

Bioassays of

Progress Energy (Florida Power Corporation)

Anclote Power Plant (Units 1 and 2)

Pasco County

NPDES #FL0002992

Sampled June 7, 2004

September 2004

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

Progress Energy (Florida Power Corporation) – Anclote Power Plant (Units 1 and 2), 1729 Baillies Bluff Rd., Holiday, Pasco County, Florida, NPDES #FL0002992. Effluent samples for this facility were collected on June 7, 2004.

Introduction

Florida Power – Anclote is an electric power generating plant having a Nameplate rating of 1,112 MegaWatts. Once-through condenser cooling water from Units 1 and 2 is passed through bar racks and intake screens, pumped through the condensers to remove excessive heat, and discharged to the plant's discharge canal. Outfall D004 (EFF-1) is the combined plant discharge which includes the once-through cooling water from Units 1 and 2 (Outfalls I-001, I-002), dilution pump flow (I-003), and cooling tower discharge from two non-recirculating cooling towers operated during certain times of the year to reduce the plant's discharge temperature (I-005). A biocide (sodium hypochlorite and sodium bromide) is added to the cooling-tower intake water for bio-fouling control. The cooling-tower effluent - is dehalogenated as needed, prior to discharge. Effluent flows via a discharge canal, which receives discharges from all internal outfalls, into the Class III Marine Waters of Anclote Sound. The facility's NPDES permit does not have a design flow. Mean flow recorded for the individual internal outfalls from 2/1/03 – 1/31/04 was 2,124.29 MGD (million gallons per day) - Flow is not measured at D004 (Facility summary provided by Lori Pillsbury and Tommy O'Neal, Southwest District FDEP).

Methods

Samples were collected from the D004 (EFF-1) NPDES sampling point by Lori Pillsbury and Nahir Cornwell (FDEP Southwest District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOP's are available on the web at: http://www.floridadep.org/labs/qa/sops.htm

The toxicity tests and algal growth potential test were performed following internal DEP SOP's TA07_03,TA07_04, and TA08_01 through TA08_07. All internal DEP SOP's are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp. The 96-hour static renewal acute screening toxicity tests were performed per the permit requirements.

Toxicity Test Results

Tests were performed June 8-12, 2004.

Americamysis bahia 96-hr acute screening bioassay – LC_{50} > 100%, 0% mortality in100% sample at 96 hours

Menidia beryllina 96-hr acute screening bioassay – LC_{50} > 100%, 5% mortality in 100% sample at 96 hours

Bioassay samples did not show toxicity to the test organisms, according to the permit conditions.

See Appendix 1 for bioassay bench sheets.

Algal Growth Potential

The effluent AGP was 0.12 mg dry wt/L of *Dunaliella tertiolecta.* Raschke and Shultz found that Algal Growth Potential (AGP) values above 10.0 mg dry weight/L represent a "problem" threshold for marine receiving waters, implying nutrient enrichment (personal communication with Ron Raschke, USEPA Region 4, 1987). The analytical chemistry suggests that the effluent is co-limited by both nitrogen and phosphorus. (Inorganic N:P = 11.6)

Chemistry Results

Total residual chlorine and total ammonia were not detected in the bioassay sample in the laboratory. Total ammonia was not detected in the sample collected and preserved for chemical analysis.

Copper was detected between the MDL and PQL. Aluminum, iron, and nickel were detected at levels that comply with the Class III Marine Water Quality Criteria (62-302, F.A.C.).

See Table 1 for results of analytes detected in the effluent, and corresponding limits.

See Appendix 2 for a complete list of chemical analyses performed.

Conclusion

The effluent samples collected from outfall D004 for this facility on June 7, 2004, did not show acute toxicity to either test species during the 96-hour bioassay tests. The effluent AGP result was less than the "problem" threshold for marine receiving waters. There were no water quality standards exceedences or permit violations detected.

