Florida
Department of Environmental Protection

Bioassays of

Stone Container Corporation
Wastewater Treatment Plant

Yulee, Nassau County, Florida

NPDES #FL0022306

Sampled 8/2/93

November 1993

Biology Section
Division of Technical Services

Bioassays of

Stone Container Corporation
Wastewater Treatment Plant

Yulee, Nassau County, Florida

NPDES #FL0022306

Biology Section
Bureau of Laboratories
November 1993

Introduction

Stone Container Corporation WWTP, Yulee, Nassau County, Florida, NPDES #FL0022306, tests performed on 3 to 5 August, 1993.

Stone Container Corporation ("Stone") is formerly known as the Trinity Paper and Plastics Corporation, and also as Terminal Paper Bag Company. It is located 1.5 miles south of Yulee on US 17. Stone's wastewater treatment plant receives influents from its industrial facilities. A pre-treatment system has a 6,000-gallon capacity tank to skim oil from water. The industrial wastewater then combines with the Stone's domestic wastewater in an 8,000-gallon septic tank with a design flow of 8,400 GPD. The combined wastewater from the WWTP is treated by sand filtration, chlorination, and dechlorination prior to discharge to a swampy area connected to the Nassau River via Lumber Creek.

The toxicity tests discussed in this report were performed in accordance with methods described by Weber, 1991, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 4th Edition (EPA/600/4-90/027).

Results and Discussion

The FDEP Biology Section performed two 48-hour static acute screening toxicity bioassays on a sample from this facility. The test species used for the bioassays were the waterflea, *Ceriodaphnia dubia*, and the bannerfin shiner, *Cyprinella leedsi* (formerly *Notropis leedsi*). The test results did not indicate toxicity.

Conclusion

The sample of effluent collected from this facility on 2 August, 1993, did not show toxicity.

Table 1. Concentration series and volumes used for the 48-hour static acute screening bioassays of the Stone Container Corporation WWTP effluent performed on 3 to 5 August, 1993.

Ceriodaphnia dubia (water flea)

Concentration	Dilution Water	Sample	Total Volume
Control	20 mL	0 mL	20 mL
100 %	0 mL	20 mL	20 mL

Cyprinella leedsi (bannerfin shiner, formerly *Notropis leedsi*)

Concentration	Dilution Water	Sample	Total Volume
Control	500 mL	0 mL	500 mL
100 %	0 mL	500 mL	500 mL

Table 2. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from the Stone Container Corporation WWTP, Yulee, Nassau County, Florida, NPDES# FL0022306, performed on 3 to 5 August, 1993.

Facility:	Stone Container Corporation WWTP	NPDES #	FL0022306	Facility Type:	Wastewater Treatment Plant
Location:	Yulee	Contact / District:	S. Bulgrin/NE		
County:	Nassau	Test type:	static acute screen		
Sample Collection Date:	8/2/93 Time: 1100	# tests:	2	Receiving Water:	Nassau River
Test Beginning Date:	8/3/93 Time: 1330	Chlorination Type:	Dechlorinated in plant		
Test Ending Date:	8/5/93 Time: 1300		Page 1 of 1		

Total Residual Cl2	mg/l	Method
Field:	Not Measured	-
Lab:	<0.03	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:	4.65	0.01

Alk & Hardness	Alkalinity (mg/l)	Hardness (mg/l)
Control Water (fish):	120	120
20% Dilute Mineral Water (cladocerans):	75	80
100% Sample:	95	260

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

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

	SURVIVAL			pH			Temperature			Dissolved Oxygen			Conductivity	
Concentrations	# at 0 hr	Live at 24 hr	Live at 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	5	5	5	7.7	-	7.9	24.2	-	26.2	7.8	-	8.1	170	185
Control	5	5	5	-	-	7.9	-	-	-	-	-	8.1	-	190
Control	5	5	5	-	-	7.9	-	-	-	-	-	8.2	-	190
Control	5	5	5	-	-	7.9	-	-	-	-	-	8.2	-	190
100%	5	5	5	6.9	-	8.1	23.8	-	26.5	7.4	-	7.8	725	775
100%	5	5	5	-	-	8.1	-	-	-	-	-	7.8	-	785
100%	5	5	5	-	-	8.1	-	-	-	-	-	7.8	-	795
100%	5	5	5	-	-	8.1	-	-	-	-	-	7.9	-	790

