

Bioassays of

Crist Electric Generation Plant

Escambia County

NPDES #FL0002275

Sampled October 6, 2003

April 2004

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

Crist Electric Generation Plant, End of Pate Road, off Ten Mile Road, Pensacola, Escambia County, Florida, NPDES #FL0002275. Effluent samples for this facility were collected on October 6, 2003.

Introduction

This electric generation plant does not have an NPDES permit designated design flow. The facility has an average flow of 227.1 million gallons per day (MGD) (based on flow data for 2000, 2001, 2002, and 7 months of 2003 from outfall D-010 combined plant discharge). All treated and untreated wastewater (except once-through cooling water from Units 1 through 5 and treated domestic wastewater) is discharged to the ash pond, which discharges via Outfall I-1CO (formally Outfall 002) to the facility's discharge canal. Wastewater streams that discharge to the ash pond include: ash sluice water, overflow from the bottom ash dewatering bins, neutralized demineralizer regeneration wastewater, cooling tower blowdown, boiler blowdown, floor drainage, auxiliary equipment cooling water and seal water, coal pile runoff, yard sump discharge, and treated metal cleaning wastewater. The wastewater streams that possibly contain oil are first routed through the oil-skimmer pond prior to discharge to the ash pond. The combined plant wastewater stream, consisting of ash pond discharge, metal cleaning wastewater, cooling tower blowdown and once-through cooling water, discharges through Outfall D-010 into the discharge canal then into the Escambia River, a Class III fresh water (facility information provided by Glenn Butts, FDEP, Pensacola).

Methods

Samples were collected from the NPDES sampling point (Outfall D-010) by Glenn Butts (FDEP Pensacola) 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 and algal growth potential tests discussed in this report were performed following internal DEP SOP's TA07_01,TA07_02, and TA08_01 through TA08_06. All internal DEP SOP's are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp

Toxicity Test Results

Tests were performed October 7-9, 2003.

Ceriodaphnia dubia 48-hr acute screening bioassay – Toxic; LC_{50} > 100%, 30% mortality in 100% sample at 48 hours

Pimephales promelas 48-hr acute screening bioassay – Not Toxic; LC_{50} > 100%, 0% mortality in 100% sample at 48 hours

The *C. dubia* bioassay showed unacceptable toxicity per the facility's NPDES permit. The permit defines unacceptable toxicity as, "greater than 20% mortality in 100% effluent for either test species". The NPDES permit for this facility requires the use of freshwater species in the toxicity bioassays. The apparent salinity of the effluent based on conductivity and temperature was ~2.8 ppt. It is not known if the measured conductivity results from seawater ions or from constituents in the ash-pond discharge.

See Table 1 for bioassay bench sheets.

Algal Growth Potential

The AGP test for this effluent was performed using the saltwater algal species, *Dunaliella tertiolecta,* because the received sample had a salinity of 2.8 ppt. The receiving water is classified

as Class III freshwater; however, FDEP District personnel state that the receiving water at Outfall D-010 is tidally influenced. The effluent AGP was 2.15 mg dry wt/L of *Dunaliella tertiolecta*. Raschke and Shultz found that Algal Growth Potential (AGP) values above 10.0 mg dry wt/L for marine receiving waters and 5.0 mg dry wt/L for fresh receiving waters represent a “problem” threshold, implying nutrient enrichment (Raschke & Shultz, 1987).

See Table 2 for AGP results.

Chemistry Results

Total residual chlorine and total ammonia were not detected in the bioassay sample in the laboratory.

The effluent iron (1,600 µg/L) and selenium (7.8 µg/L) concentrations both exceeded Class III Fresh Water Quality Criteria (iron ≤ 1,000 µg/L, selenium ≤ 5.0 µg/L (62-302.530(39 and 59) F.A.C.). It should be noted the NPDES permit for this facility states that the limits for iron and selenium will be the water quality standards set forth in (62-302.530(39 and 59) F.A.C.) or the concentration found in the intake water, whichever is greater. The iron and selenium concentrations in the intake water were not available for this assessment.

The effluent conductivity, 5,549 µmhos/cm, exceeds the conductivity limit (≤ 1275 µmhos-cm) for Class III Freshwater; however, FDEP personnel report that the influent from the Escambia River is likely to be tidally influenced (Glenn Butts, FDEP, Pensacola) or have seasonal brackish characteristics (Allen Hubbard, Water Resource Management, FDEP, Tallahassee).

See Table 3 for results of analytes detected in the effluent.

See Appendix 1 for a complete list of chemical analyses performed.

See Appendix 2 for discharge monitoring data covering the period from September 30, 1999 to July 31, 2003.

Conclusion

The effluent samples collected from this facility on October 6, 2003, showed unacceptable acute toxicity to the *Ceriodaphnia dubia* test organisms during the 48-hour bioassay tests. The observed mortality may partially be attributed to the elevated conductivity of the sample. The effluent AGP result was less than the "problem” threshold for marine and fresh receiving waters. The effluent's conductivity and iron and selenium concentrations exceeded Class III Freshwater Quality Criteria.

We recommend that an ion profile of the effluent be performed to determine if the source of the elevated conductivity is sodium chloride based, indicating that saltwater test organisms may be more appropriate for the facility’s bioassay requirements. Future facility monitoring should also include sampling of the facilities intake water in order to determine facility compliance with iron and selenium limits.

Literature Cited

Maloney, T. E., W. E. Miller, and D. T. Specht. 1974. The Marine Algal Assay Procedure: Bottle Test. National Environmental Research Center Office of Research and Development. U. S. EPA, Corvallis, Oregon. 43 p.

Miller, W. E., T. E. Maloney, and J. C. Greene. 1978. The *Selenastrum capricornutum* Printz algal assay bottle test. EPA-600/9-78-018. U. S. EPA, Cincinnati, Ohio. 126 p.

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Raschke, R. L. and D. A. Schultz. 1987. The use of the algal growth potential test for data assessment. J. Wat. Poll. Cont. Fed. 59(4): 222-227.

