

Bioassays of

Palm Coast Membrane Softening

Flagler County

NPDES #FL0042838

Sampled May 3, 2004

September 2004

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

Palm Coast Membrane Softening, 50 Citation Boulevard, Palm Coast, Flagler County, Florida, NPDES #FL0042838. Effluent samples for this facility were collected on May 3, 2004.

Introduction

The Palm Coast Membrane Softening facility is a membrane softening water treatment plant having a permitted daily maximum discharge of 2.625 million gallons per day (MGD) of reject water (concentrate) and a mean flow of 0.423 MGD (flow data from 12/1/2002 – 12/1/2003). The reject water is treated by aeration prior to being discharged via Outfall D-001 into the Class III Freshwaters of the Royal Palms Canal, upstream of its intersection with the East Hampton Canal. This facility has mixing zones for total recoverable iron, specific conductance, combined radium 226 & 228, gross alpha, and chronic toxicity. (facility information provided by James Lucas, FDEP Northeast District)

Methods

Samples were collected from the D-001 NPDES outfall sampling point by Patrick O'Connor (FDEP Northeast District, Jacksonville) 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 acute screen toxicity and algal growth potential tests discussed in this report were performed following internal DEP SOP's TA07_03, TA07_04, 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. While these toxicity tests do not reflect the permit-required conditions, the Department uses the 48-hr acute screen test to provide reasonable assurance that the facility does not adversely affect waters of the state.

The bioassay sample for the *A. bahia* test was salt adjusted from an apparent salinity of ~2 ppth (parts per thousand) to ~10 ppth using 40 Fathoms artificial sea salts, per modified NPDES permit requirements. The salt control (ASW) used for this test was diluted with well water to ~2 ppth, then salted with 40 Fathoms artificial sea salts to ~10ppth. The purpose for the salt control was to confirm that there was no effect of adding artificial sea salts to the sample. The bioassay sample used for the *M. beryllina* test was not salt adjusted.

Toxicity Test Results

Tests were performed May 4 - 6, 2004.

Americamysis bahia 48-hr acute 100% screening bioassay –LC_{50} < 100%, 100%* mortality in 100% sample within 20 minutes of loading

Menidia beryllina 48-hr acute 100% screening bioassay –LC_{50} < 100%,100%* mortality in 100% sample within 20 minutes of loading

Americamysis bahia 48-hr acute 50% screening bioassay –LC_{50} < 50%, 90%* mortality in 50% sample at 48 hours

Menidia beryllina 48-hr acute 50% screening bioassay –LC_{50} > 50%, 0%* mortality in 50% sample at 48 hours

All bioassay tests were terminated at 48 hours per District request due to 100% mortality in both test species in 100% samples within 20 minutes of loading.

*NOTE: In a 48-hr acute screen test of 100% effluent, mortality of <20% provides reasonable assurance that the effluent meets the acute toxicity criterion of Florida's Surface Water Quality Standards (Rule 62-302.500 (1)(a)4, F.A.C.). Mortality between 20-50% mortality indicates low to moderate levels of toxicity,

and further action may be required. Mortality of >50% provides reasonable assurance that the effluent fails to meet the minimum requirement to discharge to waters of the state (Rule 62-4.244(3)(a), F.A.C.).

See Appendix 1 for bioassay bench sheets.

The chemistry results confirmed that the ion makeup of the sample was not in seawater proportions and that the apparent 2.0 ppth salinity of the sample was due to elevated levels of ground-water ions. The observed mortality in the *A. bahia* test is likely due, at least in part, to the seawater-ion imbalance of the sample. Previous research conducted by the FDEP Biology Section demonstrated that *A. bahia* is much more sensitive to seawater-ion imbalances than is *M. beryllina* (Wolfe, *et al*. 1995). The calcium concentration was 835 mg/L at 2.0 ppth salinity (salinity based on conductivity and temperature). This is approximately thirty-five times (35X) the normal concentration for calcium in seawater of this salinity. The elevated calcium is one source of toxicity in this sample, but other unidentified sources of toxicity cannot be ruled out without performing the major-seawater-ion imbalance toxicity testing protocols cited above.

Algal Growth Potential

The effluent Algal Growth Potential (AGP) was 28.3 mg dry wt/L of *Dunaliella tertiolecta.* Raschke and Shultz found that 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). Due to the apparent salinity of the sample, an AGP test with the freshwater species, *Pseudokirshneriella subcapitata*, was not performed. However, an inference can be made that the freshwater problem threshold of 5 mg dry wt/L (Raschke and Schultz, 1987) would have also been exceeded.

Chemistry Results

Total residual chlorine (TRC) was detected in the bioassay sample in the laboratory at a concentration of 0.38 mg/L; however, chlorine is not used in the treatment process at the facility, so a dechlorinated sample was not tested.

