Bioassays of

Florida Power Corporation – Suwannee River Plant

Ellaville, Suwannee County, Florida

NPDES #FL0000183

Sampled 2/27/95

May 1995

Biology Section
Division of Administrative and Technical Services
Comprehensive Quality Assurance Plan #870346G

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Ellaville, Suwannee County, Florida

NPDES #FL0000183

Biology Section
Bureau of Laboratories
May 1995

Introduction

Florida Power Corporation–Suwannee River Plant, Ellaville, Suwannee County, Florida, NPDES #FL0000183, tests performed on 28 February to 2 March, 1995.

This electric power generating plant, located one-half mile south of US 90 near Ellaville, FL, has a design flow of 174.5 MGD and an average flow of 120.42 MGD (9/93 – 9/94). Once through cooling water is not treated prior to discharge to the Suwannee River (facility summary provided by Michael Dunbar, Daniel Hull, and Tim McKelvey, 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 with a sample of effluent from this facility. Due to the low initial pH of the sample (5.7), two additional 48-hour screening bioassays were performed on aliquots of sample which were pH adjusted with sodium hydroxide to be within the range of pH 6.0–9.0, per standard test procedures. The test species used for these tests were the waterflea, *Ceriodaphnia dubia*, and the bannerfin shiner, *Cyprinella leedsi*.

No toxicity was observed in the shiner tests with the original sample or the pH-adjusted sample. Ten percent morality was observed in the 100% pH-adjusted sample test with the waterflea, possibly indicating minimal toxicity (Table 1).

Total residual chlorine (TRC) of the sample was 0.04 mg/L in the laboratory but was not detected in the field. Since the effluent is not known to be chlorinated, the laboratory TRC was thought to be a result of interference caused by unknown constituents of the sample.

Total ammonia was not detected in the sample. Further chemical analyses were performed on the sample and several metals were identified (Table 2). The metals do not appear to be present in concentrations known to be toxic to the test species.

Conclusion

The sample of effluent collected from this facility on 27 February, 1995, did not show toxicity to the bannerfin shiner in either the unadjusted or pH-adjusted sample. The two waterflea deaths which occurred in the 100% pH-adjusted sample possibly indicated minimal toxicity. The cause of these deaths was not determined.

Table 1. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from the Florida Power Corporation Suwannee River Plant, Ellaville, Suwannee County, Florida, NPDES# FL0000183, performed on 28 February to 2 March, 1995.

Facility:	**Florida Power Corporation-Suwannee River Plant**			**NPDES #**	**FL0000183**	Facility Type:	**Power Plant**
Location:	1/2 mile S. of US 90 and the Suwannee River			Contact/District:	T. Mckelvey/NE		
County:	Suwannee			Test type:	static acute screen		
Sample Collection Date:	**2/27/95**	Time:	1210	# tests:	2	Receiving Water:	Suwannee River
Test Beginning Date:	2/28/95	Time:	1400	Chlorination Type:	**not chlorinated**		
Test Ending Date:	3/2/95	Time:	1400			**Page 1 of 2**	

Total Residual CL2	mg/L	Method
Field:	-	-
Lab:	0.04	DR-100

Ammonia	Total (mg/L)	Unionized (mg/L)
Control Water:	< 0.017	<0.017
100% Sample:	<0.017	<0.017

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control Water:	120	125
100% Sample:	5	20

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

Organism: ***Cyprinella leedsi*** Age: 10 days

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature			Dissolved Oxygen			Conductivity uncorrected µmhos/cm	
Concentrations	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	7.8	8.2	8.4	25.0	23.7	22.4	8.0	8.2	8.8	250	240
Control B	0/500	5	5	5	7.8	8.2	8.4	-	-	22.2	8.0	8.2	8.9	250	240
Control C	0/500	5	5	5	7.8	8.2	8.4	-	-	22.2	8.0	8.2	8.7	250	240
Control D	0/500	5	5	5	7.8	8.2	8.4	-	-	22.3	8.0	8.3	8.8	250	245
100% A	500/0	5	5	5	5.9	6.7	6.7	24.9	23.4	22.5	7.8	8.4	8.7	45	45
100% B	500/0	5	5	5	5.9	6.7	6.7	-	-	22.4	7.8	8.4	8.8	45	50
100% C	500/0	5	5	5	5.9	6.7	6.7	-	-	22.4	7.8	8.4	8.8	45	50
100% D	500/0	5	5	5	5.9	6.7	6.7	-	-	22.4	7.8	8.4	8.8	45	45