Weber, C. I. 1993. Methods for measuring the acute toxicity of effluents to freshwater and marine organisms. 4th edition. EPA/600/4-90/027. U. S. EPA, Cincinnati, Ohio. 216 pp.

USEPA. 2000. Nutrient Criteria Technical Guidance Manual – River and Streams. EPA-822-B-00-002.

USEPA. 2002. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms. 4th Edition. EPA-821-R-02-013

Table 1. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from the Crist Electric Generation Plant, end of Pate Road, off Ten Mile Road, Pensacola, Escambia County, Florida, NPDES# FL0002275, performed from 7 to 9 October, 2003.

Facility:	**Crist Electric Generation Plant**	**NPDES #:**	**FL0002275**	Facility Type:	**Electric Generation Plant**	**Analysts:**	Christa Pierini
Location:	End of Pate Road, off Ten Mile Road, Pensacola	Contact/District:	Glenn Butts/Northwest				Joshua Ayres
County:	Escambia	Test type:	static acute screen				James Daniels
Sample Collection Date:	10/6/2003 Time: 1015	# tests:	2	Receiving Water:	Escambia River		Marshall Faircloth
Test Beginning Date:	10/7/2003 Time: 1400	Chlorination Type:	non-chlorinated		Class III fresh		
Test Ending Date:	10/9/2003 Time: 1300	FDEP SOP#:	TA07_01 / 02		**Page 1 of 1**	**Reviewer:**	Julie Espy

Organism: ***Ceriodaphnia dubia*** (water flea) Life stage: <24 hours [A]Feeding: YCT/Algae
Chamber size: 30 mL Food Batch #: YCT 2/P. sub. 20

	Sample/Diluent	SURVIVAL # Alive			pH			[B]Temperature (°C)			Diss. Oxygen (mg/L)			[C]Conductivity	
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	-	8.0	24.2	-	24.0	8.0	-	7.4	0.271	0.200
Control B	0/20	5	5	5	-	-	8.1	-	-	24.0	-	-	7.5	-	0.194
Control C	0/20	5	5	5	-	-	8.1	-	-	24.0	-	-	7.6	-	0.197
Control D	0/20	5	5	5	-	-	8.1	-	-	24.0	-	-	8.0	-	0.234
100% A	20/0	5	5	4	7.5	-	7.7	24.8	-	24.0	7.0	-	7.7	5.05	5.36
100% B	20/0	5	5	4	-	-	7.7	-	-	24.0	-	-	7.6	-	5.76
100% C	20/0	5	5	4	-	-	7.7	-	-	24.0	-	-	7.5	-	5.99
100% D	20/0	5	3	2	-	-	7.7	-	-	24.0	-	-	7.9	-	7.31

[A] Organisms fed prior to testing.
[B]Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
[C]Conductivity value is uncorrected mmhos/cm.
Room Temperature range for the test period was 23.0 - 24.5°C.
Incubator #3 temperature range for the test period was 24.0 - 25.0 °C.
Light Intensity during the test was 50-100 foot candles.
Photoperiod during the test was 16 hours of light : 8 hours of dark.

LIMS	
Job number:	TLH-2003-10-07-11
sample number:	707151

Data Transcription Verification	
date:	11/24/03
by:	Cathy Oaks

Total Residual CL2	mg/L	Method
Field 100% sample:	-	-
Lab 100% sample:	0.02	Hach
Control water (water flea):	0.01	Hach
Control water: (fish):	0.00	Hach

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

Organism: ***Pimephales promelas*** (fish) Life stage: 13 days [D]Feeding: *Artemia*
Chamber size: 1000 mL Food Batch #: 0194025G

	Sample/Diluent	SURVIVAL # Alive			pH			[E]Temperature (°C)			Diss. Oxygen (mg/L)			[F]Conductivity	
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	7.7	8.0	8.0	24.0	24.9	25.0	7.6	7.0	7.8	0.343	0.358
Control B	0/500	5	5	5	7.9	8.0	8.1	24.0	24.6	25.0	7.2	7.4	7.5	0.327	0.337
Control C	0/500	5	5	5	8.2	8.0	8.1	24.0	24.5	25.9	7.1	7.1	7.4	0.346	0.357
Control D	0/500	5	5	5	8.2	8.0	8.1	24.0	25.0	24.6	7.3	7.2	7.5	0.331	0.345
100% A	500/0	5	5	5	7.2	7.6	7.7	24.7	25.8	25.9	7.1	6.6	7.5	4.85	5.29
100% B	500/0	5	5	5	7.2	7.6	7.7	24.7	24.9	25.6	7.1	6.9	7.3	5.08	5.20
100 % C	500/0	5	5	5	7.2	7.6	7.7	24.7	24.8	25.5	6.7	7.1	7.2	5.01	5.38
100% D	500/0	5	5	5	7.2	7.6	7.7	24.7	24.4	24.7	6.8	7.0	7.3	5.03	5.17

[D]Organisms fed prior to testing.
[E]Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
[F]Conductivity value is uncorrected mmhos/cm.
Room Temperature range for the test period was 23.0 - 24.5°C.
Incubator #3 temperature range for the test period was 24.0 - 25.0 °C.
Light Intensity during the test was 50-100 foot candles.
Photoperiod during the test was 16 hours of light : 8 hours of dark.

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control water: (water flea):	83	90
Control water: (fish)	80	95
100% Sample:	56	526

Mortality	Percent
Control water (water flea):	0%
100% (water flea):	30%
Control water (fish):	0%
100 % (fish):	0%

[G]Salinity	ppt
100% sample:	2.8
Control water (water flea):	<1
Control water (fish):	<1

[G]Salinity based on conductivity and temperature.

Table 2. Measued Algal Growth Potential (AGP) and ratios of inorganic nitrogen to ortho-phosphate and total nitrogen to total phosphorus for the sample of effluent from the Crist Electric Generation Plant.

