Appendix C: Toxicity Laboratory Bench Sheets

July 2015

SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Initiation Sheet

Region: Delta RMP Sample Date: 072815 Test Date: 072915

Samples stored in chamber: 10 Test conducted in: CTR

If neos isolated from Brood Board: Only use neos from gravids producing over 8 neos on day of set-up.

Brood Board # 42 MS 072916 00:01 Date/Time neos isolated: 072915 @ 8:05

Date/Time gravids isolated: ~~072815 @ 1726~~ Neos isolated by: LD

Gravids isolated by: GM Test set-up by: ~~MS 07291~~ GM 072915

Health of gravids: GOOD Time neos loaded: 15:11

At time of set-up: were neos born in an 8 hour window? yes no Age range: ~~0-8 hrs~~ 12h. (MS)

were neos less than 24 hours old? yes no

ABCDE BOARD

Blocking by known parentage: Please list which Brood Board replicate was used for test initiation.

Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
A7	B8	C7	D5	E1	E4	B4	B5	OA	A6
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.

If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 2,500, consult with a supervisor for a potential species substitution.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	Temp (°C)	EC (µS/cm)	pre-DO*	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
11	24.9	274.2		8.43	8.26	GM	88	58	0
12	25.1	124.7		8.14	8.26	GM	40	46	~~.05~~ → 0
13	24.8	147.6		8.22	8.12	GM	44	52	~~0.02~~ → 0.51
14	25.1	917	9.35	8.50	8.50	GM	228	164	~~0.01~~ → 0.02
15	25.1	1327		8.40	8.41	GM	204	102	~~0.12~~ → 0.02
16	25.0	663		7.95	8.21	GM	240	224	~~0.31~~ → 0.05
17	24.8	274.8		8.18	8.39	GM	88	58	0
18	24.6	262.1		8.20	8.31	GM	92	60	~~0.10~~ → 0
19	24.6	303.5		8.18	8.38	GM	84	60	0

Delta RMP Ceriodaphnia Dubia

Field Date: 072829
Test Set up: 072915
Samples kept in chamber: 10
Experiment kept in chamber: CTR

Instructions: This is a 3-Brood test with 1 animal per replicate and 10 replicates with 15 ml per vial treatment. This test must be set up using blocking by known parentage. Feed and change daily. Take initial chemistry and final chemistry daily. Contact Marie immediately when ≥ 50% mortality occurs for TIE initiation. Please alert Marie or Linda ASAP when test does not meet test acceptability criteria. Take down the test after the vast majority of organisms have had their 3rd brood.

ID	Treatment	Decoding or Instructions
11	L16-50 (TAC Control)	
12	Mokelumne River at New Hope Road	544SAC002
13	Sacramento River at Hood	~~510SACHOD~~ 510SACHOD
14	San Juaquin River at Vernalis	541STC501
15	San Juaquin River at Buckley Cove	544LSAC13
16	Ulatis Creek at Brown Road	~~511VLCABR~~ (~~OR 510/5~~
BLANK 17	072815 QC Sample for Ceriodaphnia	in chamber 10 510SOL010/511OLCABR
18	LWOBC	
19	SSEPAMH	

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	Dectarmp ceiro
Sample Date:	072815
Test Date:	072915

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final DO (mg/L)	Final pH	Final ID
11	1	/									/	No	DL	NA	8.19	8.2	DL	24.2	8.19	8.16	DL
	2	/									/	No	GR	NA	8.17	8.02	MS	23.6	8.29	8.16	MS
	3	/									/	No	MS	NA	8.25	8.40	MS	23.7	8.55	8.31	MS
	4	3	3	4	+	+	+	+	+	+	+	No	DL	NA	8.29	8.16	DL	23.9	7.96	8.15	DL
	5	2	4	10	+	+	+	3	+	+	2	No	DL	NA	8.28	8.22	DL	23.7	8.11	8.25	DL
	6	9	+	17	1*	12	1*	+	7	4*	9*	No	GR	NA	8.25	7.83	GR	25.2	7.71	8.05	DL
	7	+	9	+	+	+	+	11	+	+	+				8.19	7.72	GM	23.4	7.95	7.95	GM
	8	15	18	15	+	6	+	14	15	16	8#										
Total Young:																					

Notes: * = dead neos present
2/8 neos present were dead

10.82 GR 073115

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final DO (mg/L)	Final pH	Final ID
12	1	/									/	No	DL	10.7	8.12	8.1	DL	24.0	8.22	8.09	DL
	2	/									/	No	GR	~~11.24~~	8.14	8.15	MS	23.5	8.32	8.06	MS
	3	/									/	No	MS	NA	8.29	8.27	MS	23.7	8.25	8.49	MS
	4	5	4	4	+	+	+	4	+	+	4	No	DL	11.0	8.23	8.22	DL	23.9	8.03	8.03	DL
	5	8	10	5	6	4	8	7	+	7	8	No	DL	NA	8.30	8.35	DL	23.9	8.34	8.16	DL
	6	+	+	10	+	+	+	+	2	12	+	No	GR	NA	8.17	7.85	GR	25.5	7.97	7.96	DL
	7	12	13	+	11	9	8	12	+	4	11	No	GM		8.10	7.79	GM	23.2	8.05	7.91	GM
	8	7	13	9	9	10	11	+	6	1	7	No	GM								
Total Young:		1																			

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DECTARMP CEIRIO
Sample Date:	072815
Test Date:	072915

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final DO (mg/L)	Final pH	Final ID
13	1	+									+	No	DL	NA	8.42	8.0	DL	24.2	8.26	8.10	DL
	2	+									+	NO	GR	NA	8.15	8.15	MS	23.5	8.39	8.09	MS
	3	+									+	No	MS	NA	8.23	8.23	MS	23.7	8.57	8.26	MS
	4	4	5	3	+	3	4	4	+	+	4	NO	DL	NA	8.24	8.18	DL	23.8	8.06	8.01	DL
	5	9	6	11	+	8	6	11	11	4	7	No	DL	NA	8.19	8.41	DL	23.8	8.45	8.13	DL
	6	18	+	+	+	+	+	+	+	15	+	NO	GR	9.66	8.25	7.63	GR	25.4	8.04	7.98	DL
	7	+	15	13	+	15	14	13	14	+	2	NO	GM	NA	8.00	7.89	GM	23.0	8.28	7.95	GM
	8	16	17	14	7	14	13	18	13	12	16										
Total Young:																					

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final DO (mg/L)	Final pH	Final ID
14	1	+						+	D	+	+	No	DL	NA	8.35	8.0	DL	23.9	8.25	8.52	DL
	2	+						+		+	+	NO	GR	NA	8.48	8.17	MS	23.4	8.44	8.49	MS
	3	+						+		+	+	NO	MS	10.51	8.49	8.25	MS	23.7	8.61	8.64	MS
	4	5	4	4	+	5	3	4	080315 DL	4	5	No	DL	9.04	8.32	8.35	DL	24.0	8.06	8.55	DL
	5	8	10	13	~~4~~ +	~~9~~ 4	~~7~~ 080315	~~9~~ 13		8	11	No	DL	DL	8.71	8.26	DL	23.9	8.42	8.56	DL
	6	17	+	18	+	+	+	8 +		17	12	NO	GR	NA	8.68	7.76	GR	25.5	8.08	8.46	DL
	7	+	10	+	+	14	15	14		+	+	NO	GM	9.60	8.56	7.84	GM	23.1	7.97	8.40	GM
	8	19	7	15	+	12	13	12		18	16										
Total Young:																					

Notes: 080315 DL

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	ARCTARMO CERIO
Sample Date:	072815
Test Date:	072915

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final DO (mg/L)	Final pH	Final ID
15	1	+									+	No	DL	NA	8.49	8.0	DL	24.1	8.28	~~8.16~~	DL
	2	+									+	NO	GR	NA	8.26	8.21	MS	23.5	8.47	8.34	MS
	3	+									+	NO	MS	NA	8.46	8.35	MS	23.8	8.53	8.48	MS
	4	+	4	+	3	3	+	2	+	+	3	No	DL	NA	8.38	8.42	DL	23.8	8.08	~~8.69~~	DL
	5	8	11	9	3	8	+	+	2	9	+	No	DL	NA	8.43	8.23	DL	23.9	8.46	8.40	DL
	6	+	13	+	9	13	+	17	4	13	9	NO	GR	NA	8.45	7.72	GR	25.7	8.01	8.27	DL
	7	+	+	+	1	+	12	+	+	+	+	NO	GM		8.23	7.93	GM	23.4	8.05	8.20	GM
	8	11	9	6	14	12	13	6	11	11	7										
Total Young:																					

073015 (DL) → 8.38

8.38 DL 072915 (DL)

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final DO (mg/L)	Final pH	Final ID
16	1	+									+	No	DL	NA	8.25	8.0	DL	24.0	8.21	8.62	DL
	2	+									+	NO	GR	NA	8.41	8.37	MS	23.5	~~8.59~~	8.59	MS
	3	+									+	NO	MS	NA	8.67	8.10	MS	23.5	8.35	8.73	MS
	4	6	6	3	4	3	5	2	5	4	6	No	DL	NA	8.57	8.29	DL	24.0	7.81	8.69	DL
	5	9	12	10	8	8	11	5	7	10	9	No	DL	NA	8.82	8.07	DL	23.9	8.36	8.73	DL
	6	15	17	13	16	10	+	15	13	18	6*	NO	GR	NA	8.75	7.80	GR	25.7	8.05	8.62	DL
	7	+	+	+	+	+	10	+	+	+	+	NO	GM		8.46	7.99	GM	23.5	7.95	8.56	GM
	8	13	14	12	14	7	7	13	13	13	19	NO									
Total Young:																					

DO 8.19 MS 073115

Notes: * dead neo present
B-Bigheos

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DECTGRMP CERIO
Sample Date:	072915
Test Date:	072915

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final DO (mg/L)	Final pH	Final ID
17	1	+									+	No	DL	NA	8.33	8.0	DL	23.9	8.26	8.19	DL
	2	+									+	No	GR	NA	8.24	8.23	MS	23.5	8.45	8.18	MS
	3	+									+	No	MS	NA	8.34	8.26	MS	23.6	8.60	8.35	MS
	4	+	4	+	+	+	+	+	3	+	+	No	DL	NA	8.33	8.33	DL	23.7	7.88	8.20	DL
	5	+	8	8	+	6	3	+	5	+	3	No	DL	NA	8.37	8.37	DL	23.8	8.27	8.22	DL
	6	17	+	+	8*	+	+	+	+	2*	1*	No	GR	NA	8.29	7.81	GR	25.4	7.96	8.12	DL
	7	+	10	13	+	6	+	6	7	+	+	No	GM		8.17	7.91	GM	23.6	7.95	7.96	GM
	8	17	12	11	5	16	6	8	3	17	13	No									
Total Young:			22						15												

Notes: *dead neos present

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final DO (mg/L)	Final pH	Final ID
18	1	+									+	No	DL	NA	8.28	8.17	DL	24.0	8.23	8.18	DL
	2	+									+	No	GR	NA	8.21	8.22	MS	23.5	8.59	8.18	MS
	3	+									+	No	MS	NA	8.25	8.59	MS	23.7	8.45	8.34	MS
	4	3	+	3	3	3	3	2	+	+	4	No	DL	NA	8.32	8.31	DL	23.9	8.09	8.20	DL
	5	+	+	8	7	+	7	7	3	4	11	No	DL	NA	8.38	8.44	DL	23.8	8.33	8.23	DL
	6	9	+	+	+	+	+	+	11	10	+	No	GR	NA	8.30	7.86	GR	~~25.4~~	8.12	~~8.02~~	DL
	7	+	+	10	1	+	12	14	8	+	4	No	GM		8.14	8.09	GM	23.7	8.09	8.00	GM
	8	14	6	8	6	11	10	12	2	10	15										
Total Young:				21	11		22	23	22		19										

080415 DL 25.6

080415 8.07

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DECTGRMP CERIO
Sample Date:	072915
Test Date:	072915

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final DO (mg/L)	Final pH	Final ID
19	1	+									+	No	DL	NA	8.26	8.0	DL	24.0	8.24	8.17	DL
	2	+									+	No	GR	NA	8.23	8.30	MS	23.7	8.58	8.19	MS
	3	+									+	No	MS	NA	8.29	8.36	MS	23.7	8.55	8.34	MS
	4	+	4	3	+	3	+	+	4	+	3	No	DL	NA	8.33	8.35	DL	23.6	8.07	8.14	DL
	5	2	5	11	+	7	8	5	8	8	4	No	DL	NA	8.38	8.30	DL	23.8	8.38	8.24	DL
	6	10	11	16	4*	10	13	14*	11	13	13	No	GR	NA	8.30	7.76	GR	25.9	8.02	8.08	DL
	7	+	+	+	+	+	+	+	+	+	+	No	GM	NA	8.22	8.02	GM	23.8	8.13	8.06	GM
	8	13	11	8	8	13	8	17	8	12	11										
Total Young:			20	30		20			23		20										

Notes: *dead neos present

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final DO (mg/L)	Final pH	Final ID
	1																				
	2																				
	3																				
	4																				
	5																				
	6																				
	7																				
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Termination Sheet

Region: Delta RMP Sample Date: 072815 Test Date: 072915

Samples stored in chamber: 10 Test conducted in: CTR

Test taken down by: GM

Test take down time: 11:30

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
11	24.7	306.8	7.95	GM 080615 ~~7.95~~ 8.05	GM
12	24.7	160.1	7.99	8.09	GM
13	24.9	172.2	7.81	7.95	GM
14	24.7	905.0	7.78	8.39	GM
15	25.0	1279.0	7.89	8.21	GM
16	25.2	696	8.03	8.53	GM
17	25.1	308.2	7.89	7.99	GM
18	25.0	306.7	8.02	8.09	GM
19	25.1	351.8	7.97	8.05	GM

Fathead Minnow Delta RMP Treatment List
Field Date: 072815
Test Set up: 072915
Samples kept in chamber: 10
Experiment kept in: CTR

Instructions: This is a 7-day chronic-style test with 10 animals per replicate and 4 replicates per treatment. Each replicate consists of 250ml of sample. Carefully renew 200ml per replicate daily with the squeegee tip method. Feed 3X times daily. Do not feed on the last day of the test. If ≥ 50% mortality occurs in one replicate, feed the replicate half the amount of food.

amount ?

If ≥ 50% mortality occurs in a treatment, contact Marie or Linda immediately for TIE initiation. This test must be setup with <48-hour old fish. Initial and final chemistry must be taken daily.

ID	Treatment	Decoding or Instructions
11	ROEPAMH (TAC Control)	Formerly DIEPAMH
12	Mokelumne River at New Hope Road	
13	Sacramento River at Hood	
14	San Juaquin River at Vernalis	
15	San Juaquin River at Buckley Cove	
16	Ulatis Creek at Brown Road	
17	072815 QC Sample for Fatheads	

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SWRCB - SWAMP FY 14/15 Fathead Test Initiation Sheet

Region: DELTA RMP Sample Date: 072815 Test Date: 072915

Samples stored in chamber: 10 Test conducted in: CTR

Before test initiation, what percentage of fish: are lying on the bottom <1 %
have bent spines <1 %
are active >99 %

Comments about irregular color, sizes or shapes: LOOK GREAT!

Age at time of set-up: < 48 HOURS % of less desirable fish used in each beaker: ~~0~~

Test set-up by: LD Test set-up time: 16:33

Special Instructions:

✓ If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.
✓ If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.
✓ If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.
✓ If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	Temp (°C)	EC (µS/cm)	pre-DO*	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
11	24.7	288.8	–	8.40	8.29	LD	84	58	0
12	24.8	120.2	–	8.35	8.30	LD	40	46	0
13	24.8	130.5	–	8.56	8.15	LD	44	52	0.51
14	25.1	899	9.35	8.26	8.45	LD	228	164	0.02
15	24.8	1304	–	8.25	8.41	LD	204	102	0.02
16	24.7	~~8~~ 6129 15*	8.55	8.01	8.19	LD	240	224	0.05
17	24.7	285.2	–	8.33	8.33	LD	84	56	0

* EC = 670 on Day 0, Treatment 16

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Updated by LD 072815

SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region:	DELTA RMP
Sample Date:	072815
Test Date:	072915

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
11	1	Live	10	9	9*	9	9	9	9	
		Dead		1						
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	9	9*	9	9	9	9	
		Dead		1						
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		No	No	NO	NO	NO	NO	No	
	ID		DL	MS	GR	DL	GM	GM	DL	

			1	2	3	4	5	6
Initial	Pre-DO*		NA	NA	NA	NA	NA	NA
	pH		8.28	8.21	8.37	8.33	8.20	8.24
	DO (mg/L)		8.21	8.19	8.41	7.85	7.91	7.73
	ID		DL	MS	GR	GM	GM	GM
Final	Temp °C		23.4	23.3	23.0	22.7	23.2	23.5
	pH		8.02	7.99	8.09	8.04	8.08	8.02
	DO (mg/L)		7.89	7.78	8.33	7.66	7.68	7.79
	ID		GR	MS	GR	GM	GM	GM

Rep	Boat Weight	Total Weight
1	0.97393	0.97706
2	0.99140	0.99532
3	0.98158	0.98563
4	1.00436	1.00775

Notes:
*Sucked up baster

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
12	1	Live	10	10	10*	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	9	9	9	9	
		Dead								
		Missing				1				
	3	Live	10	10	10	9	9	9	9	
		Dead								
		Missing				1				
Murky Rating	4	Live	10	9	9	10	10	10	10	
		Dead		1						
		Missing								
	≥50% Mortality?		No	NO	NO	No	NO		No	
	ID		DL	GR	GR	DL	GM		DL	

			1	2	3	4	5	6
Initial	Pre-DO*		NA	10.49	NA	11.3	9.12	NA
	pH		8.18	8.15	8.27	8.19	8.21	8.11
	DO (mg/L)		8.22	8.23	8.57	8.56	8.27	7.60
	ID		DL	MS	GR	GM	GM	GM
Final	Temp °C		23.4	23.3	23.1	22.7	23.3	23.8
	pH		8.00	8.04	8.03	8.11	8.06	8.01
	DO (mg/L)		8.01	7.79	8.29	7.99	7.91	7.70
	ID		GR	MS	GR	GM	GM	GM

Rep	Boat Weight	Total Weight
1	0.99048	0.99450
2	0.99627	0.99984
3	0.99721	1.00054
4	1.00144	1.00525

Notes:
*Sucked up baster

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region:	DELTA RMP
Sample Date:	072815
Test Date:	072915

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
13	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10*	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	8	8	8	8	8	8	
		Dead		2						
		Missing								
	≥50% Mortality?		No	NO	NO	No	NO		No	
	ID		DL	GR	GR	DL	GM		DL	
	Initial	Pre-DO*	NA	NA	NA	NA	NA	NA		
		pH	8.12	8.10	7.95	8.03	8.16	8.11		
		DO (mg/L)	8.25	8.36	8.26	8.59	7.98	7.68		
		ID	DL	MS	GR	GM	GM	GM		
	Final	Temp °C	23.4	23.5	23.0	22.8	23.4	24.2		
		pH	8.07	7.78	8.01	8.02	7.99	7.90		
		DO (mg/L)	8.00	7.96	8.19	7.61	7.82	7.63		
		ID	GR	MS	GR	GM	GM	GM		

Rep	Boat Weight	Total Weight
1	0.99238	0.99608
2	0.98856	0.99291
3	0.98999	0.99389
4	1.01333	1.01683

Notes:
Rep C - sucked one up baster on day 2
* sucked 1 up - dead it's swimming a little erratic

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
14	1	Live	10	9	9	9	9	9	9	
		Dead		1						
		Missing								
	2	Live	10	9	9	9	9	9	9	
		Dead		1						
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	9	9	9	
		Dead					1			
		Missing								
	≥50% Mortality?		No	NO	NO	No	NO	NO	No	
	ID		DL	GR	GR	DL	GM	GM	DL	
	Initial	Pre-DO*	11.2	NA	10.62	NA	NA	9.72		
		pH	8.41	8.34	8.31	8.52	8.20	8.39		
		DO (mg/L)	8.22	8.25	8.20	7.97	8.91	7.74		
		ID	DL	MS	GR	GM	GM	GM		
	Final	Temp °C	23.5	23.5	23.1	~~NA~~	23.4	24.2		
		pH	8.50	8.36	8.53	~~8.54~~	8.55	8.42		
		DO (mg/L)	8.02	8.01	8.20	~~7.47~~	7.83	7.66		
		ID	GR	MS	GR	GM	GM			

GM 072915

Day 4 Final: T- 22.9
pH - 8.53
DO 7.56

Rep	Boat Weight	Total Weight
1	0.98026	0.98426
2	0.99384	0.99788
3	0.97651	0.98088
4	0.99885	1.00307

Notes:

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region:	DELTA RMP
Sample Date:	072815
Test Date:	072915

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
15	1	Live	10	8	8	8	8	8	8	
		Dead		2						
		Missing								
	2	Live	10	8	8	8	8	8	8	
		Dead		2						
		Missing								
	3	Live	10	9	9	10	10	10	10	
		Dead		1						
		Missing								
Murky Rating	4	Live	10	10	10	9	9	9	9	
		Dead								
		Missing				1				
	≥50% Mortality?		NO	NO	NO	NO	NO		NO	
	ID		GR	GR	GR	GM	GM		DL	

Rep	Boat Weight	Total Weight
1	0.98192	0.98587
2	0.99205	0.99620
3	0.99052	0.99441
4	0.99211	0.99650

Notes: Microcystis present in sample 080215 GM

		Day 1	2	3	4	5	6
Initial	Pre-DO*	NA	NA	NA	NA	NA	NA
	pH	8.31	8.22	8.42	8.43	8.35	8.40
	DO (mg/L)	8.17	8.55	8.47	7.99	7.98	7.76
	ID	DL	MS	GR	GM	GM	GM
Final	Temp °C	23.4	23.7	23.2	22.9	23.3	24.3
	pH	8.30	8.14	8.31	8.27	8.29	8.19
	DO (mg/L)	7.98	7.98	8.15	8.66	7.99	7.64
	ID	GR	MS	GR	GM	GM	GM

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
16	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	9	9	9	8	8	8	8	
		Dead	1							
		Missing				1				
	3	Live	9	9	9	9	8	8	8	
		Dead	1							
		Missing					1			
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GR	GR	GR	GM	GM	GM	DL	

Rep	Boat Weight	Total Weight
1	0.98765	0.99214
2	0.98224	0.98572
3	0.98703	0.99083
4	0.99414	0.99873

Notes: Pre DO

		Day 1	2	3	4	5	6
Initial	Pre-DO*	NA	NA	NA	NA	NA	NA
	pH	8.33	8.40	8.29	8.49	8.17	8.57
	DO (mg/L)	8.36	8.29	8.18	8.01	7.91	7.72
	ID	DL	MS	GR	GM	GM	GM
Final	Temp °C	23.4	23.7	23.2	22.7	23.4	23.9
	pH	8.55	8.47	8.64	8.62	8.65	8.54
	DO (mg/L)	7.80	8.00	8.13	7.80	7.76	7.53
	ID	GR	MS	GR	GM	GM	GM

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region:	DELTA RMP
Sample Date:	072815
Test Date:	072915

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
17	1	Live	10	10	10	10	10	10	9	
		Dead							(A)	
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	9	8	8	7	7	7	7	
		Dead	1	1						
		Missing	1			1				
	≥50% Mortality?		NO	NO	NO	NO	NO	NO		
	ID		GR	GR	GR	GM	GM	GM		
	Initial	Pre-DO*	NA	NA	NA	NA	NA	NA		
		pH	8.28	8.27	8.30	7.72	7.91	7.97		
		DO (mg/L)	8.11	8.28	8.53	7.97	7.86	7.82		
		ID	DL	MS	GR	GM	GM	GM		
	Final	Temp °C	23.5	23.4	23.0	22.8	23.0	24.2		
		pH	8.10	7.91	8.11	8.11	7.85	7.66		
		DO (mg/L)	7.95	8.08	8.26	7.82	7.85	7.64		
		ID	GR	MS	GR	GM	GM	GM		

Rep	Boat Weight	Total Weight
1	0.98180	0.98547
2	0.98662	1.00427
3	0.99988	0.99026
4	0.99518	0.99854

Switched 080715 (GR)

Notes:
Day 2, Rep B - sucked one up baster

(A) super decomposed, half body left 080515 (DL)

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
	1	Live								
		Dead								
		Missing								
	2	Live								
		Dead								
		Missing								
	3	Live								
		Dead								
		Missing								
Murky Rating	4	Live								
		Dead								
		Missing								
	≥50% Mortality?									
	ID									
	Initial	Pre-DO*								
		pH								
		DO (mg/L)								
		ID								
	Final	Temp °C								
		pH								
		DO (mg/L)								
		ID								

Rep	Boat Weight	Total Weight
1		
2		
3		
4		

Notes:

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(Delta)

SWRCB - SWAMP Fathead Test Termination Sheet

Region: Δ RMP Sample Date: ~~080315~~ 072815 Test Date: 072915

Samples stored in: CH·10 Test conducted in: CTR

Test taken down by: DL

Test take down time: 15:

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
11	23.7	294.6	7.97	8.08	DL
12	23.9	130.1	7.86	8.00	DL
13	23.6	128.3	7.99	8.10	DL
14	23.7	904	~~8.51~~	8.51	DL
15	23.7	1296	8.02	8.22	DL
16	23.7	681	7.92	8.48	DL
17	23.8	290.8	7.85	7.93	DL
~~1 080515 (DL)~~	~~23.8~~	~~290.8~~			~~DL~~

→ 080515 (DL) : 7.97

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Updated by LD 072815

Delta RMP Selenastrum Capricornutum (no EDTA)

Field Date: 072829
Test Set up: 072915
Samples kept in chamber: 10
Experiment kept in chamber: 5

Instructions: This is a 96-hour chronic algae test. Take initial chemistry at test set up and final chemistry at test termination. Randomize flasks twice daily. Flasks must be inoculated individually. This test has 5 replicates per treatment, one of which is a chemistry-only replicate. Please take daily pH and temperature measurements at the AM randomization. Start spiking algae cells at 94 hours of testing whenever possible.

ID	Treatment	Decoding or Instructions
11	Glass Distilled Water	2143967 [illegible]
12	Mokelumne River at New Hope Road	748347 [illegible]
13	Sacramento River at Hood	
14	San Joaquin River at Vernalis	
15	San Joaquin River at Buckley Cove	669887 [illegible]
16	Ulatis Creek at Brown Road	
17	072815 QC Sample for Algae	

18 new algae slant 40A

Day 4 (Takedown) cal ✓ final chem

	pH	Temp	DO	EC
1	x	x		
2				
3				
4				
5				
6				
7				
11			x	x
12				
13				
14				
15				
16				
17				
18	x	x	x	x

pH cal buffer 7 = 7.06
" 10 = 10.05
DO = 8.77
EC = 991

[illegible]

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SWRCB - SWAMP FY 14/15 Algae Test Initiation Sheet

Region: DRMP Sample Date: 072815 Test Date: 072915

Samples stored in chamber: 10 Test conducted in: chamber 5

Culture water type: glass distilled Initial flask cell count: $0.99 \times 10^6 / 0.95 \times 10^6$

Letter and date of culture: 28C/40A 072415 Initial innoculum volume: 1mL into 100mL

Tech who made culture: MS Test set-up by: MS

Test set-up time: 1645

The nutrients were added to: individual flasks entire treatment ✓ multiple treatments ✓

Were algae cells added to individual flasks? yes ✓ no Light intensity range: 359-490

Special Instructions:

If the Sample Receiving SC or Field SC is ≥ 1,500, then a high conductivity control must be included in the test.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation									Daily Measurements					
Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	Hard (mg/L)	Alk (mg/L)	Amm (mg/L)	ID	pH	°C	pH	°C	pH	°C
11	24.3	97.8	8.17	7.75	4	2	0	MS	7.69	24.5	7.75	24.7	8.11	24.7
12	24.3	199.9	8.24	8.24	40	46	0	MS	8.20	24.6	8.16	24.9	8.48	25.1
13	23.8	209.5	8.32	8.11	44	52	0.51	MS	8.29	25.0	8.24	25.1	8.45	24.6
14	23.9	955	8.36	8.34	228	164	0.02	MS	8.67	25.1	8.59	24.2	8.80	24.7
15	24.2	1359	8.39	8.36	204	102	0.02	MS	8.48	25.1	8.42	24.5	8.64	25.0
16	24.0	756	8.40	8.41	240	224	0.05	MS	8.78	24.9	8.75	25.1	8.94	24.6
17	23.7	89.9	8.12	7.76	0	2	0	MS	7.72	25.1	7.74	24.4	8.06	23.9
18	23.8	92.2	8.12	7.71	0	2	0	MS	7.60	24.5	7.67	24.4	7.95	24.3
									ID	DL	ID	MS	ID	MS

Algae Randomization Record				
Date	AM Time	ID	PM Time	ID
072915			1700	MS/GM
073015	845	DL	1730	GR
073115	945	MS	1630	GR → 18D found left out on 2nd shelf of a push-cart
080115	1000	MS	1700	MS
080215	755	DL		

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Revised by LD 072815

Algae Innoculum Worksheet

Test: DeltaRMP - old slant (no EDTA)

Field Date: 072815

Setup Date: 072915

Algal Culture ID letter 28C

Algal Culture made by MS

Date made 072415

Days cultured 5

Background Counts	26	35	22
Raw Algal Counts	50021	49967	50010

Mean of raw counts $49999.\overline{3}$

Mean of raw counts x 80 4.0×10^6

1×10^6 / (mean of raw counts x 80) x 200 = amount of algal culture needed 50

200 - amount of algal culture needed = amount of SSEPAMH needed 150

Mix the above amounts of algae and SSEPAMH to make the innoculum for the test.

Once dilution is made, count the cell number for the dilution to make sure that it is approximately 1×10^6 cells/ml.

Dilution Counts	12449	12480	12327

Mean of dilution counts 12418.67

Mean of dilution counts x 80 ~~9.9×10^5~~ MS072815 (acceptable range is: $0.9 \times 10^6 - 1.1 \times 10^6$)

0.99×10^6

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Algae Innoculum Worksheet

Test: Delta RMP – new slant 40 (no EDTA)

Field Date: 072815

Setup Date: 072915

Algal Culture ID letter 40A

Algal Culture made by MS

Date made 072415

Days cultured 5

Background Counts	26	35	22
Raw Algal Counts	63719	63504	63709

Mean of raw counts 63644

Mean of raw counts x 80 5.09×10^6

1×10^6 / (mean of raw counts x 80) x 200 = amount of algal culture needed 39.29

200 – amount of algal culture needed = amount of SSEPAMH needed 160.71

Mix the above amounts of algae and SSEPAMH to make the innoculum for the test.

Once dilution is made, count the cell number for the dilution to make sure that it is approximately 1×10^6 cells/ml.

Dilution Counts	12006	11919	11841

Mean of dilution counts 11922

Mean of dilution counts x 80 0.95×10^6 (acceptable range is: $0.9 \times 10^6 - 1.1 \times 10^6$)

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Algae Takedown

Aquatic Toxicology Laboratory
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Test: Delta RMP (NO EDTA) Test Date: 072915

PASS

Treatment: 11

Replicate 1	~~34581~~ 31800 / 33161	32050 / 33538	31908 / 33510
Replicate 2	25528	25233	25460
Replicate 3	23686	23554	23654
Replicate 4	26315	25963	26444

Treatment: 12

Replicate 1	10639 / 9437	10815 / 9400	10413 / 9447
~~Replicate 2~~	23902	23464	24110
Replicate 3	2784	2383	2275
Replicate 4	1692	1646	1712

12Bis visibly more green than all other ~~treatments~~ replicates possibly double spiked? GM 080215

Treatment: 13

Replicate 1	33968	34193	34392
Replicate 2	31477	31177	30740
Replicate 3	30696	31037	30813
Replicate 4	34466	34808	35028

Treatment: 14

Replicate 1	27315	27315	27323
Replicate 2	27022	27599	26929
Replicate 3	39528 / 32924	39181 / 33376	39427 / 33135
Replicate 4	26387	26787	26642

Treatment: 15

Replicate 1	9972	9339	9549
Replicate 2	9261	8754	8746
Replicate 3	8724	8856	8391
Replicate 4	6254	6203	6434

Treatment: 16

Replicate 1	24668	24914	24403
Replicate 2	26598	27375	GM 080215 26860
Replicate 3	23747	24565	23920
Replicate 4	21367	22135	21451

Treatment: 17

Replicate 1	23247	23278	23639
Replicate 2	21339	21514	21312
Replicate 3	18432	18151	18251
Replicate 4	19196	19374	19410

Treatment: 18

Replicate 1	21677	21228	21663
Replicate 2	26322	26776	26898
Replicate 3	24340	24556	24263
Replicate 4	21071	20999	21246

Background counts 080215 = ~~96~~ ~~115~~, 99, 98, 102
$\bar{X}$ = 99.6

SWRCB - SWAMP FY 14/15 Algae Test Termination Sheet

Region: DFMP Sample Date: 072815 Test Date: 072915

Samples stored in chamber: 10 Test conducted in: chambers

Test taken down by: GM

Test take down time: 1400 - 1807 (start spiking algae cells at 94 hours)

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
11	24.6	118.1	9.75	9.32	GM
12	24.2	200.3	11.03	9.41	GM
13	24.6	213.0	11.62	9.41	GM
14	24.1	871	10.64	9.21	GM
15	24.3	1,315	8.45	8.64	GM
16	24.6	706	13.70	9.46	GM
17	24.5	120.6	9.53	9.21	GM
18	24.2	100.4	9.32	9.06	GM

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Revised by LD 072815

August 2015

Delta RMP Ceriodaphnia Dubia -Retest

Field Date: 072829
Test Set up: 080715
Samples kept in chamber: 10
Experiment kept in chamber: CTR

Instructions: This is a 3-Brood test with 1 animal per replicate and 10 replicates with 15 ml per vial treatment. This test must be set up using blocking by known parentage. Feed and change daily. Take initial chemistry and final chemistry daily. Contact Marie immediately when ≥ 50% mortality occurs for TIE initiation. Please alert Marie or Linda ASAP when test does not meet test acceptability criteria. Take down the test after the vast majority of organisms have had their 3rd brood.

ID	Treatment	Decoding or Instructions
11	L16-50 (TAC Control)	
12	Mokelumne River at New Hope Road	
13	Sacramento River at Hood	
14	San Joaquin River at Vernalis	
15	San Joaquin River at Buckley Cove	
16	Ulatis Creek at Brown Road	
17	~~072815~~ QC Sample for Ceriodaphnia	080715 WATER
18	LWOBC INTERNAL	
19	SSEPAMH INTERNAL	

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Initiation Sheet

Region: DeltaRMP Sample Date: 072815 Test Date: 080715-Retest

Samples stored in chamber: 10 Test conducted in: CTR

If neos isolated from Brood Board: Only use neos from gravids producing over 8 neos on day of set-up.

Brood Board # 45 Date/Time neos isolated: 080715 00:05

Date/Time gravids isolated: 080615 1605 Neos isolated by: DL

Gravids isolated by: GR Test set-up by: MS

Health of gravids: good Time neos loaded: 16:50

At time of set-up: were neos born in an 8 hour window? yes no Age range: ~16h.

were neos less than 24 hours old? yes 45 no 80 MM 080715

Blocking by known parentage: Please list which Brood Board replicate was used for test initiation.

Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
A3	A9	C4	E7	B10	D4	R4	R7	R9	D-1
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.

If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 2,500, consult with a supervisor for a potential species substitution.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	pre-DO	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
11	NA	25.1	269.0	8.10	8.17	MS	80	58	0.04
12	10.52	25.3	137.1	8.12	8.14	MS	40	46	0
13	NA	25.4	143.9	8.08	8.17	MS	44	52	0.57
14	NA	25.3	942	8.12	8.51	MS	228	164	0.02
15	NA	25.3	1356	8.09	8.38	MS	204	102	0.02
16	NA	25.1	696	8.07	8.57	MS	240	224	0.05
17	NA	25.2	264.3	8.06	8.20	MS	80	58	0.04
18	NA	25.4	281.1	8.06	8.18	MS	92	48	0
19	NA	25.3	329.3	8.17	8.19	MS	84	60	0

SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DRMP Retest
Sample Date:	072815
Test Date:	080715

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
11	1	†									†	NO	MS	NA	8.17*	8.17	LD	24.3	8.11	8.14	MS
	2	†									†	NO	GM	NA	8.31	8.40	GM	24.1	8.18	7.98	GM
	3	3	+	+	+	+	+	+	+	+	+	NO	DL		8.12	7.82	DL	24.1	8.12	7.66	DL
	4	+	5	6	4	5	2	5	5	6	+	NO	GM		8.14	7.80	GM	23.4	8.09	8.03	GM
	5	10	10	11	12	8	8	9	9	8	8	NO	DL		~~8.36~~	8.36	DL	24.1	8.05	7.86	DL
	6	12	10	14	11	13	9	13	13	13	2	NO	GM		8.30	8.18	GM	24.6	8.18	8.46	GM
	7	†	2	†							†	NO	MS								
(2)	8																				
Total Young:																					

→ 081215 DL : 810

Notes: * YES, DO AND pH ARE THE SAME LD

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
(6) 12	1	†									†	NO	MS	~~10.52~~ 10.52 LD 080815	8.15	8.14	LD	24.2	8.12	8.06	MS
	2	†									†	NO	GM	~~10.10~~	8.29	8.48	GM	24.3	8.13	7.95	
	3	+	+	+	+	+	+	+	+	+	3	NO	DL		8.06	8.02	DL	24.0	8.00	7.83	DL
	4	+	6	+	3	3	2	6	5	4	+	NO	GM		8.07	7.78	GM	23.5	8.11	8.15	GM
	5	6	10	11	10	11	9	9	8	10	9	NO	DL		8.17	8.11	DL	24.0	7.87	7.87	DL
	6	12	10	12	13	14	11	8	9	8	15	NO	GM		8.25	8.11	GM	24.4	8.15	8.45	GM
	7	†									†	NO	MS								
	8																				
Total Young:																					

Notes: PRE DO ON DAY 0 = 10.52 } LD 080815
PRE DO ON DAY 1 = 10.10

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DPNP Retest
Sample Date:	~~0708~~ 072815
Test Date:	080715

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
13	1	†									†	NO	MS	NA ~~10.57~~	8.27	8.14	[illegible]	24.1	8.18	8.10	MS
	2	†									†	NO	GM	WA	8.22	8.45	GM	24.1	8.18	7.98	GM
	3	3	+	+	3	+	+	+	+	+	3	No	DL		8.02	8.10	DL	24.0	7.99	7.99	DL
	4	+	2	5	+	5	5	4	5	+	+	NO	GM		8.02	7.76	GM	23.5	8.16	8.13	GM
	5	11	9	10	10	9	8	9	10	6	8	No	DL		8.16	8.40	DL	24.0	7.93	7.93	DL
(a)	6	13	11	11	6	9	13	14	9	13	14	NO	GM	9.86	8.29	8.18	GM	24.3	8.19	8.49	GM
	7	†			†	2	†				†	NO	MS								
	8																				
Total Young:																					

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO. (mg/L)	Final ID
(a) 14	1	†									†	NO	MS	NA	8.53	8.04	[illegible]	24.1	8.62	8.06	MS
	2	†									†	NO	GM	11.62	8.49	8.07	GM	24.3	8.61	7.91	GM
	3	6	+	~~24~~	3	+	+	+	+	3	3	No	DL		8.01	8.13	DL	23.9	8.44	7.96	DL
	4	+	4	7	+	4	4	6	5	+	+	NO	GM		8.54	7.80	GM	23.6	8.57	8.10	GM
	5	10	+	11	9	7	9	7	9	10	4	No	DL	11.2	8.30	8.27	DL	23.9	8.50	7.68	DL
	6	12	13	14	16	16	15	10	11	14	6	NO	GM		8.60	8.15	GM	24.3	8.59	8.38	GM
	7	†	12	†						†	†	No	MS								
	8																				
Total Young:																					

081015 (a)

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DRMP Retest
Sample Date:	072815
Test Date:	080715

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
15	1	†									†	NO	MS	NA	8.23	8.36	LD	24.1	8.46	8.21	MS
	2	†									†	NO	GM	NA	8.34	8.38	GM	24.4	8.44	8.00	GM
	3	4	†	†	5	†	†	†	†	†	†	NO	DL		8.18	8.06	DL	24.0	8.24	7.77	DL
	4	†	A †	6	†	6	5	4	4	5	†	NO	GM		8.20	7.75	GM	23.7	8.42	8.14	GM
	5	10	† (B)	10	9	8	10	5 (C)	10	†	†	NO	DL		8.29	8.10	DL	23.9	8.25	~~8.7~~ 7.76	DL
(4)	6	13	~~8~~ †	10	10	12	13	~~12~~ †	~~10~~ †	~~11~~ †	~~16~~ (C)	NO	GM		8.54	8.19	GM	24.5	8.45	8.51	GM
	7	8	†		†	1	†				†	NO	MS								
	8																				
Total Young:																					

→ 081215 (D)

Notes: A- small gravid

(B) dots on ground.. dead neos? ~7 of them 081215 (D)

(C) dead neos 081215 (D)

Day 6: 13/†/10/10/12/13/†/†/†/16

→ 080015 DL

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
16	1	†									†	NO	MS	NA	8.63	8.18	LD	24.1	8.71	7.92	MS
	2	†									†	NO	DL	~~9.26~~	8.43	8.21	GM	24.5	8.73	7.78	GM
	3	3	†	†	3	†	†	†	†	4	4	NO	DL	9.26	8.33	8.18	DL	24.2	8.55	7.75	DL
(9)	4	†	5	5	†	5	4	5	7	†	†	NO	GM	10.99	8.80	7.74	GM	23.5	8.63	7.65	GM
	5	6	10	8	9	11	10	11	11	7	6	NO	DL		8.45	8.22	DL	24.0	8.70	7.90	DL
	6	11	8	10	17	11	15	10	11	15	15	NO	GM		8.68	8.25	GM	24.6	8.72	8.30	GM
	7	†								†	17	NO	MS								
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DRMP Retest
Sample Date:	072815
Test Date:	080715

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1	†									†	NO	MS	NA	8.30	8.18	LD	24.0	8.25	8.15	MS
	2	†									†	NO	DL		8.24	8.29		24.4	8.21	8.09	GM
	3	3	†	†	†	†	†	†	†	3	4	NO	DL		8.05	8.30	DL	24.1	7.97	7.72	DL
17	4	†	2	4	†	4	2	4	5	†	†	NO.	GM		7.88	7.82	GM	23.4	8.04	7.81	GM
	5	8	10	8	9	10	11	10	8	11	9	NO	DL		8.21	8.12	DL	23.8	7.92	7.73	DL
(6)	6	10	10	11	9	14	11	12	6	12	8	NO	GM		8.28	8.20	GM	24.5	8.22	8.52	GM
	7	†									†	NO	MS								
	8																				
Total Young:																					

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1	†									†	NO	MS	NA	~~8.63~~ 8.30	8.24	LD	23.9	8.27	8.26	MS
	2	†									†	NO	DL		8.32	8.10	GM	24.3	8.25	8.10	GM
	3	4	†	†	†	†	†	†	†	†	4	NO	DL		7.98	8.32	DL	24.0	8.03	7.82	DL
18	4	†	5	6	4	5	1A	5	4	3	†	NO	GM		7.80	7.91	GM	23.4	8.02	7.76	GM
	5	9	11	10	10	6	7	9	10	9	8	NO	DL		8.18	8.15	DL	23.9	8.00	7.88	DL
(3)	6	†	†	6	9	14	10	10	11	†*	8	NO	GM		8.31	8.22	GM	24.4	8.26	8.56	GM
	7	†	8	†							†	NO	MS								
	8									↓											
Total Young:										NR											

Notes: A small nec

* tech spilled vial + lost gravid.

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DPMP Retest
Sample Date:	072815
Test Date:	080715

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1	~~1~~									~~1~~	NO	MS	NA	8.23	8.27	D	24.1	8.25	8.14	MS
	2	~~1~~									~~1~~	NO	DL		8.37	8.11	GM	24.3	8.27	8.01	GM
	3	4	+	+	3	+	+	+	+	3	2	NO	DL		8.13	8.17	DL	24.0	8.02	7.81	DL
19	4	+	4A	+	+	4	+	5	4	+	+	NO	GM		8.06	7.85	GM	23.5	8.06	7.78	GM
	5	5	+	+	10	6	5	7	6	10	9	NO	DL		8.30	8.06	DL	24.0	7.98	7.98	DL
	6	15	+	2	12	12	7	12	12	11	11	NO	GM		8.21	8.29	GM	24.7	8.29	8.44	GM
(7)	7	~~1~~									~~1~~	NO	MS								
	8																				
Total Young:																					

Notes: A - pale ground

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1																				
	2																				
	3																				
	4																				
	5																				
	6																				
	7																				
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Termination Sheet

Region: DRNP Retest Sample Date: 072815 Test Date: 080715

Samples stored in chamber: 10 Test conducted in: CTR

Test taken down by: MS

Test take down time: 10:05

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
11	24.4	284.2	7.62	7.76	MS
12	24.4	165.5	7.62	7.74	MS
13	24.4	170.0	7.69	7.80	MS
14	24.4	928	7.69	8.30	MS
15	24.4	1388	7.82	8.09	MS
16	24.4	765	7.77	8.50	MS
17	24.3	316.9	7.96	7.87	MS
18	24.3	304.5	7.96	7.86	MS
19	24.3	347.7	8.01	7.88	MS

Delta RMP Ceriodaphnia Dubia

Field Date: 081815
Test Set up: 081915
Samples kept in chamber: 10
Experiment kept in chamber: CTR

Instructions: This is a 3-Brood test with 1 animal per replicate and 10 replicates with 15 ml per vial treatment. This test must be set up using blocking by known parentage. Feed and change daily. Take initial chemistry and final chemistry daily. Contact Marie immediately when ≥ 50% mortality occurs for TIE initiation. Please alert Marie or Linda ASAP when test does not meet test acceptability criteria. Take down the test after the vast majority of organisms have had their 3rd brood.

ID	Treatment	Decoding or Instructions
41	L16-50 (TAC Control)	
42	510SACHOD	
43	544SAC002	
44	544LSAC13	
45	Field QC	
46	541SJC501	
47	510SOL010	
48	Lab QC for Ceriodaphnia	CHAMBER 8, LEFT SIDE
49	LWOBC	
50	SSEPAMH	

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Initiation Sheet

Region: DeltaRMP Sample Date: 081815 Test Date: 081915

Samples stored in chamber: 10 Test conducted in: CR

If neos isolated from Brood Board: Only use neos from gravids producing over 8 neos on day of set-up.

Brood Board # 47 Date/Time neos isolated: 081915 15:50

Date/Time gravids isolated: 081915 Neos isolated by: MS

Gravids isolated by: LD 07:58 Test set-up by: MS

Health of gravids: good Time neos loaded: 1705

At time of set-up: were neos born in an 8 hour window? yes ✓ no Age range: 9h

were neos less than 24 hours old? yes ✓ no

'ABCDE' Board

Blocking by known parentage: Please list which Brood Board replicate was used for test initiation.

Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
A2	A9	A10	B1	B5	B8	D9	E1	E2	E9
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
B1	B9	B10	O1	O5	O10	A1	A2	A4	A6

ORT BOARD BOARD

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.

If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 2,500, consult with a supervisor for a potential species substitution.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	pre-DO	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
41	NA	25.1	280.0	8.05	8.35	MS	92	48	0.02
42	NA	25.3	184.1	8.12	8.39	MS	56	60	0.71
43	NA	25.3	142.0	8.22	8.35	MS	44	48	0
44	NA	25.3	1327	8.33	8.33	MS	204	102	0.05
45	NA	25.4	1368	8.18	8.54	MS	224	106	0.07
46	NA	25.3	707	8.16	8.58	MS	140	122	0.01
47	9.89	25.2	764	8.23	8.70	MS	254	240	0.01
48	NA	25.1	283.4	8.18	8.44	MS	92	58	0.01
49	NA	25.2	279.2	8.26	8.35	MS	84	58	0
50	NA	25.1	183.8	8.30	7.96	MS	84	56	0

SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	Delta RMP
Sample Date:	081815
Test Date:	081915

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
41	1	+									+	N	DL	NA	8.25	8.15	DL	24.1	8.26	7.70	DL
	2	+									+	NO	MS	NA	8.26	7.89	MS	25.2	8.15	7.70	MS
	3	+									+	NO	GM	NA	8.17	8.00	GM	25.3	8.10	7.81	GM
	4	5	+	4	5	6	6	5	5	4	4	No	DL	NA	8.11	8.08	MS	24.0	8.21	8.00	MS
	5	9A	B+	+	6	+			+	10A	+	NO	MS	NA	8.26	8.10	MS	24.1	8.19	8.25	MS
	6	D	+	12D ©	3D	9D	+	10	+	D	8	NO	GM	NA	8.15	7.58	GM	28.3	8.11	7.45	GM
	7	↓	+	↓	↓	↓	+		+	↓	D		MS								
	8	↓		↓	↓	↓				↓											
Total Young:		14	0	12	14	15	6	15	5	14	12										

$\bar{x}$: ~~33.2~~ 27.75 (50% mort)

Notes: A-looks lethargic grandmaydie B-dropped eggs on bottom of vial © - big neos

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
42	1	+									+	N	DL	NA	8.32	8.41	DL	24.2	8.32	7.78	GM
	2	+									+	NO	MS	NA	8.31	7.92	MS	25.0	8.16	7.69	MS
	3	+									+	NO	GM	NA	7.98	8.28	GM	25.4	8.21	7.91	GM
	4	7	6	5	5	2	4	5	4	5	2	No	DL	NA	8.16	7.93	MS	24.0	8.21	7.86	MS
	5	13	10	+	4A	+					+	NO	MS	10.44	8.32	8.01	MS	24.0	8.20	7.95	MS
	6	+	+	8	+	3	10	10	12	10	6	NO	GM	NA	8.13	7.60	GM	24.8	8.10	7.67	GM
	7	14	16	16	11	16	17	17	12	14	9	NO	MS								
	8																				
Total Young:		34	32	29	20	21	31	32	28	29	17										

$\bar{x}$: 27.3

Notes: A-neos lethargic on bottom of vial

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	Delta RMP
Sample Date:	081815
Test Date:	081915

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1	—	—	—	—	—	—	—	—	—	—	NO	GM	NA	8.23	8.40	DL	24.1	8.23	7.91	DL
	2	—	—	—	—	—	—	—	—	—	—	NO	MS	NA	8.24	7.93	MS	25.0	8.09	7.80	MS
	3	—	—	—	—	—	—	—	—	—	—	NO	GM	10.58	8.17	8.05	GM	25.2	8.13	7.88	GM
	4	4	4	5	+	+	4	+	4	+	3	NO	DL	NA	8.19	7.76	MS	24.0	8.17	7.97	MS
43	5	10	6	+	3	+	+	—	—	—	—	NO	MS	NA	8.26	8.00	MS	23.8	8.09	7.93	MS
	6	+	+	11	11	7	9	10	4	11	8	NO	GM	NA	8.11	7.68	GM	24.7	8.07	7.72	GM
	7	12	13	14	D5	17	13	16	+	D	15	NO	MS								
	8				↓					↓											
Total Young:		26	23	30	19	24	26	26	8	11	26										

$\bar{x}$: 27.375

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1	—	—	—	—	—	—	—	—	—	—	NO	DL	NA	8.22	8.56	DL	24.2	8.47	7.95	DL
	2	—	—	—	—	—	—	—	—	—	—	NO	MS	NA	8.43	7.91	MS	25.2	8.31	7.74	MS
	3	—	—	—	—	—	—	—	—	—	—	NO	GM	~~NA~~ NA	8.23	8.0	GM	25.1	8.30	7.73	GM
44	4	5	+	4	3	5	+	5	4	4	+	NO	DL	NA	8.30	7.88	MS	24.1	8.37	7.96	MS
	5	14	+	D	9	+	—	—	—	D	24	NO	MS	NA	8.46	8.03	MS	23.9	8.37	7.97	MS
	6	+	8		+	9	10	7	10		+	NO	GM	NA	8.29	7.52	GM	24.7	8.26	7.66	GM
	7	20	+		13	14	13	14	14		12	~~AMO~~	MS								
	8			↓						↓											
Total Young:		26	8	4	25	27	23	26	28	4	14										

$\bar{x}$: 23.125

Notes: A-deadness on bottom of vial

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	Delta RMP
Sample Date:	081815
Test Date:	081915

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
45	1	†									†	NO	DL	NA	8.36	8.39	DL	24.3	8.49	7.95	GM
	2	†									†	NO	MS	NA	8.47	7.95	MS	25.3	8.32	7.72	MS
	3	†									†	NO	GM	NA	8.28	8.04	GM	25.0	8.35	7.86	GM
	4	5	4	2	5	3	2	4	5	5	4	No	DL	NA	8.33	7.91	MS	24.2	8.41	8.09	MS
	5	†	†	2A	10	†					†	NO	MS	NA	8.42	8.13	MS	24.2	8.39	8.11	MS
	6	†	5	10	†	10	9	10	15	11	11	NO	GM	9.28	8.26	7.60	GM	25.2	8.28	7.68	GM
	7	18	4	14	14	15	19	19	15	23	13	NO	MS								
	8																				
Total Young:		23	13	14	29	28	29	33	35	39	28										

$\bar{x}$: 27.1 → 082315 (DL) 10.35

Notes: A-fungus

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO. (mg/L)	Final ID
46	1	†									†	NO	DL	NA	8.43	8.47	DL	24.3	8.61	7.92	DL
	2	†									†	NO	MS	NA	8.57	7.92	MS	25.3	8.45	7.74	MS
	3	†									†	NO	GM	NA	8.40	7.95	GM	25.4	8.53	8.01	GM
	4	4	3	3	4	4	+	+	3	+	4	No	DL	NA	8.31	7.99	MS	24.3	8.50	7.83	MS
	5	6	8	+	4	†			†	+A	+	NO	MS	NA	8.46	8.07	MS	23.9	8.45	8.00	MS
	6	+	+	11	+	10	4	6	2	X	2	NO	GM	NA	8.29	7.76	GM	25.6	8.41	7.53	GM
	7	16	14	16	15	15	11	18	8	14	+A										
	8																				
Total Young:		26	25	30	23	29	15	24	13	14	6										

$\bar{x}$: 20.5

Notes: A-deadness A-deadness

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	Delta RMP
Sample Date:	081815
Test Date:	081915

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
47	1	†									†	NO	DL	NA	8.46	8.44	GM	24.2	8.80	7.88	DL
	2	†									†	NO	MS	8.72	8.56	7.85	MS	25.0	8.65	7.61	MS
	3	†									†	NO	GM	NA	8.42	7.97	GM	25.3	8.71	7.97	GM
	4	†	4	5	4	5	3	†	2	4	4	No	DL	NA	8.47	7.92	MS	24.2	8.72	7.75	MS
	5	3	14	†	†A	5	†	3B	†	10	4	NO	MS	NA	8.65	8.08	MS	23.8	8.67	7.96	MS
	6	†	†	9	†	†	3	†	11	†	†	NO	GM	NA	8.24	7.88	GM	25.5	8.64	7.58	GM
	7	†	16	17	16	13	17	14	17	19	13	NO	MS								
	8																				
Total Young:		3	34	31	20	23	23	17	30	33	21	$\bar{x}$: 23.5									

Notes: A-deadnecos B-lethargic nacos

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
48	1	†									†	NO	DL	NA	8.22	8.49	DL	24.3	8.27	7.86	GM
	2	†									†	NO	MS	NA	8.26	7.95	MS	24.8	8.16	7.81	MS
	3	†									†	NO	GM	NA	8.24	8.05	GM	25.3	8.29	8.15	GM
	4	5	5	3	5	2	4	†	3	3	4	No	DL	NA	8.28	7.96	MS	24.2	8.23	7.85	MS
	5	11	8	†	5	†	D	†			†	NO	MS	NA	8.29	8.16	MS	23.9	8.18	8.01	MS
	6	†	†	†	†	10	↓	†	†	7	7	No	GM	NA	8.12	7.73	GM	25.7	8.00	7.73	GM
	7	†	13	†A	†	†A		†		†	3	No	MS								
	8																				
Total Young:		23	26	3	10	12	4	0	3	10	14	$\bar{x}$: 11.67									

Notes: A-eggs dropped

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	Delta RMP
Sample Date:	081815
Test Date:	081918

oops!

8.23 pH 4pH 7.93 DO day 4

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
49	1	↓									↓	NO	DL	NA	8.22	8.40	DL	24.0	8.29	7.67	GM
	2	+									+	NO	MS	NA	8.26	7.90	MS	24.9	8.13	7.97	MS
	3	+									+	NO	GM	NA	8.05	8.24	GM	25.3	8.30	8.09	GM
	4	6	4	2	4	+	2	4	3	+	14	~~NO~~	~~GM~~	NA	~~7.92~~	~~8.02~~	~~GM~~	24.0	8.19	7.86	MS
	5	8	5	+	10	+				+	6	NO	MS	NA	8.21	8.16	MS	23.9	8.14	8.02	MS
	6	+	+	7	+	6	+	6	+	+	+	NO	GM	NA	8.11	7.73	GM	25.6	7.95	7.57	GM
	7	9	+	5	+	10	+	+	D	+	9	NO	MS								
	8								↓												
Total Young:		23	9	14	14	16	2	10	3	0	19	$\bar{x}$: 12.2	082315 (DL)								

Notes: wrote in day 4's spaces on day 3 on accident GM 082215
Day 6 = a number of pale/weak looking gravids.

