

Bioassays of

DeLand / Wiley M. Nash Water Reclamation Facility

Volusia County

NPDES #FL0020303

Sampled June 6, 2005

July 2005

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

Deland/Wiley Nash Water Reclamation Facility, 1032 S. Amelia Avenue, Deland, Volusia County, Florida, NPDES #FL0020303. Effluent samples for this facility were collected on June 6, 2005.

Introduction

The Deland/Wiley Nash Water Reclamation Facility, an advanced secondary wastewater treatment facility, has a design flow of 6.0 million gallons per day (MGD) annual average daily flow (AADF). The facility has a permitted surface water discharge of 4.0 MGD. From May 2004 to April 2005, the facility had an influent flow of 3.15 MGD AADF and a discharge of 1.15 MGD AADF. The wastewater treatment process includes influent screening, grit removal, primary clarification, three carousel type oxidation ditches, secondary clarification, chemical feed, filtration, chlorination (chlorine gas) and dechlorination (sulfur dioxide). Residuals are processed using thickeners, aerobic digesters, and belt-filter presses for dewatering prior to land application. Treated effluent is discharged through outfall D001 to the Class III freshwaters of the St. Johns River at Whitehair Bridge. The outfall is approximately 9 m (30 ft) in length and discharges at a depth of approximately 3 m (10 ft). The discharge point is located at latitude 29º 00' 31" N and longitude 82º 22' 55" W.

The facility has a permitted 3.87 MGD AADF permitted slow rate public access land application system (R-001) consisting of a reclaimed water transmission/distribution system for public access irrigation of golf courses, cemeteries, parks, and playgrounds. The public access reuse system includes an existing 3 million gallon reclaimed water storage tank and the use of reclaimed water (0.175 MGD) to maintain a constant level for aesthetic purposes at an existing stormwater pond located at Earl Brown Park. Reclaimed water (2.27 MGD) will also be stored in three stormwater ponds (Pond A, SE Pond, and Pond 22) located in the Victoria Park golf course. These stormwater ponds do not discharge to offsite surface waters. The AADF during April 2005 for the R-001 discharge location was 1.48 MGD.

There have been no enforcement actions taken against this facility and there were no permit violations in the past year. The facility has no mixing zones. Over the past five (5) years, the AADF to D-001 has remained fairly constant at approximately 1.2 MGD; the effluent concentrations of total phosphorus, carbonaceous biochemical oxygen demand, total suspended solids, and total nitrogen have shown sight increases (facility information provided by David Smirchino of FDEP Central District).

Methods

Samples were collected from the EFD-1 NPDES sampling point, located at the effluent pump station-after dechlorination but prior to discharge at outfall D-001, by Phil Kane and Steve Kent (FDEP Central 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 acute definitive toxicity tests and algal growth potential test were performed following internal DEP SOP's TA07_01, TA07_02, 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 toxicity tests were performed in accordance with permit conditions.

Toxicity Test Results

Tests were performed June 7 - 11, 2005.

Ceriodaphnia dubia 96-hr acute definitive bioassay –	LC_{50} > 100%, 0% mortality in 100% sample at 96 hours

Cyprinella leedsi 96-hr acute definitive bioassay –	LC_{50} > 100%, 0% mortality in 100% sample at 96 hours

The bioassay samples were not acutely toxic to the test organisms.

See Appendix 1 for bioassay bench sheets.

Algal Growth Potential

The effluent Algal Growth Potential (AGP) was 189 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Shultz (1987) found that AGP values above 5.0 mg dry weight/L represent a “problem” threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry suggests that the effluent is co-limited by both nitrogen and phosphorus. The predicted AGPs based on the total nitrogen and phosphorus concentrations were 189.24 (±20%) and 167.7 (±20%) mg dry wt/L, respectively (Table 1; Miller et al. 1978).

See Table 1 for AGP results.

Chemistry Results

Total residual chlorine and total ammonia were not detected in the bioassay sample in the laboratory. The total ammonia concentration in the sample collected and preserved for chemical analysis was 0.045 mg/L. Based on the pH, salinity and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.

Aluminum, iron, and zinc were detected in the effluent at levels that comply with Class III freshwater quality criteria. Copper, lead, nickel, and selenium were detected between the laboratory minimum detection limits (MDL) and practical quantitation limits (PQL).

See Table 2 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 sample collected from the EFD-1 NPDES sampling point for this facility on June 6, 2005, was not acutely toxic to either test species during the 96-hour acute definitive bioassays. The effluent AGP result greatly exceeded the "problem” threshold for fresh receiving waters.

Literature Cited

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.

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. Measured and predicted algal growth potential (AGP; mg dry wt/L) of Pseudokirchneriella subcapitata *for total soluble nitrogen (TSIN), total nitrogen (TN), ortho phosphate (OP), and total phosphorus (TP) limitation, and ratios of nitrogen to phosphorus for the sample collected from DeLand/Wiley M. Nash Wastewater Treatment Facility on June 6, 2005.*

Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (OP) ± 20%	Predicted AGP (TN) ± 20%	Predicted AGP (TP) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent Samples	189	157.51 ± 31.502	133.3 ± 26.66	189.24 ± 37.848	167.7 ± 33.54	13.37	12.77

Table 2. Effluent limits, Class III Freshwater Criteria, and chemical data for samples collected from DeLand/Wiley M. Nash Water Reclamation Facility on June 6, 2005.

