Bioassays of

G & M Auto/Truck Plaza Wastewater Treatment Plant

St. Augustine, St. Johns County, Florida

NPDES #FL0022551

Sampled 5/20/96

June 1996

Biology Section

Division of Administrative and Technical Services

Comprehensive Quality Assurance Plan #870346G

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NPDES #FL0022551

Biology Section
Bureau of Laboratories
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Introduction

G & M Auto/Truck Plaza WWTP, St. Augustine, St. Johns County, Florida, NPDES # FL0022551, tests performed on 21 to 23 May, 1996.

This extended-aeration wastewater treatment plant, located at I-95 and S.R. 210 west of St. Augustine, has a design capacity of 18.8 TGD and an annual average flow of 17.8 TGD. Treated effluent is chlorinated for disinfection and dechlorinated prior to discharge via a ditch (Fever Hammock) to Durbin Creek to Julington Creek, then to the St. Johns River. The facility has been issued a temporary operating permit with a compliance schedule to either upgrade the treatment plant or eliminate the discharge (facility summary provided by Kathleen Gerard, FDEP, Jacksonville).

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 chlorinated effluent from this facility. Two additional 48-hour screening bioassays were performed on aliquots of the sample that were dechlorinated in the laboratory with 6.6 mL of 0.025N sodium thiosulfate per liter of sample. The test species used for these bioassays were the water flea, *Ceriodaphnia dubia*, and the bannerfin shiner, *Cyprinella leedsi*.

The chlorinated test results showed the sample to be acutely toxic to both test species, producing 100% mortality in less than two (2) hours in both the *Cyprinella leedsi* test and the *Ceriodaphnia dubia* test (Table 1).

The dechlorinated sample tests also showed the sample to be acutely toxic, producing 100% mortality in the *Cyprinella leedsi* test in less than two (2) hours and 100% mortality in the *Ceriodaphnia dubia* test in 48 hours (Table 1, concluded).

Total residual chlorine of the sample was 5.83 mg/L in the laboratory and was 5.0 mg/L in the field. Total residual chlorine levels as low as 0.028 mg/L have been found to be acutely toxic to some freshwater fish and invertebrates (EPA *Quality Criteria for Water* 1986, EPA 44015-86-001, 1986). Total and unionized ammonia concentrations were 28.4 mg/L and 0.914 mg/L, respectively, in the chlorinated sample test. In the dechlorinated sample test, the total and unionized ammonia concentrations were 27.4 mg/L and 1.777 mg/L, respectively. At 48 hours the total and unionized ammonia values were 11.8 mg/L and 2.11 mg/L in the *Ceriodaphnia dubia* dechlorinated sample test. Unionized ammonia levels as low as 0.08 mg/L and 0.5 mg/L have been found to be acutely toxic to some freshwater fish and invertebrates, respectively (EPA *Quality Criteria for Water* 1986, EPA 44015-86-001, 1986). Further chemical analyses were performed on the sample and several metals and phenol were identified (Table 2).

Conclusion

The sample of effluent collected from this facility on May 20, 1996, showed toxicity in both the chlorinated sample and in the aliquot of sample which was dechlorinated in the laboratory. We attribute the toxicity to both the total residual chlorine and the ammonia content of the sample, although either constituent alone could have caused the noted toxicity.

Table 1. Data recorded during the 48-hour acute toxicity screening bioassays of a sample of effluent from the G & M Auto/Truck Plaza WWTP, St. Augustine, St. Johns County, Florida, NPDES#FL0022551, performed on 21, May, 1996.

Chlorinated Test

Facility: **G & M Auto/Truck Plaza WWTP** — NPDES # **FL0022551** — Facility Type: **WWTP**
Location: I-95 and S.R. 210, St. Augustine — Contact/District: T. McKelvey/Northeast
County: St. Johns — Test type: static acute screen
Sample Collection Date: 5/20/96 Time: 1330 — # tests: 4 — Receiving Water: St. Johns River via a ditch
Test Beginning Date: 5/21/96 Time: 1350 — Chlorination Type: **Chlorinated**[A] — to Durbin Creek and Julington Creek
Test Ending Date: 5/21/96 Time: 1500 — **Page 1 of 2**

[A]Sample collected after plant dechlorination unit.