Total ammonia was detected in the bioassay sample in the laboratory at a concentration of 2.02 mg/L. Total ammonia was detected in the sample preserved for chemical analyses at a concentration of 2.6 mg/L. Based on the pH, salinity and temperature of the effluent as collected, the calculated unionized ammonia of the effluent was $\leq$ 0.02 mg/L.

Aluminum, chromium-III, lead, and nickel were detected in the effluent sample at levels between the laboratory method detection limit and the laboratory practical quantitation limit (Table 1).

The conductivity, combined radium, and iron of the effluent sample collected on May 3, 2004, exceeded the Class III Fresh Water Quality Criteria, but did not exceed the effluent limits specified in the permit (Table 1).

See Table 1 for results of analytes detected in the effluent.

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

Conclusion

The 100% effluent sample collected from this facility on May 3, 2004, showed acute toxicity to both test species during the 48-hour bioassay tests. The 50% effluent caused 90% mortality in the mysid test, but no mortality in the fish test. The toxicity is attributed to major-seawater-ion-imbalance and unknown constituents of the sample. The saltwater AGP result for the effluent suggests that the problem threshold for fresh receiving waters would likely be exceeded. Some components of the effluent exceeded Class III Freshwater criteria, but not effluent limits.

Literature Cited

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.

Table 1. *Effluent limits, Class III Criteria and chemical data from samples collected from the Palm Coast Membrane Softening Facility on May 3, 2004.*

Palm Coast Membrane Softening	Class III Freshwater Stds	Effluent Limits	Effluent Samples
Organic Constituents (µg/L)			
None Detected	-	-	-
Metals (µg/L unless otherwise noted)			
Aluminum	-	-	13 l
Arsenic	≤ 50	-	5 U
Cadmium	≤ 3.4 b	-	0.025 U
Calcium (mg/L)	-	-	835
Chromium-III	≤ 268.2 b	-	6.6 l
Copper	≤ 30.5 b	-	7.6 U
Iron	≤ 1000	≤ 6400	3240
Lead	≤ 18.6 b	-	0.075 l
Magnesium (mg/L)	-	-	45.4
Nickel	≤ 168.5 b	-	3.4 l
Selenium	≤ 5	-	2 U
Silver	≤ 0.07	-	0.02 U
Zinc	≤ 387.8 b	-	10 U
Nutrients (mg/L)			
Ortho-phosphate	-	-	1.6
Total Phosphorus	-	-	2.3
Ammonia	-	Report	2.6
Unionized Ammonia	≤ 0.02	≤ 0.02	≤ 0.02
Nitrate+Nitrite	-	-	0.02 l
Total Kjeldahl Nitrogen	-	-	4.8
Organic Nitrogen	-	-	2.2 c
Total Nitrogen	-	Report	4.82 c
General Physical and Chemical Parameters			
Alpha, Gross (pCi/L)	≤ 15	≤ 55.7	9.6
Alpha-Counting Error (pCi/L)	-	-	3.9
Radium 226 (pCi/L)	-	-	5.5
Radium 226-Counting Error (pCi/L)	-	-	0.4
Radium 228 (pCi/L)	-	-	1
Radium 228-Counting Error (pCi/L)	-	-	0.7
Combined Radium 226 + 228 (pCi/L)	≤ 5.0	≤ 15.8	6.5
Dissolved Oxygen (mg/L)	≥ 5	≥ 5	5.9
pH (S.U.)	-	6.0 - 8.5	6.5
Conductivity (umhos/cm)	≤ 1275	≤ 4964	3749
Temperature (C)	-	Report	22.9
Hardness (mg/L)	-	-	2272 c
AGP (mg DryWt/L)	-	-	28.3
Total Residual Chlorine (100% mg/L lab)	≤ 0.01	-	0.38 *

Value exceeds the Class III Freshwater Quality Criteria

b - Value is calculated based on hardness

c - Calculated value

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

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

* This value is likely due to interfering substances within the sample.

FDEP Biology Section - Acute Screening Bioassay Bench Sheets

Facility: Palm Coast Membrane Softening

Address: 50 Citation Blvd.

City: Palm Coast **County:** Flagler

Contact/District: P. O'Connor / NE

NPDES Permit #: FL 0042838

LIMS Job #: ~~752266 CAP~~ TLH-20040505-04-32 **LIMS Sample #:** 752266

Sample Collection: Date: 5/3/04 Time: 11:00

Lims Data Entry: 5/7/04 MF Data Entry Verification: 5-7-04 CAP

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

Test Type: (Screening)
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: ~ 2.0 Final Salinity: 10.0 (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

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)

Comments:
- Test canceled at 48 hrs. due to District request.
- Salt control (20‰ ASW) was diluted with well water to ~2ppt, then salted with 40 fathoms artificial sea salts to test salinity of ~10ppt.
- The test salinity was not adjusted for the Menidia test.
- The A. bahia test (sample) was not adjusted by ~8 ppt with 40 fathoms artificial sea salts, per modified NPDES permit requirements.