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
50	1	+				+	D	+			+	No	DL	NA	8.92	8.42	DL	24.3	7.88	7.79	GM
	2	+				+		+			+	NO	MS	NA	7.92	7.95	MS	24.9	7.64	7.86	MS
	3	+				+		+			+	NO	GM	NA	7.72	8.10	GM	25.3	8.07	8.08	GM
	4	4	3	3	3	4		4	+	4	+	No	DL	NA	7.81	8.06	MS	24.0	7.80	7.92	MS
	5	+	+	+	14	+		+	D	+	+	NO	MS	NA	7.83	8.15	MS	24.2	7.73	8.07	MS
	6	+	+	+	+	+		+		+	+	NO	GM	NA	8.06	7.96	GM	25.7	7.89	8.45	GM
	7	1	+		+	3		+		7	7	NO	MS								
	8						↓		↓												
Total Young:		5	3	3	4	7	0	4	0	11	7	$\bar{x}$ 4.89									

Notes: A-Regsizeneo

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Termination Sheet

Region: DELTARMP Sample Date: 081815 Test Date: 081915

Samples stored in chamber: 10 Test conducted in: CTR

Test taken down by: _____

Test take down time: _____

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
41					
42					
43					
44					
45					
46					
47					
48					
49					
58					

Ceriodaphnia Dubia Calibration Check Log for SWAMP Projects

Meters calibrated on: 081915	Sample Field Dates: 081815
Technicians Initials: MS	Test Initiation Dates: 081915

Initial Calibration	First Cal Check	Second Cal Check	Limits
DO Meter #: 3			
☐8.92 mg/L for 21 °C Water	[ ] mg/L	[ ] mg/L	8.48 to 9.36
☐8.74 mg/L for 22 °C Water	[ ] mg/L	[ ] mg/L	8.31 to 9.17
☐8.58 mg/L for 23 °C Water	[ ] mg/L	[ ] mg/L	8.16 to 9.00
☒8.42 mg/L for 24 °C Water	[ ] mg/L	[ ] mg/L	8.00 to 8.84
☐8.26 mg/L for 25 °C Water	[ ] mg/L	[ ] mg/L	7.85 to 8.67
☐8.11 mg/L for 26 °C Water	[ ] mg/L	[ ] mg/L	7.71 to 8.51
pH Meter #:			
☒Buffer 7	[ ]	[ ]	6.8 to 7.2
☒Buffer 10	[ ]	[ ]	9.8 to 10.2
☐Buffer 4	[ ]	[ ]	3.8 to 4.2
EC Meter #: 5			
☒Internal Cell Constant 5.14	☐Internal CC:	☐Internal CC:	Not App
☐1000 µS/cm Standard	[ ] µS/cm	[ ] µS/cm	950 to 1050

ID	Treatment Description	Initial Chem			Final Chem		
		EC	DO	pH	EC	DO	pH
41	L16-50 (TAC Control)	1	1	1			
42	510SACHOD	2	2	2			
43	544SAC002	3	3	3			
44	544LSAC13	4	4	4			
45	Field QC	5	5	5			
46	541SJC501	6	6	6			
47	510SOL010	7	7	7			
48	Lab QC for Ceriodaphnia	8	8	8			
49	LWOBC	9	9	9			
1	Ref Tox - L16-50	10	10	10			
2	Ref Tox - 500 µS/cm	11	11	11			
3	Ref Tox - 1000 µS/cm	12	12	12			
4	Ref Tox - 2000 µS/cm	13	13	13			
5	Ref Tox - 4000 µS/cm	14	14	14			
6	Ref Tox - 8000 µS/cm	15	15	15			

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Fathead Minnow Delta RMP Treatment List
Field Date: 081815
Test Set up: 081915
Samples kept in chamber: 10
Experiment kept in: CTR

Instructions: This is a 7-day chronic-style test with 10 animals per replicate and 4 replicates per treatment. Each replicate consists of 250ml of sample. Carefully renew 200ml per replicate daily with the squeegee tip method. Feed 3X times daily. Do not feed on the last day of the test. If ≥ 50% mortality occurs in one replicate, feed the replicate half the amount of food.

If ≥ 50% mortality occurs in a treatment, contact Marie or Linda immediately for TIE initiation. This test must be setup with <48-hour old fish. Initial and final chemistry must be taken daily.

ID	Treatment	Decoding or Instructions
41	ROEPAMH (TAC Control)	Formerly DIEPAMH
42	510SACHOD	
43	544SAC002	
44	544LSAC13	
45	Field QC	
46	541SJC501	
47	510SOL010	
48	Lab QC for Fatheads	WITH REF TOX WATERS

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SWRCB - SWAMP FY 14/15 Fathead Test Initiation Sheet

Region: Delta RMP Sample Date: 081815 Test Date: 081915

Samples stored in chamber: 10 Test conducted in: CTR

Before test initiation, what percentage of fish: are lying on the bottom ~5 %
have bent spines — %
are active 95 %

Comments about irregular color, sizes or shapes: Mostly normal & look healthy

Age at time of set-up: ~48hr % of less desirable fish used in each beaker: 0

Test set-up by: GM Test set-up time: by 16:00

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.
If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.
If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.
If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	pre-DO	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
41	NA	24.4	298.8	8.35	8.39	GM	82	58	0
42	NA	24.3	171.2	8.23	8.27	GM	56	60	0.71
43	NA	24.2	130.8	8.47	8.21	GM	44	48	0
44	NA	24.2	1277.0	8.25	8.34	GM	204	102	0.05
45	NA	24.0	1251	8.29	8.29	GM	222	106	0.07
46	NA	24.0	615.0	8.34	8.38	GM	140	122	0.01
47	8.76	23.8	703	8.60	8.37	GM	254	240	0.01
48	NA	23.8	292.8	8.28	8.38	GM	82	56	0.0

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: ARMP

Sample Date: 081815
Test Date: 081915

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
41	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	9	
		Dead							1	
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	GM	DL	DL	GM	GM	

			1	2	3	4	5	6
Initial	Pre-DO*							
	pH		8.39	8.28	7.76	8.27	8.28	8.23
	DO (mg/L)		8.30	7.86	8.16	8.27	8.09	7.63
	ID		GM	GM	GM	MS	DL	GM
Final	Temp °C		25.4	24.6	24.8	23.6	23.7	25.3
	pH		8.26	8.10	8.00	8.10	8.02	7.92
	DO (mg/L)		7.51	7.81	7.71	7.60	7.78	7.62
	ID		GM	GM	GM	MS	DL	GM

Rep	Boat Weight	Total Weight
1	0.99739	1.00029
2	0.99299	0.99622
3	0.97341	0.97653
4	0.99647	0.99977

Notes:
Rep 2 & 3 boats got switched @ final (total) weight. Boat & total weights are correct, just switch the Rep numbers (GR/GM) 082815

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
42	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	9	9	9	9	9	9	
		Dead		1						
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	GM	DL	DL	GM	GM	

			1	2	3	4	5	6
Initial	Pre-DO*							
	pH		8.41	~~8.08~~	8.22	8.13	8.26	8.05
	DO (mg/L)		8.29	~~7.66~~	8.14	8.10	8.16	7.82
	ID		GM	GM	GM	MS	DL	GM
Final	Temp °C		25.4	24.6	24.3	23.3	24.0	25.1
	pH		7.46	8.02	8.09	8.12	8.09	8.00
	DO (mg/L)		8.26	7.80	7.87	7.50	7.81	7.40
	ID		GM	GM	GM	MS	DL	GM

Rep	Boat Weight	Total Weight
1	1.01231	1.01558
2	0.99729	1.00047
3	0.99662	0.99976
4	0.99651	0.99983

Notes:

Rep 2 initial chem
DO = 7.92
pH = 8.06

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: ARMP

Sample Date: 081815
Test Date: 081915

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
43	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	GM	DL	DL	GM	GM	
	Initial	Pre-DO*	NA	NA	10.82	10.46	NA	NA		
		pH	8.29	8.23	8.14	8.11	8.23	8.03		
		DO (mg/L)	8.59	7.92	8.20	8.53	8.11	7.76		
		ID	GM	GM	GM	MS	DL	GM		
	Final	Temp °C	25.4	24.7	24.6	23.6	23.9	25.2		
		pH	8.20	8.02	7.95	8.00	7.96	7.88		
		DO (mg/L)	7.61	7.73	7.79	7.68	7.84	7.49		
		ID	GM	GM	GM	MS	DL	GM		

082415 @ 7.84

Rep	Boat Weight	Total Weight
1	1.01622	~~1.01933~~ 1.01933
2	1.01240	1.01568
3	0.99986	1.00343
4	0.97826	0.98114

082815 GR

Notes:

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
44	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	9	
		Dead								
		Missing							1	
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	GM	DL	DL	GM	GM	
	Initial	Pre-DO*								
		pH	8.34	8.27	8.11	8.34	8.35	8.17		
		DO (mg/L)	8.49	7.09	8.39	8.23	8.18	7.72		
		ID	GM	GM	GM	MS	DL	GM		
	Final	Temp °C	25.5	24.8	24.9	23.3	23.9	25.3		
		pH	8.48	8.28	8.20	8.25	8.24	8.13		
		DO (mg/L)	7.87	7.57	7.75	7.69	7.96	7.37		
		ID	GM	GM	GM	MS	DL	GM		

Rep	Boat Weight	Total Weight
1	0.98801	0.99113
2	0.99085	0.99389
3	0.98427	0.98738
4	0.97463	0.97798

Notes: Microcystis present

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: ΔRMP

Sample Date: 08815
Test Date: 081915

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
45	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	GM	DL	DL	GM	MS	

		Day 1	2	3	4	5	6	7
Initial	Pre-DO*	11.41					9.29	
	pH	8.43	8.31	7.97	8.04	8.21	8.29	
	DO (mg/L)	8.26	7.84	8.86	8.48	8.24	7.58	
	ID	GM	GM	GM	MS		GM	
Final	Temp °C	25.5	24.9	24.7	23.1	23.9	24.9	
	pH	8.46	8.31	8.24	8.28	8.25	8.12	
	DO (mg/L)	7.49	7.70	7.76	7.68	7.90	7.63	
	ID	GM	GM	GM	MS	DL	GM	

Rep	Boat Weight	Total Weight
1	0.98793	0.99100
2	0.98984	0.99271
3	0.98575	0.98886
4	0.99435	0.99751

Notes: Microcystis present

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
46	1	Live	11	11	11	11	11	11	11	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	GM	DL	DL	GM	MS	

		Day 1	2	3	4	5	6	7
Initial	Pre-DO*							
	pH	8.52	8.30	8.37	8.16	8.43	8.20	
	DO (mg/L)	8.35	7.85	8.13	8.56	8.22	7.33	
	ID	GM	GM	GM	MS		GM	
Final	Temp °C	25.4	24.9	24.8	23.1	24.0	25.4	
	pH	8.55	8.13	8.36	8.42	8.38	8.27	
	DO (mg/L)	7.48	7.63	7.74	7.62	7.89	7.56	
	ID	GM	GM	GM	MS		GM	

Rep	Boat Weight	Total Weight
1	0.98742	0.99071
2	0.97636	0.97983
3	0.99163	0.99467
4	0.98821	0.99158

Notes:

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region:	ΔRMP

Sample Date:	081815
Test Date:	081915

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
47	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10*	9	9	9	9	9	9	
		Dead		1						
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	GM	DL	DL	GM	MS	

		Day 1	2	3	4	5	6
Initial	Pre-DO*	NA	9.19	NA	NA	10.81	NA
	pH	8.52	8.51	8.58	8.50	8.31	8.33
	DO (mg/L)	8.33	7.02	7.67	8.32	8.27	7.67
	ID	GM	GM	GM	MS	DL	GM
Final	Temp °C	25.3	24.9	24.9	23.1	24.0	25.3
	pH	8.73	8.62	8.58	8.65	8.56	8.46
	DO (mg/L)	7.41	7.56	7.67	7.80	7.83	7.37
	ID	GM	GM	GM	MS	DL	GM

Rep	Boat Weight	Total Weight
1	0.99264	0.99614
2	0.98074	0.98385
3	0.98150	0.98451
4	0.97626	0.97967

Notes:
* 1 Barely alive, bent spine

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
48	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	GM	DL	DL	GM	MS	

		Day 1	2	3	4	5	6
Initial	Pre-DO*						
	pH	8.28	8.19	8.23	8.29	8.31	8.19
	DO (mg/L)	8.45	7.7	8.10	8.23	8.20	7.68
	ID	GM	GM	GM	MS	DL	GM
Final	Temp °C	25.4	24.7	24.9	23.1	23.8	25.2
	pH	8.28	8.16	8.07	8.14	8.14	8.02
	DO (mg/L)	7.46	7.67	7.79	7.60	7.87	7.77
	ID	GM	GM	GM	MS	DL	GM

Rep	Boat Weight	Total Weight
1	0.99899	1.00214
2	0.98888	0.99219
3	0.98330	0.98684
4	0.97901	0.98207

Notes:
SWAMP R3 18C = 0.98520

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SWRCB - SWAMP Fathead Test Termination Sheet

Region: ΔRMP Sample Date: 081815 Test Date: 081915

Samples stored in: 10 Test conducted in: CTR

Test taken down by: _____

Test take down time: _____

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
41	25.7	303.0	7.42	7.85	GM
42	25.3	173.2	7.51	7.93	GM
43	25.3	144.6	7.53	7.79	GM
44	25.4	1398.0	7.55	8.05	GM
45	24.7	1382.0	7.79	8.07	GM
46	25.6	659	7.53	8.21	GM
47	24.8	750	7.75	8.42	GM
48	25.4	314.4	7.51	7.85	GM

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Updated by LD 072815

Delta RMP Selenastrum Capricornutum + Avg RT (no EDTA)

Field Date: 072829 ?
Test Set up: ~~072915~~ 080815 MJ
Samples kept in chamber: 10
Experiment kept in chamber: 5

Instructions: This is a 96-hour chronic algae test. Take initial chemistry at test set up and final chemistry at test termination. Randomize flasks twice daily. Flasks must be inoculated individually. This test has 5 replicates in two treatments only, one of which is a chemistry-only replicate. Please take daily pH and temperature measurements at the AM randomization. Start spiking algae cells at 94 hours of testing whenever possible.

ID	Treatment	Instructions
1	Glass Distilled Water	5th Chem Rep
2	Ref Tox – 16 ppb Zinc Chloride	
3	Ref Tox – 32 ppb Zinc Chloride	
4	Ref Tox – 64 ppb Zinc Chloride	
5	Ref Tox – 128 ppb Zinc Chloride	
6	Ref Tox – 256 ppb Zinc Chloride	
7	Ref Tox – 512ppb Zinc Chloride	
8	Glass Distilled **Blank** for Mokelumne River	
9	Mokelumne River at New Hope Road	5th Chem Rep
10	C8 **Rinsate** of Mokelumne River at New Hope Road	
11	Glass Distilled **Blank** for San Joaquin River	
12	San Joaquin River at Buckley Cove	
13	C8 **Rinsate** of San Joaquin River at Buckley Cove	

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SWRCB - SWAMP FY 14/15 Algae Test Initiation Sheet

Region: DeltaRMP Sample Date: 072815 Test Date: 080815

Samples stored in chamber: 10 Test conducted in: Chamber 5

Culture water type: glass distilled Initial flask cell count: 2.7×10^6

Letter and date of culture: AC (8/4) Initial innoculum volume: 1 mL into 100 mL

Tech who made culture: GM Test set-up by: MS

Test set-up time: 17:10

The nutrients were added to: individual flasks entire treatment multiple treatments ✓

Were algae cells added to individual flasks? yes ✓ no Light intensity range: 359-460

Special Instructions:

If the Sample Receiving SC or Field SC is ≥ 1,500, then a high conductivity control must be included in the test.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

	Initial Water Chemistry at Test Initiation									Daily Measurements					
	Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	Hard (mg/L)	Alk (mg/L)	Amm (mg/L)	ID	pH	°C	pH	°C	pH	°C
*	1	23.8	90.6	8.21	7.71	NA	NA	NA	MS	7.77	25.2	~~8.29~~ 8.28	24.5	8.23	24.1
	2	23.7	92.4	8.23	7.68				MS						
	3	23.7	92.7	8.22	7.64				MS						
	4	23.8	93.8	8.21	7.62				MS						
	5	23.8	93.8	8.22	7.60				MS						
	6	23.9	93.1	8.23	7.58				MS						
	7	24.2	95.5	8.15	7.55				MS						
	8	24.4	92.7	8.05	7.64				MS						
*	9	24.2	203.3	8.33	8.08	0	4	0	MS	8.27	24.8	8.36	24.6	8.46	23.7
	10	24.4	201.7	8.23	8.13	40	46	0	MS						
	11	24.2	96.3	8.16	7.74	NA (MS)	NA	NA	MS						
	12	24.1	1394	8.34	8.24	~~204~~	NA	NA	MS						
	13	24.3	1427	8.29	8.30	204 ↑	102	0.02	MS						
										ID	GM	ID	DL	ID	GM

8.23 DO day 0 #10 080815 (MS)

GM-2D found w/o plug on 080915 am
GM-10C found w/o foam plug on it on 081115 @ 10:00

Algae Randomization Record				
Date	AM Time	ID	PM Time	ID
080815			17:30	MS
080915	9:10	GM	1655	GM
081015	930	DL	1630	DL
081115	1000	GM	0742	DL
081215	9:15	GM/DL		

* - daily measurements

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SWRCB - SWAMP FY 14/15 Algae Test Termination Sheet

Region: DeltaRMP Sample Date: 072815 Test Date: 080815

Samples stored in chamber: 10 Test conducted in: 5

Test taken down by: GM

Test take down time: 12:45- 16:30 (start spiking algae cells at 94 hours)

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
1	23.0	94.3	8.07	8.73	GM
2	23.0	94.5	8.15	8.27	GM
3	22.9	95.7	8.15	8.30	GM
4	22.7	96.8	8.16	8.73	GM
5	22.5	97.9	8.13	8.68	GM
6	22.5	95.7	8.18	8.87	GM
7	22.4	100.2	8.16	8.28	GM
8	22.9	94.8	8.08	8.85	GM
9	22.9	200.8	8.20	9.11	GM
10	22.9	195.9	8.20	8.89	GM
11	22.7	96.0	8.09	8.68	GM
12	22.8	1323	8.24	8.96	GM
13	22.6	1336	8.14	8.91	GM

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Algae Innoculum Worksheet

Test: DeltaRNP Algae Retest/NE AlgRT (noEDTA) Field Date: 072815

Setup Date: 080815

Algal Culture ID letter AC Algal Culture made by gM

Date made 080415 Days cultured 4

Background Counts	99	89	92
Raw Algal Counts	34076	33878	33397

Mean of raw counts 33783.67

Mean of raw counts x 80 2.7×10^6

1×10^6 / (mean of raw counts x 80) x 200 = amount of algal culture needed 74.07

200 - amount of algal culture needed = amount of SSEPAMH needed 125.93

Mix the above amounts of algae and SSEPAMH to make the innoculum for the test.

Once dilution is made, count the cell number for the dilution to make sure that it is approximately 1×10^6 cells/ml.

Dilution Counts	11393	~~10915~~ 11228 MS	11461

Mean of dilution counts 11360.67

Mean of dilution counts x 80 0.91×10^6 (acceptable range is: $0.9 \times 10^6 - 1.1 \times 10^6$)

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Start takedown @ 12:40

Algae Takedown

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Test: Avg RT (no EDTA) Test Date: 080815

Treatment: 1

Replicate 1	~~19991~~ 19991	19953	19841
Replicate 2	24092	24070	23756
Replicate 3	21385	21475	~~217~~ ~~217~~ 21179
Replicate 4	22835	22685	22837

Treatment: 2

Replicate 1	20833	20667	20455
* Replicate 2	14416 / 16149	14518 / 16025	14636 / 16099
Replicate 3	18585	18471	18587
Replicate 4	18720	19002	19412

Treatment: 3

Replicate 1	16062	16293	16059
Replicate 2	16399	16782	16658
Replicate 3	15827	15583	15922
Replicate 4	16944	16770	16966

Treatment: 4

Replicate 1	14029	14266	14026
Replicate 2	12560	12532	12805
Replicate 3	12146	12400	12491
Replicate 4	13737	13922	13860

Treatment: 5

Replicate 1	9145	9273	9375
Replicate 2	9292	9471	9528
Replicate 3	9255	9420	9200
Replicate 4	10067	9685	9510

Treatment: 6

Replicate 1	3658	3791	3633
Replicate 2	3570	3668	3732
Replicate 3	4288	4192	4055
Replicate 4	4829	5031	4904

Treatment: 7

Replicate 1	773	816	729
Replicate 2	489	481	480
Replicate 3	521	683	851
Replicate 4	630	938	577

Treatment:

Replicate 1			
Replicate 2			
Replicate 3			
Replicate 4			

Algae Takedown

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Test: Delta RMP Retest

Test Date: 080815

Treatment: 8

Replicate 1	16391	15956	16254
Replicate 2	17059	16955	17040
Replicate 3	18223	17952	17905
Replicate 4	19064	18559	18607

Treatment: 9

Replicate 1	27749	27731	27317
Replicate 2	29118	28917	29120
Replicate 3	27023	27298	27239
Replicate 4	25880	26078	25991

Treatment: 10

Replicate 1	27114	26499	26648
Replicate 2	24440	24806	24504
Replicate 3	28189	28224	28304
Replicate 4	28676	28910	28830

Treatment: 11

Replicate 1	15920	16233	15999
Replicate 2	16924	17046	17084
Replicate 3	14643	~~16165~~ → 14569 GM 08/21/15	14747
Replicate 4	1774	17601	17360

Treatment: 12

Replicate 1	22990	22870	22945
Replicate 2	25277	24914	25265
Replicate 3	26608	26378	26586
Replicate 4	23075	23156	23383

Treatment: 13

Replicate 1	18441	18473	17983
Replicate 2	19000	18709	18774
Replicate 3	18931	18801	18810
* Replicate 4	23509 / 24199	23424 / 24046	23438 / 24093

Treatment:

Replicate 1			
Replicate 2			
Replicate 3			
Replicate 4			

Treatment:

Replicate 1			
Replicate 2			
Replicate 3			
Replicate 4			

Delta RMP Selenastrum Capricornutum

Field Date: 081829
Test Set up: 081915
Samples kept in chamber: 10
Experiment kept in chamber: 8

Instructions: This is a 96-hour chronic algae test. Take initial chemistry at test set up and final chemistry at test termination. Randomize flasks twice daily. Flasks must be inoculated individually. This test has 5 replicates per treatment, one of which is a chemistry-only replicate. Please take daily pH and temperature measurements at the AM randomization. Start spiking algae cells at 94 hours of testing whenever possible.

ID	Treatment	Decoding or Instructions
41	Glass Distilled Water	
42	510SACHOD	
43	544SAC002	
44	544LSAC13	
45	Field QC	
46	541SJC501	
47	510SOL010	
48	Lab QC for Algae	

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SWRCB - SWAMP FY 14/15 Algae Test Initiation Sheet

Region: Delta RMP Sample Date: 081815 Test Date: 081915

Samples stored in chamber: 10 Test conducted in: Chamber 5

Culture water type: Algal Media Initial flask cell count: 1.04×10^6

Letter and date of culture: Algae E 081315 Initial innoculum volume: 200 mL

Tech who made culture: GM Test set-up by: DL

Test set-up time: 1140

The nutrients were added to: individual flasks entire treatment multiple treatments

Were algae cells added to individual flasks? yes no Light intensity range: 359-436

Special Instructions:

If the Sample Receiving SC or Field SC is ≥ 1,500, then a high conductivity control must be included in the test.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation									Daily Measurements					
Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	Hard (mg/L)	Alk (mg/L)	Amm (mg/L)	ID	pH	°C	pH	082115 GR °C	pH	°C
41	21.9	93.8	8.60	7.83	0	4	0	DL	7.95	24.0	7.81	~~24.3~~	7.91	25.6
42	21.8	239.4	8.62	8.10	56	60	0.71	DL	8.36	24.1	8.30	24.5	8.49	25.3
43	22.0	205.4	8.57	8.23	44	48	0	DL	8.33	24.3	8.27	24.4	8.53	25.2
44	22.0	132.1	8.48	8.28	204	102	0.05	DL	8.55	23.9	8.49	24.4	8.44	25.2
45	22.1	132.7	8.55	8.24	222	106	0.07	DL	8.56	24.0	8.51	23.8	8.61	25.1
46	22.0	653	8.66	8.30	140	122	0.01	DL	8.66	24.2	8.60	23.7	8.73	25.0
47	22.0	780	8.63	8.45	254	240	0.01	DL	8.85	24.1	8.86	23.5	8.97	24.8
48	22.1	94.6	8.60	~~8.7.83~~	0	4	0	DL	~~8.7.88~~	24.4	7.88	23.4	7.88	24.8
				081215 DL					082215 DL			(1)		
									ID	DL	ID	GR	ID	GM

Algae Randomization Record				
Date	AM Time	ID	PM Time	ID
081915	1140		~~GR~~ 1742	DL
082015	935	DL	1742	GM
082115	940	GR	1615	GR
082215	925	GM	1545	GM
082315	830	DL		

UloA found w/o plug @ 915 082215 GM

Revised by LD 072815

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Algae Innoculum Worksheet

Test: Delta RPM

Field Date: 081815

Setup Date: 081915

Algal Culture ID letter E

Algal Culture made by GM

Date made 081315

Days cultured 7

Background Counts	44	54	46
Raw Algal Counts	79850	80154	~~78939~~ 79565

081915 PL dot on screen

Mean of raw counts 79856.33

Mean of raw counts x 80 6388506.67 = 6.39×10^6

1×10^6 / (mean of raw counts x 80) x 200 = amount of algal culture needed 31.3

200 - amount of algal culture needed = amount of SSEPAMH needed 168.7

Mix the above amounts of algae and SSEPAMH to make the innoculum for the test.

Once dilution is made, count the cell number for the dilution to make sure that it is approximately 1×10^6 cells/ml.

Dilution Counts	12969	13161	12964

Mean of dilution counts 13031.33

Mean of dilution counts x 80 1.04×10^6 (acceptable range is: $0.9 \times 10^6 - 1.1 \times 10^6$)

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SWRCB - SWAMP FY 14/15 Algae Test Termination Sheet

Region: DeltaRMP Sample Date: 081815 Test Date: 081915

Samples stored in chamber: Chamber 10 Test conducted in: Chamber 5

Test taken down by: MS

Test take down time: 13:22 end (start spiking algae cells at 94 hours)

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
41	24.3	106.6	8.89	8.90	MS
42	24.2	232.2	11.16	9.65	MS
43	24.2	220.1	10.80	9.32	MS
44	24.0	1302	10.31	9.25	MS
45	24.2	1353	10.95	9.18	MS
46	24.5	719	11.96	9.56	MS
47	24.8	770	14.57	9.65	MS
48	24.8	164.4	9.22	9.34	MS

High algal growth in ambient samples flasks very green in color MS 082315

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Algae Takedown

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Test: DeltaRMP (no EDTA) Test Date: 081915

Treatment: 41

Replicate 1	26797	27055	27248
Replicate 2	24269	24322	24329
Replicate 3	22837	23006	23059
Replicate 4	24312	24231	24250

Treatment: 42

Replicate 1	30819	30623	30980
Replicate 2	26400	26662	26732
Replicate 3	31382	32127	32133
Replicate 4	31832	32224	32363

Treatment: 43

Replicate 1	24802	24885	24794
Replicate 2	26041	25956	25907
Replicate 3	24771	25215	24850
Replicate 4	27469	27094	28049

Treatment: 44

Replicate 1	24265	24212	24281
Replicate 2	19955	20247	20077
Replicate 3	19948	20402	19615
Replicate 4	21859	21789	21380

Treatment: 45

Replicate 1	23206	23510	24286
Replicate 2	22770	22316	22569
Replicate 3	21175	21512	21363
Replicate 4	22293	22643	22512

Treatment: 46

Replicate 1	28205	27970	28333
Replicate 2	22519	22692	22917
Replicate 3	25919	25876	26052
Replicate 4	24011	24284	24361

Treatment: 47

Replicate 1	27780	27511	27755
Replicate 2	25579	25535	25638
Replicate 3	25004	25039	24790
Replicate 4	26182	26393	26397

Treatment: 48

Replicate 1	18390	18161	18274
Replicate 2	18854	19173	18951
Replicate 3	22065	21975	22213
Replicate 4	21031	21182	21337

Background: 60, 55, 64

September 2015

Fathead Minnow Delta RMP Treatment List
Field Date: 092315
Test Set up: ~~092415~~ 092515 GM
Samples kept in chamber: 7
Experiment kept in: CTR

Instructions: This is a 7-day chronic-style test with 10 animals per replicate and 4 replicates per treatment. Each replicate consists of 250ml of sample. Carefully renew 200ml per replicate daily with the squeegee tip method. Feed 3X times daily. Do not feed on the last day of the test. If ≥ 50% mortality occurs in one replicate, feed the replicate half the amount of food.

If ≥ 50% mortality occurs in a treatment, contact Marie or Linda immediately for TIE initiation. This test must be setup with <48-hour old fish. Initial and final chemistry must be taken daily.

ID	Treatment	Decoding or Instructions
71	ROEPAMH (TAC Control)	Formerly DIEPAMH
72	510SACC3A	
73	544SAC002	
74	544LSAC13	Microcystis present
75	541SJC501	
76	510SOL010	

10/1/15
PRT 73 set up 0900 9,50

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SWRCB - SWAMP FY 14/15 Fathead Test Initiation Sheet

Region: 5/ DRMP Sample Date: 9/23/15 Test Date: 092515

Samples stored in chamber: 7 Test conducted in: CTR

Before test initiation, what percentage of fish: are lying on the bottom 0 %
have bent spines 1 %
are active 99 %

Comments about irregular color, sizes or shapes: Regular. Look good

Age at time of set-up: < 48hr % of less desirable fish used in each beaker: 0

Test set-up by: GM Test set-up time: 15:00

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.
If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.
If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.
If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	pre-DO	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
71	NA	24.5	277.8	8.06	8.19	MS	80	60	0
72	NA	25.2	186.9	8.01	8.21	MS	56	66	0.83
73	NA	25.3	196.0	8.19	8.14	MS	56	70	0.13
74	NA	25.1	1347	8.59	7.87	MS	216	118	0.11
75	10.03	25.3	771	8.09	8.01	MS	80	128	0.00
76	NA	25.3	1056	8.02	8.25	MS	320	280	0.09

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 092315
Test Date: 092515

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
71	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10 (A)	10	10 (A)	10	9 (A)	9	
		Dead						1		
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	DL	GR	GM	DL	DL	GM	
	Initial	Pre-DO*		8.11 092715						
		pH	8.33	8.09	8.37	8.15	7.98	8.18		
		DO (mg/L)	7.76	8.09	8.18	8.29	8.10	8.28		
		ID	GM	DL	DL	DL	DL	DL		
	Final	Temp °C	23.2	23.1	23.5	23.4	23.3	23.6		
		pH	8.13	8.13	8.00	7.93	7.92	7.89		
		DO (mg/L)	7.80	8.01	8.01	8.01	8.01	7.91		
		ID	GM	DL	GR	GM	DL	GM		

8.10
7.98

Rep	Boat Weight	Total Weight
1	1.00507	1.00830
2	1.00056	1.00365
3	1.00869	1.01183
4	0.99898	1.00198

Notes:
(A) 2 small pale over 092715 (DL)
Same on day 3 (092815 GR)

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
72	1	Live	10	10	9	9	9	9	9	
		Dead			1 (A)					
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	9	9	9	
		Dead					1			
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	DL	DL	GM	DL	DL	GM	
	Initial	Pre-DO*		9.96			9.14			
		pH	8.27	8.51	8.21	8.06	8.07	8.05		
		DO (mg/L)	7.76	8.51	8.16	8.35	8.03	8.43		
		ID	GM	DL	DL	DL	DL	DL		
	Final	Temp °C	23.4	23.3	23.5	23.4	23.2	23.7		
		pH	8.12	8.10	8.12	8.04	7.94	7.96		
		DO (mg/L)	7.88	8.13	8.17	8.05	8.06	7.92		
		ID	GM	DL	GR	GM	DL	GM		

092715 (DL) 7.83

Rep	Boat Weight	Total Weight
1	0.99472	0.99738
2	1.02882	1.03202
3	1.02727	1.03050
4	0.99515	0.99768

Notes:
A-TE, one dead

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 092315
Test Date: 092515

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
73	1	Live	10	10	10	10(+)	9	9	9	
		Dead					1			
		Missing								
	2	Live	10	9	9	9	9	9	9	
		Dead		1						
		Missing								
	3	Live	10	10	9Δ	9	9	9	9	
		Dead			1					
		Missing								
Murky Rating	4	Live	10	10	4Δ	2	0	—	0	
		Dead			6	2≠	2≠			
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	DL	GR	GM	DL	DL	GM	
	Initial	Pre-DO*	9.33							
		pH	8.19	8.07	8.26	8.09	8.14	8.11		
		DO (mg/L)	~~7.91~~	8.24	8.24	8.38	7.96	8.32		
		ID	GM	DL	DL	DL	DL	DL		
	Final	Temp °C	23.2	23.2	23.8	~~23.4~~	23.1	23.5		
		pH	8.10	8.09	8.07	~~7.93~~	7.96	7.96		
		DO (mg/L)	7.91	8.08	7.90	~~8.07~~	8.04	8.06		
		ID	GM	DL	GR	~~GM~~ 092915 GM	DL	GM		

Rep	Boat Weight	Total Weight
1	1.01782	1.02076
2	1.03888	1.04200
3	1.01060	1.01325
4	1.01777	~~1.03566~~

9/04/15 AA

Notes: (+) one barely alive
Day 1 (I) DO: 8.30
Day 3 - all dead fish are very "moldy" in appearance
- changed beaker after removal
Δ switched out beaker
≠ very fungusy

AS of 092915 CV is 33.85 %

CV @ 49.3% on 092515 @ 1430

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
74	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	8	8	8	8	
		Dead				2≠				
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	DL	DL	GM	DL	DL	GM	
	Initial	Pre-DO*				092915 GM				
		pH	8.10	8.20	8.22	8.19	8.11	8.22		
		DO (mg/L)	7.81	8.28	8.29	8.36	8.04	8.35		
		ID	GM	DL	DL	DL	DL	DL		
	Final	Temp °C	23.2	23.0	23.2	~~23.4~~	23.4	23.4		
		pH	8.08	8.29	8.24	~~8.04~~	8.14	8.09		
		DO (mg/L)	7.90	8.15	8.09	~~8.25~~	8.13	8.02		
		ID	GM	DL	GR	GM 092915 GM	DL	GM		

Rep	Boat Weight	Total Weight
1	1.03246	1.03566
2	1.01642	1.01896
3	1.00706	1.01025
4	1.02181	1.02513

Notes:
≠ fungusy & changed beaker

Day 4 Final
23.4
8.22
8.15
GM

Day 4 Final
23.3
8.21
8.19
GM

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 092315
Test Date: 092515

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
75	1	Live	10	10	10	9	9	9	9	
		Dead				1				
		Missing								
	2	Live	11	11	11	11	11	11	11	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	DL	GR	DL	GM	DL	GM	

			1	2	3	4	5	6
Initial	Pre-DO*							
	pH		8.24	8.27	8.31	8.00	8.03	8.12
	DO (mg/L)		8.06	8.27	8.28	8.41	8.02	8.36
	ID		GM	DL	DL	DL	DL	DL
Final	Temp °C		23.4	23.1	23.6	22.2	23.1	23.5
	pH		8.36	8.39	8.38	8.28	8.29	8.21
	DO (mg/L)		7.88	8.24	8.07	8.34	8.19	8.04
	ID		GM	DL	GR	GM	DL	GM

Rep	Boat Weight	Total Weight
1	1.04202	1.04500
2	1.01219	1.01564
3	1.03934	1.04226
4	1.04433	1.04753

Notes:

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
76	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	DL	DL	GM	DL	DL	GM	

			1	2	3	4	5	6
Initial	Pre-DO*							8.32
	pH		8.18	8.23	8.52	8.42	8.24	8.26
	DO (mg/L)		8.29	8.33	8.30	8.39	8.04	8.30
	ID		GM	DL	DL	DL	DL	DL
Final	Temp °C		23.2	23.2	23.5	22.9	23.1	23.3
	pH		8.58	8.55	8.58	8.50	8.53	8.46
	DO (mg/L)		7.78	8.30	7.95	8.13	8.18	7.90
	ID		GM	DL	GR	GM	DL	GM

Rep	Boat Weight	Total Weight
1	1.04592	1.04912
2	0.99019	0.99365
3	1.01797	1.02150
4	1.00709	1.01042

Notes:

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SWRCB - SWAMP Fathead Test Termination Sheet

Region: DELTA RMP Sample Date: 9/23/15 Test Date: 9/25/15

Samples stored in: 7 Test conducted in: CTR

Test taken down by: _____

Test take down time: _____

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
71	23.5	299.6	8.29	8.16	CYT
72	23.5	186.2	8.17	8.20	CYT
73	23.7	189.9	8.14	8.14	CYT
74	23.6	1433	8.10	8.28	CYT
75	23.6	697	8.05	8.34	CYT
76	23.2	1013	7.86	8.49	CYT

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Delta RMP Selenastrum Capricornutum

Field Date: 092315
Test Set up: 092415
Samples kept in chamber: 7
Experiment kept in chamber: 5

Instructions: This is a 96-hour chronic algae test. Take initial chemistry at test set up and final chemistry at test termination. Randomize flasks twice daily. Flasks must be inoculated individually. This test has 5 replicates per treatment, one of which is a chemistry-only replicate. Please take daily pH and temperature measurements at the AM randomization. Start spiking algae cells at 94 hours of testing whenever possible.

ID	Treatment	Decoding or Instructions
71	Glass Distilled	
72	510SACC3A	
73	544SAC002	
74	544LSAC13	*has microcystis
75	541SJC501	
76	510SOL010	

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Algae Innoculum Worksheet

Test: Delta RMP

Field Date: 092315

Setup Date: ~~092315~~ 092415 (DJ)

Algal Culture ID letter W

Algal Culture made by GM

Date made 091815

Days cultured 5

Background Counts	60	63	62
Raw Algal Counts	62879	62974	62797

Mean of raw counts 62883.33

Mean of raw counts x 80 5.03×10^6

1×10^6 / (mean of raw counts x 80) x 200 = amount of algal culture needed 39.8

200 – amount of algal culture needed = amount of SSEPAMH needed 160.2

Mix the above amounts of algae and SSEPAMH to make the innoculum for the test.

Once dilution is made, count the cell number for the dilution to make sure that it is approximately 1×10^6 cells/ml.

Dilution Counts	12743	12809	12638

Mean of dilution counts 12730

Mean of dilution counts x 80 1.02×10^6 (acceptable range is: $0.9 \times 10^6 - 1.1 \times 10^6$)

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SWRCB - SWAMP FY 14/15 Algae Test Initiation Sheet

Region: Delta RMP Sample Date: 092315 Test Date: ~~092315~~ 092415 DL

Samples stored in chamber: 7 Test conducted in: Chamber 5

Culture water type: Media 090115 Initial flask cell count: 1.02×10^6

Letter and date of culture: W 091815 Initial innoculum volume: 200mL

Tech who made culture: GM Test set-up by: DL

Test set-up time: 1130

The nutrients were added to: individual flasks (entire treatment) multiple treatments

Were algae cells added to individual flasks? (yes) no Light intensity range: 361 - 441 ft candles

Special Instructions:

If the Sample Receiving SC or Field SC is ≥ 1,500, then a high conductivity control must be included in the test.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation									Daily Measurements					
Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	Hard (mg/L)	Alk (mg/L)	Amm (mg/L)	ID	pH	°C	pH	°C	pH	°C
71	22.8	91.6	8.50	7.85	0	4	0	DL	7.74	25.3	7.81	25.5	7.82	25.6
72	22.9	242.5	8.58	8.02	56	60	0.83	DL	8.27	25.4	8.30	25.5	8.43	25.5
73	22.8	254.8	8.60	8.14	56	70	0.13	DL	8.28	25.3	8.44	25.6	8.49	25.6
74	22.8	1405	8.57	8.13	216	118	0.11	DL	8.42	25.2	8.54	25.0	8.52	25.4
75	22.7	709	8.47	8.19	80	128	0	DL	8.51	25.5	8.62	25.3	8.70	25.6
76	22.8	1023	8.59	8.29	320	280	0.09	DL	8.77	25.4	8.90	25.6	8.96	25.5
									ID	MS	ID	GM	ID	DL

Algae Randomization Record				
Date	AM Time	ID	PM Time	ID
092415	1130	DL	1650	DL
092515	920	MS		
092615	10:30	GM	11:00	GM
092715	929	DL	1601	DL
092815				

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SWRCB - SWAMP FY 14/15 Algae Test Termination Sheet

Region: DRMP Sample Date: 092315 Test Date: 092415

Samples stored in chamber: Chamber 7 Test conducted in: Chamber 5

Test taken down by: DL/GR

Test take down time: 1215 (start spiking algae cells at 94 hours)

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
71	25.6	103.1	8.17	8.11	GR/DL
72	25.6	239.8	8.28	9.06	GR/DL
73	25.9	2521	8.12	8.89	GR/DL
74	25.6	1327	8.13	8.65	GR/DL
75	25.6	728	8.15	8.75	GR/DL
76	25.6	1041	8.18	9.53	GR/DL

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Algae Takedown

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Background Replicates = 37, 25, 25, ~~24~~ 092815 GR

Test: Delta RMP 092415 Test Date: 092415

Treatment: 71

Replicate 1	31298	31531	31334	
Replicate 2	32400	31791	31496	
Replicate 3	31591	32044	31345	
Replicate 4	36143	36729	36267	Respiked

Treatment: 72

Replicate 1	48636	48325	48680	
Replicate 2	50255	50467	50201	
Replicate 3	51847	51356	51466	
Replicate 4	44924	44316	44916	Respiked

Treatment: 73

Replicate 1	30404	30445	30626	
Replicate 2	38331	37578	37967	Respiked
Replicate 3	32153	32059	32185	
Replicate 4	31783	31440	31511	

Treatment: 74

Replicate 1	27913	27705	28063	
Replicate 2	26519	26701	26680	
Replicate 3	36343	36400	36987	Respiked
Replicate 4	28951	28815	28454	

Treatment: 75

Replicate 1	39803	40071	39624	
Replicate 2	42352	42018	41708	
Replicate 3	39957	40187	40808	
Replicate 4	34137	34377	34271	Respiked

Treatment: 76

Replicate 1	21538	21739	22401
Replicate 2	25050	24786	25521
Replicate 3	22686	22750	23408
Replicate 4	23829	23849	23940

Re-spike

Treatment: 092815GR

71D	~~Replicate 1~~	35984	36050	35869	–
72D	~~Replicate 2~~	48343	48495	48843	✓
73B	~~Replicate 3~~	39285	092415GR ~~34439~~ 39399	39339	–
74C	~~Replicate 4~~	37223	37401	37687	–

Re-spike

Treatment:

75D	~~Replicate 1~~	37148	37311	37015	✓
	Replicate 2			
	Replicate 3			
	Replicate 4			

AQUA-Science

Environmental Toxicology Specialists

CERIODAPHNIA SURVIVAL AND REPRODUCTION TEST

Test Number:	RWQCB5 FY 14/15	Study Director:	J.L. Miller
Protocol No.:	EPA 821-R-02-013	Technicians:	Walker/McIntyre/Noss/Francis/Pham
Test Material:	Delta RMP SWAMP samples (09/23/15)		
Test Species:	*Ceriodaphnia dubia*	Animal Lot No:	A/S RO: 092515
Initiation Date:	September ~~25~~, 2019 24	Termination Date:	October ~~2~~, 2019 01

Sample @ 100%: **Lab Control**

ADULT SURVIVAL/MORTALITY RECORD

Day	REPLICATE NUMBER										
No.	1	2	3	4	5	6	7	8	9	10	n
1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
2	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
3	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
4	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
5	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
6	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
7	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
n	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	

NEONATE REPRODUCTION RECORD

Day	REPLICATE NUMBER											Tech	Obs.
No.	1	2	3	4	5	6	7	8	9	10	n	Init.	Date
1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	JN	09/25
2	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	JN	09/26
3	Ø	Ø	3	2	Ø	Ø	4	Ø	4	Ø	13	~	09/27
4	3	4	Ø	Ø	Ø	5	Ø	2	Ø	5	19	~	09/28
5	9	8	10	8	9	10	10	2	7	11	84	JN	09/29
6	14	Ø	13	11	11	13	12	Ø	11	14	99	JN	09/30
7	Ø	13	12 ①	13 ①	14	Ø	Ø	15	17 ①	Ø	42	JN	10/01
n	26	25	26	21	34	28	26	19	22	30			

TOTAL NUMBER OF ADULTS AT STUDY TERMINATION DATE	10
TOTAL NUMBER OF NEONATES PRODUCED	257
MEAN NUMBER OF NEONATES PRODUCED PER ADULT	25.7
STANDARD DEVIATION FOR THE ABOVE MEAN	4.4

Additional Comments/Observations

① 4th brood excluded from data analyses CW 10/02/15

Test Initiated / Animals Fed by JN @ 1415

Test Terminated by JN @ 1432

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Time of Observation / Feeding:	1310	1235	1350	1355	1426	1340	1432

AQUA-Science

Environmental Toxicology Specialists

CERIODAPHNIA SURVIVAL AND REPRODUCTION TEST

Test Number:	RWQCB5 FY 14/15	Study Director:	J.L. Miller
Protocol No.:	EPA 821-R-02-013	Technicians:	Walker/McIntyre/Noss/Francis/Pham
Test Material:	Delta RMP SWAMP samples (09/23/15)		
Test Species:	*Ceriodaphnia dubia*	Animal Lot No:	A/S RO: 092515
Initiation Date:	September 25, 2019	Termination Date:	October 2, 2019

Sample @ 100%: **510SACC3A**

ADULT SURVIVAL/MORTALITY RECORD

Day No.	1	2	3	4	5	6	7	8	9	10	n
1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
2	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
3	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
4	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
5	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
6	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
7	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
n	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	

NEONATE REPRODUCTION RECORD

Day No.	1	2	3	4	5	6	7	8	9	10	n	Tech Init.	Obs. Date
1	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	JN	09/25
2	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	JN	09/26
3	4	4	Ø	4	Ø	4	4	Ø	Ø	Ø	20	~	09/27
4	Ø	7	2	Ø	2	Ø	Ø	7	4	3	25	~	09/28
5	7	2 ②	11	7	Ø	6	9	Ø	7	7	56	JN	09/29
6	13	13	Ø	12	5	12	17	12	Ø	16	100	JN	09/30
7	17 ①	12 ①	16	Ø	11	15 ①	11 ①	12	8	Ø	47	JN	10/01
n	24	26	29	23	18	22	30	31	19	26			

TOTAL NUMBER OF ADULTS AT STUDY TERMINATION DATE	10
TOTAL NUMBER OF NEONATES PRODUCED	248
MEAN NUMBER OF NEONATES PRODUCED PER ADULT	24.8
STANDARD DEVIATION FOR THE ABOVE MEAN	4.4

Additional Comments/Observations

① 4th brood excluded from data analyses (JN) 10/02/15
② Split brood (JN) 10/02/15

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Time of Observation / Feeding:	1313	1238	1355	1400	1432	1345	1435

AQUA-Science

Environmental Toxicology Specialists

CERIODAPHNIA SURVIVAL AND REPRODUCTION TEST

Test Number:	RWQCB5 FY 14/15	Study Director:	J.L. Miller
Protocol No.:	EPA 821-R-02-013	Technicians:	Walker/McIntyre/Noss/Francis/Pham
Test Material:	Delta RMP SWAMP samples (09/23/15)		
Test Species:	*Ceriodaphnia dubia*	Animal Lot No:	A/S RO: 092515
Initiation Date:	September 25, 2019	Termination Date:	October 2, 2019

Sample @ 100%: **544SAC002**

ADULT SURVIVAL/MORTALITY RECORD

Day No.	1	2	3	4	5	6	7	8	9	10	n
1	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
2	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
3	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
4	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
5	Φ	Φ	Φ	1	Φ	Φ	Φ	Φ	Φ	Φ	1
6	Φ	Φ	Φ	/	Φ	Φ	Φ	Φ	Φ	Φ	Φ
7	Φ	Φ	Φ	/	Φ	Φ	Φ	Φ	Φ	Φ	Φ
n	Φ	Φ	Φ	1	Φ	Φ	Φ	Φ	Φ	Φ	

NEONATE REPRODUCTION RECORD

Day No.	1	2	3	4	5	6	7	8	9	10	n	Tech Init.	Obs. Date
1	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	JN	09/25
2	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	JN	09/26
3	Φ	Φ	Φ	3	3	Φ	1	Φ	Φ	Φ	7	~	09/27
4	6	4	2	Φ	Φ	4	Φ	8	3	5	32	~	09/28
5	8	Φ	Φ	1	5	4	8	Φ	8	6	40	JN	09/29
6	Φ	9	Φ	/	1	11	11	13	Φ	11	56	JN	09/30
7	14	14	6	/	Φ	Φ	Φ	13	6	Φ	53	JN	10/01
n	28	27	8	4	9	19	20	34	17	22			

TOTAL NUMBER OF ADULTS AT STUDY TERMINATION DATE	9
TOTAL NUMBER OF NEONATES PRODUCED	188
MEAN NUMBER OF NEONATES PRODUCED PER ADULT	18.8
STANDARD DEVIATION FOR THE ABOVE MEAN	9.66

Additional Comments/Observations

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Time of Observation / Feeding:	1315	1240	1400	1405	1436	1410	1439

AQUA-Science

Environmental Toxicology Specialists

CERIODAPHNIA SURVIVAL AND REPRODUCTION TEST

Test Number:	RWQCB5 FY 14/15	Study Director:	J.L. Miller
Protocol No.:	EPA 821-R-02-013	Technicians:	Walker/McIntyre/Noss/Francis/Pham
Test Material:	Delta RMP SWAMP samples (09/23/15)		
Test Species:	*Ceriodaphnia dubia*	Animal Lot No:	A/S RO: 092515
Initiation Date:	September 25, 2019	Termination Date:	October 2, 2019

Sample @ 100%: **544LSAC13**

ADULT SURVIVAL/MORTALITY RECORD

Day No.	1	2	3	4	5	6	7	8	9	10	n
1	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
2	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
3	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
4	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
5	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
6	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
7	1	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	1
n	1	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	

NEONATE REPRODUCTION RECORD

Day No.	1	2	3	4	5	6	7	8	9	10	n	Tech Init.	Obs. Date
1	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	JN	09/25
2	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	JN	09/26
3	Φ	Φ	Φ	Φ	Φ	3	Φ	Φ	3	4	10	~	09/27
4	5	3	7	2	6	9	5	4	Φ	Φ	41	~	09/28
5	2	9	10	7	9	1 ①	3	Φ	10	10	61	JN	09/29
6	9	13	Φ	14	16	15	Φ	13	10	14	104	JN	09/30
7	Φ	Φ	4	Φ	Φ	9 ②	13	12	17 ②	18 ②	29	JN	10/01
n	16	25	21	23	31	28	21	29	23	28			

TOTAL NUMBER OF ADULTS AT STUDY TERMINATION DATE	9
TOTAL NUMBER OF NEONATES PRODUCED	245
MEAN NUMBER OF NEONATES PRODUCED PER ADULT	24.5
STANDARD DEVIATION FOR THE ABOVE MEAN	4.6

Additional Comments/Observations

① Split brood GW 10/02/15
② 4th brood excluded from data analyses GW 10/02/15

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Time of Observation / Feeding:	1317	1243	1405	1410	1442	1414	1442

AQUA-Science

Environmental Toxicology Specialists

CERIODAPHNIA SURVIVAL AND REPRODUCTION TEST

Test Number:	RWQCB5 FY 14/15	Study Director:	J.L. Miller
Protocol No.:	EPA 821-R-02-013	Technicians:	Walker/McIntyre/Noss/Francis/Pham
Test Material:	Delta RMP SWAMP samples (09/23/15)		
Test Species:	*Ceriodaphnia dubia*	Animal Lot No:	A/S RO: 092515
Initiation Date:	September 25, 2019	Termination Date:	October 2, 2019

Sample @ 100%: **541SJC501**

ADULT SURVIVAL/MORTALITY RECORD

Day No.	1	2	3	4	5	6	7	8	9	10	n
1	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
2	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
3	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
4	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
5	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
6	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
7	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
n	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	

NEONATE REPRODUCTION RECORD

Day No.	1	2	3	4	5	6	7	8	9	10	n	Tech Init.	Obs. Date
1	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	JN	09/25
2	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	JN	09/26
3	2	4	Φ	Φ	Φ	2	Φ	Φ	Φ	2	10	~	09/27
4	Φ	Φ	4	4	4	7	4	5	5	Φ	33	~	09/28
5	4	7	10	4	7	Φ	8	7	5	2	54	JN	09/29
6	14	13	13	13	10	14	13	13	12	12	157	JN	09/30
7	17 ①	14 ①	Φ	Φ	12 ①	17 ①	Φ	Φ	Φ	Φ	Φ	JN	10/01
n	20	24	27	21	21	23	25	25	22	16			

TOTAL NUMBER OF ADULTS AT STUDY TERMINATION DATE	10
TOTAL NUMBER OF NEONATES PRODUCED	224
MEAN NUMBER OF NEONATES PRODUCED PER ADULT	22.4
STANDARD DEVIATION FOR THE ABOVE MEAN	3.1

Additional Comments/Observations

①4th brood excluded from data analyses (JN) 10/02/15

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Time of Observation / Feeding:	1320	1245	1410	1415	1445	1420	1445

AQUA-Science

Environmental Toxicology Specialists

CERIODAPHNIA SURVIVAL AND REPRODUCTION TEST

Test Number:	RWQCB5 FY 14/15	Study Director:	J.L. Miller
Protocol No.:	EPA 821-R-02-013	Technicians:	Walker/McIntyre/Noss/Francis/Pham
Test Material:	Delta RMP SWAMP samples (09/23/15)		
Test Species:	*Ceriodaphnia dubia*	Animal Lot No:	A/S RO: 092515
Initiation Date:	September 25, 2019	Termination Date:	October 2, 2019

Sample @ 100%: **510SOL010**

ADULT SURVIVAL/MORTALITY RECORD

Day No.	1	2	3	4	5	6	7	8	9	10	n
1	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
2	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
3	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
4	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
5	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
6	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
7	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ
n	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	

NEONATE REPRODUCTION RECORD

Day No.	1	2	3	4	5	6	7	8	9	10	n	Tech Init.	Obs. Date
1	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	JN	09/25
2	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	Φ	JN	09/26
3	5	Φ	1	5	Φ	Φ	Φ	6	2	3	22	~	09/27
4	Φ	5	Φ	Φ	1	3	10	Φ	9	13	41	~	09/28
5	11	Φ	9	6	8	12	Φ	15	Φ	Φ	61	JN	09/29
6	18	14	Φ	15	Φ	Φ	14	20	15	16	112	JN	09/30
7	19 ①	Φ	14	18 ①	20	1	18	23 Φ	20 ①	10 Φ	53	JN	10/01
n	34	19	24	26	29	16	42	41	26	32			

TOTAL NUMBER OF ADULTS AT STUDY TERMINATION DATE	10
TOTAL NUMBER OF NEONATES PRODUCED	289
MEAN NUMBER OF NEONATES PRODUCED PER ADULT	28.9
STANDARD DEVIATION FOR THE ABOVE MEAN	8.6

Additional Comments/Observations

① 4th brood excluded from data analyses (w) 10/02/15

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Time of Observation / Feeding:	1322	1249	1415	1420	1449	1427	1449

AQUA-Science

Environmental Toxicology Specialists

DOSE PREPARATION SHEET

09/24/15

RWQCB5 FY 14/15

Static Chronic bioassay w/ 24 hr. Changeout

Ceriodaphnia dubia

Delta RMP SWAMP samples (09/23/15)

Control water = Reverse Osmosis water amended with EPA salts to achieve EPAMH specifications

All surface waters filtered through 60 µm screen

n = 5 animals/replicate - 4 replicates/concentration

Site ID	Site Name	Amount Sample (mL)	Control Water (mL)	Total (mL)*
-	Lab Control	0	220	220
510SACC3A	510SACC3A	220	0	220
544SAC002	544SAC002	220	0	220
544LSAC13	544LSAC13	220	0	220
541SJC501	541SJC501	220	0	220
510SOL010	510SOL010	220	0	220

* 20 mL used to measure pH, inoculate 200 mL

Test Day	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
Technician	TP	TP	TP	FF	FF	TP	TP
Time	1330	1115	1040	1220	0945	1010	1100
Date	09/24/15	09/25/15	09/26/15	09/27/15	09/28/15	09/29/15	09/30/15

AQUA-Science

Environmental Toxicology Specialists

WATER QUALITY REPORT FOR AQUATIC BIOASSAYS

Test Number:	RWQCB5 FY 14/15	Study Director:	J.L. Miller
Protocol No.:	EPA 821-R-02-013	Technicians	Walker/McIntyre/Noss/Francis/Pham
Test Material:	Delta RMP SWAMP samples (09/23/15)		
Test Species:	*Ceriodaphnia dubia*	Animal Lot No.:	A/S RO: 092415
Initiation Date:	September 24, 2015	Termination Date:	September 28, 2015

	OBSERVATION Day:		0	Date:	09/24/15	24 Hour Obsv.			
Sample @ 100%	Temperature (°C)	Dissolved Oxygen*	pH^^	Alkalinity **/ Hardness~	Conductivity ^	Temp	D.O.*	pH^^	Cond. ^
Lab Ctrl	24	7.8	8.35	61/80	290	24	6.2	8.12	311
510SACC3A	24	8.2	8.27	-	179	24	6.0	8.10	197
544SAC002	24	8.2	8.25	-	198	24	6.3	8.03	221
544LSAC13	24	8.0	7.84	-	1392	24	4.6	7.66	1418
541SJC501	24	8.1	7.86	-	699	24	6.3	7.72	723
510SOL010	24	7.4	7.66	-	1040	24	5.1	7.62	1058
					Tech Init/Date	TP		09/25/15	

UNIT INSTRUMENTATION LEGEND

*=Dissolved oxygen (mg/L): Meter ID 09

^^= pH: Meter ID 08

^=Conductivity/Salinity (µmohs): Meter ID 06

**Alkalinity (mg/L CaCO3); HACH Test Kit

~=Water Hardness (mg/L CaCO3); HACH Test Kit

ADDITIONAL COMMENTS:

Lab Control = 2x carbon filtered reverse osmosis water at EPA moderately hard level using EPA salts.