Organism: ***Cyprinella leedsi*** Age: 11 days

	SURVIVAL			pH			Temperature			Dissolved Oxygen			Conductivity	
Concentrations	# at 0 hr	Live at 24 hr	Live at 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	5	5	5	7.5	7.8	8.1	24.1	24.0	24.0	8.0	8.0	8.2	245	255
Control	5	5	5	7.5	7.8	8.1	-	-	-	8.0	8.0	8.2	245	250
100%	5	5	5	6.6	7.3	7.8	22.7	24.2	24.0	6.6	7.6	8.1	765	780
100%	5	5	5	6.6	7.3	7.8	-	-	-	6.6	7.6	8.2	765	785

DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: Terminal Paper Bag Company
Location:
County: NASSAU
Contact/District: Scott Bulgrin / NE
NPDES Permit #: FL0022306 Outfall #:
lims 93AUG-0305 59474 verified 8/5/93

Sample Collection: Date 8/2/93 Time 1100
Test Beginning: Date 8/3/93 Time 1330
Test Ending: Date 8/5/93 Time 1300
Organism Batch #: 103 Diluent Batch #: 17
Organism Age: < 24 hours
Test Organism: Ceriodaphnia dubia

Test Type: (Screening) | Definitive
(Static) | Static Renewal | Flow-through
Test Number: 1 of 2
Remarks:

Instrument Calibrations: pH | Temperature °C | D.O. mg/L | Conductivity µmhos/cm
Sampling 8/5/93 mr
0 hr 7.0 @ 7.0, 8.99 @ 9.0 | 23.8 @ 23.8 | 8.4 @ 8.4 | 1012 @ 1,000 @ 24.5, 9530 @ 10,000
24 hr 7.0 @ 7.0, 9.0 @ 9.0 | 23.7 @ 23.8 | 8.3 @ 23.8 | 1015 @ 1,000 @ 24.3, 9800 @ 10,000
48 hr 7.0 @ 7.0, 9.0 @ 9.0 | 24.0 @ 24.1 | 8.3 @ 24.5 | 1015 @ 1,000 @ 24.5, 9760 @ 10,000

Conc.	Chamber #	Number Live 0	24	48	pH 0	24	48	Temperature (°C) 0	24	48	D.O. (mg/L) 0	24	48	Cond. (mmhos/cm) Cond. (µmhos/cm) 0	24	48
Control	A	5	5	5	7.7		7.9	24.2		26.2	7.8		8.1	170		185
Control	B	5	5	5			7.9						8.1			190
Control	C	5	5	5			7.9						8.2			190
Control	D	5	5	5			7.9						8.2			190
100%	A	5	5	5	6.9		8.1	23.8		26.5	7.4		7.8	725		775
100%	B	5	5	5			8.1						7.8			785
100%	C	5	5	5			8.1						7.8			795
100%	D	5	5	5			8.1						7.9			790
Measured/Loaded by:		TM	TR	TR	TM		TR	TM		TR	TM		TR	TM		TR
Recorded by:		TM	TM	TR	TM		TR	TM		TR	TM		TR	TM		TR

Investigators' Signatures
Tina Mikulski
Randall Smith
Tobin C. Rader
Reviewer

	Salt Water/ Well Water	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2:			Not Measured		SB
Lab Total Residual Cl2:	<0.03	<0.03	<0.03	DR/100	EM
Alkalinity:	120	75	95	Hach	TM
Hardness:	120	80	260	Hach	TM
Total Ammonia:	<0.017	<0.017	4.65	Orion	MR

Cl2 Blank: _____ Ammonia Meter Slope: -54.0 Ammonia Blank: <0.017 Sample Salinity: 0 ppt

form updated 10/20/92

DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: Terminal Paper Bag Company
Location:
County: NASSAU
Contact/District: Scott Bulgrin / NE
NPDES Permit #: FL00 22306 Outfall #:
Lims 93AUG0305 59474

Sample Collection: Date 8/2/93 Time 1100
Test Beginning: Date 8/3/93 Time 1330
Test Ending: Date 8/5/93 Time 1300
Organism Batch #: 33 Diluent Batch #: well H2O
Organism Age: 11 days
Test Organism: Cyprinella leedsi