Total Residual CL2	mg/L	Method
Field:	5.00	-
Lab:	5.84	DR-100

Ammonia	Total (mg/L)	Unionized (mg/L)
Control Water (fish):	< 0.017	0.00
20% Dilute Mineral Water (cladocerans):	< 0.017	0.00
100% Sample:	28.40	0.914

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control Water (fish):	120	130
20% Dilute Mineral Water (cladocerans):	75	95
100% Sample:	260	255

Salinity	(ppt)
Control Water:	0
100% Sample:	0

Organism: ***Ceriodaphnia dubia*** Life stage: < 24 hours old

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[B]			Dissolved Oxygen			Conductivity Uncorrected µmhos/cm	
Concentrations	Volume(mL)	0 hr	1.2 hrs	48 hr	0 hour	1.2 hours	48 hour	0 hour	1.2 hours	48 hour	0 hour	1.2 hours	48 hour	0 hour	1.2 hours
Control A	0/20	5	5	-	8.1	8.2	-	24.0	25.3	-	7.9	7.8	-	195	195
Control B	0/20	5	5	-	-	8.2	-	-	25.4	-	-	7.8	-	-	200
Control C	0/20	5	5	-	-	8.2	-	-	25.3	-	-	7.8	-	-	200
Control D	0/20	5	5	-	-	8.2	-	-	24.9	-	-	7.7	-	-	200
100% A	20/0	5	0	-	7.8	8.0	-	24.2	25.3	-	7.9	7.6	-	1420	1455
100% B	20/0	5	0	-	-	8.0	-	-	25.4	-	-	7.6	-	-	1500
100% C	20/0	5	0	-	-	8.0	-	-	25.3	-	-	7.5	-	-	1490
100% D	20/0	5	0	-	-	8.0	-	-	25.0	-	-	7.4	-	-	1480

[B]Temperature of test incubator was continously recorded on a strip chart recorder.
Incubator temperature for the test period was 24.4°C.

Organism: ***Cyprinella leedsi*** Age: 12 days

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[C]			Dissolved Oxygen			Conductivity Uncorrected µmhos/cm	
Concentrations	Volume(mL)	0 hr	1 hr	48 hr	0 hour	1 hour	48 hour	0 hour	1 hour	48 hour	0 hour	1 hour	48 hour	0 hour	1 hour
Control A	0/500	5	5	-	7.9	8.0	-	24.7	24.7	-	7.7	8.6	-	250	250
Control B	0/500	5	5	-	7.9	8.0	-	24.7	24.6	-	7.7	8.5	-	250	250
Control C	0/500	5	5	-	7.9	8.0	-	24.7	24.6	-	7.8	8.6	-	250	250
Control D	0/500	5	5	-	7.9	8.0	-	24.7	24.5	-	7.8	8.6	-	250	250
100% A	500/0	5	0	-	7.7	7.8	-	24.6	24.5	-	6.0	8.6	-	1515	1515
100% B	500/0	5	0	-	7.7	7.8	-	24.4	24.4	-	6.2	8.5	-	1515	1515
100% C	500/0	5	0	-	7.7	7.8	-	24.4	24.4	-	6.1	8.8	-	1515	1515
100% D	500/0	5	0	-	7.7	7.8	-	24.4	24.4	-	6.0	8.7	-	1515	1515

[C]Temperature of test room was continously recorded on a strip chart recorder.
Room temperature for the test period was 24°C.

-Continued-

Table 1. Concluded. Data recorded during the 48-hour acute toxicity screening bioassays of a sample of effluent from the G & M Auto/Truck Plaza WWTP, St. Augustine, St. Johns County, Florida, NPDES#FL0022551, performed on 21 to 23, May, 1996.