Temperature Range °C
Incubator # 3 Range N/A
Room B246: 24.0 - 25.0
Waterbath: 26.0

Investigators' Signatures
Christa Levine
Marshall Faircloth
Dawn Nichols
Sarah Prichard
Callie Espey
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		0.38	HACH	SP	CAP
Alkalinity (mg/L as $CaCO_3$):			192	142.5		1035	HACH	DN	SD
Hardness (mg/L as $CaCO_3$):			142.5			2015	HACH	DN	SD
Total Ammonia (mg/L as N):			<0.017	<0.017		2.02	DENVER	MF	DN
Salinity (ppt):			~10	~2		~2	YSI	CAP	MF

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@ Systems place p.o. 5.4.04

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FDEP Biology Section - - Bioassay Bench Sheet

Survival

LIMS Sample #: 752266 **Test #:** 1 **Test Started: Date** 5/4/04 **Time:** 1330

Organism: A. bahia **Test Ended: Date** 5/6/04 **Time:** 1300

Organism Batch: 119 **Diluent/ Batch:** ASW, #20

Organism Age: 5days **Food:** YCT *P. subcapitata* (*Artemia*) 01940256

Chamber Size 1000 **mL** **Batch:**

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	H1	5	5	5			
	B	H2	5	5	5			
	C	H3	5	5	5			
	D	H4	5	5	5			
SALT CTRL	A	H5	5	5	5			
	B	H6	5	5	5			
	C	H7	5	5	5			
	D	H8	5	5	5			
50%	A	H9	5	4	1 3D			
	B	H10	5	1	0 1D			
	C	H11	5	0	—			
	D	H12	5	4	1 3D			
100%	A	H13	5	0	—			
	B	H14	5	0	—			
	C	H15	5	0	—			
	D	H16	5	0	—			

Organisms loaded by: JD

Loading Verified by: MF

Checked by: (initials) MF | mF | CAP

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

Comments: 100% mortality in 100% sample (salted) within 20 minutes of loading - mF 5/4/04

Test Results:

% mortality in 100% sample 100

LC_{50}: <50% 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 #: 752269 Test #: 2 Test Started: Date 5/4/04 Time: 1315
Organism: M. beryllina Test Ended: Date 5/6/04 Time: 1320
Organism Batch: 15 Diluent/ Batch: ASW 1 #20
Organism Age: 12 days Food: YCT P. subcapitata Artemia 0194025 G
Chamber Size 1000 mL Batch: — —
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	G13	5	5	5			
	B	G14	5	5	5			
	C	G15	5	5	5			
	D	G16	5	5	5			
50%	A	G17	5	5	5			
	B	G18	5	5	5			
	C	G19	5	5	5			
	D	G20	5	5	5			
100%	A	G21	5	0	—			
	B	G22	5	0	—			
	C	G23	5	0	—			
	D	G24	5	0	—			

Organisms loaded by: SD Checked by: MF MF CAP
Loading Verified by: MF (initials)
m = missing d = dead BR = before renewal AR = after renewal

Comments: 100% mortality in 100% sample within 20 minutes of loading, MF 5-4-04

Test Results:
% mortality in 100% sample 100%
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 # : 752266 **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			
pH (S.U.)	8.5	8.5	8.3			
Temperature °C	24.4	24.2	24.9			
Dissolved Oxygen mg/L	7.6	6.9	7.1			
Conductivity µmhos (mmhos)	16.3	16.4	16.8			
(initials) Measured by:	CAP	CAP	CAP			
(initials) Recorded by:	CAP	CAP	CAP			

Comments:

Concentration 50%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.5	8.3	8.3			
Temperature °C	24.4	24.1	25.0			
Dissolved Oxygen mg/L	7.5	7.0	6.5			
Conductivity µmhos (mmhos)	16.3	16.4	16.5			
(initials) Measured by:	CAP	CAP	CAP			
(initials) Recorded by:	CAP	CAP	CAP			

Comments:

Concentration SAIT CTRL	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	8.0	8.5	8.4			
Temperature °C	24.6	24.1	25.1			
Dissolved Oxygen mg/L	7.5	7.2	6.4			
Conductivity µmhos (mmhos)	16.2	16.5	16.6			
(initials) Measured by:	CAP	CAP	CAP			
(initials) Recorded by:	CAP	CAP	CAP			

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A					
pH (S.U.)	7.9					
Temperature °C	24.4					
Dissolved Oxygen mg/L	7.5					
Conductivity µmhos (mmhos)	16.2					
(initials) Measured by:	CAP					
(initials) Recorded by:	CAP					

Comments: 100% mortality in 100% sample (solvent) within 20 minutes of loading.

