



Bioassays of
Falkenburg Road Advanced Wastewater Treatment Plant
Tampa, Hillsborough County, Florida
NPDES #FL0040614
Sampled 4/1/02

September 2002

Biology Section
Division of Resource Assessment & Management
Comprehensive Quality Assurance Plan #870346G

Bioassays of
Falkenburg Road Advanced Wastewater Treatment Plant
Tampa, Hillsborough County, Florida
NPDES #FL0040614

**Biology Section
Bureau of Laboratories
September 2002**

Introduction

Falkenburg Road AWWTP, 102 North Falkenburg Road, Tampa, Hillsborough County, Florida, NPDES #FL0040614, tests performed on 2 to 4 April 2002.

This wastewater treatment plant has a design flow of 6.0 MGD and an annual average flow of 4.22 MGD (January 2001-December 2001). Wastewater treatment includes influent screens, grit removal, 4 anoxic tanks, 4 aeration tanks, 4 final settling tanks, 5 dual-media deep-bed filters, 2 chlorine contact chambers, and 2 dechlorination/reaeration tanks. Effluent is chlorinated for disinfection and then dechlorinated with sulfur dioxide gas prior to being discharged into the Class III marine waters of the Palm River (facility information provided by Andrea Grainger, FDEP, Tampa).

The toxicity tests discussed in this report were performed in accordance with methods described by Weber, 1993, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 4th Edition, EPA/600/4-90/027F.

Results and Discussion

The FDEP Biology Section performed two 48-hour static acute screening toxicity bioassays on a sample of effluent collected from this facility. The freshwater species used in testing were the water flea, *Ceriodaphnia dubia*, and the bannerfin shiner, *Cyprinella leedsii* (Table 1).

Toxicity was not evident in the test organisms used in the bioassays. Neither total residual chlorine nor total ammonia was detected in the bioassay sample in the laboratory. Additional samples of effluent were collected from this facility and analyzed for herbicides, nutrients, metals, organic compounds, and pesticides. Several metals, nutrients and one pesticide were detected (Table 2).

Conclusion

The sample of effluent collected from this facility on April 1, 2002, showed no acute toxicity to either test species within 48 hours.

Table 1. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from Falkenburg AWWTP, 102 North Falkenburg Road, Tampa, Hillsborough County, Florida, NPDES# FL0040614, performed from 2 to 4 April 2002.

Facility: Falkenburg AWWTP	NPDES # FL0040614	Facility Type: WWTP	Analysts: Della Parker-Hanson Joshua Ayres Gary Hardie Marshall Faircloth
Location: 102 North Falkenburg Road	Contact/District: Grainger/SW		
County: Hillsborough	Test type: static acute screen		
Sample Collection Date: 4/1/02	# tests: 2	Receiving Water: Palm River	
Time: 1300			
Test Beginning Date: 4/2/02	Chlorination Type: Chlorinated		
Time: 1430			
Test Ending Date: 4/4/02	sample collected after dechlorination	Page 1 of 1	Reviewer: David Whiting
Time: 1420			

Organism: <i>Ceriodaphnia dubia</i> Life stage: <24 hours														Conductivity	
														Uncorrected	
Concentrations	Sample/Diluent	SURVIVAL # Alive			pH			Temperature ^A			Dissolved Oxygen			µmhos/cm	
	Volume(mL)	0 hr	24 hr	48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	48 hour
Control A	0/20	5	5	5	8.2	-	8.2	24.1	-	24.4	8.0	-	7.8	165	170
Control B	0/20	5	5	5	-	-	8.2	-	-	24.5	-	-	7.8	-	180
Control C	0/20	5	5	5	-	-	8.2	-	-	24.4	-	-	7.7	-	185
Control D	0/20	5	5	5	-	-	8.2	-	-	24.4	-	-	7.7	-	190
100% A	20/0	5	5	5	7.4	-	8.5	24.5	-	24.4	7.6	-	7.7	865	1110
100% B	20/0	5	5	5	-	-	8.5	-	-	24.3	-	-	7.7	-	1090
100% C	20/0	5	5	5	-	-	8.5	-	-	24.3	-	-	7.7	-	1125
100% D	20/0	5	5	5	-	-	8.5	-	-	24.3	-	-	7.7	-	1165

^A Temperatures of room and test incubator were continuously recorded on a strip chart recorder.