[A]Temperature of test room was continously recorded on a strip chart recorder.
Room temperature range for the test period was 25°-25.5°C.

Organism: ***Ceriodaphnia dubia*** Age: ≤24 hours

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature			Dissolved Oxygen			Conductivity uncorrected µmhos/cm	
Concentrations	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	8.1	-	8.3	23.3	-	24.6	8.1	-	8.4	175	195
Control B	0/20	5	5	5	-	-	8.3	-	-	24.6	-	-	8.4	-	195
Control C	0/20	5	5	5	-	-	8.3	-	-	24.6	-	-	8.4	-	195
Control D	0/20	5	5	5	-	-	8.3	-	-	24.4	-	-	8.4	-	190
100% A	20/0	5	5	5	6.1	-	6.8	23.9	-	24.5	7.9	-	8.4	50	55
100% B	20/0	5	5	5	-	-	6.7	-	-	24.5	-	-	8.4	-	45
100% C	20/0	5	5	5	-	-	6.7	-	-	24.4	-	-	8.5	-	45
100% D	20/0	5	5	5	-	-	6.6	-	-	24.1	-	-	8.4	-	50

[B]Temperature of test incubator was continously recorded on a strip chart recorder.
Incubator temperature range for the test period was 23.9°-24.4°C.

Table 1. Continued. Data recorded during the 48-hour acute screening bioassays of a pH adjusted aliquot of a sample of effluent from the Florida Power Corporation-Suwannee River Plant, Ellaville, Suwannee County, Florida, NPDES# FL0000183, performed on 28 February to 2 March, 1995.

pH Adjusted Test

Facility:	**Florida Power Corporation-Suwannee River Plant**	**NPDES #**	**FL0000183**	Facility Type:	**Power Plant**
Location:	1/2 mile S. of US 90 and the Suwannee River near Ellaville	Contact/District:	T. Mckelvey/NE		
County:	Suwannee	Test type:	static acute screen		
Sample Collection Date:	**2/27/95** Time: 1210	# tests:	2	Receiving Water:	Suwannee River
Test Beginning Date:	2/28/95 Time: 1400	Chlorination Type:	**not chlorinated**		
Test Ending Date:	3/2/95 Time: 1400		**Page 2 of 2**		

Total Residual CL2	mg/L	Method
Field:	-	-
Lab:	0.04	DR-100

Ammonia	Total (mg/L)	Unionized (mg/L)
Control Water:	< 0.017	<0.017
100% Sample:	<0.017	<0.017

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control Water:	120	125
100% Sample:	5	20

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

Organism: ***Cyprinella leedsi*** Age: 10 days

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature [A]			Dissolved Oxygen			Conductivity uncorrected µmhos/cm	
Concentrations	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	7.8	8.2	8.4	23.0	23.2	22.4	8.2	8.5	8.9	240	250
Control B	0/500	5	5	5	7.8	8.2	8.4	-	-	22.3	8.2	8.5	8.9	240	250
Control C	0/500	5	5	5	7.8	8.2	8.4	-	-	22.2	8.2	8.5	8.9	240	245
Control D	0/500	5	5	5	7.8	8.2	8.4	-	-	22.4	8.2	8.5	9.0	240	245
100% A	500/0	5	5	5	6.2	6.9	6.8	24.9	23.2	22.6	7.8	8.3	8.7	50	55
100% B	500/0	5	5	5	6.2	6.9	6.8	-	-	22.5	7.8	8.3	8.7	50	50
100% C	500/0	5	5	5	6.2	6.9	6.8	-	-	22.4	7.8	8.3	8.7	50	50
100% D	500/0	5	5	5	6.2	6.9	6.8	-	-	22.5	7.8	8.3	8.7	50	55

[A]Temperature of test room was continously recorded on a strip chart recorder.
Room temperature range for the test period was 25°-25.5°C.

