

Bioassays of

Nassau Host, Inc.

Yulee, Nassau County, Florida

No NPDES Number

Sampled 1/22/96

March 1996

Biology Section

Division of Administrative and Technical Services

Comprehensive Quality Assurance Plan #870346G

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Nassau Host, Inc.

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No NPDES Number

Biology Section
Bureau of Laboratories
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Introduction

Nassau Host, Inc., Yulee, Nassau County, Florida, no NPDES #, tests performed on 23 to 25 January, 1996.

This facility is located on U.S. Highway 17 and I-95, just south of the Florida-Georgia border and north of Yulee, Florida. The facility operates a domestic WWTP system which has a design capacity of 0.015 MGD and an average flow of 0.011 MGD. The effluent receives secondary treatment, chlorination, and dechlorination prior to discharge to an unnamed wetland. At the time of sampling, there were no sodium bisulfite tablets in the dechlorination structure, so the final effluent contained chlorine (facility summary provided by Jon Dinges, FDEP, Jacksonville).

The toxicity tests discussed in this report were performed in accordance with methods described by Weber, 1993, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 4th Edition, EPA/600/4-90/027F.

Results and Discussion

The FDEP Biology Section performed two 48-hour static acute screening toxicity bioassays on a sample of chlorinated effluent from this facility. Two additional 48-hour screening bioassays were performed on aliquots of the sample that were dechlorinated in the laboratory with 1.2 mL/L of 0.025N sodium thiosulfate. The test species used for these bioassays were the water flea, *Ceriodaphnia dubia*, and the bannerfin shiner, *Cyprinella leedsi*.

The chlorinated test results showed the sample to be acutely toxic to both test species, producing 100% mortality in the *Cyprinella leedsi* test and 95% mortality in the *Ceriodaphnia dubia* test, in 24 hours (Table 1). However, no mortality occurred in either of the dechlorinated sample tests (Table 1, concluded).

Total residual chlorine of the sample was 1.01 mg/L in the field and 0.9 mg/L in the laboratory. Total residual chlorine levels as low as 0.028 mg/L have been found to be acutely toxic to some freshwater fish and invertebrates (EPA *Quality Criteria for Water*, 1986). Total ammonia was not detected in the sample. Further chemical analyses were performed on the sample and several metals and organic compounds were identified (Table 2).

Conclusion

The sample of effluent collected from this facility on January 22, 1996, showed toxicity in the chlorinated sample, but did not show toxicity in the aliquot of sample which was dechlorinated in the laboratory. We attribute the toxicity to the total residual chlorine content of the sample.

Table 1. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from the Nassau Host, Inc., Yulee, Nassau County, Florida, no NPDES#, performed on 23 to 25 January, 1996.

Chlorinated Test

Facility:	**Nassau Host Inc.**		NPDES #	none	Facility Type: **Domestic WWTP**
Location:	U.S. 17 and I-95 near Yulee		Contact/District:	T. McKelvey/Northeast	
County:	Nassau		Test type:	static acute screen	
Sample Collection Date:	1/22/96	Time: 1445	# tests:	4	Receiving Water: Unnamed wetlands
Test Beginning Date:	1/23/96	Time: 1330	Chlorination Type:	**Chlorinated**	
Test Ending Date:	1/25/96	Time: 1330			**Page 1 of 2**

Total Residual CL2	mg/L	Method
Field:	1.01	-
Lab:	0.90	DR-100

Ammonia	Total (mg/L)	Unionized (mg/L)
Control Water (fish):	< 0.017	0.00
20% Dilute Mineral Water (cladocerans):	< 0.017	0.00
100% Sample:	<0.017	0.000

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control Water (fish):	125	140
20% Dilute Mineral Water (cladocerans):	70	80
100% Sample:	170	330

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

Organism: ***Ceriodaphnia dubia*** Life stage: < 24 hours old

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[A]			Dissolved Oxygen			Conductivity Uncorrected µmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour
Control A	0/20	5	5	5	8.2	-	8.3	23.8	-	25.3	7.9	-	7.3	180	190
Control B	0/20	5	5	5	-	-	8.3	-	-	25.4	-	-	7.4	-	185
Control C	0/20	5	5	5	-	-	8.3	-	-	25.5	-	-	7.4	-	185
Control D	0/20	5	5	5	-	-	8.3	-	-	25.5	-	-	7.4	-	190
100% A	20/0	5	0	0	8.3	-	8.6	23.7	-	24.9	7.8	-	7.6	850	1000
100% B	20/0	5	1	1	-	-	8.6	-	-	25.1	-	-	7.7	-	965
100% C	20/0	5	0	0	-	-	8.6	-	-	25.2	-	-	7.5	-	1015
100% D	20/0	5	0	0	-	-	8.6	-	-	24.9	-	-	7.4	-	1005

[A] Temperature of test incubator was continously recorded on a strip chart recorder. Incubator temperature range for the test period was 24.4-25.6°C.