DeLand/Wiley M. Nash WRF NPDES# FL0020303	Class III Freshwater Stds	Effluent Limits	Effluent Samples
Metals (µg/L unless otherwise noted)			
Aluminum	-	-	60
Arsenic	≤ 50	-	4 U
Beryllium	≤ 0.13	≤ 0.13 a	na
Cadmium	≤ 1.7 b	-	0.5 U
Calcium (mg/L)	-	-	53.9
Chromium-III	≤ 128.3 b	-	2 U
Copper	≤ 14.1 b	-	1.6 I
Iron	≤ 1000	-	52
Lead	≤ 5.9 b	≤ 5.9 b	0.69 I
Magnesium (mg/L)	-	-	6.8
Nickel	≤ 78.7 b	-	2.6 I
Selenium	≤ 5	-	0.87 I
Silver	≤ 0.07	≤ 0.07 s	0.025 U
Zinc	≤ 180.9 b	-	37
Nutrients (mg/L)			
Ortho-phosphate	-	-	0.31
Total Phosphorus	-	≤ 2 s	0.39 A
Ammonia	-	-	0.045 A
Unionized Ammonia	≤ 0.02	-	≤ 0.02
Nitrate+Nitrite	-	-	4.1
Total Kjeldahl Nitrogen	-	Report	0.88 JA
Organic Nitrogen	-	-	0.84 c
Total Nitrogen	-	Report	4.98 c
General Physical and Chemical Parameters			
Dissolved Oxygen (mg/L)	≥ 5	≥ 5 s	7.6
pH (S.U.)	6.0-8.5	6.0-8.5	7.3
Alkalinity (mg/L as $CaCO_3$)	≥ 20	-	100 A
Conductivity (umhos/cm)	≤ 1,275	-	732
Temperature (C)	-	-	26.9
TSS (mg/L)	-	≤ 60 s	4 U
Turbidity (NTU)	≤ 29 t	-	0.7
Total Residual Chlorine (mg/L)	≤ 0.01	≤ 0.01	0.00*
CBOD (mg/L)	-	≤ 60 s	na
Oil and Grease (mg/L)	≤ 5	-	1.7 U
Hardness (mg/L)	-	Report	162.6 c
Microbiology (#cfu/100mL)			
Fecal Coliform	800 s	800 s	na

Value exceeds the Class III Fresh Water Quality Criteria (62-302, F.A.C.) and/or Effluent Limits

* - field measurement

b - Value is calculated based on hardness

c - calculated value

na - an analysis was not performed for this analyte

s - Single sample

t - Shall not exceed 29 NTUs above background

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 limi

J - Estimated value

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

FDEP Biology Section - Acute Definitive Bioassay Bench Sheets

Facility: DeLand/Wiley M. Nash WRF

Address: 1032 S. Amelia Avenue

City: DeLand County: Volusia

Contact/District: Phil Kane / Central District

NPDES Permit #: FL 0020303

LIMS Job #: TLH-2005-06-07-08 LIMS Sample #: 840480

Sample Collection: Date: 06-06-05 Time: 0926

Hold Time Start: Date: 06-06-05 Time: 0926

Comments:
(A) method - Hach Kit - mF 6-14-05

Lims Data Entry: 6-14-05 mF

Data Entry Verification: 6-14-05 DN

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

SOP#07_01/_02

Test Type: 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

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)

Temperature Range °C
Incubator # 1 Range 23.7 - 24.6
Room B246: 23.3 - 23.9
Waterbath: N/A

Investigators' Signatures

Sarah Pritchard

Marshall Faircloth

James Daniels

Deborah Nicholson

Nicole Wetherbee

REVIEWER

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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	0.00	~~P.Kane~~ (A)	Phil Kane	SP
Lab Total Residual Cl2 (mg/L):	<0.03	<0.03				<0.03	HACH	DN / JD	SP
Alkalinity (mg/L as $CaCO_3$):	87	140				114	HACH	DN	SP
Hardness (mg/L as $CaCO_3$):	~~Hach 88~~ (B)	136				159	HACH	DN	SP
Total Ammonia (mg/L as N):	<0.017	<0.017				<0.017	DENVER	DN / MF	SP
Salinity (ppt):	<1	<1				<1	~~YSI~~ METTLER	SP	MF

(B) 1st entry was Hardness of Well H_2O. DN

FDEP Biology Section - - Bioassay Bench Sheet

Survival

LIMS Sample #: 840480 Test #: 1 Test Started: Date 6-7-05 Time: 1325

Organism: C. dubia Test Ended: Date 6-11-05 Time: 1600

Organism Batch: M-05 Diluent/ Batch: DMW/ 17-05

Organism Age: <24 hrs Food: YCT *S. subcapitata* *Artemia*

Chamber Size 30 mL Batch: 3-05 1-05

Test Volume 20 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	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
6.25%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
12.5%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
25%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
50%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
100%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	5	5	5	5
Organisms loaded by: MF		Checked by:	MF/SS	DN	DN	MF	MF	D
Loading Verified by: SO		(initials)						

Comments:

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

Test Results:

% mortality in 100% sample 0

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 #: 840480 Test #: 2 Test Started: Date 6-7-05 Time: 1300
Organism: C. leedsi Test Ended: Date 6-11-05 Time: 1600
Organism Batch: 15-05 Diluent/ Batch: well 1 NA
Organism Age: 7days Food: YCT *P. subcapitata* Artemia 351384256R
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	B1	5	5	5	5	5	5
	B	B2	5	5	5	5	5	5
	C	B3	5	5	5	5	5	5
	D	B4	5	5	5	5	5	5
6.25%	A	B5	5	5	5	5	5	5
	B	B6	5	5	5	5	5	5
	C	B7	5	5	5	5	5	5
	D	B8	5	5	5	5	5	5
12.5%	A	B9	5	5	5	5	5	5
	B	B10	5	5	5	5	5	5
	C	B11	5	5	5	5	5	5
	D	B12	5	5	5	5	5	5
25%	A	B13	5	5	5	5	5	5
	B	B14	5	5	5	5	5	5
	C	B15	5	5	5	5	5	5
	D	B16	5	5	5	5	5	5
50%	A	B17	5	5	5	5	5	5
	B	B18	5	5	5	5	5	5
	C	B19	5	5	5	5	5	5
	D	B20	5	5	5	5	5	5
100%	A	B21	5	5	5	5	5	5
	B	B22	5	5	5	5	5	5
	C	B23	5	5	5	5	5	5
	D	B24	5	5	5	5	5	5
Organisms loaded by: JD		Checked by: (initials)	JD	JD	JD	JD	JD	JD
Loading Verified by: SP								

Comments:

m = missing d = dead BR = before renewal AR = after renewal
Test Results:
% mortality in 100% sample 0
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 # : 840480 **Test # :** 1 **of** 2

TEST SOP: TA07_ 01 **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. (A) before ← renewal	48 Hr. → after renewal	72 Hr.	96 Hr.
Replicate	A		C	B		A
pH (S.U.)	8.2		8.2	8.2		8.2
Temperature °C	24.0		24.4	24.5		24.2
Dissolved Oxygen mg/L	7.7		7.6	7.7		7.8
Conductivity ~~µmhos~~ mmhos	171.4		173	191		210
(initials) Measured by:	SP		SP	SP		SP
(initials) Recorded by:	SP		SP	SP		SP

Comments:
(A) all concentrations – after renewal parameters written in before renewal column SP

Concentration 6.25%	0 Hr.	24 Hr.	48 Hr. before ← renewal	48 Hr. → after renewal	72 Hr.	96 Hr.
Replicate	A		C	B		A
pH (S.U.)	8.2		8.2	8.2		8.2
Temperature °C	24.5		24.6	24.4		24.0
Dissolved Oxygen mg/L	7.8		7.7	7.8		7.8
Conductivity ~~µmhos~~ mmhos	214		214	230		245
(initials) Measured by:	SP		SP	SP		SP
(initials) Recorded by:	SP		SP	SP		SP

Comments:

Concentration 12.5 %	0 Hr.	24 Hr.	48 Hr. before ← renewal	48 Hr. → after renewal	72 Hr.	96 Hr.
Replicate	A		C	B		A
pH (S.U.)	8.1		8.1	8.2		8.2
Temperature °C	24.5		24.5	24.4		24.0
Dissolved Oxygen mg/L	7.7		7.6	7.8		7.7
Conductivity ~~µmhos~~ mmhos	251		249	278		300
(initials) Measured by:	SP		SP	SP		SP
(initials) Recorded by:	SP		SP	SP		SP

Comments:

Concentration 25%	0 Hr.	24 Hr.	48 Hr. before ← renewal	48 Hr. → after renewal	72 Hr.	96 Hr.
Replicate	A		C	B		A
pH (S.U.)	8.1		8.0	8.2		8.3
Temperature °C	24.4		24.5	24.3		24.2
Dissolved Oxygen mg/L	7.7		7.6	7.8		7.9
Conductivity ~~µmhos~~ mmhos	320		319	344		385
(initials) Measured by:	SP		SP	SP		SP
(initials) Recorded by:	SP		SP	SP		SP

Comments:

000024

V 1 2/24/04

Bioassay Parameters

LIMS Sample # : 840480 **Test # :** 1 **of** 2

TEST SOP: TA07_ 01 **Test Species:** (*Ceriodaphnia dubia*) *Cyprinella leedsi* *Pimephales promelas* *Americamysis bahia* *Menidia beryllina* Other:_____

V.1 2/24/04

Concentration 50 %	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A		C	B		A
pH (S.U.)	7.9		7.7	~~7.8~~ 8.3 SP		8.3
Temperature °C	24.4		24.5	24.3		24.2
Dissolved Oxygen mg/L	7.6		7.5	7.8		7.8
Conductivity (µmhos) mmhos	460		455	503		600
(initials) Measured by:	SP		SP	SP		JD
(initials) Recorded by:	SP		SP	SP		JD

Comments:

Concentration 100 %	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A		C	B		A
pH (S.U.)	7.5		7.4	8.3		8.3
Temperature °C	24.3		24.3	24.3		24.5
Dissolved Oxygen mg/L	7.4		7.0	7.8		7.8
Conductivity (µmhos) mmhos	729		723	848		1005
(initials) Measured by:	SP		SP	SP		JD
(initials) Recorded by:	SP		SP	SP		JD