Table 1. *Effluent limits, Class III Marine Criteria, and chemical data from samples collected from Florida Power - Anclote Plant on June 7, 2004*

Florida Power - Anclote Power Plant (Units 1 and 2)	Class III Marine Standards	Effluent Limits	Effluent Samples
Organic Constituents (µg/L)			
None Detected	-	-	-
Metals (µg/L unless otherwise noted)			
Aluminum	≤ 1500	-	57
Arsenic	≤ 50	-	20 U
Cadmium	≤ 9.3	-	0.25 U
Calcium (mg/L)	-	-	419
Chromium-III	-	-	19 U
Copper	≤ 3.7	-	0.75 I
Iron	≤ 300	-	75
Lead	≤ 8.5	-	0.5 U
Magnesium (mg/L)	-	-	1300
Nickel	≤ 8.3	-	0.43
PAH	-	-	0 c
Selenium	≤ 71	-	15 U
Silver	-	-	0.1 U
Zinc	≤ 86	-	4 U
Nutrients (mg/L)			
TSS	-	-	15 I
Ortho-phosphate	-	-	0.005 I
Total Phosphorus	-	-	0.02 U
Ammonia	-	-	0.05 U
Unionized Ammonia	-	-	0.0034 c
Nitrate+Nitrite	-	-	0.008 I
Total Kjeldahl Nitrogen	-	-	0.52
Organic Nitrogen	-	-	0.52 c
Total Nitrogen	-	-	0.53 c
Turbidity (NTU)	29	-	1
General Physical and Chemical Parameters			
Dissolved Oxygen (mg/L)	≥ 4	-	4.6
pH (S.U.)	6.5 - 8.5	-	8
Salinity (ppth)	-	-	35.7
Temperature (C)	-	-	31.1
BOD (mg/L)	-	-	2.6
Oil and Grease (mg/l)	≤ 5	-	0.69 U
AGP (mg DryWt/L)	-	-	0.12 I
Total Residual Chlorine (100% mg/L) Lab	≤ 0.01	-	< 0.03 U
Total Residual Oxidants (mg/L)	-	≤ 0.01	-

Value exceeds the Class III Marine Water Quality Criteria (62-302, F.A.C.)

b - Value is calculated based on hardness

c - calculated value

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

L - Actual value is known to be greater than value given

U - Material analyzed for but not detected; value reported is the minimum detection limit

FDEP Biology Section - Acute
Bioassay Bench Sheets

Facility: FPL Anclote
Address: Anclote Road
City: Tarpon Springs County: Pasco
Contact/District: L. Pillsbury / SW
NPDES Permit #: FL 0002992
LIMS Job #: TLH-2004-06-08-05 LIMS Sample #: 758894

Sample Collection: Date: 06/07/04 Time: 10:20
Hold time Start: Date: 06/07/04 Time: 10:20

Comments:
Control water (NSW) diluted with well water from ~35ppt to ~33ppt.
Due to decrease in DO all test replicates for both species were aerated at 24 hours for the duration of the test MF 6/12/04

Lims Data Entry: 6/14/04 MF
Data Entry Verification: 6/14/04 CAP

Instructions (for below): Circle appropriate wording. If yes is circled complete blanks.

Test Type: (Screening) Definitive
(Static) (Static Renewal) Flow-through
Test Duration: 48 (96) Hours.
Light Intensity : 50 - 100 ft. candles.
Photoperiod : 16 hours light 8 hours dark.
Initial sample handling:

Test 1 validation:
Control survival ≥90%: (Yes) No
Temperature Range ≤3°C: (Yes) No
Test 2 validation:
Control survival ≥90%: (Yes) No
Temperature Range ≤3°C: (Yes) No

PH adjustment : yes (no) Initial pH NaOH N HCl N Drops mL Final pH
Aeration : yes (no) Initial DO: mg/L Final DO: mg/L Duration: minutes Rate: ~ bubbles/min
Salinity adjusted (Test 1): yes (no) Initial Salinity: Final Salinity: Salts Hypersaline brine
Salinity adjusted (Test 2): yes (no) Initial Salinity: Final Salinity: Salts Hypersaline brine
Dechlorination: yes (no) mL of 0.025N Sodium Thiosulfate per liter of sample. Final TRC

