Coastal Protection and Restoration Authority of Louisiana

Office of Coastal Protection and Restoration

2008/2009 Annual Inspection Report

For

HUMBLE CANAL HYDROLOGIC RESTORATION PROJECT (ME-11)

State Project Number ME-11
Priority Project List 8

October 1, 2008
Cameron Parish

Prepared by:

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I. Introduction

The Humble Canal Hydrologic Restoration Project (ME-11) encompasses 4,030 acres (1228.34 ha) in Cameron Parish, Louisiana. The project is bounded by the Little Chenier Ridge to the south, the Mermentau River to the east, oilfield canals on the west, and an east-west trenaisse and an oilfield canal along the north. The marsh is classified as a fresh marsh with 74 percent of the project area being marsh and 26 percent open water, based on the Louisiana Department of Natural Resource's GIS data for 1988–90 (See Appendix A).

The Humble Canal Hydrologic Restoration Project was authorized by Section 303(a) of Title III Public Law 101-646, the Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) enacted on November 29, 1990 as amended and approved on the eight Priority Project List. The Humble Canal Project has a twenty–year (20 year) economic life, which began in March 2003.

II. Inspection Purpose and Procedures

The purpose of the annual inspection of the Humble Canal Hydrologic Restoration Project (ME-11) is to evaluate the constructed project features, 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, OCPR 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, 2003). The annual inspection report also contains a summary of maintenance projects, if any, which were completed since completion of constructed project features 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.

In 2003, the CWPPRA Task Force determined, due to the fact that OCPR was responsible for the operation and maintenance phase of the vast majority of CWPPRA projects, that OCPR would be the responsible party for all Post Storm/Hurricane Assessments. After Hurricane Ike, every project appeared to have been impacted by the storms; therefore, OCPR determined that all projects should be assessed for damages (Broussard, 2006). With concurrence from the federal sponsor, OCPR has decided to use the information obtained during this post hurricane assessment in this Annual Maintenance Inspection.

An inspection of the Humble Canal Hydrologic Restoration Project (ME-11) was held on October 1, 2008 under sunny skies and mild temperatures. In attendance were Mel Guidry and Stan Aucoin from (OCPR), along with Dale Garber representing (NRCS). All parties met at the boat launch on the Mermentau River in Grand Chenier, and traveled north to the Humble Canal Project Site. The annual inspection began at approximately 10:30 a.m. at the marine barrier on the juncture of the Humble Canal Project Outfall Channel and the Mermentau River.

The field inspection included a complete visual inspection of all project features. Staff gauge readings where available were used to determine approximate elevations of water, earthen embankments, water control structure and other project features. Photographs were taken at each project feature (see Appendix B) and Field Inspection notes were completed in the field to record measurements and any notable deficiencies (see Appendix D).

III. Project Description and History

The Humble Canal Hydrologic Restoration Project (ME-11) was completed in March 2003 and involved the installation of a water control structure consisting of 5 - 48" x 50' corrugated aluminum pipes with weir type drop inlets and flap gated outlets. Also 1 - 18" x 50' corrugated aluminum pipe with screw gate as well as all associated excavated access channels, embankments and timber bulkheads, approximately 88 linear feet of hyacinth fence, and approximately 100 linear feet of marine barrier fence. The structure is designed to improve the removal rate of excess water within the project area while preventing salt water from entering. The hyacinth fence will prevent large amounts of vegetation and debris from interfering with the operational capabilities of the structure. The marine barrier will prevent boats from getting too close to the structure. The principle project features of the Humble Canal Hydrologic Restoration Project include the following:

A. **Water Control Structure:** One water control structure consisting of 5 - 48" x 50' corrugated aluminum pipe with weir type drop inlets and flap gated outlets. Also 1 - 18" x 50' corrugated aluminum pipe with screw gate as well as all associated excavated access channels, embankments and timber bulkheads.