Organism: ***Cyprinella leedsi*** Age: 12 days

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[B]			Dissolved Oxygen			Conductivity Uncorrected µmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour
Control A	0/500	5	5	-	8.0	8.3	-	24.0	23.8	-	7.8	8.0	-	250	250
Control B	0/500	5	5	-	8.0	8.3	-	24.1	23.8	-	7.8	7.9	-	250	250
Control C	0/500	5	5	-	8.0	8.3	-	24.1	23.7	-	7.8	7.9	-	250	250
Control D	0/500	5	5	-	8.0	8.3	-	24.1	23.7	-	7.7	7.9	-	250	250
100% A	500/0	5	0	-	8.2	8.4	-	23.3	23.7	-	7.8	7.9	-	900	910
100% B	500/0	5	0	-	8.2	8.4	-	23.3	23.7	-	7.9	7.9	-	900	910
100% C	500/0	5	0	-	8.2	8.4	-	23.2	23.6	-	8.1	8.0	-	900	910
100% D	500/0	5	0	-	8.2	8.4	-	23.3	23.7	-	8.2	8.2	-	900	910

[B] Temperature of test room was continously recorded on a strip chart recorder. Room temperature range for the test period was 23-25°C.

-Continued-

Table 1. Concluded. Data recorded during the 48-hour acute toxicity screening bioassays of a sample of effluent from the Nassau Host, Inc., Yulee, Nassau County, Florida, no NPDES#, performed on 23 to 25 January, 1996.

Dechlorinated Test

Facility:	**Nassau Host, Inc.**		NPDES #	none	Facility Type: **Domestic WWTP**
Location:	U.S. 17 and I-95 near Yulee		Contact/District:	T. McKelvey/Northeast	
County:	Nassau		Test type:	static acute screen	
Sample Collection Date:	1/22/96	Time: 1445	# tests:	4	Receiving Water: Unnamed wetlands
Test Beginning Date:	1/23/96	Time: 1330	Chlorination Type:	Chlorinated*	
Test Ending Date:	1/25/96	Time: 1330			Page 2 of 2

*Sample was dechlorinated in the laboratory with 1.2 mL/L of 0.025 N sodium thiosulfate.

Total Residual CL2	mg/L	Method
Field:	not measured	
Lab:	0.04	DR-100

Ammonia	Total (mg/L)	Unionized (mg/L)
Control Water (fish):	< 0.017	0.00
20% Dilute Mineral Water (cladocerans):	< 0.017	0.00
100% Sample:	<0.017	0.00

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control Water (fish):	125	140
20% Dilute Mineral Water (cladocerans):	70	80
100% Sample:	175	335

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

Organism: ***Ceriodaphnia dubia*** Life stage: < 24 hours old

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[A]			Dissolved Oxygen			Conductivity Uncorrected µmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	48 hour
Control A	0/20	5	5	5	8.3	-	8.3	24.0	-	25.2	7.7	-	7.2	170	185
Control B	0/20	5	5	5	-	-	8.3	-	-	25.3	-	-	7.4	-	190
Control C	0/20	5	5	5	-	-	8.3	-	-	25.4	-	-	7.4	-	195
Control D	0/20	5	5	5	-	-	8.3	-	-	25.3	-	-	7.4	-	185
100% A	20/0	5	5	5	8.3	-	8.6	23.9	-	25.4	7.8	-	7.5	880	985
100% B	20/0	5	5	5	-	-	8.5	-	-	25.6	-	-	7.4	-	995
100% C	20/0	5	5	5	-	-	8.5	-	-	25.6	-	-	7.5	-	1010
100% D	20/0	5	5	5	-	-	8.5	-	-	25.7	-	-	7.4	-	970

[A] Temperature of test incubator was continously recorded on a strip chart recorder. Incubator temperature range for the test period was 24.4-25.6°C.

