	9.30	10.54	1.24	0.248				
	E	5	5	10.09	11.24	1.15	0.230				
	F	5	5	8.69	9.98	1.29	0.258				
	G	5	5	9.29	10.62	1.33	0.266				
	H	5	5	10.09	11.46	1.37	0.274				
250	I	5	5	10.56	12.07	1.51	0.302	100.0	0.288	7.9	-7.6
	J	5	5	10.16	11.53	1.37	0.274				
	K	5	5	10.34	11.54	1.20	0.240				
	L	5	5	9.92	11.41	1.49	0.298				
	M	5	5	11.89	13.44	1.55	0.310				
	N	5	5	14.05	15.58	1.53	0.306				
	O	5	5	13.34	14.75	1.41	0.282				
	P	5	5	12.33	13.77	1.44	0.288				
375	Q	5	5	11.98	13.37	1.39	0.278	100.0	0.276	9.6	-3.4
	R	5	5	13.07	14.22	1.15	0.230				
	S	5	5	13.15	14.64	1.49	0.298				
	T	5	5	13.00	14.51	1.51	0.302				
	U	5	5	13.56	14.81	1.25	0.250				
	V	5	5	14.90	16.43	1.53	0.306				
	W	5	5	12.04	13.38	1.34	0.268				
	X	5	5	11.72	13.11	1.39	0.278				
500	Y	5	3	12.94	13.44	0.50	0.100	57.5	0.140	20.9	47.7
	Z	5	2	12.73	13.29	0.56	0.112				
	AA	5	3	11.49	12.08	0.59	0.118				
	BB	5	2	13.37	13.99	0.62	0.124				
	CC	5	3	9.68	10.47	0.79	0.158				
	DD	5	3	11.48	12.30	0.82	0.164				
	EE	5	3	12.13	12.99	0.86	0.172				
	FF	5	4	11.66	12.51	0.85	0.170				
750	GG	5	0	0.00	0.00	0.00	0.000	0.0	0.000	0.0	100.0
	HH	5	0	0.00	0.00	0.00	0.000				
	II	5	0	0.00	0.00	0.00	0.000				
	JJ	5	0	0.00	0.00	0.00	0.000				
	KK	5	0	0.00	0.00	0.00	0.000				
	LL	5	0	0.00	0.00	0.00	0.000				
	MM	5	0	0.00	0.00	0.00	0.000				
	NN	5	0	0.00	0.00	0.00	0.000				
1000	OO	5	0	0.00	0.00	0.00	0.000	0.0	0.000	0.0	100.0
	PP	5	0	0.00	0.00	0.00	0.000				
	QQ	5	0	0.00	0.00	0.00	0.000				
	RR	5	0	0.00	0.00	0.00	0.000				
	SS	5	0	0.00	0.00	0.00	0.000				
	TT	5	0	0.00	0.00	0.00	0.000				
	UU	5	0	0.00	0.00	0.00	0.000				
	VV	5	0	0.00	0.00	0.00	0.000				

Dunnett's MSD value: 0.0337
PMSD: 12.6

MSD = Minimum Significant Difference
PMSD = Percent Minimum Significant Difference

PMSD is a measure of test precision. The PMSD is the minimum percent difference between the control and treatment that can be declared statistically significant in a whole effluent toxicity test.

Lower PMSD bound determined by USEPA (10th percentile) = 11%.

Upper PMSD bound determined by USEPA (90th percentile) = 37%.

Lower and upper PMSD bounds were determined from the 10th and 90th percentile, respectively, of PMSD data from EPA's WET Interlaboratory Variability Study (USEPA, 2001a; USEPA, 2001b). The lower PMSD bound represents a practical limit to the sensitivity of the test method and is not a minimum acceptance criteria.

Conc-mg/L	1	2	3	4	5	6	7	8
D-Control	0.2700	0.3000	0.2920	0.2480	0.2300	0.2580	0.2660	0.2740
250	0.3020	0.2740	0.2400	0.2980	0.3100	0.3060	0.2820	0.2880
375	0.2780	0.2300	0.2980	0.3020	0.2500	0.3060	0.2680	0.2780
500	0.1000	0.1120	0.1180	0.1240	0.1580	0.1640	0.1720	0.1700
750	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-mg/L	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%	Mean					N-Mean	
D-Control	0.2673	1.0000	0.2673	0.2300	0.3000	8.466	8				0.2774	1.0000	
250	0.2875	1.0758	0.2875	0.2400	0.3100	7.929	8	-1.684	2.799	0.0337	0.2774	1.0000	
375	0.2763	1.0337	0.2763	0.2300	0.3060	9.600	8	-0.748	2.799	0.0337	0.2763	0.9959	
500	0.1398	0.5229	0.1398	0.1000	0.1720	20.858	8				0.1398	0.5038	
750	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	8				0.0000	0.0000	
1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	8				0.0000	0.0000	

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$)	0.94188	0.884	-0.6283	-0.265
Bartlett's Test indicates equal variances ($p = 0.90$)	0.21801	9.21035		

Hypothesis Test (1-tail, 0.01)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	375	>375			0.03365	0.12592	0.00082	0.00058	0.26308	2, 21

Treatments vs D-Control

Linear Interpolation (200 Resamples)					
Point	mg/L	SD	95% CL	Skew	
IC05	386.67	11.93	339.01	389.33	-3.5994
IC10	399.37	5.35	383.35	403.67	-1.8205
IC15	412.07	5.10	397.30	418.00	-0.9865
IC20	424.77	5.24	411.39	432.34	-0.4949
IC25	437.47	5.59	424.71	446.67	-0.1327
IC40	475.57	7.51	461.95	489.99	0.2367
IC50	501.90	12.18	484.15	529.13	0.5702

AbKCICR Test Number: **278**

Daily Chemistry:

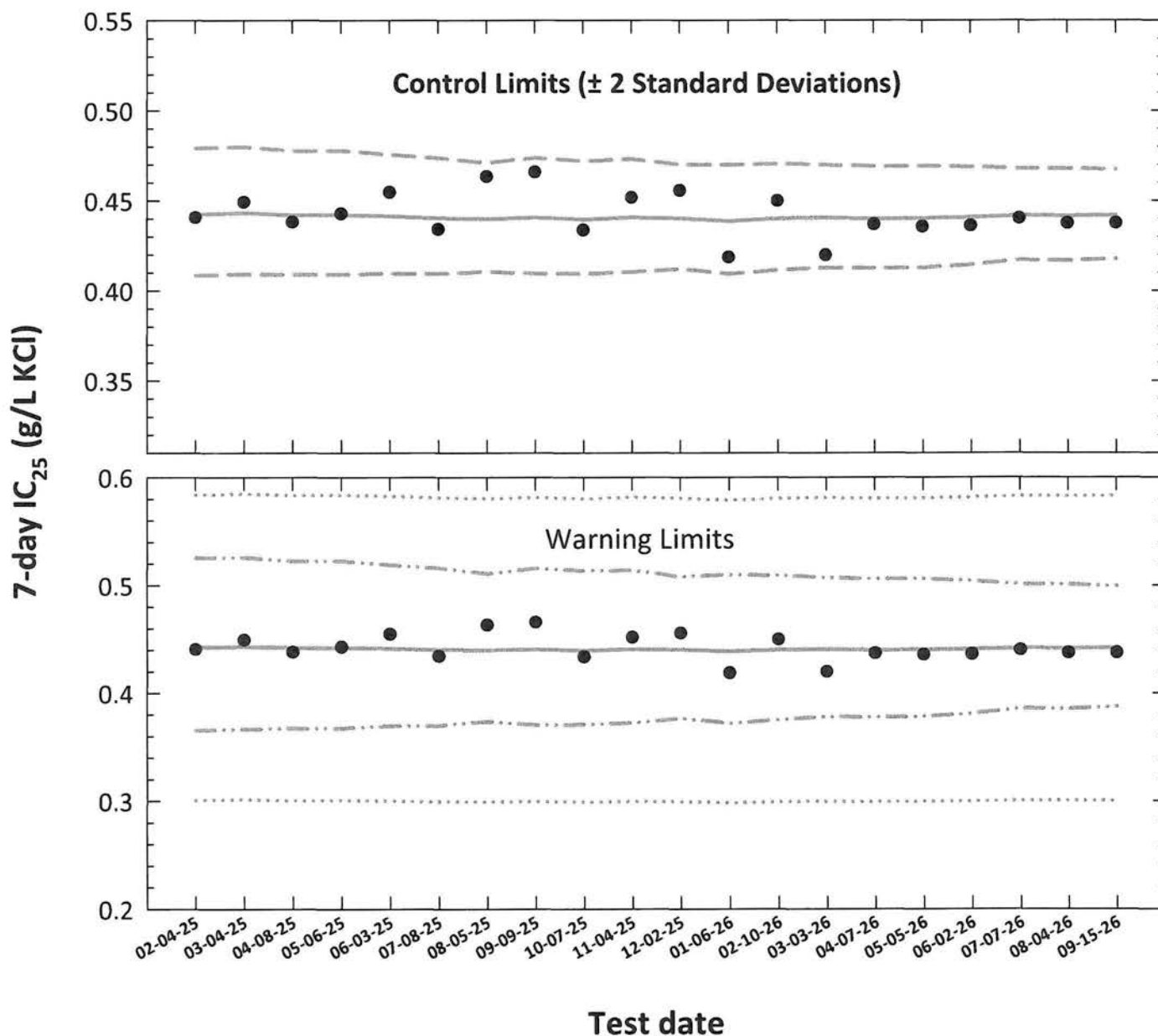
Temperatures performed at the time of test initiation, renewal or termination by the analyst identified in the Daily Renewal Information table located on Page 1. Alkalinity performed by the analyst identified on the bench sheet specific for this analysis and transcribed to this bench sheet.

Conc.	Parameter	Day (Analyst identified for each day, performed pH, D.O. and salinity measurements only.)					
		0		1		2	
		XL	XL	XL	XL	XL	XL
CONTROL, Salt SW	Analyst						
	pH (S.U.)	8.10	7.90	8.06	7.95	8.05	8.02
	DO (mg/L)	8.2	7.8	8.1	7.8	8.1	8.1
	Salinity (ppt)	24.7	25.0	24.7	24.8	24.7	24.9
	Alkalinity (mg CaCO ₃ /L)	110		—	—	140	
	Temperature (°C)	25.5	25.6	25.2	25.7	25.2	25.3
250 mg KCl/L	pH (S.U.)	8.02	7.92	7.98	7.89	7.97	7.95
	DO (mg/L)	8.3	7.9	8.1	7.8	8.1	8.1
	Salinity (ppt)	24.9	25.2	25.1	24.9	24.9	24.9
	Temperature (°C)	25.3	25.7	25.2	25.6	25.1	25.6
375 mg KCl/L	pH (S.U.)	8.01	7.92	7.97	7.88	7.96	7.95
	DO (mg/L)	8.3	7.9	8.1	7.9	8.1	8.1
	Salinity (ppt)	24.9	25.2	25.1	25.1	25.1	25.2
	Temperature (°C)	25.3	25.5	25.3	25.6	25.3	25.6
500 mg KCl/L	pH (S.U.)	8.01	7.92	7.97	7.87	7.96	7.95
	DO (mg/L)	8.3	7.9	8.1	7.8	8.1	8.1
	Salinity (ppt)	25.0	25.3	25.2	25.0	25.3	25.3
	Temperature (°C)	25.5	25.5	25.1	25.5	25.1	25.4
750 mg KCl/L	pH (S.U.)	8.01	7.93				
	DO (mg/L)	8.4	7.9				
	Salinity (ppt)	25.1	25.5				
	Temperature (°C)	25.5	25.5				
1000 mg KCl/L	pH (S.U.)	8.00	7.93				
	DO (mg/L)	8.4	7.8				
	Salinity (ppt)	25.3	25.6				
	Temperature (°C)	25.5	25.8				
		Initial	Final	Initial	Final	Initial	Final

AbKCICR Test Number: 278

Conc.	Parameter	Day (Analyst identified for each day, performed pH, D.O. and salinity measurements only.)							
		3		4		5		6	
		Analyst	XL	BSL	BSL	BSL	BSL	XL	XL
CONTROL, Salt SW	pH (S.U.)	8.07	7.98	8.07	7.98	8.10	7.94	8.07	7.82
	DO (mg/L)	8.2	8.3	8.4	8.0	8.3	7.9	8.0	6.1
	Salinity (ppt)	24.9	25.0	25.0	25.1	25.2	25.1	25.4	25.2
	Alkalinity (mg CaCO ₃ /L)	0.11-20.11		130				0.11-20.11	
	Temperature (°C)	25.2	25.7	25.3	25.7	25.2	25.5	25.3	25.7
250 mg KCl/L	pH (S.U.)	8.09	7.97	8.09	7.99	8.12	7.96	8.07	7.82
	DO (mg/L)	8.2	8.2	8.4	8.0	8.3	7.8	8.0	5.8
	Salinity (ppt)	25.3	25.2	25.2	25.2	25.2	25.2	25.3	25.2
	Temperature (°C)	25.2	25.6	25.1	25.5	25.3	25.6	25.2	25.5
375 mg KCl/L	pH (S.U.)	8.09	7.98	8.09	7.96	8.12	7.96	8.08	7.82
	DO (mg/L)	8.2	8.2	8.4	8.0	8.3	7.6	8.0	6.0
	Salinity (ppt)	25.3	25.3	25.4	25.3	25.2	25.3	25.4	25.4
	Temperature (°C)	25.3	25.6	25.1	25.7	25.3	25.7	25.2	25.5
500 mg KCl/L	pH (S.U.)	8.09	7.98	8.10	7.99	8.12	7.98	8.08	7.90
	DO (mg/L)	8.2	8.1	8.4	7.8	8.3	7.3	8.0	6.4
	Salinity (ppt)	25.3	25.5	25.5	25.4	25.2	25.4	25.5	25.4
	Temperature (°C)	25.3	25.6	25.2	25.7	25.3	25.6	25.2	25.6
750 mg KCl/L	pH (S.U.)								
	DO (mg/L)								
	Salinity (ppt)								
	Temperature (°C)								
1000 mg KCl/L	pH (S.U.)								
	DO (mg/L)								
	Salinity (ppt)								
	Temperature (°C)								0.0-0.5
		Initial	Final	Initial	Final	Initial	Final	Initial	Final

Americamysis (Mysidopsis) bahia Chronic Reference Toxicant Control Chart Source: Aquatic Indicators, Inc.



