



**State of Louisiana
Department of Natural Resources
Coastal Restoration Division**

**2006/2007 Annual Inspection
Report**

for

**NAOMI OUTFALL
MANAGEMENT
(BA-03c)**

State Project Number BA-3c
Priority Project List 5

July 18, 2007
Jefferson Parish

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I. Introduction

The Naomi Outfall Management Project (State Project No. BA-03c) is located south of Lafitte, Louisiana. Although the project features are located entirely in Jefferson Parish, the project outfall area encompasses 27,135 acres in Jefferson and Plaquemines Parishes. More specifically, project features are located on two streams – Goose Bayou Canal and Bayou Dupont – which connect the Barataria Bay Waterway to the Pen (Appendix A).

II. Inspection Purpose and Procedures

The purpose of the annual inspection of the Naomi Outfall Management Project (BA-03c) is to evaluate the constructed project features to identify any deficiencies and prepare a report detailing the condition of project features and recommended corrective actions needed. Should it be determined that corrective actions are needed, LDNR shall provide, in the report, a detailed cost estimate for engineering, design, supervision, inspection, and construction contingencies, and an assessment of the urgency of such repairs (O&M Plan December 24, 2002). The annual inspection report also contains a summary of maintenance projects and an estimated projected budget for the upcoming three (3) years for operation, maintenance and rehabilitation. The three (3) year projected operation and maintenance budget is shown in Appendix C. A summary of past operation and maintenance projects completed since completion of the Naomi Outfall Management Project are outlined in Section II.

An inspection of the Naomi Outfall Management Project (BA-03c) was held on March 20, 2007 by George Boddie, Barry Richard, Tom Bernard, and Peter Hopkins from LDNR; Warren Blanchard of NRCS. There was a light southeast wind, and the tide gage, which is located approximately 0.8 miles north of C&M Marina on the east bank of the Barataria Bay Waterway, read +0.88-ft NAVD-88. Photographs of that inspection are included in Appendix B of this report.

III. Project Description and History

In February, 1993, the Naomi Siphon, located on the west bank of the Mississippi River, went into operation and has delivered an average of 997 cfs of fresh river water (when operating) into the marshes and streams east of the Pen. Much of this fresh water eventually exits the project area via Goose Bayou Canal and Bayou Dupont Canal which connect the Pen with the Barataria Waterway. During periods of high tide, reverse flow occurs and high-salinity water from the Barataria Waterway enters the Pen via the two subject canals. So, the two canals provide a natural avenue for loss of fresh river water from the project area and intrusion of high-salinity water into the project area.

The present project, which consists of fixed crest weirs with boat bays, restricts the hydrologic connections between the Pen and the Barataria Waterway. This restriction holds diverted water and nutrients in the project area, while restricting the high salinity waters from the Barataria Waterway. The weirs moderate or dampen the interchange of water into and out

of the Pen through Goose Bayou Canal and Bayou Dupont Canal. Thus, retention of sediment-rich fresh siphon water in the outfall area is maximized, and intrusion of high-salinity water is minimized.

Project construction began on June 1, 2002, and was completed on July 15, 2002. Project life is estimated to be 20 years. Annual project inspections are planned.

The principal project features include:

1. One stone weir at **Goose Bayou Canal**

- a. Total length of weir = 458 ft.
- b. Bottom width of boat bay = 30 ft.
- c. Boat bay bottom elevation = -5 ft. (NAVD 88)
- d. Weir crest = +1 ft. (NAVD 88)
- e. Rock placed directly on geotextile
- f. Rock rip rap = 3,967 tons
- g. Geotextile = 2,851 yards
- h. Rock conforms to Rock Type 1 of Material Specification 523 with a gradation of:

Percent Lighter Than	Rock Unit Weight
100	700 lbs
50-100	300 lbs
15-50	150 lbs
0-15	45 lbs

- i. Four (4) - 4-piling clusters with navigation aid lights and warning signs
- j. Six (6) single pilings with warning signs
- k. Thirty-two buoys and associated stainless steel cable