Organism: ***Cyprinella leedsi*** Age: 12 days

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[B]			Dissolved Oxygen			Conductivity Uncorrected µmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	48 hour
Control A	0/500	5	5	5	8.0	8.3	8.4	24.0	23.7	23.3	7.7	7.8	7.6	250	245
Control B	0/500	5	5	5	8.0	8.3	8.4	24.0	23.7	23.2	7.7	7.8	7.5	250	245
Control C	0/500	5	5	5	8.0	8.3	8.4	24.0	23.6	23.1	7.8	7.8	7.6	250	245
Control D	0/500	5	5	5	8.0	8.3	8.4	24.0	23.6	23.1	7.7	7.8	7.7	250	250
100% A	500/0	5	5	5	8.3	8.4	8.3	23.7	23.7	23.2	7.9	7.9	7.6	910	920
100% B	500/0	5	5	5	8.3	8.4	8.3	23.6	23.7	23.2	7.9	7.8	7.5	910	920
100% C	500/0	5	5	5	8.3	8.4	8.3	23.6	23.7	23.2	8.0	7.8	7.2	910	915
100% D	500/0	5	5	5	8.3	8.4	8.2	23.6	23.6	23.2	8.0	7.8	7.2	915	920

[B] Temperature of test room was continously recorded on a strip chart recorder. Room temperature range for the test period was 23-25°C.

Table 2. Results of chemical analyses on the effluent from the Nassau Host, Inc., sampled on January 22, 1996.

Metals

Cadmium	1.3	µg/L[J]
Calcium	68.4	mg/L[A]
Copper	12	µg/L[A]
Iron	157	µg/L[A]
Magnesium	35.9	mg/L[A]
Nickel	4	µg/L[I]
Zinc	100	µg/L[A]

Pesticides and Herbicides

none detected

Base, Neutral, & Acid Extractable Organics

Butyl ester Octadecanoic acid	5	µg/L
Total long carbon chain Amines	20	µg/L
Unidentifiable Organic compounds (total)	6	µg/L

[A] Value reported is the mean of two or more determinations.

[I] Value reported is less than the minimum quantitation limit and greater than or equal to the minimum detection limit.

[J] Estimated value.

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Nassau Host Inc.
County: Nassau
Contact / District: Tim McKilvy / Northeast
NPDES Permit #: FL00 None
LIMS Sample #: 127659 (sample log 1-22-96) LIMS Job #: 96-JAN-23-12

Sample Collection: Date 1-22-96 Time 1445
Test Beginning: Date 1-23-96 Time 1350
Test Ending: Date 1-25-96 Time 1330
Organism Batch #: 5 Diluent Batch #: 3
Organism Age: < 24 hours

Test Organism: Ceriodaphnia dubia

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

Test Number: 1 of 4

Remarks: dechlorination test
Sample dechlorinated with
1.2 mL/L of sodium thiosulfate
0.025N.

Instrument Calibrations:	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
meter #	7851	90H018262	90H018262	G9005749
0 hr	7.0 @ 7.0 9.0 @ 9.0	21.8 @ 21.7	8.1 @ 25.8 °C	1072 @ 1062 1024 @ 1025 @ 24.9 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	23.1 @ 23.2	8.1 @ 26.0 °C	1078 @ 1062 1027 @ 1025 @ 24.9 °C
48 hr	7.0 @ 7.0 9.0 @ 9.0	20.7 @ 20.7	8.2 @ 24.7 °C	1070 @ 1062 1023 @ 1025 @ 24.7 °C

Conc.	Chamber #	Number Live 0 hr	Number Live 24 h	Number Live 48 h	pH 0 hr	pH 24 h	pH 48 h	Temperature (°C) 0 hr	Temperature (°C) 24 h	Temperature (°C) 48 h	D.O. (mg/L) 0 hr	D.O. (mg/L) 24 h	D.O. (mg/L) 48 h	UNCORRECTED Cond. (mmhos/cm) / Cond. (µmhos/cm) 0 hr	UNCORRECTED Cond. (mmhos/cm) / Cond. (µmhos/cm) 24 h	UNCORRECTED Cond. (mmhos/cm) / Cond. (µmhos/cm) 48 h
Control	A	5	5	5	8.3		8.3	24.0		25.2	7.7		7.2	170		185
Control	B	5	5	5			8.3			25.3			7.4			190
Control	C	5	5	5			8.3			25.4			7.4			195
Control	D	5	5	5			8.3			25.3			7.4			185
100%	A	5	5	5	8.3		8.6	23.9		25.4	7.8		7.5	980		985
100%	B	5	5	5			8.5			25.6			7.4			995
100%	C	5	5	5			8.5			25.6			7.5			1010
100%	D	5	5	5			8.5			25.7			7.4			970
Measured/Loaded by:		JM	MF	JM	MF		JM	MF		JM	MF		JM	MF		JM
Recorded by:		JM	MF	JM	TR		TR	TR		TR	TR		TR	TR		TR