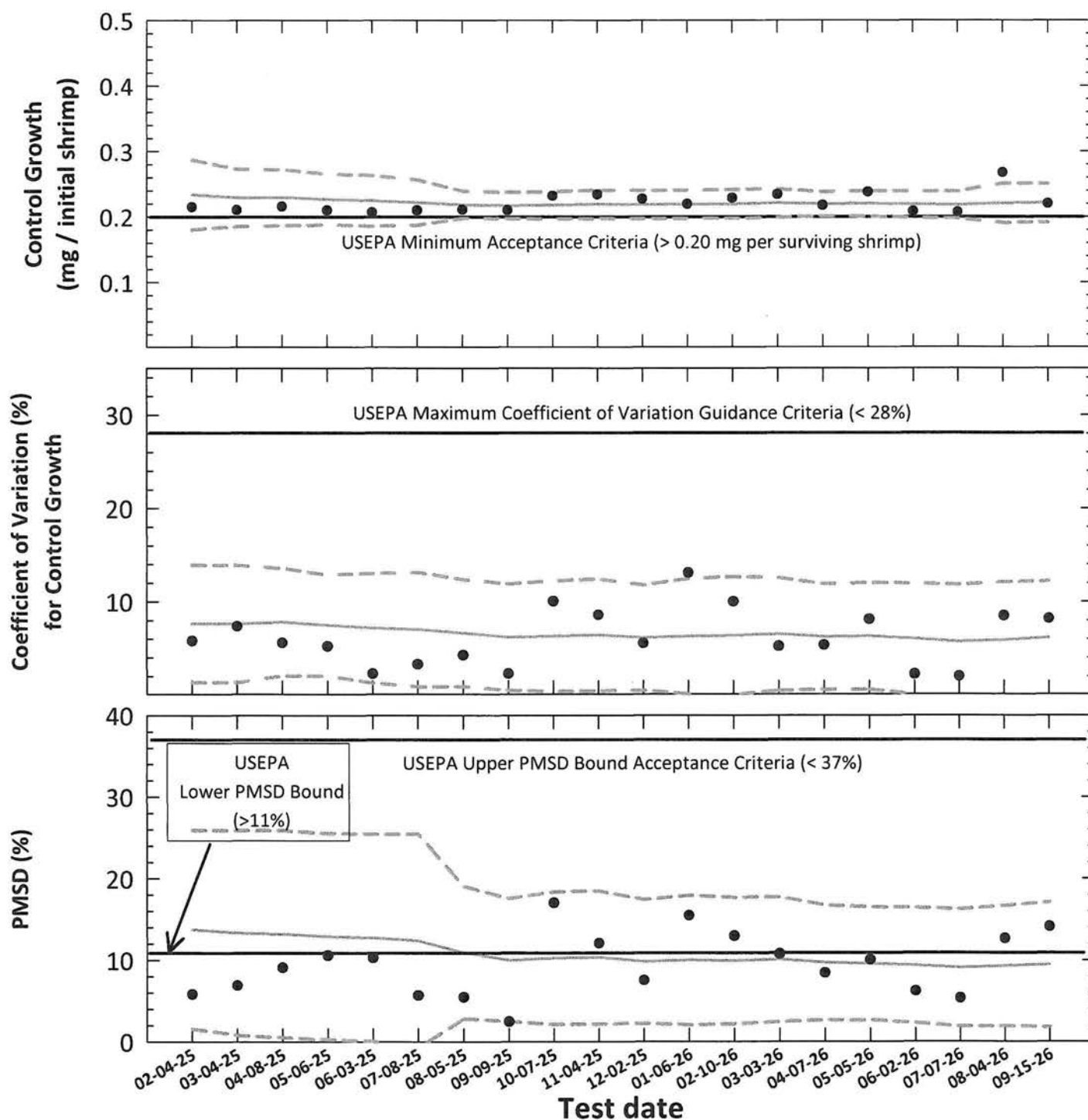
- **7-day IC_{25}** = 25% inhibition concentration. An estimation of the potassium chloride concentration which would cause a 25% reduction in *Americamysis* growth (calculated using ToxCalc).
- **Central Tendency** (mean logarithmic IC_{25} converted to anti-logarithmic values)
- - - **Control Limits** (mean logarithmic $IC_{25} \pm 2$ standard deviations converted to anti-logarithmic values)
- . - . - **Laboratory Warning Limits** (mean logarithmic $IC_{25} \pm 2$ coefficient of variations converted to anti-logarithmic values)
- **USEPA Warning Limits** (mean logarithmic $IC_{25} \pm S_{A.75}$ converted to anti-logarithmic values, $S_{A.75}$ = 75th percentile of CVs reported nationally by USEPA)

Americamysis (Mysidopsis) bahia
Chronic Reference Toxicant Testing, Test Acceptability Criteria
Source: Aquatic Indicators, Inc.

Test number	Test date	ToxCal Determination				Control Growth		Control Growth (mg/initial shrimp)		Control Growth CV		Test PMSD	
		Control Survival (%)	Control Growth		Test	CT	95% Confidence Interval CT - 2S	95% Confidence Interval CT + 2S	CT	95% Confidence Interval CT - 2S	95% Confidence Interval CT + 2S	CT	95% Confidence Interval CT - 2S
			Mean (mg/initial shrimp)	CV (%)									
1	02-04-25	100	0.215	5.8	0.0125	0.234	0.181	0.287	7.6	1.3	13.9	13.7	1.5
2	03-04-25	100	0.211	7.4	0.0146	0.229	0.185	0.273	7.6	1.3	13.9	13.3	0.8
3	04-08-25	100	0.216	5.6	0.0196	0.230	0.187	0.273	7.8	2.1	13.6	13.2	0.5
4	05-06-25	100	0.210	5.2	0.0222	0.227	0.188	0.265	7.5	2.0	12.9	12.9	0.3
5	06-03-25	100	0.207	2.3	0.0213	0.225	0.186	0.264	7.2	1.3	13.1	12.8	0.1
6	07-08-25	100	0.210	3.3	0.0119	0.222	0.188	0.257	7.0	0.9	13.2	12.4	-0.7
7	08-05-25	100	0.211	4.3	0.0115	0.219	0.198	0.239	6.6	0.9	12.4	10.9	2.8
8	09-09-25	100	0.210	2.3	0.0052	0.218	0.198	0.237	6.2	0.5	11.9	10.0	2.5
9	10-07-25	100	0.232	10.0	0.0395	0.218	0.197	0.239	6.3	0.4	12.2	10.2	2.1
10	11-04-25	100	0.234	8.6	0.0282	0.219	0.197	0.241	6.4	0.4	12.4	10.3	2.1
11	12-02-25	100	0.228	5.6	0.0171	0.219	0.197	0.241	6.2	0.5	11.8	9.8	2.2
12	01-06-26	100	0.220	13.1	0.0339	0.219	0.198	0.241	6.3	0.1	12.5	10.0	2.0
13	02-10-26	100	0.229	10.0	0.0296	0.220	0.198	0.242	6.4	0.0	12.7	9.9	2.1
14	03-03-26	100	0.234	5.2	0.0252	0.221	0.199	0.243	6.5	0.5	12.6	10.1	2.4
15	04-07-26	100	0.218	5.3	0.0183	0.220	0.201	0.238	6.2	0.6	11.9	9.7	2.6
16	05-05-26	100	0.238	8.1	0.0238	0.220	0.200	0.240	6.3	0.6	12.0	9.5	2.6
17	06-02-26	100	0.209	2.2	0.0129	0.219	0.199	0.239	6.0	0.1	12.0	9.3	2.3
18	07-07-26	100	0.207	2.0	0.0110	0.218	0.198	0.239	5.7	-0.4	11.8	9.0	1.8
19	08-04-26	100	0.267	8.5	0.0337	0.221	0.191	0.251	5.8	-0.4	12.1	9.2	1.9
20	09-15-26	100	0.221	8.2	0.0311	0.221	0.192	0.251	6.1	0.1	12.2	9.4	1.8

Note:
Control Survival = USEPA minimum test acceptability criteria $\geq 80\%$ survival.
Control Mean Growth = USEPA minimum test acceptability criteria ≥ 0.20 mg/surviving shrimp.
CV = Coefficient of variation for control growth.
USEPA maximum CV guidance criteria (90th percentile) < 28%.
MSD = Minimum significant difference.
PMSD = Percent minimum significant difference.
PMSD is a measure of test precision. The PMSD is the minimum percent difference between the control and treatment that can be declared statistically significant in a whole effluent toxicity test.
Lower PMSD bound determined by USEPA (10th percentile) > 11%.
The lower PMSD bound represents a practical limit to the sensitivity of the test method and is not a minimum acceptance criteria.
Upper PMSD bound acceptance criteria determined by USEPA (90th percentile) < 37%.
CT = Central tendency of the growth, CV or PMSD values.
S = Standard deviation of the growth, CV or PMSD values.

Americamysis (Mysidopsis) bahia
Chronic Reference Toxicant Testing, Test Acceptability Criteria
Organism Source: Aquatic Indicators, Inc.



- **Control Growth, Coefficient of Variation (CV) or Percent Minimum Significant Difference (PMSD)**
PMSD is the percent minimum significant difference between the control and treatment that can be declared statistically significant. The lower PMSD bound represents a practical limit to the sensitivity of the test method and is not a minimum acceptance criteria.
- **Central Tendency** (mean Control Growth, CV or PMSD)
- - - **95% Confidence Interval** (mean Control Growth, CV or PMSD $\pm$ 2 Standard Deviations)

Americamysis (Mysidopsis) bahia Chronic Reference Toxicant Control Chart Source: Aquatic Indicators, Inc.

Test number	Test date	7-day IC ₂₅ ToxCal Determination (g/L KCl)	Log ₁₀ Conversion		Anti-logarithmic Values (g/L KCl)							
			7-day IC ₂₅	CT	S	CT	Control Limits CT - 2S CT + 2S	Laboratory Calculated CV Warning Limits CT - 2CV CT + 2CV	75th Percentile CV Warning Limits CT - S _{A.75} CT + S _{A.75}			
1	02-04-25	0.4408	-0.3558	-0.3542	0.0173	0.4424	0.4085	0.4792	0.3657	0.5255	0.3008	0.5840
2	03-04-25	0.4493	-0.3474	-0.3534	0.0173	0.4432	0.4093	0.4799	0.3667	0.5260	0.3014	0.5850
3	04-08-25	0.4382	-0.3583	-0.3545	0.0169	0.4421	0.4091	0.4777	0.3674	0.5228	0.3006	0.5835
4	05-06-25	0.4428	-0.3538	-0.3545	0.0169	0.4421	0.4091	0.4778	0.3674	0.5228	0.3006	0.5836
5	06-03-25	0.4548	-0.3422	-0.3550	0.0162	0.4415	0.4098	0.4757	0.3696	0.5190	0.3002	0.5828
6	07-08-25	0.4342	-0.3624	-0.3562	0.0159	0.4404	0.4093	0.4738	0.3699	0.5162	0.2995	0.5813
7	08-05-25	0.4634	-0.3340	-0.3567	0.0149	0.4398	0.4107	0.4710	0.3736	0.5108	0.2991	0.5806
8	09-09-25	0.4660	-0.3316	-0.3559	0.0158	0.4407	0.4097	0.4740	0.3705	0.5162	0.2997	0.5817
9	10-07-25	0.4336	-0.3629	-0.3570	0.0155	0.4396	0.4093	0.4721	0.3708	0.5135	0.2989	0.5802
10	11-04-25	0.4518	-0.3451	-0.3557	0.0154	0.4408	0.4107	0.4732	0.3724	0.5143	0.2998	0.5819
11	12-02-25	0.4557	-0.3414	-0.3564	0.0143	0.4401	0.4121	0.4701	0.3764	0.5082	0.2993	0.5810
12	01-06-26	0.4187	-0.3781	-0.3579	0.0150	0.4387	0.4094	0.4700	0.3720	0.5100	0.2983	0.5790
13	02-10-26	0.4500	-0.3468	-0.3564	0.0146	0.4401	0.4116	0.4706	0.3753	0.5094	0.2993	0.5809
14	03-03-26	0.4198	-0.3770	-0.3561	0.0140	0.4404	0.4129	0.4698	0.3779	0.5071	0.2995	0.5814
15	04-07-26	0.4370	-0.3595	-0.3566	0.0140	0.4400	0.4126	0.4692	0.3777	0.5064	0.2992	0.5807
16	05-05-26	0.4356	-0.3609	-0.3564	0.0139	0.4401	0.4128	0.4692	0.3781	0.5062	0.2993	0.5810
17	06-02-26	0.4362	-0.3603	-0.3558	0.0134	0.4408	0.4144	0.4688	0.3809	0.5044	0.2997	0.5818
18	07-07-26	0.4402	-0.3563	-0.3548	0.0125	0.4418	0.4170	0.4680	0.3858	0.5011	0.3004	0.5831
19	08-04-26	0.4375	-0.3591	-0.3551	0.0125	0.4415	0.4167	0.4677	0.3853	0.5010	0.3002	0.5828
20	09-15-26	0.4377	-0.3589	-0.3546	0.0122	0.4420	0.4179	0.4675	0.3874	0.4997	0.3005	0.5834

Note: 7-day IC₂₅ = 25% inhibition concentration. An estimation of the potassium chloride concentration that would cause a 25% reduction in *Americamysis* growth (calculated using ToxCalc).

CT = Central tendency of the IC₂₅ values.

S = Standard deviation of the IC₂₅ values.

Control Limits = Mean logarithmic IC₂₅ ± 2 standard deviations converted to anti-logarithmic values.

Warning Limits = Mean logarithmic IC₂₅ ± 2CV or S_{A.75} converted to anti-logarithmic values.

S_{A.75} = Standard deviation corresponding to the 75th percentile of CVs reported nationally by USEPA (S_{A.75} = 0.32).

CV = Coefficient of variation.

Potassium Chloride Chronic Reference Toxicant Test (EPA-821-R-02-014, Method 1007.0)

Species: *Americamysis (Mysidopsis) bahia*

AbKCICR Test Number: 279

Dilution preparation information:						Comments:
KCl Stock INSS number:	INSS 7501					
Stock preparation:	50 g KCl/L: Dissolve 50 g KCl in 1-L Deionized water					
Dilution prep (mg/L)	250	375	500	750	1000	
Stock volume (mL)	10	15	20	30	40	
Diluent volume (mL)	1990	1985	1980	1970	1960	
Total volume (mL)	2000	2000	2000	2000	2000	

Test organism information:			Test information:	
Organism age:	7-days old		Randomizing template:	Yellow
Date and times organisms were born between:	09-08-26 1200 to 09-09-26 1130		Incubator number and shelf location:	6C
Organism source:	AI Batch Ab: 09-09-26		Artemia CHM number:	CHM1432
Transfer bowl information:	pH = 8.16 S.U. Temperature = 25.0 °C		Drying information for weight determination:	
Average transfer volume:	< 0.25 mL		Date / Time in oven:	09-22-26 1035
			*Initial oven temperature:	60°C
			Date / Time out of oven:	09-23-26 1040
			*Final oven temperature:	60°C
			Total drying time:	24-Hours

Daily feeding and renewal information:

*60°C Oven, Thermometer SN: 14-98585

Day	Date	Morning feeding		Afternoon feeding		Test initiation, renewal, or termination		Salt SW batch used
		Time	Analyst	Time	Analyst	Time	Analyst	
0	09-15-26	1110	K	1300	K	1200	JL	09-08-26 A
1	09-16-26	0500	K	1330	K	0826	JL	↓
2	09-17-26	0500	K	1200	K	0830	JL	09-08-26 B → 09-09-26 B → 09-10-26 B
3	09-18-26	0500	K	1100	K	0825	K	↓
4	09-19-26	0600	K	1100	K	0910	JL	09-16-26
5	09-20-26	0600	K	1100	K	0910	K	↓
6	09-21-26	0500	K	1100	JL	0855	K	↓
7	09-22-26	0500	K			1000	K	

Chemical analyses:

Parameter	Reporting Limit	Method number	Meter	Serial number
pH	0.1 S.U.	SM 4500-H+ B-2021	Accumet AR20	93312452
Dissolved Oxygen (D.O.)	1.0 mg/L	SM 4500-O H-2021	HACH HQ430d Flexi	SN250100050300
Salinity	1.0 ppt	SM 2520 B-2021	YSI PRO30	18D104324
Alkalinity	5.0 mg CaCO ₃ /L	SM 2320 B-2021	Accumet AR20	93312452
Temperature	0.1 °C	SM 2550B-2010	Digital Thermometer	130664685

Control information:		Acceptance criteria	Summary of test endpoints:	
% Mortality:	07.	≤ 20%	7-day LC ₅₀ (mg/L KCl)	533.1
Average weight per initial shrimp:	0.221		NOEC (mg/L KCl)	375
Average weight per surviving shrimp:	0.221	≥ 0.20 mg/shrimp	LOEC (mg/L KCl)	500
			ChV (mg/L KCl)	433.0
			IC ₂₅ (mg/L KCl)	437.7

AbKCICR Test Number: **279****Survival and Growth Data**

Day	CONTROL								250 mg KCl/L							
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
2	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
3	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
4	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
5	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
6	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
7	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
# females with eggs in brood sac																
# females with developing ova in oviducts																
# immature females																
# males																
*A = Pan weight (mg) Tray color code: light pink Analyst: <u>go</u> Date: <u>08-25-26</u>	12.71	13.15	11.65	13.58	11.68	13.24	14.21	14.47	13.80	13.55	14.87	13.32	14.24	13.14	14.62	14.60
*B = Pan + Shrimp weight (mg) Analyst: <u>JA</u> Date: <u>09-24-26</u>	13.76	14.30	12.67	14.64	12.96	14.37	15.21	15.60	14.82	14.87	16.17	14.38	15.29	14.22	15.82	15.66
C = Shrimp weight (mg) = B - A Hand calculated Analyst: <u>JA</u>	1.05	1.15	1.02	1.06	1.28	1.13	1.00	1.13	1.02	1.32	1.30	1.06	1.05	1.08	1.20	1.06
Weight per initial number of shrimp (mg) = C / Initial number of shrimp Hand calculated Analyst: <u>JA</u>	0.210	0.230	0.204	0.212	0.256	0.226	0.200	0.226	0.204	0.264	0.260	0.212	0.210	0.216	0.240	0.212
Average weight per initial number of shrimp (mg) 0.221								Average weight per initial number of shrimp (mg) 0.227				Percent reduction from control (%) -3.17				

*Weight measurements performed using Cahn 28 Automatic Electrobalance, SN 41520.

