

Attachment 6

WET Summary and Evaluation

Facility Name	GREENVILLE SANI AUTH
Permit No.	PA0027367
Design Flow (MGD)	4
Q ₇₋₁₀ Flow (cfs)	45.7
PMF _a	0.171
PMF _c	1

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Ceriodaphnia	Reproduction	7/24/18	10/23/18	4/2/19	2/18/20
		PASS	PASS	PASS	PASS

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Pimephales	Survival	7/24/18	10/23/18	4/2/19	2/18/20
		PASS	PASS	PASS	PASS

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Pimephales	Growth	7/24/18	10/23/18	4/2/19	2/18/20
		PASS	PASS	PASS	PASS

Species	Endpoint	Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Ceriodaphnia	Survival	7/24/18	10/23/18	4/2/19	2/18/20
		PASS	PASS	PASS	PASS

Reasonable Potential? NO

Permit Recommendations

Test Type **Chronic**
 TIWC **12** % Effluent
 Dilution Series **3, 6, 12, 56, 100** % Effluent
 Permit Limit **None**
 Permit Limit Species

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet					
Type of Test	Chronic		Facility Name		
Species Tested	Ceriodaphnia		Greenville WWTP		
Endpoint	Reproduction		Permit No.		
TIWC (decimal)	0.12		PA0027367		
No. Per Replicate	1				
TST b value	0.75				
TST alpha value	0.2				
Test Completion Date			Test Completion Date		
7/24/2018			10/23/2018		
Replicate	Control	TIWC	Replicate	Control	TIWC
No.			No.		
1	29	32	1	15	31
2	25	31	2	19	22
3	30	29	3	5	25
4	24	31	4	20	27
5	26	29	5	15	26
6	23	32	6	29	26
7	26	27	7	26	25
8	24	31	8	22	28
9	29	31	9	22	31
10	29	1	10	27	27
11			11		
12			12		
13			13		
14			14		
15			15		
Mean	26.500	27.400	Mean	20.000	26.800
Std Dev.	2.550	9.407	Std Dev.	7.071	2.741
# Replicates	10	10	# Replicates	10	10
T-Test Result	2.4790		T-Test Result	6.2508	
Deg. of Freedom	11		Deg. of Freedom	17	
Critical T Value	0.8755		Critical T Value	0.8633	
Pass or Fail	PASS		Pass or Fail	PASS	
Test Completion Date			Test Completion Date		
4/2/2019			2/18/2020		
Replicate	Control	TIWC	Replicate	Control	TIWC
No.			No.		
1	24	35	1	36	27
2	25	35	2	18	25
3	38	32	3	31	29
4	22	34	4	23	31
5	36	35	5	24	27
6	32	31	6	22	29
7	36	35	7	27	31
8	27	37	8	27	29
9	38	38	9	31	31
10	33	37	10	29	32
11			11		
12			12		
13			13		
14			14		
15			15		
Mean	31.100	34.900	Mean	26.800	29.100
Std Dev.	6.100	2.183	Std Dev.	5.245	2.234
# Replicates	10	10	# Replicates	10	10
T-Test Result	7.2206		T-Test Result	6.2914	
Deg. of Freedom	17		Deg. of Freedom	17	
Critical T Value	0.8633		Critical T Value	0.8633	
Pass or Fail	PASS		Pass or Fail	PASS	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet					
Type of Test	Chronic		Facility Name		
Species Tested	Pimephales		Greenville WWTP		
Endpoint	Survival		Permit No.		
TIWC (decimal)	0.12		PA0027367		
No. Per Replicate	10				
TST b value	0.75				
TST alpha value	0.25				
Test Completion Date			Test Completion Date		
7/24/2018			10/23/2018		
Replicate	Control	TIWC	Replicate	Control	TIWC
1	1	1	1	0.8	0.8
2	1	1	2	0.9	1
3	1	0.9	3	0.9	0.6
4	1	1	4	0.8	0.5
5			5		
6			6		
7			7		
8			8		
9			9		
10			10		
11			11		
12			12		
13			13		
14			14		
15			15		
Mean	1.000	0.975	Mean	0.850	0.725
Std Dev.	0.000	0.050	Std Dev.	0.058	0.222
# Replicates	4	4	# Replicates	4	4
T-Test Result	17.8623		T-Test Result	2.2435	
Deg. of Freedom	3		Deg. of Freedom	3	
Critical T Value	0.7649		Critical T Value	0.7649	
Pass or Fail	PASS		Pass or Fail	PASS	
Test Completion Date			Test Completion Date		
4/2/2019			2/18/2020		
Replicate	Control	TIWC	Replicate	Control	TIWC
1	1	0.9	1	1	0.7
2	0.9	0.9	2	1	1
3	1	1	3	1	0.9
4	1	0.8	4	1	1
5			5		
6			6		
7			7		
8			8		
9			9		
10			10		
11			11		
12			12		
13			13		
14			14		
15			15		
Mean	0.975	0.900	Mean	1.000	0.900
Std Dev.	0.050	0.082	Std Dev.	0.000	0.141
# Replicates	4	4	# Replicates	4	4
T-Test Result	8.4776		T-Test Result	4.9246	
Deg. of Freedom	4		Deg. of Freedom	3	
Critical T Value	0.7407		Critical T Value	0.7649	
Pass or Fail	PASS		Pass or Fail	PASS	