Organism: ***Ceriodaphnia dubia*** Age: ≤24 hours

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature [B]			Dissolved Oxygen			Conductivity uncorrected µmhos/cm	
Concentrations	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	8.1	-	8.3	23.5	-	24.5	8.0	-	8.5	170	200
Control B	0/20	5	5	5	-	-	8.3	-	-	24.7	-	-	8.5	-	195
Control C	0/20	5	5	5	-	-	8.3	-	-	24.6	-	-	8.4	-	195
Control D	0/20	5	5	5	-	-	8.3	-	-	24.6	-	-	8.4	-	195
100% A	20/0	5	5	5	6.3	-	6.9	24.1	-	24.4	7.9	-	8.4	50	50
100% B	20/0	5	5	4	-	-	7.0	-	-	24.8	-	-	8.4	-	60
100% C	20/0	5	5	4	-	-	7.0	-	-	25.4	-	-	8.4	-	50
100% D	20/0	5	5	5	-	-	6.9	-	-	25.1	-	-	8.4	-	50

[B]Temperature of test incubator was continously recorded on a strip chart recorder.
Incubator temperature range for the test period was 23.9°-24.4°C.

Table 2. Results of chemical analyses on the effluent from Florida Power Corporation-Suwannee River Plant sampled on 27 February, 1995.

Metals

Aluminum	1100	µg/L
Calcium	3.8	mg/L [A]
Copper	6	µg/L [I]
Iron	1050	µg/L [A]
Magnesium	1.01	mg/L [A]
Zinc	8	µg/L [I]

Base-Neutral & Acid Extractables

None detected

Volatile Organic Compounds

None detected

[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: Florida Power Park
County: Suwannee
Contact / District: T. McKelvey / NE
NPDES Permit #: FL0000183
LIMS Sample #: 100169 LIMS Job #: 95-Fe6-28-15
sample log 3/10/95

Test Type: Screening / Definitive
Static / Static Renewal / Flow-through

Test Number: 2 of 4

Remarks:

Sample Collection: Date 2/27/95 Time 1240
Test Beginning: Date 2/28/95 Time 1400
Test Ending: Date 3/4/95 Time 1400
Organism Batch #: 110* mf Diluent Batch #: 9
Organism Age: < 24 hours

*wrong batch # in log book & MF 3/8/95

Test Organism: Ceriodaphnia dubia

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	23.2 @ 23.3	8.59 @ 23 °C	104.3 @ 104.1 868 @ 1000 @ 23.9 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	22.9 @ 23.0	8.4 @ 23.5 °C	104 @ 104.1 948 @ 1000 @ 23.9 °C
48 hr	7.0 @ 7.0 9.0 @ 9.0	23.7 @ 23.7	8.4 @ 23.4 °C	103 @ 104.1 9470 @ 10000 @ 23.9 °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	24 h	48 h
Control	A	5	5	5	8.1		8.3	23.3		24.6	8.1		8.4	175		195
Control	B	5	5	5			8.3			24.6			8.4			195
Control	C	5	5	5			8.3			24.6			8.4			195
Control	D	5	5	5			8.3			24.4			8.4			190
100%	A	5	5	5	6.9		6.8	23.9		24.5	7.9		8.4	50		55
100%	B	5	5	5			6.7			24.5			8.4			45
100%	C	5	5	5			6.7			24.4			8.5			45
100%	D	5	5	5			6.6			24.1			8.4			50
Recorded by:		MF	MF	TM	JN		LW	JN		LW	JN		LW	JN		LW
Measured/Loaded by:		MF	MF	TM	MF		MF	MF		MF	MF		MF	MF		MF