Dechlorinated Test [A]

Facility: **G & M Auto/Truck Plaza WWTP**
Location: I-95 and S.R. 210, St. Augustine
County: St. Johns
Sample Collection Date: 5/20/96 Time: 1330
Test Beginning Date: 5/21/96 Time: 1350
Test Ending Date: 5/23/96 Time: 1400

NPDES # **FL0022551**
Contact/District: T. McKelvey/Northeast
Test type: static acute screen
tests: 4
Chlorination Type: **Chlorinated[B]**

Facility Type: **WWTP**
Receiving Water: St. Johns River via a ditch to Durbin Creek and Julington Creek
Page 2 of 2

[A]Sample was dechlorinated in the laboratory with 6.6 mL/L of 0.025 N sodium thiosulfate.
[B]Sample was collected after plant dechlorination unit.

Organism: ***Ceriodaphnia dubia*** Life stage: < 24 hours old

Concentrations	Sample/Diluent Volume(mL)	SURVIVAL # Alive 0 hr	24 hr	48 hr	pH 0 hour	24 hour	48 hour	Temperature[C] 0 hour	24 hour	48 hour	Dissolved Oxygen 0 hour	24 hour	48 hour	Conductivity Uncorrected µmhos/cm 0 hour	48 hour
Control A	0/20	5	5	5	8.2	-	8.3	24.0	-	24.6	8.0	8.0	-	195	205
Control B	0/20	5	5	5	-	-	8.3	-	-	24.5	-	7.9	-	-	210
Control C	0/20	5	5	5	-	-	8.3	-	-	24.1	-	8.0	-	-	220
Control D	0/20	5	5	5	-	-	8.3	-	-	23.9	-	8.1	-	-	220
100% A	20/0	5	0	0	8.0	-	8.5	24.4	-	24.5	7.9	8.1	-	1440	1425
100% B	20/0	5	1	0	-	-	8.5	-	-	24.4	-	7.8	-	-	,1485
100% C	20/0	5	1	0	-	-	8.5	-	-	24.2	-	7.8	-	-	1505
100% D	20/0	5	0	0	-	-	8.5	-	-	24.1	-	7.9	-	-	1510

[C] Temperature of test incubator was continously recorded on a strip chart recorder.
Incubator temperature range for the test period was 24.4-25.2°C.

Organism: ***Cyprinella leedsi*** [D] Age: 12 days

[D]The *Cyprinella leedsi* test was terminated 50 minutes after the test organisms were loaded into the test vessels.

Concentrations	Sample/Diluent Volume(mL)	SURVIVAL # Alive 0 hr	1 hr	48 hr	pH 0 hour	1 hour	48 hour	Temperature[E] 0 hour	1 hour	48 hour	Dissolved Oxygen 0 hour	1 hour	48 hour	Conductivity Uncorrected µmhos/cm 0 hour	1 hour
Control A	0/500	5	5	-	7.9	8.0	-	24.8	24.7	-	7.9	7.6	-	250	250
Control B	0/500	5	5	-	7.9	8.0	-	24.7	24.6	-	7.9	7.6	-	250	250
Control C	0/500	5	5	-	7.9	8.0	-	24.7	24.6	-	7.9	7.7	-	250	250
Control D	0/500	5	5	-	7.9	8.0	-	24.7	24.5	-	7.9	7.6	-	250	250
100% A	500/0	5	0	-	8.0	8.0	-	25.1	24.9	-	7.7	7.3	-	1560	1550
100% B	500/0	5	0	-	8.0	8.0	-	24.7	24.7	-	7.6	7.3	-	1545	1545
100% C	500/0	5	0	-	8.0	8.0	-	24.5	24.4	-	7.6	7.4	-	1535	1535
100% D	500/0	5	0	-	8.0	8.0	-	24.4	24.4	-	7.6	7.4	-	1530	1540

[E] Temperature of test room was continously recorded on a strip chart recorder.
Room temperature for the test period was 24°C.

Total Residual CL2	mg/L	Method
Field:	5.00	-
Lab:	5.84	DR-100

Ammonia	Total (mg/L)	Unionized (mg/L)
Control Water (fish):	< 0.017	0.00
20% Dilute Mineral Water (cladocerans):	< 0.017	0.00
100% Sample:	27.4	1.777

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control Water (fish):	120	130
20% Dilute Mineral Water (cladocerans):	75	95
100% Sample:	265	265

Salinity	(ppt)
Control Water:	0
100% Sample:	0

Table 2. Results of chemical analyses on effluent from the G & M Auto/Truck Plaza WWTP sampled on May 20, 1996.