Control water ID = R/O EPAMH #140 FCNS

All surface waters filtered through a 60 µm screen daily

Technician: [signature] Date: 09/24/15

AQUA-Science

Environmental Toxicology Specialists

WATER QUALITY REPORT FOR AQUATIC BIOASSAYS

Test Number:	RWQCB5 FY 14/15	Study Director:	J.L. Miller
Protocol No.:	EPA 821-R-02-013	Technicians	Walker/McIntyre/Noss/Francis/Pham
Test Material:	Delta RMP SWAMP samples (09/23/15)		
Test Species:	*Ceriodaphnia dubia*	Animal Lot No.:	A/S RO: 092415
Initiation Date:	September 24, 2015	Termination Date:	September 28, 2015

	OBSERVATION Day:		1	Date:	09/25/15	24 Hour Obsv.			
Sample @ 100%	Temperature (°C)	Dissolved Oxygen*	pH^^	Alkalinity **/ Hardness~	Conductivity ^	Temp	D.O.*	pH^^	Cond. ^
Lab Ctrl	24	7.7	8.19	61/80	286	24	5.3	8.26	310
510SACC3A	24	①8.6/7.8	8.14	-	187	24	5.7	8.22	204
544SAC002	24	①9.5/8.0	8.13	-	206	24	5.8	8.14	229
544LSAC13	24	①8.4/8.1	7.76	-	1387	24	5.9	7.78	1420
541SJC501	24	①8.4/8.1	7.82	-	702	24	6.1	7.84	733
510SOL010	24	7.6	7.60	-	1044	24	6.1	7.80	1075
					Tech Init/Date	TP	09/26/15		

UNIT INSTRUMENTATION LEGEND

*=Dissolved oxygen (mg/L): Meter ID 09

^^= pH: Meter ID 08

^=Conductivity/Salinity (µmohs): Meter ID 06

**Alkalinity (mg/L CaCO3); HACH Test Kit

~=Water Hardness (mg/L CaCO3); HACH Test Kit

ADDITIONAL COMMENTS:

① Desaturated TP 09/25/15

Lab Control = 2x carbon filtered reverse osmosis water at EPA moderately hard level using EPA salts.

Control water ID = R/O EPAMH H/40 FCNS

All surface waters filtered through a 60 µm screen daily

Technician: [signature] Date: 09/25/15

AQUA-Science

Environmental Toxicology Specialists

WATER QUALITY REPORT FOR AQUATIC BIOASSAYS

Test Number:	RWQCB5 FY 14/15	Study Director:	J.L. Miller
Protocol No.:	EPA 821-R-02-013	Technicians	Walker/McIntyre/Noss/Francis/Pham
Test Material:	Delta RMP SWAMP samples (09/23/15)		
Test Species:	*Ceriodaphnia dubia*	Animal Lot No.:	A/S RO: 092415
Initiation Date:	September 24, 2015	Termination Date:	September 28, 2015

	OBSERVATION Day:		2	Date:	09/26/15	24 Hour Obsv.			
Sample @ 100%	Temperature (°C)	Dissolved Oxygen*	pH^^	Alkalinity **/ Hardness~	Conductivity ^	Temp	D.O.*	pH^^	Cond. ^
Lab Ctrl	24	7.9	8.25	59/81	285	24	6.4	8.36	307
510SACC3A	24	①9.0/7.9	8.25	-	192	24	6.3	8.33	206
544SAC002	24	①9.0/8.1	8.24	-	212	24	6.3	8.19	227
544LSAC13	24	①8.8/7.9	7.85	-	1391	24	5.8	7.92	1427
541SJC501	24	①9.1/8.1	7.93	-	704	24	6.6	7.94	731
510SOL010	24	①8.4/7.8	7.71	-	1043	24	6.1	8.02	1083
					Tech Init/Date	FF 09/27/15			

UNIT INSTRUMENTATION LEGEND

*=Dissolved oxygen (mg/L): Meter ID 09

^^= pH: Meter ID 08

^=Conductivity/Salinity (µmohs): Meter ID 06

**Alkalinity (mg/L CaCO3); HACH Test Kit

~=Water Hardness (mg/L CaCO3); HACH Test Kit

ADDITIONAL COMMENTS:

① Dosa Waters TP 09/26/15

Lab Control = 2x carbon filtered reverse osmosis water at EPA moderately hard level using EPA salts.

Control water ID = R/O EPAMH #141 +CNS

All surface waters filtered through a 60 µm screen daily

Technician: [signature]

Date: 09/26/15

AQUA-Science

Environmental Toxicology Specialists

WATER QUALITY REPORT FOR AQUATIC BIOASSAYS

Test Number:	RWQCB5 FY 14/15	Study Director:	J.L. Miller
Protocol No.:	EPA 821-R-02-013	Technicians	Walker/McIntyre/Noss/Francis/Pham
Test Material:	Delta RMP SWAMP samples (09/23/15)		
Test Species:	*Ceriodaphnia dubia*	Animal Lot No.:	A/S RO: 092415
Initiation Date:	September 24, 2015	Termination Date:	September 28, 2015

	OBSERVATION Day:		3	Date:	09/27/15	24 Hour Obsv.			
Sample @ 100%	Temperature (°C)	Dissolved Oxygen*	pH^^	Alkalinity **/ Hardness~	Conductivity ^	Temp	D.O.*	pH^^	Cond. ^
Lab Ctrl	24	8.0	8.11	59/81	286	24	6.5	8.20	275
510SACC3A	24	9.3/8.2 ①	8.05	-	190	24	6.1	8.09	178
544SAC002	24	9.6/8.1 ①	8.05	-	210	24	6.0	8.07	205
544LSAC13	24	9.4/8.2 ①	7.78	-	1383	24	5.1	7.72	1291
541SJC501	24	9.6/8.0 ①	7.85	-	701	24	6.2	7.77	654
510SOL010	24	9.0/8.2 ①	7.74	-	1037	24	5.2	7.81	970
					Tech Init/Date	FF	09/28/15		

UNIT INSTRUMENTATION LEGEND

*=Dissolved oxygen (mg/L): Meter ID 09

^^= pH: Meter ID 06

^=Conductivity/Salinity (µmohs): Meter ID 06

**Alkalinity (mg/L CaCO3); HACH Test Kit

~=Water Hardness (mg/L CaCO3); HACH Test Kit

ADDITIONAL COMMENTS:

① DO saturated FF 09/27/15

Lab Control = 2x carbon filtered reverse osmosis water at EPA moderately hard level using EPA salts.

Control water ID = R/O EPA MH # 141 + CNS

All surface waters filtered through a 60 µm screen daily

Technician: [signature]

Date: 09/27/15

AQUA-Science

Environmental Toxicology Specialists

WATER QUALITY REPORT FOR AQUATIC BIOASSAYS

Test Number:	RWQCB5 FY 14/15	Study Director:	J.L. Miller
Protocol No.:	EPA 821-R-02-013	Technicians	Walker/McIntyre/Noss/Francis/Pham
Test Material:	Delta RMP SWAMP samples (09/23/15)		
Test Species:	*Ceriodaphnia dubia*	Animal Lot No.:	A/S RO: 092415
Initiation Date:	September 24, 2015	Termination Date:	September 28, 2015

	OBSERVATION Day:		4	Date:	09/28/15	24 Hour Obsv.			
Sample @ 100%	Temperature (°C)	Dissolved Oxygen*	pH^^	Alkalinity **/ Hardness~	Conductivity ^	Temp	D.O.*	pH^^	Cond. ^
Lab Ctrl	24	7.7	7.84	59 | 81	293	24	6.5	8.02	271
510SACC3A	24	9.5 | 7.6 ①	8.38	-	193	24	6.4	7.91	179
544SAC002	24	9.5 | 7.6 ①	8.27	-	214	24	6.5	7.89	203
544LSAC13	24	9.3 | 7.6 ①	7.69	-	1392	24	5.6	7.62	1327
541SJC501	24	9.4 | 7.5 ①	7.73	-	710	24	6.4	7.68	673
510SOL010	24	9.1 | 7.6 ①	7.50	-	1043	24	5.3	7.76	1001
					Tech Init/Date	FF	09/29/15		

UNIT INSTRUMENTATION LEGEND

*=Dissolved oxygen (mg/L): Meter ID 09

^^= pH: Meter ID 06

^=Conductivity/Salinity (µmohs): Meter ID 06

**Alkalinity (mg/L CaCO3); HACH Test Kit

~=Water Hardness (mg/L CaCO3); HACH Test Kit

ADDITIONAL COMMENTS:

① Desaturated FF 09/28/15

Lab Control = 2x carbon filtered reverse osmosis water at EPA moderately hard level using EPA salts.

Control water ID = RIO GRAND #141 + CWS

All surface waters filtered through a 60 µm screen daily

Technician: [signature] Date: 09/28/15

AQUA-Science

Environmental Toxicology Specialists

WATER QUALITY REPORT FOR AQUATIC BIOASSAYS

Test Number:	RWQCB5 FY 14/15	Study Director:	J.L. Miller
Protocol No.:	EPA 821-R-02-013	Technicians	Walker/McIntyre/Noss/Francis/Pham
Test Material:	Delta RMP SWAMP samples (09/23/15)		
Test Species:	*Ceriodaphnia dubia*	Animal Lot No.:	A/S RO: 092415
Initiation Date:	September 24, 2015	Termination Date:	September 28, 2015

	OBSERVATION Day:	5	Date:		09/29/15	24 Hour Obsv.			
Sample @ 100%	Temperature (°C)	Dissolved Oxygen*	pH^^	Alkalinity **/ Hardness~	Conductivity ^	Temp	D.O.*	pH^^	Cond. ^
Lab Ctrl	24	7.8	8.25	59/82	276	24	5.9	7.86	254
510SACC3A	24	D 9.3/7.8	8.19	-	190	24	6.0	7.81	174
544SAC002	24	D 9.5/7.9	8.08	-	216	24	6.0	7.81	192
544LSAC13	24	D 9.6/7.8	7.58	-	1392	24	4.8	7.56	1261
541SJC501	24	D 9.8/7.9	7.64	-	705	24	6.1	7.65	646
510SOL010	24	D 9.1/7.9	7.43	-	1050	24	5.3	7.72	951
					Tech Init/Date	TP	09/30/15		

UNIT INSTRUMENTATION LEGEND

*=Dissolved oxygen (mg/L): Meter ID 09

^^= pH: Meter ID 06

^=Conductivity/Salinity (µmohs): Meter ID 06

**Alkalinity (mg/L CaCO3); HACH Test Kit

~=Water Hardness (mg/L CaCO3); HACH Test Kit

ADDITIONAL COMMENTS:

D Resaturated TP 09/29/15

Lab Control = 2x carbon filtered reverse osmosis water at EPA moderately hard level using EPA salts.

Control water ID = R/O EPAMH #144 ICNS

All surface waters filtered through a 60 µm screen daily

Technician: [signature]

Date: 09/29/15

AQUA-Science

Environmental Toxicology Specialists

WATER QUALITY REPORT FOR AQUATIC BIOASSAYS

Test Number:	RWQCB5 FY 14/15	Study Director:	J.L. Miller
Protocol No.:	EPA 821-R-02-013	Technicians	Walker/McIntyre/Noss/Francis/Pham
Test Material:	Delta RMP SWAMP samples (09/23/15)		
Test Species:	*Ceriodaphnia dubia*	Animal Lot No.:	A/S RO: 092415
Initiation Date:	September 24, 2015	Termination Date:	September 28, 2015

	OBSERVATION Day:		6	Date:	09/30/15	24 Hour Obsv.			
Sample @ 100%	Temperature (°C)	Dissolved Oxygen*	pH^^	Alkalinity **/ Hardness~	Conductivity ^	Temp	D.O.*	pH^^	Cond. ^
Lab Ctrl	25	7.8	7.94	59/82	281	24	6.2	8.02	309
510SACC3A	25	①9.7/7.8	7.87	-	190	24	5.3	7.97	207
544SAC002	25	①9.6/7.9	7.85	-	207	24	5.3	7.95	221
544LSAC13	25	①9.7/7.9	7.53	-	1386	24	4.1	7.61	1397
541SJC501	25	①9.5/8.1	7.58	-	703	24	4.9	7.68	726
510SOL010	25	①9.5/8.0	7.46	-	1041	24	5.0	7.59	1066
					Tech Init/Date	TP		10/01/15	

UNIT INSTRUMENTATION LEGEND

*=Dissolved oxygen (mg/L): Meter ID 09

^^= pH: Meter ID 06

^=Conductivity/Salinity (µmohs): Meter ID 06

**Alkalinity (mg/L CaCO3); HACH Test Kit

~=Water Hardness (mg/L CaCO3); HACH Test Kit

ADDITIONAL COMMENTS:

① Desaturated TP 09/30/15

Lab Control = 2x carbon filtered reverse osmosis water at EPA moderately hard level using EPA salts.

Control water ID = R/O EPAMH #144 FCNS

All surface waters filtered through a 60 µm screen daily

Technician: [signature] Date: 09/30/15

October 2015

Delta RMP Ceriodaphnia Dubia

Field Date: 102115
Test Set up: 102215
Samples kept in chamber: 9
Experiment kept in chamber: CTR

Instructions: This is a 3-Brood test with 1 animal per replicate and 10 replicates with 15 ml per vial treatment. This test must be set up using blocking by known parentage. Feed and change daily. Take initial chemistry and final chemistry daily. Contact Marie immediately when either endpoint in any sample has a 50% reduction from the control performance. Please alert Marie or Linda ASAP when test does not meet test acceptability criteria. Take down the test after the vast majority of organisms have had their 3rd brood.

ID	Treatment	Decoding or Instructions
21	L16-50 (TAC Control)	
22	510SACC3A	
23	544SAC002	
24	544LSAC13	
25	541SJC501	
26	510SOL010	
27	Field Duplicate "Field QC"	
28	LWOBC	
29	SSEPAMH	
30	QC Sample for Ceriodaphnia "Bottle Blank"	
31	Low Conductivity Control	L16-50 diluted with Glass Distilled

Pull out BB??

Aquatic Health Program Laboratory
1089 Veterinary Medicine Drive
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Davis, CA 95616
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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Initiation Sheet

Region: 5 Sample Date: 102115 Test Date: 102215

Samples stored in chamber: 9 Test conducted in: CTR

If neos isolated from Brood Board: Only use neos from gravids producing over 8 neos on day of set-up.

Brood Board # 72 Date/Time neos isolated: 15:46 102215

Date/Time gravids isolated: 102215 07:54 Neos isolated by: DL

Gravids isolated by: LD Test set-up by: MS

Health of gravids: good Time neos loaded: 16:50

At time of set-up: were neos born in an 8 hour window? yes ✓ no Age range: ~7.5h

were neos less than 24 hours old? yes ✓ no

Blocking by known parentage: Please list which Brood Board replicate was used for test initiation.

Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
C-14	E-1	G-1	G-2	~~H-1~~	~~H-4~~	H-8	J-1	J-4	J-10
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
				H-1	H-4				
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.

If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 2,500, consult with a supervisor for a potential species substitution.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	pre-DO	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
21	NA	24.9	312.1	8.16	8.20	DL	80	58	0.01
22	9.3	24.9	183.0	8.22	8.24	DL	64	68	0.79
23	NA	24.8	78.5	8.26	7.95	DL	20	20	0.01
24	NA	24.7	868	8.24	8.41	DL	168	132	0.04
25	NA	24.7	519	8.38	8.39	DL	116	92	0
26	NA	24.7	1057	8.53	8.51	DL	304	268	0.29
27 TD	NA	24.6	495.0	8.45	8.33	DL	112	92	0
28	NA	24.6	438.3	8.36	8.40	DL	96	60	0
29	NA	24.6	111.5	8.07	7.90	DL	32	22	0
30 BB	NA	24.7	448.4	8.18	8.38	DL	84	58	0.01
31 LCC	NA	24.6	64.0	8.48	7.90	DL	24	10	0

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Updated 072815 by LD

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	5 — DRNP
Sample Date:	102115
Test Date:	102215

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	DO (mg/L)	ID	Final °C	pH	DO (mg/L)	ID
															102215 EG ~~8.17~~ 8.09						
21	1	+									+	NO	MS	NA	~~8.17~~	7.77	EG	24.4	8.01	8.03	MS
	2	+									+	NO	GM	NA	8.01	7.99	AA	24.4	7.81	7.36	AA
	3	+									+	NO	DL	NA	8.05	7.96	DL	24.8	7.16	8.04	DL
	4	5	6	5	5	5	5	6	5	5	5	No	DL	NA	8.12	8.17	DL	24.6	~~7.21~~ EG 102615	7.83	EG
	5	13	11	11	12	12	+	14	10	12	10	NO	MS	NA	8.7	8.25	GM	25.5	7.90	7.54	MS
	6	+	+	+	+	+	12	+	+	+	+	No	DL	NA	8.20	7.96	DL	25.1	7.87	8.16	DL
	7	16	+	14	17	15	17	16	15	16	17	No	DL								
	8																				
Total Young:		94																			

+ = 15 23 24

Notes:

Final
pay 4 pH = 7.92

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	DO (mg/L)	ID	Final °C	pH	DO (mg/L)	ID
22	1	+									+	NO	MS	10.52	8.16	7.65	EG	24.1	8.03	7.88	MS
	2	+									+	NO	GM	8.82	8.09	7.96	AA	24.2	7.89	7.61	AA
	3	+									+	No	DL	9.30	8.02	7.95	DL	24.7	7.15	8.01	DL
	4	4	+	5	+	+	4	+	+	+	4	No	DL	NA	8.09	8.16	DL	23.9	7.98	7.42	EG
	5	12	9	10	14	+	+	10	+		10	No	MS	~~8.76~~	8.12	8.24	GM	25.3	7.90	7.78	MS
	6	+	+	+	10	7	8	+	10		+	No	DL	8.86	8.21	7.99	DL	25.2	7.91	8.24	DL
	7	13	16	8	13	18	19	15	~~13~~ 14		15	No	DL								
	8																				
Total Young:																					

Notes:

A-looks like gravid
will pop any
moment

102915 PV

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Region:	5 – DRMP
Sample Date:	102115
Test Date:	102215

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
23	1	+									+	NO	MS	NA	7.87	7.82	EG	23.9	7.64	8.16	MS
	2	+									+	NO	GM	NA	7.78	8.15	AA	24.0	7.47	7.37	AA
	3	+									+	NO	DL	NA	7.88	8.06	DL	24.7	7.55	8.10	DL
	4	4	5	4	5	4	6	5	5	4	4	NO	DL	NA	7.72	8.10	DL	23.9	7.91	7.56	EG
	5	10	14	9	+	8	+	9	+	9	12	NO	MS	NA	7.84	8.20	GM	25.2	7.56	7.76	MS
	6	+	+	+	10	+	9	+	10	+	+	NO	DL	NA	7.81	8.08	DL	25.1	7.49	8.13	DL
	7	13	15	14	12	13	15	15	16	18	12	NO	DL								
	8																				
Total Young:																					

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
24	1	+									+	NO	MS	NA	8.33	7.66	EG	24.0	8.30	8.55	MS
	2	+									+	NO	GM	NA	7.89	8.24	AA	24.1	8.12	7.47	AA
	3	+									+	NO	DL	NA	8.09	8.01	DL	24.6	8.27	8.16	DL
	4	4	4	4	4	5	5	4	4	4	4	NO	DL	NA	8.37	8.22	DL	23.4	8.23	7.64	EG
	5	8	10	10	+		+	10	9	12	12	NO	MS	NA	8.40	8.17	GM	25.2	8.21	8.54	MS
	6	+	+	+	10	11	10	+	+	+	+	NO	DL	NA	8.27	8.10	DL	25.0	8.30	8.36	DL
	7	15	15	15	16	18	12	18	16	14	14	NO	DL								
	8																				
Total Young:																					

Notes:

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Sample Date:	102115
Test Date:	102215

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
25	1	+									+	NO	MS	NA	8.27	7.72		24.2	8.17	8.24	MS
	2	+									+	NO	GM	NA	8.21	7.96	AA	24.5	7.99	7.40	AA
	3	+									+	No	DL	NA	8.20	8.03	DL	24.6	8.03	8.09	DL
	4	3	4	3	4	4	5	4	5	5	5	No	DL	9.61	8.29	8.25	DL	24.0	8.08	7.78	EG
	5	10	12	10	+	12	+	12	12	12	10	NO	MS	NA	8.29	8.15	GM	25.5	8.07	7.72	MS
	6	+	+	+	10	+	11	+	+	+	+	No	DL	NA	8.28	8.04	DL	25.1	8.12	8.18	DL
	7	16	17	16	17	9	16	18	16	18	17	~~NO~~ NO	DL								
	8																				
Total Young:												102915									

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
26	1	+									+	NO	MS	NA	8.31			24.6	8.54	7.94	MS
	2	+								+	NR	NO	GM	NA	8.27	8.06	AA	24.6	8.37	7.60	AA
	3	NR	+							+		No	DL	NA	8.24	8.11	DL	24.6	8.50	7.98	DL
	4		6	5	5	4	4	6	5	4		No	DL	NA	8.27	8.20	DL	23.4	8.54	7.58	EG
	5		13	10	13	7	+	D	12	7		NO	MS	NA	8.39	8.19	GM	25.6	8.50	8.20	MS
	6		+	+	+	+	10		+	+		No	DL	NA	8.33	8.09	DL	25.2	8.53	8.27	DL
	7		17	9	15	13	11		14	12		No	DL								
	8																				
Total Young:																					

Notes:

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Region:	5 – DRMP
Sample Date:	102115
Test Date:	102215

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
27	1	†									†	NO	MS	NA	8.23	7.70	EG	24.2	8.07	8.06	MS
	2	†									†	NO	GM	NA	8.16	8.09	AA	23.7	8.00	7.83	AA
	3	†									†	NO	DL	NA	8.22	8.14	DL	24.6	8.05	8.14	DL
	4	4	4	6	5	5	5	5	6	5	5	NO	DL	NA	8.21	8.31	DL	23.2	8.07	7.55	EG
	5	12	10	13	†	7	†	11	12	13	12	NO	MS	NA	8.19	8.27	GM	25.3	8.07	8.33	MS
	6	†	†	†	10	†	12	†	†	†	†	NO	DL	NA	8.27	8.11	DL	25.0	8.03	8.24	DL
	7	15	18	16	5	17	17	18	15	19	17	NO	DL								
	8																				
Total Young:																					

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
28	1	†									†	NO	MS	NA	7.94	7.66	EG	24.5	8.16	7.94	MS
	2	†									†	NO	GM	NA	8.05	8.35	AA	23.7	7.84	7.78	AA
	3	†									†	NO	DL	NA	8.00	8.16	DL	24.5	8.20	8.24	DL
	4	5	5	5	5	4	5	6	5	5	5	NO	DL	NA	8.14	8.27	DL	23.0	8.08	7.69	EG
	5	†	†	9	†				†	7	†	NO	MS	NA	8.15	8.18	GM	25.1	7.87	8.46	MS
	6	10	8	†	9	10	8	9	10	†	10	NO	DL	NA	8.21	8.14	DL	25.0	7.88	8.39	DL
	7	10	8	D	10	11	9	13	8	†	12	NO	DL								
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	5 DRMP
Sample Date:	102115
Test Date:	102215

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
29	1	+									+	NO	MS	NA	7.97	7.68	EG	24.2	7.60	8.35	MS
	2	+									+	NO	GM	NA	7.91	8.18	AA	23.5	7.61	7.90	AA
	3	+									+	NO	DL	NA	7.95	8.09	DL	24.6	7.58	8.22	DL
	4	5	4	4	5	5	+	4	5	4	5	NO	DL	NA	7.79	8.16	DL	23.6	7.51	7.86	EG
	5	+	8	+			+	8	+		+	NO	MS	NA	8.11	8.30	GM	25.1	7.61	8.40	MS
	6	+	+	+	+	7	+	+	+	+	8	NO	DL	NA	7.88	8.10	DL	25.0	7.59	8.29	DL
	7	+	12	~~14~~	~~14~~	14	x	14	10	7	10	NO	DL								
	8																				
Total Young:																					

Notes: 102915 DL ○ SCORE?

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
30	1	+									+	NO	MS	NA	8.12	7.81	EG	24.6	8.09	8.07	MS
	2	+									+	NO	GM	NA	8.04	8.23	AA	24.0	7.79	7.71	AA
	3	+									+	NO	DL	NA	8.10	8.14	DL	24.3	8.00	8.27	DL
	4	4	4	5	+	+	5	4	4	4	3	NO	DL	NA	8.05	8.24	DL	23.4	7.84	7.69	EG
	5	11	14	12	8	9	9	11	11	13	12	NO	MS	NA	7.91	8.04	GM	25.3	7.84	8.36	MS
	6	+	+	+	+	+	+	+	+	+	+	NO	DL	NA	8.09	8.15	DL	25.0	7.88	8.27	DL
	7	2	8	14	15	16	15	11	13	16	14	NO	DL								
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	5 _DRMT
Sample Date:	102115
Test Date:	102215

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1											NO	MS	NA	7.81	7.80	EG	24.5	7.51	7.55	MS
	2											NO	GM	N/A	7.65	8.13	AA	23.9	7.50	7.79	AA
31	3											NO	DL	NA	7.86	8.02	DL	24.5	7.56	8.12	DL
	4	3	4	4	3	+	5	5	5	+	4	NO	DL	NA	7.72	8.25	DL	24.1	7.71	8.05	EG
(41)	5	10	D7	9	8	+	8	+	10	11	11	NO	MS	NA	7.66	8.23	GM	24.1	7.56	8.04	
	6	+		+	+	+	+	11	+	+	+	NO	DL	NA	7.85	8.07	DL	25.1	7.48	8.21	DL
	7	+		+	+	+	12	10	+	14	13	NO	DL								
	8																				
Total Young:																					

Notes: ○ is it ♂, diamond shaped, larger stride?

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1																				
	2																				
	3																				
	4																				
	5																				
	6																				
	7																				
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Termination Sheet

Region: 5 Sample Date: 102115 Test Date: 102215

Samples stored in chamber: 9 Test conducted in: CTR

Test taken down by: 1600

Test take down time: GM

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
21	24.5	314.2	7.74	7.82	AA
22	23.8	192.0	7.97	7.86	AA
23	23.9	70.1	7.99	7.46	AA
24	23.9	841	7.85	8.11	AA
25	23.9	458.2	7.98	8.02	AA
26	23.6	899	7.83	8.40	AA
27 TD	23.7	453.7	7.84	7.97	AA
28	23.9	417.4	8.08	7.91	AA
29	23.3	105.4	8.21	7.58	AA
30 BB	24.1	313.6	7.89	7.82	AA
31 CC	23.7	75.8	7.90	7.43	AA

DeltaRMP Fathead Minnow PRT follow up test

Fathead PRT

Field Date: 9/23/15
Test Set up: 10/01/15
Samples kept in chamber: 7
Experiment kept in chamber: CTR

Instructions: This is a 7 day chronic style test renewed daily. Initial and Final chemistry are taken daily. There are 20 replicates per treatment with 2 fish per replicate. Replicates hold 20 mL and renewals are static 100% renewals. Feed ~50 artemia per feeding.

ID	Treatment	Decoding or Instructions
71	ROEPAMH	
73	544SCA002	

important!

Please take
DO, pH, pre DO
for all initial chem
&
DO, temp, pH
for all final chem
(even though not on data sheet)

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Fathead Minnow PRT Test Data Sheet

Test Name: DFNLP PRT follow up
Sample Date: 092315
Test Date: 100115

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
71	A	2	2	2	2	2	2	2		1.00305	1.00643
	B	1A/1D	1	1	1	1	1	1		1.04319	1.04663
	C	2	2	2	2	2	2	2		0.99807	1.0088
	D	2	2	2	2	2	2	2		0.99123	0.99473
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2		1.04319	1.04663
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	1A/1D	1	1	1	1	1			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2		0.99807	1.0088
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2		0.99123	0.99473
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	~~2~~ 1A/1M*	1			
	S	2	2*	1A	1	1	1	1			
	T	2	2	2	2	2	2	2			
	ID	GM	GM	DL	CH	CH	CYT	GM		AA	

Initial	Pre-DO*		NA		NA			
	DO (mg/L)	8.30	8.18	8.03	8.23	7.93	8.06	
	ID	GM 100215 ~~DL~~ GM	GM	DL		CYT	GM	
Final	Temp	23.8	24.4	23.2	23.7	23.9	24.3	
	pH	8.07	8.06	7.98	7.90	7.87	7.92	
	DO (mg/L)	8.16	~~8.00~~ 7.97	8.17	7.90	7.88	7.83	
	ID	GM	GM	DL	CH	CH	CYT	
	pH initial	8.18	8.95	8.19	8.20	8.10	8.21	

Notes:
Day 0 = DO: 8.22 DL
#1 bent spine, probably will die

EC: 280.2 332.4p
25.5°C

*ACCIDENTALLY KILLED BY TECH

Fathead Minnow PRT Test Data Sheet

Test Name: PRT fdown up - DRMP
Sample Date: 092315
Test Date: 100115

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
	A	2	2	2	2	1A/1D*	1	1		0.98459	0.98698
	B	2	2	2	2	2	1A/1M	1		0.97826	0.98184
	C	2	1A/1D	1	1	0A/1D*	→	→		0.99495	0.99801
	D	2	2	2	2	2	2	2		1.02228	1.02517
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2		0.97826	0.98184
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	1A/1D*	1	1			
73	K	0A/2D	→	→	→	→	→	→		0.99495	0.99801
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2*	2	2	2	2	2	2			
	O	2	2	2	1	1	1	1			
	P	2	2	2	2	2	2	2		1.02228	1.02517
	Q	2A	0A/2D	→	→	→	→	→			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	1A/1D	1	1	1	1	1			
	ID	GM	GM	DC	GR	CM	GM	GM		AK	

Initial	Pre-DO*	~~9.86~~ 10.21	~~10.25~~ 10.20	10.14	11.75	11.65	14.19	
	DO (mg/L)	~~8.18~~ 8.18	8.65	8.09	8.26	8.01	8.16	
	ID	GM ~~DC~~	GM	DC		CM	GM	
Final	Temp	24.0	24.3	23.6	TE	24.5	24.7	
	pH	8.15	8.14	8.08	TE	7.92	8.05	
	DO (mg/L)	8.20	8.04	8.29	TE	7.65	7.68	
	ID	GM	GM	DC	GR	CM	GM	
	pH initial	GM 100215 8.18	7.8	8.25	8.14	8.16	8.26	

25-4°C
EC: 100115
1916.6

Notes:
Day 0 pre DO/DO: 9.86 & 8.18 DC
* May have injured one fish GM
A- one fish dying GM

A=alive M= Missing
D= Dead

DAY 5 * DEAD IN FUNGUS

Fathead Minnow Delta RMP Treatment List
Field Date: 102115
Test Set up: 102215
Samples kept in chamber: 9
Experiment kept in: CTR

Instructions: This is a 7-day chronic-style test with 10 animals per replicate and 4 replicates per treatment. Each replicate consists of 250ml of sample. Carefully renew 200ml per replicate daily with the squeegee tip method. Feed 3X times daily. Do not feed on the last day of the test. If ≥ 50% mortality occurs in one replicate, feed the replicate half the amount of food.

Contact Marie immediately when either endpoint in any sample has a 50% reduction from the control performance, or if you have high variability between the replicates (PRT trigger). This test must be setup with <48-hour old fish. Initial and final chemistry must be taken daily.

ID	Treatment	Decoding or Instructions
21	ROEPAMH (TAC Control)	Formerly DIEPAMH
22	510SACC3A	
23	544SAC002	
24	544LSAC13	Microcystis present
25	541SJC501	
26	510SOL010	
27	Field Duplicate "Field QC" written prior to Day 2 pour	
28	QC Sample for Fatheads "Bottle Blank"	
29	Low Conductivity Control	ROEPAMH diluted with Glass Distilled

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SWRCB - SWAMP FY 14/15 Fathead Test Initiation Sheet

Region: 5 Sample Date: 102115 Test Date: 102215

Samples stored in chamber: 9 Test conducted in: CTR

Before test initiation, what percentage of fish: are lying on the bottom 1 %
have bent spines 1 %
are active 98 %

Comments about irregular color, sizes or shapes: normal

Age at time of set-up: <48hr % of less desirable fish used in each beaker: 0

Test set-up by: GM Test set-up time: 14:00

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.
If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.
If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.
If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	pre-DO	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)	
21	—	24.9	292.8	8.08	8.18	GM	80	56	0	CTR
22	9.72	24.8	166.9	8.38	8.03	GM	64	68	0.79	
23	—	24.6	61.7	8.34	7.79	GM	20	20	0.01	
24	—	25.2	870	8.32	8.26	GM	168	132	0.04	
25	—	24.9	451.4	8.29	8.02	GM	116	92	0	SAMP
26	—	25.0	927	8.22	8.11	GM	304	268	0.29	
27 FD	—	24.9	281.3	8.23	8.23	GM	112	92	0	DUP
28 BB	—	25.0	456.7	8.22	8.07	GM	80	56	0	BLANK
29 LCC	—	24.8	79.0	8.33	7.86	GM	28	12	0	
21		22.9	294.5	8.16	7.85		N/A	N/A	N/A	
22		22.8	162.8	8.00	7.83					
23		22.9	63.6	8.20	7.50					
24		23.0	842	7.99	8.15					
25		23.0	454.8	8.08	8.05					
26		23.1	911	7.92	8.40					
27	FD	22.8	457.8	8.19	8.04					
28	BB	23.0	90.6	8.22	7.59					
29	LCC	23.2	~~8.15~~	8.15	7.81					

Initial Chem

AA 10/29
266.7

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Updated by LD 072815

SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: 5

Sample Date: 102115
Test Date: 102215

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
21	1	Live	9	9	9	9	9	9	9	
		Dead	1							
		Missing								
	2	Live	10A	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	8	8	8	8	8	
		Dead			2					
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	DV	DV	DV	DV	GM	
	Initial	Pre-DO*	NA	NA	MA	MA	MA			
		pH	8.19	8.08	8.12	7.87	~~7.99~~	8.30		
		DO (mg/L)	7.92	8.38	7.93	7.82	~~8.08~~	7.85		
		ID	EG	AA	DV	EG	GM	GR		
	Final	Temp °C	24.3	22.9	23.4	23.5	23.7	24.5		
		pH	7.93	~~7.88~~	7.90	8.06	7.99	8.10		
		DO (mg/L)	2	8.20	8.30	7.55	8.08	7.75		
		ID		AA	DV	EG	GM	GR		

Rep	Boat Weight	Total Weight
1	0.98793	0.99110
2	0.97735	0.98065
3	0.97428	0.97741
4	0.99846	1.00137

Notes:
A- two lethargic looking fish present

Day 5, I 102715 (DV)
pH: ~~8.21~~ 8.13
DO: 8.15
TO: (DV)

AA 1024 (7.95 pH)

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
22	1	Live	10	10	10	9	9	9	9	
		Dead				1				
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	8	8	8	8	
		Dead				2*				
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	DV	DV	DV	DV	GM	
	Initial	Pre-DO*	10.82	8.97	9.24	MA	9.02			
		pH	8.17	7.98	8.05	7.97	~~8.02~~	8.16		
		DO (mg/L)	7.92	8.15	8.03	7.96	~~8.17~~	7.95		
		ID	EG	AA	DV	EG	GM	GR		
	Final	Temp °C	24.2	22.8	23.4	23.5	23.7	24.8		
		pH	7.98	7.98	7.93	8.06	8.02	8.10		
		DO (mg/L)		8.25	8.21	8.23	8.17	7.99		
		ID		AA	DV	EG	GM	GR		

Rep	Boat Weight	Total Weight
1	0.97286	0.97565
2	0.97717	0.98026
3	0.98284	0.98620
4	0.99856	1.00121

Notes:
*fungus 102615 (DV)

Day 5 102715 (DV)
pH ~~8.07~~ 8.28
DO 8.21
TO (DV)

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: 5

Sample Date: 102115
Test Date: 102215

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
23	1	Live	10	10	1	1	1	1	1	
		Dead			9*					
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	9	0	—	—	—	
		Dead			1*	9*				
		Missing								
Murky Rating	4	Live	10	10	4	1	1	1	1	
		Dead			6*	3				
		Missing								
	≥50% Mortality?		No	No	Yes	Yes	Yes	Yes	Yes	
	ID		GM	GM	DV	DV	DV	DV	GM	

Rep	Boat Weight	Total Weight
1	0.97321	0.97382
2	0.99437	0.99735
3	0.97175	0.97183
4	0.98068	0.98154

Notes:

* all covered in fungus 102515 (DV)

			1	2	3	4	5	6	7
→	Initial	Pre-DO*	NA	NA	NA	9.61	NA		
		pH	7.83	7.75	7.80	7.83	8.09	7.88	
		DO (mg/L)	8.35	8.16	8.21	8.15	8.14	8.00	
		ID	EG	AA	DV	EG	DV	GR	
	Final	Temp °C	24.2	22.7	23.1	23.3	23.8	24.7	
		pH	7.67	7.59	7.50	7.80	7.69	7.75	
		DO (mg/L)		8.16	8.24	8.18	8.17	7.95	
		ID		AA	DV	EG	GM	GR	

DAY 3 60%S - 70.7% CV

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
24	1	Live	10	8	8	8	8	8	8	
		Dead		2						
		Missing								
	2	Live	10	10	10	9	9	9	9	
		Dead				1*				
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	9	9	9	
		Dead					1*			
		Missing								
	≥50% Mortality?		No	No	No	No	No	No	No	
	ID		GM	GM	DV	DV	DV	DV	GM	

Rep	Boat Weight	Total Weight
1	0.98150	0.99449
2	0.98306	0.99604
3	0.99791	1.00128
4	0.99019	0.99334

Notes:

* fungus 102615 (DV)

			1	2	3	4	5	6	7
	Initial	Pre-DO*	NA	NA	NA	NA	NA		
		pH	8.16	7.76	7.93	8.12	8.30	8.26	
		DO (mg/L)	8.31	8.24	8.17	7.90	8.17	7.96	
		ID	EG	AA	DV	EG	DV	GR	
	Final	Temp °C	24.2	22.7	23.2	23.6	23.8	24.9	
		pH	8.25	8.16	8.21	8.29	8.28	8.32	
		DO (mg/L)		8.09	8.20	7.93	8.15	7.65	
		ID		AA	DV	EG	GM	GR	

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region:	

Sample Date:	102115
Test Date:	102215

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
25	1	Live	10	10	9	7	7	7	7	
		Dead			1	2*				
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing				102615 (DV)				
	3	Live	10	9	4	2	1	0	—	
		Dead		1	5*	3*D		1		
		Missing								
Murky Rating	4	Live	10	9	7	3	2	1	1	
		Dead		1	2*	4*	1*	1		
		Missing								
	≥50% Mortality?		NO	NO	Yes	Yes	Yes	Yes	Yes	
	ID		GM	GM	DV	DV	DV	DV	GM	
	Initial	Pre-DO*	NA	NA	NA	NA	NA			
		pH	8.16	8.00	8.04	7.97	8.35	8.24		
		DO (mg/L)	7.99	8.21	8.18	8.93	8.22	8.16		
		ID	EG	AA	DV	EG	DV	GR		
	Final	Temp °C	24.0	22.7	23.2	23.4	23.8	24.2		
		pH	8.23	8.07	8.12	8.17	8.16	8.27		
		DO (mg/L)		8.17	8.22	8.05	8.30	7.70		
		ID		AA	DV	EG	GM	GR		

Rep	Boat Weight	Total Weight
1	0.99971	1.00243
2	0.99955	1.00254
3	0.99461	—
4	0.98663	0.98728

Notes:

* fungus 102515 (RV)

*D : are no fungus, just dead 102615 (DV)

2+8+7
1+2+2 5

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
26	1	Live	10	9	9	9	9	9	9	
		Dead								
		Missing		1						
	2	Live	10	10	6	6	6	6	6	
		Dead			4*					
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	DV	DV	DV	DV	GM	
	Initial	Pre-DO*	NA	NA	NA	NA	NA			
		pH	8.24	8.11	8.17	8.15	8.39	8.30		
		DO (mg/L)	7.92	8.32	7.98	8.13	8.18	8.96		
		ID	EG	AA	DV	EG	DV	GR		
	Final	Temp °C	23.9	22.7	23.2	23.4	23.6	24.8		
		pH	8.50	8.40	8.48	8.17	8.48	8.52		
		DO (mg/L)		7.92	8.27	8.05	7.99	7.45		
		ID		AA	DV	EG	GM	GR		

Rep	Boat Weight	Total Weight
1	0.99044	0.99369
2	0.97951	0.98223
3	0.99818	1.00144
4	0.98494	0.99859

Notes:

* fungus 102515 (RV)

Day 4 final
Temp 23.8
pH 8.59
DO 7.85

102615

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 102115
Test Date: 102215

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
27	1	Live	10	11	11	11	11	11	11	
		Dead								
		Missing								
	2	Live	10	10	9	9	9	9	9	
		Dead			1					
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	DL	DL	DL	DL	GM	
	Initial	Pre-DO*	NA	NA	NA	NA	NA			
		pH	8.03	7.92	7.90	8.15	8.36	8.24		
		DO (mg/L)	8.83	8.16	8.04	8.10	8.24	8.01		
		ID	EG	AA	DL	EG	DL	GR		
	Final	Temp °C	24.0	22.7	23.1	23.7	23.7	24.5		
		pH	8.02	8.03	8.01	8.19	8.17	8.22		
		DO (mg/L)		8.14	8.31	7.89	8.09	7.80		
		ID		AA	DL	EG	GM	GR		

Rep	Boat Weight	Total Weight
1	0.98193	0.98537
2	0.98408	0.98747
3	0.98106	0.98420
4	0.97332	0.97630

Notes:

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
28	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	6	5	5	
		Dead					4*	1*		
		Missing								
	3	Live	11	11	11	11	11	11	11	
		Dead								
		Missing								
Murky Rating	4	Live	11	11	10	1	0	—	—	
		Dead		1	1*	1*	1			
		Missing								
	≥50% Mortality?		NO	NO	NO	Yes	Yes	Yes	Yes	
	ID		GM	GM	DL	DL	DL	DL	GM	
	Initial	Pre-DO*	NA	NA	NA	NA	NA			
		pH	8.21	8.03	8.11	8.13	8.38	8.25		
		DO (mg/L)	8.03	8.45	8.06	8.06	8.14	8.15		
		ID	EG	AA	DL	EG	DL	GR		
	Final	Temp °C	24.2	22.8	23.3	23.4	23.6	24.5		
		pH	8.09	8.02	8.15	7.96	8.02	8.08		
		DO (mg/L)		8.29	8.28	7.56	8.33	7.84		
		ID		AA	DL	EG	GM	GR		

Rep	Boat Weight	Total Weight
1	0.97088	0.97424
2	0.98789	—
3	0.98261	0.98613
4	0.97282	—

Notes:
Did not save rep B for biomass. instead, sent five remaining living fish to Daily for pathology
*fungus (DL) 102515

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DPMP

Sample Date: 102115
Test Date: 102215

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
29	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	9	9	9	9	9	
		Dead			1					
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	No	No	No	NO	NO	
	ID		GM	GM	DL	DL	DL	DL	GM	

		Day 1	2	3	4	5	6
Initial	Pre-DO*	NA	NA	NA	NA	NA	
	pH	8.35	7.67	7.93	7.91	8.01	8.19
	DO (mg/L)	7.99	8.21	7.97	8.02	8.09	8.16
	ID	EG	AA	DL	EG	DL	GR
Final	Temp °C	24.4	22.6	23.0	23.3	23.6	24.5
	pH	7.55	7.59	7.60	7.52	8.07	7.62
	DO (mg/L)		8.28	8.36	8.35	8.20	7.89
	ID		AA	DL	EG	GM	GR

Rep	Boat Weight	Total Weight
1	0.97429	0.97928
2	0.98537	0.98903
3	0.96681	0.96944
4	0.98253	0.98548

Notes:

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
	1	Live								
		Dead								
		Missing								
	2	Live								
		Dead								
		Missing								
	3	Live								
		Dead								
		Missing								
Murky Rating	4	Live								
		Dead								
		Missing								
	≥50% Mortality?									
	ID									

		Day 1	2	3	4	5	6
Initial	Pre-DO*						
	pH						
	DO (mg/L)						
	ID						
Final	Temp °C						
	pH						
	DO (mg/L)						
	ID						

Rep	Boat Weight	Total Weight
1		
2		
3		
4		

Notes:

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SWRCB - SWAMP Fathead Test Termination Sheet

Region: 5 Sample Date: 102115 Test Date: 102215

Samples stored in: 9 Test conducted in: GTR

Test taken down by: Guy

Test take down time: 1700

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
	See Initiation Sheet				

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Updated by LD 072815

Fathead Minnow Delta RMP PRT Follow-up Treatment List
Field Date: 10/21/15
Test Set up: 10/29/15
Samples kept in chamber: 10
Experiment kept in: CTR

Instructions: This is a 7-day chronic-style test with 2 animals per replicate and 20 replicates per treatment. Each replicate consists of 20 mL of sample. Carefully transfer fish to new 20 mL replicate daily. Feed 3X times daily. Do not feed on the last day of the test. This test must be setup with <48-hour old fish. Initial and final chemistry must be taken daily.

Contact Marie **immediately** when:

- either endpoint in any sample has a 50% reduction from the control performance (TIE trigger, applies to biomass and reproduction), or
- if you have high variability between the replicates (PRT trigger, use Excel calculator).

ID	Treatment	Decoding or Instructions
21	ROEPAMH (TAC Control)	
22	544SAC002	
23	541SJC501	
24	Blank	

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Fathead Minnow PRT Test Data Sheet

Test Name: PRT - Delta RMP Region 5
Sample Date: 10.29.15
Test Date: 10.29.15

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
	A	2	2	2	2	2	2	2	A	0.91437	0.91802
	B	2	2	2	2	2	2	2	B	0.92806	0.93210
	C	2	2	2	2	2	2	2	C	0.90057	0.90420
	D	2	3*	2/2	2	2	2	2	D	0.90650	0.90993
	E	2	2	2	2	2	2	1			
	F	2	2	2	2	2	2	2			
	G	2	2	2	2	2	2	2	GA	0.98943	0.98963
21	H	2	2	2	2	2	2	2	GB	0.91091	0.91089
	I	2	2	2	2	2	2	2	GC	0.89396	0.89395
	J	2	2	2	2	2	2	2	GD	0.91043	0.91047
ROFPAM+1	K	2	2	2	2	2	2	2			
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	1 (A)	1	~~2~~ 1 (A)	1			
	P	2	2	2	2	2	2	2			
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	GM	GM	MS	DL	DL	DL	GM			

Initial	Pre-DO*			NA				
	DO (mg/L)	~~8.03~~ 8.10	8.03	8.02	7.58	7.96	7.95	
	ID	GM	AA	MS	CYT	DL	DL	
Final	Temp	24.0	25.8	25.2	23.8	23.7	23.7	
	pH	8.15	7.56	7.89	7.92	7.81	7.86	
	DO (mg/L)	7.71	7.89	7.40	7.58	6.86	8.06	
	ID	GM	AA	MS	CYT	MS	DL	

Final T 25.1
pH 8.04
DO 7.80
EC 330.4

Notes:

Day 0 initial DO = 8.08

*likely the one missing in 28T. put one fish into 28T

(A) one missing ~~[illegible]~~ 110115 (M)

Fathead Minnow PRT Test Data Sheet

Test Name: PRT - Delta RMP, Region 5
Sample Date: 102115
Test Date: 102915

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
23 544 SAC002	A	2	2	2	2	2	2	2	A	0.91044	0.91370
	B	2	2	2	2	2	2	1A/1D	B	0.89926	0.89260
	C	2	2	2	2	2	2	2	C	0.90842	0.91219
	D	2	2	2	2	2	2	2	D	0.91631	0.91976
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2			
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	1 (A)	1	1			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2			
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2			
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	GM	GM	MS	DL	DL	DL	GM			

Initial	Pre-DO*	9.61			8.81			
	DO (mg/L)	~~8.29~~ 10.00 (8.29)	8.11	8.36	7.80	8.03	7.98	
	ID	GM	AA	MS	CYT	DL	DL	
Final	Temp	24.2	23.5	25.2	23.9	23.5	23.4	
	pH	7.87	7.90	7.71	7.68	7.34	7.55	
	DO (mg/L)	7.71	7.82	7.74	7.76	6.82	7.94	
	ID	GM	AA	MS	CYT	MS	DL	

Notes:
Day 0 initial DO = 8.29
pre DO = 9.61
(A) missing one α
110315 (DL)

Final T 24.5
pH 7.03
DO 7.75
EC 73.1

Fathead Minnow PRT Test Data Sheet

Test Name: PRT- Delta RMP Region 5
Sample Date: 102115
Test Date: 102915

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
25 541SJC501	A	2	2	2	2	2	2	2	A	0.90585	0.9101
	B	2	2	2	2	2	2	2	B	0.92451	0.92859
	C	2	2	2	2	2	2	2	C	0.93221	0.93632
	D	2	2	2	2	2	2	2	D	0.93126	0.93521
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2			
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2			
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2			
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	GM	GM	MS	DC	DC	DC	GM			

Initial	Pre-DO*	11.61	8.44			9.31	8.87	
	DO (mg/L)	~~8.15~~ 8.01	8.48	8.51	7.81	7.92	8.04	
	ID	GM	AA	MS	CH	DC	DC	
Final	Temp	23.5	23.9	25.4	~~23.4~~ 24.7	23.4	23.2	
	pH	8.21	8.05	8.03	~~7.93~~ 8.12	7.92	8.04	
	DO (mg/L)	7.69	7.86	7.73	~~7.37~~ 7.50	7.40	8.03	
	ID	GM	AA	MS	CH	MS	DC	

Notes:
Day 0 initial DO = 8.15

110115 CT

Final T 24.3
pH 8.11
DO 7.83
EC 4904

Fathead Minnow PRT Test Data Sheet

Test Name: PRT - Delta RMP, Region 5
Sample Date: 102115
Test Date: 102915

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
	A	2	2	2	2	2	2	~~10~~ 2	A	0.92024	0.92432
	B	2	2	2	2	2	2	~~10~~ 2	B	0.90005	0.90430
	C	2	2	2	2	2	2	~~10~~ 2	C	0.92480	0.92845
	D	2	2	2	2	2	2	~~10~~ 2	D	0.90478	0.90862
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2			
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
28	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
Bottle Blank QC	K	2	2	2	2	2	1/2 (B)	1			
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2			
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	1 of 2*	2	2	2	2	2	2			
	ID	GM	GM	MS	DL	DL	DL	GM			

Initial	Pre-DO*							
	DO (mg/L)	~~8.20~~ 4.3	8.04	8.39	7.85	7.88	8.02	
	ID	GM	AA	MS	CYT	DL	DL	
Final	Temp	23.7	23.6	25.3	23.4	23.5	23.2	
	pH	8.00	7.97	7.93	7.93	7.68	7.85	
	DO (mg/L)	7.85	7.84	7.31	7.31	7.66	8.11	
	ID	GM	AA	MS	CYT	MS	DL	

Notes:

Day 0 initial DO = 8.20

(B) one dead 110415 (DL)

* Day 1 - Rep T - ~~TE~~ Lost 1 fish

Final T 24.1
pH 7.99
DO 7.93
EC 302.5

Delta RMP Selenastrum Capricornutum

Field Date: 102115
Test Set up: 102215
Samples kept in chamber: 9
Experiment kept in chamber: 5

Instructions: This is a 96-hour chronic algae test. Take initial chemistry at test set up and final chemistry at test termination. Randomize flasks twice daily. Flasks must be inoculated individually. This test has 5 replicates per treatment, one of which is a chemistry-only replicate. Please take daily pH and temperature measurements at the AM randomization. Contact Marie immediately when the average growth from any sample has a 50% reduction from the control performance. Start spiking algae cells at 94 hours of testing whenever possible.

ID	Treatment	Notes
21	Glass Distilled Water	
22	510SACC3A	Foaming or Mycrocystis Present?
23	544SAC002	Foaming or Mycrocystis Present? A little tiny bit
24	544LSAC13	Foaming or Mycrocystis Present?
25	541SJC501	Foaming or Mycrocystis Present?
26	510SOL010	Foaming or Mycrocystis Present?
27	Field Duplicate	Foaming or Mycrocystis Present?
28	QC Sample for Algae	

looks like Soap bubbles not foam

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SWRCB - SWAMP FY 14/15 Algae Test Initiation Sheet

Region: 5 Sample Date: 102115 Test Date: 102215

Samples stored in chamber: 9 Test conducted in: Chamber 5

Culture water type: glass distilled Initial flask cell count: 6.52×10^6

Letter and date of culture: K (10/16) Initial innoculum volume: 1.09×10^6 – 1 mL into 100 mL

Tech who made culture: GM Test set-up by: MS + GR

Test set-up time: 16:15

The nutrients were added to: individual flasks entire treatment multiple treatments ✓

Were algae cells added to individual flasks? yes ✓ no Light intensity range: 404 – 442

Special Instructions:

If the Sample Receiving SC or Field SC is ≥ 1,500, then a high conductivity control must be included in the test.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation									Daily Measurements					
Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	Hard (mg/L)	Alk (mg/L)	Amm (mg/L)	ID	pH	°C	pH	°C	pH	°C
21	24.0	106.1	8.32	7.60	0	4	0		7.76	25.6	7.63	25.1	7.63	25.0
22	24.2	246.3	8.55	8.02	64	68	0.79		8.16	25.1	8.14	24.5	8.11	24.8
23	24.3	143.9	8.42	7.81	20	20	0.01		7.94	25.6	7.91	24.8	7.90	24.9
24	24.2	923	8.47	8.10	168	132	0.04		8.43	25.8	8.34	24.3	8.40	24.8
25	24.3	526	8.56	8.00	116	92	0		8.36	25.4	8.24	24.9	8.34	24.7
26	24.4	983	8.40	8.26	304	268	0.29		8.71	25.0	8.60	25.1	8.68	24.6
27	24.5	527	8.52	8.01	112	92	0		8.38	25.7	8.24	25.0	8.42	24.6
28	24.4	98	8.37	7.72	0	4	0		7.77	25.6	7.52	24.8	7.60	24.5
									ID	MS	ID	GM	ID	

Algae Randomization Record				
Date	AM Time	ID	PM Time	ID
102215			1700	GR
102315	916	MS	1650	GR
102415	844	GM	1622	GM
102515	710	DL	1618	DL
102615	920	MS		

Algae 27C
↳ Dropped & broke flask
102515 (DL)
28B dropped & broke 10/26

Revised by LD 072815

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Algae Innoculum Worksheet

Test: DeltaPMP October (no EDTA) Field Date: 102115

Setup Date: 102215

Algal Culture ID letter K Algal Culture made by gm

Date made 101615 Days cultured 6

Background Counts	34	69	49
Raw Algal Counts	81643	80671	82145

Mean of raw counts 81486.$\overline{3}$

Mean of raw counts x 80 6.52×10^6

1×10^6 / (mean of raw counts x 80) x 200 = amount of algal culture needed 30.67

200 – amount of algal culture needed = amount of SSEPAMH needed 169.33

Mix the above amounts of algae and SSEPAMH to make the innoculum for the test.

Once dilution is made, count the cell number for the dilution to make sure that it is approximately 1×10^6 cells/ml.

Dilution Counts	13748	13422	13526

Mean of dilution counts 13565.$\overline{3}$

Mean of dilution counts x 80 1.09×10^6 (acceptable range is: $0.9 \times 10^6 - 1.1 \times 10^6$)

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Algae Takedown

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Test: Delta RNP (no EDTA) Test Date: 102215

Treatment: 21

Replicate 1	19545	19086	19219
Replicate 2	18095	17695	17795
Replicate 3	17470	17632	17372
Replicate 4	18498	17110	17273

Treatment: 22

Replicate 1	32016	31713	31871
Replicate 2	32461	31250	31873
* Replicate 3	39864 / 40230	39312	39459
Replicate 4	34458	34680	34321

Treatment: 23

Replicate 1	27021	27141	26836
Replicate 2	30926	30802	3031029
Replicate 3	35292	35271	35202
* Replicate 4	40494 / 40959	40002	40682

Treatment: 24

Replicate 1	24372	24843	24776
Replicate 2	19453	19640	19725
Replicate 3	22258	22321	22550
Replicate 4	17948	18204	18111

Treatment: 25

Replicate 1	39240	37623	37699
Replicate 2	33669	33476	33586
Replicate 3	41684	42256	41791
Replicate 4	30855	31115	30617

Treatment: 26

Replicate 1	38467	38922	39207
Replicate 2	48395	48192	48340
* Replicate 3	33630 / 36098	33291 / 36294	33724 / 37546
Replicate 4	42403 / ~~36098~~ MS 102615	42552	42471

Treatment: 27

Replicate 1	35160	35193	35485
Replicate 2	33944	33926	34141
Replicate 3	Rep dropped and broken		
Replicate 4	30888	30303	30362

Treatment: 28

Replicate 1	13381	13245	13257
Replicate 2	Replicate dropped and broken		
* Replicate 3	18388 / 19689	18329	18344
Replicate 4	13152	13164	13130

Background counts: 16, 35, 19

SWRCB - SWAMP FY 14/15 Algae Test Termination Sheet

Region: 5 Sample Date: 102115 Test Date: 102215

Samples stored in chamber: 9 Test conducted in: chamber 5

Test taken down by: MS

Test take down time: 14:40 - 16:50 (start spiking algae cells at 94 hours)

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
21	24.2	115.5	8.02	7.85	MS
22	24.7	232.8	8.56	8.15	MS
23	24.5	153.8	8.11	7.97	MS
24	24.7	887	8.23	8.42	MS
25	24.7	544	8.28	8.55	MS
26	24.8	921	8.91	9.25	MS
27	24.5	554	8.24	8.59	MS
28	24.5	120.8	8.18	7.84	MS

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Revised by LD 072815

November 2015

Delta RMP Ceriodaphnia Dubia – First Flush

Field Date: 111015
Test Set up: 111115
Samples kept in chamber: 12
Experiment kept in chamber: CYR

Instructions: This is a 3-Brood test with 1 animal per replicate and 10 replicates with 15 ml per vial treatment. This test must be set up using blocking by known parentage. Feed and change daily. Take initial chemistry and final chemistry daily. Contact Marie **immediately** when either endpoint in any sample has a 50% reduction from the control performance. Please alert Marie or Linda ASAP when test does not meet test acceptability criteria. Take down the test after the vast majority of organisms have had their 3rd brood.