2. One stone weir at **Bayou Dupont Canal**

- a. Total length of weir = 302 ft.
- b. Bottom width of boat bay = 30 ft.
- c. Boat bay bottom elevation = -5 ft. (NAVD 88)
- d. Weir crest +1 ft. (NAVD 88)
- e. Rock placed directly on geotextile
- f. Rock rip rap = 8,505 tons
- g. Geotextile = 3,374 yards
- h. Rock conforms to Rock Type 1 of Material Specification 523 with a gradation of:

Percent Lighter Than	Rock Unit Weight
100	700 lbs
50 -100	300 lbs
15-50	150 lbs

0-15	45 lbs
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- i. Four (4) 4-pile clusters with day mark navigation signs and three (3) of the piling clusters have navigation aid lights.
- j. Three (3) single pilings with warning signs (reduced from five (5) in 2006 repair project)
- k. Twenty-two warning buoys with stainless steel cable
- l. Two (2) marker buoys with warning markings and internal radar reflectors (added during 2006 repair project in place of two (2) single pilings with warning signs).

IV. Summary of Past Operation and Maintenance Projects

Operation: There are no operable structures associated with this project.

General Maintenance:

June 2006- Double Aught Construction

- place two warning buoys in places where warning signs were damaged
- replace 5 navigation lights
- this project was completed on October 4, 2006

TOTAL CONSTRUCTION COST- \$56,600.00

V. Inspection Results

BAYOU DUPONT CANAL WEIR

Rock Riprap

There were no notable changes in the rock rip rap during this inspection.

Pilings

The two pilings on either side of the boat bay which were damaged at last year's inspection have been replaced with regulatory marker buoys (Photo #1). There was no damage to any others.

Warning Signs and Day Board Navigation Signs

The two warning signs attached to the pilings which were noted as damaged in last year's inspection report have been replaced with regulatory marker buoys as mentioned above (Photo #1). There was no damage to any others.

Navigation Aid Lights

The navigation lights which were noted as damaged in last year's inspection report have been replaced (Photo #1). There was no damage to any others.

Regulatory Marker Buoys

The two new regulatory marker buoys on either side of the boat bay have washed up and are aground on the dikes and are lying on their sides (Photo #1).

GOOSE BAYOU CANAL WEIR

Rock Riprap

There were no notable changes in the rock rip rap during this inspection.

Pilings

All pilings visually appeared to be damage-free and in good condition (Photo #2).

Warning Signs and Day Board Navigation Signs

All signs appeared to be in satisfactory condition with no indication of significant damage (Photo #2).