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:

V.1 2/24/04

Bioassay Parameters

LIMS Sample # : 840480 **Test # :** 2 **of** 2

TEST SOP: TA07_ 02 **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.)	7.8	8.4	8.4	8.0	8.3	8.2
Temperature °C	25.1	24.4	24.3	24.3	24.0	24.1
Dissolved Oxygen mg/L	7.1	7.0	7.7	7.7	7.3	7.3
Conductivity (µmhos) mmhos	265	296	285	265	274	280
(initials) Measured by:	JD	JD	DN	DN	JD	JD
(initials) Recorded by:	JD	JD	DN	DN	JD	JD

Comments:

Concentration 6.25 %	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.)	7.8	8.3	8.4	8.0	8.2	8.2
Temperature °C	25.3	24.2	24.2	24.4	24.0	24.0
Dissolved Oxygen mg/L	7.3	7.4	7.8	7.8	7.3	7.3
Conductivity (µmhos) mmhos	293	321	320	305	315	320
(initials) Measured by:	JD	JD	DN	DN	JD	JD
(initials) Recorded by:	JD	JD	DN	DN	JD	JD

Comments:

Concentration 12.5 %	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.)	7.8	8.3	8.4	8.0	8.2	8.3
Temperature °C	25.8	24.7	24.1	24.4	24.0	24.0
Dissolved Oxygen mg/L	7.2	7.6	7.8	7.7	7.1	7.3
Conductivity (µmhos) mmhos	327	349	355	330	345	335
(initials) Measured by:	JD	JD	DN	DN	JD	JD
(initials) Recorded by:	JD	JD	DN	DN	JD	JD

Comments:

Concentration 25 %	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.)	7.8	8.3	8.4	7.9	8.1	8.3
Temperature °C	25.1	24.1	24.0	24.3	24.0	24.1
Dissolved Oxygen mg/L	7.1	7.4	7.8	7.7	7.0	7.2
Conductivity (µmhos) mmhos	387	411	400	380	390	400
(initials) Measured by:	JD	JD	DN	DN	JD	JD
(initials) Recorded by:	JD	JD	DN	DN	JD	JD

Comments:

000026

V.1 2/24/04

Bioassay Parameters

LIMS Sample # : 840480 **Test # :** 2 **of** 2

TEST SOP: TA07_ 02 **Test Species:** *Ceriodaphnia dubia* (*Cyprinella leedsi*) *Pimephales promelas* *Americamysis bahia* *Menidia beryllina* Other:_____

V.1 2/24/04

Concentration 50 %	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.)	7.6	8.3	8.3	7.8	8.0	8.2
Temperature °C	25.3	24.0	24.4	24.3	24.3	24.0
Dissolved Oxygen mg/L	7.0	7.4	7.5 7.7 (1)	7.5	7.1	7.2
Conductivity (µmhos) mmhos	501	520	525	500	530	530
(initials) Measured by:	JD	JD	DN	DN	JD	JD
(initials) Recorded by:	JD	JD	DN	DN	JD	JD

Comments: @ Entry error, 1st entry measurement for control, DN.

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.)	7.4	8.1	8.2	7.5	7.8	8.2
Temperature °C	24.8	24.8	24.0	24.4	24.1	24.3
Dissolved Oxygen mg/L	6.9	7.1	7.6	7.3	7.0	7.2
Conductivity (µmhos) mmhos	712	780	770	725	740	790
(initials) Measured by:	JD	JD	DN	DN	JD	JD
(initials) Recorded by:	JD	JD	DN	DN	JD	JD

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:

V.1 2/24/04

Appendix 2. Chemical Analyses performed on the effluent from the Deland/Wiley M. Nash Water Reclamation Facility, sampled on June 6, 2005.