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Bioassay Parameters

LIMS Sample # : 752266 **Test # :** 2 **of** 2

TEST SOP: TA-07- 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			
pH (S.U.)	7.9	8.2	8.0			
Temperature °C	24.4	24.1	24.3			
Dissolved Oxygen mg/L	7.7	7.4	7.4			
Conductivity µmhos mmhos	3.53	3.91	4.02			
(initials) Measured by:	CAP	CAP	CAP			
(initials) Recorded by:	CAP	CAP	CAP			

Comments:

Concentration 50%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	7.3	8.1	8.2			
Temperature °C	24.4	24.1	CAP 24.9			
Dissolved Oxygen mg/L	7.9	6.5	7.3			
Conductivity µmhos mmhos	3.50	3.86	3.91			
(initials) Measured by:	CAP	CAP	CAP			
(initials) Recorded by:	CAP	CAP	CAP			

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A					
pH (S.U.)	7.2					
Temperature °C	24.5					
Dissolved Oxygen mg/L	6.5					
Conductivity µmhos mmhos	3.25					
(initials) Measured by:	CAP					
(initials) Recorded by:	CAP					

Comments: 100% mortality in 100% sample within 20 minutes of loading

Concentration ~~100%~~ CAP	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	~~A~~					
pH (S.U.)						
Temperature °C	~~24.4~~					
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

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Appendix 2. Chemical Analyses performed on the effluent from the Palm Coast Membrane Softening sampled on May 2, 2004.

DATE SAMPLED	FIELD ID	ANALYSIS GROUP	COMPONENT	RESULT	UNITS	REMARK	MDL	PQL
5/3/2004 7:20	EQ BLANK	BNA-Water	1,2,4-Trichlorobenzene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	1,2-Dichlorobenzene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	1,3-Dichlorobenzene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	1,4-Dichlorobenzene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	2,4,6-Trichlorophenol	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	2,4-Dichlorophenol	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	2,4-Dimethylphenol	56	ug/L	U	56	220
5/3/2004 7:20	EQ BLANK	BNA-Water	2,4-Dinitrophenol	17	ug/L	UJ	17	67
5/3/2004 7:20	EQ BLANK	BNA-Water	2,4-Dinitrotoluene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	2,6-Dinitrotoluene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	2-Chloronaphthalene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	2-Chlorophenol	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	2-Methyl-4,6-dinitrophenol	3.4	ug/L	U	3.4	13
5/3/2004 7:20	EQ BLANK	BNA-Water	2-Nitrophenol	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	3,3'-Dichlorobenzidine	45	ug/L	U	45	180
5/3/2004 7:20	EQ BLANK	BNA-Water	4,4'-DDD	1.7	ug/L	U	1.7	6.7
5/3/2004 7:20	EQ BLANK	BNA-Water	4,4'-DDE	1.7	ug/L	U	1.7	6.7
5/3/2004 7:20	EQ BLANK	BNA-Water	4,4'-DDT	1.7	ug/L	U	1.7	6.7
5/3/2004 7:20	EQ BLANK	BNA-Water	4-Bromophenyl phenyl ether	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	4-Chloro-3-methylphenol	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	4-Chlorophenyl phenyl ether	2.2	ug/L	U	2.2	9
5/3/2004 7:20	EQ BLANK	BNA-Water	4-Nitrophenol	17	ug/L	U	17	67
5/3/2004 7:20	EQ BLANK	BNA-Water	Acenaphthene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Acenaphthylene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Aldrin	1.7	ug/L	U	1.7	6.7
5/3/2004 7:20	EQ BLANK	BNA-Water	Anthracene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Benzidine	110	ug/L	U	110	450
5/3/2004 7:20	EQ BLANK	BNA-Water	Benzo(a)anthracene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Benzo(a)pyrene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Benzo(b)fluoranthene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Benzo(g,h,i)perylene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Benzo(k)fluoranthene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Bis(2-chloroethoxy)methane	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Bis(2-chloroethyl)ether	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Bis(2-chloroisopropyl)ether	3.4	ug/L	U	3.4	13
5/3/2004 7:20	EQ BLANK	BNA-Water	Bis(2-ethylhexyl)phthalate	17	ug/L	U	17	67
5/3/2004 7:20	EQ BLANK	BNA-Water	Butyl benzyl phthalate	5.6	ug/L	U	5.6	22
5/3/2004 7:20	EQ BLANK	BNA-Water	Chrysene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Di-n-butyl phthalate	5.6	ug/L	U	5.6	22
5/3/2004 7:20	EQ BLANK	BNA-Water	Di-n-octyl phthalate	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Dibenzo(a,h)anthracene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Dieldrin	1.7	ug/L	U	1.7	6.7
5/3/2004 7:20	EQ BLANK	BNA-Water	Diethyl phthalate	3.1	ug/L	U	3.1	13
5/3/2004 7:20	EQ BLANK	BNA-Water	Dimethyl phthalate	56	ug/L	U	56	220
5/3/2004 7:20	EQ BLANK	BNA-Water	Endosulfan I	4.5	ug/L	U	4.5	18
5/3/2004 7:20	EQ BLANK	BNA-Water	Endosulfan II	4.5	ug/L	U	4.5	18
5/3/2004 7:20	EQ BLANK	BNA-Water	Endosulfan sulfate	1.7	ug/L	U	1.7	6.7
5/3/2004 7:20	EQ BLANK	BNA-Water	Endrin	1.7	ug/L	U	1.7	6.7
5/3/2004 7:20	EQ BLANK	BNA-Water	Endrin aldehyde	4.5	ug/L	UJ	4.5	18
5/3/2004 7:20	EQ BLANK	BNA-Water	Fluoranthene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Fluorene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Heptachlor	1.7	ug/L	U	1.7	6.7
5/3/2004 7:20	EQ BLANK	BNA-Water	Heptachlor epoxide	1.7	ug/L	U	1.7	6.7
5/3/2004 7:20	EQ BLANK	BNA-Water	Hexachlorobenzene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Hexachlorobutadiene	3.4	ug/L	U	3.4	13
5/3/2004 7:20	EQ BLANK	BNA-Water	Hexachlorocyclopentadiene	3.4	ug/L	UJ	3.4	13
5/3/2004 7:20	EQ BLANK	BNA-Water	Hexachloroethane	3.4	ug/L	U	3.4	13
5/3/2004 7:20	EQ BLANK	BNA-Water	Indeno(1,2,3-cd)pyrene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Isophorone	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	N-Nitrosodi-n-propylamine	2.2	ug/L	U	2.2	9
5/3/2004 7:20	EQ BLANK	BNA-Water	N-Nitrosodimethylamine	2.2	ug/L	U	2.2	9
5/3/2004 7:20	EQ BLANK	BNA-Water	N-Nitrosodiphenylamine	3.4	ug/L	U	3.4	13