Location	AGP (measured)	Inorganic N:P ratio	Total N:P ratio
Effluent Samples	2.15	33.56	18.1

Table 3. Effluent limits, Class III Criteria and chemical data from samples collected from the* Crist Electric Generation Plant *on October 6, 2003.

Crist Electric Generation Plant	Class III Stds	Effluent Limits	Effluent Samples
Organic Constituents (µg/L)			
None Detected	-	-	-
Metals (µg/L unless otherwise noted)			
Aluminum	-	-	584 A
Arsenic	≤ 50	50	6 U
Cadmium	≤ 3.4 h	3.4 b	0.026 I
Calcium (mg/L)	-	-	43.7 A
Chromium-III	≤ 268.2 h	268.2 b	3 U
Copper	≤ 30.5 h	30.5 b	3.7 I
Iron	≤ 1000	1000	1600 A
Lead	≤ 18.6 h	18.6 b	0.66 A
Magnesium (mg/L)	-	-	104 A
Mercury	≤ 0.012	0.012	0.1 U
Nickel	≤ 168.5 h	≤ 168.5 b	8.6 U
Selenium	≤ 5	5	7.8 A
Silver	≤ 0.07	-	0.02 U
Zinc	≤ 387.8 h	387.8 b	5.7 I
Nutrients (mg/L)			
Ortho-phosphate	-	-	0.009 I
Total Phosphorus	-	-	0.042 I
Ammonia	-	-	0.052
Unionized Ammonia	≤ 0.02	-	≤ 0.02
Nitrate+Nitrite	-	-	0.25
Total Kjeldahl Nitrogen	-	-	0.51
Organic Nitrogen	-	-	0.46 c
Total Nitrogen	-	-	0.76 c
General Physical and Chemical Parameters			
Alpha, Total (pCi/L)	-	15	15.6 U
Alpha-Counting Error (pCi/L)	-	-	9.2
Radium 226 (pCi/L)	-	5	0.1
Radium 226-Counting Error (pCi/L)	-	-	0.1
Radium 228 (pCi/L)	-	5	0.9 U
Radium 228-Counting Error (pCi/L)	-	-	0.6
Dissolved Oxygen (mg/L)	≥ 5	-	5.8
pH (S.U.)	6.0 - 8.5	6 - 8.5	6.4
Conductivity (umhos/cm)	≤ 1275	-	5549
Temperature (C)	36.1	34.4	30.1
Oil and Grease (mg/l)	12	10	4.6 IV
Hardness (mg/L)	-	-	537.4 c
Total Residual Chlorine (Lab)	≤ 0.01	0.01	< 0.03 p
Total Residual Chlorine (Field)	≤ 0.01	0.01	-
AGP (mg DryWt/L)	-	-	2.15

b - Limit based on water quality standard set forth in FAC 62-302.530 for Class III fresh waters or the concentration in the intake cooling water (Not Available), whichever is greater.

c - calculated value.

h - Value is based on water hardness as mg/L CaCO3.

p - Material analyzed for and not detected. Value reported (0.03) is the laboratory minimum detection value.

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

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

U - Material was analyzed for but not detected. The value reported is the minimum detection limit.

V - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.

Appendix 1. Chemical Analyses performed on the effluent from Crist Electric Generation Plant sampled on October 6, 2003.

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
10/6/2003 7:00	EQUIP BLK	BNA-Water	1,2,4,5-Tetrachlorobenzene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	1,2,4-Trichlorobenzene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	1,2-Dichlorobenzene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	1,3,5-Trinitrobenzene	3.9	ug/L	U	3.9	16
10/6/2003 7:00	EQUIP BLK	BNA-Water	1,3-Dichlorobenzene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	1,3-Dinitrobenzene	1.9	ug/L	U	1.9	7.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	1,4-Dichlorobenzene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	1,4-Naphthoquinone	19	ug/L	U	19	78
10/6/2003 7:00	EQUIP BLK	BNA-Water	1-Naphthylamine	9.7	ug/L	U	9.7	39
10/6/2003 7:00	EQUIP BLK	BNA-Water	2,3,4,6-Tetrachlorophenol	1.9	ug/L	U	1.9	7.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	2,4,5-Trichlorophenol	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	2,4,6-Trichlorophenol	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	2,4-Dichlorophenol	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	2,4-Dimethylphenol	49	ug/L	U	49	190
10/6/2003 7:00	EQUIP BLK	BNA-Water	2,4-Dinitrophenol	15	ug/L	U	15	58
10/6/2003 7:00	EQUIP BLK	BNA-Water	2,4-Dinitrotoluene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	2,6-Dichlorophenol	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	2,6-Dinitrotoluene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	2-Acetylaminofluorene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	2-Chloronaphthalene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	2-Chlorophenol	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	12
10/6/2003 7:00	EQUIP BLK	BNA-Water	2-Methylnaphthalene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	2-Naphthylamine	9.7	ug/L	U	9.7	39
10/6/2003 7:00	EQUIP BLK	BNA-Water	2-Nitroaniline	0.97	ug/L	UJ	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	2-Nitrophenol	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	2-Picoline	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	3,3'-Dichlorobenzidine	39	ug/L	UJ	39	160
10/6/2003 7:00	EQUIP BLK	BNA-Water	3,3'-Dimethylbenzidine	19	ug/L	UJ	19	78
10/6/2003 7:00	EQUIP BLK	BNA-Water	3-Methylcholanthrene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	3-Nitroaniline	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	4,4'-DDD	1.5	ug/L	U	1.5	5.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	4,4'-DDE	1.5	ug/L	U	1.5	5.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	4,4'-DDT	1.5	ug/L	U	1.5	5.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	4-Aminobiphenyl	3.9	ug/L	U	3.9	16
10/6/2003 7:00	EQUIP BLK	BNA-Water	4-Bromophenyl phenyl ether	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	4-Chloro-3-methylphenol	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	4-Chloroaniline	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	4-Nitroaniline	0.97	ug/L	UJ	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	4-Nitrophenol	15	ug/L	UJ	15	58
10/6/2003 7:00	EQUIP BLK	BNA-Water	5-Nitro-o-toluidine	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	7,12-Dimethylbenz(a)anthracene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Acenaphthene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Acenaphthylene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Acetophenone	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Aldrin	1.5	ug/L	U	1.5	5.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	Aniline	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Anthracene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Azobenzene/1,2-Diphenylhydrazine	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Benzidine	97	ug/L	U	97	390
10/6/2003 7:00	EQUIP BLK	BNA-Water	Benzo(a)anthracene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Benzo(a)pyrene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Benzo(b)fluoranthene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Benzo(g,h,i)perylene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Benzo(k)fluoranthene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Benzyl alcohol	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Bis(2-chloroethoxy)methane	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Bis(2-chloroethyl)ether	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	12
10/6/2003 7:00	EQUIP BLK	BNA-Water	Bis(2-ethylhexyl)phthalate	15	ug/L	U	15	58
10/6/2003 7:00	EQUIP BLK	BNA-Water	Butyl benzyl phthalate	4.9	ug/L	U	4.9	19