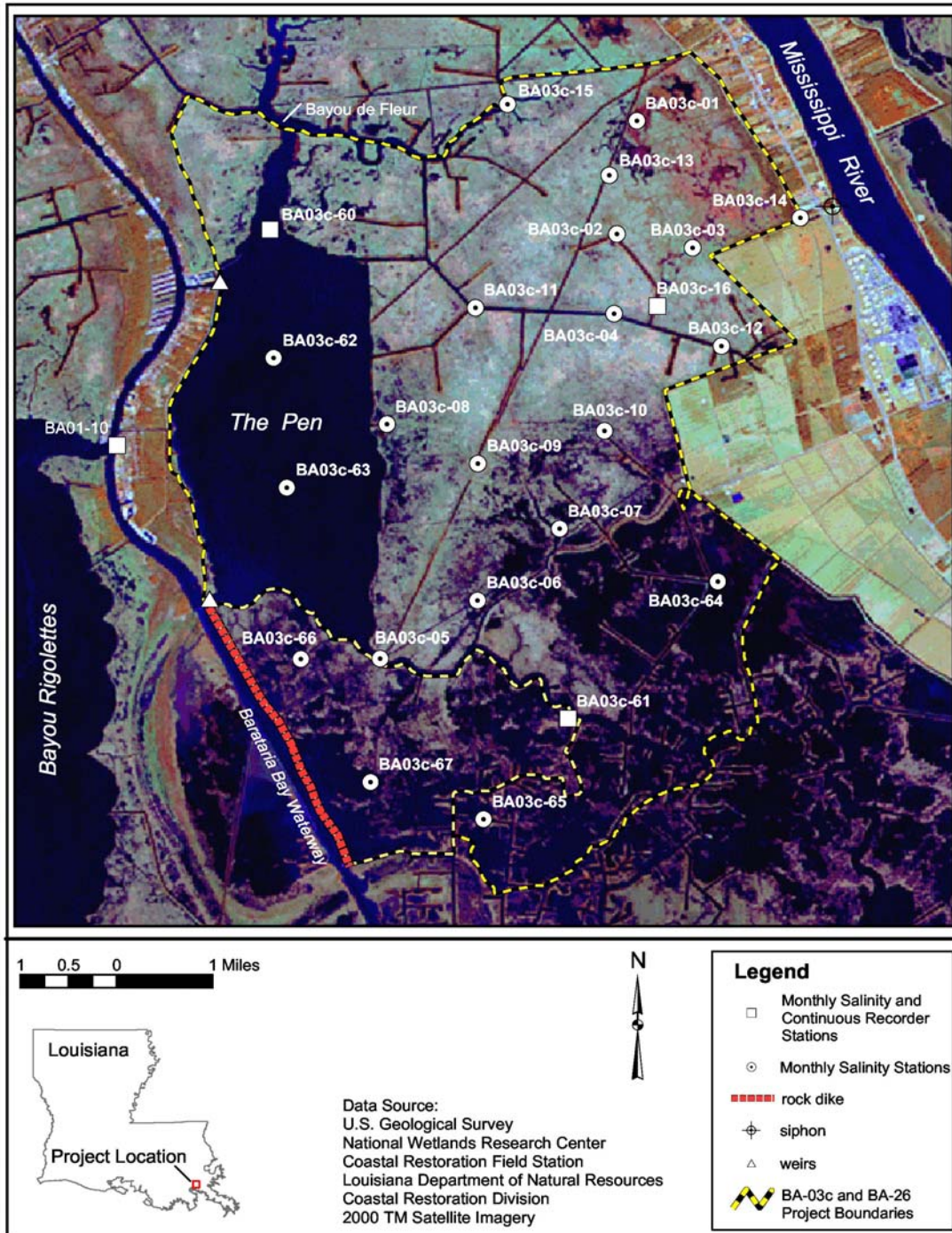
Navigation Aid Lights

The navigation lights which were noted as damaged in last year's inspection report have been replaced. A contract has been awarded to Automatic Power for regular maintenance of the lights.

VI. Conclusions and Recommendations

Overall, the Naomi Outfall Management project is functioning properly and is in fair condition. The new regulatory marker buoys at the Bayou Dupont structure have been washed up on the rock dikes. Possible solutions are being considered to keep the buoys off the dikes including relocating their anchors and/or modifying their ballast configuration. The contract cost of this work is preliminarily estimated to be \$25,000 plus \$5,000 Engineering and Design and Construction Oversight. Although none was evident at the time of this inspection, vandalism to the navigational aids continues to be a concern.

Appendix A
Project Features Map



Appendix B

Photographs



Photo #1 – Bayou Dupont Canal Weir. Approaching the Bayou Dupont weir from the Barataria Waterway, looking across the weir boat bay toward the Pen. Warning signs and navigation aids have been restored. Note the grounded regulatory marker buoys.



Photo #2 – Goose Bayou Canal Weir. Approaching the Goose Bayou weir from the Barataria Waterway side, looking across the weir boat bay toward the Pen. Warning signs and navigation aids are shown on either side of channel through the boat bay.

Appendix C

Three Year Budget Projection

Annual Inspection Report
 NAOMI OUTFALL MANAGEMENT
 State Project No. BA-073c

**Naomi Outfall Management / BA-03c / PPL 5
 Three-Year Operations & Maintenance Budgets 07/01/2007 - 06/30/2010**

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<u>Project Manager</u> Barry Richard	<u>O & M Manager</u> Barry Richard	<u>Federal Sponsor</u> NRCS	<u>Prepared By</u> Peter Hopkins
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	2007/2008	2008/2009	2009/2010
Maintenance Inspection	\$3,094.00	\$3,174.00	\$3,257.00
General Maintenance	\$3,000.00	\$3,000.00	\$3,000.00
Structure Operation	\$0.00	\$0.00	\$0.00
Administration	\$0.00	\$0.00	\$0.00
Maintenance/Rehabilitation			