Comment codes: c = clear, d = dead, fg = fungus, k = killed, m = missing, sk = sick, sm = unusually small, lg = unusually large, d&r = decanted and returned, w = wounded.

Comments:

AbKCICR Test Number: **279****Survival and Growth Data**

Day	375 mg KCl/L								500 mg KCl/L							
	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF
0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
2	S	S	S	S	S	S	S	S	4 ^{1d}	4 ^{1d}	4 ^{1d}	4 ^{1d}	5	5	5	5
3	S	S	S	S	S	S	S	S	4	4	4	3 ^{1d}	5	5	5	5
4	S	S	S	S	S	S	S	S	4	4	4	1 ^{2d}	5	4 ^{1d}	5	5
5	S	S	S	S	S	S	S	S	4	4	4	1	5	4	5	5
6	S	S	S	S	S	S	S	S	4	3 ^{1d}	4	1	5	4	5	5
7	S	S	S	S	S	S	S	S	3 ^{1d}	3	3 ^{1d}	1	4 ^{1d}	4	3 ^{2d}	3 ^{2d}
# females with eggs in brood sac																
# females with developing ova in oviducts																
# immature females																
# males																4 ^{0d}
*A = Pan weight (mg) Tray color code: light blue/pink Analyst: <u>JS</u> Date: <u>08-25-26</u>	12.40	14.48	13.54	13.74	12.66	12.98	14.95	13.71	13.47	14.44	12.75	12.44	11.71	14.48	13.61	12.41
*B = Pan + Shrimp weight (mg) Analyst: <u>JS</u> Date: <u>08-24-26</u>	13.46	15.48	14.56	15.08	12.84	14.17	16.19	14.76	14.11	15.07	13.27	12.68	12.22	15.21	14.25	13.07
C = Shrimp weight (mg) = B - A Hand calculated Analyst: <u>H</u>	0.64 1.06	0.63 1.00	0.52 1.02	0.52 1.34	0.52 1.18	0.52 1.19	0.52 1.24	0.52 1.05	0.64	0.63	0.52	0.24	0.51	0.73	0.64	0.60
Weight per initial number of shrimp (mg) = C / Initial number of shrimp Hand calculated Analyst: <u>H</u>	0.212	0.200	0.204	0.268	0.236	0.238	0.248	0.210	0.128	0.126	0.104	0.048	0.102	0.146	0.128	0.120
	Average weight per initial number of shrimp (mg) 0.227				Percent reduction from control (%) - 2.97				Average weight per initial number of shrimp (mg) 0.113				Percent reduction from control (%) 48.97			

*Weight measurements performed using Cahn 28 Automatic Electrobalance, SN 41520.

Comment codes: c = clear, d = dead, fg = fungus, k = killed, m = missing, sk = sick, sm = unusually small, lg = unusually large, d&r = decanted and returned, w = wounded.

Comments:

Environmental Testing Solutions, Inc.

AbKCICR Test Number: **279****Survival and Growth Data**

Day	750 mg KCl/L								1000 mg KCl/L							
	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV
0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}	0 ^{sd}
2																
3																
4																
5																
6																
7																
# females with eggs in brood sac																
# females with developing ova in oviducts																
# immature females																
# males																
*A = Pan weight (mg) Tray color code: _____																
Analyst: _____																
Date: _____																
*B = Pan + Shrimp weight (mg)																
Analyst: _____																
Date: _____																
C = Shrimp weight (mg) = B - A																
Hand calculated																
Analyst: _____																
Weight per initial number of shrimp (mg) = C / Initial number of shrimp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hand calculated																
Analyst: _____																
Average weight per initial number of shrimp (mg)	0								0							
Percent reduction from control (%)	100%								100%							

*Weight measurements performed using Cahn 28 Automatic Electrobalance, SN 41520.

Comment codes: c = clear, d = dead, fg = fungus, k = killed, m = missing, sk = sick, sm = unusually small, lg = unusually large, d&r = decanted and returned, w = wounded.

Comments:

Americamysis bahia Chronic Reference Toxicant Test
EPA-821-R-02-014, Method 1007.0

Quality Control
Verification of Data Entry, Calculations, and Statistical Analyses

Test number: 27
Test dates: September 15-22, 2021

Concentration (mg/L KCl)	Replicate	Initial number of larvae	Final number of larvae	A = Pan weight (mg)	B = Pan + Larvae weight (mg)	Larvae weight (mg) = B - A	Weight / Initial number of larvae (mg)	Mean survival (%)	Mean weight (mg)	Coefficient of variation (%)	Percent reduction from control (%)
Control	A	5	5	12.71	13.76	1.05	0.210	100.0	0.221	8.2	Not applicable
	B	5	5	13.15	14.30	1.15	0.230				
	C	5	5	11.65	12.67	1.02	0.204				
	D	5	5	13.58	14.64	1.06	0.212				
	E	5	5	11.68	12.96	1.28	0.256				
	F	5	5	13.24	14.37	1.13	0.226				
	G	5	5	14.21	15.21	1.00	0.200				
	H	5	5	14.47	15.60	1.13	0.226				
250	I	5	5	13.80	14.82	1.02	0.204	100.0	0.227	10.5	-3.1
	J	5	5	13.55	14.87	1.32	0.264				
	K	5	5	14.87	16.17	1.30	0.260				
	L	5	5	13.32	14.38	1.06	0.212				
	M	5	5	14.24	15.29	1.05	0.210				
	N	5	5	13.14	14.22	1.08	0.216				
	O	5	5	14.62	15.82	1.20	0.240				
	P	5	5	14.60	15.66	1.06	0.212				
375	Q	5	5	12.40	13.46	1.06	0.212	100.0	0.227	10.7	-2.9
	R	5	5	14.48	15.48	1.00	0.200				
	S	5	5	13.54	14.56	1.02	0.204				
	T	5	5	13.74	15.08	1.34	0.268				
	U	5	5	12.66	13.84	1.18	0.236				
	V	5	5	12.98	14.17	1.19	0.238				
	W	5	5	14.95	16.19	1.24	0.248				
	X	5	5	13.71	14.76	1.05	0.210				
500	Y	5	3	13.47	14.11	0.64	0.128	60.0	0.113	26.4	48.9
	Z	5	3	14.44	15.07	0.63	0.126				
	AA	5	3	12.75	13.27	0.52	0.104				
	BB	5	1	12.44	12.68	0.24	0.048				
	CC	5	4	11.71	12.22	0.51	0.102				
	DD	5	4	14.48	15.21	0.73	0.146				
	EE	5	3	13.61	14.25	0.64	0.128				
	FF	5	3	12.47	13.07	0.60	0.120				
750	GG	5	0	0.00	0.00	0.00	0.000	0.0	0.000	0.0	100.0
	HH	5	0	0.00	0.00	0.00	0.000				
	II	5	0	0.00	0.00	0.00	0.000				
	JJ	5	0	0.00	0.00	0.00	0.000				
	KK	5	0	0.00	0.00	0.00	0.000				
	LL	5	0	0.00	0.00	0.00	0.000				
	MM	5	0	0.00	0.00	0.00	0.000				
	NN	5	0	0.00	0.00	0.00	0.000				
1000	OO	5	0	0.00	0.00	0.00	0.000	0.0	0.000	0.0	100.0
	PP	5	0	0.00	0.00	0.00	0.000				
	QQ	5	0	0.00	0.00	0.00	0.000				
	RR	5	0	0.00	0.00	0.00	0.000				
	SS	5	0	0.00	0.00	0.00	0.000				
	TT	5	0	0.00	0.00	0.00	0.000				
	UU	5	0	0.00	0.00	0.00	0.000				
	VV	5	0	0.00	0.00	0.00	0.000				

Dunnett's MSD value: 0.0311
PMSD: 14.1

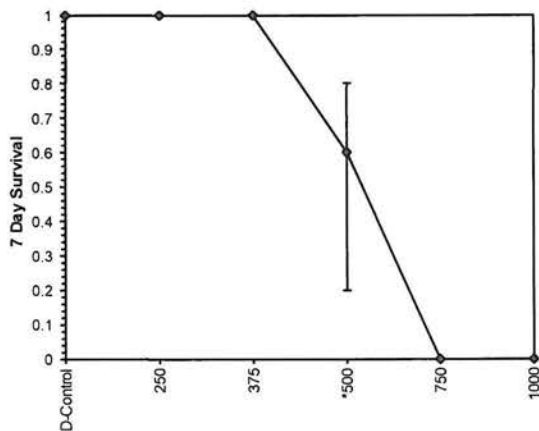
MSD = Minimum Significant Difference
PMSD = Percent Minimum Significant Difference

PMSD is a measure of test precision. The PMSD is the minimum percent difference between the control and treatment that can be declared statistically significant in a whole effluent toxicity test.

Lower PMSD bound determined by USEPA (10th percentile) = 11%.

Upper PMSD bound determined by USEPA (90th percentile) = 37%.

Lower and upper PMSD bounds were determined from the 10th and 90th percentile, respectively, of PMSD data from EPA's WET Interlaboratory Variability Study (USEPA, 2001a; USEPA, 2001b). The lower PMSD bound represents a practical limit to the sensitivity of the test method and is not a minimum acceptance criteria.



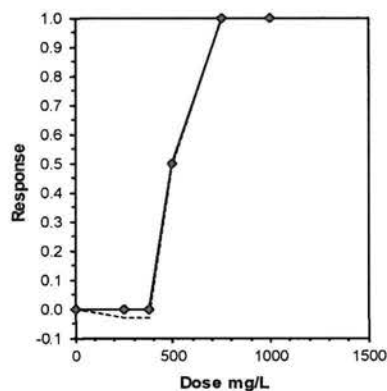
Start Date:	9/15/2026	Test ID:	AbKCICR	Sample ID:	REF-Ref Toxicant
End Date:	9/22/2026	Lab ID:	ETS-Envr. Testing Sol.	Sample Type:	KCL-Potassium chloride
Sample Date:		Protocol:	SWCHR-EPA-821-R-02-014	Test Species:	AB-Americanmysis bahia
Comments:					

[illegible]

Conc-mg/L	Mean	N-Mean	Transform: Untransformed				N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%					Mean	N-Mean
D-Control	0.2205	1.0000	0.2205	0.2000	0.2560	8.196	8				0.2249	1.0000
250	0.2273	1.0306	0.2273	0.2040	0.2640	10.539	8	-0.607	2.799	0.0311	0.2249	1.0000
375	0.2270	1.0295	0.2270	0.2000	0.2680	10.656	8	-0.584	2.799	0.0311	0.2249	1.0000
500	0.1128	0.5113	0.1128	0.0480	0.1460	26.360	8				0.1128	0.5013
750	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	8				0.0000	0.0000
1000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	8				0.0000	0.0000

Auxiliary Tests					Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$)					0.89231	0.884	0.65023	-0.8492						
Bartlett's Test indicates equal variances ($p = 0.72$)					0.6706	9.21035								
Hypothesis Test (1-tail, 0.01)					NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test					375	>375			0.03114	0.14121	0.00012	0.0005	0.79135	2, 21
Treatments vs D-Control														

Point	mg/L	SD	95% CL		Skew
IC05	387.53	24.55	334.57	389.56	-7.4424
IC10	400.07	5.42	383.00	404.12	-1.1287
IC15	412.60	5.36	395.33	418.68	-0.6055
IC20	425.13	5.60	411.06	433.24	-0.1660
IC25	437.66	6.10	425.35	447.80	0.0758
IC40	475.26	8.62	459.06	491.65	0.1488
IC50	500.65	14.00	480.77	531.22	0.4224



1-tail, 0.01 level of significance

Dose	Growth-Weight (Mean)	Standard Deviation (SD)
0-Control	0.22	0.01
250	0.23	0.03
375	0.23	0.04
500	0.11	0.05
750	0.00	0.00
1000	0.00	0.00

AbKCICR Test Number: 279**Daily Chemistry:**

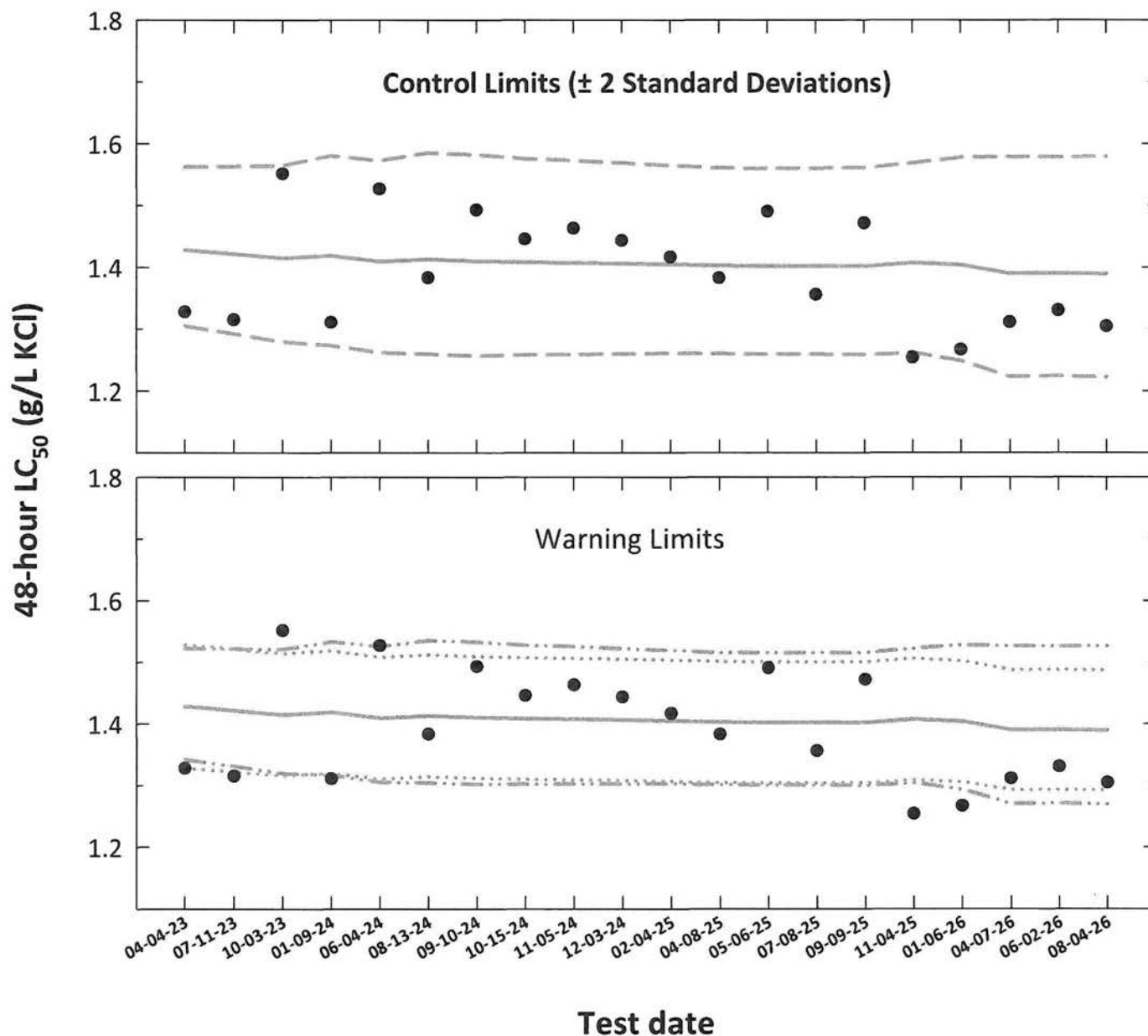
Temperatures performed at the time of test initiation, renewal or termination by the analyst identified in the Daily Renewal Information table located on Page 1. Alkalinity performed by the analyst identified on the bench sheet specific for this analysis and transcribed to this bench sheet.