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
6/6/2005 9:26	DELA	Bio-AGP/LimNut	Algal Growth Potential	189	mg DryWt/L		0.3	0.9
6/6/2005 9:26	DELA	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
6/6/2005 9:26	DELA	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
6/6/2005 9:26	DELA	Bio-Toxicology	Bioassay-Acute-Def-FW-C.dubia, LC50	100	LC50	L		
6/6/2005 9:26	DELA	Bio-Toxicology	Bioassay-Acute-Def-FW-Fish, LC50	100	LC50	L		
6/6/2005 9:26	DELA	BNA-Water	1,2,4-Trichlorobenzene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	1,2,4-Trichlorobenzene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	1,2-Dichlorobenzene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	1,2-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	1,3-Dichlorobenzene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	1,3-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	1,4-Dichlorobenzene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	1,4-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	2,4,6-Trichlorophenol	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	2,4,6-Trichlorophenol	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	2,4-Dichlorophenol	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	2,4-Dichlorophenol	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	2,4-Dimethylphenol	50	ug/L	U	50	200
6/6/2005 9:45	DELA	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
6/6/2005 9:26	DELA	BNA-Water	2,4-Dinitrophenol	15	ug/L	U	15	60
6/6/2005 9:45	DELA	BNA-Water	2,4-Dinitrophenol	14	ug/L	U	14	57
6/6/2005 9:26	DELA	BNA-Water	2,4-Dinitrotoluene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	2,4-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	2,6-Dinitrotoluene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	2,6-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	2-Chloronaphthalene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	2-Chloronaphthalene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	2-Chlorophenol	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	2-Chlorophenol	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	2-Methyl-4,6-dinitrophenol	3	ug/L	U	3	12
6/6/2005 9:45	DELA	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	11
6/6/2005 9:26	DELA	BNA-Water	2-Nitrophenol	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	2-Nitrophenol	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	3,3'-Dichlorobenzidine	40	ug/L	U	40	160
6/6/2005 9:45	DELA	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	U	38	150
6/6/2005 9:26	DELA	BNA-Water	4,4'-DDD	1.5	ug/L	U	1.5	6
6/6/2005 9:45	DELA	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.7
6/6/2005 9:26	DELA	BNA-Water	4,4'-DDE	1.5	ug/L	U	1.5	6
6/6/2005 9:45	DELA	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.7
6/6/2005 9:26	DELA	BNA-Water	4,4'-DDT	1.5	ug/L	U	1.5	6
6/6/2005 9:45	DELA	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.7
6/6/2005 9:26	DELA	BNA-Water	4-Bromophenyl phenyl ether	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	4-Bromophenyl phenyl ether	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	4-Chloro-3-methylphenol	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	4-Chloro-3-methylphenol	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	4-Chlorophenyl phenyl ether	2	ug/L	U	2	8
6/6/2005 9:45	DELA	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.6
6/6/2005 9:26	DELA	BNA-Water	4-Nitrophenol	15	ug/L	U	15	60
6/6/2005 9:45	DELA	BNA-Water	4-Nitrophenol	14	ug/L	U	14	57
6/6/2005 9:26	DELA	BNA-Water	Acenaphthene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Acenaphthene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Acenaphthylene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Acenaphthylene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Aldrin	1.5	ug/L	U	1.5	6
6/6/2005 9:45	DELA	BNA-Water	Aldrin	1.4	ug/L	U	1.4	5.7
6/6/2005 9:26	DELA	BNA-Water	alpha-BHC	1.5	ug/L	U	1.5	6
6/6/2005 9:45	DELA	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.7

Appendix 2. cont'd

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
6/6/2005 9:26	DELA	BNA-Water	Anthracene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Anthracene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Benzidine	100	ug/L	UJ	100	400
6/6/2005 9:45	DELA	BNA-Water	Benzidine	95	ug/L	UJ	95	380
6/6/2005 9:26	DELA	BNA-Water	Benzo(a)anthracene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Benzo(a)anthracene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Benzo(a)pyrene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Benzo(a)pyrene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Benzo(b)fluoranthene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Benzo(b)fluoranthene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Benzo(g,h,i)perylene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Benzo(g,h,i)perylene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Benzo(k)fluoranthene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Benzo(k)fluoranthene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	beta-BHC	1.5	ug/L	U	1.5	6
6/6/2005 9:45	DELA	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.7
6/6/2005 9:26	DELA	BNA-Water	Bis(2-chloroethoxy)methane	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Bis(2-chloroethoxy)methane	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Bis(2-chloroethyl)ether	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Bis(2-chloroethyl)ether	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Bis(2-chloroisopropyl)ether	3	ug/L	U	3	12
6/6/2005 9:45	DELA	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	11
6/6/2005 9:26	DELA	BNA-Water	Bis(2-ethylhexyl)phthalate	15	ug/L	U	15	60
6/6/2005 9:45	DELA	BNA-Water	Bis(2-ethylhexyl)phthalate	14	ug/L	U	14	57
6/6/2005 9:26	DELA	BNA-Water	Butyl benzyl phthalate	5	ug/L	U	5	20
6/6/2005 9:45	DELA	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
6/6/2005 9:26	DELA	BNA-Water	Chrysene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Chrysene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	delta-BHC	1.5	ug/L	U	1.5	6
6/6/2005 9:45	DELA	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.7
6/6/2005 9:26	DELA	BNA-Water	Dibenzo(a,h)anthracene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Dibenzo(a,h)anthracene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Dieldrin	1.5	ug/L	U	1.5	6
6/6/2005 9:45	DELA	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.7
6/6/2005 9:26	DELA	BNA-Water	Diethyl phthalate	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Diethyl phthalate	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Dimethyl phthalate	50	ug/L	U	50	200
6/6/2005 9:45	DELA	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190
6/6/2005 9:26	DELA	BNA-Water	Di-n-butyl phthalate	5	ug/L	U	5	20
6/6/2005 9:45	DELA	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
6/6/2005 9:26	DELA	BNA-Water	Di-n-octyl phthalate	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Di-n-octyl phthalate	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Endosulfan I	4	ug/L	U	4	16
6/6/2005 9:45	DELA	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
6/6/2005 9:26	DELA	BNA-Water	Endosulfan II	4	ug/L	U	4	16
6/6/2005 9:45	DELA	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
6/6/2005 9:26	DELA	BNA-Water	Endosulfan sulfate	1.5	ug/L	U	1.5	6
6/6/2005 9:45	DELA	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.7
6/6/2005 9:26	DELA	BNA-Water	Endrin	1.5	ug/L	U	1.5	6
6/6/2005 9:45	DELA	BNA-Water	Endrin	1.4	ug/L	U	1.4	5.7
6/6/2005 9:26	DELA	BNA-Water	Endrin aldehyde	4	ug/L	U	4	16
6/6/2005 9:45	DELA	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
6/6/2005 9:26	DELA	BNA-Water	Fluoranthene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Fluoranthene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Fluorene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Fluorene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	gamma-BHC	1.5	ug/L	U	1.5	6
6/6/2005 9:45	DELA	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.7