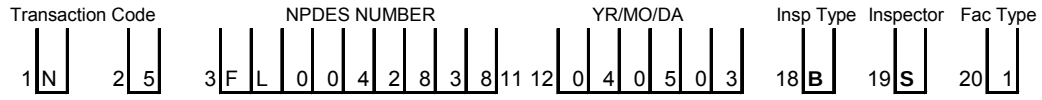
5/3/2004 7:20	EQ BLANK	BNA-Water	Naphthalene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Nitrobenzene	2.2	ug/L	U	2.2	9
5/3/2004 7:20	EQ BLANK	BNA-Water	Pentachlorophenol	3.4	ug/L	U	3.4	13
5/3/2004 7:20	EQ BLANK	BNA-Water	Phenanthrene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Phenol	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	Pyrene	1.1	ug/L	U	1.1	4.5
5/3/2004 7:20	EQ BLANK	BNA-Water	alpha-BHC	1.7	ug/L	U	1.7	6.7
5/3/2004 7:20	EQ BLANK	BNA-Water	beta-BHC	1.7	ug/L	U	1.7	6.7
5/3/2004 7:20	EQ BLANK	BNA-Water	delta-BHC	1.7	ug/L	U	1.7	6.7
5/3/2004 7:20	EQ BLANK	BNA-Water	gamma-BHC	1.7	ug/L	U	1.7	6.7
5/3/2004 7:20	EQ BLANK	GC-Water	Alachlor	0.58	ug/L	UJ	0.57692	2.31
5/3/2004 7:20	EQ BLANK	GC-Water	Ametryn	0.048	ug/L	U	0.048077	0.192
5/3/2004 7:20	EQ BLANK	GC-Water	Atrazine	0.048	ug/L	U	0.048077	0.192
5/3/2004 7:20	EQ BLANK	GC-Water	Azinphos Methyl	0.048	ug/L	U	0.048077	0.192
5/3/2004 7:20	EQ BLANK	GC-Water	Bromacil	0.19	ug/L	U	0.19231	0.769
5/3/2004 7:20	EQ BLANK	GC-Water	Butylate	0.19	ug/L	U	0.19231	0.769
5/3/2004 7:20	EQ BLANK	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048077	0.192
5/3/2004 7:20	EQ BLANK	GC-Water	Chlorpyrifos Methyl	0.096	ug/L	U	0.096154	0.385
5/3/2004 7:20	EQ BLANK	GC-Water	Diazinon	0.048	ug/L	UJ	0.048077	0.192
5/3/2004 7:20	EQ BLANK	GC-Water	Ethion	0.048	ug/L	U	0.048077	0.192
5/3/2004 7:20	EQ BLANK	GC-Water	Ethoprop	0.096	ug/L	U	0.096154	0.385
5/3/2004 7:20	EQ BLANK	GC-Water	Fenamiphos	0.19	ug/L	U	0.19231	0.769
5/3/2004 7:20	EQ BLANK	GC-Water	Fonofos	0.096	ug/L	UJ	0.096154	0.385
5/3/2004 7:20	EQ BLANK	GC-Water	Hexazinone	0.096	ug/L	U	0.096154	0.385
5/3/2004 7:20	EQ BLANK	GC-Water	Malathion	0.14	ug/L	U	0.14423	0.577
5/3/2004 7:20	EQ BLANK	GC-Water	Metalaxyl	0.24	ug/L	U	0.24038	0.962
5/3/2004 7:20	EQ BLANK	GC-Water	Metolachlor	0.48	ug/L	U	0.48077	1.92
5/3/2004 7:20	EQ BLANK	GC-Water	Metribuzin	0.096	ug/L	U	0.096154	0.385
5/3/2004 7:20	EQ BLANK	GC-Water	Mevinphos	0.19	ug/L	U	0.19231	0.769
5/3/2004 7:20	EQ BLANK	GC-Water	Naled	0.77	ug/L	UJ	0.76923	3.08
5/3/2004 7:20	EQ BLANK	GC-Water	Norflurazon	0.096	ug/L	U	0.096154	0.385
5/3/2004 7:20	EQ BLANK	GC-Water	Parathion Ethyl	0.14	ug/L	UJ	0.14423	0.577
5/3/2004 7:20	EQ BLANK	GC-Water	Parathion Methyl	0.096	ug/L	U	0.096154	0.385
