State of Louisiana
Department of Natural Resources
Coastal Restoration Division

2003 Bi-Annual Inspection Report

for

ATCHAFALAYA SEDIMENT DELIVERY PROJECT, AT-02, & ATCHAFALAYA BIG ISLAND MINING PROJECT, AT-03

State Project Numbers AT-02 and AT-03
Priority Project List 2

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St. Mary Parish

Prepared by:

Herbert J. Juneau, Jr., Engineer IV
Stan Aucoin, Engineering Tech.
LDNR/Coastal Engineering Division
Lafayette Field Office
635 Cajundome Blvd.

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I. Introduction

The Atchafalaya Sediment Delivery Project is a distributary channel maintenance and delta-lobe creation project consisting of approximately 2,182 acres of freshwater wetlands and shallow open water. The project is located in the northeastern region of the Atchafalaya Delta within the Louisiana Department of Wildlife and Fisheries Atchafalaya Delta Wildlife Management Area in the southeast corner of St. Mary Parish, Louisiana. The Project is bounded on the north by Mile Island, the west by East Pass, and to the east and south by the Atchafalaya Bay. (Attachment III)

The Big Island Mining Project is a distributary channel and delta lobe creation project. The project is located in the northwestern region of the Atchafalaya Delta and is bounded by Shell Island and Shell Pass to the north and west, Amarada Pass to the south, and the Atchafalaya Bay Channel to the east and southwest. The project is located in the Atchafalaya Delta Wildlife Management Area in the southeast corner of St. Mary Parish, Louisiana. (Attachment III).

II. Project Description, Purpose, and History

The Atchafalaya Delta is bisected by the Lower Atchafalaya River which is maintained by the U.S. Corps of Engineers to a an Elevation of -20.0 NGVD with a 400 foot bottom width for navigation purposes. The continued dredging and placement of spoil material along the banks of the river has caused sediment deprivation in adjacent delta environments.

The Sediment Delivery Project was designed to enhance the natural delta-building process by restoring the Natal Channel and Castille Pass Channel to functional tertiary distributary channels and utilizing the dredged material to create delta lobe islands as wetlands that are suitable for establishment of emergent marsh.

The Big Island Mining Project was designed to create and/or re-establish channels for water and sediment distribution from the Atchafalaya River to the northwest portion of the Atchafalaya Delta and to create delta lobe islands with the resulting spoil material from the channel excavations.

The projects were constructed as a Coastal Wetlands, Planning, Protection, and Restoration Project (CWPPRA) with the Louisiana Department of Natural Resources as the local State Sponsor and the National Marine Fisheries Service of the Department of Commerce as the Federal Sponsor. The general contractor for the construction of the Projects, which were accomplished under one contract by the State of Louisiana Division of Administration, and administered by the Louisiana Department of Natural Resources was River Road Construction Co. of Mandeville, LA. The Projects were constructed during the period of January 28, 1998 and October 27, 1998. Final cost of the construction contract was $7,238,449.36. The design, engineering, and construction oversight for the Projects was performed under an Engineering Services Contract with the State of Louisiana Department of Natural Resources by Brown, Cunningham, Gannuch Engineers.

The principle project features of the Sediment Delivery Project include:

- Natal Channel - 5,100 linear ft. dredge channel with a 170 ft. wide bottom width and with a branch channel of 1,500 linear ft. oriented to the northeast from Station 74+00. Bottom width of this branch channel was 150 feet.
- Castille Pass Channel - 2,000 linear ft. dredge channel with a 125 ft. wide bottom width.
- Marsh Creation – 668,683 cubic yards of dredge material from Natal Channel placed at four (4) sites creating approximately 257 acres of wetlands.
- Marsh Creation – 32,242 cubic yards of dredge material from Castille Pass placed on a location southeast of the channel and creating approximately 20.5 acres of wetlands.

The principle project features of the Big Island Mining Project include:

- Channel A, 20,600 linear ft. of dredged channel from the Atchafalaya River starting with 800 feet of bottom width at the Elevation -20.0 ft. NGVD contour of the Atchafalaya River to a 400 ft. bottom width at an elevation of -10.0 ft. NGVD, thence remainder of channel was dredged to -10.0 feet NGVD. Bottom width of the channel was 400 feet to Station 145+00, thence 375 feet between Stations 145+00 and 180+00, thence 250 feet width between Stations 180+00 and 200+00, thence with a 200 feet width between Stations 200+00 and 206+00 with exception that this latter portion of the channel created is all to the south of the channel centerline baseline.
- Channel B, 5,500 linear ft. of dredged channel with a bottom width of 160 feet.
- Channel C, 2,400 linear ft. of dredged channel with a bottom width of 125 feet.
- Channel D, 4,000 linear ft. of dredged channel with a bottom width of 160 feet.
- Channel E, 4,150 linear ft. of dredged channel with a bottom width of 125 feet. A "Cul du Sac" turning/mooring area was excavated at the end of Channel E.
- Channel F, 2,300 linear ft. of dredged channel with a bottom width of 160 feet.
- The placement of 3.36 million cubic yards of dredged material at eleven (11) separate disposal areas to create wetlands at an elevation of between Elevation 1.5 ft. to 3.0 ft. NGVD.
- All channels that were dredged were excavated to an elevation of -10.0 feet NGVD Datum, except where noted differently for the "ramp" entrance of Channel A from the Atchafalaya River.