07/08 Description:
 Relocate bouy anchors and minor repairs

E&D	\$2,500.00
Construction	\$25,000.00
Construction Oversight	\$2,500.00
<i>Sub Total - Maint. And Rehab.</i>	\$ 30,000.00

08/09 Description:

E&D	\$0.00
Construction	\$0.00
Construction Oversight	\$0.00
<i>Sub Total - Maint. And Rehab.</i>	\$ -

09/10 Description:

E&D	\$0.00
Construction	\$7,114.00
Construction Oversight	\$0.00
<i>Sub Total - Maint. And Rehab.</i>	\$ 7,114.00

	2007/2008	2008/2009	2009/2010
Total O&M Budgets	\$ 36,094.00	\$ 6,174.00	\$ 13,371.00

O & M Budget (3 yr Total)	\$ 55,639.00
Unexpended O & M Budget	\$ 331,093.85
Remaining O & M Budget (Projected)	\$ 275,454.85

Annual Inspection Report
 NAOMI OUTFALL MANAGEMENT
 State Project No. BA-083c

OPERATION AND MAINTENANCE BUDGET WORKSHEET 2007/2008
 Naomi Outfall Management / BA-03c / PPL 5

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$3,094.00	\$3,094.00
General Structure Maintenance	LUMP	1	\$3,000.00	\$3,000.00
Engineering and Design	LUMP	1	\$2,500.00	\$2,500.00
Operations Contract	LUMP	1	\$0.00	\$0.00
Construction Oversight	LUMP	1	\$2,500.00	\$2,500.00
ADMINISTRATION				
LDNR / CRD Admin.	LUMP	1	\$0.00	\$0.00
FEDERAL SPONSER Admin.	LUMP	1	\$0.00	\$0.00
SURVEY Admin.	LUMP	0	\$0.00	\$0.00
OTHER				\$0.00
TOTAL ADMINISTRATION COSTS:				\$0.00

MAINTENANCE / CONSTRUCTION

SURVEY

SURVEY DESCRIPTION:	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
Secondary Monument	EACH	0	\$0.00	\$0.00
Staff Gauge / Recorders	EACH	0	\$0.00	\$0.00
Marsh Elevation / Topography	LUMP	0	\$0.00	\$0.00
TBM Installation	EACH	0	\$0.00	\$0.00
OTHER				\$0.00
TOTAL SURVEY COSTS:				\$0.00

GEOTECHNICAL

GEOTECH DESCRIPTION:	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
Borings	EACH	0	\$0.00	\$0.00
OTHER				\$0.00
TOTAL GEOTECHNICAL COSTS:				\$0.00

CONSTRUCTION

CONSTRUCTION DESCRIPTION:	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
Relocate bouy anchors and minor repairs				
Rip Rap	LIN FT	TON / FT	TONS	UNIT PRICE
	0	0.0	0	\$0.00
	0	0.0	0	\$0.00
	0	0.0	0	\$0.00
Filter Cloth / Geogrid Fabric	SQ YD	0	\$0.00	\$0.00
Navagation Aid	EACH	0	\$0.00	\$0.00
Signage	EACH	0	\$0.00	\$0.00
General Excavation / Fill	CU YD	0	\$0.00	\$0.00
Dredging	CU YD	0	\$0.00	\$0.00
Sheet Piles (Lin Ft or Sq Yds)		0	\$0.00	\$0.00
Timber Piles (each or lump sum)		0	\$0.00	\$0.00
Timber Members (each or lump sum)		0	\$0.00	\$0.00
Hardware	LUMP	1	\$0.00	\$0.00
Materials	LUMP	1	\$0.00	\$0.00
Mob / Demob	LUMP	1	\$5,000.00	\$5,000.00
Contingency	LUMP	1	\$0.00	\$0.00
General Structure Maintenance	LUMP	1	\$20,000.00	\$20,000.00
OTHER				\$0.00
OTHER				\$0.00
OTHER				\$0.00
TOTAL CONSTRUCTION COSTS:				\$25,000.00