B. **Water Hyacinth Fence:** Approximately 88 linear feet of hyacinth fence.

C. **Marine Barrier Fence:** Approximately 100 linear feet of marine vessel barrier fence.

Historically, floods occurring in spring inundated wetlands with fresh water. As water levels receded, salt water could slowly move into the basin through meandering bayous, especially during periods of low rainfall in late summer and early fall. The basin once functioned as a nursery for a variety of marine species that favor a low salinity environment. Projects initiated by various interests have disrupted the basin's natural processes. Extended periods of high water in the upper basin and saltwater intrusion in the lower basin have imposed physiological stresses on vegetated wetlands resulting in their conversion to open water (USDA/NRCS 1997). However, the vegetation in the project area was classified as freshwater marsh in 1968 (Chabreck et al. 1968), and vegetation maps produced in the last three decades still classify the project area as a freshwater marsh (Chabreck and Linscombe 1978,1988,1998).

The Humble Canal and its laterals were constructed for mineral exploration during the early 1950's and increased water exchange between the Mermentau River and the eastern end of Big Burn Marsh. Dredging of the Mermentau River in 1952 and construction of the

Mermentau River to the Gulf of Mexico Navigation Channel in 1978 provided greater commercial use of the Mermentau River Basin. But as with other deepwater shipping channels along Louisiana's fragile coast, one environmental consequence has been increased northward migration and intrusion of saltwater, and the deterioration of fresh water wetlands. In the south eastern portion of the project is a 24 inch open pipe allowing water flow into the project area. This also may be affecting salinity within the project.

The specific goals of the project are:

1. Increase present (yr 2000) land to water ratio.

2. Maintain mean water levels in the project area between 6 in below and 2 in above marsh level.

3. Maintain mean monthly salinity (0–3 ppt) in the project area after construction and prevent salinities from exceeding 7 ppt.

4. Increase or maintain the occurrence and cover of fresh marsh vegetation species in the project area.

5. Increase frequency of occurrence of submerged aquatic vegetation (SAV) in the project area.

IV. Summary of Past Operation and Maintenance Projects

General Maintenance: Below is a summary of completed maintenance projects and operation tasks performed since March 2003, the construction completion date of the Humble Canal Hydrologic Restoration Project (ME-11).

There has been no maintenance on this project.

Structure Operations: In accordance with the operation schedule outlined in the Operation and Maintenance Plan, the structure was operated as required, by Miami Corporation personnel at no cost to OCPR. At present, a servitude agreement amendment is being developed between Miami Corporation and OCPR for Miami Corporation to continue to operate the structure according to the permitted operational plan at no cost to OCPR.

V. Inspection Results

Marine barrier fence

The structure is in excellent condition and does not appear to have suffered any additional damage from Hurricane Ike. Some shrinkage of the sign lettering has occurred and the signs are slightly bent from Hurricane Rita damage. Bank tie-ins, pile caps, hardware, etc. is in excellent condition. Maintenance is required at this time to replace the signs. (Photos: Appendix B, Photo 1)

Hyacinth guard

This feature is in good condition; however several pilings, walers and vertical wooden members have been burned when the adjacent camp debris from Hurricane Rita recently caught fire. Maintenance to repair this damage is needed. (Photos: Appendix B, Photo 2)

Water control structure

Overall, the structure is in good post construction condition. The inspection noted the erosion of the structure embankment behind each wing wall and over the structure identified in the previous O& M Inspections. Miscellaneous structure maintenance such as replacement of bolts and flap gate locking arms will be required. The camp building debris adjacent to the structure has burned since the last inspection and has caused damage to the hyacinth guard as noted above. (Photos: Appendix B, Photo 3 & 4)