III. Inspection Procedures

On Tuesday, October 28, 2003, this writer and the following individuals participated in the required bi-annual inspection of the Big Island Mining, AT-3, and Atchafalaya Sediment Delivery, AT-2, Projects: Patrick Landry, Dewey Billodeau, Herbert Juneau, and Stanley

Aucoin of LDNR/CED/Lafayette Field Engineering Office, Edmond Mouton and Steve Smith of LDW&F/New Iberia Office, and John Foret of the Lafayette, LA NMFS Office. This report is to serve to document the observations made and some of the results found during the trip.

The purpose of the trip was to inspect the various channels of the two projects by observations and intermittent soundings to determine condition of the channels with respect to the depths initially excavated during construction. Though original excavated depth of all channels was to a (minus) -10.0 feet NGVD, widths of the channels during construction varied from 400 feet to125 feet. No attempt to measure the current existing channel widths was made during the inspection. The inspection began at approximately 9:00 AM, originating from the Berwick, LA Public Boat Launch, and was completed at approximately 2:00 PM, when we returned to the landing. Transportation to and from the landing was via LDNR/Lafayette Field Engineering Office's 21' Workboat. The LDNR/Lafayette Workboat had capability of performing fathometer soundings, by use of borrowed equipment from C H Fenstermaker & Associates, Inc. of Lafayette, LA. The fathometer was operated by LDNR personnel. The inspection party was able to accomplish a cursory, but adequate, investigation for depths existing in the various primary and secondary distribution channels of the Big Island and Sediment Delivery Projects by the fathometer soundings.

IV. Inspection Results

AT-02-BIG ISLAND MINING PROJECT

The actual inspection began at the Atchafalaya River near the transition and beginning reach of the Big Island Channel, Channel A on the construction drawings. There we found "good" soundings that averaged between -8.0 to sometimes -10.0 feet, but generally soundings slightly below -8.0 feet as we journeyed slowly downstream in the channel, intermittently, as we would veer off each time we encountered a secondary distribution channel to profile them. We "took" a partial cross-section of Channel A opposite the "piling" near the start of Channel A, and verified some -8.0 foot depths across portions of the channel. At the very downstream end of Channel A, we discovered that the channel continued for some distance past the location of where we had stopped dredging under the original work. Though width was not measured and channel seemed very narrow, apparently some erosion occurred for an estimated several hundred feet to the southwest. As an aside, the sandbar in the Atchafalaya River, noted during our inspection of CY 2000, immediately upstream in the River of the entrance to Channel A, appears to have not aggraded and encroached into the cross-section of Channel A. Apparently, the flow into Channel A from the River gathers and carries any sediments trying to accumulate on the downstream of this "bar" into and downstream into Channel A. This is a very desirable condition as this puts Channel A in what's possibly a "sediment-rich" location that will contribute to and enhance maximum sediment distribution into the project area.

Comments on the various secondary distribution channels of the Big Island Project follow. Channels D, the first channel on the right down Channel A, was found to have approximately -4.0 feet of water in the initial reach of same after immediately leaving Channel A. Thereafter, approximately -5 feet of water depth was noted as we moved downstream in Channel D

towards the Shell Island Pass Channel to the northwest. Channel D remains in a condition similar to that noted during the CY 2000 inspection.

Channel B, the second channel to the right that spurs off Channel A, indicated depths of approximately -4.0 feet of water for an estimated distance of several hundred feet from Channel A. Depths then increased to -6.0 feet and then eventually to -8.0 and -9.0 feet towards the Shell Island Pass Channel to the northwest. This channel is still in good condition.

Channel F, the third channel on the right encountered down Channel A, revealed about -4.0 feet as the controlling water depth, again just off of Channel A and entering Channel E, and after a distance of several hundred feet, we found a very regular bottom that had at approximately -6 feet of water.

Channel C, the last channel on the left side of Channel A, and that leads to Catfish Pass, indicated approximately -5.0 feet of water as we left Channel A, and then thereafter was -6 to -7 feet deep until we reached Catfish Pass which had depths of approximately -8.0 feet. This channel is marked with plastic pipe used as staking and is regularly used by W&F, sportsmen, and others for access to and from Amarada Pass..

An inspection of the Channel E, the "dead end" Cul de Sac Channel that is oriented towards the south towards Big Island and is the first channel to the left off of Channel A when traveling downstream in the latter, was found to have approximately but -2.0 foot depths controlling over a hump approximately 150 feet in length, then thereafter water depths went to -5 feet, then gradually sloping down to -10.0 feet at a point approximately 1,500+ feet down the Cul de Sac Channel, then we found another hump at -6.5 feet, then we found the Cul du Sac area at the southern end of the channel irregular in depth but varying between -9 and -11 feet in depth from that day's water surface. It is apparent that immediately off Channel A, Channel E is receiving significant deposits of sediment that probably "falls out" from the effect of very minor to zero slope in the channel to the Cul du Sac from Channel A. Channel E is used frequently for navigation to Big Island by maintenance/biology crews of LDW&F. They are contending with the shallow draft problem at this time, but it is the opinion of this writer that the problem will significantly worsen over the next year and that we may have to address same by some maintenance dredging in CY 2005.