5/3/2004 7:20	EQ BLANK	GC-Water	Phorate	0.048	ug/L	U	0.048077	0.192
5/3/2004 7:20	EQ BLANK	GC-Water	Prometryn	0.14	ug/L	UJ	0.14423	0.577
5/3/2004 7:20	EQ BLANK	GC-Water	Simazine	0.048	ug/L	U	0.048077	0.192
5/3/2004 7:20	EQ BLANK	Metals-Water	Aluminum	5	ug/L	U	5	20
5/3/2004 7:20	EQ BLANK	Metals-Water	Arsenic	5	ug/L	U	5	20
5/3/2004 7:20	EQ BLANK	Metals-Water	Cadmium	0.025	ug/L	U	0.025	0.1
5/3/2004 7:20	EQ BLANK	Metals-Water	Calcium	0.05	mg/L	U	0.05	0.2
5/3/2004 7:20	EQ BLANK	Metals-Water	Chromium	2	ug/L	U	2	8
5/3/2004 7:20	EQ BLANK	Metals-Water	Copper	0.75	ug/L	U	0.75	3
5/3/2004 7:20	EQ BLANK	Metals-Water	Iron	5	ug/L	U	5	20
5/3/2004 7:20	EQ BLANK	Metals-Water	Lead	0.05	ug/L	U	0.05	0.2
5/3/2004 7:20	EQ BLANK	Metals-Water	Magnesium	0.02	mg/L	U	0.02	0.08
5/3/2004 7:20	EQ BLANK	Metals-Water	Nickel	2	ug/L	U	2	8
5/3/2004 7:20	EQ BLANK	Metals-Water	Selenium	1	ug/L	U	1	4
5/3/2004 7:20	EQ BLANK	Metals-Water	Silver	0.02	ug/L	U	0.02	0.08
5/3/2004 7:20	EQ BLANK	Metals-Water	Zinc	2	ug/L	U	2	8
5/3/2004 7:20	EQ BLANK	Nutrients-Liquid	Ammonia-N	0.01	mg N/L	U	0.01	0.02
5/3/2004 7:20	EQ BLANK	Nutrients-Liquid	NO2NO3-N	0.004	mg N/L	U	0.004	0.01
5/3/2004 7:20	EQ BLANK	Nutrients-Liquid	N_KJEL_TOT	0.06	mg N/L	U	0.06	0.2
5/3/2004 7:20	EQ BLANK	Nutrients-Liquid	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
5/3/2004 7:20	EQ BLANK	Nutrients-Liquid	Total-P	0.02	mg P/L	U	0.02	0.06
5/3/2004 7:20	EQ BLANK	Overflow	Alpha, Total	0.6	pCi/L	U		
5/3/2004 7:20	EQ BLANK	Overflow	Alpha-Counting Error	0.5	pCi/L			
5/3/2004 7:20	EQ BLANK	Overflow	Radium 226	0.1	pCi/L			
5/3/2004 7:20	EQ BLANK	Overflow	Radium 226-Counting Error	0.1	pCi/L			
5/3/2004 7:20	EQ BLANK	Overflow	Radium 228	1	pCi/L	U		
5/3/2004 7:20	EQ BLANK	Overflow	Radium 228-Counting Error	0.6	pCi/L			
5/3/2004 11:00	FINAL EFFLUENT	Bio-AGP/LimNut	Algal Growth Potential	28.3	mg DryWt/L		0.1	0.3
5/3/2004 11:00	FINAL EFFLUENT	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
5/3/2004 11:00	FINAL EFFLUENT	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
5/3/2004 11:00	FINAL EFFLUENT	Bio-Toxicology	Bioassay-Acute-Screen-SW-Fish, LC50	100	LC50	K		
5/3/2004 11:00	FINAL EFFLUENT	Bio-Toxicology	Bioassay-Acute-Screen-SW-Mysid, LC50	50	LC50	K		
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	1,2,4-Trichlorobenzene	0.97	ug/L	U	0.97	3.9