Investigators' Signatures

Marshall Faircloth
Robin G. Rader
Tina Mikulski
Jim Smith
Tim McKilvy
Tom Gleason

reviewer

form updated 5/05/95

Water Quality Parameters	Salt Water / Well Water	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):			—	—	—
Lab Total Residual Cl2 (mg/L):	—	<0.03	0.04	DR100	JM
Alkalinity (mg/L as $CaCO_3$):	—	70	125	Hach	TR
Hardness (mg/L as $CaCO_3$):	—	80	335	Hach	TR
Total ammonia (mg/L as N):	—	<0.017	<0.017	Orion	JM

Ammonia Meter #98136 Ammonia Meter Slope: -58.4 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Nassau Host INC
County: Nassau
Contact / District: Tim McKelvey / Northeast
NPDES Permit #: FL00 None
LIMS Sample #: 127659 LIMS Job #: 96-JAN-23-12

Sample Collection: Date 1-22-96 Time 1445
Test Beginning: Date 1-23-96 Time 1330
Test Ending: Date 1-25-96 Time 1330
Organism Batch #: 3 Diluent Batch #: well H_2O
Organism Age: 12 days
Test Organism: cyprinella leedsi

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

Test Number: 2 of 4

Remarks: dechlorinated test
Sample dechlorinated with 1.2mL/L of 0.025 N sodium thiosulfate

Instrument Calibrations:	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
meter #	7851	90H018262	90H018262	G9005749
0 hr	7.0 @ 7.0 9.0 @ 9.0	21.8 @ 21.7	8.1 @ 25.8 °C	107.2 @ 106.2 1024 @ 1025 @ 24.9 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	23.1 @ 23.2	8.1 @ 26.0 °C	107.8 @ 106.2 1027 @ 1025 @ 24.9 °C
48 hr	7.0 @ 7.0 9.0 @ 9.0	20.7 @ 20.7	8.2 @ 24.7 °C	107.0 @ 106.2 1023 @ 1025 @ 24.7 °C

		Number Live			pH			Temperature (°C)			D.O. (mg/L)			UNCORRECTED Cond. (mmhos/cm) ~~Cond. (µmhos/cm)~~		
Conc.	Chamber #	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h
Control A	G17	5	5	5	8.0	8.3	8.4	24.0	23.7	23.3	7.7	7.8	7.6	250	250	245
Control B	G18	5	5	5	8.0	8.3	8.4	24.0	23.7	23.2	7.7	7.8	7.5	250	245	245
Control C	G19	5	5	5	8.0	8.3	8.4	24.0	23.6	23.1	7.8	7.8	7.6	250	245	245
Control D	G20	5	5	5	8.0	8.3	8.4	24.0	23.6	23.1	7.7	7.8	7.7	250	250	250
100% A	G21	5	5	5	8.3	8.4	8.3	23.7	23.7	23.2	7.9	7.9	7.6	910	920	920
100% B	G22	5	5	5	8.3	8.4	8.3	23.6	23.7	23.2	7.9	7.8	7.5	910	920	920
100% C	G23	5	5	5	8.3	8.4	8.3	23.6	23.7	23.2	8.0	7.8	7.2	910	910	915
100% D	G24	5	5	5	8.3	8.4	8.2	23.6	23.6	23.2	8.0	7.8	7.2	915	915	920
Measured/Loaded by:		TM	MF	TM	MF	MF	TM	MF	MF	TM	MF	MF	TM	MF	MF	TM
Recorded by:		TM	MF	TM	TR	JN	DB	TR	JN	DB	TR	JN	DB	TR	MF	DB