Metals

Cadmium	0.05	µg/L[I]
Calcium	58.2	mg/L[A]
Copper	6	µg/L[I]
Iron	239	µg/L[A]
Magnesium	23.1	mg/L[A]
Zinc	19	µg/L[I]

Pesticides and Herbicides

none detected

Base, Neutral, & Acid Extractable Organics

Phenol	2.2	µg/L[I]

A Value reported is the mean of two or more determinations.

I Value reported is less than the minimum quantitation limit and greater than or equal to the minimum detection limit.

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: G+M Truck Plaza
County: St. Johns
Contact / District: Tim McKelvey / Northeast
NPDES Permit #: FL0022551
LIMS Sample #: 139624 LIMS Job #: 96-MAY-21-07

Sample Collection: Date 5/20/96 Time 1330
Test Beginning: Date 5/21/96 Time 1350
Test Ending: Date 5/21/96 Time 1500
Organism Batch #: 23 Diluent Batch #: 24
Organism Age: ~~2 days~~ <24 hrs
Test Organism: Ceriodaphnia dubia

Test Type: (Screening) | Definitive
(Static) | Static Renewal | Flow-through

Test Number: 1 of 4 Cl⁻

Remarks: Unadjusted Sample.
Test terminated at 1500 hrs on 5/21/96.

Instrument Calibrations:	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
meter #	7851	90H018262	90H018262	G9005749
0 hr	7.0 @ 7.0	24.3 @ 24.4	8.2 @ 24.5 °C	106.7 @ 105.4
	9.0 @ 9.0			102.7 @ 102.5 @ 25.3 °C
24 hr	___ @ 7.0	___ @ ___	___ @ ___ °C	___ @ ___
	___ @ ___			___ @ ___ @ ___ °C
48 hr	___ @ 7.0	___ @ ___	___ @ ___ °C	___ @ ___
	___ @ ___			___ @ ___ @ ___ °C

Conc.	Chamber #	Number Live 0 hr	24 h	48 h	pH 0 hr	24 h	48 h	Temperature (°C) 0 hr	24 h	48 h	D.O. (mg/L) 0 hr	24 h	48 h	UNCORRECTED Cond. (mmhos/cm) ~~Cond. (µmhos/cm)~~ 0 hr	24 h	48 h
Ctl	A	5	*Ø5		8.1	8.2		24.0	25.3		7.9	7.8		195	195	
Ctl	B	5	Ø5			8.2			25.4			7.8			200	
Ctl	C	5	Ø5			8.2			25.3			7.8			200	
Ctl	D	5	Ø5			8.2			24.9			7.7			200	
100%	A	5	0		7.8	8.0		24.7	25.3		7.9	7.6		1420	1455	
100%	B	5	0			8.0			25.4			7.6			1500	
100%	C	5	0			8.0			25.3			7.5			1490	
100%	D	5	0			8.0			25.0			7.4			1480	
Measured/Loaded by:		MF	DW		LM	MF		LM	MF		LM	MF		LM	MF	
Recorded by:		TM	TM		JN	TM		JN	TM		JN	TM		JN	TM	

Investigators' Signatures

*controls alkaline 5/21/96 TM

Water Quality Parameters	Salt Water: Well Water	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):			5.0	—	Ruth Bowman
Lab Total Residual Cl2 (mg/L):	<0.03	<0.03	5.83	Dr-100	TM
Alkalinity (mg/L as $CaCO_3$):	120	75	260	Hach	TM
Hardness (mg/L as $CaCO_3$):	130	95	255	Hach	TM
Total ammonia (mg/L as N):	<0.017	<0.017	28.4	Orion	LM

Ammonia Meter #98136 Ammonia Meter Slope: -55.0 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

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form updated 5/05/95

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: G+M Truck Plaza
County: St. Johns
Contact / District: Tim Mckelvey / Northeast
NPDES Permit #: FL00 22551
LIMS Sample #: 139624 LIMS Job #: 96-MAY-21-07