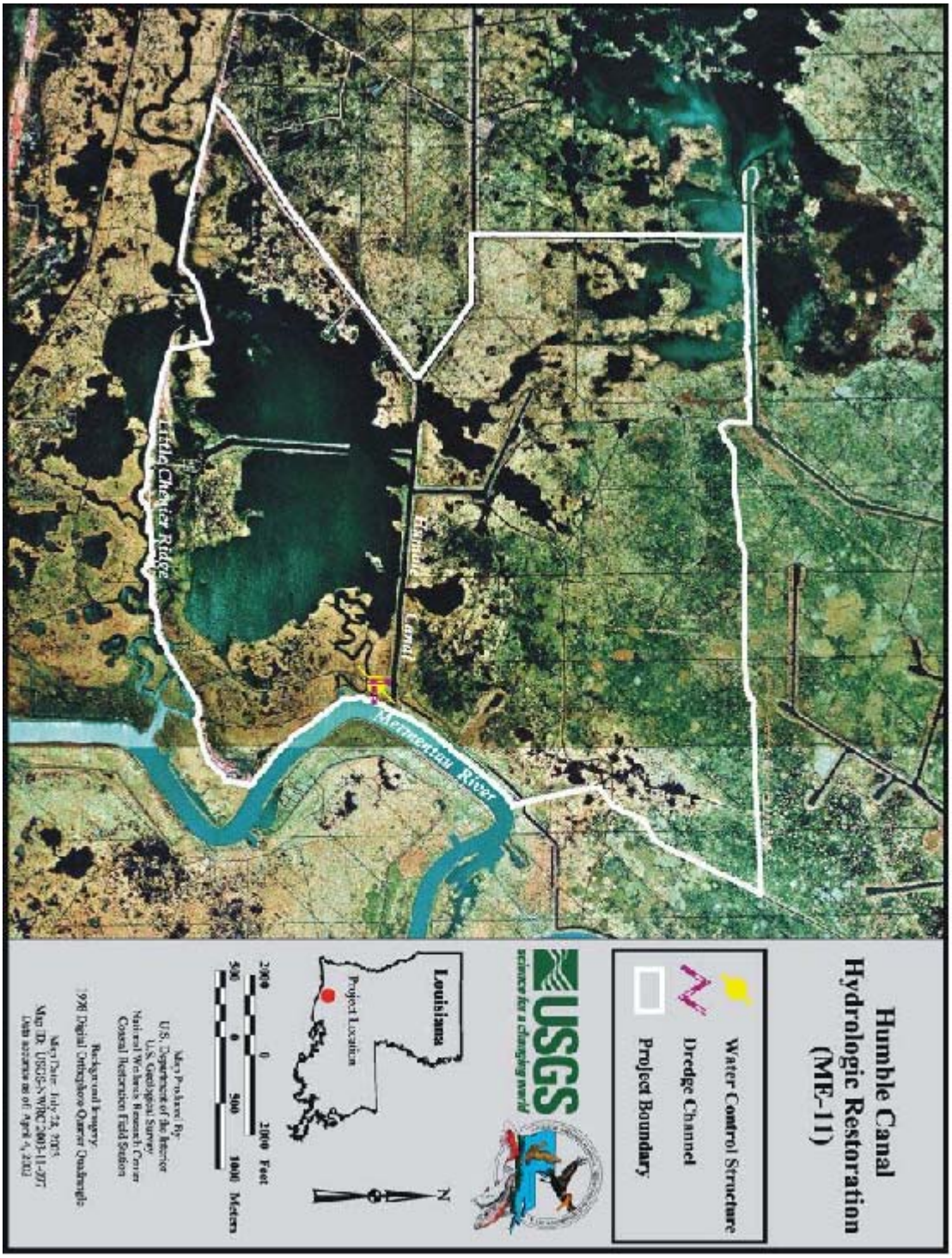
VI. Conclusions and Recommendations

Overall, the Humble Canal Hydrologic Restoration Project is in good condition and is functioning as designed and provides adequate drainage during normal conditions. However, recent storm events, including tropical storms, have shown that the structure cannot drain the area after big rainfall events. As a result, the levee between Humble Canal and the Mermentau River has been cut to allow drainage. Most recently the levee was cut after Hurricanes Rita and Ike. Maintenance is required as listed below. Plans and specifications will be prepared to address these issues. A FEMA claim has been submitted for a portion of the repair work needed on the structure.