ID	Treatment	Decoding or Instructions
31	L16-50 (TAC Control)	
32	510SACC3A	
33	544SAC002	
34	544LSAC13	
35	541SJC501	
36	510SOL010	
37	SSEPAMH	
38	Low Cond Control @ 60.5 µS/cm	L16-50 diluted with Glass Distilled

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Initiation Sheet

Region: DRMP first flush Sample Date: 111015 Test Date: 111115

Samples stored in chamber: 12 Test conducted in: CTR

If neos isolated from Brood Board: Only use neos from gravids producing over 8 neos on day of set-up.

Brood Board # 83 Date/Time neos isolated: 111015 11:50

Date/Time gravids isolated: 111015 16:06 Neos isolated by: GM

Gravids isolated by: MS Test set-up by: MS

Health of gravids: good Time neos loaded: 12:06

At time of set-up: were neos born in an 8 hour window? yes✓ no Age range: ~20h.

were neos less than 24 hours old? yes✓ no

Blocking by known parentage: Please list which Brood Board replicate was used for test initiation.

Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
B-8	B-10	C-1	C-8	C-9	C-10	~~E-D2~~	E-67	E-6	E 9
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.

If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 2,500, consult with a supervisor for a potential species substitution.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample ID	Receiving SC	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
31		24.1	300.2	8.09	8.16	MS	108	58	0
32		24.6	191.2	8.14	8.05	MS	60	68	1.46
33		24.8	64.4	8.15	7.85	MS	22	20	0
34		24.7	371.2	8.16	8.16	MS	92	70	0.01
35		24.7	248.9	8.10	8.17	MS	60	58	0
36		24.8	1031	8.12	8.49	MS	296	250	0.05
37		24.6	299.5	8.51	8.20	MS	96	86	0
38		24.4	62.7	8.17	7.81	MS	24	12	0

Note: Pre-DO is 8.90 on Treatment # 32

SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DRMP
Sample Date:	1/10/15
Test Date:	1/11/15

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
31	1													NA	8.10	8.13	MH	24.3	7.92	7.72	MH
	2	+	+	+	+	+	+	+	+	+	+	NO	GM	NA	8.16	7.98	MS	24.5	7.97	7.63	MS
	3	4	4	+	3	5	5	+	3	5	+	NO	GM	NA	8.07	8.18	MH	25.0	7.92	7.71	MH
	4	+	+	5	+	+	+	5	+	+	6	NO	DL	NA	8.09	8.10	DL	24.2	7.95	7.80	DL
	5	12	13	12	11	12	8	13	11	9	13	NO	MS	NA	8.25	8.13	GR	24.0	8.07	7.87	MS
	6	16	17	16	17	15	15	16	16	15	16	NO	GR	NA	8.15	8.03	LD	25.0	8.01	7.85	LD
	7	+	+	+	+	+	+	+	+	+	+	NO	LD								
	8																				
Total Young:		32	34	33	31	32	28	34	30	29	35										

Notes: 4TH BROOD WAS NOT COUNTED IN THIS TEST, RECOMMENDING PROTOCOL CHANGE

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
32	1													9.23	8.19	8.08	MH	23.9	7.98	7.72	MH
	2	+	+	+	+	+	+	+	+	+	+	NO	GM	NA	8.13	8.15	MS	24.5	7.93	7.57	MS
	3	2	2	+	+	3	2	+	+	5	+	NO	GM	NA	8.16	8.03	MH	24.9	7.97	7.60	MH
	4	+	+	3	+	+	+	4	+	+	5	NO	DL	9.41	8.15	8.08	DL	24.3	7.93	7.84	DL
	5	11	14	13	12	12	10	13	10	11	14	NO	MS	NA	8.15	8.28	GR	23.6	7.99	7.89	MS
	6	16	18	18	17	18	17	20	15	15	15	NO	GR	NA	8.12	8.05	LD	24.3	7.91	7.83	LD
	7	+	+	+	+	+	+	+	+	+	+	NO	LD								
	8																				
Total Young:		29	24	24		33	29	37		31	34										

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DRMP
Sample Date:	11/10/15
Test Date:	11/11/15

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
33	1													NA	7.69	8.12	MH	23.9	7.73	7.80	MH
	2	+									+	NO	GM	NA	7.80	8.30	MS	24.4	7.51	7.44	MS
	3	3	3	+	3	6	2	+	4	6	+	NO	GM	NA	7.77	8.11	MH	24.8	7.42	7.45	MH
	4	+	+	4	+		+	4	+	+	~~45~~	NO	DL	NA	8.04	8.13	DL	24.3	7.36	7.88	DL
	5	11	11	12	9	12	13	11	10	11	12	NO	MS	NA	7.88	8.47	GR	23.6	7.67	8.05	MS
	6	16	16	13	17	19	17	15	11	14	13	NO	GR	NA	7.90	8.12	LD	24.0	7.60	7.85	LD
	7	+	+	+	+	+	+	+	+	+	+	NO	LD								
	8																				
Total Young:		30	30	29	29	37	32	30	25	31	30										

Notes:

MH 11/12/15 7.77

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
34	1													NA	8.19	8.10	MH	23.7	7.98	~~7.80~~	MH
	2	+									+	NO	GM	NA	8.12	8.21	MS	24.4	7.97	7.82	MS
	3	+	4	+	+	+	5	+	5	+	+	NO	GM	NA	8.14	8.13	MH	24.8	7.93	7.71	MH
	4	+	+	8	+		+	7	+	+	8	NO	DL	NA	8.19	8.07	DL	24.3	7.86	7.90	DL
	5	10	13	14	13	10	13	12	12	12	13	NO	MS	NA	8.19	8.21	GR	23.5	7.93	7.97	MS
	6	16	16	17	16	16	17	16	17	15	17	NO	GR	NA	8.21	8.05	LD	24.2	7.80	7.80	LD
	7	+	+	+	+	+	+	+	+	+	+	NO	LD								
	8																				
Total Young:			33	39			35	35	34		38										

Notes:

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Revised by LD on 072815

SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DFMP
Sample Date:	11/10/15
Test Date:	11/11/15

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
35	1													NA	8.09	8.06	MH	23.8	7.91	7.64	MH
	2	←						→	D	←	→	NO	GM	11.08	8.12	8.32	MS	24.6	7.86	7.48	MS
	3	+	+	+	+	2	1*	+		3	+	NO	GM	NA	8.00	8.36	MH	24.7	7.80	7.64	MH
	4	+	+	6	+		+	7		~~+7~~	7	NO	DL	NA	8.12	8.15	DL	24.4	7.81	7.96	DL
	5	13	11	12	13	12	13	14		14	13	NO	MS	NA	8.25	8.22	GR	23.6	7.94	8.02	MS
	6	17	18	15	19	18	16	19		17	18	NO	GR	NA	8.04	8.10	LD	24.7	7.78	7.56	LD
	7	23	22	+	+	+	+	+		+	+	NO	LD								
	8								↓												
Total Young:				33		32	30	40		34	38										

Notes: + small

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
36	1													NA	8.62	8.09	MH	23.9	8.53	7.85	MH
	2	←									→	NO	GM	NA	8.35	8.27	MS	24.5	8.53	7.60	MS
	3	5	6	+	+	3	3	+	+	+	+	NO	GM	NA	8.26	8.20	MH	24.7	8.43	7.72	MH
	4	+	+	5	+		+	6	+	+	5	NO	DL	NA	8.33	8.16	DL	24.2	8.50	7.83	DL
	5	11	14	15	13	13	13	14	12	14	14	NO	MS	9.85	8.29	8.31	GR	24.2	8.54	7.88	MS
	6	16	17	18	14	16	15	16	3	16	15	NO	GR	9.72	8.22	8.06	LD	24.5	8.43	7.80	LD
	7	+	+	+	22	+	+	+	+	19	+										
	8																				
Total Young:		32	37	38		32	31	36			34										

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DPMP
Sample Date:	111015
Test Date:	111115

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
37	1													NA	8.22	8.12	MH	23.9	8.05	7.91	MH
	2	↓									↓	NO	GM	NA	8.17	8.26	MS	24.4	8.02	7.83	MS
	3	+	+	+	3	5	5	+	4	+	+	NO	GM	NA	8.16	8.10	MH	24.7	7.96	7.83	MH
	4	4	5	3	+	+	+	3	+	4	4	NO	DL	NA		8.09	DL	24.1	7.98	7.88	DL
	5	11	8	8	7	9	8	8	9	9	4	NO	MS	NA	8.23	8.28	GR	24.0	8.09	8.00	MS
	6	10	12	12	10	10	12	12	11	12	11	NO	GR	NA	8.06	8.07	LD	24.1	7.93	7.56	LD
	7	+	+	+	+	+	+	+	+	+	+	NO	LD								
	8																				
Total Young:		25	25	23	20	24	25	23	24	25	19										

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
38	1													NA	7.54	8.15	MH	23.7	7.50	7.89	MH
	2	↓									↓	NO	GM	NA	7.73	8.30	MS	24.4	7.46	7.74	MS
	3	4	4	+	6	6	3 (3)	+	3	5	+	NO	GM	NA	7.56	8.11	MH	24.8	7.46	7.72	MH
	4	+	+	5	+		+	5	+	+	6	NO	DL	NA		8.14	DL	24.2	7.48	7.80	DL
	5	11	9	9	11	9	9	7	8	8	10	NO	MS	NA	7.95	8.25	GR	24.2	7.59	7.97	MS
	6	12	10	12	14	11	12	13	11	13	12	NO	GR	NA	8.14	8.20	LD	24.2	7.54	7.68	LD
	7	+	+	+	+	+	+	+	+	+	+	NO	LD								
	8																				
Total Young:		27	23	26	31	26	24	25	22	26	28										

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Termination Sheet

Region: DELTA RMP Sample Date: 111015 Test Date: 111115

Samples stored in chamber: 12 Test conducted in: CTR

Test taken down by: LD

Test take down time: 11:50

Final Water Chemistry at Test Termination

Sample ID	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
31	23.9	371.5	7.82	7.93	LD
32	23.5	222.0	8.05	7.88	LD
33	23.2	92.2	7.99	7.64	LD
34	23.4	373.8	8.06	7.72	LD
35	23.6	264.0	8.16	7.76	LD
36	23.5	972	8.05	8.42	LD
37	23.5	282.3	8.11	8.00	LD
38	23.5	115.0	8.24	7.52	LD

Fathead Minnow Delta RMP Treatment List
Field Date: 111015
Test Set up: 111115
Samples kept in chamber: 12
Experiment kept in: CTR

Instructions: This is a 7-day chronic-style test with 10 animals per replicate and 4 replicates per treatment. Each replicate consists of 250ml of sample. Carefully renew 200ml per replicate daily with the squeegee tip method. Feed 3X times daily. Do not feed on the last day of the test. If ≥ 50% mortality occurs in one replicate, feed the replicate half the amount of food. This test must be setup with <48-hour old fish. Initial and final chemistry must be taken daily.

Contact Marie **immediately** when:

- either endpoint in any sample has a 50% reduction from the control performance (TIE trigger, applies to biomass and reproduction), or
- if you have high variability between the replicates (PRT trigger, use Excel calculator).

ID	Treatment	Decoding or Instructions
31	ROEPAMH (TAC Control)	
32	510SACC3A	
33	Place Holder for 544SAC002	For Treatment numbering only
34	544LSAC13	
35	541SJC501	
36	510SOL010	

ID	Treatment	
31 PRT	ROEPAMH (TAC Control)	This test will be set up PRT Style (20 replicates with 2 fish each). Feeding will be about 25 artemia per cup twice a day.
32 PRT	Low Conductivity Control?	
33 PRT	544SAC002	

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SWRCB - SWAMP FY 14/15 Fathead Test Initiation Sheet

Region: DRMP firstflush Sample Date: 111015 Test Date: 111115

Samples stored in chamber: 12 Test conducted in: CTR

Before test initiation, what percentage of fish: are lying on the bottom Ø %
have bent spines Ø %
are active 100 %

Comments about irregular color, sizes or shapes: look good

Age at time of set-up: <48h % of less desirable fish used in each beaker: Ø

Test set-up by: LD Test set-up time: 12:35 PRT set up by AA @ 12:50

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.
If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.
If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.
If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample ID	Receiving SC	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
31		23.7	279.5	8.26	8.17	MS	100	60	0
32		24.0	193.0	8.41	8.10	MS	60	68	1.46
34		24.0	369.7	8.42	8.10	MS	92	70	0.01
35		24.0	249.6	8.46	8.00	MS	60	58	0
36		23.8	990	8.38	8.31	MS	296	250	0.05
31PRT		23.7	295.5	8.45	8.18	MS	100	60	0
32 PRT?		23.7	81.2	8.40	7.81	MS	24	16	0
33 PRT		23.8	59.4	8.58	7.71	MS	22	20	0

Note: Pre-DO is 9.32 mg/L in Treatment # 36
9.17 PRT 33

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Updated by LD 110415

SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 111015

Test Date: 111115

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
31	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	GM	AA	GR	GM	CM	

Rep	Boat Weight	Total Weight
1	0.92136	0.92535
2	0.89117	0.89437
3	0.91240	0.91637
4	0.89195	0.89540

Notes:

		1	2	3	4	5	6
Initial	Pre-DO*	NA	NA	NA	NA	NA	NA
	pH	8.16	~~8.04~~	8.01	8.20	8.18	8.05
	DO (mg/L)	8.37	~~8.23~~	~~8.25~~	8.14	8.19	8.01
	ID	MH	GM	MH	DL	GR	D
Final	Temp °C	22.2		22.9	23.9	22.1	22.7
	pH	8.03	8.04	7.92	7.95	7.95	7.90
	DO (mg/L)	8.35	8.23	8.25	8.10	8.16	8.06
	ID	CC	GM	MH	DL	MS	D

day 2 initial
pH: 8.19
DO: 8.29

day 3 initial
pH 8.10
DO. 8.15

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
32	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	9	9	9	
		Dead					1			
		Missing								
Murky Rating	4	Live	10	10	10	10	9	8	8	
		Dead					1	1		
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	GM	AA	GR	GM	CM	

Rep	Boat Weight	Total Weight
1	0.89845	0.90158
2	0.93100	0.93453
3	0.92219	0.92479
4	0.90342	0.90677

Notes:

		1	2	3	4	5	6
Initial	Pre-DO*	NA	NA	NA	9.27	NA	
	pH	8.17	~~8.00~~	~~8~~	8.17	7.92	7.91
	DO (mg/L)	8.39	~~8.15~~	8.25	8.06	8.13	8.20
	ID	MH	GM	MH	DL	GR	D
Final	Temp °C	22.5		23.1	23.4	22.2	22.7
	pH	8.06	8.06	7.93	7.92	7.92	7.87
	DO (mg/L)	8.17	8.15	8.20	8.10	8.28	8.01
	ID	CC	GM	MH	DL	MS	D

day 2 initial
pH: 8.13
DO: 8.37

day 3 initial
pH. 7.87

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DFMP

Sample Date: 111015
Test Date: 111115

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
33	1	Live								
		Dead								
		Missing								
	2	Live								
		Dead								
		Missing								
	3	Live								
		Dead								
		Missing								
Murky Rating	4	Live								
		Dead								
		Missing								
	≥50% Mortality?									
	ID									
	Initial	Pre-DO*								
		pH								
		DO (mg/L)								
		ID								
	Final	Temp °C								
		pH								
		DO (mg/L)								
		ID								

Rep	Boat Weight	Total Weight
1		
2		
3		
4		

Notes:

place holder

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
34	1	Live	10	8	8	8	8	8	8	
		Dead		2*						
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	GM	AA	GR	GM	CY	
	Initial	Pre-DO*	NA	NA	NA	NA	NA			
		pH	8.19	~~8.00~~	8.03	8.15	8.17	7.92		
		DO (mg/L)	8.32	~~8.09~~	8.30	8.11	8.27	8.03		
		ID	MH	GM	MH	DL	GR	LD		
	Final	Temp °C	22.7		23.2	23.5	22.2	22.8		
		pH	8.09	8.00	7.98	7.95	7.90	7.91		
		DO (mg/L)	8.18	8.09	8.15	8.10	8.28	8.05		
		ID	CC	GM	MH	DL	MS	LD		

day 2 initial
pH: 8.16
DO: 8.30

Rep	Boat Weight	Total Weight
1	0.91250	0.91585
2	0.92474	0.92865
3	0.97364	0.97725
4	0.91440	0.91781

Notes: * fungusy & changed out beaker GM

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 111015
Test Date: 111115

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
35	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	GM	DL	CR	GM	GM	
	Initial	Pre-DO*	NA	9.40	NA	NA	NA			
		pH	8.10	8.10	7.94	8.16	8.21	7.87		
		DO (mg/L)	8.31	8.26	8.18	8.20	8.25	8.11		
		ID	MH	MS	MH	DL	CR	LD		
	Final	Temp °C	~~8.00~~	23.1	23.4	23.2	22.2	22.6		
		pH	7.97	7.99	7.89	7.88	7.91	7.86		
		DO (mg/L)	8.16	7.98	8.08	8.21	8.40	8.10		
		ID	CC	GM	MH	DL	MS	LD		

22.1
11/15 CC

Rep	Boat Weight	Total Weight
1	0.90852	0.91185
2	0.92213	0.92533
3	0.91729	0.92081
4	0.88396	0.88759

Notes:

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
36	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	GM	GM	DL	CR	GM	GM	
	Initial	Pre-DO*	10.56	NA	NA	NA	10.01	9.60		
		pH	8.42	8.40	8.40	8.47	8.27	8.22		
		DO (mg/L)	8.35	8.20	8.20	8.22	8.30	8.13		
		ID	MH	MS	MH	DL	CR	LD		
	Final	Temp °C	22.4		23.1	23.3	22.5	22.9		
		pH	8.52	8.34	8.46	8.51	8.53	8.41		
		DO (mg/L)	8.19	8.09	8.12	8.18	8.53	8.12		
		ID	CC	GM	MH	DL	MS	LD		

Rep	Boat Weight	Total Weight
1	0.89084	0.89449
2	0.98643	0.99007
3	1.00235	1.00628
4	1.00696	1.01029

Notes:

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Fathead Minnow PRT Test Data Sheet

Test Name: DPMP PRT FollowUP
Sample Date: 11/10/15
Test Date: 11/11/15

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight	
	A	2	2	2	2	2	2	2		1.04369	1.04737	A
	B	2	2	2	2	2	2	2		1.00721	1.01096	B
	C	2	2	2	2	2	2	2		1.03637	1.04026	C
	D	2	2	2	2	2	2	2		0.98534	0.98895	D
	E	2	2	2	2	2	2	2		~~1.05000~~		
	F	2	2	2	2	2	2	2		B		
	G	2	2	2	2	2	2	2				
	H	2	2	2	2	2	2	2				
	I	2	2	2	2	2	2	2				
31	J	2	2	2	2	2	2	2				
	K	2	2	2	1A/1D	1	1	1				
	L	2	2	2	2	2	2	2				
	M	2	2	2	2	2	2	2				
	N	2	2	2	2	2	2	2				
	O	2	2	2	2	2	2	2				
	P	2	2	2	2	2	2	2				
	Q	2	2	2	2	2	2	2				
	R	2	2	2	2	2	2	2				
	S	2	2	2	2	2	2	2				
	T	2	2	2	2	2	2	2				
	ID	AA	GM	AA	AA	GR	LD/GM	LD				

Initial	Pre-DO*		NA P.22					
	DO (mg/L)	8.32	~~8.13~~ 2	8.19	8.21	8.28	8.10	
	ID	MH	MS	MH	DL	GR	LD	
Final	Temp	22.5	23.2	23.7	23.2	23.1	24.0	
	pH	7.76	7.79	7.88	7.71	7.93	7.87	
	DO (mg/L)	7.50	7.43	7.94	~~7.06~~ 8.02	8.12	7.81	
	ID	MH	MS	MH	AA	GR	LD	

11/15/15 AA

IpH 8.09
IT° 23.5

Notes:

Fathead Minnow PRT Test Data Sheet

Test Name: DPNP PRT follow up
Sample Date: 111015
Test Date: 111115

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight	
32	A	2	2	2	2	2	2	2		1.05000	1.05350	A
	B	2	2	2	2	2	2	2		1.04709	1.05063	B
	C	2	2	2	2	2	2	2		1.02203	1.02584	C
	D	2	2	2	2	2	2	2		1.00924	1.01258	D
	E	2	2	2	2	2	2	2				
	F	2	2	2	2	2	2	2				
	G	2	2	2	2	2	2	2				
	H	2	2	2	2	2	2	2				
	I	2	2	2	2	2	2	2				
	J	2	2	2	2	2	2	2				
	K	2	2	2	2	2	2	2				
	L	2	2	2	2	2	2	2				
	M	2	2	2	2	2	2	2				
	N	2	2	2	2	2	2	2				
	O	2	2	2	2	2	2	2				
	P	2	2	2	2	2	2	2				
	Q	2	2	2	2	2	2	2				
	R	2	2	2	2	2	2	2				
	S	2	2	2	2	2	2	2				
	T	2	2	2	2	2	2	2				
	ID	MH	GM	AA	AA	GR	LD/GM	LD				

Initial	Pre-DO*		NA					
	DO (mg/L)	8.32	8.28	8.26	8.30	8.28	8.18	
	ID	MH	MS	MH	DL	GR	LD	
Final	Temp	22.6	23.0	23.5	23.0	22.3	23.9	
	pH	7.46	7.34	7.40	7.20	7.68	7.81	
	DO (mg/L)	7.58	7.40	7.78	7.93	8.20	7.82	
	ID	MH	MS	MH	AA/DL	GR	LD	

IpH 7.91
IT: 23.5

Notes:

Fathead Minnow PRT Test Data Sheet

Test Name: DFMP PRT follow up
Sample Date: 11/10/15
Test Date: 11/11/15

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight	
33	A	2	2	2	2	2	2	2		~~0.88814~~		
	B	2	2	2	2	2	2	2		~~0.92710~~		
	C	2	2	2	2	2	2	2		~~0.90898~~		
	D	2	2	1A/1D	1	1	1	1		~~1.00510~~		
	E	2	2	2	2	2	2	2		1.02779	1.03141	A
	F	2	2	2	2	2	2	2		0.98074	0.98441	B
	G	2	2	2	2	2	2	2		0.98457	0.98859	C
	H	2	2	2	2	2	2	2		0.97780	0.98033	D
	I	2	2	2	2	2	1A/1D	1				
	J	2	2	2	2	2	2	2				
	K	2	2	2	2	2	2	2				
	L	2	2	2	2	2	2	2				
	M	2	2	2	2	2	2	2				
	N	2	2	2	2	2	2	2				
	O	2	2	2	2	2	2	2				
	P	2	2	2	2	2	2	2				
	Q	2	2	1A/1D	1	0/1	0	0				
	R	2	2	2	2	2	2	2				
	S	2	2	2	2	2	2	2				
	T	2	2	2	2	2	2	1				
	ID	AX GM	GM	AA	AA	GR	LD/GM	LD				

Initial	Pre-DO*	9.72	11.10		9.68	11.14	10.7	
	DO (mg/L)	8.62	8.28	8.10	8.11	8.79	8.08	
	ID	MH	MS	MH	DL	GR	LD	
Final	Temp	22.7	23.5	23.5	23.1	22.6	24.0	
	pH	7.42	7.30	7.48	7.50	7.55	7.43	
	DO (mg/L)	7.60	7.46	7.85	7.40	8.18	7.8	
	ID	MH	MS	MH	DL	GR	LD	

IpH = 7.97
IT° = 23.5

Notes:

SWRCB - SWAMP Fathead Test Termination Sheet

Region: DeltaRMP Sample Date: 111015 Test Date: 111115

Samples stored in: 12 Test conducted in: CTR

Test taken down by: LD

Test take down time:

Final Water Chemistry at Test Termination

Sample ID	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
31	23.2	309.4	7.75	7.84	GM
32	23.8	202.4	7.67	7.83	GM
34	23.3	377.2	7.53	7.78	GM
35	23.0	250.7	7.59	7.74	GM
36	23.1	987	7.61	8.34	GM
31PRT	22.8	340.1	7.44	7.98	GM
32PRT?	23.0	98.5	7.28	7.64	GM
33PRT	22.8	101.5	7.37	7.58	GM

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Updated by LD 110415

Delta RMP Selenastrum Capricornutum <u>without EDTA</u>

Field Date: 111015
Test Set up: 111115
Samples kept in chamber: 12
Experiment kept in chamber: 5

Instructions: This is a 96-hour chronic algae test. Take initial chemistry at test set up and final chemistry at test termination. Randomize flasks twice daily. Flasks must be inoculated individually. This test has 5 replicates per treatment, one of which is a chemistry-only replicate. Please take daily pH and temperature measurements at the AM randomization. Contact Marie **<u>immediately</u>** when the average growth from any sample has a 50% reduction from the control performance. Start spiking algae cells at 94 hours of testing whenever possible.

ID	Treatment	Decoding or Instructions
31	Glass Distilled Water (TAC)	
32	510SACC3A	Foaming or Mycrocystis Present? NO
33	544SAC002	Foaming or Mycrocystis Present? NO
34	544LSAC13	Foaming or Mycrocystis Present? NO
35	541SJC501	Foaming or Mycrocystis Present? NO
36	510SOL010	Foaming or Mycrocystis Present? NO

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SWRCB - SWAMP FY 14/15 Algae Test Initiation Sheet

Region: DRM/ first flush Sample Date: 111015 Test Date: 111115

Samples stored in chamber: 12 Test conducted in: chamber 5

Culture water type: glassdistilled Initial flask cell count: 9.9x10^5

Letter and date of culture: U Initial innoculum volume: 200mL total / 1000mL per flask

Tech who made culture: DL Test set-up by: DL

Test set-up time: 1000

The nutrients were added to: individual flasks, entire treatment, multiple treatments

Were algae cells added to individual flasks? yes no Light intensity range: 468-328 ft candles

Special Instructions:

If the Sample Receiving SC or Field SC is ≥ 1,500, then a high conductivity control must be included in the test.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation									Daily Measurements					
Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	Hard (mg/L)	Alk (mg/L)	Amm (mg/L)	ID	pH	°C	pH	°C	pH	°C
31	23.3	92.3	8.39	7.63	0	2	~~1.46~~ 0	MS	7.76	24.8	7.82	24.0	7.69	26.0
32	23.5	255.1	8.46	7.91	60	68	~~0.46~~	MS	8.18	25.2	8.07	23.7	8.32	25.4
33	23.4	~~255.1~~ mS	8.50	7.79	22	20	~~0.01~~ 0	MS	7.87	24.5	7.84	23.9	8.30	25.8
34	23.5	432.8	8.48	7.98	92	70	~~0.01~~ 0.01	MS	8.21	25.1	8.09	24.9	8.48	25.3
35	23.6	317.9	8.54	7.99	60	58	~~0.05~~ 0	MS	8.14	24.2	8.12	24.6	8.51	25.8
36	23.6	1038	8.60	8.29	296	250	0.05	MS	8.63	23.8	8.59	23.9	8.75	25.5
									ID	GM	ID	MS	ID	GM

Algae Randomization Record				
Date	AM Time	ID	PM Time	ID
111115			1500	MS
111215	930	GM	1715	DL
111315	935	MS	1715	GM
111415	10:25	GM		
111515	800	DL		

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Revised by LD 072815

SWRCB - SWAMP FY 14/15 Algae Test Termination Sheet

Region: Delta RMP Sample Date: 111015 Test Date: 111115

Samples stored in chamber: 12 Test conducted in: Chamber 5

Test taken down by: DL

Test take down time: 1400 (start spiking algae cells at 94 hours)

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
31	24.8	106.9	8.24	7.95	DL
32	24.9	246.6	8.25	9.49	DL
33	24.8	144.8	8.40	9.37	DL
34	24.9	440.2	8.48	9.04	DL
35	24.9	316.1	8.52	9.69	DL
36	24.9	1020	8.55	9.46	DL

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Revised by LD 072815

Algae Innoculum Worksheet

Test: Delta RMP

Field Date: 111015

Setup Date: 111115

Algal Culture ID letter U

Algal Culture made by DL

Date made 110515

Days cultured 6

Background Counts	66	70	57
Raw Algal Counts	77902	78816	78566

Mean of raw counts 78428

Mean of raw counts x 80 6.27×10^6

1×10^6 / (mean of raw counts x 80) x 200 = amount of algal culture needed 31.9

200 – amount of algal culture needed = amount of SSEPAMH needed 168.1

Mix the above amounts of algae and SSEPAMH to make the innoculum for the test.

Once dilution is made, count the cell number for the dilution to make sure that it is approximately 1×10^6 cells/ml.

Dilution Counts	12255	12598	12279

Mean of dilution counts 12377.3

Mean of dilution counts x 80 9.9×10^5 (acceptable range is: $0.9 \times 10^6 - 1.1 \times 10^6$)

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Background: 17, 25, 30

Algae Takedown

Aquatic Toxicology Laboratory
VM:APC
1321 Haring Hall
University of California, Davis
Davis , CA 95616
(530) 752-0772

Test: Delta RMP Test Date: 111115 DL

Treatment: 31

Replicate 1	18677	18421	18486
Replicate 2	17783	18306	17961
Replicate 3	18952	18860	18900
Replicate 4	17072	17210	17248

Treatment: 32 → 111515 DL wrong vial read!

Replicate 1	~~17506~~ 50311	~~17568~~ 49631	~~17796~~ 50787
Replicate 2	47041	47125	47050
Replicate 3	47539	47623	47692
Replicate 4	46689	46737	46921

Treatment: 33

Replicate 1	37042	37135	37007
Replicate 2	37610	37572	37683
Replicate 3	38126	37958	38022
Replicate 4	36989	36780	36900

Treatment: 34

Replicate 1	34324	34822	34522
Replicate 2	38050	37966	38105
Replicate 3	34357	34023	34179
Replicate 4	35801	35662	35670

Treatment: 35

Replicate 1	38706	38221	38533
Replicate 2	36581	36802	36738
Replicate 3	36210	36111	36150
Replicate 4	37573	37893	37900

Treatment: 36

Replicate 1	22337	23000	22875
Replicate 2	28120	28245	28105
Replicate 3	23750	23509	23584
Replicate 4	22962	23052	22967

Treatment:

Replicate 1			
Replicate 2			
Replicate 3			
Replicate 4			

Treatment:

Replicate 1			
Replicate 2			
Replicate 3			
Replicate 4			

December 2015

Delta RMP Ceriodaphnia Dubia

Field Date: 121515
Test Set up: 121615
Samples kept in chamber: 10
Experiment kept in chamber: CTR

Instructions: This is a 3-Brood test with 1 animal per replicate and 10 replicates with 15 ml per vial treatment. This test must be set up using blocking by known parentage. Feed and change daily. Take initial chemistry and final chemistry daily. Contact Marie **immediately** when either endpoint in any sample has a 50% reduction from the control performance. Please alert Marie or Linda ASAP when test does not meet test acceptability criteria. Take down the test after the vast majority of organisms have had their 3rd brood.

ID	Treatment	Decoding or Instructions
51	L16-50 (TAC Control)	
52	510SACC3A	
53	544SAC002	
54	544LSAC13	
55	541SJC501	
56	510SOL010	
57	Field Duplicate	
58	Low Conductivity Control	L16-50 diluted with Glass Distilled
59	LWOBC	
60	SSEPAMH	

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Initiation Sheet

Region: DRNP Sample Date: 121515 Test Date: 121615

Samples stored in chamber: 10 Test conducted in: CTR

If neos isolated from Brood Board: Only use neos from gravids producing over 8 neos on day of set-up.

Brood Board # 98 Date/Time neos isolated: 121615 07:59

Date/Time gravids isolated: 121615 00:21 Neos isolated by: LD

Gravids isolated by: MS Test set-up by: MS

Health of gravids: good Time neos loaded: 15:24

At time of set-up: were neos born in an 8 hour window? yes no Age range: 15.5h.

were neos less than 24 hours old? yes no

Blocking by known parentage: Please list which Brood Board replicate was used for test initiation.

Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
B9	C2	C4	C5	D2	D3	D5	D6	D10	E2
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.

If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 2,500, consult with a supervisor for a potential species substitution.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample ID	Receiving SC	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
51		23.9	260.4	8.30	8.13	MH	92	62	0.00
52		23.9	186.1	8.50	8.18	MH	64	74	0.45
53		24.9	63.6	8.23	7.86	MH	20	22	0.00
54		23.8	584	8.23	8.22	MH	112	78	0.10
55		23.8	499	8.33	8.19	MH	108	86	0.01
56		23.8	797	8.30	8.26	MH	200	180	0.10
57		23.8	187.3	8.48	8.22	MH	64	74	0.51
58		23.7	66.1	8.36	7.81	MH	20	14	Ø
59		23.6	261.2	8.53	8.06	MH	88	88	Ø
60		23.7	227.6	8.78	7.99	MH	92	62	Ø

Note: Pre-DO is 10.86 on Treatment # 53

SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DRMP
Sample Date:	121515
Test Date:	121615

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
S1	1	↓									↓		GM		8.08	8.21	AA	23.9	7.94	8.03	GR
	2	↓									↓		GR		8.23	7.54	AH	24.2	8.11	7.53	AH
	3	↓									↓		GM		8.21	8.20	GM	24.5	8.00	8.01	GM
	4	7	6	5	6	6	5	5	6	6	5	No	DL		8.26	7.98	DL	24.3	8.06	8.12	DL
	5	12	12	11	12	13	10	11	12	13	11	No	DL		8.12	8.12	DL	24.3	7.99	7.90	AH
	6	14	13	10	12	12	11	11	15	14	13	No	DL		7.96	8.02	GM	25.1	8.11	7.80	GM
	7	↓									↓	No	DL								
	8																				
Total Young:																					

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
S2	1	↓									↓		GM	10.93	8.19	8.32	AA	23.4	8.03	8.02	GR
	2	↓									↓		GR		8.33	7.55	AH	23.9	8.16	7.46	AH
	3	↓									↓		GM		8.25	8.25	GM	24.2	8.00	8.10	GM
	4	5	6	5	5	5	4	5	6	5	6	No	DL		8.30	8.12	DL	24.0	8.10	8.08	DL
	5	11	11	12	11	12	12	11	13	12	11	No	DL	11.32	8.21	8.33	DL	24.3	8.03	7.68	AH
	6	14	14	15	15	14	12	13	14	15	17	No	DL		8.02	8.08	GM	24.7	8.17	7.85	GM
	7	↓									↓	No	DL								
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DRMP
Sample Date:	121515
Test Date:	121615

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
53	1												GM	12	7.74	8.16	AA	23.1	7.58	8.02	GR
	2												GR	12.16	8.08	7.58	AH	23.6	7.69	7.55	AH
	3												GM	10.18	7.97	8.21		24.3	8.13	8.23	GM
	4	5	5	6	5	5	5	5	6	5	6	No	DL		7.79	8.14	DL	24.5	8.00	8.18	DL
	5	13	12	13	11	13	11	10	10	10	11	No	DL		7.83	8.36	DL	24.3	7.53	7.63	AH
	6	18	14	15	16	14	15	16	17	14	16	No	DL		7.84	8.01	GM	24.5	7.67	7.77	GM
	7											No	DL								
	8																				
Total Young:																					

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
54	1												GM		8.15	8.32	AA	23.0	7.95	8.29	GR
	2												GR		8.27	7.67	AH	23.7	8.14	7.44	AH
	3												GM		8.22	8.24	GM	24.2	7.98	8.19	GM
	4	7	6	5	6	6	5	6	7	7	6	No	DL		8.25	8.26	DL	24.5	7.97	8.24	DL
	5	13	12	10	12	12	11	11	13	11	13	No	DL	9.78	8.19	8.29	DL	24.1	8.01	8.03	AH
	6	14	11	12	12	12	13	16	14	13	17	No	DL		8.16	8.02	GM	24.7	8.11	7.99	GM
	7											No	DL								
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DPNP
Sample Date:	121515
Test Date:	121615

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
SS	1	†											GM		8.25	8.28	AA	23.3	8.03	8.26	GR
	2	†											GR		8.35	7.64	AH	23.9	8.16	7.25	AH
	3	†											GM		8.31	8.41	GM	24.4	8.10	7.82	GM
	4	†	6	6	5	5	†	5	4	6	5	No	DL	10.14	8.32	8.20	DL	24.6	8.13	8.13	DL
	5	6	13	11	11	12	11	13	10	13	10	No	DL		8.24	8.36	DL	24.1	7.99	7.65	AH
	6	14	17	16	17	17	18	16	15	14	16	No	DL		8.19	8.22	GM	24.8	8.19	7.84	GM
	~~7~~	~~21~~	~~21~~	~~17~~	~~18~~	~~17~~	~~19~~	~~17~~	~~18~~	~~20~~	~~16~~	~~No~~ 122215	GR								
	~~8~~ 7	†		†		†	†				†	No	DL								
Total Young:																					

Notes: 122215 DO

17, 1 avid alive still 122215 DO

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
S6	1	†											GM		8.38	8.26	AA	23.4	8.32	8.22	GR
	2	†											GR		8.47	7.57	AH	24.1	8.44	7.27	AH
	3	†											GM		8.46	8.24	GM	24.2	8.45	8.02	GM
	4	†	5	6	6	7	5	6	6	5	5	No	DL		8.45	8.28	DL	24.1	8.40	8.24	DL
	5	13	12	12	13	13	12	13	14	11	13	No	DL		8.26	8.41	DL	23.8	8.34	7.82	AH
	6	21	21	17	18	17	19	17	18	20	16	No	GR		8.40	8.09	GM	25.2	8.50	7.82	GR
	7	†									†	No	DL								
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DRMP
Sample Date:	121515
Test Date:	121615

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
57	1												GM		8.19	8.27	AA	23.3	8.07	8.27	GR
	2												GR		8.35	7.65	AH	24.1	8.12	7.21	AH
	3												GM		8.32	8.33	GM	24.3	8.12	8.11	GM
	4	6	5	4	6	5	5	5	6	5	5	No	DL		8.31	8.27	DL	24.4	8.10	8.22	DL
	5	9	11	11	11	11	10	10	10	12	11	No	DL		8.23	8.26	DL	23.6	8.01	7.95	AH
	6	13	14	13	15	12	13	14	13	16	14	No	GR		8.15	8.01	GM	25.0	8.21	7.95	GM
	7	+	+									No	DL								
	8																				
Total Young:																					

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
58	1												GM		7.67	8.30	AA	22.8	7.43	8.32	GR
	2												GR		7.95	7.69	AH	23.9	7.58	7.44	AH
	3												GM		7.96	8.31	GM	24.3	7.72	8.12	GM
	4	5	+	4	5	5	4	5	4	4	5	No	DL		7.98	8.22	DL	24.2	7.76	8.05	DL
	5	9	+	9	8	7	6	7	7	6	8	No	DL		7.72	8.30	DL	23.4	~~8.02~~	8.12	AH
	6	9	+	+	+	+	+	+	6	+	7	No	GR		7.87	7.99	GM	25.0	8.06	7.98	GM
	7	+	6	9	7	8	6	9	+	6	+	No	DL								
	8																				
Total Young:																					

7.6 122115 AH

23.6 122115 AH

Notes:

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Revised by LD on 072815

SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region:	DRMP
Sample Date:	12/5/15
Test Date:	12/6/15

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
59	1	†	—	—	—	—	—	—	—	—	†		GM		8.10	8.07	AA	22.5	7.84	8.23	GR
	2	†	—	—	—	—	—	—	—	—	†		GR		8.27	7.73	AH	23.7	8.04	7.39	AH
	3	†	—	—	—	—	—	—	—	—	†		GM		8.09	8.23	GM	24.4	8.11	8.22	GM
	4	4	5	4	4	5	4	4	4	5	4	NO	DL		8.11	8.25	DL	24.2	8.00	7.98	DL
	5	10	10	8	9	9	10	8	9	9	9	NO	DL		8.09	8.24	DL	23.7	7.94	8.12	AH
	6	11	10	8	+	11	10	9	11	9	9	NO	GR		8.17	8.04	GM	25.1	8.13	7.95	GM
	7	†	—	—	†	5	†	—	—	—	†	NO	DL								
	8																				
Total Young:																					

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
60	1	†	—	—	—	—	—	—	—	—	†		GM		8.11	8.22	AA	23.1	7.94	8.21	GR
	2	†	—	—	—	—	—	—	—	—	†		GR		8.24	7.63	AH	23.7	8.05	7.41	AH
	3	†	—	—	—	—	—	—	—	—	†		GM		8.12	8.33	GM	24.5	8.11	8.22	GM
	4	4	5	4	3	4	4	3	5	4	4	NO	DL		8.11	8.26	DL	24.3	7.99	8.03	DL
	5	10	8	7	8	9	10	9	9	8	9	NO	DL		8.07	8.27	DL	23.8	7.97	8.04	AH
	6	12	6	10	9	~~10~~ NR	10	~~7~~ NR	~~8~~ NR	8	7	NO	GR		8.16	7.97	GM	25.1	8.16	8.01	GM
	7	†	—	—	†	NR	†	—	—	—	†	NO	DL								
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Termination Sheet

Region: DRMP Sample Date: 121515 Test Date: 121615

Samples stored in chamber: 10 Test conducted in: CTR

Test taken down by: DL
Test take down time: 900

Final Water Chemistry at Test Termination

Sample ID	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
51	23.8	257.8	7.40	7.79	DL
52	23.4	181.3	7.46	7.81	DL
53	23.9	70.6	7.52	7.47	DL
54	23.8	566	7.47	7.85	DL
55	23.7	482.7	7.50	7.86	DL
56	23.7	728	7.62	8.27	DL
57	23.8	227.6	7.78	7.93	DL
58	23.4	80.0	7.76	7.39	DL
59	23.7	261.6	7.85	7.89	DL
60	23.9	243.4	7.93	7.85	DL

Fathead Minnow Delta RMP Treatment List
Field Date: 121515
Test Setup: 121615
Samples kept in chamber: 10
Experiment kept in: CTR

Instructions: This is a 7-day chronic-style test with 10 animals per replicate and 4 replicates per treatment. Each replicate consists of 250ml of sample. Carefully renew 200ml per replicate daily with the squeegee tip method. Feed 3X times daily. Do not feed on the last day of the test. If ≥ 50% mortality occurs in one replicate, feed the replicate half the amount of food. This test must be setup with <48-hour old fish. Initial and final chemistry must be taken daily.

Contact Marie **immediately** when:

- either endpoint in any sample has a 50% reduction from the control performance (TIE trigger, applies to biomass and reproduction), or
- if you have high variability between the replicates (PRT trigger, use Excel calculator).

ID	Treatment	Decoding or Instructions
51	ROEPAMH (TAC Control)	
52	510SACC3A	
(53)	Place Holder for 544SAC002	For Treatment numbering only
54	544LSAC13	
55	541SJC501	
56	510SOL010	
57	Field Duplicate	

ID	Treatment	
61	ROEPAMH (TAC Control)	This test will be set up PRT Style (20 replicates with 2 fish each). Feeding will be about 25 artemia per beaker twice a day.
62	544SAC002	
63	Low Conductivity Control	

NOTE: NO TEFLON BEAKERS, SWITCHED TO GLASS FOR PRT.

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SWRCB - SWAMP FY 14/15 Fathead Test Initiation Sheet

Region: Delta RMP Sample Date: 121515 Test Date: 121615

Samples stored in chamber: 10 Test conducted in: CTR

Before test initiation, what percentage of fish: are lying on the bottom 2 %
have bent spines 1 %
are active 95 %

Comments about irregular color, sizes or shapes: ~10% had orange "stuff" stuck to pectoral and/or caudal fins (didn't use them)

Age at time of set-up: <48 hrs % of less desirable fish used in each beaker: 0

Test set-up by: GR/AA Test set-up time: ~~16:45~~ 16:30 ~~121615ep~~

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.
If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.
If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.
If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample ID	Receiving SC	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)	DO (mg/L)
51		24.9	292.3	8.06	8.10	MH	64	46		8.44
52		24.4	189.0	8.10 121615	8.15	MH	64	74		8.36
54		24.6	592	8.20	8.11	MH	112	78		8.40
55		24.5	501	8.57 MH	8.00	MH	108	86		8.63
56		24.4	799	8.15	8.20	MH	200	180		8.56
57		24.4	191	8.13	8.09	MH	64	74		8.41
		~~4~~	~~267.4~~		~~8.12~~ MH 121615					
61		24.2	267.4	8.40	8.13	MH	64	46		
62		25.2	66.0	8.62	7.86	MH	20	22		
63		24.3	67.5	8.37	7.87	MH	28	14		

Note: Pre-DO is 10.95 mg/L in Treatment # 56
" 10.82 mg/L " # 62

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Updated by LD 110415

SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DFMP

Sample Date: 12/15/15
Test Date: 12/16/15

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
51	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		TK	GR	GM	DL	GR	GM	GM	

		1	2	3	4	5	6	7
Initial	Pre-DO*							
	pH	8.16	8.20	8.25	8.28	8.13	~~7.99~~	
	DO (mg/L)	8.14	8.41	8.23	8.09	8.10	~~24.0~~	
	ID	DL	AH	GM	DL	DL	GR	
Final	Temp °C	22.0	8.01	22.6	22.7	22.0	24.0	
	pH	7.92	8.04	8.12	8.02	7.94	7.99	
	DO (mg/L)	8.40	23.3	8.46	8.10	8.25	8.55	
	ID	DL	AH	GM	DL	GR	GR	

Day 6
8.31
8.16
DL

Rep	Boat Weight	Total Weight
1	1.03516	1.03815
2	1.04515	1.04884
3	1.04839	1.05224
4	1.04011	1.04389

Notes:

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
52	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	8	8	8	8	8	8	
		Dead		1						
		Missing		1						
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		TK	GR	GM	DL	GR	GM	GM	

		1	2	3	4	5	6	7
Initial	Pre-DO*	11.27		10.96		10.23	11.32	
	pH	8.16	8.31	~~8.26~~	8.20	8.13	~~8.02~~	
	DO (mg/L)	8.42	8.12	8.30	8.33	8.24	~~23.9~~	
	ID	DL	AH	GM	DL	GR	GR	
Final	Temp °C	22.4	23.1	22.9	22.8	22.0	23.9	
	pH	8.04	8.17	8.18	8.08	7.99	8.02	
	DO (mg/L)	8.52	8.12	8.30	8.24	8.10	8.15	
	ID	DL	AH	GM	DL	GR	GR	

Day 6
8.30
8.24
DL

Rep	Boat Weight	Total Weight
1	1.03660	~~1.03~~ 1.04000
2	1.02444	1.02768
3	1.02340	1.02666
4	1.03090	1.03449

122015

Notes:
Day 2, Rep 2, one fish looks bent to the side

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 121515
Test Date: 121615

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
53	1	Live								
		Dead								
		Missing								
	2	Live								
		Dead								
		Missing								
	3	Live								
		Dead								
		Missing								
Murky Rating	4	Live								
		Dead								
		Missing								
	≥50% Mortality?									
	ID									
	Initial	Pre-DO*								
		pH								
		DO (mg/L)								
		ID								
	Final	Temp °C								
		pH								
		DO (mg/L)	~~8.60~~							
		ID								

Rep	Boat Weight	Total Weight
1	1.00492	
2	1.02360	
3	0.99564	
4	0.99116	

Notes:

121515 DV

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
54	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
~~PDE~~ ~~27~~	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	9	9	
		Dead								
		Missing						1		
	≥50% Mortality?		NO	NO	NO	NO	NO			
	ID		TK	GR	GR	DV	GR			
	Initial	Pre-DO*								
		pH	8.10	8.28	8.25	8.10	8.02	~~8.04~~ 8.21		
		DO (mg/L)	8.54	8.24	8.30	8.38	8.29	8.30		
		ID	DV	AH	GR	DV	DV	DV		
	Final	Temp °C	22.3	23.3	22.9	23.0	22.0	23.9		
		pH	8.01	8.15	8.18	8.04	7.98	8.04		
		DO (mg/L)	8.60	8.09	8.49	8.31	8.25	8.30		
		ID	DV	AH	GR	DV	GR	GR		

122215 DV

Rep	Boat Weight	Total Weight
1	~~1.00492~~	0.98689
2	~~1.02360~~	1.00621
3	~~0.99564~~	0.99177
4	~~0.99116~~	1.00158

121615 GR

Notes: Initial boat weights:
1) 0.98332
2) 1.00256
3) 0.98809
4) 0.99817

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 121515
Test Date: 121615

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
5	1	Live		10	10	9/~~10~~	8	8	8	
		Dead					1 A			
		Missing				1				
	2	Live		10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live		10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live		10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?			NO	NO	NO	NO	NO		
	ID			GR	GM	DL	GR	GM		

Rep	Boat Weight	Total Weight
1	1.02281	1.02631
2	1.02186	1.02559
3	0.97677	0.98032
4	0.98021	0.98397

Notes:
Day 2, Rep 3 - ~~[illegible]~~ one fish ended up in transfer beaker & doesn't look good
A - fuzzy dead FH

			1	2	3	4	5	6
Initial		Pre-DO*		~~12.03~~ ~~11.28~~		10.28		
		pH	8.16	8.37	8.20	8.20	8.13	8.24
		DO (mg/L)	8.57	8.12	8.32	8.46	8.36	8.44
		ID	DL	AH	GM	DL	DL	DL
Final		Temp °C	22.4	23.3	22.8	23.0	22.1	23.9
		pH	8.05	8.19	8.21	8.10	8.03	8.09
		DO (mg/L)	8.55	8.17	8.52	8.34	8.40	8.15
		ID		AH	GM	DL	GR	GR

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
50	1	Live		10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live		10	10	9	9	9	9	
		Dead								
		Missing				1				
	3	Live		10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live		10	10	10	9	9	9	
		Dead					1 TE			
		Missing								
	≥50% Mortality?			NO	NO	NO	NO	NO	NO	
	ID			GR	GM	DL	GR	GM	~~GM~~	

Rep	Boat Weight	Total Weight
1	0.98666	0.99006
2	1.02329	1.02607
3	0.98948	0.99328
4	0.98477	0.98814

Notes:
TE - GR squished one

			1	2	3	4	5	6
Initial		Pre-DO*						
		pH	8.32	8.34	8.35	8.34	8.23	8.45
		DO (mg/L)	8.61	8.15	8.22	8.31	8.30	8.40
		ID	DL	AH	GM	DL	DL	DL
Final		Temp °C	22.3	23.1	22.8	22.8	22.1	23.8
		pH	8.34	8.45	8.44	8.31	8.28	8.37
		DO (mg/L)	8.56	8.06	8.19	8.29	7.95	8.17
		ID	DL	AH	GM	DL	GR	GR

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 12/5/15
Test Date: 12/6/15

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
57	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		TK	GR	GM	DL	GR	GM	GM	
Initial		Pre-DO*								
		pH	8.12	8.48	8.20	8.22	8.15	8.31		
		DO (mg/L)	8.63	8.12	8.22	8.27	8.26	8.38		
		ID	DL	AH	GM	DL	GR	DL		
Final		Temp °C	22.1	22.7	22.8	22.7	22.1	23.8		
		pH	8.10	8.13	8.21	8.11	8.02	8.33		
		DO (mg/L)	8.53	8.26	8.52	8.25	8.13	8.21		
		ID	DL	AH	GM	DL	GR	GR		

Rep	Boat Weight	Total Weight
1	0.98728	0.99086
2	0.98233	0.98608
3	1.02397	1.02781
4	1.01724	1.02063

Notes:

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
58	1	Live								
		Dead								
		Missing								
	2	Live								
		Dead								
		Missing								
	3	Live								
		Dead								
		Missing								
Murky Rating	4	Live								
		Dead								
		Missing								
	≥50% Mortality?									
	ID									
Initial		Pre-DO*								
		pH								
		DO (mg/L)								
		ID								
Final		Temp °C								
		pH								
		DO (mg/L)								
		ID								

Rep	Boat Weight	Total Weight
1	1.05567	
2	1.01508	
3	1.02308	
4	1.02211	

Notes:

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SWRCB - SWAMP Fathead Test Termination Sheet

Region: DFMP Sample Date: 121515 Test Date: 121615

Samples stored in: Chamber 10 Test conducted in: CTR

Test taken down by: DL

Test take down time: 10

Final Water Chemistry at Test Termination

Sample ID	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
51	23.7	287.2	8.11	8.02	DL
52	23.4	201.2	8.25	8.06	DL
54	23.5	582	8.28	8.08	DL
55	23.3	516	8.37	8.18	DL
56	23.5	781	8.24	8.43	DL
57	23.5	203.4	8.14	8.11	DL
61					
62					
63					

} see bench sheets

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Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name:
Sample Date:
Test Date:

Boats labeled

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
61	A	2	2	2	2	2	2	2			1.02689
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2			1.05249
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2			1.04042
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2			1.00595
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	AA	GM	GM	DL	DL	GM	CC			

Initial	Pre-DO*							
	pH	8.04	8.30	8.20	8.22	8.11	8.32	
	DO (mg/L)	7.97	7.77	8.40	8.10	8.20	8.29	
	ID	AA	AH	GM	DL	DL	DL	
Final	Temp	24.0	24.1	23.7	23.4	23.3	27.0	
	pH	7.67	7.95	8.01	7.98	7.99	8.04	
	DO (mg/L)	7.56	7.52	7.91	~~7.88~~	8.03	7.60	
	ID	AA	AH	GM	DL	DL	GM	

7.88
12/2/15
DL

Notes:
Final 7
DO 7.77
pH 8.11
T 24.4

LD modified 11/18/15

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Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name:
Sample Date:
Test Date:

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
62	A	2	2	2	2		2	2			1.00853
	B	2	2	2	2		2	2			
	C	2	2	2	2		2	2			
	D	2	2	2	2		2	2			
	E	2	2	2	2		2	2			
	F	2	2	2	2		2	2			1.02741
	G	2	2	2	2		2	2			
	H	2	2	2	2		2	2			
	I	2	2	2	2		2	2			
	J	2	2	2	2		2	2			
	K	2	2	2	2		2	2			0.99976
	L	2	2	2	2		2	2			
	M	2	2	2	2		2	2			
	N	2	2	2	2		2	2			
	O	2	2	2	2		2	2			
	P	2		2	2		2	2			0.99462
	Q	2	1D/1A	1	1		1	1			
	R	2	2	2	2		2	2			
	S	2	2	2	2		2	2			
	T	2	2	2	2		2	2			
	ID		GM	DL	DL		GM	CC			

Initial	Pre-DO*	11.06		10.59	10.43	10.57 (12/15 DO)	12.35	
	pH	7.80	8.03	7.87	7.80	7.87	7.92	
	DO (mg/L)	8.00	7.72	8.34	8.29	8.33	8.50	
	ID	AA	AH	GM	DL	DL	DL	
Final	Temp	23.9	24.1	23.8	23.2	23.2	25.9	
	pH	7.44	7.74	7.67	7.70	7.61	7.72	
	DO (mg/L)	7.57	7.49	8.05	8.01	8.21	7.62	
	ID	AA	AH	GM	DL	DL	GM	

Notes:

Final 7
DO 7.72
pH 7.82
T 24.6
EC 93.3

LD modified 11/18/15

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Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name:
Sample Date:
Test Date:

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
63	A	2	2	2	2	2	2	2			1.05936
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	IA/IM	1			
	F	2	2	2	2	2	2	2			1.01906
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2			1.02655
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	1D/1A	2	1			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2			1.02607
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	AA	GM	GM	DL	DL	GM	CL			

Initial	Pre-DO*							
	pH	7.53	7.89	8.06	8.00	7.68	7.86	
	DO (mg/L)	8.03	7.88	8.34	8.25	8.18	8.43	
	ID	AA	AH	GM	DL	DL	DL	
Final	Temp	23.7	24.4	24.0	23.7	23.1	25.1	
	pH	7.22	7.47	7.51	7.48	7.60	7.56	
	DO (mg/L)	7.70	7.44	7.83	7.96	8.32	7.06	
	ID	AA	AH	GM	DL	DL	GM	

Notes:
M = missing
Day 7 Final
EC 112.7
T 24.5
pH 7.91
DO 7.62

LD modified 11/18/15

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Delta RMP Selenastrum Capricornutum <u>without EDTA</u>

Field Date: 121515
Test Set up: 121615
Samples kept in chamber: 10
Experiment kept in chamber: 5

Instructions: This is a 96-hour chronic algae test. Take initial chemistry at test set up and final chemistry at test termination. Randomize flasks twice daily. Flasks must be inoculated individually. This test has 5 replicates per treatment, one of which is a chemistry-only replicate. Please take daily pH and temperature measurements at the AM randomization. Contact Marie **<u>immediately</u>** when the average growth from any sample has a 50% reduction from the control performance. Start spiking algae cells at 94 hours of testing whenever possible.