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet							
Type of Test	Chronic		Facility Name				
Species Tested	Pimephales		Greenville WWTP				
Endpoint	Growth		Permit No.				
TIWC (decimal)	0.12		PA0027367				
No. Per Replicate	10						
TST b value	0.75						
TST alpha value	0.25						
Test Completion Date			Test Completion Date				
7/24/2018			10/23/2018				
Replicate	No.	Control	TIWC	Replicate	No.	Control	TIWC
	1	0.389	0.416		1	0.234	0.269
	2	0.37	0.358		2	0.313	0.301
	3	0.387	0.375		3	0.218	0.212
	4	0.418	0.414		4	0.252	0.219
	5				5		
	6				6		
	7				7		
	8				8		
	9				9		
	10				10		
	11				11		
	12				12		
	13				13		
	14				14		
	15				15		
Mean	0.391	0.391		Mean	0.254	0.250	
Std Dev.	0.020	0.029		Std Dev.	0.042	0.042	
# Replicates	4	4		# Replicates	4	4	
T-Test Result	6.0006			T-Test Result	2.2674		
Deg. of Freedom	5			Deg. of Freedom	5		
Critical T Value	0.7267			Critical T Value	0.7267		
Pass or Fail	PASS			Pass or Fail	PASS		
Test Completion Date			Test Completion Date				
4/2/2019			2/18/2020				
Replicate	No.	Control	TIWC	Replicate	No.	Control	TIWC
	1	0.35	0.271		1	0.397	0.329
	2	0.36	0.345		2	0.385	0.405
	3	0.297	0.33		3	0.394	0.321
	4	0.322	0.307		4	0.402	0.336
	5				5		
	6				6		
	7				7		
	8				8		
	9				9		
	10				10		
	11				11		
	12				12		
	13				13		
	14				14		
	15				15		
Mean	0.332	0.313		Mean	0.395	0.348	
Std Dev.	0.028	0.032		Std Dev.	0.007	0.039	
# Replicates	4	4		# Replicates	4	4	
T-Test Result	3.3151			T-Test Result	2.6586		
Deg. of Freedom	5			Deg. of Freedom	3		
Critical T Value	0.7267			Critical T Value	0.7649		
Pass or Fail	PASS			Pass or Fail	PASS		

DEP Whole Effluent Toxicity (WET) Analysis Spreadsheet						
Type of Test	Chronic		Facility Name			
Species Tested	Ceriodaphnia		Greenville WWTP			
Endpoint	Survival		Permit No.			
TIWC (decimal)	0.12		PA0027367			
No. Per Replicate	1					
TST b value	0.75					
TST alpha value	0.2					
Test Completion Date			Test Completion Date			
7/24/2018			10/23/2018			
Replicate No.	Control	TIWC	Replicate No.	Control	TIWC	
1	1	1	1	1	1	
2	1	1	2	1	1	
3	1	1	3	1	1	
4	1	1	4	1	1	
5	1	1	5	1	1	
6	1	1	6	1	1	
7	1	1	7	1	1	
8	1	1	8	1	1	
9	1	1	9	1	1	
10	1	1	10	1	1	
11			11			
12			12			
13			13			
14			14			
15			15			
Mean	1.000	1.000	Mean	1.000	1.000	
Std Dev.	0.000	0.000	Std Dev.	0.000	0.000	
# Replicates	10	10	# Replicates	10	10	
T-Test Result			T-Test Result			
Deg. of Freedom			Deg. of Freedom			
Critical T Value			Critical T Value			
Pass or Fail			Pass or Fail			
PASS			PASS			
Test Completion Date			Test Completion Date			
4/2/2019			2/18/2020			
Replicate No.	Control	TIWC	Replicate No.	Control	TIWC	
1	1	1	1	1	1	
2	1	1	2	1	1	
3	1	1	3	1	1	
4	1	1	4	1	1	
5	1	1	5	1	1	
6	1	1	6	1	1	
7	1	1	7	1	1	
8	1	1	8	1	1	
9	1	1	9	1	1	
10	1	1	10	1	1	
11			11			
12			12			
13			13			
14			14			
15			15			
Mean	1.000	1.000	Mean	1.000	1.000	
Std Dev.	0.000	0.000	Std Dev.	0.000	0.000	
# Replicates	10	10	# Replicates	10	10	
T-Test Result			T-Test Result			
Deg. of Freedom			Deg. of Freedom			
Critical T Value			Critical T Value			
Pass or Fail			Pass or Fail			
PASS			PASS			