Appendix 2. cont'd

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
6/6/2005 9:26	DELA	BNA-Water	Heptachlor	1.5	ug/L	U	1.5	6
6/6/2005 9:45	DELA	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.7
6/6/2005 9:26	DELA	BNA-Water	Heptachlor epoxide	1.5	ug/L	U	1.5	6
6/6/2005 9:45	DELA	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.7
6/6/2005 9:26	DELA	BNA-Water	Hexachlorobenzene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Hexachlorobenzene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Hexachlorobutadiene	3	ug/L	U	3	12
6/6/2005 9:45	DELA	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	11
6/6/2005 9:26	DELA	BNA-Water	Hexachlorocyclopentadiene	3	ug/L	UJ	3	12
6/6/2005 9:45	DELA	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	UJ	2.9	11
6/6/2005 9:26	DELA	BNA-Water	Hexachloroethane	3	ug/L	U	3	12
6/6/2005 9:45	DELA	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	11
6/6/2005 9:26	DELA	BNA-Water	Indeno(1,2,3-cd)pyrene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Indeno(1,2,3-cd)pyrene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Isophorone	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Isophorone	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Naphthalene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Naphthalene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Nitrobenzene	2	ug/L	U	2	8
6/6/2005 9:45	DELA	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.6
6/6/2005 9:26	DELA	BNA-Water	N-Nitrosodimethylamine	2	ug/L	U	2	8
6/6/2005 9:45	DELA	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.6
6/6/2005 9:26	DELA	BNA-Water	N-Nitrosodi-n-propylamine	2	ug/L	U	2	8
6/6/2005 9:45	DELA	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.6
6/6/2005 9:26	DELA	BNA-Water	N-Nitrosodiphenylamine	3	ug/L	U	3	12
6/6/2005 9:45	DELA	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	U	2.9	11
6/6/2005 9:26	DELA	BNA-Water	Pentachlorophenol	3	ug/L	U	3	12
6/6/2005 9:45	DELA	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	11
6/6/2005 9:26	DELA	BNA-Water	Phenanthrene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Phenanthrene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Phenol	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Phenol	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	BNA-Water	Pyrene	1	ug/L	U	1	4
6/6/2005 9:45	DELA	BNA-Water	Pyrene	0.95	ug/L	U	0.95	3.8
6/6/2005 9:26	DELA	GC-Water	Alachlor	0.6	ug/L	UJ	0.6	2.4
6/6/2005 9:45	DELA	GC-Water	Alachlor	0.57	ug/L	UJ	0.57	2.3
6/6/2005 9:26	DELA	GC-Water	Ametryn	0.05	ug/L	U	0.05	0.2
6/6/2005 9:45	DELA	GC-Water	Ametryn	0.048	ug/L	U	0.048	0.19
6/6/2005 9:26	DELA	GC-Water	Atrazine	0.05	ug/L	U	0.05	0.2
6/6/2005 9:45	DELA	GC-Water	Atrazine	0.048	ug/L	U	0.048	0.19
6/6/2005 9:26	DELA	GC-Water	Azinphos Methyl	0.05	ug/L	U	0.05	0.2
6/6/2005 9:45	DELA	GC-Water	Azinphos Methyl	0.048	ug/L	U	0.048	0.19
6/6/2005 9:26	DELA	GC-Water	Bromacil	0.2	ug/L	U	0.2	0.8
6/6/2005 9:45	DELA	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
6/6/2005 9:26	DELA	GC-Water	Butylate	0.2	ug/L	U	0.2	0.8
6/6/2005 9:45	DELA	GC-Water	Butylate	0.19	ug/L	U	0.19	0.76
6/6/2005 9:26	DELA	GC-Water	Chlorpyrifos Ethyl	0.05	ug/L	U	0.05	0.2
6/6/2005 9:45	DELA	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048	0.19
6/6/2005 9:26	DELA	GC-Water	Chlorpyrifos Methyl	0.1	ug/L	U	0.1	0.4
6/6/2005 9:45	DELA	GC-Water	Chlorpyrifos Methyl	0.095	ug/L	U	0.095	0.38
6/6/2005 9:26	DELA	GC-Water	Diazinon	0.05	ug/L	UJ	0.05	0.2
6/6/2005 9:45	DELA	GC-Water	Diazinon	0.048	ug/L	UJ	0.048	0.19
6/6/2005 9:26	DELA	GC-Water	Ethion	0.05	ug/L	U	0.05	0.2
6/6/2005 9:45	DELA	GC-Water	Ethion	0.048	ug/L	U	0.048	0.19
6/6/2005 9:26	DELA	GC-Water	Ethoprop	0.1	ug/L	U	0.1	0.4
6/6/2005 9:45	DELA	GC-Water	Ethoprop	0.095	ug/L	U	0.095	0.38
6/6/2005 9:26	DELA	GC-Water	Fenamiphos	0.2	ug/L	U	0.2	0.8
6/6/2005 9:45	DELA	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76