Sample Collection: Date 5/20/96 Time 1330
Test Beginning: Date 5/21/96 Time 1400
Test Ending: Date 5/21/96 Time 1500
Organism Batch #: 36 Diluent Batch #: well
Organism Age: 11 days
Test Organism: Cyprinella leedsi

Test Type: (Screening) | Definitive
(Static) | Static Renewal | Flow-through
Test Number: 2 of 4 Cl⁻

Remarks: Unadjusted Sample. Test terminated at 1500 hrs. on 5/21/96

Instrument Calibrations:	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
meter #	7851	90H018262	90H018262	G9005749
0 hr	7.0 @ 7.0 9.0 @ 9.0	24.3 @ 24.4	8.2 @ 24.5 °C	106.7 @ 105.4 1027 @ 1025 @ 25.3 °C
24 hr	___ @ 7.0 ___ @ ___	___ @ ___	___ @ ___ @ ___ °C	___ @ ___ ___ @ ___ @ ___ °C
48 hr	___ @ 7.0 ___ @ ___	___ @ ___	___ @ ___ @ ___ °C	___ @ ___ ___ @ ___ @ ___ °C

Conc.	Chamber #	Number Live 0 hr	Number Live 24 h	Number Live 48 h	pH 0 hr	pH 24 h	pH 48 h	Temperature (°C) 0 hr	Temperature (°C) 24 h	Temperature (°C) 48 h	D.O. (mg/L) 0 hr	D.O. (mg/L) 24 h	D.O. (mg/L) 48 h	UNCORRECTED Cond. (mmhos/cm) (Cond. (µmhos/cm)) 0 hr	UNCORRECTED Cond. (mmhos/cm) (Cond. (µmhos/cm)) 24 h	UNCORRECTED Cond. (mmhos/cm) (Cond. (µmhos/cm)) 48 h
CTL A	H16	5	5		7.9	8.0		24.7	24.7		7.7	7.7		250	250	
CTL B	H17	5	5		7.9	8.0		24.7	24.6		7.7	7.7		250	250	
CTL C	H18	5	5		7.9	8.0		24.7	24.6		7.8	7.7		250	250	
CTL D	H19	5	5		7.9	8.0		24.7	24.5		7.8	7.8		250	250	
100% A	H20	5	0		7.7	7.8		24.6	24.5		6.0	~~6.5~~		1515	1515	
100% B	H21	5	0		7.7	7.8		24.4	24.4		6.2	6.4		1515	1515	
100% C	H22	5	0		7.7	7.8		24.4	24.4		6.1	6.4		1515	1515	
100% D	H23	5	0		7.7	7.8		24.4	24.4		6.0	6.4		1515	1515	
	~~H24~~															
Measured/Loaded by:		DW	DW		LM	mF		LM	mF		LM	mF		LM	mF	
Recorded by:		TM	TM		JN	TM		JN	TM		JN	TM		JN	TM	

*6.5 not acclimated 6/21/96 TM

Investigators' Signatures

Jennifer Martin
Linda Mendez
Tina Mikulski
Marshall Faircloth
Paul Wilk

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form updated 5/05/95

Water Quality Parameters	Salt Water / (Well Water)	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):			5.0	—	Ruth Bowman
Lab Total Residual Cl2 (mg/L):	<0.03	<0.03	5.83	Or-100	TM
Alkalinity (mg/L as $CaCO_3$):	120	75	260	Hach	TM
Hardness (mg/L as $CaCO_3$):	130	95	255	Hach	TM
Total ammonia (mg/L as N):	<0.017	<0.017	28.4	Orion	LM

Ammonia Meter #98136 Meter Slope: -55.0 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: G & M Truck Plaza
County: St. Johns
Contact / District: Tim McKelvey / Northeast
NPDES Permit #: FL00 22551
LIMS Sample #: 139624 LIMS Job #: 96-MAY-21-07

Sample Collection: Date 5/20/96 Time 1330
Test Beginning: Date 5/21/96 Time 1355
Test Ending: Date 5-23-96 Time 1400
Organism Batch #: 23 Diluent Batch #: 24
Organism Age: < 24 hours
Test Organism: Ceriodaphnia dubia