Temperature Range °C
Incubator # 3 Range 23.5-24.0°C
Room B246: 24.5-26.0°C
Waterbath: N/A

Sample Validation:
Temperature: Shipped ≤6°C (Yes) No Hand Delivered: Cooling (received °C < collected °C) Yes No
Holding Time: ≤36 Hours (Yes) No (Composite-end of collection; grab-when collected; 4 in 24 - time last sample collected)

Investigators' Signatures
Christa Pezzini
Marshall Faircloth
Regina Nicholson
Brenda Daniels

REVIEWER

Water Quality Parameters	20% DMW	Well Water	Salt Water ASW (NSW) Test 1	Salt Water ASW (NSW) Test 2	Moderately Hard Water	Original Sample	Method	Measured by	Verified by
Field Total Residual Cl2 (mg/L):	N/A	N/A	N/A	N/A	N/A	not measured		—	CAP
Lab Total Residual Cl2 (mg/L):			<0.03	<0.03		<0.03	HACH	CAP	JO
Alkalinity (mg/L as $CaCO_3$):			142	142		90	HACH	DN	JO
Hardness (mg/L as $CaCO_3$):			N/A	N/A		N/A	HACH	—	CAP
Total Ammonia (mg/L as N):			<0.068	<0.068		<0.068	DENVER	MF	CAP
Salinity (ppt):			~33.0	~33.0		~33.0	YSI	MF	CAP

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FDEP Biology Section - - Bioassay Bench Sheet
Survival

LIMS Sample #: 758896 Test #: 1 Test Started: Date 06/08/04 Time: 2:00
Organism: A. bahia Test Ended: Date 6/12/04 Time: 1100
Organism Batch: #154 Diluent/ Batch: NSW / N/A
Organism Age: 4 days Food: YCT P. subcapitata Artemia
Chamber Size 1000 mL Batch: ___ ___ 01940425G
Test Volume 500 mL Feeding: Prior to test - Prior to renewal - Daily

Concentration	Replicate	Chamber #	0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
CTRL	A	A1	5	5	5	5	5	5
	B	A2	5	5	5	5	5	5
	C	A3	5	5	5	5	5	5
	D	A4	5	5	5	5	5	5
100%	A	A5	5	5	5	5	5	5
	B	A6	5	5	5	5	5	5
	C	A7	5	5	5	5	5	5
	D	A8	5	5	5	5	5	5
Organisms loaded by: JO; Loading Verified by: CAP		Checked by: (initials)	CAP	CAP	DN	DN	JO	MF

Comments:

m = missing d = dead BR = before renewal AR = after renewal

Test Results:

% mortality in 100% sample Ø

LC_{50}: >100% If Calculated: 95% CI ______ Method: ______

Screening Tests: Report LC50 as >100%, =100%, or <100%.
Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).

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FDEP Biology Section - - Bioassay Bench Sheet

Survival

LIMS Sample #: 758896 **Test #:** 2 **Test Started: Date** 06/08/04 **Time:** 2:10

Organism: M. beryllina **Test Ended: Date** 6/12/04 **Time:** 1100

Organism Batch: #19 **Diluent/ Batch:** NSW1 N/A

Organism Age: 13 days **Food:** YCT *P. subcapitata* *Artemia* 01940456 **Batch:** ___

Chamber Size 1000 mL

Test Volume 500 mL **Feeding:** Prior to test - Prior to renewal - Daily

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
CTRL	A	A9	5	5	5	5	5	5
	B	A10	5	5	5	5	5	5
	C	A11	5	5	5	5	5	5
	D	A12	5	5	5	5	5	5
100%	A	A13	5	5	5	5	5	5
	B	A14	5	5	4 10	4	4	4
	C	A15	5	5	5	5	5	5
	D	A16	5	5	5	5	5	5
Organisms loaded by: JD		Checked by:	CAP	CAP/DN	DN	DN	JO	MA
Loading Verified by: CAP		(initials)						

m = missing d = dead BR = before renewal AR = after renewal

Comments:

Test Results:

% mortality in 100% sample 5

LC_{50}: >100 % If Calculated: 95% CI_____ Method:_____

Screening Tests: Report LC50 as >100%, =100%, or <100%.

Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).

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Bioassay Parameters

LIMS Sample # : 758896 **Test # :** 1 **of** 2

TEST SOP: TA07_ 03 **Test Species:** *Ceriodaphnia dubia Cyprinella leedsi Pimephales promelas Americamysis bahia Menidia beryllina* Other:_____

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Concentration CTRL	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C	C	D	A
pH (S.U.)	8.2	8.0	7.9	8.1	8.0	8.1
Temperature °C	24.0	25.1	24.5	25.0	25.4	24.3
Dissolved Oxygen mg/L	6.9	5.5	6.5	7.9	6.0	7.4
Conductivity µmhos mmhos	47.3	48.4	48.2	47.2	47.4	50.1
(initials) Measured by:	DN	CAP	CAP	JD	JD	MF
(initials) Recorded by:	CAP	DN	CAP	JD	JD	MF

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C	C	D	A
pH (S.U.)	8.2	8.0	7.9	8.1	8.1	8.1
Temperature °C	24.2	24.7	24.8	25.1	25.4	24.5
Dissolved Oxygen mg/L	7.6	5.6	6.5	7.9	6.1	7.6
Conductivity µmhos mmhos	48.8	49.9	50.4	49.9	49.9	50.9
(initials) Measured by:	DN	CAP	CAP	JD	JD	MF
(initials) Recorded by:	CAP	DN	CAP	JD	JD	MF

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

Bioassay Parameters 000082

LIMS Sample # : 758896 **Test # :** 2 **of** 2

TEST SOP: TA07_ 04 **Test Species:** *Ceriodaphnia dubia* *Cyprinella leedsi* *Pimephales promelas* *Americamysis bahia* (*Menidia beryllina*) Other: _____

V.1 2/24/04

Concentration CTRL	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C	C	D	A
pH (S.U.)	8.2	8.1	8.0	8.1	8.0	8.1
Temperature °C	24.0	24.9	24.9	24.9	25.4	24.5
Dissolved Oxygen mg/L	7.1	6.0	6.5	8.3	5.9	7.2
Conductivity µmhos (mmhos)	46.3	47.4	48.8	48.0	48.1	50.3
(initials) Measured by:	DN	CAP	CAP	JD	JD	MF
(initials) Recorded by:	CAP	DN	CAP	JD	JD	MF

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C	C	D	A
pH (S.U.)	8.2	8.1	8.1	8.2	8.1	8.1
Temperature °C	24.3	25.1	24.9	25.1	25.4	24.5
Dissolved Oxygen mg/L	7.6	5.8	6.5	7.7	5.9	7.4
Conductivity µmhos (mmhos)	48.8	50.4	50.0	49.9	49.9	50.9
(initials) Measured by:	DN	CAP	CAP	JD	JD	MF
(initials) Recorded by:	CAP	DN	CAP	JD	JD	MF

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

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Appendix 1. Chemical Analyses performed on the effluent from the Florida Power Corporation - Anclote Plant Outfall D004, sampled on June 7, 2004.