Appendix 2. cont'd

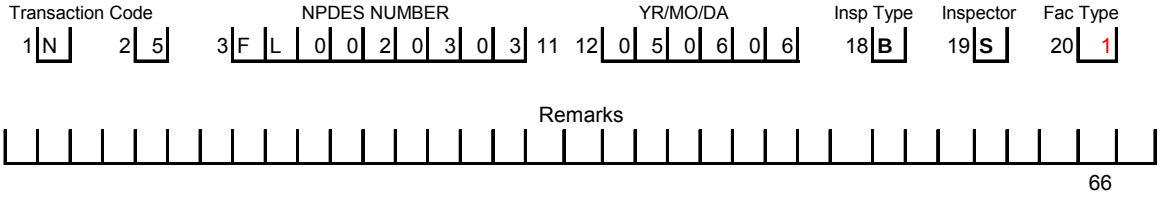
Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
6/6/2005 9:26	DELA	GC-Water	Fonofos	0.1	ug/L	U	0.1	0.4
6/6/2005 9:45	DELA	GC-Water	Fonofos	0.095	ug/L	U	0.095	0.38
6/6/2005 9:26	DELA	GC-Water	Hexazinone	0.1	ug/L	U	0.1	0.4
6/6/2005 9:45	DELA	GC-Water	Hexazinone	0.095	ug/L	U	0.095	0.38
6/6/2005 9:26	DELA	GC-Water	Malathion	0.15	ug/L	U	0.15	0.6
6/6/2005 9:45	DELA	GC-Water	Malathion	0.14	ug/L	U	0.14	0.56
6/6/2005 9:26	DELA	GC-Water	Metalaxyl	0.25	ug/L	U	0.25	1
6/6/2005 9:45	DELA	GC-Water	Metalaxyl	0.24	ug/L	U	0.24	0.96
6/6/2005 9:26	DELA	GC-Water	Metolachlor	0.5	ug/L	UJ	0.5	2
6/6/2005 9:45	DELA	GC-Water	Metolachlor	0.48	ug/L	UJ	0.48	1.9
6/6/2005 9:26	DELA	GC-Water	Metribuzin	0.1	ug/L	U	0.1	0.4
6/6/2005 9:45	DELA	GC-Water	Metribuzin	0.095	ug/L	U	0.095	0.38
6/6/2005 9:26	DELA	GC-Water	Mevinphos	0.2	ug/L	U	0.2	0.8
6/6/2005 9:45	DELA	GC-Water	Mevinphos	0.19	ug/L	U	0.19	0.76
6/6/2005 9:26	DELA	GC-Water	Naled	0.8	ug/L	U	0.8	3.2
6/6/2005 9:45	DELA	GC-Water	Naled	0.76	ug/L	U	0.76	3
6/6/2005 9:26	DELA	GC-Water	Norflurazon	0.1	ug/L	U	0.1	0.4
6/6/2005 9:45	DELA	GC-Water	Norflurazon	0.095	ug/L	U	0.095	0.38
6/6/2005 9:26	DELA	GC-Water	Parathion Ethyl	0.15	ug/L	U	0.15	0.6
6/6/2005 9:45	DELA	GC-Water	Parathion Ethyl	0.14	ug/L	U	0.14	0.56
6/6/2005 9:26	DELA	GC-Water	Parathion Methyl	0.1	ug/L	U	0.1	0.4
6/6/2005 9:45	DELA	GC-Water	Parathion Methyl	0.095	ug/L	U	0.095	0.38
6/6/2005 9:26	DELA	GC-Water	Phorate	0.05	ug/L	U	0.05	0.2
6/6/2005 9:45	DELA	GC-Water	Phorate	0.048	ug/L	U	0.048	0.19
6/6/2005 9:26	DELA	GC-Water	Prometryn	0.15	ug/L	UJ	0.15	0.6
6/6/2005 9:45	DELA	GC-Water	Prometryn	0.14	ug/L	UJ	0.14	0.56
6/6/2005 9:26	DELA	GC-Water	Simazine	0.05	ug/L	U	0.05	0.2
6/6/2005 9:45	DELA	GC-Water	Simazine	0.048	ug/L	U	0.048	0.19
6/6/2005 9:26	DELA	Metals-Water	Aluminum	60	ug/L		5	20
6/6/2005 9:45	DELA	Metals-Water	Aluminum	5	ug/L	U	5	20
6/6/2005 9:26	DELA	Metals-Water	Arsenic	4	ug/L	U	4	16
6/6/2005 9:45	DELA	Metals-Water	Arsenic	4	ug/L	U	4	16
6/6/2005 9:26	DELA	Metals-Water	Cadmium	0.5	ug/L	U	0.5	2
6/6/2005 9:45	DELA	Metals-Water	Cadmium	0.5	ug/L	U	0.5	2
6/6/2005 9:26	DELA	Metals-Water	Calcium	53.9	mg/L		0.05	0.2
6/6/2005 9:45	DELA	Metals-Water	Calcium	0.05	mg/L	U	0.05	0.2
6/6/2005 9:26	DELA	Metals-Water	Chromium	2	ug/L	U	2	8
6/6/2005 9:45	DELA	Metals-Water	Chromium	2	ug/L	U	2	8
6/6/2005 9:26	DELA	Metals-Water	Copper	1.6	ug/L	I	0.5	2
6/6/2005 9:45	DELA	Metals-Water	Copper	0.56	ug/L	U	0.56	2.2
6/6/2005 9:26	DELA	Metals-Water	Iron	52	ug/L		10	40
6/6/2005 9:45	DELA	Metals-Water	Iron	10	ug/L	U	10	40
6/6/2005 9:26	DELA	Metals-Water	Lead	0.69	ug/L	I	0.52	2.1
6/6/2005 9:45	DELA	Metals-Water	Lead	0.52	ug/L	U	0.52	2.1
6/6/2005 9:26	DELA	Metals-Water	Magnesium	6.8	mg/L		0.01	0.04
6/6/2005 9:45	DELA	Metals-Water	Magnesium	0.01	mg/L	U	0.01	0.04
6/6/2005 9:26	DELA	Metals-Water	Nickel	2.6	ug/L	I	2	8
6/6/2005 9:45	DELA	Metals-Water	Nickel	2	ug/L	U	2	8
6/6/2005 9:26	DELA	Metals-Water	Selenium	0.87	ug/L	I	0.5	2
6/6/2005 9:45	DELA	Metals-Water	Selenium	0.5	ug/L	U	0.5	2
6/6/2005 9:26	DELA	Metals-Water	Silver	0.025	ug/L	U	0.025	0.1
6/6/2005 9:45	DELA	Metals-Water	Silver	0.025	ug/L	U	0.025	0.1
6/6/2005 9:26	DELA	Metals-Water	Zinc	37	ug/L		3	12
6/6/2005 9:45	DELA	Metals-Water	Zinc	3	ug/L	U	3	12
6/6/2005 9:26	DELA	Nutrients-Liquid	Alkalinity	100	mg CaCO3/L	A	0.65	2.5
6/6/2005 9:45	DELA	Nutrients-Liquid	Alkalinity	0.65	mg CaCO3/L	U	0.65	2.5
6/6/2005 9:26	DELA	Nutrients-Liquid	Ammonia-N	0.045	mg N/L	A	0.01	0.02
6/6/2005 9:45	DELA	Nutrients-Liquid	Ammonia-N	0.01	mg N/L	U	0.01	0.02