Test Type: (Screening) | Definitive
(Static) | Static Renewal | Flow-through

Test Number: 3 of 4 De Cl⁻

Remarks:
Sample aliquot dechlorinated with 6.6 ml of 0.025N Sodium Thiosulfate per liter of sample

Instrument Calibrations:	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
meter #	7851	90H018262	90H018262	G9005749
0 hr	7.0 @ 7.0 9.0 @ 9.0	24.3 @ 24.4	8.2 @ 24.5 °C	106.7 @ 105.4 1027 @ 1025 @ 25.3 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	24.2 @ 24.3	8.2 @ 25.6 °C	106.2 @ 105.4 1019 @ 1025 @ 24.9 °C
48 hr	7.0 @ 7.0 9.0 @ 9.0	23.8 @ 23.9	8.2 @ 25.5 °C	110.6 @ 105.4 1022 @ 1025 @ 25.7 °C

		Number Live			pH			Temperature (°C)			D.O. (mg/L)			UNCORRECTED Cond. (mmhos/cm) (µmhos/cm)		
Conc.	Chamber #	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h
Ctl	A	5	5	5	8.2		8.3	24.0		24.6	8.0		8.0	195		205
Ctl	B	5	5	5			8.3			24.5			7.9			210
Ctl	C	5	5	5			8.3			24.1			8.0			220
Ctl	D	5	5	5			8.3			23.9			8.1			220
100%	A	5	0	—	8.0		8.5	24.4		24.5	7.9		8.1	1440		1485
100%	B	5	1	0			8.5			24.4			7.8			1485
100%	C	5	1	0			8.5			24.2			7.8			1505
100%	D	5	0	—			8.5			24.1			7.9			1510
Measured/Loaded by:		MF	MF	MF	LM		JN	LM		JN	LM		JN	LM		JN
Recorded by:		TM	MF	MF	JN		MF	JN		MF	JN		MF	JN		MF

Investigators' Signatures
Joseph Muth
Tim Mckelvey
Tina Mikulski
Marshall Faircloth

reviewer

form updated 5/05/95

Water Quality Parameters	Salt Water / Well Water	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):			—	—	—
Lab Total Residual Cl2 (mg/L):	<0.03	<0.03	<0.03	DR-100	TM
Alkalinity (mg/L as $CaCO_3$):	120	75	265	Hach	TM
Hardness (mg/L as $CaCO_3$):	130	95	265	Hach	TM
Total ammonia (mg/L as N):	<0.017	<0.017	27.4*	Orion	LM
	Ammonia	Ammonia	Ammonia	Control	Sample

*Total Ammonia on 5-23-96 was 11.8 mg/L MF 5-23-96

Meter #98136 Meter Slope: -55.0 Blank: <0.017 Salinity: 0 ppt Salinity: 0 ppt

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: G+M Truck Plaza
County: ST. Johns
Contact / District: Tim McKelvey / Northeast
NPDES Permit #: FL0022551
LIMS Sample #: 139624 LIMS Job #: 96-MAY-21-07

Sample Collection: Date 5/20/96 Time 1330
Test Beginning: Date 5/21/96 Time 1410
Test Ending: Date 5/21/96 Time 1500
Organism Batch #: 36 Diluent Batch #: Well
Organism Age: 11 days
Test Organism: Cyprinella leedsi

Test Type: (Screening) | Definitive
(Static) | Static Renewal | Flow-through

Test Number: 4 of 4 DeCl

Remarks:
Sample aliquot dechlorinated with 6.6ml of 0.025N sodium Thiosulfate per Liter of Sample
Test terminated at 1500hrs on 5/21/96. After Test Termination an equivalent amount of Sodium thiosulfate was added to each control to ensure that the sodium thiosulfate was not the cause of toxicity, there was 100% control/ Survival at the end of 48 hours.