Investigators' Signatures

Joseph Smith
Marshall Faircloth
Jennifer Spangler
Tina Mikulski
Robin C. Reder
Reviewer

form updated 10/05/94

Water Quality Parameters	Salt Water / Well Water	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):			0	—	DAN Hall
Lab Total Residual Cl2 (mg/L):	—	<0.03	0.04	DR-100	TM
Alkalinity (mg/L as $CaCO_3$):	—	70	5	Hach	JCS
Hardness (mg/L as $CaCO_3$):	—	80	20	Hach	JCS
Total ammonia (mg/L as N):	—	<0.017	<0.017	Orion	MF

Ammonia Meter #98136 Ammonia Meter Slope: -57.6 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Florida Power Park.
County: Suwannee.
Contact / District: T. McKelvey / NE
NPDES Permit #: FL00 20183
LIMS Sample #: 100169 LIMS Job #: 95-Feb-28-15
sample log 3/6/95

Sample Collection: Date 2/22/95 Time 1210
Test Beginning: Date 2/28/95 Time 1400
Test Ending: Date 3/2/95 Time 1400
Organism Batch #: 8 Diluent Batch #: well
Organism Age: 10 days
Test Organism: Cyprinella leedsi

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

Test Number: 1 of 4

Remarks: pH of sample was 5.7 STD units after the sample was initially warmed to test temperature. tests 3 & 4 were acetyp with pH (6.1) adjusted aliquots 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	23.2 @ 23.3	8.59 @ 23 °C	1043 @ 1041 868 @ 1000 @ 23.9 °C 9470 9000
24 hr	7.0 @ 7.0 9.0 @ 9.0	22.9 @ 23.0	8.4 @ 23.5 °C	104 @ 1041 948 @ 1000 @ 23.9 °C
48 hr	7.0 @ 7.0 9.0 @ 9.0	22.7 @ 22.7	8.4 @ 23.4 °C	103 @ 1041 918 @ 1000 @ 23.9 °C 10389 10019

		Number Live			pH			Temperature (°C)			D.O. (mg/L)			UNCORRECTED Cond. (mmhos/cm) Cond. (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	
Control A	302	5	5	5	7.8	8.2	8.4	25.0	23.7	23.4	8.0	8.2	8.8	250	250	240	24.4
Control B	504	5	5	5	7.8	8.2	8.4			23.4	8.0	8.2	8.9	250	250	240	22.3
Control C	1265	5	5	5	7.8	8.2	8.4			23.4	8.0	8.2	8.7	250	250	240	22.3
Control D	198	5	5	5	7.8	8.2	8.4			23.4	8.0	8.3	8.8	250	255	245	22.3
100% A	4	5	5	5	5.9	6.7	6.7	24.9	23.4	23.5	7.8	8.4	8.7	45	45	45	
100% B	506	5	5	5	5.9	6.7	6.7			23.4	7.8	8.4	8.8	45	50	50	
100% C	216	5	5	5	5.9	6.7	6.7			23.4	7.8	8.4	8.8	45	50	50	
100% D	413	5	5	5	5.9	6.7	6.7			23.4	7.8	8.4	8.8	45	45	45	
Recorded by:		JN	MF	LW	JN	JDS	LW	JN	JDS	LW	JN	JDS	LW	JN	JDS	LW	
Measured/Loaded by:		JN	MF	LW	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	

Investigators' Signatures
Tobin C. Rader
Marshall Faircloth
Jennifer Spangari
Mindy Mikulsky
Reviewer

Water Quality Parameters	Salt Water (Well Water)	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):			0	—	Don Hall
Lab Total Residual Cl2 (mg/L):	<0.03	—	0.04	DR-100	TM
Alkalinity (mg/L as $CaCO_3$):	120	—	5	Hach	JLS
Hardness (mg/L as $CaCO_3$):	125	—	20	Hach	JLS
Total ammonia (mg/L as N):	<0.017	—	<0.017	Orion	MF