Conc.	Parameter	Day (Analyst identified for each day, performed pH, D.O. and salinity measurements only.)					
		0		1		2	
	Analyst	<i>XL</i>	<i>XL</i>	<i>XL</i>	<i>XL</i>	<i>XL</i>	<i>XL</i>
CONTROL, Salt SW	pH (S.U.)	<i>7.99</i>	<i>7.94</i>	<i>8.00</i>	<i>7.96</i>	<i>7.98</i>	<i>7.89</i>
	DO (mg/L)	<i>8.1</i>	<i>8.0</i>	<i>8.2</i>	<i>8.0</i>	<i>8.2</i>	<i>7.9</i>
	Salinity (ppt)	<i>25.3</i>	<i>25.1</i>	<i>25.0</i>	<i>25.2</i>	<i>25.0</i>	<i>25.1</i>
	Alkalinity (mg CaCO ₃ /L)	<i>110</i>		<i>110</i>		<i>110</i>	
	Temperature (°C)	<i>25.3</i>	<i>25.5</i>	<i>25.1</i>	<i>25.7</i>	<i>25.1</i>	<i>25.6</i>
250 mg KCl/L	pH (S.U.)	<i>8.00</i>	<i>7.94</i>	<i>7.97</i>	<i>7.89</i>	<i>7.96</i>	<i>7.86</i>
	DO (mg/L)	<i>8.2</i>	<i>8.0</i>	<i>8.2</i>	<i>8.0</i>	<i>8.2</i>	<i>7.9</i>
	Salinity (ppt)	<i>25.4</i>	<i>25.3</i>	<i>25.1</i>	<i>25.6</i>	<i>25.1</i>	<i>25.2</i>
	Temperature (°C)	<i>25.2</i>	<i>25.3</i>	<i>25.2</i>	<i>25.5</i>	<i>25.1</i>	<i>25.6</i>
375 mg KCl/L	pH (S.U.)	<i>8.01</i>	<i>7.93</i>	<i>7.97</i>	<i>7.89</i>	<i>7.96</i>	<i>7.86</i>
	DO (mg/L)	<i>8.2</i>	<i>8.0</i>	<i>8.2</i>	<i>7.9</i>	<i>8.2</i>	<i>7.9</i>
	Salinity (ppt)	<i>25.5</i>	<i>25.4</i>	<i>25.2</i>	<i>25.6</i>	<i>25.3</i>	<i>25.3</i>
	Temperature (°C)	<i>25.2</i>	<i>25.6</i>	<i>25.2</i>	<i>25.2</i>	<i>25.2</i>	<i>25.7</i>
500 mg KCl/L	pH (S.U.)	<i>8.02</i>	<i>7.93</i>	<i>7.98</i>	<i>7.87</i>	<i>7.97</i>	<i>7.85</i>
	DO (mg/L)	<i>8.2</i>	<i>8.0</i>	<i>8.2</i>	<i>7.8</i>	<i>8.2</i>	<i>7.7</i>
	Salinity (ppt)	<i>25.6</i>	<i>25.5</i>	<i>25.3</i>	<i>25.7</i>	<i>25.3</i>	<i>25.4</i>
	Temperature (°C)	<i>25.2</i>	<i>25.6</i>	<i>25.2</i>	<i>25.7</i>	<i>25.1</i>	<i>25.5</i>
750 mg KCl/L	pH (S.U.)	<i>8.02</i>	<i>7.95</i>				
	DO (mg/L)	<i>8.2</i>	<i>8.0</i>				
	Salinity (ppt)	<i>25.9</i>	<i>26.0</i>				
	Temperature (°C)	<i>25.4</i>	<i>25.2</i>				
1000 mg KCl/L	pH (S.U.)	<i>8.02</i>	<i>7.95</i>				
	DO (mg/L)	<i>8.2</i>	<i>7.9</i>				
	Salinity (ppt)	<i>26.0</i>	<i>26.1</i>				
	Temperature (°C)	<i>25.4</i>	<i>25.2</i>				
		Initial	Final	Initial	Final	Initial	Final

AbKCICR Test Number: 279

		Day							
		(Analyst identified for each day, performed pH, D.O. and salinity measurements only.)							
Conc.	Parameter	3		4		5		6	
Analyst		XL	BSL	BSL	BSL	BSL	XL	XL	XL
CONTROL, Salt SW	pH (S.U.)	7.95	7.84	8.06	7.91	8.11	7.85	7.97	7.49
	DO (mg/L)	8.1	7.8	8.1	7.8	8.2	7.9	8.1	6.0
	Salinity (ppt)	25.1	25.2	24.9	25.2	25.0	25.0	25.2	25.3
	Alkalinity (mg CaCO ₃ /L)	no more		100				no more	
	Temperature (°C)	25.2	25.7	25.3	25.6	25.2	25.8	25.2	25.7
250 mg KCl/L	pH (S.U.)	7.94	7.84	7.99	7.82	8.10	7.95	8.06	7.74
	DO (mg/L)	8.1	7.8	8.1	7.8	8.3	7.9	8.1	6.0
	Salinity (ppt)	25.2	25.2	25.1	25.2	25.3	25.3	25.3	25.4
	Temperature (°C)	25.1	25.5	25.3	25.5	25.3	25.7	25.2	25.7
375 mg KCl/L	pH (S.U.)	7.94	7.86	7.99	7.82	8.09	7.96	8.07	7.75
	DO (mg/L)	8.1	7.8	8.2	7.7	8.3	7.8	8.1	5.9
	Salinity (ppt)	25.2	25.2	25.3	25.3	25.4	25.4	25.4	25.6
	Temperature (°C)	25.1	25.5	25.4	25.7	25.3	25.7	25.1	25.6
500 mg KCl/L	pH (S.U.)	7.95	7.86	7.99	7.82	8.09	7.98	8.07	7.76
	DO (mg/L)	8.1	7.8	8.2	7.6	8.3	7.8	8.0	6.1
	Salinity (ppt)	25.3	25.4	25.4	25.4	25.5	25.5	25.6	25.7
	Temperature (°C)	25.3	25.8	25.4	25.7	25.3	25.9	25.1	25.6
750 mg KCl/L	pH (S.U.)								
	DO (mg/L)								
	Salinity (ppt)								
	Temperature (°C)								
1000 mg KCl/L	pH (S.U.)								
	DO (mg/L)								
	Salinity (ppt)								
	Temperature (°C)								
		Initial	Final	Initial	Final	Initial	Final	Initial	Final

Menidia beryllina
Acute Reference Toxicant Control Chart
Source: Aquatic Indicators, Inc.



- **48-hour LC₅₀** = median lethal concentration. An estimation of the potassium chloride concentration which is lethal to 50% of the test organisms in 48-hours (calculated using ToxCalc).
- **Central Tendency** (mean logarithmic LC₅₀ converted to anti-logarithmic values)
- - - **Control Limits** (mean logarithmic LC₅₀ ± 2 standard deviations converted to anti-logarithmic values)
- - - **Laboratory Warning Limits** (mean logarithmic LC₅₀ ± 2 coefficient of variations converted to anti-logarithmic values)
- - - **USEPA Warning Limits** (mean logarithmic LC₅₀ $\pm S_{A,10}$ converted to anti-logarithmic values, $S_{A,10}$ = 10th percentile of CVs reported nationally by USEPA)

Menidia beryllina
Acute Reference Toxicant Control Chart
Source: Aquatic Indicators, Inc.

Test number	Test date	48-hour LC ₅₀ ToxCal Determination (g/L KCl)	Log ₁₀ Conversion		Anti-logarithmic Values (g/L KCl)				
			48-hour LC ₅₀	CT	S	CT	Control Limits CT - 2S CT + 2S	Laboratory Calculated CV Warning Limits CT - 2CV CT + 2CV	10th Percentile CV Warning Limits CT - S _{A,10} CT + S _{A,10}
1	04-04-23	1.3283	0.1199	0.1548	0.0196	1.4284	1.3053 1.5630	1.3422 1.5227	1.3284 1.5283
2	07-11-23	1.3153	0.1233	0.1528	0.0206	1.4216	1.2927 1.5634	1.3309 1.5213	1.3221 1.5211
3	10-03-23	1.5515	0.1190	0.1507	0.0219	1.4149	1.2793 1.5649	1.3190 1.5209	1.3158 1.5139
4	01-09-24	1.3113	0.1908	0.1520	0.0235	1.4190	1.2738 1.5809	1.3167 1.5331	1.3197 1.5184
5	06-04-24	1.5271	0.1177	0.1490	0.0239	1.4094	1.2627 1.5732	1.3053 1.5256	1.3107 1.5081
6	08-13-24	1.3832	0.1839	0.1502	0.0250	1.4131	1.2594 1.5854	1.3043 1.5351	1.3142 1.5120
7	09-10-24	1.4930	0.1409	0.1493	0.0250	1.4102	1.2569 1.5823	1.3015 1.5322	1.3115 1.5089
8	10-15-24	1.4461	0.1740	0.1488	0.0244	1.4087	1.2589 1.5763	1.3024 1.5277	1.3101 1.5073
9	11-05-24	1.4632	0.1602	0.1484	0.0242	1.4075	1.2593 1.5731	1.3022 1.5251	1.3090 1.5060
10	12-03-24	1.4436	0.1653	0.1480	0.0238	1.4062	1.2603 1.5689	1.3024 1.5219	1.3077 1.5046
11	02-04-25	1.4168	0.1594	0.1476	0.0235	1.4047	1.2609 1.5649	1.3023 1.5188	1.3064 1.5030
12	04-08-25	1.3832	0.1513	0.1470	0.0232	1.4029	1.2607 1.5611	1.3015 1.5156	1.3047 1.5011
13	05-06-25	1.4906	0.1409	0.1468	0.0232	1.4021	1.2597 1.5605	1.3006 1.5150	1.3039 1.5002
14	07-08-25	1.3559	0.1734	0.1468	0.0233	1.4022	1.2596 1.5610	1.3005 1.5154	1.3040 1.5004
15	09-09-25	1.4716	0.1322	0.1467	0.0234	1.4017	1.2587 1.5611	1.2997 1.5154	1.3036 1.4999
16	11-04-25	1.2543	0.1678	0.1484	0.0236	1.4073	1.2623 1.5690	1.3042 1.5222	1.3088 1.5058
17	01-06-26	1.2670	0.0984	0.1473	0.0254	1.4038	1.2488 1.5780	1.2934 1.5279	1.3055 1.5021
18	04-07-26	1.3112	0.1177	0.1430	0.0277	1.3898	1.2232 1.5791	1.2699 1.5260	1.2925 1.4871
19	06-02-26	1.3309	0.1241	0.1432	0.0276	1.3904	1.2246 1.5787	1.2712 1.5258	1.2931 1.4878
20	08-04-26	1.3047	0.1155	0.1429	0.0278	1.3897	1.2228 1.5795	1.2696 1.5262	1.2924 1.4870

Note: 48-hour LC₅₀ = 48-hour median lethal concentration. An estimate of the potassium chloride concentration which is lethal to 50% of the test organisms in 48-hours (calculated using ToxCalc).
CT = Central tendency of the LC₅₀ values.

S = Standard deviation of the LC₅₀ values.

Control Limits = Mean logarithmic LC₅₀ ± 2 standard deviations converted to anti-logarithmic values.

Warning Limits = Mean logarithmic LC₅₀ ± 2CV or S_{A,10} converted to anti-logarithmic values.

S_{A,10} = Standard deviation corresponding to the 10th percentile of CVs reported nationally by USEPA. (S_{A,10} = 0.07).

CV = Coefficient of variation.



Acute LC₅₀ Whole Effluent Toxicity Test, Species: *Menidia beryllina*
EPA-821-R-02-012, Method 2006.0

Menidia beryllina Potassium Chloride Acute Reference Toxicant Test

MbKCIAC # 108

Dilution Preparation:

Test concentrations (mg/L KCl)	1000	1250	1500	1750	2000
mL Stock solution	20	25	30	35	40
mL Dilution water	980	975	970	965	960
Total volume (mL)	1000	1000	1000	1000	1000

A stock solution was prepared by diluting 100 g KCl into 2000 mL deionized water. This 50,000 mg/L KCl stock solution was used to prepare the concentrations evaluated for toxicity.

Stock solution INSS #: 2486

Chemical Analyses:

		Hours		
		0	24	48
Concentration	Analyst	XL	XL	XL
Control, SaltSW	pH (S.U.)	8.10	7.99	7.94
	Dissolved oxygen (mg/L)	8.2	8.0	7.9
	*Salinity (ppt)	24.7	25.2	26.9
	*Alkalinity (mg/L CaCO ₃)	110		
	*Temperature (°C)	25.0	25.1	25.4
1000 mg/L	pH (S.U.)	8.01	7.99	7.93
	Dissolved oxygen (mg/L)	8.4	8.0	7.9
	*Salinity (ppt)	24.9	25.4	26.0
	*Temperature (°C)	25.2	25.3	25.0
1250 mg/L	pH (S.U.)	8.01	7.97	7.92
	Dissolved oxygen (mg/L)	8.4	7.9	7.9
	*Salinity (ppt)	25.1	25.6	26.0
	*Temperature (°C)	25.2	25.0	25.2
1500 mg/L	pH (S.U.)	8.01	7.97	7.93
	Dissolved oxygen (mg/L)	8.4	7.9	7.9
	*Salinity (ppt)	25.3	25.8	26.9
	*Temperature (°C)	25.0	25.0	25.2
1750 mg/L	pH (S.U.)	8.00	7.96	
	Dissolved oxygen (mg/L)	8.4	7.9	
	*Salinity (ppt)	25.9	26.2	
	*Temperature (°C)	25.3	25.2	
2000 mg/L	pH (S.U.)	8.01	7.96	
	Dissolved oxygen (mg/L)	8.4	7.7	
	*Salinity (ppt)	26.3	26.4	
	*Temperature (°C)	25.1	25.2	

*Analyst identified for each day, performed pH and dissolved oxygen measurements only. Temperature and salinity performed at the time of test initiation or termination by the analyst performing the toxic test. Alkalinity performed by the analyst identified on the test specific bench sheet and transcribed to this bench sheet.

Chemical analyses:

Parameter	Reporting limit	Method number	Meter	Serial number
pH	0.1 S.U.	SM 4500-H+ B-2021	Accumet AR20	93312452
Dissolved oxygen	1.0 mg/L	SM 4500-O H-2021	HACH HQ430d Flexi	SN250100050300
Salinity	1.0 ppt	SM 2520 B-2021	YSI PRO30	18D104324
Alkalinity	5.0 mg CaCO ₃ /L	SM 2320 B-2021	Accumet AR20	93312452
Temperature	0.1 °C	SM 2550B-2010	Digital Thermometer	130664685

Acute LC₅₀ Whole Effluent Toxicity Test, Species: *Menidia beryllina*
EPA-821-R-02-012, Method 2006.0

Menidia beryllina Potassium Chloride Acute Reference Toxicant Test

MbKCIAC # 108

Hours	Date	Feeding		Test Initiation or Termination		Location Incubator/Shelf	Randomizing Template	SaltSW Batch
		Time	Analyst	Time	Analyst			
0 Initiation	06-04-26	1045	K	1302	K	6E	Light BWE	07-30-16A
24	06-05-26			1305	K			
48 Termination	06-06-26			1300	K			

*Test organisms were fed in holding 2 to 5 hours prior to test initiation. Test organisms were not fed during the test.