- Repair and/or replace miscellaneous hardware.
- Add crushed stone on top of structure.
- Repair hyacinth guard.
- Replace warning signs on marine barrier.

Appendix A

Project Features Map


Humble Canal
Hydrologic Restoration
(ME-11)
Water Control Structure
Dredge Channel
Project Boundary
Little Chenier Ridge
Humble Canal
Mermentau River
USGS
science for a changing world
Louisiana
Project Location
N
2000 0 2000 Feet
500 0 500 1000 Meters
Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Background Imagery:
1998 Digital Orthophoto Quarter Quadrangle
Map Date: July 24, 2001
Map ID: USGS-NWRC 2001-11-077
Data accurate as of April 4, 2001

Appendix B

Photographs

Photo 1, Marine barrier with signage.

Photo 2, Inlet side showing burn damage to hyacinth fence.

Photo No. 3, Inlet side of structure

Photo No. 4, Outlet side of structure

Appendix C

Three Year Budget Projection

HUMBLE CANAL / ME-11 / PPL8

Three-Year Operations & Maintenance Budgets 07/01/2009 - 06/30/2012

Project Manager	O & M Manager	Federal Sponsor	Prepared By
Pat Landry	*Mel Guidry*	*NRCS*	*Mel Guidry*

	2009/2010	2010/2011	2011/2012
Maintenance Inspection	$ 5,737.00	$ 5,909.00	$ 6,086.00
Structure Operation	$ 7,500.00	$ 7,500.00	$ 7,500.00
Administration	$ 9,000.00		$ -
Maintenance/Rehabilitation			

09/10 Description: Replace missing hardware, add rock, replace signs, repair hyacinth guard.

E&D	$ -
Construction	$ 50,000.00
Construction Oversight	$ 10,000.00
Sub Total - Maint. And Rehab.	$ 60,000.00

10/11 Description:

E&D	
Construction	
Construction Oversight	
Sub Total - Maint. And Rehab.	$ -

11/12 Description:

E&D	
Construction	$ -
Construction Oversight	$ -
Sub Total - Maint. And Rehab.	$ -

	2009/2010	2010/2011	2011/2012
Total O&M Budgets	**$ 82,237.00**	**$ 13,409.00**	**$ 13,586.00**

O &M Budget (3 yr Total)	**$ 109,232.00**
Unexpended O & M Budget	**$ 183,206.00**
Remaining O & M Budget (Projected)	**$ 73,974.00**

OPERATION AND MAINTENANCE BUDGET WORKSHEET

HUMBLE CANAL HR PROJECT / PROJECT NO. ME-11 / PPL NO. 8

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	$5,737.00	**$5,737.00**
General Structure Maintenance	LUMP	1	$0.00	**$0.00**
Engineering and Design	LUMP	1	$0.00	**$0.00**
Operations Contract	LUMP	1	$7,500.00	**$7,500.00**
Construction Oversight	LUMP	1	$10,000.00	**$10,000.00**

ADMINISTRATION

OCPR / CRD Admin.	LUMP	1	$7,000.00	$7,000.00
FEDERAL SPONSOR Admin.	LUMP	1	$2,000.00	$2,000.00
SURVEY Admin.	LUMP	0	$0.00	$0.00
OTHER				$0.00
			TOTAL ADMINISTRATION COSTS:	**$9,000.00**

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
OTHER				$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: Repair hardware, add crushed stone, replace signs, repair hyacinth guard.