10/6/2003 7:00	EQUIP BLK	BNA-Water	Chrysene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Di-n-butyl phthalate	4.9	ug/L	U	4.9	19
10/6/2003 7:00	EQUIP BLK	BNA-Water	Di-n-octyl phthalate	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Dibenzo(a,h)anthracene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Dibenzofuran	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Dieldrin	1.5	ug/L	U	1.5	5.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	Diethyl phthalate	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Dimethyl phthalate	49	ug/L	U	49	190
10/6/2003 7:00	EQUIP BLK	BNA-Water	Dimethylaminoazobenzene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Dinoseb	3.9	ug/L	U	3.9	16
10/6/2003 7:00	EQUIP BLK	BNA-Water	Diphenylamine	2.9	ug/L	U	2.9	12
10/6/2003 7:00	EQUIP BLK	BNA-Water	Endosulfan I	3.9	ug/L	U	3.9	16
10/6/2003 7:00	EQUIP BLK	BNA-Water	Endosulfan II	3.9	ug/L	U	3.9	16
10/6/2003 7:00	EQUIP BLK	BNA-Water	Endosulfan sulfate	1.5	ug/L	U	1.5	5.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	Endrin	1.5	ug/L	U	1.5	5.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	Endrin aldehyde	3.9	ug/L	U	3.9	16
10/6/2003 7:00	EQUIP BLK	BNA-Water	Ethyl methanesulfonate	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Fluoranthene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Fluorene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Heptachlor	1.5	ug/L	U	1.5	5.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	Heptachlor epoxide	1.5	ug/L	U	1.5	5.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	Hexachlorobenzene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	12
10/6/2003 7:00	EQUIP BLK	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	UJ	2.9	12
10/6/2003 7:00	EQUIP BLK	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	12
10/6/2003 7:00	EQUIP BLK	BNA-Water	Hexachloropropene	1.9	ug/L	U	1.9	7.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	Indeno(1,2,3-cd)pyrene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Isophorone	0.97	ug/L	UJ	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Isosafrole	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Methapyrilene	3.9	ug/L	U	3.9	16
10/6/2003 7:00	EQUIP BLK	BNA-Water	Methyl methanesulfonate	0.97	ug/L	UJ	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	N-Nitrosodi-n-butylamine	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	N-Nitrosodiethylamine	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	U	2.9	12
10/6/2003 7:00	EQUIP BLK	BNA-Water	N-Nitrosomethylethylamine	1.9	ug/L	U	1.9	7.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	N-Nitrosomorpholine	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	N-Nitrosopiperidine	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	N-Nitrosopyrrolidine	1.9	ug/L	U	1.9	7.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	Naphthalene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	Nitroquinoline-1-oxide	19	ug/L	U	19	78
10/6/2003 7:00	EQUIP BLK	BNA-Water	Pentachlorobenzene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Pentachloroethane	49	ug/L	U	49	190
10/6/2003 7:00	EQUIP BLK	BNA-Water	Pentachloronitrobenzene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	12
10/6/2003 7:00	EQUIP BLK	BNA-Water	Phenacetin	3.9	ug/L	U	3.9	12
10/6/2003 7:00	EQUIP BLK	BNA-Water	Phenanthrene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Phenol	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Pyrene	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	Pyridine	3.9	ug/L	U	3.9	16
10/6/2003 7:00	EQUIP BLK	BNA-Water	Safrole	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	BNA-Water	alpha-BHC	1.5	ug/L	U	1.5	5.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	beta-BHC	1.5	ug/L	U	1.5	5.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	delta-BHC	1.5	ug/L	U	1.5	5.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	gamma-BHC	1.5	ug/L	U	1.5	5.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	m,p-Cresols	1.9	ug/L	U	1.9	7.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	o-Cresol	1.9	ug/L	U	1.9	7.8
10/6/2003 7:00	EQUIP BLK	BNA-Water	o-Toluidine	0.97	ug/L	U	0.97	3.9
10/6/2003 7:00	EQUIP BLK	GC-Water	Alachlor	0.58	ug/L	U	0.58	2.32
10/6/2003 7:00	EQUIP BLK	GC-Water	Ametryn	0.048	ug/L	U	0.048	0.192
10/6/2003 7:00	EQUIP BLK	GC-Water	Atrazine	0.048	ug/L	U	0.048	0.192
10/6/2003 7:00	EQUIP BLK	GC-Water	Azinphos Methyl	0.048	ug/L	U	0.048	0.192
10/6/2003 7:00	EQUIP BLK	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
10/6/2003 7:00	EQUIP BLK	GC-Water	Butylate	0.19	ug/L	U	0.19	0.76