ID	Treatment	Decoding or Instructions
51	Glass Distilled Water (TAC)	
52	510SACC3A	Foaming or Mycrocystis Present? No
53	544SAC002	Foaming or Mycrocystis Present? No
54	544LSAC13	Foaming or Mycrocystis Present? No
55	541SJC501	Foaming or Mycrocystis Present? No
56	510SOL010	Foaming or Mycrocystis Present? No
57	Field Duplicate	Foaming or Mycrocystis Present? No

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SWRCB - SWAMP FY 14/15 Algae Test Initiation Sheet

Region: DRMP w/o EDTA Sample Date: 121515 Test Date: 121615

Samples stored in chamber: 10 Test conducted in: 5

Culture water type: Glass Distilled Initial flask cell count: 1.03×10^6 cells/mL

Letter and date of culture: F Initial innoculum volume: 200mL

Tech who made culture: GM Test set-up by: DL

Test set-up time: 1127

The nutrients were added to: individual flasks entire treatment multiple treatments

Were algae cells added to individual flasks? yes no Light intensity range: 392-457 ft candles

Special Instructions:

If the Sample Receiving SC or Field SC is ≥ 1,500, then a high conductivity control must be included in the test.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation									Daily Measurements					
Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	Hard (mg/L)	Alk (mg/L)	Amm (mg/L)	ID	pH	°C	pH	°C	pH	°C
51	23.5	90.1	8.66	7.02	0	4	0.00	DLMS	7.59	25.2	7.79	25.1	7.78	24.7
52	23.4	267.9	8.72	7.91	64	74	0.45	DLMS	8.13	25.0	8.29	25.3	8.48	25.0
53	23.4	146.5	8.61	7.68	20	22	0.00	DLMS	7.88	25.0	7.98	25.0	8.41	25.0
54	23.3	667	~~8.50~~	7.94	112	78	0.10	DLMS	8.18	24.7	8.34	25.4	8.63	24.9
55	23.4	573	8.69	8.00	108	86	0.01	DLMS	8.23	24.5	8.37	25.1	8.61	25.2
56	23.5	869	~~8.75~~	8.18	200	180	0.10	DLMS	8.51	24.9	8.63	25.1	8.84	25.3
57	23.2	269.8	8.58	8.01	64	74	0.57	DLMS	8.25	24.7	8.37	24.8	8.69	24.6
			8.58 121615 (D4)											
			8.50 121615 (D7)											
									ID	MS	ID	GM	ID	GM

Algae Randomization Record				
Date	AM Time	ID	PM Time	ID
121615	~~DC~~			DL
121715	934	MS		
121815	930	GM	1010	GM
121915	945	GM	715	GM
122015				

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SWRCB - SWAMP FY 14/15 Algae Test Termination Sheet

Region: DRMP (S) Sample Date: 121515 Test Date: 121615

Samples stored in chamber: 10 Test conducted in: chamber 5

Test taken down by: MS

Test take down time: 1244 end (start spiking algae cells at 94 hours)

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
51	25.3	94.2	8.66	8.76	MS
52	25.3	274.9	10.67	9.66	MS
53	24.9	150.2	10.71	9.51	MS
54	25.3	616	10.66	9.65	MS
55	25.2	566	10.59	9.48	MS
56	24.9	816	10.99	9.58	MS
57	24.4	293.3	10.53	9.63	MS

All treatments (52-57) are super green. Control is green but less so compared to ambient samples. 122015 MS

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Algae Takedown

Aquatic Toxicology Laboratory
VM:APC
1321 Haring Hall
University of California, Davis
Davis , CA 95616
(530) 752-0772

Test: DeltaRMP Algae (no EDTA) Test Date: 121615

Treatment: S1

Replicate 1	13632	14082	13909
Replicate 2	12787	12878	13104
Replicate 3	12088	12623	12335
Replicate 4	13713	13707	13674

Treatment: S2

Replicate 1	34313	34877	34855
Replicate 2	28711	28362	28607
Replicate 3	35974	35788	36188
Replicate 4	33451	33046	33093

Treatment: S3

Replicate 1	31097	31690	31534
Replicate 2	31415	31449 (31444)	31231
Replicate 3	32889	32668	32555
Replicate 4	32349	32278	32127

Treatment: S4

Replicate 1	23998	24838	24082
Replicate 2	24156	23785	23695
Replicate 3	25080	25427	24887
Replicate 4	23451	23442	23829

Treatment: S5

Replicate 1	34406	34832	34790
Replicate 2	31199	31696	31232
Replicate 3	35494	35606	35822
Replicate 4	34358	33881	34034

Treatment: S6

Replicate 1	20895	21214	21034
Replicate 2	22037	22177	22270
Replicate 3	22213	22646	22329
Replicate 4	22138	22046	22015

Treatment: S7

Replicate 1	35695	35576	35421
Replicate 2	32457	32318	31825
Replicate 3	35943	36177	35589
Replicate 4	32191	31804	31984

Treatment: Background counts 21, 27, 17

Replicate 1			
Replicate 2			
Replicate 3			
Replicate 4			

January 2016

Delta RMP Ceriodaphnia Dubia

Field Date: 1/19/16
Test Set up: 1/20/16
Samples kept in chamber: 12
Experiment kept in chamber: CTR

Instructions: This is a 3-Brood test with 1 animal per replicate and 10 replicates with 15 ml per vial treatment. This test must be set up using blocking by known parentage. Feed and change daily. Take initial chemistry and final chemistry daily. Contact Marie **immediately** when either endpoint in any sample has a 50% reduction from the control performance. Please alert Marie or Linda ASAP when test does not meet test acceptability criteria. Take down the test after the vast majority of organisms have had their 3rd brood.

ID	Treatment	Decoding or Instructions
11	L16-50 (TAC Control)	
12	510SACC3A	
13	544SAC002	
14	544LSAC13	
15	541SJC501	
16	510SOL010	BM-sample rec'd @ 98°C
17	Field Duplicate	
18	Low Conductivity Control	L16-50 diluted with Glass Distilled
19	SSEPAMH	

16 & 17 appear to be same samples based on receiving SC & visual turbidity. Initial water chemistry shows 16 has lower EC than 17 (field duplicate)... this could be due to 16 being "more turbid" than 17 (based on difficulty filtering) [012016 CR]

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Initiation Sheet

Region: Delta RMP Sample Date: 011916 Test Date: 012016

Samples stored in chamber: 12 Test conducted in: CTR

If neos isolated from Brood Board: Only use neos from gravids producing over 8 neos on day of set-up.

Brood Board # 12 Date/Time neos isolated: 011916 @ 16:00

Date/Time gravids isolated: 011916 @ 11:00 Neos isolated by: MS

Gravids isolated by: GM Test set-up by: GM

Health of gravids: good Time neos loaded: 10:10

At time of set-up: were neos born in an 8 hour window? (yes) no Age range: ~~16-24~~ 5hr hrs (MS)

were neos less than 24 hours old? (yes) no

Blocking by known parentage: Please list which Brood Board replicate was used for test initiation.

Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
ABC (A1)	ABC (B8)	ABC (C4)	ABC (D1)	ABC (E8)	FGH (F8)	FGH (G4)	FGH (H3)	FGH (I9)	FGH (J4)
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
ABC (A1)	ABC (B8)	ABC (C4)	ABC (D1)	ABC (E8)	FGH (F8)	FGH (G4)	FGH (H3)	FGH (I9)	FGH (J4)
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.

If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 2,500, consult with a supervisor for a potential species substitution.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample ID	Receiving SC	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
11	—	24.8	285.8	7.98	8.31	GR	88	54	0.02
12	~~11.0~~ GR 012016	24.7	142.4	8.04	8.22	GR	60	58	0.21
13	61.3	24.5	55.3	8.02	7.99	GR	20	44	0.01
14	428.7	24.4	GR 012016 ~~399.2~~	7.99	8.30	GR	88	58	0.23
15	463.3	24.4	437.4	7.99	8.33	GR	108	72	0.09
16	141.9	24.5	147.2	7.84 GR 012016	8.22	GR	80	56	0.51
17	141.9	24.4	142.7	7.81	8.11	GR	76	58	0.49
18	—	24.3	62.4	8.03	7.94	GR	20	12	0.02
19	—	24.2	266.5	8.01	8.15	GR	88	50	0.01

012016 GR Receiving SC = 150.7 →

EC = 406.6 →

Note: Pre-DO is 12 on Treatment # 11.0

SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 1/19/16	
Test Date: 1/20/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
11	1	+									+	No	DL		8.18	7.82	CT	24.4	8.05	7.76	DL
	2	+									+	NO	GM		8.17	7.77	GR	23.1	8.05	7.57	GR
	3	5	4	6	6	5	5	7	6	5	5	NO	AA		7.99	8.24	MS	25.1	7.89	7.61	AA
	4	10	+	9	12	10	9	10	10	9	8	No	AA		7.79	7.90	AA	24.7	7.71	7.69	MS
	5	+	8	+							+	No	DL		~~8.18~~	8.19	CT	24.5	7.65	7.29	EG
	6	12	9	9	12	11	12	13	16	12	9	NO	GM								
	7																				
	8																				
Total Young:		27	21	24	30	26	26	30	32	26	22	$\bar{X}$ = 26.4			DAY 5 INITIAL pH = 8.02						

Notes: Power outage @ 16:30 on 1/22/16, day 2 → final temps out of range GM

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
12	1	+									+	No	DL		8.14	7.82	CT	24.5	~~7.83~~	7.83	DL
	2	+									+	NO	GM		8.14	~~7.82~~	GM	22.6	7.97	7.42	GR
	3	3	6	4	5	4	4	6	6	6	5	No	AA		7.88	8.26	MS	24.9	7.89	7.73	AA
	4	11	+	11	12	13	12	14	13	12	13	No	AA	11.74	7.93	7.97	AA	24.8	7.69	7.70	MS
	5	+	9	+							+	No	DL		~~8.19~~	8.15	CT	24.5	7.84	7.61	EG
	6	16	17	12	15	16	15	18	13	13	13	NO	GM								
	7																				
	8																				
Total Young:		30	32	27	32	33	31	38	32	31	31	$\bar{X}$ = 28.7			DAY 5 INITIAL pH = 8.10						

7.83 012216 GR

7.98 012116 (PV)

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 1/19/16	
Test Date: 1/20/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
13	1	†									†	No	DL	10.85	7.96	7.85	CYT	25	7.82	7.72	DL
	2	†									†	NO	GM	10.96	7.95	7.75	GR	22.6	7.71	7.45	GR
	3	6	7	7	7	5	5	6	6	9	6	NO	AA		7.66	8.24	MS	24.9	7.51	7.63	AA
	4	11	†	12	11	14	12	11	13	12	13	No	AA		7.61	7.95	AA	24.8	7.39	7.72	MS
	5	†	10	†							†	No	DL		7.87	8.16	CT	24.5	7.25	7.58	EG
	6	14	10	13	13	16	16	17	13	18	10	NO	GM								
	7																				
	8																				
Total Young:		31	27	32	31	35	33	34	32	39	35	$\bar{x}$ = 32.9									

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
14	1	D	D	D	D	D	D	D	D	D	D	Yes	DL		8.11	7.86	CYT	24.9	7.92	7.50	DL
	2	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓										N
	3																				
	4																				
	5																				
	6																				
	7																				
	8																				
Total Young:		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	$\bar{x}$ = 0									

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 1/19/16	
Test Date: 1/20/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
15	1	+									+	No	DL		8.11	7.98	CT	24.9	8.06	7.59	DL
	2	+									+	No	GM		8.12	7.74	CR	22.6	7.98	7.59	GM
	3	6	5	5	8	5	6	6	6	6	7	No	AA		8.07	8.44	MS	24.9	8.02	7.82	AA
	4	AA 0.1.2.4.6 (15)	AA 0.1.2.4.6 (12)	AA 0.1.2.4.6 (14)	13	15	14	14	13	11	13	No	AA		8.00	7.92	AA	24.5	7.77	7.83	MS
	5	10	+	15	+	+	+	+	+	+	+	No	DL		7.97	8.35	CT	24.9	7.91	7.50	EG
	6	+	15	+	17	15	14	22	21	17	19	No	GM								
	7																				
	8																				
Total Young:		37	32	34	38	35	34	42	40	34	39	$\bar{x} = 36.5$									

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
16	1	+									+	No	DL		8.10	7.90	CT	24.8	7.73	5.90	DL
	2	+									+	No	GM		8.10	7.69	CR	23.2	7.76	6.14	GM
	3	5	3	4	4	4	4	2	5	2	2	No	AA		7.92	8.29	MS	26.2	7.71	7.00	AA
	4	11	+	7	8	10	9	2	9	4	6	No	AA		7.84	7.95	AA	24.5	7.53	7.33	MS
	5	+	3	+							+	No	DL		8.08	8.18	CT	24.5	7.65	6.83	EG
	6	7	9	8	10	10	8	7	11	8	7	No	GM								
	7																				
	8																				
Total Young:		23	15	19	22	24	21	11	25	14	15	$\bar{x} = 18.9$									

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 1/19/16	
Test Date: 1/20/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
17	1	+									+	No	DL		8.08	7.91	CYT	24.9	7.63	5.95	DL
	2	+									+	No	GM		7.96	7.55	GR	22.8	7.71	6.18	GR
	3	3	+	4	5	5	4	3	6	3	+	No	AA		7.90	8.26	MS	26.1	7.66	6.72	AA
	4	10	+	+	7	10	9	+	4	7	8	No	AA		7.82	7.90	AA	24.5	7.49	7.12	MS
	5	+	6	+	+	+	+	+	+	+	+	No	DL		7.98	8.16	CT	24.7	7.58	6.48	EG
	6	10	11	12	13	12	11	10	16	11	9	No	GM								
	7																				
	8																				
Total Young:		23			25	27	24		36	21		$\bar{x}=26$									

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
18	1	+									+	No	DL		7.72	7.95	CYT	24.9	7.59	7.62	DL
	2	+									+	No	GM		7.76	7.85	GR	22.7	7.57	9.58	GM
	3	6	5	5	6	6	4	5	4	6	4	No	AA		7.64	8.35	MS	26.0	7.83	7.64	AA
	4	9	+	9	10	8	16	9	8	6	8	No	AA		7.53	8.00	AA	24.5	7.35	7.96	MS
	5	+	8	+							+	No	DL		7.73	8.25	CT	24.7	7.48	7.76	EG
	6	7	11	8	11	6	6	12	8	9	10	No	GM								
	7																				
	8																				
Total Young:		22	24	22	27	20	20	26	20	21	22	$\bar{x}=22.4$									

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 1/19/16	
Test Date: 1/20/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1	+									+	No	DL		8.00	7.93	GM	24.6	7.87	7.64	DL
	2	+									+	NO	GM		7.98	7.87	GR	23.6	7.82	7.51	GR
	3	+	5	5	3	6	6	6	6	4	5	No	AA		7.97	8.38	MS	26.4	7.38	7.64	AA
P	4	+	+	9	8	10	9	8	9	+	7	No	AA		7.84	7.93	AA	24.5	7.62	7.99	MS
	5	5	7	+	+	+	+		+	5	+	No	DL		7.98	8.19	GR	24.7	7.81	7.72	EG
	6	5	7	8	8	5	7	9	9	7	+	No	GM								
	7																				
	8																				
Total Young:			19	22	19	21	22	23	24	16		$\bar{x}$ = 20.75									

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1																				
	2																				
	3																				
	4																				
	5																				
	6																				
	7																				
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Termination Sheet

Region: DRMP Sample Date: 011916 Test Date: 012016

Samples stored in chamber: 12 Test conducted in: CTR

Test taken down by: GM

Test take down time: 11:15

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
11	25.0	250.3	7.62	7.57	GM
12	25.0	158.0	7.70	7.73	GM
13	25.3	73.6	7.60	7.38	GM
14	24.9	445.3	7.50	7.92	DL → 012116
15	25.1	441.9	7.66	7.81	GM
16	24.6	163.6	6.93	7.59	GM
17	24.5	164.7	6.34	7.52	GM
18	24.4	89.5	7.70	7.32	GM
19	24.4	263.5	7.90	7.66	GM

Delta RMP Ceriodaphnia Dilution Series – 544LSAC13

Field Date: 1/19/16
Test Set up: 1/21/16
Samples kept in chamber: 12
Experiment kept in chamber: CTR

Instructions: This is a 4-day acute-style toxicity test with 5 animals per replicate and 4 18 mL replicates per treatment. Cerio must be <24 hours old at initiation. Score mortality and renew waters daily. Feed a mixture of YCT and Selenastrum (TIE food) to replicates ~2 hours prior to renewal.

ID	Treatment	Decoding or Instructions
111	~~L1650%~~ SSEPAMH	
112	544LSAC13 6.25%	20 ml Sample + 300 mL Control Water
113	544LSAC13 12.5%	40 mL Sample + 280 mL Control Water
114	544LSAC13 25%	80 mL Sample + 240 mL Control Water
115	544LSAC13 50%	160 mL Sample + 160 mL Control Water
116	544LSAC13 100%	320 mL Sample only

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Acute Ceriodaphnia Data Sheet

Sample Date: 1/19/16	Test Name: 544LSAC13 Dilution Series
Test Date: 1/21/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
111	1	Live	5	5	5	5 *		(A) - lost one during transfer (MS)
		Dead						* = neos present
		Missing						
	2	Live	5	5	5	~~5~~ 4 *		Day 5 012616
		Dead				~~1~~ 012516 GR		Rep 1: 4A, 1D
		Missing						2: 3A, 1D, 1M
	3	Live	5	5	5	5 *		3: 5
		Dead						4: 4A 1M
		Missing						
	4	Live	~~5~~ 4	4	3	3 *		
		Dead			1			
		Missing	1 (A)					
	ID		MS	MS	MS	GR		

		Day 0	Day 1	Day 2	Day 3	Day 4
Initial Chem	Temp (°C)	22.9	23.4	24.0	24.6	
	EC (µS/cm)	279.7	281.3	272.2	274.1	
	pre-DO*	—	—	—	—	
	DO (mg/L)	8.20	7.86	8.32	8.22	
	pH	8.07	8.24	8.15	7.95	
	ID	AA	GR/GM	GR	MS	
Final Chem.	Temp (°C)		23.6	25.0	25.1	25.3
	DO (mg/L)	7.74	~~7.85~~	7.82	7.96	7.89
	pH	012216 GR	8.01	7.99	7.85	8.01
	ID		GR/GM	GR	MS	GR

*If DO is < 4 mg/L or > 100% saturation at test temp, aeration must be applied @ 100 bubbles per minute using an airbar.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
112	1	Live	5	5	5	4 *		Day 6 012716
		Dead				1		
		Missing						
	2	Live	5	5	5	5 *		Rep 1 4
		Dead						2 4/1 dead
		Missing						3 5
	3	Live	5	5	5	5 *		4 5
		Dead						
		Missing						day 7 012816
	4	Live	5	5	5	5 *		Rep 1: 3/3
		Dead						2: 3/3
		Missing						3: 5
	ID		MS	MS	MS	GR		4: 4/4

		Day 0	Day 1	Day 2	Day 3	Day 4
Initial Chem	Temp (°C)	23.0	23.0	25.2	24.9	
	EC (µS/cm)	293.4	294.3	308.6	299.5	
	pre-DO*	—	—	—	—	
	DO (mg/L)	8.14	8.01	8.28	8.22	
	pH	8.04	8.20	8.10	7.91	
	ID	AA	GR/GM	GR	MS	
Final Chem	Temp (°C)		23.6	25.0	25.0	25.2
	DO (mg/L)		7.60	7.75	8.13	8.06
	pH		7.98	7.95	7.81	8.00
	ID		GR/GM	GR	MS	GR

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Acute Ceriodaphnia Data Sheet

Sample Date: 1/19/16	Test Name: 544LSAC13 Dilution Series
Test Date: 1/21/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
113	1	Live	5	5	5	5*		*=neos present
		Dead						
		Missing						
	2	Live	5	5	5	5*		
		Dead						
		Missing						
	3	Live	5	5	5	5*		
		Dead						
		Missing						
	4	Live	5	5	5	5*		
		Dead						
		Missing						
	ID		MS	MS	MS	GR		

		Day 0	Day 1	Day 2	Day 3	Day 4
Initial Chem	Temp (°C)	23.0	23.0	25.6	25.2	
	EC (µS/cm)	293.0	297.5	322.3	317.0	
	pre-DO*	—	—	—	—	
	DO (mg/L)	8.21	8.05	8.11	8.18	
	pH	8.07	8.10	8.12	7.90	
	ID	AA	GR	GR	MS	
Final Chem	Temp (°C)		23.6	24.9	24.8	25.1
	DO (mg/L)		7.60	7.90	8.19	8.09
	pH		7.97	7.96	7.80	7.98
	ID		GR/GM	GR	MS	GR

*If DO is < 4 mg/L or > 100% saturation at test temp, aeration must be applied @ 100 bubbles per minute using an airbar.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
114	1	Live	5	5	5	5*		
		Dead						
		Missing						
	2	Live	5	5	5	5*		
		Dead						
		Missing						
	3	Live	5	5	5	5*		
		Dead						
		Missing						
	4	Live	5	5	5	5*		
		Dead						
		Missing						
	ID		MS	MS	MS	GR		

		Day 0	Day 1	Day 2	Day 3	Day 4
Initial Chem	Temp (°C)	23.1	23.0	24.6	25.4	
	EC (µS/cm)	310.9	321.2	334.0	336.0	
	pre-DO*	—	—	—	—	
	DO (mg/L)	8.21	8.10	8.13	8.19	
	pH	8.03	8.07	8.06	7.89	
	ID	AA	GR	GR	MS	
Final Chem	Temp (°C)		23.6	24.9	24.8	25.1
	DO (mg/L)		7.62	7.96	8.20	8.12
	pH		7.96	7.97	7.78	7.97
	ID		GR/GM	GR	MS	GR

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Acute Ceriodaphnia Data Sheet

Sample Date: 1/19/16	Test Name: 544LSAC13 Dilution Series
Test Date: 1/21/16	

115

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
	1	Live	5	5	5	5*		* neos present
		Dead						
		Missing						
	2	Live	5	5	5	5*		
		Dead						
		Missing						
	3	Live	5	5	5	5*		
		Dead						
		Missing						
	4	Live	5	5	5	5*		
		Dead						
		Missing						
	ID		MS	MS	MS	GR		

		Day 0	Day 1	Day 2	Day 3	Day 4
Initial Chem	Temp (°C)	23.1	22.9	24.6	25.3	
	EC (µS/cm)	340.2	333.8	359.9	362.3	
	pre-DO*	—	8.22	—	—	
	DO (mg/L)	8.15	8.17	8.27	8.19	
	pH	8.02	8.17	8.03	7.88	
	ID	AA	GR	GR	MS	
Final Chem	Temp (°C)		23.7	25.1	24.9	25.1
	DO (mg/L)		7.58	7.94	8.18	8.06
	pH		7.95	7.95	7.77	7.97
	ID		GR/GM	GR	MS	GR

*If DO is < 4 mg/L or > 100% saturation at test temp, aeration must be applied @ 100 bubbles per minute using an airbar.

116

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
	1	Live	5	5	5	5*		Day 5 012616 - neos present in all vials. Rep 1: 5, 2: 5, 3: 4, 4: 5
		Dead						
		Missing						
	2	Live	5	5	5	5*		
		Dead						
		Missing						
	3	Live	5	5	4	4		Day 6 012716: Rep 1: 5, 2: 5, 3: 4, 4: 5
		Dead			1			
		Missing						
	4	Live	5	5	5	5		Day 7 012816: Rep 1: 5, 2: 5, 3: 5, 4: 5 } neos present all vials
		Dead						
		Missing						
	ID		MS	MS	MS	GR		

		Day 0	Day 1	Day 2	Day 3	Day 4
Initial Chem	Temp (°C)	23.2	22.9	24.7	25.3	
	EC (µS/cm)	399.8	403.6	417.7	423.3	
	pre-DO*	—	—	—	12.13	
	DO (mg/L)	8.23	8.63	8.29	8.14	
	pH	7.93	7.91	7.98	7.88	
	ID		GR	GR	MS	
Final Chem	Temp (°C)		23.7	25.4	25.1	25.4
	DO (mg/L)		7.52	7.78	8.11	7.92
	pH		7.94	7.91	7.75	7.90
	ID		GR/GM	GR	MS	GR

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Delta RMP Ceriodaphnia 96-hour TIE Treatment List

Client Name: SWRCB - SWAMP
Sample Name and Field Date: SJR at Buckley Cove 011916
Test Set-Up Date: 012316
Samples kept in Chamber #: 12
Experiment kept in: CTR
Pouring volumes: Pour 100 mL for setup and renewal days, see exceptions for 101 and 113

Instructions: This is a 96-hour test with five animals per replicate and four replicates per treatment. The test is conducted at 25 °C. We must update the TIE Subcommittee at the end of this test. Feed 150 µl YCT/Selenastrum mixture into each replicate two hours prior to renewing water. DO NOT AERATE warming samples. You will need to pour and spike samples with EDTA two hours prior to changing. BSA and Esterase must be spiked 1 hour before changing and stirred on occasion. Use 5 g/L stock EDTA and 10g/L stock of BSA. Waters will be renewed daily. Score mortality daily. Please do initial chemistry on Day 0 for treatments 101 and 113 and final water chemistry on Day 1 for all treatments. BEFORE terminating the test, please discuss the results with the lab manager.

ID	Treatment	Instructions
101	SSEPAMH	Pour **250** mL on Day 0 for I. Chem
102	SSEPAMH + MeOH @ 0.6%	Add 600 µl plain MeOH to 100 mL
103	SSEPAMH + Eluate addback @ 3x	Add 600 µl Eluate to 100 mL
104	SSEPAMH + 10 mg/L EDTA	Add 200 µl EDTA to 100 mL
105	SSEPAMH + 40 mg/L EDTA	Add 800 µl EDTA to 100 mL
~~106~~	~~SSEPAMH + 100 ppb PBO~~	Add 2000 µl 5ppm PBO to 100 mL
107	SSEPAMH + BSA @ 30X equivalence	Add 5 µl 10g/L BSA to 100 mL
108	SSEPAMH + BSA @ 100X equivalence	Add 16 µl 10g/L BSA to 100 mL
109	SSEPAMH + Carboxylesterase @ 30X	Add 5 µl Carboxylesterase to 100 mL
110	SSEPAMH + Carboxylesterase @ 100X	Add 16 µl 10g/L Carboxylesterase to 100 mL
111	SSEPAMH C8 Blank	100 mL
112	SSEPAMH Centrifuged	100 mL
113	544LSAC13	Pour **250** mL on Day 0 for I. Chem
114	544LSAC13 + 2.5 mg/L EDTA	Add 50 µl EDTA to 100 mL
115	544LSAC13 + 10 mg/L EDTA	Add 200 µl EDTA to 100 mL
116	544LSAC13 + 40 mg/L EDTA	Add 800 µl EDTA to 100 mL
~~117~~	~~544LSAC13 + 100 ppb PBO~~	Add 2000 µl 5ppm PBO to 100 mL
118	544LSAC13 + BSA @ 30X equivalence	Add 5 µl 10g/L BSA to 100 mL
119	544LSAC13 + BSA @ 100X equivalence	Add 16 µl 10g/L BSA to 100 mL
120	544LSAC13 + Carboxylesterase @ 30X	Add 5 µl Carboxylesterase to 100 mL
121	544LSAC13 + Carboxylesterase @ 100X	Add 16 µl 10g/L Carboxylesterase to 100 mL
122	544LSAC13 C8 Rinsate	100 mL
123	544LSAC13 Centrifuged	100 mL

Acute Ceriodaphnia Data Sheet for TIEs

Sample Date: 1/19/16	Test Name: 544LSAC13 TIE
Test Date: 1/23/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
1	1	Live	5	5	5	5		
		Dead						
		Missing						
	2	Live	5	5	5	5		5 Neos
		Dead						
		Missing						
	3	Live	5	5	5	5		3 neos
		Dead						
		Missing						
	4	Live	5	5	5	5		
		Dead						
		Missing						
	ID		MS	LD	LD	LD		

TAC CONTROL

		Day 0	Day 1
Initial Chem	Temp (°C)	24.9	
	EC (µS/cm)	279.1	
	DO (mg/L)	8.47	
	pH	8.05	
	ID	LD	
Final Chem	Temp (°C)		23.9
	DO (mg/L)		7.75
	pH		7.81
	ID		MS

PLEASE NOTE: To conserve water, initial chemistry is only measured on the TAC control, the hardness adjusted control (if relevant) and the unmanipulated ambient sample. Final chemistry is measured on ALL treaments from the first renewal.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
2	1	Live	5	5	5			* SPILLED VIAL AND LOST ONE
		Dead						LD
		Missing						
	2	Live	5	5	5			NO BABIES
		Dead						
		Missing			LD			
	3	Live	5	5	~~5~~ 4			
		Dead						
		Missing			*			
	4	Live	5	5	5			
		Dead						
		Missing						
	ID		MS	LD	LD			

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		23.8
	DO (mg/L)		7.79
	pH		7.80
	ID		MS

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Acute Ceriodaphnia Data Sheet for TIEs

Sample Date: 1/19/16	Test Name: 544LSAC13 TIE
Test Date: 1/23/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
3	1	Live	5	5	5	5		NO BABIES
		Dead				0		
		Missing						
	2	Live	5	5	5	5		
		Dead						
		Missing						
	3	Live	5	5	5	5		
		Dead						
		Missing						
	4	Live	5	5	5	5		
		Dead						
		Missing						
	ID		MS	LD	LD	LD		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		23.7
	DO (mg/L)		7.78
	pH		7.79
	ID		MS

PLEASE NOTE: To conserve water, initial chemistry is only measured on the TAC control, the hardness adjusted control (if relevant) and the unmanipulated ambient sample. Final chemistry is measured on ALL treaments from the first renewal.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
4	1	Live	5	5	5	5		NO BABIES
		Dead						
		Missing						
	2	Live	5	5	5	5		
		Dead						
		Missing						
	3	Live	5	5	5	5		
		Dead						
		Missing						
	4	Live	5	5	5	5		
		Dead						
		Missing						
	ID		MS	LD	LD	LD		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		23.8
	DO (mg/L)		7.87
	pH		7.79
	ID		MS

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Acute Ceriodaphnia Data Sheet for TIEs

Sample Date: 1/19/16	Test Name: 544LSAC13 TIE
Test Date: 1/23/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
5	1	Live	5	5	5	5		No neos
		Dead						
		Missing						
	2	Live	5	5	5	5		
		Dead						
		Missing						
	3	Live	5	5	5	5		
		Dead						
		Missing						
	4	Live	5	5	5	5		
		Dead						
		Missing						
	ID		MS	LD	LD	LD		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		23.9
	DO (mg/L)		7.82
	pH		7.77
	ID		MV

PLEASE NOTE: To conserve water, initial chemistry is only measured on the TAC control, the hardness adjusted control (if relevant) and the unmanipulated ambient sample. Final chemistry is measured on ALL treaments from the first renewal.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
6	1	Live	0					
		Dead	5					
		Missing						
	2	Live	0					
		Dead	5					
		Missing						
	3	Live	0					
		Dead	5					
		Missing						
	4	Live	0					
		Dead	5					
		Missing						
	ID		MS					

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		
	DO (mg/L)		→ did not measure
	pH		
	ID		

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Acute Ceriodaphnia Data Sheet for TIEs

Sample Date: 1/19/16	Test Name: 544LSAC13 TIE
Test Date: 1/23/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
7	1	Live	4	5?	5	5		NO NEONATES
		Dead	1					
		Missing						
	2	Live	4	4	4	4		
		Dead	1					
		Missing						
	3	Live	5	5	5	5		
		Dead						
		Missing						
	4	Live	5	5	5	5		
		Dead						
		Missing						
	ID		MS	WD	WD	WD		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		23.8
	DO (mg/L)		7.50
	pH		7.76
	ID		MS

PLEASE NOTE: To conserve water, initial chemistry is only measured on the TAC control, the hardness adjusted control (if relevant) and the unmanipulated ambient sample. Final chemistry is measured on ALL treaments from the first renewal.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
8	1	Live	5	5	5	5		
		Dead						
		Missing						
	2	Live	5	5	5	5		
		Dead						
		Missing						
	3	Live	5	5	5	5		← 4 NEOS
		Dead						
		Missing						
	4	Live	5	5	5	5		
		Dead						
		Missing						
	ID		MS	WD	WD	WD		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		23.8
	DO (mg/L)		7.52
	pH		7.72
	ID		MS

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Acute Ceriodaphnia Data Sheet for TIEs

Sample Date: 1/19/16	Test Name: 544LSAC13 TIE
Test Date: 1/23/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
9	1	Live	5	5	4	4		8 BABIES
		Dead						
		Missing			1			
	2	Live	5	5	5	5		1 Neo
		Dead						
		Missing						
	3	Live	5	5	5	5		
		Dead						
		Missing						
	4	Live	5	5	5	5		
		Dead						
		Missing						
	ID		MS	LD	LD	LD		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		22.9
	DO (mg/L)		7.05
	pH		7.75
	ID		MS

PLEASE NOTE: To conserve water, initial chemistry is only measured on the TAC control, the hardness adjusted control (if relevant) and the unmanipulated ambient sample. Final chemistry is measured on ALL treaments from the first renewal.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
10	1	Live	5	5	5	5		∅
		Dead						
		Missing						
	2	Live	5	5	5	5		4 Neos
		Dead						
		Missing						
	3	Live	5	5	5	5		3 Neos
		Dead						
		Missing						
	4	Live	5	5	5	5		5 neos
		Dead						
		Missing						
	ID		MS	LD	LD	LD		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		24.1
	DO (mg/L)		8.02
	pH		7.74
	ID		MS

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Acute Ceriodaphnia Data Sheet for TIEs

Sample Date: 1/19/16	Test Name: 544LSAC13 TIE
Test Date: 1/23/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
11	1	Live	5	5	5	5		
		Dead						
		Missing						
	2	Live	5	5	5	5		
		Dead						
		Missing						
	3	Live	5	5	5	5		4 neos
		Dead						
		Missing						
	4	Live	5	5	5	5		
		Dead						
		Missing						
	ID		MS	LD	LD	LD		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		24.1
	DO (mg/L)		8.05
	pH		7.77
	ID		MS

PLEASE NOTE: To conserve water, initial chemistry is only measured on the TAC control, the hardness adjusted control (if relevant) and the unmanipulated ambient sample. Final chemistry is measured on ALL treaments from the first renewal.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
12	1	Live	5	4	4	4		no neos
		Dead						
		Missing		1				
	2	Live	6	6	6	6		
		Dead						
		Missing						
	3	Live	5	5	5	5		
		Dead						
		Missing						
	4	Live	5	5	5	5		
		Dead						
		Missing						
	ID		MS	LD	LD	LD		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		24.2
	DO (mg/L)		8.03
	pH		7.75
	ID		MS

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Acute Ceriodaphnia Data Sheet for TIEs

Sample Date: 1/19/16	Test Name: 544LSAC13 TIE
Test Date: 1/23/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
13	1	Live	5	5	5	5		17 neos
		Dead						
		Missing						
	2	Live	5	5	5	5		13 neos
		Dead						
		Missing						
	3	Live	5	5	5	5		16 neos
		Dead						
		Missing						
	4	Live	5	5	5	5		14 neos
		Dead						
		Missing						
	ID		MS	D	D			

		Day 0	Day 1
Initial Chem	Temp (°C)	24.7	
	EC (µS/cm)	398.9	
	DO (mg/L)	8.90	
	pH	7.84	
	ID	D	
Final Chem	Temp (°C)		24.1
	DO (mg/L)		7.92
	pH		7.75
	ID		MS

PLEASE NOTE: To conserve water, initial chemistry is only measured on the TAC control, the hardness adjusted control (if relevant) and the unmanipulated ambient sample. Final chemistry is measured on ALL treaments from the first renewal.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
14	1	Live	5	5	5	5		16 neos
		Dead						
		Missing						
	2	Live	5	5	5	5		14
		Dead						
		Missing						
	3	Live	5	5	5	5		15
		Dead						
		Missing						
	4	Live	5	5	5	4		11
		Dead				?*		* sediment
		Missing						
	ID		MS	D	D	D		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		24.1
	DO (mg/L)		7.95
	pH		7.72
	ID		MS

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Acute Ceriodaphnia Data Sheet for TIEs

Sample Date: 1/19/16	Test Name: 544LSAC13 TIE
Test Date: 1/23/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
15	1	Live	5	5	5	5		14
		Dead						
		Missing						
	2	Live	5	5	5	5		13
		Dead						
		Missing						
	3	Live	5	5	5	5		13
		Dead						
		Missing						
	4	Live	5	5	5	5		6
		Dead						
		Missing						
	ID		MS	↳	↳	↳		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		24.1
	DO (mg/L)		8.13
	pH		7.68
	ID		MS

PLEASE NOTE: To conserve water, initial chemistry is only measured on the TAC control, the hardness adjusted control (if relevant) and the unmanipulated ambient sample. Final chemistry is measured on ALL treaments from the first renewal.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
16	1	Live	5	5	5	3		*one very tiny + copepod w/ 5 cerio
		Dead						
		Missing						
	2	Live	5	5	5	4		NO NEOS
		Dead						
		Missing						
	3	Live	5	6?*	6	5		
		Dead						
		Missing						
	4	Live	5	5+	4?	4		
		Dead						
		Missing						
	ID		MS	↳	↳	↳		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		24.1
	DO (mg/L)		7.84
	pH		7.62
	ID		MS

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Acute Ceriodaphnia Data Sheet for TIEs

Sample Date: 1/19/16	Test Name: 544LSAC13 TIE
Test Date: 1/23/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
17	1	Live	0					
		Dead	5					
		Missing						
	2	Live	0					
		Dead	5					
		Missing						
	3	Live	0					
		Dead	5					
		Missing						
	4	Live	0					
		Dead	5					
		Missing						
	ID		MS					

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		24.2
	DO (mg/L)		7.60
	pH		7.65
	ID		MS

PLEASE NOTE: To conserve water, initial chemistry is only measured on the TAC control, the hardness adjusted control (if relevant) and the unmanipulated ambient sample. Final chemistry is measured on ALL treaments from the first renewal.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
18	1	Live	5	5	5	5		14
		Dead						
		Missing						
	2	Live	5	5	5	5		18
		Dead						
		Missing						
	3	Live	4	4	4	4		17
		Dead	1					
		Missing						
	4	Live	5	5	5	4		13 (13)
		Dead						
		Missing						
	ID		MS	D	D	D		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		24.1
	DO (mg/L)		7.80
	pH		7.62
	ID		MS

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Acute Ceriodaphnia Data Sheet for TIEs

Sample Date: 1/19/16	Test Name: 544LSAC13 TIE
Test Date: 1/23/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
19	1	Live	5	5	5	5		15
		Dead						
		Missing						
	2	Live	5	5	4	4		14
		Dead						
		Missing			1*			*VERY HARD TO SEE IN SEDIMENT
	3	Live	5	5	5	5		17
		Dead						
		Missing						
	4	Live	5	5	5	5		
		Dead						
		Missing						
	ID		MS	D	D	D		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		24.2
	DO (mg/L)		7.29
	pH		7.63
	ID		MS

PLEASE NOTE: To conserve water, initial chemistry is only measured on the TAC control, the hardness adjusted control (if relevant) and the unmanipulated ambient sample. Final chemistry is measured on ALL treaments from the first renewal.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
20	1	Live	5	5	5	5		21
		Dead						
		Missing						
	2	Live	5	5	5	5		20
		Dead						
		Missing						
	3	Live	5	5	5	5		16
		Dead						
		Missing						
	4	Live	5	5	5	5		18
		Dead						
		Missing						
	ID		MS	D	D	D		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		24.2
	DO (mg/L)		7.60
	pH		7.54
	ID		MS

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Acute Ceriodaphnia Data Sheet for TIEs

Sample Date: 1/19/16	Test Name: 544LSAC13 TIE
Test Date: 1/23/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
21	1	Live	5	5	5	5		25 *ALSO HAD NEOS YESTERDAY
		Dead						
		Missing						
	2	Live	5	5	5*	5		21
		Dead						
		Missing						
	3	Live	5	5	5*	5		24
		Dead						
		Missing						
	4	Live	5	5	5	5		23
		Dead						
		Missing						
	ID		MS	D	D	D		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		24.4
	DO (mg/L)		7.80
	pH		7.78
	ID		MS

PLEASE NOTE: To conserve water, initial chemistry is only measured on the TAC control, the hardness adjusted control (if relevant) and the unmanipulated ambient sample. Final chemistry is measured on ALL treaments from the first renewal.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
22	1	Live	5	5	5	5		15
		Dead						
		Missing						
	2	Live	5	5	5	5		17
		Dead						
		Missing						
	3	Live	5	5	5	5		15
		Dead						
		Missing						
	4	Live	5	5	5	5		14
		Dead						
		Missing						
	ID		MS	D	D	D		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		24.3
	DO (mg/L)		>.40
	pH		7.80
	ID		MS

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Acute Ceriodaphnia Data Sheet for TIEs

Sample Date: 1/19/16	Test Name: 544LSAC13 TIE
Test Date: 1/23/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
23	1	Live	5	5	5	5		* MIGHT HAVE INJURED ONE
		Dead						6
		Missing						
	2	Live	5	5	5	5		7
		Dead						
		Missing						
	3	Live	5	5*	5	5		9
		Dead						
		Missing						
	4	Live	5	5	5	5		8
		Dead						
		Missing						
	ID		MS	D	D	D		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		24.2
	DO (mg/L)		7.70
	pH		7.75
	ID		MS

PLEASE NOTE: To conserve water, initial chemistry is only measured on the TAC control, the hardness adjusted control (if relevant) and the unmanipulated ambient sample. Final chemistry is measured on ALL treaments from the first renewal.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
	1	Live						
		Dead						
		Missing						
	2	Live						
		Dead						
		Missing						
	3	Live						
		Dead						
		Missing						
	4	Live						
		Dead						
		Missing						
	ID							

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		
	DO (mg/L)		
	pH		
	ID		

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Delta RMP Ceriodaphnia 96-hour TIE Treatment List

Client Name: SWRCB - SWAMP
Sample Name and Field Date: SJR at Buckley Cove 011916
Test Set-Up Date: 012516
Samples kept in Chamber #: 12
Experiment kept in:
Pouring volumes: Pour 100 mL for setup and renewal days, see exceptions for 111 and 114

Instructions: This is a 96-hour test with five animals per replicate and four replicates per treatment. The test is conducted at 25 °C. We must update the TIE Subcommittee at the end of this test. Feed 150 µl YCT/Selenastrum mixture into each replicate two hours prior to renewing water. DO NOT AERATE warming samples. Waters will be renewed daily. Score mortality daily. Please do initial chemistry on Day 0 for treatments 111 and 114 and final water chemistry on Day 1 for all treatments. BEFORE terminating the test, please discuss the results with the lab manager.

ID	Treatment	Instructions
111	SSEPAMH	Pour **250** mL on Day 0 for I. Chem
112	SSEPAMH + ~~100~~ 50 ppb PBO	Add 1000 µl 5ppm PBO to 100 mL
113	SSEPAMH + 100 ppb PBO	Add 2000 µl 5ppm PBO to 100 mL
114	544LSAC13	Pour **250** mL on Day 0 for I. Chem
115	544LSAC13 + ~~100~~ 50 ppb PBO	Add 1000 µl 5ppm PBO to 100 mL
116	SSEPAMH + 100 ppb PBO	Add 2000 µl 5ppm PBO to 100 mL

Acute Ceriodaphnia Data Sheet for TIEs

Sample Date: 1/19/16	Test Name: 544LSAC13 TIE
Test Date: 1/25/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
111	1	Live	5	5	5	5		
		Dead						
		Missing						
	2	Live	5	5	5	5		
		Dead						
		Missing						
	3	Live	5	5	5	5		
		Dead						
		Missing						
	4	Live	5	5	5	5		
		Dead						
		Missing						
	ID		MS	GR/MS	MS	MS		

day 4
3 neos present
gravids look lethargic
1 neo present

		Day 0	Day 1
Initial Chem	Temp (°C)	24.6	
	EC (µS/cm)	274.5	
	DO (mg/L)	8.44	
	pH	8.00	
	ID	DL/LD	
Final Chem	Temp (°C)		25.5
	DO (mg/L)		7.16
	pH		7.70
	ID		MS

PLEASE NOTE: To conserve water, initial chemistry is only measured on the TAC control, the hardness adjusted control (if relevant) and the unmanipulated ambient sample. Final chemistry is measured on ALL treaments from the first renewal.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
112	1	Live	5	5	4	4 (B)		A-Stuck to side of vial
		Dead						3 neos (B-one gravid almost dead
		Missing			1 A			
	2	Live	6	6	6	5		1 neo
		Dead						
		Missing						
	3	Live	5	5	5	5		3 neos
		Dead						
		Missing						
	4	Live	6	6	5	5		4 neos
		Dead						
		Missing			1			
	ID		MS	MS/GR	MS			

day 4

		Day 0	Day 1
Initial Chem	Temp (°C)	24.5	
	EC (µS/cm)	412.5	
	DO (mg/L)	8.56	
	pH	7.79	
	ID	DL/LD	
Final Chem	Temp (°C)		25.5
	DO (mg/L)		6.91
	pH		7.65
	ID		MS

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Acute Ceriodaphnia Data Sheet for TIEs

Sample Date: 1/19/16	Test Name: 544LSAC13 TIE
Test Date: 1/25/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
113	1	Live	5	5	5	5		
		Dead						
		Missing						
	2	Live	5	5	5	5		
		Dead						
		Missing						day 4
	3	Live	5	5	5	5		5 neos
		Dead						
		Missing						
	4	Live	5	5	5	5		2 neos
		Dead						
		Missing						
	ID		MS	GR/MS	MS	MS		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		25.7
	DO (mg/L)		6.82
	pH		7.61
	ID		MS

PLEASE NOTE: To conserve water, initial chemistry is only measured on the TAC control, the hardness adjusted control (if relevant) and the unmanipulated ambient sample. Final chemistry is measured on ALL treaments from the first renewal.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
114	1	Live	5	5	5	5		A-one very small
		Dead						B-Copepod in vial
		Missing						
	2	Live	6A	5	5	5		Day 2: gr moved one ♂ into Rep
		Dead						C from Rep B.
		Missing						
	3	Live	4B	5	5	5		Day 4
		Dead	1					Rep 1: 14 neos
		Missing						Rep 2: 14 neos
	4	Live	5A	5	5	5		3: ~15 neos
		Dead						4: ~11 neos
		Missing						all neos near bottom of vial
	ID		MS	GR/MS	MS	MS		grids active

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		25.6
	DO (mg/L)		7.18
	pH		7.64
	ID		MS

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Acute Ceriodaphnia Data Sheet for TIEs

Sample Date: 1/19/16	Test Name: 544LSAC13 TIE
Test Date: 1/25/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
115	1	Live	5	5	5	5		day 4 Rep 1: ~16 neos, 2: ~16 neos, 3: ~10 neos, 4: ~13 neos } Both neos and gravids active. Most neos near bottom of vial
		Dead						
		Missing						
	2	Live	5	5	5	5		
		Dead						
		Missing						
	3	Live	6	6	6	6		7 neos present day 3
		Dead						
		Missing						
	4	Live	5	5	5	5		5 neos present day 3
		Dead						
		Missing						
	ID		MS	GR/MS	MS	MS		

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		25.6
	DO (mg/L)		7.15
	pH		7.63
	ID		MS

PLEASE NOTE: To conserve water, initial chemistry is only measured on the TAC control, the hardness adjusted control (if relevant) and the unmanipulated ambient sample. Final chemistry is measured on ALL treaments from the first renewal.

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
116	1	Live	5	5	5	5		day 4 Rep 1: ~16 neos, 2: ~14 neos, 3: ~11 neos, 4: 11 neos
		Dead						
		Missing						
	2	Live	5	5	5	5		5 neos day 3
		Dead						
		Missing						
	3	Live	5	5	5	5		5 neos day 3
		Dead						
		Missing						
	4	Live	5	5	5	5		10 neos day 3
		Dead						
		Missing						
	ID		MS	GR/MS	MS	MS		Both gravids and neos are active

		Day 0	Day 1
Initial Chem	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final Chem	Temp (°C)		25.6
	DO (mg/L)		7.16
	pH		7.63
	ID		MS

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544LSAC13 PBO follow-up Test δ

Field: 011916

Setup: 021816
@ 14:50 hr (MS)

Columns eluted: 021716

96hr test w/ 4 Reps w/ 5 animals/rep.
4hr feed and change daily. Use 5ppm PBO stock!

pour to 80 ML

101 SSEPAMH

102 SSEPAMH + MeOH — Add 480 µl MeOH

103 SSEPAMH + eluate — Add 480 µl eluate

104 SSEPAMH + MeOH + PBO — Add 480 µl MeOH and 1600 µl PBO

105 SSEPAMH + eluate + PBO — Add 480 µl eluate and 1600 µl PBO

Initial chem day 0 #101

Temp: 25.2 DO: 8.01
EC: 309.7 pH: 8.13 MS

544LSAC13 PBO follow up Test δ

Acute *C. dubia* Rangefinder Data Sheet

Sample Date: NA	Test Name: *C. dubia* PBO test
Test Date: 2/18/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
101	1	Live	5	5	5	4		
		Dead				1		
		Missing						
	2	Live	5	5	5	5		
		Dead						
		Missing						
	3	Live	5	4	3	3		
		Dead		1	1			
		Missing						
	4	Live	4	4	4	3		
		Dead	1			1		
		Missing						
	ID		GR	DL	GM	MS		

		Day 0	Day 1
Initial	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final	Temp (°C)		25.3
	DO (mg/L)		6.78
	pH		7.90
	ID		GR

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
102	1	Live	5	5	5	5		
		Dead						
		Missing						
	2	Live	5	5	5	5		
		Dead						
		Missing						
	3	Live	5	5	5	5		
		Dead						
		Missing						
	4	Live	5	5	5	5		
		Dead						
		Missing						
	ID		GR	DL	GM	MS		

		Day 0	Day 1
Initial	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final	Temp (°C)		25.3
	DO (mg/L)		6.82
	pH		7.96
	ID		GR

Footnotes:
SOU - Sucked One Up
FD - Found Dead
FL - Found Living
TE - Tech Error

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Acute *C. dubia* Rangefinder Data Sheet

Sample Date: NA	Test Name: *C. dubia* PBO test
Test Date: 2/18/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
103	1	Live	5	5	5	5		
		Dead						
		Missing						
	2	Live	5	5	5	5		
		Dead						
		Missing						
	3	Live	5	5	5	5		
		Dead						
		Missing						
	4	Live	5	5	5	5		
		Dead						
		Missing						
	ID		GR	DL	GM	MS		

		Day 0	Day 1
Initial	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final	Temp (°C)		25.2
	DO (mg/L)		6.72
	pH		7.94
	ID		GR

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
104	1	Live	5	5	5	5		All animals pale or white & appear smaller in size compare to other treatments in days - GM
		Dead						
		Missing						
	2	Live	5	5	5	5		
		Dead						
		Missing						
	3	Live	4	4	4	2		
		Dead	1			2		
		Missing						
	4	Live	5	5	4	4		
		Dead			1			
		Missing						
	ID		GR			MS		

		Day 0	Day 1
Initial	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final	Temp (°C)		25.2
	DO (mg/L)		7.89
	pH		7.92
	ID		GR

Footnotes:
SOU - Sucked One Up
FD - Found Dead
FL - Found Living
TE - Tech Error

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Acute *C. dubia* Rangefinder Data Sheet

Sample Date: NA	Test Name: *C. dubia* PBO test
Test Date: 2/18/16	

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
105	1	Live	5	5	5	5		
		Dead						
		Missing						
	2	Live	5	5	5	4		
		Dead				1		
		Missing						
	3	Live	5	5	5	5		
		Dead						
		Missing						
	4	Live	5	5	5	5		
		Dead						
		Missing						
	ID		GR	DL	LW	MV		

		Day 0	Day 1
Initial	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final	Temp (°C)		25.2
	DO (mg/L)		6.83
	pH		7.87
	ID		GR

Treatment	Rep	Status	Day 1	Day 2	Day 3	Day 4	Sum	Notes
	1	Live						
		Dead						
		Missing						
	2	Live						
		Dead						
		Missing						
	3	Live						
		Dead						
		Missing						
	4	Live						
		Dead						
		Missing						
	ID							

		Day 0	Day 1
Initial	Temp (°C)		
	EC (µS/cm)		
	DO (mg/L)		
	pH		
	ID		
Final	Temp (°C)		
	DO (mg/L)		
	pH		
	ID		

Footnotes:
SOU - Sucked One Up
FD - Found Dead
FL - Found Living
TE - Tech Error

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Fathead Minnow Delta RMP Treatment List
Field Date: 1/19/16
Test Set up: 1/20/16
Samples kept in chamber: 12
Experiment kept in: WT-2

Instructions: This is a 7-day chronic-style test with 10 animals per replicate and 4 replicates per treatment. Each replicate consists of 250ml of sample. Carefully renew 200ml per replicate daily with the squeegee tip method. Feed 3X times daily. Do not feed on the last day of the test. If ≥ 50% mortality occurs in one replicate, feed the replicate half the amount of food. This test must be setup with <48-hour old fish. Initial and final chemistry must be taken daily.

Contact Marie **immediately** when:

- either endpoint in any sample has a 50% reduction from the control performance (TIE trigger, applies to biomass and reproduction), or
- if you have high variability between the replicates (PRT trigger, use Excel calculator).

ID	Treatment	Decoding or Instructions
11	ROEPAMH (TAC Control)	
12	510SACC3A	
14	544LSAC13	
15	541SJC501	
16	510SOL010	Bj: sample rec'd @ 9.8°C
17	Field Duplicate	

ID	Treatment	
11	ROEPAMH (TAC Control)	This test will be set up PRT Style (20 replicates with 2 fish each). Feeding will be about 25 *Artemia* per beaker twice a day.
~~13~~ 12	544SAC002	
13	Low Conductivity Control	

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SWRCB - SWAMP FY 14/15 Fathead Test Initiation Sheet

Region: DRMP Sample Date: 011916 Test Date: 012016

Samples stored in chamber: 12 Test conducted in: WT-2

Before test initiation, what percentage of fish: are lying on the bottom <1 %
have bent spines <1 %
are active 99 %

Comments about irregular color, sizes or shapes: Normal & Healthy

Age at time of set-up: <48h % of less desirable fish used in each beaker: Ø

Test set-up by: GR + GM Test set-up time: 1650

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.
If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.
If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.
If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	pre-DO	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
11	NA	24.7	273.6	7.86	8.29	MS	84	62	0.00
12	10.66	24.9	151.6	7.88	8.30	MS	60	58	0.21
~~13~~	~~NA~~								
14	NA	25.1	418.9	7.91	8.22	MS	88	58	0.23
15	NA	24.9	444.7	8.01	8.33	MS	108	72	0.09
16	NA	25.0	152.8	7.83	8.11	MS	80	56	0.51
17	NA	25.3	154.9	7.78	8.11	MS	76	58	0.49
11	10.69	24.0	278.4	7.92	8.25	GM	84	62	0.00
12	NA	23.9	103.7	7.86	8.02	GM	20	44	0.01
13	NA	23.9	87.3	7.92	7.77	GM	24	12	0.02

PRT

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Updated by LD 072815

SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 1/19/16
Test Date: 1/20/16

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
11	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	9	9	8	8	8	7	7	
		Dead								
		Missing			1			1		
Murky Rating	4	Live	10	9	9	9	9	9	9	
		Dead								
		Missing		1						
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		CYT	SR	SR	SR	CT	CT	CT	
	Initial	Pre-DO*								
		pH	8.11	8.16	~~8.01~~	7.90	8.06	8.09		
		DO (mg/L)	7.82	8.16	~~7.89~~	8.20	8.25	8.33		
		ID	CYT	CYT	GM	GM	CT	DL		
	Final	Temp °C	22.9	23.5	24.2	24.8	23.3	23.3		
		pH	8.15	8.04	8.01	~~7.87~~	8.03	8.00		
		DO (mg/L)	7.79	7.83	7.89	~~8.02~~	8.14	8.25		
		ID	CYT	CYT	GM	GR	CT	CT		

Day 3 initial
pH 8.16
DO 8.26
(MS)

Day 4 final
pH 7.87
DO 8.02

Rep	Boat Weight	Total Weight
1	1.00205	1.00740
2	1.00446	1.00967
3	1.00623	1.01082
4	1.00941	1.01438

Notes:

TOQ

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
12	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	9	9	9	9	9	9	9	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		DL	SR	SR	SR	CT	CT	CT	
	Initial	Pre-DO*				12.42	~~10.96~~	12.07		
		pH	7.99	8.15	~~8.01~~	7.88	7.98	7.96		
		DO (mg/L)	7.82	8.16	~~7.89~~	8.20	8.25	8.48		
		ID	CYT	CYT	GM	GM	CT	DL		
	Final	Temp °C	22.8	23.2	24.5	24.6	23.3	23.3		
		pH	8.16	8.05	8.01	7.88	~~8.14~~	~~8.18~~		
		DO (mg/L)	7.79	7.87	7.86	7.68	8.09	8.18		
		ID	CYT	CYT	GM	GR	CT			

Day 3 initial
pH: 8.10
DO: 8.23
(MS)

DAY 5 FINAL
pH: 7.93

DAY 6
FINAL pH = 8.03

Rep	Boat Weight	Total Weight
1	0.99017	0.99544
2	0.99933	1.00391
3	1.00066	1.00536
4	1.01194	1.01680

Notes:

TOQ

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 1/19/16
Test Date: 1/20/16

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
14	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	9	9	9	9	9	9	9	
		Dead								
		Missing					~~9~~			
	3	Live	9	9	9	9	9	9	9	
		Dead								
		Missing								
Murky Rating	4	Live	10	9	8	8	8	8	8	
		Dead			1					
		Missing		1						
	≥50% Mortality?		No	NO	NO	NO	NO	NO	NO	
	ID		DL	SR	SR	SR	CT	CT	CT	
	Initial	Pre-DO*	10.34							
		pH	7.99	8.13	~~7.97~~	7.77	7.90	7.85		
		DO (mg/L)	7.85	8.13	~~7.84~~	8.25	8.42	8.55		
		ID	CYT	CYT	GM	GM	CT	DL		
	Final	Temp °C	22.8	23.3	24.4	24.7	23.5	23.3		
		pH	8.09	7.98	7.97	~~7.80~~	7.91	7.89		
		DO (mg/L)	7.76	7.87	7.89	~~7.62~~	7.98	~~8.25~~		
		ID	CYT	CYT	GM	GR	CT	CT		

Rep	Boat Weight	Total Weight
1	1.00329	1.00799
2	1.02138	1.02634
3	1.02560	1.03034
4	0.99885	1.00361

Notes:

ToQ

Day 3 initial
pH: 7.97
DO: 8.34
(MS)

Day 4 final
pH = 7.62
DO = 7.80

DAY 6 FINAL
DO=8.15

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
15	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	9	9	
		Dead						1		
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing			SR					
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		DL	SR	SR	SR	CT	CT	CT	
	Initial	Pre-DO*		9.24						
		pH	8.06	8.16	~~8.08~~	7.92	7.89	7.85		
		DO (mg/L)	7.87	8.15	~~7.46~~	8.19	8.40	8.56		
		ID	CYT	CYT	GM	GM	CT	DL		
	Final	Temp °C	22.7	23.3	24.6	24.8	23.4	23.4		
		pH	8.30	8.07	8.03	~~8.81~~	8.01	8.16		
		DO (mg/L)	7.84	7.80	7.96	~~7.95~~	7.96	8.27		
		ID	CYT	CYT	GM	GR	CT	CT		

Rep	Boat Weight	Total Weight
1	1.02516	1.02977
2	1.02723	1.03145
3	1.01841	1.02298
4	1.00253	1.00695

Notes:

Day 3 initial
pH: 8.06
DO: 8.33
(MS)

Day 4 final
pH = 7.75
DO = ~~7.81~~ 7.81

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 1/19/16
Test Date: 1/20/16

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
16	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	9	9	9	
		Dead								
		Missing					1			
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		No	NO	NO	NO	NO	NO		
	ID		DL	CT	GR	GR	CT	CT		
	Initial	Pre-DO*								
		pH	7.86	8.06	7.91	7.68	7.91	7.69		
		DO (mg/L)	8.09	8.06	7.63	8.26	7.85	8.40		
		ID	CM	CM	GM	GM	CT	DL		
	Final	Temp °C	22.7	23.5	24.2	25.0	23.7	23.2		
		pH	8.10	7.89	7.91	7.57	7.60	7.91		
		DO (mg/L)	7.33	7.31	7.63	7.51	7.66	7.90		
		ID	CT	CT	GM	GR	CT	CT		

Rep	Boat Weight	Total Weight
1	0.99346	0.99841
2	0.99768	1.00156
3	1.01383	1.01967
4	1.02729	1.03211

Notes:

Day 3 initial
pH: 7.96
DO: 8.17
MS

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
17	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10^A	10	10	10	10	
		Dead								
		Missing								
	3	Live	9	9	9	9	9	8*	8	
		Dead								
		Missing						1		
Murky Rating	4	Live	10	10	10^A	D	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		No	NO	NO	NO	NO	NO	NO	
	ID		DL	CT	GR/MH	GR	CT	CT	CT	
	Initial	Pre-DO*								
		pH	8.00	8.09	7.87	8.17	8.28	7.96		
		DO (mg/L)	7.84	8.06	7.44	7.74	8.16	8.51		
		ID	CM	CM	GM	GM	CT	DL		
	Final	Temp °C	22.6	23.5	24.2	24.9	23.5	23.1		
		pH	8.03	7.90	7.87	7.57	7.82	7.95		
		DO (mg/L)	7.46	7.55	7.64	7.87	7.73	8.00		
		ID	CT	CM	GM	GR	CT	CT		

Rep	Boat Weight	Total Weight
1	1.00852	1.01329
2	1.02539	1.03036
3	1.01954	1.02413
4	1.00800	1.01309

Notes:
A-Sucked one up
* sucked one up during water Δ?

