

Whole Effluent Toxicity (WET) Results Follow Up

Commission Meeting
August 31, 2023



WET Test Sampling Protocol

- Sample location and type are specified in the District's permit
- Obtain the sample under normal operating conditions

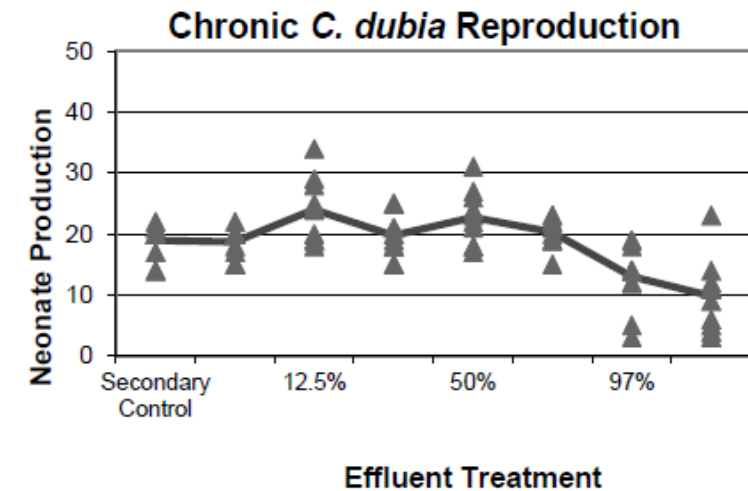


Madison Metropolitan Sewerage District



WET Test Results

SPECIES	EFFLUENT TREATMENT	NEONATE PRODUCTION BY REPLICATE										MEAN NEONATES	%CV	% ADULT SURVIVAL
		1	2	3	4	5	6	7	8	9	10			
C. dubia Reproduction & Survival Test	Secondary Control	20	17	22	20	14	21	20	21	20	14	18.9	15.3	100%
	Primary Control	15	20	17	18	20	15	20	20	22	20	18.7	12.6	100%
	12.5%	19	24	25	20	18	28	24	19	29	34	24.0		100%
	25%	25	18	21	19	20	15	21	18	15	25	19.7		100%
	50%	17	26	23	18	24	21	27	18	31	22	22.7		100%
	75%	19	23	19	22	22	20	23	21	15	19	20.3		100%
	97%	19	5	14	3	12	14	14	12	19	18	13.0		100%
	100%	4	9	12	6	14	3	23	5	11	11	9.8		100%
Male Production ≤ 20% Over All Treatments?												<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
C. dubia CHRONIC RESULTS:		IC ₂₅ = 88.0		C.I.% = 82-94%		TUC = 1.1								
Please describe any unusual behavior and/or appearance of organisms.(see Part 6.1.2 of the Methods Manual for ex.)														
COMMENTS: Permit issued 05/01/20 (TUC=100/IC25, Positive for toxicity at a TUC of greater than 1.03)														



We failed a WET test, now what?

- After a failed WET test, two repeat tests are required within 90 days
 - Original test date – week of July 23, 2023
 - Repeat tests scheduled – weeks of September 3, 2023 and September 24, 2023
- If one or both tests fail, the DNR may require action via:
 - Toxicity reduction evaluation (TRE)
 - Plant performance
 - Process review
 - Chemical screening
 - Toxicity identification evaluation (TIE)



Why did we only fail at Badger Mill Creek?

	Badger Mill Creek	Badfish Creek
Instream Waste Concentration (IWC)	97%	93%
Toxicity Unit, Chronic Cutoff (Calculated TUC)	1.03	1.1
WET Test Results - Reported	1.1	1.1



References

- Whole Effluent Toxicity (WET) Test Report Form, completed by ECT (Superior, WI) on 8/2/2023
- Madison Metropolitan Sewerage District WPDES Permit, effective 5/1/2020
- Whole Effluent Toxicity (WET) Program Guidance Document, Edition No. 13, effective 10/13/2022



Questions?

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Visitor

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