Room Temperature range for the test period was 24.0-26.0 °C.

Incubator #3 temperature range for the test period was 24.0-26.0°C.

Organism: <i>Cyprinella leedsii</i> Life stage: 9 days														Conductivity	
														Uncorrected	
Concentrations	Sample/Diluent	SURVIVAL # Alive			pH			Temperature ^B			Dissolved Oxygen			µmhos/cm	
	Volume(mL)	0 hr	24 hr	48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	48 hour
Control A	0/500	5	5	5	8.1	8.3	8.5	24.6	24.8	24.9	7.7	7.5	7.7	270	285
Control B	0/500	5	5	5	8.1	8.3	8.5	24.7	24.4	24.3	7.7	7.5	7.5	265	280
Control C	0/500	5	5	5	8.1	8.3	8.5	24.7	24.2	24.1	7.7	7.4	7.8	260	280
Control D	0/500	5	5	5	8.0	8.3	8.5	24.8	24.2	24.2	7.7	7.5	7.8	265	285
100% A	500/0	5	5	5	7.4	8.2	8.4	24.2	25.4	24.2	7.3	6.8	7.7	950	1020
100% B	500/0	5	5	5	7.4	8.2	8.4	24.2	24.7	24.3	7.3	7.1	7.7	985	1075
100 % C	500/0	5	5	5	7.4	8.2	8.4	24.3	24.4	24.5	7.3	7.5	7.8	965	1095
100% D	500/0	5	5	5	7.4	8.1	8.4	24.2	24.3	24.8	7.2	7.5	7.6	990	1075

^B Temperatures of room and test incubator were continuously recorded on a strip chart recorder.

Room Temperature range for the test period was 24.0-26.0°C.

Incubator #3 temperature range for the test period was 24.0-26.0°C.

LIMS		
Job number:	TLH-2002-04-02-01	
sample number:	585429	

Data Transcription Verification		
date:	7/17/02	
by:	Joshua Ayres Gary Hardie	

Total Residual CL2	mg/L	Method
Field:	-	-
Lab:	<0.03	Hach

Ammonia	Total (mg/L)	Unionized (mg/L)
Control water (fish):	<0.017	<0.017
Control water (water flea):	<0.017	<0.017
100% Sample:	<0.017	<0.017

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control water (fish):	139	131
Control water (water flea):	80	155
100% Sample:	81	242

Table 2. Results of chemical analyses on the effluent from Falkenburg Road AWWTP sampled on April 1, 2002.

Metals

Copper	1.2 ug/L	^I
Nickel	2.6 ug/L	^I
Silver	0.025 ug/L	^I

Pesticides and Herbicides

Fonofos	0.14 ug/L	^I
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Nutrients

Nitrates and Nitrites	0.32 mg N/L
Ortho-Phosphate	0.48 mg P/L
Total Kjeldahl Nitrogen	0.91 mg P/L
Total Phosphorus	0.5 mg P/L

Base, Neutral, & Acid Extractable Organics

None detected

^I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

The Bioassay of Falkenburg Road AWWTP effluent sampled on April 1, 2002, NPDES #FL0040614.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, X

Transaction Code		NPDES NUMBER								YR/MO/DA						Insp Type	Inspector	Fac Type									
1	N	2	5	3	F	L	0	0	4	0	6	1	4	11	12	0	2	0	4	0	1	18	B	19	S	20	1

Remarks																												

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The Priority Pollutants Analysis for Bioassay of Falkenburg Road AWWTP effluent sampled on April 1, 2002, NPDES #FL0040614.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, X

Transaction Code		NPDES NUMBER								YR/MO/DA						Insp Type	Inspector	Fac Type									
1	N	2	5	3	F	L	0	0	4	0	6	1	4	11	12	0	2	0	4	0	1	18	B	19	S	20	1

Remarks																												

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