TOTAL OPERATIONS AND MAINTENANCE BUDGET: \$36,094.00

Annual Inspection Report
 NAOMI OUTFALL MANAGEMENT
 State Project No. BA-093c

OPERATION AND MAINTENANCE BUDGET WORKSHEET 2008/2009
 Naomi Outfall Management / BA-03c / PPL 5

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$3,174.00	\$3,174.00
General Structure Maintenance	LUMP	1	\$3,000.00	\$3,000.00
Engineering and Design	LUMP	1	\$0.00	\$0.00
Operations Contract	LUMP	1	\$0.00	\$0.00
Construction Oversight	LUMP	1	\$0.00	\$0.00
ADMINISTRATION				
LDNR / CRD Admin.	LUMP	0	\$0.00	\$0.00
FEDERAL SPONSER Admin.	LUMP	0	\$0.00	\$0.00
SURVEY Admin.	LUMP	0	\$0.00	\$0.00
OTHER				\$0.00
TOTAL ADMINISTRATION COSTS:				\$0.00

MAINTENANCE / CONSTRUCTION

SURVEY

SURVEY DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Secondary Monument	EACH	0	\$0.00	\$0.00
	Staff Gauge / Recorders	EACH	0	\$0.00	\$0.00
	Marsh Elevation / Topography	LUMP	0	\$0.00	\$0.00
	TBM Installation	EACH	0	\$0.00	\$0.00
	OTHER				\$0.00
TOTAL SURVEY COSTS:					\$0.00

GEOTECHNICAL

GEOTECH DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Borings	EACH	0	\$0.00	\$0.00
	OTHER				\$0.00
TOTAL GEOTECHNICAL COSTS:					\$0.00

CONSTRUCTION

CONSTRUCTION DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Rip Rap	LIN FT	0	\$0.00	\$0.00
		TON / FT	0.0	\$0.00	\$0.00
		TONS	0	\$0.00	\$0.00
			0	\$0.00	\$0.00
	Filter Cloth / Geogrid Fabric	SQ YD	0	\$0.00	\$0.00
	Navigation Aid	EACH	0	\$0.00	\$0.00
	Signage	EACH	0	\$0.00	\$0.00
	General Excavation / Fill	CU YD	0	\$0.00	\$0.00
	Dredging	CU YD	0	\$0.00	\$0.00
	Sheet Piles (Lin Ft or Sq Yds)		0	\$0.00	\$0.00
	Timber Piles (each or lump sum)		0	\$0.00	\$0.00
	Timber Members (each or lump sum)		0	\$0.00	\$0.00
	Hardware	LUMP	1	\$0.00	\$0.00
	Materials	LUMP	1	\$0.00	\$0.00
	Mob / Demob	LUMP	1	\$0.00	\$0.00
	Contingency	LUMP	1	\$0.00	\$0.00
	General Structure Maintenance	LUMP	1	\$0.00	\$0.00
	OTHER				\$0.00
	OTHER				\$0.00
	OTHER				\$0.00
TOTAL CONSTRUCTION COSTS:					\$0.00

TOTAL OPERATIONS AND MAINTENANCE BUDGET: \$6,174.00

Annual Inspection Report
 NAOMI OUTFALL MANAGEMENT
 State Project No. BA-0103c

OPERATION AND MAINTENANCE BUDGET WORKSHEET 2009/2010
 Naomi Outfall Management / BA-03c / PPL 5

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$3,257.00	\$3,257.00
General Structure Maintenance	LUMP	1	\$3,000.00	\$3,000.00
Engineering and Design	LUMP	0	\$0.00	\$0.00
Operations Contract	LUMP	0	\$0.00	\$0.00
Construction Oversight	LUMP	0	\$0.00	\$0.00

ADMINISTRATION

LDNR / CRD Admin.	LUMP	0	\$0.00	\$0.00
FEDERAL SPONSER Admin.	LUMP	0	\$0.00	\$0.00
SURVEY Admin.	LUMP	0	\$0.00	\$0.00
OTHER				\$0.00
TOTAL ADMINISTRATION COSTS:				\$0.00