Test Organism Information:

Organism Source:	Aquatic Indicators, Inc.
Batch (AI Batch Mb):	07-25-26
Age (9 to 14 days old):	10 DAYS
Date organisms were born:	07-24-26 1200 TO 07-25-26 1150
Average transfer volume:	< 0.25 mL
Transfer bowl information:	pH (S.U.): 7.84 Temperature (°C) 24.7

Survival Data (number of living organisms):

Hours	Control		1000 mg/L		1250 mg/L		1500 mg/L		1750 mg/L		2000 mg/L	
	Replicate		Replicate		Replicate		Replicate		Replicate		Replicate	
	A	B	C	D	E	F	G	H	I	J	K	L
0 Initiation	10	10	10	10	10	10	10	10	10	10	10	10
24	10	10	10	10	5 ^{sd}	6 ^u	5 ^{sd}	4 ^u	0 ^{10d}	0 ^{10d}	0 ^{10d}	0 ^{10d}
48 Termination	10	10	10	10	5	6	2 ^u	2 ^u	0	0	0	0
Mean Survival	100%		100%		55%		20%		0%		0%	

Comment codes: d = dead, u = unhealthy, s = stressed

Statistics:

Method	PROBIT
Lower 95% confidence limit (mg KCl/L)	1230.9
Upper 95% confidence limit (mg KCl/L)	1374.5
48-hour LC ₅₀ (mg KCl/L)	1304.7

Comments:

Start Date:	8/4/2026	Test ID:	MbKCIAC	Sample ID:	REF-Ref Toxicant
End Date:	8/6/2026	Lab ID:	ETS-Envir. Testing Sol.	Sample Type:	KCL-Potassium chloride
Sample Date:		Protocol:	ACUTE-EPA-821-R-02-012	Test Species:	MB-Menidia berylina
Comments:					

Conc-mg/L	1	2
D-Control	1.0000	1.0000
1000	1.0000	1.0000
1250	0.5000	0.6000
1500	0.5000	0.4000
1750	0.0000	0.0000
2000	0.0000	0.0000

Transform: Arcsin Square Root								1-Tailed			Number	Total
Conc-mg/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Resp	Number
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2				0	20
1000	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0.000	2.850	0.1283	0	20
*1250	0.5500	0.5500	0.8357	0.7854	0.8861	8.518	2	12.799	2.850	0.1283	9	20
*1500	0.4500	0.4500	0.7351	0.6847	0.7854	9.685	2	15.035	2.850	0.1283	11	20
*1750	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	27.834	2.850	0.1283	20	20
2000	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2				20	20

Auxiliary Tests					Statistic	Critical	Skew	Kurt			
Normality of the data set cannot be confirmed											
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	1000	1250	1118.03		0.05519	0.0566	0.55224	0.00203	4.9E-06	4, 5	
Treatments vs D-Control											
Maximum Likelihood-Probit											
Parameter	Value	SE	95% Fiducial Limits		Control	Chi-Sq	Critical	P-value	Mu	Sigma	Iter
Slope	14.8358	2.47605	9.9827	19.6888	0	7.67696	7.81472	0.05318	3.13267	0.0674	7
Intercept	-41.475	7.78815	-56.74	-26.211							
TSCR											
Point	Probits	mg/L	95% Fiducial Limits								
EC01	2.674	945.935	774.286	1052.91							
EC05	3.355	1051.47	902.666	1144.59							
EC10	3.718	1112.46	978.483	1198.03							
EC15	3.964	1155.6	1032.42	1236.42							
EC20	4.158	1191.07	1076.73	1268.61							
EC25	4.326	1222.37	1115.59	1297.66							
EC40	4.747	1304.94	1215.49	1378.76							
EC50	5.000	1357.28	1275.39	1434.98							
EC60	5.253	1411.71	1333.73	1498.54							
EC75	5.674	1507.06	1425.9	1622.64							
EC80	5.842	1546.67	1461.05	1678.33							
EC85	6.036	1594.15	1501.41	1747.65							
EC90	6.282	1655.96	1551.72	1841.38							
EC95	6.645	1752.02	1626.4	1993.31							
EC99	7.326	1947.49	1770.37	2320.7							

Response

Dose mg/L

1-tail, 0.05 level of significance

24 Hr Survival

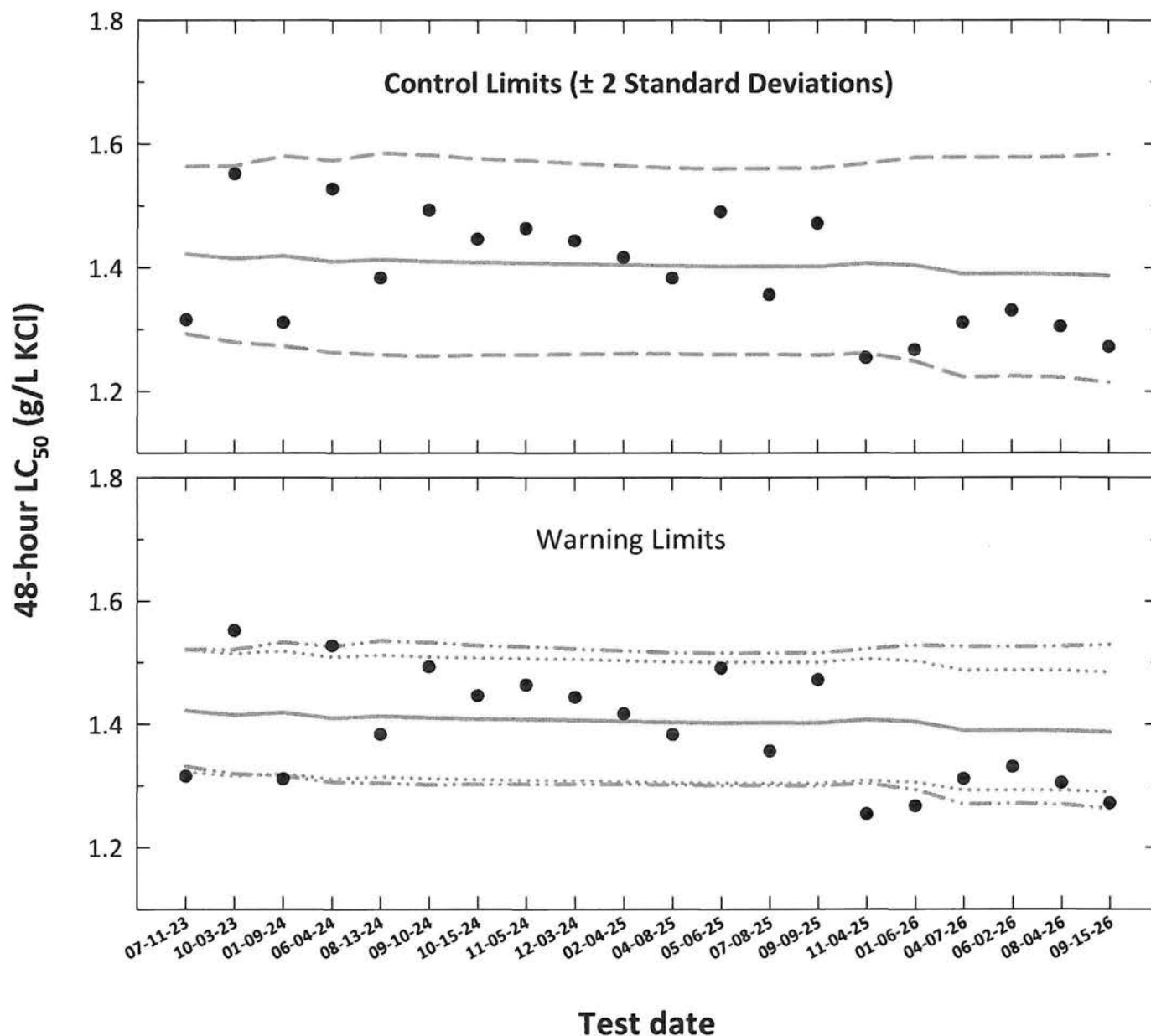
Dose mg/L

1-tail, 0.05 level of significance

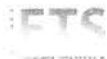
Menidia beryllina

Acute Reference Toxicant Control Chart

Source: Aquatic Indicators, Inc.



- **48-hour LC₅₀** = median lethal concentration. An estimation of the potassium chloride concentration which is lethal to 50% of the test organisms in 48-hours (calculated using ToxCalc).
- **Central Tendency** (mean logarithmic LC₅₀ converted to anti-logarithmic values)
- - - **Control Limits** (mean logarithmic LC₅₀ ± 2 standard deviations converted to anti-logarithmic values)
- . - . - **Laboratory Warning Limits** (mean logarithmic LC₅₀ ± 2 coefficient of variations converted to anti-logarithmic values)
- **USEPA Warning Limits** (mean logarithmic LC₅₀ $\pm S_{A.10}$ converted to anti-logarithmic values,
S_{A.10} = 10th percentile of CVs reported nationally by USEPA)

Acute LC₅₀ Whole Effluent Toxicity Test, Species: *Menidia beryllina*

EPA-821-R-02-012, Method 2006.0

Menidia beryllina Potassium Chloride Acute Reference Toxicant TestMbKClAC # 109

Dilution Preparation:

Test concentrations (mg/L KCl)	1000	1250	1500	1750	2000
mL Stock solution	20	25	30	35	40
mL Dilution water	980	975	970	965	960
Total volume (mL)	1000	1000	1000	1000	1000

A stock solution was prepared by diluting 100 g KCl into 2000 mL deionized water. This 50,000 mg/L KCl stock solution was used to prepare the concentrations evaluated for toxicity.

Stock solution INSS #: 2501

Chemical Analyses:

		Hours		
		0	24	48
Concentration	Analyst	U	XL	XL
Control, SaltSW	pH (S.U.)	7.93	7.95	7.89
	Dissolved oxygen (mg/L)	8.1	8.1	8.0
	*Salinity (ppt)	25.3	25.1	25.2
	*Alkalinity (mg/L CaCO ₃)	110		
	*Temperature (°C)	25.6	24.6	25.0
1000 mg/L	pH (S.U.)	8.00	7.94	7.89
	Dissolved oxygen (mg/L)	8.2	8.1	8.1
	*Salinity (ppt)	25.0	25.7	25.9
	*Temperature (°C)	25.6	24.9	24.7
1250 mg/L	pH (S.U.)	8.00	7.93	7.88
	Dissolved oxygen (mg/L)	8.2	8.1	8.1
	*Salinity (ppt)	26.0	25.9	26.1
	*Temperature (°C)	25.6	25.0	24.7
1500 mg/L	pH (S.U.)	8.00	7.93	7.88
	Dissolved oxygen (mg/L)	8.2	8.1	8.0
	*Salinity (ppt)	26.0	26.0	26.2
	*Temperature (°C)	25.6	25.0	25.1
1750 mg/L	pH (S.U.)	8.00	7.92	7.86
	Dissolved oxygen (mg/L)	8.2	8.1	8.0
	*Salinity (ppt)	26.1	26.5	26.4
	*Temperature (°C)	25.4	24.9	25.1
2000 mg/L	pH (S.U.)	8.00	7.92	
	Dissolved oxygen (mg/L)	8.2	8.0	
	*Salinity (ppt)	26.5	26.4	
	*Temperature (°C)	25.4	24.9	

*Analyst identified for each day, performed pH and dissolved oxygen measurements only. Temperature and salinity performed at the time of test initiation or termination by the analyst performing the toxicity test. Alkalinity performed by the analyst identified on the test specific bench sheet and transcribed to this bench sheet.

Chemical analyses:

Parameter	Reporting limit	Method number	Meter	Serial number
pH	0.1 S.U.	SM 4500-H+ B-2021	Accumet AR20	93312452
Dissolved oxygen	1.0 mg/L	SM 4500-O H-2021	HACH HQ430d Flexi	SN250100050300
Salinity	1.0 ppt	SM 2520 B-2021	YSI PRO30	180104324
Alkalinity	5.0 mg CaCO ₃ /L	SM 2320 B-2021	Accumet AR20	93312452
Temperature	0.1 °C	SM 2550B-2010	Digital Thermometer	170664705

Acute LC₅₀ Whole Effluent Toxicity Test, Species: Menidia beryllina
EPA-821-R-02-012, Method 2006.0

Menidia beryllina Potassium Chloride Acute Reference Toxicant Test

MbKCIAC # 109

Hours	Date	Feeding		Test Initiation or Termination		Location Incubator/Shelf	Randomizing Template	SaltSW Batch
		Time	Analyst	Time	Analyst			
0 Initiation	09-15-26	1110	K	1401	JP	1B	orange	09-05-26 A
24	09-16-26			1352	JP			
48 Termination	09-17-26			1400	JP			

*Test organisms were fed in holding 2 to 5 hours prior to test initiation. Test organisms were not fed during the test.

Test Organism Information:

Organism Source:	Aquatic Indicators, Inc.
Batch (AI Batch Mb):	09-05-26
Age (9 to 14 days old):	10 DMS
Date organisms were born:	09-04-26 1200 TO 09-05-26 1130
Average transfer volume:	< 0.25 mL
Transfer bowl information:	pH (S.U.): 7.95 Temperature (°C) 24.2

Survival Data (number of living organisms):

Hours	Control		1000 mg/L		1250 mg/L		1500 mg/L		1750 mg/L		2000 mg/L	
	Replicate		Replicate		Replicate		Replicate		Replicate		Replicate	
	A	B	C	D	E	F	G	H	I	J	K	L
0 Initiation	10	10	10	10	10	10	10	10	10	10	10	10
24	10	10	10	10	5 ^s	9 ^u	6 ^u	3 ^u	1 ^u	0 ^u	0 ^u	0 ^u
48 Termination	10	10	10	9 ^u	5	4 ^s	4 ^u	1 ^u	0 ^u	0	0	0
Mean Survival	100%		95%		45%		25%		0%		0%	

Comment codes: d = dead, u = unhealthy, s = stressed

Statistics:

Method	Probit
Lower 95% confidence limit (mg KCl/L)	1189.6
Upper 95% confidence limit (mg KCl/L)	1348.3
48-hour LC ₅₀ (mg KCl/L)	1271.7

Comments:



Acute Silverside Test-24 Hr Survival

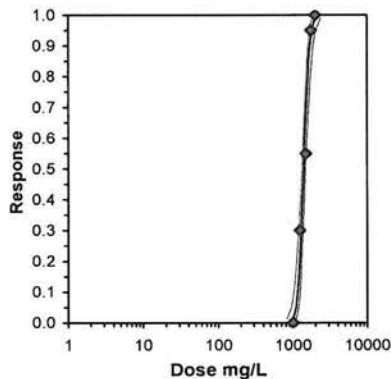
Start Date: 9/15/2026 Test ID: MbKCIAC Sample ID: REF-Ref Toxicant
End Date: 9/17/2026 Lab ID: ETS-Envir. Testing Sol. Sample Type: KCL-Potassium chloride
Sample Date: Protocol: ACUTE-EPA-821-R-02-012 Test Species: MB-Menidia beryllina
Comments:

Conc-mg/L	1	2
D-Control	1.0000	1.0000
1000	1.0000	1.0000
1250	0.5000	0.9000
1500	0.6000	0.3000
1750	0.1000	0.0000
2000	0.0000	0.0000

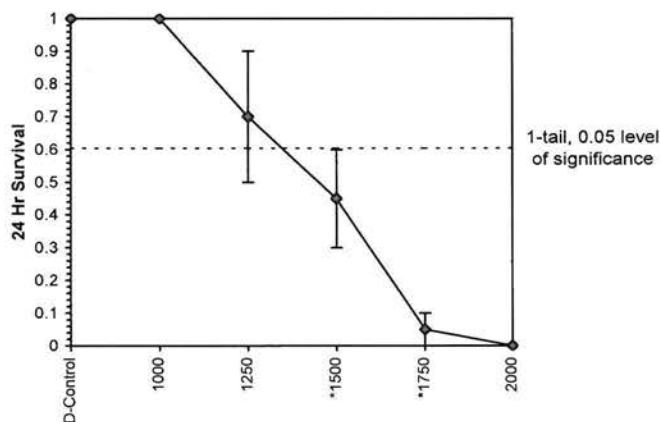
Conc-mg/L	Mean	N-Mean	Transform: Arcsin Square Root				N	t-Stat	1-Tailed Critical	MSD	Number Resp	Total Number
			Mean	Min	Max	CV%						
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2				0	20
1000	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0.000	2.850	0.5220	0	20
1250	0.7000	0.7000	1.0172	0.7854	1.2490	32.230	2	2.156	2.850	0.5220	6	20
*1500	0.4500	0.4500	0.7329	0.5796	0.8861	29.567	2	3.708	2.850	0.5220	11	20
*1750	0.0500	0.0500	0.2403	0.1588	0.3218	47.963	2	6.398	2.850	0.5220	19	20
2000	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2				20	20