TOP

Day 3 initial
pH: 7.91
DO: 8.17
MS

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Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 1/19/2016
Test Date: 1/20/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
11-PRT	A	2	2	2	1A/1D	1	1	1		1.01571	1.02079
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2		1.01934	1.02302
	G	1A/1D	1	1	1	1	1	1			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	1A/1D	1	1	1			
	K	2	2	2	2	2	2	2		1.02575	1.03041
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	1A/1D	1	1	1			
	P	2	2	2	2	2	~~0~~ 2	2		1.01269	1.01735
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	CT	CT	AA	GM	CT	CT	CT			

Initial	Pre-DO*							
	pH	8.12	8.06	8.16	7.89	8.04	8.00	
	DO (mg/L)	7.97	8.13	8.31	8.09	8.34	8.23	
	ID	CT	CT	MS	GM	CT	CT	
Final	Temp	24.0	23.1	22.4	24.7	24.1	24.1	
	pH	7.85	7.84	7.87	7.69	7.79	7.69	
	DO (mg/L)	7.38	7.76	7.97	7.51	~~7.67~~	7.76	
	ID	CT	CT	AA	GM	CT	CT	

Notes:

LD modified 11/18/15

DAY 5 FINAL DO = 7.66

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 1/19/2016
Test Date: 1/20/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
12 PRT	A	2	2	2	2	2	2	2		0.99595	1.00052
	B	2	2	1A/10	1	1	1	1			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2		1.02783	1.03221
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2		1.01306	1.01902
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2		1.03779	1.04220
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	CT	CT	AA	GM	CT	CT	CT			

Initial	Pre-DO*	10.70	11.41		11.52	12.52	12.73	
	pH	7.87	7.82	7.89	7.68	7.75	7.81	
	DO (mg/L)	7.81	8.45	8.36	8.17	8.22	8.35	
	ID	CT	CT	MS	GM	CT	CT	
Final	Temp	23.8	23.1	23.6	24.8	~~24.6~~	24.2	
	pH	7.58	7.56	7.52	7.36	~~7.85~~	7.32	
	DO (mg/L)	7.51	~~7.76~~	7.86	7.57	7.67	7.60	
	ID	CT	CT	AA	GM	CT	CT	

Notes:

LD modified 11/18/15

DAY 2 F_{DO}: 7.71

DAY 5
FINAL
pH = 7.45
TEMP = 24.4

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 1/19/2016
Test Date: 1/20/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
13-PRT	A	2	2	2	2	~~2~~ IA/10	1	1		1.02475	1.02906
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2		1.02310	1.02781
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2		0.98672	0.99079
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	IA/10	1	1			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	IA/10	1	1			
	P	2	2	2	2	2	2	2		1.01547	1.02062
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	CM	CM	AA	GM	GT	GT	CT			

Initial	Pre-DO*							
	pH	7.59	7.83	7.85	7.55	~~7.75~~	7.62	
	DO (mg/L)	7.91	8.12	8.39	8.18	~~8.20~~	8.28	
	ID	CM	CM	MS	GM	GT	GT	
Final	Temp	23.7	24.6	24.0	25.4	24.1	24.3	
	pH	7.44	7.44	7.45	7.20	7.24	7.15	
	DO (mg/L)	7.54	7.65	7.96	7.58	7.56	7.54	
	ID	CM	CM	AA	GM	GT	GT	

Notes:

LD modified 11/18/15

DAY 5 INTERIM
DO: 8.25
pH: 7.67

SWRCB - SWAMP Fathead Test Termination Sheet

Region: DRMP Sample Date: 011916 Test Date: 012016

Samples stored in: Chamber 12 Test conducted in: WT-2

Test taken down by: CT

Test take down time:

Final Water Chemistry at Test Termination

Sample	Temp (ºC)	EC (µS/cm)	DO (mg/L)	pH	ID
11	23.7	277.0	~~7.76~~	8.05	CT
12	23.7	159.2	7.76	7.93	CT
14	23.8	414.2	7.55	7.91	CT
15	23.8	446.4	7.73	8.06	CT
16	23.8	159.6	7.40	7.80	CT
17	23.9	154.7	7.39	7.85	CT
11	23.4	337.2	8.11	8.05	CT
12	23.9	86.4	7.97	7.66	CT
13	23.4	86.5	8.13	7.57	CT

DO = 7.75

PRT

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Updated by LD 072815

Delta RMP Selenastrum Capricornutum <u>without EDTA</u>

Field Date: 1/19/16
Test Set up: 1/20/16
Samples kept in chamber: 12
Experiment kept in chamber: 5

Instructions: This is a 96-hour chronic algae test. Take initial chemistry at test set up and final chemistry at test termination. Randomize flasks twice daily. Flasks must be inoculated individually. This test has 5 replicates per treatment, one of which is a chemistry-only replicate. Please take daily pH and temperature measurements at the AM randomization. All chemistry measurements for this test will be from the 5th chemistry replicate. Contact Marie **<u>immediately</u>** when the average growth from any sample has a 50% reduction from the control performance. Start spiking algae cells at 94 hours of testing whenever possible.

ID	Treatment	Decoding or Instructions
11	Glass Distilled Water (TAC)	
12	510SACC3A	Foaming or Mycrocystis Present?
13	544SAC002	Foaming or Mycrocystis Present?
14	544LSAC13	Foaming or Mycrocystis Present?
15	541SJC501	Foaming or Mycrocystis Present?
16	510SOL010 By Reid 9.8.0	Foaming or Mycrocystis Present?
17	Field Duplicate	Foaming or Mycrocystis Present?

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SWRCB - SWAMP FY 14/15 Algae Test Initiation Sheet

Region: Delta RMP Sample Date: 011916 Test Date: 012016

Samples stored in chamber: 12 Test conducted in: Chamber 5

Culture water type: Glass Distilled Initial flask cell count: 1.03X10^6

Letter and date of culture: W Initial innoculum volume: 200mL

Tech who made culture: DL Test set-up by: DL

Test set-up time: 1150

The nutrients were added to: individual flasks (entire treatment) multiple treatments

Were algae cells added to individual flasks? (yes) no Light intensity range: 358-441 ft candles

Special Instructions:

If the Sample Receiving SC or Field SC is ≥ 1,500, then a high conductivity control must be included in the test.
If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation									Daily Measurements					
Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	Hard (mg/L)	Alk (mg/L)	Amm (mg/L)	ID	pH	°C	pH	°C	pH	°C
11	25.7	91.8	7.86	7.91	0	8	0	DL	25.6	7.61	7.53	25.2	7.83	25.2
12	25.8	231.8	8.13	8.17	60	58	0.21	DL	25.0	8.08	8.06	25.3	8.38	24.5
13	25.9	144.2	7.94	7.96	20	44	0.01	DL	7.91	25.2	7.88	25.0	8.25	24.6
14	26.0	491.2	8.02	8.15	88	58	0.23	DL	8.12	25.0	8.08	24.7	8.36	25.1
15	25.7	532	8.00	8.22	108	72	0.09	DL	8.22	25.0	8.21	25.1	8.51	24.8
16	25.7	230.5	8.04	8.19	86	56	0.51	DL	8.08	24.9	8.15	24.3	8.40	24.8
17	25.9	227.5	8.01	8.12	76	58	0.49	DL	8.13	25.0	8.10	24.8	8.44	24.9
									ID	DL	ID		ID	

Algae Randomization Record				
Date	AM Time	ID	PM Time	ID
012016	1145	DL	1700	GR
012116	715	DL	1857	MJ
012216	940	MJ		
012316	948	GM	1610	GR
012416	840	GR		

Power outage 1/22 @16:30. Intentionally did not randomize to preserve chamber temperature GM

Revised by LD 072815

Aquatic Health Program Laboratory
University of California
1089 Veterinary Medicine Drive
Davis, CA 95616
(530)754-6772

SWRCB - SWAMP FY 14/15 Algae Test Termination Sheet

Region: DeltaRMP Sample Date: 011916 Test Date: 011201 6

Samples stored in chamber: 12 Test conducted in: Chamber 5

Test taken down by: MS/AA

Test take down time: 955 (start spiking algae cells at 94 hours)

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
11	25.3	95.0	8.43	7.94	MS
12	25.2	209.6	8.93	9.10	MS
13	24.6	136.5	9.23	8.78	MS
14	25.1	448.9	9.06	8.75	MS
15	25.2	510	9.11	9.07	MS
16	25.1	265.2	8.98	9.03	MS
17	24.8	239.3	8.95	9.03	MS

samples very green @ termination 012416 MS

Revised by LD 072815

Aquatic Health Program Laboratory
University of California
1089 Veterinary Medicine Drive
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(530)754-6772

Algae Innoculum Worksheet

Test: Delta RMP

Field Date: 011916

Setup Date: 012016

Algal Culture ID letter W

Algal Culture made by DL

Date made 011416

Days cultured 6

Background Counts	51	55	55
Raw Algal Counts	64203	63751	63694

Mean of raw counts 63882.67

Mean of raw counts x 80 5.11×10^6

1×10^6 / (mean of raw counts x 80) x 200 = amount of algal culture needed 39.1

200 – amount of algal culture needed = amount of SSEPAMH needed 160.9

Mix the above amounts of algae and SSEPAMH to make the innoculum for the test.

Once dilution is made, count the cell number for the dilution to make sure that it is approximately 1×10^6 cells/ml.

Dilution Counts	12779	12875	12861

Mean of dilution counts 12838.3

Mean of dilution counts x 80 1.03×10^6 (acceptable range is: $0.9 \times 10^6 - 1.1 \times 10^6$)

Aquatic Toxicology Laboratory
VM:APC
1321 Haring Hall
University of California, Davis
Davis , CA 95616
(530) 752-0772

Background count:
1) 54
2) 75
3) 57

Algae Takedown

Aquatic Toxicology Laboratory
VM:APC
1321 Haring Hall
University of California, Davis
Davis , CA 95616
(530) 752-0772

Test: Delta RMP Test Date: 01 20 16

Treatment: 11

Replicate 1	21815	21790	21941
Replicate 2	16616	16854	16907
Replicate 3	19988	19869	19794
Replicate 4	17270	17096	16982

$\bar{x}$ CELL COUNT 18910 1.51×10^6 w/ 12.7% CV

Treatment: 12

Replicate 1	22208	22258	22332
Replicate 2	22002	22243	24237
Replicate 3	20530	19999	20455
Replicate 4	24498	24271	24757

Treatment: 13

Replicate 1	27850	28231	28571
Replicate 2	29091	29740	29297
Replicate 3	33888	33530	33690
Replicate 4	29966	30053	30125

Treatment: 14

Replicate 1	13151	13363	13619
Replicate 2	10314	10606	10338
Replicate 3	14491	14626	14696
Replicate 4	14645	15027	15107

Treatment: 15

Replicate 1	24649	24737	25043
Replicate 2	22494	22848	22826
Replicate 3	23684	24080	24249
Replicate 4	22201	22082	22434

Treatment: 16

Replicate 1	27253	26818	26851
Replicate 2	25285	25853	25304
Replicate 3	24035	23582	23818
Replicate 4	28850	29461	29765

Treatment: 17

Replicate 1	24216	24714	24647
Replicate 2	24937	24902	24239
Replicate 3	24419	24910	24876
Replicate 4	27313	28105	27777

Treatment:

Replicate 1			
Replicate 2			
Replicate 3			
Replicate 4			

February 2016

Delta RMP Ceriodaphnia Dubia

Field Date: 2/17/16
Test Set up: 2/18/16
Samples kept in chamber: 9
Experiment kept in chamber: CTR

Instructions: This is a 3-Brood test with 1 animal per replicate and 10 replicates with 15 ml per vial treatment. This test must be set up using blocking by known parentage. Feed and change daily. Take initial chemistry and final chemistry daily. Contact Marie **immediately** when either endpoint in any sample has a 50% reduction from the control performance. Please alert Marie or Linda ASAP when test does not meet test acceptability criteria. Take down the test after the vast majority of organisms have had their 3rd brood.

ID	Treatment	Decoding or Instructions
21	L16-50 (TAC Control)	
22	510SACC3A	
23	544SAC002	
24	544LSAC13	
25	541SJC501	
26	510SOL010	
27	LabQA for Cerio	
28	Low Conductivity Control	L16-50 diluted with Glass Distilled
29	SSEPAMH	

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Davis, CA 95616
(530) 754-6772

SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Initiation Sheet

Region: Delta RMP Sample Date: 021716 Test Date: 021816

Samples stored in chamber: _____ Test conducted in: CTR

If neos isolated from Brood Board: Only use neos from gravids producing over 8 neos on day of set-up.

Brood Board # 26 (ABCDE) & (FGHIJ) Date/Time neos isolated: 021816 / 1200

Date/Time gravids isolated: 021716 / 1600 Neos isolated by: MS

Gravids isolated by: DL Test set-up by: DL

Health of gravids: good Time neos loaded: 1400

At time of set-up: were neos born in an 8 hour window? (yes) no Age range: ~~0-24 hrs~~ 14hrs

were neos less than 24 hours old? (yes) no MS021916

Blocking by known parentage: Please list which Brood Board replicate was used for test initiation.

Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
A2	B3	C4	D1	D9	F9	G10	H5	J3	J6
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
A2	B3	C4	D1	D9	F9	G10	H5	J3	J6
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.

If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 2,500, consult with a supervisor for a potential species substitution.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample ID	Receiving SC	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
21		24.0	311.0	7.98	8.25	DL	92	56	0.01
22		24.2	200.0	8.18	8.31	DL	68	74	0.38
23		24.1	70.3	8.22	8.10	DL	20	20	0.02
24		24.0	587.0	8.14	8.31	DL	140	88	0.09
25		23.9	942	8.09	8.46	DL	216	130	0.01
26		24.0	1070	8.11	8.68	DL	320	272	0.01
27		24.0	295.0	8.16	8.28	DL	96	56	0.01
28		23.9	75.0	8.09	8.02	DL	0	4	0.01
29		24.0	297.1	8.33	8.16	DL	NR	NR	0.02

Note: Pre-DO is _____ on Treatment # _____

SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 2/17/16	
Test Date: 2/18/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
21	1													NA	8.14	7.79	MS	25.4	7.86	6.61	EG
	2	+									+	No	DL		8.12	7.89	DL	25.1	8.06	7.54	DL
	3	5	5	5	4	5	3	4	5	5	5	NO	GM		8.13	7.99	GM	25.4	7.93	7.44	GM
	4	10	10	11	10	10	9	9	10	10	9	No	DL		8.06	8.12	DL	25.2	8.00	8.20	GR
	5	+									+	NO	GM		8.14	8.18	MT	24.6	7.47	7.71	GM
	6	15	14	16	14	14	11	13	15	14	12	No	DL		8.12	8.00	DL	25.0	7.97	7.70	SW
	7																				
	8																				
Total Young:																					

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
22	1													NA	8.14	7.92	MS	25.5	8.03	7.18	EG
	2	+									+	No	DL		8.16	7.63	DL	25.4	8.07	7.63	DL
	3	6	+	1	4	+	+	+	5	3	5	NO	GM		8.13	8.14	GM	25.3	8.02	7.46	GM
	4	11	3	9	3	4	8	+	+	6	9	No	DL		8.05	8.35	DL	24.8	7.94	8.06	GR
	5	+									+	NO	GM	11.52	8.24	8.23	MT	24.1	8.02	7.80	GM
	6	12	13	6	2	12	12	+	8	12	13	No	DL	10.81	8.18	8.03	DL	24.7	8.01	7.55	SW
	7																				
	8																				
Total Young:																					

Notes:

Aquatic Health Program Laboratory
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(530)754-6772

Revised by LD on 072815

SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 2/17/16	
Test Date: 2/18/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
23	1													10.18	7.91	8.47	MS	25.2	7.65	7.37	EG
	2	+									+	NO	DL		7.86	7.74	DL	25.6	7.74	7.72	DL
	3	4	4	5	5	3	2	2	3	5	5	NO	GM		7.82	8.00	GM	25.2	7.62	7.41	GM
	4	9	10	9	10	9	7	5	8	8	9	NO	DL		7.74	8.48	DL	24.3	7.60	8.17	GR
	5	+	+	3+	+						+	NO	GM		7.89	8.17	MT	24.1	7.65	7.88	GM
	6	10	11	12	11	11	13	10D	12	12	13	NO	DL		7.80	8.10	DL				
	7							↓													
	8																				
Total Young:																					

Notes: A big

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
24	1													NA	8.20	8.52	MS	25.3	8.06	7.34	EG
	2	+									+	NO	DL		8.01	7.80	DL	25.5	8.07	7.65	DL
	3	4	7	+	+	5	4	7	5	5	6	NO	GM		7.97	7.94	GM	25.3	8.03	7.52	GM
	4	D9	9	8	7	11	9	10	9	10	10	NO	DL		8.04	8.50	DL	24.1	7.94	8.24	GR
	5	↓	+								+	NO	GM		8.26	8.14	MT	24.0	8.06	7.92	GM
	6		12	11	12	10	12	13	12	13	13	NO	DL		8.17	8.08	DL				
	7																				
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 2/17/16	
Test Date: 2/18/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
25	1													NA	8.33	8.31	MS	25.4	8.22	6.83	EG
	2	+									+	No	DL		8.28	8.00	DL	25.5	8.27	7.48	DL
	3	7	7	6	7	4	3	5	4	4	2	No	GM		8.15	8.08	GM	25.4	8.18	7.56	GM
	4	11	14	11	10	10	11	13	10	10	9	No	DL		8.26	8.35	DL	24.5	8.18	8.18	GR
	5	15	9	+				13	+			No	GM		8.36	8.26	MT	23.9	8.23	7.87	GM
	6	+	+	13	13	14	15	+	15	16	16	No	DL		8.29	8.14	DL				
	7																				
	8																				
Total Young:																					

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
26	1													NA	8.41	8.19	MS	25.2	8.57	6.65	EG
	2	+									+	No	DL	10.37	8.33	7.86	DL	25.4	8.56	7.75	DL
	3	5	2	+	1	4	3	+	3	6	+	No	GM	10.30	8.35	8.08	GM	25.2	8.49	7.44	GM
	4	7	9	8	5	8	6	8	5	+	6	No	DL		8.35	8.40	DL	24.1	8.47	8.18	GR
	5	12	+	+	+	+	+	11	+	+	+	No	GM		8.55	8.26	DL	23.9	8.53	7.91	GM
	6	+	12	13	12	13	11	+	6	4	13	No	DL		8.52	8.09	DL				
	7																				
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 2/17/16	
Test Date: 2/18/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
27	1													NA	8.18	8.34	MS	25.3	7.81	6.51	EG
	2	+									+	No	DL		8.12	7.79	DL	25.5	8.05	7.72	DL
	3	4	4	2	4	3	+	3	D	5	4	No	GM		8.09	8.17	GM	25.2	7.94	7.70	GM
	4	8	8	6	6	6	5	4		7	7	No	DL		8.08	8.42	DL	24.0	7.96	8.32	GR
	5	+						+		+	+	No	GM		8.18	8.30	DL	23.7	8.01	8.09	GM
	6	11	12	11	10	11	8	10		11	12	No	DL		8.00	8.05	DL				
	7																				
	8																				
Total Young:																					

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
28	1													NA	7.82	8.42	MS	25.3	7.42	6.67	EG
	2	+			+	D	+				+	No	DL		7.75	7.85	DL	25.3	8.56	7.78	DL
	3	4	2	3	4		+	5	6	5	4	No	GM		7.70	8.01	GM	25.2	7.55	7.68	GM
	4	8	+	+	+		6	9	+	7	7	No	DL		7.63	8.50	DL	24.0	7.63	8.41	GR
	5	+	5	7	6		+	+	7	+	+	No	GM		7.74	8.25	DL	23.9	7.48	7.98	GM
	6	4	4	9	5		7	4	10	10	4	No	DL		7.62	8.20	DL				
	7																				
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 2/17/16	
Test Date: 2/18/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1													NA	8.08	8.41	MS	25.6	7.82	6.79	EG
	2	+									+	NO	DL		8.07	7.75	DL	25.4	7.84	7.68	DL
	3	2	3	5	2	5	2	3	2	3	4	NO	GM		8.11	8.05	GM	25.4	7.82	7.70	GM
29	4	7	4	7	8	6	8	7	7	7	5	NO	DL		7.92	8.43	DL	24.1	7.85	8.36	GR
	5	9	+	+							+	NO	GM		8.03	8.33	DL	24.3	7.96	8.00	GM
	6	+	12	9	9	10	11	11	8	10	10	NO	DL		7.95	8.13	DL				
	7																				
	8																				
Total Young:																					

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1																				
	2																				
	3																				
	4																				
	5																				
	6																				
	7																				
	8																				
Total Young:																					

Notes:

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SWRCB - **SWAMP FY 14/15 Ceriodaphnia Test Termination Sheet**

Region: Delta RMP Sample Date: 021716 Test Date: 021816

Samples stored in chamber: 9 Test conducted in: CTR

Test taken down by: DL/SW

Test take down time: 1600

Final Water Chemistry at Test Termination

Sample ID	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
21	25.0	321.3	7.70	7.97	SW
22	24.7	209.0	7.55	8.01	SW
23	24.8	81.6	7.58	7.58	SW
24	24.1	599.0	7.59	8.05	SW
25	24.7	963.0	7.47	8.20	SW
26	25.0	1096.0	7.64	8.54	SW
27	24.9	313.6	7.52	7.93	SW
28	24.8	82.5	7.71	7.55	SW
29	25.0	313.3	7.72	8.04	SW

Fathead Minnow Delta RMP Treatment List
Field Date: 2/17/16
Test Set up: 2/18/16
Samples kept in chamber: 9
Experiment kept in: WT-2

Instructions: This is a 7-day chronic-style test with 10 animals per replicate and 4 replicates per treatment. Each replicate consists of 250ml of sample. Carefully renew 200ml per replicate daily with the squeegee tip method. Feed 3X times daily. Do not feed on the last day of the test. If ≥ 50% mortality occurs in one replicate, feed the replicate half the amount of food. This test must be setup with <48-hour old fish. Initial and final chemistry must be taken daily.

Contact Marie **immediately** when:

- either endpoint in any sample has a 50% reduction from the control performance (TIE trigger, applies to biomass and reproduction), or
- if you have high variability between the replicates (PRT trigger, use Excel calculator).

	ID	Treatment	Decoding or Instructions
21	~~21~~	ROEPAMH (TAC Control)	
22	~~22~~	510SACC3A	
24	~~23~~	544LSAC13	
25	~~24~~	541SJC501	
26	~~25~~	510SOL010	
27	~~26~~	LabQA for Fish	

ID	Treatment	
21	ROEPAMH (TAC Control)	This test will be set up PRT Style (20 replicates with 2 fish each). Feeding will be about 25 *Artemia* per beaker twice a day.
22	544SAC002	
23	Low Conductivity Control	

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(530) 754-6772

SWRCB - SWAMP FY 14/15 Fathead Test Initiation Sheet

Region: DRMP Sample Date: 021716 Test Date: 021816

Samples stored in chamber: 9 Test conducted in: CTR

Before test initiation, what percentage of fish: are lying on the bottom 2.5 %
have bent spines 2.5 %
are active 95 %

Comments about irregular color, sizes or shapes: normal

Age at time of set-up: 48h % of less desirable fish used in each beaker: Ø

Test set-up by: GM Test set-up time: 13:30

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.
If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.
If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.
If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	pre-DO	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
21	NA	24.1	288	7.55	8.14	EL	20	42	0.02
22	9.8	23.9	191	8.12	8.28	EL	68	74	0.38
	NA	2	592						
24		24.2	592	7.73	8.03	EL	140	88	0.09
25		24.2	952	7.35	8.26	EL	216	130	0.01
26		24.0	1095	7.67	8.47	EL	320	272	0.01
27		24.3	290	7.65	8.21	EL	88	58	0.01
21	NA	23.9	281.9	8.19	8.21	DL/MS	20	42	0.02
22	NA	24.0	74.6	7.97	7.91	DL/MS	20	20	0.02
23	9.7	24.0	70.3	8.10	7.83	DL/MS	~~20~~ 0	~~42~~ 4	0.02

RT

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 2/17/16
Test Date: 2/18/16

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
21	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	9	
		Dead								
		Missing							1	
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	MH	MH	EG	GR	SG	DL	

Rep	Boat Weight	Total Weight
1	0.99796	1.00128
2	1.00367	1.00688
3	1.00165	1.00497
4	1.00760	1.01125

Notes:

			Day 1	2	3	4	5	6	7
Initial		Pre-DO*							
		pH	8.10	8.16	8.11	8.12	8.11	8.12	
		DO (mg/L)	8.38	8.15	8.18	8.28	8.10	7.96	
		ID	EG	DL	GM	DL	MT	DL	
Final		Temp °C	23.7	23.8	23.1	23.7	23.1	23.0	
		pH	7.87	7.96	8.03	7.87	7.96	8.22	→ DO
		DO (mg/L)	7.52	8.11	8.01	8.10	8.11	7.87	→ pH } 022416 DL
		ID	EG	DL	GM	DL	MT	DL	

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
22	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing							+ 022516 DL	
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	8	
		Dead							1	
		Missing							1	
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	MH	MH	EG	GR	SG	DL	

Rep	Boat Weight	Total Weight
1	1.00208	1.00602
2	1.02285	1.02646
3	1.01658	1.02101
4	0.98467	0.98759

Notes:

			Day 1	2	3	4	5	6	7
Initial		Pre-DO*	10.46	10.15				10.19	
		pH	8.07	7.95	8.10	8.09	8.21	8.11	
		DO (mg/L)	8.18	8.25	8.19	8.35	8.14	8.06	8.15 DO initial day 5 022316
		ID	EG	DL	GM	DL	MT	DL	
Final		Temp °C	23.8	23.5	23.4	23.5	23.2	23.0	
		pH	7.91	8.04	8.11	7.93	8.06	7.91	→ DO
		DO (mg/L)	7.20	8.03	8.01	8.19	8.01	7.96	→ pH } 022416 DL
		ID	EG	DL	GM	DL	MT	DL	

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 2/17/16
Test Date: 2/18/16

24

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
	1	Live	10	10	10	10	10	10	8	
		Dead							1	
		Missing							1	
	2	Live	9	8	7	4	4	4	4	
		Dead	1	1	1	3*				
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NES	NO	NO	NO	
	ID		GM	MH	MH	EG	CR	SG	DV	

Rep	Boat Weight	Total Weight
1	1.01738	1.02070
2	1.02548	1.02740
3	1.00088	1.00491
4	1.02587	1.02965

Notes:
*Fish died of fungus (EG)

			1	2	3	4	5	6	7
Initial		Pre-DO*					8.63		
		pH	8.18	7.96	8.05	8.05	8.16	8.04	
		DO (mg/L)	8.08	8.31	8.22	8.40	8.02	7.95	
		ID	EG	DV	GM	DV	MT	DV	
Final		Temp °C	23.4	23.5	23.2	23.7	23.0	22.9	
		pH	7.99	8.03	8.10	7.95	8.07	8.10	→ DO
		DO (mg/L)	7.28	8.18	8.00	8.21	8.01	7.98	→ PH } 022416 (DV)
		ID	EG	DV	GM	DV	MT	DV	

25

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
	1	Live	10	9	9	9	9	9	8	
		Dead		1					1	
		Missing								
	2	Live	~~10~~ 9	9	9	9	9	9	9	
		Dead	1							
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	MH	MH	EG	MS	SG	DV	

Rep	Boat Weight	Total Weight
1	1.02703	1.03045
2	1.01063	1.01479
3	1.01736	1.02140
4	1.01345	1.01739

Notes: aliquoted into transfer container but poured transfer container back into beakers on Day 3 022116 MH (25A-25D)

			1	2	3	4	5	6	7
Initial		Pre-DO*							
		pH	8.24	8.16	8.14	8.14	8.16	8.16	
		DO (mg/L)	8.19	8.22	8.22	8.42	8.04	8.09	
		ID	EG	DV	GM	DV	MT	DV	
Final		Temp °C	23.4	23.2	23.3	23.7	22.7	23.0	
		pH EG 022416	~~7.98~~	8.19	8.05	8.14	8.26	7.98	→ DV
		DO (mg/L)	7.18	8.25	8.09	8.25	8.24	~~8.00~~	022416 (DV)
		ID	EG	DV	GM	DV	MT	DV	pH: 8.19 → PH

PH day 1 8.20

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 2/17/16
Test Date: 2/18/16

26

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	11	11	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	AA	MH	EG	MS	SG	DL	

Rep	Boat Weight	Total Weight
1	1.01458	1.01875
2	0.99094	0.99518
3	0.99212	0.99606
4	0.99590	0.99987

Notes

			1	2	3	4	5	6
Initial		Pre-DO*			10.65			
		pH	8.38	8.28	8.17	8.31	8.36	8.34
		DO (mg/L)	8.13	8.25	8.30	8.48	8.05	8.02
		ID	EG	DL	GM	DL	MT	DL
Final		Temp °C	23.4	23.3	23.2	23.7	22.7	22.8
		pH	8.53	8.52	8.51	8.46	8.54	7.95
		DO (mg/L)	8.56	8.41	8.57	8.28	8.26	~~8.07~~
		ID	EG	DL	GM	DL	MT	DL

022416 DO → DO
8.51 → pH

27

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GM	AA	MH	EG	MS	SG	GR	

Rep	Boat Weight	Total Weight
1		1.01819
2		1.03273
3		1.02212
4		1.02422

Notes:
27 weigh boats are labelled "23 ΔRMP" series & initial weights weren't taken
022516 GR

			1	2	3	4	5	6	7
Initial		Pre-DO*							
		pH	8.22	8.09	8.09	8.11	8.12	8.17	
		DO (mg/L)	8.14	8.28	8.20	8.46	8.02	8.10	
		ID	EG	DL	GM	DL	MT	DL	
Final		Temp °C	23.3	23.3	23.0	23.6	22.9	23.0	
		pH	7.86	7.94	7.99	7.94	7.93	8.06	→ DO
		DO (mg/L)	8.48	8.24	8.15	8.30	8.12	7.94	→ pH
		ID	EG	DL	GM	DL	MT	DL	

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Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 2/17/2016
Test Date: 2/18/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
21	A	2	2	2	2	2	2	2	9	1.00814	1.01196
	B	2	2	2	2	2	2	2		1.00508	1.00937
	C	2	2	2	2	2	2	1 *		1.01206	1.01652
	D	2	2	2	2	2	2	2		1.01429	1.01907
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2	9		
	G	2	2	2	2	2	2	2			
	H	1	1	1	1	1	1	1			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2	9		
	L	2	2	2	2	2	1 2	1			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2	10		
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	GR	AA	AA	SG	GR	DU	GR			

IS 2/19/16

Initial	Pre-DO*	~~7.8~~						
	pH	8.19	8.21	8.14	8.06	8.08	8.08	
	DO (mg/L)	7.8	7.93	7.70	8.08	8.20	7.98	
	ID	IS	DL	MM	DL	DU	DL	
Final	Temp	25.9	24.5	25.7	25.4	25.1	24.7	
	pH	7.92	7.99	7.95	7.91	7.82	7.70	
	DO (mg/L)	7.24	6.91	7.46	7.74	7.12	6.90	
	ID	SW	AA	GM	EG	GR	SW	

Notes:
21C, day 7, 1 live, 1 missing

LD modified 11/18/15

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 2/17/2016
Test Date: 2/18/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
	A	2	2	2	2	2	2	2		0.99359	0.99810
	B	2	2	2	2	2	2	2		1.01020	1.01449
	C	2	2	2	2	2	2	2	10	~~1.020~~ 1.02110	1.02554
	D	2	2	2	2	2	2	2		0.99489	0.99869
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2			
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2	10		
	I	2	2	2	2	2	2	2			
22	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2			
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2	10		
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2			
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2	9		
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	1			
	ID	GR	AA	AA	EG/SG	GR	DV	MH			
	021416										
	DO		10.20			11.55	10.72				
Initial	pH	10.22	7.75	7.60	7.74	7.77	7.75				
	Cond. (mS/cm)	7.76	7.89	8.10	8.20	8.31	8.07				
	ID	IS	DV	GM	DL	DV	DL				
	Temp	26.7	24.6	25.9	26.7	25.6	24.7				
	pH	7.54	7.44		7.40	7.30	7.35				
	Cond. (mS/cm)	6.51	6.87	7.53	7.76	6.83	7.01				
	ID	SW	AA	GM	EG	GR	SW				

Notes:

LD modified 11/18/15

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 2/17/2016
Test Date: 2/18/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
23	A	2	2	2	2	2	2	2	9	1.02659	1.03040
	B	2	2	2	2	2	2	2		1.00968	1.01444
	C	2	2	2	2	2	2	1		1.00009	1.00456
	D	2	2	2	2	2	2	2		0.99267	0.99636
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2	10		
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2	10		
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2	9		
	Q	2	2	2	2	2	2	~~2~~ 1			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	GR	MH/AA	AA	EG	GR	DL	GR			

Initial	pH/DO*			9.93				
	pH	7.96	7.79	7.75	7.64	7.78	7.52	
	DO (mg/L)	7.79	8.02	8.29	8.24	8.28	8.10	
	ID	IS	DL	GM	DL	DL	DL	
Final	Temp	26.0	25.4	25.8	~~DL~~	24.3	25.2	
	pH	7.38	7.58	7.56	7.57	7.20	7.33	
	DO (mg/L)	6.84	6.79	7.54	7.68	7.34	~~8.~~ 7.56	
	ID	SW	AA	GM	EG	GR	DL	

Temp: 25.3° Day 4 → 022416 (DL)

→ 022416 (DL)

Notes:
23C-day 7-dead FHM was moldy (GR)
23Q- "

LD modified 11/18/15

SWRCB - SWAMP Fathead Test Termination Sheet

Region: DPMP Sample Date: 021716 Test Date: 021816

Samples stored in: 9 Test conducted in: CTR

Test taken down by: AA

Test take down time:

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
21	23.2	302.0	8.14	7.92	AA
22	23.1	201.6	8.22	8.02	AA
24	23.4	615	8.11	8.05	AA
25	23.3	987	8.18	8.22	AA
26	23.3	1129	8.13	8.51	AA
27	23.2	298	8.17	7.91	AA

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Updated by LD 072815

Fathead Minnow Delta RMP Treatment List – PRT follow up
Field Date: 2/17/16
Test Set up: 2/24/16
Samples kept in chamber: 9
Experiment kept in: CTR

ID	Treatment	
31	ROEPAMH (TAC Control)	This test will be set up PRT Style (20 replicates with 2 fish each). Feeding will be about 25 *Artemia* per cup twice a day.
32	544LSAC13	

Contact Marie **immediately** when:

- either endpoint in any sample has a 50% reduction from the control performance (TIE trigger, applies to biomass and reproduction)

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SWRCB - SWAMP FY 14/15 Fathead Test Initiation Sheet

Region: Delta RMP Sample Date: 021716 Test Date: 022416

Samples stored in chamber: 9 Test conducted in: CTR

Before test initiation, what percentage of fish: are lying on the bottom <1 %
have bent spines <1 %
are active >99 %

Comments about irregular color, sizes or shapes: All look healthy

Age at time of set-up: <48 hrs % of less desirable fish used in each beaker: 0

Test set-up by: GR Test set-up time: 1600

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.
If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.
If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.
If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	pre-DO	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
31		25.5	294.0	8.00	8.16	SW	~~HT~~ 20	42	0.02
32		25.5	604.0	7.90	8.16	SW	140	88	0.09

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Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 2/17/2016
Test Date: ~~2/18/2016~~ 022416

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
31	A	2	2	2	2	2	2	2		1.00714	1.01083
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2		0.98512	0.98864
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2		1.00817	1.01200
	L	2	2	2	2	2	2	2			
	M	2*	1	1	1	1	1	1			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2		0.98718	0.99158
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	GR	MH	GM	SG	DL	DL	SG			

Initial	Pre-DO*	—						
	pH	8.15	8.14	8.12	8.18	8.23	8.25	
	DO (mg/L)	8.05	7.99	8.41	8.25	8.07	8.00	
	ID	MS	MH	GM	DL	DL	DL	
Final	Temp	24.0	24.5	24.6	24.4	24.7	24.6	
	pH	7.90	7.91	7.94	7.85	7.93	7.82	
	DO (mg/L)	8.02	7.76	8.02	7.96	8.04	8.00	
	ID	MS	MH	GM	DL	DL	DL	

Notes:
31M, day 1 – TE, hit a fish hard, will probably die tomorrow

LD modified 11/18/15

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 2/17/2016
Test Date: ~~2/18/2016~~022416

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
32	A	2	2	2	2	2	2	2		1.0098	1.01336
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2 *	2	2	2	2	2			
	F	2	2	2	2	2	2	2		1.02769	1.03206
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2		2	2	2	2			
	K	2	2	2	2	2	2	2		1.01853	1.02344
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2		1.03093	1.03554
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	CR	MH	GM	SG	DL	DL	SG			

Initial	Pre-DO*	12.15	10.62	8.62	10.14	9.87	11.15	
	pH	8.11	8.25	8.90	8.14	8.08	8.24	
	DO (mg/L)	8.07	8.02	8.28	8.36	8.13	8.11	
	ID	MS	MH	GM	DL	DL	GM	
Final	Temp	24.1	24.9	24.6	24.6	24.5	24.5	
	pH	8.01	8.06	8.10	7.91	8.02	~~8~~	
	DO (mg/L)	8.21	7.65	8.01	8.10	8.12	8.24	
	ID	MS	MH	GM	DL	DL	DL	

Notes:
32E Day 2, TE dropped fish on light board

LD modified 11/18/15

030116
DV
7.97

SWRCB - SWAMP Fathead Test Termination Sheet

Region: Delta RMP Sample Date: 2/17/16 Test Date: 2/24/16

Samples stored in: 9 Test conducted in: CTR

Test taken down by: SG
Test take down time: 15:00

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
31	25.6	376.8	8.15	8.16	SG
32	26.7	814	7.89	8.20	SG

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Delta RMP Selenastrum Capricornutum <u>without EDTA</u>

Field Date: 2/17/16
Test Set up: 2/18/16
Samples kept in chamber: 9
Experiment kept in chamber: 5

Instructions: This is a 96-hour chronic algae test. Take initial chemistry at test set up and final chemistry at test termination. Randomize flasks twice daily. Flasks must be inoculated individually. This test has 5 replicates per treatment, one of which is a chemistry-only replicate. Please take daily pH and temperature measurements at the AM randomization. All chemistry measurements for this test will be from the 5th chemistry replicate. Contact Marie **<u>immediately</u>** when the average growth from any sample has a 50% reduction from the control performance. Start spiking algae cells at 94 hours of testing whenever possible.

ID	Treatment	Decoding or Instructions
21	Glass Distilled Water (TAC)	
22	510SACC3A	Foaming or Mycrocystis Present?
23	544SAC002	Foaming or Mycrocystis Present?
24	544LSAC13	Foaming or Mycrocystis Present?
25	541SJC501	Foaming or Mycrocystis Present?
26	510SOL010	Foaming or Mycrocystis Present?
27	LabQA for Algae	Foaming or Mycrocystis Present?

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SWRCB - SWAMP FY 14/15 Algae Test Initiation Sheet

Region: DRMP
Sample Date: 021716
Test Date: 021816

Samples stored in chamber: 9
Test conducted in: chamber 5

Culture water type: glass distilled
Letter and date of culture: K(2|21)
Tech who made culture: GR

Initial flask cell count: 5.10x10^6
Initial innoculum volume: 1mL into 100mL
Test set-up by: DL+MS
Test set-up time: ~~10:10~~ MS 9:50

The nutrients were added to: individual flasks entire treatment [✓ multiple treatments]

Were algae cells added to individual flasks? [✓ yes] no

Light intensity range: 399-441

Special Instructions:

If the Sample Receiving SC or Field SC is ≥ 1,500, then a high conductivity control must be included in the test.
If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation									Daily Measurements					
Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	Hard (mg/L)	Alk (mg/L)	Amm (mg/L)	ID	pH	°C	pH	°C	pH	°C
21	~~22~~ 19.8 [illegible]	134.3	6.31 ~~8.10~~ [illegible]	9.10	0	4	0	0.00	7.89	24.4	8.08	24.4	7.73	25.3
22	19.7 ~~22.4~~ 021816	269.9	7.87	7.94	68	74	0.38	0.38	8.21	24.2	8.32	24.5	8.50	25.3
23	19.8	149.7	8.02	7.89	20	20	0.02	0.02	7.92	24.5	8.08	24.3	8.42	25.8
24	20.3	640	7.91	8.06	140	88	0.09	0.09	8.28	24.7	8.34	24.6	8.47	25.3
25	20.8	1017	7.97	8.17	216	130	0.01	0.01	8.42	24.5	8.50	24.4	8.71	25.9
26	21.1	1175	8.01	8.38	320	212	0.01	0.01	8.69	24.6	8.71	24.4	8.73	25.5
27	21.4	93	7.88	7.77	0	4	0	0.00	7.92	24.4	7.92	24.5	7.92	25.2
									ID	DL	ID	DL	ID	MH

Algae Randomization Record				
Date	AM Time	ID	PM Time	ID
021816			1700	hm
021916	800	DL	1702	MS
022016	750	DL		
022116	930	MH		
022216	915	MS		

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Revised by LD 072815

Background: 52 50 34

Algae Takedown

Aquatic Toxicology Laboratory
VM:APC
1321 Haring Hall
University of California, Davis
Davis , CA 95616
(530) 752-0772

Test: Delta RMP w/o EDTA Test Date: 021816

Treatment: 21

Replicate 1	28381	28228	28479
Replicate 2	28673	28772	28752
Replicate 3	26658	26725	26697
Replicate 4	25980	25593	25997

Treatment: 22

Replicate 1	29254	29372	29397
Replicate 2	29760	29282	29874
Replicate 3	34772	34500	34725
Replicate 4	30134	30286	30498

Treatment: 23

Replicate 1	36256	36000	35569
Replicate 2	32488	32347	32587
Replicate 3	36870	36900	36953
Replicate 4	32571	32111	31894

Treatment: 24

Replicate 1	18519	18802	18729
Replicate 2	16343	16560	16492
Replicate 3	17387	17348	17666
Replicate 4	14255	14182	14207

Treatment: 25

Replicate 1	27070	27374	27311
Replicate 2	29125	29103	29056
Replicate 3	27925	27978	27702
Replicate 4	25432	25406	25547

Treatment: 26

Replicate 1	18960	19047	19033
Replicate 2	18490	18492	18185
Replicate 3	18763	18902	18755
Replicate 4	18061	18307	18178

Treatment: 27

Replicate 1	30340	30502	30373
Replicate 2	26563	26429	26588
Replicate 3	27202	27399	27245
Replicate 4	27984	27616	27707

Treatment:

Replicate 1			
Replicate 2			
Replicate 3			
Replicate 4			

Algae Innoculum Worksheet

Test: Delta RMP

Field Date: 021716

Setup Date: 021816

Algal Culture ID letter K

Algal Culture made by GR

Date made 021116

Days cultured 7 days

Background Counts	67	68	75
Raw Algal Counts	63590	63483	64004

Mean of raw counts 63692.3

Mean of raw counts x 80 5.10×10^6

1×10^6 / (mean of raw counts x 80) x 200 = amount of algal culture needed 39.3

200 - amount of algal culture needed = amount of SSEPAMH needed 160.8

Mix the above amounts of algae and SSEPAMH to make the innoculum for the test.

Once dilution is made, count the cell number for the dilution to make sure that it is approximately 1×10^6 cells/ml.

Dilution Counts	12847	12838	12824

Mean of dilution counts 12836.3

Mean of dilution counts x 80 1.02×10^6 (acceptable range is: $0.9 \times 10^6 - 1.1 \times 10^6$)

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Davis , CA 95616
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SWRCB - SWAMP FY 14/15 Algae Test Termination Check

Region: DeltaRMPC Sample Date: 021716 Test Initiation: 021816

Samples stored in chamber: 9 Test conducted in: chamber 5

Test taken down by: DL

Test take down time: 9:30 (start spiking algae cells at 94 hours)

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	
21	~~7.74~~ 24.8	144.7	8.20	~~24.8~~ 7.74	MT	
22	24.9	256.0	8.80	9.06	MT	
23	25.6	156.0	8.45	9.07	MT	
24	25.8	621.0	8.37	8.85	MT	
25	25.8	~~66.0~~	8.41	9.10	MT	← EC: 956.0
26	25.5	1078.0	8.75	8.95	MT	
27	24.9	96.8	8.47	8.24	MT	

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Revised by LD 072815

March 2016

Delta RMP Ceriodaphnia Dubia

Field Date: 3/7/16
Test Set up: 3/8/16
Samples kept in chamber: ~~10~~ 9 MS030816
Experiment kept in chamber: CTR

Instructions: This is a 3-Brood test with 1 animal per replicate and 10 replicates with 15 ml per vial treatment. This test must be set up using blocking by known parentage. Feed and change daily. Take initial chemistry and final chemistry daily. Contact Marie **immediately** when either endpoint in any sample has a 50% reduction from the control performance. Please alert Marie or Linda ASAP when test does not meet test acceptability criteria. Take down the test after the vast majority of organisms have had their 3rd brood.

ID	Treatment	Decoding or Instructions
51	L16-50 (TAC Control)	
52	510SACC3A	Recd @ 7/6'0
53	544SAC002	Recd @ 7/7'0
54	544LSAC13	
55	541SJC501	
56	510SOL010	
57	Low Conductivity Control	L16-50 diluted with Glass Distilled
58	SSEPAMH	

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2-10-Gam-2

SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Initiation Sheet

Region: DRMP Sample Date: 030716 Test Date: 030816

Samples stored in chamber: 9 Test conducted in: CTR

If neos isolated from Brood Board: Only use neos from gravids producing over 8 neos on day of set-up.

Brood Board # 36 Date/Time neos isolated: 030716 @ 16:50

Date/Time gravids isolated: 14:00 030716 Neos isolated by: LN(DL)

Gravids isolated by: LN (DL) Test set-up by: JM

Health of gravids: great Time neos loaded: 10:50

At time of set-up: were neos born in an 8 hour window? yes no Age range: ~~16-24~~ ~20h hr

were neos less than 24 hours old? yes no MS030816

Blocking by known parentage: Please list which Brood Board replicate was used for test initiation.

Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
C1	08	R4	R6	R9	E7	E6	C6	C2	C1
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.

If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 2,500, consult with a supervisor for a potential species substitution.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample ID	Receiving SC	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
S1		24.1	307.9	8.07	8.17	MS	84	56	0.03
S2		23.8	142.6	8.09	8.13	MS	52	50	0.35
S3		23.9	58.8	8.10	7.76	MS	16	18	0.03
S4		23.9	643	8.08	8.16	MS	132	82	0.23
S5		23.9	720	8.10	8.31	MS	156	104	0.07
S6		24.0	210.5	8.06	8.23	MS	76	70	0.19
S7		24.0	62.8	8.08	7.76	MS	16	12	0.01
S8		24.2	311.1	8.10	8.09	MS	80	54	0.02
S9									

Note: Pre-DO is _____ on Treatment # _____

SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 3/7/16	
Test Date: 3/8/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
S1	1	+									+	No	DL		8.19	8.11	DL	24.4	8.03	8.11	MS
	2	+									+	No	GM		8.27	7.79	GM	24.3	7.95	8.06	Cy
	3	4	4	4	4	4	6	5	4	5	4	No	DL		8.24	8.09	DL	24.0	8.02	7.96	DL
	4	+							+	7	6	No	GM		8.21	8.04	GM	23.9	7.78	7.62	GM
	5	+	8	10	11	10	10	10	12	+	+	No	GR		8.20	8.25		23.6	7.96	7.87	AA
	6	16	17	16	16	14	17	15	17	18	16	No	MS								
	7																				
	8																				
Total Young:		20	29	30	31	28	33	30	33	30	26										

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
S2	1	+									+	No	DL		8.14	8.24	DL	24.2	7.92	8.00	MS
	2	+									+	No	GM	10.24	8.15	7.83	GM	24.1	7.91	7.77	Cy
	3	4	5	5	4	4	3	5	4	3	2	No	DL	10.00	8.11	8.20	DL	24.1	7.88	8.02	DL
	4	+									+	No	GM	~~10.17~~	8.16	8.00	GM	23.8	7.90	7.48	GM
	5	+	10	10	10	9	10	11	12	9	13	No	GR	10.17	8.17	8.33	GR	23.6	7.90	7.76	AA
	6	12	14	18	15	16	14	20	20	18	17	No	MS								
	7																				
	8																				
Total Young:		16	29	33	29	29	27	36	36	30	32										

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 3/7/16	
Test Date: 3/8/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
S3	1	+									+	No	DL		7.82	8.14	DL	23.9	7.62	8.00	MS
	2	+									+	NO	GM		7.88	7.97	GM	23.8	7.62	7.77	CG
	3	5	5	5	5	4D	6	5	5	4	4	No	DL		7.82	8.12	DL	23.9	7.70	7.84	DL
	4	5	+	+	+		+	9	+	7	8	NO	GM		7.87	8.02	GM	23.8	7.59	7.42	GM
	5	+	12	9	11		10	D	12	+	+	NO	GR		7.89	8.21	GR	23.6	7.61	7.64	AA
	6	14	20	18	14		15		18	17	18	NO	MS								
	7																				
	8																				
Total Young:		24	37	32	30	4	31	14	35	28	30										

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
S4	1	+									+	No	DL		8.22	8.35	DL	24.0	8.00	7.90	MS
	2	+									+	NO	GM		8.17	7.84	GM	24.0	8.00	7.80	CG
	3	3	3	+	3	4	+	5	6	5	+	No	DL		8.26	8.21	DL	23.9	8.01	7.99	DL
	4	5	+	+	+	+	+	7	+	7	7	NO	GM	10.24	8.25	8.03	GM	23.8	8.03	7.65	
	5	+	11	12	13	13	11	1	11	+	+	NO	GR		8.32	8.23	GR	23.5	8.04	7.71	AA
	6	17	18	20	19	18	17	19	18	20	16	NO	MS								
	7																				
	8																				
Total Young:		25	32	32	35	35	28	31	35	32	23										

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 3/7/16	
Test Date: 3/8/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
55	1	+									+	No	DL	10.6	8.26	8.38	DL	24.4	8.16	7.96	MS
	2	+									+	No	GM		8.42	7.77	GM	[illegible]	8.15	7.83	CG
	3	+	+	3	4	+	2	+	5	3	+	No	DL		8.40	8.11	DL	24.0	8.17	8.06	DL
	4	9	13	D	+	+	+	+	+	9	+	No	GM		8.43	8.15		24.0	8.20	7.57	GM
	5	+	+		9	8	12	+	11	+	+	No	GR		8.36	8.25	GR	23.3	8.24	8.10	AA
	6	18	19		16	23	14	17	21	15	14	No	MS								
	7																				
	8																				
Total Young:		27	32	3	29	31	28	17	37	27	14										

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
56	1	+									+	No	DL		7.94	8.58	DL	24.3	8.00	7.76	MS
	2	+									+	No	GM		8.18	7.94	GM	24.1	7.99	7.66	CG
	3	5	5	4	3	4	5	3	4	5	4	No	DL		8.22	8.18	DL	23.8	8.06	8.04	DL
	4	8	6	+	+	+	7	9	+	5	6				8.27	8.07	GM	23.9	7.98	7.40	
	5	+	9	9	10	10	+	+	13	+	+	No	GR		8.29	8.38	GR	23.4	8.03	7.91	AA
	6	17	20	14	21	20	17	24	27	24	20	No	MS								
	7																				
	8																				
Total Young:		30	31	27	34	34	29	36	38	34	30										

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 3/7/16	
Test Date: 3/8/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
57	1	†									†	NO	DL		7.70	8.27	DL	24.1	7.61	8.05	MS
	2	†									†	NO	GM		7.86	7.88	GM	24.1	7.41	7.75	CG
	3	5	3	5	5	5	4	5	4	3	4	NO	DL		7.82	8.19	DL	23.8	7.70	7.90	DL
	4	7	†								†	NO	GM		8.02	8.05	GM	23.9	7.76	7.46	GM
	5	†	11	9	11	7	8	11	11	8	12	NO	GR		7.92	8.41	GR	23.4	7.61	7.93	AA
	6	13	10	7	9	16	9	10	13	10	8	NO	MS								
	7																				
	8																				
Total Young:		25	24	21	25	28	21	26	28	21	24										

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
58	1	†									†	NO	DL		8.05	8.25	DL	24.4	7.91	8.07	MS
	2	†									†	NO	GM		8.21	7.91	GM	24.0	7.90	7.73	CG
	3	4	4	4	5	4	5	3	2	4	4	NO	DL		8.12	8.22	DL	23.7	7.9	7.95	DL
	4	3	5			8	5	6	†	NR	†	NO	GM		8.09	8.05	GM	24.1	7.97	7.98	GM
	5	13	3	8	9	†	7	†	6		7	NO	GR		8.06	8.32	GR	23.4	7.99	8.01	AA
	6	†	14	17	12	14	11	10	12		13	NO	MS								
	7																				
	8																				
Total Young:		20	12	27	26	26	17	19	20		24										

Notes:

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Revised by LD on 072815

SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Termination Sheet

Region: DPMP Sample Date: 030716 Test Date: 030816

Samples stored in chamber: 10 Test conducted in: CTR

Test taken down by: MS

Test take down time: 11:25

Final Water Chemistry at Test Termination

Sample ID	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
51	24.7	323.8	7.58	7.90	MS
52	24.6	179.7	7.62	7.78	MS
53	24.4	91.3	7.51	7.36	MS
54	24.4	625	7.48	7.87	MS
55	24.4	753	7.55	8.02	MS
56	24.4	281.8	7.33	7.89	MS
57	24.4	104.9	7.67	7.29	MS
58	24.5	320.5	7.60	7.62	MS

Fathead Minnow Delta RMP Treatment List
Field Date: 3/7/16
Test Set up: 3/8/16
Samples kept in chamber: ~~10~~ 9 MS 030816
Experiment kept in: ~~WT-2~~ CR

Instructions: This is a 7-day chronic-style test with 10 animals per replicate and 4 replicates per treatment. Each replicate consists of 250ml of sample. Carefully renew 200ml per replicate daily with the squeegee tip method. Feed 3X times daily. Do not feed on the last day of the test. If ≥ 50% mortality occurs in one replicate, feed the replicate half the amount of food. This test must be setup with <48-hour old fish. Initial and final chemistry must be taken daily.

Contact Marie **immediately** when:

- either endpoint in any sample has a 50% reduction from the control performance (TIE trigger, applies to biomass and reproduction), or
- if you have high variability between the replicates (PRT trigger, use Excel calculator).