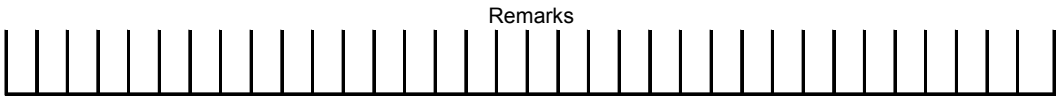
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	1,2-Dichlorobenzene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	1,3-Dichlorobenzene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	1,4-Dichlorobenzene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	2,4,6-Trichlorophenol	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	2,4-Dichlorophenol	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	2,4-Dimethylphenol	49	ug/L	U	49	190
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	2,4-Dinitrophenol	15	ug/L	UJ	15	58
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	2,4-Dinitrotoluene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	2,6-Dinitrotoluene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	2-Chloronaphthalene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	2-Chlorophenol	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	12
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	2-Nitrophenol	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	3,3'-Dichlorobenzidine	39	ug/L	U	39	160
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	4,4'-DDD	1.5	ug/L	U	1.5	5.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	4,4'-DDE	1.5	ug/L	U	1.5	5.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	4,4'-DDT	1.5	ug/L	U	1.5	5.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	4-Bromophenyl phenyl ether	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	4-Chloro-3-methylphenol	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	4-Nitrophenol	15	ug/L	U	15	58
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Acenaphthene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Acenaphthylene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Aldrin	1.5	ug/L	U	1.5	5.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Anthracene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Benzidine	97	ug/L	U	97	390
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Benzo(a)anthracene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Benzo(a)pyrene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Benzo(b)fluoranthene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Benzo(g,h,i)perylene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Benzo(k)fluoranthene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Bis(2-chloroethoxy)methane	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Bis(2-chloroethyl)ether	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	12
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Bis(2-ethylhexyl)phthalate	15	ug/L	U	15	58
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Butyl benzyl phthalate	4.9	ug/L	U	4.9	19
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Chrysene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Di-n-butyl phthalate	4.9	ug/L	U	4.9	19
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Di-n-octyl phthalate	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Dibenzo(a,h)anthracene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Dieldrin	1.5	ug/L	U	1.5	5.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Diethyl phthalate	2.8	ug/L	U	2.8	11
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Dimethyl phthalate	49	ug/L	U	49	190
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Endosulfan I	3.9	ug/L	U	3.9	16
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Endosulfan II	3.9	ug/L	U	3.9	16
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Endosulfan sulfate	1.5	ug/L	U	1.5	5.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Endrin	1.5	ug/L	U	1.5	5.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Endrin aldehyde	3.9	ug/L	UJ	3.9	16
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Fluoranthene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Fluorene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Heptachlor	1.5	ug/L	U	1.5	5.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Heptachlor epoxide	1.5	ug/L	U	1.5	5.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Hexachlorobenzene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	12
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	UJ	2.9	12
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	12
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Indeno(1,2,3-cd)pyrene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Isophorone	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	U	2.9	12
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Naphthalene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	12
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Phenanthrene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Phenol	0.97	ug/L	U	0.97	3.9