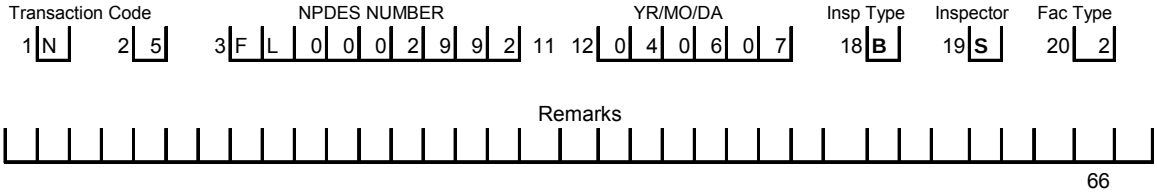
DATE SAMPLED	FIELD ID	ANALYSIS GROUP	COMPONENT	RESULT	UNITS	REMARK	MDL	PQL
6/7/2004 10:20	OUTFALL D004	Bio-AGP/LimNut	Algal Growth Potential	0.12	mg DryWt/L	I	0.1	0.3
6/7/2004 10:20	OUTFALL D004	Bio-BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	2.6	mg/L			
6/7/2004 10:20	OUTFALL D004	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	2.1	ug/L	I	0.85	2.6
6/7/2004 10:20	OUTFALL D004	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	0.18	ug/L	J	0.85	2.6
6/7/2004 10:20	OUTFALL D004	Bio-Toxicology	Bioassay-Acute-Screen-SW-Fish, LC50	100	LC50	L		
6/7/2004 10:20	OUTFALL D004	Bio-Toxicology	Bioassay-Acute-Screen-SW-Mysid, LC50	100	LC50	L		
6/7/2004 10:00	FIELD BLANK	BNA-Water	1,2,4-Trichlorobenzene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	1,2-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	1,3-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	1,4-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	2,4,6-Trichlorophenol	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	2,4-Dichlorophenol	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
6/7/2004 10:00	FIELD BLANK	BNA-Water	2,4-Dinitrophenol	14	ug/L	U	14	58
6/7/2004 10:00	FIELD BLANK	BNA-Water	2,4-Dinitrotoluene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	2,6-Dinitrotoluene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	2-Chloronaphthalene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	2-Chlorophenol	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	12
6/7/2004 10:00	FIELD BLANK	BNA-Water	2-Nitrophenol	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	U	38	150
6/7/2004 10:00	FIELD BLANK	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	4-Bromophenyl phenyl ether	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	4-Chloro-3-methylphenol	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.7
6/7/2004 10:00	FIELD BLANK	BNA-Water	4-Nitrophenol	14	ug/L	U	14	58
6/7/2004 10:00	FIELD BLANK	BNA-Water	Acenaphthene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Acenaphthylene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Aldrin	1.4	ug/L	U	1.4	5.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Anthracene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Benzidine	96	ug/L	U	96	380
6/7/2004 10:00	FIELD BLANK	BNA-Water	Benzo(a)anthracene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Benzo(a)pyrene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Benzo(b)fluoranthene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Benzo(g,h,i)perylene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Benzo(k)fluoranthene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Bis(2-chloroethoxy)methane	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Bis(2-chloroethyl)ether	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	12
6/7/2004 10:00	FIELD BLANK	BNA-Water	Bis(2-ethylhexyl)phthalate	14	ug/L	U	14	58
6/7/2004 10:00	FIELD BLANK	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
6/7/2004 10:00	FIELD BLANK	BNA-Water	Chrysene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
6/7/2004 10:00	FIELD BLANK	BNA-Water	Di-n-octyl phthalate	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Dibenzo(a,h)anthracene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Diethyl phthalate	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190
6/7/2004 10:00	FIELD BLANK	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
6/7/2004 10:00	FIELD BLANK	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
6/7/2004 10:00	FIELD BLANK	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Endrin	1.4	ug/L	U	1.4	5.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
6/7/2004 10:00	FIELD BLANK	BNA-Water	Fluoranthene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Fluorene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Hexachlorobenzene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	12
6/7/2004 10:00	FIELD BLANK	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	U	2.9	12
6/7/2004 10:00	FIELD BLANK	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	12
6/7/2004 10:00	FIELD BLANK	BNA-Water	Indeno(1,2,3-cd)pyrene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Isophorone	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.7
6/7/2004 10:00	FIELD BLANK	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.7
6/7/2004 10:00	FIELD BLANK	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	U	2.9	12
6/7/2004 10:00	FIELD BLANK	BNA-Water	Naphthalene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.7
6/7/2004 10:00	FIELD BLANK	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	12