Ammonia Meter #98136 Ammonia Meter Slope: -57.6 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

form updated 10/05/94

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Florida Power Park
County: Suwannee
Contact / District: T. McKelvey / NE
NPDES Permit #: FL0000183
LIMS Sample #: 100169 LIMS Job #: 95-Feb-28-1S

Sample Collection: Date 2/27/95 Time 1210
Test Beginning: Date 2/28/95 Time 1400
Test Ending: Date 3/2/95 Time 1400
Organism Batch #: 11 ~~10~~ JN Diluent Batch #: 9
Organism Age: < 24 hours
Test Organism: Ceriodaphnia dubia

JN 3/8/95 *wrong batch #written in log bc

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

Test Number: 4 of 4

Remarks: pH adjusted test
Initial pH of sample was 5.7 STD units. An aliquot of sample was adjusted to pH 6.1, then poured into test vessels. Required pH range of toxicity test is 6.0 - 9.0 STD units.

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	23.2 @ 23.3	8.59 @ 23 °C	104.3 @ 104.1 868 @ 1000 @ 23.9 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	22.9 @ 23.0	8.4 @ 23.5 °C	104 @ 104.1 9470 @ 10000 948 @ 1000 @ 23.9 °C
48 hr	7.0 @ 7.0 9.0 @ 9.0	22.7 @ 22.7	8.4 @ 23.4 °C	103 @ 104.1 918 @ 1000 @ 23.9 °C 10389 100.19

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	24 h	48 h
Control	A	5	5	5	8.1		8.3	23.5		24.5	8.0		8.5	170		200
Control	B	5	5	5			8.3			24.7			8.5			195
Control	C	5	5	5			8.3			24.6			8.4			195
Control	D	5	5	5			8.3			24.6			8.4			195
100%	A	5	5	5	6.3		6.9	24.1		24.4	7.9		8.4	50		50
100%	B	5	5	4			7.0			24.8			8.4			60
100%	C	5	5	4			7.0			25.4			8.4			50
100%	D	5	5	5			6.9			25.1			8.4			50
Recorded by:		MF	MF	TM	JN		LW	JN		LW	JN		LW	JN		LW
Measured/Loaded by:		MF	MF	TM	MF		MF	MF		MF	MF		MF	MF		MF

Investigators' Signatures
Joseph B North
Marshall Faircloth
Tobin C. Reder
Jennifer Spangari
Reviewer

form updated 10/05/94

Water Quality Parameters	Salt Water / (Well Water)	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):			0	—	D Hull
Lab Total Residual Cl2 (mg/L):	—	<0.03	0.04	DR-100	TM
Alkalinity (mg/L as $CaCO_3$):	120	70	5	Hach	JLS
Hardness (mg/L as $CaCO_3$):	125	80	20	Hach	JLS
Total ammonia (mg/L as N):	<0.017	<0.017	<0.017	Orion	MF

Ammonia Meter #98136 Ammonia Meter Slope: -57.6 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Florida Power Park
County: Suwannee
Contact / District: T. McKelvey / NE
NPDES Permit #: FL0000183
LIMS Sample #: 100169 LIMS Job #: 95-Feb-28-15

Sample Collection: Date 2/27/95 Time 1210
Test Beginning: Date 2/28/95 Time 1400
Test Ending: Date 3/2/95 Time 1400
Organism Batch #: 8 Diluent Batch #: well
Organism Age: 10 days
Test Organism: Cyprinella leedsi

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

Test Number: 3 of 4

Remarks: pH adjusted test. Initial pH of sample was 5.7 STD units. An aliquot was adjusted to pH 6.1 then poured ~~into~~ mf into test vessels. Required pH range of toxicity test is 6.0 - 9.0 STD units.