10/6/2003 7:00	EQUIP BLK	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048	0.192
10/6/2003 7:00	EQUIP BLK	GC-Water	Chlorpyrifos Methyl	0.097	ug/L	U	0.097	0.388
10/6/2003 7:00	EQUIP BLK	GC-Water	Diazinon	0.048	ug/L	U	0.048	0.192
10/6/2003 7:00	EQUIP BLK	GC-Water	Ethion	0.048	ug/L	UJ	0.048	0.192
10/6/2003 7:00	EQUIP BLK	GC-Water	Ethoprop	0.097	ug/L	U	0.097	0.388
10/6/2003 7:00	EQUIP BLK	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
10/6/2003 7:00	EQUIP BLK	GC-Water	Fonofos	0.097	ug/L	UJ	0.097	0.388
10/6/2003 7:00	EQUIP BLK	GC-Water	Hexazinone	0.097	ug/L	U	0.097	0.388
10/6/2003 7:00	EQUIP BLK	GC-Water	Malathion	0.14	ug/L	U	0.14	0.56
10/6/2003 7:00	EQUIP BLK	GC-Water	Metalaxyl	0.24	ug/L	UJ	0.24	0.96
10/6/2003 7:00	EQUIP BLK	GC-Water	Metolachlor	0.48	ug/L	U	0.48	1.92
10/6/2003 7:00	EQUIP BLK	GC-Water	Metribuzin	0.097	ug/L	U	0.097	0.388
10/6/2003 7:00	EQUIP BLK	GC-Water	Mevinphos	0.19	ug/L	U	0.19	0.76
10/6/2003 7:00	EQUIP BLK	GC-Water	Naled	0.78	ug/L	U	0.78	3.12
10/6/2003 7:00	EQUIP BLK	GC-Water	Norflurazon	0.097	ug/L	U	0.097	0.388
10/6/2003 7:00	EQUIP BLK	GC-Water	Parathion Ethyl	0.14	ug/L	U	0.14	0.56
10/6/2003 7:00	EQUIP BLK	GC-Water	Parathion Methyl	0.097	ug/L	U	0.097	0.388
10/6/2003 7:00	EQUIP BLK	GC-Water	Phorate	0.048	ug/L	UJ	0.048	0.192
10/6/2003 7:00	EQUIP BLK	GC-Water	Prometryn	0.14	ug/L	U	0.14	0.56
10/6/2003 7:00	EQUIP BLK	GC-Water	Simazine	0.048	ug/L	U	0.048	0.192
10/6/2003 7:00	EQUIP BLK	Mercury-Water	Mercury	0.1	ug/L	U	0.1	0.4
10/6/2003 7:00	EQUIP BLK	Metals-Water	Aluminum	7	ug/L	U	7	28
10/6/2003 7:00	EQUIP BLK	Metals-Water	Arsenic	6	ug/L	U	6	24
10/6/2003 7:00	EQUIP BLK	Metals-Water	Cadmium	0.025	ug/L	U	0.025	0.1
10/6/2003 7:00	EQUIP BLK	Metals-Water	Calcium	0.05	mg/L	U	0.05	0.2
10/6/2003 7:00	EQUIP BLK	Metals-Water	Chromium	3	ug/L	U	3	12
10/6/2003 7:00	EQUIP BLK	Metals-Water	Copper	1	ug/L	U	1	4
10/6/2003 7:00	EQUIP BLK	Metals-Water	Iron	15	ug/L	U	15	60
10/6/2003 7:00	EQUIP BLK	Metals-Water	Lead	0.05	ug/L	U	0.05	0.2
10/6/2003 7:00	EQUIP BLK	Metals-Water	Magnesium	0.02	mg/L	U	0.02	0.08
10/6/2003 7:00	EQUIP BLK	Metals-Water	Nickel	3	ug/L	U	3	12
10/6/2003 7:00	EQUIP BLK	Metals-Water	Selenium	1	ug/L	U	1	4
10/6/2003 7:00	EQUIP BLK	Metals-Water	Silver	0.02	ug/L	U	0.02	0.08
10/6/2003 7:00	EQUIP BLK	Metals-Water	Zinc	4	ug/L	U	4	16
10/6/2003 7:00	EQUIP BLK	Nutrients-Liquid	Ammonia-N	0.01	mg N/L	U	0.01	0.02
10/6/2003 7:00	EQUIP BLK	Nutrients-Liquid	NO2NO3-N	0.009	mg N/L	I	0.004	0.01
10/6/2003 7:00	EQUIP BLK	Nutrients-Liquid	N_KJEL_TOT	0.06	mg N/L	U	0.06	0.2
10/6/2003 7:00	EQUIP BLK	Nutrients-Liquid	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
10/6/2003 7:00	EQUIP BLK	Nutrients-Liquid	Total-P	0.02	mg P/L	U	0.02	0.06
10/6/2003 7:00	EQUIP BLK	Overflow	Alpha, Total	0.6	pCi/L	U		
10/6/2003 7:00	EQUIP BLK	Overflow	Alpha-Counting Error	0.3	pCi/L			
10/6/2003 7:00	EQUIP BLK	Overflow	Oil and Grease	3.8	mg/l	IV		
10/6/2003 7:00	EQUIP BLK	Overflow	Radium 226	0.1	pCi/L			
10/6/2003 7:00	EQUIP BLK	Overflow	Radium 226-Counting Error	0.1	pCi/L			
10/6/2003 7:00	EQUIP BLK	Overflow	Radium 228	1	pCi/L	U		
10/6/2003 7:00	EQUIP BLK	Overflow	Radium 228-Counting Error	0.6	pCi/L			
10/6/2003 10:15	GP	BNA-Water	1,2,4,5-Tetrachlorobenzene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	1,2,4-Trichlorobenzene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	1,2-Dichlorobenzene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	1,3,5-Trinitrobenzene	4	ug/L	U	4	16
10/6/2003 10:15	GP	BNA-Water	1,3-Dichlorobenzene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	1,3-Dinitrobenzene	2	ug/L	U	2	8.1
10/6/2003 10:15	GP	BNA-Water	1,4-Dichlorobenzene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	1,4-Naphthoquinone	20	ug/L	U	20	81
10/6/2003 10:15	GP	BNA-Water	1-Naphthylamine	10	ug/L	U	10	40
10/6/2003 10:15	GP	BNA-Water	2,3,4,6-Tetrachlorophenol	2	ug/L	U	2	8.1
10/6/2003 10:15	GP	BNA-Water	2,4,5-Trichlorophenol	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	2,4,6-Trichlorophenol	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	2,4-Dichlorophenol	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	2,4-Dimethylphenol	51	ug/L	U	51	200
10/6/2003 10:15	GP	BNA-Water	2,4-Dinitrophenol	15	ug/L	U	15	61
10/6/2003 10:15	GP	BNA-Water	2,4-Dinitrotoluene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	2,6-Dichlorophenol	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	2,6-Dinitrotoluene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	2-Acetylaminofluorene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	2-Chloronaphthalene	1	ug/L	U	1	4