Rip Rap	LIN FT	TON / FT	TONS	UNIT PRICE	
Rock Rip rap	0	0.0	45	$160.00	$7,200.00
Aggregate Surface Course	0	0.0	60	$160.00	$9,600.00
	0	0.0	0	$0.00	$0.00
Filter Cloth / Geogrid Fabric		SQ YD	500	$2.00	$1,000.00
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	$10,000.00	$10,000.00
Contingency		LUMP	1	$10,200.00	$10,200.00
General Structure Maintenance		LUMP	1	$12,000.00	$12,000.00
Repair Hyacinth Guard		LUMP	1	$0.00	$0.00
OTHER				$0.00	$0.00
OTHER				$0.00	$0.00
				TOTAL CONSTRUCTION COSTS:	**$50,000.00**

TOTAL OPERATIONS AND MAINTENANCE BUDGET: **$82,237.00**

Appendix D

Field Inspection Form

Annual Inspection Report
HUMBLE CANAL HYDROLOGIC RESTORATION PROJECT
State Project No. ME-11

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: ME-11 Humble Canal

Date of Inspection: October 1, 2008 Time: 10:30am

Structure No. N/A

Inspector(s): OCPR- Mel Guidry & Stan Aucoin
NRCS- Dale Garber

Structure Description: 5 - 48" x 50' corrugated aluminum pipe with weir type drop inlets and flap gated outlets/ 1 1 - 18" x 50' corrugated alum.pi

Water Level Inside

Type of Inspection: Annual

Weater Conditions: Sunny and mild

Item	Condition	Pysical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	good				
Steel Grating	good				
Stop Logs	good			3 & 4	Stoplogs on this structure are made of aluminum and should last practically forever.
Hardware	fair			3 & 4	Some of the hardware needs to be replaced or repaired.
Timber Piles	good				
Timber Wales	good				
Galv. Pile Caps	good				
Cables/ lifting device	good				
Signage /Supports	N/A				
Rip Rap (fill) (foreshore dike)	good				
Eathern Embankment	good			3 & 4	Erosion has occurred behind each wingwall and over the structure.
Inlet Channel/Plug	good				

What are the conditions of the existing levees?	Stable on both the inlet and outlet channels. Exposed cloth near the structure as noted.
Are there any noticable breaches?	No
Settlement of rock plugs and rock weirs?	N/A
Position of stoplogs at the time of the inspection?	Unkown
Are there any signs of vandalism?	No

Annual Inspection Report
HUMBLE CANAL HYDROLOGIC RESTORATION PROJECT
State Project No. ME-11

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: ME-11 Humble Canal

Date of Inspection: October 1, 2008 Time: 10:30am

Structure No. N/A

Inspector(s): OCPR- Mel Guidry & Stan Aucoin
NRCS- Dale Garber

Structure Description: Marine Barrier Fence

Water Level Inside

Type of Inspection: Annual

Weater Conditions: Sunny and mild

Item	Condition	Pysical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	good				
Steel Grating					
Stop Logs	N/A				
Hardware	good				
Timber Piles	good				
Timber Wales	good				
Galv. Pile Caps	good				
Cables	N/A				
Signage /Supports	good			1	Signs slightly bent from Hurricane RITA damage and should be replaced..
Rip Rap (fill)	N/A				
Eathern Embankment	N/A				

What are the conditions of the existing levees?
Are there any noticable breaches?
Settlement of rock plugs and rock weirs?
Position of stoplogs at the time of the inspection?
Are there any signs of vandalism?

Annual Inspection Report
HUMBLE CANAL HYDROLOGIC RESTORATION PROJECT
State Project No. ME-11

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: ME-11 Humble Canal

Date of Inspection: October 1, 2008 Time: 10:30am

Structure No. Hyacinth Fence

Inspector(s): OCPR- Mel Guidry & Stan Aucoin
NRCS- Dale Garber

Structure Description:

Water Level Inside

Type of Inspection: Annual

Weater Conditions: Sunny and mild

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	good				
Steel Grating	N/A				
Stop Logs	N/A				
Hardware	good				
Timber Piles	fair			2	Some of the piles have been burned.
Timber Wales	fair			2	Some of the walers have been burned.
Galv. Pile Caps	good				
Cables	N/A				
Signage /Supports	N/A				
Rip Rap (fill)	N/A				
Earthen Embankment	N/A				

What are the conditions of the existing levees?
Are there any noticeable breaches?
Settlement of rock plugs and rock weirs?
Position of stoplogs at the time of the inspection?
Are there any signs of vandalism?

Appendix E

Locations to be Monitored