6/7/2004 10:00	FIELD BLANK	BNA-Water	Phenanthrene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Phenol	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	Pyrene	0.96	ug/L	U	0.96	3.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.8
6/7/2004 10:00	FIELD BLANK	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	1,2,4-Trichlorobenzene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	1,2-Dichlorobenzene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	1,3-Dichlorobenzene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	1,4-Dichlorobenzene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	2,4,6-Trichlorophenol	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	2,4-Dichlorophenol	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	2,4-Dimethylphenol	47	ug/L	U	47	190
6/7/2004 10:20	OUTFALL D004	BNA-Water	2,4-Dinitrophenol	14	ug/L	U	14	57
6/7/2004 10:20	OUTFALL D004	BNA-Water	2,4-Dinitrotoluene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	2,6-Dinitrotoluene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	2-Chloronaphthalene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	2-Chlorophenol	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	2-Methyl-4,6-dinitrophenol	2.8	ug/L	U	2.8	11
6/7/2004 10:20	OUTFALL D004	BNA-Water	2-Nitrophenol	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	U	38	150
6/7/2004 10:20	OUTFALL D004	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.7
6/7/2004 10:20	OUTFALL D004	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.7
6/7/2004 10:20	OUTFALL D004	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.7
6/7/2004 10:20	OUTFALL D004	BNA-Water	4-Bromophenyl phenyl ether	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	4-Chloro-3-methylphenol	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.5
6/7/2004 10:20	OUTFALL D004	BNA-Water	4-Nitrophenol	14	ug/L	U	14	57
6/7/2004 10:20	OUTFALL D004	BNA-Water	Acenaphthene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Acenaphthylene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Aldrin	1.4	ug/L	U	1.4	5.7
6/7/2004 10:20	OUTFALL D004	BNA-Water	Anthracene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Benzidine	94	ug/L	U	94	380
6/7/2004 10:20	OUTFALL D004	BNA-Water	Benzo(a)anthracene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Benzo(a)pyrene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Benzo(b)fluoranthene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Benzo(g,h,i)perylene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Benzo(k)fluoranthene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Bis(2-chloroethoxy)methane	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Bis(2-chloroethyl)ether	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Bis(2-chloroisopropyl)ether	2.8	ug/L	U	2.8	11
6/7/2004 10:20	OUTFALL D004	BNA-Water	Bis(2-ethylhexyl)phthalate	14	ug/L	U	14	57
6/7/2004 10:20	OUTFALL D004	BNA-Water	Butyl benzyl phthalate	4.7	ug/L	U	4.7	19
6/7/2004 10:20	OUTFALL D004	BNA-Water	Chrysene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Di-n-butyl phthalate	4.7	ug/L	U	4.7	19
6/7/2004 10:20	OUTFALL D004	BNA-Water	Di-n-octyl phthalate	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Dibenzo(a,h)anthracene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.7
6/7/2004 10:20	OUTFALL D004	BNA-Water	Diethyl phthalate	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Dimethyl phthalate	47	ug/L	U	47	190
6/7/2004 10:20	OUTFALL D004	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
6/7/2004 10:20	OUTFALL D004	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
6/7/2004 10:20	OUTFALL D004	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.7
6/7/2004 10:20	OUTFALL D004	BNA-Water	Endrin	1.4	ug/L	U	1.4	5.7
6/7/2004 10:20	OUTFALL D004	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
6/7/2004 10:20	OUTFALL D004	BNA-Water	Fluoranthene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Fluorene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.7
6/7/2004 10:20	OUTFALL D004	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.7
6/7/2004 10:20	OUTFALL D004	BNA-Water	Hexachlorobenzene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Hexachlorobutadiene	2.8	ug/L	U	2.8	11
6/7/2004 10:20	OUTFALL D004	BNA-Water	Hexachlorocyclopentadiene	2.8	ug/L	U	2.8	11
6/7/2004 10:20	OUTFALL D004	BNA-Water	Hexachloroethane	2.8	ug/L	U	2.8	11
6/7/2004 10:20	OUTFALL D004	BNA-Water	Indeno(1,2,3-cd)pyrene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Isophorone	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.5
6/7/2004 10:20	OUTFALL D004	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.5
6/7/2004 10:20	OUTFALL D004	BNA-Water	N-Nitrosodiphenylamine	2.8	ug/L	U	2.8	11
6/7/2004 10:20	OUTFALL D004	BNA-Water	Naphthalene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.5
6/7/2004 10:20	OUTFALL D004	BNA-Water	Pentachlorophenol	2.8	ug/L	U	2.8	11
6/7/2004 10:20	OUTFALL D004	BNA-Water	Phenanthrene	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Phenol	0.94	ug/L	U	0.94	3.8
6/7/2004 10:20	OUTFALL D004	BNA-Water	Pyrene	0.94	ug/L	U	0.94	3.8