10/6/2003 10:15	GP	BNA-Water	2-Chlorophenol	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	2-Methyl-4,6-dinitrophenol	3	ug/L	U	3	12
10/6/2003 10:15	GP	BNA-Water	2-Methylnaphthalene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	2-Naphthylamine	10	ug/L	U	10	40
10/6/2003 10:15	GP	BNA-Water	2-Nitroaniline	1	ug/L	UJ	1	4
10/6/2003 10:15	GP	BNA-Water	2-Nitrophenol	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	2-Picoline	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	3,3'-Dichlorobenzidine	40	ug/L	UJ	40	160
10/6/2003 10:15	GP	BNA-Water	3,3'-Dimethylbenzidine	20	ug/L	UJ	20	81
10/6/2003 10:15	GP	BNA-Water	3-Methylcholanthrene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	3-Nitroaniline	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	4,4'-DDD	1.5	ug/L	U	1.5	6.1
10/6/2003 10:15	GP	BNA-Water	4,4'-DDE	1.5	ug/L	U	1.5	6.1
10/6/2003 10:15	GP	BNA-Water	4,4'-DDT	1.5	ug/L	U	1.5	6.1
10/6/2003 10:15	GP	BNA-Water	4-Aminobiphenyl	4	ug/L	U	4	16
10/6/2003 10:15	GP	BNA-Water	4-Bromophenyl phenyl ether	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	4-Chloro-3-methylphenol	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	4-Chloroaniline	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	4-Chlorophenyl phenyl ether	2	ug/L	U	2	8.1
10/6/2003 10:15	GP	BNA-Water	4-Nitroaniline	1	ug/L	UJ	1	4
10/6/2003 10:15	GP	BNA-Water	4-Nitrophenol	15	ug/L	UJ	15	61
10/6/2003 10:15	GP	BNA-Water	5-Nitro-o-toluidine	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	7,12-Dimethylbenz(a)anthracene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Acenaphthene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Acenaphthylene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Acetophenone	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Aldrin	1.5	ug/L	U	1.5	6.1
10/6/2003 10:15	GP	BNA-Water	Aniline	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Anthracene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Azobenzene/1,2-Diphenylhydrazine	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Benzidine	100	ug/L	U	100	400
10/6/2003 10:15	GP	BNA-Water	Benzo(a)anthracene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Benzo(a)pyrene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Benzo(b)fluoranthene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Benzo(g,h,i)perylene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Benzo(k)fluoranthene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Benzyl alcohol	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Bis(2-chloroethoxy)methane	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Bis(2-chloroethyl)ether	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Bis(2-chloroisopropyl)ether	3	ug/L	U	3	12
10/6/2003 10:15	GP	BNA-Water	Bis(2-ethylhexyl)phthalate	15	ug/L	U	15	61
10/6/2003 10:15	GP	BNA-Water	Butyl benzyl phthalate	5.1	ug/L	U	5.1	20
10/6/2003 10:15	GP	BNA-Water	Chrysene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Di-n-butyl phthalate	5.1	ug/L	U	5.1	20
10/6/2003 10:15	GP	BNA-Water	Di-n-octyl phthalate	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Dibenzo(a,h)anthracene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Dibenzofuran	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Dieldrin	1.5	ug/L	U	1.5	6.1
10/6/2003 10:15	GP	BNA-Water	Diethyl phthalate	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Dimethyl phthalate	51	ug/L	U	51	200
10/6/2003 10:15	GP	BNA-Water	Dimethylaminoazobenzene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Dinoseb	4	ug/L	U	4	16
10/6/2003 10:15	GP	BNA-Water	Diphenylamine	3	ug/L	U	3	12
10/6/2003 10:15	GP	BNA-Water	Endosulfan I	4	ug/L	U	4	16
10/6/2003 10:15	GP	BNA-Water	Endosulfan II	4	ug/L	U	4	16
10/6/2003 10:15	GP	BNA-Water	Endosulfan sulfate	1.5	ug/L	U	1.5	6.1
10/6/2003 10:15	GP	BNA-Water	Endrin	1.5	ug/L	U	1.5	6.1
10/6/2003 10:15	GP	BNA-Water	Endrin aldehyde	4	ug/L	U	4	16
10/6/2003 10:15	GP	BNA-Water	Ethyl methanesulfonate	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Fluoranthene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Fluorene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Heptachlor	1.5	ug/L	U	1.5	6.1
10/6/2003 10:15	GP	BNA-Water	Heptachlor epoxide	1.5	ug/L	U	1.5	6.1
10/6/2003 10:15	GP	BNA-Water	Hexachlorobenzene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Hexachlorobutadiene	3	ug/L	U	3	12
10/6/2003 10:15	GP	BNA-Water	Hexachlorocyclopentadiene	3	ug/L	UJ	3	12