5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	Pyrene	0.97	ug/L	U	0.97	3.9
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	alpha-BHC	1.5	ug/L	U	1.5	5.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	beta-BHC	1.5	ug/L	U	1.5	5.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	delta-BHC	1.5	ug/L	U	1.5	5.8
5/3/2004 11:00	FINAL EFFLUENT	BNA-Water	gamma-BHC	1.5	ug/L	U	1.5	5.8
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Alachlor	0.58	ug/L	UJ	0.57692	2.31
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Ametryn	0.048	ug/L	U	0.048077	0.192
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Atrazine	0.048	ug/L	U	0.048077	0.192
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Azinphos Methyl	0.048	ug/L	U	0.048077	0.192
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Bromacil	0.19	ug/L	U	0.19231	0.769
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Butylate	0.19	ug/L	U	0.19231	0.769
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048077	0.192
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Chlorpyrifos Methyl	0.096	ug/L	U	0.096154	0.385
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Diazinon	0.048	ug/L	UJ	0.048077	0.192
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Ethion	0.048	ug/L	U	0.048077	0.192
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Ethoprop	0.096	ug/L	U	0.096154	0.385
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Fenamiphos	0.19	ug/L	U	0.19231	0.769
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Fonofos	0.096	ug/L	UJ	0.096154	0.385
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Hexazinone	0.096	ug/L	U	0.096154	0.385
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Malathion	0.14	ug/L	U	0.14423	0.577
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Metalaxyl	0.24	ug/L	U	0.24038	0.962
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Metolachlor	0.48	ug/L	U	0.48077	1.92
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Metribuzin	0.096	ug/L	U	0.096154	0.385
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Mevinphos	0.19	ug/L	U	0.19231	0.769
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Naled	0.77	ug/L	UJ	0.76923	3.08
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Norflurazon	0.096	ug/L	U	0.096154	0.385
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Parathion Ethyl	0.14	ug/L	UJ	0.14423	0.577
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Parathion Methyl	0.096	ug/L	U	0.096154	0.385
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Phorate	0.048	ug/L	U	0.048077	0.192
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Prometryn	0.14	ug/L	UJ	0.14423	0.577
5/3/2004 11:00	FINAL EFFLUENT	GC-Water	Simazine	0.048	ug/L	U	0.048077	0.192
5/3/2004 11:00	FINAL EFFLUENT	Metals-Water	Aluminum	13	ug/L	I	5	20
5/3/2004 11:00	FINAL EFFLUENT	Metals-Water	Arsenic	5	ug/L	U	5	20
5/3/2004 11:00	FINAL EFFLUENT	Metals-Water	Cadmium	0.025	ug/L	U	0.025	0.1
5/3/2004 11:00	FINAL EFFLUENT	Metals-Water	Calcium	835	mg/L		0.25	1
5/3/2004 11:00	FINAL EFFLUENT	Metals-Water	Chromium	6.6	ug/L	I	2	8
5/3/2004 11:00	FINAL EFFLUENT	Metals-Water	Copper	7.6	ug/L	U	7.6	30
5/3/2004 11:00	FINAL EFFLUENT	Metals-Water	Iron	3.24E+03	ug/L		5	20
5/3/2004 11:00	FINAL EFFLUENT	Metals-Water	Lead	0.075	ug/L	I	0.05	0.2
5/3/2004 11:00	FINAL EFFLUENT	Metals-Water	Magnesium	45.4	mg/L		0.02	0.08
5/3/2004 11:00	FINAL EFFLUENT	Metals-Water	Nickel	3.4	ug/L	I	2	8
5/3/2004 11:00	FINAL EFFLUENT	Metals-Water	Selenium	2	ug/L	U	2	8
5/3/2004 11:00	FINAL EFFLUENT	Metals-Water	Silver	0.02	ug/L	U	0.02	0.08
5/3/2004 11:00	FINAL EFFLUENT	Metals-Water	Zinc	10	ug/L	U	10	40
5/3/2004 11:00	FINAL EFFLUENT	Nutrients-Liquid	Ammonia-N	2.6	mg N/L		0.2	0.4
5/3/2004 11:00	FINAL EFFLUENT	Nutrients-Liquid	NO2NO3-N	0.02	mg N/L	I	0.02	0.05
5/3/2004 11:00	FINAL EFFLUENT	Nutrients-Liquid	N_KJEL_TOT	4.8	mg N/L		0.6	2
5/3/2004 11:00	FINAL EFFLUENT	Nutrients-Liquid	O-Phosphate-P	1.6	mg P/L		0.032	0.08
5/3/2004 11:00	FINAL EFFLUENT	Nutrients-Liquid	Total-P	2.3	mg P/L		0.2	0.6
5/3/2004 11:00	FINAL EFFLUENT	Overflow	Alpha, Total	9.6	pCi/L			
5/3/2004 11:00	FINAL EFFLUENT	Overflow	Alpha-Counting Error	3.9	pCi/L			
5/3/2004 11:00	FINAL EFFLUENT	Overflow	Radium 226	5.5	pCi/L			
5/3/2004 11:00	FINAL EFFLUENT	Overflow	Radium 226-Counting Error	0.4	pCi/L			
5/3/2004 11:00	FINAL EFFLUENT	Overflow	Radium 228	1	pCi/L			
5/3/2004 11:00	FINAL EFFLUENT	Overflow	Radium 228-Counting Error	0.7	pCi/L			

The Bioassay of Palm Coast Membrane Softening effluent sampled on 3 May 2004, NPDES #FL0042838.

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





The Priority Pollutants Analysis for Bioassay of Palm Coast Membrane Softening effluent sampled on 3 May, 2004, NPDES #FL0042838.

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