MAINTENANCE / CONSTRUCTION

SURVEY

SURVEY DESCRIPTION:					
Secondary Monument	EACH	0	\$0.00	\$0.00	
Staff Gauge / Recorders	EACH	0	\$0.00	\$0.00	
Marsh Elevation / Topography	LUMP	0	\$0.00	\$0.00	
TBM Installation	EACH	0	\$0.00	\$0.00	
	LUMP	0	\$0.00	\$0.00	
TOTAL SURVEY COSTS:				\$0.00	

GEOTECHNICAL

GEOTECH DESCRIPTION:					
Borings	EACH	0	\$0.00	\$0.00	
OTHER				\$0.00	
TOTAL GEOTECHNICAL COSTS:				\$0.00	

CONSTRUCTION

CONSTRUCTION DESCRIPTION:						
Rip Rap	LIN FT	TON / FT	TONS	UNIT PRICE		
	0	0.0	0	\$0.00	\$0.00	\$0.00
	0	0.0	0	\$0.00	\$0.00	\$0.00
	0	0.0	0	\$0.00	\$0.00	\$0.00
Filter Cloth / Geogrid Fabric	SQ YD	0	\$0.00	\$0.00	\$0.00	
Navigation Aid	EACH	0	\$0.00	\$0.00	\$0.00	
Signage	EACH	0	\$0.00	\$0.00	\$0.00	
General Excavation / Fill	CU YD	0	\$0.00	\$0.00	\$0.00	
Dredging	CU YD	0	\$0.00	\$0.00	\$0.00	
Sheet Piles (Lin Ft or Sq Yds)		0	\$0.00	\$0.00	\$0.00	
Timber Piles (each or lump sum)		0	\$0.00	\$0.00	\$0.00	
Timber Members (each or lump sum)		0	\$0.00	\$0.00	\$0.00	
Hardware	LUMP	1	\$0.00	\$0.00	\$0.00	
Materials	LUMP	1	\$0.00	\$0.00	\$0.00	
Mob / Demob	LUMP	1	\$0.00	\$0.00	\$0.00	
Contingency	LUMP	1	\$0.00	\$0.00	\$0.00	
			\$0.00	\$0.00	\$0.00	
OTHER			\$0.00	\$0.00	\$0.00	
OTHER			\$0.00	\$0.00	\$0.00	
OTHER			\$0.00	\$0.00	\$0.00	
TOTAL CONSTRUCTION COSTS:				\$0.00		

TOTAL OPERATIONS AND MAINTENANCE BUDGET: \$6,257.00

Appendix D

Field Inspection Form

FIELD INSPECTION CHECK SHEET

Project No. / Name: Naomi Outfall Management
 Structure No. Bayou Dupont Canal
 Structure Description: Stone Weir
 Type of Inspection: Annual

Date of Inspection: 3/20/2007 Time: 9:30
 Inspector(s): Richard, Boddie, Bernard, Hopkins, Blanchard
 Water Level: Inside: N/A Outside: Approx. 0.9 ft
 Weather Conditions: Clear skies, Light Wind

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Rock Riprap	Good	None	N/A		
Creosote Piling	Fair	None	None	#1	
Warning Signs and Day Board Navigation Signs	Poor	None	None	#1	
Navigation Aid Lights	Fair	None	None	#1	
Warning Buoys	Good	See observations	None	#1	The two (2) new regulatory marker buoys are aground on the rock dikes.
Vandalism	Good	None	-		Vandalism of the lights and batteries continue to be a concern although none was evident at the time of this inspection.

FIELD INSPECTION CHECK SHEET

Project No. / Name: Naomi Outfall Management
 Structure No. Goose Bayou Canal
 Structure Description: Stone Weir
 Type of Inspection: Annual

Date of Inspection: 3/20/2007 Time: 9:30
 Inspector(s): Richard, Boddie, Bernard, Hopkins, Blanchard
 Water Level: Inside: N/A Outside: Approx. 0.9 ft
 Weather Conditions: Clear skies, Light Wind

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Rock Riprap	Good	None	N/A		
Creosote Piling	Excellent	None	None	#2	
Warning Signs and Day Board Navigation Signs	Excellent	None	None	#2	
Navigation Aid Lights	Good	None	None	#2	
Warning Buoys	Good	None	None	#2	
Vandalism	-	None	-	-	Vandalism of the lights and batteries continue to be a concern although none was evident at the time of this inspection.