10/6/2003 10:15	GP	BNA-Water	Hexachloroethane	3	ug/L	U	3	12
10/6/2003 10:15	GP	BNA-Water	Hexachloropropene	2	ug/L	U	2	8.1
10/6/2003 10:15	GP	BNA-Water	Indeno(1,2,3-cd)pyrene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Isophorone	1	ug/L	UJ	1	4
10/6/2003 10:15	GP	BNA-Water	Isosafrole	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Methapyrilene	4	ug/L	U	4	16
10/6/2003 10:15	GP	BNA-Water	Methyl methanesulfonate	1	ug/L	UJ	1	4
10/6/2003 10:15	GP	BNA-Water	N-Nitrosodi-n-butylamine	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	N-Nitrosodi-n-propylamine	2	ug/L	U	2	8.1
10/6/2003 10:15	GP	BNA-Water	N-Nitrosodiethylamine	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	N-Nitrosodimethylamine	2	ug/L	U	2	8.1
10/6/2003 10:15	GP	BNA-Water	N-Nitrosodiphenylamine	3	ug/L	U	3	12
10/6/2003 10:15	GP	BNA-Water	N-Nitrosomethylethylamine	2	ug/L	U	2	8.1
10/6/2003 10:15	GP	BNA-Water	N-Nitrosomorpholine	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	N-Nitrosopiperidine	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	N-Nitrosopyrrolidine	2	ug/L	U	2	8.1
10/6/2003 10:15	GP	BNA-Water	Naphthalene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Nitrobenzene	2	ug/L	U	2	8.1
10/6/2003 10:15	GP	BNA-Water	Nitroquinoline-1-oxide	20	ug/L	U	20	81
10/6/2003 10:15	GP	BNA-Water	Pentachlorobenzene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Pentachloroethane	51	ug/L	U	51	200
10/6/2003 10:15	GP	BNA-Water	Pentachloronitrobenzene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Pentachlorophenol	3	ug/L	U	3	12
10/6/2003 10:15	GP	BNA-Water	Phenacetin	4	ug/L	U	4	12
10/6/2003 10:15	GP	BNA-Water	Phenanthrene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Phenol	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Pyrene	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	Pyridine	4	ug/L	U	4	16
10/6/2003 10:15	GP	BNA-Water	Safrole	1	ug/L	U	1	4
10/6/2003 10:15	GP	BNA-Water	alpha-BHC	1.5	ug/L	U	1.5	6.1
10/6/2003 10:15	GP	BNA-Water	beta-BHC	1.5	ug/L	U	1.5	6.1
10/6/2003 10:15	GP	BNA-Water	delta-BHC	1.5	ug/L	U	1.5	6.1
10/6/2003 10:15	GP	BNA-Water	gamma-BHC	1.5	ug/L	U	1.5	6.1
10/6/2003 10:15	GP	BNA-Water	m,p-Cresols	2	ug/L	U	2	8.1
10/6/2003 10:15	GP	BNA-Water	o-Cresol	2	ug/L	U	2	8.1
10/6/2003 10:15	GP	BNA-Water	o-Toluidine	1	ug/L	U	1	4
10/6/2003 10:15	GP	Bio-AGP/LimNut	Algal Growth Potential	2.15	mg DryWt/L		0.1	0.3
10/6/2003 10:15	GP	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
10/6/2003 10:15	GP	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
10/6/2003 10:15	GP	Bio-Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	LC50	L		
10/6/2003 10:15	GP	Bio-Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	LC50	L		
10/6/2003 10:15	GP	GC-Water	Alachlor	0.58	ug/L	U	0.58	2.32
10/6/2003 10:15	GP	GC-Water	Ametryn	0.048	ug/L	U	0.048	0.192
10/6/2003 10:15	GP	GC-Water	Atrazine	0.048	ug/L	U	0.048	0.192
10/6/2003 10:15	GP	GC-Water	Azinphos Methyl	0.048	ug/L	U	0.048	0.192
10/6/2003 10:15	GP	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
10/6/2003 10:15	GP	GC-Water	Butylate	0.19	ug/L	U	0.19	0.76
10/6/2003 10:15	GP	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048	0.192
10/6/2003 10:15	GP	GC-Water	Chlorpyrifos Methyl	0.097	ug/L	U	0.097	0.388
10/6/2003 10:15	GP	GC-Water	Diazinon	0.048	ug/L	U	0.048	0.192
10/6/2003 10:15	GP	GC-Water	Ethion	0.048	ug/L	UJ	0.048	0.192
10/6/2003 10:15	GP	GC-Water	Ethoprop	0.097	ug/L	U	0.097	0.388
10/6/2003 10:15	GP	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
10/6/2003 10:15	GP	GC-Water	Fonofos	0.097	ug/L	UJ	0.097	0.388
10/6/2003 10:15	GP	GC-Water	Hexazinone	0.097	ug/L	U	0.097	0.388
10/6/2003 10:15	GP	GC-Water	Malathion	0.14	ug/L	U	0.14	0.56
10/6/2003 10:15	GP	GC-Water	Metalaxyl	0.24	ug/L	UJ	0.24	0.96
10/6/2003 10:15	GP	GC-Water	Metolachlor	0.48	ug/L	U	0.48	1.92
10/6/2003 10:15	GP	GC-Water	Metribuzin	0.097	ug/L	U	0.097	0.388
10/6/2003 10:15	GP	GC-Water	Mevinphos	0.19	ug/L	U	0.19	0.76
10/6/2003 10:15	GP	GC-Water	Naled	0.78	ug/L	U	0.78	3.12
10/6/2003 10:15	GP	GC-Water	Norflurazon	0.097	ug/L	U	0.097	0.388
10/6/2003 10:15	GP	GC-Water	Parathion Ethyl	0.14	ug/L	U	0.14	0.56
10/6/2003 10:15	GP	GC-Water	Parathion Methyl	0.097	ug/L	U	0.097	0.388
10/6/2003 10:15	GP	GC-Water	Phorate	0.048	ug/L	UJ	0.048	0.192
10/6/2003 10:15	GP	GC-Water	Prometryn	0.14	ug/L	U	0.14	0.56