Auxiliary Tests					Statistic		Critical	Skew	Kurt		
Normality of the data set cannot be confirmed											
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		1250	1500	1369.31		0.37112	0.38063	0.49074	0.03354	0.00574	4, 5
Treatments vs D-Control											

Maximum Likelihood-Probit											
Parameter	Value	SE	95% Fiducial Limits		Control	Chi-Sq	Critical	P-value	Mu	Sigma	Iter
Slope	15.3611	2.57839	10.3075	20.4148	0	2.62518	7.81472	0.45309	3.14826	0.0651	3
Intercept	-43.361	8.1468	-59.328	-27.393							
TSCR											
Point	Probits	mg/L	95% Fiducial Limits								
EC01	2.674	992.688	817.659	1100.82							
EC05	3.355	1099.46	948.615	1193.16							
EC10	3.718	1160.99	1025.66	1246.89							
EC15	3.964	1204.44	1080.34	1285.46							
EC20	4.158	1240.13	1125.17	1317.78							
EC25	4.326	1271.59	1164.42	1346.95							
EC40	4.747	1354.45	1265.05	1428.38							
EC50	5.000	1406.88	1325.13	1484.84							
EC60	5.253	1461.33	1383.47	1548.67							
EC75	5.674	1556.56	1475.33	1673.11							
EC80	5.842	1596.05	1510.31	1728.82							
EC85	6.036	1643.34	1550.43	1798.07							
EC90	6.282	1704.85	1600.42	1891.53							
EC95	6.645	1800.26	1674.54	2042.65							
EC99	7.326	1993.89	1817.16	2366.98							



Dose-Response Plot



Acute Silverside Test-48 Hr Survival

Start Date: 9/15/2026 Test ID: MbKCIAC Sample ID: REF-Ref Toxicant
End Date: 9/17/2026 Lab ID: ETS-Envir. Testing Sol. Sample Type: KCL-Potassium chloride
Sample Date: Protocol: ACUTE-EPA-821-R-02-012 Test Species: MB-Menidia beryllina
Comments:

Conc-mg/L	1	2
D-Control	1.0000	1.0000
1000	1.0000	0.9000
1250	0.5000	0.4000
1500	0.4000	0.1000
1750	0.0000	0.0000
2000	0.0000	0.0000

Conc-mg/L	Mean	N-Mean	Transform: Arcsin Square Root					N	t-Stat	1-Tailed Critical	MSD	Number Resp	Total Number
			Mean	Min	Max	CV%							
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2					0	20
1000	0.9500	0.9500	1.3305	1.2490	1.4120	8.661	2	0.628	2.850	0.3699		1	20
*1250	0.4500	0.4500	0.7351	0.6847	0.7854	9.685	2	5.216	2.850	0.3699		11	20
*1500	0.2500	0.2500	0.5032	0.3218	0.6847	51.002	2	7.002	2.850	0.3699		15	20
*1750	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	9.656	2.850	0.3699		20	20
2000	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2					20	20

Auxiliary Tests

Normality of the data set cannot be confirmed

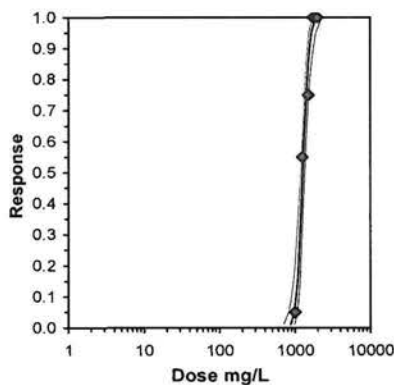
Equality of variance cannot be confirmed

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	1000	1250	1118.03		0.2294	0.23528	0.57779	0.01684	7.9E-04	4, 5
Treatments vs D-Control										

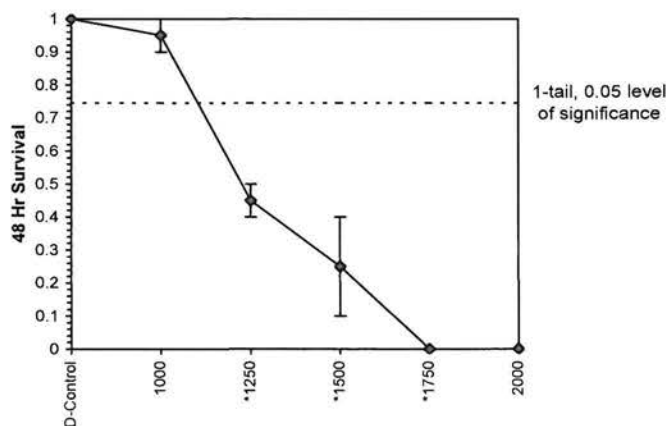
Maximum Likelihood-Probit

Parameter	Value	SE	95% Fiducial Limits	Control	Chi-Sq	Critical	P-value	Mu	Sigma	Iter
Slope	14.234	2.42288	9.48512 18.9828	0	2.76934	7.81472	0.42857	3.10439	0.07025	4
Intercept	-39.188	7.55846	-54.002 -24.373							

Point	Probits	mg/L	95% Fiducial Limits
EC01	2.674	872.88	702.799 978.478
EC05	3.355	974.614	826.03 1066.93
EC10	3.718	1033.61	899.291 1118.59
EC15	3.964	1075.42	951.624 1155.74
EC20	4.158	1109.85	994.744 1186.91
EC25	4.326	1140.26	1032.67 1215.05
EC40	4.747	1220.65	1130.61 1293.68
EC50	5.000	1271.72	1189.6 1348.32
EC60	5.253	1324.92	1247.2 1410.31
EC75	5.674	1418.33	1338.17 1532.24
EC80	5.842	1457.2	1372.81 1587.28
EC85	6.036	1503.85	1412.52 1656.04
EC90	6.282	1564.68	1461.97 1749.36
EC95	6.645	1659.39	1535.35 1901.31
EC99	7.326	1852.8	1676.87 2231.05



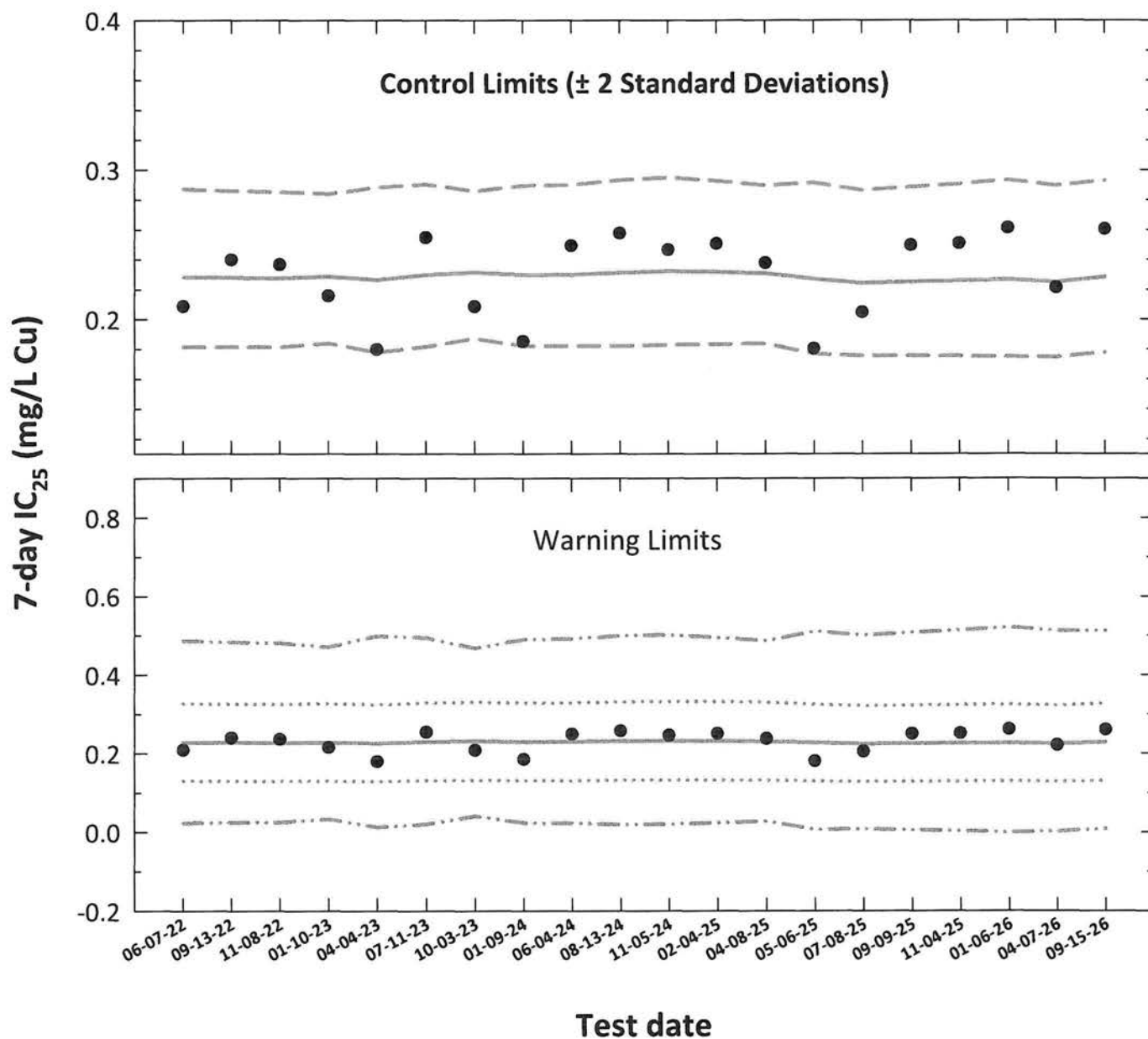
Dose-Response Plot



Menidia beryllina

Chronic Reference Toxicant Control Chart

Source: Aquatic Indicators, Inc.



- 7-day IC_{25} = 25% inhibition concentration. An estimation of the copper concentration which would cause a 25% reduction in *Menidia* growth (calculated using ToxCalc).
- Central Tendency (mean logarithmic IC_{25} converted to anti-logarithmic values)
- - - Control Limits (mean logarithmic $IC_{25} \pm 2$ standard deviations converted to anti-logarithmic values)
- . . . Laboratory Warning Limits (mean logarithmic $IC_{25} \pm 2$ coefficient of variations converted to anti-logarithmic values)
- USEPA Warning Limits (mean logarithmic $IC_{25} \pm S_{A.75}$ converted to anti-logarithmic values, $S_{A.75}$ = 75th percentile of CVs reported nationally by USEPA)

Menidia beryllina
Chronic Reference Toxicant Control Chart
Source: Aquatic Indicators, Inc.

Test number	Test date	7-day IC ₂₅ ToxCal Determination (mg/L Cu)	Log ₁₀ Conversion			Anti-logarithmic Values (mg/L Cu)						
			7-day IC ₂₅	CT	S	CT	Control Limits		Laboratory Calculated CV		75th Percentile CV	
							CT - 2S	CT + 2S	CT - 2CV	CT + 2CV	CT - S _{A,75}	CT + S _{A,75}
1	06-07-22	0.2088	-0.6803	-0.6415	0.0498	0.2283	0.1815	0.2872	0.0233	0.4861	0.1301	0.3265
2	09-13-22	0.2399	-0.6200	-0.6422	0.0494	0.2279	0.1816	0.2861	0.0246	0.4831	0.1299	0.3259
3	11-08-22	0.2368	-0.6256	-0.6428	0.0491	0.2276	0.1816	0.2853	0.0254	0.4811	0.1297	0.3255
4	01-10-23	0.2159	-0.6657	-0.6408	0.0471	0.2287	0.1841	0.2841	0.0337	0.4708	0.1304	0.3270
5	04-04-23	0.1799	-0.7450	-0.6447	0.0523	0.2266	0.1781	0.2884	0.0125	0.4991	0.1292	0.3241
6	07-11-23	0.2548	-0.5938	-0.6387	0.0509	0.2298	0.1818	0.2905	0.0208	0.4939	0.1310	0.3286
7	10-03-23	0.2086	-0.6807	-0.6356	0.0459	0.2314	0.1873	0.2859	0.0408	0.4669	0.1319	0.3309
8	01-09-24	0.1852	-0.7324	-0.6387	0.0502	0.2298	0.1824	0.2896	0.0233	0.4900	0.1310	0.3286
9	06-04-24	0.2493	-0.6033	-0.6383	0.0504	0.2300	0.1823	0.2901	0.0227	0.4914	0.1311	0.3288
10	08-13-24	0.2577	-0.5889	-0.6360	0.0516	0.2312	0.1823	0.2932	0.0196	0.4996	0.1318	0.3306
11	11-05-24	0.2466	-0.6080	-0.6338	0.0518	0.2324	0.1831	0.2950	0.0201	0.5019	0.1325	0.3323
12	02-04-25	0.2507	-0.6008	-0.6349	0.0507	0.2318	0.1835	0.2928	0.0234	0.4950	0.1321	0.3314
13	04-08-25	0.2377	-0.6240	-0.6369	0.0494	0.2307	0.1838	0.2896	0.0273	0.4861	0.1315	0.3299
14	05-06-25	0.1805	-0.7435	-0.6438	0.0542	0.2271	0.1769	0.2915	0.0062	0.5105	0.1294	0.3247
15	07-08-25	0.2047	-0.6889	-0.6492	0.0530	0.2243	0.1757	0.2863	0.0077	0.5007	0.1278	0.3207
16	09-09-25	0.2496	-0.6028	-0.6477	0.0539	0.2251	0.1756	0.2885	0.0052	0.5069	0.1283	0.3219
17	11-04-25	0.2509	-0.6005	-0.6462	0.0548	0.2259	0.1755	0.2907	0.0027	0.5131	0.1287	0.3230
18	01-06-26	0.2611	-0.5832	-0.6448	0.0561	0.2266	0.1750	0.2934	-0.0011	0.5215	0.1292	0.3240
19	04-07-26	0.2212	-0.6552	-0.6479	0.0548	0.2250	0.1748	0.2895	0.0021	0.5118	0.1282	0.3217
20	09-15-26	0.2604	-0.5844	-0.6413	0.0541	0.2284	0.1780	0.2930	0.0079	0.5112	0.1302	0.3266

Note: 7-day IC₂₅ = 25% inhibition concentration. An estimation of the copper concentration that would cause a 25% reduction in *Menidia* growth (calculated using ToxCalc).

CT = Central tendency of the IC₂₅ values.

S = Standard deviation of the IC₂₅ values.

Control Limits = Mean logarithmic IC₂₅ ± 2 standard deviations converted to anti-logarithmic values.