Investigators' Signatures

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Robin G. Rader
Tina M. Nicholas
Dan R
Jennifer Morrell

reviewer

form updated 5/05/95

Water Quality Parameters	Salt Water: Well Water / ~~20% Min Water~~	Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):				
Lab Total Residual Cl2 (mg/L):	<0.03	0.04	DR-100	TM
Alkalinity (mg/L as $CaCO_3$):	125	175	Hach	TR
Hardness (mg/L as $CaCO_3$):	140	335	Hach	TR
Total ammonia (mg/L as N):	<0.017	<0.017	Orion	JN

Ammonia Meter #98136 Ammonia Meter Slope: -58.4 Ammonia Blank: <0.017

Control Salinity: 0 ppt

Sample Salinity: 0 ppt

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Nassau Host, Inc.
County: Nassau
Contact / District: Tim McKelvey / Northeast
NPDES Permit #: FL00 None
LIMS Sample #: 127654 LIMS Job #: 96-JAN-23-12

Sample Collection: Date 1-22-96 Time 1445
Test Beginning: Date 1-23-96 Time 1330
Test Ending: Date 1-26-96 Time 1330
Organism Batch #: 5 Diluent Batch #: 3
Organism Age: < 24 hours
Test Organism: Ceriodaphnia dubia

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

Test Number: 3 of 4

Remarks: Chlorinated tost

Instrument Calibrations:	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
meter #	7851	90H018262	90H018262	G9005749
0 hr	7.0 @ 7.0 9.0 @ 9.0	21.8 @ 21.7	8.1 @ 25.5 °C	1072 @ 1062 1024 @ 1025 @ 24.9 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	23.1 @ 23.2	8.1 @ 26.0 °C	1078 @ 1062 1027 @ 1025 @ 24.9 °C
48 hr	7.0 @ 7.0 9.0 @ 9.0	20.7 @ 20.7	8.2 @ 24.7 °C	1070 @ 1062 1023 @ 1025 @ 24.7 °C

Conc.	Chamber #	Number Live 0 hr	Number Live 24 h	Number Live 48 h	pH 0 hr	pH 24 h	pH 48 h	Temperature (°C) 0 hr	Temperature (°C) 24 h	Temperature (°C) 48 h	D.O. (mg/L) 0 hr	D.O. (mg/L) 24 h	D.O. (mg/L) 48 h	UNCORRECTED Cond. (mmhos/cm) (Cond. (µmhos/cm)) 0 hr	UNCORRECTED Cond. (mmhos/cm) (Cond. (µmhos/cm)) 24 h	UNCORRECTED Cond. (mmhos/cm) (Cond. (µmhos/cm)) 48 h
Control	A	5	5	5	8.2		8.3	23.8		25.3	7.9		7.3	190		190
Control	B	5	5	5			8.3			25.4			7.4			185
Control	C	5	5	5			8.3			25.5			7.4			185
Control	D	5	5	5			8.3			25.5			7.4			190
100%	A	5	0	0	8.3		8.6	23.7		24.9	7.8		7.6	850		1000
100%	B	5	1	1			8.6			25.1			7.7			965
100%	C	5	0	0			8.6			25.2			7.5			1015
100%	D	5	0	0			8.6			24.9			7.4			1005
Measured/Loaded by:		TM	MF	TM	MF		TM	MF		TM	MF		TM	MF		TM
Recorded by:		TM	MF	TM	TR		TR	TR		TR	TR		TR	TR		TR

Investigators' Signatures

Marshall Faircloth
Tobin G. Rader
Tina Mikulski
Jennifer Morrell
Tim Bo
reviewer

form updated 5/05/95

Water Quality Parameters	Salt Water / Well Water	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):			1.01	—	Jon Dinges
Lab Total Residual Cl2 (mg/L):	—	<0.03	0.9	DR-100	TM
Alkalinity (mg/L as $CaCO_3$):	—	70	170	Hach	TR
Hardness (mg/L as $CaCO_3$):	—	80	330	Hach	TR
Total ammonia (mg/L as N):	—	<0.017	<0.017	Orion	JN

Ammonia Meter #98136 Ammonia Meter Slope: -58.4 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Nassau HOST, INC.
County: Nassau
Contact / District: Tim McKelvey / Northeast
NPDES Permit #: FL00 None
LIMS Sample #: 127659 LIMS Job #: 96-JAN-23-12