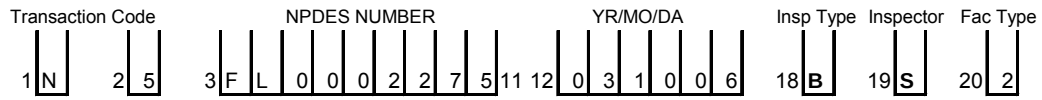
10/6/2003 10:15	GP	GC-Water	Simazine	0.048	ug/L	U	0.048	0.192
10/6/2003 10:15	GP	Mercury-Water	Mercury	0.1	ug/L	U	0.1	0.4
10/6/2003 10:15	GP	Metals-Water	Aluminum	584	ug/L	A	7	28
10/6/2003 10:15	GP	Metals-Water	Arsenic	6	ug/L	U	6	24
10/6/2003 10:15	GP	Metals-Water	Cadmium	0.026	ug/L	I	0.025	0.1
10/6/2003 10:15	GP	Metals-Water	Calcium	43.7	mg/L	A	0.05	0.2
10/6/2003 10:15	GP	Metals-Water	Chromium	3	ug/L	U	3	12
10/6/2003 10:15	GP	Metals-Water	Copper	3.7	ug/L	I	1	4
10/6/2003 10:15	GP	Metals-Water	Iron	1.60E+03	ug/L	A	15	60
10/6/2003 10:15	GP	Metals-Water	Lead	0.66	ug/L	A	0.05	0.2
10/6/2003 10:15	GP	Metals-Water	Magnesium	104	mg/L	A	0.04	0.16
10/6/2003 10:15	GP	Metals-Water	Nickel	8.6	ug/L	U	3	12
10/6/2003 10:15	GP	Metals-Water	Selenium	7.8	ug/L	A	1	4
10/6/2003 10:15	GP	Metals-Water	Silver	0.02	ug/L	U	0.02	0.08
10/6/2003 10:15	GP	Metals-Water	Zinc	5.7	ug/L	I	4	16
10/6/2003 10:15	GP	Nutrients-Liquid	Ammonia-N	0.052	mg N/L		0.01	0.02
10/6/2003 10:15	GP	Nutrients-Liquid	NO2NO3-N	0.25	mg N/L		0.004	0.01
10/6/2003 10:15	GP	Nutrients-Liquid	N_KJEL_TOT	0.51	mg N/L		0.06	0.2
10/6/2003 10:15	GP	Nutrients-Liquid	O-Phosphate-P	0.009	mg P/L	I	0.004	0.01
10/6/2003 10:15	GP	Nutrients-Liquid	Total-P	0.042	mg P/L	I	0.02	0.06
10/6/2003 10:15	GP	Overflow	Alpha, Total	15.6	pCi/L	U		
10/6/2003 10:15	GP	Overflow	Alpha-Counting Error	9.2	pCi/L			
10/6/2003 10:15	GP	Overflow	Oil and Grease	4.6	mg/l	IV		
10/6/2003 10:15	GP	Overflow	Radium 226	0.1	pCi/L			
10/6/2003 10:15	GP	Overflow	Radium 226-Counting Error	0.1	pCi/L			
10/6/2003 10:15	GP	Overflow	Radium 228	0.9	pCi/L	U		
10/6/2003 10:15	GP	Overflow	Radium 228-Counting Error	0.6	pCi/L			

Appendix 2. Crist Electric Generation Plant Monitoring Data.

Monitoring Date	Outfall Indicator	Parameter Description	Data	Limit	Statistical Base	Units
9/30/1999	1C0-1	OIL AND GREASE, HEXANE EXTR METHOD	12.0	10.0	MX DA AV	MG/L
9/30/1999	1C0-1	OIL AND GREASE, HEXANE EXTR METHOD	18.0	7.0	MX MO AV	MG/L
1/31/2000	010-Q	MERCURY, TOTAL RECOVERABLE	0.016	0.0	INST MAX	UG/L
4/30/2000	010-Q	MERCURY, TOTAL RECOVERABLE	0.016	0.0	INST MAX	UG/L
7/31/2001	010-Q	COPPER, TOTAL RECOVERABLE	0.4	0.0	INST MAX	UG/L
10/31/2001	010-A	SELENIUM, TOTAL RECOVERABLE	3.3	0.0	INST MAX	UG/L
10/31/2001	010-Q	ARSENIC, TOTAL RECOVERABLE	47.3	0.0	INST MAX	UG/L
10/31/2001	010-Q	IRON, TOTAL RECOVERABLE	330	0.0	INST MAX	MG/L
10/31/2001	010-Q	ZINC, TOTAL RECOVERABLE	340.7	0.0	INST MAX	UG/L
10/31/2001	010-Q	CADMIUM, TOTAL RECOVERABLE	2.82	0.0	INST MAX	UG/L
10/31/2001	010-Q	LEAD, TOTAL RECOVERABLE	18.03	0.0	INST MAX	UG/L
10/31/2001	010-Q	CHROMIUM, TOTAL RECOVERABLE	10.23	0.0	INST MAX	UG/L
10/31/2001	010-Q	RADIUM 226 + RADIUM 228, TOTAL	2.6	0.0	INST MAX	PCI/L
10/31/2001	010-Q	ALPHA, GROSS PARTICLE ACTIVITY	8.5	0.0	INST MAX	PCI/L
10/31/2001	1C0-1	SOLIDS, TOTAL SUSPENDED	99.0	65.0	MX DA AV	MG/L
10/31/2001	1C0-1	SOLIDS, TOTAL SUSPENDED	48.6	30.0	MX MO AV	MG/L
1/31/2003	010-Q	COPPER, TOTAL RECOVERABLE	2.45	0.0	INST MAX	UG/L
7/31/2003	010-Q	COPPER, TOTAL RECOVERABLE	2.65	0.0	INST MAX	UG/L

The Bioassay of Crist Electric Generation Plant effluent sampled on October 6, 2003, NPDES #FL0002275.

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





The Priority Pollutants Analysis for Bioassay of Crist Electric Generation Plant effluent sampled on October 6, 2003, NPDES #FL0002275.

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