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	23.2 @ 23.3	8.59 @ 23.0 °C	104.3 @ 104.1 868 @ 1000 @ 23.9 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	22.9 @ 23.0	8.4 @ 23.5 °C	104 @ 104.1 948 @ 1000 @ 23.9 °C
48 hr	7.0 @ 7.0 9.0 @ 9.0	23.7 @ 23.7	8.4 @ 23.4 °C	103 @ 104.1 918 @ 1000 @ 23.9 °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
Control A	9	5	5	5	7.8	8.2	8.4	23.0	23.2	22.4	8.2	8.5	8.9	240	250	250
Control B	348	5	5	5	7.8	8.2	8.4			22.3	8.2	8.5	8.9	240	250	250
Control C	48	5	5	5	7.8	8.2	8.4			22.2	8.2	8.5	8.9	240	250	245
Control D	87	5	5	5	7.8	8.2	8.4			22.4	8.2	8.5	9.0	240	250	245
100% A	305	5	5	5	6.2	6.9	6.8	24.9	23.2	22.6	7.8	8.3	8.7	50	(*)450	55
100% B	287	5	5	5	6.2	6.9	6.8			22.5	7.8	8.3	8.7	50	50	50
100% C	149	5	5	5	6.2	6.9	6.8			22.4	7.8	8.3	8.7	50	50	50
100% D	130	5	5	5	6.2	6.9	6.8			22.5	7.8	8.3	8.7	50	(A)450 55	55
Recorded by:		JN	MF	LW	JN	JRS	LW	JN	JRS	LW	JN	JRS	LW	JN	JRS	LW
Measured/Loaded by:		JN	MF	LW	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF

(50) correct conc. (*) JRS 3/1/95 Entry Error
(A) JRS 3/1/95 Entry Error (55) correct conc.

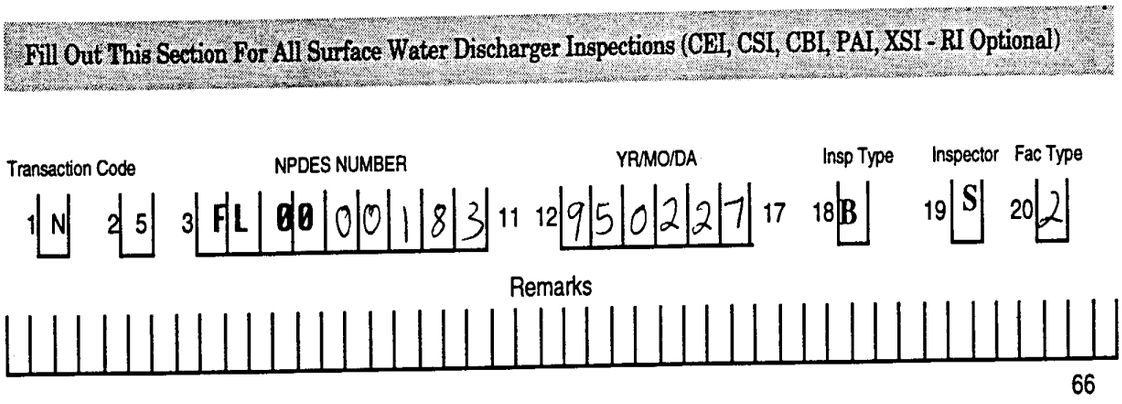
Investigators' Signatures
Joseph Smith
Marshall Faircloth
John G. Rader
Jennifer Sparapani
Reviewer
Lisa Nicholls

Water Quality Parameters	Salt Water / Well Water	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):			0	—	JRS 11
Lab Total Residual Cl2 (mg/L):	<0.03	—	0.04	DR-100	TM
Alkalinity (mg/L as $CaCO_3$):	120	—	5	Hach	JLS
Hardness (mg/L as $CaCO_3$):	125	—	20	Hach	JLS
Total ammonia (mg/L as N):	<0.017	<0.017	<0.017	Orion	MF

Ammonia Meter #98136 Meter Slope: -57.6 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

form updated 10/05/94

The Bioassay of the Florida Power Corporation-Suwannee River Plant effluent sampled on February 27, 1995, NPDES #FL0000183.



The Priority Pollutants Analysis for the Bioassay of the Florida Power Corporation-Suwannee River Plant effluent sampled on February 27, 1995, NPDES #FL0000183.