ID	Treatment	Decoding or Instructions
51	ROEPAMH (TAC Control)	
52	510SACC3A	
53	544LSAC13	
54	541SJC501	
55	510SOL010	

ID	Treatment	
61	ROEPAMH (TAC Control)	This test will be set up PRT Style (20 replicates with 2 fish each). Feeding will be about 25 *Artemia* per beaker twice a day.
62	544SAC002	
63	Low Conductivity Control	

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SWRCB - SWAMP FY 14/15 Fathead Test Initiation Sheet

Region: Delta RMP Sample Date: 030716 Test Date: 030816

Samples stored in chamber: 9 Test conducted in: CTR

Before test initiation, what percentage of fish: are lying on the bottom <1 %
have bent spines <1 %
are active 100 %

Comments about irregular color, sizes or shapes: look great

Age at time of set-up: <48h % of less desirable fish used in each beaker: 0

Test set-up by: MS Test set-up time: 16:00

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.
If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.
If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.
If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	pre-DO	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
51		24.7	291.1	8.03	8.25	DL	80	54	0.02
52		24.6	163.2	8.06	8.16	DL	52	50	0.35
53		24.7	648	8.05	8.27	DL	132	82	0.23
54		24.6	728	8.11	8.39	DL	156	104	0.07
55		24.5	219.5	8.12	8.25	DL	76	70	0.19
61		24.4	284.6	8.08	8.22	DL	80	54	0.02
62		24.3	72.6	8.10	7.87	DL	16	18	0.03
63		24.4	65.3	8.06	7.75	DL	12	14	0.01

Aquatic Health Program Laboratory
University of California
1089 Veterinary Medicine Drive
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(530)754-6772

SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 3/7/16
Test Date: 3/8/16

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
51	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing				MH 0312				
	2	Live	10	10	10	~~10~~ 9	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10*	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?			NO	NO	NO	NO	NO	NO	
	ID		SG	GM	GR	MH	GR	MS	GM	
Initial		Pre-DO*			GR	8.18				
		pH	8.09	8.10	8.16	~~8.09~~	8.12	8.24		
		DO (mg/L)	8.29	8.47	8.52	8.06	8.44	8.29		
		ID	CC	CG	GR	GM	AA	MS		
Final		Temp °C	22.8	23.8	21.3	22.9	23.5	23.6		
		pH	~~8.47~~	8.04	8.04	8.05	7.97	7.88		
		DO (mg/L)	~~8.60~~	7.70	8.06	8.05	7.96	7.90		
		ID	MT	AA	MH	GM	AA	DL		

Rep	Boat Weight	Total Weight
1	1.03222	1.03575
2	1.02308	1.02675
3	1.03166	1.03528
4	1.02762	1.03167

Notes:
*sucked one up
Day 4 - 10 alive in 51B

Day 1 Total Weights (03/16/16)
1. 1.03558
2. 1.02660
3. 1.03516
4. 1.03148

PH: Day 1 ~~7.88~~ MT 03/9/16 7.92
DO: ~~8.60~~ 8.44

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
52	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	5	2	0	0	
		Dead				5	3 (B)	2		
		Missing								
	3	Live	12	12	11	11*	11	10	10	
		Dead								
		Missing			1			1		
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?			NO	NO	NO	NO	NO	NO	
	ID		SG	GM	GR	MH		MS	GM	
Initial		Pre-DO*		10.32	10.30		10.23	11.31		
		pH	7.98	8.12	8.09	8.02	8.10	8.18		
		DO (mg/L)	8.29	8.38	8.54	8.16	8.30	8.24		
		ID	CC	CG	GR	GM	AA	MS		
Final		Temp °C	23.2	23.8	20.5	22.1	23.8	23.7		
		pH	7.90	8.02	7.93	8.00	7.93	7.87		
		DO (mg/L)	8.38	7.77	7.72	7.91	8.03	8.02		
		ID	MT	AA	MH	GM	AA	DL		

Rep	Boat Weight	Total Weight
1	1.02119	1.02509
2	1.03227	—
3	1.00177	1.00570
4	0.99638	1.00025

Notes:
Day 4 - 52B the 5 fish had dead fungus on them
*sucked one up
(B) Day 4 - 52B 3 dead fish had fungus - changed beaker

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 3/7/16
Test Date:3/8/16

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
53	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	9	9	9	
		Dead					TE(1)			
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?			NO	NO	NO	NO	NO	NO	
	ID		SG	MH	GR	MH	GR	MS	GM	

		Day 1	2	3	4	5	6
Initial	Pre-DO*						
	pH	8.05	8.08	8.21	8.16	8.22	8.20
	DO (mg/L)	8.35	8.34	8.49	8.04	8.15	8.26
	ID	CC	CG	GR	GM	AA	MS
Final	Temp °C	22.8	23.8	22.2	22.6	23.5	23.6
	pH	8.03	8.14	8.11	8.14	8.10	7.97
	DO (mg/L)	8.10	7.57	7.82	7.93	8.05	8.03
	ID	MT	AA	MH	GM	AA	DL

Rep	Boat Weight	Total Weight
1	1.01101	1.01512
2	1.01337	1.016948
3	~~0.99869~~ GM 0.01716 *	1.00176
4	1.00167	1.00523

Notes:
Day 5, 53C - crushed one with squeegee tip

0.99869 rep 3 boat *

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
54	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?			NO	NO	NO	NO	NO	NO	
	ID		SG	MH	GR	MH	GR	MS	GM	

		Day 1	2	3	4	5	6	7
Initial	Pre-DO*				11.05			Day 2 PH 8.16
	pH	8.23	~~8.08~~	8.34	8.26	8.29	8.30	
	DO (mg/L)	8.07	8.39	8.45	8.09	8.11	8.32	
	ID	CC	CG	GR	GM	AA	MS	
Final	Temp °C	23.0	23.8	21.7	22.6	23.5	23.4	
	pH	8.17	8.30	8.22	8.26	8.25	8.12	
	DO (mg/L)	8.14	7.63	7.84	8.06	7.91	8.04	
	ID	MT	AA	MH	GM	AA	DL	

Rep	Boat Weight	Total Weight
1	1.00512	1.00928
2	0.99569	0.99956
3	GM ~~0.01716~~ ~~0.99869~~ *	1.00920
4	1.01637	1.01020

Notes:

* 1.00521 rep 3 boat weight

0

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 3/7/16
Test Date:3/8/16

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
55	1	Live	12	12	12	12*	12	12	12	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10*	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?			NO		NO	NO	NO	NO	
	ID		SG	MH	CD	MH	GR	MS	GM	

Rep	Boat Weight	Total Weight
1	1.00797	1.01158
2	1.00445	1.00850
3	0.99344	0.99732
4	1.00751	1.0141

Notes:
Day 4-sucked a couple up

*55D-sucked one up
MH 031016

			1	2	3	4	5	6
Initial		Pre-DO*						
		pH	8.08	8.14	8.18	8.17	8.23	8.22
		DO (mg/L)	8.17	8.33	8.40	7.96	8.14	8.36
		ID	CC	CO	GR	GM	AA	MS
Final		Temp °C	23.2	23.8	22.4	22.9	23.6	23.3
		pH	7.94	8.05	8.04	8.06	8.01	7.97
		DO (mg/L)	7.87	7.62	7.78	7.84	7.84	8.10
		ID	MT	AA	GR	GM	AA	DL

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
56	1	Live								
		Dead								
		Missing								
	2	Live								
		Dead								
		Missing								
	3	Live								
		Dead								
		Missing								
Murky Rating	4	Live								
		Dead								
		Missing								
	≥50% Mortality?									
	ID									

Rep	Boat Weight	Total Weight
1	1.00115	~~1.01147~~
2	1.01690	
3	1.00317	
4	1.01566	

Notes:

			1	2	3	4	5	6
Initial		Pre-DO*	10.69					
		pH						
		DO (mg/L)						
		ID						
Final		Temp °C						
		pH						
		DO (mg/L)						
		ID						

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SWRCB - SWAMP Fathead Test Termination Sheet

Region: Delta RMP Sample Date: 030716 Test Date: 030816

Samples stored in: 9 Test conducted in: CTR

Test taken down by: GM
Test take down time: 1520

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
51	23.2	314.4	7.68	7.83	DL
52	23.4	173.4	7.84	7.78	DL
53	23.1	670	7.93	7.88	DL
54	23.2	806	7.90	7.90	DL
55	23.4	255.6	8.03	7.89	DL
031516 DL ~~6~~					
~~7~~	~~23.8~~	~~18.92~~	~~7.63~~	~~7.88~~	~~AA~~ transferred to RT final chem sheet on 031516 DL
61	23.4	343.2	7.82	7.91	DL
62	23.1	~~105.0~~ 031516 DL 7.90		7.52	DL
63	23.3	85.7	7.70	7.49	DL
		89.4			

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Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 3/7/2016
Test Date: 3/8/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
61	A	2	2	2	2	2	2	2		~~1.01809~~ 1.00115	1.00590
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2		~~1.03408~~ 1.01690	1.02131
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2		~~1.02551~~ 1.00317	1.00725
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2		~~0.99474~~ 1.01566	1.01989
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	GM	GM	GM	GM	AA	DV	GM			

Initial	Pre-DO*							
	pH	8.13	8.16	8.21	8.21	8.19	8.18	
	DO (mg/L)	8.23	8.08	8.12	7.91	8.24	8.18	
	ID	GM	CG	DV	GM	AA	MS	
Final	Temp	24.0	24.5	24.9	23.1	~~24.4~~	23.9	
	pH	7.79	7.71	7.78	7.86	~~7.43~~	7.80	
	DO (mg/L)	7.45	6.92	6.99	7.36	7.42	7.77	
	ID	MS	CG	GM	GM	AA	DV	

Notes:

LD modified 11/18/15

Day 5:
pH: 7.84
Temp: 23.6
(AA)

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 3/7/2016
Test Date: 3/8/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
62	A	2	2	2	2	2	2	2		~~1.00590~~ 1.01864	1.02320
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2		~~1.00423~~ 1.03488	1.03883
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2		~~1.02427~~ 1.02557	1.02962
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2		~~1.0171~~ 0.99474	0.99920
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	DL	GM	GM	GM	AA	DL	GM			

Initial	Pre-DO*	10.75	10.20	12.41	10.30	11.67	12.35	
	pH	7.81	7.99	7.84	7.92	7.88	7.86	
	DO (mg/L)	8.33	8.23	8.22	7.94	8.23	8.33	
	ID	GM	CG	DL	GM	AA	MV	
Final	Temp	24.4	24.6	24.7	23.3	23.8	24.0	
	pH	7.44	7.42	7.45	7.65	7.48	7.43	
	DO (mg/L)	7.62	7.37	7.20	7.65	7.28	7.66	
	ID	MV	CG	GM	GM	AA	DL	

Notes:

LD modified 11/18/15

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 3/7/2016
Test Date: 3/8/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
G3	A	2	2	2	Ø A						
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2		~~1.02153~~	1.00979
	D	2	2	2	2	2	2	2		1.00570	
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2			
	G	2	2	2	2	2	2	2		~~1.01285~~	1.01180
	H	2	2	2	2	2	2	2		1.00923	
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2			
	L	2	2	2	2	2	2	2		~~1.02110~~	1.02331
	M	2	2	2	2	2	2	2		1.02027	
	N	2	2	2	Ø A						
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2			
	Q	1A/1D	1	1	1	1	1	1		~~1.00701~~	1.01613
	R	2	2	2	2	2	2	2		1.01171	
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	DL	GM	GM	GM	AA	DL	GM			

Initial	Pre-DO*	—	—	—	—	—	—	
	pH	8.00	7.91	7.84	7.85	7.76	7.85	
	DO (mg/L)	8.33	8.36	8.29	7.92	8.24	8.30	
	ID	GM	CG	DL	GM	AA	MS	
Final	Temp	24.5	25.2	25.1	23.4	24.4	24.0	
	pH	7.44	~~7.3~~	7.42	7.43	7.43	7.45	
	DO (mg/L)	7.83	7.33	7.59	7.62	7.31	7.80	
	ID	MS	CG	GM	GM	AA	DL	

Notes:
A- fungusy

LD modified 11/18/15

Day 2
pH 7.31

Fathead Minnow Delta RMP PRT Follow-up Treatment List
Field Date: 3/7/16
Test Set up: 3/15/16
Samples kept in chamber: 10
Experiment kept in: CTR

Instructions: This is a 7-day chronic-style test with 2 animals per replicate and 20 replicates per treatment. Each replicate consists of 20 mL of sample. Carefully transfer fish to new 20 mL replicate daily. Feed 3X times daily. Do not feed on the last day of the test. This test must be setup with <48-hour old fish. Initial and final chemistry must be taken daily.

Contact Marie **immediately** when:

- either endpoint in any sample has a 50% reduction from the control performance (TIE trigger, applies to biomass and reproduction), or
- if you have high variability between the replicates (PRT trigger, use Excel calculator).

ID	Treatment	Decoding or Instructions
51	ROEPAMH (TAC Control)	
52	510SACC3A	

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(530) 754-6772

510SACC3A

SWAMP Fathead Test Initiation Sheet

Region: DRMP Sample Date: 030716 Test Date: 031516

Samples stored in chamber: 10 Test conducted in: CTR

Before test initiation, what percentage of fish: are lying on the bottom Ø %
have bent spines Ø %
are active Ø %

Comments about irregular color, sizes or shapes: good.

Age at time of set-up: <48hr % of less desirable fish used in each beaker: Ø

Test set-up by: DL Test set-up time: 16:20

Initial Water Chemistry at Test Initiation

Sample	Temp (°C)	EC (µS/cm)	pre-DO*	DO (mg/L)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)	ID
51	24.7	279.7		8.04	8.12	84	54	0.00	DL
52	24.6	143.6	10.93	8.14	8.02	52	50	0.35	DL

Are all of the EC's lower than 3500µmhos? yes no
If the EC is above 3500µmhos the sample needs to be tested with Hyalella!

Are all of the pH's between 6.0 and 9.0? yes no
If not, were the appropriate pH adjustments made? yes no NA

*If DO is < 4 mg/L or > 100% saturation at test temp, aeration must be applied @ 100 bubbles/min using an airbar.

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Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 3/7/2016
Test Date: ~~3/8/2016~~ 3/15/16

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
51	A	2	2	2	2	2	2	2		A 1.00179	1.00664
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2		B 1.02652	1.03142
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2		C 1.03323	1.03781
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2		D 0.98005	0.98480
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	GR	GM	GM	GM	AA	DL	GM			

Initial	Pre-DO*					NA		
	pH	8.17	8.16	8.02	8.16	8.31	8.17	
	DO (mg/L)	8.40	8.12	8.43	8.07	8.17	8.14	
	ID	GM	GM	GM	GM	MS	DL	
Final	Temp	25.8	24.7	24.1	24.9	25.2	24.3	
	pH	7.85	7.88	7.92	7.86	7.84	7.85	
	DO (mg/L)	7.25	7.62	7.79	6.99	7.42	7.66	
	ID	GM	GM	GM	GM	AA	DL	

Notes:

LD modified 11/18/15

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 3/7/2016
Test Date: ~~3/8/2016~~ 3/15/16

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
52	A	2	2	2	2	2	2	2		A LN 0.99049	0.99468
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2		B 0.99656	1.00085
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	ID/1A	1	1	1		C 0.98678	0.99089
	L	2	2	2	2	2	2	2			
	M	2	2	2	ID/1A	1	1	1			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	↑D/1A	1			
	P	2	2	2	2	2	2	2		D 1.00464	1.00843
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	GR	GM	GM	GM	AA	DL	GM			

*fungus on dead fish 032116 DL

Initial	Pre-DO*	11.08	10.20	11.14	9.86	11.36	10.50	
	pH	8.11	8.17	8.08	8.19	8.26	8.09	
	DO (mg/L)	8.30	8.08	8.34	7.90	8.25	8.24	
	ID	GM	GM	GM	GM	MS	DL	
Final	Temp	25.2	24.7	24.2	25.3	25.3	24.3	
	pH	7.75	7.92	7.90	7.84	7.87	7.90	
	DO (mg/L)	7.01	7.40	7.81	7.15	7.54	7.54	
	ID	GM	GM	GM	GM	AA	DL	

Notes:

LD modified 11/18/15

SWAMP Fathead Test Termination Sheet

Region: DRMP Sample Date: 030716 Test Date: 031516

Samples stored in: 10 Test conducted in: CTR

Test taken down by: GM
Test take down time: 14:20

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
51	23.5	375.7	7.95	8.09	GM
52	23.3	183.2	7.98	8.01	GM

*If DO is < 4 mg/L or > 100% saturation at test temp, aeration must be applied @ 100 bubbles/min using an airbar.

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Davis, CA 95616
(530)752-0772

Delta RMP Selenastrum Capricornutum <u>without EDTA</u>

Field Date: 3/7/16
Test Set up: 3/8/16
Samples kept in chamber: ~~10~~ 9/10
Experiment kept in chamber: 5

Instructions: This is a 96-hour chronic algae test. Take initial chemistry at test set up and final chemistry at test termination. Randomize flasks twice daily. Flasks must be inoculated individually. This test has 5 replicates per treatment, one of which is a chemistry-only replicate. Please take daily pH and temperature measurements at the AM randomization. All chemistry measurements for this test will be from the 5th chemistry replicate. Contact Marie **<u>immediately</u>** when the average growth from any sample has a 50% reduction from the control performance. Start spiking algae cells at 94 hours of testing whenever possible.

ID	Treatment	Decoding or Instructions
51	Glass Distilled Water (TAC)	
52	510SACC3A	Foaming or Mycrocystis Present?
53	544SAC002	Foaming or Mycrocystis Present?
54	544LSAC13	Foaming or Mycrocystis Present?
55	541SJC501	Foaming or Mycrocystis Present?
56	510SOL010	Foaming or Mycrocystis Present?

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Davis, CA 95616
(530) 754-6772

Algae Innoculum Worksheet

Test: Delta RMP

Field Date: 030716

Setup Date: 030816

Algal Culture ID letter U

Algal Culture made by MT

Date made 030216

Days cultured 6

Background Counts	41	44	37
Raw Algal Counts	57699	57537	57895

Mean of raw counts 57710.33

Mean of raw counts x 80 4.62×10^6

1×10^6 / (mean of raw counts x 80) x 200 = amount of algal culture needed 43.3

200 – amount of algal culture needed = amount of SSEPAMH needed 156.7

Mix the above amounts of algae and SSEPAMH to make the innoculum for the test.

Once dilution is made, count the cell number for the dilution to make sure that it is approximately 1×10^6 cells/ml.

Dilution Counts	12378	12620	12592

Mean of dilution counts 12530

Mean of dilution counts x 80 1.00×10^6 (acceptable range is: $0.9 \times 10^6 - 1.1 \times 10^6$)

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Davis , CA 95616
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Background
19, 24, 23

Algae Takedown

Aquatic Toxicology Laboratory
VM:APC
1321 Haring Hall
University of California, Davis
Davis , CA 95616
(530) 752-0772

Test: DRMP (no EDTA) Test Date: 030816

Treatment: 51

Replicate 1	29274	29275	29024
Replicate 2	29808	29474	29663
Replicate 3	27572	27379	27131
Replicate 4	25803	25730	25603

Treatment: 52

Replicate 1	28354	27914	28426
Replicate 2	25080	25629	25550
Replicate 3	27663	27761	27679
Replicate 4	24246	23874	23599

Treatment: 53

Replicate 1	26314	26339	26619
Replicate 2	34405	33907	34150
Replicate 3	33851	33630	34297
Replicate 4	23165	23130	23109

These 2 reps are much lighter in color than (+) & reps B+C.

Treatment: 54

Replicate 1	19050	19387	19040
Replicate 2	20305	20514	20112
Replicate 3	16979 / 19078	16896 / 19095	17274 / 19191
Replicate 4	24189	23713	24015

Treatment: 55

Replicate 1	31897	31617	31410
Replicate 2	32592	32375	32738
Replicate 3	28289	27978	28075
Replicate 4	31885	31650	31889

Treatment: 56

Replicate 1	25707	25429	25098
Replicate 2	25676	25679	26075
Replicate 3	32511	32601	32706
Replicate 4	27417	27196	27337

Treatment:

Replicate 1			
Replicate 2			
Replicate 3			
Replicate 4			

Treatment:

Replicate 1			
Replicate 2			
Replicate 3			
Replicate 4			

SWRCB - SWAMP FY 14/15 Algae Test Termination Sheet

Region: DRMP

Sample Date: 030716 Test Date: 030816

Samples stored in chamber: 10

Test conducted in: 5

Test taken down by: MS

Test take down time: 10:20 – 12:00 (start sp[illegible] 94 hours)

Final Water Chemistry of Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
51	25.1	96.9	8.28	8.40	MS
52	25.3	218.0	8.85	9.45	MS
53	24.5	146.8	8.40	8.90	MS
54	25.4	686	8.47	9.15	MS
55	25.3	712	8.69	9.46	MS
56	24.6	310.6	8.95	9.46	MS

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Revised by LD 072[illegible]

SWRCB - SWAMP FY 14/15 Algae Test Initiation Sheet

Region: DPMP

Sample Date: 030716

Test Date: 030816

Samples stored in chamber: 9

Test conducted in: chamber 5

Culture water type: glass distilled

Letter and date of culture: U (3/2)

Tech who made culture: MT

Initial flask cell count: 4.62×10^6

Initial innoculum volume: 1mL into 100mL

Test set-up by: DL

Test set-up time: 11:45

The nutrients were added to: individual flasks entire treatment multiple treatments

Were algae cells added to individual flasks? yes no

Light intensity range: 371-426

Special Instructions:

If the Sample Receiving SC or Field SC is ≥ 1,500, then a high conductivity control must be included in the test.

If an initial pH falls outside of 6.50 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation									Daily Measurements					
Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	Nitrate (mg/L)	Nitrite (mg/L)	Amm (mg/L)	ID	pH	°C	pH	°C	pH	°C
51	23.6	91.4	8.36	7.63	Ø	Ø	0.00	MS	51 (7.30)	23.2	7.91	23.1	7.96	25.3
52	23.7	222.0	8.42	7.87	52	50	0.35	MS	52 (24.8)	7.88	8.25	24.2	8.49	24.6
53	23.5	142.0	8.53	7.69	16	18	0.03	MS	53 (7.72)	24.8	8.14	23.5	8.25	24.9
54	23.6	693	8.49	7.94	132	82	0.23	MS	54 (8.07)	24.1	8.40	23.7	8.52	25.0
55	23.7	784	8.54	8.12	156	104	0.07	MS	55 (8.20)	24.3	8.52	23.9	8.70	24.7
56	23.4	287.2	8.50	8.07	76	70	0.19	MS	56 (8.05)	23.7	8.39	23.8	8.51	24.9
									ID	GM	ID	EL	ID	GR

Algae Randomization Record				
Date	AM Time	ID	PM Time	ID
030816			1610	DL
030916	11:10	GM	1735	MS
031016	09:30	EL	1615	GM
031116	0930	GR	1640	GM
031216	9:45	GM		

Revised by LD 07281

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of California
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(530)754-6772

April 2016

Delta RMP Ceriodaphnia Dubia

Field Date: 4/19/16
Test Set up: 4/20/16
Samples kept in chamber: 12
Experiment kept in chamber: CTR

Instructions: This is a 3-Brood test with 1 animal per replicate and 10 replicates with 15 ml per vial treatment. This test must be set up using blocking by known parentage. Feed and change daily. Take initial chemistry and final chemistry daily. Contact Marie **immediately** when either endpoint in any sample has a 50% reduction from the control performance. Please alert Marie or Linda ASAP when test does not meet test acceptability criteria. Take down the test after the vast majority of organisms have had their 3rd brood.

ID	Treatment	Decoding or Instructions
51	L16-50 (TAC Control)	
52	510SACC3A	
53	544SAC002	
54	544LSAC13	
55	541SJC501	
56	511ULCABR	
57	Field Duplicate	
58	Low Conductivity Control @ 50 uS/cm	L16-50 diluted with Glass Distilled
59	SSEPAMH	

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Initiation Sheet

Region: DRMP Sample Date: 041916 Test Date: 042016

Samples stored in chamber: 12 Test conducted in: CTR

If neos isolated from Brood Board: Only use neos from gravids producing over 8 neos on day of set-up.

Brood Board # 58 (ABCDE + FGHIJ) Date/Time neos isolated: 042016 / ~~0~~ 042016 1550

Date/Time gravids isolated: 042016 / 0750 Neos isolated by: GR

Gravids isolated by: DL Test set-up by: DL

Health of gravids: good Time neos loaded: 1640

At time of set-up: were neos born in an 8 hour window? (yes) no Age range: ~1-9 hours old

were neos less than 24 hours old? (yes) no

Blocking by known parentage: Please list which Brood Board replicate was used for test initiation.

Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
A3	A10	C10	E7	E10	F3	G7	H9	~~F~~I2	~~F~~I6
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	042216 (RA) ~~Rep 9~~	042216 (RA) ~~Rep 10~~
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.

If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 2,500, consult with a supervisor for a potential species substitution.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	pre-DO	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
51		23.6	239.8	8.45	8.04	AC	88	60	NR
52	9.29	23.5	130.8	8.39	8.01	AC	48	50	0.30
53		23.8	60.8	8.40	7.79	AC	20	18	0.01
54		23.7	840	8.51	8.21	AC	184	108	0.07
55		23.6	373.5	8.50	8.11	AC	44	56	0.00
56		23.5	793	8.46	8.60	AC	284	234	0.00
57		23.7	844	8.51	8.24	AC	184	108	0.04
58		23.6	70.4	8.56	7.65	AC	16	10	NR
59		23.6	306.3	8.55	8.01	AC	52	56	NR

SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 4/19/16	
Test Date: 4/20/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
51	1	+									+	No	DL		7.99	8.31	DL	24.7	8.06	8.00	DL
	2	+									+	NO	GR		8.07	8.87	EL	~~25.8~~	~~7.95~~	~~7.70~~	EL
	3	+									+	~~NO~~	~~GR~~		8.20	8.48	EL	~~24.5~~	~~8.20~~	~~8.48~~	~~EL~~ EL 0423
	4	5	5	5	6	5	6	8	5	7	6	NO	GR		8.21	8.25	GR	~~24.2~~	~~8.16~~	~~8.44~~	~~EL~~ EL 0423
	5	11	12	10	11	9	12	13	12	11	12	No	DL		8.23	8.20	CG	24.2	8.10	7.53	CC
	6	16	16	15	17	15	14	17	15	16	16	No	DL								
	7																				
	8																				
Total Young:																					

Notes:

	°C	pH	DO	ID
Day 3 Final chem	25.2	8.09	7.95	EL
Day 4 Final chem	25.2	8.24	8.01	AA

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
52	1	+									+	NO	DL		8.10	8.28	DL	24.6	7.96	8.10	DL
	2	+									+	NO	GR	11.62	8.10	8.33	EL	25.0	8.00	7.53	EL
	3	+									+	NO	GR	11.31	8.14	8.46	EL	~~24.4~~	~~8.14~~	~~8.46~~	~~EL~~ EL
	4	6	5	5	3	5	5	4	4	5	7	NO	GR	11.48	8.12	8.26	GR	25.0	8.11	8.05	AA
	5	11	10	8	9	11	11	9	10	10	12	No	DL		8.23	8.01	CG	23.6	7.92	~~7.93~~	CC
	6	10	13	12	+	15	13	+	12	15	14	No	DL								
	7																				
	8																				
Total Young:																					

Notes:

	°C	pH	DO	ID
Day 3 Final chem	24.8	7.91	7.90	EL

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 4/19/16	
Test Date: 4/20/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
53	1	+									+	NO	DL	10.88	7.87	8.41	DL	24.8	7.72	8.12	DL
	2	+									+	NO	GR		7.92	8.20	EL	24.8	7.62	7.64	EL
	3	+									+	NO	GR		~~28~~.26	8.44	EL	~~24.2~~	8.16	~~8.44~~ 0.22%	EL
	4	5	2	5	5	6	6	6	6	7	6	NO	GR		8.02	8.15	GR	25.1	7.78	8.06	AA
	5	5	9	2	10	+	10	9	11	9	13	NO	DL	10.30	7.89	8.06	CG	23.9	7.61	7.64	CC
	6	10	13	12	12	9	13	11	+	12	15	NO	DL								
	7																				
	8																				
Total Young:																					

Notes: Day 3 Final chem | 24.7 | 7.61 | 7.90 | EL

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
54	1	+									+	NO	DL		8.20	8.35	DL	24.6	8.24	7.96	DL
	2	+									+	NO	GR		8.31	8.28	EL	24.6	8.21	7.63	EL
	3	+									+	NO	GR		8.14	8.47	EL	24.7	8.16	7.80	EL
	4	~~5~~ 042416 GR	~~2~~	~~9~~	~~5~~	~~6~~	~~6~~	~~6~~	~~6~~	~~7~~	~~6~~	NO	GR		8.22	8.27	GR	24.7	8.52	7.86	AA
	5	~~7~~ 042416	8	6	4	10	6	+	10	8	4	NO	DL		8.36	8.04	CG	23.9	8.26	7.72	CC
	6	11	10	10	+	11	8	10	11	13	11	NO	DL								
	7																				
	8																				
Total Young:																					

Notes: Day 4 | 4 | 5 | + | + | + | 3 | 2 | 2 | + | 6 | accidentally wrote 53 in 54 GR 042416

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 4/19/16	
Test Date: 4/20/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
55	1	+	—	—	—	—	—	—	—	—	+	No	DL		8.15	8.39	DL	24.5	7.99	7.99	DL
	2	+	—	—	—	—	—	—	—	—	+	NO	GR		8.16	8.08	EL	25.1	8.06	7.62	EL
	3	+	—	—	—	—	—	—	—	—	+	NO	GR		8.16	8.44	EL	25.1	8.00	7.83	EL
	4	4	7	7	2	6	2	2	7	3	7	NO	GR		8.00	8.52	GR	25.3	8.04	7.81	AA
	5	9	10	11	9	8	10	6	3	10	7	No	DL		8.20	8.07	CG	25.0	~~8.11~~	8.11	DL
	6	12	14	14	15	9	14	12	8	13	13	No	DL								
	7																				
	8																				
Total Young:																					

Notes:

042516 (DL)
8.03

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
56	1	+	—	—	—	—	—	—	—	—	+	No	DL		8.78	8.38	DL	24.6	8.59	7.98	DL
	2	+	—	—	—	—	—	—	—	—	+	NO	GR		8.68	8.06	EL	24.6	8.59	7.50	EL
	3	+	—	—	—	—	—	—	—	—	+	NO	GR		8.73	8.27	EL	24.9	8.51	7.53	
	4	7	6	6	5	5	6	6	4	7	7	NO	GR		8.74	8.29	GR	25.0	8.65	7.90	AA
	5	10	7	12	11	12	7	10	7	8	11	No	DL		8.77	8.12	CG	24.8	~~8.19~~	8.19	DL
	6	13	9	15	16	17	17	16	11	14	17	No	DL								
	7																				
	8																				
Total Young:																					

Notes:

042516 (DL)
8.56

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 4/19/16	
Test Date: 4/20/16	

EL 042316

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
57	1	+									+	NO	DL		8.35	8.26	DL	24.7	8.31	7.97	DL
	2	+									+	NO	GR		8.20	8.27	EL	24.8	8.25	7.50	EL
	3	+									+	NO	GR		8.16	8.53	EL	~~24.8~~ 24.8	~~7.8~~ 7.16	7.92	EL
	4	5	6	+	+	2	2	+	+	3	+	NO	GR		8.21	8.50	GR	24.9	8.35	7.98	AA
	5	+	5	7	+	7	8	3	8	9	10	No	DL		8.45	8.12	CG	24.7	8.28	8.20	DL
	6	10	10	6	10	8	8	8	13	+	14	No	DL								
	7																				
	8																				
Total Young:																					

Notes:

042116

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
58	1	+									+	NO	DL		~~8.~~ 7.95	8.32	DL	24.5	7.75	8.01	DL
	2	+									+	NO	GR		7.80	8.18	EL	24.6	7.73	7.98	EL
	3	+									+	NO	GR		8.29	8.55	EL	24.4	7.53	7.98	EL
	4	4	5	5	6	7	6	5	0	7	6	NO	GR		7.81	8.23	GR	24.7	7.72	8.03	AA
	5	5	5	3	6	5	9	7	↓	7	9	No	DL		7.85	8.08	CG	24.8	7.64	8.18	DL
	6	10	11	7	+	+	11	11		10	11	No	DL								
	7																				
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 4/19/16	
Test Date: 4/20/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1	+									+	No	DL		7.91	8.33	DL	24.7	7.97	7.94	DL
	2	+									+	NO	GR		8.16	8.12	EL	24.8	8.15	7.81	EL
	3	+									+	NO	GR		8.31	8.16	EL	24.9	7.97	8.05	EL
59	4	5	4	6	6	5	6	6	5	4	6	NO	GR		8.13	8.14	GR	24.9	8.16	8.06	AA
	5	9	9	11	6	7	6	8	8	10	7	No	DL		8.15	8.06	LG	24.4	8.01	8.23	
	6	10	10	9	11	9	10	13	11	10	11	No	DL								
	7																				
	8																				
Total Young:																					

Notes:

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1																	~~24.~~			
	2																	04/21/16 DL			
	3																				
	4																				
	5																				
	6																				
	7																				
	8																				
Total Young:																					

Notes:

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Revised by LD on 072815

SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Termination Sheet

Region: Delta RMP Sample Date: 041916 Test Date: 042016

Samples stored in chamber: 12 Test conducted in: CTR

Test taken down by: DL
Test take down time: 1640

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
51	25.2	340.8	7.80	8.01	DL
52	25.1	149.3	7.90	7.87	DL
53	25.0	68.4	7.96	7.58	DL
54	25.2	875	8.01	8.08	DL
55	25.2	406.3	7.99	7.90	DL
56	25.0	814	7.96	8.42	DL
57	25.1	870	8.03	8.17	DL
58	25.1	70.0	8.15	7.71	DL
59	25.0	356.2	8.13	7.83	DL

Fathead Minnow Delta RMP Treatment List
Field Date: 4/19/16
Test Set up: 4/20/16
Samples kept in chamber: 12
Experiment kept in: CTR

Instructions: This is a 7-day chronic-style test with 10 animals per replicate and 4 replicates per treatment. Each replicate consists of 250ml of sample. Carefully renew 200ml per replicate daily with the squeegee tip method. Feed 3X times daily. Do not feed on the last day of the test. If ≥ 50% mortality occurs in one replicate, feed the replicate half the amount of food. This test must be setup with <48-hour old fish. Initial and final chemistry must be taken daily.

Contact Marie **immediately** when:

- either endpoint in any sample has a 50% reduction from the control performance (TIE trigger, applies to biomass and reproduction), or
- if you have high variability between the replicates (PRT trigger, use Excel calculator).

ID	Treatment	Decoding or Instructions
51	ROEPAMH (TAC Control)	
52	510SACC3A	
53	544LSAC13	
54	541SJC501	
55	511ULCABR	
56	Field Duplicate	

ID	Treatment	
51	ROEPAMH (TAC Control)	This test will be set up PRT Style (20 replicates with 2 fish each). Feeding will be about 25 *Artemia* per beaker twice a day.
52	544SAC002	
53	Low Conductivity Control @ 50 uS/cm	

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SWRCB - SWAMP FY 14/15 Fathead Test Initiation Sheet

Region: 5 DRMP Sample Date: 04/19/16 Test Date: 04/20/16

Samples stored in chamber: 12 Test conducted in: CTR

Before test initiation, what percentage of fish: are lying on the bottom <2 %
have bent spines <2 %
are active 96 %

Comments about irregular color, sizes or shapes: normal

Age at time of set-up: 24-48hr % of less desirable fish used in each beaker: 0

Test set-up by: GM Test set-up time: 16:10

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.
If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.
If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.
If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	pre-DO	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
51		24.9	295.5	8.45	8.11	AC	88	56	NR
52		24.7	129.8	8.41	8.08	AC	48	50	0.30
53	9.68	24.7	844	8.36	8.13	AC	184	108	0.07
54		24.6	373.1	8.51	8.12	AC	44	56	0.00
55		24.6	800	8.40	8.61	AC	284	234	0.00
56		24.6	839	8.40	8.26	AC	184	108	0.04
	PRT	setup by 15:30 GM							
51		24.2	289.8	8.33	8.14	AC	88	56	NR
52		23.9	61.8	8.39	7.93	AC	20	18	0.01
53		24.1	80.4	8.42	7.69	AC	16	14	NR

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 4/19/16
Test Date: 4/20/16

51

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
	1	Live	10	10	10	10	9	8	8	
		Dead	X GR				1	1		
		Missing								
	2	Live	9	9	9	9	9	9	9	
		Dead	1*							
		Missing								
	3	Live	10	9	9	9	9	8	8	
		Dead		1				1		
		Missing								
Murky Rating	4	Live	9*	8	8	8	7	7	7	
		Dead	1	1			1			
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GR	AA	GR	AA	DL	GR	DL	

Rep	Boat Weight	Total Weight
1	1.01416	1.01758
2	0.99681	1.00078
3	0.98913	0.99244
4	0.99374 DL	0.99667 EG

Notes:
Rep 2, day 1 - moldy dead ∴ changed beaker. Another ∝ looks like it may die soon - bent & no food in gut
Rep 4, day 1

			1	2	3	4	5	6
Initial		Pre-DO*						
		pH	8.16	8.21	8.16	8.27	8.20	8.09
		DO (mg/L)	8.01	8.10	8.37	8.26	8.11	8.11
		ID	GM	EL	EL	GR	CG	MT
Final		Temp °C	23.8	23.8	24.3	23.8	23.3	23.0
		pH	~~7.94~~ ~~23.86~~	7.98	7.99	8.06	7.86	7.76
		DO (mg/L)	8.00	8.00	8.28	8.14	7.50	7.70
		ID	GR	GM	EL	GR	CC	EG

Day 1 final pH = 7.94

52

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
	1	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	10	9	9	9	9	7	7	
		Dead		1				1 A		
		Missing						1 A		
Murky Rating	4	Live	9	9	9	9	9	9	9	
		Dead	1							
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	N	NO	
	ID		GR	AA	GR	AA	DL	GR	DL	

Rep	Boat Weight	Total Weight
1	0.99662	1.00052
2	1.01079	~~1.00056~~ EG 0.92916 1.01439
3	0.99257	0.99600
4	1.01951 DL	1.02340 EG

Notes:

Initial day 1 DO 7.61
pH 8.20

A - Dead fish was very decomposed, possible mushing fish was just decomposed

			1	2	3	4	5	6
Initial		Pre-DO*	10.94	11.31	11.31			
		pH	~~7.93~~	7.94	7.90	8.11	8.11	7.97
		DO (mg/L)	~~24.1~~	8.29	8.36	8.24	8.04	8.07
		ID	GR	EL	EL	GR	CG	MT
Final		Temp °C	24.1	23.7	24.4	23.8	23.5	23.0
		pH	7.93	7.90	7.90	8.14	7.84	7.68
		DO (mg/L)	7.95	7.96	7.98	8.26	7.42	7.46
		ID	GR	GM	EL	GR	CC	EG

Initial pH Day 1: 8.09

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 4/19/16
Test Date: 4/20/16

53

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
	1	Live	11	11	11	11	10	10	10	
		Dead	1				1			
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	11	11	11*	10	9	9	9	
		Dead			GR*	1	1▲			
		Missing								
Murky Rating	4	Live	10	10	9	7*	7	6A	5	
		Dead			1	2		1	1●	
		Missing								
	≥50% Mortality?		NO	NO	NO	NO		NO		
	ID		GR	AA	GR	AA		GR		
	Initial	Pre-DO*					10.12			
		pH	8.23	8.21	8.24	8.18	8.24	7.97		
		DO (mg/L)	8.22	8.16	8.44	8.23	8.04	8.41		
		ID	GM	EL	EL	GR	CG	MT		
	Final	Temp °C	24.0	23.7	24.4	23.9	23.3	23.2		
		pH	8.23	8.13	8.18	8.23	8.22	7.97		
		DO (mg/L)	8.03	8.01	7.99	8.13	7.55	7.45		
		ID	GR	GM	EL	GR	CG	EG		

Rep	Boat Weight	Total Weight
1	1.00165	1.00506
2	1.02377	1.02815
3	1.02107	1.02569
4	1.00976 DL	1.01242 EG

Notes:
* Day 3, Rep 3 - one appears small with bent spine & no food in gut
* Day 4 - SOU
▲ Day 5: fungus
A Day 6 - one laying on bottom alive
● - Fungus 042716 (24)

54

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
	1	Live	9	10	9	9	9	9	9	
		Dead	1		1(TE)					
		Missing								
	2	Live	10	11	11	11	11	11	11	
		Dead								
		Missing								
	3	Live	9	9	8	8	8	8	8	
		Dead	1		1					
		Missing								
Murky Rating	4	Live	9	9	9	9	9	9	9	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GR	AA	GR	AA	DL	GR	DL	
	Initial	Pre-DO*				11.45				
		pH	8.02	8.11	8.12	8.10	8.22	7.92		
		DO (mg/L)	8.43	8.13	8.42	8.40	8.05	8.34		
		ID	GM	EL	EL	GR	CG	MT		
	Final	Temp °C	24.1	23.8	24.4	24.1	23.5	23.2		
		pH	8.00	7.96	7.93	8.07	~~7.71~~	7.71		
		DO (mg/L)	8.01	8.14	8.02	8.17	7.59	7.77		
		ID	GR	GM	EL	GR	CG	EG		

Rep	Boat Weight	Total Weight
1	1.02509	1.02867
2	0.99736	1.00134
3	1.02289	1.02661
4	1.02700 DL	1.03082 EG

Notes:

pH day 5: 7.93

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 4/19/16
Test Date: 4/20/16

55

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
	1	Live	10	10	10	10	10	10	10	
		Dead			0					
		Missing								
	2	Live	9	9	9	9	9	9	9	
		Dead	1							
		Missing								
	3	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GR	GR	GR	AA	DL	GR	DL	

Rep	Boat Weight	Total Weight
1	1.03002	1.03472
2	1.03079	1.03545
3	1.01334	1.01828
4	1.01998	1.02481

Notes: DL EG

			1	2	3	4	5	6
Initial		Pre-DO*		13.60				
		pH	8.78	8.78	8.73	8.75	8.77	~~8.59~~
		DO (mg/L)	7.99	8.26	8.33	8.14	8.07	8.21
		ID	GM	EL	EL	GR	CG	MT
Final		Temp °C	24.2	23.8	24.3	23.9	23.6	23.2
		pH	8.15	8.61	8.61	8.65	8.61	7.94
		DO (mg/L)	7.80	7.89	7.68	7.78	7.21	7.48
		ID	GR	GM	EL	GR	CC	EG

pH Day 6 8.59

56

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
	1	Live	10	10	9	9	9	9	9	
		Dead			1					
		Missing								
	2	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	3	Live	9	9	8	8	7	7	7	
		Dead	1		1		1			
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	
	ID		GR	GR	GR	AA	DL	GR	DL	

Rep	Boat Weight	Total Weight
1	1.02423	1.02862
2	1.02377	1.02838
3	1.00400	1.00773
4	1.00746	1.01210

Notes: DL EG

			1	2	3	4	5	6
Initial		Pre-DO*						
		pH	~~8.25~~	8.34	8.31	8.27	8.28	8.06
		DO (mg/L)	8.26	8.01	8.27	8.50	8.11	8.16
		ID	GM	EL	EL	GR	CG	MT
Final		Temp °C	24.1	23.9	24.5	23.9	23.3	23.2
		pH	8.25	8.21	8.22	8.27	8.23	7.94
		DO (mg/L)		8.00	8.00	8.05	7.39	7.48
		ID	GR	GM	EL	GR	CC	GR

pH day 1 in: 8.17

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Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 4/19/2016
Test Date: 4/20/2016

See attached weights! these are not accurate for any treatment

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
51	A	2	2	1 (ID)	1	1	1	1		1.03083	1.01611
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2		1.03851	1.02133
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	NR	→							
	K	2	2	2	2	2	2	2		1.03971	1.02243
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2		1.03570	1.02398
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	EG	AA	GR	GR	LN	GM	SW		MT	EG

Initial	Pre-DO*							
	pH	8.24	~~7.66~~ EG 042216	~~7.65~~	8.26	8.22	8.14	
	DO (mg/L)	8.26	8.02	8.55	8.31	7.99	8.34	
	ID	GM	EL	EL	GR	CL	DL	
Final	Temp	23.3	24.8	24.2	25.0	24.8	25.1	
	pH	7.66	7.43	7.94	7.92	7.90	7.82	
	DO (mg/L)	6.74	4.73*	7.76	7.70	7.66	7.68	
	ID	EG	CL	GR	GR	DL	DL	

LD modified 11/18/15

initial pH: 8.16 pH: 8.17

Notes: Treatment 51,52 Day 2 1st artemia feeding was way over fed (but GR removed as much as I could) ~75-200 n/beaker. Therefore, DO was most likely low due to this. Fish were in the ↑[artemia] for ~3 hrs. Chem was taken ~3 hrs after the water was changed.

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 4/19/2016
Test Date: 4/20/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
52	A	2	2	2	2	2	2	2		1.03222	1.03246
	B	1D/1A	1	1	1	1	1	1			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	1A/1 missing		1.02593	1.02639
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2		0.98383	1.01736
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	1D/1A	1	0 →							
	P	2	2	2	2	2	2	2		1.00344	1.01543
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	EG	AA	CR	CR	LN	GM	GM		MT	EG

Initial	Pre-DO*	10.76	12.11	10.31	10.16	10.27		
	pH	7.92	7.83	7.86	7.98	7.85	7.62	
	DO (mg/L)	8.28	8.10	8.48	8.25	8.12	8.55	
	ID	GM	EL	EL	CR	CG	DV	
Final	Temp	24.7	24.7	24.1	25.1	24.3	25.0	
	pH	7.25	6.97	7.72	7.70	7.53	7.48	
	DO (mg/L)	5.94	3.63*	7.98	7.44	7.62	7.80	
	ID	EG	CL	CR	CR	DV	DV	

Notes:
*See Treatment 51 notes on DO for day 2

LD modified 11/18/15

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 4/19/2016
Test Date: 4/20/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
53	A	2	2	2	2	2	2	2		1.01615	1.02909
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	1	1	1	1	1			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2		1.00284	1.03217
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	1A/1D	1	1	1	1	1			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2		0.98921	1.01328
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2		1.00338	1.01425
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	1A/1D	1	1	1	1	1			
	T	2	2	2	2	2	1D/1A	1			
	ID	EG	AA	GR	GR	LN	DL	GM		MT	EG

Initial	Pre-DO*							
	pH	7.83	7.87	7.65	7.94	7.72	7.60	
	DO (mg/L)	8.11	8.06	8.33	8.45	8.39	8.60	
	ID	GM	EL	EL	GR	CG	DL	
Final	Temp	26.0	24.8	24.3	25.2	24.5	25.0	
	pH	7.35	7.10	7.38	7.42	7.22	7.40	
	DO (mg/L)	6.88	6.75	7.78	7.57	7.65	7.72	
	ID	EG	CL	GR	GR	DL	DL	

Notes:

LD modified 11/18/15

SWRCB - SWAMP Fathead Test Termination Sheet

Region: DRMP Sample Date: 0419k Test Date: 042016

Samples stored in: 12 Test conducted in: CTR

Test taken down by: GM/DL
Test take down time: 15:00

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
51	23.0	387.5	8.28	8.05	AC
52	23.1	144.2	8.27	8.03	AC
53	23.1	931	8.20	8.20	AC
54	23.2	446.1	8.39	8.03	AC
55	23.2	888	8.17	8.53	AC
56	22.8	856	8.35	8.26	AC
PRT					
51	SAMPLES NOT SAVED				
52				DL	
53	24.2	80.5	8.34	7.75	GM

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Fathead PRT Test
April 2016 w/ DRMP
Test Date: 04/20/16

Treatmean	Replicate	Boat Weigh	Total Weight
51	1	1.01171	1.01611
	2	1.01694	1.02133
	3	1.01756	1.02243
	4	1.01914	1.02398
52	1	1.02729	1.03246
	2	1.02151	1.02639
	3	1.01312	1.01736
	4	1.01028	1.01543
53	1	1.02435	1.02909
	2	1.02753	1.03217
	3	1.00824	1.01328
	4	1.01045	1.01425
	1		
	2		
	3		
	4		
	1		
	2		
	3		
	4		
	1		
	2		
	3		
	4		
	1		
	2		
	3		
	4		

Delta RMP Selenastrum Capricornutum <u>without EDTA</u>

Field Date: 4/19/16
Test Set up: 4/20/16
Samples kept in chamber: 12
Experiment kept in chamber: 5

Instructions: This is a 96-hour chronic algae test. Take initial chemistry at test set up and final chemistry at test termination. Randomize flasks twice daily. Flasks must be inoculated individually. This test has 5 replicates per treatment, one of which is a chemistry-only replicate. Please take daily pH and temperature measurements at the AM randomization. All chemistry measurements for this test will be from the 5th chemistry replicate. Contact Marie **<u>immediately</u>** when the average growth from any sample has a 50% reduction from the control performance. Start spiking algae cells at 94 hours of testing whenever possible.

ID	Treatment	Decoding or Instructions
51	Glass Distilled Water (TAC)	
52	510SACC3A	Foaming or Mycrocystis Present?
53	544SAC002	Foaming or Mycrocystis Present?
54	544LSAC13	Foaming or Mycrocystis Present?
55	541SJC501	Foaming or Mycrocystis Present?
56	511ULCABR	Foaming or Mycrocystis Present?
57	Field Duplicate	Foaming or Mycrocystis Present?

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(530) 754-6772

Algae Innoculum Worksheet

Test: Delta RMP (w/o EDTA) Field Date: 041916

Setup Date: 042016

Algal Culture ID letter D Algal Culture made by GM

Date made 041316 Days cultured 7

Background Counts 44 35 43

Raw Algal Counts 54812 55365 55107

Mean of raw counts 55094.67

Mean of raw counts x 80 4.41×10^6

1×10^6 / (mean of raw counts x 80) x 200 = amount of algal culture needed 45.4

200 – amount of algal culture needed = amount of SSEPAMH needed 154.6

Mix the above amounts of algae and SSEPAMH to make the innoculum for the test.

Once dilution is made, count the cell number for the dilution to make sure that it is approximately 1×10^6 cells/ml.

Dilution Counts 12628 12851 12612

Mean of dilution counts 12697

Mean of dilution counts x 80 1.02×10^6 (acceptable range is: $0.9 \times 10^6 - 1.1 \times 10^6$)

Aquatic Toxicology Laboratory
VM:APC
1321 Haring Hall
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Davis , CA 95616
(530) 752-0772

SWRCB - SWAMP FY 14/15 Algae Test Initiation Sheet

Region: DRMP Sample Date: 041916 Test Date: 042016

Samples stored in chamber: Chamber 12 Test conducted in: Chamber 5

Culture water type: Glass Distilled Initial flask cell count: 1.02×10^6

Letter and date of culture: ____ Initial innoculum volume: 200 mL

Tech who made culture: GM Test set-up by: DL

Test set-up time: 1406

The nutrients were added to: individual flasks (entire treatment) multiple treatments

Were algae cells added to individual flasks? (yes) no Light intensity range: 282-522 ft candles

Special Instructions:

If the Sample Receiving SC or Field SC is ≥ 1,500, then a high conductivity control must be included in the test.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation									Daily Measurements					
Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	Hard (mg/L)	Alk (mg/L)	Amm (mg/L)	ID	pH	°C	pH	°C	pH	°C
51	23.2	91.6	8.33	7.53	0	4	←	0.00	7.65	24.7	7.76	25.1	7.96	25.5
52	23.2	209.0	8.38	7.82	48	50	←	0.30	8.13	24.6	8.14	25.0	8.43	25.1
53	23.2	140.3	8.36	7.74	20	18	←	0.01	7.89	24.5	7.94	25.1	8.14	25.3
54	23.2	907	8.42	8.02	184	108	←	0.07	8.43	24.6	8.43	25.4	8.50	25.6
55	23.2	444.2	8.38	7.96	44	56	←	0.00	8.20	24.7	8.21	25.4	8.24	25.6
56	23.2	842	8.40	8.65	284	234	←	0.00	8.73	24.6	8.71	25.3	8.75	25.2
57	23.3	884	8.37	8.02	184	108	←	0.04	8.42	24.7	8.44	25.4	8.45	25.5
									ID	DL	ID	GM	ID	

Algae Randomization Record				
Date	AM Time	ID	PM Time	ID
042016			1710	GR
042116	1014	DL	1630	DL
042216	1015	EG	1700	CC
042316	0815	EL	1630	GR
042416	0815	GR		

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SWRCB - SWAMP FY 14/15 Algae Test Termination Sheet

Region: DRMP Sample Date: 041916 Test Date: 042016

Samples stored in chamber: 12 Test conducted in: Chamber 5

Test taken down by: GR

Test take down time: 1500 (start spiking algae cells at 94 hours)

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
51	26.0	99.7	8.16	8.13	GR
52	26.0	206.4	8.09	8.73	GR
53	25.9	153.4	8.47	9.44	GR
54	25.8	901.0	7.84	8.50	GR
55	25.9	468.4	7.94	8.35	GR
56	25.9	833.0	8.60	9.31	GR
57	25.8	901.0	7.88	8.46	GR

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Background: 37, 46, 35

Algae Takedown Sheet

Test: DRMP Algae Test Date: 042016

Treatment: 51

Replicate A	19025	19134	19009	Tech ID: MS for GR	Notes:
Replicate B	21982	21989	22073		
Replicate C	21539	21277	21309		
Replicate D	20508	20569	20563		

Treatment: 52

Replicate A	25087	25457	25524	Tech ID: MS for GR	Notes:
Replicate B	28774	28873	29013		
Replicate C	29032	29086	26304		
Replicate D	28009	28055	27895		

Treatment: 53

Replicate A	31277	30995	31252	Tech ID: MS for GR	Notes:
Replicate B	30349	30705	30408		
Replicate C	31489	31349	31812		
Replicate D	30529	30780	30577		

Treatment: 54

Replicate A	14042	13756	13768	Tech ID: MS for GR	Notes:
Replicate B	12254	11980	11984		
Replicate C	14529	14375	14446		
Replicate D	15657	15555	15713		

Treatment: 55

Replicate A	11745	11614	12071	Tech ID: MS for GR	Notes: lots of "junk" in these samples aparature blocked multiple times
Replicate B	8889	8943	8907		
Replicate C	14576	14652	14592		
Replicate D	11073	10864	11070		

Treatment: 56

Replicate A	26136	26529	26545	Tech ID: MS for GR	Notes:
Replicate B	33423	33201	32705		
Replicate C	32713	33241	35265		
Replicate D	31736	31184	31929		

Treatment: 57

Replicate A	15987	15747	15743	Tech ID: MS for GR	Notes:
Replicate B	13245	13126	13172		
Replicate C	17546	17559	17428		
Replicate D	13853	13549	13942		

Treatment:

Replicate A				Tech ID:	Notes:
Replicate B					
Replicate C					
Replicate D					

May 2016

Delta RMP Ceriodaphnia Dubia

Field Date: 5/18/16
Test Set up: 5/19/16
Samples kept in chamber:
Experiment kept in chamber: CTR

Instructions: This is a 3-Brood test with 1 animal per replicate and 10 replicates with 15 ml per vial treatment. This test must be set up using blocking by known parentage. Feed and change daily. Take initial chemistry and final chemistry daily. Contact Marie **immediately** when either endpoint in any sample has a 50% reduction from the control performance. Please alert Marie or Linda ASAP when test does not meet test acceptability criteria. Take down the test after the vast majority of organisms have had their 3rd brood.

ID	Treatment	Decoding or Instructions
41	L16-50 (TAC Control)	
42	510SACC3A	
43	544SAC002	
44	544LSAC13	
45	541SJC501	
46	511ULCABR	
47	Low Conductivity Control @ 52 uS/cm	L16-50 diluted with Glass Distilled
48	SSEPAMH	

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Initiation Sheet

Region: Delta RMP Sample Date: 051816 Test Date: 051916

Samples stored in chamber: 9 Test conducted in: CTR

If neos isolated from Brood Board: Only use neos from gravids producing over 8 neos on day of set-up.

Brood Board # 72 (CERIO) Date/Time neos isolated: 1430

Date/Time gravids isolated: 051916 / 800 Neos isolated by: GR

Gravids isolated by: DL Test set-up by: DL

Health of gravids: good Time neos loaded: 1638

At time of set-up: were neos born in an 8 hour window? (yes) no Age range: ~~6.5~~ 051916 7.5 @ hours

were neos less than 24 hours old? (yes) no

Blocking by known parentage: Please list which Brood Board replicate was used for test initiation.

Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
C1	C7	C9	E3	E6	R2	R3	R9	R10	I3
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
C1	C7	C9	E3	E6	R2	R3	R9	R10	I3
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.