AT-03-SEDIMENT DELIVERY PROJECT

We then traveled quickly to East Pass and the Natal Channel site of the Sediment Delivery Project, AT-3. In route, we found a substantial "bar" across the mouth of East Pass on the left descending bank of the Atchafalaya River Channel and the fathometer indicated depths of only approximately -3.0 to -3.5 feet of water for an estimated distance of 150-200 feet to the east in East Pass. Thereafter, East Pass had water depths of -6 to -10 feet until of the mouth of Natal Channel near the "jetties" (remnants of some bucket dredging spoil placed during the initial construction of the channel).

As we entered Natal Channel, water depths immediately sloped upwards to -5.0 feet and then stayed at -6 to -7.5, -8.0 feet until we approached and passed the "natural old outlet" that

continues to the northeast into open water near Ivor's Island, then water depths decreased dramatically to slightly less than -3.0 feet for quite a distance around a curve and down Natal Channel. (It was our observation that, perhaps the natural old outlet has re-developed and possibly captured the flow of the upstream portion of Natal Channel.) Later, as we continued down Natal Channel, we discovered a new spoil area placed by the Corps of Engineers during the 1999 maintenance dredging season. The spoil area appears to have been placed un-confined, is narrow and very lengthy in shape, and existed from 0.3 to approximately 1 foot above the water. Vegetation on the spoil was very, very sparse, though many species of birds were enjoying the area. We continued on a tangent down Natal Channel that carried us down the "right" leg of the "fork" created by the initial dredging of Natal Channel and found water depths of -6 to -6.5 feet for quite some distance. So much distance in fact, that we speculate that the channel has scoured and lengthened to the south. (This needs be explored, as if this is indeed the case, then if the natural old outlet is closed, this area can be a site for a future marsh creation area, as channel scour indicates significant flow conditions.) We then returned to the base of the "fork" and inspected the "left" leg of the Fork in an easterly direction. This channel leg runs parallel and is adjacent to the new Corp's disposal area described above. There, we were surprised to find -5 to -10 feet of water, and were baffled. Perhaps, work by the Corps wheeled-washed the area or maybe natural scouring has occurred. We stopped the inspection near the northen end of the Corps' spoil area. were enjoying the area. We continued on a tangent down Natal Channel that carried us down the "right" leg of the "fork" created by the initial dredging of Natal Channel and found water depths of -6 to -6.5 feet for quite some distance. So much distance in fact, that we speculate that the channel has scoured and lengthened to the south. (This needs be explored, as if this is indeed the case, then if the natural old outlet is closed, this area can be a site for a future marsh creation area, as channel scour indicates significant flow conditions.) We then returned to the base of the "fork" and inspected the "left" leg of the Fork in an easterly direction. This channel leg runs parallel and is adjacent to the new Corp's disposal area described above. There, we were surprised to find -5 to -10 feet of water, and were baffled. Perhaps, work by the Corps wheeled-washed the area or maybe natural scouring has occurred. We stopped the inspection near the northen end of the Corps' spoil area.

We then traveled to the Castille Pass Channel by returning up Natal Channel to East Pass, thence downstream down East Pass to the Castille Pass Channel. Immediately upon entering Castille Pass, we found -4.0 feet of water depth, then thereafter found -11.0 feet of depth to the reach of the channel in vicinity of the "pipeline (Trunkline's 20" Pipeline) and the end of the initial dredging performed on the Castille Pass Channel.

V. Conclusions

It was again apparent that the projects are working well and are surviving after now being in place for five (5) years. We must remember however, that the projects and the delta area have not experienced a significant "high water" event from the Atchafalaya River since the initial construction work was completed in late 1998. Since late1997, drought conditions in the upper

basins of the Mississippi and Red Rivers have limited the lower Atchafalaya River to very low flows, and thus low sediment contributions available to the project.

It was observed by several of the inspection party, that conditions found this year in some of the various channels are perhaps in as good shape as found as during the Inspection of November 2000. The sediment accumulation noted by this inspection in the dredged channels of the projects is not excessive or unexpected and does not require any maintenance dredging at this time, except as noted above for Channel E of the Big Island Mining Project. Since the constructed project features are simply excavated channels, no photographs were taken on this trip to be included in Appendix B. Also, no Field Inspection Forms are included in Appendix C.

VI. Recommendations

Immediate Repairs

- None immediate, however, we should begin discussing and considering some preliminary planning for some minor maintenance dredging on the most upstream end of Channel E, the "dead end" channel to the Cul du Sac on the lower end of the Big Island Channel A.

Programmed Maintenance

- None

Appendix A

Project Features Map

Appendix B

Photographs

Appendix C

Three Year Budget Projection

Appendix D

Field Inspection Form