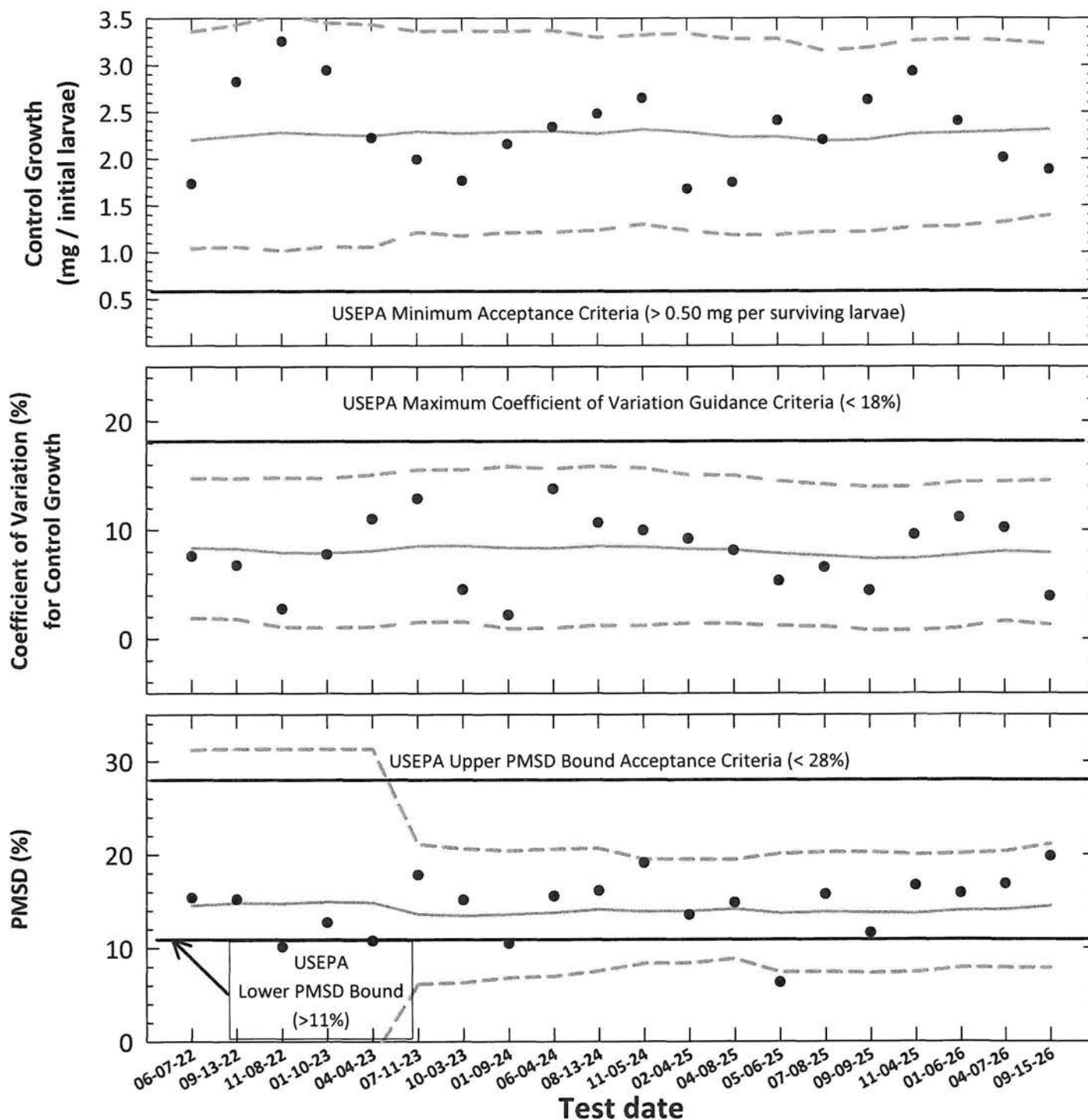
Warning Limits = Mean logarithmic IC₂₅ ± 2CV or S_{A,75} converted to anti-logarithmic values.

S_{A,75} = Standard deviation corresponding to the 75th percentile of CVs reported nationally by USEPA (S_{A,75} = 0.43).

CV = Coefficient of variation.

Menidia beryllina

Chronic Reference Toxicant Testing, Test Acceptability Criteria
Organism Source: Aquatic Indicators, Inc.



- **Control Growth, Coefficient of Variation (CV) or Percent Minimum Significant Difference (PMSD)**
PMSD is the percent minimum significant difference between the control and treatment that can be declared statistically significant. The lower PMSD bound represents a practical limit to the sensitivity of the test method and is not a minimum acceptance criteria.
- **Central Tendency** (mean Control Growth, CV or PMSD)
- - - **95% Confidence Interval** (mean Control Growth, CV or PMSD $\pm$ 2 Standard Deviations)

Menidia beryllina
Chronic Reference Toxicant Testing, Test Acceptability Criteria
Source: Aquatic Indicators, Inc.

Test number	Test date	ToxCal Determination				Control Growth		Control Growth		Control Growth CV		Test PMSD	
		Control Survival (%)	Control Growth		PMSD (%)	CT	95% Confidence Interval CT - 2S	95% Confidence Interval CT + 2S	CT	95% Confidence Interval CT - 2S	95% Confidence Interval CT + 2S	CT	95% Confidence Interval CT - 2S
			Mean (mg/initial larvae)	CV (%)									
1	06-07-22	100	1.733	7.6	15.4	2.2012	1.041	3.361	8.3	1.9	14.8	14.6	-2.1
2	09-13-22	100	2.822	6.8	15.2	2.243	1.057	3.430	8.3	1.8	14.7	14.8	-1.7
3	11-08-22	100	3.255	2.7	10.1	2.280	1.014	3.545	7.9	1.0	14.8	14.8	-1.8
4	01-10-23	100	2.945	7.8	12.8	2.257	1.062	3.453	7.9	1.0	14.8	15.0	-1.4
5	04-04-23	100	2.220	11.0	10.8	2.243	1.053	3.433	8.1	1.1	15.1	14.9	-1.6
6	07-11-23	100	1.992	12.9	17.8	2.287	1.213	3.360	8.5	1.5	15.6	13.6	6.2
7	10-03-23	100	1.763	4.5	15.2	2.270	1.174	3.366	8.5	1.5	15.5	13.5	6.3
8	01-09-24	100	2.156	2.2	10.5	2.287	1.211	3.364	8.4	0.9	15.8	13.6	6.8
9	06-04-24	100	2.339	13.8	15.5	2.291	1.215	3.368	8.3	1.0	15.6	13.8	7.0
10	08-13-24	100	2.479	10.7	16.1	2.266	1.235	3.297	8.5	1.2	15.9	14.1	7.6
11	01-05-24	100	2.648	10.0	19.1	2.312	1.299	3.324	8.5	1.2	15.7	13.9	8.3
12	02-04-25	100	1.675	9.2	13.5	2.283	1.232	3.335	8.2	1.4	15.1	13.9	8.4
13	04-08-25	100	1.747	8.1	14.9	2.230	1.183	3.278	8.2	1.4	15.0	14.2	8.9
14	05-06-25	100	2.406	5.3	6.3	2.233	1.184	3.281	7.9	1.2	14.5	13.7	7.4
15	07-08-25	100	2.201	6.6	15.7	2.188	1.221	3.155	7.6	1.1	14.2	13.8	7.4
16	09-09-25	100	2.628	4.4	11.6	2.201	1.217	3.185	7.4	0.8	14.0	13.8	7.3
17	11-04-25	100	2.930	9.6	16.7	2.266	1.268	3.263	7.4	0.8	14.0	13.7	7.4
18	01-06-26	100	2.401	11.1	15.9	2.276	1.278	3.274	7.7	1.0	14.4	14.0	7.9
19	04-07-26	100	2.009	10.2	16.9	2.292	1.322	3.261	8.1	1.6	14.5	14.1	7.9
20	09-15-26	100	1.884	3.9	19.8	2.312	1.397	3.226	7.9	1.3	14.6	14.5	7.9

Note: Control Survival = USEPA minimum test acceptability criteria $\geq 80\%$ survival.

Control Mean Growth = USEPA minimum test acceptability criteria ≥ 0.50 mg/surviving larvae.

CV = Coefficient of variation for control growth.

USEPA maximum CV guidance criteria (90th percentile) < 18%

MSD = Minimum significant difference.

PMSD = Percent minimum significant difference.

PMSD is a measure of test precision. The PMSD is the minimum percent difference between the control and treatment that can be declared statistically significant in a whole effluent toxicity test.

Lower PMSD bound determined by USEPA (10th percentile) > 11%.

Upper PMSD bound determined by USEPA (90th percentile) < 28%.

CT = Central tendency of the growth, CV or PMSD values.

S = Standard deviation of the growth, CV or PMSD values.

The lower PMSD bound represents a practical limit to the sensitivity of the test method and is not a minimum acceptance criteria.

Copper Sulfate Chronic Reference Toxicant Test (EPA-821-R-02-014, Method 1006.0)

Species: Menidia beryllina

MbCuCR Test Number: 157

Dilution preparation information:						Comments:
Cu Stock INSS number:		INSS 2516				
Stock preparation:		100 mg Cu/L: Dissolve 0.1965 g CuSO ₄ in 500-mL deionized water				
Dilution prep (mg/L)	0.025	0.050	0.100	0.200	0.500	
Stock volume (mL)	0.5	1.0	2.0	4.0	10.0	
Diluent volume (mL)	1999.5	1999.0	1998.0	1996.0	1990.0	
Total volume (mL)	2000	2000	2000	2000	2000	

Test organism information:

Organism source:	Aquatic Indicators, Inc.
Age:	10-days old
Batch:	AI Mb 09-05-26
Hatch dates and times:	09-04-26 1200 to 09-05-26 1130
Transfer vessel information:	pH (S.U.) = 7.95 Temperature (°C) = 24.2
Average transfer volume (mL):	< 0.25 mL

Test information:

Randomizing template:	ORANGE
Incubator number and shelf location:	6B
Artemia CHM number:	CHM1432
Drying information for weight determination:	
Date / Time in oven:	09-22-26 1050
*Initial oven temperature:	60°C
Date / Time out of oven:	09-23-26 1050
*Final oven temperature:	60°C
Total drying time:	24 HOURS

*60°C Oven, Thermometer SN: 14-98585

Daily feeding and renewal information:

Day	Date	Morning feeding		Afternoon feeding		Test initiation, renewal, or termination		Sample number used	SaltSW batch used
		Time	Analyst	Time	Analyst	Time	Analyst		
0	09-15-26	1110	h	1300	h	1220	h	NA	09-08-26A
1	09-16-26	0500	h	1530	h	0816	h		↓
2	09-17-26	0500	h	1200	h	0820	h		09-15-26
3	09-18-26	0500	h	1100	h	0815	h		↓
4	09-19-26	0600	h	1200	h	0900	h		09-16-26
5	09-20-26	0600	h	1100	h	0900	h		↓
6	09-21-26	0500	h	1100	h	0845	h		↓
7	09-22-26					1050	h		

Chemical analyses:

Parameter	Reporting Limit	Method number	Meter	Serial number
pH	0.1 S.U.	SM 4500-H+ B-2021	Accumet AR20	93312452
Dissolved Oxygen (D.O.)	1.0 mg/L	SM 4500-O H-2021	HACH HQ430d Flexi	SN250100050300
Salinity	1.0 ppt	SM 2520 B-2021	YSI PRO30	18D104324
Alkalinity	5.0 mg CaCO ₃ /L	SM 2320 B-2021	Accumet AR20	93312452
Temperature	0.1 °C	SM 2550B-2010	Digital Thermometer	130664685

Control information:		Acceptance criteria	Summary of test endpoints:	
% Mortality:	07.	≤ 20%	7-day LC ₅₀ (mg/L Cu)	0.316
Average weight per initial larvae:	1.664		NOEC (mg/L Cu)	0.2
Average weight per surviving larvae:	1.884	≥ 0.25mg/larvae	LOEC (mg/L Cu)	0.5
			ChV (mg/L Cu)	0.316
			IC ₂₅ (mg/L Cu)	0.260

Species: Menidia beryllina

MbCuCR Test Number: 157

Survival and Growth Data

Day	CONTROL				0.025 mg/L				0.05 mg/L			
	A	B	C	D	E	F	G	H	I	J	K	L
0	10	10	10	10	10	10	10	10	10	10	10	10
1	10	10	10	10	10	10	10	10	10	10	10	10
2	10	10	10	10	10	10	10	10	10	10	10	10
3	10	10	10	10	10	10	10	10	10	10	10	10
4	10	10	10	10	10	10	10	10	10	10	10	10
5	10	10	10	10	10	10	10	10	10	10	10	10
6	10	10	10	10	10	10	10	10	10	10	10	10
7	10	10	10	10	10	10	10	10	10	10	10	10
*A = Pan weight (mg) Tray color code: <u>Gold</u> Analyst: <u>jl</u> Date: <u>08-26-26</u>												
*B = Pan + Larvae weight (mg) Analyst: <u>jl</u> Date: <u>09-24-26</u>												
C = Larvae weight (mg) = B - A Analyst: <u>jl</u>												
Weight per initial number of larvae (mg) = C / Initial number of larvae Analyst: <u>jl</u>												
Average weight per initial number of larvae (mg) Percent reduction from control (%)												
1.884 1.777 5.77 1.942 -3.17												

*Weight measurements performed using Cahn 28 Automatic Electrobalance, SN 41520.

Comment codes: c = clear, d = dead, fg = fungus, k = killed, m = missing, sk = sick, sm = unusually small, lg = unusually large, d&r = decanted and returned, w = wounded.

Comments:

Species: Menidia beryllina

MbCuCR Test Number: 157

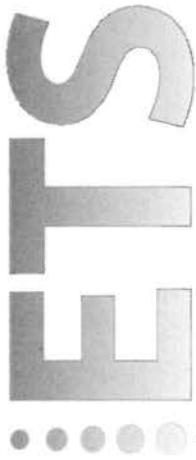
Survival and Growth Data

Day	0.1 mg/L				0.2 mg/L				0.5 mg/L			
	M	N	O	P	Q	R	S	T	U	V	W	X
0	10	10	10	10	10	10	10	10	10	10	10	10
1	10	10	10	10	10	10	10	10	7 ^{sd}	8 ^{sd}	7 ^{sd}	7 ^{sd}
2	10	10	10	10	10	10	10	10	4 ^{sd}	4 ^{sd}	4 ^{sd}	4 ^{sd}
3	10	10	10	10	10	10	10	10	3 ^{sd}	3 ^{sd}	4	3 ^{sd}
4	10	10	10	10	10	10	10	10	3	3	4	3
5	10	10	10	10	10	10	10	10	3	3	4	3
6	10	10	10	10	9 ^{sd}	10	10	9 ^{sd}	2 ^{sd}	2 ^{sd}	1 ^{sd}	2 ^{sd}
7	10	10	10	10	9	10	10	9	1 ^{sd}	0 ^{sd}	1	0 ^{sd}
*A = Pan weight (mg) Tray color code: <u>Gold</u> Analyst: <u>JL</u> Date: <u>09-26-26</u>												
*B = Pan + Larvae weight (mg) Analyst: <u>JL</u> Date: <u>09-24-26</u>												
C = Larvae weight (mg) = B - A Analyst: <u>JL</u>												
Weight per initial number of larvae (mg) = C / Initial number of larvae Analyst: <u>JL</u>												
Average weight per initial number of larvae (mg)	1.756				1.748				0.084			
Percent reduction from control (%)	6.87				7.27				95.57			

*Weight measurements performed using Cahn 28 Automatic Electrobalance, SN 41520.

Comment codes: c = clear, d = dead, fg = fungus, k = killed, m = missing, sk = sick, sm = unusually small, lg = unusually large, d&r = decanted and returned, w = wounded.

Comments:



Environmental Testing Solutions, Inc.