Appendix 2. cont'd

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
6/6/2005 9:26	DELA	Nutrients-Liquid	Kjeldahl Nitrogen	0.88	mg N/L	JA	0.12	0.4
6/6/2005 9:45	DELA	Nutrients-Liquid	Kjeldahl Nitrogen	0.06	mg N/L	U	0.06	0.2
6/6/2005 9:26	DELA	Nutrients-Liquid	NO2NO3-N	4.1	mg N/L		0.4	1
6/6/2005 9:45	DELA	Nutrients-Liquid	NO2NO3-N	0.013	mg N/L		0.004	0.01
6/6/2005 9:26	DELA	Nutrients-Liquid	O-Phosphate-P	0.31	mg P/L		0.04	0.1
6/6/2005 9:45	DELA	Nutrients-Liquid	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
6/6/2005 9:26	DELA	Nutrients-Liquid	Total-P	0.39	mg P/L	A	0.02	0.06
6/6/2005 9:45	DELA	Nutrients-Liquid	Total-P	0.02	mg P/L	U	0.02	0.06
6/6/2005 9:26	DELA	Nutrients-Liquid	TSS	4	mg/L	U	4	16
6/6/2005 9:45	DELA	Nutrients-Liquid	TSS	4	mg/L	U	4	16
6/6/2005 9:26	DELA	Nutrients-Liquid	Turbidity	0.7	NTU		0.05	0.05
6/6/2005 9:45	DELA	Nutrients-Liquid	Turbidity	0.05	NTU	U	0.05	0.05
6/6/2005 9:26	DELA	Overflow	Oil and Grease	1.7	mg/L	U		
6/6/2005 9:45	DELA	Overflow	Oil and Grease	1.7	mg/L	U		

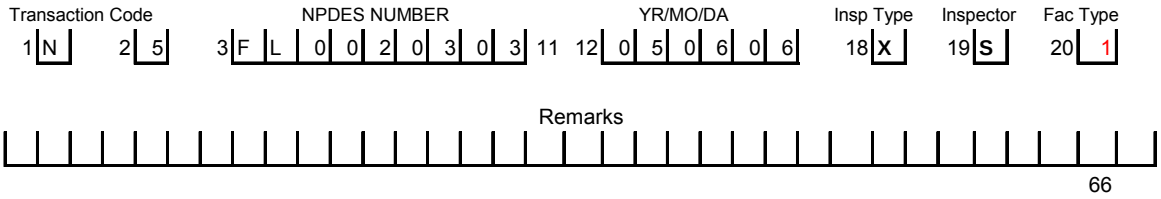
The Bioassay of Deland/Wiley M. Nash Water Reclamation Facility effluent sampled on June 6, 2005, NPDES #FL0020303.

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



The Priority Pollutants Analysis of Deland/Wiley M. Nash Water Reclamation Facility effluent sampled on June 6, 2005, NPDES #FL0020303.

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



Biological Analyses of Deland/Wiley M. Nash Water Reclamation Facility effluent sampled on June 6, 2005, NPDES #FL0020303.

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