Instrument Calibrations:	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
meter #	7851	90H018262	90H018262	G9005749
0 hr	7.0 @ 7.0 5.0 @ 5.0	24.3 @ 24.4	8.2 @ 24.5 °C	106.7 @ 105.4 1021 @ 1025 @ 25.3 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	24.2 @ 24.3	8.2 @ 25.6 °C	106.2 @ 105.4 1019 @ 1025 @ 24.9 °C
48 hr	___ @ 7.0	___ @ ___	___ @ ___ °C	___ @ ___ ___ @ ___ @ ___ °C
	___ @ ___			

Conc.	Chamber #	Number Live 0 hr	24 h	48 h	pH 0 hr	24 h	48 h	Temperature (°C) 0 hr	24 h	48 h	D.O. (mg/L) 0 hr	24 h	48 h	UNCORRECTED Cond. (mmhos/cm) 0 hr	24 h	48 h
Ctl A	H1	5	5	5	7.9	8.0		24.8	24.7		7.9	7.6		250	255	
Ctl B	H2	5	5	5	7.9	8.0		24.7	24.6		7.9	7.6		250	250	
Ctl C	H3	5	5	5	7.9	8.0		24.7	24.6		7.9	7.7		250	250	
Ctl D	H4	5	5	5	7.9	8.0		24.7	24.5		7.9	7.6		250	250	
100% A	H5	5	0		8.0	8.0		25.1	24.9		7.7	7.3		1560	1550	
100% B	H6	5	0		8.0	8.0		24.7	24.7		7.6	7.3		1545	1545	
100% C	H7	5	0		8.0	8.0		24.5	24.4		7.6	7.4		1535	1535	
100% D	H8	5	0		8.0	8.0		24.4	24.4		7.6	7.4		1530	1540	
Measured/Loaded by:		DW	DW	MF	LM	MF		LM	MF		LM	MF		LM	MF	
Recorded by:		TM	TM	DW	JN	TM		JN	TM		JN	TM		JN	TM	

Investigators' Signatures

Joseph Worth
Tim McKelvey
Marshall Faircloth

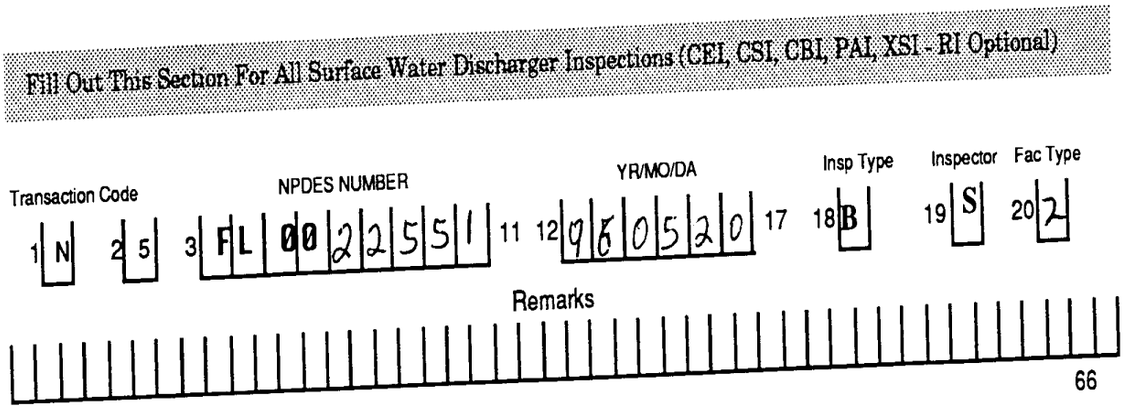
reviewer

form updated 5/05/95

Water Quality Parameters	Salt Water / Well Water	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):			—	—	—
Lab Total Residual Cl2 (mg/L):	<0.03	<0.03	<0.03	DR-100	TM
Alkalinity (mg/L as $CaCO_3$):	120	75	265	Hach	JM
Hardness (mg/L as $CaCO_3$):	130	95	265	Hach	JM
Total ammonia (mg/L as N):	<0.017	<0.017	27.4	Orion	LM

Ammonia Meter #98136 Ammonia Meter Slope: -55.0 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

The Bioassay of the G & M Auto/Truck Plaza WWTP effluent sampled on May 20, 1996, NPDES #FL0022551.



The Priority Pollutants Analysis for the Bioassay of the G & M Auto/Truck Plaza WWTP effluent sampled on May 20, 1996, NPDES #FL0022551.