Sample Collection: Date 1-22-96 Time 1445
Test Beginning: Date 1-23-96 Time 1330
Test Ending: Date 1-24-96 Time 1330
Organism Batch #: 3 Diluent Batch #: 4x11b20
Organism Age: 12 days
Test Organism: Cyprinella leedsi

Test Type: ~~Screening~~ | Definitive
~~Static~~ | Static Renewal | Flow-through

Test Number: 4 of 4
Remarks: chlorinated tost
tost terminated @ 24 hours

Instrument Calibrations:	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
meter #	7851	90H018262	90H018262	G9005749
0 hr	7.0 @ 7.0 9.0 @ 9.0	21.8 @ 21.7	8.1 @ 25.8 °C	1012 @ 106.2 1024 @ 1025 @ 24.9 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	23.1 @ 23.2	8.1 @ 26.0 °C	1018 @ 106.2 1027 @ 1025 @ 24.9 °C
48 hr	7.0 @ 7.0 9.0 @ 9.0	20.7 @ 20.7	8.2 @ 24.7 °C	1010 @ 106.2 1023 @ 1025 @ 24.7 °C

		Number Live			pH			Temperature (°C)			D.O. (mg/L)			UNCORRECTED Cond. (mmhos/cm) ~~Cond. (µmhos/cm)~~		
Conc.	Chamber #	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h
control A	G-9	5	5		8.0	8.3		24.0	23.8		7.8	8.0		250	250	
control B	G-10	5	5		8.0	8.3		24.1	23.8		7.8	7.9		250	250	
Control C	G-11	5	5		8.0	8.3		24.1	23.7		7.8	7.9		260	250	
Control D	G-12	5	5		8.0	8.3		24.1	23.7		7.7	7.9		250	250	
100% A	G13	5	0	—	8.2	8.4		~~24.8~~	23.7		7.8	7.9		900	910	
100% B	G14	5	0	—	8.2	8.4		23.3	23.7		7.9	7.9		900	910	
100% C	G-15	5	0	—	8.2	8.4		23.2	23.6		8.1	8.0		900	910	
100% D	G16	5	0	—	8.2	8.4		23.3	23.7		8.2	8.2		900	910	
Measured/Loaded by:		TM	MF		MF	MF		MF	MF		MF	MF		MF	MF	
Recorded by:		TM	MF		TR	JN		TR	JN		TR	JN		TR	MF	

* DW 23.3 probe reads to auditor

Investigators' Signatures

Salt Water: ~~Well Water~~ | 20% Min Water

Water Quality Parameters	Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):	1.01	—	~~Dan~~ Jon Dinges
Lab Total Residual Cl2 (mg/L): <0.03	0.9	DR-100	TM
Alkalinity (mg/L as $CaCO_3$): 125	170	Hach	TR
Hardness (mg/L as $CaCO_3$): 140	330	Hach	TR
Total ammonia (mg/L as N): <0.017	<0.017	Orion	JN

* ref 1/23/96 w.q. sheet

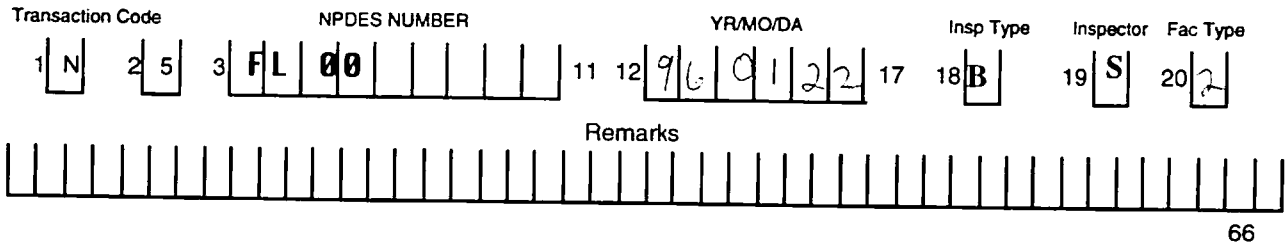
Ammonia Meter #98136 Ammonia Meter Slope: -58.4 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

reviewer

form updated 5/05/95

The Bioassay of the Nassau Host, Inc., effluent sampled on January 22, 1996, no NPDES #.

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



The Priority Pollutants Analysis for the Bioassay of the Nassau Host, Inc., effluent sampled on January 22, 1996, no NPDES #.

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