Menidia beryllina Chronic Whole Effluent Toxicity Test
EPA-821-R-02-014, Method 1006.0

Quality Control
Verification of Data Entry, Calculations, and Statistical Analyses

Test number: 157

Concentration (mg/L Cu)	Replicate	Initial number of larvae	Final number of larvae	A = Pan weight (mg)		B = Pan + Larvae weight (mg)		Larvae weight (mg) = B - A		Not for Compliance Assessment, Internal Laboratory QC		Weight / Initial number of larvae (mg)	Mean survival (%)	Mean weight/ Initial number of larvae (mg)	Coefficient of variation (%)	Percent reduction from control (%)
				A = Pan weight (mg)	Final number of larvae	B = Pan + Larvae weight (mg)	Larvae weight (mg)	B - A	Weight / Initial number of larvae (mg)	Mean weight/ Surviving number of larvae (mg)	Coefficient of variation (Mean weight per surviving number of larvae) (%)					
Control	A	10	10	8.91	10	27.30	18.39	18.39	1.839	1.884	3.9	1.839	100.0	1.884	3.9	Not applicable
	B	10	10	9.89	10	28.68	18.79	18.79	1.879			1.879				
	C	10	10	14.96	10	34.85	19.89	19.89	1.989			1.989				
	D	10	10	12.94	10	31.22	18.28	18.28	1.828			1.828				
	E	10	10	13.20	10	29.79	16.59	16.59	1.659			1.659				
0.025	F	10	10	12.83	10	31.89	19.06	19.06	1.906	1.777	8.2	1.906	100.0	1.777	8.2	5.7
	G	10	10	9.26	10	25.67	16.41	16.41	1.641			1.641				
	H	10	10	12.74	10	31.74	19.00	19.00	1.900			1.900				
	I	10	10	13.36	10	34.19	20.83	20.83	2.083			2.083				
	J	10	10	14.86	10	34.55	19.69	19.69	1.969			1.969				
0.050	K	10	10	11.57	10	33.73	22.16	22.16	2.216	1.942	16.0	2.216	100.0	1.942	16.0	-3.1
	L	10	10	9.83	10	24.83	15.00	15.00	1.500			1.500				
	M	10	10	13.83	10	29.67	15.84	15.84	1.584			1.584				
	N	10	10	12.80	10	28.26	15.46	15.46	1.546			1.546				
	O	10	10	9.57	10	30.00	20.43	20.43	2.043			2.043				
0.100	P	10	10	13.22	10	31.72	18.50	18.50	1.850	1.756	13.4	1.850	100.0	1.756	13.4	6.8
	Q	10	8	11.62	8	27.43	15.81	15.81	1.976			1.581				
	R	10	8	13.98	8	35.45	21.47	21.47	2.684			2.147				
	S	10	9	13.75	9	30.17	16.42	16.42	1.824			1.642				
	T	10	9	12.26	9	28.48	16.22	16.22	1.802			1.622				
0.200	U	10	1	13.58	1	15.64	2.06	2.06	2.060	2.072	20.0	2.060	85.0	1.748	15.3	7.2
	V	10	0	0.00	0	0.00	0.00	0.00	0.000			0.000				
	W	10	1	13.09	1	14.40	1.31	1.31	1.310			0.131				
	X	10	2	0.00	2	0.00	0.00	0.00	0.000			0.000				
										1.685	31.5		10.0	0.084	121.1	
0.500																95.5

Dunnett's MSD value:

0.3733
19.8

PMSD:

MSD =
PMSD =
Minimum Significant Difference
Percent Minimum Significant Difference
PMSD is a measure of test precision. The PMSD is the minimum percent difference between the control and treatment that can be declared statistically significant in a whole effluent toxicity test.

Lower PMSD bound determined by USEPA (10th percentile) = 11%.

Upper PMSD bound determined by USEPA (90th percentile) = 28%.

Lower and upper PMSD bounds were determined from the 10th and 90th percentile, respectively, of PMSD data from EPA's WET Interlaboratory Variability Study (USEPA, 2001a; USEPA, 2001b). The lower PMSD bound represents a practical limit to the sensitivity of the test method and is not a minimum acceptance criteria.

Larval Fish Growth and Survival Test-7 Day Survival																	
Start Date: 9/15/2026			Test ID: MbCuCR			Sample ID: REF-Ref Toxicant											
End Date: 9/22/2026			Lab ID: ETS-Envir. Testing Sol.			Sample Type: CUSO4											
Sample Date:			Protocol: SWCHR-EPA-821-R-02-014			Test Species: MB-Menidia beryllina											
Comments:																	
Conc-mg/L	1	2	3	4													
D-Control	1.0000	1.0000	1.0000	1.0000													
0.025	1.0000	1.0000	1.0000	1.0000													
0.05	1.0000	1.0000	1.0000	1.0000													
0.1	1.0000	1.0000	1.0000	1.0000													
0.2	0.9000	1.0000	1.0000	0.9000													
0.5	0.1000	0.0000	0.1000	0.0000													
Transform: Arcsin Square Root																	
Conc-mg/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Rank Sum	1-Tailed Critical	Number Resp	Total Number						
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4			0	40						
0.025	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4	18.00	10.00	0	40						
0.05	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4	18.00	10.00	0	40						
0.1	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4	18.00	10.00	0	40						
0.2	0.9500	0.9500	1.3305	1.2490	1.4120	7.072	4	14.00	10.00	2	40						
*0.5	0.0500	0.0500	0.2403	0.1588	0.3218	39.161	4	10.00	10.00	38	40						
Auxiliary Tests								Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)								0.75522	0.884	4.2E-16	0.2987						
Equality of variance cannot be confirmed																	
Hypothesis Test (1-tail, 0.05)			NOEC	LOEC	ChV	TU											
Steel's Many-One Rank Test			0.2	0.5	0.31623												
Treatments vs D-Control																	
Maximum Likelihood-Probit																	
Parameter	Value	SE	95% Fiducial Limits		Control	Chi-Sq	Critical	P-value	Mu	Sigma	Iter						
Slope	8.26902	1.18496	5.94651 10.5915		0	0.00072	7.81472	0.99999	-0.5	0.12093	3						
Intercept	9.13434	0.6382	7.88346 10.3852														
TSCR																	
Point	Probits	mg/L	95% Fiducial Limits														
EC01	2.674	0.16546	0.1233	0.19874													
EC05	3.355	0.20003	0.15849	0.23344													
EC10	3.718	0.22133	0.18063	0.25516													
EC15	3.964	0.23696	0.19692	0.27144													
EC20	4.158	0.25017	0.21063	0.28549													
EC25	4.326	0.26209	0.2229	0.29846													
EC40	4.747	0.2947	0.25569	0.33563													
EC50	5.000	0.31624	0.27651	0.36174													
EC60	5.253	0.33936	0.29799	0.39122													
EC75	5.674	0.38158	0.33507	0.44882													
EC80	5.842	0.39976	0.35028	0.47499													
EC85	6.036	0.42205	0.3684	0.50808													
EC90	6.282	0.45186	0.39188	0.55393													
EC95	6.645	0.49996	0.42832	0.63131													
EC99	7.326	0.60444	0.50309	0.81154													

Larval Fish Growth and Survival Test-7 Day Growth

Start Date:	9/15/2026	Test ID:	MbCuCR	Sample ID:	REF-Ref Toxicant
End Date:	9/22/2026	Lab ID:	ETS-Envir. Testing Sol.	Sample Type:	CUS04
Sample Date:		Protocol:	SWCHR-EPA-821-R-02-014	Test Species:	MB-Menidia beryllina
Comments:					

Conc-mg/L	1	2	3	4
D-Control	1.8390	1.8790	1.9890	1.8280
0.025	1.6590	1.9060	1.6410	1.9000
0.05	2.0830	1.9690	2.2160	1.5000
0.1	1.5840	1.5460	2.0430	1.8500
0.2	1.5810	2.1470	1.6420	1.6220
0.5	0.2060	0.0000	0.1310	0.0000

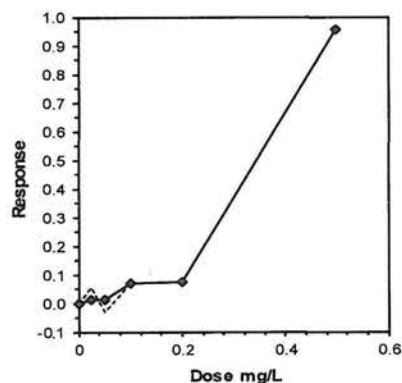
Conc-mg/L	Mean	N-Mean	Transform: Untransformed					t-Stat	1-Tailed		Isotonic	
			Mean	Min	Max	CV%	N		Critical	MSD	Mean	N-Mean
D-Control	1.8838	1.0000	1.8838	1.8280	1.9890	3.902	4				1.8838	1.0000
0.025	1.7765	0.9431	1.7765	1.6410	1.9060	8.234	4	0.678	2.360	0.3733	1.8593	0.9870
0.05	1.9420	1.0309	1.9420	1.5000	2.2160	16.039	4	-0.368	2.360	0.3733	1.8593	0.9870
0.1	1.7558	0.9321	1.7558	1.5460	2.0430	13.353	4	0.809	2.360	0.3733	1.7558	0.9321
0.2	1.7480	0.9279	1.7480	1.5810	2.1470	15.287	4	0.858	2.360	0.3733	1.7480	0.9279
0.5	0.0843	0.0447	0.0843	0.0000	0.2060	121.054	4				0.0843	0.0447

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$)	0.97419	0.868	0.02837	0.23712
Bartlett's Test indicates equal variances ($p = 0.27$)	5.19773	13.2767		

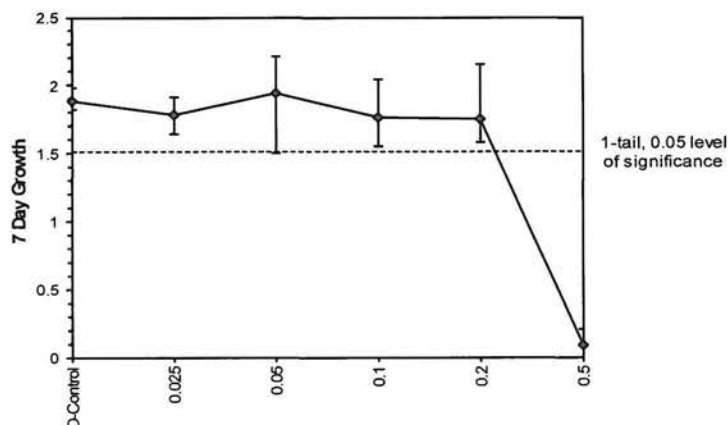
[illegible]

Treatments vs D-Control		Linear Interpolation (200 Resamples)
1	2	3

Point	mg/L	SD	95% CL(Exp)	Skew	
IC05	0.0837	0.0615	0.0000	0.2914	0.4532
IC10	0.2095	0.0512	0.0008	0.2423	-0.7951
IC15	0.2265	0.0254	0.0574	0.2565	-2.6481
IC20	0.2435	0.0140	0.1916	0.2725	0.0000
IC25	0.2604	0.0131	0.2125	0.2876	0.0023
IC40	0.3114	0.0109	0.2702	0.3364	0.0128
IC50	0.3454	0.0095	0.3091	0.3677	0.0272



Dose-Response Plot



Species: Menidia beryllina

MbCuCR Test Number: 157

Daily Chemistry:

Temperature and salinity performed at the time of test initiation, renewal or termination by the analyst identified in the Daily Renewal Information table located on Page 1. Alkalinity and chlorine (total residual) performed by the analyst identified on the bench sheet specific for each analysis and transcribed to this bench sheet.

		Day (Analyst identified for each day, performed pH and D.O. measurements only.)					
		0		1		2	
		Analyst					
Concentration	Parameter						
CONTROL, SaltSW	pH (S.U.)		7.94	8.00	7.90	7.98	7.91
	Dissolved oxygen (mg/L)		8.1	8.2	8.0	8.2	7.9
	Salinity (ppt)		25.3	25.0	25.1	25.0	24.9
	Alkalinity (mg CaCO ₃ /L)		110			110	
	Temperature (°C)		25.0	25.3	24.6	24.9	24.7
0.025 mg/L	pH (S.U.)		8.03	7.94	8.00	7.89	8.04
	Dissolved oxygen (mg/L)		8.2	8.1	8.2	8.0	8.2
	Salinity (ppt)		25.2	25.2	25.0	25.2	25.0
	Temperature (°C)		25.2	25.1	24.6	25.3	24.7
0.05 mg/L	pH (S.U.)		8.03	7.93	8.00	7.88	8.02
	Dissolved oxygen (mg/L)		8.2	8.1	8.2	7.9	8.2
	Salinity (ppt)		25.2	25.2	25.0	25.3	25.0
	Temperature (°C)		25.2	25.1	24.6	25.0	24.5
0.1 mg/L	pH (S.U.)		8.03	7.92	7.99	7.87	8.02
	Dissolved oxygen (mg/L)		8.2	8.1	8.2	7.9	8.2
	Salinity (ppt)		25.2	25.2	25.0	25.4	25.0
	Temperature (°C)		25.2	24.9	24.7	25.2	24.5
0.2 mg/L	pH (S.U.)		8.03	7.92	7.98	7.85	8.02
	Dissolved oxygen (mg/L)		8.2	8.0	8.2	7.9	8.2
	Salinity (ppt)		25.2	25.2	25.0	25.4	25.0
	Temperature (°C)		25.1	25.2	24.5	25.2	24.5
0.5 mg/L	pH (S.U.)		8.03	7.93	7.97	7.85	8.02
	Dissolved oxygen (mg/L)		8.3	8.0	8.2	7.9	8.3
	Salinity (ppt)		25.2	25.1	24.4	25.2	24.9
	Temperature (°C)		25.3	25.2	24.5	25.1	24.5
		Initial	Final	Initial	Final	Initial	Final

Species: Menidia beryllina

MbCuCR Test Number: 157

Analyst		Day (Analyst identified for each day, performed pH and D.O. measurements only.)							
		3		4		5		6	
		XL	BSC	BSC	BSC	BSC	XL	XL	XL
Concentration	Parameter								
CONTROL, SaltSW	pH (S.U.)	7.95	7.99	8.12 8.06	7.99	8.11	7.90	7.97	7.61
	Dissolved oxygen (mg/L)	8.1	8.0	8.2 (8.1)	8.1	8.2	8.0	8.1	6.3
	Salinity (ppt)	25.1	25.0	24.9	25.2	25.0	25.2	25.2	25.3
	Alkalinity (mg CaCO ₃ /L)			100					
	Temperature (°C)	24.6	24.7	24.8	25.1	24.8	25.2	24.8	24.4
0.025 mg/L	pH (S.U.)	7.97	7.88	8.12	7.99	8.14	7.99	7.97	7.62
	Dissolved oxygen (mg/L)	8.1	8.0	8.2	8.1	8.3	8.0	8.0	6.6
	Salinity (ppt)	25.0	25.0	25.0	25.2	25.1	25.0	25.2	25.3
	Temperature (°C)	24.7	24.6	24.9	24.8	24.7	25.0	24.8	24.9
0.05 mg/L	pH (S.U.)	7.98	7.86	8.12	7.97	8.13	7.99	7.96	7.62
	Dissolved oxygen (mg/L)	8.1	8.0	8.3	8.0	8.3	8.0	8.1	6.5
	Salinity (ppt)	25.0	25.1	25.0	25.3	25.2	25.3	25.1	25.4
	Temperature (°C)	24.7	25.0	24.9	25.0	24.7	25.0	24.7	25.1
0.1 mg/L	pH (S.U.)	7.98	7.87	8.12	7.99	8.14	8.00	7.95	7.64
	Dissolved oxygen (mg/L)	8.1	7.9	8.3	8.0	8.3	8.0	8.1	6.6
	Salinity (ppt)	24.9	25.1	25.0	25.3	25.1	25.4	25.0	25.3
	Temperature (°C)	24.7	25.0	24.9	25.2	24.7	25.0	24.7	25.1
0.2 mg/L	pH (S.U.)	7.98	7.88	8.12	7.94	8.13	8.01	7.95	7.64
	Dissolved oxygen (mg/L)	8.1	7.9	8.3	7.8	8.3	7.9	8.1	6.5
	Salinity (ppt)	24.9	25.2	25.1	25.3	25.2	25.4	24.9	25.3
	Temperature (°C)	24.7	25.1	25.0	25.2	24.7	25.1	24.7	24.8
0.5 mg/L	pH (S.U.)	7.98	7.87	8.13	8.01	8.13	8.01	7.95	7.67
	Dissolved oxygen (mg/L)	8.1	7.8	8.3	7.8	8.3	7.8	8.0	6.7
	Salinity (ppt)	24.9	25.0	25.1	25.2	25.1	25.2	24.9	25.1
	Temperature (°C)	24.7	25.0	25.0	25.2	24.8	25.0	25.0	25.1
		Initial	Final	Initial	Final	Initial	Final	Initial	Final