6/7/2004 10:20	OUTFALL D004	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.7
6/7/2004 10:20	OUTFALL D004	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.7
6/7/2004 10:20	OUTFALL D004	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.7
6/7/2004 10:20	OUTFALL D004	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.7
6/7/2004 10:00	FIELD BLANK	Metals-Water	Aluminum	10	ug/L	U	10	40
6/7/2004 10:00	FIELD BLANK	Metals-Water	Arsenic	8	ug/L	U	8	32
6/7/2004 10:00	FIELD BLANK	Metals-Water	Cadmium	0.025	ug/L	U	0.025	0.1
6/7/2004 10:00	FIELD BLANK	Metals-Water	Calcium	0.05	mg/L	U	0.05	0.3
6/7/2004 10:00	FIELD BLANK	Metals-Water	Chromium	2	ug/L	U	2	8
6/7/2004 10:00	FIELD BLANK	Metals-Water	Copper	0.25	ug/L	U	0.25	1
6/7/2004 10:00	FIELD BLANK	Metals-Water	Iron	10	ug/L	U	10	40
6/7/2004 10:00	FIELD BLANK	Metals-Water	Lead	0.05	ug/L	U	0.05	0.2
6/7/2004 10:00	FIELD BLANK	Metals-Water	Magnesium	0.01	mg/L	U	0.01	0.04
6/7/2004 10:00	FIELD BLANK	Metals-Water	Nickel	0.1	ug/L	U	0.1	0.4
6/7/2004 10:00	FIELD BLANK	Metals-Water	Selenium	0.5	ug/L	U	0.5	2
6/7/2004 10:00	FIELD BLANK	Metals-Water	Silver	0.01	ug/L	U	0.01	0.04
6/7/2004 10:00	FIELD BLANK	Metals-Water	Zinc	4	ug/L	U	4	16
6/7/2004 10:20	OUTFALL D004	Metals-Water	Aluminum	57	ug/L		10	40
6/7/2004 10:20	OUTFALL D004	Metals-Water	Arsenic	20	ug/L	U	20	80
6/7/2004 10:20	OUTFALL D004	Metals-Water	Cadmium	0.25	ug/L	U	0.25	1
6/7/2004 10:20	OUTFALL D004	Metals-Water	Calcium	419	mg/L		1.5	9
6/7/2004 10:20	OUTFALL D004	Metals-Water	Chromium	19	ug/L	U	19	76
6/7/2004 10:20	OUTFALL D004	Metals-Water	Copper	0.75	ug/L	I	0.25	1
6/7/2004 10:20	OUTFALL D004	Metals-Water	Iron	75	ug/L		10	40
6/7/2004 10:20	OUTFALL D004	Metals-Water	Lead	0.5	ug/L	U	0.5	2
6/7/2004 10:20	OUTFALL D004	Metals-Water	Magnesium	1.30E+03	mg/L		0.3	1.2
6/7/2004 10:20	OUTFALL D004	Metals-Water	Nickel	0.43	ug/L		0.1	0.4
6/7/2004 10:20	OUTFALL D004	Metals-Water	Selenium	15	ug/L	U	15	60
6/7/2004 10:20	OUTFALL D004	Metals-Water	Silver	0.1	ug/L	U	0.1	0.4
6/7/2004 10:20	OUTFALL D004	Metals-Water	Zinc	4	ug/L	U	4	16
6/7/2004 10:00	FIELD BLANK	Nutrients-Liquid	Ammonia-N	0.01	mg N/L	U	0.01	0.02