If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 2,500, consult with a supervisor for a potential species substitution.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample ID	Receiving SC	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
41		24.4	309.8	8.17	8.06	DL	88	54	0.00
42		24.3	109.6	8.03	8.08	DL	44	44	0.44
43		24.3	58.4	8.09	7.79	DL	16	24	0.01
44		24.4	274.3	8.12	7.93	DL	68	50	0.05
45		24.2	328.9	8.14	8.07	DL	88	58	0.01
46		24.3	757	8.10	8.60	DL	272	224	0.06
47		24.2	69.3	8.15	8.05	DL	24	12	NR-TE
48		24.1	243.5	8.14	8.09	DL	92	60	0.00

Note: Pre-DO is _____ on Treatment # _____

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Updated 110415 by LD

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 5/18/16	
Test Date: 5/19/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
41	1	+									+	NO	GM		8.12	8.33	DL	25.0	8.04	7.83	GM
	2	+									+	NO	GM		8.17	8.26	EL	25.4	8.05	7.76	EL
	3	+									+	NO	MS	NA	8.20	8.05	MS	25.0	7.92	7.51	MS
	4	4	8	8	7	9	7	5	5	4	7	NO	DL		8.16	8.35	CN	25.0	7.84	7.62	CN
	5	12	13	12	14	13	14	14	11	13	14	NO	GR		~~7.84~~	8.42	LK	25.7	7.96	7.47	GR
	6	18	19	5	17	+	14	+	15	+	14	NO	GM		8.19	8.14	AC	25.8	8.15	7.98	AC
	7	+	+	12	+	18	16	14	+	16	+	NO	DL								
	8																				
Total Young:																					

8.06

split bead 07/18/16 [illegible]

Notes: * small

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
42	1														8.14	8.31	DL	24.7	7.86	7.85	GM
	2	+									+	NO	GM		8.10	8.15	EL	25.2	7.89	7.79	EL
	3	+									+	NO	MS	NA	8.01	8.13	MS	24.9	7.78	7.51	MS
	4	+	5	6	4	4	4	5	6	5	+	NO	DL	11.02	8.17	8.36	CN	25.5	7.69	7.37	CN
	5	8	11	10	11	12	11	12	13	10	7	NO	GR	8.68	7.99	8.17	LK	25.3	7.86	7.46	GR
	6	14	+	16	+	+	+	+	+	+	5	NO	GM	10.81	8.11	8.05	AC	25.8	8.10	8.18	AC
	7	+	13	+	13	16	15	14	15	14	7	NO	DL								
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 5/18/16	
Test Date: 5/19/16	

		Replicate										≥50%		Pre	Initial			Final			
Treatment	Day	1	2	3	4	5	6	7	8	9	10	mort?	ID	DO*	pH	DO (mg/L)	ID	°C	pH	DO (mg/L)	ID
	1													10.12	7.90	8.24	DL	24.7	7.63	7.80	GM
	2	†									†	NO	GM		7.95	8.30	EL	25.1	7.62	7.49	EL
	3	†									†	NO	MS	NA	7.95	8.16	MS	24.8	7.60	7.43	MS
43	4	6	5	5	4	5	4	4	6	4	6	NO	DL		7.97	8.31	CN	25.6	7.52	7.45	CN
	5	10	12	10	12	11	11	11	10	9	12	NO	GR		7.78	8.29	LK	25.4	7.56	7.30	GR
	6	15	†	†	†	†	†	†	†	†	16	NO	GM		7.93	8.19	AC	25.7	7.89	8.13	AC
	7	†	14	16	15	15	16	17	13	11	†	NO	DL								
	8																				
Total Young:																					

Notes:

		Replicate										≥50%		Pre	Initial			Final			
Treatment	Day	1	2	3	4	5	6	7	8	9	10	mort?	ID	DO*	pH	DO (mg/L)	ID	°C	pH	DO (mg/L)	ID
	1														8.03	8.22	DL	24.8	7.80	7.76	GM
	2	†									†	NO	GM		8.01	8.42	EL	25.1	7.68	7.85	EL
	3	†									†	NO	MS	NA	8.04	8.05	MS	24.8	7.68	7.58	MS
44	4	4	4	†	4	5	4	4	4	†	5	NO	DL		8.06	8.32	CN	25.6	7.59	7.44	CN
	5	12	14	12	13	12	11	9	11	11	12	NO	GR		7.91	8.25	LK	25.1	7.74	7.46	GR
	6	14	†	†	†	†	†	†	†	†	26				8.11	8.07	AC	25.8	8.08	8.16	AC
	7	†	16	11	15	16	16	16	14	12	†	NO	DL								
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 5/18/16	
Test Date: 5/19/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1														8.19	8.34	DL	24.7	8.02	8.02	GM
	2	←									→	NO	GM	11.22	8.30	8.45	EL	25.4	7.98	7.85	EL
	3	←									→	NO	MS	NA	8.09	8.25	MS	24.9	7.76	7.48	MS
45	4	7	6	4	6	7	6	+	6	5	4	NO	DL		8.19	8.33	CN	25.9	7.75	7.47	CN
	5	+	9	10	11	12	12	10	11	10	12	NO	GR		8.30	8.16	LK	25.5	7.86	7.36	GR
	6	17	22	20	25	20	19	1*	20	+	20	NO	GM		8.20	8.11	AC	25.9	8.17	7.94	AC
	7	15	+	+	+	+	+	+	+	12	+	NO	DL								
	8																				
Total Young:																					

Notes: *Small

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1														8.57	8.25	DL	24.9	8.57	7.70	GM
	2	←									→	NO	GM		8.47	8.36	EL	25.3	8.55	7.86	EL
	3	←									→	NO	MS	10.13	8.40	8.20	MS	24.9	8.50	7.50	MS
40	4	7	8	6	6	8	5	5	6	3	4	NO	DL		8.26	8.36	CN	25.6	8.42	7.45	CN
	5	11	7	12	9	8	11	13	12	8	13	NO	GR		8.20	8.38	LK	25.2	8.49	7.37	GR
	6	2	17	17	18	17	10	19	19	10	17	NO	GM		8.65	8.14	AC	27.1	8.57	7.75	AC
	7	14	+	+	+	+	+	+	+	+	16	NO	DL								
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 5/18/16	
Test Date: 5/19/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
47	1														7.86	8.31	DL	25.0	7.66	7.81	GM
	2	—	—	—	—	—	—	—	—	—	—	NO	GM		7.94	8.43	EL	25.1	7.61	7.74	EL
	3	—	—	—	—	—	—	—	—	—	—	NO	MS	NA	7.92	8.17	MS	24.9	7.63	7.53	MS
	4	3	4	6	6	4	6	6	5	5	5	NO	DL		7.80	8.28	CN	25.3	7.46	7.64	CN
	5	11	9	10	9	12	11	9	8	9	11	NO	GR		7.62	8.70	LK	25.2	7.66	7.67	GR
	6	6	+	+	14	+	9	+	+	+	+	NO	GM		7.84	8.12	AC	25.7	7.85	8.01	AC
	7	+	7	10	8	7	+	9	10	12	10	NO	DL								
	8																				
Total Young:																					

Notes:

+ small

split brood 07/28/16 MS

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
48	1														8.02	8.37	DL	25.0	7.87	7.48	GM
	2	—	—	—	—	—	—	—	—	—	—	NO	GM		8.13	8.38	EL	25.2	7.93	7.92	EL
	3	—	—	—	—	—	—	—	—	—	—	NO	MS	NA	8.09	8.19	MS	25.0	7.84	7.59	MS
	4	4	4	5	2	3	4	4	5	2	4	NO	DL		8.05	8.25	CN	25.5	7.82	7.77	CN
	5	9	8	9	11	8	9	10	11	9	8	NO	GR		7.91	8.53	LK	25.8	7.86	7.66	GR
	6	9	7	9	11	6	12	13	7	13	10	NO	GM		8.14	8.17	AC	25.9	8.08	7.92	AC
	7	13	+	+	+	+	+	+	+	+	+	NO	DL								
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Termination Sheet

Region: DRMP Sample Date: 05/8/16 Test Date: 05/9/16

Samples stored in chamber: 9 Test conducted in: CTR

Test taken down by: DL

Test take down time: 1420

Final Water Chemistry at Test Termination

Sample ID	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
41	24.5	290.5	7.68	7.83	DL
42	24.6	133.6	7.71	7.77	DL
43	24.5	67.6	7.65	7.58	DL
44	24.5	256.3	7.62	7.57	DL
45	24.6	300.3	7.60	7.78	DL
46	24.5	707	7.72	8.41	DL
47	24.4	108.6	7.70	7.65	DL
48	24.5	281.5	7.68	7.67	DL

Fathead Minnow Delta RMP Treatment List +R6 PRT Test
Field Date: 5/18/16
Test Set up: 5/19/16
Samples kept in chamber:
Experiment kept in: CTR

Instructions: This is a 7-day chronic-style test with 10 animals per replicate and 4 replicates per treatment. Each replicate consists of 250ml of sample. Carefully renew 200ml per replicate daily with the squeegee tip method. Feed 3X times daily. Do not feed on the last day of the test. If ≥ 50% mortality occurs in one replicate, feed the replicate half the amount of food. This test must be setup with <48-hour old fish. Initial and final chemistry must be taken daily.

Contact Marie **immediately** when:

- either endpoint in any sample has a 50% reduction from the control performance (TIE trigger, applies to biomass and reproduction), or
- if you have high variability between the replicates (PRT trigger, use Excel calculator).

ID	Treatment	Decoding or Instructions
41	ROEPAMH (TAC Control)	
42	510SACC3A	
43	544LSAC13	
44	541SJC501	
45	511ULCABR	

ID	Treatment	
41	ROEPAMH (TAC Control)	This test will be set up PRT Style (20 replicates with 2 fish each). Feeding will be about 25 *Artemia* per beaker twice a day.
42	544SAC002	
43	Low Conductivity Control @ 52 uS/cm	

ID	Treatment – Region ~~2~~ 6 PRT	
31	ROEPAMH (TAC Control)	This test will be set up PRT Style (20 replicates with 2 fish each). Feeding will be about 25 *Artemia* per beaker twice a day.
32	637SUS004	

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SWRCB - SWAMP FY 14/15 Fathead Test Initiation Sheet

Region: DRMP Sample Date: 051816 Test Date: 051916

4:39

Samples stored in chamber: 9 Test conducted in: CTR

Before test initiation, what percentage of fish: are lying on the bottom 0 %
have bent spines 0 %
are active 100 %

Comments about irregular color, sizes or shapes: normal/good

Age at time of set-up: 24-48hr % of less desirable fish used in each beaker: ~~0~~

Test set-up by: GM Test set-up time: 1456 → DRMP α
15:27 → DRMP PRT α
16:39 → SWAMP α

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.
If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.
If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.
If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	pre-DO	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
41		24.4	269.4	8.16	8.13	DU	84	60	0.01
42		24.5	119.0	8.10	8.12	DU	44	44	0.44
43		24.3	263.4	8.14	8.02	DU	68	50	0.05
44		24.2	300.4	8.11	8.12	DU	88	58	0.01
45		24.3	750	8.15	8.56	DU	272	224	0.06
41		24.6	271.8	8.13	8.12	DU	84	60	0.01
42		24.5	75.0	8.20	7.74	DU	16	24	0.01
43		25.1	71.7	7.88	7.77		24	14	NR-TE
31		25.4	283.2	7.82	8.14	AA	84	60	0.01
32	10.40	25.2	112.2	7.80	8.10	AA	44	52	0.00

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 5/18/16
Test Date: 5/19/16

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
41	1	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	≥50% Mortality?			NO	NO	NO	NO	NO	NO	NO
	ID		EL	GM	MS	DL	GM	DL	GM	EL
	Initial	Pre-DO*			NA	NA				
		pH	8.18	8.19	8.32	~~8.01~~	8.17	8.15		
		DO (mg/L)	8.12	8.18	8.13	~~8.30~~	8.13	8.26		
		ID	DL	EL	AA	~~GR~~	GR	GR		
	Final	Temp °C	25.0	24.1	24.4	23.9	24.7	24.2		
		pH	8.20	8.05	7.98	8.01	8.00	8.05		
		DO (mg/L)	8.20	8.86	8.07	8.30	7.90	8.38		
		ID	GR	GM	MS	GR	LK	GR		

Rep	Boat Weight	Total Weight
1	0.99215	0.99484
2	1.00432	1.00708
3	1.01554	1.01834
4	1.00684	1.00979

Notes:

Day 4 initial chem
pH 8.20
DO 8.22
ID CN

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
42	1	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	2	Live	10	9	9	10	10	10	10	10
		Dead		1						
		Missing								
	3	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	≥50% Mortality?			NO	NO	NO	NO	NO	NO	NO
	ID			GM	MS	DL	GM	DL	GM	EL
	Initial	Pre-DO*	10.59		NA	11.93	8.82	10.95		
		pH	8.13	8.13	8.15	8.05	8.05	7.99		
		DO (mg/L)	8.14	8.44	8.04	8.30	8.15	8.45		
		ID	DL	EL	AA	CN	GR	GR		
	Final	Temp °C	24.9	24.1	24.3	24.3	24.6	24.1		
		pH	8.08	7.91	7.99	7.93	7.89	7.94		
		DO (mg/L)	8.30	8.45	7.97	8.16	7.87	8.42		
		ID	GR	GM	MS	GR	LK	GR		

Rep	Boat Weight	Total Weight
1	0.99780	1.00077
2	1.00100	1.00384
3	1.02460	1.02725
4	1.01061	1.01336

Notes:

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 5/18/16
Test Date: 5/19/16

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
43	1	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	2	Live	10	10	9	9	9	9	9	9
		Dead			1					
		Missing								
	3	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO		NO
	ID		EL	GM	MS	DL	GM	DL		EL
	Initial	Pre-DO*			NA					
		pH	8.05	8.05	8.12	7.96	8.10	7.99		
		DO (mg/L)	8.24	8.34	8.15	8.28	8.18	8.49		
		ID	DL	EL	AA	CN	GR	GR		
	Final	Temp °C	23.6	23.7	24.3	24.3	24.6	24.2		
		pH	7.84	7.47	7.97	7.87	7.90	7.95		
		DO (mg/L)	8.18	8.50	7.88	8.09	7.97	8.45		
		ID	GR	GM	MS	GR	LK	GR		

Rep	Boat Weight	Total Weight
1	1.00567	1.00860
2	1.01270	1.01519
3	1.01051	1.01340
4	1.01025	1.01306

Notes:

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
44	1	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO		NO
	ID		GR	GM	MS	DL	GM	DL		EL
	Initial	Pre-DO*			NA					
		pH	8.17	8.37	8.26	8.22	8.25	~~7.97~~	GR 8.14	
		DO (mg/L)	8.31	8.56	8.15	8.29	8.21	8.48		
		ID	DL	EL	AA	CN	GR	GR		
	Final	Temp °C	24.8	24.1	24.5	24.3	24.9	24.2		
		pH	8.12	8.12	8.03	8.00	8.04	8.05		
		DO (mg/L)	8.27	8.15	8.00	8.22	8.04	8.42		
		ID	GR	GM	MS	GR	LK	GR		

Rep	Boat Weight	Total Weight
1	1.02100	1.02410
2	1.00431	1.00734
3	1.02219	1.02528
4	1.01427	1.01749

Notes:

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 5/18/16
Test Date: 5/19/16

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
45	1	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	2	Live	9	8	5	6	6	5	5	5
		Dead	1	1A	3B			1		
		Missing			0					
	3	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	NO
	ID		GR	GR	MS	DL	GM	DV	GM	EL

Initial	Pre-DO*		9.47	10.20				
	pH	8.43	8.37	8.43	8.44	8.34	8.32	
	DO (mg/L)	8.28	8.29	8.12	8.27	8.17	8.39	
	ID	DL	EL	AA	CN	GR	GR	
Final	Temp °C	25.0	24.3	24.4	24.5	24.9	24.1	
	pH	8.64	8.53	7.88	8.48	8.55	8.51	
	DO (mg/L)	8.05	8.48	8.55	8.09	7.89	8.32	
	ID	GR	GM	MS	GR	LK	GR	

20.0

Rep	Boat Weight	Total Weight
1	0.99279	0.99594
2	1.01822	1.01995
3	1.00476	1.00784
4	1.00164	1.0486

Notes:
A - fungusy
B: 2 dead w/ fungus → one other dead fish decomposed
switched out beaker all the way.
5 alive in Rep B

05256 - switched beakers 45A + 45B (no fungus on fish) but there was fungus on piece of wood

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
	1	Live								
		Dead								
		Missing								
	2	Live								
		Dead								
		Missing								
	3	Live								
		Dead								
		Missing								
Murky Rating	4	Live								
		Dead								
		Missing								
	≥50% Mortality?									
	ID									

Initial	Pre-DO*							
	pH							
	DO (mg/L)							
	ID							
Final	Temp °C							
	pH							
	DO (mg/L)							
	ID							

Rep	Boat Weight	Total Weight
1		
2		
3		
4		

Notes:

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Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 5/18/2016
Test Date: 5/19/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
41	A	2	2	2	2	2	2	2	8	1.00753	1.01086
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	1D/1A	1	1	1	1	1			
	E	2	1D/1A	1	1	1	1	1			
	F	2	2	2	2	2	2	2	9	1.01524	1.01863
	G	2	1D/1A	1	1	1	1	1			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2	10	1.01252	1.01596
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2	10	1.03278	1.03630
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	DL	GM	AA	GR	MS	MS	AA			

Initial	Pre-DO*			NA				
	pH	8.18	8.15	8.22	8.15	8.15	8.16	
	DO (mg/L)	8.32	8.25	8.16	8.26	8.18	8.42	
	ID	DL	EL	AM	CN	GR	GR	
Final	Temp	25.0	25.3	25.3	24.8	24.2	23.3	
	pH	7.80	7.96	7.91	7.92	7.95	7.90	
	DO (mg/L)	7.22	7.93	7.49	7.79	7.93	8.25	
	ID	GM	GM	MS	CN	LK	GR	

Notes:
052016 - Day 1 - one fish looks pale

LD modified 11/18/15

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 5/18/2016
Test Date: 5/19/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
	A	2	2	2	2	2	2	2			
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2	9	0.99544	0.99893
	D	2	2	2	2	2	2	2			
	E	2	2	1A/1D	1	1	1	1			
	F	2	2	2	2	2	2	2			
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2	10	~~1.043~~ 1.04297	1.04690
	I	2	2	2	2	2	2	2			
42	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2			
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2	10	1.00772	1.01142
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2			
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2	10	1.01714	1.02111
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	DL	GM	AA	GR	MS	MC	AA			

(DW) Initial 052016 7.98	Pre-DO*	10.21	11.28	10.42	11.11	9.09	12.17	
	pH	~~8.14~~	7.92	7.89	7.79	7.91	7.88	
	DO (mg/L)	8.33	8.35	8.19	8.32	8.20	8.40	
	ID	DL	EL	AA	CN	GR	GR	
Final	Temp	25.7	25.3	25.3	24.6	23.9	23.3	
	pH	7.83	7.70	7.55	7.48	7.68	7.30	
	DO (mg/L)	7.66	7.84	7.40	7.74	7.99	8.18	
	ID	GM	MM	MS	CN	LK	GR	

Notes:

LD modified 11/18/15

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 5/18/2016
Test Date: 5/19/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
43	A	2	2	2	2	2	2	2	10	1.03056	1.03394
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2	10	1.01639	1.02002
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2	10	0.99530	0.99930
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2	9	1.01083	1.01431
	Q	2	2	2	2	2	2	2			
	R	2	1D/1A	1	1	1	1	1			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	DL	GM	AA	GR	MV	MS	AA			

Initial	Pre-DO*			NA				
	pH	~~8.03~~	~~7.80~~	7.48	7.63	7.84	7.92	
052016 @ 7.92	DO (mg/L)	8.36	8.54	8.23	8.57	8.22	8.34	
	ID	DL	EL	AA	CN	GR	GR	
Final	Temp	24.2	25.3	25.1	25.2	24.2	23.4	
	pH	7.73	7.59	7.54	7.44	7.52	7.50	
	DO (mg/L)	7.34	7.80	7.25	7.82	7.87	8.21	
	ID	DL	GM	MS	CN	LK	GR	

Notes:

LD modified 11/18/15

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: ~~R2~~ R6
Sample Date:
Test Date: 5/19/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
31	A	2	2	2	2	2	2	2	10	1.01126	EG 052416 ~~1.01126~~
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			1.01520
	F	2	2	2	2	2	2	2	10	1.00919	EG 052416 ~~1.00919~~
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			1.01286
	K	2	2	2	2	2	2	2	10	1.01388	EG 052416 ~~1.01388~~
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			1.01761
	P	2	2	2	2	2	2	2	8	1.00597	EG 052416 ~~1.00597~~
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	1A/1M	1	1	1	1	1			
	T	2	2	2	2	2	2	~~2~~			1.00892
	ID		EL	AA	DL	GW	MC	MC			

Initial	Pre-DO*							
	pH	8.04	8.11	8.21	8.10	8.20	8.12	
	DO (mg/L)	8.34	8.45	8.07	8.25	8.18	8.45	
	ID	DL	EL	AA	CN	GR	GR	
Final	Temp	23.8	24.3	25.2	25.3	24.0	23.0	
	pH	7.77	8.08	7.80	7.8	7.97	7.93	
	DO (mg/L)	7.16	8.21	7.35	7.56	8.07	8.21	
	ID	GM		AA	CN	LK	GR	

Notes:
M - Missing

LD modified 11/18/15

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: ~~R2~~ R4
Sample Date:
Test Date: 5/19/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
32	A	2	2	2	2	2	2	2	10	1.00228	1.00621
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2	10	1.01459	1.01881
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2	10	1.00691	1.01099
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2	10	1.00292	1.00657
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID		E	AA	DL	GM	MC	MS			

		1	2	3	4	5	6	7
Initial	Pre-DO*	10.22	10.68		11.93	9.70	12.73	
	pH	8.13	8.130	8.16	8.02	8.09	8.12	
	DO (mg/L)	8.33	8.32	8.20	8.38	8.30	8.48	
	ID	DL	EL	AA	CN	GR	GR	
Final	Temp	24.1	24.9	25.1	25.2	23.9	23.0	
	pH	7.80	7.94	7.86	7.80	7.95	7.87	
	DO (mg/L)	7.24	7.80	7.40	7.70	8.16	8.30	
	ID	GM	GM	AA	CN	LK	GR	

Notes:

LD modified 11/18/15

SWRCB - SWAMP Fathead Test Termination Sheet

Region: DRMP Sample Date: 051816 Test Date: 051916

Samples stored in: 9 Test conducted in: CTR

Test taken down by: LK

Test take down time:

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
41	24.4	296.1	8.09	8.00	LK
42	23.9	127.4	8.03	7.90	LK
43	24.1	289.4	8.05	7.79	LK
44	24.0	334.6	7.82	7.94	LK
45	23.8	~~88.2~~ 803.2	7.96	8.45	LK
41	23.1	306.5	8.07	7.90	LK
42	23.6	90.9	7.87	7.61	LK
43	22.8	96.5	8.11	7.55	LK
31	22.7	310.2	8.27	7.86	LK
32	23.2	143.8	8.02	7.89	LK

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Delta RMP Selenastrum Capricornutum <u>without EDTA</u>

Field Date: 5/18/16
Test Set up: 5/19/16
Samples kept in chamber:
Experiment kept in chamber: 5

Instructions: This is a 96-hour chronic algae test. Take initial chemistry at test set up and final chemistry at test termination. Randomize flasks twice daily. Flasks must be inoculated individually. This test has 5 replicates per treatment, one of which is a chemistry-only replicate. Please take daily pH and temperature measurements at the AM randomization. All chemistry measurements for this test will be from the 5th chemistry replicate. Contact Marie **<u>immediately</u>** when the average growth from any sample has a 50% reduction from the control performance. Start spiking algae cells at 94 hours of testing whenever possible.

ID	Treatment	Decoding or Instructions
41	Glass Distilled Water (TAC)	
42	510SACC3A	Foaming or Mycrocystis Present?
43	544SAC002	Foaming or Mycrocystis Present?
44	544LSAC13	Foaming or Mycrocystis Present?
45	541SJC501	Foaming or Mycrocystis Present?
46	511ULCABR	Foaming or Mycrocystis Present?

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Delta RMP Selenastrum Capricornutum <u>without EDTA</u>

Field Date: 5/18/16
Test Set up: 5/19/16
Samples kept in chamber:
Experiment kept in chamber: 5

Instructions: This is a 96-hour chronic algae test. Take initial chemistry at test set up and final chemistry at test termination. Randomize flasks twice daily. Flasks must be inoculated individually. This test has 5 replicates per treatment, one of which is a chemistry-only replicate. Please take daily pH and temperature measurements at the AM randomization. All chemistry measurements for this test will be from the 5th chemistry replicate. Contact Marie **<u>immediately</u>** when the average growth from any sample has a 50% reduction from the control performance. Start spiking algae cells at 94 hours of testing whenever possible.

ID	Treatment	Decoding or Instructions
41	Glass Distilled Water (TAC)	
42	510SACC3A	Foaming or Mycrocystis Present?
43	544SAC002	Foaming or Mycrocystis Present?
44	544LSAC13	Foaming or Mycrocystis Present?
45	541SJC501	Foaming or Mycrocystis Present?
46	511ULCABR	Foaming or Mycrocystis Present?

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SWRCB - SWAMP FY 14/15 Algae Test Termination Sheet

Region: Delta RMP Sample Date: 051816 Test Date: 051916

Samples stored in chamber: 9 Test conducted in: Chamber 5

Test taken down by: DL

Test take down time: 1130 (start spiking algae cells at 94 hours)

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
41E	27.0	117.1	8.03	7.89	CN
42E	27.0	192.9	8.20	9.03	CN
43E	26.6	151.5	8.39	8.96	CN
44E	26.5	532.2	7.86	8.12	CN
45E	26.5	388.6	7.88	8.13	CN
46E	26.6	743	8.63	9.25	CN

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Algae Innoculum Worksheet

Test: Delta RMP w/o EDTA Field Date: 051816

Setup Date: 051916

Algal Culture ID letter D Algal Culture made by MT

Date made 051216 Days cultured 7

Background Counts	53	50	55
Raw Algal Counts	39555	39761	39484

Mean of raw counts 39600

Mean of raw counts x 80 3.17×10^6

1×10^6 / (mean of raw counts x 80) x 200 = amount of algal culture needed 63.1

200 – amount of algal culture needed = amount of SSEPAMH needed 136.9

Mix the above amounts of algae and SSEPAMH to make the innoculum for the test.

Once dilution is made, count the cell number for the dilution to make sure that it is approximately 1×10^6 cells/ml.

Dilution Counts	12965	12980	12734

Mean of dilution counts 12893

Mean of dilution counts x 80 1.03×10^6 (acceptable range is: $0.9 \times 10^6 - 1.1 \times 10^6$)

Aquatic Toxicology Laboratory
VM:APC
1321 Haring Hall
University of California, Davis
Davis , CA 95616
(530) 752-0772

Background Counts: 57 37 38

Algae Takedown

Aquatic Toxicology Laboratory
VM:APC
1321 Haring Hall
University of California, Davis
Davis , CA 95616
(530) 752-0772

Test: Delta RMP w/o EDTA Test Date: 051914

Treatment: 41

Replicate 1	19032	19286	19252
Replicate 2	20482	20440	20422
Replicate 3	19062	19134	19326
Replicate 4	19848	18930	19700

Treatment: 42

Replicate 1	25642	25790	25929
Replicate 2	26732	26588	26702
Replicate 3	27228	27189	27551
Replicate 4	27350	27412	052316 ~~4~~ 27470

Treatment: 43

Replicate 1	26769	27105	27097
Replicate 2	26111	25856	25955
Replicate 3	26506	26599	26290
Replicate 4	24446	24212	24269

Treatment: 44

Replicate 1	23551	23432	23339
Replicate 2	25232	25735	25563
Replicate 3	23902	23748	23937
Replicate 4	24283	24845	24318

Treatment: 45

Replicate 1	10375	10272	10400
Replicate 2	12504	12477	12553
Replicate 3	12677	12840	12611
Replicate 4	11936	11743	11859

Treatment: 46

Replicate 1	24195	23896	23728
Replicate 2	23629	23344	23510
Replicate 3	22163	22247	052316 ~~22060~~ 22260
Replicate 4	23711	23545	23684

Treatment:

Replicate 1			
Replicate 2			
Replicate 3			
Replicate 4			

Treatment:

Replicate 1			
Replicate 2			
Replicate 3			
Replicate 4			

June 2016

Delta RMP Ceriodaphnia Dubia

Field Date: 5/18/16
Test Set up: 5/19/16
Samples kept in chamber:
Experiment kept in chamber: CTR

Instructions: This is a 3-Brood test with 1 animal per replicate and 10 replicates with 15 ml per vial treatment. This test must be set up using blocking by known parentage. Feed and change daily. Take initial chemistry and final chemistry daily. Contact Marie **immediately** when either endpoint in any sample has a 50% reduction from the control performance. Please alert Marie or Linda ASAP when test does not meet test acceptability criteria. Take down the test after the vast majority of organisms have had their 3rd brood.

ID	Treatment	Decoding or Instructions
41	L16-50 (TAC Control)	
42	510SACC3A	
43	544SAC002	
44	544LSAC13	
45	541SJC501	
46	511ULCABR	
47	Low Conductivity Control @ 52 uS/cm	L16-50 diluted with Glass Distilled
48	SSEPAMH	

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Initiation Sheet

Region: Delta RMP Sample Date: 051816 Test Date: 051916

Samples stored in chamber: 9 Test conducted in: CTR

If neos isolated from Brood Board: Only use neos from gravids producing over 8 neos on day of set-up.

Brood Board # 72 (CERIO) Date/Time neos isolated: 1430

Date/Time gravids isolated: 051916 / 800 Neos isolated by: GR

Gravids isolated by: DL Test set-up by: DL

Health of gravids: good Time neos loaded: 1638

At time of set-up: were neos born in an 8 hour window? (yes) no Age range: ~~6.5~~ 051916 7.5 @ hours

were neos less than 24 hours old? (yes) no

Blocking by known parentage: Please list which Brood Board replicate was used for test initiation.

Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
C1	C7	C9	E3	E6	R2	R3	R9	R10	I3
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
C1	C7	C9	E3	E6	R2	R3	R9	R10	I3
Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.

If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.

If the Sample Receiving SC or Field SC is ≥ 2,500, consult with a supervisor for a potential species substitution.

If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample ID	Receiving SC	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
41		24.4	309.8	8.17	8.06	DL	88	54	0.00
42		24.3	109.6	8.03	8.08	DL	44	44	0.44
43		24.3	58.4	8.09	7.79	DL	16	24	0.01
44		24.4	274.3	8.12	7.93	DL	68	50	0.05
45		24.2	328.9	8.14	8.07	DL	88	58	0.01
46		24.3	757	8.10	8.60	DL	272	224	0.06
47		24.2	69.3	8.15	8.05	DL	24	12	NR-TE
48		24.1	243.5	8.14	8.09	DL	92	60	0.00

Note: Pre-DO is _____ on Treatment # _____

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Updated 110415 by LD

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 5/18/16	
Test Date: 5/19/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
41	1	+									+	NO	GM		8.12	8.33	DL	25.0	8.04	7.83	GM
	2	+									+	NO	GM		8.17	8.26	EL	25.4	8.05	7.76	EL
	3	+									+	NO	MS	NA	8.20	8.05	MS	25.0	7.92	7.51	MS
	4	4	8	8	7	9	7	5	5	4	7	NO	DL		8.16	8.35	CN	25.0	7.84	7.62	CN
	5	12	13	12	14	13	14	14	11	13	14	NO	GR		~~7.84~~	8.42	LK	25.7	7.96	7.47	GR
	6	18	19	5	17	+	14	+	15	+	14	NO	GM		8.19	8.14	AC	25.8	8.15	7.98	AC
	7	+	+	12	+	18	16	14	+	16	+	NO	DL								
	8																				
Total Young:																					

8.06

split bead 07/18/16 [illegible]

Notes: * small

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
42	1														8.14	8.31	DL	24.7	7.86	7.85	GM
	2	+									+	NO	GM		8.10	8.15	EL	25.2	7.89	7.79	EL
	3	+									+	NO	MS	NA	8.01	8.13	MS	24.9	7.78	7.51	MS
	4	+	5	6	4	4	4	5	6	5	+	NO	DL	11.02	8.17	8.36	CN	25.5	7.69	7.37	CN
	5	8	11	10	11	12	11	12	13	10	7	NO	GR	8.68	7.99	8.17	LK	25.3	7.86	7.46	GR
	6	14	+	16	+	+	+	+	+	+	5	NO	GM	10.81	8.11	8.05	AC	25.8	8.10	8.18	AC
	7	+	13	+	13	16	15	14	15	14	7	NO	DL								
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 5/18/16	
Test Date: 5/19/16	

		Replicate										≥50%		Pre	Initial			Final			
Treatment	Day	1	2	3	4	5	6	7	8	9	10	mort?	ID	DO*	pH	DO (mg/L)	ID	°C	pH	DO (mg/L)	ID
	1													10.12	7.90	8.24	DL	24.7	7.63	7.80	GM
	2	†									†	NO	GM		7.95	8.30	EL	25.1	7.62	7.49	EL
	3	†									†	NO	MS	NA	7.95	8.16	MS	24.8	7.60	7.43	MS
43	4	6	5	5	4	5	4	4	6	4	6	NO	DL		7.97	8.31	CN	25.6	7.52	7.45	CN
	5	10	12	10	12	11	11	11	10	9	12	NO	GR		7.78	8.29	LK	25.4	7.56	7.30	GR
	6	15	†	†	†	†	†	†	†	†	16	NO	GM		7.93	8.19	AC	25.7	7.89	8.13	AC
	7	†	14	16	15	15	16	17	13	11	†	NO	DL								
	8																				
Total Young:																					

Notes:

		Replicate										≥50%		Pre	Initial			Final			
Treatment	Day	1	2	3	4	5	6	7	8	9	10	mort?	ID	DO*	pH	DO (mg/L)	ID	°C	pH	DO (mg/L)	ID
	1														8.03	8.22	DL	24.8	7.80	7.76	GM
	2	†									†	NO	GM		8.01	8.42	EL	25.1	7.68	7.85	EL
	3	†									†	NO	MS	NA	8.04	8.05	MS	24.8	7.68	7.58	MS
44	4	4	4	†	4	5	4	4	4	†	5	NO	DL		8.06	8.32	CN	25.6	7.59	7.44	CN
	5	12	14	12	13	12	11	9	11	11	12	NO	GR		7.91	8.25	LK	25.1	7.74	7.46	GR
	6	14	†	†	†	†	†	†	†	†	26				8.11	8.07	AC	25.8	8.08	8.16	AC
	7	†	16	11	15	16	16	16	14	12	†	NO	DL								
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 5/18/16	
Test Date: 5/19/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1														8.19	8.34	DL	24.7	8.02	8.02	GM
	2	←									→	NO	GM	11.22	8.30	8.45	EL	25.4	7.98	7.85	EL
	3	←									→	NO	MS	NA	8.09	8.25	MS	24.9	7.76	7.48	MS
45	4	7	6	4	6	7	6	+	6	5	4	NO	DL		8.19	8.33	CN	25.9	7.75	7.47	CN
	5	+	9	10	11	12	12	10	11	10	12	NO	GR		8.30	8.16	LK	25.5	7.86	7.36	GR
	6	17	22	20	25	20	19	1*	20	+	20	NO	GM		8.20	8.11	AC	25.9	8.17	7.94	AC
	7	15	+	+	+	+	+	+	+	12	+	NO	DL								
	8																				
Total Young:																					

Notes: *Small

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
	1														8.57	8.25	DL	24.9	8.57	7.70	GM
	2	←									→	NO	GM		8.47	8.36	EL	25.3	8.55	7.86	EL
	3	←									→	NO	MS	10.13	8.40	8.20	MS	24.9	8.50	7.50	MS
40	4	7	8	6	6	8	5	5	6	3	4	NO	DL		8.26	8.36	CN	25.6	8.42	7.45	CN
	5	11	7	12	9	8	11	13	12	8	13	NO	GR		8.20	8.38	LK	25.2	8.49	7.37	GR
	6	2	17	17	18	17	10	19	19	10	17	NO	GM		8.65	8.14	AC	27.1	8.57	7.75	AC
	7	14	+	+	+	+	+	+	+	+	16	NO	DL								
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Data Sheet

Region: DRMP	
Sample Date: 5/18/16	
Test Date: 5/19/16	

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
47	1														7.86	8.31	DL	25.0	7.66	7.81	GM
	2	—	—	—	—	—	—	—	—	—	—	NO	GM		7.94	8.43	EL	25.1	7.61	7.74	EL
	3	—	—	—	—	—	—	—	—	—	—	NO	MS	NA	7.92	8.17	MS	24.9	7.63	7.53	MS
	4	3	4	6	6	4	6	6	5	5	5	NO	DL		7.80	8.28	CN	25.3	7.46	7.64	CN
	5	11	9	10	9	12	11	9	8	9	11	NO	GR		7.62	8.70	LK	25.2	7.66	7.67	GR
	6	6	+	+	14	+	9	+	+	+	+	NO	GM		7.84	8.12	AC	25.7	7.85	8.01	AC
	7	+	7	10	8	7	+	9	10	12	10	NO	DL								
	8																				
Total Young:																					

Notes:

+ small

split brood 07/28/16 MS

Treatment	Day	Replicate 1	2	3	4	5	6	7	8	9	10	≥50% mort?	ID	Pre DO*	Initial pH	Initial DO (mg/L)	Initial ID	Final °C	Final pH	Final DO (mg/L)	Final ID
48	1														8.02	8.37	DL	25.0	7.87	7.48	GM
	2	—	—	—	—	—	—	—	—	—	—	NO	GM		8.13	8.38	EL	25.2	7.93	7.92	EL
	3	—	—	—	—	—	—	—	—	—	—	NO	MS	NA	8.09	8.19	MS	25.0	7.84	7.59	MS
	4	4	4	5	2	3	4	4	5	2	4	NO	DL		8.05	8.25	CN	25.5	7.82	7.77	CN
	5	9	8	9	11	8	9	10	11	9	8	NO	GR		7.91	8.53	LK	25.8	7.86	7.66	GR
	6	9	7	9	11	6	12	13	7	13	10	NO	GM		8.14	8.17	AC	25.9	8.08	7.92	AC
	7	13	+	+	+	+	+	+	+	+	+	NO	DL								
	8																				
Total Young:																					

Notes:

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SWRCB - SWAMP FY 14/15 Ceriodaphnia Test Termination Sheet

Region: DRMP Sample Date: 05/8/16 Test Date: 05/9/16

Samples stored in chamber: 9 Test conducted in: CTR

Test taken down by: DL

Test take down time: 1420

Final Water Chemistry at Test Termination

Sample ID	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
41	24.5	290.5	7.68	7.83	DL
42	24.6	133.6	7.71	7.77	DL
43	24.5	67.6	7.65	7.58	DL
44	24.5	256.3	7.62	7.57	DL
45	24.6	300.3	7.60	7.78	DL
46	24.5	707	7.72	8.41	DL
47	24.4	108.6	7.70	7.65	DL
48	24.5	281.5	7.68	7.67	DL

Fathead Minnow Delta RMP Treatment List +R6 PRT Test
Field Date: 5/18/16
Test Set up: 5/19/16
Samples kept in chamber:
Experiment kept in: CTR

Instructions: This is a 7-day chronic-style test with 10 animals per replicate and 4 replicates per treatment. Each replicate consists of 250ml of sample. Carefully renew 200ml per replicate daily with the squeegee tip method. Feed 3X times daily. Do not feed on the last day of the test. If ≥ 50% mortality occurs in one replicate, feed the replicate half the amount of food. This test must be setup with <48-hour old fish. Initial and final chemistry must be taken daily.

Contact Marie **immediately** when:

- either endpoint in any sample has a 50% reduction from the control performance (TIE trigger, applies to biomass and reproduction), or
- if you have high variability between the replicates (PRT trigger, use Excel calculator).

ID	Treatment	Decoding or Instructions
41	ROEPAMH (TAC Control)	
42	510SACC3A	
43	544LSAC13	
44	541SJC501	
45	511ULCABR	

ID	Treatment	
41	ROEPAMH (TAC Control)	This test will be set up PRT Style (20 replicates with 2 fish each). Feeding will be about 25 *Artemia* per beaker twice a day.
42	544SAC002	
43	Low Conductivity Control @ 52 uS/cm	

ID	Treatment – Region ~~2~~ 6 PRT	
31	ROEPAMH (TAC Control)	This test will be set up PRT Style (20 replicates with 2 fish each). Feeding will be about 25 *Artemia* per beaker twice a day.
32	637SUS004	

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SWRCB - SWAMP FY 14/15 Fathead Test Initiation Sheet

Region: DRMP Sample Date: 051816 Test Date: 051916

4:39

Samples stored in chamber: 9 Test conducted in: CTR

Before test initiation, what percentage of fish: are lying on the bottom 0 %
have bent spines 0 %
are active 100 %

Comments about irregular color, sizes or shapes: normal/good

Age at time of set-up: 24-48hr % of less desirable fish used in each beaker: ~~0~~

Test set-up by: GM Test set-up time: 1456 → DRMP α
15:27 → DRMP PRT α
16:39 → SWAMP α

Special Instructions:

If Initial DO is below 4.0, the sample and an additional control will need to be aerated during the test.
If the Sample Receiving SC or Field SC is ≤ 100, then a low conductivity control must be included in the test.
If the Sample Receiving SC or Field SC is ≥ 1900, then a high conductivity control must be included in the test.
If an initial pH falls outside of 6.00 to 9.00, then the test must include a pH shift and appropriate controls.

Initial Water Chemistry at Test Initiation

Sample	pre-DO	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID	Hardness (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)
41		24.4	269.4	8.16	8.13	DU	84	60	0.01
42		24.5	119.0	8.10	8.12	DU	44	44	0.44
43		24.3	263.4	8.14	8.02	DU	68	50	0.05
44		24.2	300.4	8.11	8.12	DU	88	58	0.01
45		24.3	750	8.15	8.56	DU	272	224	0.06
41		24.6	271.8	8.13	8.12	DU	84	60	0.01
42		24.5	75.0	8.20	7.74	DU	16	24	0.01
43		25.1	71.7	7.88	7.77		24	14	NR-TE
31		25.4	283.2	7.82	8.14	AA	84	60	0.01
32	10.40	25.2	112.2	7.80	8.10	AA	44	52	0.00

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 5/18/16
Test Date: 5/19/16

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
41	1	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	≥50% Mortality?			NO	NO	NO	NO	NO	NO	NO
	ID		EL	GM	MS	DL	GM	DL	GM	EL
	Initial	Pre-DO*			NA	NA				
		pH	8.18	8.19	8.32	~~8.01~~	8.17	8.15		
		DO (mg/L)	8.12	8.18	8.13	~~8.30~~	8.13	8.26		
		ID	DL	EL	AA	~~GR~~	GR	GR		
	Final	Temp °C	25.0	24.1	24.4	23.9	24.7	24.2		
		pH	8.20	8.05	7.98	8.01	8.00	8.05		
		DO (mg/L)	8.20	8.86	8.07	8.30	7.90	8.38		
		ID	GR	GM	MS	GR	LK	GR		

Rep	Boat Weight	Total Weight
1	0.99215	0.99484
2	1.00432	1.00708
3	1.01554	1.01834
4	1.00684	1.00979

Notes:

Day 4 initial chem
pH 8.20
DO 8.22
ID CN

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
42	1	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	2	Live	10	9	9	10	10	10	10	10
		Dead		1						
		Missing								
	3	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	≥50% Mortality?			NO	NO	NO	NO	NO	NO	NO
	ID			GM	MS	DL	GM	DL	GM	EL
	Initial	Pre-DO*	10.59		NA	11.93	8.82	10.95		
		pH	8.13	8.13	8.15	8.05	8.05	7.99		
		DO (mg/L)	8.14	8.44	8.04	8.30	8.15	8.45		
		ID	DL	EL	AA	CN	GR	GR		
	Final	Temp °C	24.9	24.1	24.3	24.3	24.6	24.1		
		pH	8.08	7.91	7.99	7.93	7.89	7.94		
		DO (mg/L)	8.30	8.45	7.97	8.16	7.87	8.42		
		ID	GR	GM	MS	GR	LK	GR		

Rep	Boat Weight	Total Weight
1	0.99780	1.00077
2	1.00100	1.00384
3	1.02460	1.02725
4	1.01061	1.01336

Notes:

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 5/18/16
Test Date: 5/19/16

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
43	1	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	2	Live	10	10	9	9	9	9	9	9
		Dead			1					
		Missing								
	3	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO		NO
	ID		EL	GM	MS	DL	GM	DL		EL
	Initial	Pre-DO*			NA					
		pH	8.05	8.05	8.12	7.96	8.10	7.99		
		DO (mg/L)	8.24	8.34	8.15	8.28	8.18	8.49		
		ID	DL	EL	AA	CN	GR	GR		
	Final	Temp °C	23.6	23.7	24.3	24.3	24.6	24.2		
		pH	7.84	7.47	7.97	7.87	7.90	7.95		
		DO (mg/L)	8.18	8.50	7.88	8.09	7.97	8.45		
		ID	GR	GM	MS	GR	LK	GR		

Rep	Boat Weight	Total Weight
1	1.00567	1.00860
2	1.01270	1.01519
3	1.01051	1.01340
4	1.01025	1.01306

Notes:

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
44	1	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	2	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	3	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO		NO
	ID		GR	GM	MS	DL	GM	DL		EL
	Initial	Pre-DO*			NA					
		pH	8.17	8.37	8.26	8.22	8.25	~~7.97~~	GR 8.14	
		DO (mg/L)	8.31	8.56	8.15	8.29	8.21	8.48		
		ID	DL	EL	AA	CN	GR	GR		
	Final	Temp °C	24.8	24.1	24.5	24.3	24.9	24.2		
		pH	8.12	8.12	8.03	8.00	8.04	8.05		
		DO (mg/L)	8.27	8.15	8.00	8.22	8.04	8.42		
		ID	GR	GM	MS	GR	LK	GR		

Rep	Boat Weight	Total Weight
1	1.02100	1.02410
2	1.00431	1.00734
3	1.02219	1.02528
4	1.01427	1.01749

Notes:

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SWRCB - SWAMP FY 14/15 Fathead Data Sheet

Region: DRMP

Sample Date: 5/18/16
Test Date: 5/19/16

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
45	1	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	2	Live	9	8	5	6	6	5	5	5
		Dead	1	1A	3B			1		
		Missing			0					
	3	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
Murky Rating	4	Live	10	10	10	10	10	10	10	10
		Dead								
		Missing								
	≥50% Mortality?		NO	NO	NO	NO	NO	NO	NO	NO
	ID		GR	GR	MS	DL	GM	DV	GM	EL

Initial	Pre-DO*		9.47	10.20				
	pH	8.43	8.37	8.43	8.44	8.34	8.32	
	DO (mg/L)	8.28	8.29	8.12	8.27	8.17	8.39	
	ID	DL	EL	AA	CN	GR	GR	
Final	Temp °C	25.0	24.3	24.4	24.5	24.9	24.1	
	pH	8.64	8.53	7.88	8.48	8.55	8.51	
	DO (mg/L)	8.05	8.48	8.55	8.09	7.89	8.32	
	ID	GR	GM	MS	GR	LK	GR	

20.0

Rep	Boat Weight	Total Weight
1	0.99279	0.99594
2	1.01822	1.01995
3	1.00476	1.00784
4	1.00164	1.0486

Notes:
A - fungusy
B: 2 dead w/ fungus → one other dead fish decomposed
switched out beaker all the way.
5 alive in Rep B

05256 - switched beakers 45A + 45B (no fungus on fish) but there was fungus on piece of wood

Treatment	Rep	Status	Day 1	2	3	4	5	6	7	Sum
	1	Live								
		Dead								
		Missing								
	2	Live								
		Dead								
		Missing								
	3	Live								
		Dead								
		Missing								
Murky Rating	4	Live								
		Dead								
		Missing								
	≥50% Mortality?									
	ID									

Initial	Pre-DO*							
	pH							
	DO (mg/L)							
	ID							
Final	Temp °C							
	pH							
	DO (mg/L)							
	ID							

Rep	Boat Weight	Total Weight
1		
2		
3		
4		

Notes:

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Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 5/18/2016
Test Date: 5/19/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
41	A	2	2	2	2	2	2	2	8	1.00753	1.01086
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	1D/1A	1	1	1	1	1			
	E	2	1D/1A	1	1	1	1	1			
	F	2	2	2	2	2	2	2	9	1.01524	1.01863
	G	2	1D/1A	1	1	1	1	1			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2	10	1.01252	1.01596
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2	10	1.03278	1.03630
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	DL	GM	AA	GR	MS	MS	AA			

Initial	Pre-DO*			NA				
	pH	8.18	8.15	8.22	8.15	8.15	8.16	
	DO (mg/L)	8.32	8.25	8.16	8.26	8.18	8.42	
	ID	DL	EL	AM	CN	GR	GR	
Final	Temp	25.0	25.3	25.3	24.8	24.2	23.3	
	pH	7.80	7.96	7.91	7.92	7.95	7.90	
	DO (mg/L)	7.22	7.93	7.49	7.79	7.93	8.25	
	ID	GM	GM	MS	CN	LK	GR	

Notes:
052016 - Day 1 - one fish looks pale

LD modified 11/18/15

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 5/18/2016
Test Date: 5/19/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
	A	2	2	2	2	2	2	2			
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2	9	0.99544	0.99893
	D	2	2	2	2	2	2	2			
	E	2	2	1A/1D	1	1	1	1			
	F	2	2	2	2	2	2	2			
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2	10	~~1.043~~ 1.04297	1.04690
	I	2	2	2	2	2	2	2			
42	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2			
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2	10	1.00772	1.01142
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2			
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2	10	1.01714	1.02111
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	DL	GM	AA	GR	MS	MC	AA			

(DW) Initial 052016 7.98	Pre-DO*	10.21	11.28	10.42	11.11	9.09	12.17	
	pH	~~8.14~~	7.92	7.89	7.79	7.91	7.88	
	DO (mg/L)	8.33	8.35	8.19	8.32	8.20	8.40	
	ID	DL	EL	AA	CN	GR	GR	
Final	Temp	25.7	25.3	25.3	24.6	23.9	23.3	
	pH	7.83	7.70	7.55	7.48	7.68	7.30	
	DO (mg/L)	7.66	7.84	7.40	7.74	7.99	8.18	
	ID	GM	MM	MS	CN	LK	GR	

Notes:

LD modified 11/18/15

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: DRMP
Sample Date: 5/18/2016
Test Date: 5/19/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
43	A	2	2	2	2	2	2	2	10	1.03056	1.03394
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2	10	1.01639	1.02002
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2	10	0.99530	0.99930
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2	9	1.01083	1.01431
	Q	2	2	2	2	2	2	2			
	R	2	1D/1A	1	1	1	1	1			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID	DL	GM	AA	GR	MV	MS	AA			

Initial	Pre-DO*			NA				
	pH	~~8.03~~	~~7.80~~	7.48	7.63	7.84	7.92	
052016 @ 7.92	DO (mg/L)	8.36	8.54	8.23	8.57	8.22	8.34	
	ID	DL	EL	AA	CN	GR	GR	
Final	Temp	24.2	25.3	25.1	25.2	24.2	23.4	
	pH	7.73	7.59	7.54	7.44	7.52	7.50	
	DO (mg/L)	7.34	7.80	7.25	7.82	7.87	8.21	
	ID	DL	GM	MS	CN	LK	GR	

Notes:

LD modified 11/18/15

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: ~~R2~~ R6
Sample Date:
Test Date: 5/19/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
31	A	2	2	2	2	2	2	2	10	1.01126	EG 052416 ~~1.01126~~
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			1.01520
	F	2	2	2	2	2	2	2	10	1.00919	EG 052416 ~~1.00919~~
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			1.01286
	K	2	2	2	2	2	2	2	10	1.01388	EG 052416 ~~1.01388~~
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			1.01761
	P	2	2	2	2	2	2	2	8	1.00597	EG 052416 ~~1.00597~~
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	1A/1M	1	1	1	1	1			
	T	2	2	2	2	2	2	~~2~~			1.00892
	ID		EL	AA	DL	GW	MC	MC			

Initial	Pre-DO*							
	pH	8.04	8.11	8.21	8.10	8.20	8.12	
	DO (mg/L)	8.34	8.45	8.07	8.25	8.18	8.45	
	ID	DL	EL	AA	CN	GR	GR	
Final	Temp	23.8	24.3	25.2	25.3	24.0	23.0	
	pH	7.77	8.08	7.80	7.8	7.97	7.93	
	DO (mg/L)	7.16	8.21	7.35	7.56	8.07	8.21	
	ID	GM		AA	CN	LK	GR	

Notes:
M - Missing

LD modified 11/18/15

Fathead Minnow PRT Test Data Sheet (For SWAMP Comparable Projects)

Test Name: ~~R2~~ R4
Sample Date:
Test Date: 5/19/2016

Treatment	Rep	Day 1	2	3	4	5	6	7	Sum	Boat Weight	Total Weight
32	A	2	2	2	2	2	2	2	10	1.00228	1.00621
	B	2	2	2	2	2	2	2			
	C	2	2	2	2	2	2	2			
	D	2	2	2	2	2	2	2			
	E	2	2	2	2	2	2	2			
	F	2	2	2	2	2	2	2	10	1.01459	1.01881
	G	2	2	2	2	2	2	2			
	H	2	2	2	2	2	2	2			
	I	2	2	2	2	2	2	2			
	J	2	2	2	2	2	2	2			
	K	2	2	2	2	2	2	2	10	1.00691	1.01099
	L	2	2	2	2	2	2	2			
	M	2	2	2	2	2	2	2			
	N	2	2	2	2	2	2	2			
	O	2	2	2	2	2	2	2			
	P	2	2	2	2	2	2	2	10	1.00292	1.00657
	Q	2	2	2	2	2	2	2			
	R	2	2	2	2	2	2	2			
	S	2	2	2	2	2	2	2			
	T	2	2	2	2	2	2	2			
	ID		E	AA	DL	GM	MC	MS			

		1	2	3	4	5	6	7
Initial	Pre-DO*	10.22	10.68		11.93	9.70	12.73	
	pH	8.13	8.130	8.16	8.02	8.09	8.12	
	DO (mg/L)	8.33	8.32	8.20	8.38	8.30	8.48	
	ID	DL	EL	AA	CN	GR	GR	
Final	Temp	24.1	24.9	25.1	25.2	23.9	23.0	
	pH	7.80	7.94	7.86	7.80	7.95	7.87	
	DO (mg/L)	7.24	7.80	7.40	7.70	8.16	8.30	
	ID	GM	GM	AA	CN	LK	GR	

Notes:

LD modified 11/18/15

SWRCB - SWAMP Fathead Test Termination Sheet

Region: DRMP Sample Date: 051816 Test Date: 051916

Samples stored in: 9 Test conducted in: CTR

Test taken down by: LK

Test take down time:

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
41	24.4	296.1	8.09	8.00	LK
42	23.9	127.4	8.03	7.90	LK
43	24.1	289.4	8.05	7.79	LK
44	24.0	334.6	7.82	7.94	LK
45	23.8	~~88.2~~ 803.2	7.96	8.45	LK
41	23.1	306.5	8.07	7.90	LK
42	23.6	90.9	7.87	7.61	LK
43	22.8	96.5	8.11	7.55	LK
31	22.7	310.2	8.27	7.86	LK
32	23.2	143.8	8.02	7.89	LK

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Delta RMP Selenastrum Capricornutum <u>without EDTA</u>

Field Date: 5/18/16
Test Set up: 5/19/16
Samples kept in chamber:
Experiment kept in chamber: 5

Instructions: This is a 96-hour chronic algae test. Take initial chemistry at test set up and final chemistry at test termination. Randomize flasks twice daily. Flasks must be inoculated individually. This test has 5 replicates per treatment, one of which is a chemistry-only replicate. Please take daily pH and temperature measurements at the AM randomization. All chemistry measurements for this test will be from the 5th chemistry replicate. Contact Marie **<u>immediately</u>** when the average growth from any sample has a 50% reduction from the control performance. Start spiking algae cells at 94 hours of testing whenever possible.

ID	Treatment	Decoding or Instructions
41	Glass Distilled Water (TAC)	
42	510SACC3A	Foaming or Mycrocystis Present?
43	544SAC002	Foaming or Mycrocystis Present?
44	544LSAC13	Foaming or Mycrocystis Present?
45	541SJC501	Foaming or Mycrocystis Present?
46	511ULCABR	Foaming or Mycrocystis Present?

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Delta RMP Selenastrum Capricornutum <u>without EDTA</u>

Field Date: 5/18/16
Test Set up: 5/19/16
Samples kept in chamber:
Experiment kept in chamber: 5

Instructions: This is a 96-hour chronic algae test. Take initial chemistry at test set up and final chemistry at test termination. Randomize flasks twice daily. Flasks must be inoculated individually. This test has 5 replicates per treatment, one of which is a chemistry-only replicate. Please take daily pH and temperature measurements at the AM randomization. All chemistry measurements for this test will be from the 5th chemistry replicate. Contact Marie **<u>immediately</u>** when the average growth from any sample has a 50% reduction from the control performance. Start spiking algae cells at 94 hours of testing whenever possible.

ID	Treatment	Decoding or Instructions
41	Glass Distilled Water (TAC)	
42	510SACC3A	Foaming or Mycrocystis Present?
43	544SAC002	Foaming or Mycrocystis Present?
44	544LSAC13	Foaming or Mycrocystis Present?
45	541SJC501	Foaming or Mycrocystis Present?
46	511ULCABR	Foaming or Mycrocystis Present?

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SWRCB - SWAMP FY 14/15 Algae Test Termination Sheet

Region: Delta RMP Sample Date: 051816 Test Date: 051916

Samples stored in chamber: 9 Test conducted in: Chamber 5

Test taken down by: DL

Test take down time: 1130 (start spiking algae cells at 94 hours)

Final Water Chemistry at Test Termination

Sample	Temp (°C)	EC (µS/cm)	DO (mg/L)	pH	ID
41E	27.0	117.1	8.03	7.89	CN
42E	27.0	192.9	8.20	9.03	CN
43E	26.6	151.5	8.39	8.96	CN
44E	26.5	532.2	7.86	8.12	CN
45E	26.5	388.6	7.88	8.13	CN
46E	26.6	743	8.63	9.25	CN

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Revised by LD 072815

Algae Innoculum Worksheet

Test: Delta RMP w/o EDTA Field Date: 051816

Setup Date: 051916

Algal Culture ID letter D Algal Culture made by MT

Date made 051216 Days cultured 7

Background Counts	53	50	55
Raw Algal Counts	39555	39761	39484

Mean of raw counts 39600

Mean of raw counts x 80 3.17×10^6

1×10^6 / (mean of raw counts x 80) x 200 = amount of algal culture needed 63.1

200 – amount of algal culture needed = amount of SSEPAMH needed 136.9

Mix the above amounts of algae and SSEPAMH to make the innoculum for the test.

Once dilution is made, count the cell number for the dilution to make sure that it is approximately 1×10^6 cells/ml.

Dilution Counts	12965	12980	12734

Mean of dilution counts 12893

Mean of dilution counts x 80 1.03×10^6 (acceptable range is: $0.9 \times 10^6 - 1.1 \times 10^6$)

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VM:APC
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University of California, Davis
Davis , CA 95616
(530) 752-0772

Background Counts: 57 37 38

Algae Takedown

Aquatic Toxicology Laboratory
VM:APC
1321 Haring Hall
University of California, Davis
Davis , CA 95616
(530) 752-0772

Test: Delta RMP w/o EDTA Test Date: 051914

Treatment: 41

Replicate 1	19032	19286	19252
Replicate 2	20482	20440	20422
Replicate 3	19062	19134	19326
Replicate 4	19848	18930	19700

Treatment: 42

Replicate 1	25642	25790	25929
Replicate 2	26732	26588	26702
Replicate 3	27228	27189	27551
Replicate 4	27350	27412	052316 ~~4~~ 27470

Treatment: 43

Replicate 1	26769	27105	27097
Replicate 2	26111	25856	25955
Replicate 3	26506	26599	26290
Replicate 4	24446	24212	24269

Treatment: 44

Replicate 1	23551	23432	23339
Replicate 2	25232	25735	25563
Replicate 3	23902	23748	23937
Replicate 4	24283	24845	24318

Treatment: 45

Replicate 1	10375	10272	10400
Replicate 2	12504	12477	12553
Replicate 3	12677	12840	12611
Replicate 4	11936	11743	11859

Treatment: 46

Replicate 1	24195	23896	23728
Replicate 2	23629	23344	23510
Replicate 3	22163	22247	052316 ~~22060~~ 22260
Replicate 4	23711	23545	23684

Treatment:

Replicate 1			
Replicate 2			
Replicate 3			
Replicate 4			

Treatment:

Replicate 1			
Replicate 2			
Replicate 3			
Replicate 4			