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

Instrument Calibrations: pH | Temperature °C | D.O. mg/L | Conductivity µmhos/cm

0 hr 7.0 @ 7.0 | 23.8 @ 23.8 | 8.4 @ 8.4 | 1012 @ 1,000 @ 24.5
8.99 @ 9.0 | | 8.3 TR | 9520 @ 10,000

24 hr 7.0 @ 7.0 | 23.7 @ 23.8 | ~~8.4~~ @ 23.8 | 1015 @ 1,000 @ 24.3
9.0 @ 9.0 | | | 9800 @ 10,000

48 hr 7.0 @ 7.0 | 24.0 @ 24.1 | 8.3 @ 24.5 | 1015 @ 1,000 @ 24.5
9.0 @ 9.0 | | | 9760 @ 10,000

		Number Live			pH			Temperature (°C)			D.O. (mg/L)			Cond. (mmhos/cm) Cond. (µmhos/cm)		
Conc.	Chamber #	0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
control	8	5	5	5	7.5	7.8	8.1	24.1	24.0	24.0	8.0	8.0	8.2	245	250	255
control	888	5	5	5	7.5	7.8	8.1				8.0	8.0	8.2	245	250	250
100%	22	5	5	5	6.6	7.3	7.8	22.7	24.2	24.0	6.6	7.6	8.1	765	780	780
100%	3	5	5	5	6.6	7.3	7.8				6.6	7.6	8.2	765	785	785
Measured/Loaded by:		TM	TM	TR	TM	TR	TR	TM	TR	TR	TM	TR	TR	TM	TR	TR
Recorded by:		TM	TM	TR	TM	TM	TR	TM	TM	TR	TM	TM	TR	TM	TM	TR

Investigators' Signatures

Tina M. Kowalski
Marshall Faircloth
Robin G. Rader

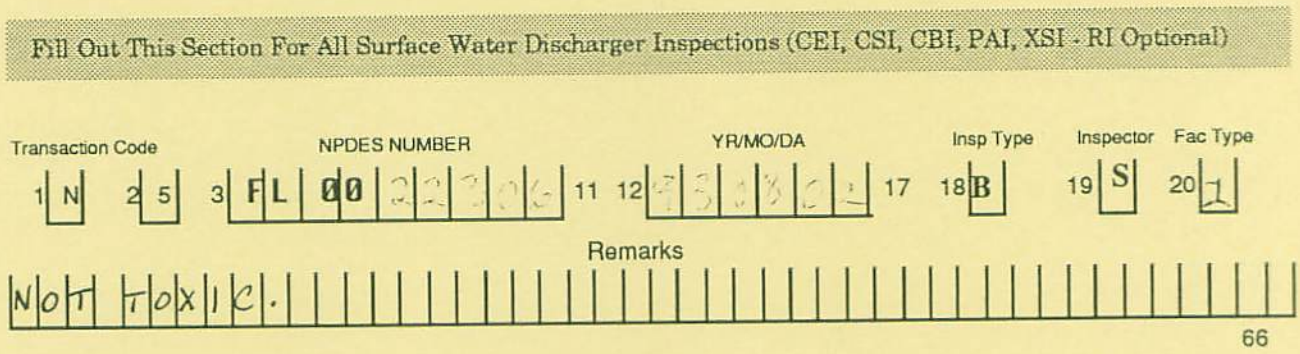
Reviewer

form updated 10/20/92

	Salt Water/ Well Water	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2:			not measured		
Lab Total Residual Cl2:	<0.03	<0.03	<0.03	DR100	EM
Alkalinity:	120	75	95	Hach	TM
Hardness:	120	80	260	Hach	TM
Total Ammonia:	<0.017	<0.017	4.65	Orion	MF

Cl_2 Blank: _____ Ammonia Meter Slope: -54.0 Ammonia Blank: <0.017 Sample Salinity: 0 ppt

The Bioassay of the Stone Container Corporation WWTP effluent sampled on August 2, 1993, NPDES# FL0022306.



The Priority Pollutants Analyses for the the Stone Container Corporation WWTP effluent sampled on August 2, 1993, NPDES# FL0022306.