6/7/2004 10:00	FIELD BLANK	Nutrients-Liquid	NO2NO3-N	0.004	mg N/L	U	0.004	0.01
6/7/2004 10:00	FIELD BLANK	Nutrients-Liquid	N_KJEL_TOT	0.06	mg N/L	U	0.06	0.2
6/7/2004 10:00	FIELD BLANK	Nutrients-Liquid	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
6/7/2004 10:00	FIELD BLANK	Nutrients-Liquid	TSS	4	mg/L	U	4	16
6/7/2004 10:00	FIELD BLANK	Nutrients-Liquid	Total-P	0.02	mg P/L	U	0.02	0.06
6/7/2004 10:00	FIELD BLANK	Nutrients-Liquid	Turbidity	0.05	NTU	U	0.05	0.05
6/7/2004 10:20	OUTFALL D004	Nutrients-Liquid	Ammonia-N	0.05	mg N/L	U	0.05	0.1
6/7/2004 10:20	OUTFALL D004	Nutrients-Liquid	NO2NO3-N	0.008	mg N/L	I	0.004	0.01
6/7/2004 10:20	OUTFALL D004	Nutrients-Liquid	N_KJEL_TOT	0.52	mg N/L		0.12	0.4
6/7/2004 10:20	OUTFALL D004	Nutrients-Liquid	O-Phosphate-P	0.005	mg P/L	I	0.004	0.01
6/7/2004 10:20	OUTFALL D004	Nutrients-Liquid	TSS	15	mg/L	I	4	16
6/7/2004 10:20	OUTFALL D004	Nutrients-Liquid	Total-P	0.02	mg P/L	U	0.02	0.06
6/7/2004 10:20	OUTFALL D004	Nutrients-Liquid	Turbidity	1	NTU		0.05	0.05
6/7/2004 10:00	FIELD BLANK	Overflow	Oil and Grease	0.69	mg/l	U		
6/7/2004 10:20	OUTFALL D004	Overflow	Oil and Grease	0.69	mg/l	U		
6/7/2004 10:00	FIELD BLANK	VOC-Water	Bromodichloromethane	0.2	ug/L	U	0.2	1
6/7/2004 10:00	FIELD BLANK	VOC-Water	Bromoform	0.5	ug/L	U	0.5	2
6/7/2004 10:00	FIELD BLANK	VOC-Water	Chloroform	0.2	ug/L	U	0.2	1
6/7/2004 10:00	FIELD BLANK	VOC-Water	Dibromochloromethane	0.2	ug/L	U	0.2	1
6/7/2004 10:20	OUTFALL D004	VOC-Water	Bromodichloromethane	0.2	ug/L	U	0.2	1
6/7/2004 10:20	OUTFALL D004	VOC-Water	Bromoform	0.5	ug/L	U	0.5	2
6/7/2004 10:20	OUTFALL D004	VOC-Water	Chloroform	0.2	ug/L	U	0.2	1
6/7/2004 10:20	OUTFALL D004	VOC-Water	Dibromochloromethane	0.2	ug/L	U	0.2	1

The Bioassay of Progress Energy (Florida Power) - Anclote Plant effluent sampled on June 7, 2004, NPDES #FL0002992.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)



The Priority Pollutants Analysis for Bioassay of Progress Energy (Florida Power) - Anclote Plant effluent sampled on June 7, 2004, NPDES #FL0002992.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

